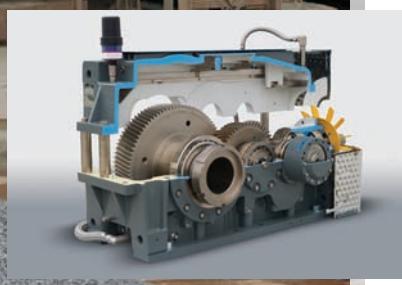




## Falk™ V-Class™ | Catalog



**REXNORD**

# Selection Guide 171-110

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HEAVY DUTY WARRANTY

**Factory Warranty** We're so confident in the performance and reliability of our latest generation of Falk™ gear drives that we're backing this comprehensive offering with the best standard warranty in the business. Our full, three-year heavy-duty warranty provides shaft-to-shaft protection on all Falk components – including bearings and seals (warranty extends for three years from date of shipment). It's an industry first and one more powerful reason why Falk is your ultimate bottom-line value.

## Basic Information

### Safety Notes

**Falk Gear Drives** The Falk name on the gear drive is the purchaser's assurance that the drive was engineered, rated and manufactured to sound design practices.

The power supplied to the geared drive must be equal to or less than the power for which the drive was selected using the appropriate mechanical service factor for the application. The customer must assume the responsibility of isolating the gear drive from any vibratory or transient load induced by the driven equipment.

Install and operate Falk products in conformance with applicable local and national safety codes and per Falk installation manuals, which are shipped with gear drives and are also available upon request. Suitable guards for rotating members may be purchased from Falk as optional accessories. Contact your local Falk district office for complete details.

**People Conveying Equipment** Selection of Falk gear drives for applications whose primary purpose is the transportation of people is not approved. This includes such applications as freight or passenger elevators, escalators, man lift platforms and ski tows and ski lifts.

If the primary purpose of the application is material conveyance and occasionally people are transported, the Rexnord warranty may remain in effect provided the design load conditions are not exceeded and certification to the appropriate safety codes and load conditions has been obtained by the system designer or end user from the appropriate enforcement authorities.

**Gear Drive Mechanical Power Ratings** Gear drive mechanical power ratings stated in this selection guide allow 100% overload for starting loads and momentary overloads associated with normal electric motor driven standard applications operating 10 hours per day under uniform conditions, applications where the recommended mechanical service factor per Page 3 or 4 of this selection guide is 1.00, and where the actual mechanical service factor of the gear drive versus full motor-rated power is equal to or greater than 1.00.

For other standard applications not meeting conditions stated in the previous paragraph, determine the appropriate mechanical service factor from Page 3 or 4, then calculate an equivalent power by multiplying the actual power transmitted by the previously determined mechanical service factor. For these applications, the mechanical power rating of the gear drive selected must equal or exceed the equivalent power that has been calculated.

These service factors are based on the assumption that the system is free from serious critical and torsional vibrations and that maximum momentary or starting loads do not exceed 200% of the normal load.

**For non-standard** applications, those where excessive overloads, reversing service, mechanical brakes, or oversize prime movers are present, refer to Page 2, Conditions Affecting Selection, for special instructions.

**Gear Drive Basic Thermal Ratings** Gear drive basic thermal ratings stated in this selection guide are based on the following assumed conditions:

Ambient temperature is 68°F (20°C).

Altitude is between sea level and 2460 feet.

Ambient air velocity is between 1.6 feet per second and 4.6 feet per second typical of a large indoor room.

Duty cycle is continuous.

Orientation is floor-mounted with shafts in same horizontal plane.

**Thermal Factors & Procedures**, Page 6, permit the calculation of an application-adjusted thermal rating for the gear drive when local thermal conditions are different than those stated above. It is not necessary to apply the mechanical service factor to the basic thermal rating when determining the thermal adequacy of a gear drive.

### Interpolation of Gear Drive Mechanical Power Ratings and Torque

**Ratings** When the high-speed shaft rpm for an actual application falls between two tabulated high-speed shaft rpms found in the selection tables, interpolate to determine gear drive rating.

**Stored and Inactive Drives** Each gear drive is spin-tested with a rust-preventive oil that will protect parts against rust for a period of four months in an outdoor shelter, or 12 months in a dry building after shipment from the Factory.

Periodically inspect stored or inactive drives and spray internal parts with rust inhibitor every six months or more often, if necessary. Drain oil before adding rust inhibitor. Indoor dry storage is recommended.

Drives ordered for extended storage can be treated at the factory with a special preservative and sealed to rust-proof parts for periods longer than those cited above, if specified on the order.

Refer to Service Manual 128-014 for preparation of stored and inactive gear drives.

# Conditions Affecting Selection

## Non-Standard Selection Procedures

Some applications require special procedures, or refer to factory.

**Excessive Overloads** The maximum momentary or starting load applied to the gear drive must not exceed 200% of the rated load capacity of the gear drive (100% overload). Rated load capacity of the gear drive is defined as the power rating published in this selection guide with a mechanical service factor of 1.00. If the actual maximum momentary or starting load exceeds the conditions stated above, calculate an equivalent input power associated with the excessive overload by dividing the maximum overload by two. The gear drive selected must have a rated load capacity equal to or greater than the equivalent input power.

**Frequency of Starts** Starting frequency is an important consideration when selecting a gear drive. Applications involving two to three equally spaced starts per hour must utilize a minimum 1.5 service factor for unloaded starts, and a minimum 1.75 service factor for fully loaded starts. For applications involving more than three starts per hour, refer to factory application specifics such as starting frequency and maximum starting torque. The addition of a fluid coupling as a soft start device would increase the number of allowable starts.

**Reversing Service** Applications involving either more than 20 reversals per 10-hour period, or less than 20 reversals per 10-hour period with peak torques greater than 175% of normal load must be referred to factory.

**Brake-Equipped Applications** When a gear drive is equipped with a "working" brake that is used to decelerate the motion of the system, and the brake is located between the prime mover and the gear drive, select the gear drive based on the brake rating or the highest equivalent input power, whichever is greater. If the brake is used for holding only and is applied after the motion of the system has come to rest, the brake rating must be less than 175% of the rated load capacity of the gear drive selected for the application. If the brake rating is greater than 175% of the rated load capacity, refer the application to the factory. Also refer to the factory all applications in which the brake is located at the output shaft of the gear drive.

**Oversize Prime Movers** Recommended Mechanical Service Factors do not cover applications that require oversize prime movers for high energy or peak loads. Refer such applications to the Factory for selection of suitable gear drives.

**Speed Variation or Multi-Speed Applications** The gear drives offered in this selection guide are designed to operate with splash lubrication on any single-speed application and any ratio shown in the selection guide unless otherwise noted. It is essential that all orders indicate the operating speed requirements and ratio so that the proper internal oil distribution accessories can be supplied for the specific speed.

Falk gear drives use different oil levels for various gear drive sizes, speeds and ratios. Consequently, to operate an existing gear drive at different speeds from those shown on the nameplate, full application and nameplate information must be referred to the Factory for review of the lubrication system.

All variable or multi-speed applications will be referred to Factory to specify lubrication components for adequate lubrication at the slowest speed, without excessive temperature or churning at the highest speed. It is essential that all orders indicate minimum and maximum speeds, as well as the speed duration cycles. A separate motor-driven oil pump (at an extra charge) may be required.

When selecting gear drives for multi-speed or variable speed applications, determine the speed at which the greatest torque is developed, and select the gear drive on this basis. If the speed is not listed in the selection table, interpolate to determine the gear drive rating.

**Application-Adjusted Thermal Rating**, Page 6, The application-adjusted thermal rating is the actual power that a gear drive will transmit continually for three hours or more without overheating. Although it is not necessary to apply the mechanical service factor when determining thermal adequacy of a gear drive, the application-adjusted thermal rating considers thermal factors associated with the application that will affect the ability of the gear drive to dissipate thermal energy. These thermal factors include ambient temperature, altitude above sea level, ambient air velocity and duty cycle. Thermal factors on Page 6 are used to adjust the Basic Thermal Rating when determining the application-adjusted thermal rating.

A check of the application-adjusted thermal rating versus the actual motor

horsepower is necessary for the following applications:

- Continuous duty application where the gear drive runs continuously without shutdown for three hours or more per day.
- Intermittent duty applications where the gear drive operates for three hours or more per day, and run time intervals exceed the duration of the immediately following shutdown intervals. If any run time interval equals or exceeds three hours, the application is considered continuous duty.

The duty cycle factor permits an upward adjustment of the basic thermal rating associated with intermittent duty applications above, and takes into account the operating time per hour of the gear drive, regardless of duration relationship between run time intervals and down time intervals, and provided no specific run time interval exceeds one hour in duration.

Other short-interval, intermittent duty applications not meeting criteria stated above may generate only modest thermal energy to be dissipated by the gear drive. Refer full application details to the Factory for selection of the minimum cooling method that is adequate.

**Effects of Solar Energy** If a drive operates in the sun at ambient temperatures over 100°F (38°C), then special measures must be taken to protect the drive from solar energy. This protection can consist of a canopy over the gear drive or reflective paint on the gear drive. If neither is possible, a heat exchanger or other cooling device may be required.

**Overhung Loads and Thrust Loads** Overhung loads and thrust loads must be taken into account when selecting a gear drive. If either an overhung load or thrust load is imposed on the gear drive, or if both an overhung load and thrust load are applied simultaneously, refer application details to the Factory for correct gear drive selection.

**Product Modifications** The Factory can supply special product modifications to suit your application needs. Contact your local Representative for housing modifications, special ratios, special shafts, special mounting orientations, accessory modifications and other special application requirements.

**Seal Housing Grease** All gear drives will be shipped with NLGI grade #2 grease in the seal housing cavities. Where this grease could contaminate products produced by customer processes, such as in the food and drug industries, refer to factory for special food grade grease options.

**Oil Pump-Equipped Application** When a gear drive is equipped with an integral or external motor-driven oil pump, and the ambient temperature falls below 50°F (10°C), or the oil viscosity is in excess of 3250 cSt, an oil heater may be required to maintain a satisfactory flow rate at startup to prevent bearing failure. Consult the Factory.

**Table 1**

Table 2 or 3 3 to 10 hour Service Factor	Mechanical Service Factor Conversions			
	3 to 10 Hours per Day	Over 10 Hours per Day	Intermittent—Up to 3 Hours per Day †	
Multi-Cyl. Engine †	Multi-Cyl. Engine †	Motor	Multi-Cyl. Engine †	
1.25	1.50	1.75	1.25	1.25
1.50	1.75	2.00	1.25	1.50
1.75	2.00	2.25	1.50	1.75
2.00	2.25	2.50	1.75	2.00

† For applications operating one half hour or less per day or applications driven by single cylinder engines, refer to the Factory.

### Occasional and Intermittent Service or Engine-Driven Applications

For multi-cylinder engine-driven applications and all applications operating intermittently up to three hours per day, refer to Table 2 or 3 for the Service Factor of the same application operating three to 10 hours per day. Next, in the first column of Table 1, find this same Service Factor. Then, to the right, under the desired hours service and prime mover, locate the converted Service Factor.

For example, from Table 3, the Service Factor is 1.25 for a uniformly loaded belt conveyor. From Table 1, for the same application, the following are the Service Factors for various conditions.

1. Engine driven three to 10 hours per day; use 1.50 Service Factor.
1. Engine driven up to three hours intermittently; use 1.25 Service Factor.
1. Motor driven up to three hours intermittently; use 1.25 Service Factor.

**Mounting Position** — Standard mounting positions for types VP & VR are with the input and output shafts horizontal.

Allowable mounting angles for standard oil levels are:

	Bridge Slope	Kiln Slope
VP & VR	± 2°	± 4°

Consult the Factory for other angles.

**Table 2**

### Mechanical Service Factors listed by Industry

For electric motor, steam turbine or hydraulic motor drives, recommendations are MINIMUM and normal conditions are assumed.

Industry	Service		Industry	Service	
	3 to 10 Hour	Over 10 Hour		3 to 10 Hour	Over 10 Hour
<b>BOTTLING AND BREWING</b>					
Bottling Machinery	1.25	1.25	Fourdrinier Rolls— Lumpbreaker, Wire Turning		
Brew Kettles, Continuous Duty	1.25	1.25	Dandy & Return Rolls		1.50
Can Filling machines	1.25	1.25	Jordan		1.50
Cookers—Continuous Duty	1.25	1.25	Kiln Drive		1.50
Mash Tubs—Continuous Duty	1.25	1.25	Mt. Hope & Paper Rolls		1.25
Scale Hoppers—Frequent Starts	1.25	1.50	Platter		1.50
<b>CLAY WORKING INDUSTRY</b>					
Brick Press	1.75	2.00	Presses (Felt & Suction)		1.25
Briquette Machines	1.75	2.00	Pulper (Continuous)		2.00
Clay Working Machinery	1.25	1.50	Repulper (Heavy Shock)		2.00
Pug Mills	1.25	1.50	Reel (Surface Type)		1.25
<b>DISTILLING</b>					
See Brewing					
<b>DREDGES</b>					
Cable Reels, Conveyors	1.25	1.50	Chip & Rotary		1.50
Cutter Head, Jig Drives & Pumps	2.00	2.00	Vibrating		2.00
Maneuvering Winches	1.75	2.00	Size Press		1.25
Screen Drives	1.75	2.00	Super Calenders ■		1.25
Stackers, Utility Winches	1.25	1.50	Thickener & Washer		
<b>FOOD INDUSTRY</b>					
Beet Slicers	1.25	1.50	AC Motor		1.50
Bottling, Can Filling Machine	1.25	1.25	DC Motor		1.25
Cereal Cookers	1.25	1.25	Vacuum Pumps		1.50
Dough Mixers, Meat Grinders	1.25	1.50	Wind & Unwind Stand.		1.25
<b>LUMBER INDUSTRY</b>					
Barkers—Spindle Feed	1.25	1.50	Winders (Surface Type)		1.25
Barkers—Main Drive	1.75	1.75	◆ Yankee Dryers		1.25
Carriage Drive	Refer to Factory		<b>PLASTIC INDUSTRY</b>		
Burner	1.25	1.50	Batch Drop Mill, 2 smooth rolls	1.25	1.25
Main or Heavy Duty	1.50	1.50	Calenders	1.50	1.50
Main Log	1.75	2.00	Compounding Mills	1.25	1.25
Re-Saw Merry-Go-Round	1.25	1.50	Continuous Feed, Holding &		
Slab	1.75	2.00	Blend Mill	1.25	1.25
Transfer	1.25	1.50	Extruders		1.50
Chains—Floor	1.50	1.50	Variable Speed Drive	1.50	1.50
Chains—Green	1.50	1.75	Fixed Speed Drive	1.75	1.75
Cut-Off Saws—Chain & Drag	1.50	1.75	Intensive Internal Mixers		
Debarking Drums	1.75	2.00	Batch Mixers	1.75	1.75
Feeds—Edger	1.25	1.50	Continuous Mixers	1.50	1.50
Feeds—Gang	1.75	1.75	<b>RUBBER INDUSTRY</b>		
Feeds—Trimmer	1.25	1.50	Batch Drop Mill, 2 smooth rolls	1.50	1.50
Log Deck	1.75	1.75	Calenders	1.50	1.50
Log Hauls—Incline, Well Type	1.75	1.75	Cracker, 2 corrugated rolls	2.00	2.00
Log Turning Devices	1.75	1.75	Cracker Warmer—2 roll.		
Planer Feed	1.25	1.50	1 corrugated roll	1.75	1.75
Planer Tilting Hoists	1.50	1.50	Extruders		
Rolls—Live—Off Bearing—					
Roll Cases	1.75	1.75	Continuous Screw Operation	1.75	1.75
Sorting Table, Tipple Hoist	1.25	1.50	Intermittent Screw Operation	1.75	1.75
Transfers—Chain & Craneway	1.50	1.75	Holding, Feed & Blend Mill—		
Tray Drives	1.25	1.50	2 Roll	1.25	1.25
Veneer Lathe Drives	Refer to Factory		Intensive Internal Mixers		
<b>OIL INDUSTRY</b>			Batch Mixers	1.75	1.75
Chillers	1.25	1.50	Continuous Mixers	1.50	1.50
Oil Well Pumping	Refer to Factory		Mixing Mill—2 smooth rolls		
Paraffin Filter Press	1.25	1.50	(if corrugated rolls are used, use Cracker Warmer service factors)	1.50	1.50
Rotary Kilns	1.25	1.50	Refiner—2 roll	1.50	1.50
<b>PAPER MILLS</b>					
Agitator (Mixer)	Refer to Factory		Bar Screens	1.25	1.25
Agitator for Pure Liquids	Refer to Factory		Chemical Feeders	1.25	1.25
Barking Drums, Barkers—Mech.	2.00		Collectors	1.25	1.25
Beater	1.50		Dewatering Screens	1.50	1.50
Breaker Stack	1.25		Scum Breakers	1.50	1.50
Calender	1.25		Slow or Rapid Mixers	1.50	1.50
Chipper	2.00		Thickeners	1.50	1.50
Chip Feeder	2.00		Vacuum Filters	1.50	1.50
Coating Rolls	1.25				
Conveyors—					
Chip, Bark, Chemical	1.25		Cane Knives, Crushers		1.75
Log (Incl. Slab)	2.00		Mills (low-speed end)		1.75
Couch Rolls	1.25				
Cutter	2.00				
Cylinder molds	1.25				
Dryers—					
Paper Mach. & Conveyor Type	1.25				
Embosser	1.25				
Extruder	1.50				
<b>SUGAR INDUSTRY</b>					
Batchers, Calenders	1.25		Cane Knives, Crushers		1.75
Card Machines	1.25		Mills (low-speed end)		1.75
Dry Cans, Dryers	1.25				
Dyeing Machinery	1.25				
Knitting Machinery	Refer to Factory				
Looms, Mangles,					
Nappers, Pads	1.25				
Range Drives	Refer to Factory				
Slashers, Soapers, Spinners,					
Tenter Frames, Washers, Winders	1.25				
<b>TEXTILE INDUSTRY</b>					
Batchers, Calenders	1.25				
Card Machines	1.25				
Dry Cans, Dryers	1.25				
Dyeing Machinery	1.25				
Knitting Machinery	Refer to Factory				
Looms, Mangles,					
Nappers, Pads	1.25				
Range Drives	Refer to Factory				
Slashers, Soapers, Spinners,					
Tenter Frames, Washers, Winders	1.25				
<b>WINDLASS</b>					
Extruder	1.50		Refer to Factory		

★ Service Factors for paper mill applications are applied to the nameplate rating of the electric drive motor at the motor-rated base speed and are consistent with those shown in TAPPI standards.

◆ Anti-friction bearings only.

■ A service factor of 1.25 may be applied at base speed of a super calender operating over a speed range of part constant power and part constant torque where the constant power speed range is greater than 1.5 to 1. A service factor of 1.25 is applicable to super calenders operating at constant torque over the entire speed range or where the constant power speed range is less than 1.5 to 1.

### **Table 3 | Mechanical Service Factors Listed by Application**

For electric motor, steam turbine or hydraulic motor drives, recommendations are MINIMUM and normal conditions are assumed.

Service			Service			Service			Service		
Industry	3 to 10 Hour	Over 10 Hour	Industry	3 to 10 Hour	Over 10 Hour	Industry	3 to 10 Hour	Over 10 Hour	Industry	3 to 10 Hour	Over 10 Hour
<b>AGITATORS</b>			<b>▲ CONVEYORS—Uniformly loaded or Fed:</b>			<b>▲ HOISTS</b>			<b>PULLERS (Barge Haul)</b>		
Pure Liquids .....	Refer to Factory		Apron or Bucket .....	1.25	1.50	Heavy Duty .....	1.75	2.00		1.75	2.00
Liquids & Solids .....	Refer to Factory		Assembly, Belt, Chain, Flight, Oven, Screw .....	1.25	1.25	Medium Duty .....	1.25	1.50	<b>PUMPS</b>		
Liquids-Variable Density .....	Refer to Factory					Skip Hoist .....	1.25	1.50	Centrifugal .....	1.25	1.25
<b>APRON CONVEYORS</b>			<b>▲ CONVEYORS—Heavy Duty. Not Uniformly Fed</b>			<b>INDUCED DRAFT FANS</b>			Proportioning .....	1.25	1.50
Uniformly Loaded or Fed .....	1.25	1.50	Apron, Assembly, Belt, Bucket, Chain, Flight, Oven, Screw .....	1.25	1.50	KILNS .....	See Mills.	Rotary	Reciprocating .....		
Heavy Duty .....	1.25	1.50				LAUNDRY WASHERS .....	1.50	2.00	Single Act., 3 or more Cyl. ....	1.25	1.50
<b>APRON FEEDERS</b> .....	1.25	1.50				LAUNDRY TUMBLERS .....	1.25	1.50	Double Act., 2 or more Cyl. ....	1.25	1.50
Uniformly Loaded or Fed .....	1.25	1.25	<b>CONVEYORS—Severe Duty</b>			LINE SHAFTS			Single Act., 1 or 2 Cyl. ....	Refer to Factory	
Heavy Duty .....	1.25	1.50	Live Roll .....	Refer to Factory		Driving Processing Equipment .....	1.25	1.50	Double Acting, 1 Cyl. ....	Refer to Factory	
<b>BALL MILLS</b> .....	See Mills.	Rotary	Reciprocating Shaker .....	1.75	2.00	Other Line Shafts, Light .....	1.25	1.25	Rotary; Gear, Lobe, Vane. ....	1.25	1.25
<b>BARGE HAUL PULLERS</b> .....	1.75	2.00	<b>COOKERS (Brewing &amp; Distilling), (food)</b> .....	1.25	1.25	<b>LIVE ROLL CONVEYORS</b> .....	Refer to Factory		<b>PUNCH PRESSES (Gear Driven)</b> .....	1.75	2.00
<b>BARKING</b>			<b>COOLING TOWER FANS</b> .....	Refer to Factory		<b>LOBE BLOWERS OR COMPRESSORS</b> .....	1.25	1.50	<b>RECIPROCATING</b>		
Drums (Coupling Connected) .....	2.00		<b>▲ CRANES</b>			<b>LOG HAULS (Lumber)</b>			Conveyors & Feeders .....	1.75	2.00
Mechanical .....	2.00		Dry Dock Cranes, Main Hoist, Bridge and Trolley Travel .....	Refer to Factory		Incline-well Type .....	1.75	1.75	<b>RECIPROCATING COMPRESSORS</b>		
<b>BAR SCREENS (Sewage)</b> .....	1.25	1.25	<b>CRUSHERS</b>			<b>LOOMS (Textile)</b> .....	1.25	1.50	Multi-Cylinder .....	1.50	1.75
<b>BATCHERS (Textile)</b> .....	1.25	1.50	Ore or Stone .....	1.75	2.00	<b>LUMBER INDUSTRY</b> .....	See Table 2		Single Cylinder .....	1.75	2.00
<b>BELT CONVEYORS</b>			Sugar .....	1.75		<b>MACHINE TOOLS</b>			<b>ROD MILLS</b> .....	See Mills.	Rotary
Uniformly Loaded or Fed .....	1.25	1.25	<b>DEWATERING SCREENS (Sewage)</b> .....	1.50	1.50	Auxiliary Drives .....	1.25	1.25	<b>ROTARY</b>		
Heavy Duty .....	1.25	1.50	<b>DISC FEEDERS</b> .....	1.25	1.25	Bending Rolls .....	1.25	1.50	Pumps .....	1.25	1.25
<b>BELT FEEDERS</b> .....	1.25	1.50	<b>DISTILLING</b> .....	See Table 2		Main Drives .....	1.25	1.50	Screens (Sand or Gravel) .....	1.25	1.50
<b>BENDING ROLLS (Machine)</b> .....	1.25	1.50	<b>DOUBLE ACTING PUMPS</b>			Notching Press (Belted) .....	Refer to Factory		<b>RUBBER &amp; PLASTICS INDUSTRIES</b>	See Table 2	
<b>BLOWERS</b>			2 or more Cylinders .....	1.25	1.50	Plate Planers .....	1.75	2.00	<b>SAND MULLERS</b> .....	1.25	1.50
Centrifugal .....	1.25	1.25	Single Cylinder .....	Refer to Factory		Punch Press (Geared) .....	1.75	2.00	<b>SCREENS</b>		
Lobe .....	1.25	1.50	<b>DOUGH MIXER (Food)</b> .....	1.25	1.50	Tapping machines .....	1.75	2.00	Air Washing .....	1.25	1.25
Vane .....	1.25	1.50	<b>DRAW BENCH (Metal Mills)</b>			<b>MANGLE (Textile)</b> .....	1.25	1.50	Rotary—Sand or Gravel .....	1.25	1.50
<b>BOTTLING MACHINERY</b> .....	1.25	1.25	Carriage & Main Drive .....	1.25	1.50	<b>MASH TUBS (Brewing &amp; Distilling)</b> .....	1.25	1.25	Traveling Water Intake .....	1.25	1.25
<b>BREWING</b> .....	See Table 2		<b>DREDGES</b> .....	See Table 2		<b>MEAT GRINDERS (Food)</b> .....	1.25	1.50	<b>SCREW CONVEYORS</b>		
<b>BRICK PRESS (Clay Working)</b> .....	1.75	2.00	<b>DRY DOCK CRANES</b> .....	Refer to Factory		<b>METAL MILLS</b>			Uniform .....	1.25	1.25
<b>BRIQUETTE MACHINES (Clay Working)</b> .....	1.75	2.00	<b>DRYERS &amp; COOLERS (Mills)</b>			Draw Bench Carriages & Main Drives .....	1.25	1.50	Heavy Duty or Feeder .....	1.25	1.50
<b>BUCKET</b>			<b>Rotary</b> .....	1.50		Non-Group Drives .....	1.25	1.50	<b>SCUM BREAKERS (Sewage)</b>	1.50	1.50
Conveyors Uniform .....	1.25	1.50	<b>DYEING MACHINERY (Textile)</b> .....	1.25	1.50	Non-Reversing Individual Drives .....	2.00	2.00	<b>SEWAGE DISPOSAL</b>	See Table 2	
Conveyors Heavy Duty .....	1.25	1.50	<b>ELEVATORS</b>			Reversing .....	Refer to Factory		<b>SHAKER CONVEYORS</b>	1.75	2.00
Elevators Continuous .....	1.25	1.50	Bucket-Uniform Load .....	1.25	1.50	Table Conveyors .....	1 or 2 Cylinders .....	Refer to Factory	<b>SHEETERS (Rubber)</b>	1.50	1.50
Elevators Uniform .....	1.25	1.50	Bucket-Heavy Duty .....	1.25	1.50	Non-Group Drives .....	3 or more Cylinders .....	Refer to Factory	<b>SINGLE ACTING PUMP</b>		
Elevators Heavy Duty .....	1.25	1.50	Bucket-Continuous .....	1.25	1.50	Non-Reversing Individual Drives .....	1.25	1.50	<b>▲ SKI TOWS &amp; LIFTS</b> .....	Not Approved	
<b>CALENDERS</b>			Centrifugal Discharge .....	1.25	1.25	Reversing .....	2.00	2.00	<b>▲ SKIP HOIST</b> .....	1.25	1.50
Rubber and Plastic .....	See Table 2		<b>▲ Escalators</b> .....	Not Approved		Table Conveyors .....	1 or 2 Cylinders .....	Refer to Factory	<b>SLAB PUSHERS</b> .....	1.50	1.50
Textile .....	1.25	1.50	Freight .....	Not Approved		Non-Reversing Group Drives .....	1.50	1.50	<b>SLITTERS (Metal)</b> .....	1.25	1.50
<b>CANE KNIVES</b> .....	1.75		Gravity Discharge .....	1.25	1.25	Wire Drawing & Flattening Machines .....	1.25	1.50	<b>SLUDGE COLLECTORS (Sewage)</b>	1.25	1.25
<b>CAN FILLING MACHINES</b> .....	1.25	1.25	▲ Man Lifts, Passenger .....	Not Approved		Wire Winding Machines .....	1.50	1.50	<b>SOAPERS (Textile)</b> .....	1.25	1.50
<b>CARD MACHINES (Textile)</b> .....	1.25	1.50	<b>EXTRUDERS (Plastic &amp; Rubber)</b> .....	See Table 2		<b>MILLS. ROTARY</b>			<b>SPINNERS (Textile)</b> .....	1.25	1.50
<b>CAR DUMPERS</b> .....	1.75	2.00	Centrifugal .....	1.25	1.25	Ball and Rod Mills .....	With Spur Ring Gear .....	2.00	<b>STEERING GEARS</b> .....	Refer to Factory	
<b>CAR PULLERS</b> .....	1.25	1.50	Cooling Towers .....	Refer to Factory		With Helical Ring Gear .....	1.50		<b>STOKERS</b> .....	1.25	1.25
<b>CEMENT KILNS</b> .....	See Mills.	Rotary	Forced Draft .....	1.25		Direct Connected .....	2.00		<b>STONE CRUSHERS</b> .....	1.75	2.00
<b>CENTRIFUGAL</b>			Induced Draft .....	1.50		Cement Kilns, Dryers & Coolers .....	1.50		<b>SUGAR INDUSTRY</b> .....	See Table 2	
Blowers, Compressors, Discharge .....	1.25	1.25	Large (Mine, etc.) .....	1.50	1.50	Pebble, Plain & Wedge Bar Mills .....	1.50		<b>TABLE CONVEYORS (Non-Reversing)</b>		
Elevators, Fans or Pumps .....	1.25	1.25	Large Industrial .....	1.50	1.50	Tumbling Barrels .....	1.75	2.00	Group Drives .....	1.50	1.50
<b>CHAIN CONVEYORS</b>			Light (Small Diameter) .....	1.25	1.25	<b>MIXER (Also see Agitators)</b>			Individual Drives .....	2.00	2.00
Uniformly Loaded or Fed .....	1.25	1.25	<b>FEEDERS</b>			Concrete, Cont. & Int. .....	Refer to Factory		Reversing .....	Refer to Factory	
Heavy Duty .....	1.25	1.50	Apron, Belt .....	1.25	1.50	Constant Density .....	Refer to Factory		<b>TENTER FRAMES (Textile)</b> .....	1.25	1.50
<b>CHEMICAL FEEDERS (Sewage)</b> .....	1.25	1.25	Disc .....	1.25	1.25	Variable Density .....	Refer to Factory		<b>TEXTILE INDUSTRY</b> .....	See Table 2	
<b>CLARIFIERS</b> .....	1.25	1.25	Reciprocating .....	1.75	2.00	<b>NAPPERS (Textile)</b> .....	1.25	1.50	<b>THICKENERS (Sewage)</b> .....	1.50	1.50
<b>CLASSIFIERS</b> .....	1.25	1.50	Screw .....	1.25	1.50	<b>OIL INDUSTRY</b> .....	See Table 2		<b>TUMBLING BARRELS</b> .....	1.75	2.00
<b>CLAY WORKING</b> .....	See Table 2		<b>FLIGHT CONVEYORS</b>			<b>ORE CRUSHERS</b> .....	1.75	2.00	<b>VACUUM FILTERS (Sewage)</b> .....	1.50	1.50
<b>COLLECTORS (Sewage)</b> .....	1.25	1.25	Uniform .....	1.25	1.25	<b>OVEN CONVEYORS</b>			<b>VANE BLOWERS</b> .....	1.25	1.50
<b>COMPRESSORS</b>			Heavy .....	1.25	1.50	Uniform .....	1.25	1.25	<b>WINCHES (Dredges)</b> .....	1.25	1.50
Centrifugal .....	1.25	1.25	<b>FOOD INDUSTRY</b> .....	See Table 2		Heavy Duty .....	1.25	1.50	<b>WINDERS (Textile)</b> .....	1.25	1.50
Lobe .....	1.25	1.50	Generators (Not Welding) .....	1.25	1.25	<b>PAPER MILLS</b> .....	See Table 2		<b>WIRE</b>		
Reciprocating .....			Gravity Discharge Elevators .....	1.25	1.25	<b>▲ PASSENGER ELEVATORS</b>	Not Approved		Drawing Machines .....	1.25	1.50
Multi-Cylinder .....	1.50	1.75	<b>HAMMER MILLS</b> .....	1.75	2.00	<b>PEBBLE MILLS</b> .....	...		Winding Machines .....	1.50	1.50
Single-Cylinder .....	1.75	2.00				<b>PLATE PLANERS</b> .....	1.75	2.00			
<b>CONCRETE MIXERS</b>						<b>PRINTING PRESSES</b> .....	Refer to Factory				
Continuous .....	Refer to Factory					<b>PROPORTIONING PUMPS</b> .....	1.25	1.50			
Intermittent .....	Refer to Factory					<b>PIG MILLS (Clay)</b> .....	1.25	1.50			

▲ Selection of Rexnord products for applications whose primary purpose is the transportation of people is not approved. This includes such applications as freight or passenger elevators, escalators, man lifts, work lift platforms and ski tows and ski lifts.

If the primary purpose of the application is material conveyance and occasionally people are transported, the Factory warranty may remain in effect provided the design load conditions are not exceeded and certification to the appropriate safety codes and load conditions has been obtained by the system designer or end user from the appropriate enforcement authorities.

# How to Select/Formula Method

Before making a selection, refer to Basic Information and Conditions Affecting Selection on Pages 1 and 2.

## Information Required

The following basic information is required to select a Falk™ V-Class™ gear drive for your application.

### Prime Mover Data

- Type – electric or hydraulic motor or engine
- Power rating in HP
- Speed – constant or variable
- Dimensions – if the Factory will furnish motor mounting accessory or coupling

### Driven Machine Data

- Type – conveyor, kiln, etc.
- Power demand in HP, or equivalent torque
- Speed and direction of rotation
- Service – hours per day; reversals per minute if reversing; minutes per hour (duty cycle) if not continuous

### Gear Drive Data

- Type – parallel shaft or right angle
- Ambient temperature range at drive location
- Altitude above sea level
- Ambient air velocity at drive location
- Mounting position – if inclined or non-standard orientation

### Shaft Connections

- Shaft diameters and key sizes
- Overhung loads – provide full description of sheave, sprocket, or pinion
- Thrust load and direction

## Power Selection Method

The power selection method is based on the power rating of the prime mover.

1. Determine the mechanical service factor.  
Electric motor-driven applications, see Tables 2 & 3, Pages 3 & 4.  
Engine-driven or intermittent applications, see Table 1, Page 3.
2. Calculate equivalent power by multiplying the rated power of the prime mover by the mechanical service factor determined in Step 1.
3. Determine gear drive nominal ratio.  
Divide the high-speed shaft rpm by the low-speed shaft rpm to determine your ideal ratio. Choose a nominal ratio that most closely approximates your ideal ratio. Nominal ratios are found in the power ratings tables. See Step 4.
4. Using the equivalent power determined in Step 2, and the gear drive nominal ratio that most closely approximates the ideal ratio determined in Step 3, select the gear drive size using the Power Ratings Tables.

Power Ratings Tables:

- Parallel shaft gear drives, see Pages 18 thru 29.
- Right angle shaft drives, see Pages 90 thru 95.

Locate the proper page within the power ratings tables based on nominal ratio and high-speed shaft rpm. Once on the proper page, go to the portion of the table associated with your high-speed shaft rpm, and using the appropriate nominal ratio, trace to the right through the columns. Determine the column of the first power rating that equals or exceeds the equivalent power determined in Step 2. The size of the gear drive selected is at the top of the column. Once a gear drive size has been selected, an exact ratio can be determined from the exact ratio tables.

5. Check thermal rating using procedures outlined on Page 6. The application-adjusted thermal rating of the cooling method selected must equal or exceed the motor power.
6. When overhung loads or thrust loads are present, check to assure they are within the capacity of the gear drive selected.

Overhung load (radial load) is imposed by sheaves, sprockets, and open pinions that are mounted directly on the shaft extensions of the gear drive. Gear drive shaft extensions that are flexible coupling-connected need not be checked for overhung load. Flexible couplings do not impose significant overhung load.

Refer HS shaft overhung load applications to the Factory.

Gear drives that have thrust load (axial loads) applied need to be referred to Factory for correct selection. Please advise magnitude and direction to select the correct drive size for the application.

Combined shaft loadings involving simultaneous application of overhung load, thrust load, or bending moment (as in mixers and agitators) should be referred directly to the Factory.

## Torque Selection Method

For convenience, low-speed shaft torque ratings of gear drives are provided, and a purely mechanical selection of a gear drive can be made using torque values. Simply follow the steps outlined in the power selection method, substituting torque values for power values. In order to check thermal adequacy, and check shaft ratings, it will be necessary to convert the torque to power using the formula below:

$$\text{Input Power (Hp)} = \frac{\text{Torque (lb-in)} \times \text{Output Speed (rpm)}}{63025}$$

## Example Selections

An example using the Power Selection Method and an example using the Torque Selection Method is found on Page 7.

# Thermal Factors & Procedures

## Checking Thermal Rating

Checking the thermal rating is extremely important. If the gear drive's capacity to dissipate thermal energy is insufficient, it will overheat, and severe damage may occur.

Gear drive basic thermal ratings are defined on Page 1. A discussion of the application-adjusted thermal rating, and when it is applicable, is found on Page 2.

## Thermal Rating Factors

Thermal horsepower ratings published herein are based on a 68°F (20°C) ambient temperature at an altitude up to 2460 feet above sea level. For other conditions, the thermal horsepower rating must be multiplied by the factors shown in Tables 1 & 2 (see right).

## Application-Adjusted Thermal Rating

Once a mechanically adequate gear drive selection has been made per Steps 1-4 on Page 5, determine the application-adjusted thermal rating of the gear drive. The application-adjusted thermal rating of the gear drive selected must equal or exceed the actual motor horsepower.

In most cases, the nameplate power rating of the motor is assumed to equal the actual power transmitted. It is not necessary to apply the mechanical service factor when determining thermal adequacy of a gear drive.

Use the following formula to determine application-adjusted thermal rating:

$$PT_A = P_T \times B_1 \times B_2 \times B_3 \times B_4 \text{ where:}$$

$P_T$  = Application-Adjusted Thermal Rating

$P_T$  = Basic Thermal Rating

$B_1$  = Ambient Temperature Factor (Table 1)

$B_2$  = Altitude Factor (Table 2)

$B_3$  = Ambient Air Velocity Factor for no auxiliary cooling (Table 3)

$B_4$  = Duty Cycle Factor (Table 4)

Basic Thermal Ratings for parallel shaft gear drives are found on Pages 30-55.

Basic Thermal Ratings for right angle shaft gear drives are found on Pages 96-117.

Once a gear drive satisfies mechanical requirements, select an auxiliary cooling method with an application-adjusted thermal rating that equals or exceeds the actual power transmitted. If no listed cooling method is adequate, contact the Factory for selection of an optional heat exchanger, or consider a larger gear drive with greater thermal capacity.

**TABLE 1 — Ambient Temperature Factor –  $B_1$**   
(For all cooling methods)

Ambient Temperature ★	Ambient Adjustment Factor at 180°F Sump	Ambient Adjustment Factor at 200°F Sump
59F (15C)	1.09	1.08
68F (20C)	1.00	1.00
77F (25C)	0.91	0.92
86F (30C)	0.82	0.85
95F (35C)	0.74	0.78
104F (40C)	0.65	0.70
113F (45C)	0.56	0.63
122F (50C)	0.48	0.56

★ Factors for other ambient temperatures can be interpolated.

**TABLE 2 — Altitude Factor –  $B_2$**

Altitude Above Sea Level – Feet	Factor
0	1.00
2461	0.95
4922	0.90
7382	0.85
9843	0.81
12304	0.76
14765	0.72
17225	0.68

**TABLE 3 — Ambient Air Velocity Factor † –  $B_3$**   
(For no auxiliary cooling)

Sustained Ambient Air Velocity † ft/sec	Installed Environment	Factor for No Auxiliary Cooling
< 1.6	Confined Space	0.75
1.6 to 4.6	Large Indoor Room	1.00
4.6 to 12.1	Large Indoor Room	1.40
> 12.1	Outdoors	1.90

† The sustained ambient air velocity must be a continuous flow of air directly onto the gear drive. If the air flow cannot be relied upon to be continuous, an ambient air velocity factor of 0.75 must be used.

**TABLE 4 — Duty Cycle Factor ‡ –  $B_4$**

% Operating Time Per Hour	Factor With or Without Auxiliary Cooling
100%	1.00
80%	1.05
60%	1.15
40%	1.35
20%	1.80

‡ The duty cycle factor must be based on the percentage of each hour that the drive is operating. For example: a gear drive operating for 48 minutes of every hour of the day has an 80% duty cycle, but a drive operating for four hours and resting for four hours has a 100% duty cycle. Where the % Operating Time Per Hour falls between values tabulated above, use the next higher % Operating Time.

## Power Selection Example

An heavily loaded coal conveyor operates continuous duty 24 hours per day. The application requires a right angle reducer due to space constraints. The gear drive will be driven by a 600 HP electric motor at 1750 rpm. A low-speed shaft speed of 70 rpm and a maximum sump temperature of 200°F has been requested.

Ambient temperature at the conveyor does not exceed 68°F. The conveyor is installed underground in an open air environment with unrestricted air flow. The high-speed and low-speed shafts of the selected gear drive will be connected to the driving and driven equipment by flexible couplings. Select a base-mounted right angle gear drive for this application as follows:

1. The mechanical service factor is 1.50 for a heavily loaded conveyor operating over 10 hours per day, from page 3, Table 2 (Conveyors, Heavy Duty).
2. The equivalent power in HP =  $1.50 \times 600 = 900$  HP.
3. The ideal ratio is  $1750 \div 70 = 25.00$ . The closest nominal ratio is 25.0:1 from the Right Angle Triple Reduction Power Ratings Table on page 92.
4. Using the Right Angle Triple Reduction Power Ratings Table on page 92 and in the section associated 25.0:1, trace right through the columns to the first power rating that equals or exceeds the equivalent of 900 HP calculated in Step 2. The selection is a size 173VR3 (shown at the top of the column) that has a power rating of 908 HP. Actual mechanical service factor is  $908 \div 600 = 1.51$  Exact ratio is 25.65:1, found on page 118 (exact ratio table).
5. Check thermal rating. The application-adjusted thermal rating must equal or exceed the actual power transmitted (600 HP). Basic thermal rating for the 173VR3, nominal ratio 25:1, high-speed shaft of 1750 rpm, no auxiliary cooling, equals 244 HP, per page 102.

Thermal factors from page 6 for no auxiliary cooling are as follows.

$B_1$  = Ambient Temperature Factor from Thermal Table 1 = 1.00  
 $B_2$  = Altitude Factor from Thermal Table 2 = 1.00  
 $B_3$  = Ambient Air Velocity Factor from Thermal Table 3 = 1.00  
 $B_4$  = Duty Cycle Factor from Thermal Table 4 = 1.00

Application-adjusted thermal rating with no auxiliary cooling =  
 $244 \times 1.00 \times 1.00 \times 1.00 \times 1.00 = 244$  HP

Application-adjusted thermal rating does not equal or exceed the 600 HP transmitted, so auxiliary cooling is required.

Basic thermal rating for the 173VR3, nominal ratio 25:1, high-speed shaft 1750 rpm, shaft fan cooling, equals 909 HP, per page 102.

Thermal factors for shaft fan cooling are as follows:

$B_1$  = Ambient Temperature Factor from Thermal Table 1 = 1.00  
 $B_2$  = Altitude Factor from Thermal Table 2 = 1.00  
 $B_4$  = Duty Cycle Factor from Thermal Table 4 = 1.00

Application-adjusted thermal rating with no auxiliary cooling =  
 $909 \times 1.00 \times 1.00 \times 1.00 \times 1.00 = 909$  HP

Application-adjusted thermal rating does equal or exceed the 600 HP transmitted so shaft fan cooling is required. Right angle VRC3 unit utilize a split axial fan so the direction of rotation of the high-speed shaft must be provided at the time of order.

6. It is not necessary to check overhung load or thrust capacity of the gear drive for this example. Gear drive shaft extensions are connected by flexible couplings, which do not impose significant overhung load. No thrust load is present.
7. Determine the complete Falk V-Class unit nomenclature per page 12. You must specify the shaft orientation and accessory mounting position for your installation. For example, the final nomenclature for this unit could be M173VRC3A25.65-0421B.

## Torque Selection Example

A dredge utility winch requires 500,000 lb.-in. of torque at its output shaft, which operates at 16 rpm. The winch is in service eight hours per day and is driven by a coupling-connected 150 HP, 1750 rpm electric motor. The ambient temperature never exceeds 68°F. The approximate air velocity is 10 feet per second, and the dredge operates in Lake Superior (sea level). The winch never operates more than 30 minutes in a given hour. The space available is best suited to a base-mounted right angle gear drive, and a maximum sump temperature of 200°F has been requested. Select a gear drive for this application.

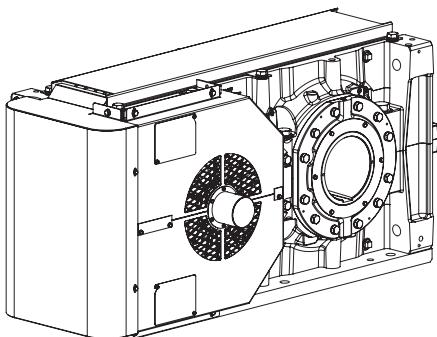
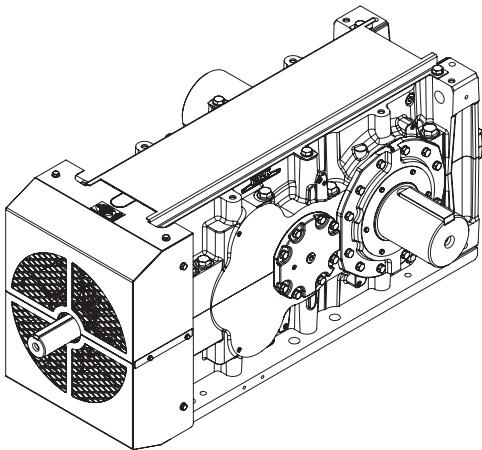
1. The Service Factor is 1.25 for a dredge utility winch operating 10 hours per day, from Page 3, Table 2 under Dredges.
2. The equivalent torque is  $1.25 \times 500,000 = 625,000$  lb.-in.
3. The ideal ratio is  $1750 \div 16 = 109.4:1$ . The nearest standard nominal ratio is 112:1 from the Right Angle Triple Reduction Table on Page 93.
4. Using the Triple Reduction Table on Page 93, in the 1750 rpm high-speed shaft section and at the 112:1 ratio and 16 rpm, trace right to 692 (x 1000, the first torque exceeding the equivalent torque of 625,000 lb.-in.) and read the drive size 165 at the top of the column.
5. The basic thermal capacity with no auxiliary cooling for an 165VR3, 112:1, at 1750 rpm from the table on Page 103 is 135 HP. The ambient temperature factor ( $B_1$ ) from Table 1, Page 6, is 1.00. The altitude factor ( $B_2$ ) from Table 2, Page 6 is 1.00. The ambient air velocity factor ( $B_3$ ) is 1.4 from Table 3, Page 6. The Duty Cycle is 50% (30 min/hour), so the duty cycle factor ( $B_4$ ) is 1.15 from Table 4, Page 6.
6. The application-adjusted thermal capacity is  $135 \times 1.00 \times 1.00 \times 1.40 \times 1.15 = 217$  HP, which exceeds the power rating of the motor (150 HP). Therefore, no additional cooling is required.
7. It is not necessary to check overhung load or thrust capacity of the gear drive for this example. Gear drive shaft extensions are connected by flexible couplings, which do not impose significant overhung load. No thrust load is present.

# Accessory & Option Information

## Shaft-Driven Cooling Fans

Shaft-driven cooling fans provide a simple and inexpensive way to utilize the full mechanical rating of the gear drives by lowering the operating temperature, thus increasing thermal power capacity. Cooling fans have been successfully used on electric motors and other related machinery for many years. They eliminate the need for water or electrically powered cooling, pumps and external piping. The sound level at standard motor rpm is about the same as that from fans on totally enclosed, fan-cooled driving motors. Less than 0.25% of cataloged power rating is required to drive the fans. Radial fans are available for use with VP parallel shaft drives. The radial fan utilized on the VP drives is a split fan design.

Axial split fans are also available for use on the VR right angle drives. The direction of rotation of the high-speed shaft is required at the time of order to ensure that the correct axial fan is selected. Dimensions, arrangements and clearances for shaft-driven fans are shown in the selection guide.



## Electric Cooling Fan

The use of an electric fan permits the full use of available shaft extensions. Electric fans are unaffected by shaft rotation and speed of the gearbox. They include a thermostatic control to turn off the fan when it is not required. The electric fan can be mounted on either end of a parallel shaft drive and on the low-speed end of a right angle drive. Electric fans are available with the following standard motor packages:

60Hz, 3 phase, 220/380VAC

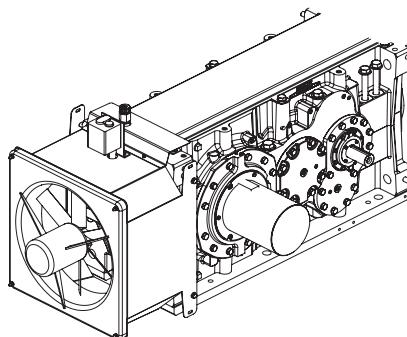
60Hz, 3 phase, 265/460VAC

60Hz, 1 phase, 110VAC

50Hz, 3 phase, 220/380VAC

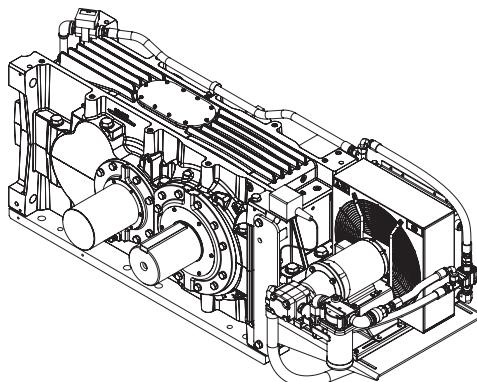
Other motor packages may be available at an extra charge. Consult the Factory for price and availability.

Dimensions, arrangements and clearances for electric fans are shown in the selection guide. Additional information including motor ratings and thermostatic control wiring diagrams are also available from the Factory.



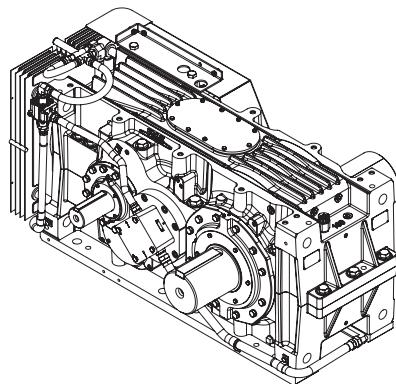
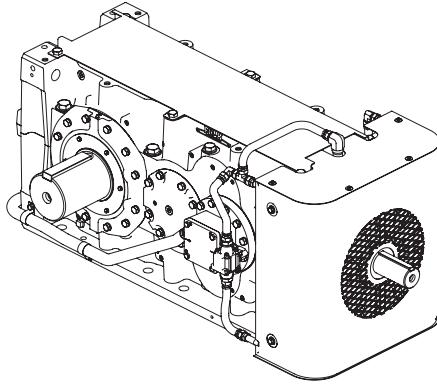
## Pumps & Coolers

The 600 Series integrated oil-to-air cooler is drive mounted at the factory and shipped with both the lube suction and return lines connected to the drive with flexible hose. Only one motor is required – this dual output motor drives both the lube pump and cooling fan. The motor is 230-460V AC, 3 phase, 50 or 60Hz. A thermostatic bypass valve at the cooler regulates the flow of oil through the cooler. Available options include flow switch, single and dual filters.



## DuraPlate™ Patent-Pending Cooling Package

The Falk V-Class DuraPlate provides enhanced cooling capacity. This self-contained system is integral to the drive train and can control oil temperatures in the most extreme conditions. No air, water or electricity is required. A shaft-driven pump circulates oil through the patent-pending DuraPlate while a shaft-driven fan provides air flow to cool the oil.



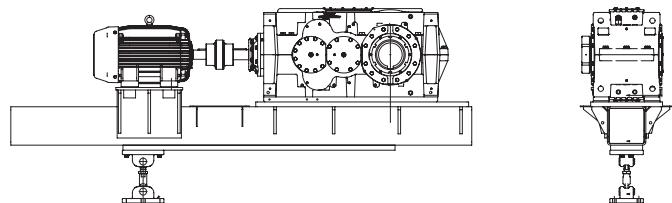
## Bedplates

A bedplate is recommended to ensure proper alignment of a base-mounted drive with the motor. The Factory can provide a fabricated steel bedplate for all popular sizes of standard VP and VR drives. These bedplates accommodate standard NEMA and IEC motors within the power range of the drive and many of the larger non-NEMA motors. Special bedplates can be designed and manufactured for unique motor and special accessory combinations.

Supports for tachometers, brakes, timing devices, foot-mounted fluid couplings or other accessories can be added. Contact the Factory for further details on this accessory.

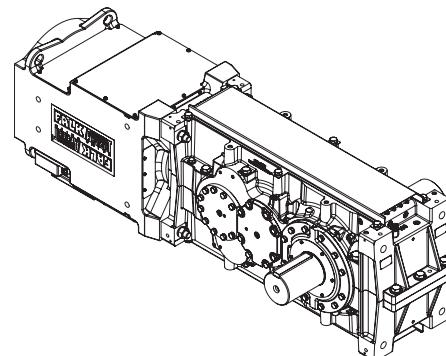
## Swing Base

Designed specifically for use with the VR right angle shaft-mounted drive, the swing base provides an economical and readily available alternative to bedplates. Swing bases have been pre-engineered for several combinations of Falk V-Class units, NEMA & IEC motors and Falk couplings.



## Alignment-Free Drive

The Alignment-Free Drive is a standard packaged drive developed to meet the demands of surface and underground belt conveyor applications. The drive comprises a unitized motor, coupling (fluid or flexible) and right angle gear drive that mounts directly to the conveyor drive shaft and is supported by a single torque arm. The unit can mount to the conveyor shaft via rigid flanged coupling, TA Taper® bushing or shrink disc. It is simple to install, eliminates the cost of expensive mounting pads, and offers the mobility required for today's conveyor systems.



## Torque Arm

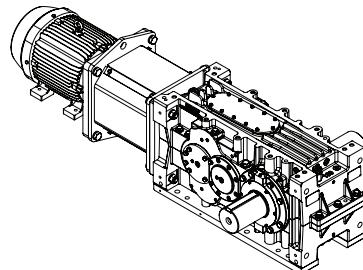
Torque arms are available for VR right angle shaft-mounted drives. They are used to support the drive in a standard horizontal position, and are suitable for use with a swingbase, bedplate or Alignment-Free drive. The customer is responsible for determining the structural integrity of their support structure.

## Transition Base

A custom transition bedplate can be provided to adapt a current Falk V-Class unit to the footprint of an existing gear drive. Transition bases are designed to align the center of the gear drive low-speed shaft with the center of the driven shaft. Additional adaption in the form of spacer couplings and/or an extended shaft may be required to complete the low-speed connection.

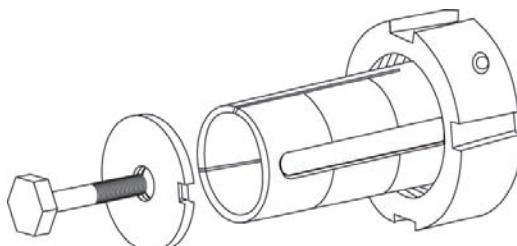
## Flange Motor Adapters

Flanged motor adapters are available for type VP and VR drives. The adapter allows a flange-mounted motor to be directly mounted to the high speed shaft of the drive.



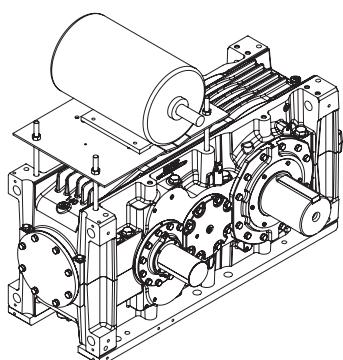
## TA Taper Bushings

Available with both inch and metric bores, the TA Taper ductile iron bushings provide for easy-on easy-off shaft mounting convenience for hollow shaft drives.



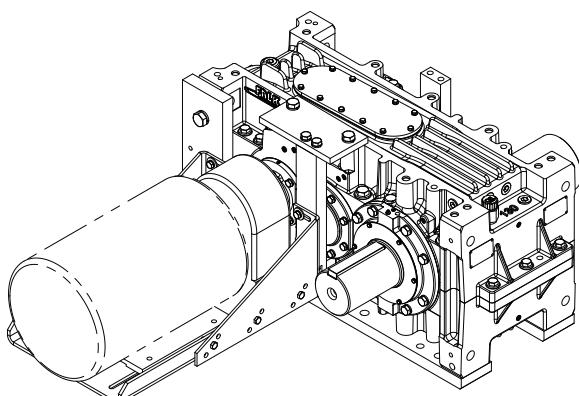
## Motor Mounts

Motor mounts are selectively predesigned for type VP drives. Motor mounts provide a convenient support for the motor when the drive is belt-driven.



## Motor Brackets

Motor brackets may be used for type VP and VR drives. These motor brackets provide an economical "soft" mounting for standard NEMA T-frame and IEC B3 induction motors. It is expected that the weight, location and starting torque of the motor will cause cantilevered motor brackets to deflect or twist to varying degrees. They are engineered to be within acceptable deflection limits as determined by the Factory. However, because the motor bracket is a "soft" motor support, deflection and vibration magnitudes of the bracket may exceed levels normally considered acceptable for rigidly, "hard" mounted machinery.

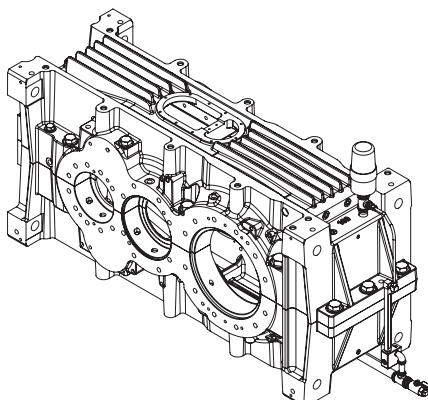


## Shaft Mounting Options

In addition to the TA Taper bushing previously described, shaft mounting options include hollow shaft with shrink disc and solid shaft with a Falk MCF rigid flange coupling.

## Lubrication Package

The Falk V-Class Lube Package includes a Falk desiccant breather, an oil sampling port, an oil sight gauge and oil drain ball valve assembly.

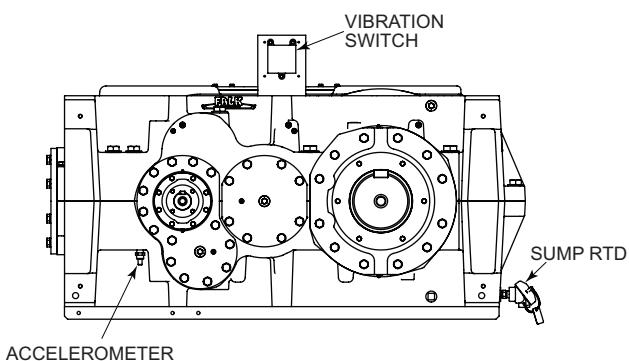


## Condition Monitoring Packages

The Falk V-Class condition monitoring packages allow you to easily monitor the health of your drive.

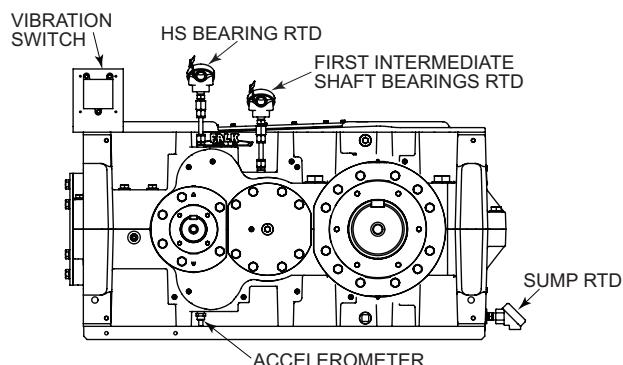
### Condition Monitoring #1

This package includes a sump RTD and an accelerometer with vibration switch. The package includes one 100Ω three-wire platinum sump RTD with thermowell.



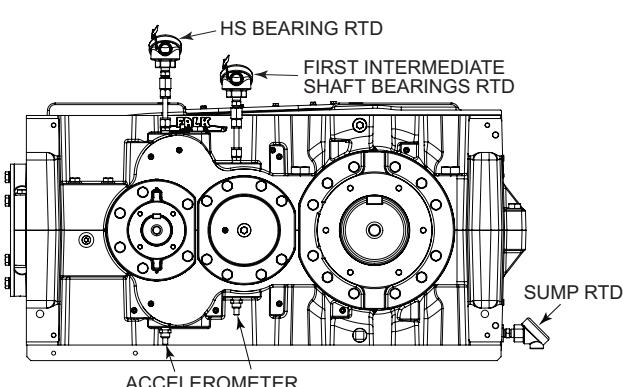
### Condition Monitoring #2

This package includes a sump RTD and an accelerometer with vibration switch and bearing RTDs located at the high-speed and first intermediate shaft bearings.



### Condition Monitoring #3

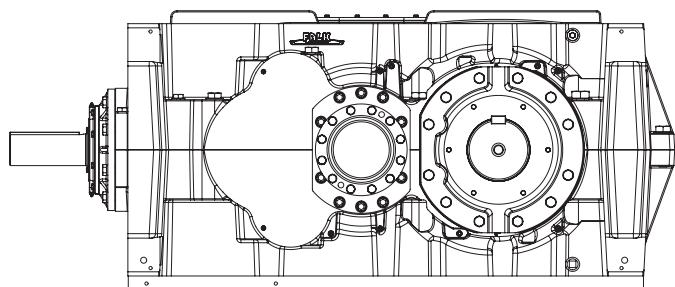
This package includes a sump RTD, bearing RTDs located at the high-speed and first intermediate shaft bearings, and accelerometers at the high-speed and first intermediate shaft bearings.



## Backstops

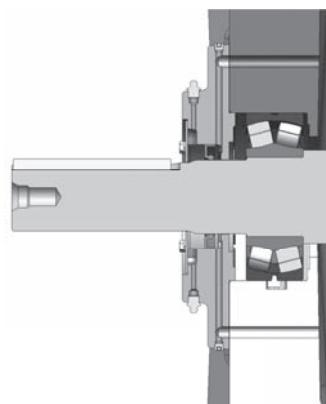
Backstops prevent reverse rotation or backrun without backlash for conveyors, elevator head shafts, and similar applications. A standard line of accessory backstops for use on types VP and VR drives is available. These accessory backstops are mounted integrally on an extension of either the high-speed or an intermediate shaft and share the drive sump oil. The Falk V-Class backstop is a sprag type design.

When specifying accessory backstops, the overrunning direction of rotation is defined as clockwise or counterclockwise when facing the rotating end of the low-speed shaft extension.



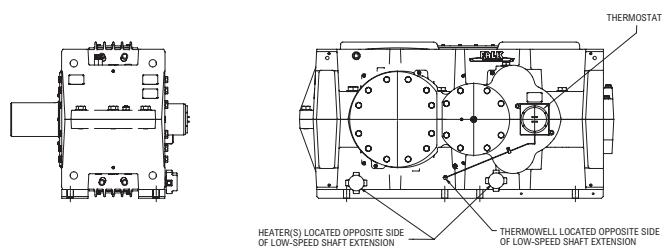
## Magnum Seals

Falk V-Class units include the standard Falk Magnum seal arrangement. Falk's exclusive labyrinth-design, non-wearing Magnum seal keeps oil in and dirt out. A purgeable grease chamber with contact seal prevents the infiltration of dirt and grime. A unique drainback passage combines with a radial and axial bush seal to retain oil and eliminate leaks.

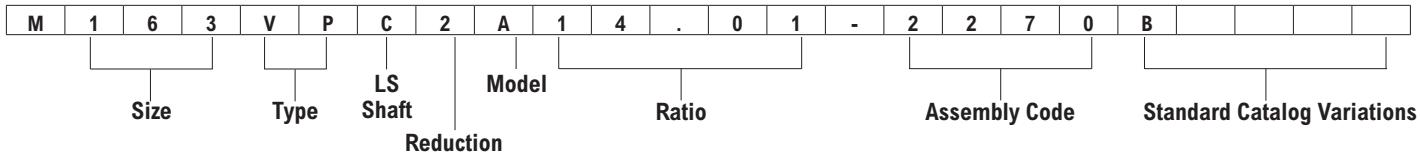


## Immersion Heater

Pre-designed immersion heaters are available for all configurations. Heater options include, 1 phase, 120V and 3 phase in 240V and 460V options. Heater selections are designed to raise the sump temperature 10 to 15 deg F per hour dependent on ambient conditions. Consult Factory with ambient conditions for actual heating time and start up viscosity requirements. Single reduction drives (VP1) have single and dual heater options base on customer ambient conditions and requirements. Consult Factory for selection.



# V-Class Nomenclature



## Shaft Dimension Standard

M standard metric input and output shafts (diameter/bore length, key and keyway)

### Size

133  
137  
143  
145  
147  
153  
155  
157  
163  
165  
167  
173  
175  
177  
187

### Type

P Parallel Shaft, Horizontal  
R Right Angle, Horizontal

## Standard Catalog Variations

A Backstop  
B 1 Shaft Fan  
D Electric Fan 60Hz 3Ph 220/380  
E Electric Fan 60Hz 3Ph 265/460  
F Electric Fan 60HZ 1Ph 110  
G Electric Fan 50HZ 3Ph 220/380  
H Immersion Heater Package  
J Integrated PA - 600 Series  
K DuraPlate Cooling Package  
M Lubrication Package  
N Condition Monitoring #1  
P Condition Monitoring #2  
Q Condition Monitoring #3  
R Alignment-Free Package  
S With Special Features  
T Top Motor Mount  
U Swingbase  
V Bedplate  
Y C-Face Motor Adapter  
Z Motor Bracket

### LS Shaft

C Solid Shaft  
T Hollow Shaft with TA Bushing  
J Hollow Shaft with Shrink Disc  
Q Hollow Shaft, Straight Bored & Keyed

### Reduction

Number of reductions/stages in gear drive

### Model

Model A.

### Ratio

Exact ratio expressed as (5) characters including decimal point

### Assembly Code

First two characters indicate shaft assembly, second two characters indicate accessory locations

# How to Order

The following information is required to order a Falk V-Class gear drive to meet your application requirements. Much of the information listed below is also used to make a selection and is repeated here in the event a selection will be made by the district office.

## Gear Drive

- Size, type and ratio
- High-speed shaft rpm and low-speed shaft rpm
- Service factor
- External shaft loads – thrust and overhung load
- Factors affecting thermal performance – ambient temperature, altitude, ambient air velocity and duty cycle
- Auxiliary equipment required – couplings, backstops, etc.
- High-speed shaft rotation when looking at shaft end for right angle (VR) units with shaft driven fan.
- Shaft assembly accessory location number (see Pages 14-16 for parallel shaft drives and Pages 88 & 89 for right angle drives)

## Motor – Prime Mover

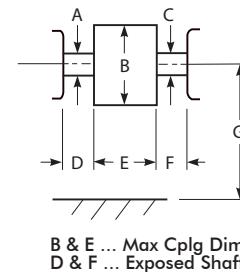
- Type – motor or engine
- Power rating – HP
- Speed – rpm
- Frame size – dimension prints if the Factory is to furnish mounting surface and/or mount the equipment
- Motor – type, class, weight, or any special characteristics (such as brake motor, explosion-proof, etc.)
- Identify if motor is to be furnished or installed by the Factory

## Driven Machine

- Required power or torque
- Speed – rpm
- Application description – belt conveyor, agitator, etc.
- Service – duty cycle, hours per day, reversals per minute if reversing
- Ambient temperature range and operating conditions – outdoor, taconite dust, etc.

## Auxiliary Equipment Furnished by the Factory

- Motors – if the Factory is to furnish, provide complete specifications
- Bedplates – supply drawing of motor and any auxiliary equipment not supplied by the Factory
- Flange motor adapters or motor brackets – supply drawing of motor
- Motor mount – supply drawing of motor and the required belt centers and mounting arrangement
- Backstops – specify direction of rotation of the low-speed shaft (CW or CCW) when facing the drive from the end of the exposed low-speed shaft extension. Also specify backstop location (right or left side facing HS end).
- Electric fan position, Hz and volts
- Couplings – specify size, type, drive and driven hub bores and keyways
- Coupling guards – furnish description of couplings and/or other equipment to be guarded, and all dimensions A through G below



- Swing base – supply frame size or drawing of the motor and HS coupling size or shaft gap

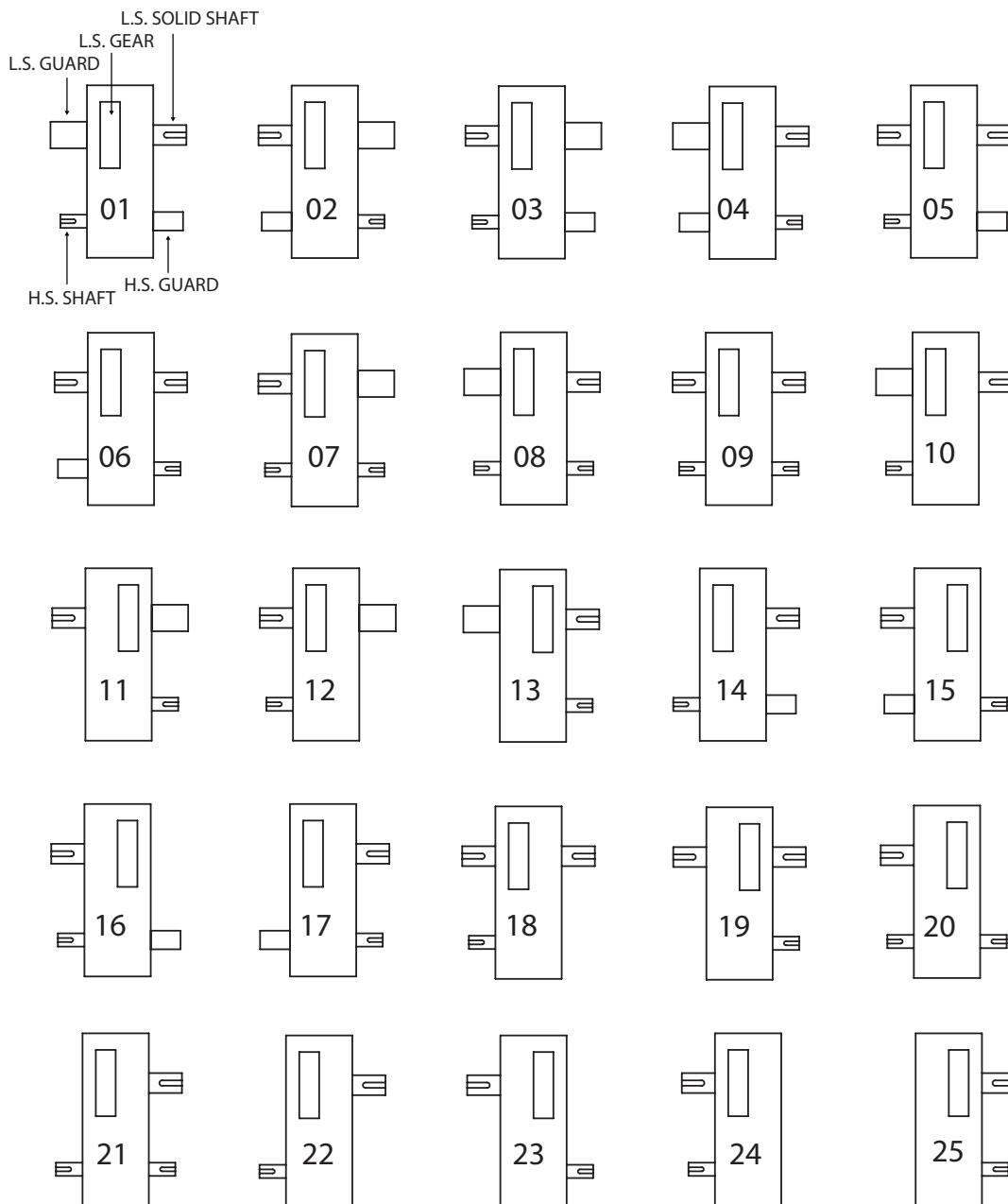
## Special or Specification Requirements

Advise the Factory of any special project-related specifications such as: noise level specifications, bearing L10 requirements, etc.

# Type VP Parallel Shaft Shaft Assemblies

Please specify the desired assembly number from the views below. Contact the Factory for inclined, wall-mounted, or other non-standard orientations.

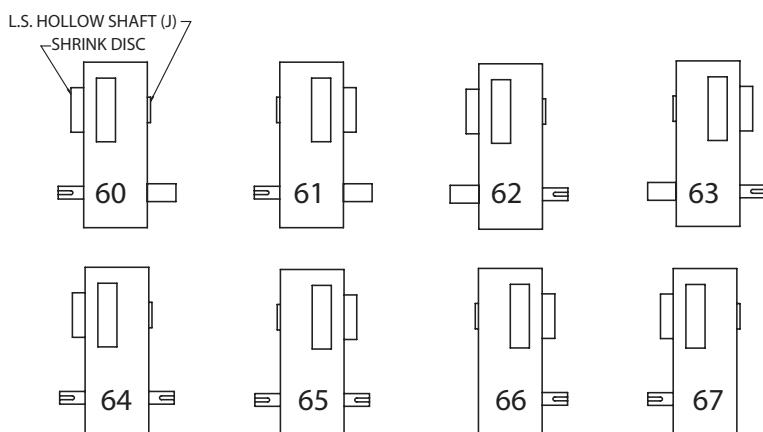
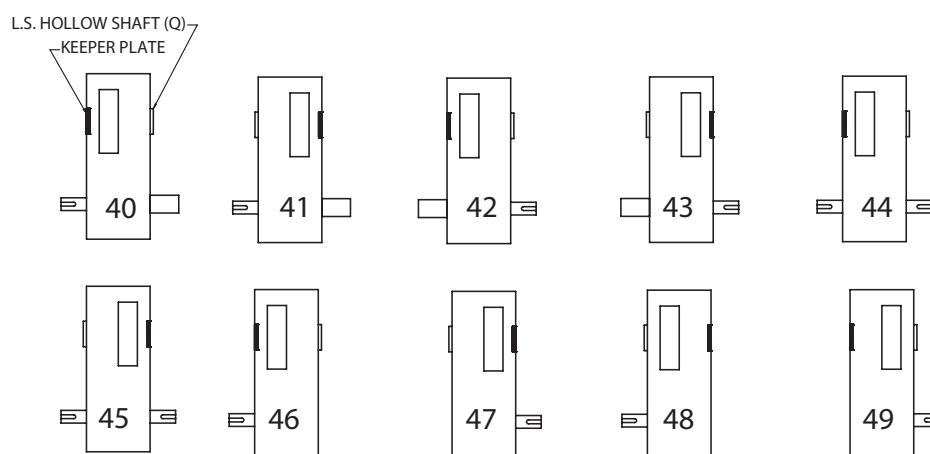
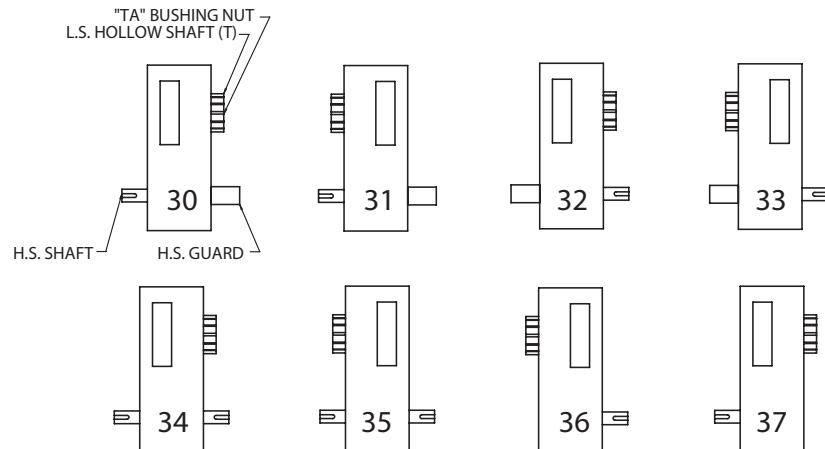
Shaft Assembly Codes



# Type VP Parallel Shaft Shaft Assemblies

Please specify the desired assembly number from the views below. Contact the Factory for inclined or other non-standard orientations.

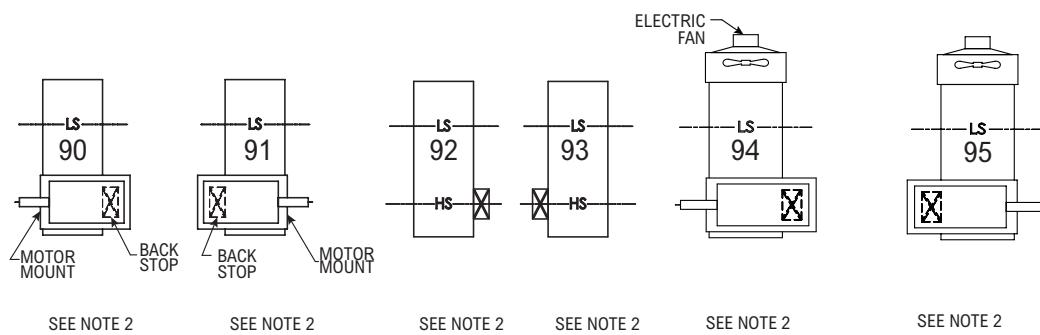
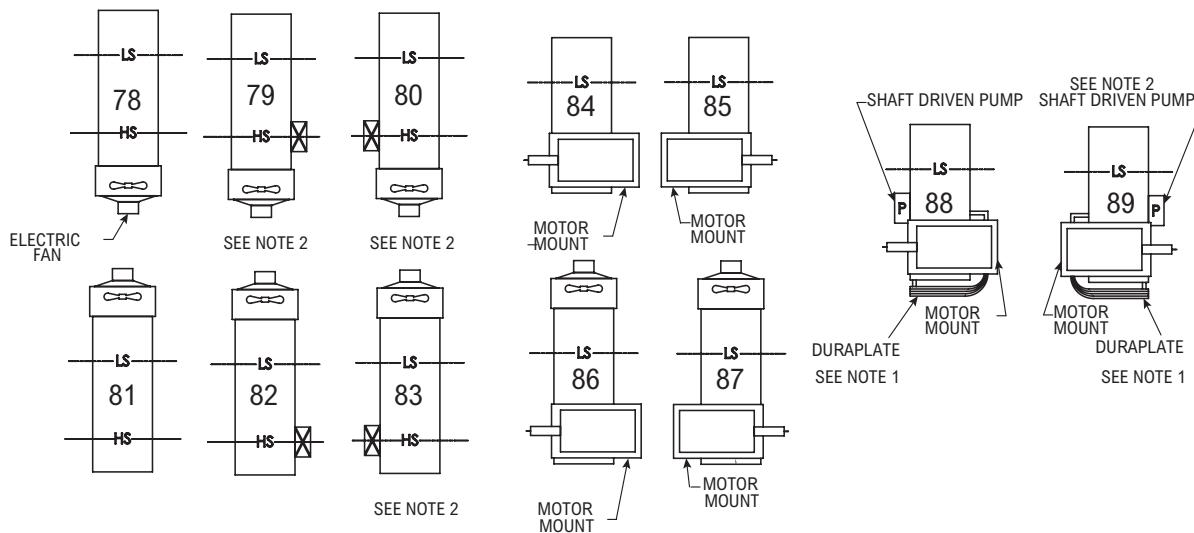
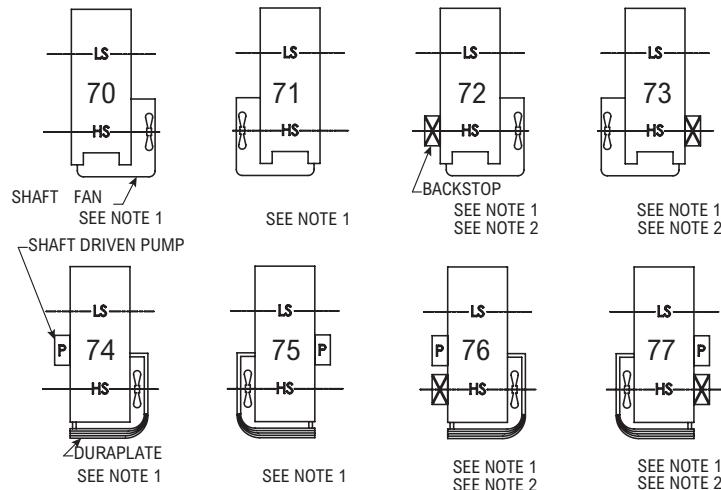
Shaft Assembly Codes



# Type VP Parallel Shaft Accessory Locations

Please specify the desired assembly number from the views below. Contact the Factory for inclined or other non-standard orientations.

Accessory Location Codes



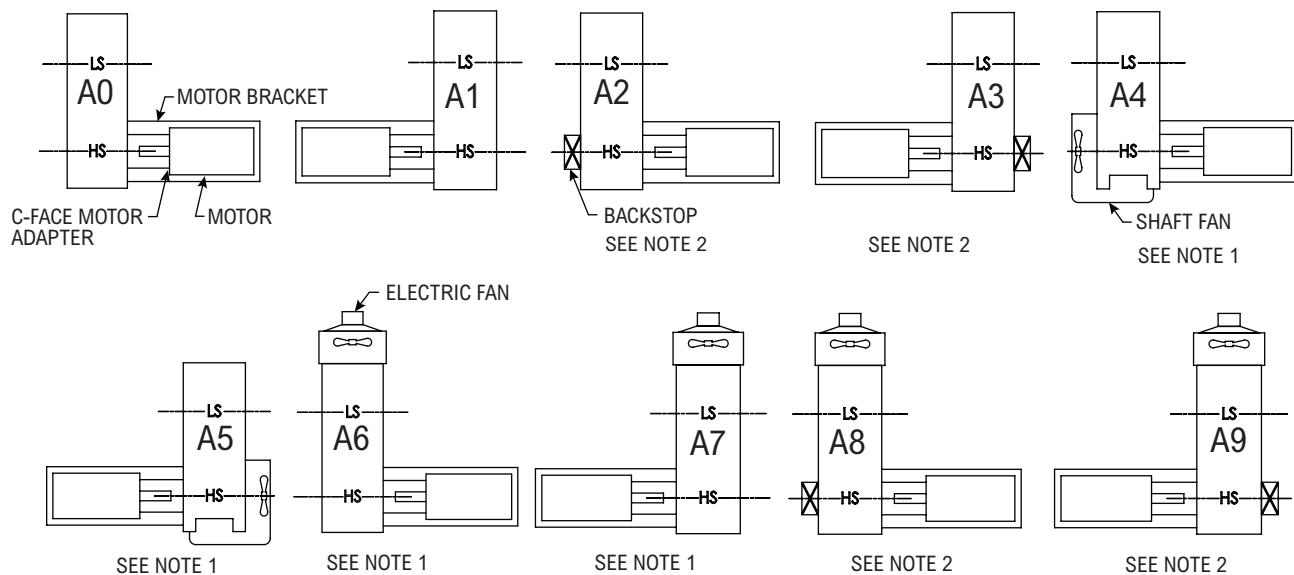
Notes:

1. Shaft fans are located on H.S. extensions (figures 1 thru 49 and 60 thru 67).
2. Backstops are located on side opposite H.S. shaft extension (Figures 10-13, 18-19, 22-25, 36-37, 46-49, 66-67).

# Type VP Parallel Shaft Accessory Locations

Please specify the desired assembly number from the views below. Contact the Factory for inclined or other non-standard orientations.

Accessory Location Codes



Notes:

1. Shaft fans are located on H.S. extensions (figures 1 thru 49 and 60 thru 67).
2. Backstops are located on side opposite H.S. shaft extension (Figures 10-13, 18-19, 22-25, 36-37, 46-49, 66-67).

# Type VP1 Parallel Shaft

## Power Ratings – Hp/Single Reduction

High-Speed Shaft rpm	Nom Ratio	Approx LS Shaft rpm	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
1750	1.25	1400	2660	3106	3914	4417	4946	5322	5955	6640	7955	9064	10245	11652	12529	13393	15179
	1.40	1250	2557	2986	3712	4190	4691	5021	5619	6265	7566	8621	9745	10763	11573	12371	14488
	1.60	1094	2399	2801	3407	3846	4306	4719	5281	5888	6978	7952	8988	9868	10611	11343	13370
	1.80	972	2248	2625	3203	3615	4047	4314	4828	5383	6596	7516	8495	9270	9968	10655	12662
	2.00	875	2089	2439	2928	3305	3700	3968	4440	4951	5989	6824	7713	8371	9001	9622	11534
	2.24	781	2010	2347	2708	3057	3423	3746	4192	4673	5589	6369	7199	7771	8356	8932	10783
	2.50	700	1854	2164	2586	2918	3268	3411	3817	4256	5188	5911	6682	7172	7711	8243	9951
	2.80	625	1677	1958	2266	2557	2863	3188	3567	3977	4784	5451	6162	6299	6773	7240	9274
	3.15	556	1512	1765	2157	2434	2725	2966	3319	3700	4378	4989	5639	5488	5901	6308	8147
	3.55	493	1460	1704	1932	2180	2441	2767	3096	3452	3776	4302	4863	5483	5896	6302	7251
	4.00	438	1229	1435	1822	2056	2302	2531	2832	3158	3215	3664	4141	4646	4995	5340	6509
	4.50	389	1154	1348	1515	1710	1915	2260	2529	2820	2725	3105	3510	3914	4208	4498	5136
	5.00	350	995	1162	1257	1419	1589	1965	2199	2451	2396	2731	3087	3422	3680	3934	4581
1430	1.25	1144	2309	2696	3398	3835	4294	4620	5170	5765	6906	7869	8895	9521	10238	10944	13178
	1.40	1021	2220	2592	3223	3637	4073	4359	4878	5439	6568	7485	8460	8795	9457	10109	12562
	1.60	894	2083	2432	2958	3339	3738	4083	4569	5095	6058	6904	7803	8064	8671	9269	11608
	1.80	794	1952	2279	2780	3138	3514	3679	4117	4590	5717	6514	7363	7575	8145	8707	10721
	2.00	715	1813	2117	2542	2869	3212	3445	3855	4298	5199	5924	6697	6840	7355	7862	10013
	2.24	638	1745	2037	2351	2654	2971	3252	3639	4057	4852	5529	6250	6350	6828	7299	9278
	2.50	572	1609	1879	2221	2507	2807	2962	3314	3695	4485	5110	5776	5860	6301	6736	8132
	2.80	511	1456	1700	1967	2220	2486	2767	3097	3453	4058	4624	5227	5147	5535	5916	7741
	3.15	454	1313	1533	1872	2113	2366	2523	2824	3148	3633	4140	4679	4485	4822	5155	6657
	3.55	403	1267	1480	1677	1893	2119	2261	2530	2821	3278	3735	4222	4480	4817	5150	5925
	4.00	358	1067	1245	1489	1680	1881	2115	2366	2638	2791	3181	3595	3796	4082	4363	5318
	4.50	318	952	1111	1238	1398	1565	1847	2067	2304	2366	2696	3047	3198	3439	3676	4459
	5.00	286	826	964	1034	1167	1307	1605	1797	2003	1958	2231	2522	2797	3007	3214	3847
1170	1.25	936	2007	2343	2953	3333	3731	3834	4291	4784	6001	6838	7729	7790	8377	8954	11353
	1.40	836	1929	2252	2800	3161	3539	3588	4015	4477	5708	6504	7351	7196	7737	8271	10278
	1.60	731	1810	2113	2570	2901	3248	3341	3739	4168	5244	5976	6754	6598	7094	7583	9793
	1.80	650	1696	1980	2416	2727	3053	3010	3368	3756	4677	5330	6025	6198	6664	7124	8772
	2.00	585	1576	1840	2209	2493	2791	2993	3350	3735	4370	4979	5628	5597	6018	6433	8221
	2.24	522	1516	1770	2043	2306	2582	2826	3162	3526	4019	4580	5177	5196	5587	5972	7591
	2.50	468	1398	1633	1817	2051	2297	2541	2843	3170	3669	4181	4726	4795	5156	5511	6653
	2.80	418	1265	1477	1709	1929	2160	2343	2622	2923	3320	3783	4276	4211	4528	4840	6333
	3.15	371	1141	1332	1627	1836	2056	2065	2310	2576	2972	3387	3828	3669	3945	4217	5447
	3.55	330	1101	1286	1448	1635	1830	1850	2070	2308	2699	3076	3477	3666	3942	4213	4848
	4.00	293	927	1082	1226	1383	1549	1730	1936	2159	2333	2658	3005	3106	3340	3570	4351
	4.50	260	793	926	1029	1161	1300	1516	1697	1892	2056	2343	2648	2616	2813	3007	3852
	5.00	234	687	802	862	973	1089	1327	1485	1656	1602	1826	2064	2288	2460	2630	3147

Forced lubrication may be required. Consult factory

**Type VP1 Parallel Shaft**  
**Torque Ratings – lb-in/Single Reduction**  
(MULTIPLY VALUES LISTED BY 1000)

High-Speed Shaft rpm	Nom Ratio	Approx LS Shaft rpm	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
1750	1.25	1400	122	142	179	202	226	244	273	305	360	410	463	527	567	606	697
	1.40	1250	131	153	187	211	237	256	287	320	375	428	484	552	594	635	741
	1.60	1094	137	160	199	225	252	268	300	335	399	455	514	576	620	663	770
	1.80	972	144	168	208	234	262	284	318	355	423	482	545	591	636	680	815
	2.00	875	153	179	207	234	261	290	324	362	439	500	565	612	658	704	844
	2.24	781	162	189	215	243	272	298	334	372	455	518	586	625	672	718	874
	2.50	700	168	197	237	267	299	311	348	388	471	536	606	636	684	731	910
	2.80	625	166	194	233	262	294	320	358	399	487	555	627	628	675	722	933
	3.15	556	172	201	241	272	305	333	372	415	503	573	648	618	664	710	934
	3.55	493	184	215	245	277	310	360	402	449	487	555	627	735	790	845	940
	4.00	438	180	210	259	292	327	359	402	448	470	536	605	689	741	792	951
	4.50	389	190	222	241	272	304	371	416	463	442	503	569	663	713	762	816
	5.00	350	177	206	229	259	290	349	391	435	427	486	550	624	670	717	835
1430	1.25	1144	130	151	190	215	240	260	291	324	382	436	492	527	567	606	741
	1.40	1021	139	162	199	224	251	272	305	340	399	455	514	552	594	635	787
	1.60	894	146	170	212	239	268	284	318	354	424	483	546	576	620	663	819
	1.80	794	153	179	221	249	279	297	332	370	449	511	578	591	636	680	845
	2.00	715	163	190	220	248	278	308	345	384	466	531	600	612	658	704	897
	2.24	638	172	201	229	258	289	317	355	396	483	551	622	625	672	718	920
	2.50	572	179	209	249	281	314	331	370	413	498	568	642	636	684	731	910
	2.80	511	176	206	247	279	312	340	380	424	505	576	651	628	675	722	953
	3.15	454	183	214	256	289	324	346	388	432	511	582	658	618	664	710	934
	3.55	403	195	228	261	294	330	360	402	449	517	589	666	735	790	845	940
	4.00	358	191	223	259	292	327	367	411	458	499	569	643	689	741	792	951
	4.50	318	191	224	241	272	304	371	416	463	469	535	604	663	713	762	867
	5.00	286	180	210	231	261	292	349	391	435	427	486	550	624	670	717	858
1170	1.25	936	138	161	202	228	255	263	295	329	406	463	523	527	567	606	780
	1.40	836	147	172	211	238	267	274	306	342	424	483	546	552	594	635	787
	1.60	731	155	181	225	254	284	284	318	354	449	511	578	576	620	663	844
	1.80	650	162	190	234	264	296	297	332	370	449	511	578	591	636	680	845
	2.00	585	173	202	233	263	295	327	366	408	479	546	617	612	658	704	900
	2.24	522	183	214	243	274	307	337	377	420	489	557	630	625	672	718	920
	2.50	468	190	222	249	281	314	347	388	433	498	568	642	636	684	731	910
	2.80	418	187	219	262	296	332	352	393	439	505	576	651	628	675	722	953
	3.15	371	195	227	272	307	344	346	388	432	511	582	658	618	664	710	934
	3.55	330	208	242	275	311	348	360	402	449	520	593	670	735	790	845	940
	4.00	293	203	237	260	294	329	367	411	458	510	581	657	689	741	792	951
	4.50	260	195	228	244	276	309	373	417	465	498	568	642	663	713	762	916
	5.00	234	183	213	235	266	297	353	395	440	427	486	550	624	670	717	858

Forced lubrication may be required. Consult factory

# Type VP1 Parallel Shaft

## Power Ratings – Hp/Single Reduction

High-Speed Shaft rpm	Nom Ratio	Approx LS Shaft rpm	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	187	
970	1.25	<b>776</b>	1760	2055	2550	2878	3222	3179	3557	3966	5067	5774	6526	6459	6945	7424	9413
	1.40	<b>693</b>	1692	1975	2446	2760	3091	2975	3329	3711	4780	5447	6157	5966	6415	6857	8521
	1.60	<b>606</b>	1588	1853	2212	2496	2795	2770	3099	3456	4348	4954	5600	5470	5882	6287	8119
	1.80	<b>539</b>	1488	1737	2055	2319	2597	2496	2793	3114	3878	4419	4995	5138	5525	5906	7272
	2.00	<b>485</b>	1382	1614	1937	2186	2448	2518	2818	3142	3623	4128	4666	4640	4989	5333	6816
	2.24	<b>433</b>	1330	1553	1792	2022	2264	2354	2634	2936	3332	3797	4292	4307	4632	4951	6294
	2.50	<b>388</b>	1227	1432	1507	1701	1904	2107	2357	2628	3042	3466	3918	3975	4274	4569	5516
	2.80	<b>346</b>	1110	1295	1499	1692	1895	1942	2173	2423	2753	3137	3545	3491	3754	4013	5251
	3.15	<b>308</b>	1000	1168	1358	1532	1716	1712	1915	2136	2464	2808	3174	3042	3271	3496	4516
	3.55	<b>273</b>	966	1128	1220	1377	1542	1539	1722	1920	2238	2550	2882	3039	3268	3493	4019
	4.00	<b>243</b>	788	920	1034	1167	1307	1450	1622	1809	1940	2210	2498	2575	2769	2960	3608
	4.50	<b>216</b>	667	778	867	978	1095	1280	1433	1597	1757	2002	2263	2179	2343	2505	3194
	5.00	<b>194</b>	577	674	725	818	916	1119	1252	1396	1353	1542	1743	1918	2062	2204	2622
870	1.25	<b>696</b>	1631	1904	2287	2581	2890	2851	3190	3557	4545	5179	5854	5793	6229	6658	8442
	1.40	<b>621</b>	1568	1831	2194	2476	2772	2668	2986	3329	4287	4886	5522	5351	5753	6150	7643
	1.60	<b>544</b>	1471	1718	1984	2239	2507	2484	2780	3099	3899	4443	5022	4906	5275	5639	7282
	1.80	<b>483</b>	1379	1610	1843	2080	2329	2238	2505	2793	3478	3963	4480	4608	4955	5297	6523
	2.00	<b>435</b>	1281	1495	1795	2026	2269	2259	2527	2818	3249	3702	4185	4162	4475	4783	6113
	2.24	<b>388</b>	1232	1439	1660	1874	2098	2111	2362	2634	2989	3406	3849	3863	4154	4441	5645
	2.50	<b>348</b>	1137	1327	1355	1529	1712	1889	2114	2357	2728	3109	3514	3565	3834	4098	4947
	2.80	<b>311</b>	1028	1200	1378	1555	1741	1742	1949	2173	2469	2813	3180	3131	3367	3599	4709
	3.15	<b>276</b>	927	1082	1231	1389	1555	1540	1723	1921	2210	2518	2847	2728	2934	3136	4050
	3.55	<b>245</b>	887	1035	1105	1247	1397	1395	1562	1741	2015	2296	2595	2726	2931	3133	3605
	4.00	<b>218</b>	712	831	936	1056	1183	1314	1470	1639	1759	2004	2266	2320	2495	2667	3236
	4.50	<b>193</b>	602	703	783	884	990	1159	1297	1446	1592	1814	2050	1976	2125	2271	2877
	5.00	<b>174</b>	521	608	655	739	827	1012	1132	1263	1225	1396	1578	1737	1868	1997	2377

## Type VP1 Parallel Shaft

### Torque Ratings – lb-in/Single Reduction

(MULTIPLY VALUES LISTED BY 1000)

High-Speed Shaft rpm	Nom Ratio	Approx LS Shaft rpm	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
970	1.25	776	146	170	210	237	266	263	295	329	414	471	533	527	567	606	780
	1.40	693	156	182	222	251	281	274	306	342	428	488	551	552	594	635	787
	1.60	606	164	191	234	264	295	284	318	354	449	511	578	576	620	663	844
	1.80	539	172	201	240	271	304	297	332	370	449	511	578	591	636	680	845
	2.00	485	183	214	247	279	312	332	371	414	479	546	617	612	658	704	900
	2.24	433	194	226	257	290	325	338	379	422	489	557	630	625	672	718	920
	2.50	388	201	235	249	281	314	347	388	433	498	568	642	636	684	731	910
	2.80	346	198	231	278	313	351	352	393	439	505	576	651	628	675	722	953
	3.15	308	206	240	274	309	346	346	388	432	511	582	658	618	664	710	934
	3.55	273	220	256	280	316	354	361	404	450	520	593	670	735	790	845	940
	4.00	243	208	243	265	299	335	371	415	463	512	583	659	689	741	792	951
	4.50	216	198	231	248	280	314	380	425	474	514	585	662	666	717	766	916
	5.00	194	185	216	239	269	302	359	401	447	435	495	560	630	678	724	862
870	1.25	696	150	176	210	237	266	263	295	329	414	471	533	527	567	606	780
	1.40	621	161	188	222	251	281	274	306	342	428	488	551	552	594	635	787
	1.60	544	169	197	234	264	295	284	318	354	449	511	578	576	620	663	844
	1.80	483	178	207	240	271	304	297	332	370	449	511	578	591	636	680	845
	2.00	435	189	221	255	288	322	332	371	414	479	546	617	612	658	704	900
	2.24	388	200	233	266	300	336	338	379	422	489	557	630	625	672	718	920
	2.50	348	208	242	249	282	315	347	388	433	498	568	642	636	684	731	910
	2.80	311	205	239	284	321	359	352	393	439	505	576	651	628	675	722	953
	3.15	276	213	248	277	312	350	347	389	434	511	582	658	618	664	710	934
	3.55	245	225	263	283	319	357	365	408	455	522	595	673	735	790	845	940
	4.00	218	210	245	267	302	338	375	420	468	517	589	666	692	744	796	951
	4.50	193	199	232	250	283	316	383	429	478	519	591	668	674	724	774	920
	5.00	174	186	217	240	271	304	362	405	451	439	500	565	637	685	732	871

# Type VP2 Parallel Shaft

## Power Ratings – Hp/Double Reduction

High-Speed Shaft rpm	Nom Ratio	Approx LS Shaft rpm	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
1750	5.00	350												3336	3657	4095	
	5.60	313	716	858	1024	1159	1252	1558	1685	1876	1976	2228	2594	3231	3541	3966	4095
	6.30	278	716	858	1024	1159	1252	1553	1681	1871	1981	2233	2600	3094	3390	3797	3970
	7.10	246	716	858	957	1083	1170	1378	1491	1660	1866	2103	2449	2547	2791	3125	3796
	8.00	219	620	744	855	967	1045	1225	1326	1475	1544	1740	2026	2308	2529	2833	3125
	9.00	194	620	744	863	977	1055	1211	1310	1458	1605	1810	2107	2206	2418	2708	3075
	10.0	175	567	680	764	864	933	1073	1161	1292	1457	1642	1912	2027	2222	2488	2886
	11.2	156	493	591	653	738	797	990	1071	1192	1212	1367	1591	1735	1902	2130	2529
	12.5	140	466	558	634	717	775	942	1019	1134	1216	1370	1596	1654	1812	2029	2312
	14.0	125	439	526	577	653	705	824	892	992	1105	1246	1451	1469	1610	1803	2163
	16.0	109	377	452	523	592	639	755	817	910	928	1046	1218	1255	1375	1540	1875
	18.0	97	334	401	464	525	567	666	721	802	864	973	1133	1193	1307	1464	1672
	20.0	88	314	377	422	477	515	582	630	701	784	884	1029	1064	1166	1306	1560
	22.4	78	227	272	346	391	422	485	525	584	699	788	917	908	995	1114	1325
	25.0	70	227	272	328	371	401	485	525	584	626	706	822	862	944	1057	1210
	28.0	63	224	269	298	337	364	429	464	516	568	640	746				1127
1430	5.00	286												2881	3157	3535	
	5.60	255	604	724	889	1006	1087	1352	1463	1628	1716	1934	2252	2719	2980	3337	3535
	6.30	227	604	724	889	1006	1087	1349	1459	1624	1720	1939	2258	2572	2818	3156	3446
	7.10	201	604	724	831	940	1015	1197	1295	1441	1620	1826	2126	2211	2423	2713	3295
	8.00	179	539	646	742	840	907	1064	1151	1281	1340	1511	1759	1922	2106	2359	2713
	9.00	159	528	633	745	842	910	1051	1137	1266	1394	1571	1829	1833	2009	2250	2561
	10.0	143	492	590	663	750	810	926	1002	1115	1265	1426	1660	1681	1842	2063	2398
	11.2	128	428	513	567	641	692	860	930	1035	1053	1187	1381	1437	1575	1764	2146
	12.5	114	383	460	523	591	638	777	841	936	1004	1132	1318	1368	1499	1678	1915
	14.0	102	361	433	475	538	581	680	735	819	912	1029	1197	1212	1329	1488	1789
	16.0	89	320	383	439	497	537	622	673	749	797	898	1046	1035	1134	1270	1548
	18.0	79	274	329	382	432	466	548	593	660	711	802	933	983	1077	1206	1379
	20.0	72	258	310	347	392	423	479	518	576	645	727	847	875	959	1074	1286
	22.4	64	188	225	286	324	350	396	429	477	577	651	758	746	818	916	1098
	25.0	57	188	225	269	304	329	396	429	477	515	580	675	708	776	869	995
	28.0	51	184	221	244	276	298	352	381	424	466	526	612				926
1170	5.00	234												2357	2583	2892	
	5.60	209	494	592	747	845	912	1164	1259	1401	1491	1681	1957	2245	2461	2756	2892
	6.30	186	494	592	747	845	912	1164	1259	1401	1495	1685	1962	2146	2352	2634	2892
	7.10	165	494	592	722	817	882	1040	1125	1252	1407	1587	1847	1866	2045	2290	2807
	8.00	146	463	555	645	730	788	924	1000	1113	1165	1313	1528	1596	1750	1959	2358
	9.00	130	436	522	616	696	752	875	947	1054	1177	1327	1545	1520	1666	1866	2127
	10.0	117	410	492	560	634	684	766	828	922	1070	1206	1405	1392	1525	1708	1989
	11.2	104	356	427	485	549	593	727	787	876	915	1031	1200	1189	1303	1459	1777
	12.5	94	316	379	431	487	526	641	694	772	829	935	1088	1130	1238	1387	1584
	14.0	84	297	356	391	443	478	560	606	675	753	848	988	1000	1096	1228	1478
	16.0	73	265	318	359	407	439	512	554	617	656	740	861	853	935	1047	1277
	18.0	65	225	270	314	355	383	451	488	543	585	660	768	810	887	994	1137
	20.0	59	212	254	285	322	348	394	426	474	531	598	697	720	790	884	1059
	22.4	52	155	186	235	266	287	324	351	390	474	535	623	614	673	754	914
	25.0	47	155	186	221	250	270	324	351	390	423	477	555	582	638	714	818
	28.0	42	151	181	200	227	245	289	313	348	383	432	503				761

**Type VP2 Parallel Shaft**  
**Torque Ratings – lb-in/Double Reduction**  
(MULTIPLY VALUES LISTED BY 1000)

High-Speed Shaft rpm	Nom Ratio	Approx LS Shaft rpm	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
1750	5.00	350												629	689	772	
	5.60	313	149	179	203	229	247	311	337	375	398	449	523	674	738	827	841
	6.30	278	167	201	227	256	277	359	389	433	440	496	577	737	808	905	887
	7.10	246	181	217	243	275	297	345	373	415	458	517	601	696	763	855	973
	8.00	219	182	218	238	269	291	355	384	427	442	499	580	698	765	857	931
	9.00	194	204	244	269	304	328	406	439	489	507	571	665	763	836	936	997
	10.0	175	201	242	273	309	334	389	421	468	509	573	667	758	831	930	1073
	11.2	156	201	241	263	298	322	397	429	478	502	566	659	718	787	881	1030
	12.5	140	213	256	286	324	350	437	473	526	555	625	728	782	857	959	1025
	14.0	125	217	261	299	339	366	413	447	498	558	629	732	776	850	952	1099
	16.0	109	217	261	292	330	357	435	471	524	551	621	723	733	804	900	1079
	18.0	97	216	259	290	328	354	444	481	535	565	637	741	797	873	978	1047
	20.0	88	220	264	303	342	370	420	454	506	567	639	744	788	864	968	1120
	22.4	78	184	221	276	312	337	383	414	461	579	652	760	744	816	913	1070
	25.0	70	207	248	293	331	358	443	480	534	571	644	750	807	885	991	1063
	28.0	63	222	266	306	346	373	424	458	510	573	646	752				1135
1430	5.00	286												664	728	816	
	5.60	255	154	184	215	243	263	331	358	398	423	477	556	694	760	852	889
	6.30	227	173	207	241	272	294	382	413	460	467	527	613	750	822	921	942
	7.10	201	187	224	259	292	316	366	396	441	487	549	639	740	811	908	1033
	8.00	179	193	231	253	286	309	377	408	454	470	530	617	712	780	873	989
	9.00	159	212	254	284	321	347	431	467	519	538	607	706	776	850	952	1016
	10.0	143	214	257	290	328	355	411	444	495	540	609	709	769	843	944	1091
	11.2	128	214	256	280	316	342	422	456	508	533	601	700	728	797	893	1070
	12.5	114	215	258	289	327	353	441	477	531	561	632	736	791	867	971	1039
	14.0	102	219	263	302	341	368	417	451	502	563	635	739	784	859	962	1112
	16.0	89	225	270	300	340	367	439	474	528	579	653	760	740	811	908	1090
	18.0	79	217	261	292	330	357	447	484	539	569	642	747	804	881	986	1057
	20.0	72	221	265	304	344	372	422	457	509	571	644	749	794	870	975	1130
	22.4	64	187	224	280	316	342	383	414	461	585	660	768	749	821	919	1086
	25.0	57	210	251	294	333	360	443	480	534	575	648	754	812	890	997	1070
	28.0	51	223	267	307	347	375	426	461	513	576	649	756				1142
1170	5.00	234												664	728	816	
	5.60	209	154	184	221	250	270	348	376	419	450	507	590	700	768	860	889
	6.30	186	173	207	247	280	302	402	435	485	496	560	652	765	838	939	967
	7.10	165	187	224	275	311	335	389	421	468	517	583	679	763	837	937	1076
	8.00	146	203	243	268	304	328	400	433	482	499	563	655	722	792	887	1051
	9.00	130	214	257	287	324	350	439	475	528	556	626	729	786	862	965	1031
	10.0	117	218	262	300	339	366	415	449	500	559	630	733	778	853	955	1105
	11.2	104	217	261	293	331	358	436	472	525	567	639	744	735	806	903	1083
	12.5	94	216	260	291	329	355	445	481	536	566	638	743	799	876	980	1050
	14.0	84	220	264	303	343	371	420	455	506	568	640	745	790	866	970	1123
	16.0	73	228	274	300	340	367	441	477	531	583	657	765	746	817	915	1099
	18.0	65	218	262	293	332	358	450	487	541	573	646	752	809	887	993	1065
	20.0	59	222	266	306	346	374	425	459	511	574	647	754	799	875	980	1137
	22.4	52	189	226	280	317	342	383	414	461	588	663	772	753	825	924	1104
	25.0	47	212	254	295	334	361	443	480	534	577	651	757	816	894	1001	1075
	28.0	42	223	268	308	348	376	427	462	515	578	652	759				1147

# Type VP2 Parallel Shaft

## Power Ratings – Hp/Double Reduction

High-Speed Shaft rpm	Nom Ratio	Approx LS Shaft rpm	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
970	5.00	194															
	5.60	173	410	491	619	700	756	965	1044	1162	1288	1452	1691	1894	2075	2324	2398
	6.30	154	410	491	619	700	756	965	1044	1162	1288	1452	1691	1806	1980	2217	2398
	7.10	137	410	491	619	700	756	911	986	1097	1234	1391	1620	1567	1717	1923	2363
	8.00	121	384	460	558	632	682	811	877	976	1021	1151	1340	1339	1467	1643	2000
	9.00	108	363	436	514	582	628	732	792	881	986	1111	1294	1273	1396	1563	1784
	10.0	97	342	410	468	529	571	640	692	770	895	1009	1175	1164	1276	1429	1666
	11.2	87	295	354	402	455	492	607	657	731	776	874	1018	994	1089	1219	1486
	12.5	78	263	315	359	406	438	535	579	644	692	780	908	944	1034	1158	1324
	14.0	69	247	297	326	369	398	467	505	563	628	708	824	834	915	1024	1234
	16.0	61	222	266	298	337	364	427	462	514	547	616	718	711	780	873	1065
	18.0	54	188	225	261	295	319	375	406	452	488	550	640	675	740	828	948
	20.0	49	176	212	237	268	290	328	355	395	442	498	580	600	658	736	883
	22.4	43	129	155	195	220	238	269	291	324	395	445	518	511	560	627	766
	25.0	39	129	155	184	208	224	269	291	324	352	397	462	484	531	594	681
	28.0	35	125	150	167	188	203	240	260	289	319	359	418				634
870	5.00	174															
	5.60	155	367	441	555	628	678	865	936	1042	1156	1303	1517	1713	1877	2102	2151
	6.30	138	367	441	555	628	678	865	936	1042	1156	1303	1517	1632	1789	2003	2151
	7.10	123	367	441	555	628	678	822	890	990	1127	1271	1480	1414	1550	1735	2135
	8.00	109	344	413	501	567	612	748	809	900	946	1067	1242	1208	1323	1482	1805
	9.00	97	327	392	463	524	566	659	713	794	889	1002	1166	1148	1258	1409	1609
	10.0	87	308	369	421	476	514	576	623	694	807	909	1059	1049	1150	1287	1501
	11.2	78	265	317	361	408	441	546	591	658	698	787	917	895	981	1098	1339
	12.5	70	236	284	323	365	394	481	520	579	623	702	818	849	931	1042	1193
	14.0	62	222	267	293	331	358	420	455	506	565	637	741	751	823	921	1111
	16.0	54	199	239	267	302	327	383	415	462	492	554	645	640	701	785	958
	18.0	48	168	202	235	265	287	337	365	406	438	494	575	607	665	745	853
	20.0	44	158	190	213	241	260	294	319	355	397	448	521	539	591	662	794
	22.4	39	116	140	175	197	213	241	261	290	355	400	466	459	503	564	688
	25.0	35	116	140	165	187	201	241	261	290	316	356	415	435	477	534	612
	28.0	31	113	135	150	169	183	216	234	260	286	323	376				569

## Type VP2 Parallel Shaft

### Torque Ratings – lb-in/Double Reduction

(MULTIPLY VALUES LISTED BY 1000)

High-Speed Shaft rpm	Nom Ratio	Approx LS Shaft rpm	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
970	5.00	194												664	728	816	
	5.60	173	154	184	221	250	270	348	376	419	469	528	615	712	781	874	889
	6.30	154	173	207	247	280	302	402	435	485	516	582	678	777	851	953	967
	7.10	137	187	224	284	321	347	411	445	495	547	617	718	773	847	949	1092
	8.00	121	203	243	280	317	342	423	458	510	528	595	693	731	801	897	1075
	9.00	108	216	258	289	327	353	443	479	533	561	633	737	794	870	975	1043
	10.0	97	219	263	302	341	369	418	453	504	564	636	740	785	861	964	1117
	11.2	87	217	261	293	331	358	439	475	529	580	653	761	742	813	910	1092
	12.5	78	217	261	292	331	357	448	484	539	570	642	748	805	882	988	1059
	14.0	69	221	265	305	345	372	423	457	509	571	644	750	795	872	976	1132
	16.0	61	231	276	300	340	367	443	480	534	586	660	769	750	822	921	1106
	18.0	54	219	263	294	333	360	452	489	544	575	649	755	813	891	998	1071
	20.0	49	223	267	307	347	375	426	461	513	577	650	757	802	879	985	1143
	22.4	43	190	228	280	317	342	383	414	461	590	665	774	756	829	928	1116
	25.0	39	213	256	296	335	362	443	480	534	579	653	760	819	898	1005	1080
	28.0	35	224	268	308	349	377	428	464	516	580	654	761			1152	
870	5.00	174												664	728	816	
	5.60	155	154	184	221	250	270	348	376	419	469	528	615	718	787	882	889
	6.30	138	173	207	247	280	302	402	435	485	516	582	678	783	858	960	967
	7.10	123	187	224	284	321	347	413	447	498	557	628	731	778	852	954	1100
	8.00	109	203	243	280	317	342	435	471	524	545	615	716	735	805	902	1082
	9.00	97	216	259	290	328	354	444	481	535	564	636	740	798	875	980	1049
	10.0	87	220	264	303	343	370	420	454	506	566	638	743	789	865	968	1122
	11.2	78	217	261	293	331	358	440	477	530	582	656	764	745	816	914	1097
	12.5	70	218	261	293	332	358	449	486	541	572	644	750	808	885	991	1063
	14.0	62	222	266	306	346	373	424	459	511	573	646	752	798	874	979	1136
	16.0	54	231	277	300	340	367	444	481	535	587	662	771	752	824	923	1110
	18.0	48	219	263	295	334	360	452	490	545	577	650	757	815	893	1001	1074
	20.0	44	223	267	307	348	376	427	462	514	578	652	759	804	881	987	1146
	22.4	39	191	229	280	317	342	383	414	461	591	666	776	758	830	930	1118
	25.0	35	214	257	296	335	362	443	480	534	580	654	761	820	899	1007	1082
	28.0	31	224	268	309	349	377	429	464	517	581	655	763			1154	

# Type VP3 Parallel Shaft

## Power Ratings – Hp/Triple Reduction

High-Speed Shaft rpm	Nom Ratio	Approx LS Shaft rpm	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
1750	28.0	63												654	720	774	
	31.5	56	144	180	202	228	252	302	338	385	422	483	550	654	720	774	774
	35.5	49	144	180	202	228	252	302	338	385	421	481	548	630	692	745	774
	40.0	44	144	180	199	225	248	283	317	362	413	473	538	521	573	616	774
	45.0	39	124	155	163	184	203	236	263	301	328	376	428	473	520	559	616
	50.0	35	117	147	163	184	203	227	254	290	320	367	417	448	493	530	608
	56.0	31	110	138	148	167	185	198	222	253	290	332	378	404	444	477	565
	63.0	28	85	106	113	128	141	187	209	238	237	271	309	343	378	406	496
	71.0	25	80	101	115	129	143	164	183	209	227	260	296	325	358	385	441
	80.0	22	76	95	103	117	129	143	160	183	206	236	269	289	318	342	410
	90.0	19	61	76	81	92	102	128	143	163	173	198	225	246	270	291	355
	100	18	56	70	80	91	100	120	134	153	164	187	213	233	256	275	316
	112	16	54	67	73	82	91	105	117	134	148	170	193	203	223	240	293
	125	14	45	56	60	68	75	92	102	117	122	140	159	172	189	204	249
	140	13	41	51	59	67	74	86	96	109	116	133	151	163	179	193	221
	160	11	39	49	54	61	67	75	84	95	105	120	137				206
1430	28.0	51												568	625	672	
	31.5	45	123	154	175	198	218	262	293	335	366	419	477	545	599	644	672
	35.5	40	123	154	175	198	218	262	293	335	366	418	476	517	568	611	672
	40.0	36	123	154	163	184	203	232	260	297	338	386	440	452	497	535	651
	45.0	32	101	127	133	150	166	205	229	261	273	313	356	388	426	459	535
	50.0	29	96	120	134	152	167	186	208	237	262	300	342	368	404	435	498
	56.0	26	90	113	121	137	151	162	182	207	238	272	310	331	363	391	463
	63.0	23	69	87	93	105	116	153	171	195	194	222	252	281	309	333	406
	71.0	20	66	82	94	106	117	134	150	171	186	212	242	266	293	315	361
	80.0	18	62	78	84	95	105	117	131	149	169	193	220	236	260	280	336
	90.0	16	50	62	67	75	83	105	117	134	141	161	184	201	221	238	291
	100	14	46	58	66	74	82	98	110	125	134	153	174	190	209	225	258
	112	13	44	55	60	67	74	86	96	109	121	139	158	166	182	196	240
	125	11	36	46	49	55	61	75	84	96	100	114	130	141	155	167	204
	140	10	34	42	49	55	61	70	78	89	95	109	124	133	147	158	181
	160	9	32	40	44	50	55	61	68	78	86	98	112				168
1170	28.0	42												494	543	584	
	31.5	37	102	128	146	165	182	228	255	291	311	356	406	447	492	529	584
	35.5	33	102	128	148	167	184	218	244	279	299	342	390	424	466	502	574
	40.0	29	102	128	133	150	166	191	213	243	276	316	360	374	411	442	535
	45.0	26	83	104	109	123	136	174	194	222	224	256	292	318	350	376	459
	50.0	23	79	99	110	124	137	153	171	195	215	245	280	301	331	357	409
	56.0	21	74	93	99	112	123	133	149	170	195	223	254	271	298	321	380
	63.0	19	57	71	76	86	95	125	140	160	158	181	206	231	253	273	332
	71.0	16	54	68	77	87	96	110	123	140	152	174	198	218	240	258	296
	80.0	15	51	63	69	78	86	96	107	122	138	158	180	194	213	229	275
	90.0	13	41	51	54	61	68	86	96	110	115	132	150	165	181	195	238
	100	12	38	47	54	61	67	80	90	103	110	125	143	156	172	185	212
	112	10	36	45	49	55	61	70	78	89	99	114	129	136	149	161	197
	125	9	30	37	40	45	50	57	64	73	78	82	93	106	115	127	167
	140	8	28	35	40	45	50	57	64	73	78	89	101	109	120	129	148
	160	7	26	33	36	41	45	50	56	64	70	81	92				138

**Type VP3 Parallel Shaft**  
**Torque Ratings – lb-in/Triple Reduction**  
(MULTIPLY VALUES LISTED BY 1000)

High-Speed Shaft rpm	Nom Ratio	Approx LS Shaft rpm	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
1750	28.0	63												696	765	823	
	31.5	56	163	204	231	260	288	343	383	438	487	558	635	769	846	910	896
	35.5	49	183	229	258	291	322	397	444	507	535	613	698	846	930	1001	975
	40.0	44	198	247	293	330	365	403	451	514	581	665	757	782	860	925	1118
	45.0	39	198	248	257	290	321	385	430	491	544	622	709	786	864	929	1008
	50.0	35	211	264	288	326	360	429	480	548	584	668	761	851	936	1007	1081
	56.0	31	214	268	301	340	375	405	453	517	585	669	763	839	922	992	1154
	63.0	28	198	248	257	290	321	423	474	540	554	634	722	789	868	934	1122
	71.0	25	211	265	291	329	363	431	482	550	585	670	763	855	940	1011	1087
	80.0	22	215	269	301	340	375	406	455	519	587	672	765	842	926	996	1159
	90.0	19	206	258	264	298	329	397	445	507	563	644	734	792	871	937	1128
	100	18	208	261	292	330	364	432	483	551	588	672	766	858	943	1015	1090
	112	16	215	270	304	343	379	407	456	520	589	674	768	844	928	999	1162
	125	14	207	259	264	298	329	400	447	510	563	644	734	794	873	940	1132
	140	13	209	262	292	330	365	433	484	552	589	674	768	860	945	1017	1093
	160	11	216	270	304	344	380	408	456	521	590	675	769				1165
1430	28.0	51												739	812	874	
	31.5	45	171	214	245	277	306	364	407	465	518	592	675	784	861	927	952
	35.5	40	192	240	274	310	342	422	472	538	569	651	741	849	934	1005	1036
	40.0	36	208	260	293	330	365	404	452	516	581	665	757	831	914	983	1151
	45.0	32	198	248	257	290	321	409	457	521	554	634	722	788	866	932	1071
	50.0	29	211	264	291	328	363	430	481	549	585	669	763	854	939	1010	1085
	56.0	26	215	269	301	340	375	406	454	518	587	671	764	841	924	995	1157
	63.0	23	198	248	257	290	321	424	475	541	554	634	722	791	870	936	1124
	71.0	20	212	265	291	329	363	431	483	551	585	670	763	857	942	1013	1089
	80.0	18	215	270	301	340	375	407	455	519	588	673	767	844	927	998	1161
	90.0	16	206	258	264	298	329	399	446	509	563	644	734	794	872	939	1130
	100	14	209	262	292	330	364	432	484	552	589	673	767	859	944	1016	1092
	112	13	216	270	304	344	379	408	456	520	590	675	768	846	930	1000	1164
	125	11	207	259	264	298	329	401	449	512	563	644	734	795	874	941	1133
	140	10	210	263	293	330	365	433	484	553	590	675	768	861	946	1018	1095
	160	9	216	270	305	344	380	408	457	521	591	676	770				1166
1170	28.0	42												785	863	928	
	31.5	37	173	216	249	281	311	387	433	494	538	615	701	786	865	930	1012
	35.5	33	194	243	282	319	352	429	480	548	569	651	742	852	937	1008	1082
	40.0	29	210	263	293	330	365	405	453	517	581	665	757	840	923	993	1155
	45.0	26	198	248	257	290	321	424	474	541	554	634	722	790	869	935	1124
	50.0	23	212	265	291	329	363	431	482	550	586	670	763	856	941	1012	1088
	56.0	21	215	269	301	340	375	407	455	519	588	672	766	843	926	997	1160
	63.0	19	198	248	257	290	321	425	475	542	554	634	722	793	871	938	1124
	71.0	16	212	265	291	329	363	432	483	551	585	670	763	858	944	1015	1091
	80.0	15	215	270	301	340	375	408	456	520	589	674	768	845	929	999	1163
	90.0	13	207	259	264	298	329	400	448	511	563	644	734	795	874	940	1132
	100	12	209	262	293	330	365	433	484	552	589	674	768	860	946	1017	1094
	112	10	216	270	305	344	380	408	457	521	590	675	769	846	930	1001	1166
	125	9	207	260	264	298	329	402	450	513	563	644	734	796	875	942	1134
	140	8	210	263	293	331	365	433	485	553	590	675	769	861	947	1019	1096
	160	7	216	270	305	344	380	409	457	521	591	676	770				1166

**Type VP3 Parallel Shaft**  
**Power Ratings – Hp/Triple Reduction**

High-Speed Shaft rpm	Nom Ratio	Approx LS Shaft rpm	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
970	28.0	35	85	107	121	136	151	200	223	255	258	295	336	431	474	510	
	31.5	31	85	107	122	138	152	181	203	232	248	284	323	372	409	440	510
	35.5	27	85	107	122	138	158	177	202	229	262	298	311	352	387	417	478
	40.0	24	85	107	110	125	138	158	177	202	229	262	298	311	341	367	444
	45.0	22	69	86	90	102	112	144	161	184	186	212	242	264	290	313	382
	50.0	19	65	82	91	103	114	127	142	162	178	204	232	250	275	296	339
	56.0	17	61	77	82	93	102	110	124	141	162	185	211	225	247	266	316
	63.0	15	47	59	63	71	78	104	116	133	131	150	171	191	210	226	275
	71.0	14	45	56	64	72	79	91	102	117	126	144	164	181	199	214	246
	80.0	12	42	53	57	65	71	80	89	102	115	131	150	161	177	190	229
	90.0	11	34	43	45	51	56	72	80	91	96	109	125	137	150	162	198
	100	10	31	39	45	50	56	67	75	85	91	104	119	129	142	153	176
	112	9	30	37	41	46	51	58	65	74	82	94	107	113	124	133	163
	125	8	25	31	33	38	42	51	57	65	68	78	88	96	105	113	138
	140	7	23	29	33	37	41	48	53	61	64	74	84	91	100	107	123
	160	6	22	27	30	34	37	41	46	53	58	67	76				114
870	28.0	31	77	96	108	122	135	180	202	230	232	265	302	390	428	461	
	31.5	28	77	96	110	124	137	163	182	208	222	254	290	334	367	395	461
	35.5	25	77	96	99	112	123	142	159	181	205	235	268	316	348	374	429
	40.0	22	77	96	99	112	123	142	159	181	205	235	279	307	330	399	
	45.0	19	62	77	81	91	101	129	145	165	190	217	237	261	281	342	
	50.0	17	59	73	82	92	102	114	127	145	160	183	208	225	247	266	305
	56.0	16	55	69	74	83	92	99	111	127	145	166	189	202	222	239	283
	63.0	14	42	53	56	64	70	93	104	119	118	135	154	172	189	203	247
	71.0	12	40	50	57	64	71	82	92	105	113	129	147	163	179	192	221
	80.0	11	38	47	51	58	64	71	80	91	103	118	134	144	159	171	205
	90.0	10	30	38	40	46	50	64	72	82	86	98	112	123	135	145	177
	100	9	28	35	40	45	50	60	67	76	82	93	106	116	128	137	158
	112	8	27	33	36	41	45	52	58	67	74	85	96	101	111	120	146
	125	7	22	28	30	34	37	46	51	59	61	70	79	86	94	102	124
	140	6	21	26	30	33	37	43	48	54	58	66	75	81	89	96	110
	160	5	20	24	27	30	33	37	42	47	52	60	68				102

**Type VP3 Parallel Shaft**  
**Torque Ratings – lb-in/Triple Reduction**  
(MULTIPLY VALUES LISTED BY 1000)

High-Speed Shaft rpm	Nom Ratio	Approx LS Shaft rpm	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
970	28.0	35	174	218	249	281	311	409	458	522	538	615	701	789	909	978	1065
	31.5	31	196	245	282	319	352	430	481	549	569	651	742	854	933	933	1085
	35.5	27	212	265	293	330	365	406	454	518	581	665	757	841	925	995	1158
	40.0	24	198	248	257	290	321	424	475	542	554	634	722	792	870	937	1128
	45.0	22	212	265	291	329	363	432	483	551	586	670	763	857	942	1014	1090
	50.0	19	215	270	301	340	375	407	455	520	589	673	767	844	928	998	1162
	56.0	17	198	248	257	290	321	425	476	543	554	634	722	794	873	939	1124
	63.0	15	212	266	291	329	363	432	484	552	585	670	763	859	945	1016	1093
	71.0	14	216	270	301	340	375	408	456	521	590	675	769	846	930	1000	1165
	80.0	12	207	260	264	298	329	401	449	512	563	644	734	795	874	941	1133
	90.0	11	210	263	293	330	365	433	484	553	590	675	769	861	946	1018	1095
	100	10	216	270	305	344	380	408	457	521	591	676	770	847	931	1002	1166
	112	9	208	260	264	298	329	403	450	514	563	644	734	797	876	942	1135
	125	8	210	263	293	331	365	434	485	553	590	675	769	862	948	1020	1096
	140	7	216	271	305	344	380	409	457	522	591	677	771				1166
	160	6															
870	28.0	31	175	219	249	281	311	412	461	526	538	615	701	790	833	916	985
	31.5	28	197	246	282	319	352	431	482	550	569	651	742	855	940	1012	1087
	35.5	25	213	266	293	330	365	406	455	519	581	665	757	842	926	996	1159
	40.0	22	198	248	257	290	321	425	475	542	554	634	722	793	871	937	1124
	45.0	19	212	265	291	329	363	432	483	551	586	670	763	858	943	1015	1091
	50.0	17	215	270	301	340	375	407	456	520	589	674	768	844	928	999	1163
	56.0	16	198	248	257	290	321	426	476	543	554	634	722	794	873	940	1124
	63.0	14	212	266	291	329	363	433	484	552	585	670	763	860	945	1017	1093
	71.0	12	216	270	301	340	375	408	457	521	590	675	769	846	930	1001	1165
	80.0	11	207	260	264	298	329	402	449	513	563	644	734	796	875	941	1134
	90.0	10	210	263	293	331	365	433	485	553	590	675	769	861	947	1019	1095
	100	9	216	270	305	344	380	409	457	521	591	676	770	847	932	1002	1166
	112	8	208	260	264	298	329	403	451	514	563	644	734	797	876	943	1136
	125	7	210	264	293	331	365	434	485	553	591	676	770	862	948	1020	1097
	140	6	216	271	305	344	380	409	457	522	592	677	771				
	160	5															

## Type VP1 Parallel Shaft

# Basic Thermal Ratings ★ – Hp/Single Reduction Maximum 200°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
1750	1.25	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	1.40	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	526	536	*	*	*	*	*	*	*	*	*	*	*	*	*
	1.60	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	525	535	*	*	*	*	*	*	*	*	*	*	*	*	*
	1.80	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	515	526	*	*	*	*	*	*	*	*	*	*	*	*	*
	2.00	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	490	500	*	*	*	*	*	*	*	*	*	*	*	*	*
1430	2.24	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	521	532	*	*	*	*	*	*	*	*	*	*	*	*	*
	2.50	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	496	506	*	*	*	*	*	*	*	*	*	*	*	*	*
	2.80	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	439	448	*	*	*	*	*	*	*	*	*	*	*	*	*
	3.15	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	405	413	*	*	*	*	*	*	*	*	*	*	*	*	*
	3.55	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	412	420	*	*	*	*	*	*	*	*	*	*	*	*	*
1430	4.00	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	399	407	*	*	*	*	*	*	*	*	*	*	*	*	*
	4.50	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	405	413	*	*	*	*	*	*	*	*	*	*	*	*	*
	5.00	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	379	387	*	*	*	*	*	*	*	*	*	*	*	*	*
1430	1.25	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	560	571	*	*	*	*	*	*	*	*	*	*	*	*	*
	1.40	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	560	572	*	*	*	*	*	*	*	*	*	*	*	*	*
	1.60	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	551	562	*	*	*	*	*	*	*	*	*	*	*	*	*
	1.80	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	534	545	*	*	*	*	*	*	*	*	*	*	*	*	*
	2.00	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	500	510	*	*	*	*	*	*	*	*	*	*	*	*	*
1430	2.24	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	528	539	*	*	*	*	*	*	*	*	*	*	*	*	*
	2.50	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	500	508	*	*	*	*	*	*	*	*	*	*	*	*	*
	2.80	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	437	446	*	*	*	*	*	*	*	*	*	*	*	*	*
	3.15	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	400	407	*	*	*	*	*	*	*	*	*	*	*	*	*
	3.55	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	404	412	*	*	*	*	*	*	*	*	*	*	*	*	*
	4.00	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	386	394	*	*	*	*	*	*	*	*	*	*	*	*	*
	4.50	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	310	317	*	*	*	*	*	*	*	*	*	*	*	*	*
	5.00	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	306	312	*	*	*	*	*	*	*	*	*	*	*	*	*

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperatures will vary based upon exact ambient conditions and load profile.

\* Contact Factory.

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## Type VP1 Parallel Shaft

# Basic Thermal Ratings ★ – Hp/Single Reduction Maximum 200°F Sump Temperature<sup>†</sup>

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
1170	1.25	None Shaft Fan Electric Fan	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	1.40	None Shaft Fan Electric Fan	N/A 575	N/A 587	N/A 735	N/A 743	N/A 750	N/A 2655	N/A 2681	N/A 2708	N/A 1542	N/A 1558	N/A 1573	N/A 2774	N/A 2802	N/A 2829	N/A 2382
	1.60	None Shaft Fan Electric Fan	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	1.80	None Shaft Fan Electric Fan	N/A 529	N/A 539	N/A 694	N/A 701	N/A 708	N/A 2343	N/A 2366	N/A 2390	N/A 1415	N/A 1429	N/A 1443	N/A 2609	N/A 2635	N/A 2661	N/A 2272
	2.00	None Shaft Fan Electric Fan	N/A 491	N/A 500	N/A 611	N/A 617	N/A 623	N/A 2000	N/A 2020	N/A 2040	N/A 1365	N/A 1379	N/A 1392	N/A 2474	N/A 2499	N/A 2523	N/A 2208
	2.24	None Shaft Fan Electric Fan	N/A 515	N/A 525	N/A 579	N/A 585	N/A 590	N/A 1909	N/A 1928	N/A 1947	N/A 1299	N/A 1312	N/A 1325	N/A 2371	N/A 2395	N/A 2418	N/A 2122
	2.50	None Shaft Fan Electric Fan	N/A 482	N/A 491	N/A 584	N/A 590	N/A 595	N/A 1761	N/A 1779	N/A 1796	N/A 1226	N/A 1238	N/A 1250	N/A 2257	N/A 2280	N/A 2302	N/A 1984
	2.80	None Shaft Fan Electric Fan	N/A 421	N/A 429	N/A 501	N/A 506	N/A 511	N/A 1655	N/A 1672	N/A 1689	N/A 1145	N/A 1157	N/A 1168	N/A 2094	N/A 2115	N/A 2136	N/A 1910
	3.15	None Shaft Fan Electric Fan	N/A 382	N/A 389	N/A 467	N/A 472	N/A 477	N/A 1519	N/A 1535	N/A 1550	N/A 1057	N/A 1068	N/A 1078	N/A 1929	N/A 1948	N/A 1968	N/A 1751
	3.55	None Shaft Fan Electric Fan	N/A 319	N/A 326	N/A 431	N/A 435	N/A 439	N/A 1419	N/A 1434	N/A 1448	N/A 979	N/A 989	N/A 999	N/A 1650	N/A 1667	N/A 1683	N/A 1693
970	4.00	None Shaft Fan Electric Fan	N/A 317	N/A 324	N/A 351	N/A 355	N/A 358	N/A 1042	N/A 1052	N/A 1063	N/A 900	N/A 909	N/A 918	N/A 1448	N/A 1463	N/A 1477	N/A 1559
	4.50	None Shaft Fan Electric Fan	N/A 329	N/A 335	N/A 356	N/A 360	N/A 363	N/A 802	N/A 810	N/A 818	N/A 853	N/A 862	N/A 870	N/A 1561	N/A 1577	N/A 1592	N/A 1493
	5.00	None Shaft Fan Electric Fan	148 N/A 314	151 N/A 320	156 N/A 339	N/A 343	N/A 346	N/A 775	N/A 783	N/A 791	N/A 1013	N/A 1023	N/A 1034	N/A 1581	N/A 1597	N/A 1613	N/A 1538
	1.25	None Shaft Fan Electric Fan	N/A 567	N/A 578	N/A 746	N/A 753	N/A 761	N/A 2620	N/A 2647	N/A 2673	N/A 1609	N/A 1625	N/A 1641	N/A 2910	N/A 2939	N/A 2968	N/A 2614
	1.40	None Shaft Fan Electric Fan	N/A 554	N/A 565	N/A 736	N/A 743	N/A 751	N/A 2542	N/A 2568	N/A 2593	N/A 1586	N/A 1602	N/A 1617	N/A 2851	N/A 2879	N/A 2908	N/A 2548
	1.60	None Shaft Fan Electric Fan	N/A 535	N/A 546	N/A 709	N/A 716	N/A 723	N/A 2438	N/A 2462	N/A 2486	N/A 1518	N/A 1533	N/A 1549	N/A 2733	N/A 2761	N/A 2788	N/A 2502
	1.80	None Shaft Fan Electric Fan	N/A 512	N/A 522	N/A 683	N/A 690	N/A 697	N/A 2276	N/A 2299	N/A 2322	N/A 1423	N/A 1437	N/A 1452	N/A 2638	N/A 2665	N/A 2691	N/A 2366
	2.00	None Shaft Fan Electric Fan	N/A 472	N/A 481	N/A 597	N/A 603	N/A 609	N/A 1937	N/A 1956	N/A 1976	N/A 1359	N/A 1373	N/A 1386	N/A 2477	N/A 2502	N/A 2527	N/A 2267
	2.24	None Shaft Fan Electric Fan	N/A 500	N/A 504	N/A 563	N/A 568	N/A 574	N/A 1843	N/A 1862	N/A 1880	N/A 1284	N/A 1297	N/A 1310	N/A 2358	N/A 2382	N/A 2406	N/A 2156
	2.50	None Shaft Fan Electric Fan	N/A 388	N/A 396	N/A 564	N/A 570	N/A 576	N/A 1693	N/A 1710	N/A 1727	N/A 1203	N/A 1215	N/A 1227	N/A 2230	N/A 2252	N/A 2275	N/A 1993
	2.80	None Shaft Fan Electric Fan	N/A 346	N/A 353	N/A 481	N/A 486	N/A 491	N/A 1587	N/A 1603	N/A 1618	N/A 1116	N/A 1127	N/A 1138	N/A 2054	N/A 2075	N/A 2096	N/A 1901
	3.15	None Shaft Fan Electric Fan	N/A 322	N/A 328	N/A 363	N/A 367	N/A 371	N/A 1452	N/A 1466	N/A 1481	N/A 1023	N/A 1033	N/A 1043	N/A 1880	N/A 1898	N/A 1917	N/A 1725
	3.55	None Shaft Fan Electric Fan	N/A 329	N/A 336	N/A 348	N/A 352	N/A 355	N/A 1122	N/A 1134	N/A 1145	N/A 942	N/A 951	N/A 961	N/A 1591	N/A 1607	N/A 1623	N/A 1651
	4.00	None Shaft Fan Electric Fan	N/A 318	N/A 324	N/A 373	N/A 377	N/A 380	N/A 849	N/A 858	N/A 866	N/A 634	N/A 640	N/A 647	N/A 1389	N/A 1403	N/A 1417	N/A 1507
	4.50	None Shaft Fan Electric Fan	156 N/A 325	159 N/A 331	165 N/A 372	176 N/A 376	178 N/A 379	*	*	*	N/A 611	N/A 617	N/A 624	N/A 1128	N/A 1139	N/A 1151	N/A 1427
	5.00	None Shaft Fan Electric Fan	150 N/A 306	153 N/A 312	165 N/A 343	167 N/A 346	168 N/A 350	178 N/A 784	186 N/A 792	190 N/A 800	777 N/A 777	785 N/A 792	792 N/A 1195	1195 N/A 1207	1219 N/A 1219	1044 N/A 1044	*

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperatures will vary based upon exact ambient conditions and load profile.

\* Contact Factory.

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## Type VP1 Parallel Shaft

# Basic Thermal Ratings ★ – Hp/Single Reduction Maximum 200°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
870	1.25	None Shaft Fan Electric Fan	*	*	*	*	*	806	814	822	*	*	*	*	*	*	*
		N/A 557	N/A 568	N/A 741	N/A 748	N/A 755	N/A 2569	N/A 2595	N/A 2621	N/A 1608	N/A 1624	N/A 1640	N/A 2916	N/A 2945	N/A 2974	N/A 2657	
	1.40	None Shaft Fan Electric Fan	*	*	*	*	*	790	798	806	*	*	*	*	*	*	*
		N/A 542	N/A 553	N/A 728	N/A 735	N/A 742	N/A 2486	N/A 2511	N/A 2536	N/A 1577	N/A 1593	N/A 1608	N/A 2837	N/A 2865	N/A 2894	N/A 2568	
	1.60	None Shaft Fan Electric Fan	*	*	*	*	*	762	770	777	*	*	*	1080	1091	1101	*
		N/A 523	N/A 533	N/A 700	N/A 704	N/A 711	N/A 2380	N/A 2404	N/A 2428	N/A 1502	N/A 1517	N/A 1532	N/A 2710	N/A 2737	N/A 2764	N/A 2508	
	1.80	None Shaft Fan Electric Fan	*	*	*	*	*	716	723	730	*	*	*	1046	1057	1067	*
		N/A 500	N/A 509	N/A 670	N/A 677	N/A 683	N/A 2218	N/A 2240	N/A 2262	N/A 1404	N/A 1418	N/A 1432	N/A 2609	N/A 2636	N/A 2662	N/A 2363	
	2.00	None Shaft Fan Electric Fan	*	*	*	*	*	597	603	608	*	*	*	988	998	1008	*
		N/A 459	N/A 468	N/A 585	N/A 590	N/A 596	N/A 1885	N/A 1904	N/A 1922	N/A 1336	N/A 1350	N/A 1363	N/A 2442	N/A 2466	N/A 2491	N/A 2253	
	2.24	None Shaft Fan Electric Fan	*	*	*	*	*	569	575	580	*	*	*	943	952	962	*
		N/A 418	N/A 426	N/A 549	N/A 555	N/A 560	N/A 1791	N/A 1809	N/A 1827	N/A 1259	N/A 1272	N/A 1284	N/A 2319	N/A 2342	N/A 2365	N/A 2135	
	2.50	None Shaft Fan Electric Fan	*	*	*	*	*	524	529	535	*	*	*	894	903	912	*
		N/A 396	N/A 404	N/A 449	N/A 453	N/A 458	N/A 1642	N/A 1659	N/A 1675	N/A 1176	N/A 1188	N/A 1200	N/A 2187	N/A 2209	N/A 2231	N/A 1966	
	2.80	None Shaft Fan Electric Fan	*	*	*	*	*	492	497	502	*	*	*	821	829	838	*
		N/A 350	N/A 356	N/A 395	N/A 399	N/A 403	N/A 1538	N/A 1553	N/A 1568	N/A 1088	N/A 1099	N/A 1110	N/A 2010	N/A 2030	N/A 2050	N/A 1869	
	3.15	None Shaft Fan Electric Fan	*	*	*	*	*	*	*	*	*	*	*	749	757	764	*
		N/A 322	N/A 328	N/A 375	N/A 379	N/A 382	N/A 1188	N/A 1200	N/A 1212	N/A 995	N/A 1005	N/A 1015	N/A 1834	N/A 1852	N/A 1871	N/A 1689	
	3.55	None Shaft Fan Electric Fan	*	*	*	*	*	298	301	304	*	*	*	622	629	635	*
		N/A 327	N/A 334	N/A 354	N/A 358	N/A 361	N/A 1144	N/A 1155	N/A 1167	N/A 685	N/A 692	N/A 699	N/A 1546	N/A 1561	N/A 1577	N/A 1611	
	4.00	None Shaft Fan Electric Fan	151	154	180	181	183	229	232	234	*	*	*	*	*	*	*
		N/A 313	N/A 319	N/A 375	N/A 378	N/A 382	N/A 854	N/A 863	N/A 871	N/A 674	N/A 680	N/A 687	N/A 1053	N/A 1063	N/A 1074	N/A 1466	
	4.50	None Shaft Fan Electric Fan	155	158	179	181	183	232	234	237	*	*	*	393	397	401	*
		N/A 318	N/A 324	N/A 371	N/A 375	N/A 379	N/A 824	N/A 832	N/A 841	N/A 640	N/A 647	N/A 653	N/A 1182	N/A 1194	N/A 1206	N/A 1018	
	5.00	None Shaft Fan Electric Fan	148	151	166	168	170	226	228	231	300	303	306	431	435	439	*
		N/A 300	N/A 305	N/A 339	N/A 342	N/A 345	N/A 774	N/A 782	N/A 790	N/A 796	N/A 804	N/A 812	N/A 1233	N/A 1245	N/A 1258	N/A 1118	

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperatures will vary based upon exact ambient conditions and load profile.

\* Contact Factory.

## Type VP1 Parallel Shaft

# Basic Thermal Ratings ★ – Hp/Single Reduction Maximum 180°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
1750	1.25	None Shaft Fan Electric Fan	*	*	N/A												
	1.40	None Shaft Fan Electric Fan	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	1.60	None Shaft Fan Electric Fan	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	1.80	None Shaft Fan Electric Fan	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	2.00	None Shaft Fan Electric Fan	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	2.24	None Shaft Fan Electric Fan	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	2.50	None Shaft Fan Electric Fan	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	2.80	None Shaft Fan Electric Fan	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	3.15	None Shaft Fan Electric Fan	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	3.55	None Shaft Fan Electric Fan	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	4.00	None Shaft Fan Electric Fan	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	4.50	None Shaft Fan Electric Fan	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	5.00	None Shaft Fan Electric Fan	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1430	1.25	None Shaft Fan Electric Fan	*	*	N/A												
	1.40	None Shaft Fan Electric Fan	*	*	N/A												
	1.60	None Shaft Fan Electric Fan	*	*	N/A												
	1.80	None Shaft Fan Electric Fan	*	*	N/A												
	2.00	None Shaft Fan Electric Fan	*	*	N/A												
	2.24	None Shaft Fan Electric Fan	*	*	N/A												
	2.50	None Shaft Fan Electric Fan	*	*	N/A												
	2.80	None Shaft Fan Electric Fan	*	*	N/A												
	3.15	None Shaft Fan Electric Fan	*	*	N/A												
	3.55	None Shaft Fan Electric Fan	*	*	N/A												
	4.00	None Shaft Fan Electric Fan	*	*	N/A												
	4.50	None Shaft Fan Electric Fan	*	*	N/A												
	5.00	None Shaft Fan Electric Fan	*	*	N/A												

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperatures will vary based upon exact ambient conditions and load profile.

\* Contact Factory.

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## Type VP1 Parallel Shaft

# Basic Thermal Ratings ★ – Hp/Single Reduction Maximum 180°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
1170	1.25	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	432	440	515	520	525	2014	2034	2054	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1.40	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	432	441	526	531	537	1999	2019	2039	1031	1041	1052	N/A	1868	N/A	1905
	1.60	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	425	434	529	535	540	1940	1959	1979	1036	1046	1056	N/A	1860	N/A	1897
	1.80	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	412	421	520	525	530	1840	1858	1877	996	1006	1016	N/A	1834	N/A	1871
	2.00	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	386	394	461	466	471	1574	1590	1606	985	995	1005	N/A	1782	N/A	1818
	2.24	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	408	417	442	447	451	1512	1527	1542	954	964	973	N/A	1735	N/A	1770
	2.50	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	385	392	452	456	461	1407	1421	1435	915	924	933	N/A	1677	N/A	1711
	2.80	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	337	344	391	395	399	1330	1343	1357	868	877	885	N/A	1580	N/A	1612
	3.15	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	308	314	367	370	374	1227	1239	1252	813	821	829	N/A	1476	N/A	1505
	3.55	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	215	219	341	344	347	1162	1173	1185	765	772	780	N/A	1290	N/A	1316
	4.00	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	228	233	218	221	223	855	864	873	713	720	727	N/A	1139	N/A	1162
	4.50	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	244	248	231	234	236	543	549	554	686	693	700	N/A	1261	N/A	1286
	5.00	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	239	244	238	240	242	553	559	564	824	832	840	N/A	1284	N/A	1324
970	1.25	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	444	453	561	567	573	2090	2111	2132	1172	1183	1195	N/A	2128	N/A	2149
	1.40	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	438	447	562	567	573	2046	2066	2087	1178	1189	1201	N/A	2139	N/A	2160
	1.60	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	427	435	551	556	562	1972	1991	2011	1148	1159	1171	N/A	2079	N/A	2120
	1.80	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	411	419	534	540	545	1853	1871	1890	1086	1097	1107	N/A	2022	N/A	2042
	2.00	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	381	389	470	475	479	1577	1593	1609	1051	1061	1072	N/A	1922	N/A	1941
	2.24	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	401	409	446	450	455	1506	1521	1536	1002	1012	1022	N/A	1844	N/A	1862
	2.50	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	268	274	451	455	460	1390	1404	1418	947	956	966	N/A	1757	N/A	1792
	2.80	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	246	250	386	390	394	1307	1320	1333	885	894	903	N/A	1631	N/A	1664
	3.15	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	237	241	237	239	242	1199	1211	1223	818	826	834	N/A	1502	N/A	1532
	3.55	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	247	252	240	242	245	783	791	798	760	767	775	N/A	1284	N/A	1309
	4.00	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	245	250	268	271	274	617	624	630	368	372	376	N/A	1124	N/A	1147
	4.50	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	255	260	273	275	278	627	634	640	378	382	385	N/A	707	N/A	714
	5.00	None	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Electric Fan	244	249	261	263	266	609	615	621	524	534	544	N/A	788	N/A	804

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperatures will vary based upon exact ambient conditions and load profile.

\* Contact Factory.

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## Type VP1 Parallel Shaft

# Basic Thermal Ratings ★ – Hp/Single Reduction Maximum 180°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE															
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187	
870	1.25	None Shaft Fan Electric Fan	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	1.40	None Shaft Fan Electric Fan	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	1.60	None Shaft Fan Electric Fan	*	*	*	*	*	526	531	536	*	*	*	*	*	*	*	
	1.80	None Shaft Fan Electric Fan	*	*	*	*	*	502	507	512	*	*	*	*	*	*	*	
	2.00	None Shaft Fan Electric Fan	*	*	*	*	*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	2.24	None Shaft Fan Electric Fan	*	*	*	*	*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	2.50	None Shaft Fan Electric Fan	*	*	*	*	*	377	381	385	*	*	*	*	*	*	*	
	2.80	None Shaft Fan Electric Fan	*	*	*	*	*	356	360	364	*	*	*	*	*	*	*	
	3.15	None Shaft Fan Electric Fan	*	*	*	*	*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	3.55	None Shaft Fan Electric Fan	*	*	*	*	*	843	851	860	807	815	824	1490	1505	1520	1356	
	4.00	None Shaft Fan Electric Fan	*	*	*	*	*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	4.50	None Shaft Fan Electric Fan	*	*	*	*	*	268	271	278	1279	1292	1305	878	887	896	1625	1641
	5.00	None Shaft Fan Electric Fan	*	*	*	*	*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperatures will vary based upon exact ambient conditions and load profile.

\* Contact Factory.

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## Type VP2 Parallel Shaft

# Basic Thermal Ratings ★ – Hp/Double Reduction Maximum 200°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
	5.00	None												N/A	N/A	N/A	
	5.00	Shaft Fan												788	796	804	
	5.00	Electric Fan												787	795	803	
	5.00	DuraPlate												2346	2369	2393	
	5.60	None	276	281	245	248	250	*	*	*	N/A						
	5.60	Shaft Fan	536	547	668	675	681	853	862	870	664	671	678	908	917	926	*
	5.60	Electric Fan	655	668	673	680	687	884	893	902	579	585	591	907	916	925	*
	5.60	DuraPlate	746	761	1047	1057	1067	1578	1594	1609	1561	1576	1592	2403	2427	2451	2117
	6.30	None	286	291	256	259	262	*	*	*	N/A						
	6.30	Shaft Fan	550	555	675	681	688	885	894	903	700	704	711	1074	1085	1095	*
	6.30	Electric Fan	661	674	680	687	694	915	925	934	612	618	625	1073	1084	1094	*
	6.30	DuraPlate	750	765	1047	1057	1068	1584	1600	1616	1587	1603	1618	2564	2589	2615	2234
	7.10	None	285	290	266	268	271	267	270	272	N/A	N/A	N/A	510	515	520	N/A
	7.10	Shaft Fan	534	545	664	670	677	888	897	906	815	823	832	1664	1681	1697	931
	7.10	Electric Fan	647	660	669	675	682	917	926	936	727	735	742	1663	1680	1697	930
	7.10	DuraPlate	733	748	1015	1025	1035	1561	1576	1592	1717	1734	1751	3181	3213	3245	2441
	8.00	None	300	302	323	326	329	418	422	427	338	342	345	512	517	522	*
	8.00	Shaft Fan	535	545	718	726	733	1039	1050	1060	1060	1071	1082	1610	1626	1642	1601
	8.00	Electric Fan	643	656	723	731	738	1068	1078	1089	977	987	997	1609	1625	1641	1600
	8.00	DuraPlate	593	605	832	840	848	1296	1309	1322	1397	1410	1424	3062	3092	3123	3137
	9.00	None	300	304	322	326	329	418	423	427	343	347	350	557	563	569	*
	9.00	Shaft Fan	534	544	712	719	726	1018	1028	1038	1059	1069	1080	1657	1674	1691	1588
	9.00	Electric Fan	640	653	717	724	731	1045	1055	1066	976	986	996	1657	1673	1690	1587
	9.00	DuraPlate	591	603	823	831	840	1264	1277	1290	1391	1405	1419	3087	3118	3149	3077
	10.0	None	290	295	310	313	316	411	415	419	382	386	389	678	685	692	*
	10.0	Shaft Fan	516	526	676	683	690	987	996	1006	1111	1122	1133	1695	1712	1729	1636
	10.0	Electric Fan	618	630	681	688	694	1013	1023	1033	1028	1038	1049	1694	1711	1728	1636
	10.0	DuraPlate	571	583	781	789	796	1223	1235	1248	1444	1459	1473	2334	2357	2381	3095
1750	11.2	None	270	275	299	302	305	392	395	399	404	408	412	643	650	656	653
1750	11.2	Shaft Fan	476	486	636	642	649	912	922	931	1023	1033	1043	1610	1626	1643	1675
1750	11.2	Electric Fan	569	581	640	647	653	936	946	955	952	962	971	1610	1626	1642	1674
1750	11.2	DuraPlate	523	534	605	611	617	1189	1201	1213	1384	1398	1412	2222	2244	2266	2321
	12.5	None	270	275	295	298	301	383	387	390	400	404	408	666	672	679	640
	12.5	Shaft Fan	473	483	627	634	640	885	894	903	1013	1023	1033	1629	1646	1662	1628
	12.5	Electric Fan	565	577	632	638	644	908	917	926	943	952	962	1629	1645	1661	1627
	12.5	DuraPlate	520	530	596	602	608	1152	1164	1175	1370	1384	1397	2233	2256	2278	2255
	14.0	None	260	266	272	275	278	371	375	378	421	426	430	726	733	740	658
	14.0	Shaft Fan	456	465	575	581	586	854	862	871	1042	1052	1063	1622	1639	1655	1637
	14.0	Electric Fan	544	555	579	584	590	876	884	893	972	981	991	1622	1638	1654	1636
	14.0	DuraPlate	501	511	547	552	558	1110	1121	1132	1400	1414	1428	1738	1755	1773	2252
	16.0	None	240	245	259	262	264	388	392	396	404	408	412	679	686	693	714
	16.0	Shaft Fan	417	425	545	551	556	861	869	878	947	956	966	1532	1547	1562	1616
	16.0	Electric Fan	497	507	549	555	560	882	891	900	885	894	903	1531	1546	1562	1615
	16.0	DuraPlate	391	399	438	442	446	890	899	908	772	780	788	1286	1298	1311	1350
	18.0	None	239	244	256	258	261	375	379	383	400	403	407	693	700	707	688
	18.0	Shaft Fan	414	423	538	543	548	830	838	847	936	945	955	1542	1557	1573	1560
	18.0	Electric Fan	493	503	541	547	552	851	859	868	875	884	892	1541	1557	1572	1560
	18.0	DuraPlate	389	396	432	436	440	858	867	875	979	989	999	1651	1668	1684	1673
	20.0	None	230	235	241	243	246	360	364	367	415	419	423	722	729	736	695
	20.0	Shaft Fan	399	407	506	511	516	794	802	810	958	968	977	1515	1530	1546	1557
	20.0	Electric Fan	474	484	510	515	520	814	822	830	897	906	915	1515	1530	1545	1556
	20.0	DuraPlate	374	381	407	411	415	821	829	837	1001	1011	1021	1925	1944	1963	1668
	22.4	None	218	223	279	282	285	362	366	370	461	466	470	673	679	686	714
	22.4	Shaft Fan	370	378	556	562	568	759	767	774	974	984	993	1428	1442	1456	1512
	22.4	Electric Fan	439	447	560	565	571	777	785	792	918	927	936	1427	1441	1456	1511
	22.4	DuraPlate	311	317	404	408	412	661	668	675	854	863	871	1820	1838	1856	1925
	25.0	None	218	222	276	279	282	350	354	357	454	458	463	739	746	754	685
	25.0	Shaft Fan	368	375	551	556	562	734	741	748	961	970	980	1590	1606	1622	1457
	25.0	Electric Fan	435	444	554	560	565	751	758	766	906	915	924	1589	1605	1621	1456
	25.0	DuraPlate	309	315	399	403	407	639	646	652	843	851	859	2036	2056	2076	1858
	28.0	None	210	214	258	260	263	337	340	344	471	476	480				742
	28.0	Shaft Fan	355	362	515	520	525	705	713	720	982	991	1001				1604
	28.0	Electric Fan	420	428	518	523	528	722	729	736	926	935	945				1604
	28.0	DuraPlate	298	304	373	377	380	615	621	627	863	872	880				2057

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperatures will vary based upon exact ambient conditions and load profile.

\* Contact Factory.

36 (171-110)

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## Type VP2 Parallel Shaft

# Basic Thermal Ratings ★ – Hp/Double Reduction Maximum 200°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE													
			133	137	143	145	147	153	155	157	163	165	167	173	175	
1430	5.00	None											*	*	*	
		Shaft Fan											1231	1243	1256	
		Electric Fan											1479	1494	1509	
		DuraPlate											2510	2536	2561	
	5.60	None	300	304	307	310	313	348	351	355	*	*	*	*	*	
		Shaft Fan	488	497	633	639	645	860	869	877	831	839	847	1252	1264	1277
		Electric Fan	659	672	726	734	741	1021	1031	1041	900	909	918	1489	1504	1518
		DuraPlate	668	681	950	959	969	1448	1462	1477	1576	1592	1608	2474	2498	2523
	6.30	None	303	309	311	314	317	367	370	374	*	*	*	*	*	*
		Shaft Fan	490	500	632	638	645	864	873	881	843	851	860	1350	1363	1377
		Electric Fan	659	672	724	731	739	1019	1029	1039	912	921	930	1586	1602	1618
		DuraPlate	668	681	943	953	962	1430	1445	1459	1580	1596	1612	2560	2585	2611
	7.10	None	300	303	307	310	313	371	375	378	*	*	*	719	727	734
		Shaft Fan	479	488	610	616	622	852	860	869	921	931	940	1615	1631	1648
		Electric Fan	641	654	903	912	922	1001	1011	1021	991	1001	1011	1835	1853	1872
		DuraPlate	650	663	903	912	922	1396	1410	1424	1664	1681	1698	2844	2872	2900
	8.00	None	294	300	335	338	341	454	458	463	441	446	450	691	698	705
		Shaft Fan	467	476	634	640	647	926	936	945	1006	1016	1026	1541	1557	1579
		Electric Fan	622	635	719	727	734	1071	1082	1093	1070	1081	1092	1751	1769	1786
		DuraPlate	527	538	738	746	753	1145	1156	1168	1289	1302	1315	2715	2743	2770
	9.00	None	295	301	332	335	338	450	451	455	440	445	449	723	730	737
		Shaft Fan	465	474	626	632	639	901	910	919	999	1009	1019	1571	1587	1603
		Electric Fan	618	630	710	717	724	1041	1051	1061	1062	1073	1084	1779	1797	1814
		DuraPlate	525	535	729	736	743	1111	1122	1133	1279	1292	1304	2729	2756	2783
	10.0	None	285	291	315	318	322	433	437	442	471	476	481	748	756	763
		Shaft Fan	449	458	592	598	603	871	879	888	1038	1049	1059	1526	1541	1556
		Electric Fan	596	607	670	677	684	1004	1014	1024	1102	1113	1124	1716	1733	1750
		DuraPlate	506	516	688	695	702	1072	1083	1094	1319	1333	1346	2055	2075	2096
	11.2	None	260	266	296	299	302	400	401	403	431	435	440	704	711	718
		Shaft Fan	409	417	550	555	561	789	797	805	907	916	925	1442	1456	1471
		Electric Fan	543	554	622	629	635	911	920	929	961	970	980	1623	1639	1656
		DuraPlate	460	469	537	542	548	1021	1031	1042	1209	1221	1233	1947	1966	1986
	12.5	None	260	265	292	294	297	384	388	392	426	430	435	721	728	735
		Shaft Fan	407	415	541	547	552	764	772	779	896	905	914	1456	1471	1486
		Electric Fan	539	550	613	619	625	881	890	899	949	959	968	1636	1652	1669
		DuraPlate	457	466	529	534	539	987	997	1007	1194	1206	1218	1956	1975	1995
	14.0	None	250	255	268	271	274	371	375	378	445	450	454	727	735	742
		Shaft Fan	392	399	496	501	506	736	743	751	921	931	940	1410	1424	1438
		Electric Fan	518	529	561	566	572	848	857	865	975	985	995	1576	1591	1607
		DuraPlate	439	448	484	489	494	950	960	969	1221	1233	1245	1524	1539	1554
	16.0	None	228	233	252	254	257	376	380	384	403	407	411	679	686	692
		Shaft Fan	356	363	467	471	476	733	740	748	817	826	834	1326	1340	1353
		Electric Fan	471	480	528	534	539	843	851	860	865	873	882	1485	1500	1514
		DuraPlate	347	354	393	397	401	769	776	784	868	876	885	1435	1450	1464
	18.0	None	228	232	250	251	253	363	367	370	400	402	406	691	698	705
		Shaft Fan	354	361	460	464	469	707	714	721	807	815	823	1336	1350	1363
		Electric Fan	467	476	520	526	531	812	820	828	854	862	871	1493	1508	1523
		DuraPlate	345	352	387	391	395	741	748	756	857	865	874	1444	1459	1473
	20.0	None	219	223	233	236	238	348	352	355	413	417	421	694	701	708
		Shaft Fan	340	347	432	436	441	676	683	690	828	836	844	1297	1310	1323
		Electric Fan	449	458	489	494	499	777	784	792	875	883	892	1443	1457	1472
		DuraPlate	332	339	364	368	371	709	716	723	878	887	895	1639	1656	1672
	22.4	None	206	210	264	266	269	348	352	355	440	445	449	646	652	659
		Shaft Fan	316	322	470	475	480	676	683	690	829	837	845	1219	1231	1243
		Electric Fan	413	422	528	533	538	777	784	792	871	880	889	1358	1371	1385
		DuraPlate	279	284	361	364	368	578	583	589	748	756	763	1546	1561	1576
	25.0	None	205	209	260	263	266	332	335	338	433	437	441	708	715	722
		Shaft Fan	314	320	465	470	474	621	628	634	817	825	833	1352	1366	1379
		Electric Fan	410	419	522	527	532	709	716	724	859	867	876	1509	1525	1540
		DuraPlate	277	283	356	360	364	558	563	569	737	745	752	1722	1740	1757
	28.0	None	198	202	243	245	248	319	322	325	449	454	458			711
		Shaft Fan	302	308	434	439	443	597	603	609	837	845	854			1363
		Electric Fan	395	403	488	493	498	682	689	696	879	888	897			1523
		DuraPlate	267	272	333	336	339	536	542	547	757	764	772			1739

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperatures will vary based upon exact ambient conditions and load profile.

\* Contact Factory.

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## Type VP2 Parallel Shaft

# Basic Thermal Ratings ★ – Hp/Double Reduction Maximum 200°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE													
			133	137	143	145	147	153	155	157	163	165	167	173	175	
5.00	None													669	676	682
	Shaft Fan													1380	1394	1407
	Electric Fan													1864	1882	1901
	DuraPlate													2384	2408	2432
5.60	None	301	307	338	341	344	430	435	439	424	428	432	665	671	678	608
	Shaft Fan	422	430	562	568	574	791	799	807	857	866	874	1340	1353	1366	1316
	Electric Fan	639	652	738	746	753	1070	1080	1091	1081	1092	1102	1800	1818	1836	1802
	DuraPlate	578	589	822	830	839	1253	1265	1278	1450	1464	1479	2297	2320	2343	2328
6.30	None	303	309	336	340	343	431	435	440	428	432	436	715	723	730	626
	Shaft Fan	422	431	558	563	569	779	787	795	856	865	873	1392	1406	1420	1313
	Electric Fan	636	649	730	737	745	1048	1058	1069	1077	1088	1098	1849	1867	1886	1784
	DuraPlate	576	587	812	821	829	1224	1236	1248	1440	1455	1469	2339	2362	2385	2293
7.10	None	300	300	323	326	329	424	428	432	469	474	478	827	835	843	683
	Shaft Fan	410	418	531	537	542	760	767	775	907	916	925	1457	1472	1486	1367
	Electric Fan	616	629	694	701	708	1018	1028	1038	1130	1141	1153	1879	1898	1916	1831
	DuraPlate	558	569	771	779	787	1187	1199	1211	1495	1510	1525	2421	2445	2469	2331
8.00	None	282	288	332	335	339	460	464	469	494	499	504	780	787	795	804
	Shaft Fan	392	400	536	542	547	788	795	803	894	903	912	1377	1391	1405	1437
	Electric Fan	588	600	696	703	710	1038	1048	1058	1098	1109	1120	1778	1796	1814	1862
	DuraPlate	455	464	635	641	647	971	981	991	1133	1144	1156	2296	2319	2342	2410
9.00	None	282	288	328	331	334	447	451	456	489	494	499	801	809	817	782
	Shaft Fan	390	398	529	534	539	763	770	778	884	893	902	1396	1410	1424	1393
	Electric Fan	583	595	685	692	699	1003	1013	1023	1085	1096	1107	1793	1811	1829	1804
	DuraPlate	453	462	625	631	637	939	949	958	1120	1131	1142	2304	2327	2350	2334
10.0	None	272	278	309	312	315	432	436	440	514	520	525	765	773	781	797
	Shaft Fan	376	383	497	502	507	735	742	750	915	924	933	1308	1321	1334	1402
	Electric Fan	561	573	644	650	657	966	975	985	1117	1128	1140	1671	1688	1705	1806
	DuraPlate	436	445	588	593	599	904	913	922	1152	1164	1175	1740	1757	1775	2325
11.2	None	245	250	285	287	290	383	387	391	435	440	444	716	723	730	754
	Shaft Fan	339	346	458	462	467	655	661	668	768	776	783	1230	1242	1255	1298
	Electric Fan	508	518	593	599	605	864	872	881	938	948	957	1576	1592	1607	1664
	DuraPlate	392	400	464	469	474	847	855	864	1019	1029	1039	1641	1658	1674	1733
12.5	None	244	249	280	283	286	371	375	379	429	433	438	729	736	744	726
	Shaft Fan	337	344	450	455	459	633	639	646	757	765	772	1242	1254	1267	1252
	Electric Fan	504	514	583	589	595	834	842	851	925	935	944	1585	1601	1617	1606
	DuraPlate	390	398	457	461	466	818	826	834	1005	1015	1025	1649	1666	1682	1673
14.0	None	235	240	257	260	262	358	361	365	450	451	456	703	710	717	732
	Shaft Fan	325	331	412	416	420	609	615	621	780	788	796	1178	1189	1201	1252
	Electric Fan	484	494	533	538	544	802	810	818	949	959	968	1494	1509	1524	1601
	DuraPlate	375	382	418	422	427	787	794	802	1029	1039	1050	1294	1307	1320	1666
16.0	None	213	217	239	241	244	356	359	363	391	395	399	655	661	668	695
	Shaft Fan	294	299	385	389	393	601	607	613	679	686	693	1104	1115	1126	1171
	Electric Fan	438	447	500	505	510	789	797	805	827	835	843	1406	1420	1434	1489
	DuraPlate	301	307	344	347	350	645	652	658	737	745	752	1215	1227	1239	1288
18.0	None	212	216	235	238	240	343	346	350	385	389	392	665	672	679	667
	Shaft Fan	292	298	379	383	386	579	585	591	670	676	683	1114	1125	1136	1126
	Electric Fan	435	443	492	497	502	760	768	775	816	824	832	1413	1427	1441	1434
	DuraPlate	299	305	338	342	345	622	628	634	727	734	742	1224	1236	1248	1239
20.0	None	204	208	221	223	225	329	332	335	400	403	407	652	659	665	669
	Shaft Fan	281	287	356	359	363	554	560	565	689	696	703	1072	1082	1093	1124
	Electric Fan	418	426	462	466	471	727	734	741	836	844	853	1350	1363	1377	1428
	DuraPlate	288	293	318	321	324	595	601	607	747	754	762	1356	1369	1383	1236
22.4	None	191	194	244	247	249	319	322	325	411	415	420	606	612	618	644
	Shaft Fan	260	265	383	387	391	526	531	536	681	687	694	1003	1013	1023	1065
	Electric Fan	384	391	489	494	499	683	689	696	813	821	829	1268	1281	1294	1345
	DuraPlate	244	249	315	319	322	492	497	502	640	646	653	1274	1286	1299	1351
25.0	None	190	194	241	243	246	308	311	314	404	408	412	662	669	676	617
	Shaft Fan	259	264	378	382	386	508	513	518	670	677	683	1108	1119	1130	1023
	Electric Fan	381	388	483	488	493	659	666	672	801	809	817	1407	1421	1435	1294
	DuraPlate	243	247	311	315	318	475	480	485	630	636	642	1413	1427	1441	1300
28.0	None	183	187	225	227	229	296	299	302	420	424	428				665
	Shaft Fan	249	254	353	357	360	488	493	498	689	696	703				1116
	Electric Fan	367	374	452	456	461	633	640	646	820	828	837				1419
	DuraPlate	234	238	291	293	296	457	461	466	648	655	661				1425

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperatures will vary based upon exact ambient conditions and load profile.

\* Contact Factory.

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## Type VP2 Parallel Shaft

# Basic Thermal Ratings ★ – Hp/Double Reduction Maximum 200°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175		
970	5.00	None												820	828	836	
		Shaft Fan												1343	1356	1370	
		Electric Fan												1966	1986	2006	
		DuraPlate												2177	2198	2220	
	5.60	None	293	299	341	345	348	452	456	461	491	496	500	787	794	802	782
		Shaft Fan	371	378	500	505	510	711	718	725	810	818	826	1281	1294	1307	1305
		Electric Fan	613	625	724	732	739	1059	1069	1080	1129	1140	1151	1874	1893	1912	1933
		DuraPlate	510	520	724	731	739	1096	1107	1118	1306	1319	1332	2075	2096	2116	2145
	6.30	None	294	300	338	341	345	444	449	453	489	494	498	820	829	837	774
		Shaft Fan	370	377	494	499	503	695	702	709	803	811	819	1315	1328	1341	1280
		Electric Fan	609	621	714	721	728	1029	1039	1050	1118	1129	1140	1902	1921	1940	1886
		DuraPlate	507	518	714	721	728	1065	1076	1087	1292	1305	1318	2100	2121	2142	2092
	7.10	None	285	290	321	324	327	433	437	441	521	526	532	846	854	863	806
		Shaft Fan	359	366	467	472	477	674	681	687	842	850	859	1303	1316	1329	1307
		Electric Fan	589	600	674	681	688	996	1005	1015	1159	1170	1182	1844	1862	1880	1904
		DuraPlate	491	501	674	681	688	1031	1041	1051	1334	1347	1361	2101	2122	2143	2106
	8.00	None	269	275	322	325	328	448	453	457	503	508	513	792	800	808	830
		Shaft Fan	339	346	465	470	475	683	690	697	794	801	809	1224	1237	1249	1288
		Electric Fan	558	569	669	675	682	995	1005	1014	1082	1093	1104	1738	1756	1773	1833
		DuraPlate	404	412	559	565	571	846	855	863	1006	1016	1026	1984	2004	2024	2093
	9.00	None	268	274	317	320	323	434	438	443	497	502	507	809	817	825	801
		Shaft Fan	337	344	458	463	467	660	667	673	783	790	798	1240	1252	1264	1243
		Electric Fan	553	564	657	664	670	959	969	978	1067	1078	1088	1749	1766	1783	1770
		DuraPlate	402	410	550	556	561	817	825	833	992	1002	1012	1991	2011	2031	2021
	10.0	None	259	264	298	301	304	418	422	427	519	524	529	749	757	764	810
		Shaft Fan	325	331	430	434	438	635	642	648	809	818	826	1141	1153	1164	1247
		Electric Fan	532	542	616	622	628	922	932	941	1096	1107	1118	1606	1622	1638	1764
		DuraPlate	387	395	516	521	526	786	794	801	1021	1031	1041	1514	1529	1544	2011
	11.2	None	231	236	272	275	278	367	370	374	426	430	434	699	706	713	740
		Shaft Fan	291	297	393	397	401	560	566	571	665	672	679	1069	1080	1091	1132
		Electric Fan	479	489	566	571	577	819	827	836	905	914	923	1511	1526	1541	1600
		DuraPlate	346	353	414	418	422	729	736	743	884	892	901	1423	1438	1452	1507
	12.5	None	231	235	268	271	273	354	358	362	419	423	427	710	717	725	711
		Shaft Fan	290	295	387	391	395	541	546	552	655	662	668	1080	1091	1102	1089
		Electric Fan	475	484	556	561	567	790	798	806	892	901	910	1519	1534	1549	1542
		DuraPlate	344	351	407	411	415	703	711	718	870	879	888	1432	1446	1460	1452
	14.0	None	222	226	246	250	251	341	345	348	436	440	444	672	679	686	714
		Shaft Fan	279	284	354	358	361	521	526	531	676	683	689	1014	1024	1034	1089
		Electric Fan	457	466	508	513	518	760	768	775	915	924	933	1419	1433	1447	1535
		DuraPlate	331	337	372	376	380	677	683	690	893	902	911	1135	1146	1157	1446
	16.0	None	200	204	227	230	232	336	340	343	375	379	383	625	631	637	664
		Shaft Fan	251	256	329	333	336	511	516	521	583	589	594	948	957	967	1007
		Electric Fan	412	420	475	480	485	745	752	760	791	799	806	1333	1346	1359	1414
		DuraPlate	268	273	310	313	317	563	568	574	649	655	662	1062	1073	1084	1128
	18.0	None	199	203	224	226	228	324	327	330	369	373	376	635	641	647	637
		Shaft Fan	250	255	324	327	330	492	497	502	574	580	585	958	967	977	967
		Electric Fan	409	417	467	472	477	717	724	731	779	787	795	1340	1353	1367	1360
		DuraPlate	267	272	305	308	311	542	547	553	639	645	652	1071	1082	1093	1084
	20.0	None	192	196	210	212	214	310	314	317	383	387	391	615	621	627	639
		Shaft Fan	241	245	304	307	310	471	476	480	592	598	604	917	927	936	966
		Electric Fan	393	401	438	442	447	685	692	699	799	807	815	1273	1286	1299	1354
		DuraPlate	257	262	286	289	292	519	524	529	658	664	671	1166	1178	1189	1081
	22.4	None	178	182	228	231	233	299	302	305	387	391	395	571	576	582	608
		Shaft Fan	223	227	325	328	331	447	451	456	580	586	592	856	865	873	910
		Electric Fan	360	367	459	463	468	642	648	654	765	773	781	1195	1207	1219	1268
		DuraPlate	N/A	N/A	N/A	N/A	N/A	434	439	443	566	572	577	1092	1103	1114	1160
	25.0	None	178	181	225	228	230	289	292	294	380	384	388	623	629	636	581
		Shaft Fan	222	226	321	324	327	431	436	440	571	576	582	942	952	961	873
		Electric Fan	358	365	453	458	462	619	625	632	754	761	769	1323	1337	1350	1219
		DuraPlate	N/A	N/A	N/A	N/A	N/A	419	423	427	557	562	568	1208	1220	1232	1144
	28.0	None	171	175	210	212	214	277	280	283	395	399	403				626
		Shaft Fan	213	218	299	302	305	414	419	423	588	594	600				948
		Electric Fan	344	351	423	427	432	595	601	607	773	780	788				1334
		DuraPlate	N/A	N/A	N/A	N/A	N/A	403	407	411	574	580	586				1217

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperatures will vary based upon exact ambient conditions and load profile.

\* Contact Factory.

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## Type VP2 Parallel Shaft

# Basic Thermal Ratings ★ – Hp/Double Reduction Maximum 200°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175		
870	5.00	None												862	871	880	
		Shaft Fan												1290	1303	1316	
		Electric Fan												1977	1996	2016	
		DuraPlate												2042	2083		
	5.60	None	287	292	338	342	345	453	457	462	509	514	519	819	827	835	833
		Shaft Fan	343	350	464	469	474	663	670	676	770	777	785	1224	1236	1248	1261
		Electric Fan	596	607	711	718	725	1041	1051	1062	1132	1144	1155	1875	1894	1913	1952
		DuraPlate	474	484	672	679	685	1012	1022	1032	1220	1232	1244	1938	1957	1977	2018
	6.30	None	287	292	334	337	341	443	447	452	504	509	514	846	855	863	816
		Shaft Fan	342	349	458	463	467	646	652	658	762	769	777	1250	1263	1275	1229
		Electric Fan	591	603	700	707	714	1009	1019	1029	1119	1130	1141	1896	1915	1933	1897
		DuraPlate	472	481	661	668	675	981	991	1001	1205	1217	1229	1957	1977	1996	1961
	7.10	None	277	283	316	319	322	430	434	438	533	539	544	841	849	858	839
		Shaft Fan	331	338	433	437	441	625	631	638	795	803	811	1214	1226	1238	1248
		Electric Fan	571	583	659	666	672	975	984	994	1156	1167	1179	1808	1826	1844	1904
		DuraPlate	456	465	624	630	636	948	958	967	1242	1254	1267	1933	1952	1972	1967
	8.00	None	261	266	314	318	321	438	443	447	500	505	510	785	793	801	827
		Shaft Fan	312	318	428	433	437	628	634	641	737	744	751	1138	1149	1160	1201
		Electric Fan	539	550	651	658	664	966	976	986	1064	1074	1085	1702	1719	1736	1799
		DuraPlate	378	386	522	527	533	783	791	798	936	945	955	1821	1840	1858	1925
	9.00	None	260	265	309	312	315	424	428	432	493	498	503	800	808	816	797
		Shaft Fan	310	316	421	425	430	606	612	618	726	733	740	1151	1163	1174	1157
		Electric Fan	534	545	640	646	652	931	941	950	1048	1059	1069	1710	1727	1744	1734
		DuraPlate	376	383	513	518	524	755	763	770	922	932	941	1828	1846	1865	1857
	10.0	None	250	255	290	293	296	408	412	416	514	519	525	733	741	748	803
		Shaft Fan	299	305	395	399	403	583	589	595	751	758	766	1052	1062	1073	1159
		Electric Fan	514	524	599	605	611	895	904	913	1076	1086	1097	1562	1577	1593	1727
		DuraPlate	362	369	481	486	490	726	733	740	949	959	968	1396	1410	1424	1847
	11.2	None	223	228	265	267	270	356	359	363	417	421	425	683	690	696	724
		Shaft Fan	267	272	361	364	368	512	517	522	611	618	624	984	994	1004	1043
		Electric Fan	462	472	549	555	560	793	801	809	883	892	901	1468	1483	1498	1556
		DuraPlate	322	329	388	392	396	669	676	682	815	824	832	1311	1324	1337	1389
	12.5	None	223	227	260	263	265	344	347	350	410	414	418	694	701	708	695
		Shaft Fan	265	271	354	358	362	494	499	504	602	608	614	995	1004	1014	1003
		Electric Fan	458	468	539	545	550	765	772	780	869	878	887	1475	1490	1505	1498
		DuraPlate	321	327	381	385	389	645	652	658	803	811	819	1319	1333	1346	1337
	14.0	None	214	218	239	241	243	331	334	337	426	430	435	652	659	665	698
		Shaft Fan	255	261	325	328	331	475	480	485	621	628	634	930	939	948	1003
		Electric Fan	441	449	493	498	503	735	742	750	892	901	910	1374	1387	1401	1491
		DuraPlate	308	314	349	353	356	621	627	633	825	833	841	1054	1064	1075	1332
	16.0	None	193	197	220	223	225	325	328	331	365	369	372	606	612	618	644
		Shaft Fan	230	235	301	304	307	466	470	475	533	539	544	868	877	885	922
		Electric Fan	397	405	461	465	470	719	726	733	769	776	784	1289	1302	1315	1368
		DuraPlate	252	257	292	295	298	520	525	530	603	609	615	985	995	1005	1046
	18.0	None	192	196	217	219	221	313	316	319	359	363	366	615	621	627	617
		Shaft Fan	229	234	296	299	302	448	453	457	525	530	536	877	886	895	885
		Electric Fan	394	402	453	457	462	692	699	705	757	765	772	1297	1310	1323	1316
		DuraPlate	251	256	287	290	293	501	506	511	593	599	605	994	1004	1014	1005
	20.0	None	185	189	203	205	207	300	303	306	373	377	381	594	599	605	619
		Shaft Fan	220	225	278	280	283	429	433	438	542	548	553	839	848	856	885
		Electric Fan	379	386	424	429	433	661	668	675	777	785	793	1230	1242	1254	1310
		DuraPlate	241	246	269	272	274	479	484	489	612	618	624	1071	1082	1093	1003
	22.4	None	171	174	220	222	224	288	291	294	373	377	381	550	556	561	586
		Shaft Fan	203	207	296	299	302	407	411	415	530	535	540	782	790	798	832
		Electric Fan	346	353	442	446	451	619	625	631	739	746	753	1153	1164	1176	1224
		DuraPlate	N/A	N/A	N/A	N/A	N/A	405	409	413	N/A	N/A	N/A	1002	1012	1022	1064
	25.0	None	170	174	217	219	221	278	281	283	366	370	374	600	606	612	561
		Shaft Fan	202	206	292	295	298	393	397	401	520	526	531	859	868	876	797
		Electric Fan	344	351	436	441	445	597	603	609	727	734	742	1276	1289	1301	1176
		DuraPlate	N/A	N/A	N/A	N/A	N/A	391	395	399	N/A	N/A	N/A	1106	1117	1128	1022
	28.0	None	164	167	202	204	206	267	270	272	381	385	389	389			603
		Shaft Fan	195	199	272	275	277	378	381	385	538	543	548				864
		Electric Fan	331	338	407	411	415	574	579	585	746	753	761				1286
		DuraPlate	N/A	N/A	N/A	N/A	N/A	376	380	383	N/A	N/A	N/A				1114

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperatures will vary based upon exact ambient conditions and load profile.

\* Contact Factory.

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## Type VP2 Parallel Shaft

# Basic Thermal Ratings ★ – Hp/Double Reduction Maximum 180°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE													
			133	137	143	145	147	153	155	157	163	165	167	173	175	177
5.00	None													N/A	N/A	N/A
	Shaft Fan													N/A	N/A	N/A
	Electric Fan													N/A	N/A	N/A
	DuraPlate													724	731	738
5.60	None	155	158	*	*	*	*	*	*	*	N/A	N/A	N/A	N/A	N/A	N/A
	Shaft Fan	384	392	421	425	429	416	420	424	*	*	*	*	N/A	N/A	N/A
	Electric Fan	489	498	426	430	434	442	447	451	*	*	*	*	N/A	N/A	N/A
	DuraPlate	557	568	729	736	743	1021	1031	1041	700	705	712	946	955	964	
6.30	None	170	173	*	*	*	*	*	*	N/A						
	Shaft Fan	400	407	439	444	448	492	496	501	*	*	*	*	*	*	N/A
	Electric Fan	502	512	444	449	453	518	523	528	*	*	*	*	*	*	N/A
	DuraPlate	570	581	744	752	759	1082	1092	1103	754	762	769	1196	1208	1220	642
7.10	None	177	181	*	*	*	*	*	*	N/A	N/A	N/A	N/A	*	*	N/A
	Shaft Fan	400	408	456	460	465	526	531	537	*	*	*	969	978	988	N/A
	Electric Fan	500	510	460	465	470	552	557	563	*	*	*	969	979	989	N/A
	DuraPlate	565	576	745	753	760	1097	1108	1119	925	934	944	2274	2297	2319	967
8.00	None	210	214	208	210	212	*	*	*	*	*	*	*	*	*	*
	Shaft Fan	425	433	552	557	563	775	783	791	663	669	676	974	984	993	872
	Electric Fan	520	530	557	562	568	801	809	817	594	600	606	974	984	994	872
	DuraPlate	468	477	639	646	652	989	999	1009	928	938	947	2221	2243	2266	2185
9.00	None	214	218	211	213	216	244	247	249	*	*	*	*	*	*	*
	Shaft Fan	426	435	551	556	562	772	780	787	672	679	685	1044	1055	1065	907
	Electric Fan	521	531	555	561	566	800	805	813	604	610	616	1045	1055	1065	908
	DuraPlate	469	479	637	643	649	978	987	997	935	945	954	2280	2303	2326	2182
10.0	None	210	214	209	211	213	247	250	252	*	*	*	*	*	*	*
	Shaft Fan	415	423	529	535	540	756	763	771	732	740	747	1241	1253	1266	991
	Electric Fan	505	515	534	539	544	780	787	795	663	670	676	1241	1254	1266	992
	DuraPlate	456	465	610	617	623	953	963	972	999	1009	1019	1782	1799	1817	2249
11.2	None	204	208	216	218	220	265	267	270	*	*	*	*	*	*	*
	Shaft Fan	391	399	512	517	522	726	734	741	769	776	784	1187	1199	1211	1208
	Electric Fan	474	483	516	521	527	750	755	763	709	716	723	1187	1199	1211	1208
	DuraPlate	425	434	476	481	486	959	968	978	1065	1076	1086	1704	1721	1738	1753
12.5	None	205	209	215	217	219	262	265	268	*	*	*	*	*	*	*
	Shaft Fan	390	398	506	511	517	709	716	723	764	771	779	1214	1227	1239	1185
	Electric Fan	472	481	510	516	521	729	737	744	705	712	719	1215	1227	1239	1185
	DuraPlate	424	432	471	476	481	932	942	951	1057	1067	1078	1726	1744	1761	1714
14.0	None	200	203	200	202	204	256	259	261	258	261	263	503	508	513	*
	Shaft Fan	376	384	466	470	475	685	692	699	793	801	809	1302	1315	1328	1208
	Electric Fan	455	464	469	474	479	705	712	720	734	741	748	1302	1315	1328	1208
	DuraPlate	409	417	434	438	442	900	909	918	1088	1099	1110	1385	1399	1413	1729
16.0	None	187	191	195	197	199	289	292	295	286	289	292	472	476	481	489
	Shaft Fan	348	355	447	452	456	712	719	726	760	767	775	1230	1243	1255	1291
	Electric Fan	419	427	451	455	460	731	739	746	707	714	721	1231	1243	1255	1291
	DuraPlate	319	326	347	350	354	726	733	741	787	794	802	1309	1323	1336	1375
18.0	None	187	191	193	195	197	281	283	286	286	289	289	485	490	495	474
	Shaft Fan	346	353	441	446	450	688	695	702	752	759	767	1243	1256	1268	1249
	Electric Fan	416	425	445	449	454	707	714	721	707	714	721	1243	1256	1268	1249
	DuraPlate	318	324	342	346	349	701	708	715	778	786	794	1322	1335	1348	1330
20.0	None	180	184	182	184	186	270	273	275	297	300	303	555	560	566	483
	Shaft Fan	333	340	416	420	425	659	666	672	772	780	788	1268	1281	1294	1252
	Electric Fan	401	409	420	424	428	677	684	690	720	727	734	1269	1281	1294	1252
	DuraPlate	306	312	323	326	330	672	679	685	799	807	815	1613	1629	1645	1332
22.4	None	175	178	221	224	226	287	290	293	360	364	368	517	522	527	546
	Shaft Fan	314	320	471	476	481	645	651	657	822	830	839	1194	1206	1218	1263
	Electric Fan	374	382	475	479	484	661	667	674	773	781	789	1524	1540	1555	1611
	DuraPlate	256	261	329	333	336	550	555	561	705	712	719	1524	1540	1555	1611
25.0	None	174	178	219	221	224	278	281	283	355	358	362	567	572	578	525
	Shaft Fan	312	318	467	471	476	623	630	636	811	819	828	1330	1343	1356	1218
	Electric Fan	372	379	470	475	479	639	646	652	763	771	778	1330	1343	1357	1218
	DuraPlate	255	260	326	329	332	532	537	542	695	702	709	1704	1721	1738	1555
28.0	None	168	171	205	207	209	267	270	273	369	373	377				568
	Shaft Fan	301	307	437	441	445	600	606	612	831	839	847				1340
	Electric Fan	358	366	440	444	448	615	621	627	782	790	798				1341
	DuraPlate	245	250	305	308	311	511	517	522	714	721	728				1721

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperatures will vary based upon exact ambient conditions and load profile.

\* Contact Factory.

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## Type VP2 Parallel Shaft

# Basic Thermal Ratings ★ – Hp/Double Reduction Maximum 180°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
	5.00	None Shaft Fan Electric Fan DuraPlate												N/A 376 569 1407	N/A 380 575 1421	N/A 384 580 1435	
	5.60	None Shaft Fan Electric Fan DuraPlate	200 375 523 522	204 379 533 532	172 450 531 709	173 455 536 716	175 459 541 724	126 553 700 1048	127 558 701 1059	128 564 706 1069	N/A 378 433 971	N/A 382 437 980	N/A 385 442 990	N/A 671 1478	N/A 678 1493	N/A 684 1508	N/A 1211
	6.30	None Shaft Fan Electric Fan DuraPlate	209 379 528 527	213 387 539 538	181 458 537 713	183 462 542 720	161 585 548 727	163 591 727 1064	164 597 734 1075	N/A 406 461 996	N/A 410 470 1006	N/A 414 470 1016	N/A 612 809 1622	N/A 618 817 1638	N/A 624 825 1654	N/A 1325	
	7.10	None Shaft Fan Electric Fan DuraPlate	209 375 518 517	213 382 529 527	190 454 534 695	192 459 540 702	194 463 540 709	179 593 723 1055	181 599 731 1066	183 605 738 1076	*	*	*	*	*	*	N/A
	8.00	None Shaft Fan Electric Fan DuraPlate	220 378 515 423	225 385 526 431	238 502 576 582	240 507 582 588	243 512 588 594	304 725 853 903	307 732 862 912	310 740 870 921	*	*	*	*	*	*	*
	9.00	None Shaft Fan Electric Fan DuraPlate	223 378 514 423	227 386 524 431	238 500 577 577	240 503 583 583	243 508 836 884	305 712 844 892	308 720 852 901	311 727 769 938	*	*	*	386 721 777 948	390 729 785 957	393 1129 1311 2127	*
	10.0	None Shaft Fan Electric Fan DuraPlate	216 366 496 409	221 374 506 417	229 474 543 549	232 479 548 554	234 484 554 560	301 692 810 856	304 699 819 865	307 706 827 874	269 758 813 984	272 765 821 994	275 773 829 1004	491 773 1350 1626	501 1182 1350 1643	501 1194 1363 1659	*
1430	11.2	None Shaft Fan Electric Fan DuraPlate	202 338 457 376	206 345 466 383	223 448 511 429	225 453 517 433	227 457 522 437	289 642 749 835	292 648 756 843	295 654 764 851	296 709 756 956	298 716 764 956	301 723 771 975	466 1121 1281 1545	471 1143 1294 1560	471 1162 1331 1610	
	12.5	None Shaft Fan Electric Fan DuraPlate	203 337 454 374	207 344 463 423	220 442 504 427	223 447 510 431	225 451 515 809	283 623 727 809	286 630 734 818	289 636 741 826	292 702 749 946	295 709 756 955	298 716 764 965	484 1140 1299 1560	489 1151 1312 1576	494 1163 1325 1591	461 1130 1294 1564
	14.0	None Shaft Fan Electric Fan DuraPlate	196 325 437 360	200 332 446 368	204 406 463 388	206 410 467 392	208 414 472 780	274 602 701 780	277 608 708 788	280 614 715 796	309 727 774 972	313 734 781 982	316 741 789 992	539 1152 1299 1233	545 1164 1312 1246	550 1175 1325 1258	477 1142 1303 1569
	16.0	None Shaft Fan Electric Fan DuraPlate	181 298 399 284	184 304 407 289	194 385 439 315	196 389 443 318	198 392 447 321	289 611 708 632	292 617 722 638	295 623 722 645	300 665 706 697	303 672 706 704	306 678 713 711	504 678 720 1162	509 1084 1225 1162	514 1095 1227 1173	529 1106 1249 1185
	18.0	None Shaft Fan Electric Fan DuraPlate	180 296 397 282	184 302 405 288	191 379 432 310	193 383 437 313	195 387 441 316	280 589 683 610	283 595 689 616	286 601 696 622	296 657 698 689	299 664 705 703	302 670 712 1172	515 1096 1235 1172	520 1117 1247 1184	525 1117 1247 1196	510 1104 1247 1183
	20.0	None Shaft Fan Electric Fan DuraPlate	174 285 382 272	177 291 389 277	180 357 407 292	182 361 411 295	184 364 415 298	269 564 653 584	272 570 660 590	274 576 666 596	309 676 717 708	312 682 724 715	316 689 731 722	546 1091 1220 1378	551 1102 1233 1392	556 1113 1245 1406	516 1104 1246 1183
	22.4	None Shaft Fan Electric Fan DuraPlate	166 267 354 229	169 272 361 234	211 398 449 295	213 402 449 298	215 406 454 301	275 547 458 480	278 552 627 485	280 557 640 490	350 701 739 620	353 708 747 611	356 715 754 617	507 1024 1148 623	512 1034 1148 1446	517 1045 1171 1461	538 1085 1216 1325
	25.0	None Shaft Fan Electric Fan DuraPlate	165 266 352 228	169 271 359 233	208 394 349 292	211 398 449 295	213 402 454 298	266 528 606 464	268 533 612 469	271 539 619 474	343 691 729 611	347 698 736 617	350 705 743 623	555 1136 1275 1446	561 1147 1288 1461	566 1158 1301 1475	516 1045 1171 1325
	28.0	None Shaft Fan Electric Fan DuraPlate	159 256 354 220	163 261 346 224	194 368 416 273	196 372 420 275	198 508 424 446	256 513 583 451	258 518 589 455	261 518 595 455	358 709 747 628	361 717 755 635	365 724 762 641				557 1144 1286 1459

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperatures will vary based upon exact ambient conditions and load profile.

\* Contact Factory.

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## Type VP2 Parallel Shaft

# Basic Thermal Ratings ★ – Hp/Double Reduction Maximum 180°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE													
			133	137	143	145	147	153	155	157	163	165	167	173	175	
1170	5.00	None												*	*	
		Shaft Fan												821	829	
		Electric Fan												837		
		DuraPlate												1237	1249	
	5.60	None	225	227	231	234	236	263	266	268	*	*	*	*	1664	1681
		Shaft Fan	335	342	431	435	439	582	587	593	554	559	565	836	845	853
		Electric Fan	526	537	582	588	594	825	833	841	742	749	757	1233	1245	1257
		DuraPlate	464	473	644	651	657	972	982	992	1039	1050	1060	1640	1657	1673
	6.30	None	227	231	234	236	239	276	279	282	*	*	*	*	*	*
		Shaft Fan	338	345	431	435	439	586	592	598	563	568	574	910	919	928
		Electric Fan	527	537	580	588	591	821	829	838	749	757	764	1307	1320	1333
		DuraPlate	465	474	641	647	654	963	973	982	1043	1054	1064	1712	1729	1746
	7.10	None	223	227	230	232	235	279	282	285	*	*	*	545	551	556
		Shaft Fan	330	337	416	420	425	579	585	590	621	627	633	1110	1121	1132
		Electric Fan	512	522	557	562	568	805	813	821	811	820	828	1480	1495	1510
		DuraPlate	453	462	614	620	627	942	951	961	1109	1120	1131	1934	1953	1973
	8.00	None	220	224	250	253	255	340	343	346	333	336	340	522	527	532
		Shaft Fan	322	328	434	438	443	636	643	649	684	691	698	1056	1066	1077
		Electric Fan	495	505	573	578	584	857	865	874	860	869	877	1408	1422	1436
		DuraPlate	371	379	510	515	520	786	794	802	874	883	892	1841	1859	1878
	9.00	None	220	225	248	251	253	334	337	340	332	335	339	546	552	557
		Shaft Fan	321	328	429	433	438	620	626	632	679	686	693	1081	1092	1103
		Electric Fan	492	502	565	571	576	832	840	848	853	861	870	1431	1445	1460
		DuraPlate	370	377	503	508	513	764	771	779	867	876	884	1859	1877	1896
	10.0	None	213	217	236	238	240	324	327	331	356	360	363	561	567	573
		Shaft Fan	310	316	405	409	413	599	605	611	710	718	725	1052	1062	1076
		Electric Fan	474	484	533	538	544	803	811	819	886	895	903	1372	1385	1399
		DuraPlate	357	364	475	480	484	737	744	752	900	909	918	1411	1426	1440
	11.2	None	194	198	221	223	225	294	297	300	322	326	329	526	532	537
		Shaft Fan	282	288	376	380	384	540	545	551	617	624	630	990	1000	1010
		Electric Fan	431	440	494	499	504	724	731	739	765	772	780	1295	1308	1321
		DuraPlate	323	329	375	379	383	699	706	713	821	829	837	1332	1346	1359
	12.5	None	194	198	218	220	222	286	289	292	318	322	325	540	546	551
		Shaft Fan	281	287	371	374	378	523	528	534	610	616	622	1004	1014	1024
		Electric Fan	428	437	486	491	496	701	708	715	755	763	770	1306	1320	1333
		DuraPlate	321	328	370	374	377	676	683	689	810	819	827	1344	1357	1371
	14.0	None	187	191	200	202	204	276	279	282	334	337	340	544	550	555
		Shaft Fan	271	276	340	343	347	504	509	514	630	637	643	975	985	994
		Electric Fan	412	420	445	450	454	674	681	688	777	785	793	1255	1267	1280
		DuraPlate	309	316	339	343	346	651	657	664	833	841	850	1061	1072	1082
	16.0	None	170	174	187	189	191	280	283	285	301	304	307	506	511	516
		Shaft Fan	246	251	319	322	325	503	508	513	558	564	569	914	923	932
		Electric Fan	374	381	418	423	427	669	676	683	686	693	700	1180	1192	1203
		DuraPlate	247	252	277	280	283	534	539	544	598	604	610	996	1006	1015
	18.0	None	170	173	185	186	188	270	273	276	300	301	302	516	521	527
		Shaft Fan	245	250	314	317	320	485	490	494	550	556	561	924	933	942
		Electric Fan	371	378	412	416	420	645	651	658	677	684	691	1188	1200	1212
		DuraPlate	246	251	273	276	278	514	520	525	590	596	602	1005	1015	1025
	20.0	None	164	167	174	175	177	259	262	264	309	312	315	521	526	531
		Shaft Fan	236	240	295	298	301	464	469	474	567	573	579	904	913	922
		Electric Fan	357	364	387	391	395	617	623	629	695	702	709	1150	1161	1173
		DuraPlate	237	241	257	259	262	493	497	502	608	614	620	1139	1150	1162
	22.4	None	154	157	197	199	201	257	260	263	330	334	337	483	488	493
		Shaft Fan	220	224	324	327	331	446	451	455	576	582	588	845	854	862
		Electric Fan	329	336	418	422	426	585	591	597	693	700	707	1080	1090	1101
		DuraPlate	201	206	259	262	264	409	413	418	531	536	542	1069	1080	1094
	25.0	None	154	157	194	196	198	249	251	254	324	328	331	528	533	538
		Shaft Fan	219	223	320	323	327	431	435	440	567	573	579	933	942	951
		Electric Fan	327	333	413	417	421	565	571	577	683	690	697	1197	1209	1221
		DuraPlate	201	205	256	258	261	395	399	403	523	528	533	1185	1197	1209
	28.0	None	148	151	181	183	185	239	241	244	338	341	345			530
		Shaft Fan	211	215	299	302	305	415	419	423	584	590	596			939
		Electric Fan	315	321	386	390	394	543	549	554	701	708	715			1207
		DuraPlate	193	197	239	241	243	380	384	388	539	544	550			1195

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperatures will vary based upon exact ambient conditions and load profile.

\* Contact Factory.

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## Type VP2 Parallel Shaft

# Basic Thermal Ratings ★ – Hp/Double Reduction Maximum 180°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175		
	5.00	None Shaft Fan Electric Fan DuraPlate												474 938 1481 2177	479 947 1496 2199	484 957 1511 2221	
	5.60	None Shaft Fan Electric Fan DuraPlate	226 300 513 414	230 306 523 422	251 395 589 578	253 399 595 583	256 403 601 589	316 551 855 875	319 557 864 883	322 562 872 892	305 584 857 992	308 590 865 1002	311 596 874 1011	474 914 1431 2094	479 923 1445 2115	484 933 1459 2136	
	6.30	None Shaft Fan Electric Fan DuraPlate	227 301 511 414	232 307 521 422	250 396 589 572	253 400 589 577	255 545 839 853	318 551 847 866	321 556 856 874	324 585 854 987	308 590 854 997	311 596 862 1007	315 960 871 2129	516 970 1474 2150	521 979 1489 2150	* 883 1428 1588	
	7.10	None Shaft Fan Electric Fan DuraPlate	222 293 495 401	226 298 505 410	241 375 554 543	243 378 560 549	246 382 565 549	313 533 815 833	317 538 824 841	320 544 832 850	342 626 899 1034	345 632 908 1044	348 639 917 1044	615 1031 1507 1044	621 1042 1522 1712	627 1052 1537 1729	489 936 1457 1610
	8.00	None Shaft Fan Electric Fan DuraPlate	213 280 473 332	217 286 482 338	249 380 557 453	252 384 562 458	254 388 568 462	345 560 834 693	348 566 843 700	351 571 851 707	367 627 877 797	371 633 885 805	374 640 894 813	579 973 1424 1619	585 982 1438 1635	591 992 1453 1652	596 1012 1491 1697
	9.00	None Shaft Fan Electric Fan DuraPlate	213 279 469 330	217 285 479 337	246 375 548 446	249 379 554 451	251 383 559 455	335 543 807 671	339 548 815 677	342 554 823 684	364 620 866 787	367 626 875 795	371 633 884 803	597 991 1439 1632	603 1001 1454 1648	609 1011 1468 1665	580 981 1444 1644
	10.0	None Shaft Fan Electric Fan DuraPlate	205 269 452 318	210 275 461 325	232 353 515 420	234 357 520 424	237 360 525 428	324 524 646 646	327 529 777 653	331 534 785 659	384 646 894 815	388 652 903 823	392 659 912 831	574 932 1342 1241	580 942 1355 1254	585 951 1369 1266	593 992 1448 1644
970	11.2	None Shaft Fan Electric Fan DuraPlate	185 243 408 285	189 247 416 291	214 325 328 336	216 328 331 339	218 331 465 342	287 465 470 604	290 474 474 610	293 542 707 616	326 542 749 719	329 547 757 727	332 553 764 734	536 874 1263 1167	541 883 1276 1179	546 892 1288 1191	564 923 1334 1233
	12.5	None Shaft Fan Electric Fan DuraPlate	185 242 405 284	188 246 413 290	211 320 466 330	213 323 471 333	215 326 476 337	278 450 676 583	281 454 676 589	284 534 683 595	321 534 739 709	324 539 746 716	327 545 754 723	547 886 1272 1177	553 895 1285 1189	558 904 1298 1201	543 889 1287 1189
	14.0	None Shaft Fan Electric Fan DuraPlate	178 233 390 273	181 237 397 279	194 293 427 303	196 296 431 306	198 299 435 309	269 433 644 561	271 437 651 567	274 442 657 573	335 552 760 730	339 558 767 737	342 563 775 744	530 844 1201 935	536 853 1213 944	541 861 1225 954	548 892 1284 1188
	16.0	None Shaft Fan Electric Fan DuraPlate	161 210 352 220	164 215 359 225	180 273 399 251	182 276 403 253	183 278 407 256	268 428 634 465	270 432 641 470	273 437 647 475	294 481 661 527	297 486 668 533	300 491 674 538	493 789 1128 875	497 797 1139 884	502 805 1151 882	523 837 1151 928
	18.0	None Shaft Fan Electric Fan DuraPlate	161 210 350 219	164 214 357 224	177 269 393 247	179 271 397 249	181 274 401 252	258 413 611 448	261 417 617 453	263 421 623 457	289 479 652 520	292 483 658 525	295 798 665 530	502 806 1136 884	507 814 1147 893	512 804 1158 902	501 804 1151 892
	20.0	None Shaft Fan Electric Fan DuraPlate	155 202 336 211	158 206 343 215	166 252 369 232	168 255 373 234	170 257 376 236	247 395 584 429	250 399 590 434	252 403 596 438	301 490 670 536	304 495 676 541	307 499 683 547	495 774 1088 979	500 782 1099 989	505 789 1110 999	504 805 1147 992
	22.4	None Shaft Fan Electric Fan DuraPlate	145 188 309 N/A	148 191 316 N/A	185 274 392 N/A	187 277 400 N/A	188 280 395 N/A	242 379 551 364	245 383 557 368	247 491 655 470	313 491 661 475	316 496 668 479	319 722 1021 917	459 501 668 479	463 729 1031 926	468 736 1041 935	489 767 1083 974
	25.0	None Shaft Fan Electric Fan DuraPlate	144 187 307 N/A	147 191 313 N/A	182 271 388 N/A	184 274 392 N/A	186 276 395 N/A	234 366 532 348	236 369 537 352	239 373 543 355	307 483 645 462	310 488 651 467	313 492 658 471	500 793 1130 1013	505 801 1141 1023	510 809 1152 1033	467 736 1041 935
	28.0	None Shaft Fan Electric Fan DuraPlate	139 180 296 N/A	142 184 302 N/A	170 253 362 N/A	171 255 366 N/A	173 258 369 N/A	225 351 511 335	227 355 516 338	229 358 522 341	320 499 662 477	323 504 669 482	326 509 675 487				502 798 1138 1020

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperatures will vary based upon exact ambient conditions and load profile.

\* Contact Factory.

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## Type VP2 Parallel Shaft

# Basic Thermal Ratings ★ – Hp/Double Reduction Maximum 180°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE												
			133	137	143	145	147	153	155	157	163	165	167	173	175
870	5.00	None												560	566
		Shaft Fan												948	958
		Electric Fan												1548	1563
		DuraPlate												1582	1598
8.00	5.60	None	224	228	255	257	260	331	334	337	343	346	350	545	550
		Shaft Fan	279	285	371	375	379	524	529	534	576	582	588	912	921
		Electric Fan	502	512	585	591	597	855	863	872	888	897	905	1481	1496
		DuraPlate	387	395	541	547	552	815	823	832	946	956	965	1513	1529
8.00	6.30	None	225	229	253	256	258	328	332	335	344	347	351	578	584
		Shaft Fan	280	286	368	371	375	515	520	525	574	580	585	947	956
		Electric Fan	499	509	577	583	589	834	842	851	881	890	899	1513	1528
		DuraPlate	386	394	534	540	545	796	804	812	939	948	958	1545	1560
8.00	7.10	None	218	223	242	244	247	321	325	328	373	376	380	631	637
		Shaft Fan	272	277	350	353	357	501	506	511	609	615	621	974	984
		Electric Fan	483	493	547	552	558	808	816	824	920	930	939	1497	1512
		DuraPlate	374	382	506	511	516	772	779	787	979	989	998	1586	1602
8.00	8.00	None	207	212	246	248	251	342	345	348	375	379	383	591	597
		Shaft Fan	258	263	351	355	358	518	523	528	589	595	601	915	924
		Electric Fan	459	468	545	550	556	816	824	832	873	881	890	1411	1425
		DuraPlate	310	316	424	428	432	642	648	655	749	756	764	1496	1511
8.00	9.00	None	207	211	242	245	247	332	335	338	370	374	378	607	613
		Shaft Fan	257	262	346	350	353	501	506	511	582	588	593	931	940
		Electric Fan	455	464	536	541	547	788	796	803	861	870	878	1423	1438
		DuraPlate	308	315	417	421	425	621	627	633	739	746	754	1507	1523
8.00	10.0	None	200	204	228	230	233	320	323	326	390	393	397	570	576
		Shaft Fan	248	253	325	328	332	483	487	492	605	611	617	865	874
		Electric Fan	438	447	503	508	513	758	765	773	887	896	905	1314	1340
		DuraPlate	297	303	392	396	399	597	603	609	764	772	779	1151	1174
8.00	11.2	None	179	183	209	211	213	281	284	287	323	326	330	531	537
		Shaft Fan	222	227	298	301	304	426	430	434	500	505	510	809	817
		Electric Fan	395	403	462	467	471	673	680	687	735	743	750	1235	1248
		DuraPlate	265	271	315	318	321	554	560	566	664	671	678	1080	1091
8.00	12.5	None	179	182	206	208	210	272	275	277	318	321	324	542	547
		Shaft Fan	222	226	293	296	299	411	416	420	493	497	502	820	828
		Electric Fan	392	399	454	459	463	650	656	663	724	732	739	1090	1101
		DuraPlate	264	269	309	312	315	535	541	546	661	668	674	654	668
8.00	14.0	None	172	176	189	191	193	262	265	267	332	335	338	518	523
		Shaft Fan	213	218	269	272	274	396	400	404	510	515	520	776	783
		Electric Fan	377	384	415	420	424	625	631	637	745	752	760	1167	1179
		DuraPlate	254	259	284	286	289	515	520	526	674	681	688	877	886
8.00	16.0	None	155	158	175	177	178	259	262	265	288	290	293	481	486
		Shaft Fan	192	196	250	252	255	390	394	398	441	445	450	723	731
		Electric Fan	340	347	388	392	396	613	620	626	645	651	658	1095	1106
		DuraPlate	207	211	237	239	242	430	434	439	491	496	501	812	820
8.00	18.0	None	155	158	172	174	176	250	253	255	283	286	288	490	495
		Shaft Fan	192	196	246	248	251	376	380	383	434	439	443	733	740
		Electric Fan	338	344	382	385	389	591	596	602	635	642	648	1102	1113
		DuraPlate	206	210	233	235	238	414	418	422	484	493	499	821	829
8.00	20.0	None	149	152	162	163	165	240	242	245	295	298	300	479	484
		Shaft Fan	185	188	230	233	235	360	364	367	449	454	458	708	715
		Electric Fan	325	331	358	362	365	565	570	576	653	660	666	1052	1063
		DuraPlate	198	202	219	221	223	397	401	405	500	505	510	900	918
8.00	22.4	None	138	141	178	180	181	234	236	238	302	305	308	444	448
		Shaft Fan	171	174	249	252	254	345	348	352	448	452	457	659	665
		Electric Fan	297	303	378	382	386	532	537	542	633	645	649	986	996
		DuraPlate	N/A	N/A	N/A	N/A	N/A	336	340	343	N/A	N/A	N/A	841	849
8.00	25.0	None	138	141	175	177	179	225	228	230	296	299	302	483	488
		Shaft Fan	170	173	246	249	251	333	336	339	440	444	449	723	730
		Electric Fan	295	301	373	377	381	513	518	523	623	629	635	1091	1101
		DuraPlate	N/A	N/A	N/A	N/A	N/A	325	328	331	N/A	N/A	N/A	927	936
8.00	28.0	None	133	136	163	165	166	217	219	221	309	312	315		485
		Shaft Fan	164	167	229	232	234	320	323	326	455	460	464		727
		Electric Fan	284	290	349	352	356	493	498	503	640	646	652		1099
		DuraPlate	N/A	N/A	N/A	N/A	N/A	312	315	318	N/A	N/A	N/A		933

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

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\* Contact Factory.

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## Type VP3 Parallel Shaft

# Basic Thermal Ratings ★ – Hp/Triple Reduction Maximum 200°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE												
			133	137	143	145	147	153	155	157	163	165	167	173	175
28.0	None													300	301
	Shaft Fan													793	801
	Electric Fan													793	808
	DuraPlate													836	845
31.5	None	123	126	144	145	146	181	182	184	202	204	206	281	284	286
	Shaft Fan	229	233	317	321	324	437	441	445	389	393	397	752	759	767
	Electric Fan	306	312	320	323	326	449	453	458	487	492	497	751	759	766
	DuraPlate	293	299	346	349	353	441	445	450	537	542	548	793	801	834
35.5	None	123	126	142	143	144	176	178	179	200	201	203	286	289	291
	Shaft Fan	228	233	313	316	319	425	429	433	384	387	391	758	766	773
	Electric Fan	304	310	315	318	321	436	441	445	480	485	490	758	765	773
	DuraPlate	291	297	341	344	348	429	433	437	529	534	540	799	807	808
40.0	None	120	122	134	136	137	171	173	174	207	209	211	277	280	283
	Shaft Fan	222	226	297	300	303	412	417	421	395	399	403	723	730	738
	Electric Fan	295	301	299	302	305	424	428	432	494	498	503	723	730	737
	DuraPlate	283	289	323	327	330	416	421	425	543	548	554	605	611	807
45.0	None	110	112	125	126	127	169	170	172	188	190	192	261	263	266
	Shaft Fan	203	208	278	280	283	406	410	414	358	362	366	684	690	697
	Electric Fan	272	277	280	282	285	417	422	426	448	452	457	683	690	720
	DuraPlate	212	216	246	248	251	333	336	339	394	398	402	572	577	583
50.0	None	110	112	123	125	125	164	166	167	185	187	189	265	268	271
	Shaft Fan	203	207	273	276	279	394	398	402	353	356	360	690	697	704
	Electric Fan	270	276	275	278	281	405	409	413	441	446	450	690	697	703
	DuraPlate	211	215	242	244	247	323	326	330	389	392	396	578	584	582
56.0	None	107	109	117	118	119	158	160	162	192	194	196	274	277	279
	Shaft Fan	197	201	259	262	265	379	383	387	364	368	371	669	676	683
	Electric Fan	262	267	261	264	266	390	394	398	454	458	463	669	676	696
	DuraPlate	205	209	230	232	234	311	314	318	400	404	408	N/A	N/A	583
63.0	None	94	96	110	111	112	154	156	157	178	180	181	257	260	262
	Shaft Fan	175	178	242	244	247	362	365	369	327	331	334	633	639	645
	Electric Fan	234	239	244	246	248	371	375	379	406	410	414	632	639	645
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	302	305	308	N/A	N/A	N/A
71.0	None	94	96	108	109	110	150	152	153	175	177	178	262	264	267
	Shaft Fan	174	178	238	241	243	351	355	358	322	326	329	638	645	645
	Electric Fan	233	238	240	242	245	361	364	368	400	404	408	638	645	644
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	297	300	303	N/A	N/A	N/A
80.0	None	91	93	103	104	105	145	146	148	181	183	185	255	258	260
	Shaft Fan	169	173	226	228	230	338	342	345	333	336	339	618	624	644
	Electric Fan	226	231	228	230	232	347	351	354	411	415	419	618	624	630
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	307	310	313	N/A	N/A	N/A
90.0	None	86	88	104	105	106	143	144	146	175	177	179	239	242	253
	Shaft Fan	160	163	229	231	233	334	337	340	321	324	327	582	588	594
	Electric Fan	214	219	230	232	235	343	346	350	396	400	404	582	588	614
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
100	None	86	88	103	104	105	139	140	142	172	174	175	243	246	248
	Shaft Fan	160	163	225	227	230	324	327	330	315	318	321	588	594	600
	Electric Fan	213	217	227	229	231	333	336	339	389	393	397	588	594	593
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
112	None	84	85	97	98	99	134	136	137	179	181	183	252	254	245
	Shaft Fan	155	158	212	215	217	312	315	318	326	329	332	590	596	602
	Electric Fan	207	211	214	216	218	320	324	327	402	406	410	590	596	593
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
125	None	78	79	100	101	102	135	137	138	170	172	174	235	237	249
	Shaft Fan	144	147	217	219	221	308	311	315	306	309	312	554	560	586
	Electric Fan	193	197	218	220	222	317	320	323	376	380	384	554	560	585
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
140	None	78	79	98	99	100	131	132	134	167	169	170	241	244	239
	Shaft Fan	144	147	213	215	217	299	302	305	300	303	306	567	573	564
	Electric Fan	192	196	215	217	219	307	310	313	369	373	377	567	573	578
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
160	None	76	77	92	93	94	127	128	129	174	176	178			243
	Shaft Fan	140	142	201	203	205	289	292	295	311	314	317			571
	Electric Fan	186	190	202	204	206	297	300	303	382	385	389			571
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperatures will vary based upon exact ambient conditions and load profile.

\* Contact Factory.

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## Type VP3 Parallel Shaft

# Basic Thermal Ratings ★ – Hp/Triple Reduction Maximum 200°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
1430	28.0	None												325	326	329	
		Shaft Fan												702	709	716	
		Electric Fan												801	809	817	
	31.5	DuraPlate												748	756	763	
		None	117	120	139	140	141	177	179	181	208	210	212	304	307	310	320
		Shaft Fan	192	196	267	270	273	368	372	376	344	348	351	664	670	677	699
	35.5	Electric Fan	289	295	305	308	311	430	434	439	481	486	490	758	765	773	798
		DuraPlate	249	254	296	299	302	379	383	386	470	475	479	708	715	722	746
		None	117	119	137	138	139	172	174	176	205	207	209	309	312	315	309
	40.0	Shaft Fan	192	196	263	266	268	358	362	365	339	342	346	670	677	683	676
		Electric Fan	287	293	301	304	307	418	422	426	474	478	483	764	772	779	773
		DuraPlate	248	253	291	294	297	368	372	376	463	468	472	714	722	729	722
	45.0	None	114	116	130	131	132	168	169	171	212	214	216	300	300	301	311
		Shaft Fan	186	190	250	252	255	348	352	355	350	353	357	635	641	647	677
		Electric Fan	279	285	285	288	291	406	410	414	487	492	496	723	730	738	772
	45.0	DuraPlate	241	246	276	279	282	358	361	365	476	481	485	555	560	566	721
		None	104	106	120	121	122	164	166	168	190	192	194	277	279	282	292
		Shaft Fan	171	174	233	235	237	342	345	349	314	317	320	599	605	611	631
	50.0	Electric Fan	257	262	266	269	271	399	403	407	438	443	447	683	690	697	720
		DuraPlate	184	187	214	216	218	293	296	298	352	356	359	523	528	533	551
		None	104	106	118	119	121	160	161	163	187	189	191	281	284	287	282
	50.0	Shaft Fan	170	174	229	231	234	332	335	338	309	312	315	605	611	617	610
		Electric Fan	255	260	262	265	267	387	391	395	432	436	440	689	696	703	696
		DuraPlate	183	187	211	213	215	284	287	290	347	350	354	529	534	540	533
	56.0	None	101	103	112	113	114	154	156	157	194	196	198	272	275	277	283
		Shaft Fan	165	169	217	219	222	319	323	326	319	322	326	570	576	582	610
		Electric Fan	248	253	248	251	253	373	376	380	444	448	453	648	655	661	696
	56.0	DuraPlate	178	181	200	202	204	274	277	279	358	361	365	N/A	N/A	N/A	534
		None	89	90	103	104	105	147	148	150	172	174	176	255	258	260	269
		Shaft Fan	146	149	200	202	204	301	304	307	280	283	286	538	543	549	567
	63.0	Electric Fan	221	225	229	231	234	351	355	358	388	392	396	612	618	624	645
		DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	269	272	274	N/A	N/A	N/A	N/A	
		None	89	90	102	103	104	143	144	146	170	171	173	260	262	265	260
	71.0	Shaft Fan	146	149	197	199	201	293	295	298	276	279	281	544	549	554	548
		Electric Fan	220	224	225	228	230	341	344	348	382	386	390	618	624	630	623
		DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	265	267	270	N/A	N/A	N/A	N/A	
	80.0	None	86	88	96	97	98	138	139	141	176	178	180	252	255	257	261
		Shaft Fan	142	144	187	189	190	282	285	288	285	288	291	525	531	536	548
		Electric Fan	213	218	214	216	218	328	331	335	394	398	401	597	603	609	623
	80.0	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	274	276	279	N/A	N/A	N/A	N/A	
		None	81	83	98	99	100	136	137	139	170	172	173	236	238	241	249
		Shaft Fan	134	137	189	191	193	278	281	284	275	278	281	494	499	504	522
	90.0	Electric Fan	202	206	216	218	221	324	327	331	380	384	387	562	567	573	593
		DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		None	82	83	96	97	98	132	133	135	167	169	170	240	243	245	240
	100	Shaft Fan	134	137	186	188	190	270	273	275	278	273	276	500	505	510	503
		Electric Fan	201	205	213	215	217	314	318	321	373	377	381	568	573	579	572
		DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	112	None	79	81	91	92	93	128	129	130	174	176	177	240	243	245	242
		Shaft Fan	130	133	176	177	179	260	263	265	280	283	286	494	499	503	504
		Electric Fan	195	199	201	203	205	303	306	309	385	389	393	560	565	571	572
	125	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		None	73	74	94	95	95	126	127	128	159	161	162	224	226	229	237
		Shaft Fan	120	122	176	178	180	246	249	251	254	256	261	463	472	489	489
	140	Electric Fan	181	184	202	204	206	286	289	292	346	350	353	537	543	548	535
		DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		None	71	72	87	88	88	118	119	120	163	165	166				231
	160	Shaft Fan	116	119	166	168	169	239	241	243	261	264	266				477
		Electric Fan	175	179	190	192	194	277	280	283	358	362	366				541
		DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperatures will vary based upon exact ambient conditions and load profile.

\* Contact Factory.

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## Type VP3 Parallel Shaft

# Basic Thermal Ratings ★ – Hp/Triple Reduction Maximum 200°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE													
			133	137	143	145	147	153	155	157	163	165	167	173	175	
28.0	None													326	329	333
	Shaft Fan													589	595	601
	Electric Fan													777	785	793
	DuraPlate													642	649	655
31.5	None	108	110	130	132	133	168	170	171	203	205	207	307	310	313	323
	Shaft Fan	155	158	216	218	220	298	301	304	291	293	296	556	561	567	586
	Electric Fan	267	273	286	288	291	402	406	410	459	464	469	735	742	749	774
	DuraPlate	204	208	244	247	249	315	318	321	396	400	404	607	613	619	639
35.5	None	108	110	128	130	131	163	185	167	200	202	204	312	315	318	312
	Shaft Fan	155	158	213	215	217	289	292	295	286	289	292	562	568	573	566
	Electric Fan	266	271	281	284	287	391	395	399	452	457	461	741	748	756	749
	DuraPlate	203	207	240	243	245	306	309	312	390	394	398	613	619	625	618
40.0	None	105	107	122	123	124	159	160	162	207	210	212	294	297	300	314
	Shaft Fan	150	153	202	204	206	281	284	287	295	298	301	529	535	540	567
	Electric Fan	258	263	266	269	272	380	383	387	465	470	474	698	705	712	748
	DuraPlate	198	201	228	230	232	297	300	303	402	406	410	488	492	497	618
45.0	None	96	98	112	113	115	155	157	158	184	186	188	276	279	281	291
	Shaft Fan	137	140	187	189	191	276	278	281	263	266	269	499	503	508	526
	Electric Fan	237	242	248	251	253	373	377	380	416	421	425	658	665	672	695
	DuraPlate	154	157	180	182	184	249	251	254	304	307	310	459	463	468	484
50.0	None	96	98	111	112	113	151	152	154	181	183	185	280	283	286	281
	Shaft Fan	137	140	184	186	188	267	270	273	259	262	264	504	509	514	508
	Electric Fan	236	241	244	247	249	362	365	369	410	414	418	664	671	678	671
	DuraPlate	154	157	177	179	181	242	244	247	299	302	305	465	469	474	467
56.0	None	93	95	105	106	107	146	147	149	188	190	192	260	263	265	282
	Shaft Fan	133	136	175	176	178	258	260	263	268	271	273	465	470	474	509
	Electric Fan	229	234	231	234	236	348	351	355	422	426	430	612	618	624	671
	DuraPlate	149	152	168	170	171	233	235	238	309	312	315	N/A	N/A	N/A	468
63.0	None	82	84	96	97	98	135	137	138	163	164	166	244	247	249	258
	Shaft Fan	118	120	160	162	163	240	242	244	231	233	236	438	442	446	461
	Electric Fan	205	209	213	215	217	324	327	330	364	367	371	577	583	588	608
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
71.0	None	82	84	95	95	96	132	133	134	160	161	163	248	251	253	248
	Shaft Fan	118	120	158	159	161	233	235	237	227	229	232	443	447	452	446
	Electric Fan	204	208	209	211	213	314	317	321	358	361	365	583	588	594	588
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
80.0	None	80	81	90	91	91	127	128	130	166	168	169	240	243	245	250
	Shaft Fan	114	117	149	151	152	224	227	229	235	238	240	428	432	437	446
	Electric Fan	198	202	198	200	202	303	306	309	369	372	376	563	568	574	588
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
90.0	None	75	77	91	92	93	125	127	128	161	162	164	225	227	229	238
	Shaft Fan	108	110	151	153	154	222	224	226	227	230	232	402	406	410	424
	Electric Fan	187	191	201	203	205	299	302	305	356	360	363	529	534	539	559
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
100	None	76	77	89	90	91	122	123	124	158	159	161	229	231	233	229
	Shaft Fan	108	110	149	150	152	215	217	219	223	225	228	407	411	415	409
	Electric Fan	187	190	198	199	201	290	293	296	350	353	357	535	540	545	539
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
112	None	73	75	84	85	86	118	119	120	164	166	168	222	224	226	230
	Shaft Fan	105	107	141	142	143	207	209	212	232	234	236	394	398	402	410
	Electric Fan	181	185	186	188	190	280	283	285	361	365	369	518	523	529	539
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
125	None	67	68	86	87	88	116	117	118	148	150	151	207	209	211	219
	Shaft Fan	96	98	143	144	146	203	205	207	209	211	214	369	372	376	390
	Electric Fan	167	170	189	191	193	272	275	278	328	331	335	485	490	495	513
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
140	None	67	69	85	86	86	112	113	114	145	147	148	212	214	216	210
	Shaft Fan	96	98	140	142	143	196	198	200	205	207	209	378	381	385	375
	Electric Fan	167	170	186	188	190	264	267	269	322	325	328	497	502	507	494
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
160	None	65	67	80	81	81	109	110	111	152	153	155				213
	Shaft Fan	93	95	132	134	135	190	192	194	214	216	218				380
	Electric Fan	162	165	175	177	178	255	258	261	333	337	340				500
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperatures will vary based upon exact ambient conditions and load profile.

\* Contact Factory.

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## Type VP3 Parallel Shaft

# Basic Thermal Ratings ★ – Hp/Triple Reduction Maximum 200°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
28.0	None													317	320	323	
	Shaft Fan													505	510	515	
	Electric Fan													744	752	759	
	DuraPlate													563	569	574	
31.5	None	101	104	122	123	125	157	158	160	195	197	200	298	301	304	314	
	Shaft Fan	131	133	181	183	185	248	250	253	251	254	256	476	481	485	502	
	Electric Fan	251	256	268	271	273	376	380	384	437	441	445	703	710	717	741	
	DuraPlate	175	179	212	214	216	270	273	275	344	348	351	531	536	541	560	
35.5	None	101	103	120	121	123	153	154	156	192	194	196	303	306	309	303	
	Shaft Fan	131	133	178	180	182	241	244	246	247	249	252	482	487	491	485	
	Electric Fan	250	255	264	266	269	366	369	373	430	434	438	709	716	723	716	
	DuraPlate	175	178	208	210	212	263	265	268	339	342	346	537	542	547	541	
40.0	None	99	101	114	115	116	148	150	151	199	201	203	284	287	290	305	
	Shaft Fan	127	129	169	171	172	234	237	239	256	258	261	453	457	462	486	
	Electric Fan	242	247	250	252	255	355	358	362	442	446	451	667	674	680	716	
	DuraPlate	170	173	197	199	201	255	258	260	350	353	357	435	440	444	541	
45.0	None	90	92	105	106	107	145	147	148	176	178	180	267	269	272	281	
	Shaft Fan	116	118	156	158	159	230	232	234	227	229	231	425	430	434	449	
	Electric Fan	223	227	232	235	237	349	352	356	395	399	403	628	635	641	663	
	DuraPlate	135	137	158	160	162	218	220	222	268	271	274	409	413	417	432	
50.0	None	90	92	103	104	105	141	142	144	173	175	176	271	274	276	271	
	Shaft Fan	116	118	154	155	157	223	225	227	223	225	227	431	435	440	433	
	Electric Fan	222	226	229	231	233	338	342	345	388	392	396	634	641	647	640	
	DuraPlate	134	137	156	158	159	211	213	215	264	266	269	415	419	423	417	
56.0	None	87	89	98	99	100	136	138	139	180	182	183	245	247	249	273	
	Shaft Fan	112	115	146	147	149	215	217	219	231	233	236	390	394	397	434	
	Electric Fan	215	219	217	219	221	326	329	332	400	404	408	575	581	587	640	
	DuraPlate	131	133	148	149	151	204	206	208	273	276	279	N/A	N/A	N/A	418	
63.0	None	77	78	90	91	92	127	128	130	152	154	155	229	231	234	242	
	Shaft Fan	99	101	134	135	137	200	202	204	196	198	200	366	370	373	386	
	Electric Fan	192	196	199	201	203	303	306	309	341	344	348	542	547	553	572	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
71.0	None	77	78	89	89	90	123	125	126	149	151	152	233	235	238	233	
	Shaft Fan	99	101	132	133	134	194	196	198	192	194	196	371	375	379	373	
	Electric Fan	191	195	196	198	200	294	297	300	335	339	342	548	553	559	552	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
80.0	None	75	76	84	85	86	119	120	122	155	157	159	226	228	230	235	
	Shaft Fan	96	98	125	126	127	188	189	191	200	202	204	359	363	366	374	
	Electric Fan	185	189	186	188	189	284	286	289	346	349	353	529	534	540	552	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
90.0	None	71	72	85	86	87	118	119	120	151	152	154	211	213	215	223	
	Shaft Fan	91	93	127	128	129	185	187	189	193	195	197	336	340	343	355	
	Electric Fan	176	179	188	190	192	281	284	286	334	338	341	497	502	507	525	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
100	None	71	72	84	85	85	114	115	117	148	149	151	215	217	219	215	
	Shaft Fan	91	93	124	126	127	180	182	183	190	192	193	341	345	348	342	
	Electric Fan	175	179	185	187	189	272	275	278	328	332	335	508	513	516	506	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
112	None	69	70	79	80	81	110	111	113	154	156	157	209	211	213	216	
	Shaft Fan	89	90	117	119	120	173	175	177	197	199	201	331	334	337	343	
	Electric Fan	170	173	174	176	178	262	265	268	340	343	346	487	492	497	506	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
125	None	62	64	80	81	82	108	109	110	139	140	141	194	196	198	206	
	Shaft Fan	81	82	119	120	121	169	170	172	178	180	181	309	312	315	327	
	Electric Fan	156	159	177	178	180	254	257	259	308	311	314	456	461	465	482	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
140	None	63	64	79	80	80	104	105	106	136	137	139	199	201	203	197	
	Shaft Fan	81	82	117	118	119	163	165	167	174	176	178	317	320	323	314	
	Electric Fan	156	159	174	175	177	246	249	251	302	305	308	467	471	476	464	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
160	None	61	62	74	75	76	101	102	103	142	144	145				200	
	Shaft Fan	78	80	110	111	112	158	160	161	182	184	186				318	
	Electric Fan	151	154	163	165	167	238	241	243	313	316	319				470	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperatures will vary based upon exact ambient conditions and load profile.

\* Contact Factory.

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## Type VP3 Parallel Shaft

# Basic Thermal Ratings ★ – Hp/Triple Reduction Maximum 200°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE													
			133	137	143	145	147	153	155	157	163	165	167	173	175	
870	28.0	None												309	312	315
		Shaft Fan												461	466	471
		Electric Fan												723	730	737
		DuraPlate												522	527	532
	31.5	None	98	100	118	119	120	151	153	154	189	191	193	290	293	296
		Shaft Fan	119	121	164	166	167	224	227	229	231	233	235	434	439	443
		Electric Fan	242	247	259	261	264	363	366	370	423	427	431	682	689	696
		DuraPlate	161	164	195	196	198	249	252	254	318	321	324	491	496	501
	35.5	None	98	99	116	117	118	147	149	150	186	188	190	295	298	301
		Shaft Fan	119	121	162	163	165	218	220	223	227	229	231	440	444	449
		Electric Fan	240	245	254	257	260	352	356	359	416	420	424	688	695	702
		DuraPlate	161	164	191	193	195	242	245	247	313	316	319	497	502	501
870	40.0	None	95	97	110	111	112	143	145	146	193	195	197	277	279	282
		Shaft Fan	115	118	153	155	156	212	214	216	235	237	240	413	417	421
		Electric Fan	233	238	241	243	246	342	345	349	428	432	436	647	653	660
		DuraPlate	156	159	181	183	185	235	238	240	323	326	329	N/A	N/A	501
	45.0	None	86	88	101	102	103	140	141	143	170	172	174	259	262	264
		Shaft Fan	105	107	141	143	144	208	210	212	208	210	212	388	392	395
		Electric Fan	214	219	224	226	228	336	340	343	381	385	389	609	615	621
		DuraPlate	125	127	147	148	150	202	204	206	N/A	N/A	N/A	N/A	N/A	N/A
	50.0	None	86	88	100	101	102	136	137	139	167	169	171	264	266	269
		Shaft Fan	105	107	139	141	142	202	204	206	204	206	208	393	397	401
		Electric Fan	213	218	220	223	225	326	329	333	375	379	383	615	621	627
		DuraPlate	125	127	145	146	147	196	198	200	N/A	N/A	N/A	N/A	N/A	N/A
	56.0	None	84	86	94	95	96	131	133	134	174	176	178	237	239	242
		Shaft Fan	102	104	132	133	134	194	196	198	212	214	216	354	358	361
		Electric Fan	207	211	209	211	213	314	317	320	387	391	394	557	562	568
		DuraPlate	121	124	137	138	140	189	191	193	N/A	N/A	N/A	N/A	N/A	N/A
870	63.0	None	74	75	86	87	88	122	123	124	147	148	150	222	224	226
		Shaft Fan	90	92	121	122	123	181	182	184	179	181	183	332	336	339
		Electric Fan	184	188	192	194	196	292	295	298	329	332	335	524	529	534
		DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	71.0	None	74	75	85	86	87	119	120	121	144	146	147	226	228	230
		Shaft Fan	90	92	119	120	121	175	177	179	176	178	179	337	341	344
		Electric Fan	184	187	189	191	192	283	286	289	323	327	330	529	535	538
		DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	80.0	None	72	73	81	81	82	115	116	117	150	152	153	219	221	223
		Shaft Fan	87	89	113	114	115	169	171	173	183	185	186	326	329	333
		Electric Fan	178	182	179	180	182	273	275	278	334	337	340	512	517	522
		DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
870	90.0	None	68	69	82	83	83	113	114	115	145	147	148	204	206	208
		Shaft Fan	83	84	114	115	117	167	169	171	177	179	181	305	308	311
		Electric Fan	169	172	181	183	185	270	273	276	323	326	329	480	485	490
		DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	100	None	68	69	80	81	82	110	111	112	143	144	145	208	210	212
		Shaft Fan	83	84	112	113	115	162	164	166	174	175	177	310	313	316
		Electric Fan	169	172	178	180	182	262	265	267	317	320	323	486	491	496
		DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	112	None	66	67	76	77	77	106	107	108	149	150	152	201	203	205
		Shaft Fan	80	82	106	107	108	157	158	160	181	183	185	299	302	305
		Electric Fan	163	167	168	169	171	252	255	257	328	331	335	470	474	479
		DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
870	125	None	60	61	77	78	78	103	104	105	133	135	136	187	189	191
		Shaft Fan	73	74	107	108	109	152	153	155	162	164	165	279	282	285
		Electric Fan	150	153	170	171	173	244	246	249	296	302	304	444	448	465
		DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	140	None	60	61	76	76	77	100	101	102	131	132	133	192	194	196
		Shaft Fan	73	75	105	107	108	147	149	150	159	160	162	286	289	292
		Electric Fan	150	153	167	168	170	236	239	241	290	293	296	450	454	467
		DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	160	None	58	59	71	72	73	97	98	99	137	138	139			193
		Shaft Fan	71	72	99	100	101	142	144	145	166	168	169			287
		Electric Fan	145	148	157	158	160	229	231	233	301	304	307			452
		DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperatures will vary based upon exact ambient conditions and load profile.

\* Contact Factory.

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## Type VP3 Parallel Shaft

# Basic Thermal Ratings ★ – Hp/Triple Reduction Maximum 180°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE												
			133	137	143	145	147	153	155	157	163	165	167	173	175
28.0	None													166	168
	Shaft Fan													580	586
	Electric Fan													580	586
	DuraPlate													605	611
31.5	None	95	97	107	108	109	129	130	131	130	131	132	132	157	158
	Shaft Fan	189	193	259	262	264	353	357	360	289	292	295	295	550	555
	Electric Fan	255	260	261	264	266	364	368	371	373	377	380	380	550	555
	DuraPlate	240	245	279	282	285	350	354	357	406	411	415	573	579	585
35.5	None	95	97	106	107	108	126	127	128	128	129	130	161	162	164
	Shaft Fan	188	192	255	258	260	344	347	350	285	288	291	291	556	562
	Electric Fan	254	259	257	260	263	354	358	361	368	371	375	375	556	562
	DuraPlate	239	244	275	278	280	341	344	348	401	405	409	409	580	585
40.0	None	93	95	101	102	103	122	123	125	133	135	136	165	166	168
	Shaft Fan	183	187	243	245	247	334	337	341	295	298	301	301	540	545
	Electric Fan	247	252	245	247	249	344	348	351	379	383	386	386	540	545
	DuraPlate	232	237	261	264	266	331	335	338	412	416	421	421	436	441
45.0	None	85	87	94	95	96	122	124	125	125	126	128	154	156	158
	Shaft Fan	168	172	227	230	232	330	333	337	271	274	277	277	510	515
	Electric Fan	228	232	229	232	234	340	344	347	348	351	355	355	510	515
	DuraPlate	172	176	196	198	200	261	264	267	296	299	302	302	408	412
50.0	None	85	87	92	93	94	119	120	121	123	124	126	158	159	161
	Shaft Fan	168	171	224	226	228	321	324	327	267	270	273	273	516	521
	Electric Fan	226	231	226	228	230	330	334	337	343	346	350	350	516	521
	DuraPlate	172	175	193	195	197	254	257	259	292	295	297	413	417	421
56.0	None	83	85	88	89	90	115	116	117	128	130	131	192	194	196
	Shaft Fan	163	166	213	215	217	309	312	315	279	282	285	282	533	538
	Electric Fan	220	224	214	217	219	318	321	325	357	360	360	360	533	538
	DuraPlate	167	170	184	185	187	245	247	250	301	304	307	N/A	N/A	417
63.0	None	73	75	85	86	87	118	119	120	131	132	133	180	182	184
	Shaft Fan	145	148	201	203	205	301	304	307	262	264	267	267	504	509
	Electric Fan	196	200	202	204	207	310	313	316	329	333	336	336	504	514
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	235	237	240	N/A	N/A	N/A
71.0	None	73	75	84	85	85	115	116	117	129	130	131	184	185	187
	Shaft Fan	145	147	198	200	202	292	295	298	258	260	263	263	509	514
	Electric Fan	196	200	199	201	203	301	304	307	324	328	331	331	509	514
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	231	234	236	N/A	N/A	N/A
80.0	None	71	73	79	80	81	111	112	113	134	135	137	182	184	185
	Shaft Fan	140	143	188	190	192	282	285	287	266	269	272	272	495	500
	Electric Fan	190	194	189	191	193	290	293	296	334	338	341	341	495	500
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	239	242	244	N/A	N/A	N/A
90.0	None	67	69	81	82	82	110	111	112	129	130	132	170	172	174
	Shaft Fan	133	136	190	192	194	278	281	284	256	259	262	466	471	476
	Electric Fan	180	183	192	194	195	286	289	292	322	325	328	467	471	476
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
100	None	67	69	80	80	81	107	108	109	127	128	129	173	175	177
	Shaft Fan	133	135	187	189	191	270	273	275	252	255	257	472	477	481
	Electric Fan	179	183	189	191	192	278	281	283	316	320	323	472	477	475
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
112	None	65	67	75	76	77	103	104	105	132	134	135	193	195	197
	Shaft Fan	129	131	177	179	180	260	263	265	261	264	266	488	493	498
	Electric Fan	174	177	178	180	182	268	270	273	327	330	333	489	493	498
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
125	None	61	63	79	79	80	107	108	109	133	134	135	180	182	183
	Shaft Fan	121	123	182	183	185	261	264	266	253	255	258	459	463	468
	Electric Fan	163	166	183	185	187	269	271	274	314	317	320	459	463	468
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
140	None	62	63	77	78	79	104	105	106	130	131	133	185	187	188
	Shaft Fan	120	123	179	181	182	253	256	258	248	250	253	470	474	476
	Electric Fan	162	166	180	182	184	260	263	266	308	311	314	470	474	476
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
160	None	60	61	73	74	74	100	101	102	136	137	139			186
	Shaft Fan	117	119	168	170	172	245	248	250	257	260	262			473
	Electric Fan	158	161	170	172	173	252	255	257	319	322	325			473
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperatures will vary based upon exact ambient conditions and load profile.

\* Contact Factory.

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## Type VP3 Parallel Shaft

# Basic Thermal Ratings ★ – Hp/Triple Reduction Maximum 180°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
28.0	None													216	218	221	
	Shaft Fan													541	547	552	
	Electric Fan													626	632	639	
	DuraPlate													571	577	582	
31.5	None	92	94	107	108	109	133	135	136	148	149	151	204	206	208	214	
	Shaft Fan	159	162	220	222	224	302	305	309	267	270	273	512	517	522	539	
	Electric Fan	243	248	253	256	258	356	360	364	384	388	392	593	599	605	624	
	DuraPlate	204	208	241	243	246	306	309	312	368	372	375	540	546	551	568	
35.5	None	92	94	105	106	107	130	131	132	145	147	148	208	210	212	207	
	Shaft Fan	159	162	217	219	221	294	297	300	263	266	269	518	523	528	522	
	Electric Fan	242	247	249	252	254	347	350	354	379	383	386	599	605	611	604	
	DuraPlate	203	207	237	240	242	298	301	304	363	366	370	546	552	557	550	
40.0	None	89	91	100	101	102	126	127	129	151	153	154	202	204	206	209	
	Shaft Fan	154	158	206	208	210	286	289	292	272	275	277	495	500	505	523	
	Electric Fan	235	240	237	239	241	337	340	343	390	394	398	571	577	583	604	
	DuraPlate	198	202	225	228	230	290	292	295	373	377	381	418	423	427	551	
45.0	None	82	83	92	93	94	125	126	127	138	139	140	190	192	194	200	
	Shaft Fan	142	144	192	194	196	281	284	287	246	249	251	467	472	477	492	
	Electric Fan	216	220	221	223	225	331	335	338	353	357	360	540	545	550	569	
	DuraPlate	149	152	172	174	175	233	236	238	273	276	279	394	398	402	416	
50.0	None	82	83	91	92	93	121	122	124	135	137	138	193	195	197	193	
	Shaft Fan	141	144	189	191	193	273	276	279	243	245	247	473	478	482	476	
	Electric Fan	215	219	218	220	222	322	325	328	348	351	355	545	551	556	550	
	DuraPlate	149	152	169	171	173	227	229	231	269	272	274	400	404	408	402	
56.0	None	80	81	86	87	88	117	118	120	141	142	144	202	204	206	195	
	Shaft Fan	137	140	179	181	183	263	266	269	251	253	256	462	467	472	477	
	Electric Fan	209	213	206	209	211	310	313	316	358	362	365	530	535	540	550	
	DuraPlate	145	147	161	162	164	219	221	223	278	281	284	N/A	N/A	N/A	403	
63.0	None	70	71	80	81	82	115	116	117	131	133	134	190	192	193	200	
	Shaft Fan	121	124	166	167	169	252	254	257	227	229	232	436	441	445	460	
	Electric Fan	186	190	191	193	195	295	298	301	321	324	327	500	505	510	527	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	213	215	217	N/A	N/A	N/A	N/A	
71.0	None	70	71	79	80	81	111	113	114	129	131	132	193	195	197	193	
	Shaft Fan	121	124	163	165	167	245	247	249	224	226	228	441	446	450	444	
	Electric Fan	185	189	188	190	192	287	290	293	316	319	322	505	510	515	509	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	210	212	214	N/A	N/A	N/A	N/A	
80.0	None	68	69	75	76	77	108	109	110	134	136	137	189	191	193	194	
	Shaft Fan	118	120	155	157	158	236	238	241	231	234	236	428	432	436	445	
	Electric Fan	180	183	178	180	182	276	279	282	325	329	332	489	494	499	510	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	217	219	221	N/A	N/A	N/A	N/A	
90.0	None	64	65	76	77	78	106	107	109	130	131	132	177	178	180	187	
	Shaft Fan	111	114	157	159	160	233	235	237	223	225	228	402	406	410	425	
	Electric Fan	170	174	181	182	184	273	275	278	314	317	320	461	465	470	486	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
100	None	64	65	75	76	77	103	104	105	127	129	130	180	182	184	180	
	Shaft Fan	111	113	155	156	158	226	228	230	219	221	223	407	412	416	410	
	Electric Fan	170	173	178	180	181	265	267	270	308	311	314	466	471	475	469	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
112	None	62	64	71	72	72	100	101	102	133	134	136	188	189	191	181	
	Shaft Fan	108	110	146	147	149	218	220	222	230	232	234	411	415	419	411	
	Electric Fan	165	168	168	170	171	255	258	260	318	322	325	468	473	477	470	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
125	None	58	59	71	72	72	100	101	102	125	126	127	175	177	178	185	
	Shaft Fan	100	102	146	147	149	215	217	219	211	213	215	385	389	393	407	
	Electric Fan	153	156	168	170	171	251	253	256	295	298	301	439	443	448	464	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
140	None	58	59	73	74	74	97	98	99	122	123	125	180	181	183	178	
	Shaft Fan	100	102	148	149	151	208	210	212	207	209	211	394	398	402	392	
	Electric Fan	153	156	170	172	173	243	246	248	290	293	295	449	454	458	447	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
160	None	56	57	69	70	70	93	94	95	128	129	130				180	
	Shaft Fan	97	99	139	141	142	201	203	205	215	217	220				397	
	Electric Fan	148	151	160	162	163	235	238	240	300	303	306				452	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperatures will vary based upon exact ambient conditions and load profile.

\* Contact Factory.

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## Type VP3 Parallel Shaft

# Basic Thermal Ratings ★ – Hp/Triple Reduction Maximum 180°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE												
			133	137	143	145	147	153	155	157	163	165	167	173	175
28.0	None													240	242
	Shaft Fan													471	476
	Electric Fan													633	639
	DuraPlate													507	512
31.5	None	85	87	102	103	104	130	132	133	153	155	156	226	228	230
	Shaft Fan	128	131	179	181	183	247	249	252	232	234	237	444	449	453
	Electric Fan	226	230	239	241	244	338	341	345	378	381	385	598	604	610
	DuraPlate	167	171	198	200	202	257	259	262	316	320	323	479	483	504
35.5	None	85	87	101	102	103	127	128	130	151	152	154	230	232	234
	Shaft Fan	128	130	176	178	180	240	242	245	228	231	233	450	454	459
	Electric Fan	225	229	235	238	240	329	332	335	372	376	379	604	610	609
	DuraPlate	167	170	195	197	199	250	252	255	312	315	318	484	489	488
40.0	None	83	85	96	96	97	123	125	126	157	158	160	219	221	223
	Shaft Fan	124	127	167	169	171	233	235	238	236	239	241	426	430	434
	Electric Fan	218	223	223	225	228	319	322	326	383	386	390	571	576	582
	DuraPlate	162	165	185	187	189	243	245	248	321	325	328	382	386	389
45.0	None	76	77	88	89	90	121	122	123	140	142	143	205	207	209
	Shaft Fan	114	116	155	157	158	229	231	233	212	214	216	401	405	409
	Electric Fan	200	204	208	210	212	314	317	320	344	347	350	538	544	568
	DuraPlate	126	128	145	147	148	201	203	205	241	243	246	359	363	379
50.0	None	76	77	87	88	89	118	119	120	138	139	141	209	211	213
	Shaft Fan	114	116	153	154	156	222	224	226	208	210	212	406	410	414
	Electric Fan	200	204	205	207	209	304	307	310	338	342	345	544	549	555
	DuraPlate	125	128	143	144	146	195	197	199	237	239	242	364	368	371
56.0	None	74	75	82	83	84	114	115	116	143	145	146	201	203	205
	Shaft Fan	110	113	145	146	148	214	216	218	216	218	220	382	386	389
	Electric Fan	194	198	194	196	198	293	296	299	348	352	355	509	514	519
	DuraPlate	122	124	136	137	138	188	190	192	245	248	250	N/A	N/A	367
63.0	None	65	66	76	76	77	107	108	109	127	128	129	188	190	192
	Shaft Fan	98	100	133	134	136	200	202	204	189	191	193	359	363	379
	Electric Fan	173	176	178	180	182	273	276	279	304	307	310	480	484	506
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
71.0	None	65	66	74	75	76	104	105	106	125	126	127	192	193	195
	Shaft Fan	98	100	131	132	134	194	196	198	186	188	189	364	368	371
	Electric Fan	172	176	176	177	179	266	268	271	299	302	305	485	490	494
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
80.0	None	63	65	71	71	72	100	101	102	130	131	132	186	188	190
	Shaft Fan	95	97	124	125	127	187	189	191	193	194	196	352	356	359
	Electric Fan	167	171	167	168	170	256	258	261	308	311	314	469	473	478
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
90.0	None	60	61	72	72	73	99	100	101	125	127	128	174	176	177
	Shaft Fan	90	92	126	127	128	185	187	189	186	188	190	331	334	337
	Electric Fan	158	162	169	170	172	253	255	258	297	300	303	440	445	449
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
100	None	60	61	71	71	72	96	97	98	123	124	125	177	179	181
	Shaft Fan	90	92	124	125	126	180	181	183	183	184	186	335	339	342
	Electric Fan	158	161	166	168	169	245	248	250	292	295	298	446	450	449
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
112	None	58	59	67	67	68	93	94	95	128	130	131	174	176	178
	Shaft Fan	87	89	117	118	119	173	175	177	190	192	194	327	330	334
	Electric Fan	153	156	157	158	160	236	239	241	302	305	308	435	439	449
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
125	None	53	54	69	69	70	93	93	94	117	118	120	162	164	165
	Shaft Fan	80	82	120	121	122	171	172	174	173	175	177	306	309	312
	Electric Fan	142	144	160	161	163	232	234	237	276	279	281	407	411	430
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
140	None	54	55	68	68	69	90	91	91	115	116	117	167	168	170
	Shaft Fan	80	82	118	119	120	165	167	169	170	171	173	314	317	320
	Electric Fan	141	144	157	159	160	225	227	229	271	273	276	417	421	414
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
160	None	52	53	64	64	65	87	88	89	120	121	123			167
	Shaft Fan	78	79	111	112	113	160	162	163	177	179	180			315
	Electric Fan	137	140	148	149	151	218	220	222	281	283	286			419
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperatures will vary based upon exact ambient conditions and load profile.

\* Contact Factory.

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## Type VP3 Parallel Shaft

# Basic Thermal Ratings ★ – Hp/Triple Reduction Maximum 180°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
28.0	None													242	245	247	
	Shaft Fan													410	414	418	
	Electric Fan													616	622	629	
	DuraPlate													451	456	460	
31.5	None	81	82	96	97	98	123	124	125	151	152	154	227	230	232	240	
	Shaft Fan	108	110	150	151	153	205	207	209	203	205	207	386	390	394	407	
	Electric Fan	212	217	225	227	229	317	320	323	363	367	370	582	588	594	613	
	DuraPlate	144	147	172	174	176	220	222	224	278	281	283	425	429	434	448	
35.5	None	81	82	95	96	97	119	121	122	148	150	151	231	234	236	232	
	Shaft Fan	108	110	147	149	150	200	202	204	200	202	204	392	395	399	394	
	Electric Fan	212	216	221	224	226	308	311	314	358	361	365	587	593	599	593	
	DuraPlate	143	146	170	171	173	214	216	218	273	276	279	430	435	439	433	
40.0	None	78	80	90	91	92	116	117	118	154	156	157	218	221	223	233	
	Shaft Fan	105	107	140	141	143	194	196	198	207	209	211	369	373	376	395	
	Electric Fan	205	210	210	212	214	299	302	305	368	372	375	553	559	565	593	
	DuraPlate	139	142	161	162	164	208	210	212	282	285	288	347	350	353	434	
45.0	None	71	73	83	84	84	114	115	116	137	138	139	205	207	209	216	
	Shaft Fan	96	98	129	131	132	190	192	194	184	186	188	347	350	354	366	
	Electric Fan	189	192	195	197	199	294	297	300	329	332	336	522	527	532	550	
	DuraPlate	110	112	128	129	130	176	177	179	216	218	220	326	329	332	344	
50.0	None	71	73	82	82	83	111	112	113	134	136	137	208	210	213	208	
	Shaft Fan	96	98	127	129	130	185	187	188	181	183	185	352	355	359	353	
	Electric Fan	188	192	192	194	196	285	288	291	324	327	330	527	532	537	531	
	DuraPlate	109	112	126	127	128	171	172	174	212	214	216	330	334	337	331	
56.0	None	69	71	77	78	79	107	108	109	140	141	143	190	192	194	210	
	Shaft Fan	93	95	121	122	123	178	180	182	188	190	192	320	323	326	354	
	Electric Fan	182	186	182	184	186	275	278	280	334	337	341	480	485	490	531	
	DuraPlate	106	108	119	120	122	165	166	168	220	222	224	N/A	N/A	N/A	333	
63.0	None	61	62	71	72	73	101	102	103	119	120	122	178	180	182	188	
	Shaft Fan	82	84	111	112	113	167	169	171	160	162	163	301	304	307	317	
	Electric Fan	162	166	168	170	171	257	260	262	285	288	291	452	457	461	477	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
71.0	None	61	62	70	71	72	98	99	100	117	118	119	181	183	185	181	
	Shaft Fan	82	84	110	111	112	162	164	166	157	159	160	305	308	311	306	
	Electric Fan	162	165	165	167	169	250	252	255	281	283	286	457	462	466	461	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
80.0	None	59	61	67	67	68	95	96	97	122	123	124	176	178	180	182	
	Shaft Fan	80	81	104	105	106	157	158	160	163	165	167	295	298	301	307	
	Electric Fan	157	160	157	158	160	241	243	245	290	293	296	442	447	451	461	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
90.0	None	56	57	68	68	69	94	94	95	118	119	120	164	166	168	174	
	Shaft Fan	76	77	105	106	107	155	156	158	158	160	161	277	279	282	292	
	Electric Fan	149	152	159	160	162	238	240	243	280	283	286	415	419	423	438	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
100	None	56	57	66	67	68	91	92	93	116	117	118	168	169	171	167	
	Shaft Fan	76	77	104	105	106	150	152	153	155	157	158	281	284	287	281	
	Electric Fan	148	151	156	158	159	231	233	236	275	278	280	420	424	429	423	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
112	None	55	56	63	63	64	88	89	89	121	122	123	165	167	169	168	
	Shaft Fan	73	75	98	99	100	145	146	148	162	163	165	275	278	281	283	
	Electric Fan	144	147	147	149	150	222	225	227	285	288	290	411	415	419	423	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
125	None	50	51	64	65	65	86	87	88	110	111	113	154	155	157	163	
	Shaft Fan	67	68	99	100	101	142	143	145	147	149	150	257	259	262	272	
	Electric Fan	132	135	149	151	152	217	219	221	260	262	265	384	388	392	406	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
140	None	50	51	63	64	64	84	85	85	108	109	110	158	160	161	156	
	Shaft Fan	67	69	98	99	100	138	139	140	144	146	147	263	266	269	261	
	Electric Fan	132	135	147	148	150	210	212	214	254	257	260	393	397	401	391	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
160	None	49	50	59	60	61	81	82	83	113	114	115				159	
	Shaft Fan	65	67	92	93	94	133	134	136	151	152	154				265	
	Electric Fan	128	131	138	140	141	203	205	207	264	267	269				396	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperatures will vary based upon exact ambient conditions and load profile.

\* Contact Factory.

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## Type VP3 Parallel Shaft

# Basic Thermal Ratings ★ – Hp/Triple Reduction Maximum 180°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
28.0	None													239	242	244	
	Shaft Fan													377	380	384	
	Electric Fan													602	608	614	
	DuraPlate													421	425	429	
31.5	None	78	79	93	94	95	119	121	122	148	149	151	225	227	229	237	
	Shaft Fan	98	100	136	137	139	186	188	190	187	189	191	355	358	362	374	
	Electric Fan	205	209	218	220	222	307	310	313	353	357	360	568	574	580	599	
	DuraPlate	132	134	159	161	162	204	206	208	258	260	263	396	400	404	418	
35.5	None	78	79	92	93	94	116	117	119	145	147	148	229	231	233	229	
	Shaft Fan	98	100	134	135	136	181	183	185	184	186	188	359	363	367	361	
	Electric Fan	204	208	214	216	218	298	301	304	347	351	354	574	579	585	579	
	DuraPlate	131	134	156	158	160	198	200	202	253	256	259	401	405	409	403	
40.0	None	76	77	87	88	89	113	114	115	151	152	154	215	217	219	230	
	Shaft Fan	96	97	127	128	129	176	178	179	191	193	195	338	341	345	362	
	Electric Fan	198	202	203	205	207	289	292	295	358	361	365	540	545	551	579	
	DuraPlate	128	130	148	150	151	192	194	196	262	265	267	N/A	N/A	N/A	404	
45.0	None	69	70	80	81	82	111	112	113	133	135	136	201	203	205	213	
	Shaft Fan	87	89	117	118	119	172	174	176	169	171	173	317	321	324	335	
	Electric Fan	182	185	188	190	192	284	287	290	319	322	326	508	513	518	536	
	DuraPlate	102	104	119	120	121	164	165	167	N/A							
50.0	None	69	70	79	80	80	107	108	110	131	132	134	205	207	209	205	
	Shaft Fan	87	89	115	116	118	167	169	171	166	168	170	322	325	328	323	
	Electric Fan	181	185	185	187	189	276	279	281	314	317	320	514	519	524	518	
	DuraPlate	102	104	117	118	119	159	161	162	N/A							
56.0	None	67	68	75	75	76	104	105	106	136	138	139	186	187	189	206	
	Shaft Fan	85	86	109	110	111	162	163	165	173	175	176	291	294	297	324	
	Electric Fan	176	179	176	177	179	266	268	271	324	327	330	466	471	476	518	
	DuraPlate	99	101	111	112	113	153	155	157	N/A							
63.0	None	59	60	69	69	70	97	98	99	116	117	118	174	176	177	183	
	Shaft Fan	75	76	100	101	102	151	152	154	147	148	150	274	276	279	289	
	Electric Fan	156	159	162	163	165	248	250	253	276	279	282	439	443	448	463	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
71.0	None	59	60	68	68	69	94	95	96	114	115	116	177	179	181	177	
	Shaft Fan	74	76	99	100	101	147	148	149	144	146	147	278	281	283	278	
	Electric Fan	156	159	159	161	162	241	243	245	271	274	277	444	448	453	447	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
80.0	None	57	58	64	65	65	91	92	93	118	120	121	172	173	175	178	
	Shaft Fan	72	74	94	95	96	141	143	144	150	151	153	269	272	274	280	
	Electric Fan	151	154	151	152	154	232	234	236	280	283	286	429	433	438	447	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
90.0	None	54	55	65	66	66	90	91	92	115	116	117	160	162	163	169	
	Shaft Fan	68	70	95	96	97	140	141	143	145	146	148	252	254	257	266	
	Electric Fan	143	146	153	154	156	229	232	234	271	274	277	403	407	411	425	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
100	None	54	55	64	65	65	88	88	89	112	114	115	163	165	167	163	
	Shaft Fan	69	70	93	94	95	136	137	138	142	144	145	256	258	261	256	
	Electric Fan	143	146	150	152	153	222	225	227	266	269	272	408	412	416	410	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
112	None	53	54	60	61	62	85	85	86	118	119	120	160	161	163	164	
	Shaft Fan	67	68	88	89	90	131	132	134	148	150	151	249	251	254	257	
	Electric Fan	139	141	142	143	144	214	217	219	276	278	281	396	400	404	411	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
125	None	48	49	62	62	63	83	84	85	106	107	108	148	150	151	157	
	Shaft Fan	61	62	90	90	91	128	129	130	134	135	137	232	234	237	246	
	Electric Fan	127	130	144	145	147	208	210	212	250	253	255	371	374	378	392	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
140	None	48	49	60	61	62	80	81	82	104	105	106	153	154	156	151	
	Shaft Fan	61	62	88	89	90	124	125	126	131	133	134	238	241	243	236	
	Electric Fan	127	130	141	143	144	202	204	206	245	248	250	379	383	387	377	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
160	None	47	48	57	58	58	78	79	79	109	110	111				153	
	Shaft Fan	59	60	83	84	85	120	121	122	137	139	140				239	
	Electric Fan	123	126	133	134	135	195	197	199	254	257	260				382	
	DuraPlate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperatures will vary based upon exact ambient conditions and load profile.

\* Contact Factory.

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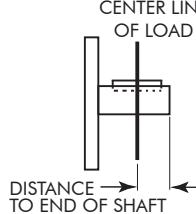
# Type VP & VR Overhung Loads

## Low-Speed Shaft

Overhung Load (lb) =

$$126000 \times HP \times F_C \times L_f$$

Pitch Dia (in) x rpm



$F_C$  = Load Connection Factor

Sprocket □	1.00
Machined Pinion & Gear★	1.25
Synchronous (Timing) Belt	1.30
V-Belt	1.50
Flat Belt	2.50

$L_f$  = Load Location Factor

Low-Speed Shaft – See table below  
High-Speed Shaft – Refer to Factory

★ Refer all multiple chain sprocket and pinion-mounted applications to the Factory for deflection analysis.

**Overhung Loads** — Overhung load is imposed upon a shaft when a pinion, sprocket or sheave is used as a power takeoff. The magnitude of the load varies with the type of takeoff and its proximity to the shaft bearing. Calculate the load (including minimum required service factor) and check the result against the tabulated overhung load rating. The above overhung load formula considers the transmitted power rating without service factor. This is appropriate for applications where starting loads, momentary overloads and brake capacities do not exceed 200% of drive rating (100% overload). For other considerations, compute the equivalent power by multiplying the transmitted power by the appropriate service factor.

**Locate the center line of the load** as close to the drive seal cage as practical to minimize the overhung load and increase bearing life.

**Consult the Factory for Higher Overhung Load Ratings** — In many cases, overhung load capacity in excess of that published is available. If the actual load should exceed the published capacity, refer full details to the Factory; provide complete application information, as well as direction of rotation, location, and direction of applied load.

Combined shaft loadings involving simultaneous application of overhung load, thrust load or bending moment should be referred directly to the Factory.

**Low-Speed Shaft Overhung Load** — Calculate low-speed shaft overhung load using the formula and  $F_C$  values at left. The  $L_f$  load location factors tabulated below are based on the distance from the center line of the load to the end of the shaft.

**Example** — A 135 HP, 1170 rpm electric motor, coupling connected to a Falk V-Class Size M175VP2 drive used to drive a uniformly loaded belt conveyor. The drive is a VP2 configuration mounted on its base. The drive's low-speed shaft rotates at 75 rpm and is chain connected to the conveyor on the extension opposite the low-speed gear. The low-speed sprocket has a pitch diameter of 28" and center of the teeth on the sprocket are located 3" from the end of the shaft. Calculate the overhung load as follows :

$$\text{Overhung Load} = \frac{126,000 \times 450 \times 1.00 \times 1.18}{28 \times 75} = 31,860 \text{ lbs}$$

The allowable overhung load for a M175VP2 drive that is mounted on the base surface with extension opposite the low-speed gear is found on Page 57. The value for the allowable overhung load is found by interpolating for the given output rpm. The allowable overhung load is 49,500 lbs. The applied overhung load is less than the allowable, therefore, this application is acceptable.

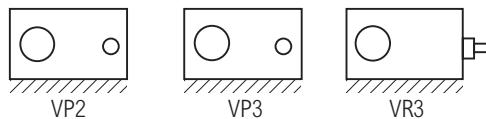
## Type VP & VR Lf Load Location Factors† (inch)

### Low-Speed Shaft

† Based on distance from centerline of load to end of shaft

Distance (inches)	Single Reduction Drive Size						Double & Triple Reduction Drive Size					
	133V 137V	143V 145V 147V	153V 155V 157V	163V 165V 167V	173V 175V 177V	187V	133V 137V	143V 145V 147V	153V 155V 157V	163V 165V 167V	173V 175V 177V	187V
0.0	1.38	1.36	1.45	1.44	1.48	1.48	1.44	1.44	1.41	1.40	1.45	1.45
0.5	1.33	1.31	1.40	1.39	1.43	1.43	1.38	1.38	1.35	1.35	1.41	1.41
1.0	1.27	1.26	1.34	1.34	1.39	1.39	1.31	1.32	1.29	1.30	1.36	1.36
1.5	1.22	1.21	1.28	1.29	1.34	1.34	1.25	1.25	1.23	1.25	1.32	1.32
2.0	1.17	1.16	1.22	1.24	1.29	1.29	1.19	1.19	1.18	1.20	1.27	1.27
2.5	1.11	1.11	1.17	1.19	1.24	1.24	1.13	1.13	1.12	1.15	1.22	1.22
3.0	1.06	1.06	1.11	1.14	1.19	1.19	1.07	1.07	1.06	1.10	1.18	1.18
3.5	1.00	1.00	1.05	1.09	1.14	1.14	1.01	1.01	1.00	1.05	1.13	1.13
4.0	0.98	0.98	1.00	1.04	1.09	1.09	0.97	0.98	0.98	1.00	1.09	1.09
4.5	0.95	0.95	0.97	0.99	1.04	1.04	0.95	0.95	0.95	0.98	1.04	1.04
5.0	0.92	0.92	0.95	0.97	1.00	1.00	0.92	0.92	0.93	0.95	1.00	1.00
5.5	0.90	0.90	0.93	0.95	0.98	0.98	0.89	0.90	0.90	0.93	0.98	0.98
6.0	0.87	0.87	0.90	0.93	0.96	0.96	0.86	0.87	0.88	0.91	0.96	0.96
6.5	0.85	0.85	0.88	0.91	0.94	0.94	0.84	0.84	0.85	0.89	0.94	0.94
7.0	0.82	0.82	0.86	0.89	0.92	0.92	0.81	0.82	0.83	0.87	0.92	0.92
7.5	0.79	0.80	0.84	0.87	0.90	0.90				0.84	0.90	0.90
8.0	0.77	0.77	0.81	0.85	0.88	0.88				0.82	0.88	0.88
8.5	0.74	0.74	0.79	0.83	0.86	0.86				0.80	0.86	0.86
9.0				0.81	0.84	0.84				0.78	0.84	0.84
9.5				0.79	0.82	0.82					0.82	0.82
10.0				0.77	0.81	0.81					0.80	0.80
10.5					0.79	0.79					0.78	0.78
11.0												
11.5												
12.0												
12.5												
13.0												
13.5												
14.0												
14.5												
15.0												
15.5												
16.0												

Type VPC Double & Triple and VRC Triple Reduction — Sizes 133-187  
**Low-Speed Shaft Overhung Load •/lbs x 1000**  
Refer to Low-Speed Gear Position on Pages 14-15 & 88



Output rpm	133 137		143 145 147		153 155 157		163 165 167		173 175 177		187	
	Extension Opposite Low Speed Gear	Extension On Low Speed Gear Side	Extension Opposite Low Speed Gear	Extension On Low Speed Gear Side	Extension Opposite Low Speed Gear	Extension On Low Speed Gear Side	Extension Opposite Low Speed Gear	Extension On Low Speed Gear Side	Extension Opposite Low Speed Gear	Extension On Low Speed Gear Side	Extension Opposite Low Speed Gear	Extension On Low Speed Gear Side
290	12.2	8.1	13.6	8.1	17.5	10.6	22.8	16.2	32.4	25.0	36.2	26.0
250	12.9	8.7	14.5	8.8	18.6	11.5	24.2	17.4	34.2	26.8	38.3	27.8
210	13.8	9.5	15.5	9.7	20.0	12.6	25.9	19.0	36.5	29.1	40.8	30.1
170	15.0	10.6	16.9	10.9	21.7	14.1	28.2	21.0	39.4	32.1	44.1	33.2
130	16.6	12.1	18.8	12.6	24.2	16.4	31.4	24.0	43.6	36.3	48.7	37.5
90	19.1	14.5	20.6	15.4	28.1	20.0	36.5	28.8	49.9	43.1	49.5	44.4
50	22.0	19.4	20.6	20.6	32.3	27.4	46.2	38.5	52.0	52.0	49.5	49.5
10	22.0	22.0	20.6	20.6	32.3	32.3	51.0	51.0	52.0	52.0	49.5	49.5

- Overhung load values shown are for loads applied at midpoint of extension key length. Published overhung load ratings are based on a combination of the most unfavorable conditions of loading. Consult the Factory for application-specific review if additional capacity is required. Interpolate for values at intermediate speeds. The last overhung load listed applies to all lower output speeds for that drive size and mounting surface.

Type VPC Single Reduction & VRC Double Reduction  
**Low-Speed Shaft Overhung Load**

REFER TO THE FACTORY

**High-Speed Shaft Overhung Load — All Reductions**

REFER TO THE FACTORY

# Exact Ratios/Parallel Shaft Drives

## Type VP

Nominal Ratios	UNIT SIZE														
	133VP	137VP	143VP	145VP	147VP	153VP	155VP	157VP	163VP	165VP	167VP	173VP	175VP	177VP	187VP
<b>SINGLE REDUCTION</b>															
<b>1.25</b>	1.273	1.273	1.270	1.270	1.270	1.275	1.275	1.275	1.256	1.256	1.256	1.256	1.256	1.256	1.275
<b>1.40</b>	1.419	1.419	1.400	1.400	1.400	1.417	1.417	1.417	1.378	1.378	1.378	1.425	1.425	1.425	1.421
<b>1.60</b>	1.586	1.586	1.625	1.625	1.625	1.578	1.578	1.578	1.588	1.588	1.588	1.622	1.622	1.622	1.600
<b>1.80</b>	1.778	1.778	1.800	1.800	1.800	1.829	1.829	1.829	1.781	1.781	1.781	1.771	1.771	1.771	1.788
<b>2.00</b>	2.040	2.040	1.962	1.962	1.962	2.029	2.029	2.029	2.034	2.034	2.034	2.031	2.031	2.031	2.033
<b>2.24</b>	2.240	2.240	2.208	2.208	2.208	2.212	2.212	2.212	2.259	2.259	2.259	2.233	2.233	2.233	2.250
<b>2.50</b>	2.522	2.522	2.542	2.542	2.542	2.533	2.533	2.533	2.520	2.520	2.520	2.464	2.464	2.464	2.538
<b>2.80</b>	2.750	2.750	2.850	2.850	2.850	2.786	2.786	2.786	2.826	2.826	2.826	2.769	2.769	2.769	2.792
<b>3.15</b>	3.167	3.167	3.105	3.105	3.105	3.115	3.115	3.115	3.190	3.190	3.190	3.125	3.125	3.125	3.182
<b>3.55</b>	3.500	3.500	3.529	3.529	3.529	3.609	3.609	3.609	3.579	3.579	3.579	3.722	3.722	3.722	3.600
<b>4.00</b>	4.063	4.063	3.941	3.941	3.941	3.941	3.941	3.941	4.059	4.059	4.059	4.118	4.118	4.118	4.056
<b>4.50</b>	4.563	4.563	4.412	4.412	4.412	4.563	4.563	4.563	4.500	4.500	4.500	4.706	4.706	4.706	4.412
<b>5.00</b>	4.933	4.933	5.067	5.067	4.933	4.933	4.933	4.944	4.944	4.944	5.059	5.059	5.059	5.059	5.059
<b>DOUBLE REDUCTION</b>															
<b>5.00</b>	---	---	---	---	---	---	---	---	---	---	5.234	5.234	5.234	5.234	---
<b>5.60</b>	5.781	5.781	5.489	5.489	5.489	5.547	5.547	5.547	5.598	5.598	5.598	5.790	5.790	5.790	5.703
<b>6.30</b>	6.493	6.493	6.145	6.145	6.145	6.421	6.421	6.421	6.166	6.166	6.166	6.618	6.618	6.618	6.204
<b>7.10</b>	7.021	7.021	7.057	7.057	7.057	6.943	6.943	6.943	6.820	6.820	6.820	7.593	7.593	7.593	7.114
<b>8.00</b>	8.125	8.125	7.725	7.725	7.725	8.040	8.040	8.040	7.955	7.955	7.955	8.400	8.400	8.400	8.273
<b>9.00</b>	9.125	9.125	8.647	8.647	8.647	9.308	9.308	9.308	8.762	8.762	8.762	9.600	9.600	9.600	9.000
<b>10.0</b>	9.867	9.867	9.931	9.931	9.931	10.06	10.06	10.06	9.69	9.69	9.69	10.38	10.38	10.38	10.32
<b>11.2</b>	11.33	11.33	11.20	11.20	11.20	11.13	11.13	11.13	11.50	11.50	11.50	11.49	11.49	11.49	11.31
<b>12.5</b>	12.73	12.73	12.54	12.54	12.54	12.88	12.88	12.88	12.67	12.67	12.67	13.13	13.13	13.13	12.31
<b>14.0</b>	13.76	13.76	14.40	14.40	14.40	13.93	13.93	13.93	14.01	14.01	14.01	14.67	14.67	14.67	14.11
<b>16.0</b>	16.00	16.00	15.50	15.50	15.50	16.00	16.00	16.00	16.49	16.49	16.49	16.23	16.23	16.23	15.98
<b>18.0</b>	17.96	17.96	17.35	17.35	17.35	18.52	18.52	18.52	18.16	18.16	18.16	18.55	18.55	18.55	17.39
<b>20.0</b>	19.43	19.43	19.93	19.93	19.93	20.02	20.02	20.02	20.09	20.09	20.09	20.58	20.58	20.58	19.94
<b>22.4</b>	22.60	22.60	22.17	22.17	22.17	21.92	21.92	21.92	23.00	23.00	23.00	22.77	22.77	22.77	22.42
<b>25.0</b>	25.38	25.38	24.82	24.82	24.82	25.38	25.38	25.38	25.33	25.33	25.33	26.02	26.02	26.02	24.39
<b>28.0</b>	27.44	27.44	28.50	28.50	28.50	27.44	27.44	27.44	28.02	28.02	28.02	---	---	---	27.97
<b>TRIPLE REDUCTION</b>															
<b>28.0</b>	---	---	---	---	---	---	---	---	---	---	29.51	29.51	29.51	29.51	---
<b>31.5</b>	31.48	31.48	31.74	31.74	31.74	31.53	31.53	31.53	32.08	32.08	32.08	32.64	32.64	32.64	32.15
<b>35.5</b>	35.35	35.35	35.53	35.53	35.53	36.50	36.50	36.50	35.33	35.33	35.33	37.31	37.31	37.31	34.98
<b>40.0</b>	38.23	38.23	40.80	40.80	40.80	39.47	39.47	39.47	39.08	39.08	39.08	41.69	41.69	41.69	40.11
<b>45.0</b>	44.43	44.43	43.92	43.92	43.92	45.32	45.32	45.32	46.00	46.00	46.00	46.12	46.12	46.12	45.43
<b>50.0</b>	49.90	49.90	49.17	49.17	49.17	52.47	52.47	52.47	50.66	50.66	50.66	52.71	52.71	52.71	49.42
<b>56.0</b>	53.96	53.96	56.46	56.46	56.46	56.73	56.73	56.73	56.03	56.03	56.03	57.70	57.70	57.70	56.67
<b>63.0</b>	64.98	64.98	62.98	62.98	62.98	62.99	62.99	62.99	64.92	64.92	64.92	63.83	63.83	63.83	62.87
<b>71.0</b>	72.98	72.98	70.50	70.50	70.50	72.92	72.92	72.92	71.51	71.51	71.51	72.95	72.95	72.95	68.39
<b>80.0</b>	78.91	78.91	80.96	80.96	80.96	78.84	78.84	78.84	79.09	79.09	79.09	80.95	80.95	80.95	78.42
<b>90.0</b>	93.91	93.91	90.06	90.06	90.06	86.32	86.32	86.32	90.56	90.56	90.56	89.55	89.55	89.55	88.20
<b>100</b>	103.1	103.1	100.8	100.8	100.8	99.93	99.93	99.93	99.75	99.75	99.75	102.3	102.3	102.3	96.0
<b>112</b>	111.5	111.5	115.8	115.8	115.8	108.1	108.1	108.1	110.3	110.3	110.3	115.8	115.8	115.8	110.0
<b>125</b>	128.8	128.8	121.9	121.9	121.9	121.2	121.2	121.2	127.9	127.9	127.9	128.1	128.1	128.1	126.1
<b>140</b>	141.4	141.4	136.5	136.5	136.5	140.3	140.3	140.3	140.9	140.9	140.9	146.4	146.4	146.4	137.2
<b>160</b>	152.9	152.9	156.8	156.8	156.8	151.7	151.7	151.7	155.9	155.9	155.9	---	---	---	157.3

Type VP & VR Sizes 133-187

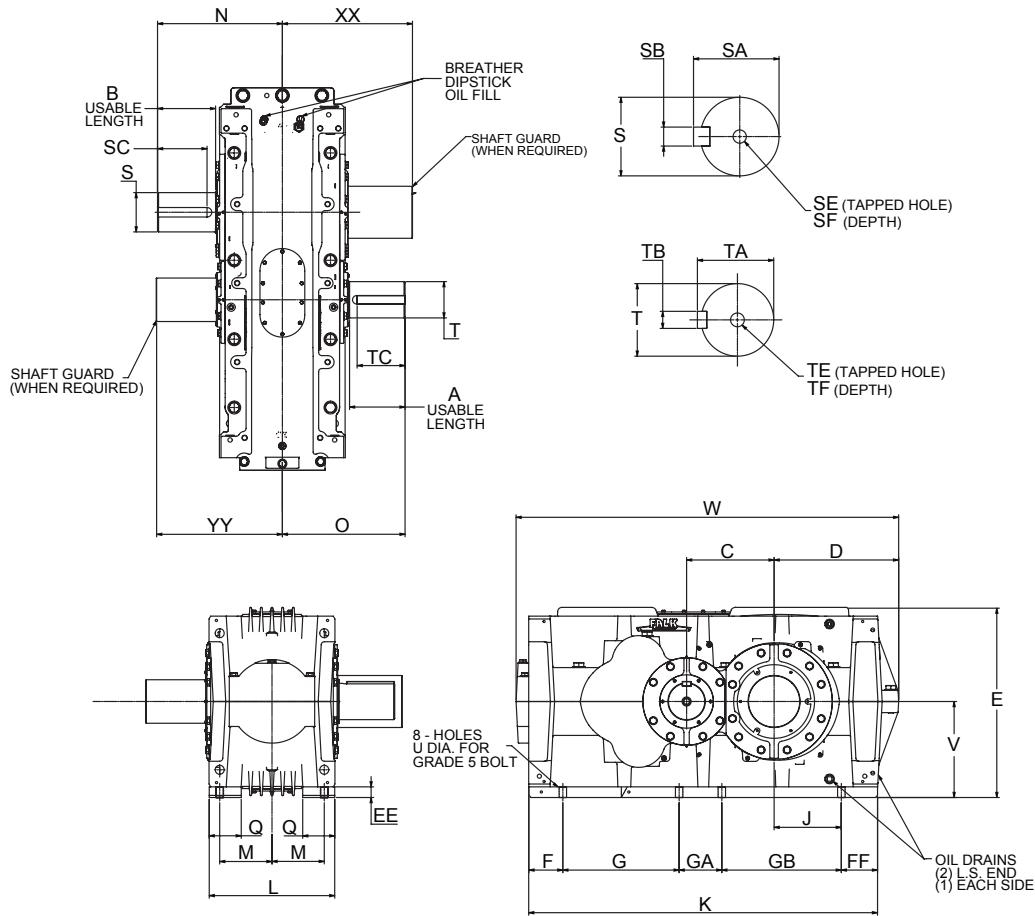
# Tolerance Limits/Dimensions — Inches

**Table 1**

	Diameter	Shaft Tolerance										Bore Tolerance			
		c11 inch	g6 inch	h6 inch	h9 inch	h10 inch	h11 inch	j6 inch	k6 inch	m6 inch	D10 inch	H7 inch	J7 inch	N9 inch	
from	0.7087	-0.0043	-0.0003	0.0000	0.0000	0.0000	0.0000	0.0003	0.0006	0.0008	0.0059	0.0008	0.0005	0.0000	
to	1.1811	-0.0094	-0.0008	-0.0005	-0.0020	-0.0033	-0.0051	-0.0003	0.0001	0.0003	0.0026	0.0000	-0.0004	-0.0020	
above	1.1811	-0.0047	-0.0004	0.0000	0.0000	0.0000	0.0000	0.0003	0.0007	0.0010	0.0071	0.0010	0.0006	0.0000	
to	1.5748	-0.0110	-0.0010	-0.0006	-0.0024	-0.0039	-0.0063	-0.0003	0.0001	0.0004	0.0031	0.0000	-0.0004	-0.0024	
above	1.5748	-0.0051	-0.0004	0.0000	0.0000	0.0000	0.0000	0.0003	0.0007	0.0010	0.0071	0.0010	0.0006	0.0000	
to	1.9685	-0.0114	-0.0010	-0.0006	-0.0024	-0.0039	-0.0063	-0.0003	0.0001	0.0004	0.0031	0.0000	-0.0004	-0.0024	
above	1.9685	-0.0055	-0.0004	0.0000	0.0000	0.0000	0.0000	0.0004	0.0008	0.0012	0.0087	0.0012	0.0007	0.0000	
to	2.5591	-0.0130	-0.0011	-0.0007	-0.0029	-0.0047	-0.0075	-0.0004	0.0001	0.0004	0.0039	0.0000	-0.0005	-0.0029	
above	2.5591	-0.0059	-0.0004	0.0000	0.0000	0.0000	0.0000	0.0004	0.0008	0.0012	0.0087	0.0012	0.0007	0.0000	
to	3.1496	-0.0134	-0.0011	-0.0007	-0.0029	-0.0047	-0.0075	-0.0004	0.0001	0.0004	0.0039	0.0000	-0.0005	-0.0029	
above	3.1496	-0.0067	-0.0005	0.0000	0.0000	0.0000	0.0000	0.0004	0.0010	0.0014	0.0102	0.0014	0.0009	0.0000	
to	3.9370	-0.0154	-0.0013	-0.0009	-0.0034	-0.0055	-0.0087	-0.0004	0.0001	0.0005	0.0047	0.0000	-0.0005	-0.0034	
above	3.9370	-0.0071	-0.0005	0.0000	0.0000	0.0000	0.0000	0.0004	0.0010	0.0014	0.0102	0.0014	0.0009	0.0000	
to	4.7244	-0.0157	-0.0013	-0.0009	-0.0034	-0.0055	-0.0087	-0.0004	0.0001	0.0005	0.0047	0.0000	-0.0005	-0.0034	
above	4.7244	-0.0079	-0.0006	0.0000	0.0000	0.0000	0.0000	0.0005	0.0011	0.0016	0.0120	0.0016	0.0010	0.0000	
to	5.5118	-0.0177	-0.0015	-0.0010	-0.0039	-0.0063	-0.0098	-0.0005	0.0001	0.0006	0.0057	0.0000	-0.0006	-0.0039	
above	5.5118	-0.0083	-0.0006	0.0000	0.0000	0.0000	0.0000	0.0005	0.0011	0.0016	0.0120	0.0016	0.0010	0.0000	
to	6.2992	-0.0181	-0.0015	-0.0010	-0.0039	-0.0063	-0.0098	-0.0005	0.0001	0.0006	0.0057	0.0000	-0.0006	-0.0039	
above	6.2992	-0.0091	-0.0006	0.0000	0.0000	0.0000	0.0000	0.0005	0.0011	0.0016	0.0120	0.0016	0.0010	0.0000	
to	7.0866	-0.0189	-0.0015	-0.0010	-0.0039	-0.0063	-0.0098	-0.0005	0.0001	0.0006	0.0057	0.0000	-0.0006	-0.0039	
above	7.0866	-0.0094	-0.0006	0.0000	0.0000	0.0000	0.0000	0.0006	0.0013	0.0018	0.0140	0.0018	0.0012	0.0000	
to	7.8740	-0.0209	-0.0017	-0.0011	-0.0045	-0.0073	-0.0114	-0.0006	0.0002	0.0007	0.0067	0.0000	-0.0006	-0.0045	
above	7.8740	-0.0102	-0.0006	0.0000	0.0000	0.0000	0.0000	0.0006	0.0013	0.0018	0.0140	0.0018	0.0012	0.0000	
to	8.8583	-0.0220	-0.0017	-0.0011	-0.0045	-0.0073	-0.0114	-0.0006	0.0002	0.0007	0.0067	0.0000	-0.0006	-0.0045	
above	8.8583	-0.0110	-0.0006	0.0000	0.0000	0.0000	0.0000	0.0006	0.0013	0.0018	0.0140	0.0018	0.0012	0.0000	
to	9.8425	-0.0224	-0.0017	-0.0011	-0.0045	-0.0073	-0.0114	-0.0006	0.0002	0.0007	0.0067	0.0000	-0.0006	-0.0045	

# Type VPC1 Single Reduction Solid Low-Speed Shaft, Base Drive

Sizes 133 – 173/Dimensions — Inches



DRIVE SIZE★	Ratios	A	B	C	D	E	EE	F	FF	G	GA	GB	J	K	L	M	N•	O	Q
133	1.25-5.00	7.68	8.66	10.24	13.06	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	17.80	17.05	4.44
143	1.25-5.00	7.68	8.66	11.42	13.91	24.49	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	18.11	17.17	4.25
153	1.25-5.00	7.48	8.66	13.19	15.32	26.12	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	19.09	18.11	4.49
163	1.25-5.00	9.25	10.04	14.57	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	21.46	20.79	4.88
173	1.25-5.0	10.24	10.63	16.14	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	23.03	22.64	5.91

DRIVE SIZE★	Ratios	Low-Speed Shaft†						High-Speed Shaft†						U	V	W	XX	YY	Approx. Wt. lb.
		S*	SA	SB	SC	SE	SF	T*	TA	TB	TC	TE	TF						
133	1.25-4.00	5.1181m6	5.39	1.26	7.09	M24	1.97	3.9370m6	4.17	1.10	7.09	M24	1.97	0.94	11.02	42.60	18.11	17.43	1854
	4.50-5.00							3.1496m6	3.34	0.87	7.09	M20	1.65						
143	1.25-4.00	5.5118m6	5.82	1.42	8.66	M30	2.36	4.3307m6	4.56	1.10	7.09	M24	1.97	0.94	12.40	47.37	18.57	17.62	2480
	4.50-5.00							3.5433m6	3.73	0.98	7.09	M24	1.97						
153	1.25-4.00	5.9055m6	6.21	1.42	7.87	M30	2.36	5.1181m6	5.39	1.26	7.09	M24	1.97	1.10	13.19	52.52	19.64	18.72	3171
	4.50-5.00							4.1338m6	4.36	1.10	7.09	M24	1.97						
163	1.25-4.00	7.0866m6	7.48	1.77	8.66	M30	2.36	5.5118m6	5.82	1.42	8.66	M30	2.36	1.38	14.76	59.46	22.17	21.94	4623
	4.50-5.00							3.9370m6	4.17	1.10	8.66	M24	1.97						
173	1.25-3.15	7.6772m6	8.07	1.77	9.84	M30	2.36	6.6929m6	7.04	1.57	8.86	M30	2.36	1.38	17.72	70.58	24.09	23.27	6777
	3.55-5.00							4.7244m6	4.99	1.26	8.86	M24	1.97						

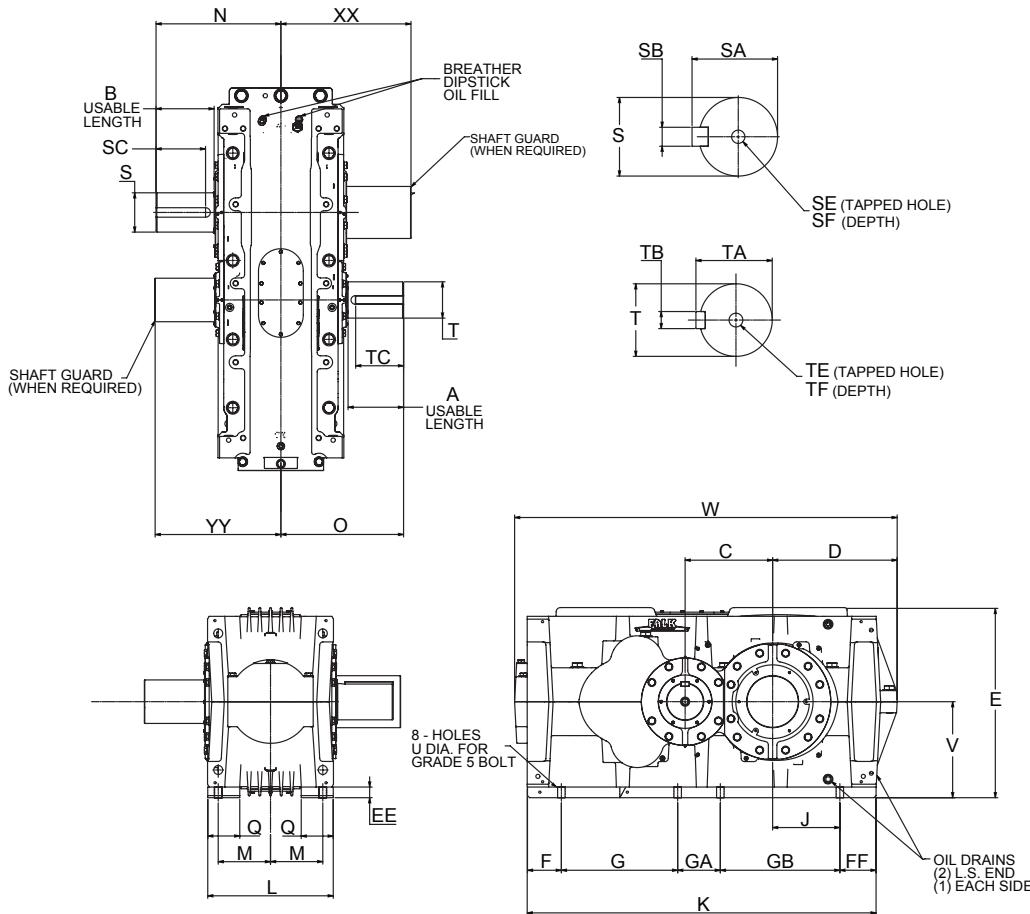
★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* See table 1 on page 59 for tolerance

● Single low-speed shaft extension is standard; double extension is special.

# Type VPC1 Single Reduction Solid Low-Speed Shaft, Base Drive Sizes 145 – 175/Dimensions — Inches



DRIVE SIZE★	Ratios	A	B	C	D	E	EE	F	FF	G	GA	GB	J	K	L	M	N•	O	Q
<b>145</b>	1.25-5.00	7.68	8.66	11.42	13.91	24.49	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	18.11	17.17	4.25
<b>155</b>	1.25-5.00	7.48	8.66	13.19	15.32	26.12	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	19.09	18.11	4.49
<b>165</b>	1.25-5.00	9.25	10.04	14.57	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	21.46	20.79	4.88
<b>175</b>	1.25-5.00	10.24	10.63	16.14	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	23.03	22.64	5.91

★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

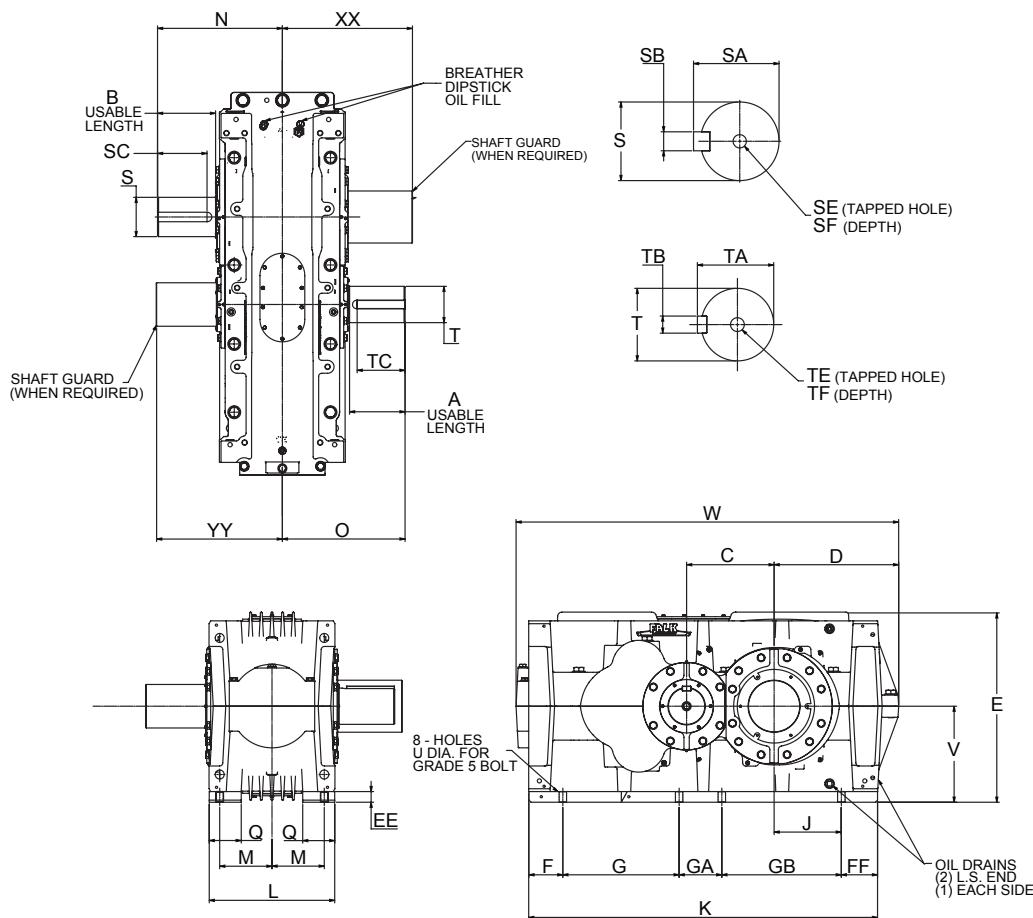
† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* See table 1 on page 59 for tolerance

- Single low-speed shaft extension is standard; double extension is special.

# Type VPC1 Single Reduction Solid Low-Speed Shaft, Base Drive

## Sizes 137 – 187/Dimensions — Inches



DRIVE SIZE★	Ratios	A	B	C	D	E	EE	F	FF	G	GA	GB	J	K	L	M	N•	O	Q
137	1.25-5.00	7.68	8.66	10.24	13.06	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	17.80	17.05	4.44
147	1.25-5.00	7.68	8.66	11.42	13.91	24.49	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	18.11	17.17	4.25
157	1.25-5.00	7.48	8.66	13.19	15.32	26.12	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	19.09	18.11	4.49
167	1.25-5.00	9.25	10.04	14.57	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	21.46	20.79	4.88
177	1.25-5.00	10.24	10.63	16.14	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	23.03	22.64	5.91
187	1.25-5.00	10.24	10.63	17.13	22.01	35.08	1.97	6.26	6.69	21.46	7.87	22.05	11.42	64.33	23.15	9.65	23.03	22.64	5.91

DRIVE SIZE★	Ratios	Low-Speed Shaft†						High-Speed Shaft†						U	V	W	XX	YY	Approx. Wt. lb.
		S*	SA	SB	SC	SE	SF	T*	TA	TB	TC	TE	TF						
137	1.25-4.00	5.1181m6	5.39	1.26	7.09	M24	1.97	3.9370m6	4.17	1.10	7.09	M24	1.97	0.94	11.02	42.60	18.11	17.43	1854
	4.50-5.00							3.1496m6	3.34	0.87	7.09	M20	1.65						
147	1.25-4.00	5.5118m6	5.82	1.42	8.66	M30	2.36	4.3307m6	4.56	1.10	7.09	M24	1.97	0.94	12.40	47.37	18.57	17.62	2480
	4.50-5.00							3.5433m6	3.73	0.98	7.09	M24	1.97						
157	1.25-4.00	5.9055m6	6.21	1.42	7.87	M30	2.36	5.1181m6	5.39	1.26	7.09	M24	1.97	1.10	13.19	52.52	19.64	18.72	3171
	4.50-5.00							4.1338m6	4.36	1.10	7.09	M24	1.97						
167	1.25-4.00	7.0866m6	7.48	1.77	8.66	M30	2.36	5.5118m6	5.82	1.42	8.66	M30	2.36	1.38	14.76	59.46	22.17	21.94	4623
	4.50-5.00							3.9370m6	4.17	1.10	8.66	M24	1.97						
177	1.25-3.15	7.6772m6	8.07	1.77	9.84	M30	2.36	6.6929m6	7.04	1.57	8.86	M30	2.36	1.38	17.72	70.58	24.09	23.27	6777
	3.55-5.00							4.7244m6	4.99	1.26	8.86	M24	1.97						
187	1.25-4.00	7.6772m6	8.07	1.77	9.84	M30	2.36	6.6929m6	7.04	1.57	8.86	M30	2.36	1.38	17.72	70.58	24.09	23.27	6999
	4.50-5.00							4.7244m6	4.99	1.26	8.86	M24	1.97						

★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

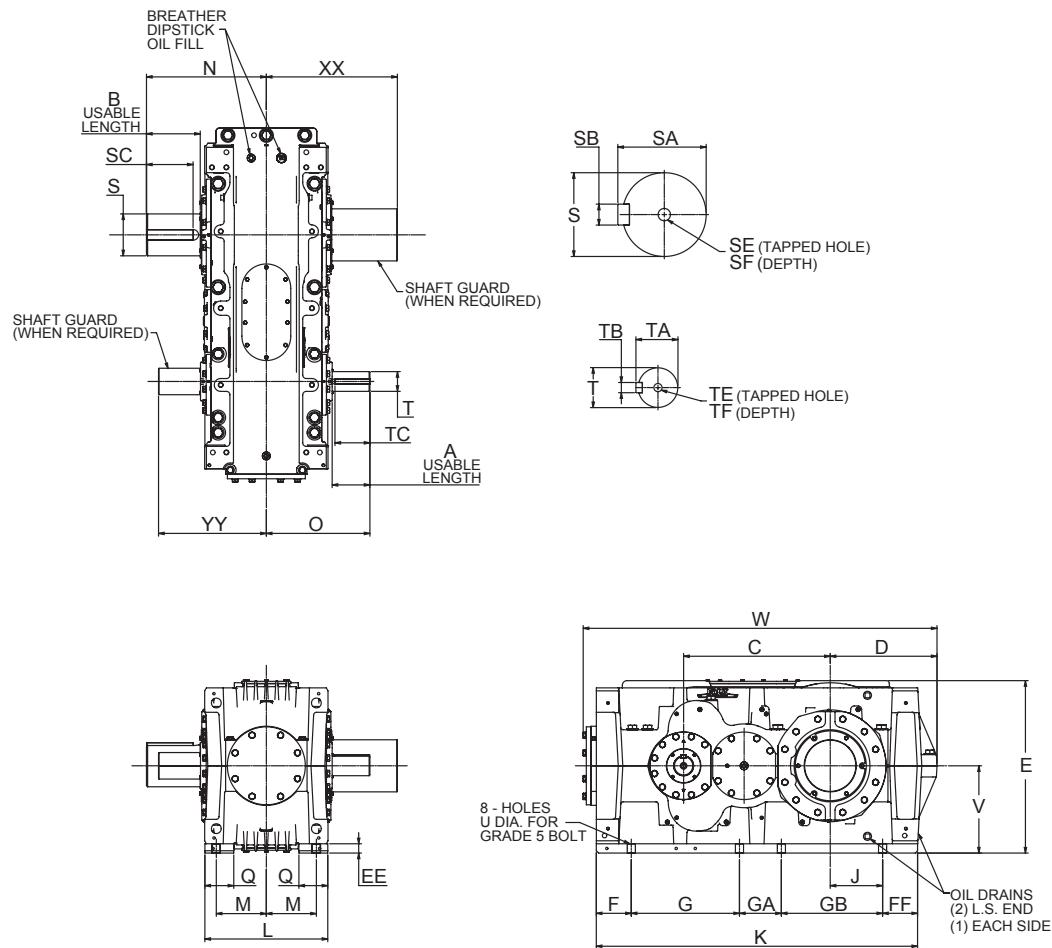
† Key Sizes per ISC/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* See table 1 on page 59 for tolerance

● Single low-speed shaft extension is standard; double extension is special.

# Type VPC2 Double Reduction Solid Low-Speed Shaft, Base Drive

## Sizes 133 – 173/Dimensions — Inches



DRIVE SIZE★	Ratios	A	B	C	D	E	EE	F	FF	G	GA	GB	J	K	L	M	N•	O	Q
133	5.60-28.0	3.94	7.48	16.93	13.05	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	16.61	13.07	4.44
143	5.60-28.0	4.92	7.48	19.10	13.91	24.49	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	16.93	14.33	4.25
153	5.60-28.0	5.12	7.48	22.05	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	17.91	15.55	4.49
163	5.60-28.0	6.10	8.86	24.80	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	20.28	17.52	4.88
173	5.00-25.0	6.30	10.63	27.56	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	23.03	18.70	5.91
DRIVE SIZE★	Ratios	Low-Speed Shaft†						High-Speed Shaft†						U	V	W	XX	YY	Approx. Wt. lb.
133	5.60-20.0	5.11181m6	5.39	1.26	7.09	M24	1.97	2.2047m6	2.36	0.63	3.94	M20	1.65	0.94	11.02	43.35	16.92	13.45	1755
	22.4-28.0																		
143	5.60-20.0	5.5118m6	5.82	1.42	7.09	M30	2.36	2.5591m6	2.71	0.71	4.53	M20	1.65	0.94	12.40	48.12	17.31	14.81	2290
	22.4-28.0																		
153	5.60-20.0	6.2992m6	6.65	1.57	7.09	M30	2.36	2.9528m6	3.12	0.79	4.92	M20	1.65	1.10	13.19	52.70	18.47	16.24	3178
	22.4-28.0																		
163	5.60-20.0	7.0866m6	7.48	1.77	7.87	M30	2.36	3.3465m6	3.54	0.87	5.91	M20	1.65	1.38	14.76	59.88	22.17	18.23	4332
	22.4-28.0																		
173	5.00-18.0	7.6772m6	8.07	1.77	9.84	M30	2.36	3.7402m6	3.94	0.98	6.10	M24	1.97	1.38	17.72	71.46	24.09	19.33	6355
	20.0-25.0																		

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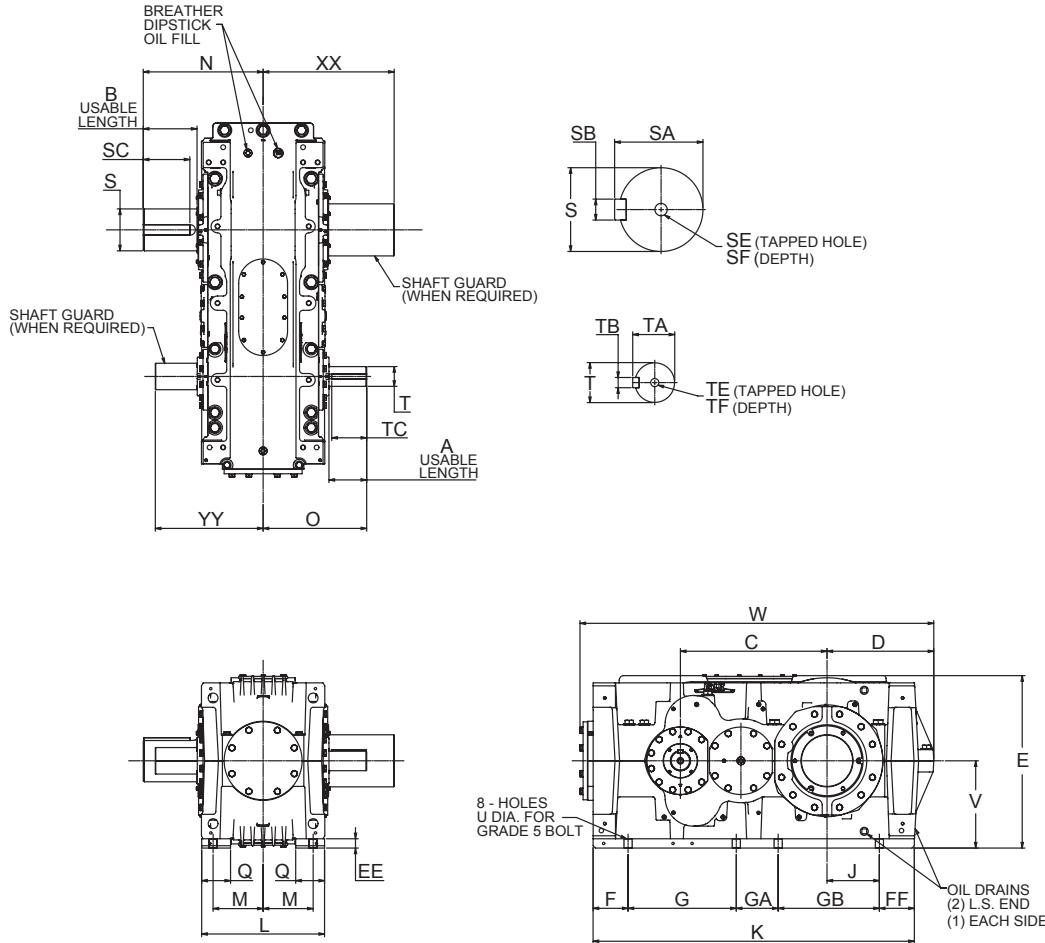
† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* See table 1 on page 59 for tolerance

● Single low-speed shaft extension is standard; double extension is special.

# Type VPC2 Double Reduction Solid Low-Speed Shaft, Base Drive

Sizes 145 – 175/Dimensions — Inches



DRIVE SIZE★	Ratios	A	B	C	D	E	EE	F	FF	G	GA	GB	J	K	L	M	N•	O	Q
145	5.60-28.0	4.92	7.48	19.10	13.91	24.49	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	16.93	14.33	4.25
155	5.60-28.0	5.12	7.48	22.05	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	17.91	15.55	4.49
165	5.60-28.0	6.10	8.86	24.80	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	20.28	17.52	4.88
175	5.00-25.0	6.30	10.63	27.56	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	23.03	18.70	5.91

DRIVE SIZE★	Ratios	Low-Speed Shaft†						High-Speed Shaft†						U	V	W	XX	YY	Approx. Wt. lb.
		S*	SA	SB	SC	SE	SF	T*	TA	TB	TC	TE	TF						
145	5.60-20.0	5.5118m6	5.82	1.42	7.09	M30	2.36	2.5591m6	2.71	0.71	4.53	M20	1.65	0.94	12.40	48.12	17.31	14.81	2290
	22.4-28.0							1.7717k6	1.90	0.55		M16	1.42						
155	5.60-20.0	6.2992m6	6.65	1.57	7.09	M30	2.36	2.9528m6	3.12	0.79	4.92	M20	1.65	1.10	13.19	52.70	18.47	16.24	3178
	22.4-28.0							2.1654m6	2.32	0.63									
165	5.60-20.0	7.0866m6	7.48	1.77	7.87	M30	2.36	3.3465m6	3.54	0.87	5.91	M20	1.65	1.38	14.76	59.88	22.17	18.23	4332
	22.4-28.0							2.5591m6	2.72	0.71									
175	5.00-18.0	7.6772m6	8.07	1.77	9.84	M30	2.36	3.7402m6	3.94	0.98	6.10	M24	1.97	1.38	17.72	71.46	24.09	19.33	6355
	20.0-25.0							2.9528m6	3.11	0.79		M20	1.65						

★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

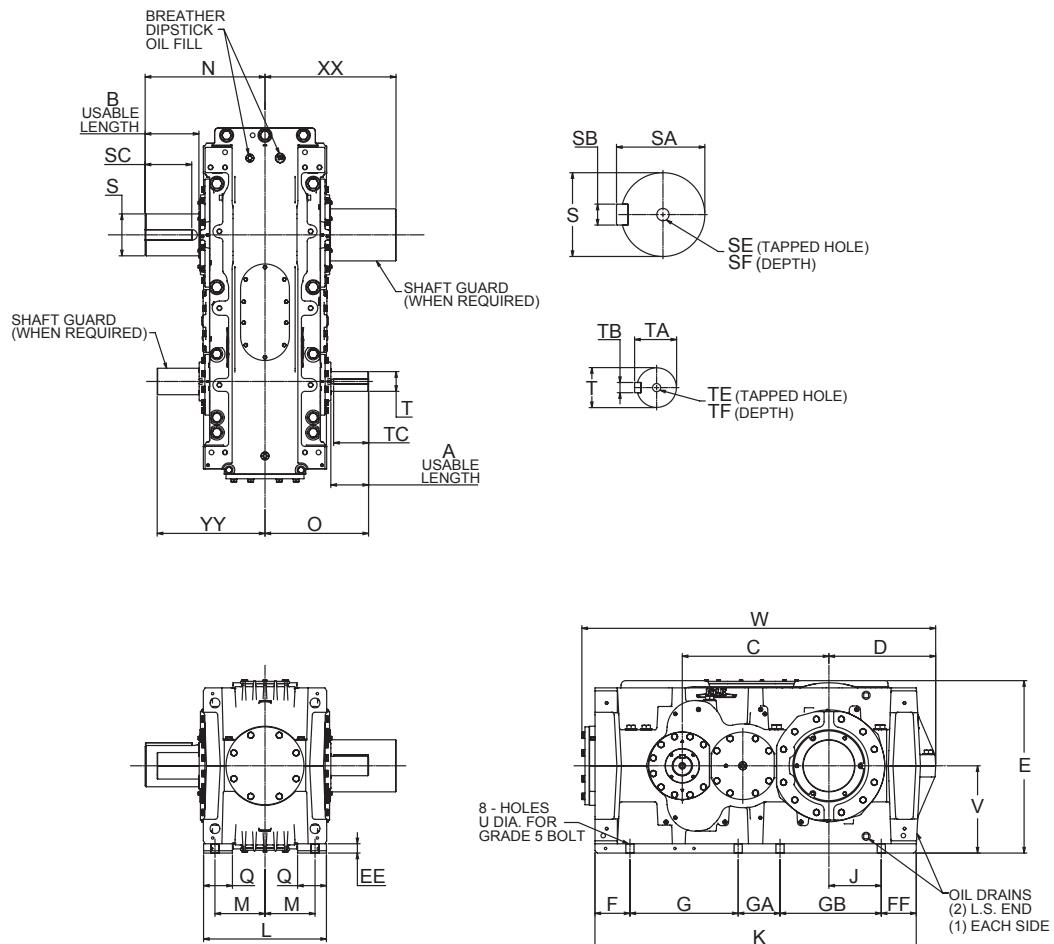
† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* See table 1 on page 59 for tolerance

● Single low-speed shaft extension is standard; double extension is special.

# Type VPC2 Double Reduction Solid Low-Speed Shaft, Base Drive

## Sizes 137 – 187/Dimensions — Inches



DRIVE SIZE★	Ratios	A	B	C	D	E	EE	F	FF	G	GA	GB	J	K	L	M	N•	O	Q
<b>137</b>	5.60-28.0	3.94	7.48	16.93	13.05	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	16.61	13.07	4.44
<b>147</b>	5.60-28.0	4.92	7.48	19.10	13.91	24.49	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	16.93	14.33	4.25
<b>157</b>	5.60-28.0	5.12	7.48	22.05	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	17.91	15.55	4.49
<b>167</b>	5.60-28.0	6.10	8.86	24.80	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	20.28	17.52	4.88
<b>177</b>	5.00-25.0	6.30	10.63	27.56	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	23.03	18.70	5.91
<b>187</b>	5.60-28.0	6.30	10.63	28.54	22.01	35.08	1.97	6.26	6.69	21.46	7.87	22.05	11.42	64.33	23.15	9.65	23.03	18.70	5.91

DRIVE SIZE★	Ratios	Low-Speed Shaft†						High-Speed Shaft†						U	V	W	XX	YY	Approx. Wt. lb.
		S*	SA	SB	SC	SE	SF	T*	TA	TB	TC	TE	TF						
<b>137</b>	5.60-20.0	5.1181m6	5.39	1.26	7.09	M24	1.97	2.2047m6	2.36	0.63	3.94	M20	1.65	0.94	11.02	43.35	16.92	13.45	1755
	22.4-28.0							1.6535k6	1.77	0.47		M16	1.42						
<b>147</b>	5.60-20.0	5.5118m6	5.82	1.42	7.09	M30	2.36	2.5591m6	2.71	0.71	4.53	M20	1.65	0.94	12.40	48.12	17.31	14.81	2290
	22.4-28.0							1.7717k6	1.90	0.55		M16	1.42						
<b>157</b>	5.60-20.0	6.2992m6	6.65	1.57	7.09	M30	2.36	2.9528m6	3.12	0.79	4.92	M20	1.65	1.10	13.19	52.70	18.47	16.24	3178
	22.4-28.0							2.1654m6	2.32	0.63									
<b>167</b>	5.60-20.0	7.0866m6	7.48	1.77	7.87	M30	2.36	3.3465m6	3.54	0.87	5.91	M20	1.65	1.38	14.76	59.88	22.17	18.23	4332
	22.4-28.0							2.5591m6	2.72	0.71									
<b>177</b>	5.00-18.0	7.6772m6	8.07	1.77	9.84	M30	2.36	3.7402m6	3.94	0.98	6.10	M24	1.97	1.38	17.72	71.46	24.09	19.33	6355
	20.0-25.0							2.9528m6	3.11	0.79		M20	1.65						
<b>187</b>	5.60-20.0	7.6772m6	8.07	1.77	9.84	M30	2.36	3.7402m6	3.94	0.98	6.10	M24	1.97						
	22.4-28.0							2.9528m6	3.11	0.79		M20	1.65						

★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

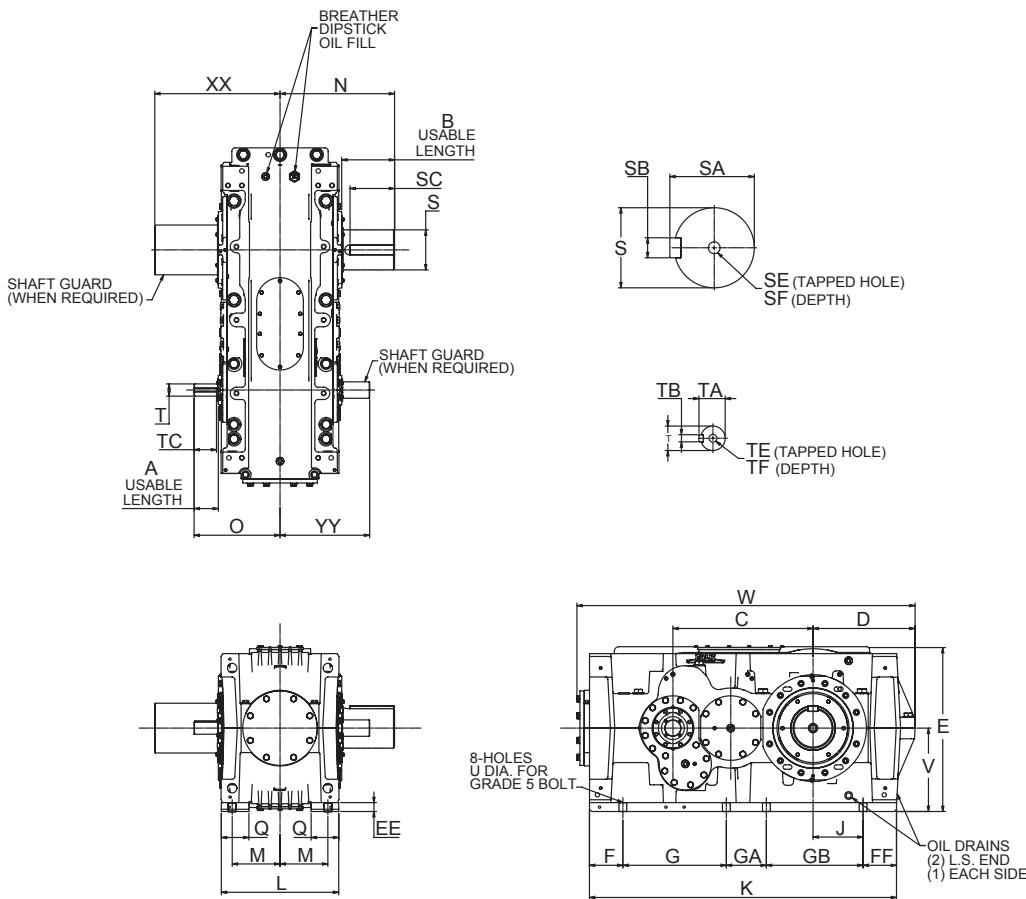
† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* See table 1 on page 59 for tolerance

● Single low-speed shaft extension is standard; double extension is special.

# Type VPC3 Triple Reduction Solid Low-Speed Shaft, Base Drive

Sizes 133 – 173/Dimensions — Inches



DRIVE SIZE★	Ratios	A	B	C	D	E	EE	F	FF	G	GA	GB	J	K	L	M	N•	O	Q
133	31.5-160	2.76	7.48	16.93	13.06	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	16.61	11.89	4.44
143	31.5-160	3.94	7.48	19.09	13.91	24.35	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	16.93	13.15	4.25
153	31.5-160	3.94	7.48	22.05	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	17.91	14.37	4.49
163	31.5-160	3.94	8.86	24.80	18.07	29.37	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	20.28	15.24	4.88
173	28.0-140	5.12	10.63	27.56	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	23.03	17.52	5.91

DRIVE SIZE★	Ratios	Low-Speed Shaft†						High-Speed Shaft†						U	V	W	XX	YY	Approx. Wt. lb.
		S*	SA	SB	SC	SE	SF	T*	TA	TB	TC	TE	TF						
133	31.5-112	5.1181m6	5.39	1.26	7.09	M24	1.97	1.3780k6	1.49	0.39	2.56	M12	1.10	0.94	11.02	43.34	16.99	12.42	1799
	125-160							0.9843j6	1.10	0.31		M10	0.87						
143	31.5-112	5.5118m6	5.82	1.42	7.09	M30	2.36	1.7717k6	1.90	0.55	3.54	M16	1.42	0.94	12.40	48.12	17.31	13.88	2221
	125-160							1.1181j6	1.29	0.31		M10	0.87						
153	31.5-112	6.2992m6	6.65	1.57	7.09	M30	2.36	1.8898k6	2.02	0.55	3.94	M16	1.42	1.10	13.19	52.70	18.55	14.68	3157
	125-160							1.3780k6	1.49	0.39		M12	1.10						
163	31.5-112	7.0866m6	7.48	1.77	7.87	M30	2.36	2.1654m6	2.32	0.63	3.94	M20	1.65	1.38	14.76	59.88	22.17	15.87	4408
	125-160							1.6535k6	1.77	0.47		M16	1.42						
173	28.0-100	7.6772m6	8.07	1.77	9.84	M30	2.36	2.5591m6	2.72	0.71	4.72	M20	1.65	1.38	17.72	71.46	24.09	18.35	6335
	112-140							1.9685k6	2.09	0.55		M16	1.42						

★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

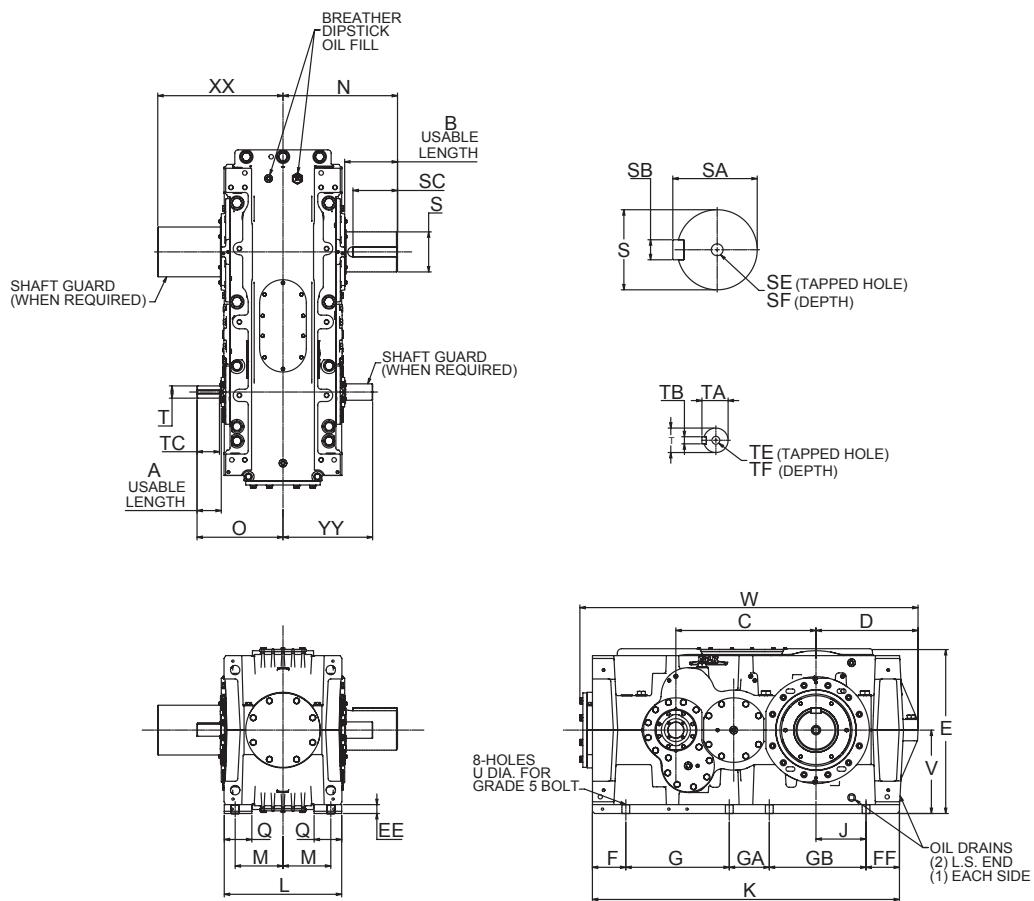
† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* See table 1 on page 59 for tolerance

● Single low-speed shaft extension is standard; double extension is special.

# Type VPC3 Triple Reduction Solid Low-Speed Shaft, Base Drive

Sizes 145 – 175/Dimensions — Inches



DRIVE SIZE★	Ratios	A	B	C	D	E	EE	F	FF	G	GA	GB	J	K	L	M	N•	O	Q
145	31.5-160	3.94	7.48	19.09	13.91	24.35	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	16.93	13.15	4.25
155	31.5-160	3.94	7.48	22.05	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	17.91	14.37	4.49
165	31.5-160	3.94	8.86	24.80	18.07	29.37	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	20.28	15.24	4.88
175	28.0-140	5.12	10.63	27.56	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	23.03	17.52	5.91

DRIVE SIZE★	Ratios	Low-Speed Shaft†						High-Speed Shaft†						U	V	W	XX	YY	Approx. Wt. Ib.
		S*	SA	SB	SC	SE	SF	T*	TA	TB	TC	TE	TF						
145	31.5-112	5.5118m6	5.82	1.42	7.09	M30	2.36	1.7717k6	1.90	0.55	3.54	M16	1.42	0.94	12.40	48.12	17.31	13.88	2221
	125-160							1.1181j6	1.29	0.31		M10	0.87						
155	31.5-112	6.2992m6	6.65	1.57	7.09	M30	2.36	1.8898k6	2.02	0.55	3.94	M16	1.42	1.10	13.19	52.70	18.55	14.68	3157
	125-160							1.3780k6	1.49	0.39		M12	1.10						
165	31.5-112	7.0866m6	7.48	1.77	7.87	M30	2.36	2.1654m6	2.32	0.63	3.94	M20	1.65	1.38	14.76	59.88	22.17	15.87	4408
	125-160							1.6535k6	1.77	0.47		M16	1.42						
175	28.0-100	7.6772m6	8.07	1.77	9.84	M30	2.36	2.5591m6	2.72	0.71	4.72	M20	1.65	1.38	17.72	71.46	24.09	18.35	6335
	112-140							1.9685k6	2.09	0.55		M16	1.42						

★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

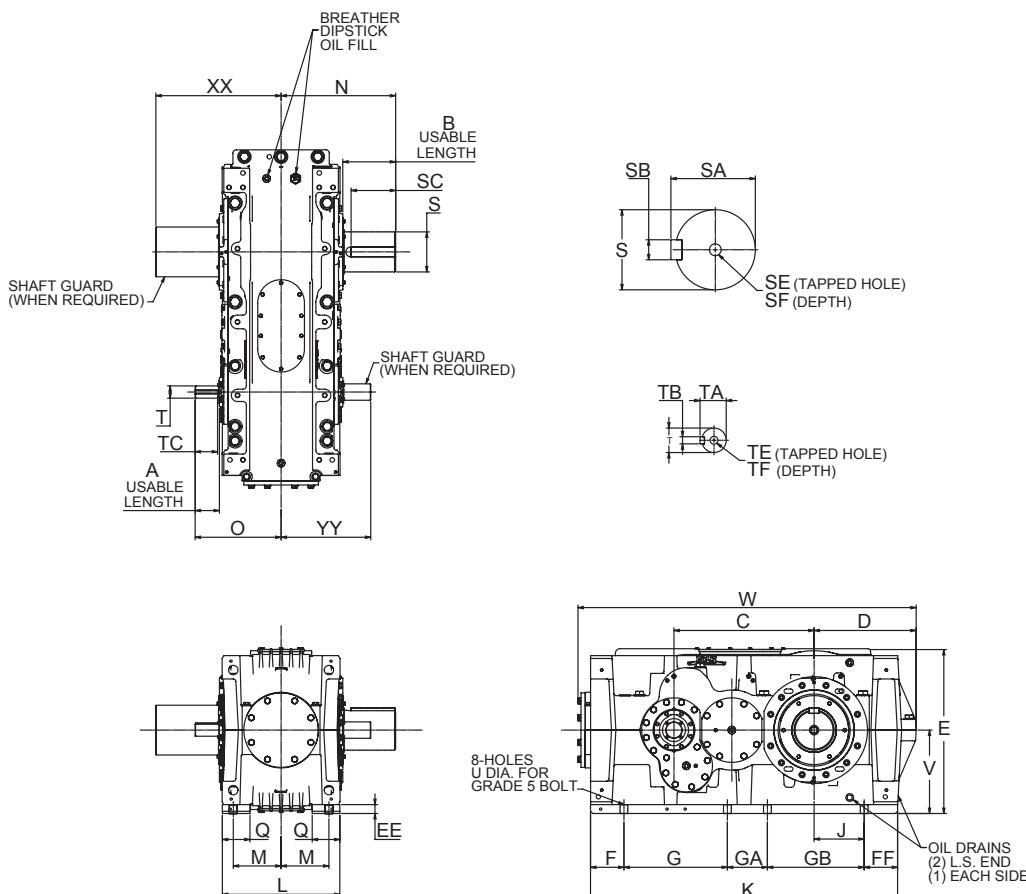
† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* See table 1 on page 59 for tolerance.

● Single low-speed shaft extension is standard; double extension is special.

# Type VPC3 Triple Reduction Solid Low-Speed Shaft, Base Drive

Sizes 137 – 187/Dimensions — Inches



DRIVE SIZE★	Ratios	A	B	C	D	E	EE	F	FF	G	GA	GB	J	K	L	M	N•	O	Q
137	31.5-160	2.76	7.48	16.93	13.06	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	16.61	11.89	4.44
147	31.5-160	3.94	7.48	19.09	13.91	24.35	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	16.93	13.15	4.25
157	31.5-160	3.94	7.48	22.05	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	17.91	14.37	4.49
167	31.5-160	3.94	8.86	24.80	18.07	29.37	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	20.28	15.24	4.88
177	28.0-140	5.12	10.63	27.56	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	23.03	17.52	5.91
187	31.5-160	5.12	10.63	28.54	22.01	35.08	1.97	6.26	6.69	21.46	7.87	22.05	11.42	64.33	23.15	9.65	23.03	17.52	5.91

DRIVE SIZE★	Ratios	Low-Speed Shaft†						High-Speed Shaft†						U	V	W	XX	YY	Approx. Wt. lb.
		S*	SA	SB	SC	SE	SF	T*	TA	TB	TC	TE	TF						
137	31.5-112	5.1181m6	5.39	1.26	7.09	M24	1.97	1.3780k6	1.49	0.39	2.56	M12	1.10	0.94	11.02	43.34	16.99	12.42	1799
	125-160							0.9843j6	1.10	0.31		M10	0.87						
147	31.5-112	5.5118m6	5.82	1.42	7.09	M30	2.36	1.7717k6	1.90	0.55	3.54	M16	1.42	0.94	12.40	48.12	17.31	13.88	2221
	125-160							1.1181j6	1.29	0.31		M10	0.87						
157	31.5-112	6.2992m6	6.65	1.57	7.09	M30	2.36	1.8898k6	2.02	0.55	3.94	M16	1.42	1.10	13.19	52.70	18.55	14.68	3157
	125-160							1.3780k6	1.49	0.39		M12	1.10						
167	31.5-112	7.0866m6	7.48	1.77	7.87	M30	2.36	2.1654m6	2.32	0.63	3.94	M20	1.65	1.38	14.76	59.88	22.17	15.87	4408
	125-160							1.6535k6	1.77	0.47		M16	1.42						
177	28.0-100	7.6772m6	8.07	1.77	9.84	M30	2.36	2.5591m6	2.72	0.71	4.72	M20	1.65	1.38	17.72	71.46	24.09	18.35	6335
	112-140							1.9685k6	2.09	0.55		M16	1.42						
187	31.5-112	7.6772m6	8.07	1.77	9.84	M30	2.36	2.5591m6	2.72	0.71	4.72	M20	1.65	1.38	17.72	71.46	24.09	18.35	6468
	125-160							1.9685k6	2.09	0.55		M16	1.42						

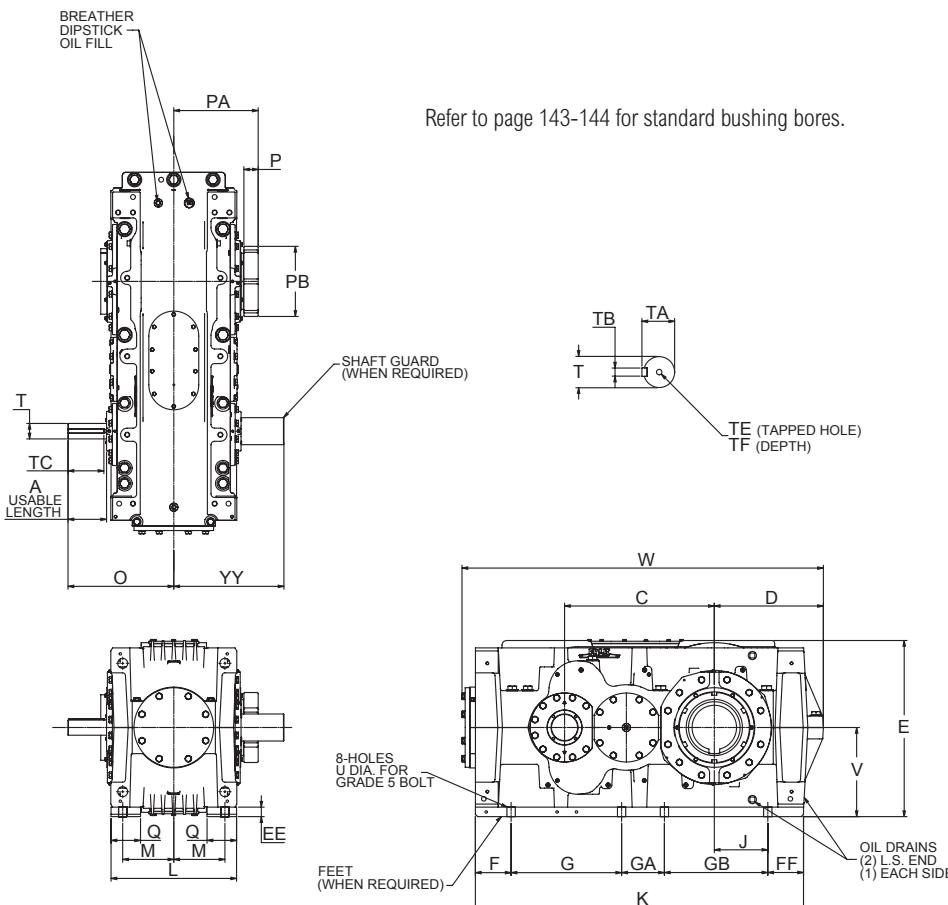
★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* See table 1 on page 59 for tolerance

● Single low-speed shaft extension is standard; double extension is special.

# Type VPT2 Double Reduction Hollow Low-Speed Shaft with Taper Bushing Sizes 133 – 173/Dimensions — Inches



DRIVE SIZE★	Ratios	A	C	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PA	PB	Q
133	5.60-28.0	3.94	16.93	13.05	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	13.07	2.24	11.93	9.45	4.44
143	5.60-28.0	4.92	19.10	13.91	24.49	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	14.33	2.24	11.81	10.24	4.25
153	5.60-28.0	5.12	22.05	15.32	26.20	1.57	5.47	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	15.55	2.32	13.19	11.02	4.49
163	5.60-28.0	6.10	24.80	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	17.52	2.36	13.98	11.61	4.88
173	5.00-25.0	6.30	27.56	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	18.70	...	13.03	11.00	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	V	W	YY	Approx. Wt. lb.
		T*	TA	TB	TC	TE	TF					
133	5.60-20.0	2.2047m6	2.36	0.63	3.94	M20	1.65	0.94	11.02	43.35	13.45	1755
	22.4-28.0	1.6535k6	1.77	0.47		M16	1.42					
143	5.60-20.0	2.5591m6	2.72	0.71	4.53	M20	1.65	0.94	12.40	48.12	14.81	2290
	22.4-28.0	1.7717k6	1.89	0.55		M16	1.42					
153	5.60-20.0	2.9530m6	3.12	0.79	4.92	M20	1.65	1.10	13.19	52.70	16.24	3178
	22.4-28.0	2.1654m6	2.32	0.63		M20	1.65					
163	5.60-20.0	3.3465m6	3.54	0.87	5.91	M20	1.65	1.38	14.76	59.88	18.23	3990
	22.4-28.0	2.5591m6	2.72	0.71		M20	1.65					
173	5.00-18.0	3.7402m6	3.94	0.98	6.10	M24	1.97	1.38	17.72	71.46	19.33	5943
	20.0-25.0	2.9528m6	3.11	0.79		M20	1.65					

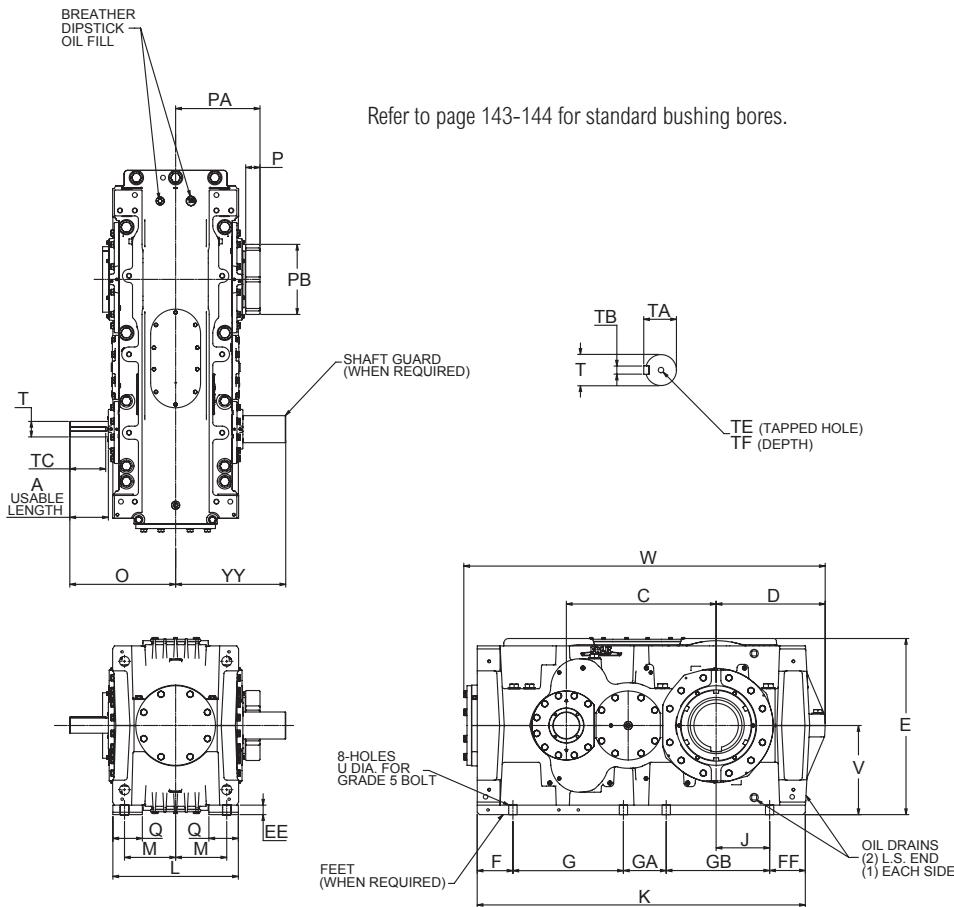
★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* See table 1 on page 59 for tolerance.

# Type VPT2 Double Reduction Hollow Low-Speed Shaft with Taper Bushing

## Sizes 145 – 175/Dimensions — Inches



DRIVE SIZE★	Ratios	A	C	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PA	PB	Q
<b>135</b>	5.60-28.0	3.94	16.93	13.05	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	13.07	2.24	11.93	9.45	4.44
<b>145</b>	5.60-28.0	4.92	19.10	13.91	24.49	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	14.33	2.24	11.81	10.24	4.25
<b>165</b>	5.60-28.0	6.10	24.80	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	17.52	2.36	13.98	11.61	4.88
<b>175</b>	5.00-25.0	6.30	27.56	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	18.70	...	13.03	11.00	5.91

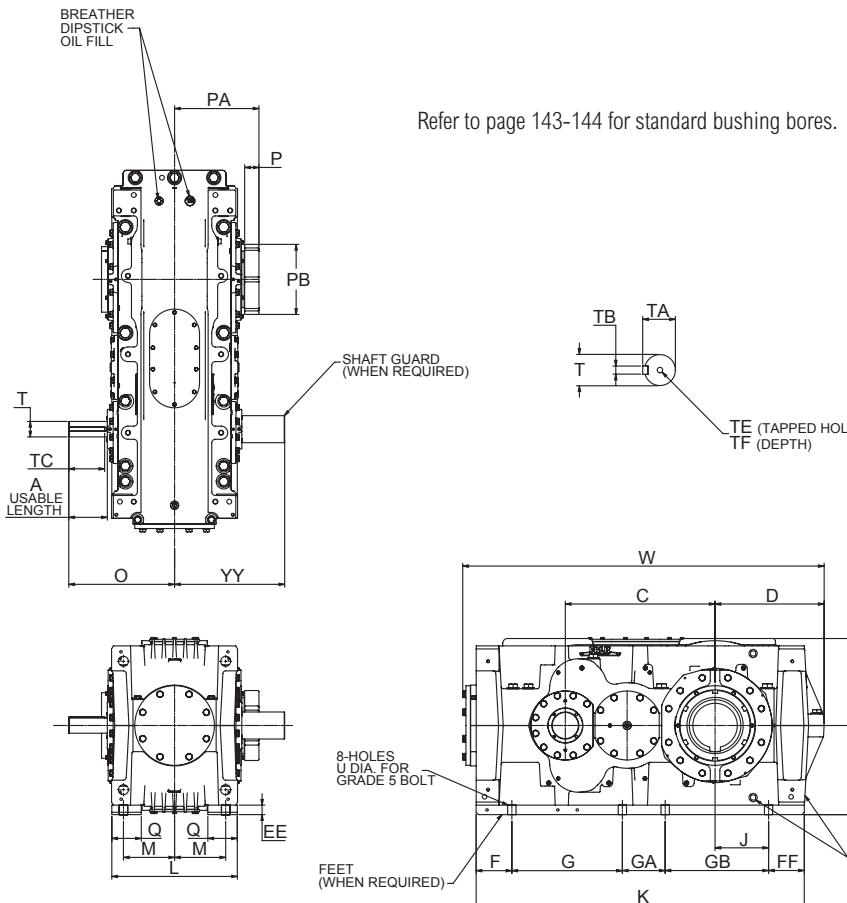
DRIVE SIZE★	Ratios	High-Speed Shaft†						U	V	W	YY	Approx. Wt. lb.
		T*	TA	TB	TC	TE	TF					
<b>135</b>	5.60-20.0	2.2047m6	2.36	0.63	3.94	M20	1.65	0.94	11.02	43.35	13.45	1755
	22.4-28.0	1.6535k6	1.77	0.47		M16	1.42					
<b>145</b>	5.60-20.0	2.5591m6	2.72	0.71	4.53	M20	1.65	0.94	12.40	48.12	14.81	2290
	22.4-28.0	1.7717k6	1.89	0.55		M16	1.42					
<b>165</b>	5.60-20.0	3.3465m6	3.54	0.87	5.91	M20	1.65	1.38	14.76	59.88	18.23	3990
	22.4-28.0	2.5591m6	2.72	0.71		M20	1.42					
<b>175</b>	5.00-18.0	3.7402m6	3.94	0.98	6.10	M24	1.97	1.38	17.72	71.46	19.33	5943
	20.0-25.0	2.9528m6	3.11	0.79		M20	1.65					

★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* See table 1 on page 59 for tolerance

# Type VPT2 Double Reduction Hollow Low-Speed Shaft with Taper Bushing Sizes 137 – 187/Dimensions — Inches



DRIVE SIZE★	Ratios	A	C	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PA	PB	Q
137	5.60-28.0	3.94	16.93	13.05	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	13.07	2.24	11.93	9.45	4.44
147	5.60-28.0	4.92	19.10	13.91	24.49	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	14.33	2.24	11.81	10.24	4.25
157	5.60-28.0	5.12	22.05	15.32	26.20	1.57	5.47	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	15.55	2.32	13.19	11.02	4.49
167	5.60-28.0	6.10	24.80	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	17.52	2.36	13.98	11.61	4.88
177	5.00-25.0	6.30	27.56	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	18.70	...	13.03	11.00	5.91
187	5.60-28.0	6.30	28.54	22.01	35.08	1.97	6.26	6.69	21.46	7.87	22.05	11.42	64.33	23.15	9.65	18.70	...	13.03	11.00	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	V	W	YY	Approx. Wt. lb.
		T*	TA	TB	TC	TE	TF					
137	5.60-20.0	2.2047m6	2.36	0.63	3.94	M20	1.65	0.94	11.02	43.35	13.45	1755
	22.4-28.0	1.6535k6	1.77	0.47		M16	1.42					
147	5.60-20.0	2.5591m6	2.72	0.71	4.53	M20	1.65	0.94	12.40	48.12	14.81	2290
	22.4-28.0	1.7717k6	1.89	0.55		M16	1.42					
157	5.60-20.0	2.9530m6	3.12	0.79	4.92	M20	1.65	1.10	13.19	52.70	16.24	3178
	22.4-28.0	2.1654m6	2.32	0.63		M20	1.65					
167	5.60-20.0	3.3465m6	3.54	0.87	5.91	M20	1.65	1.38	14.76	59.88	18.23	3990
	22.4-28.0	2.5591m6	2.72	0.71		M20	1.65					
177	5.00-18.0	3.7402m6	3.94	0.98	6.10	M24	1.97	1.38	17.72	71.46	19.33	5943
	20.0-25.0	2.9528m6	3.11	0.79		M20	1.65					
187	5.60-20.0	3.7402m6	3.94	0.98	6.10	M24	1.97	1.38	17.72	71.46	19.33	5943
	22.4-28.0	2.9528m6	3.11	0.79		M20	1.65					

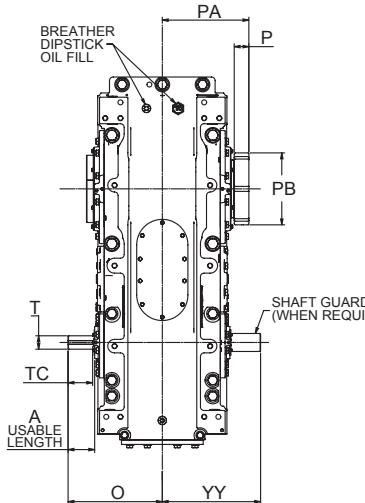
★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

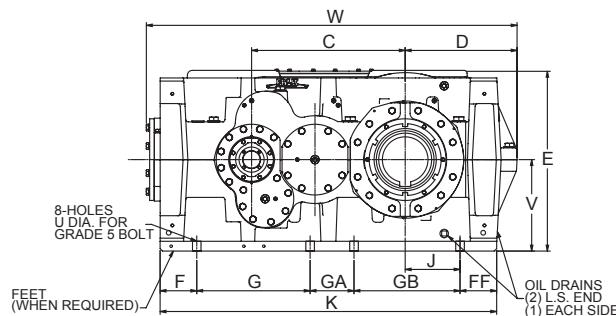
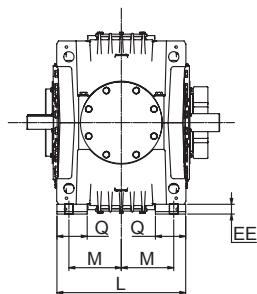
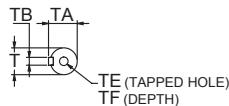
\* See table 1 on page 59 for tolerance.

# Type VPT3 Triple Reduction Hollow Low-Speed Shaft with Taper Bushing

## Sizes 133 – 173/Dimensions — Inches



Refer to page 143-144 for standard bushing bores.



DRIVE SIZE★	Ratios	A	C	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PA	PB	Q
133	31.5-160	2.76	16.93	13.06	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	11.89	2.24	11.93	9.45	4.44
143	31.5-160	3.94	19.10	13.91	24.35	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	13.15	2.24	11.81	10.24	4.25
153	31.5-160	3.94	22.10	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	14.37	2.32	13.19	11.02	4.49
163	31.5-160	3.94	24.80	18.07	29.37	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	15.24	2.36	13.98	11.61	4.88
173	28.0-140	5.12	27.56	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	17.52	...	13.03	11.00	5.91

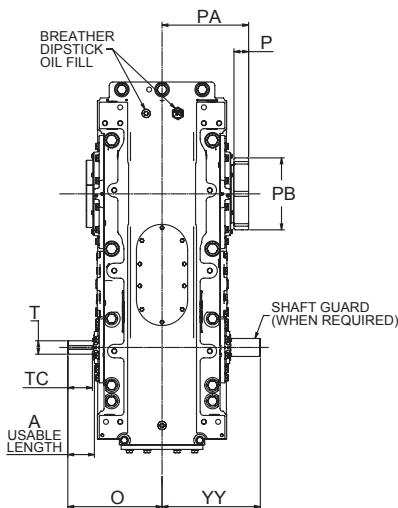
DRIVE SIZE★	Ratios	High-Speed Shaft†						U	V	W	YY	Approx. Wt. lb.
		T*	TA	TB	TC	TE	TF					
133	31.5-112	1.3780k6	1.49	0.39	2.56	M12	1.10	0.94	11.02	43.34	12.42	1799
	125-160	0.9842j6	1.10	0.31		M10	0.87					
143	31.5-112	1.7717k6	1.90	0.55	3.54	M16	1.42	0.94	12.40	48.12	13.88	2221
	125-160	1.1811j6	1.29	0.31		M10	0.87					
153	31.5-112	1.8900k6	2.02	0.55	3.94	M16	1.42	1.10	13.19	52.70	14.68	3157
	125-160	1.3780k6	1.49	0.39		M12	1.10					
163	31.5-112	2.1654m6	2.32	0.63	3.94	M20	1.65	1.38	14.76	59.88	15.87	4066
	125-160	1.6535k6	1.77	0.47		M16	1.42					
173	28.0-100	2.5591m6	2.72	0.71	4.72	M20	1.65	1.38	17.72	71.46	18.35	5923
	112-140	1.9685k6	2.09	0.55		M16	1.42					

★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

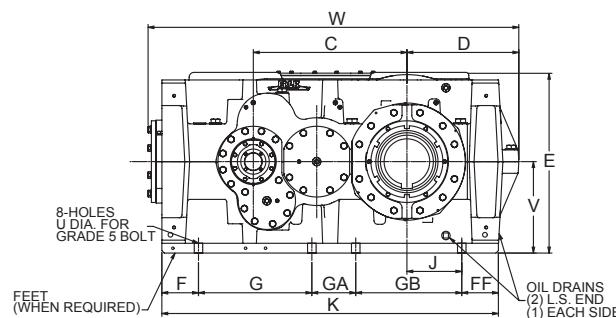
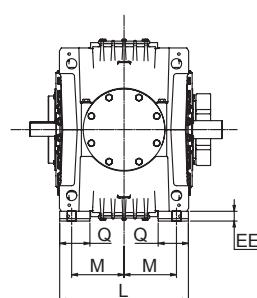
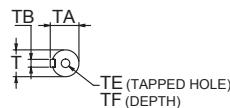
† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* See table 1 on page 59 for tolerance

# Type VPT3 Triple Reduction Hollow Low-Speed Shaft with Taper Bushing Sizes 145 – 175/Dimensions — Inches



Refer to page 143-144 for standard bushing bores.



DRIVE SIZE★	Ratios	A	C	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PA	PB	Q
145	31.5-160	3.94	19.10	13.91	24.35	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	13.15	2.24	11.81	10.24	4.25
155	31.5-160	3.94	22.10	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	14.37	2.32	13.19	11.02	4.49
165	31.5-160	3.94	24.80	18.07	29.37	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	15.24	2.36	13.98	11.61	4.88
175	28.0-140	5.12	27.56	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	17.52	...	13.03	11.00	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	V	W	YY	Approx. Wt. lb.
		T*	TA	TB	TC	TE	TF					
145	31.5-112	1.7717k6	1.90	0.55	3.54	M16	1.42	0.94	12.40	48.12	13.88	2221
	125-160	1.1811j6	1.29	0.31		M10	0.87					
155	31.5-112	1.8900k6	2.02	0.55	3.94	M16	1.42	1.10	13.19	52.70	14.68	3157
	125-160	1.3780k6	1.49	0.39		M12	1.10					
165	31.5-112	2.1654m6	2.32	0.63	3.94	M20	1.65	1.38	14.76	59.88	15.87	4066
	125-160	1.6535k6	1.77	0.47		M16	1.42					
175	28.0-100	2.5591m6	2.72	0.71	4.72	M20	1.65	1.38	17.72	71.46	18.35	5923
	112-140	1.9685k6	2.09	0.55		M16	1.42					

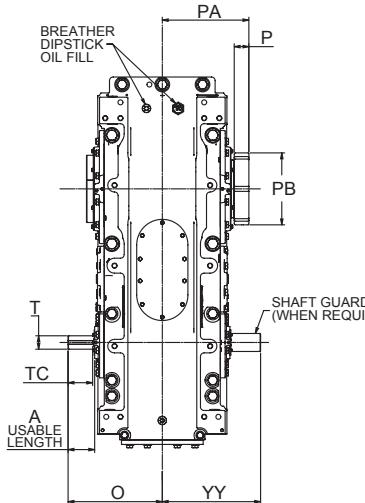
★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

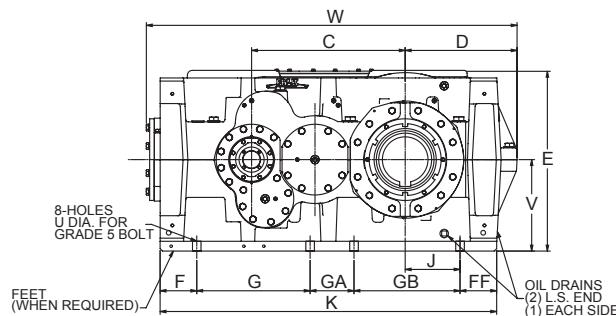
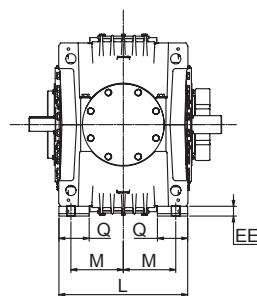
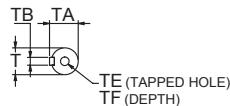
\* See table 1 on page 59 for tolerance.

# Type VPT3 Triple Reduction Hollow Low-Speed Shaft with Taper Bushing

## Sizes 137 – 187/Dimensions — Inches



Refer to page 143-144 for standard bushing bores.



DRIVE SIZE★	Ratios	A	C	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PA	PB	Q
<b>137</b>	31.5-160	2.76	16.93	13.06	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	11.89	2.24	11.93	9.45	4.44
<b>147</b>	31.5-160	3.94	19.10	13.91	24.35	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	13.15	2.24	11.81	10.24	4.25
<b>157</b>	31.5-160	3.94	22.10	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	14.37	2.32	13.19	11.02	4.49
<b>167</b>	31.5-160	3.94	24.80	18.07	29.37	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	15.24	2.36	13.98	11.61	4.88
<b>177</b>	28.0-140	5.12	27.56	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	17.52	...	13.03	11.00	5.91
<b>187</b>	31.5-160	5.12	28.54	22.01	35.08	1.97	6.26	6.69	21.46	7.87	22.05	11.42	64.33	23.15	9.65	17.52	...	13.03	11.00	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	V	W	YY	Approx. Wt. lb.
		T*	TA	TB	TC	TE	TF					
<b>137</b>	31.5-112	1.3780k6	1.49	0.39	2.56	M12	1.10	0.94	11.02	43.34	12.42	1799
	125-160	0.9842j6	1.10	0.31		M10	0.87					
<b>147</b>	31.5-112	1.7717k6	1.90	0.55	3.54	M16	1.42	0.94	12.40	48.12	13.88	2221
	125-160	1.1811j6	1.29	0.31		M10	0.87					
<b>157</b>	31.5-112	1.8900k6	2.02	0.55	3.94	M16	1.42	1.10	13.19	52.70	14.68	3157
	125-160	1.3780k6	1.49	0.39		M12	1.10					
<b>167</b>	31.5-112	2.1654m6	2.32	0.63	3.94	M20	1.65	1.38	14.76	59.88	15.87	4066
	125-160	1.6535k6	1.77	0.47		M16	1.42					
<b>177</b>	28.0-100	2.5591m6	2.72	0.71	4.72	M20	1.65	1.38	17.72	71.46	18.35	5923
	112-140	1.9685k6	2.09	0.55		M16	1.42					
<b>187</b>	31.5-112	2.5591m6	2.72	0.71	4.72	M20	1.65	1.38	17.72	71.46	18.35	6060
	125-160	1.9685k6	2.09	0.55		M16	1.42					

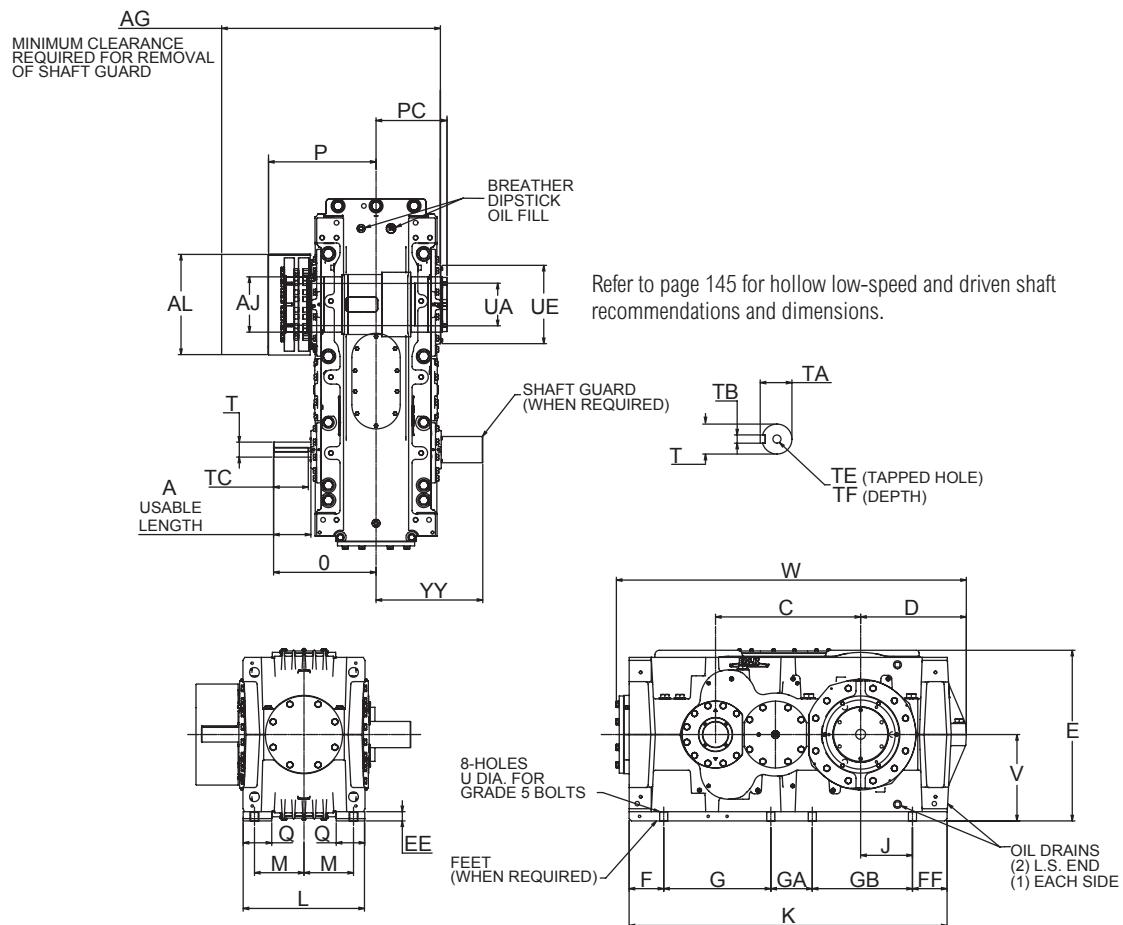
★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* See table 1 on page 59 for tolerance.

# Type VPJ2 Double Reduction Hollow Low-Speed Shaft with Shrink Disc

## Sizes 133 – 173/Dimensions — Inches



DRIVE SIZE★	Ratios	A	AG	AJ*	AL	C	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PC	Q
133	5.60-28.0	3.94	29.41	5.3150 J7	13.46	16.93	13.05	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	13.07	13.68	8.50	4.44
143	5.60-28.0	4.92	31.81	5.9055 J7	15.11	19.10	13.91	24.49	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	14.33	15.32	8.50	4.25
153	5.60-28.0	5.12	34.49	6.4961 J7	15.90	22.05	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	15.55	16.86	9.72	4.49
163	5.60-28.0	6.10	36.73	7.0866 J7	17.32	24.80	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	17.52	18.46	11.34	4.88
173	5.00-25.0	6.30	40.71	7.8740 J7	18.70	27.56	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	18.70	20.39	12.48	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	UA*	UE	V	W	YY	Approx. Wt. lb.
		T*	TA	TB	TC	TE	TF							
133	5.60-20.0	2.2050m6	2.36	0.63	3.94	M20	1.65	0.94	5.5118 H7	9.29	11.02	43.35	13.45	1755
	22.4-28.0	1.6535k6	1.77	0.47		M16	1.42							
143	5.60-20.0	2.5591m6	2.71	0.71	4.53	M20	1.65	0.94	6.1024 H7	10.51	12.40	48.12	14.81	2290
	22.4-28.0	1.7717k6	1.90	0.55		M16	1.42							
153	5.60-20.0	2.9528m6	3.12	0.79	4.92	M20	1.65	1.10	6.6929 H7	11.57	13.19	52.70	16.24	3178
	22.4-28.0	2.1654m6	2.32	0.63		M20	1.65							
163	5.60-20.0	3.3465m6	3.54	0.87	5.91	M20	1.65	1.38	7.2835 H7	13.43	14.76	59.88	18.23	4088
	22.4-28.0	2.5591m6	2.72	0.71		M20	1.65							
173	5.00-18.0	3.7402m6	3.94	0.98	6.10	M24	1.97	1.38	8.2677 H7	14.76	17.72	71.46	19.33	6080
	20.0-25.0	2.9528m6	3.11	0.79		M20	1.65							

★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

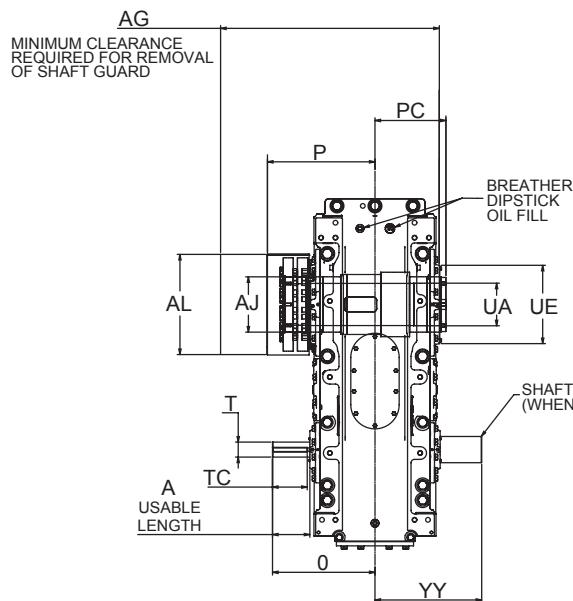
† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* j6 tolerance for shaft diameters 1.2" and less, k6 tolerance for shaft diameters over 1.2" to 2.0", m6 tolerance for shaft diameters above 2.0".

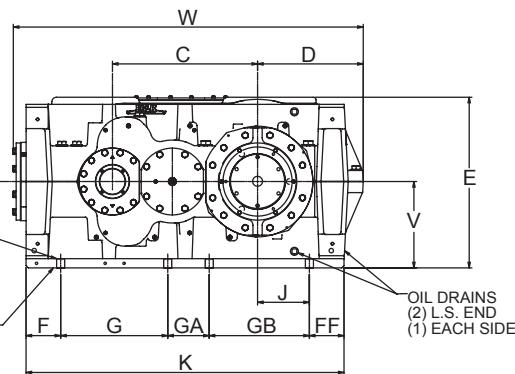
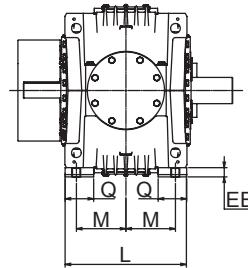
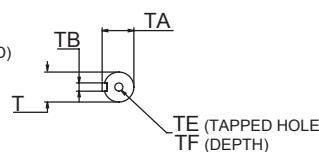
\* See table 1 on page 59 for tolerance

# Type VPJ2 Double Reduction Hollow Low-Speed Shaft with Shrink Disc

## Sizes 145 – 175/Dimensions — Inches



Refer to page 145 for hollow low-speed and driven shaft recommendations and dimensions.



DRIVE SIZE★	Ratios	A	AG	AJ*	AL	C	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PC	Q
<b>145</b>	5.60-28.0	4.92	31.81	5.9055 J7	15.11	19.10	13.91	24.49	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	14.33	15.32	8.50	4.25
<b>155</b>	5.60-28.0	5.12	34.49	6.4961 J7	15.90	22.05	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	15.55	16.86	9.72	4.49
<b>165</b>	5.60-28.0	6.10	36.73	7.0866 J7	17.32	24.80	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	17.52	18.46	11.34	4.88
<b>175</b>	5.00-25.0	6.30	40.71	7.8740 J7	18.70	27.56	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	18.70	20.39	12.48	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	UA*	UE	V	W	YY	Approx. Wt. lb.
		T*	TA	TB	TC	TE	TF							
<b>145</b>	5.60-20.0	2.5591m6	2.71	0.71	4.53	M20	1.65	0.94	6.1024 H7	10.51	12.40	48.12	14.81	2290
	22.4-28.0	1.7717k6	1.90	0.55		M16	1.42							
<b>155</b>	5.60-20.0	2.9528m6	3.12	0.79	4.92	M20	1.65	1.10	6.6929 H7	11.57	13.19	52.70	16.24	3178
	22.4-28.0	2.1654m6	2.32	0.63										
<b>165</b>	5.60-20.0	3.3465m6	3.54	0.87	5.91	M20	1.65	1.38	7.2835 H7	13.43	14.76	59.88	18.23	4088
	22.4-28.0	2.5591m6	2.72	0.71										
<b>175</b>	5.00-18.0	3.7402m6	3.94	0.98	6.10	M24	1.97	1.38	8.2677 H7	14.76	17.72	71.46	19.33	6080
	20.0-25.0	2.9528m6	3.11	0.79		M20	1.65							

★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

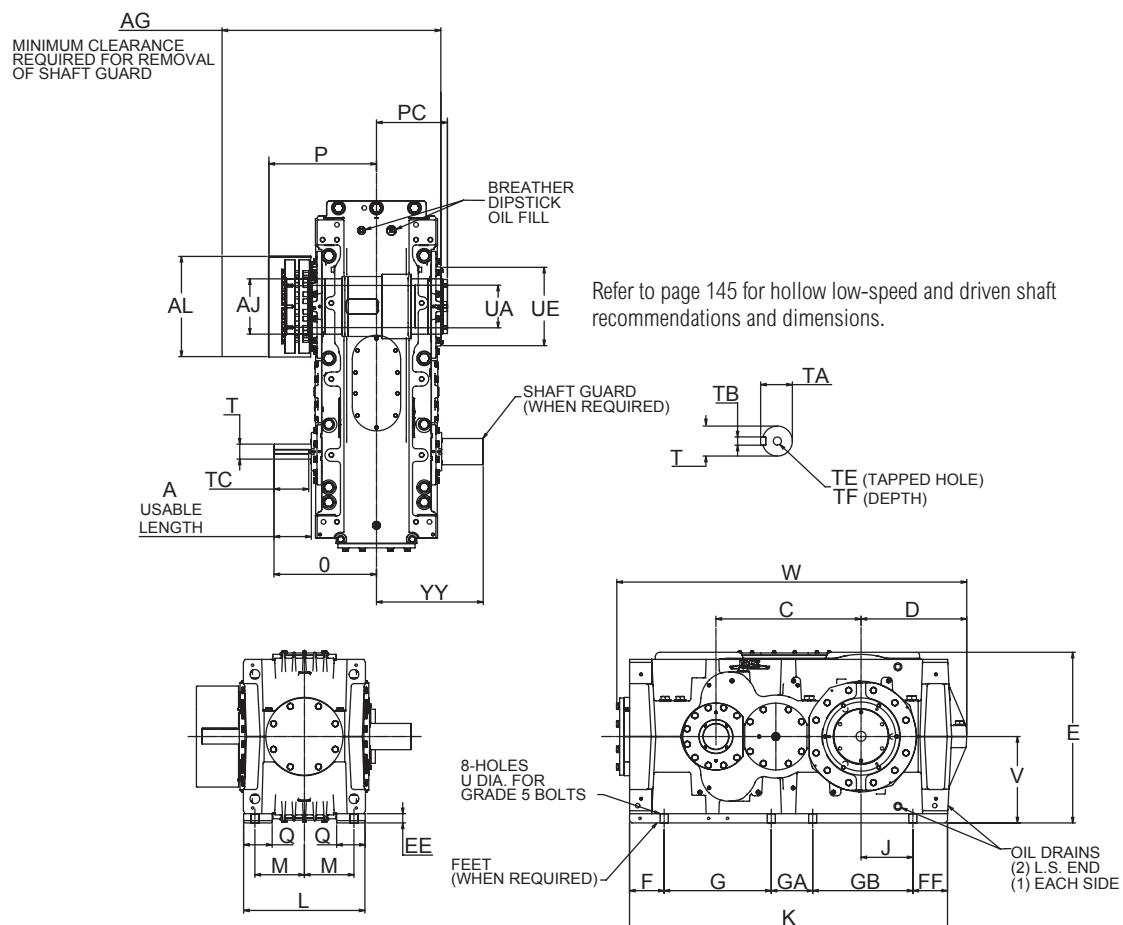
† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* J6 tolerance for shaft diameters 1.2" and less, k6 tolerance for shaft diameters over 1.2" to 2.0", m6 tolerance for shaft diameters above 2.0".

\* See table 1 on page 59 for tolerance.

# Type VPJ2 Double Reduction Hollow Low-Speed Shaft with Shrink Disc

## Sizes 137 – 187/Dimensions — Inches



DRIVE SIZE★	Ratios	A	AG	AJ*	AL	C	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PC	Q
137	5.60-28.0	3.94	29.41	5.3150 J7	13.46	16.93	13.05	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	13.07	13.68	8.50	4.44
147	5.60-28.0	4.92	31.81	5.9055 J7	15.11	19.10	13.91	24.49	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	14.33	15.32	8.50	4.25
157	5.60-28.0	5.12	34.49	6.4961 J7	15.90	22.05	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	15.55	16.86	9.72	4.49
167	5.60-28.0	6.10	36.73	7.0866 J7	17.32	24.80	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	17.52	18.46	11.34	4.88
177	5.00-25.0	6.30	40.71	7.8740 J7	18.70	27.56	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	18.70	20.39	12.48	5.91
187	5.60-28.0	6.30	40.71	7.8740 J7	18.70	28.54	22.01	35.08	1.97	6.26	6.69	21.46	7.87	22.05	11.42	64.33	23.15	9.65	18.70	20.39	12.48	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†								U	UA*	UE	V	W	YY	Approx. Wt. lb.
		T*	TA	TB	TC	TE	TF	U								
137	5.60-20.0	2.2050m6	2.36	0.63	3.94	M20	1.65	0.94	5.5118 H7	9.29	11.02	43.35	13.45	1755		
	22.4-28.0	1.6535k6	1.77	0.47		M16	1.42									
147	5.60-20.0	2.5591m6	2.71	0.71	4.53	M20	1.65	0.94	6.1024 H7	10.51	12.40	48.12	14.81	2290		
	22.4-28.0	1.7717k6	1.90	0.55		M16	1.42									
157	5.60-20.0	2.9528m6	3.12	0.79	4.92	M20	1.65	1.10	6.6929 H7	11.57	13.19	52.70	16.24	3178		
	22.4-28.0	2.1654m6	2.32	0.63		M20	1.65									
167	5.60-20.0	3.3465m6	3.54	0.87	5.91	M20	1.65	1.38	7.2835 H7	13.43	14.76	59.88	18.23	4088		
	22.4-28.0	2.5591m6	2.72	0.71		M20	1.65									
177	5.00-18.0	3.7402m6	3.94	0.98	6.10	M24	1.97	1.38	8.2677 H7	14.76	17.72	71.46	19.33	6080		
	20.0-25.0	2.9528m6	3.11	0.79		M20	1.65									
187	5.60-20.0	3.7402m6	3.94	0.98	6.10	M24	1.97	1.38	8.2677 H7	14.76	17.72	71.46	19.33	6072		
	22.4-28.0	2.9528m6	3.11	0.79		M20	1.65									

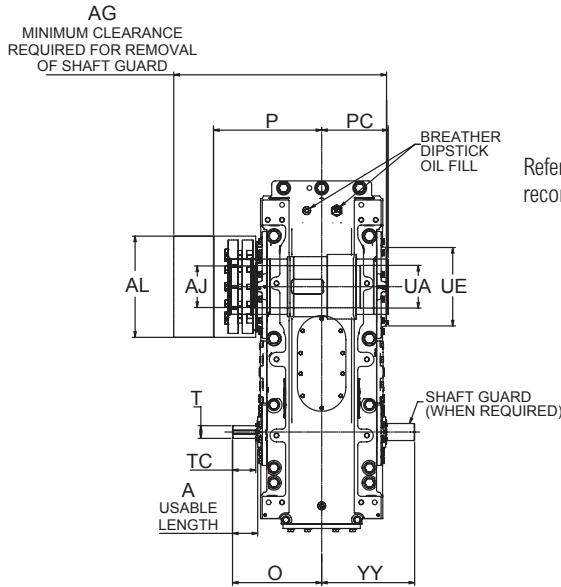
★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

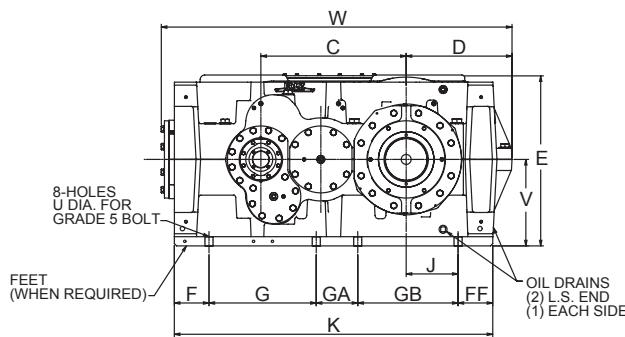
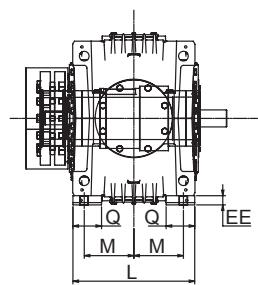
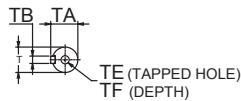
\* See table 1 on page 59 for tolerance.

# Type VPJ3 Triple Reduction Hollow Low-Speed Shaft with Shrink Disc

## Sizes 133 – 173/Dimensions — Inches



Refer to page 145 for hollow low-speed and driven shaft recommendations and dimensions.



DRIVE SIZE★	Ratios	A	AG	AJ*	AL	C	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PC	Q
<b>133</b>	31.5-160	2.76	30.04	5.3150 J7	13.46	16.93	13.06	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	11.89	13.70	8.50	4.44
<b>143</b>	31.5-160	3.94	31.81	5.9055 J7	15.11	19.09	13.91	24.35	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	13.15	15.32	8.94	4.25
<b>153</b>	31.5-160	3.94	34.49	6.4961 J7	15.90	22.05	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	14.37	16.86	9.72	4.49
<b>163</b>	31.5-160	3.94	36.73	7.0866 J7	17.32	24.80	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	15.24	18.46	11.34	4.88
<b>173</b>	28.0-140	5.12	40.71	8.0709 J7	18.70	27.56	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	17.52	20.39	12.48	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	UA*	UE	V	W	YY	Approx. Wt. lb.
		T*	TA	TB	TC	TE	TF							
<b>133</b>	31.5-112	1.3780k6	1.49	0.39	2.56	M12	1.10	0.94	5.5118 H7	9.29	11.02	43.34	12.42	1799
	125-160	0.9843j6	1.10	0.31		M10	0.87							
<b>143</b>	31.5-112	1.7717k6	1.90	0.55	3.54	M16	1.42	0.94	6.1024 H7	10.51	12.40	48.12	13.88	2221
	125-160	1.1181j6	1.29	0.31		M10	0.87							
<b>153</b>	31.5-112	1.8898k6	2.02	0.55	3.94	M16	1.42	1.10	6.6929 H7	11.57	13.19	52.70	14.68	3157
	125-160	1.3780k6	1.49	0.39		M12	1.10							
<b>163</b>	31.5-112	2.1654m6	2.32	0.63	3.94	M20	1.65	1.38	7.2835 H7	13.43	14.76	59.88	15.87	4066
	125-160	1.6535k6	1.77	0.47		M16	1.42							
<b>173</b>	28.0-100	2.5590m6	2.72	0.71	4.72	M20	1.65	1.38	8.2677 H7	14.76	17.72	71.46	18.35	6065
	112-140	1.9685k6	2.09	0.55		M16	1.42							

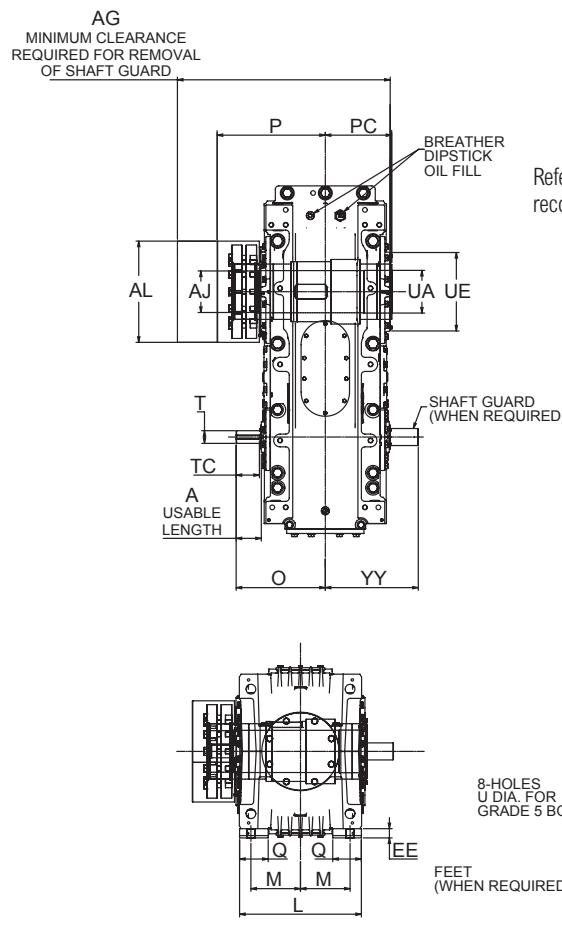
★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

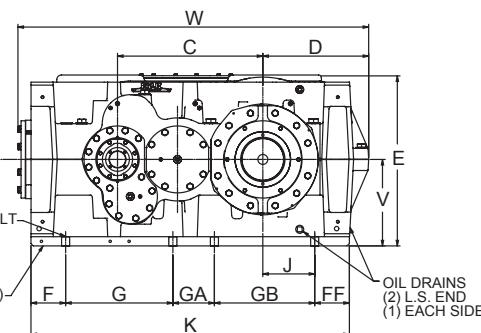
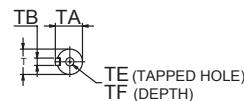
\* See table 1 on page 59 for tolerance

# Type VPJ3 Triple Reduction Hollow Low-Speed Shaft with Shrink Disc

## Sizes 145 – 175/Dimensions — Inches



Refer to page 145 for hollow low-speed and driven shaft recommendations and dimensions.



DRIVE SIZE★	Ratios	A	AG	AJ*	AL	C	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PC	Q
145	31.5-160	3.94	31.81	5.9055 J7	15.11	19.09	13.91	24.35	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	13.15	15.32	8.94	4.25
155	31.5-160	3.94	34.49	6.4961 J7	15.90	22.05	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	14.37	16.86	9.72	4.49
165	31.5-160	3.94	36.73	7.0866 J7	17.32	24.80	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	15.24	18.46	11.34	4.88
175	28.0-140	5.12	40.71	8.0709 J7	18.70	27.56	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	17.52	20.39	12.48	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	UA*	UE	V	W	YY	Approx. Wt. Ib.
		T*	TA	TB	TC	TE	TF							
145	31.5-112	1.7717k6	1.90	0.55	3.54	M16	1.42	0.94	6.1024 H7	10.51	12.40	48.12	13.88	2221
	125-160	1.1181j6	1.29	0.31		M10	0.87							
155	31.5-112	1.8898k6	2.02	0.55	3.94	M16	1.42	1.10	6.6929 H7	11.57	13.19	52.70	14.68	3157
	125-160	1.3780k6	1.49	0.39		M12	1.10							
165	31.5-112	2.1654m6	2.32	0.63	3.94	M20	1.65	1.38	7.2835 H7	13.43	14.76	59.88	15.87	4066
	125-160	1.6535k6	1.77	0.47		M16	1.42							
175	28.0-100	2.5590m6	2.72	0.71	4.72	M20	1.65	1.38	8.2677 H7	14.76	17.72	71.46	18.35	6065
	112-140	1.9685k6	2.09	0.55		M16	1.42							

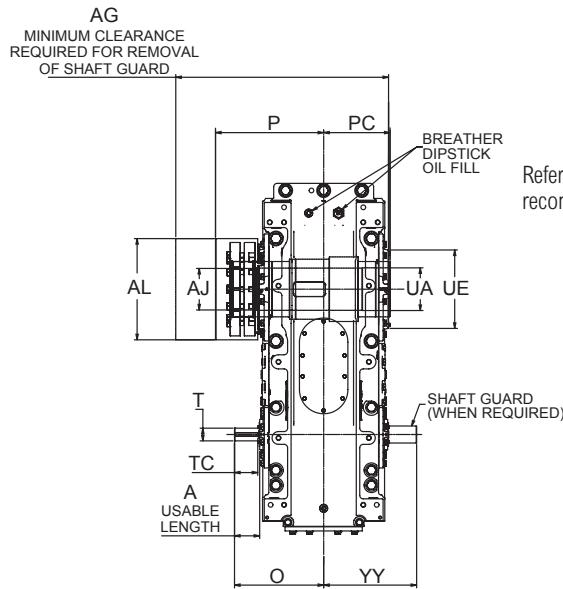
★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

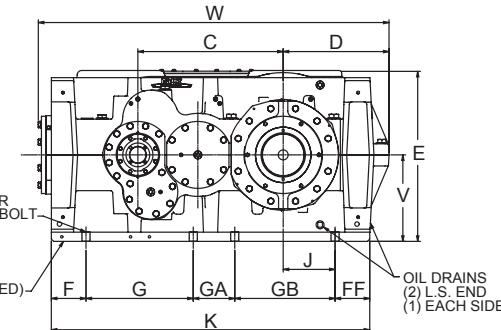
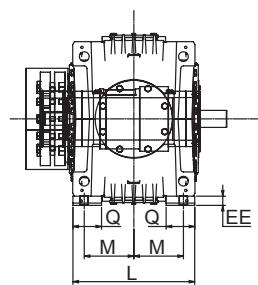
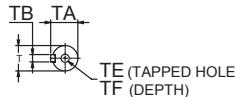
\* See table 1 on page 59 for tolerance.

# Type VPJ3 Triple Reduction Hollow Low-Speed Shaft with Shrink Disc

## Sizes 137 – 187/Dimensions — Inches



Refer to page 145 for hollow low-speed and driven shaft recommendations and dimensions.



DRIVE SIZE★	Ratios	A	AG	AJ*	AL	C	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PC	Q
<b>137</b>	31.5-160	2.76	30.04	5.3150 J7	13.46	16.93	13.06	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	11.89	13.70	8.50	4.44
<b>147</b>	31.5-160	3.94	31.81	5.9055 J7	15.11	19.09	13.91	24.35	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	13.15	15.32	8.94	4.25
<b>157</b>	31.5-160	3.94	34.49	6.4961 J7	15.90	22.05	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	14.37	16.86	9.72	4.49
<b>167</b>	31.5-160	3.94	36.73	7.0866 J7	17.32	24.80	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	15.24	18.46	11.34	4.88
<b>177</b>	28.0-140	5.12	40.71	8.0709 J7	18.70	27.56	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	17.52	20.39	12.48	5.91
<b>187</b>	31.5-160	5.12	40.71	8.0709 J7	18.70	28.54	22.01	35.08	1.97	6.26	6.69	21.46	7.87	22.05	11.42	64.33	23.15	9.65	17.52	20.39	12.48	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	UA*	UE	V	W	YY	Approx. Wt. lb.
		T*	TA	TB	TC	TE	TF							
<b>137</b>	31.5-112	1.3780k6	1.49	0.39	2.56	M12	1.10	0.94	5.5118 H7	9.29	11.02	43.34	12.42	1799
	125-160	0.9843j6	1.10	0.31		M10	0.87							
<b>147</b>	31.5-112	1.7717k6	1.90	0.55	3.54	M16	1.42	0.94	6.1024 H7	10.51	12.40	48.12	13.88	2221
	125-160	1.1181j6	1.29	0.31		M10	0.87							
<b>157</b>	31.5-112	1.8898k6	2.02	0.55	3.94	M16	1.42	1.10	6.6929 H7	11.57	13.19	52.70	14.68	3157
	125-160	1.3780k6	1.49	0.39		M12	1.10							
<b>167</b>	31.5-112	2.1654m6	2.32	0.63	3.94	M20	1.65	1.38	7.2835 H7	13.43	14.76	59.88	15.87	4066
	125-160	1.6535k6	1.77	0.47		M16	1.42							
<b>177</b>	28.0-100	2.5590m6	2.72	0.71	4.72	M20	1.65	1.38	8.2677 H7	14.76	17.72	71.46	18.35	6065
	112-140	1.9685k6	2.09	0.55		M16	1.42							
<b>187</b>	31.5-112	2.5590m6	2.72	0.71	4.72	M20	1.65	1.38	8.2677 H7	14.76	17.72	71.46	18.35	6189
	125-160	1.9685k6	2.09	0.55		M16	1.42							

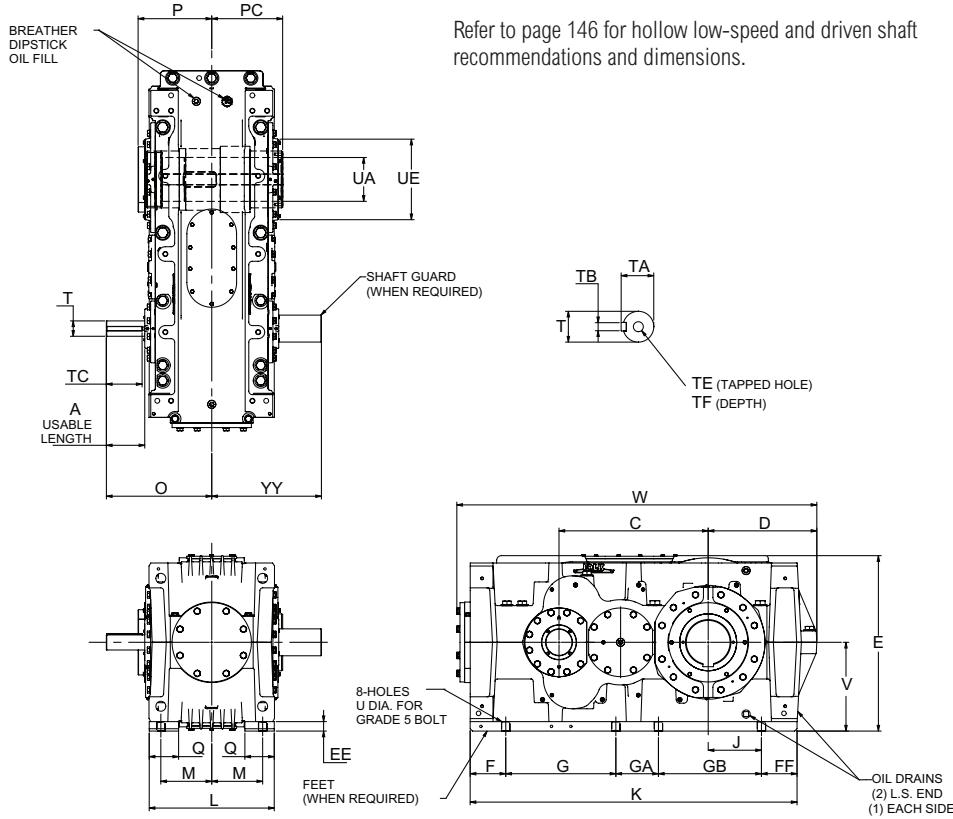
★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* See table 1 on page 59 for tolerance.

# Type VPQ2 Double Reduction with Hollow Low-Speed Shaft

## Sizes 133 – 173/Dimensions — Inches



DRIVE SIZE★	Ratios	A	C	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PC	Q
<b>133</b>	5.60-28.0	3.94	16.93	13.05	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	13.07	9.94	9.17	4.44
<b>143</b>	5.60-28.0	4.92	19.10	13.91	24.49	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	14.33	10.05	9.33	4.25
<b>153</b>	5.60-28.0	5.12	22.05	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	15.55	11.25	10.43	4.49
<b>163</b>	5.60-28.0	6.10	24.80	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	17.52	12.25	11.34	4.88
<b>173</b>	5.00-25.0	6.30	27.56	22.99	36.69	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	18.70	13.14	12.48	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	UA*	UE	V	W	YY	Approx. Wt. Ib.
		T*	TA	TB	TC	TE	TF							
<b>133</b>	5.60-20.0	2.2047m6	2.36	0.63	3.94	M20	1.65	0.94	5.3150 H7	9.29	11.02	43.35	13.45	1755
	22.4-28.0	1.6535k6	1.77	0.47		M16	1.42							
<b>143</b>	5.60-20.0	2.5591m6	2.71	0.71	4.53	M20	1.65	0.94	5.9055 H7	10.51	12.40	48.12	14.81	2290
	22.4-28.0	1.7717k6	1.90	0.55		M16	1.42							
<b>153</b>	5.60-20.0	2.9528m6	3.12	0.79	4.92	M20	1.65	1.10	6.6929 H7	11.57	13.19	52.70	16.24	3178
	22.4-28.0	2.1654m6	2.32	0.63		M20	1.65							
<b>163</b>	5.60-20.0	3.3464m6	3.53	0.87	5.91	M20	1.65	1.38	7.2835H7	13.43	14.76	59.86	18.25	3990
	22.4-28.0	2.5591m6	2.71	0.71		M20	1.65							
<b>173</b>	5.00-18.0	3.7402m6	3.93	0.98	6.10	M24	1.97	1.38	8.6614H7	14.76	17.72	71.46	19.33	6355
	20.0-25.0	2.9528m6	3.12	0.79		M20	1.65							

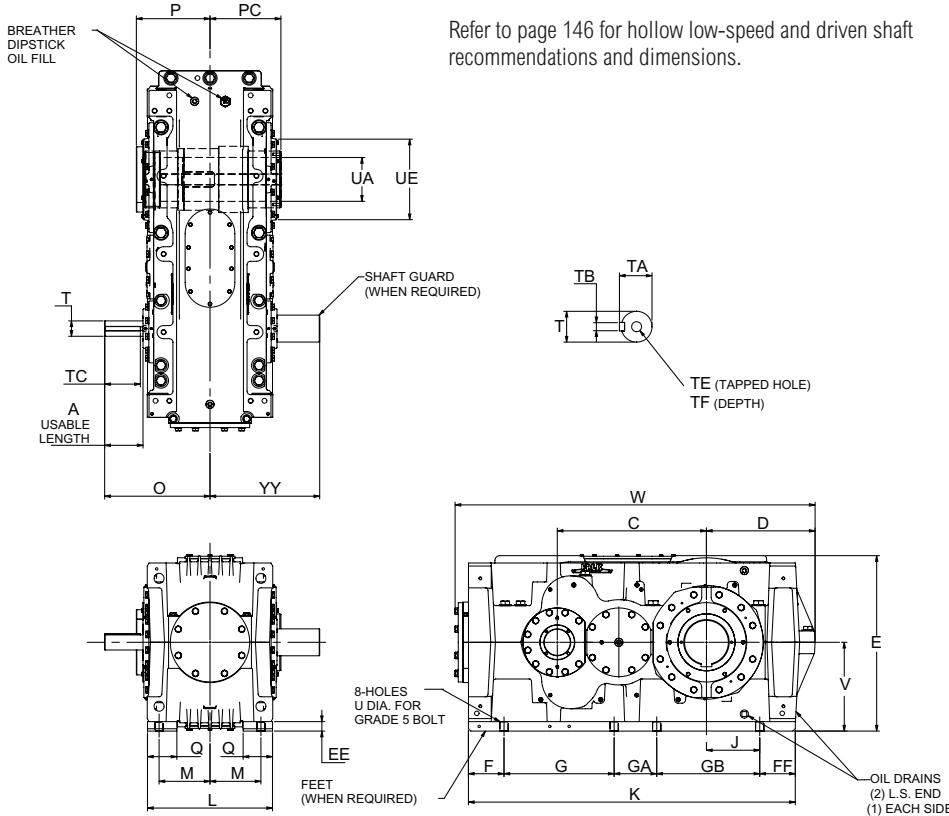
★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* See table 1 on page 59 for tolerance.

# Type VPQ2 Double Reduction with Hollow Low-Speed Shaft

## Sizes 145 – 175/Dimensions — Inches



DRIVE SIZE★	Ratios	A	C	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PC	Q
<b>145</b>	5.60-28.0	4.92	19.10	13.91	24.49	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	14.33	10.05	9.33	4.25
<b>155</b>	5.60-28.0	5.12	22.05	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	15.55	11.25	10.43	4.49
<b>165</b>	5.60-28.0	6.10	24.80	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	17.52	12.25	11.34	4.88
<b>175</b>	5.00-25.0	6.30	27.56	22.99	36.69	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	18.70	13.14	12.48	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	UA*	UE	V	W	YY	Approx. Wt. lb.
		T*	TA	TB	TC	TE	TF							
<b>145</b>	5.60-20.0	2.5591m6	2.71	0.71	4.53	M20	1.65	0.94	5.9055 H7	10.51	12.40	48.12	14.81	2290
	22.4-28.0	1.7717K6	1.90	0.55		M16	1.42							
<b>155</b>	5.60-20.0	2.9528m6	3.12	0.79	4.92	M20	1.65	1.10	6.6929 H7	11.57	13.19	52.70	16.24	3178
	22.4-28.0	2.1654m6	2.32	0.63		M20	1.65							
<b>165</b>	5.60-20.0	3.3464m6	3.53	0.87	5.91	M20	1.65	1.38	7.2835H7	13.43	14.76	59.86	18.25	3990
	22.4-28.0	2.5591m6	2.71	0.71		M20	1.65							
<b>175</b>	5.00-18.0	3.7402m6	3.93	0.98	6.10	M24	1.97	1.38	8.6614H7	14.76	17.72	71.46	19.33	6355
	20.0-25.0	2.9528m6	3.12	0.79		M20	1.65							

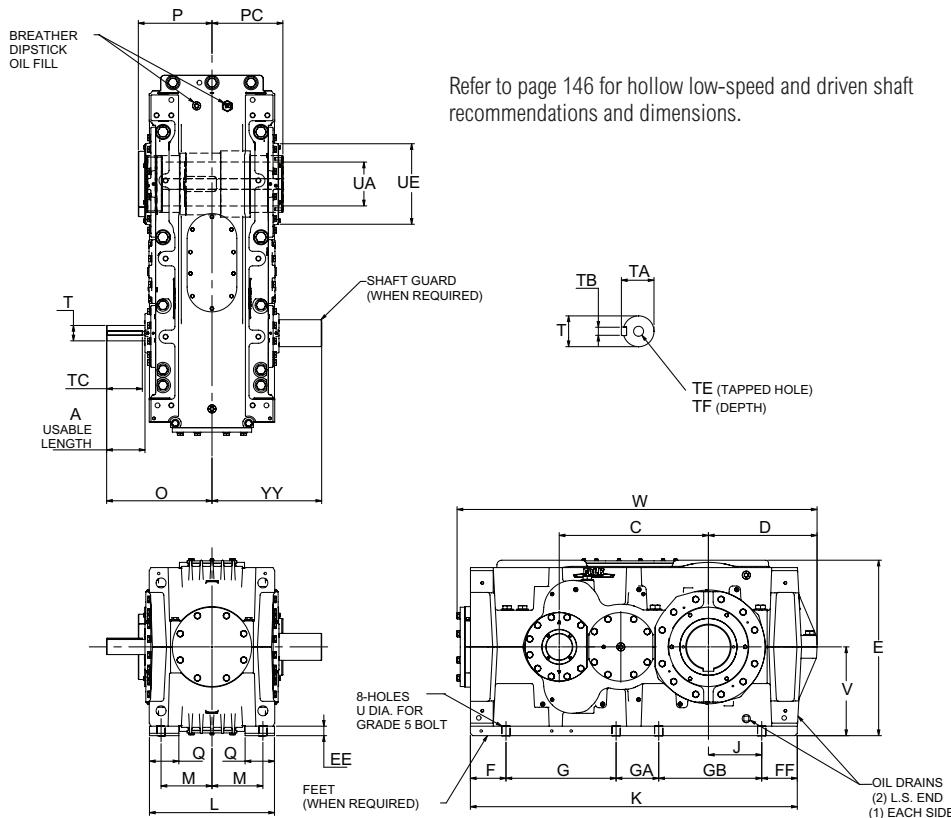
★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* See table 1 on page 59 for tolerance

# Type VPQ2 Double Reduction with Hollow Low-Speed Shaft

## Sizes 137 – 187/Dimensions — Inches



DRIVE SIZE★	Ratios	A	C	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PC	Q
<b>137</b>	5.60-28.0	3.94	16.93	13.05	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	13.07	9.94	9.17	4.44
<b>147</b>	5.60-28.0	4.92	19.10	13.91	24.49	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	14.33	10.05	9.33	4.25
<b>157</b>	5.60-28.0	5.12	22.05	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	15.55	11.25	10.43	4.49
<b>167</b>	5.60-28.0	6.10	24.80	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	17.52	12.25	11.34	4.88
<b>177</b>	5.00-25.0	6.30	27.56	22.99	36.69	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	18.70	13.14	12.48	5.91
<b>187</b>	5.60-28.0	6.30	28.54	22.01	36.69	1.97	6.26	6.69	21.46	7.87	22.05	11.42	64.33	23.15	9.65	18.70	13.14	12.48	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	UA*	UE	V	W	YY	Approx. Wt. Ib.
		T*	TA	TB	TC	TE	TF							
<b>137</b>	5.60-20.0	2.2047m6	2.36	0.63	3.94	M20	1.65	0.94	5.3150 H7	9.29	11.02	43.35	13.45	1755
	22.4-28.0	1.6535k6	1.77	0.47		M16	1.42							
<b>147</b>	5.60-20.0	2.5591m6	2.71	0.71	4.53	M20	1.65	0.94	5.9055 H7	10.51	12.40	48.12	14.81	2290
	22.4-28.0	1.7717k6	1.90	0.55		M16	1.42							
<b>157</b>	5.60-20.0	2.9528m6	3.12	0.79	4.92	M20	1.65	1.10	6.6929 H7	11.57	13.19	52.70	16.24	3178
	22.4-28.0	2.1654m6	2.32	0.63		M20	1.65							
<b>167</b>	5.60-20.0	3.3464m6	3.53	0.87	5.91	M20	1.65	1.38	7.2835H7	13.43	14.76	59.86	18.25	3990
	22.4-28.0	2.5591m6	2.71	0.71		M20	1.65							
<b>177</b>	5.00-18.0	3.7402m6	3.93	0.98	6.10	M24	1.97	1.38	8.6614H7	14.76	17.72	71.46	19.33	6355
	20.0-25.0	2.9528m6	3.12	0.79		M20	1.65							
<b>187</b>	5.60-28.0	3.7402m6	3.93	0.98	6.10	M24	1.97	1.38	8.6614H7	14.76	17.72	71.46	19.33	5943
	22.4-28.0	2.9528m6	3.12	0.79		M20	1.65							

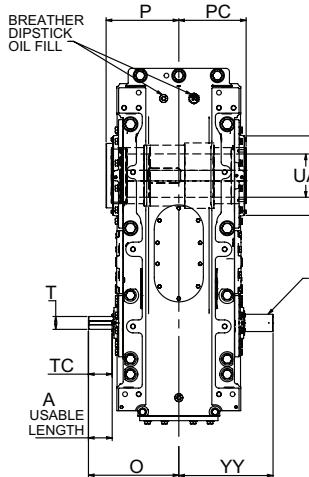
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† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

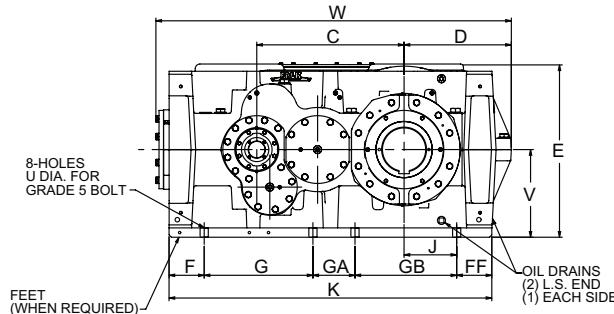
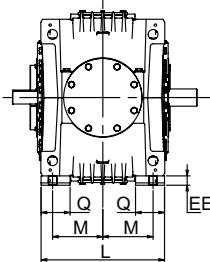
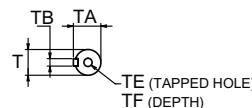
\* See table 1 on page 59 for tolerance.

# Type VPQ3 Triple Reduction with Hollow Low-Speed Shaft

## Sizes 133 – 173/Dimensions — Inches



Refer to page 146 for hollow low-speed and driven shaft recommendations and dimensions.



DRIVE SIZE★	Ratios	A	C	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PC	Q
<b>133</b>	31.5-160	2.76	16.93	13.06	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	11.89	9.94	9.17	4.44
<b>143</b>	31.5-160	3.94	19.09	13.91	24.35	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	13.15	10.05	9.33	4.25
<b>153</b>	31.5-160	3.94	22.05	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	14.37	11.25	10.43	4.49
<b>163</b>	31.5-160	3.94	24.81	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	15.22	12.25	11.34	4.88
<b>173</b>	28.0-140	5.12	27.56	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.34	23.15	9.65	17.52	13.14	12.48	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	UA*	UE	V	W	YY	Approx. Wt. Ib.
		T*	TA	TB	TC	TE	TF							
<b>133</b>	31.5-112	1.3780k6	1.49	0.39	2.56	M12	1.10	0.94	5.3150 H7	9.29	11.02	43.34	12.42	1799
	125-160	0.9843j6	1.10	0.31		M10	0.87							
<b>143</b>	31.5-112	1.7717k6	1.90	0.55	3.54	M16	1.42	0.94	5.9055 H7	10.51	12.40	48.12	13.88	2221
	125-160	1.1181j6	1.29	0.31		M10	0.87							
<b>153</b>	31.5-112	1.8898k6	2.02	0.55	3.94	M16	1.42	1.10	6.6929 H7	11.57	13.19	52.70	14.68	3157
	125-160	1.3780k6	1.49	0.39		M12	1.10							
<b>163</b>	31.5-112	2.1653m6	2.32	0.63	3.94	M20	1.65	1.38	7.2835H7	13.43	14.76	59.86	15.87	4066
	125-160	1.6535k6	1.77	0.47		M16	1.42							
<b>173</b>	28.0-100	2.5590m6	2.72	0.71	4.72	M20	1.65	1.38	8.6614H7	14.76	17.72	71.46	18.35	5923
	112-140	1.9685k6	2.09	0.55		M16	1.42							

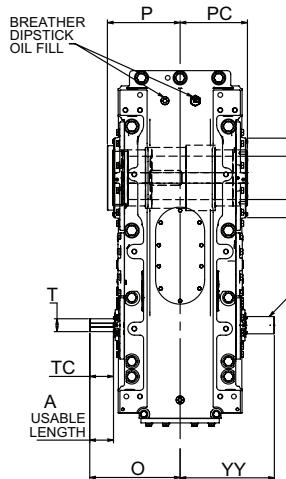
★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

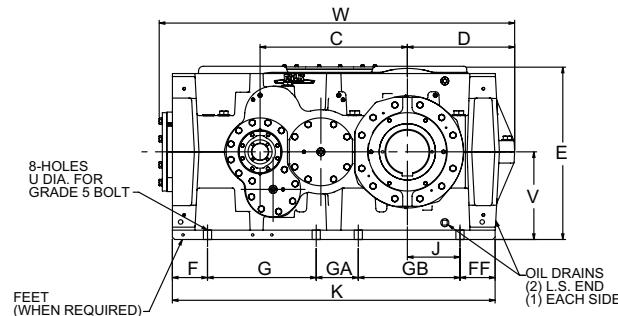
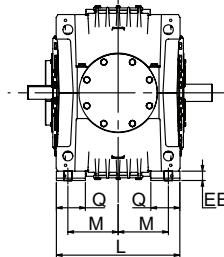
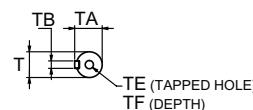
\* See table 1 on page 59 for tolerance.

# Type VPQ3 Triple Reduction with Hollow Low-Speed Shaft

## Sizes 145 – 175/Dimensions — Inches



Refer to page 146 for hollow low-speed and driven shaft recommendations and dimensions.



DRIVE SIZE★	Ratios	A	C	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PC	Q
145	31.5-160	3.94	19.09	13.91	24.35	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	13.15	10.05	9.33	4.25
155	31.5-160	3.94	22.05	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	14.37	11.25	10.43	4.49
165	31.5-160	3.94	24.81	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	15.22	12.25	11.34	4.88
175	28.0-140	5.12	27.56	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.34	23.15	9.65	17.52	13.14	12.48	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	UA*	UE	V	W	YY	Approx. Wt. lb.
		T*	TA	TB	TC	TE	TF							
145	31.5-112	1.7717k6	1.90	0.55	3.54	M16	1.42	0.94	5.9055 H7	10.51	12.40	48.12	13.88	2221
	125-160	1.1181j6	1.29	0.31		M10	0.87							
155	31.5-112	1.8898k6	2.02	0.55	3.94	M16	1.42	1.10	6.6929 H7	11.57	13.19	52.70	14.68	3157
	125-160	1.3780k6	1.49	0.39		M12	1.10							
165	31.5-112	2.1653m6	2.32	0.63	3.94	M20	1.65	1.38	7.2835H7	13.43	14.76	59.86	15.87	4066
	125-160	1.6535k6	1.77	0.47	3.94	M16	1.42							
175	28.0-100	2.5590m6	2.72	0.71	4.72	M20	1.65	1.38	8.6614H7	14.76	17.72	71.46	18.35	5923
	112-140	1.9685k6	2.09	0.55	4.72	M16	1.42							

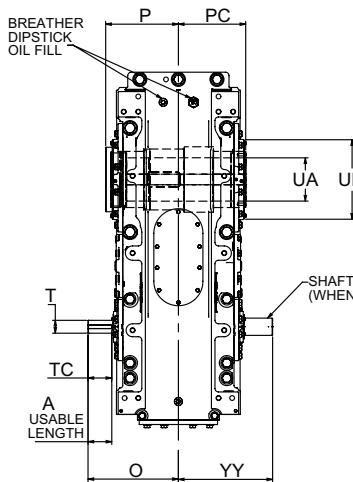
★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

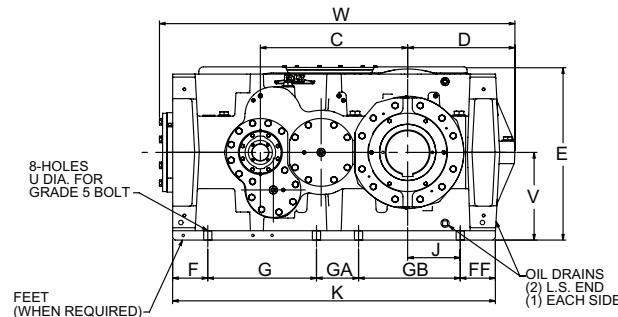
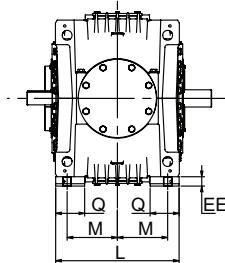
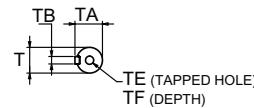
\* See table 1 on page 59 for tolerance.

# Type VPQ3 Triple Reduction with Hollow Low-Speed Shaft

Sizes 137 – 187/Dimensions — Inches



Refer to page 146 for hollow low-speed and driven shaft recommendations and dimensions.



DRIVE SIZE★	Ratios	A	C	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PC	Q
<b>137</b>	31.5-160	2.76	16.93	13.06	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	11.89	9.94	9.17	4.44
<b>147</b>	31.5-160	3.94	19.09	13.91	24.35	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	13.15	10.05	9.33	4.25
<b>157</b>	31.5-160	3.94	22.05	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	14.37	11.25	10.43	4.49
<b>167</b>	31.5-160	3.94	24.81	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	15.22	12.25	11.34	4.88
<b>177</b>	28.0-140	5.12	27.56	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.34	23.15	9.65	17.52	13.14	12.48	5.91
<b>187</b>	31.5-160	5.12	28.54	22.01	35.08	1.97	6.26	6.69	21.46	7.87	22.05	11.42	64.34	23.15	9.65	17.52	13.14	12.48	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	UA*	UE	V	W	YY	Approx. Wt. Ib.
		T*	TA	TB	TC	TE	TF							
<b>137</b>	31.5-112	1.3780k6	1.49	0.39	2.56	M12	1.10	0.94	5.3150 H7	9.29	11.02	43.34	12.42	1799
	125-160	0.9843j6	1.10	0.31		M10	0.87							
<b>147</b>	31.5-112	1.7717k6	1.90	0.55	3.54	M16	1.42	0.94	5.9055 H7	10.51	12.40	48.12	13.88	2221
	125-160	1.1181j6	1.29	0.31		M10	0.87							
<b>157</b>	31.5-112	1.8898k6	2.02	0.55	3.94	M16	1.42	1.10	6.6929 H7	11.57	13.19	52.70	14.68	3157
	125-160	1.3780k6	1.49	0.39		M12	1.10							
<b>167</b>	31.5-112	2.1653m6	2.32	0.63	3.94	M20	1.65	1.38	7.2835H7	13.43	14.76	59.86	15.87	4066
	125-160	1.6535k6	1.77	0.47	3.94	M16	1.42							
<b>177</b>	28.0-100	2.5590m6	2.72	0.71	4.72	M20	1.65	1.38	8.6614H7	14.76	17.72	71.46	18.35	5923
	112-140	1.9685k6	2.09	0.55	4.72	M16	1.42							
<b>187</b>	31.5-112	2.5590m6	2.72	0.71	4.72	M20	1.65	1.38	8.6614H7	14.76	17.72	71.46	18.35	6060
	125-160	1.9685k6	2.09	0.55	4.72	M16	1.42							

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† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* See table 1 on page 59 for tolerance.

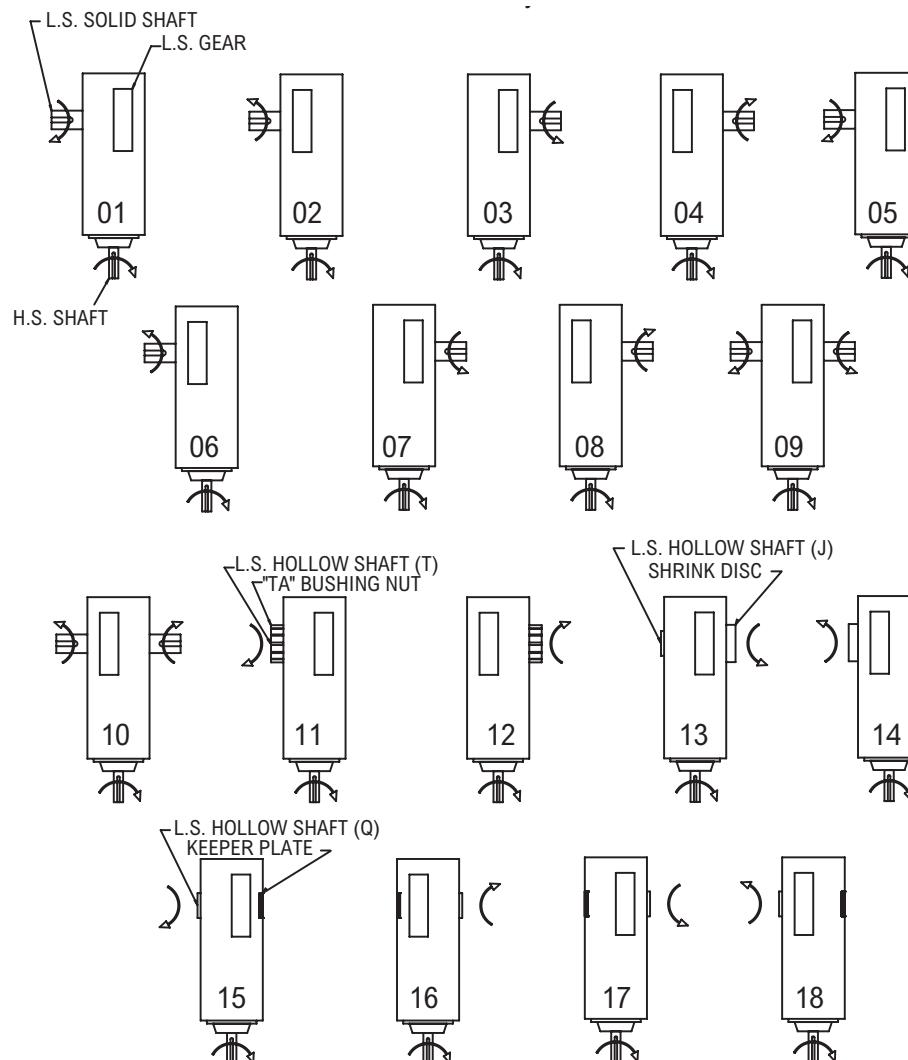
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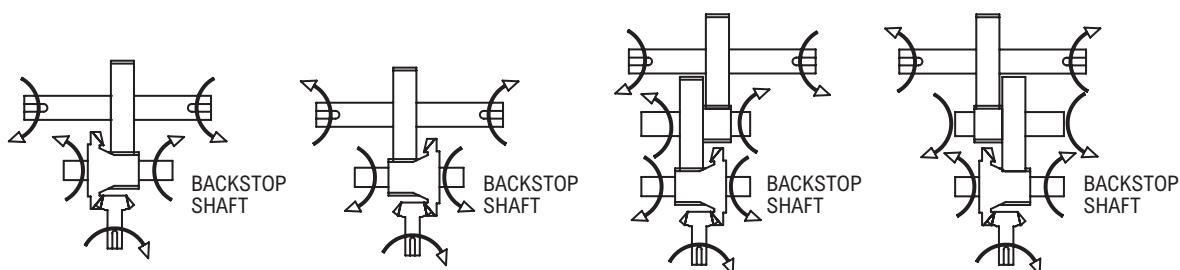
# Type VR Right Angle Shaft Shaft Assemblies & Rotations

Please specify the desired assembly number from the views below. Contact the Factory for inclined, wall-mounted, or other non-standard orientations.

Shaft Assembly Codes



Relative Rotations<sup>‡</sup>



Assemblies:

01, 03, 05, 07, 09,  
11, 13, 15 & 17

Assemblies:

02, 04, 06, 08, 10,  
12, 14, 16 & 18

Assemblies:

01, 03, 05, 07, 09,  
11, 13, 15 & 17

Assemblies:

02, 04, 06, 08, 10,  
12, 14, 16 & 18

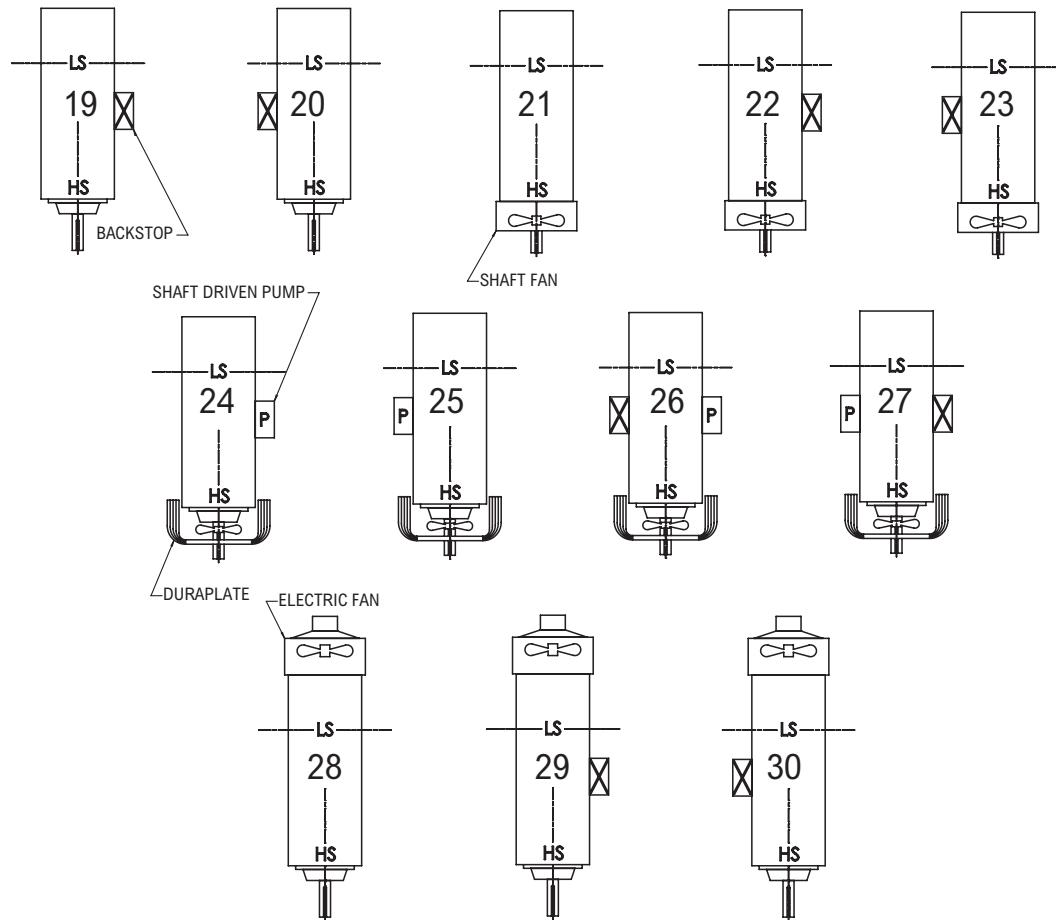
<sup>‡</sup> If the input shaft rotation is opposite the rotation shown, the output shaft rotation will also be opposite the rotation shown.

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# Type VR Right Angle Shaft Accessory Locations

Please specify the desired assembly number from the views below. Contact the Factory for inclined, wall-mounted, or other non-standard orientations.

## Accessory Location Codes



# Type VR2 Right Angle

## Power Ratings – Hp/Double Reduction

High-Speed Shaft rpm	Nom Ratio	Approx LS Shaft rpm	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
1750	<b>6.30</b>	<b>278</b>												1991	2243	2495	
	<b>7.10</b>	<b>246</b>	537	664	711	783	846	1058	1199	1322	1286	1438	1613	1991	2243	2495	2495
	<b>8.00</b>	<b>219</b>	524	648	734	808	873	988	1119	1234	1365	1526	1712	1991	2243	2495	2495
	<b>9.00</b>	<b>194</b>	456	564	641	706	762	876	993	1095	1259	1408	1580	1608	1811	2014	2495
	<b>10.0</b>	<b>175</b>	397	491	537	592	639	764	866	955	983	1099	1233	1538	1733	1927	2011
	<b>11.2</b>	<b>156</b>	388	479	555	612	660	718	813	897	1045	1168	1311	1513	1704	1896	1928
	<b>12.5</b>	<b>140</b>	340	421	487	537	579	643	729	804	963	1077	1208				1895
1430	<b>6.30</b>	<b>227</b>												1729	1947	2166	
	<b>7.10</b>	<b>201</b>	467	577	617	680	734	918	1041	1148	1116	1248	1400	1729	1947	2166	2166
	<b>8.00</b>	<b>179</b>	455	563	637	702	758	857	972	1071	1185	1325	1486	1729	1947	2166	2166
	<b>9.00</b>	<b>159</b>	396	489	556	613	662	761	862	951	1093	1222	1371	1396	1572	1749	2166
	<b>10.0</b>	<b>143</b>	345	426	466	514	555	664	752	829	853	954	1070	1336	1504	1673	1746
	<b>11.2</b>	<b>128</b>	337	416	482	531	573	623	706	779	907	1014	1138	1314	1480	1646	1674
	<b>12.5</b>	<b>114</b>	296	365	423	466	503	558	633	698	836	935	1049				1645
1170	<b>6.30</b>	<b>186</b>												1502	1692	1882	
	<b>7.10</b>	<b>165</b>	405	501	537	591	638	798	904	997	970	1085	1217	1502	1692	1882	1882
	<b>8.00</b>	<b>146</b>	396	489	554	610	658	745	844	931	1030	1151	1292	1502	1692	1882	1882
	<b>9.00</b>	<b>130</b>	344	425	484	533	575	661	749	826	950	1062	1192	1213	1366	1519	1882
	<b>10.0</b>	<b>117</b>	300	370	405	446	482	577	653	721	741	829	930	1161	1307	1454	1517
	<b>11.2</b>	<b>104</b>	293	362	419	461	498	541	614	677	788	881	989	1142	1286	1430	1455
	<b>12.5</b>	<b>94</b>	257	317	368	405	437	485	550	606	726	812	911				1430
970	<b>6.30</b>	<b>154</b>												1318	1484	1650	
	<b>7.10</b>	<b>137</b>	355	439	466	513	554	700	793	875	817	913	1024	1318	1484	1650	1650
	<b>8.00</b>	<b>121</b>	347	429	476	524	566	653	740	817	903	1009	1133	1273	1433	1594	1650
	<b>9.00</b>	<b>108</b>	302	373	424	467	504	580	657	725	833	931	1045	1064	1198	1333	1594
	<b>10.0</b>	<b>97</b>	263	325	355	391	423	506	573	632	620	693	777	1018	1146	1275	1330
	<b>11.2</b>	<b>87</b>	257	317	367	405	437	475	538	593	691	773	867	1001	1128	1254	1276
	<b>12.5</b>	<b>78</b>	225	278	322	355	383	426	482	532	637	712	799				1254
870	<b>6.30</b>	<b>138</b>												1221	1375	1529	
	<b>7.10</b>	<b>123</b>	318	393	418	460	497	649	735	811	732	819	919	1221	1375	1529	1529
	<b>8.00</b>	<b>109</b>	318	393	427	470	507	605	686	757	830	928	1041	1141	1285	1430	1529
	<b>9.00</b>	<b>97</b>	280	346	393	433	467	537	609	672	771	862	967	986	1110	1235	1430
	<b>10.0</b>	<b>87</b>	243	301	329	363	392	469	531	586	556	621	697	943	1062	1182	1233
	<b>11.2</b>	<b>78</b>	238	294	341	375	405	440	499	550	641	716	804	928	1045	1162	1182
	<b>12.5</b>	<b>70</b>	209	258	299	329	355	394	447	493	590	660	741				1162

## Type VR2 Right Angle

### Torque Ratings – lb-in/Double Reduction

(MULTIPLY VALUES LISTED BY 1000)

High-Speed Shaft rpm	Nom Ratio	Approx LS Shaft rpm	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
1750	6.30	278												483	544	605	
	7.10	246	142	176	183	201	217	269	305	336	340	380	427	534	602	669	659
	8.00	219	156	193	211	232	251	290	329	363	398	445	499	611	688	765	717
	9.00	194	147	181	212	233	252	279	316	348	406	454	509	534	601	669	822
	10.0	175	147	182	188	208	224	268	304	335	356	398	446	565	636	708	727
	11.2	156	161	199	218	240	259	291	330	364	417	466	523	635	715	796	759
	12.5	140	153	189	220	242	261	282	320	353	425	475	533				855
1430	6.30	227												513	578	643	
	7.10	201	151	187	194	214	231	285	324	357	361	404	453	568	639	711	701
	8.00	179	166	205	224	247	267	308	350	386	422	472	530	649	731	813	762
	9.00	159	156	193	225	248	267	296	335	370	431	482	541	567	639	710	874
	10.0	143	156	193	200	220	238	285	323	356	378	422	474	600	676	752	773
	11.2	128	171	212	232	255	275	310	351	387	443	495	555	675	760	845	806
	12.5	114	163	201	233	257	277	300	340	375	451	504	566				908
1170	6.30	186												545	614	683	
	7.10	165	161	198	206	227	245	303	344	379	384	429	481	603	679	755	744
	8.00	146	176	217	238	262	283	328	371	409	449	502	563	689	776	863	809
	9.00	130	165	205	239	263	284	314	356	393	458	512	574	602	678	754	928
	10.00	117	166	205	213	234	253	302	343	378	401	449	503	637	718	798	821
	11.20	104	182	225	246	271	293	329	373	411	470	526	590	717	807	898	856
	12.50	94	173	213	248	273	295	319	361	398	479	536	601				965
970	6.30	154												577	649	722	
	7.10	137	169	209	216	238	257	321	363	401	390	436	489	638	718	799	787
	8.00	121	186	230	247	272	293	347	393	433	475	531	595	704	793	882	856
	9.00	108	175	216	253	278	300	333	377	416	484	541	608	637	718	798	948
	10.0	97	175	217	225	248	267	320	363	400	405	452	508	674	759	845	868
	11.2	87	192	238	260	287	309	348	394	435	497	556	624	758	854	950	906
	12.5	78	183	226	262	289	312	337	382	421	507	567	636				1021
870	6.30	138												596	671	746	
	7.10	123	169	209	216	238	257	331	376	414	390	436	489	659	742	826	813
	8.00	109	190	235	247	272	293	358	406	447	486	544	610	704	793	882	884
	9.00	97	181	224	261	287	310	344	389	429	500	559	627	658	741	825	948
	10.0	87	181	224	232	256	276	331	375	413	405	452	508	697	785	873	897
	11.2	78	199	246	269	296	320	359	407	449	514	574	645	783	882	981	936
	12.5	70	189	233	271	298	322	348	395	435	524	585	657				1055

# Type VR3 Right Angle

## Power Ratings – Hp/Triple Reduction

High-Speed Shaft rpm	Nom Ratio	Approx LS Shaft rpm	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
1750	12.5	140															
	14.0	125	316	372	432	478	528	601	671	759	873	999	1108	1292	1395	1502	1502
	16.0	109	316	372	432	478	528	601	671	759	873	999	1108	1292	1395	1502	1502
	18.0	97	316	372	432	478	528	601	671	759	873	999	1108	1226	1324	1426	1502
	20.0	88	295	347	398	441	486	583	651	737	800	916	1015	1046	1129	1216	1483
	22.4	78	272	320	355	393	434	514	573	649	714	817	906	993	1073	1155	1320
	25.0	70	256	301	323	357	394	449	501	567	643	736	816	908	981	1056	1231
	28.0	63	231	271	294	325	359	417	465	526	579	663	734	774	836	900	1090
	31.5	56	197	232	264	292	322	367	409	463	516	591	655	734	793	854	977
	35.5	49	185	218	239	265	293	320	357	404	465	532	589	649	701	755	910
	40.0	44	166	195	218	241	266	292	326	369	407	466	516	552	597	642	761
	45.0	39	140	165	192	212	234	257	286	324	363	415	460	524	566	609	698
	50.0	35	132	155	174	192	212	224	250	283	326	373	414	465	503	541	649
	56.0	31	105	124	146	162	179	197	220	249	293	336	372	396	428	461	563
	63.0	28	97	114	135	149	164	188	210	237	261	299	331	375	405	436	500
	71.0	25	94	110	122	135	149	164	183	207	235	269	298	304	328	353	465
	80.0	22	78	92	106	118	130	132	147	166	205	235	260	287	310	334	369
	90.0	19	73	86	97	107	118	127	141	160	184	211	234	255	276	297	356
	100	18	59	70	79	88	97	113	126	143	166	189	210	217	234	252	309
	112	16	53	63	75	83	92	106	118	134	147	169	187	205	222	239	274
	125	14	52	61	68	75	83	93	103	117	132	152	168				255
1430	12.5	114															
	14.0	102	275	323	375	415	458	522	582	659	758	868	962	1121	1211	1304	1304
	16.0	89	275	323	375	415	458	522	582	659	758	868	962	1105	1193	1285	1304
	18.0	79	275	323	375	415	458	506	564	639	756	865	958	1010	1091	1174	1304
	20.0	72	256	301	325	360	397	479	535	606	658	753	835	861	930	1001	1221
	22.4	64	223	263	292	323	356	422	471	533	587	672	745	817	882	950	1087
	25.0	57	210	247	265	293	323	369	411	466	529	605	670	747	806	868	1012
	28.0	51	189	222	240	266	293	342	381	432	475	544	603	636	687	739	903
	31.5	45	161	190	216	239	264	301	335	380	424	485	537	603	651	701	803
	35.5	40	152	179	196	217	240	262	293	332	381	436	483	532	575	619	747
	40.0	36	136	160	178	197	217	239	267	302	334	382	423	453	489	527	622
	45.0	32	115	135	157	174	192	210	235	266	297	340	377	429	464	499	572
	50.0	29	108	127	142	158	174	183	205	232	267	306	339	381	412	443	532
	56.0	26	86	102	120	133	147	163	182	206	240	275	305	324	350	377	461
	63.0	23	80	94	110	122	135	154	172	194	214	245	271	307	332	357	410
	71.0	20	77	90	100	110	122	134	150	170	192	220	244	248	268	289	381
	80.0	18	64	75	88	97	107	114	128	144	168	192	213	235	254	274	314
	90.0	16	60	71	79	88	97	104	116	131	151	173	191	209	226	243	292
	100	14	48	57	65	72	79	93	104	117	135	155	172	178	192	206	252
	112	13	44	51	61	68	75	87	97	110	121	138	153	168	182	195	224
	125	11	43	50	56	61	68	76	85	96	108	124	137				208
1170	12.5	94															
	14.0	84	239	281	326	361	398	454	506	573	659	754	836	968	1045	1125	1125
	16.0	73	239	281	326	361	398	454	506	573	659	754	836	911	984	1059	1125
	18.0	65	239	281	313	346	382	416	464	526	622	712	789	832	888	967	1125
	20.0	59	214	252	266	295	325	394	440	498	541	620	687	708	765	824	1006
	22.4	52	183	216	239	265	293	347	387	438	483	552	612	672	726	781	894
	25.0	47	172	203	217	240	265	303	338	383	434	497	551	614	663	714	832
	28.0	42	154	182	196	217	240	281	313	355	390	447	495	522	564	607	742
	31.5	37	132	156	178	196	217	247	275	312	348	398	441	495	535	576	660
	35.5	33	125	146	161	178	197	215	240	272	313	358	397	437	472	508	614
	40.0	29	111	131	146	161	178	196	219	248	274	313	347	372	402	432	509
	45.0	26	94	111	129	142	157	172	192	218	244	279	309	352	380	409	470
	50.0	23	88	104	117	129	143	150	168	190	219	251	278	313	338	364	436
	56.0	21	71	84	99	109	121	134	150	170	197	225	250	266	287	309	378
	63.0	19	66	77	90	100	110	126	141	159	175	201	222	252	272	293	336
	71.0	16	63	74	82	91	100	110	123	139	158	180	200	204	220	237	312
	80.0	15	52	62	72	79	88	97	109	123	137	157	174	193	208	224	257
	90.0	13	49	58	65	72	79	85	95	107	124	141	157	171	185	199	239
	100	12	40	47	53	59	65	76	85	96	111	127	141	145	157	169	207
	112	10	36	42	50	56	61	71	79	90	99	113	125	138	149	160	184
	125	9	35	41	45	50	56	62	69	78	89	102	113				171

**Type VR3 Right Angle**  
**Torque Ratings – lb-in/Triple Reduction**  
(MULTIPLY VALUES LISTED BY 1000)

High-Speed Shaft rpm	Nom Ratio	Approx LS Shaft rpm	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
1750	12.5	140															
	14.0	125	165	194	219	243	268	311	348	394	453	518	574	707	764	822	810
	16.0	109	185	217	245	272	300	361	402	456	499	571	632	808	873	940	881
	18.0	97	200	235	282	312	344	390	435	493	552	631	699	830	896	965	1010
	20.0	88	214	251	293	324	358	418	467	528	600	686	761	783	845	910	1093
	22.4	78	222	261	292	324	357	427	476	539	590	675	748	850	918	988	1059
	25.0	70	226	265	305	337	373	403	450	509	587	672	745	839	907	976	1132
	28.0	63	233	274	293	324	358	422	471	534	606	693	769	791	854	920	1098
	31.5	56	223	262	294	326	360	430	480	543	595	681	755	858	926	997	1070
	35.5	49	227	267	307	339	375	406	453	513	592	678	751	847	915	985	1142
	40.0	44	236	278	300	332	367	425	475	537	611	699	774	798	862	928	1083
	45.0	39	224	264	296	327	362	433	483	547	599	686	760	864	933	1005	1079
	50.0	35	228	268	308	341	377	409	456	516	596	682	756	852	921	991	1151
	56.0	31	217	255	288	319	352	394	439	498	614	702	778	802	867	933	1123
	63.0	28	220	258	297	329	363	435	485	549	602	689	763	869	938	1010	1086
	71.0	25	229	269	309	342	378	410	457	518	599	685	759	805	870	936	1157
	80.0	22	225	265	296	327	361	395	441	499	603	691	765	871	941	1013	1050
	90.0	19	229	269	310	343	379	411	459	519	600	687	761	858	927	998	1160
	100	18	219	258	282	312	345	403	449	509	617	706	782	808	872	939	1131
	112	16	217	255	298	330	365	437	487	551	605	692	767	874	944	1016	1093
	125	14	229	270	310	344	379	412	459	520	601	688	763				1164
1430	12.5	114															
	14.0	102	175	206	233	258	285	331	369	418	481	550	610	751	811	873	860
	16.0	89	196	231	261	289	319	383	427	484	530	606	672	846	914	984	936
	18.0	79	212	250	299	331	366	401	448	507	584	668	741	836	903	972	1073
	20.0	72	227	267	293	324	358	421	470	532	604	691	766	878	952	917	1102
	22.4	64	223	262	294	325	359	429	478	542	593	679	752	855	924	994	1067
	25.0	57	226	266	306	339	374	405	452	512	591	676	749	844	912	982	1139
	28.0	51	233	274	293	324	358	424	473	536	609	697	772	795	859	925	1112
	31.5	45	224	263	295	327	361	432	482	546	598	684	758	862	931	1002	1076
	35.5	40	228	268	308	341	376	408	455	515	595	680	754	850	918	989	1148
	40.0	36	237	278	300	332	367	427	476	539	613	701	777	801	865	931	1083
	45.0	32	225	264	297	328	362	434	484	548	601	688	762	867	936	1008	1083
	50.0	29	228	269	309	342	377	410	457	517	598	684	758	855	923	994	1155
	56.0	26	218	256	290	321	354	399	445	504	615	704	780	804	869	935	1126
	63.0	23	221	260	298	329	364	435	486	550	603	690	765	871	940	1012	1088
	71.0	20	229	269	310	343	378	411	458	519	600	686	761	807	871	938	1160
	80.0	18	226	265	298	330	364	420	468	530	604	692	767	873	943	1015	1091
	90.0	16	229	270	310	343	379	412	459	520	601	688	762	860	929	1000	1163
	100	14	220	259	282	312	345	404	451	510	618	707	783	809	873	940	1132
	112	13	217	255	299	330	365	437	488	552	606	693	768	875	945	1017	1094
	125	11	230	270	311	344	380	412	460	521	602	689	764				1165
1170	12.5	94															
	14.0	84	186	218	247	274	302	351	392	444	511	585	648	785	848	913	907
	16.0	73	208	245	277	306	338	407	454	514	563	644	714	852	920	991	987
	18.0	65	225	265	305	338	373	404	450	510	588	673	746	842	909	979	1132
	20.0	59	233	274	293	324	358	423	472	534	607	695	770	793	857	922	1109
	22.4	52	223	263	295	326	360	431	481	544	596	682	756	860	928	999	1073
	25.0	47	227	267	307	340	375	407	454	514	593	679	752	848	916	986	1145
	28.0	42	233	274	293	324	358	426	475	538	611	699	775	799	863	929	1117
	31.5	37	224	264	296	328	362	433	483	547	600	686	760	865	934	1006	1080
	35.5	33	228	268	309	341	377	409	456	516	597	683	757	853	921	992	1152
	40.0	29	237	279	300	332	367	428	477	540	614	703	779	803	867	934	1083
	45.0	26	225	265	297	329	363	435	485	549	602	689	764	869	939	1011	1086
	50.0	23	229	269	309	342	378	410	458	518	599	685	760	857	925	996	1158
	56.0	21	219	257	291	322	356	401	448	507	616	705	781	806	871	937	1129
	63.0	19	221	261	298	330	364	436	487	551	604	691	766	872	942	1014	1091
	71.0	16	229	270	310	343	379	411	459	520	601	687	762	808	873	939	1162
	80.0	15	226	266	298	330	365	437	487	552	605	693	768	874	944	1016	1093
	90.0	13	229	270	311	344	379	412	460	520	602	688	763	861	930	1001	1164
	100	12	220	259	282	312	345	405	452	512	618	708	784	810	874	941	1134
	112	10	217	255	299	331	365	437	488	553	606	694	769	876	946	1018	1095
	125	9	230	270	311	344	380	413	460	521	603	689	764				1166

# Type VR3 Right Angle

## Power Ratings – Hp/Triple Reduction

High-Speed Shaft rpm	Nom Ratio	Approx LS Shaft rpm	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
970	12.5	78															
	14.0	69	205	242	286	316	349	398	444	502	578	661	733	800	864	930	933
	16.0	61	205	242	286	316	349	397	443	501	576	659	731	759	820	883	933
	18.0	54	199	234	260	288	318	347	387	438	519	593	658	693	748	806	933
	20.0	49	178	209	221	244	270	328	366	414	451	516	572	590	637	686	838
	22.4	43	152	179	199	220	243	289	322	364	402	460	509	559	604	650	745
	25.0	39	143	169	181	200	221	252	281	318	361	413	458	511	551	594	693
	28.0	35	128	150	163	180	199	233	260	295	325	371	412	435	469	505	617
	31.5	31	110	129	148	163	180	205	229	259	289	331	367	412	445	479	549
	35.5	27	103	122	134	148	163	179	200	226	260	298	330	363	392	422	510
	40.0	24	92	109	121	134	147	163	182	206	227	260	288	309	334	359	422
	45.0	22	78	92	107	118	131	143	160	181	202	232	257	293	316	340	390
	50.0	19	73	86	97	107	118	125	139	158	182	208	231	260	281	302	363
	56.0	17	59	70	82	91	100	112	125	141	163	187	207	221	239	257	314
	63.0	15	55	64	75	83	92	105	117	132	146	166	185	209	226	243	279
	71.0	14	52	61	68	75	83	91	102	115	131	150	166	169	183	197	259
	80.0	12	43	51	59	66	73	81	90	102	114	131	145	160	173	186	213
	90.0	11	41	48	54	60	66	70	79	89	103	117	130	142	153	165	198
	100	10	33	39	44	49	54	63	71	80	92	105	117	121	130	140	172
	112	9	30	35	42	46	51	59	66	75	82	94	104	114	123	133	152
	125	8	29	34	38	42	46	51	57	65	74	84	93				141
870	12.5	70															
	14.0	62	184	217	265	293	324	369	411	466	524	599	664	720	777	837	837
	16.0	54	184	217	258	285	315	357	398	451	518	593	657	683	737	794	837
	18.0	48	179	210	234	259	286	311	348	394	466	533	591	623	673	724	837
	20.0	44	159	188	198	219	242	295	329	372	405	463	514	530	573	617	753
	22.4	39	137	161	179	198	218	259	289	327	361	413	458	502	543	584	670
	25.0	35	129	151	162	179	198	226	252	286	325	371	412	459	496	533	623
	28.0	31	115	135	146	162	178	210	234	265	292	334	370	390	422	454	555
	31.5	28	99	116	132	147	162	184	205	233	260	297	329	370	399	430	493
	35.5	25	93	109	120	133	147	161	179	203	234	267	296	326	352	379	458
	40.0	22	83	98	108	120	132	146	163	185	204	234	259	277	300	323	379
	45.0	19	70	82	96	106	117	129	143	162	182	208	231	263	284	305	350
	50.0	17	66	78	87	96	106	112	125	142	163	187	207	233	252	271	325
	56.0	16	53	62	74	81	90	100	112	127	147	168	186	198	214	231	282
	63.0	14	49	58	67	74	82	94	105	119	131	149	166	188	203	218	250
	71.0	12	47	55	61	67	74	82	91	104	117	134	149	152	164	176	233
	80.0	11	39	46	53	59	65	72	81	92	102	117	130	144	155	167	192
	90.0	10	37	43	48	53	59	63	71	80	92	105	117	127	138	148	178
	100	9	30	35	39	44	48	57	63	72	83	94	105	108	117	126	154
	112	8	26	31	37	41	46	53	59	67	74	84	93	102	111	119	137
	125	7	26	31	34	37	41	46	52	58	66	76	84				127

**Type VR3 Right Angle**  
**Torque Ratings – lb-in/Triple Reduction**  
(MULTIPLY VALUES LISTED BY 1000)

High-Speed Shaft rpm	Nom Ratio	Approx LS Shaft rpm	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
970	12.5	78															
	14.0	69	193	227	262	290	320	372	415	470	540	618	685	716	774	833	
	16.0	61	217	255	293	324	358	429	479	543	593	679	753	854	919	907	
	18.0	54	227	267	306	339	374	405	452	512	591	676	749	857	925	996	987
	20.0	49	233	274	293	324	358	424	474	536	609	697	773	846	913	983	1132
	22.4	43	224	263	296	327	361	432	482	546	598	684	759	863	932	1003	1078
	25.0	39	228	268	308	341	376	408	455	515	595	681	755	851	919	990	1150
	28.0	35	233	274	293	324	358	427	476	539	613	701	777	801	865	932	1121
	31.5	31	225	264	297	329	363	434	484	548	601	688	763	867	937	1009	1084
	35.5	27	228	269	309	342	378	410	457	518	598	684	758	855	923	994	1156
	40.0	24	237	279	300	332	367	428	478	541	615	704	780	805	869	936	1083
	45.0	22	225	265	298	329	364	436	486	550	604	691	765	871	941	1013	1089
	50.0	19	229	269	310	343	379	411	459	519	600	687	761	858	927	998	1160
	56.0	17	219	258	292	323	356	403	449	509	617	706	782	807	872	939	1131
	63.0	15	222	261	298	330	365	437	487	552	605	692	767	873	943	1016	1092
	71.0	14	229	270	310	344	379	412	459	520	601	688	763	809	874	941	1164
	80.0	12	226	266	299	331	365	437	488	552	606	693	768	875	945	1017	1095
	90.0	11	230	270	311	344	380	412	460	521	602	689	764	862	931	1002	1166
	100	10	221	260	282	312	345	406	453	513	619	708	785	810	875	942	1135
	112	9	217	255	299	331	365	438	488	553	607	694	770	876	946	1019	1096
	125	8	230	270	311	344	380	413	461	521	603	690	765				1166
870	12.5	70															
	14.0	62	193	227	270	299	330	384	429	485	546	625	693	716	774	833	
	16.0	54	217	255	295	326	360	430	480	544	595	681	755	856	921	907	
	18.0	48	227	267	307	340	375	406	453	513	592	678	751	859	928	999	987
	20.0	44	233	274	293	324	358	425	474	537	611	699	774	862	938	1017	1095
	22.4	39	224	264	296	328	362	433	483	547	599	686	760	865	934	1005	1080
	25.0	35	228	268	308	341	377	409	456	516	596	682	756	852	921	991	1152
	28.0	31	233	274	293	324	358	427	477	540	614	702	778	802	867	933	1123
	31.5	28	225	265	297	329	363	435	485	549	602	689	764	869	938	1010	1086
	35.5	25	229	269	309	342	378	410	458	518	599	685	759	855	923	994	1157
	40.0	22	238	280	300	332	367	429	478	542	616	705	781	806	870	937	1083
	45.0	19	225	265	298	330	364	436	486	551	604	691	766	872	942	1014	1090
	50.0	17	229	270	310	343	379	411	459	520	601	687	762	859	928	999	1161
	56.0	16	220	258	292	323	356	403	450	510	617	706	783	808	873	940	1132
	63.0	14	222	262	299	330	365	437	487	552	605	693	768	874	944	1016	1093
	71.0	12	230	270	311	344	379	412	460	521	602	689	763	809	874	941	1164
	80.0	11	226	266	299	331	365	437	488	553	606	694	769	875	946	1018	1095
	90.0	10	230	270	311	344	380	413	460	521	603	689	764	862	931	1002	1166
	100	9	221	260	282	312	345	406	453	513	619	708	785	811	876	943	1135
	112	8	217	255	299	331	365	438	489	553	607	694	770	877	947	1019	1097
	125	7	230	270	311	344	380	413	461	522	603	690	765				1166

## Type VR2 Right Angle Shaft

# Basic Thermal Ratings ★ – Hp/Double Reduction Maximum 200°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
1750	6.30	None												*	*	*	
		Shaft Fan												1279	1292	1304	
		Electric Fan												1415	1429	1443	
		DuraPlate												4100	4141	4182	
	7.10	None	166	169	213	215	217	*	*	*	269	272	275	*	*	*	
		Shaft Fan	414	422	582	588	594	727	734	742	919	928	938	1235	1248	1260	1458
		Electric Fan	500	510	617	623	629	794	802	810	1145	1157	1168	1366	1380	1393	1556
		DuraPlate	788	804	1551	1566	1582	2362	2386	2410	2801	2829	2857	3939	3978	4018	3853
	8.00	None	168	171	213	216	218	208	210	212	273	275	278	*	*	*	*
		Shaft Fan	415	423	583	589	595	714	721	729	928	937	947	1269	1282	1294	1437
		Electric Fan	500	510	618	624	630	779	787	795	1157	1168	1180	1400	1414	1428	1533
		DuraPlate	785	801	1556	1572	1587	2290	2312	2335	2841	2870	2898	3967	4007	4047	3775
	9.00	None	163	166	205	207	209	205	207	209	294	297	300	364	368	371	*
		Shaft Fan	397	405	552	557	563	689	696	703	959	969	978	1209	1221	1233	1465
		Electric Fan	478	487	584	590	596	751	758	766	1188	1199	1211	1329	1342	1355	1560
		DuraPlate	746	761	1456	1470	1485	2174	2196	2218	2846	2874	2903	3875	3914	3953	3788
	10.0	None	144	146	187	189	190	208	210	212	251	254	256	349	353	356	*
		Shaft Fan	346	353	491	496	501	665	672	679	778	786	794	1156	1167	1179	1359
		Electric Fan	416	424	519	525	530	723	730	738	961	971	980	1270	1283	1295	1443
		DuraPlate	641	654	1055	1066	1077	1587	1603	1619	1863	1881	1900	3712	3749	3787	3572
	11.2	None	144	147	186	188	190	205	207	209	251	254	256	361	365	368	*
		Shaft Fan	346	353	491	496	501	649	656	662	782	790	797	1175	1187	1199	1328
		Electric Fan	415	424	519	524	530	705	712	719	967	976	986	1290	1303	1316	1411
		DuraPlate	638	651	1057	1068	1079	1540	1555	1571	1882	1901	1920	3726	3763	3800	3491
	12.5	None	140	142	178	179	181	200	201	203	264	266	269				*
		Shaft Fan	332	339	464	469	474	624	631	637	800	808	816			1340	
		Electric Fan	398	406	491	496	501	678	684	691	985	995	1004			1421	
		DuraPlate	609	621	995	1004	1014	1469	1483	1498	1890	1909	1928			3489	
1430	6.30	None												429	433	437	
		Shaft Fan												1124	1135	1147	
		Electric Fan												1488	1503	1518	
		DuraPlate												3328	3361	3394	
	7.10	None	171	174	220	222	224	235	237	240	316	319	322	414	418	422	*
		Shaft Fan	354	361	497	502	507	632	638	644	815	823	831	1077	1088	1099	1312
		Electric Fan	488	498	604	610	616	799	807	815	1158	1169	1181	1425	1439	1453	1614
		DuraPlate	643	656	1253	1265	1278	1846	1864	1883	2281	2304	2327	3185	3217	3249	3203
	8.00	None	172	175	220	222	224	233	235	237	317	321	324	431	435	439	403
		Shaft Fan	354	362	497	502	507	618	624	631	820	828	836	1101	1112	1124	1286
		Electric Fan	487	497	604	610	616	780	787	795	1166	1178	1190	1451	1465	1480	1580
		DuraPlate	641	654	1255	1268	1280	1789	1807	1824	2308	2331	2354	3208	3240	3272	3130
	9.00	None	166	169	209	211	214	227	229	232	335	339	342	421	425	429	417
		Shaft Fan	340	346	469	474	479	596	602	607	844	853	861	1037	1047	1058	1303
		Electric Fan	465	474	569	575	581	749	756	764	1191	1203	1215	1355	1369	1382	1596
		DuraPlate	610	622	1174	1186	1198	1701	1718	1735	2317	2340	2363	3131	3162	3193	3137
	10.0	None	145	148	188	190	192	224	226	228	270	272	275	400	404	408	403
		Shaft Fan	295	301	416	420	425	571	577	583	670	677	683	987	997	1007	1194
		Electric Fan	404	412	504	509	514	715	722	730	946	956	965	1291	1304	1317	1453
		DuraPlate	523	534	857	865	874	1287	1299	1312	1508	1524	1539	2991	3021	3051	2951
	11.2	None	145	148	188	189	191	219	221	223	269	272	275	411	415	419	394
		Shaft Fan	295	301	415	420	424	557	562	568	671	678	685	1003	1013	1023	1164
		Electric Fan	403	411	503	508	513	696	703	710	950	960	969	1309	1322	1335	1417
		DuraPlate	522	532	857	866	874	1248	1260	1273	1520	1536	1551	3005	3035	3065	2880
	12.5	None	141	143	178	180	182	212	214	217	280	283	286				401
		Shaft Fan	283	289	393	397	401	535	541	546	688	694	701				1171
		Electric Fan	386	393	475	480	485	668	675	681	967	976	986				1424
		DuraPlate	498	508	806	814	822	1192	1203	1215	1532	1547	1563				2879

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperature will vary based upon exact ambient conditions and load profile.

\* Consult Factory.

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## Type VR2 Right Angle Shaft

# Basic Thermal Ratings ★ – Hp/Double Reduction Maximum 200°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175		
1170	6.30	None												484	489	494	
		Shaft Fan												928	937	946	
		Electric Fan												1497	1512	1527	
	7.10	DuraPlate												2542	2567	2593	
		None	169	172	218	220	222	248	250	252	337	341	344	462	466	471	463
		Shaft Fan	290	296	406	410	414	522	528	533	685	692	699	884	892	901	1120
	8.00	Electric Fan	465	475	577	583	589	777	785	792	1129	1140	1152	1426	1440	1454	1607
		DuraPlate	502	512	960	969	979	1405	1419	1433	1757	1775	1792	2424	2448	2472	2528
		None	169	173	217	219	221	243	245	248	337	340	344	475	479	484	453
	9.00	Shaft Fan	290	296	405	409	413	510	515	520	687	694	700	901	910	919	1093
		Electric Fan	464	473	576	582	588	756	763	771	1135	1146	1158	1446	1460	1475	1567
		DuraPlate	500	510	960	969	979	1362	1375	1389	1772	1790	1808	2443	2468	2492	2465
970	6.30	None	163	167	206	208	210	236	238	240	352	356	359	450	455	459	462
		Shaft Fan	278	284	382	386	389	491	496	501	707	714	721	841	850	858	1103
		Electric Fan	443	452	542	547	553	725	732	739	1155	1167	1178	1339	1352	1365	1576
	7.10	DuraPlate	477	486	899	908	917	1297	1310	1323	1786	1804	1822	2386	2410	2434	2469
		None	136	139	184	185	187	228	230	233	274	276	279	426	430	435	431
		Shaft Fan	235	240	338	342	345	469	473	478	550	556	561	798	806	814	1002
	8.00	Electric Fan	377	384	478	483	488	689	696	702	906	915	924	1272	1285	1297	1420
		DuraPlate	401	409	660	667	673	988	998	1008	1156	1168	1179	2273	2296	2319	2321
		None	137	140	183	184	186	223	225	227	273	275	278	435	440	444	419
	11.2	Shaft Fan	235	240	337	340	344	456	461	465	550	556	561	811	819	827	975
		Electric Fan	376	384	477	482	487	669	676	683	909	918	927	1287	1300	1313	1382
		DuraPlate	400	408	659	666	672	958	968	978	1162	1174	1185	2287	2310	2333	2262
12.5	12.5	None	132	135	165	166	168	215	218	220	283	286	289				424
		Shaft Fan	226	231	309	312	315	439	443	448	565	570	576				980
		Electric Fan	360	368	440	445	449	642	648	655	924	933	943				1387
	12.5	DuraPlate	383	391	610	616	622	916	926	935	1176	1188	1199				2262
		None												498	503	508	
		Shaft Fan												780	787	795	
	6.30	Electric Fan												1466	1481	1496	
		DuraPlate												2020	2040	2061	
		None	164	167	211	213	215	247	249	251	337	340	344	472	477	482	477
970	7.10	Shaft Fan	250	251	343	346	350	443	450	452	588	594	599	739	747	754	971
		Electric Fan	443	452	550	555	561	747	754	762	1086	1097	1108	1393	1407	1421	1565
		DuraPlate	408	416	770	778	786	1121	1132	1143	1414	1428	1442	1921	1940	1960	2071
	8.00	None	164	167	210	212	214	241	243	246	336	339	343	483	488	493	464
		Shaft Fan	250	251	341	345	348	432	436	441	588	593	599	753	761	768	944
		Electric Fan	442	451	548	554	559	725	733	740	1090	1101	1112	1410	1424	1439	1523
	9.00	DuraPlate	407	415	769	777	784	1086	1097	1108	1422	1436	1451	1939	1958	1977	2016
		None	151	154	198	200	202	233	236	238	350	353	357	454	458	463	471
		Shaft Fan	229	234	322	325	328	416	420	424	605	611	617	701	708	715	952
	10.0	Electric Fan	414	422	515	520	525	695	702	709	1109	1120	1131	1301	1314	1327	1529
		DuraPlate	381	388	720	728	735	1036	1047	1057	1438	1453	1467	1899	1918	1937	2019
		None	133	136	171	173	174	224	226	229	268	271	273	428	432	437	433
12.5	10.0	Shaft Fan	201	205	279	282	284	397	401	405	466	471	475	663	670	676	861
		Electric Fan	360	368	448	452	457	659	666	672	864	873	881	1234	1246	1259	1372
		DuraPlate	329	336	527	532	537	794	802	810	929	938	947	1805	1823	1841	1901
	11.2	None	134	136	170	172	173	207	209	211	266	269	272	437	441	445	420
		Shaft Fan	201	205	278	280	283	373	377	380	465	470	474	674	681	687	837
		Electric Fan	360	367	447	451	456	626	632	638	866	875	883	1248	1260	1273	1335
	12.5	DuraPlate	329	335	526	531	536	756	763	771	932	941	950	1819	1837	1855	1852
		None	129	132	161	163	164	200	202	204	276	279	282				424
		Shaft Fan	193	197	262	265	268	359	363	366	478	483	488				841
		Electric Fan	344	351	421	425	430	600	606	612	881	889	898				1338
		DuraPlate	315	321	495	500	505	724	731	739	946	955	965				1852

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperature will vary based upon exact ambient conditions and load profile.

\* Consult Factory.

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## Type VR2 Right Angle Shaft

# Basic Thermal Ratings ★ – Hp/Double Reduction Maximum 200°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
870	6.30	None												498	503	508	
		Shaft Fan												702	709	716	
		Electric Fan												1439	1454	1468	
		DuraPlate												1763	1780	1798	
	7.10	None	160	163	206	208	210	243	245	248	333	336	339	471	476	481	477
		Shaft Fan	224	228	311	314	317	403	407	411	536	542	547	664	671	677	890
		Electric Fan	430	438	533	538	544	726	734	741	1057	1067	1078	1366	1379	1393	1532
		DuraPlate	363	370	678	684	691	981	991	1001	1244	1257	1269	1674	1690	1707	1842
	8.00	None	155	158	205	207	209	237	240	242	331	335	338	481	486	491	463
		Shaft Fan	218	222	309	312	315	392	396	400	536	541	546	677	683	690	865
		Electric Fan	422	430	531	537	542	705	712	719	1060	1071	1081	1382	1396	1410	1490
		DuraPlate	340	347	676	683	690	951	961	970	1250	1262	1275	1690	1707	1724	1791
	9.00	None	149	152	186	187	189	230	232	234	345	348	351	450	454	459	469
		Shaft Fan	209	214	283	286	289	378	381	385	552	558	563	629	635	641	871
		Electric Fan	403	411	490	495	500	676	682	689	1078	1089	1100	1273	1286	1299	1495
		DuraPlate	356	363	624	631	637	909	918	927	1267	1280	1292	1712	1730	1747	1795
	10.0	None	131	133	168	169	171	211	213	215	262	265	267	424	428	433	429
		Shaft Fan	183	186	253	256	259	350	353	357	423	427	431	594	600	606	788
		Electric Fan	350	357	435	440	444	629	635	642	838	846	854	1207	1219	1231	1340
		DuraPlate	293	299	466	471	476	688	695	702	817	825	833	1626	1642	1658	1692
	11.2	None	131	133	167	168	170	206	208	210	248	250	253	433	437	441	416
		Shaft Fan	183	186	252	255	257	340	344	347	407	411	415	604	610	616	765
		Electric Fan	349	356	434	438	443	611	617	623	823	831	839	1220	1232	1245	1302
		DuraPlate	293	299	465	470	474	668	675	682	802	810	818	1639	1656	1672	1646
	12.5	None	126	129	158	159	161	199	201	203	258	260	263				420
		Shaft Fan	176	180	238	241	243	328	331	335	420	424	428				769
		Electric Fan	334	341	409	413	417	586	592	598	838	846	855				1305
		DuraPlate	281	286	438	442	447	641	647	654	817	825	833				1647

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperature will vary based upon exact ambient conditions and load profile.

\* Consult Factory.

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## Type VR2 Right Angle Shaft

# Basic Thermal Ratings ★ – Hp/Double Reduction Maximum 180°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
1750	6.30	None												*	*	*	
		Shaft Fan												849	857	866	
		Electric Fan												963	972	982	
		DuraPlate												3271	3304	3337	
	7.10	None	104	106	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	318	325	450	455	459	523	528	534	641	647	654	836	844	853	995
		Electric Fan	392	400	480	484	489	579	585	591	833	842	850	945	955	964	1077
		DuraPlate	644	657	1298	1311	1324	1886	1905	1924	2279	2302	2325	3160	3191	3223	3099
	8.00	None	106	108	*	*	*	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	320	327	453	457	462	521	526	531	651	658	664	875	884	892	997
		Electric Fan	394	402	482	487	492	575	581	587	846	854	863	985	995	1005	1077
		DuraPlate	643	656	1304	1317	1330	1837	1855	1873	2301	2324	2347	3202	3234	3266	3051
	9.00	None	104	106	131	132	133	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	308	315	432	436	440	507	512	517	687	693	700	872	880	889	1037
		Electric Fan	378	385	459	464	468	559	565	570	882	891	900	973	983	993	1118
		DuraPlate	613	625	1224	1236	1248	1750	1768	1785	2335	2358	2381	3180	3211	3243	3082
	10.0	None	94	96	124	125	126	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	272	277	389	393	397	502	507	512	583	589	595	838	846	855	1004
		Electric Fan	332	338	413	417	421	551	556	562	740	747	755	935	945	954	1076
		DuraPlate	529	539	882	890	899	1306	1319	1332	1527	1542	1558	3052	3082	3113	2959
	11.2	None	95	97	124	125	126	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	272	278	389	393	397	492	497	502	586	592	598	858	867	876	987
		Electric Fan	332	338	413	417	421	540	545	550	745	752	760	956	966	976	1057
		DuraPlate	527	538	884	892	901	1270	1283	1295	1543	1559	1574	3071	3101	3132	2896
	12.5	None	93	95	119	120	121	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	262	267	369	373	377	475	480	485	605	611	617				1002
		Electric Fan	319	325	392	396	400	521	526	531	764	772	779				1072
		DuraPlate	504	514	833	841	849	1214	1226	1238	1556	1572	1587				2902
1430	6.30	None												*	*	*	
		Shaft Fan												810	818	826	
		Electric Fan												1118	1130	1141	
		DuraPlate												2707	2734	2761	
	7.10	None	117	119	151	152	154	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	279	284	394	398	402	477	481	486	606	612	618	784	792	800	964
		Electric Fan	394	402	486	491	496	619	625	631	901	910	919	1080	1090	1101	1224
		DuraPlate	530	541	1055	1065	1076	1534	1550	1565	1883	1902	1921	2600	2626	2652	2624
	8.00	None	118	121	151	153	154	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	280	285	394	398	402	470	475	479	611	617	623	811	819	827	953
		Electric Fan	395	402	487	492	496	608	614	620	908	917	926	1109	1120	1131	1207
		DuraPlate	530	540	1057	1068	1078	1491	1506	1521	1896	1915	1934	2630	2656	2683	2573
	9.00	None	115	117	146	147	149	*	*	*	*	*	*	*	*	*	*
		Shaft Fan	269	274	374	378	382	455	460	465	637	644	650	784	792	800	977
		Electric Fan	378	385	461	465	470	587	593	599	937	946	956	1057	1067	1078	1231
		DuraPlate	505	515	992	1002	1012	1422	1436	1450	1924	1943	1962	2597	2623	2649	2590
	10.0	None	102	104	134	135	136	142	143	145	173	175	177	258	260	263	*
		Shaft Fan	235	240	335	338	342	444	448	453	519	524	529	749	756	764	918
		Electric Fan	329	336	411	415	419	568	573	579	758	765	773	1009	1020	1030	1144
		DuraPlate	433	442	719	726	734	1067	1078	1088	1248	1261	1273	2485	2510	2535	2468
	11.2	None	103	105	133	135	136	140	142	143	173	175	177	267	270	273	*
		Shaft Fan	235	240	334	338	341	434	438	442	520	526	531	765	772	780	898
		Electric Fan	329	335	410	414	418	554	559	565	761	769	776	1027	1037	1047	1118
		DuraPlate	432	441	720	727	734	1037	1047	1057	1258	1271	1283	2501	2526	2551	2411
	12.5	None	100	102	127	129	130	137	138	140	183	185	186				*
		Shaft Fan	227	231	317	320	323	418	423	427	536	541	547				908
		Electric Fan	316	322	388	392	396	533	538	544	778	785	793				1128
		DuraPlate	414	422	678	685	692	991	1001	1011	1272	1284	1297				2415

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperature will vary based upon exact ambient conditions and load profile.

\* Consult Factory.

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## Type VR2 Right Angle Shaft

# Basic Thermal Ratings ★ – Hp/Double Reduction Maximum 180°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE													
			133	137	143	145	147	153	155	157	163	165	167	173	175	177
1170	6.30	None												336	339	343
		Shaft Fan												709	716	723
		Electric Fan												1196	1208	1220
		DuraPlate												2100	2121	2142
	7.10	None	123	126	160	161	163	168	169	171	228	230	232	324	327	330
		Shaft Fan	232	237	327	331	334	408	412	416	533	538	543	678	685	692
		Electric Fan	384	392	475	480	485	627	634	640	917	926	935	1144	1155	1167
		DuraPlate	415	424	811	819	827	1177	1189	1201	1467	1481	1496	2007	2027	2047
	8.00	None	124	127	159	161	163	166	168	169	229	231	233	336	340	343
		Shaft Fan	233	238	327	330	334	400	404	408	535	540	545	696	703	710
		Electric Fan	384	391	475	480	484	612	619	625	920	929	939	1165	1176	1188
		DuraPlate	415	423	812	820	828	1143	1154	1166	1472	1487	1502	2029	2049	2069
	9.00	None	120	123	152	153	155	162	164	165	242	245	247	329	332	335
		Shaft Fan	224	228	309	312	316	387	391	394	554	560	565	660	667	674
		Electric Fan	367	374	448	452	457	589	595	601	944	953	962	1089	1100	1111
		DuraPlate	396	404	761	769	777	1091	1102	1113	1497	1512	1527	1998	2018	2038
	10.0	None	98	100	137	138	140	160	162	163	194	196	198	312	315	318
		Shaft Fan	186	190	276	278	281	373	377	380	438	442	446	627	634	640
		Electric Fan	309	315	397	401	405	563	569	574	746	753	761	1036	1046	1057
		DuraPlate	330	337	556	562	568	825	834	842	964	974	983	1905	1924	1943
	11.2	None	98	100	136	138	139	157	159	160	193	195	197	320	324	327
		Shaft Fan	187	191	275	277	280	364	367	371	438	442	446	639	646	652
		Electric Fan	309	315	396	400	404	548	553	559	748	756	763	1050	1061	1071
		DuraPlate	330	336	556	561	567	802	810	818	969	979	989	1920	1939	1959
	12.5	None	95	97	118	119	120	152	154	155	202	204	206			289
		Shaft Fan	180	184	246	249	251	351	354	358	451	455	460			781
		Electric Fan	296	302	360	363	367	526	532	537	763	770	778			1136
		DuraPlate	316	322	509	514	519	768	775	783	983	993	1003			1910
970	6.30	None												375	379	382
		Shaft Fan												613	620	626
		Electric Fan												1205	1217	1229
		DuraPlate												1683	1700	1716
	7.10	None	123	126	160	161	163	177	179	181	243	246	248	357	361	364
		Shaft Fan	199	203	279	282	285	353	356	360	467	471	476	584	590	595
		Electric Fan	370	377	458	463	467	615	621	627	899	908	917	1147	1158	1170
		DuraPlate	339	345	652	659	665	941	951	960	1186	1198	1210	1603	1619	1635
	8.00	None	124	126	159	161	162	175	176	178	368	371	375	319	322	325
		Shaft Fan	199	203	278	281	284	345	348	352	597	603	609	735	743	750
		Electric Fan	369	377	457	462	466	599	605	611	1164	1176	1188	1230	1242	1254
		DuraPlate	338	345	652	658	665	914	923	932	1621	1637	1654	1656	1673	1689
	9.00	None	110	113	151	152	154	170	171	173	255	258	260	350	354	357
		Shaft Fan	181	185	263	265	268	333	336	340	484	488	493	562	567	573
		Electric Fan	341	348	430	435	439	575	580	586	922	931	940	1080	1091	1102
		DuraPlate	312	318	612	618	624	873	882	891	1211	1223	1235	1598	1614	1630
	10.0	None	99	101	127	128	130	165	167	168	198	200	202	331	335	338
		Shaft Fan	161	164	225	227	229	320	323	326	375	379	383	532	537	542
		Electric Fan	300	306	371	375	378	547	552	558	721	728	735	1025	1036	1046
		DuraPlate	272	278	440	444	449	666	672	679	777	784	792	1520	1535	1550
	11.2	None	100	102	127	128	129	145	146	148	197	199	201	339	342	346
		Shaft Fan	161	165	224	226	228	293	295	298	375	378	382	542	547	553
		Electric Fan	299	305	370	374	377	511	516	521	723	730	737	1038	1049	1059
		DuraPlate	272	277	439	443	448	625	632	638	779	787	794	1533	1549	1564
	12.5	None	97	99	120	122	123	141	142	144	205	208	210			308
		Shaft Fan	156	159	212	214	216	282	285	288	386	390	394			680
		Electric Fan	287	293	349	353	356	491	496	501	736	744	751			1114
		DuraPlate	261	266	414	418	423	600	606	612	792	800	808			1568

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperature will vary based upon exact ambient conditions and load profile.

\* Consult Factory.

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## Type VR2 Right Angle Shaft

# Basic Thermal Ratings ★ – Hp/Double Reduction Maximum 180°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
870	6.30	None												386	390	394	
		Shaft Fan												559	565	570	
		Electric Fan												1196	1207	1219	
		DuraPlate												1473	1488	1503	
	7.10	None	122	124	158	159	161	179	181	183	246	249	251	366	370	374	344
		Shaft Fan	182	185	254	256	259	323	326	329	430	434	438	531	536	541	712
		Electric Fan	360	368	447	451	455	603	609	615	882	891	899	1136	1147	1159	1272
		DuraPlate	302	308	574	580	585	825	834	842	1045	1056	1066	1401	1415	1429	1545
	8.00	None	115	117	157	158	160	176	177	179	246	248	250	376	380	383	335
		Shaft Fan	174	177	253	255	258	315	318	322	429	434	438	542	548	553	694
		Electric Fan	350	357	445	450	454	536	592	598	882	891	900	1152	1164	1175	1239
		DuraPlate	293	298	573	579	584	801	809	817	1046	1056	1067	1418	1432	1446	1505
	9.00	None	111	113	138	139	141	170	172	174	257	259	262	355	359	362	341
		Shaft Fan	167	171	227	229	231	304	307	310	445	449	453	508	514	519	701
		Electric Fan	335	342	405	409	413	563	568	574	902	911	921	1066	1076	1087	1245
		DuraPlate	280	286	524	529	534	766	774	782	1067	1078	1088	1455	1469	1484	1510
	10.0	None	99	101	127	128	129	152	154	155	198	200	202	335	339	342	317
		Shaft Fan	148	151	206	208	210	277	280	282	343	346	349	481	485	490	639
		Electric Fan	293	299	363	366	370	518	524	529	703	710	717	1011	1021	1031	1121
		DuraPlate	243	247	390	394	398	571	576	582	685	692	699	1382	1396	1409	1433
	11.2	None	99	101	126	127	129	149	150	152	179	180	182	343	346	350	308
		Shaft Fan	148	151	205	207	209	270	273	275	321	324	327	490	495	499	621
		Electric Fan	292	298	362	365	369	504	509	514	680	687	694	1023	1034	1044	1091
		DuraPlate	242	247	389	393	397	555	560	566	662	669	675	1395	1409	1423	1394
	12.5	None	96	98	120	121	122	144	146	147	187	188	190				312
		Shaft Fan	143	145	194	196	198	261	263	266	332	335	339				625
		Electric Fan	280	286	341	345	348	484	489	494	694	701	708				1094
		DuraPlate	233	237	367	371	375	532	538	543	676	683	690				1397

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperature will vary based upon exact ambient conditions and load profile.

\* Consult Factory.

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## Type VR3 Right Angle Shaft

# Basic Thermal Ratings ★ – Hp/Triple Reduction Maximum 200°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
1750	12.5	None												*	*	*	
		Shaft Fan												904	913	922	
		Electric Fan												693	700	707	
		DuraPlate												2687	2714	2741	
	14.0	None	130	132	134	136	137	154	156	157	*	*	*	*	*	*	
		Shaft Fan	300	306	370	374	378	518	523	529	563	568	574	878	887	900	832
		Electric Fan	279	285	303	306	309	426	430	435	522	527	532	674	681	688	631
		DuraPlate	662	676	991	1001	1011	1589	1605	1621	1732	1749	1766	2606	2633	2659	2571
	16.0	None	130	133	134	135	137	155	156	158	*	*	*	*	*	*	
		Shaft Fan	300	306	367	371	375	511	516	521	560	566	571	900	906	915	825
		Electric Fan	279	285	301	304	307	421	425	429	519	525	530	693	700	707	628
		DuraPlate	658	672	980	990	1000	1553	1568	1584	1718	1735	1752	2613	2639	2666	2528
	18.0	None	128	131	130	132	133	153	155	156	*	*	*	*	*	*	
		Shaft Fan	294	300	355	358	362	501	506	511	584	590	596	900	909	918	841
		Electric Fan	273	279	290	293	296	413	417	421	543	548	553	703	710	718	644
		DuraPlate	642	655	943	953	962	1514	1529	1544	1747	1764	1782	2556	2581	2607	2607
	20.0	None	121	124	130	131	132	148	149	151	*	*	*	*	*	*	
		Shaft Fan	279	284	347	350	353	474	478	483	539	545	550	864	873	881	842
		Electric Fan	259	265	284	287	290	391	395	399	502	507	512	675	682	689	654
		DuraPlate	614	626	919	928	937	1443	1457	1472	1596	1612	1628	2466	2491	2515	2460
	22.4	None	122	124	129	130	131	146	147	149	154	155	157	*	*	*	
		Shaft Fan	278	284	343	346	350	464	468	473	534	539	545	875	884	892	825
		Electric Fan	259	264	281	284	287	383	387	391	497	502	507	686	693	700	641
		DuraPlate	610	622	908	917	926	1406	1420	1434	1581	1597	1613	2465	2490	2515	2408
	25.0	None	119	121	123	125	126	143	144	146	162	164	166	244	246	249	*
		Shaft Fan	271	276	328	332	335	452	457	461	551	557	562	909	918	927	831
		Electric Fan	252	257	270	272	275	374	378	381	514	519	524	737	744	752	648
		DuraPlate	593	605	870	878	887	1367	1381	1394	1604	1620	1636	2469	2494	2518	2397
	28.0	None	109	111	128	130	131	154	156	157	173	175	176	232	235	237	241
		Shaft Fan	243	248	318	322	325	432	437	441	505	510	515	871	879	888	907
		Electric Fan	227	231	264	267	270	362	366	370	473	478	483	705	712	719	735
		DuraPlate	527	537	672	679	685	1324	1337	1350	1184	1196	1207	2382	2406	2429	2483
	31.5	None	109	111	127	128	129	154	156	157	171	172	174	237	240	242	235
		Shaft Fan	242	247	315	318	321	432	437	441	499	504	509	878	887	896	885
		Electric Fan	226	231	261	264	266	362	366	370	468	473	477	713	720	727	717
		DuraPlate	523	533	664	670	677	1291	1304	1317	1171	1183	1195	2378	2402	2425	2428
	35.5	None	107	109	121	123	124	148	149	151	178	180	182	238	240	242	238
		Shaft Fan	236	241	301	305	308	412	416	420	514	519	524	854	862	871	887
		Electric Fan	220	225	250	253	255	346	349	353	482	487	492	695	702	709	719
		DuraPlate	509	519	636	643	649	1256	1269	1281	1190	1202	1214	2291	2314	2337	2411
	40.0	None	100	102	115	116	117	147	148	150	163	165	166	225	227	229	235
		Shaft Fan	222	227	286	289	292	405	409	413	469	473	478	815	823	831	853
		Electric Fan	207	211	237	239	242	340	344	347	439	444	448	663	669	676	693
		DuraPlate	481	491	606	612	618	1225	1237	1249	1090	1101	1111	2206	2228	2250	2304
	45.0	None	100	102	113	115	116	143	145	146	161	163	164	229	231	233	228
		Shaft Fan	222	226	282	285	288	395	399	403	463	468	472	822	830	838	830
		Electric Fan	207	211	234	236	239	332	335	339	434	438	443	669	676	682	674
		DuraPlate	478	488	599	605	611	1192	1204	1216	1078	1089	1100	2202	2224	2246	2249
	50.0	None	97	99	108	109	110	139	141	142	168	170	171	231	234	236	230
		Shaft Fan	216	220	270	273	275	384	388	391	476	481	486	805	813	821	830
		Electric Fan	201	205	224	226	228	323	326	329	447	452	456	658	665	671	675
		DuraPlate	465	474	573	579	585	1155	1167	1178	1096	1107	1118	2128	2149	2170	2233
	56.0	None	88	90	96	97	98	111	112	114	165	167	168	218	220	222	229
		Shaft Fan	201	205	253	255	258	346	350	353	460	464	469	767	774	782	804
		Electric Fan	187	191	208	210	212	288	291	293	429	433	437	626	632	638	656
		DuraPlate	436	444	547	552	558	1069	1079	1090	1015	1025	1035	2044	2065	2085	2138

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperature will vary based upon exact ambient conditions and load profile.

\* Consult Factory.

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## Type VR3 Right Angle Shaft

# Basic Thermal Ratings ★ – Hp/Triple Reduction Maximum 200°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
1750	63.0	None	88	90	94	95	96	109	110	111	162	164	166	222	224	226	221
		Shaft Fan	199	203	250	252	255	337	341	344	450	455	459	773	781	789	781
		Electric Fan	185	189	205	207	209	280	283	286	423	428	432	632	638	644	637
		DuraPlate	425	433	540	546	551	1042	1052	1063	1004	1014	1025	2042	2063	2083	2084
	71.0	None	86	87	90	91	92	105	107	108	170	172	173	197	199	201	223
		Shaft Fan	193	197	238	240	243	328	331	334	464	468	473	649	656	662	781
		Electric Fan	180	184	195	197	199	273	275	278	437	441	445	532	538	543	638
		DuraPlate	413	422	516	521	526	1012	1022	1032	1022	1032	1042	1236	1248	1261	2070
	80.0	None	78	79	91	92	93	117	119	120	134	136	137	200	202	204	200
		Shaft Fan	170	174	222	225	227	313	316	319	370	374	378	655	661	668	661
		Electric Fan	159	162	185	187	188	264	266	269	348	351	355	538	543	548	542
		DuraPlate	269	274	358	362	366	640	647	653	780	788	796	1240	1252	1264	1260
	90.0	None	76	77	87	88	89	114	115	117	140	141	143	198	200	202	202
		Shaft Fan	166	169	213	215	217	304	307	310	382	386	390	638	644	651	662
		Electric Fan	155	158	177	178	180	257	259	262	359	362	366	525	530	536	543
		DuraPlate	262	267	343	347	350	622	628	634	796	804	812	1201	1213	1225	1255
	100	None	73	74	87	88	89	115	116	117	136	137	138	186	188	190	196
		Shaft Fan	160	163	212	214	216	303	306	309	366	370	374	608	614	620	637
		Electric Fan	149	152	176	178	180	256	258	261	344	348	351	499	504	509	523
		DuraPlate	253	258	340	343	346	617	623	630	752	759	767	1150	1162	1173	1204
	112	None	73	74	86	87	88	112	113	114	133	135	136	190	192	194	190
		Shaft Fan	159	162	209	211	213	296	298	301	361	365	368	613	619	625	619
		Electric Fan	149	152	174	176	178	249	252	254	339	343	346	504	509	514	508
		DuraPlate	251	256	335	339	342	602	608	614	743	750	758	1154	1166	1178	1172
	125	None	71	72	82	83	84	109	110	111	140	141	142				191
		Shaft Fan	155	158	199	201	203	287	290	293	373	377	381				619
		Electric Fan	145	148	166	167	169	243	245	247	351	354	358				509
		DuraPlate	244	249	320	323	326	585	590	596	759	766	774				1168
1430	12.5	None												243	245	248	
		Shaft Fan												888	897	905	
		Electric Fan												833	842	850	
		DuraPlate												2303	2326	2349	
	14.0	None	132	134	146	148	149	184	186	188	202	204	206	236	238	240	*
		Shaft Fan	259	264	325	329	332	466	471	476	535	540	545	856	864	873	825
		Electric Fan	275	280	309	312	315	450	454	459	580	586	592	803	811	819	771
		DuraPlate	542	553	814	822	830	1308	1321	1334	1454	1469	1483	2225	2247	2269	2199
	16.0	None	132	135	145	146	148	182	184	186	201	203	205	245	248	250	*
		Shaft Fan	259	264	322	326	329	458	462	467	530	536	541	869	878	886	810
		Electric Fan	274	280	306	309	312	441	446	450	575	581	587	816	824	833	759
		DuraPlate	539	550	804	812	820	1277	1290	1302	1440	1455	1469	2230	2252	2274	2156
	18.0	None	129	132	140	141	143	179	181	183	213	215	217	252	254	257	*
		Shaft Fan	253	258	310	313	316	447	452	456	550	555	561	848	856	865	819
		Electric Fan	268	273	294	297	300	431	436	440	596	602	607	798	806	813	768
		DuraPlate	525	536	773	780	788	1244	1256	1269	1466	1480	1495	2157	2179	2200	2152
	20.0	None	121	124	136	137	139	167	169	170	194	196	198	240	242	245	228
		Shaft Fan	238	243	300	303	306	417	422	426	493	498	503	811	819	828	800
		Electric Fan	253	258	285	287	290	402	406	410	534	540	545	763	771	778	746
		DuraPlate	499	509	749	756	764	1164	1176	1187	1320	1333	1347	2076	2097	2117	2069
	22.4	None	121	124	135	136	137	164	165	167	192	194	196	246	248	251	224
		Shaft Fan	237	242	296	299	302	408	412	416	488	493	498	820	828	837	776
		Electric Fan	252	257	281	284	287	393	397	401	528	533	539	772	779	787	729
		DuraPlate	496	506	739	747	754	1135	1146	1158	1307	1320	1333	2077	2097	2118	2021
	25.0	None	118	121	129	130	131	160	162	163	201	203	205	279	282	285	228
		Shaft Fan	231	236	284	286	289	397	401	405	504	509	514	802	810	818	779
		Electric Fan	245	250	269	272	274	383	387	391	545	550	556	759	766	774	732
		DuraPlate	482	492	707	715	722	1104	1115	1126	1329	1342	1355	2039	2060	2080	2012

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperature will vary based upon exact ambient conditions and load profile.

\* Consult Factory.

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## Type VR3 Right Angle Shaft

# Basic Thermal Ratings ★ – Hp/Triple Reduction Maximum 200°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
1430	28.0	None	107	109	128	129	130	158	159	161	188	190	192	265	268	270	277
		Shaft Fan	206	210	271	274	277	370	373	377	444	449	453	767	775	782	801
		Electric Fan	218	223	258	260	263	357	360	364	479	484	488	725	732	739	757
		DuraPlate	427	436	549	554	560	1070	1080	1091	975	985	995	1963	1982	2002	2049
	31.5	None	107	109	126	128	129	154	156	157	186	188	190	270	273	275	269
		Shaft Fan	205	209	268	271	273	361	365	368	439	443	448	774	781	789	780
		Electric Fan	218	222	255	257	260	349	352	356	473	478	483	731	739	746	737
		DuraPlate	425	433	542	547	553	1043	1053	1064	964	974	983	1962	1982	2001	2000
	35.5	None	104	106	121	122	123	150	152	153	194	196	198	264	266	269	271
		Shaft Fan	200	204	256	259	262	352	355	359	452	457	461	747	754	761	781
		Electric Fan	212	216	519	524	529	340	343	347	487	492	497	706	713	720	739
		DuraPlate	414	422	519	524	529	1015	1025	1035	982	992	1002	1885	1904	1923	1988
	40.0	None	93	95	105	106	107	148	150	151	175	176	178	249	252	254	261
		Shaft Fan	183	187	232	234	237	345	348	352	409	413	417	711	718	726	745
		Electric Fan	194	198	220	222	224	333	337	340	441	445	450	673	679	686	705
		DuraPlate	385	392	481	486	491	989	999	1009	894	903	912	1810	1828	1846	1893
	45.0	None	93	95	103	104	105	145	146	147	175	175	176	254	256	259	253
		Shaft Fan	183	186	229	231	234	336	339	343	404	408	412	718	725	732	724
		Electric Fan	194	198	217	219	221	325	328	331	435	439	444	679	686	692	685
		DuraPlate	382	390	475	480	485	962	972	981	884	893	902	1810	1828	1846	1845
	50.0	None	91	92	99	100	101	141	142	143	180	181	183	252	254	257	255
		Shaft Fan	178	181	219	221	223	326	330	333	416	421	425	700	707	714	725
		Electric Fan	189	192	207	209	211	315	319	322	448	453	457	663	670	676	686
		DuraPlate	372	379	455	459	464	932	942	951	902	911	920	1748	1765	1782	1834
	56.0	None	88	89	100	101	102	124	126	127	131	132	133	237	239	242	249
		Shaft Fan	172	175	219	221	223	304	307	310	349	352	355	665	672	679	698
		Electric Fan	182	186	207	209	211	294	297	300	378	382	386	630	636	642	661
		DuraPlate	355	362	449	453	458	874	882	891	782	790	798	1675	1692	1708	1754
	63.0	None	88	89	98	99	100	121	122	123	128	130	131	241	243	246	241
		Shaft Fan	170	173	216	218	220	296	299	302	342	345	349	672	678	685	678
		Electric Fan	180	183	205	207	209	286	289	292	370	374	378	636	642	648	641
		DuraPlate	347	353	444	448	452	851	860	868	773	781	789	1676	1693	1710	1707
	71.0	None	85	87	93	94	95	118	119	120	135	136	137	205	207	209	242
		Shaft Fan	165	168	205	207	209	288	291	294	354	357	361	557	562	568	678
		Electric Fan	175	178	195	197	199	278	281	284	386	390	393	527	532	538	642
		DuraPlate	337	344	423	427	431	827	835	843	790	798	806	1017	1027	1038	1698
	80.0	None	74	76	88	89	90	115	116	117	138	139	140	208	210	212	208
		Shaft Fan	142	145	186	188	190	263	266	268	317	321	324	562	567	573	567
		Electric Fan	151	154	177	179	180	254	257	259	342	345	349	532	538	543	537
		DuraPlate	219	223	291	294	297	518	523	528	636	643	649	1022	1032	1042	1036
	90.0	None	72	74	84	85	85	112	113	114	144	145	146	204	206	208	210
		Shaft Fan	139	142	178	180	181	256	258	261	328	331	335	547	552	558	567
		Electric Fan	147	150	169	171	172	247	250	252	353	357	360	518	523	529	537
		DuraPlate	213	217	279	281	284	503	508	513	651	658	664	990	1000	1009	1034
	100	None	69	71	84	85	86	112	113	114	138	140	141	192	194	196	202
		Shaft Fan	134	136	177	179	181	255	257	260	314	317	320	519	525	530	545
		Electric Fan	142	144	168	170	172	246	249	251	338	341	345	492	497	502	516
		DuraPlate	205	209	276	279	282	499	504	509	615	621	628	946	955	964	990
	112	None	70	71	83	84	85	109	110	111	136	137	139	196	198	200	196
		Shaft Fan	133	136	175	177	178	248	251	253	309	312	316	525	530	535	529
		Electric Fan	141	144	166	168	170	240	242	245	333	336	340	497	502	507	501
		DuraPlate	204	208	273	275	278	486	491	496	608	614	620	950	960	969	963
	125	None	68	69	79	80	80	106	107	108	142	144	145				197
		Shaft Fan	130	132	167	168	170	241	244	246	320	324	327				530
		Electric Fan	137	140	158	160	161	233	235	238	344	348	351				502
		DuraPlate	199	203	260	263	265	472	477	482	623	629	635				961

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperature will vary based upon exact ambient conditions and load profile.

\* Consult Factory.

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## Type VR3 Right Angle Shaft

# Basic Thermal Ratings ★ – Hp/Triple Reduction Maximum 200°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175		
1170	12.5	None												323	326	329	
		Shaft Fan												801	809	817	
		Electric Fan												899	908	917	
		DuraPlate												1861	1879	1898	
	14.0	None	129	131	149	150	152	197	199	201	235	237	240	309	312	315	292
		Shaft Fan	214	218	272	275	278	396	400	404	472	477	482	768	775	783	750
		Electric Fan	263	269	303	306	309	450	455	459	599	605	611	861	870	879	838
		DuraPlate	423	431	634	640	646	1018	1028	1038	1153	1165	1176	1790	1808	1826	1769
	16.0	None	129	131	147	149	150	194	196	198	232	235	237	316	320	323	286
		Shaft Fan	213	218	269	272	274	388	392	395	467	472	477	777	785	793	728
		Electric Fan	263	268	299	302	305	440	445	449	592	598	604	871	880	888	819
		DuraPlate	420	429	626	632	638	993	1002	1012	1141	1152	1164	1795	1813	1831	1730
	18.0	None	126	128	141	143	144	189	191	193	244	246	248	306	309	312	292
		Shaft Fan	208	212	258	261	263	378	382	386	484	489	493	744	751	759	733
		Electric Fan	256	261	287	290	293	429	434	438	611	617	623	833	842	850	823
		DuraPlate	410	418	600	606	612	966	976	985	1163	1175	1187	1720	1737	1754	1725
	20.0	None	117	119	135	137	138	173	175	177	213	215	217	290	293	296	280
		Shaft Fan	195	199	248	250	253	348	352	355	424	428	433	709	716	724	696
		Electric Fan	240	245	275	278	281	396	400	404	537	543	548	795	803	811	781
		DuraPlate	387	394	578	584	590	897	906	915	1037	1047	1057	1649	1666	1682	1640
	22.4	None	117	119	134	135	136	169	171	173	210	212	214	296	299	302	273
		Shaft Fan	194	198	245	247	249	340	343	347	419	423	427	717	724	731	677
		Electric Fan	239	244	272	275	277	387	391	395	531	536	541	803	811	819	761
		DuraPlate	384	392	571	577	582	874	883	891	1022	1032	1042	1652	1669	1685	1600
	25.0	None	114	116	128	129	130	165	167	168	219	221	223	294	297	300	276
		Shaft Fan	189	193	234	236	238	331	334	338	433	437	442	674	681	687	679
		Electric Fan	233	238	260	262	265	376	380	384	547	552	558	751	758	766	763
		DuraPlate	374	381	546	551	557	850	858	867	1042	1052	1063	1599	1615	1631	1593
	28.0	None	99	101	118	119	120	154	156	158	192	194	196	278	281	284	292
		Shaft Fan	165	168	216	218	220	302	305	308	372	376	379	642	649	655	672
		Electric Fan	203	207	240	242	244	342	346	349	468	473	477	716	724	731	750
		DuraPlate	327	334	419	423	428	820	829	837	761	769	776	1534	1550	1565	1604
	31.5	None	99	101	117	118	119	151	152	154	190	191	193	283	286	289	283
		Shaft Fan	164	168	213	215	217	295	298	301	367	371	374	648	655	661	654
		Electric Fan	203	207	237	239	241	334	338	341	462	466	471	723	730	737	729
		DuraPlate	326	332	414	418	422	799	807	815	752	759	767	1537	1552	1568	1564
	35.5	None	96	98	111	112	113	147	148	150	200	201	201	275	275	278	285
		Shaft Fan	160	163	203	205	207	287	290	293	379	383	387	622	628	635	655
		Electric Fan	198	202	226	228	231	326	329	332	475	480	485	693	700	707	730
		DuraPlate	317	323	396	400	404	778	786	793	769	776	784	1472	1487	1502	1556
	40.0	None	90	92	105	106	107	135	136	137	153	154	156	257	260	262	270
		Shaft Fan	150	153	192	194	196	270	273	275	313	316	319	591	597	603	620
		Electric Fan	185	189	213	215	218	307	310	313	399	403	407	659	666	672	691
		DuraPlate	298	304	375	379	382	745	753	760	665	671	678	1409	1424	1438	1476
	45.0	None	90	92	103	104	105	131	133	134	150	152	153	262	264	267	262
		Shaft Fan	150	153	189	191	193	263	266	268	309	312	315	597	603	609	602
		Electric Fan	185	188	211	213	215	299	302	305	394	398	402	665	672	679	671
		DuraPlate	296	302	375	379	382	725	732	740	657	663	670	1412	1427	1441	1437
	50.0	None	88	89	98	99	100	128	129	130	157	159	160	225	227	229	263
		Shaft Fan	146	149	181	182	184	255	258	261	320	323	326	543	549	554	603
		Electric Fan	179	183	201	203	205	290	293	296	407	411	415	609	615	621	672
		DuraPlate	288	294	353	357	360	703	710	717	673	679	686	1322	1335	1348	1430
	56.0	None	84	86	99	100	101	128	129	131	152	154	155	211	213	215	221
		Shaft Fan	140	143	180	182	184	254	256	259	305	308	311	515	520	525	540
		Electric Fan	173	176	200	202	204	288	290	293	386	389	393	577	583	588	605
		DuraPlate	275	281	350	353	357	677	684	691	627	633	639	1262	1275	1288	1323

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperature will vary based upon exact ambient conditions and load profile.

\* Consult Factory.

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## Type VR3 Right Angle Shaft

# Basic Thermal Ratings ★ – Hp/Triple Reduction Maximum 200°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
1170	63.0	None	84	86	98	99	100	125	126	127	150	151	153	215	217	219	214
		Shaft Fan	139	142	178	180	181	247	250	252	301	304	307	521	526	531	523
		Electric Fan	170	174	198	200	202	280	283	286	380	384	388	583	589	595	587
		DuraPlate	269	275	345	349	352	660	666	673	619	625	631	1266	1279	1292	1286
	71.0	None	82	84	93	94	94	121	122	124	157	159	160	202	204	207	215
		Shaft Fan	135	138	169	171	172	240	242	245	312	315	318	455	460	464	524
		Electric Fan	166	169	188	190	192	272	275	277	393	397	401	507	512	517	587
		DuraPlate	262	267	329	332	335	641	647	653	634	641	647	796	804	812	1281
	80.0	None	69	71	83	84	84	109	110	111	135	136	137	206	208	210	206
		Shaft Fan	114	117	149	151	152	212	214	216	259	262	265	460	465	470	464
		Electric Fan	141	144	166	168	169	240	242	245	327	330	333	512	517	522	516
		DuraPlate	170	173	226	228	231	398	402	406	493	498	503	801	809	817	811
	90.0	None	68	69	79	80	80	106	107	108	141	142	143	201	203	205	207
		Shaft Fan	112	114	143	144	145	206	208	210	269	272	274	448	452	456	464
		Electric Fan	137	140	158	160	161	233	236	238	338	341	344	498	503	508	517
		DuraPlate	165	169	216	218	220	387	390	394	506	511	517	776	784	792	810
	100	None	65	66	79	80	81	106	107	108	135	136	138	189	191	193	199
		Shaft Fan	107	109	142	144	145	205	207	209	257	260	262	424	428	432	445
		Electric Fan	132	135	158	159	161	232	234	237	322	326	329	472	477	481	495
		DuraPlate	159	162	215	217	219	384	388	392	479	484	489	739	747	754	775
	112	None	65	66	78	79	80	103	104	105	132	134	135	192	194	196	192
		Shaft Fan	107	109	140	142	143	199	201	203	253	256	258	429	433	438	431
		Electric Fan	132	134	156	157	159	226	228	230	317	321	324	477	482	487	480
		DuraPlate	159	162	212	214	216	374	377	381	473	477	482	744	752	759	753
	125	None	63	64	74	75	76	100	101	102	139	140	142				194
		Shaft Fan	104	106	133	135	136	194	196	198	263	265	268				433
		Electric Fan	128	131	148	150	151	219	222	224	329	332	335				481
		DuraPlate	154	157	202	204	206	363	367	370	486	491	496				752
970	12.5	None												349	352	356	
		Shaft Fan												712	719	726	
		Electric Fan												904	913	922	
		DuraPlate												1543	1558	1574	
	14.0	None	124	126	146	147	148	197	199	201	242	245	247	332	335	338	317
		Shaft Fan	182	186	233	235	238	342	345	348	416	420	424	680	686	693	660
		Electric Fan	252	257	292	295	298	439	443	447	591	597	603	864	873	881	844
		DuraPlate	344	351	514	519	525	825	833	841	944	954	963	1480	1495	1510	1460
	16.0	None	124	126	144	145	147	193	195	197	239	242	244	338	342	345	310
		Shaft Fan	182	185	230	232	235	334	337	340	411	415	419	688	695	701	644
		Electric Fan	251	256	288	291	294	428	432	437	584	590	596	872	881	890	823
		DuraPlate	343	350	508	513	518	804	812	820	933	943	952	1485	1500	1515	1425
	18.0	None	121	123	138	139	140	188	190	192	250	252	255	321	324	327	313
		Shaft Fan	177	181	220	222	225	325	328	332	425	429	434	652	658	665	650
		Electric Fan	244	249	276	279	282	417	421	425	601	607	613	827	835	844	825
		DuraPlate	334	341	486	491	496	782	790	798	954	963	973	1414	1428	1442	1422
	20.0	None	112	114	131	133	134	171	173	174	214	217	219	304	307	310	294
		Shaft Fan	165	168	210	213	215	297	300	303	368	372	375	620	626	632	607
		Electric Fan	228	233	264	267	269	383	387	390	524	529	535	788	796	804	775
		DuraPlate	314	320	467	471	476	727	734	742	838	847	855	1352	1366	1380	1342
	22.4	None	112	114	130	131	132	167	169	170	211	213	216	309	312	315	286
		Shaft Fan	164	168	208	210	212	290	293	296	363	367	370	626	633	639	591
		Electric Fan	228	232	260	263	266	373	377	381	517	522	527	795	803	811	754
		DuraPlate	312	318	461	465	470	703	710	717	828	837	845	1357	1370	1384	1307
	25.0	None	109	111	124	125	126	162	164	166	220	222	225	293	300	301	288
		Shaft Fan	160	163	198	200	202	282	285	288	376	379	383	578	584	590	592
		Electric Fan	221	226	249	251	254	363	367	370	533	538	543	730	737	744	755
		DuraPlate	303	309	440	444	449	683	690	697	847	856	864	1305	1318	1331	1303

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperature will vary based upon exact ambient conditions and load profile.

\* Consult Factory.

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## Type VR3 Right Angle Shaft

# Basic Thermal Ratings ★ – Hp/Triple Reduction Maximum 200°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
28.0	None	None	95	97	115	116	118	142	144	145	189	191	192	277	280	282	290
		Shaft Fan	140	143	184	186	188	248	250	253	319	322	325	550	555	561	576
		Electric Fan	194	198	231	233	236	320	323	326	451	456	460	695	702	709	728
		DuraPlate	266	271	343	346	350	650	656	663	620	626	632	1249	1262	1274	1308
31.5	None	None	95	97	114	115	116	139	140	142	186	188	190	281	284	287	281
		Shaft Fan	140	143	182	184	185	242	244	247	314	318	321	556	561	567	560
		Electric Fan	194	197	228	230	232	312	315	318	445	449	454	701	708	715	708
		DuraPlate	265	270	338	342	345	633	639	646	612	618	624	1253	1266	1279	1273
35.5	None	None	92	94	108	109	111	135	137	138	194	195	200	248	251	253	283
		Shaft Fan	136	139	173	175	177	236	238	240	325	329	332	508	513	518	561
		Electric Fan	188	192	218	220	222	304	307	310	458	463	468	646	652	659	708
		DuraPlate	258	263	323	326	330	616	622	628	627	634	640	1172	1183	1195	1268
40.0	None	None	86	88	102	103	104	133	134	136	159	160	162	234	236	239	250
		Shaft Fan	127	130	163	165	166	231	233	236	276	278	281	481	486	491	505
		Electric Fan	176	180	205	207	209	297	300	303	395	399	403	613	619	626	643
		DuraPlate	242	246	305	308	311	601	607	613	548	553	559	1119	1130	1141	1172
45.0	None	None	86	88	100	101	102	130	131	132	156	158	159	238	240	243	238
		Shaft Fan	127	129	161	162	164	225	227	229	272	274	277	487	492	496	489
		Electric Fan	176	179	202	204	206	289	292	295	390	394	397	619	625	632	624
		DuraPlate	241	245	287	290	293	584	590	596	541	546	551	1123	1134	1146	1140
50.0	None	None	84	85	95	96	97	126	127	128	163	165	166	234	236	239	239
		Shaft Fan	123	126	153	155	156	218	221	223	282	285	287	474	479	484	490
		Electric Fan	171	174	193	195	196	281	284	286	402	406	410	602	608	614	625
		DuraPlate	234	239	301	304	307	566	572	578	556	561	567	1086	1097	1108	1136
56.0	None	None	81	82	96	97	98	126	127	129	157	159	160	220	222	224	231
		Shaft Fan	119	121	153	155	156	217	219	221	268	271	273	448	453	457	471
		Electric Fan	164	167	192	194	196	277	280	282	379	383	386	570	576	582	599
		DuraPlate	223	228	285	287	290	547	553	558	518	523	528	1035	1045	1055	1085
63.0	None	None	80	82	94	95	96	123	124	125	154	156	157	224	226	228	225
		Shaft Fan	118	120	151	152	154	211	213	215	264	267	269	454	458	463	456
		Electric Fan	161	165	189	191	193	269	272	275	373	377	381	576	582	588	580
		DuraPlate	219	223	281	284	286	533	538	543	511	516	521	1040	1050	1060	1054
71.0	None	None	78	80	90	90	91	119	120	121	162	163	165	196	198	200	225
		Shaft Fan	114	117	143	145	146	205	207	209	274	277	280	384	388	392	457
		Electric Fan	157	160	180	182	183	262	264	267	386	390	394	485	490	495	581
		DuraPlate	213	217	267	270	272	517	522	528	525	531	536	650	656	663	1051
80.0	None	None	65	67	78	79	80	104	105	106	129	131	132	199	201	203	199
		Shaft Fan	96	98	125	126	127	177	179	181	219	221	223	389	393	397	391
		Electric Fan	133	136	157	158	160	227	229	232	311	314	317	490	495	500	494
		DuraPlate	139	142	184	185	187	321	324	327	399	403	407	655	661	668	662
90.0	None	None	64	65	74	75	76	101	102	103	135	136	138	194	196	198	200
		Shaft Fan	93	95	119	120	121	172	174	176	227	230	232	378	382	386	392
		Electric Fan	130	132	149	151	152	221	223	225	322	325	328	476	481	486	495
		DuraPlate	135	138	175	177	179	312	315	318	411	415	419	634	641	647	661
100	None	None	61	62	75	75	76	100	101	102	129	131	132	182	184	186	192
		Shaft Fan	90	92	119	120	121	171	173	175	217	219	222	357	361	364	376
		Electric Fan	125	127	149	150	152	219	222	224	307	310	313	451	455	460	474
		DuraPlate	130	132	174	176	178	309	312	316	389	393	397	603	609	615	632
112	None	None	61	62	74	74	75	98	99	100	127	128	129	186	187	189	185
		Shaft Fan	90	91	117	118	119	167	168	170	214	216	218	362	366	369	364
		Electric Fan	124	127	147	148	150	214	216	218	302	305	308	456	460	465	459
		DuraPlate	129	132	172	174	175	301	304	307	383	387	391	608	614	620	614
125	None	None	59	61	70	71	71	95	96	97	133	134	136				187
		Shaft Fan	87	89	111	112	114	162	164	165	223	225	227				365
		Electric Fan	121	123	140	141	142	207	210	212	313	316	319				460
		DuraPlate	126	128	163	165	167	292	295	298	396	400	404				614

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperature will vary based upon exact ambient conditions and load profile.

\* Consult Factory.

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## Type VR3 Right Angle Shaft

# Basic Thermal Ratings ★ – Hp/Triple Reduction Maximum 200°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
870	12.5	None												354	357	361	
		Shaft Fan												660	666	673	
		Electric Fan												896	905	914	
		DuraPlate												1379	1393	1407	
	14.0	None	120	123	143	144	145	195	197	199	242	244	246	336	339	343	322
		Shaft Fan	166	169	212	215	217	312	315	319	384	388	391	628	635	641	611
		Electric Fan	244	249	284	287	290	429	433	438	581	587	593	855	864	872	836
		DuraPlate	305	311	455	460	464	728	736	743	839	848	856	1321	1334	1347	1301
	16.0	None	120	123	141	142	144	190	192	194	238	241	243	342	345	349	314
		Shaft Fan	165	169	210	212	214	305	308	311	379	383	386	636	642	649	600
		Electric Fan	243	248	281	284	287	418	423	427	829	837	846	863	871	880	814
		DuraPlate	304	310	449	454	458	710	717	724	574	579	585	1326	1339	1353	1269
	18.0	None	117	120	135	136	137	185	187	189	249	251	254	322	325	329	317
		Shaft Fan	161	165	201	203	205	297	300	303	392	396	400	600	606	612	600
		Electric Fan	237	242	269	271	274	407	411	416	591	596	602	815	823	832	816
		DuraPlate	296	302	430	434	439	690	697	704	849	857	866	1258	1271	1283	1266
	20.0	None	105	108	122	123	124	168	169	171	212	214	216	305	308	311	295
		Shaft Fan	146	149	185	186	188	270	273	276	337	341	344	570	575	581	558
		Electric Fan	218	222	249	252	254	373	376	380	513	518	523	776	784	792	763
		DuraPlate	274	279	404	409	413	635	641	647	742	749	757	1202	1214	1226	1190
	22.4	None	105	108	120	122	123	164	165	167	209	211	213	310	313	316	287
		Shaft Fan	146	149	182	184	186	264	266	269	333	336	339	576	582	588	542
		Electric Fan	217	222	246	249	251	363	367	371	506	511	516	783	791	798	742
		DuraPlate	272	278	399	403	407	618	625	631	733	740	747	1207	1219	1231	1159
	25.0	None	103	105	115	116	117	159	161	162	218	220	222	289	292	294	289
		Shaft Fan	142	145	174	175	177	257	259	262	345	348	352	528	533	539	544
		Electric Fan	211	215	235	237	240	354	357	361	521	526	532	714	721	728	743
		DuraPlate	265	270	381	385	389	601	607	613	751	758	766	1159	1171	1182	1156
	28.0	None	92	94	113	114	115	140	142	143	175	175	177	275	276	278	286
		Shaft Fan	127	130	168	170	171	226	228	231	278	281	284	502	507	512	526
		Electric Fan	188	192	225	227	229	312	315	319	426	430	434	680	686	693	712
		DuraPlate	236	241	305	308	311	573	578	584	535	540	545	1108	1119	1130	1160
	31.5	None	92	94	111	112	113	137	138	140	175	175	176	277	280	283	277
		Shaft Fan	127	130	166	167	169	221	223	225	274	277	280	507	512	517	511
		Electric Fan	188	192	222	224	226	305	308	311	420	424	428	685	692	699	692
		DuraPlate	235	240	300	303	306	558	564	569	527	533	538	1112	1123	1135	1129
	35.5	None	90	92	106	107	108	133	135	136	178	180	182	250	252	255	279
		Shaft Fan	124	126	158	160	161	215	217	219	285	287	290	467	472	477	512
		Electric Fan	183	187	212	214	216	297	300	303	433	437	442	637	643	650	692
		DuraPlate	229	233	287	290	293	543	548	554	542	548	553	1043	1054	1064	1125
	40.0	None	84	85	99	100	101	131	132	133	159	160	162	235	237	240	247
		Shaft Fan	115	118	148	150	151	210	212	215	254	257	259	442	447	451	464
		Electric Fan	171	174	199	201	203	290	293	296	389	392	396	604	611	617	634
		DuraPlate	214	218	270	273	276	529	535	540	488	492	497	995	1005	1015	1043
	45.0	None	84	85	98	99	100	127	129	130	156	158	159	239	241	244	239
		Shaft Fan	115	118	146	148	149	205	207	209	251	253	256	448	452	457	450
		Electric Fan	170	174	196	198	200	282	285	288	383	387	391	610	616	623	615
		DuraPlate	213	217	267	269	272	515	520	525	481	486	491	1000	1010	1020	1013
	50.0	None	81	83	93	94	95	124	125	126	163	165	166	234	237	239	240
		Shaft Fan	112	114	139	141	142	199	201	203	260	263	265	436	440	445	451
		Electric Fan	166	169	187	189	191	274	277	279	396	400	404	592	598	604	616
		DuraPlate	207	211	254	257	259	499	504	509	495	500	505	966	976	986	1011
	56.0	None	78	80	93	94	95	124	125	126	157	158	160	220	222	224	231
		Shaft Fan	108	110	139	141	142	197	199	201	247	250	252	411	416	420	433
		Electric Fan	159	162	186	188	190	269	272	275	371	375	379	561	566	572	589
		DuraPlate	198	202	252	255	257	483	488	492	462	466	471	919	928	938	965

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperature will vary based upon exact ambient conditions and load profile.

\* Consult Factory.

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## Type VR3 Right Angle Shaft

# Basic Thermal Ratings ★ – Hp/Triple Reduction Maximum 200°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
870	63.0	None	78	79	92	93	94	120	121	122	154	155	157	224	226	228	223
		Shaft Fan	107	109	137	139	140	192	194	196	243	246	248	417	421	425	418
		Electric Fan	156	159	184	186	187	262	265	267	366	370	373	567	572	578	571
		DuraPlate	194	198	249	251	254	470	475	479	455	460	464	925	934	943	936
	71.0	None	76	77	87	88	89	117	118	119	161	163	164	191	192	194	225
		Shaft Fan	104	106	130	131	133	186	188	190	253	256	258	348	352	355	420
		Electric Fan	152	155	175	176	178	255	257	260	379	382	386	472	476	481	571
		DuraPlate	189	193	236	239	241	456	461	465	469	474	479	577	583	588	934
	80.0	None	63	64	75	76	77	100	101	102	125	127	128	194	196	198	194
		Shaft Fan	87	88	113	114	115	160	161	163	198	200	202	353	356	360	354
		Electric Fan	128	131	151	153	154	220	222	224	301	304	307	477	481	486	480
		DuraPlate	123	126	163	165	166	283	286	289	352	356	360	582	588	594	587
	90.0	None	61	63	72	73	73	97	98	99	131	132	134	189	191	193	195
		Shaft Fan	84	86	107	108	109	155	157	159	206	208	210	343	346	350	355
		Electric Fan	125	128	144	146	147	213	216	218	312	315	318	462	467	472	481
		DuraPlate	120	122	155	157	159	275	278	281	364	368	371	564	570	575	588
	100	None	59	60	72	73	73	97	98	99	125	127	128	177	179	181	187
		Shaft Fan	81	83	107	108	109	155	156	158	197	199	201	323	327	330	340
		Electric Fan	120	122	144	145	147	212	214	216	297	300	303	438	442	446	460
		DuraPlate	115	118	155	156	158	273	276	279	345	348	352	535	540	546	562
	112	None	59	60	71	72	72	94	95	96	123	124	126	181	182	184	180
		Shaft Fan	81	83	106	107	108	150	152	153	194	196	198	328	331	335	329
		Electric Fan	120	122	142	143	145	206	208	211	292	295	298	443	447	452	445
		DuraPlate	115	117	153	154	156	266	269	271	340	343	347	540	546	551	545
	125	None	57	58	67	68	69	92	93	94	129	130	132				182
		Shaft Fan	79	80	100	101	102	146	148	149	202	204	206				330
		Electric Fan	117	119	135	136	137	200	202	204	303	306	309				446
		DuraPlate	112	114	145	147	148	258	261	263	351	355	358				545

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperature will vary based upon exact ambient conditions and load profile.

\* Consult Factory.

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## Type VR3 Right Angle Shaft

# Basic Thermal Ratings ★ – Hp/Triple Reduction Maximum 180°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
1750	12.5	None												*	*	*	
		Shaft Fan												480	485	490	
		Electric Fan												311	314	317	
		DuraPlate												2003	2023	2043	
	14.0	None	87	89	*	*	*	*	*	*	*	*	*	*	*	*	
		Shaft Fan	236	241	276	278	281	362	366	369	337	340	343	477	482	487	423
		Electric Fan	218	222	218	220	222	284	287	289	303	306	309	314	317	320	265
		DuraPlate	550	561	814	822	830	1289	1301	1314	1334	1348	1361	1953	1972	1992	1895
	16.0	None	88	90	*	*	*	*	*	*	*	*	*	*	*	*	
		Shaft Fan	237	242	275	277	280	361	365	368	338	341	345	500	505	510	431
		Electric Fan	219	223	217	220	222	285	287	290	305	308	311	334	338	341	275
		DuraPlate	548	559	807	815	823	1264	1277	1290	1327	1340	1354	1971	1991	2011	1875
	18.0	None	87	89	*	*	*	*	*	*	*	*	*	*	*	*	
		Shaft Fan	233	237	267	270	272	356	360	363	361	365	368	547	553	558	455
		Electric Fan	215	219	212	214	216	282	284	287	327	330	333	386	389	393	297
		DuraPlate	535	546	778	786	794	1235	1248	1260	1359	1373	1386	1970	1989	2009	1891
	20.0	None	85	87	80	81	81	*	*	*	*	*	*	*	*	*	
		Shaft Fan	223	227	266	269	272	350	351	352	357	361	365	529	534	539	504
		Electric Fan	206	210	213	215	217	275	277	280	326	330	333	378	377	381	350
		DuraPlate	514	524	763	771	779	1176	1188	1199	1269	1282	1294	1904	1923	1942	1886
	22.4	None	85	87	79	80	81	*	*	*	*	*	*	*	*	*	
		Shaft Fan	223	227	264	266	269	339	343	346	355	358	362	541	546	552	497
		Electric Fan	206	210	211	213	215	271	273	276	324	327	330	384	388	392	347
		DuraPlate	511	521	755	762	770	1149	1161	1172	1259	1271	1284	1910	1929	1948	1850
	25.0	None	84	85	77	77	78	*	*	*	*	*	*	*	*	*	
		Shaft Fan	217	222	253	256	258	332	335	339	370	374	377	673	680	687	507
		Electric Fan	201	205	203	205	207	265	268	270	338	342	345	526	532	537	356
		DuraPlate	497	507	724	731	738	1119	1130	1141	1281	1294	1306	2026	2046	2066	1849
	28.0	None	81	82	91	91	92	102	103	104	*	*	*	*	*	*	
		Shaft Fan	199	203	257	259	262	343	346	349	376	380	384	646	652	659	670
		Electric Fan	184	188	210	212	214	282	285	288	350	353	356	504	509	514	523
		DuraPlate	444	453	563	568	574	1117	1129	1140	962	971	981	1955	1975	1994	2035
	31.5	None	81	83	90	90	91	101	102	103	*	*	*	*	*	*	
		Shaft Fan	198	202	254	256	259	335	339	342	372	376	380	653	660	666	655
		Electric Fan	184	188	207	209	211	276	279	282	350	351	352	512	517	522	511
		DuraPlate	442	451	556	562	567	1090	1101	1112	952	961	971	1955	1975	1994	1991
	35.5	None	79	81	86	87	88	98	99	100	99	100	101	*	*	*	
		Shaft Fan	194	198	243	246	248	327	331	334	385	388	392	646	653	659	659
		Electric Fan	180	183	199	201	203	270	273	275	357	361	364	510	515	520	515
		DuraPlate	430	439	534	539	545	1062	1073	1083	969	979	989	1896	1915	1933	1981
	40.0	None	75	76	82	83	84	100	101	102	95	96	97	117	118	119	*
		Shaft Fan	183	186	232	234	236	324	327	331	355	358	362	617	623	629	645
		Electric Fan	170	173	189	191	193	268	271	273	330	333	336	486	491	495	508
		DuraPlate	407	416	509	514	519	1038	1049	1059	892	901	910	1825	1843	1861	1905
	45.0	None	75	76	81	82	83	97	98	99	93	94	95	120	121	122	*
		Shaft Fan	182	186	229	231	233	316	319	323	350	354	357	623	629	635	627
		Electric Fan	169	173	187	189	191	262	264	267	326	329	332	492	497	501	494
		DuraPlate	405	413	503	508	513	1011	1021	1031	883	891	900	1824	1842	1860	1860
	50.0	None	73	74	77	78	79	95	96	97	98	99	100	129	130	131	120
		Shaft Fan	178	181	219	221	223	308	311	314	362	365	369	619	625	631	629
		Electric Fan	165	168	179	180	182	254	257	260	337	340	343	492	497	502	496
		DuraPlate	394	402	482	487	492	980	990	1000	899	908	917	1771	1789	1807	1849
	56.0	None	62	63	60	60	61	57	57	58	100	101	102	121	122	123	127
		Shaft Fan	161	164	195	197	199	256	259	261	352	356	359	589	595	601	617
		Electric Fan	149	152	156	158	160	205	207	209	329	332	335	467	472	476	490
		DuraPlate	369	376	450	454	459	889	898	907	842	850	858	1702	1719	1736	1780

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperature will vary based upon exact ambient conditions and load profile.

\* Consult Factory.

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## Type VR3 Right Angle Shaft

# Basic Thermal Ratings ★ – Hp/Triple Reduction Maximum 180°F Sump Temperature<sup>†</sup>

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
1750	63.0	None	62	63	59	60	60	55	56	57	98	99	100	123	125	126	122
		Shaft Fan	160	163	193	195	197	250	252	255	348	351	355	595	601	606	599
		Electric Fan	148	151	155	156	158	200	202	204	324	328	331	472	477	482	475
		DuraPlate	358	365	445	449	454	867	875	884	833	841	849	1702	1719	1736	1735
	71.0	None	60	62	56	57	57	54	54	55	103	104	105	126	127	128	124
		Shaft Fan	156	159	184	186	187	243	245	248	359	363	366	514	519	524	600
		Electric Fan	145	147	147	149	150	194	196	198	336	339	342	413	417	422	477
		DuraPlate	348	355	424	429	433	842	851	859	870	879	887	1022	1032	1042	1724
	80.0	None	60	61	69	69	70	86	87	88	88	88	89	128	129	131	128
		Shaft Fan	142	145	184	186	188	257	259	262	291	293	296	519	524	529	524
		Electric Fan	132	135	151	153	154	214	216	218	271	274	276	418	422	426	421
		DuraPlate	227	232	302	305	308	541	546	551	645	651	658	1026	1036	1046	1041
	90.0	None	59	60	65	66	67	84	85	85	92	93	94	129	130	131	129
		Shaft Fan	138	141	176	178	180	250	253	255	300	303	306	509	514	519	524
		Electric Fan	129	131	145	146	147	208	211	213	280	283	286	411	415	419	422
		DuraPlate	222	226	289	292	295	525	531	536	659	665	672	997	1007	1017	1038
	100	None	57	58	66	67	68	85	85	86	90	91	92	121	122	123	127
		Shaft Fan	134	136	176	178	179	250	252	255	289	292	295	484	489	494	507
		Electric Fan	124	127	145	146	148	209	211	213	270	273	276	390	394	398	409
		DuraPlate	214	218	287	290	292	523	528	533	628	634	640	955	964	974	999
	112	None	57	58	65	66	67	82	83	84	88	89	90	123	125	126	123
		Shaft Fan	133	136	174	175	177	244	246	248	285	288	291	489	494	499	493
		Electric Fan	124	126	143	144	146	203	205	207	266	269	272	395	399	403	397
		DuraPlate	213	217	283	286	289	509	514	519	620	627	633	959	969	978	973
	125	None	55	56	62	63	63	80	81	82	93	94	95				124
		Shaft Fan	130	132	166	167	169	237	239	242	295	298	301				494
		Electric Fan	121	123	136	138	139	198	200	202	276	279	282				398
		DuraPlate	207	211	270	273	276	495	500	505	635	641	647				970
1430	12.5	None											*	*	*		
		Shaft Fan											586	592	598		
		Electric Fan											540	545	550		
		DuraPlate											1805	1823	1841		
	14.0	None	95	97	97	98	99	*	*	*	*	*	*	*	*	*	
		Shaft Fan	208	212	253	256	258	351	354	358	371	375	379	570	576	582	533
		Electric Fan	222	226	238	241	243	336	339	342	409	413	418	525	530	536	489
		DuraPlate	454	463	677	684	691	1080	1091	1102	1161	1173	1184	1749	1766	1784	1712
	16.0	None	96	98	97	98	99	*	*	*	*	*	*	*	*	*	
		Shaft Fan	209	213	252	254	257	346	350	353	370	374	377	586	592	598	530
		Electric Fan	222	226	237	239	242	332	335	339	408	412	416	541	546	551	486
		DuraPlate	452	461	670	677	684	1057	1068	1078	1152	1164	1175	1760	1778	1795	1684
	18.0	None	95	96	94	95	96	109	110	111	*	*	*	*	*	*	
		Shaft Fan	204	208	243	245	248	340	343	347	388	392	396	594	600	606	544
		Electric Fan	217	222	229	231	233	326	329	332	427	431	435	551	556	562	501
		DuraPlate	441	450	645	652	658	1031	1041	1052	1178	1190	1202	1725	1742	1759	1690
	20.0	None	90	91	95	95	96	105	106	108	*	*	*	*	*	*	
		Shaft Fan	193	197	238	240	243	321	324	328	360	364	368	570	576	581	552
		Electric Fan	206	210	224	226	229	308	311	314	395	399	403	528	533	539	510
		DuraPlate	420	428	628	634	640	972	981	991	1076	1087	1098	1661	1678	1694	1648
	22.4	None	90	92	94	95	96	104	105	106	*	*	*	*	*	*	
		Shaft Fan	193	197	235	238	240	315	318	321	357	360	364	579	585	591	541
		Electric Fan	206	210	222	224	226	302	305	308	391	395	399	537	543	548	500
		DuraPlate	418	426	620	627	633	949	958	967	1066	1077	1087	1666	1683	1699	1613
	25.0	None	88	90	90	91	92	102	103	104	*	*	*	*	*	*	
		Shaft Fan	188	192	225	228	230	307	310	313	370	374	378	623	629	635	546
		Electric Fan	200	204	213	215	217	295	298	301	405	409	413	585	590	596	506
		DuraPlate	406	415	594	600	606	923	932	942	1086	1097	1108	1696	1713	1730	1610

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperature will vary based upon exact ambient conditions and load profile.

\* Consult Factory.

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## Type VR3 Right Angle Shaft

# Basic Thermal Ratings ★ – Hp/Triple Reduction Maximum 180°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
1430	28.0	None	81	83	95	96	97	113	114	116	125	126	127	165	166	168	171
		Shaft Fan	170	173	222	224	226	299	302	305	346	349	353	596	602	608	621
		Electric Fan	180	184	210	212	214	288	290	293	375	379	383	559	564	570	582
		DuraPlate	362	369	462	467	472	907	916	925	804	812	820	1633	1649	1665	1703
	31.5	None	81	83	94	95	96	111	112	113	123	124	125	169	170	172	166
		Shaft Fan	169	173	219	221	223	292	295	298	342	345	349	602	608	614	605
		Electric Fan	180	184	207	209	211	281	284	287	371	375	378	565	571	577	568
		DuraPlate	360	367	457	461	466	885	893	902	795	803	811	1634	1651	1667	1664
	35.5	None	79	81	90	91	92	108	109	111	129	130	131	170	172	173	169
		Shaft Fan	165	169	210	212	214	285	288	291	353	357	360	587	593	599	607
		Electric Fan	176	179	198	200	202	274	277	280	383	387	390	552	557	563	570
		DuraPlate	350	357	438	442	447	861	870	878	811	820	828	1577	1592	1608	1656
	40.0	None	69	70	72	73	74	108	109	110	118	119	120	160	162	164	168
		Shaft Fan	148	151	183	185	187	281	284	286	321	325	328	559	565	570	585
		Electric Fan	158	161	173	174	176	270	273	276	348	352	355	525	530	536	550
		DuraPlate	323	330	399	403	407	841	849	858	741	748	756	1514	1529	1544	1583
	45.0	None	69	70	71	72	73	105	106	107	116	118	119	164	165	167	163
		Shaft Fan	148	151	181	183	185	274	276	279	317	320	324	565	571	576	569
		Electric Fan	158	161	171	172	174	264	266	269	344	348	351	531	536	541	534
		DuraPlate	321	328	394	398	402	819	827	835	733	740	747	1516	1531	1546	1543
	50.0	None	67	68	68	69	69	103	104	105	122	123	124	167	168	170	164
		Shaft Fan	144	147	173	175	176	266	269	271	328	331	334	556	562	567	570
		Electric Fan	154	157	163	165	166	256	259	261	355	359	362	523	528	534	536
		DuraPlate	313	319	377	381	385	794	802	810	748	756	763	1469	1483	1498	1535
	56.0	None	65	66	70	71	71	80	81	82	61	61	62	157	158	160	165
		Shaft Fan	140	142	174	176	177	237	239	242	241	244	246	528	533	539	554
		Electric Fan	149	152	164	166	167	228	230	232	266	269	272	496	501	506	521
		DuraPlate	300	306	374	378	381	735	742	750	619	625	631	1408	1422	1436	1473
	63.0	None	65	66	69	70	70	78	79	79	59	60	61	160	161	163	159
		Shaft Fan	139	142	172	173	175	231	233	236	238	240	242	534	539	544	538
		Electric Fan	148	150	162	164	165	222	224	226	262	265	268	502	507	512	505
		DuraPlate	293	299	369	373	377	716	723	731	612	618	624	1410	1424	1438	1435
	71.0	None	63	65	65	66	67	76	76	77	63	63	64	145	147	148	160
		Shaft Fan	135	138	163	165	167	224	227	229	247	250	252	451	456	460	538
		Electric Fan	144	146	154	156	157	215	218	220	272	275	278	425	429	434	507
		DuraPlate	286	291	352	356	359	696	703	710	626	633	639	851	859	868	1428
	80.0	None	58	59	68	69	69	87	88	89	99	100	101	150	151	152	148
		Shaft Fan	119	121	155	156	158	218	220	222	255	258	261	456	460	465	459
		Electric Fan	126	129	147	148	150	210	212	214	276	279	282	430	434	438	433
		DuraPlate	185	189	246	249	251	439	444	448	531	537	542	855	863	872	867
	90.0	None	57	58	65	65	66	85	86	87	103	104	105	146	148	149	149
		Shaft Fan	116	118	148	150	151	212	214	216	264	267	270	445	450	454	460
		Electric Fan	123	126	140	141	143	204	207	209	286	289	291	420	424	428	434
		DuraPlate	180	184	236	238	240	427	431	436	544	550	555	830	838	847	865
	100	None	55	56	65	66	67	85	86	87	100	101	102	138	139	140	145
		Shaft Fan	112	114	148	149	151	212	214	216	254	257	259	423	427	431	444
		Electric Fan	119	121	140	141	143	204	206	208	274	277	280	399	403	407	418
		DuraPlate	174	177	234	236	239	425	429	433	519	524	529	793	801	809	830
	112	None	55	56	64	65	66	83	84	85	98	99	100	140	142	143	140
		Shaft Fan	112	114	146	147	149	206	208	210	250	253	255	428	432	436	430
		Electric Fan	118	121	138	140	141	199	201	203	270	273	276	403	407	411	406
		DuraPlate	173	176	231	233	236	414	418	422	512	517	522	798	806	814	808
	125	None	53	54	61	62	62	81	82	83	103	104	105				141
		Shaft Fan	109	111	139	140	142	201	203	205	259	262	265				431
		Electric Fan	115	118	132	133	134	193	195	197	280	283	286				407
		DuraPlate	168	172	220	222	225	402	406	410	525	530	536				806

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperature will vary based upon exact ambient conditions and load profile.

\* Consult Factory.

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## Type VR3 Right Angle Shaft

# Basic Thermal Ratings ★ – Hp/Triple Reduction Maximum 180°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
1170	12.5	None												185	187	188	
		Shaft Fan												594	600	606	
		Electric Fan												676	683	690	
		DuraPlate												1509	1525	1540	
	14.0	None	98	100	109	110	111	138	139	140	152	153	155	179	181	182	163
		Shaft Fan	175	178	218	221	223	312	316	319	358	361	365	571	577	582	546
		Electric Fan	218	222	244	247	249	358	362	366	466	470	475	650	657	663	624
		DuraPlate	356	363	532	538	543	852	860	869	945	955	964	1455	1469	1484	1429
	16.0	None	98	100	108	109	110	136	138	139	151	152	154	186	188	190	162
		Shaft Fan	175	178	216	219	221	307	310	313	355	358	362	582	587	593	537
		Electric Fan	217	222	242	244	247	352	355	359	461	466	471	661	668	674	613
		DuraPlate	355	362	526	532	537	832	840	849	936	945	955	1463	1477	1492	1400
	18.0	None	96	98	104	105	106	134	135	136	160	162	163	189	191	193	168
		Shaft Fan	171	174	208	210	212	300	303	306	369	373	377	567	572	578	544
		Electric Fan	212	216	232	235	237	344	347	351	478	483	488	642	649	655	621
		DuraPlate	346	353	505	510	516	811	819	827	957	967	976	1411	1425	1439	1401
	20.0	None	90	92	101	102	103	124	125	127	145	146	148	180	182	184	171
		Shaft Fan	160	163	201	203	205	278	281	284	329	332	336	541	546	552	527
		Electric Fan	199	203	224	227	229	319	322	325	426	430	435	613	620	626	599
		DuraPlate	327	333	488	493	498	756	764	771	857	866	875	1354	1368	1381	1343
	22.4	None	90	92	100	101	102	122	123	124	143	144	146	185	187	189	168
		Shaft Fan	160	163	198	200	202	272	275	277	325	328	332	548	554	559	514
		Electric Fan	199	203	222	224	226	312	315	318	421	425	429	621	627	633	585
		DuraPlate	325	332	482	487	492	738	745	752	848	857	865	1359	1373	1386	1311
	25.0	None	88	89	95	96	97	119	120	121	150	152	153	208	210	212	171
		Shaft Fan	156	159	190	192	194	265	268	270	337	341	344	540	546	551	518
		Electric Fan	194	198	212	214	216	304	307	310	435	439	444	606	612	618	588
		DuraPlate	316	323	461	466	471	718	725	732	867	875	884	1344	1357	1370	1308
	28.0	None	75	77	87	88	89	117	118	119	140	142	143	197	199	201	206
		Shaft Fan	135	138	174	176	177	248	250	253	298	301	304	515	520	525	538
		Electric Fan	168	171	194	196	198	282	285	288	381	385	388	578	584	590	604
		DuraPlate	276	281	350	354	357	697	704	711	635	641	647	1289	1302	1315	1347
	31.5	None	75	77	86	87	88	114	115	117	138	140	141	201	203	205	200
		Shaft Fan	135	137	172	173	175	242	245	247	294	297	300	521	526	531	524
		Electric Fan	168	171	192	194	196	276	278	281	376	380	383	584	590	596	588
		DuraPlate	274	280	346	349	353	680	687	693	627	633	639	1293	1306	1319	1314
	35.5	None	74	75	82	83	84	111	113	114	144	146	147	196	198	200	202
		Shaft Fan	131	134	164	166	167	236	238	241	305	308	311	502	507	512	525
		Electric Fan	163	167	183	185	187	269	271	274	388	392	395	563	569	574	589
		DuraPlate	267	273	331	334	338	662	668	675	642	648	655	1242	1254	1267	1309
	40.0	None	69	70	78	78	79	96	97	98	96	97	98	185	187	189	194
		Shaft Fan	123	126	155	157	158	215	217	220	234	237	239	477	482	487	500
		Electric Fan	153	157	173	175	177	247	249	252	308	311	314	535	541	546	561
		DuraPlate	251	256	314	317	320	627	633	639	536	542	547	1189	1201	1213	1244
	45.0	None	69	70	77	77	78	94	95	96	95	96	96	188	190	192	188
		Shaft Fan	123	125	153	155	156	210	212	214	231	233	236	483	487	492	486
		Electric Fan	153	156	171	173	175	240	243	245	304	307	310	541	546	552	545
		DuraPlate	250	255	310	313	316	610	616	623	530	535	540	1192	1204	1216	1211
	50.0	None	67	69	73	74	74	91	92	93	99	100	101	141	142	144	189
		Shaft Fan	120	122	146	148	149	204	206	208	240	242	245	416	421	425	487
		Electric Fan	149	152	163	165	167	234	236	238	314	317	320	472	476	481	546
		DuraPlate	243	248	296	299	302	592	598	604	544	549	554	1091	1102	1113	1207
	56.0	None	65	66	74	75	76	93	93	94	98	99	100	132	133	135	138
		Shaft Fan	115	118	147	148	150	204	206	209	232	235	237	394	398	402	413
		Electric Fan	144	147	164	165	167	233	236	238	302	305	308	447	451	456	468
		DuraPlate	233	238	294	297	300	574	580	586	511	517	522	1042	1052	1063	1092

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperature will vary based upon exact ambient conditions and load profile.

\* Consult Factory.

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## Type VR3 Right Angle Shaft

# Basic Thermal Ratings ★ – Hp/Triple Reduction Maximum 180°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
1170	63.0	None	65	66	73	74	74	90	91	92	97	97	98	135	136	138	133
		Shaft Fan	115	117	145	146	148	199	201	203	229	231	234	399	403	407	400
		Electric Fan	142	145	161	163	165	227	230	232	297	300	303	452	456	461	453
		DuraPlate	229	233	290	293	296	559	565	570	505	510	515	1046	1057	1067	1062
	71.0	None	63	64	69	70	71	88	88	89	102	103	104	153	154	156	135
		Shaft Fan	112	114	137	139	140	193	195	197	238	241	243	375	379	383	401
		Electric Fan	138	141	154	155	157	221	223	225	308	311	314	419	424	428	455
		DuraPlate	223	227	276	279	282	543	549	554	519	524	529	671	677	684	1058
	80.0	None	55	56	65	66	66	85	86	87	102	103	104	156	157	159	155
		Shaft Fan	96	98	125	126	127	177	178	180	213	215	217	380	383	387	382
		Electric Fan	119	121	139	140	142	201	203	205	270	273	276	424	428	432	427
		DuraPlate	144	147	191	193	195	338	342	345	414	418	422	675	682	689	683
	90.0	None	54	55	62	63	63	83	84	85	107	108	109	153	154	156	157
		Shaft Fan	93	95	119	120	121	172	174	175	220	223	225	370	374	377	383
		Electric Fan	116	118	133	134	135	195	197	199	280	283	285	413	417	421	428
		DuraPlate	140	143	183	185	186	329	332	335	426	430	434	655	662	669	683
	100	None	52	53	62	63	64	83	84	85	103	104	105	144	145	146	151
		Shaft Fan	90	92	119	120	121	171	173	175	211	213	216	350	354	357	368
		Electric Fan	111	114	132	134	135	194	196	198	268	270	273	391	395	399	411
		DuraPlate	135	138	182	184	185	327	330	333	406	410	414	624	630	637	654
	112	None	52	53	62	62	63	83	84	85	101	102	103	146	148	149	146
		Shaft Fan	90	92	117	119	120	171	173	175	208	210	212	355	358	362	357
		Electric Fan	111	113	131	132	133	194	196	198	264	266	269	396	400	404	398
		DuraPlate	134	137	179	181	183	318	321	325	400	404	408	629	635	642	636
	125	None	50	51	58	59	60	79	79	80	106	107	108				147
		Shaft Fan	87	89	112	113	114	162	164	165	216	218	221				358
		Electric Fan	108	110	124	125	127	184	186	188	273	276	279				399
		DuraPlate	131	133	171	173	174	309	312	315	412	416	420				635
970	12.5	None												236	238	240	
		Shaft Fan												553	559	564	
		Electric Fan												717	725	732	
		DuraPlate												1272	1285	1298	
	14.0	None	96	98	111	112	113	146	148	149	173	174	176	225	227	230	212
		Shaft Fan	150	153	190	192	193	275	278	281	327	330	333	529	534	540	510
		Electric Fan	210	214	240	243	245	358	362	366	477	482	487	687	694	701	666
		DuraPlate	291	296	434	439	443	694	701	708	783	791	799	1222	1234	1246	1200
	16.0	None	96	98	110	111	112	144	145	147	171	173	174	231	233	236	208
		Shaft Fan	150	153	188	189	191	270	272	275	323	326	330	537	543	548	499
		Electric Fan	210	214	237	240	242	351	354	358	472	477	481	695	702	709	651
		DuraPlate	290	295	429	433	438	677	684	690	775	782	790	1228	1241	1253	1173
	18.0	None	94	96	105	106	107	141	142	143	180	181	183	224	226	229	212
		Shaft Fan	146	149	180	182	183	263	266	268	336	339	343	514	520	525	503
		Electric Fan	204	208	228	230	232	342	345	349	488	492	497	665	671	678	655
		DuraPlate	282	288	411	415	420	659	666	672	794	801	809	1175	1186	1198	1173
	20.0	None	87	89	101	102	103	128	130	131	157	158	160	212	214	217	204
		Shaft Fan	136	139	172	174	176	241	244	246	293	296	299	489	494	499	478
		Electric Fan	191	195	218	221	223	315	318	321	428	432	436	634	640	646	621
		DuraPlate	265	271	396	400	404	610	616	622	702	709	716	1124	1135	1147	1113
	22.4	None	87	89	100	101	102	125	127	128	155	156	158	217	219	221	199
		Shaft Fan	136	139	170	172	174	236	238	240	289	292	295	496	501	506	465
		Electric Fan	191	195	216	218	220	307	310	313	422	426	431	640	647	653	605
		DuraPlate	264	269	390	394	398	595	601	607	694	700	707	1129	1141	1152	1084
	25.0	None	85	87	95	96	97	122	124	125	162	163	165	218	220	223	201
		Shaft Fan	132	135	163	164	166	230	232	234	300	303	306	471	475	480	467
		Electric Fan	186	189	206	208	210	299	302	305	436	440	444	601	607	613	607
		DuraPlate	257	262	373	377	381	579	585	590	710	717	725	1101	1112	1123	1083

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperature will vary based upon exact ambient conditions and load profile.

\* Consult Factory.

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## Type VR3 Right Angle Shaft

# Basic Thermal Ratings ★ – Hp/Triple Reduction Maximum 180°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
970	28.0	None	74	75	88	89	90	106	107	108	143	144	146	206	208	211	216
		Shaft Fan	115	118	150	152	153	200	202	204	259	262	265	448	452	457	469
		Electric Fan	162	165	190	192	194	261	264	267	373	377	381	572	578	584	599
		DuraPlate	224	229	287	290	293	547	553	558	519	524	529	1054	1065	1075	1103
	31.5	None	74	75	87	88	89	103	104	105	141	142	144	210	212	214	210
		Shaft Fan	115	117	148	150	151	195	197	199	256	258	261	453	457	462	455
		Electric Fan	162	165	188	190	192	255	258	260	368	372	376	578	584	589	583
		DuraPlate	223	228	284	286	289	534	539	544	512	517	522	1059	1069	1080	1074
	35.5	None	72	73	83	84	84	101	102	103	147	148	150	172	174	176	211
		Shaft Fan	112	114	142	143	145	190	192	194	265	268	270	399	403	407	457
		Electric Fan	157	161	179	181	183	249	251	254	380	384	387	517	523	528	583
		DuraPlate	218	222	271	274	277	519	525	530	526	531	536	974	983	993	1071
	40.0	None	67	69	78	79	79	100	101	102	112	113	114	162	164	165	170
		Shaft Fan	105	107	133	135	136	187	189	191	215	217	219	378	382	386	396
		Electric Fan	147	150	169	171	172	244	247	249	317	321	324	491	496	501	515
		DuraPlate	204	208	256	259	261	508	513	518	449	453	458	930	939	948	974
	45.0	None	67	69	77	77	78	97	98	99	110	111	112	165	167	169	164
		Shaft Fan	105	107	132	133	134	182	184	186	212	214	216	383	387	391	384
		Electric Fan	147	150	167	169	170	238	240	243	313	316	319	497	502	507	499
		DuraPlate	203	207	253	255	258	494	499	504	443	447	452	934	944	953	947
	50.0	None	65	67	73	74	74	94	95	96	115	116	117	165	166	168	166
		Shaft Fan	102	104	125	127	128	177	179	181	220	223	225	376	380	383	386
		Electric Fan	143	146	159	161	162	231	233	236	324	327	330	485	490	495	500
		DuraPlate	198	202	241	244	246	479	484	489	456	460	465	906	915	924	945
	56.0	None	63	64	74	74	75	95	96	97	112	113	114	154	156	157	162
		Shaft Fan	98	100	126	127	128	177	179	181	212	214	216	355	359	362	373
		Electric Fan	138	140	159	161	162	229	231	234	308	311	314	459	464	469	482
		DuraPlate	189	193	240	242	244	465	470	475	428	433	437	863	872	880	905
	63.0	None	63	64	73	73	74	93	94	94	110	111	112	157	159	160	156
		Shaft Fan	98	100	124	125	126	172	174	176	209	211	213	360	363	367	361
		Electric Fan	136	139	157	158	160	223	225	228	303	306	309	465	469	474	467
		DuraPlate	186	190	236	239	241	453	458	462	423	427	431	868	877	885	879
	71.0	None	61	63	69	70	70	90	91	92	116	117	118	152	153	155	158
		Shaft Fan	95	97	118	119	120	167	169	171	217	219	221	319	322	325	362
		Electric Fan	132	135	149	150	152	217	219	221	314	317	320	406	410	414	468
		DuraPlate	181	185	225	227	229	440	444	449	435	440	444	549	554	560	877
	80.0	None	52	53	62	63	63	82	83	84	100	101	102	154	156	157	154
		Shaft Fan	80	82	104	105	106	148	150	151	181	183	184	323	326	330	325
		Electric Fan	112	115	132	133	134	191	193	195	260	263	265	410	414	419	413
		DuraPlate	117	120	155	157	159	273	275	278	336	340	343	553	559	565	559
	90.0	None	51	52	59	60	60	80	80	81	105	106	107	151	152	154	155
		Shaft Fan	78	80	99	100	101	144	146	147	188	190	192	315	318	321	326
		Electric Fan	109	112	126	127	128	186	188	190	269	272	275	399	403	407	414
		DuraPlate	114	117	148	150	151	265	267	270	347	350	354	537	542	548	559
	100	None	49	50	59	60	61	80	80	81	101	102	103	142	143	145	149
		Shaft Fan	75	77	100	101	102	143	145	146	180	182	183	297	300	303	312
		Electric Fan	105	107	125	127	128	185	187	189	257	260	263	378	382	385	397
		DuraPlate	110	112	148	149	151	263	266	268	330	334	337	510	515	520	535
	112	None	49	50	58	59	60	77	78	79	99	100	101	144	146	147	144
		Shaft Fan	75	77	98	99	100	140	141	142	177	179	180	301	304	307	302
		Electric Fan	105	107	124	125	126	180	182	184	253	256	258	382	386	390	384
		DuraPlate	110	112	146	147	149	256	259	261	326	329	332	515	520	525	519
	125	None	47	48	55	56	57	75	76	77	104	105	106				145
		Shaft Fan	73	75	93	94	95	136	137	138	184	186	188				304
		Electric Fan	102	104	118	119	120	175	177	178	263	265	268				385
		DuraPlate	107	109	139	140	141	249	251	254	336	340	343				520

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

† Actual sump temperature will vary based upon exact ambient conditions and load profile.

\* Consult Factory.

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## Type VR3 Right Angle Shaft

# Basic Thermal Ratings ★ – Hp/Triple Reduction Maximum 180°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
870	12.5	None												251	254	257	
		Shaft Fan												522	527	532	
		Electric Fan												724	731	739	
		DuraPlate												1144	1156	1167	
	14.0	None	94	96	110	111	112	148	149	150	178	180	182	239	242	244	227
		Shaft Fan	137	140	174	176	177	254	256	259	306	309	312	498	503	508	481
		Electric Fan	205	209	236	238	241	354	358	361	476	480	485	692	699	706	673
		DuraPlate	258	263	385	389	392	614	620	626	700	707	714	1097	1108	1119	1077
	16.0	None	94	96	109	110	111	145	146	147	176	178	180	245	247	250	222
		Shaft Fan	137	139	172	174	175	248	251	253	302	305	308	505	510	515	469
		Electric Fan	204	208	233	235	238	346	349	353	470	475	479	700	707	714	657
		DuraPlate	257	262	380	384	388	599	605	611	692	698	705	1103	1114	1125	1051
	18.0	None	92	94	104	105	106	141	143	144	185	186	188	234	236	239	226
		Shaft Fan	133	136	165	166	168	242	245	247	314	317	320	480	485	490	473
		Electric Fan	199	203	223	225	228	337	341	344	485	490	495	665	672	678	660
		DuraPlate	250	255	364	368	371	583	589	595	709	716	724	1050	1061	1071	1051
	20.0	None	81	83	91	91	92	128	129	131	159	161	162	221	224	226	214
		Shaft Fan	119	122	148	149	150	221	223	225	272	274	277	456	461	465	445
		Electric Fan	181	184	203	205	207	309	313	316	423	427	431	633	640	646	621
		DuraPlate	229	234	338	341	345	538	543	548	623	629	635	1004	1014	1024	992
	22.4	None	81	83	89	90	91	125	126	128	157	158	160	226	228	230	208
		Shaft Fan	119	122	146	147	149	216	218	220	268	271	273	462	467	471	433
		Electric Fan	180	184	200	202	204	302	305	308	417	421	426	640	646	652	605
		DuraPlate	228	233	333	337	340	524	529	535	615	622	628	1009	1019	1029	966
	25.0	None	79	81	85	86	87	122	123	124	164	165	167	219	222	224	210
		Shaft Fan	116	118	139	140	142	210	212	214	278	281	284	432	437	441	435
		Electric Fan	176	179	191	193	195	294	297	300	430	435	439	592	598	604	606
		DuraPlate	222	227	318	322	325	510	515	520	631	638	644	980	989	999	965
	28.0	None	72	74	87	88	89	106	107	108	125	127	128	207	209	211	217
		Shaft Fan	105	107	138	139	140	184	186	188	219	221	224	411	415	419	430
		Electric Fan	158	161	187	189	190	258	260	263	346	349	352	564	569	575	591
		DuraPlate	199	203	256	258	261	484	488	493	440	444	449	936	946	955	980
	31.5	None	72	74	86	87	88	104	105	106	124	125	126	211	213	215	211
		Shaft Fan	105	107	136	137	139	180	181	183	216	218	220	416	420	424	418
		Electric Fan	157	161	184	186	188	252	254	257	341	344	348	569	575	581	574
		DuraPlate	198	202	252	255	257	471	476	481	434	438	443	941	950	960	954
	35.5	None	71	72	82	83	84	101	102	103	129	130	132	181	182	184	212
		Shaft Fan	102	104	130	131	132	175	177	178	224	227	229	373	377	380	419
		Electric Fan	153	156	176	178	179	245	248	250	352	356	359	518	523	529	575
		DuraPlate	193	197	241	244	246	459	463	468	447	451	456	871	880	889	952
	40.0	None	66	67	77	78	78	100	101	102	116	117	118	170	172	173	178
		Shaft Fan	95	97	122	123	124	172	173	175	202	204	206	353	356	360	370
		Electric Fan	143	146	165	167	169	240	243	245	317	320	323	492	497	502	516
		DuraPlate	180	184	227	230	232	448	453	457	403	407	411	831	839	847	871
	45.0	None	66	67	76	76	77	97	98	99	114	115	116	173	175	177	172
		Shaft Fan	95	97	120	121	123	167	169	171	199	201	203	358	361	365	359
		Electric Fan	143	146	163	165	166	234	236	239	312	316	319	497	502	507	500
		DuraPlate	180	183	224	227	229	436	440	445	397	401	405	836	844	852	846
	50.0	None	64	65	72	73	74	94	95	96	119	121	122	171	173	174	174
		Shaft Fan	93	95	114	116	117	162	164	166	207	209	211	350	353	357	360
		Electric Fan	139	142	156	157	159	227	229	232	323	326	330	485	489	494	501
		DuraPlate	175	178	214	216	218	423	427	431	409	414	418	810	818	826	845
	56.0	None	62	63	73	73	74	95	96	97	116	117	118	160	162	164	169
		Shaft Fan	89	91	115	116	117	162	164	165	198	200	202	330	333	337	347
		Electric Fan	134	136	155	157	158	225	227	229	306	309	312	458	463	468	481
		DuraPlate	168	171	213	215	217	411	415	419	385	388	392	770	778	786	809

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

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\* Consult Factory.

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## Type VR3 Right Angle Shaft

# Basic Thermal Ratings ★ – Hp/Triple Reduction Maximum 180°F Sump Temperature†

HSS rpm	Nom. Ratio	Auxiliary Cooling	DRIVE SIZE														
			133	137	143	145	147	153	155	157	163	165	167	173	175	177	187
870	63.0	None	62	63	72	72	73	92	93	94	113	115	116	163	165	167	163
		Shaft Fan	89	91	113	114	115	158	159	161	195	197	199	335	338	341	335
		Electric Fan	132	135	153	155	156	219	221	223	301	304	307	464	468	473	466
		DuraPlate	165	168	210	212	214	400	404	408	379	383	387	776	783	791	785
	71.0	None	60	61	68	69	69	90	90	91	119	120	122	149	151	152	164
		Shaft Fan	86	88	107	108	109	153	155	156	203	205	207	290	293	295	337
		Electric Fan	128	131	145	147	148	212	214	217	312	315	318	396	400	404	467
		DuraPlate	160	163	199	201	203	389	393	397	391	395	399	488	493	498	783
	80.0	None	50	51	60	61	61	80	80	81	98	99	100	152	153	155	152
		Shaft Fan	73	74	94	95	96	134	135	136	164	166	168	294	297	299	295
		Electric Fan	109	111	127	129	130	185	187	189	253	256	258	401	405	409	403
		DuraPlate	104	106	138	139	141	241	243	245	297	300	303	493	497	502	497
	90.0	None	49	50	57	58	58	77	78	79	103	104	105	148	150	151	153
		Shaft Fan	71	72	90	91	91	130	131	133	171	173	174	286	289	291	296
		Electric Fan	106	108	121	123	124	180	182	184	262	265	267	389	393	397	404
		DuraPlate	101	103	132	133	134	234	236	238	307	310	313	478	483	487	497
	100	None	47	48	57	58	59	77	78	79	99	100	101	139	140	142	147
		Shaft Fan	68	69	90	91	92	129	131	132	164	165	167	270	272	275	284
		Electric Fan	102	104	121	122	124	179	181	183	250	253	255	368	372	376	387
		DuraPlate	97	99	131	132	134	232	235	237	293	296	298	453	458	462	476
	112	None	47	48	57	57	58	75	76	77	97	98	99	142	143	145	141
		Shaft Fan	68	69	88	89	90	126	127	129	161	162	164	274	276	279	274
		Electric Fan	101	103	120	121	122	174	176	178	246	249	251	373	376	380	375
		DuraPlate	97	99	129	131	132	226	228	231	288	291	294	458	462	467	461
	125	None	46	47	54	54	55	73	74	74	102	103	104				142
		Shaft Fan	66	67	84	85	86	122	124	125	168	169	171				276
		Electric Fan	99	101	114	115	116	169	171	173	256	258	261				376
		DuraPlate	94	96	123	124	125	220	222	224	298	301	304				462

★ Basic thermal ratings listed are based on an ambient temperature of 68°F(20°C) at sea level. Application-adjusted thermal ratings must be calculated using the application-adjusted thermal factors on Page 6 before comparing to the required load. For cooling beyond the range of values listed, contact the Factory.

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\* Consult Factory.

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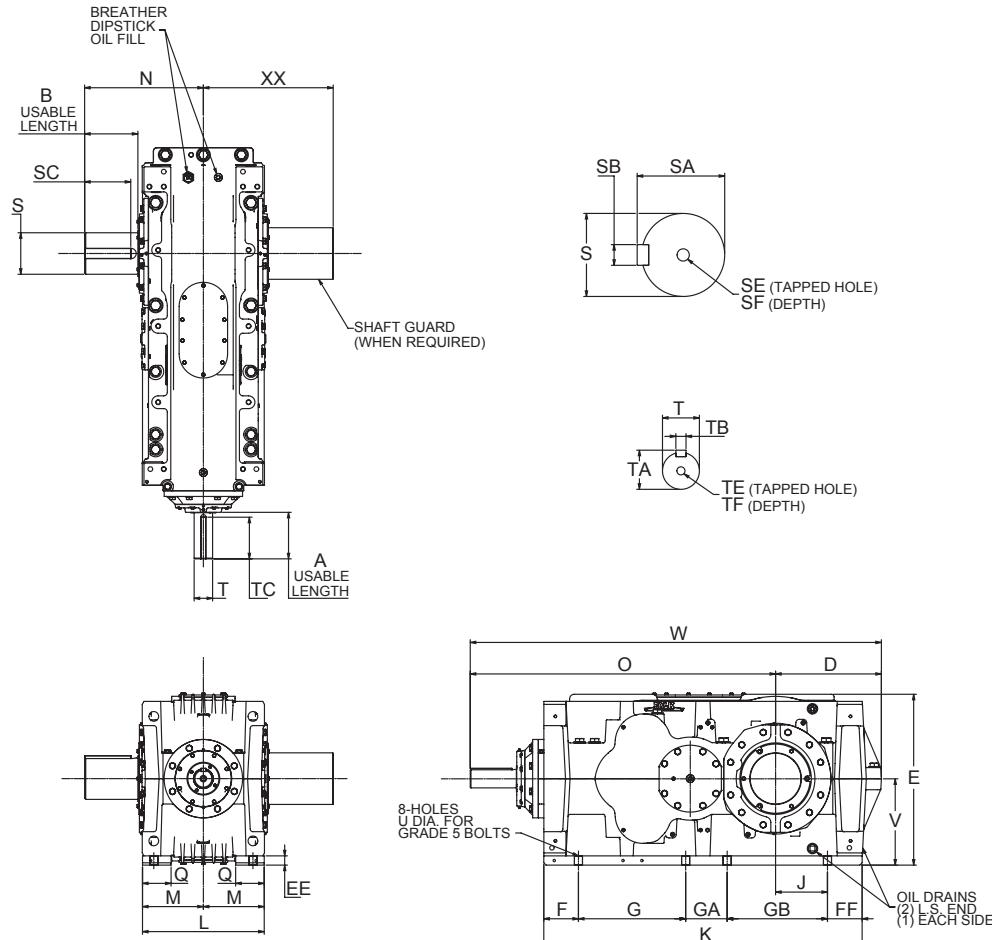
# Exact Ratios/Right Angle Shaft Drives

## Type VR

Nominal Ratios	UNIT SIZE														
	133VR	137VR	143VR	145VR	147VR	153VR	155VR	157VR	163VR	165VR	167VR	173VR	175VR	177VR	187VR
<b>DOUBLE REDUCTION</b>															
<b>6.3</b>	---	---	---	---	---	---	---	---	---	---	---	6.735	6.735	6.735	---
<b>7.1</b>	7.351	7.351	7.132	7.132	7.132	7.053	7.053	7.053	7.344	7.344	7.344	7.451	7.451	7.451	7.339
<b>8.0</b>	8.256	8.256	7.983	7.983	7.983	8.165	8.165	8.165	8.090	8.090	8.090	8.515	8.515	8.515	7.983
<b>9.0</b>	8.927	8.927	9.168	9.168	9.168	8.828	8.828	8.828	8.947	8.947	8.947	9.217	9.217	9.217	9.154
<b>10.0</b>	10.28	10.28	9.737	9.737	9.737	9.737	9.737	9.737	10.05	10.05	10.05	10.20	10.20	10.20	10.04
<b>11.2</b>	11.54	11.54	10.90	10.90	10.90	11.27	11.27	11.27	11.07	11.07	11.07	11.65	11.65	11.65	10.92
<b>12.5</b>	12.48	12.48	12.52	12.52	12.52	12.19	12.19	12.19	12.24	12.24	12.24	---	---	---	12.53
<b>TRIPLE REDUCTION</b>															
<b>12.5</b>	---	---	---	---	---	---	---	---	---	---	---	13.74	13.74	13.74	---
<b>14.0</b>	14.44	14.44	14.09	14.09	14.09	14.39	14.39	14.39	14.40	14.40	14.40	15.20	15.20	15.20	14.97
<b>16.0</b>	16.22	16.22	15.77	15.77	15.77	16.66	16.66	16.66	15.86	15.86	15.86	17.37	17.37	17.37	16.29
<b>18.0</b>	17.54	17.54	18.11	18.11	18.11	18.01	18.01	18.01	17.54	17.54	17.54	18.79	18.79	18.79	18.67
<b>20.0</b>	20.15	20.15	20.43	20.43	20.43	19.91	19.91	19.91	20.81	20.81	20.81	20.78	20.78	20.78	20.47
<b>22.4</b>	22.63	22.63	22.86	22.86	22.86	23.05	23.05	23.05	22.92	22.92	22.92	23.75	23.75	23.75	22.27
<b>25.0</b>	24.47	24.47	26.26	26.26	26.26	24.93	24.93	24.93	25.35	25.35	25.35	25.65	25.65	25.65	25.53
<b>28.0</b>	28.00	28.00	27.67	27.67	27.67	28.15	28.15	28.15	29.05	29.05	29.05	28.38	28.38	28.38	27.95
<b>31.5</b>	31.44	31.44	30.98	30.98	30.98	32.58	32.58	32.58	32.00	32.00	32.00	32.43	32.43	32.43	30.40
<b>35.5</b>	34.00	34.00	35.58	35.58	35.58	35.23	35.23	35.23	35.39	35.39	35.39	36.24	36.24	36.24	34.86
<b>40.0</b>	39.52	39.52	38.30	38.30	38.30	40.46	40.46	40.46	41.66	41.66	41.66	40.09	40.09	40.09	39.49
<b>45.0</b>	44.38	44.38	42.87	42.87	42.87	46.84	46.84	46.84	45.88	45.88	45.88	45.82	45.82	45.82	42.96
<b>50.0</b>	47.99	47.99	49.24	49.24	49.24	50.65	50.65	50.65	50.74	50.74	50.74	50.85	50.85	50.85	49.26
<b>56.0</b>	57.11	57.11	54.77	54.77	54.77	55.45	55.45	55.45	58.10	58.10	58.10	56.25	56.25	56.25	55.40
<b>63.0</b>	62.70	62.70	61.31	61.31	61.31	64.19	64.19	64.19	64.00	64.00	64.00	64.29	64.29	64.29	60.27
<b>71.0</b>	67.80	67.80	70.41	70.41	70.41	69.41	69.41	69.41	70.78	70.78	70.78	73.65	73.65	73.65	69.11
<b>80.0</b>	80.02	80.02	77.30	77.30	77.30	83.33	83.33	83.33	81.73	81.73	81.73	84.18	84.18	84.18	78.91
<b>90.0</b>	86.53	86.53	88.77	88.77	88.77	90.11	90.11	90.11	90.39	90.39	90.39	93.41	93.41	93.41	90.49
<b>100.0</b>	103.0	103.0	98.75	98.75	98.75	98.65	98.65	98.65	103.5	103.5	103.5	103.3	103.3	103.3	101.8
<b>112.0</b>	113.1	113.1	110.5	110.5	110.5	114.2	114.2	114.2	114.0	114.0	114.0	118.1	118.1	118.1	110.7
<b>125.0</b>	122.2	122.2	127.0	127.0	127.0	123.5	123.5	123.5	126.1	126.1	126.1	---	---	---	127.0

# Type VRC2 Double Reduction Solid Low-Speed Shaft, Base Drive

## Sizes 133 – 173/Dimensions — Inches



DRIVE SIZE★	Ratios	A	B	D	E	EE	F	FF	G	GA	GB	J	K	L	M	N•	O	Q
<b>133</b>	7.10-12.5	5.91	7.48	13.05	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	16.61	40.50	4.44
<b>143</b>	7.10-12.5	6.10	7.48	13.91	24.49	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	16.93	42.81	4.25
<b>153</b>	7.10-12.5	7.09	7.48	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	17.91	47.83	4.49
<b>163</b>	7.10-12.5	7.68	8.86	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	20.28	52.13	4.88
<b>173</b>	6.30-11.2	9.45	10.63	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	23.03	60.04	5.91

DRIVE SIZE★	Ratios	Low-Speed Shaft†						High-Speed Shaft†						U	V	W	XX	Approx. Wt. lb.
		S*	SA	SB	SC	SE	SF	T*	TA	TB	TC	TE	TF					
<b>133</b>	7.10-12.5	5.1181m6	5.39	1.26	7.09	M24	1.97	2.3622m6	2.51	0.71	5.91	M20	1.65	0.94	11.02	53.55	16.92	1900
<b>143</b>	7.10-12.5	5.5118m6	5.82	1.42	7.09	M30	2.36	2.3622m6	2.51	0.71	5.91	M20	1.65	0.94	12.40	56.72	17.31	2426
<b>153</b>	7.10-12.5	6.2992m6	6.65	1.57	7.09	M30	2.36	2.9528m6	3.12	0.79	7.09	M20	1.65	1.10	13.19	63.16	18.47	3303
<b>163</b>	7.10-12.5	7.0866m6	7.48	1.77	7.87	M30	2.36	3.1496m6	3.35	0.87	7.09	M20	1.65	1.38	14.76	70.20	22.17	4765
<b>173</b>	6.30-11.2	7.6772m6	8.07	1.77	9.84	M30	2.36	3.9370m6	4.17	1.10	8.66	M24	1.97	1.38	17.72	83.03	24.09	6571

★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

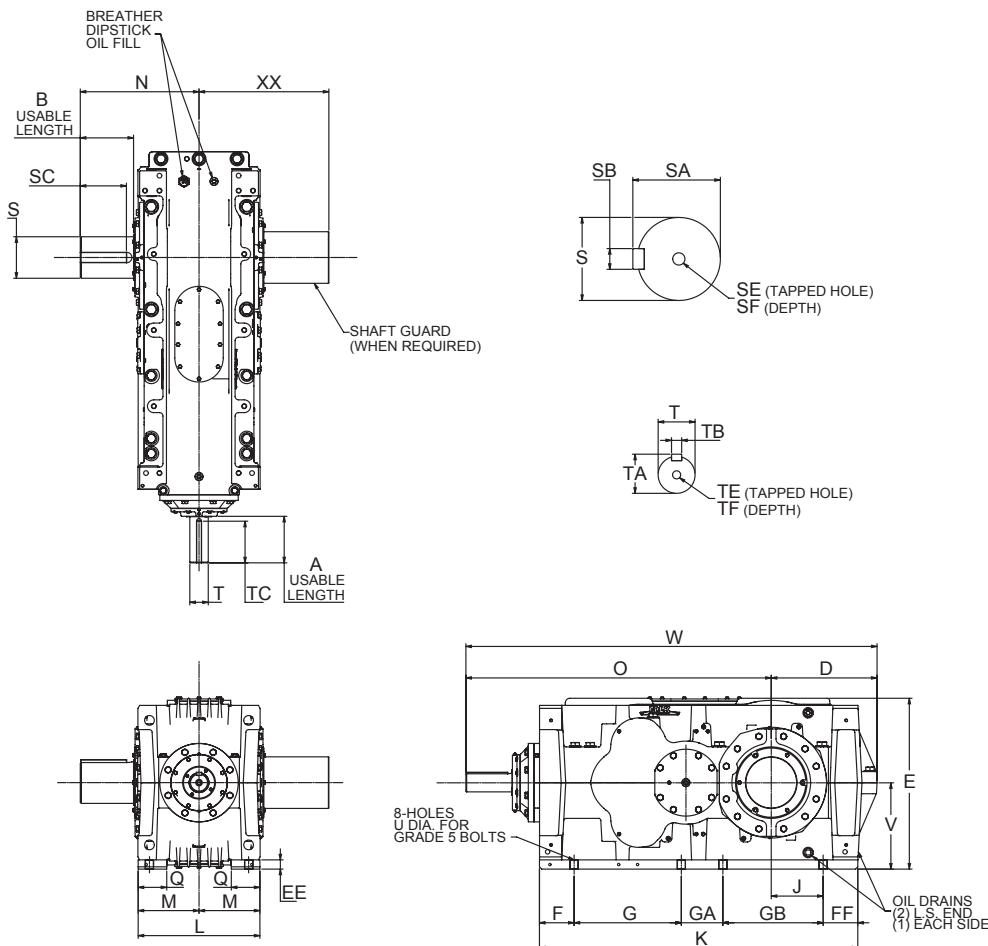
† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* See table 1 on page 59 for tolerance

● Single low-speed shaft extension is standard; double extension is special.

# Type VRC2 Double Reduction Solid Low-Speed Shaft, Base Drive

Sizes 145 – 175/Dimensions — Inches



DRIVE SIZE★	Ratios	A	B	D	E	EE	F	FF	G	GA	GB	J	K	L	M	N•	O	Q
<b>145</b>	7.10-12.5	6.10	7.48	13.91	24.49	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	16.93	42.81	4.25
<b>155</b>	7.10-12.5	7.09	7.48	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	17.91	47.83	4.49
<b>165</b>	7.10-12.5	7.68	8.86	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	20.28	52.13	4.88
<b>175</b>	6.30-11.2	9.45	10.63	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	23.03	60.04	5.91

DRIVE SIZE★	Ratios	Low-Speed Shaft†						High-Speed Shaft†						U	V	W	XX	Approx. Wt. lb.
		S*	SA	SB	SC	SE	SF	T*	TA	TB	TC	TE	TF					
<b>145</b>	7.10-12.5	5.5118m6	5.82	1.42	7.09	M30	2.36	2.3622m6	2.51	0.71	5.91	M20	1.65	0.94	12.40	56.72	17.31	2426
<b>155</b>	7.10-12.5	6.2992m6	6.65	1.57	7.09	M30	2.36	2.9528m6	3.12	0.79	7.09	M20	1.65	1.10	13.19	63.16	18.47	3303
<b>165</b>	7.10-12.5	7.0866m6	7.48	1.77	7.87	M30	2.36	3.1496m6	3.35	0.87	7.09	M20	1.65	1.38	14.76	70.20	22.17	4765
<b>175</b>	6.30-11.2	7.6772m6	8.07	1.77	9.84	M30	2.36	3.9370m6	4.17	1.10	8.66	M24	1.97	1.38	17.72	83.03	24.09	6571

★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

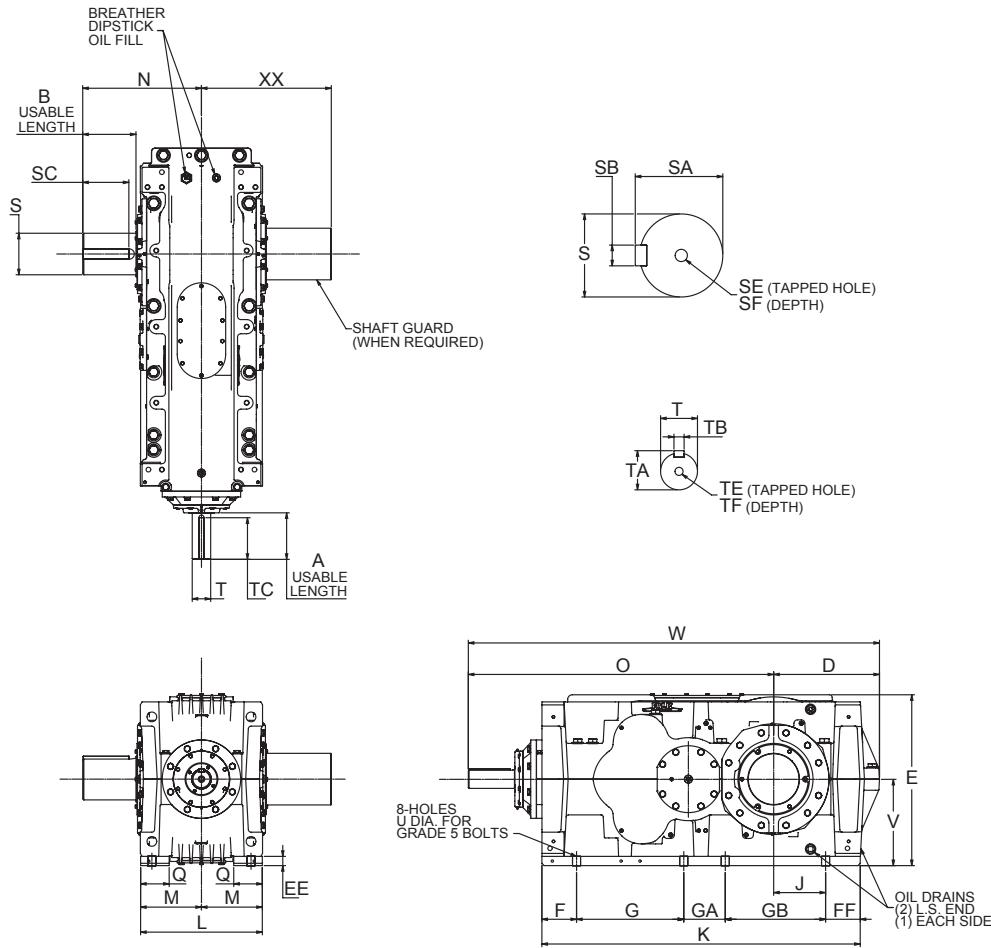
† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* See table 1 on page 59 for tolerance.

● Single low-speed shaft extension is standard; double extension is special.

# Type VRC2 Double Reduction Solid Low-Speed Shaft, Base Drive

## Sizes 137 – 187/Dimensions — Inches



DRIVE SIZE★	Ratios	A	B	D	E	EE	F	FF	G	GA	GB	J	K	L	M	N•	O	Q
<b>137</b>	7.10-12.5	5.91	7.48	13.05	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	16.61	40.50	4.44
<b>147</b>	7.10-12.5	6.10	7.48	13.91	24.49	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	16.93	42.81	4.25
<b>157</b>	7.10-12.5	7.09	7.48	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	17.91	47.83	4.49
<b>167</b>	7.10-12.5	7.68	8.86	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	20.28	52.13	4.88
<b>177</b>	6.30-11.2	9.45	10.63	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	23.03	60.04	5.91
<b>187</b>	7.10-12.5	9.45	10.63	22.01	35.08	1.97	6.26	6.69	21.46	7.87	22.05	11.42	64.33	23.15	9.65	23.03	61.04	5.91

DRIVE SIZE★	Ratios	Low-Speed Shaft†						High-Speed Shaft†						U	V	W	XX	Approx. Wt. lb.
		S*	SA	SB	SC	SE	SF	T*	TA	TB	TC	TE	TF					
<b>137</b>	7.10-12.5	5.1181m6	5.39	1.26	7.09	M24	1.97	2.3622m6	2.51	0.71	5.91	M20	1.65	0.94	11.02	53.55	16.92	1900
<b>147</b>	7.10-12.5	5.5118m6	5.82	1.42	7.09	M30	2.36	2.3622m6	2.51	0.71	5.91	M20	1.65	0.94	12.40	56.72	17.31	2426
<b>157</b>	7.10-12.5	6.2992m6	6.65	1.57	7.09	M30	2.36	2.9528m6	3.12	0.79	7.09	M20	1.65	1.10	13.19	63.16	18.47	3303
<b>167</b>	7.10-12.5	7.0866m6	7.48	1.77	7.87	M30	2.36	3.1496m6	3.35	0.87	7.09	M20	1.65	1.38	14.76	70.20	22.17	4765
<b>177</b>	6.30-11.2	7.6772m6	8.07	1.77	9.84	M30	2.36	3.9370m6	4.17	1.10	8.66	M24	1.97	1.38	17.72	83.03	24.09	6571
<b>187</b>	7.10-12.5	7.6772m6	8.07	1.77	9.84	M30	2.36	3.9370m6	4.17	1.10	8.66	M24	1.97	1.38	17.72	83.03	24.09	6717

★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

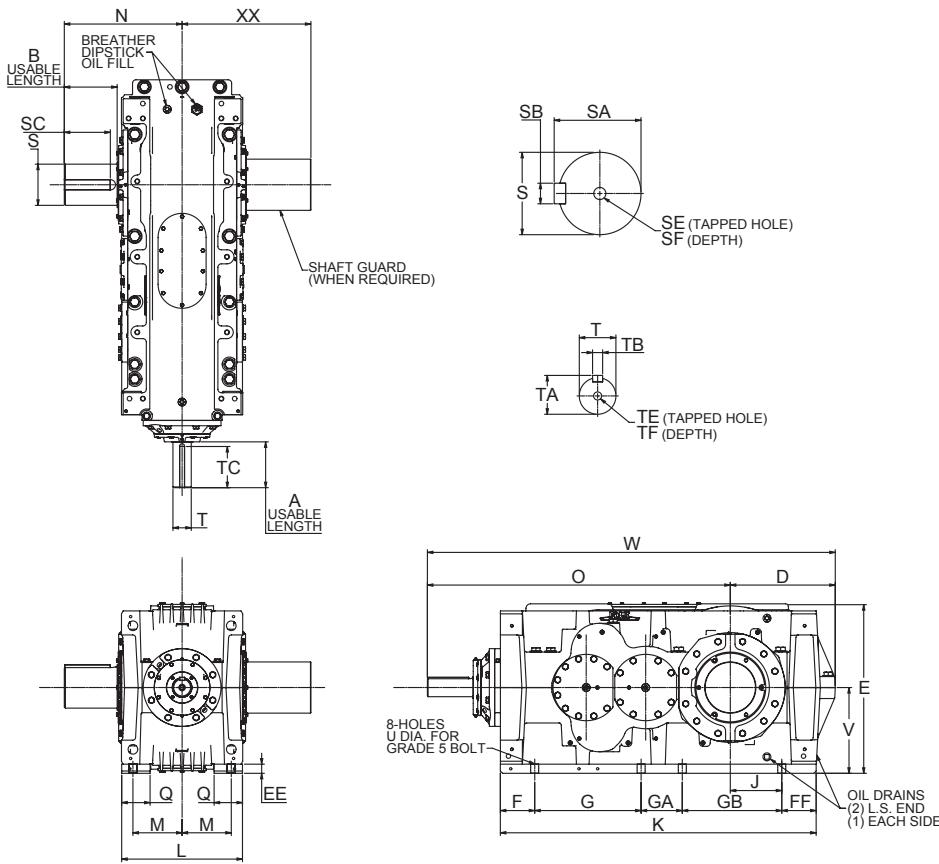
† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* See table 1 on page 59 for tolerance

● Single low-speed shaft extension is standard; double extension is special.

# Type VRC3 Triple Reduction Solid Low-Speed Shaft, Base Drive

## Sizes 133 – 173/Dimensions — Inches



DRIVE SIZE★	Ratios	A	B	D	E	EE	F	FF	G	GA	GB	J	K	L	M	N•	O	Q
133	14.0-125	5.91	7.48	13.06	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	16.61	40.50	4.44
143	14.0-125	6.10	7.48	13.91	24.35	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	16.93	42.81	4.25
153	14.0-125	7.09	7.48	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	17.91	47.83	4.49
163	14.0-125	7.68	8.86	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	20.28	52.13	4.88
173	12.5-112	9.45	10.63	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	23.03	60.04	5.91

DRIVE SIZE★	Ratios	Low-Speed Shaft†						High-Speed Shaft†						U	V	W	XX	Approx. Wt. lb.
		S*	SA	SB	SC	SE	SF	T*	TA	TB	TC	TE	TF					
133	14.0-71.0	5.1181m6	5.39	1.26	7.09	M24	1.97	2.1654m6	2.32	0.63	5.91	M20	1.42	0.94	11.02	53.55	16.99	1898
	80.0-125							1.5748k6	1.69	0.47		M16	1.65					
143	14.0-71.0	5.5118m6	5.82	1.42	7.09	M30	2.36	2.3622m6	2.51	0.71	5.59	M20	1.65	0.94	12.40	56.72	17.31	2438
	80.0-125							1.9685k6	2.10	0.55								
153	14.0-71.0	6.2992m6	6.65	1.57	7.09	M30	2.36	2.7559m6	2.93	0.79	7.09	M20	1.65	1.10	13.19	63.16	18.55	3372
	80.0-125							2.1653m6	2.32	0.63								
163	14.0-71.0	7.0866m6	7.47	1.77	7.87	M30	2.36	3.1496m6	3.34	0.87	7.09	M20	1.65	1.38	14.76	70.20	22.17	4647
	80.0-125							2.3622m6	2.51	0.71								
173	12.5-63.0	7.6772m6	8.07	1.77	9.84	M30	2.36	4.3307m6	4.56	1.10	8.66	M24	1.97	1.38	17.72	83.03	24.09	6689
	71.0-112							2.7559m6	2.93	0.79								

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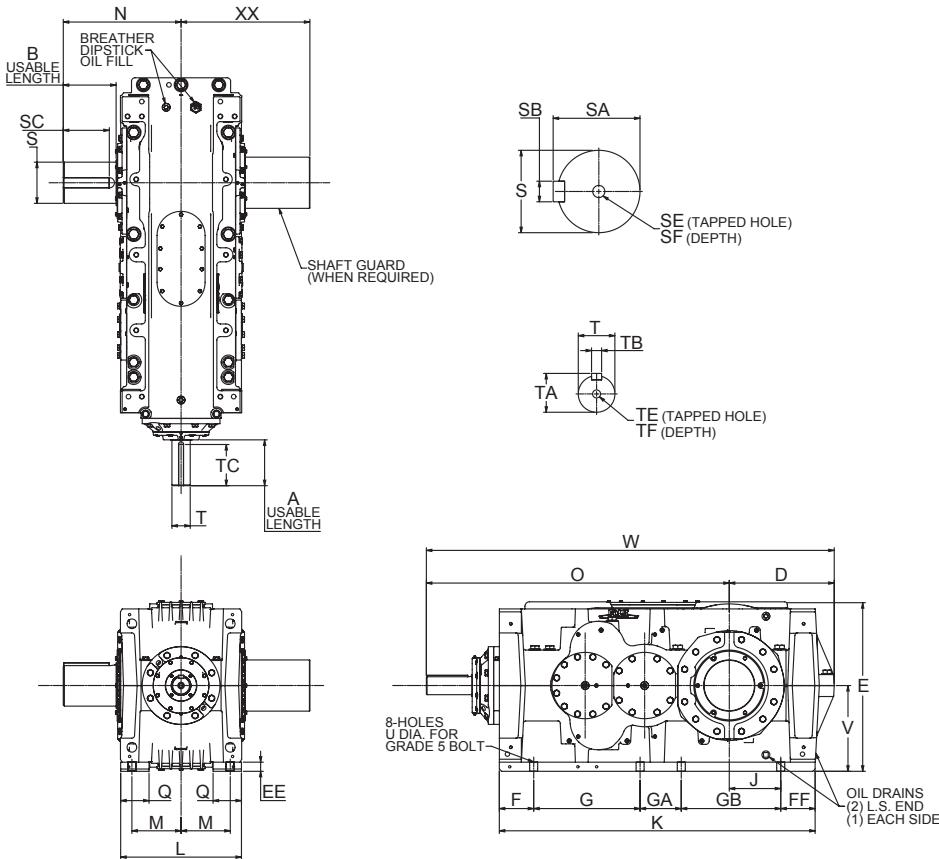
† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* See Table 1 on page 59 for tolerance

● Single low-speed shaft extension is standard; double extension is special.

# Type VRC3 Triple Reduction Solid Low-Speed Shaft, Base Drive

## Sizes 145 – 175/Dimensions — Inches



DRIVE SIZE★	Ratios	A	B	D	E	EE	F	FF	G	GA	GB	J	K	L	M	N*	O	Q
<b>145</b>	14.0-125	6.10	7.48	13.91	24.35	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	16.93	42.81	4.25
<b>155</b>	14.0-125	7.09	7.48	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	17.91	47.83	4.49
<b>165</b>	14.0-125	7.68	8.86	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	20.28	52.13	4.88
<b>175</b>	12.5-112	9.45	10.63	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	23.03	60.04	5.91

DRIVE SIZE★	Ratios	Low-Speed Shaft†						High-Speed Shaft†						U	V	W	XX	Approx. Wt. lb.
		S*	SA	SB	SC	SE	SF	T*	TA	TB	TC	TE	TF					
<b>145</b>	14.0-71.0	5.5118m6	5.82	1.42	7.09	M30	2.36	2.3622m6	2.51	0.71	5.59	M20	1.65	0.94	12.40	56.72	17.31	2438
	80.0-125							1.9685k6	2.10	0.55	5.51							
<b>155</b>	14.0-71.0	6.2992m6	6.65	1.57	7.09	M30	2.36	2.7559m6	2.93	0.79	7.09	M20	1.65	1.10	13.19	63.16	18.55	3372
	80.0-125							2.1653m6	2.32	0.63								
<b>165</b>	14.0-71.0	7.0866m6	7.47	1.77	7.87	M30	2.36	3.1496m6	3.34	0.87	7.09	M20	1.65	1.38	14.76	70.20	22.17	4647
	80.0-125							2.3622m6	2.51	0.71								
<b>175</b>	12.5-63.0	7.6772m6	8.07	1.77	9.84	M30	2.36	4.3307m6	4.56	1.10	8.66	M24	1.97	1.38	17.72	83.03	24.09	6689
	71.0-112							2.7559m6	2.93	0.79								

★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

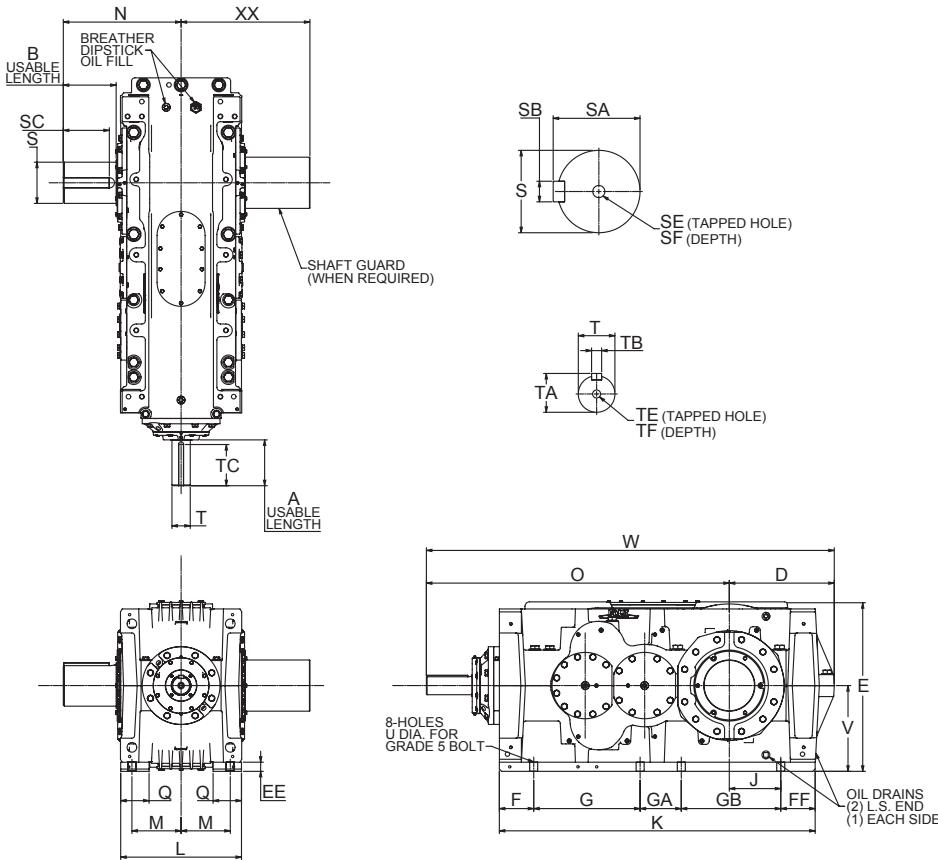
† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* See table 1 on page 59 for tolerance

● Single low-speed shaft extension is standard; double extension is special.

# Type VRC3 Triple Reduction Solid Low-Speed Shaft, Base Drive

Sizes 137 – 187/Dimensions — Inches



DRIVE SIZE★	Ratios	A	B	D	E	EE	F	FF	G	GA	GB	J	K	L	M	N•	O	Q
<b>137</b>	14.0-125	5.91	7.48	13.06	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	16.61	40.50	4.44
<b>147</b>	14.0-125	6.10	7.48	13.91	24.35	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	16.93	42.81	4.25
<b>157</b>	14.0-125	7.09	7.48	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	17.91	47.83	4.49
<b>167</b>	14.0-125	7.68	8.86	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	20.28	52.13	4.88
<b>177</b>	12.5-112	9.45	10.63	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	23.03	60.04	5.91
<b>187</b>	14.0-125	9.45	10.63	22.01	35.08	1.97	6.26	6.69	21.46	7.87	22.05	11.42	64.33	23.15	9.65	23.03	61.02	5.91

DRIVE SIZE★	Ratios	Low-Speed Shaft†						High-Speed Shaft†						U	V	W	XX	Approx. Wt. lb.
		S*	SA	SB	SC	SE	SF	T*	TA	TB	TC	TE	TF					
<b>137</b>	14.0-71.0	5.1181m6	5.39	1.26	7.09	M24	1.97	2.1654m6	2.32	0.63	5.91	M20	1.42	0.94	11.02	53.55	16.99	1898
	80.0-125							1.5748k6	1.69	0.47		M16	1.65					
<b>147</b>	14.0-71.0	5.5118m6	5.82	1.42	7.09	M30	2.36	2.3622m6	2.51	0.71	5.51	M20	1.65	0.94	12.40	56.72	17.31	2438
	80.0-125							1.9685k6	2.10	0.55		M20	1.65					
<b>157</b>	14.0-71.0	6.2992m6	6.65	1.57	7.09	M30	2.36	2.7559m6	2.93	0.79	7.09	M20	1.65	1.10	13.19	63.16	18.55	3372
	80.0-125							2.1653m6	2.32	0.63		M20	1.65					
<b>167</b>	14.0-71.0	7.0866m6	7.47	1.77	7.87	M30	2.36	3.1496m6	3.34	0.87	7.09	M20	1.65	1.38	14.76	70.20	22.17	4647
	80.0-125							2.3622m6	2.51	0.71		M20	1.65					
<b>177</b>	12.5-63.0	7.6772m6	8.07	1.77	9.84	M30	2.36	4.3307m6	4.56	1.10	8.66	M24	1.97	1.38	17.72	83.03	24.09	6689
	71.0-112							2.7559m6	2.93	0.79		M20	1.65					
<b>187</b>	14.0-71.0	7.6772m6	8.07	1.77	9.84	M30	2.36	4.3307m6	4.56	1.10	8.66	M24	1.97	1.38	17.72	83.03	24.09	6810
	80.0-125							2.7559m6	2.93	0.79		M20	1.65					

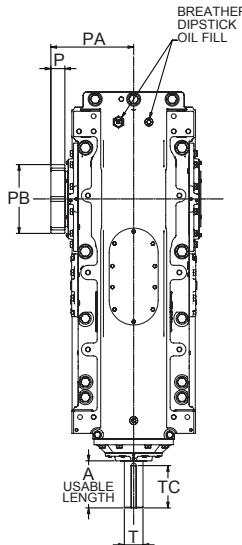
★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

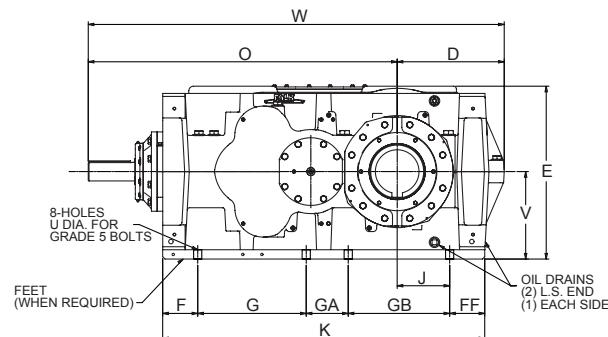
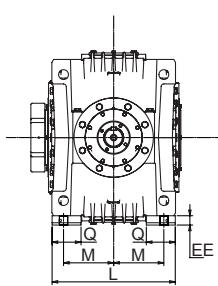
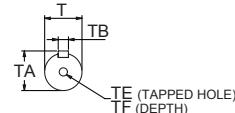
\* See table 1 on page 59 for tolerance

● Single low-speed shaft extension is standard; double extension is special.

# Type VRT2 Double Reduction Hollow Low-Speed Shaft with TA Taper Bushing Sizes 133 – 173/Dimensions — Inches



Refer to page 143-144 for standard bushing bores.



DRIVE SIZE★	Ratios	A	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PA	PB	Q
<b>133</b>	7.10-12.5	5.91	13.05	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	40.50	2.24	11.93	9.45	4.44
<b>143</b>	7.10-12.5	6.10	13.91	24.49	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	42.81	2.24	11.81	10.24	4.25
<b>153</b>	7.10-12.5	7.09	15.32	26.20	1.57	5.47	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	47.83	2.32	13.19	11.02	4.49
<b>163</b>	7.10-12.5	7.68	18.07	29.34	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	52.13	2.36	13.98	11.61	4.88
<b>173</b>	6.30-11.2	9.45	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	60.03	...	13.03	10.98	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	V	W	Approx. Wt. lb.
		T*	TA	TB	TC	TE	TF				
<b>133</b>	7.10-12.5	2.3622m6	2.51	0.71	5.91	M20	1.65	0.94	11.02	53.55	1900
<b>143</b>	7.10-12.5	2.3622m6	2.51	0.71	5.91	M20	1.65	0.94	12.40	56.72	2426
<b>153</b>	7.10-12.5	2.9528m6	3.12	0.79	7.09	M20	1.65	1.10	13.19	63.16	3303
<b>163</b>	7.10-12.5	3.1496m6	3.34	0.87	7.09	M20	1.65	1.38	14.76	70.20	4423
<b>173</b>	6.30-11.2	3.9370m6	4.17	1.10	8.66	M24	1.97	1.38	17.72	83.03	6159

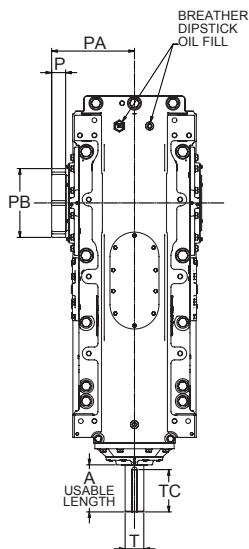
★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

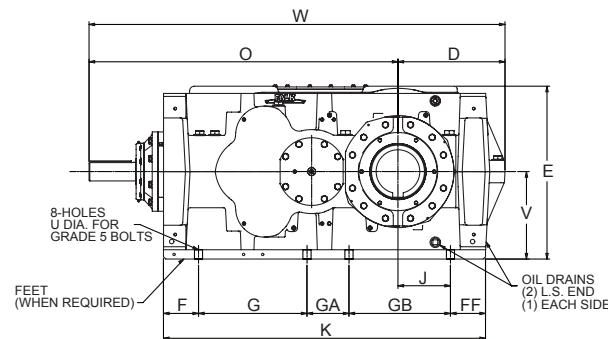
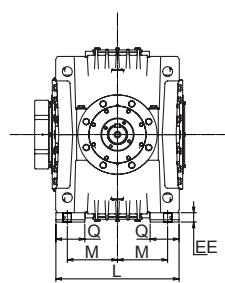
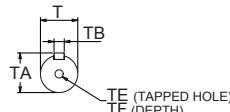
\* See table 1 on page 59 for tolerance

# Type VRT2 Double Reduction Hollow Low-Speed Shaft with TA Taper Bushing

## Sizes 145 – 175/Dimensions — Inches



Refer to page 143-144 for standard bushing bores.



DRIVE SIZE★	Ratios	A	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PA	PB	Q
<b>145</b>	7.10-12.5	6.10	13.91	24.49	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	42.81	2.24	11.81	10.24	4.25
<b>155</b>	7.10-12.5	7.09	15.32	26.20	1.57	5.47	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	47.83	2.32	13.19	11.02	4.49
<b>165</b>	7.10-12.5	7.68	18.07	29.34	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	52.13	2.36	13.98	11.61	4.88
<b>175</b>	6.30-11.2	9.45	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	60.03	...	13.03	10.98	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	V	W	Approx. Wt. Ib.
		T*	TA	TB	TC	TE	TF				
<b>145</b>	7.10-12.5	2.3622m6	2.51	0.71	5.91	M20	1.65	0.94	12.40	56.72	2426
<b>155</b>	7.10-12.5	2.9528m6	3.12	0.79	7.09	M20	1.65	1.10	13.19	63.16	3303
<b>165</b>	7.10-12.5	3.1496m6	3.34	0.87	7.09	M20	1.65	1.38	14.76	70.20	4423
<b>175</b>	6.30-11.2	3.9370m6	4.17	1.10	8.66	M24	1.97	1.38	17.72	83.03	6159

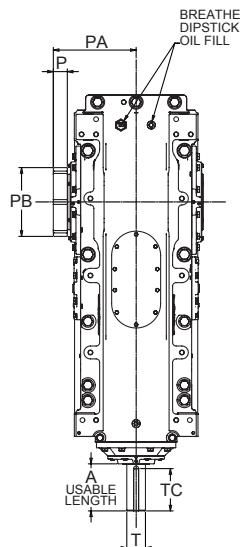
★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

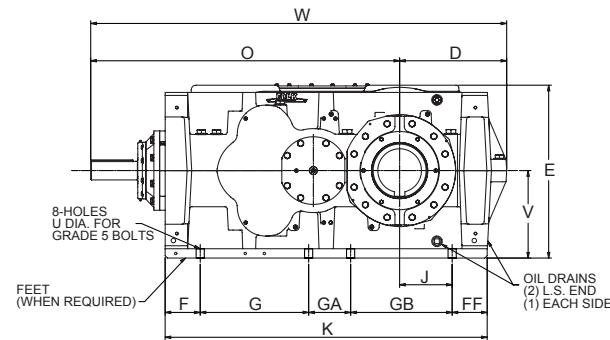
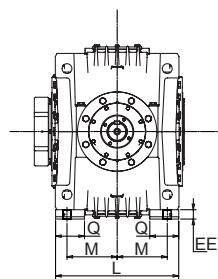
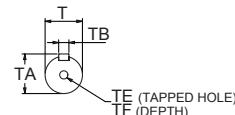
\* See table 1 on page 59 for tolerance

# Type VRT2 Double Reduction Hollow Low-Speed Shaft with TA Taper Bushing

Sizes 137 – 187/Dimensions — Inches



Refer to page 143-144 for standard bushing bores.



DRIVE SIZE★	Ratios	A	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PA	PB	Q
<b>137</b>	7.10-12.5	5.91	13.05	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	40.50	2.24	11.93	9.45	4.44
<b>147</b>	7.10-12.5	6.10	13.91	24.49	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	42.81	2.24	11.81	10.24	4.25
<b>157</b>	7.10-12.5	7.09	15.32	26.20	1.57	5.47	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	47.83	2.32	13.19	11.02	4.49
<b>167</b>	7.10-12.5	7.68	18.07	29.34	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	52.13	2.36	13.98	11.61	4.88
<b>177</b>	6.30-11.2	9.45	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	60.03	...	13.03	10.98	5.91
<b>187</b>	7.10-12.5	9.45	22.01	35.08	1.97	6.26	6.69	21.46	7.87	22.05	11.42	64.33	23.15	9.65	61.02	...	12.95	10.98	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	V	W	Approx. Wt. lb.
		T*	TA	TB	TC	TE	TF				
<b>130</b>	7.10-12.5	2.3622m6	2.51	0.71	5.91	M20	1.65	0.94	11.02	53.55	1900
<b>140</b>	7.10-12.5	2.3622m6	2.51	0.71	5.91	M20	1.65	0.94	12.40	56.72	2426
<b>150</b>	7.10-12.5	2.9528m6	3.12	0.79	7.09	M20	1.65	1.10	13.19	63.16	3303
<b>167</b>	7.10-12.5	3.1496m6	3.34	0.87	7.09	M20	1.65	1.38	14.76	70.20	4423
<b>177</b>	6.30-11.2	3.9370m6	4.17	1.10	8.66	M24	1.97	1.38	17.72	83.03	6159
<b>187</b>	7.10-12.5	3.9370m6	4.17	1.10	8.66	M24	1.97	1.38	17.72	83.03	6309

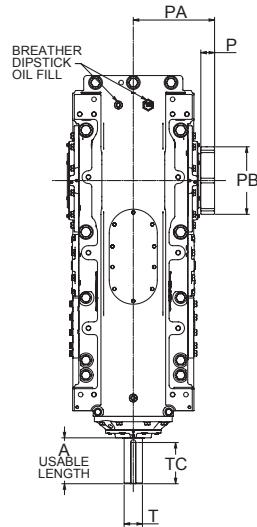
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† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

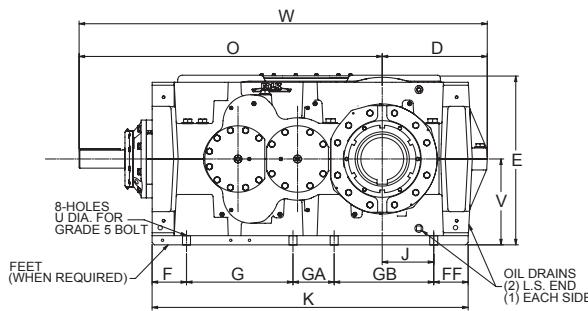
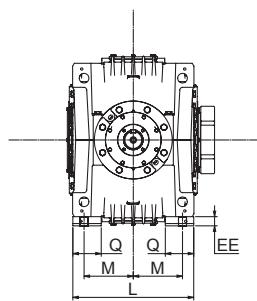
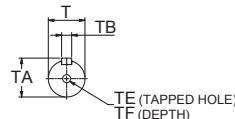
\* See table 1 on page 59 for tolerance

# Type VRT3 Triple Reduction Hollow Low-Speed Shaft with TA Taper Bushing

## Sizes 133 – 173/Dimensions — Inches



Refer to page 143-144 for standard bushing bores.



DRIVE SIZE★	Ratios	A	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PA	PB	Q
<b>133</b>	14.0-125	5.91	13.06	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	40.50	2.24	11.93	9.45	4.44
<b>143</b>	14.0-125	6.10	13.91	24.35	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	42.81	2.24	11.81	10.24	4.25
<b>153</b>	14.0-125	7.09	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	47.83	2.32	13.19	11.02	4.49
<b>163</b>	14.0-125	7.68	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	52.13	2.36	13.98	11.61	4.88
<b>173</b>	12.5-112	9.45	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	60.04	---	13.03	11.00	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	V	W	Approx. Wt. lb.
		T*	TA	TB	TC	TE	TF				
<b>133</b>	14.0-71.0	2.1654m6	2.32	0.63	5.91	M20	1.42	0.94	11.02	53.55	1898
	80.0-125	1.5748k6	1.69	0.47		M16	1.65				
<b>143</b>	14.0-71.0	2.3622m6	2.51	0.71	5.51	M20	1.65	0.94	12.40	42.81	2438
	80.0-125	1.9685k6	2.10	0.55		M20	1.65				
<b>153</b>	14.0-71.0	2.7559m6	2.93	0.79	7.09	M20	1.65	1.10	13.19	63.16	3372
	80.0-125	2.1654m6	2.32	0.63		M20	1.65				
<b>163</b>	14.0-71.0	3.1496m6	3.35	0.87	7.09	M20	1.65	1.38	14.76	70.20	4305
	80.0-125	2.3622m6	2.52	0.71		M20	1.65				
<b>173</b>	12.5-63.0	4.3307m6	4.57	1.10	8.66	M24	1.97	1.38	17.72	83.03	6277
	71.0-112	2.7559m6	2.91	0.79		M20	1.65				

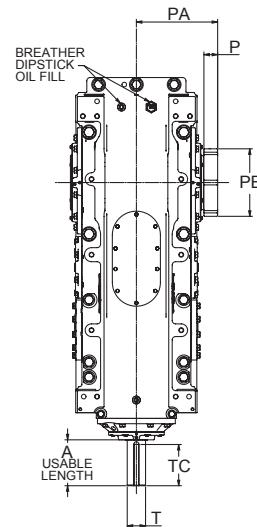
★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

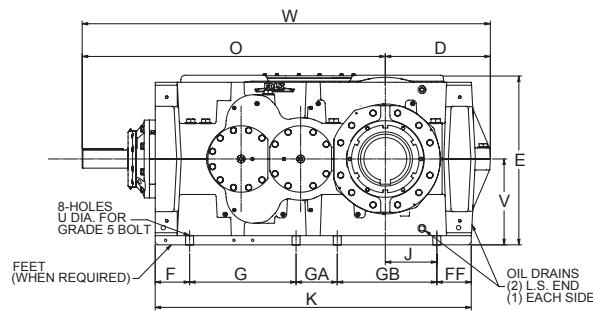
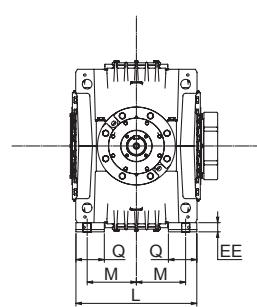
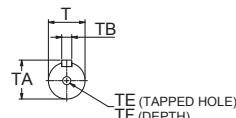
\* See table 1 on page 59 for tolerance

# Type VRT3 Triple Reduction Hollow Low-Speed Shaft with TA Taper Bushing

## Sizes 145 – 175/Dimensions — Inches



Refer to page 143-144 for standard bushing bores.



DRIVE SIZE★	Ratios	A	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PA	PB	Q
145	14.0-125	6.10	13.91	24.35	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	42.81	2.24	11.81	10.24	4.25
155	14.0-125	7.09	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	47.83	2.32	13.19	11.02	4.49
165	14.0-125	7.68	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	52.13	2.36	13.98	11.61	4.88
175	12.5-112	9.45	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	60.04	---	13.03	11.00	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	V	W	Approx. Wt. Ib.
		T*	TA	TB	TC	TE	TF				
145	14.0-71.0	2.3622m6	2.51	0.71	5.59	M20	1.65	0.94	12.40	42.81	2438
	80.0-125	1.9685k6	2.10	0.55	5.51						
155	14.0-71.0	2.7559m6	2.93	0.79	7.09	M20	1.65	1.10	13.19	63.16	3372
	80.0-125	2.1654m6	2.32	0.63							
165	14.0-71.0	3.1496m6	3.35	0.87	7.09	M20	1.65	1.38	14.76	70.20	4305
	80.0-125	2.3622m6	2.52	0.71							
175	12.5-63.0	4.3307m6	4.57	1.10	8.66	M24	1.97	1.38	17.72	83.03	6277
	71.0-112	2.7559m6	2.91	0.79							

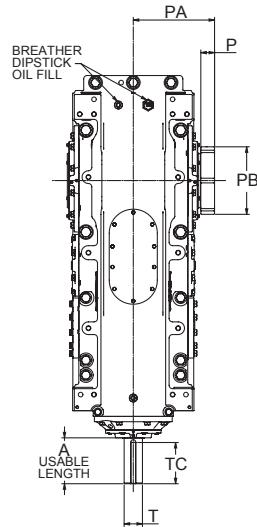
★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

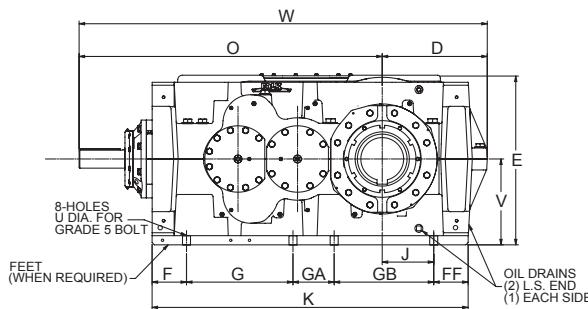
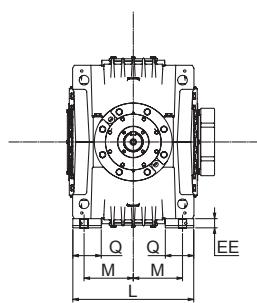
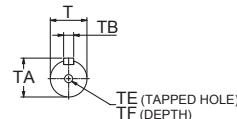
\* See table 1 on page 59 for tolerance.

# Type VRT3 Triple Reduction Hollow Low-Speed Shaft with TA Taper Bushing

## Sizes 137 – 187/Dimensions — Inches



Refer to page 143-144 for standard bushing bores.



DRIVE SIZE★	Ratios	A	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PA	PB	Q
137	14.0-125	5.91	13.06	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	40.50	2.24	11.93	9.45	4.44
147	14.0-125	6.10	13.91	24.35	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	42.81	2.24	11.81	10.24	4.25
157	14.0-125	7.09	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	47.83	2.32	13.19	11.02	4.49
167	14.0-125	7.68	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	52.13	2.36	13.98	11.61	4.88
177	12.5-112	9.45	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	60.04	---	13.03	11.00	5.91
187	14.0-125	9.45	22.01	35.08	1.97	6.26	6.69	21.46	7.87	22.05	11.42	64.33	23.15	9.65	61.02	---	13.03	11.00	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	V	W	Approx. Wt. lb.
		T*	TA	TB	TC	TE	TF				
137	14.0-71.0	2.1654m6	2.32	0.63	5.91	M20	1.42	0.94	11.02	53.55	1898
	80.0-125	1.5748k6	1.69	0.47		M16	1.65				
147	14.0-71.0	2.3622m6	2.51	0.71	5.59	M20	1.65	0.94	12.40	42.81	2438
	80.0-125	1.9685k6	2.10	0.55							
157	14.0-71.0	2.7559m6	2.93	0.79	7.09	M20	1.65	1.10	13.19	63.16	3372
	80.0-125	2.1654m6	2.32	0.63							
167	14.0-71.0	3.1496m6	3.35	0.87	7.09	M20	1.65	1.38	14.76	70.20	4305
	80.0-125	2.3622m6	2.52	0.71							
177	12.5-63.0	4.3307m6	4.57	1.10	8.66	M24	1.97	1.38	17.72	83.03	6277
	71.0-112	2.7559m6	2.91	0.79		M20	1.65				
187	14.0-71.0	4.3307m6	4.57	1.10	8.66	M24	1.97	1.38	17.72	83.03	6398
	80.0-125	2.7559m6	2.91	0.79		M20	1.65				

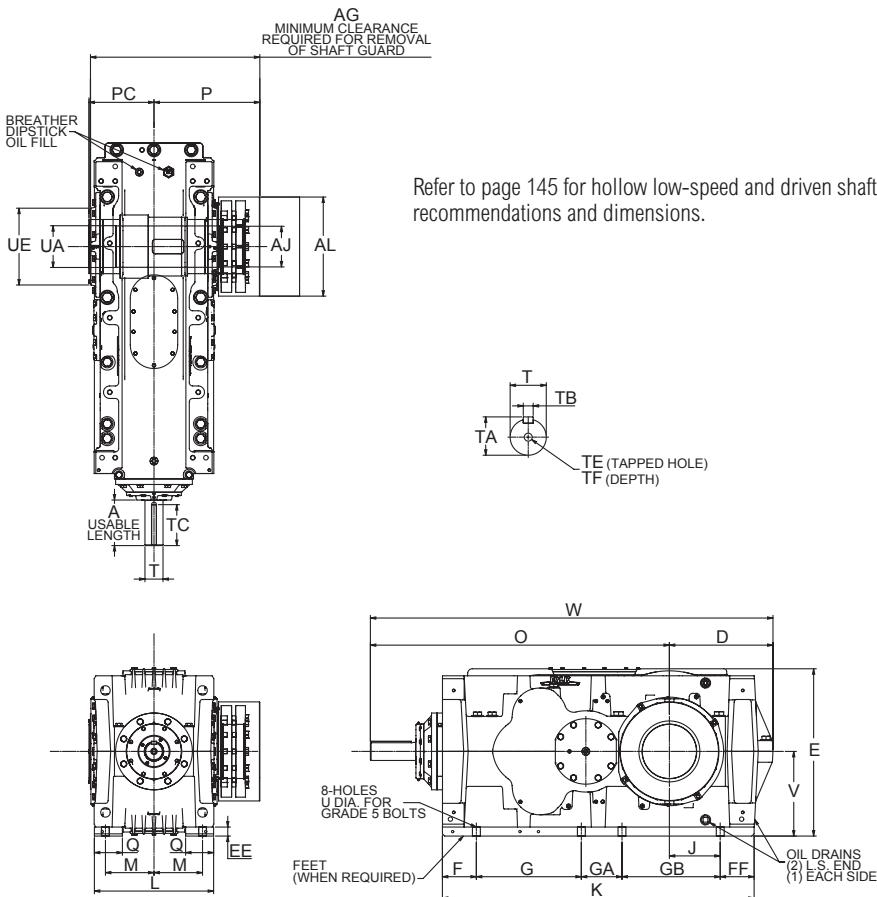
★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* See table 1 on page 59 for tolerance.

# Type VRJ2 Double Reduction Hollow Low-Speed Shaft with Shrink Disc

## Sizes 133 – 173/Dimensions — Inches



DRIVE SIZE★	Ratios	A	AG	AJ*	AL	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PC	Q
<b>133</b>	7.10-12.5	5.91	29.41	5.3150 J7	13.46	13.05	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	40.50	13.68	8.50	4.44
<b>143</b>	7.10-12.5	6.10	31.81	5.9055 J7	15.11	13.91	24.49	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	42.81	15.32	8.50	4.25
<b>153</b>	7.10-12.5	7.09	34.49	6.4961 J7	15.90	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	47.83	16.86	9.72	4.49
<b>163</b>	7.10-12.5	7.68	36.69	7.0866 J7	17.28	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	52.13	18.46	11.34	4.88
<b>173</b>	6.30-11.2	9.45	40.71	7.8740 J7	18.70	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	60.04	20.39	12.48	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	UA*	UE	V	W	Approx. Wt. Ib.
		T*	TA	TB	TC	TE	TF						
<b>133</b>	7.10-12.5	2.3622m6	2.51	0.71	5.91	M20	1.65	0.94	5.5118 H7	9.29	11.02	53.55	1900
<b>143</b>	7.10-12.5	2.3622m6	2.51	0.71	5.91	M20	1.65	0.94	6.1024 H7	10.51	12.40	56.72	2426
<b>153</b>	7.10-12.5	2.9528m6	3.12	0.79	7.09	M20	1.65	1.10	6.6929 H7	11.57	13.19	63.16	3303
<b>163</b>	7.10-12.5	3.1496m6	3.35	0.87	7.09	M20	1.65	1.38	7.2835 H7	13.43	14.76	70.20	4521
<b>173</b>	6.30-11.2	3.9370m6	4.17	1.10	8.66	M24	1.97	1.38	8.2677 H7	14.76	17.72	83.03	6301

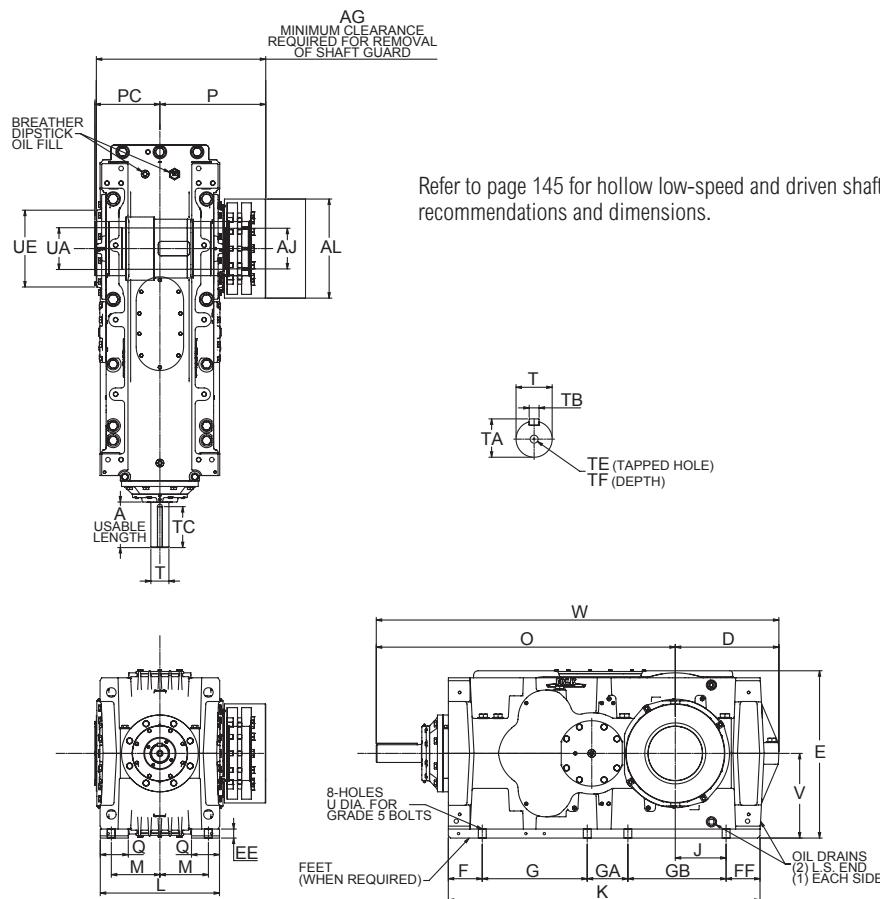
★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* See table 1 on page 59 for tolerance

# Type VRJ2 Double Reduction Hollow Low-Speed Shaft with Shrink Disc

Sizes 145 – 175/Dimensions — Inches



DRIVE SIZE★	Ratios	A	AG	AJ*	AL	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PC	Q
<b>145</b>	7.10-12.5	6.10	31.81	5.9055 J7	15.11	13.91	24.49	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	42.81	15.32	8.50	4.25
<b>155</b>	7.10-12.5	7.09	34.49	6.4961 J7	15.90	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	47.83	16.86	9.72	4.49
<b>165</b>	7.10-12.5	7.68	36.69	7.0866 J7	17.28	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	52.13	18.46	11.34	4.88
<b>175</b>	6.30-11.2	9.45	40.71	7.8740 J7	18.70	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	60.04	20.39	12.48	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	UA*	UE	V	W	Approx. Wt. lb.
		T*	TA	TB	TC	TE	TF						
<b>145</b>	7.10-12.5	2.3622m6	2.51	0.71	5.91	M20	1.65	0.94	6.1024 H7	10.51	12.40	56.72	2426
<b>155</b>	7.10-12.5	2.9528m6	3.12	0.79	7.09	M20	1.65	1.10	6.6929 H7	11.57	13.19	63.16	3303
<b>165</b>	7.10-12.5	3.1496m6	3.35	0.87	7.09	M20	1.65	1.38	7.2835 H7	13.43	14.76	70.20	4521
<b>175</b>	6.30-11.2	3.9370m6	4.17	1.10	8.66	M24	1.97	1.38	8.2677 H7	14.76	17.72	83.03	6301

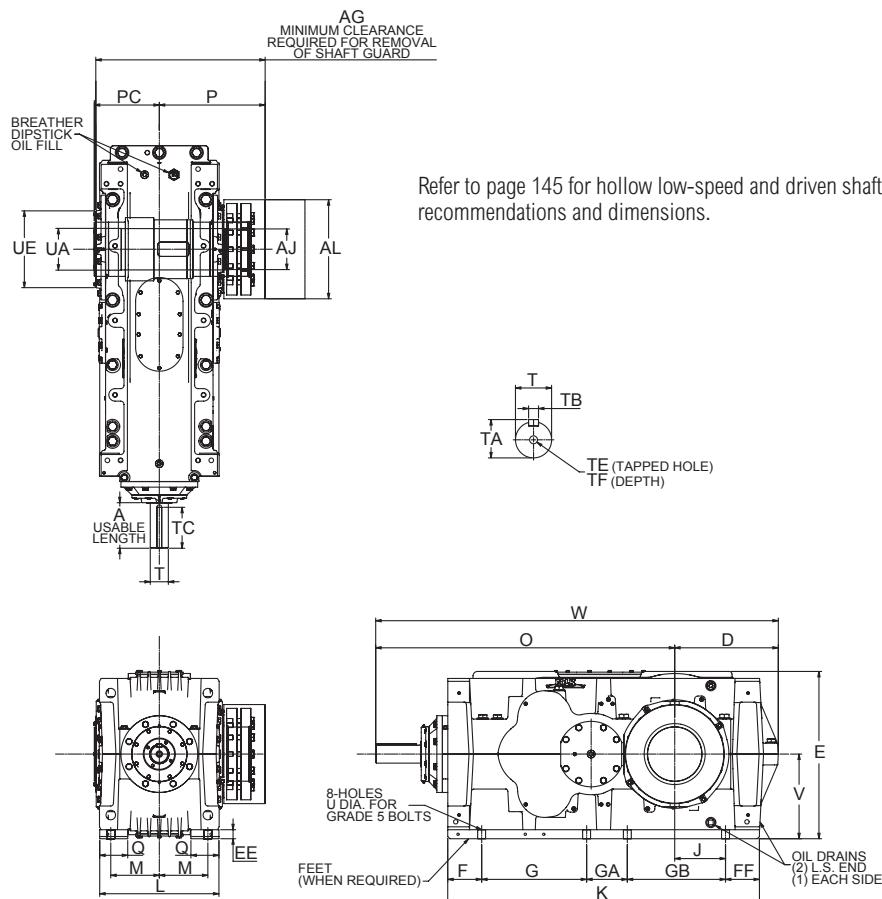
★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* See table 1 on page 59 for tolerance.

# Type VRJ2 Double Reduction Hollow Low-Speed Shaft with Shrink Disc

## Sizes 137 – 187/Dimensions — Inches



DRIVE SIZE★	Ratios	A	AG	AJ*	AL	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PC	Q
<b>137</b>	7.10-12.5	5.91	29.41	5.3150 J7	13.46	13.05	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	40.50	13.68	8.50	4.44
<b>147</b>	7.10-12.5	6.10	31.81	5.9055 J7	15.11	13.91	24.49	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	42.81	15.32	8.50	4.25
<b>157</b>	7.10-12.5	7.09	34.49	6.4961 J7	15.90	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	47.83	16.86	9.72	4.49
<b>167</b>	7.10-12.5	7.68	36.69	7.0866 J7	17.28	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	52.13	18.46	11.34	4.88
<b>177</b>	6.30-11.2	9.45	40.71	7.8740 J7	18.70	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	60.04	20.39	12.48	5.91
<b>187</b>	7.10-12.5	9.45	40.71	7.8740 J7	18.70	22.01	35.08	1.97	6.26	6.69	21.46	7.87	22.05	11.42	64.33	23.15	9.65	61.04	20.39	12.48	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	UA*	UE	V	W	Approx. Wt. lb.
		T*	TA	TB	TC	TE	TF						
<b>137</b>	7.10-12.5	2.3622m6	2.51	0.71	5.91	M20	1.65	0.94	5.5118 H7	9.29	11.02	53.55	1900
<b>147</b>	7.10-12.5	2.3622m6	2.51	0.71	5.91	M20	1.65	0.94	6.1024 H7	10.51	12.40	56.72	2426
<b>157</b>	7.10-12.5	2.9528m6	3.12	0.79	7.09	M20	1.65	1.10	6.6929 H7	11.57	13.19	63.16	3303
<b>167</b>	7.10-12.5	3.1496m6	3.35	0.87	7.09	M20	1.65	1.38	7.2835 H7	13.43	14.76	70.20	4521
<b>177</b>	6.30-11.2	3.9370m6	4.17	1.10	8.66	M24	1.97	1.38	8.2677 H7	14.76	17.72	83.03	6301
<b>187</b>	7.10-12.5	3.9370m6	4.17	1.10	8.66	M24	1.97	1.38	8.2677 H7	14.76	17.72	83.03	6438

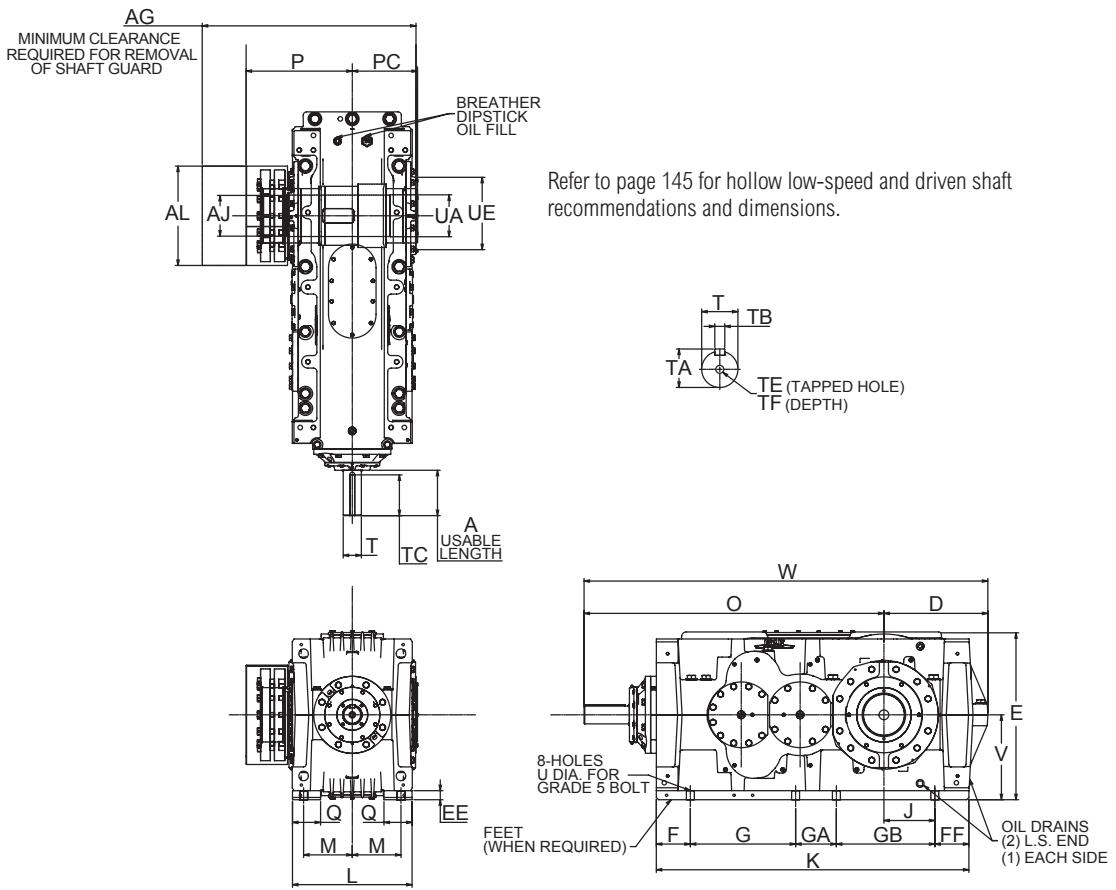
★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* See table 1 on page 59 for tolerance.

# Type VRJ3 Triple Reduction Hollow Low-Speed Shaft with Shrink Disc

## Sizes 133 – 173/Dimensions — Inches



DRIVE SIZE★	Ratios	A	AG	AJ*	AL	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PC	Q
<b>133</b>	14.0-125	5.91	30.04	5.3150 J7	13.46	13.06	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	40.50	13.70	8.50	4.44
<b>143</b>	14.0-125	6.10	31.81	5.9055 J7	15.11	13.91	24.35	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	42.81	15.32	8.94	4.25
<b>153</b>	14.0-125	7.09	34.49	6.4961 J7	15.90	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	47.83	16.86	9.72	4.49
<b>163</b>	14.0-125	7.68	36.69	7.0866 J7	17.28	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	52.13	18.46	11.34	4.88
<b>173</b>	12.5-112	9.45	40.75	7.8740 J7	18.70	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	60.04	20.39	12.48	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	UA*	UE	V	W	Approx. Wt. lb.
		T*	TA	TB	TC	TE	TF						
<b>133</b>	14.0-71.0	2.1654m6	2.32	0.63	5.91	M20	1.42	0.94	5.5118 H7	9.29	11.02	53.55	1898
	80.0-125	1.5748k6	1.69	0.47		M16	1.65						
<b>143</b>	14.0-71.0	2.3622m6	2.51	0.71	5.51	M20	1.65	0.94	6.1024 H7	10.51	12.40	56.72	2438
	80.0-125	1.9685k6	2.10	0.55		M20	1.65						
<b>153</b>	14.0-71.0	2.7559m6	2.93	0.79	7.09	M20	1.65	1.10	6.6929 H7	11.57	13.19	63.16	3372
	80.0-125	2.1654m6	2.32	0.63		M20	1.65						
<b>163</b>	14.0-71.0	3.1496m6	3.34	0.87	7.09	M20	1.65	1.38	7.2835 H7	13.39	14.76	70.20	4403
	80.0-125	2.3622m6	2.51	0.71		M20	1.65						
<b>173</b>	12.5-63.0	4.3307m6	4.56	1.10	8.66	M24	1.97	1.38	8.2677 H7	14.76	17.72	83.03	6419
	71.0-112	2.7559m6	2.93	0.79		M20	1.65						

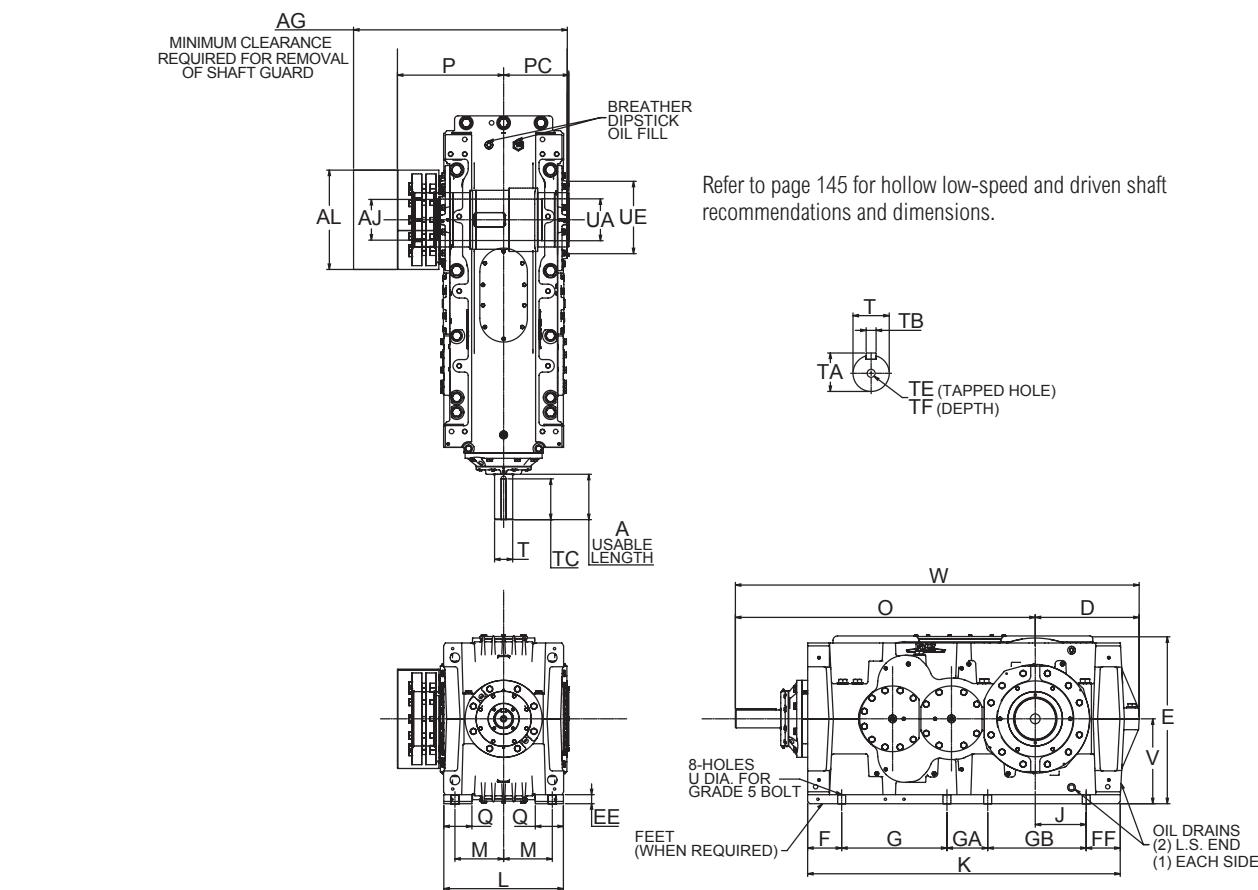
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† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* See table 1 on page 59 for tolerance

# Type VRJ3 Triple Reduction Hollow Low-Speed Shaft with Shrink Disc

## Sizes 145 – 175/Dimensions — Inches



DRIVE SIZE★	Ratios	A	AG	AJ*	AL	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PC	Q
<b>145</b>	14.0-125	6.10	31.81	5.9055J7	15.11	13.91	24.35	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	42.81	15.32	8.94	4.25
<b>155</b>	14.0-125	7.09	34.49	6.4961J7	15.90	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	47.83	16.86	9.72	4.49
<b>165</b>	14.0-125	7.68	36.69	7.0866J7	17.28	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	52.13	18.46	11.34	4.88
<b>175</b>	12.5-112	9.45	40.75	7.8740J7	18.70	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	60.04	20.39	12.48	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	UA*	UE	V	W	Approx. Wt. lb.
		T*	TA	TB	TC	TE	TF						
<b>145</b>	14.0-71.0	2.3622m6	2.51	0.71	5.59	M20	1.65	0.94	6.1024 H7	10.51	12.40	56.72	2438
	80.0-125	1.9685k6	2.10	0.55	5.51								
<b>155</b>	14.0-71.0	2.7559m6	2.93	0.79	7.09	M20	1.65	1.10	6.6929 H7	11.57	13.19	63.16	3372
	80.0-125	2.1654m6	2.32	0.63									
<b>165</b>	14.0-71.0	3.1496m6	3.34	0.87	7.09	M20	1.65	1.38	7.2835 H7	13.39	14.76	70.20	4403
	80.0-125	2.3622m6	2.51	0.71									
<b>175</b>	12.5-63.0	4.3307m6	4.56	1.10	8.66	M24	1.97	1.38	8.2677 H7	14.76	17.72	83.03	6419
	71.0-112	2.7559m6	2.93	0.79		M20	1.65						

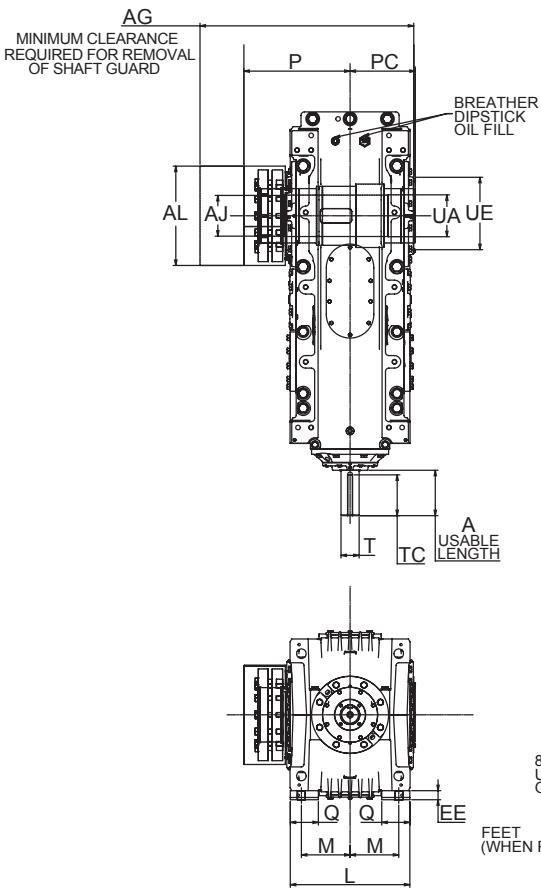
★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

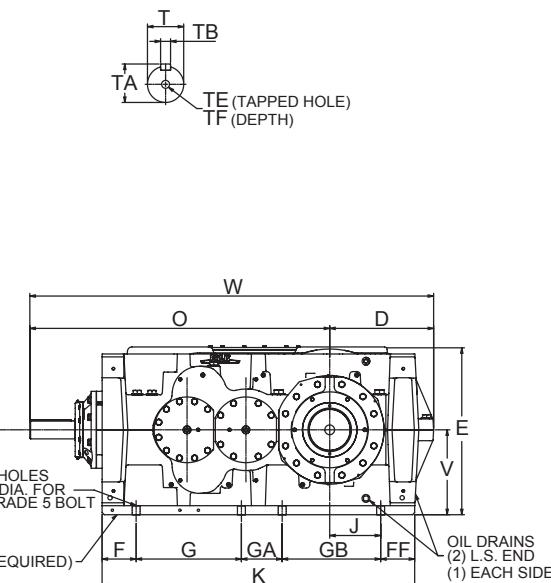
\* See table 1 on page 59 for tolerance

# Type VRJ3 Triple Reduction Hollow Low-Speed Shaft with Shrink Disc

## Sizes 137 – 187/Dimensions — Inches



Refer to page 145 for hollow low-speed and driven shaft recommendations and dimensions.



DRIVE SIZE★	Ratios	A	AG	AJ*	AL	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PC	Q
<b>137</b>	14.0-125	5.91	30.04	5.3150 J7	13.46	13.06	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	40.50	13.70	8.50	4.44
<b>147</b>	14.0-125	6.10	31.81	5.9055 J7	15.11	13.91	24.35	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	42.81	15.32	8.94	4.25
<b>157</b>	14.0-125	7.09	34.49	6.4961 J7	15.90	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	47.83	16.86	9.72	4.49
<b>167</b>	14.0-125	7.68	36.69	7.0866 J7	17.28	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	52.13	18.46	11.34	4.88
<b>177</b>	12.5-112	9.45	40.75	7.8740 J7	18.70	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	60.04	20.39	12.48	5.91
<b>187</b>	14.0-125	9.45	40.75	8.0709 J7	18.70	22.01	35.08	1.97	6.26	6.69	21.46	7.87	22.05	11.42	64.33	23.15	9.65	61.02	20.39	12.48	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	UA*	UE	V	W	Approx. Wt. lb.
		T*	TA	TB	TC	TE	TF						
<b>137</b>	14.0-71.0	2.1654m6	2.32	0.63	5.91	M20	1.42	0.94	5.5118 H7	9.29	11.02	53.55	1898
	80.0-125	1.5748k6	1.69	0.47		M16	1.65						
<b>147</b>	14.0-71.0	2.3622m6	2.51	0.71	5.59	M20	1.65	0.94	6.1024 H7	10.51	12.40	56.72	2438
	80.0-125	1.9685k6	2.10	0.55									
<b>157</b>	14.0-71.0	2.7559m6	2.93	0.79	7.09	M20	1.65	1.10	6.6929 H7	11.57	13.19	63.16	3372
	80.0-125	2.1654m6	2.32	0.63									
<b>167</b>	14.0-71.0	3.1496m6	3.34	0.87	7.09	M20	1.65	1.38	7.2835 H7	13.39	14.76	70.20	4403
	80.0-125	2.3622m6	2.51	0.71									
<b>177</b>	12.5-63.0	4.3307m6	4.56	1.10	8.66	M24	1.97	1.38	8.2677 H7	14.76	17.72	83.03	6419
	71.0-112	2.7559m6	2.93	0.79									
<b>187</b>	14.0-71.0	4.3307m6	4.56	1.10	8.66	M24	1.97	1.38	8.2677 H7	14.76	17.72	83.03	6410
	80.0-125	2.7559m6	2.93	0.79									

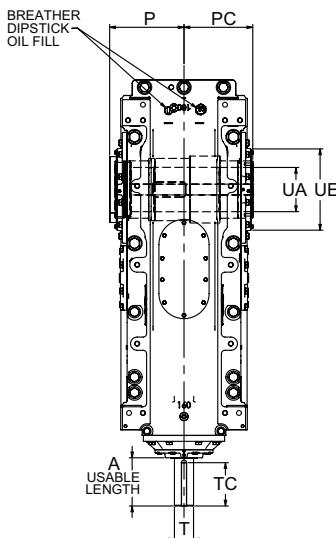
★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

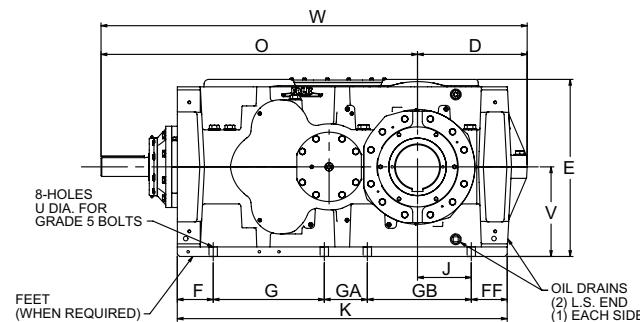
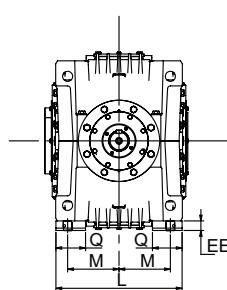
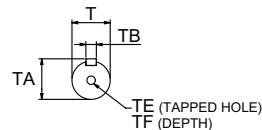
\* See table 1 on page 62 for tolerance.

# Type VRQ2 Double Reduction with Hollow Low-Speed Shaft

## Sizes 133 – 173/Dimensions — Inches



Refer to page 146 for hollow low-speed and driven shaft recommendations and dimensions.



DRIVE SIZE★	Ratios	A	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PC	Q
<b>133</b>	7.10-12.5	5.91	13.05	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	53.55	9.94	9.17	4.44
<b>143</b>	7.10-12.5	6.10	13.91	24.49	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	42.81	9.97	9.33	4.25
<b>153</b>	7.10-12.5	7.09	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	47.83	11.25	10.43	4.49
<b>163</b>	7.10-12.5	7.68	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	52.13	12.25	11.34	4.88
<b>173</b>	6.30-11.2	9.45	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	60.03	13.14	12.48	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	UA*	UE	V	W	Approx. Wt. Ib.
		T*	TA	TB	TC	TE	TF						
<b>133</b>	7.10-12.5	2.3622m6	2.51	0.71	5.91	M20	1.65	0.94	5.3150 H7	9.29	11.02	53.55	1900
<b>143</b>	7.10-12.5	2.3622m6	2.51	0.71	5.91	M20	1.65	0.94	5.9055 H7	10.51	12.40	56.72	2426
<b>153</b>	7.10-12.5	2.9528m6	3.12	0.79	7.09	M20	1.65	1.10	6.6929 H7	11.57	13.19	63.16	3303
<b>163</b>	7.10-12.5	3.1496m6	3.34	0.87	5.91	M20	1.57	1.38	7.2835H7	13.43	14.76	70.20	4423
<b>173</b>	6.30-11.2	3.9370m6	4.17	1.10	8.66	M24	1.97	1.38	8.6614H7	14.76	17.72	83.03	6159

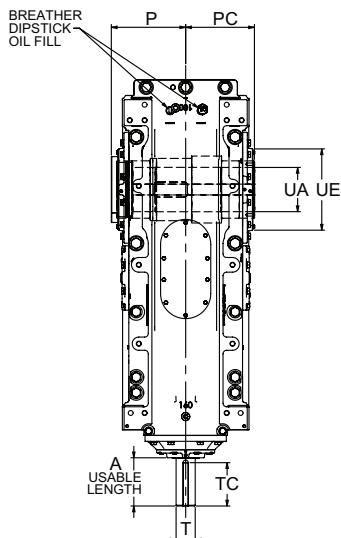
★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

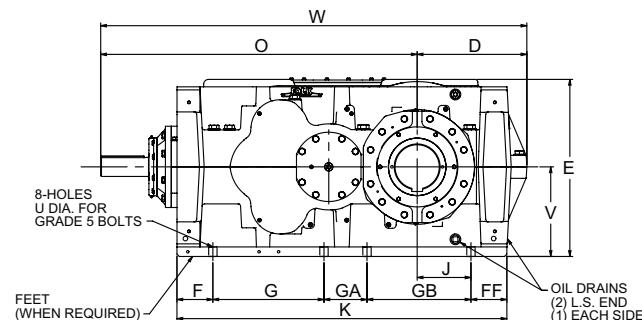
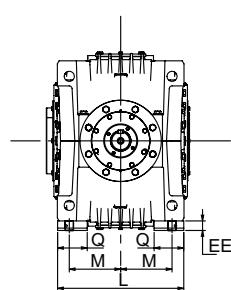
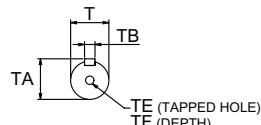
\* See table 1 on page 59 for tolerance

# Type VRQ2 Double Reduction with Hollow Low-Speed Shaft

## Sizes 145 – 175/Dimensions — Inches



Refer to page 146 for hollow low-speed and driven shaft recommendations and dimensions.



DRIVE SIZE★	Ratios	A	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PC	Q
<b>145</b>	7.10-12.5	6.10	13.91	24.49	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	42.81	9.97	9.33	4.25
<b>155</b>	7.10-12.5	7.09	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	47.83	11.25	10.43	4.49
<b>165</b>	7.10-12.5	7.68	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	52.13	12.25	11.34	4.88
<b>175</b>	6.30-11.2	9.45	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	60.03	13.14	12.48	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	UA*	UE	V	W	Approx. Wt. lb.
		T*	TA	TB	TC	TE	TF						
<b>145</b>	7.10-12.5	2.3622m6	2.51	0.71	5.91	M20	1.65	0.94	5.9055 H7	10.51	12.40	56.72	2426
<b>155</b>	7.10-12.5	2.9528m6	3.12	0.79	7.09	M20	1.65	1.10	6.6929 H7	11.57	13.19	63.16	3303
<b>165</b>	7.10-12.5	3.1496m6	3.34	0.87	5.91	M20	1.57	1.38	7.2835H7	13.43	14.76	70.20	4423
<b>175</b>	6.30-11.2	3.9370m6	4.17	1.10	8.66	M24	1.97	1.38	8.6614H7	14.76	17.72	83.03	6159

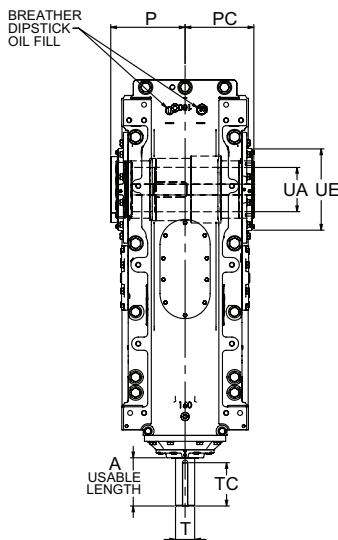
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† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

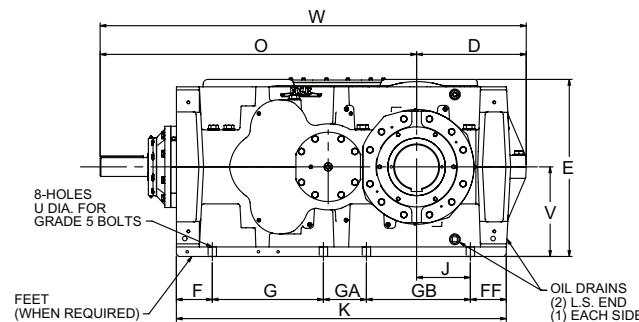
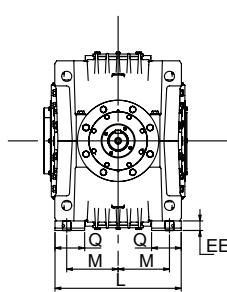
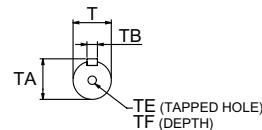
\* See table 1 on page 59 for tolerance.

# Type VRQ2 Double Reduction with Hollow Low-Speed Shaft

## Sizes 137 – 187/Dimensions — Inches



Refer to page 146 for hollow low-speed and driven shaft recommendations and dimensions.



DRIVE SIZE★	Ratios	A	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PC	Q
<b>137</b>	7.10-12.5	5.91	13.05	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	53.55	9.94	9.17	4.44
<b>147</b>	7.10-12.5	6.10	13.91	24.49	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	42.81	9.97	9.33	4.25
<b>157</b>	7.10-12.5	7.09	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	47.83	11.25	10.43	4.49
<b>167</b>	7.10-12.5	7.68	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	52.13	12.25	11.34	4.88
<b>177</b>	6.30-11.2	9.45	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	60.03	13.14	12.48	5.91
<b>187</b>	7.10-12.5	9.45	22.01	35.08	1.97	6.26	6.69	21.46	7.87	22.05	11.42	64.33	23.15	9.65	61.02	13.14	12.48	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	UA*	UE	V	W	Approx. Wt. lb.	
		T*	TA	TB	TC	TE	TF							
<b>137</b>	7.10-12.5	2.3622m6	2.51	0.71	5.91	M20	1.65	0.94	5.3150H7	9.29	11.02	53.55	1900	
<b>147</b>	7.10-12.5	2.3622m6	2.51	0.71	5.91	M20	1.65	0.94	5.9055H7	10.51	12.40	56.72	2426	
<b>157</b>	7.10-12.5	2.9528m6	3.12	0.79	7.09	M20	1.65	1.10	6.6929H7	11.57	13.19	63.16	3303	
<b>167</b>	7.10-12.5	3.1496m6	3.34	0.87	5.91	M20	1.57	1.38	7.2835H7	13.43	14.76	70.20	4423	
<b>177</b>	6.30-11.2	3.9370m6	4.17	1.10	8.66	M24	1.97	1.38	8.6614H7	14.76	17.72	83.03	6159	
<b>187</b>	7.10-12.5	3.9370m6	4.17	1.10	8.66	M24	1.97	1.38	9.6614H7	14.76	17.72	83.03	6305	

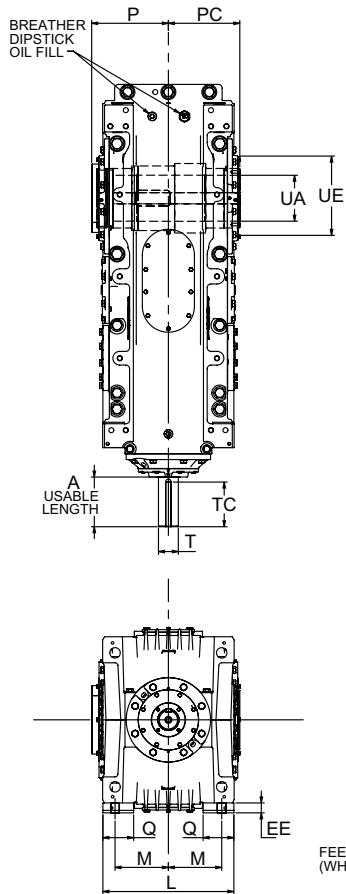
★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

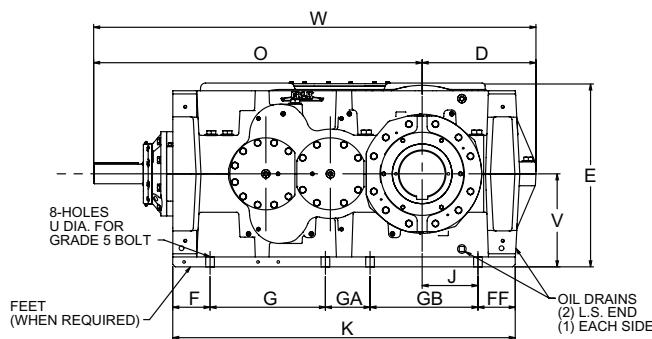
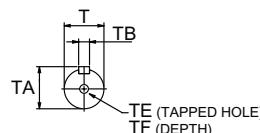
\* See table 1 on page 59 for tolerance

# Type VRQ3 Triple Reduction with Hollow Low-Speed Shaft

Sizes 133 – 173/Dimensions — Inches



Refer to page 146 for hollow low-speed and driven shaft recommendations and dimensions.



DRIVE SIZE★	Ratios	A	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PC	Q
133	14.0-125	5.91	13.06	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	40.50	9.94	9.17	4.44
143	14.0-125	6.10	13.91	24.35	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	42.81	10.05	9.33	4.25
153	14.0-125	7.09	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	47.83	11.25	10.43	4.49
163	14.0-125	7.68	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	52.13	12.25	11.34	4.88
173	12.5-112	9.45	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	60.04	13.14	12.48	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	UA*	UE	V	W	Approx. Wt. Ib.
		T*	TA	TB	TC	TE	TF						
133	14.0-71.0	2.1654m6	2.32	0.63	5.91	M20	1.42	0.94	5.3150 H7	9.29	11.02	53.55	1898
	80.0-125	1.5748k6	1.69	0.47		M16	1.65						
143	14.0-71.0	2.3622m6	2.51	0.71	5.59	M20	1.65	0.94	5.9055 H7	10.51	12.40	56.72	2438
	80.0-125	1.9685k6	2.10	0.55									
153	14.0-71.0	2.7559m6	2.93	0.79	7.09	M20	1.65	1.10	6.6929 H7	11.57	13.19	63.16	3372
	80.0-125	2.1654m6	2.32	0.63									
163	14.0-71.0	3.1496m6	3.34	0.87	7.09	M20	1.65	1.38	7.2834H7	13.43	14.76	70.20	4305
	80.0-125	2.3622m6	2.51	0.71									
173	12.5-63.0	4.3307m6	4.56	1.10	8.66	M24	1.97	1.38	8.6614H7	14.76	17.72	83.03	6277
	71.0-112	2.7559m6	2.93	0.79		M20	1.65						

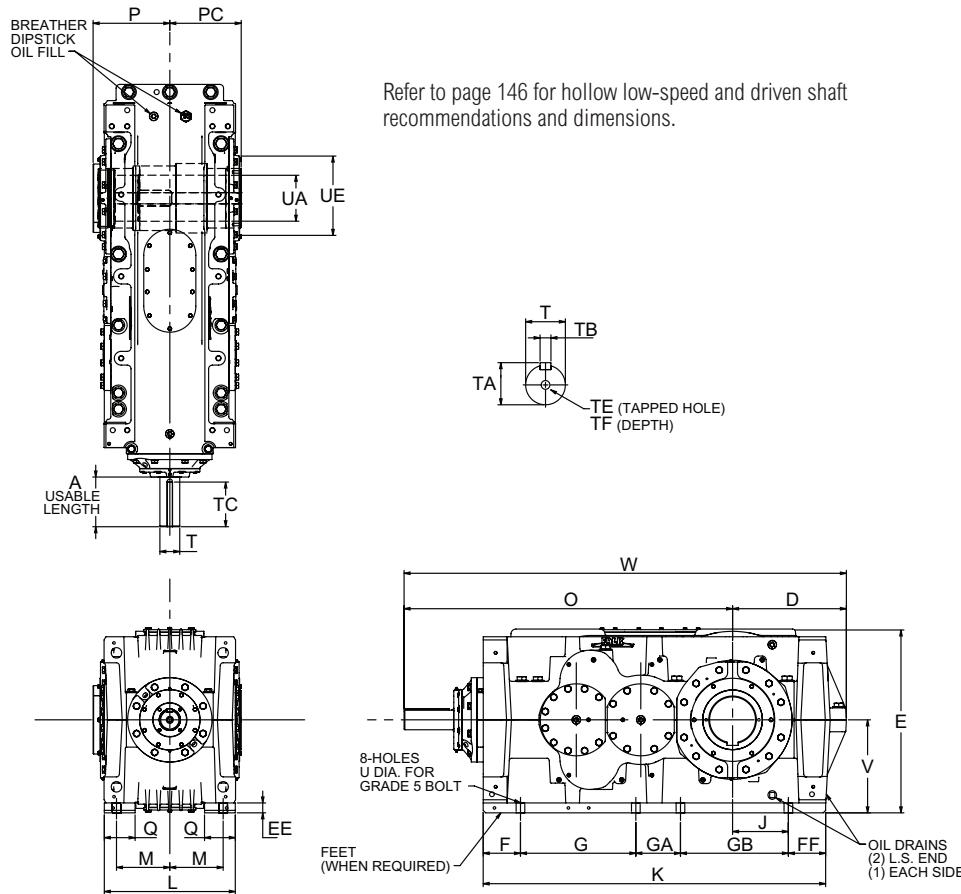
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† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* See table 1 on page 59 for tolerance

# Type VRQ3 Triple Reduction with Hollow Low-Speed Shaft

## Sizes 145 – 175/Dimensions — Inches



DRIVE SIZE★	Ratios	A	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PC	Q
<b>145</b>	14.0-125	6.10	13.91	24.35	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	42.81	10.05	9.33	4.25
<b>155</b>	14.0-125	7.09	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	47.83	11.25	10.43	4.49
<b>165</b>	14.0-125	7.68	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	52.13	12.25	11.34	4.88
<b>175</b>	12.5-112	9.45	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	60.04	13.14	12.48	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	UA*	UE	V	W	Approx. Wt. lb.
		T*	TA	TB	TC	TE	TF						
<b>145</b>	14.0-71.0	2.3622m6	2.51	0.71	5.59	M20	1.65	0.94	5.9055 H7	10.51	12.40	56.72	2438
	80.0-125	1.9685k6	2.10	0.55	5.51								
<b>155</b>	14.0-71.0	2.7559m6	2.93	0.79	7.09	M20	1.65	1.10	6.6929 H7	11.57	13.19	63.16	3372
	80.0-125	2.1654m6	2.32	0.63									
<b>165</b>	14.0-71.0	3.1496m6	3.34	0.87	7.09	M20	1.65	1.38	7.2834H7	13.43	14.76	70.20	4305
	80.0-125	2.3622m6	2.51	0.71									
<b>175</b>	12.5-63.0	4.3307m6	4.56	1.10	8.66	M24	1.97	1.38	8.6614H7	14.76	17.72	83.03	6277
	71.0-112	2.7559m6	2.93	0.79									

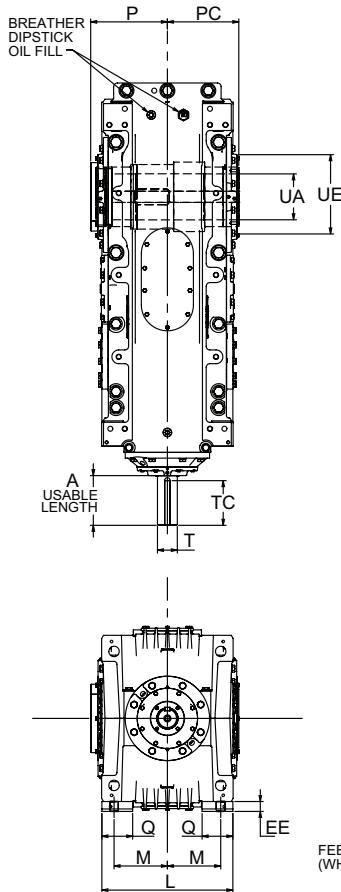
★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

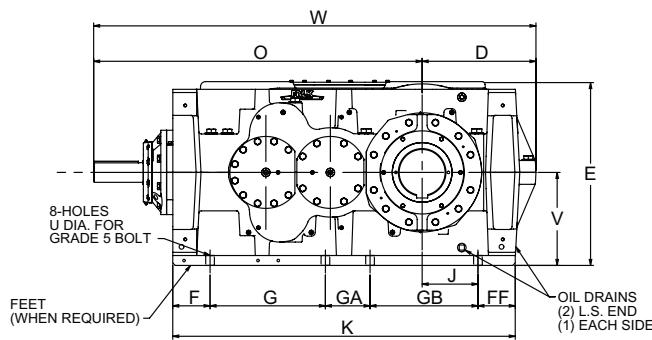
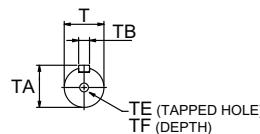
\* See table 1 on page 59 for tolerance.

# Type VRQ3 Triple Reduction with Hollow Low-Speed Shaft

Sizes 137 – 187/Dimensions — Inches



Refer to page 146 for hollow low-speed and driven shaft recommendations and dimensions.



DRIVE SIZE★	Ratios	A	D	E	EE	F	FF	G	GA	GB	J	K	L	M	O	P	PC	Q
137	14.0-125	5.91	13.06	21.73	1.37	4.86	4.62	11.71	6.50	10.93	6.10	38.61	16.61	6.99	40.50	9.94	9.17	4.44
147	14.0-125	6.10	13.91	24.35	1.77	5.47	5.20	13.78	5.91	12.60	6.30	42.95	16.85	7.09	42.81	10.05	9.33	4.25
157	14.0-125	7.09	15.32	26.20	1.57	5.46	5.13	16.14	7.09	14.17	7.68	47.99	19.21	8.27	47.83	11.25	10.43	4.49
167	14.0-125	7.68	18.07	29.33	1.57	5.91	5.91	18.31	7.09	17.13	8.86	54.37	20.79	8.46	52.13	12.25	11.34	4.88
177	12.5-112	9.45	22.99	35.08	1.97	6.26	6.69	21.46	7.87	22.05	12.40	64.33	23.15	9.65	60.04	13.14	12.48	5.91
187	14.0-125	9.45	22.01	35.08	1.97	6.26	6.69	21.46	7.87	22.05	11.42	64.33	23.15	9.65	61.02	13.14	12.48	5.91

DRIVE SIZE★	Ratios	High-Speed Shaft†						U	UA*	UE	V	W	Approx. Wt. lb.		
		T*	TA	TB	TC	TE	TF								
137	14.0-71.0	2.1654m6	2.32	0.63	5.91	M20	1.42	0.94	5.3150 H7	9.29	11.02	53.55	1898		
	80.0-125	1.5748k6	1.69	0.47		M16	1.65								
147	14.0-71.0	2.3622m6	2.51	0.71	5.59	M20	1.65	0.94	5.9055 H7	10.51	12.40	56.72	2438		
	80.0-125	1.9685k6	2.10	0.55		5.51									
157	14.0-71.0	2.7559m6	2.93	0.79	7.09	M20	1.65	1.10	6.6929 H7	11.57	13.19	63.16	3372		
	80.0-125	2.1654m6	2.32	0.63											
167	14.0-71.0	3.1496m6	3.34	0.87	7.09	M20	1.65	1.38	7.2834H7	13.43	14.76	70.20	4305		
	80.0-125	2.3622m6	2.51	0.71											
177	12.5-63.0	4.3307m6	4.56	1.10	8.66	M24	1.97	1.38	8.6614H7	14.76	17.72	83.03	6277		
	71.0-112	2.7559m6	2.93	0.79		M20	1.65								
187	14.0-71.0	4.3307m6	4.56	1.10	8.66	M24	1.97	1.38	8.6614H7	14.76	17.72	83.03	6398		
	80.0-125	2.7559m6	2.93	0.79		M20	1.65								

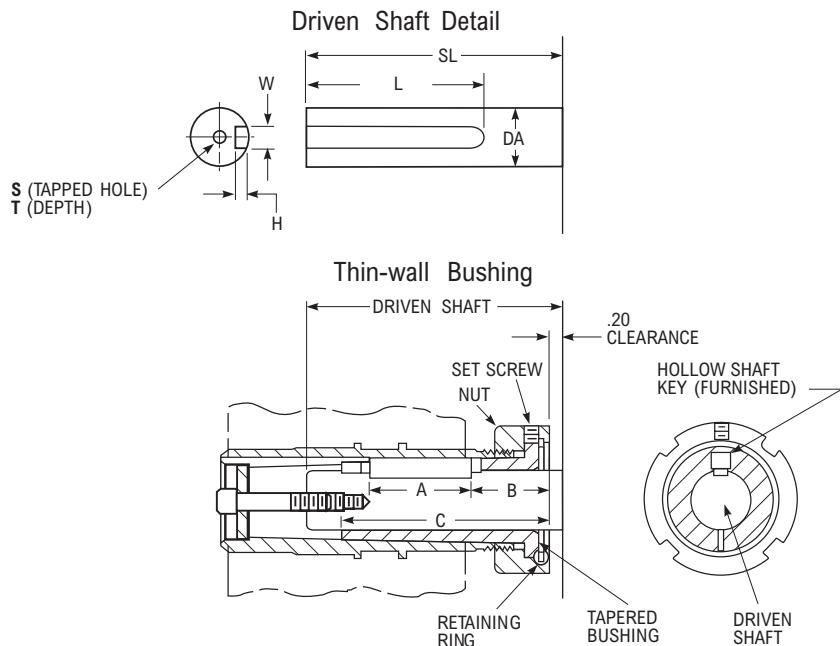
★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, floor-mounted operation unless specifically stated otherwise. Consult the Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Key Sizes per ISO/R773-1969, Form B. Tapped center hole to DIN 332, threads 6H.

\* See table 1 on page 59 for tolerance

# Type VPT & VRT Sizes 133-167

## TA Taper Bushing & Driven Shaft/Dimensions — Inches

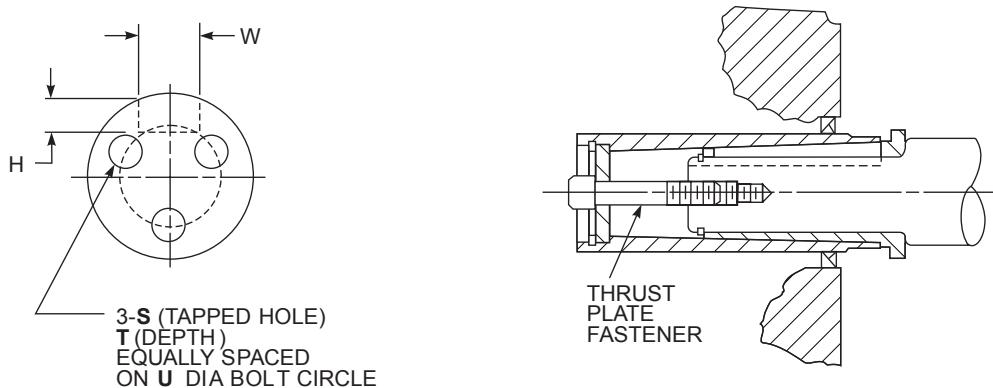
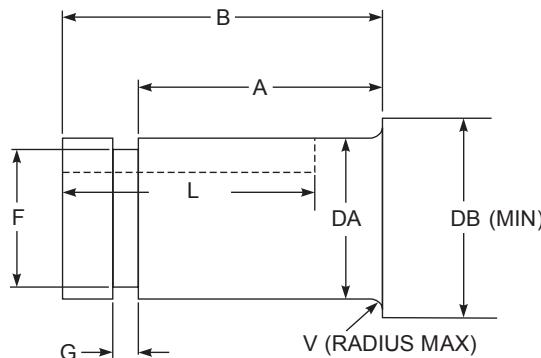


DRIVE SIZE	Bushing			Driven Shaft					S	T	
	Bushing Size	A	B	C	DA	Tolerance	SL Min	W x H •			
133 137	4.438	7.874	2.33	12.83	4.4375	+.000 -.007	17.87	1.000x.500	16.02	1.000-8 UNC	2.00
	4.938				4.9375			1.250x.625			
143 145 147	4.938	9.843	2.33	13.23	4.9375	+.000 -.007	17.17	1.250x.625	15.44	1.125-7 UNC	2.25
	5.438				5.4375			1.250x.625			
	5.938				5.9375			1.500x.750*			
153 155 157	5.938	9.843	2.69	14.69	5.9375	+.000 -.007	19.80	1.500x.750	17.72	1.125-7 UNC	2.25
	6.000				6.0000			1.500x.750			
	6.500				6.5000			1.500x.750			
163 165 167	5.938	11.024	2.59	15.28	5.9375	+.000 -.007	21.61	1.500 x .750	19.76	1.125-7UNC	2.25
	6.000				6.0000			1.500 x .750			
	6.500				6.5000			1.500 x .750			
	6.938				6.9375			1.750 x .750			
	7.000				7.0000			1.750 x .750			

• Check strength of driven shaft.

# Type VPT & VRT Sizes 173-187

Driven Shaft Recommendations Using TA Taper Bushing With Keeper Plate  
Sizes 173-187/Dimensions — Inches



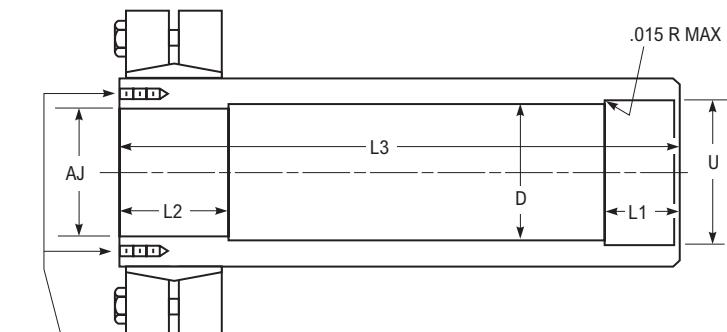
DRIVE SIZE	A	B	DA*	DB	Retaining Ring			Keyway			Shaft End				V	
					Groove		Mfg No.	Max OD	W	H	L (Min)	Figure No.	S	T (Min)	U	
					F	G										
173	15.630	16.805	7.500h10	8.25	7.180	0.209	Smalley WST-750	7.930	1.750	0.750	14.81	2	1.250-7 UNC	2.500	4.750	0.15
175																
177																
187																
173	15.630	16.805	8.000h10	8.75	7.660	0.209	Smalley WST-800	8.410	2.000	0.750	14.81	2	1.250-7 UNC	2.500	4.750	0.15
175																
177																
187																

\* See table 1 on page 59 for tolerance

# Type VPJ & VRJ Sizes 133-187

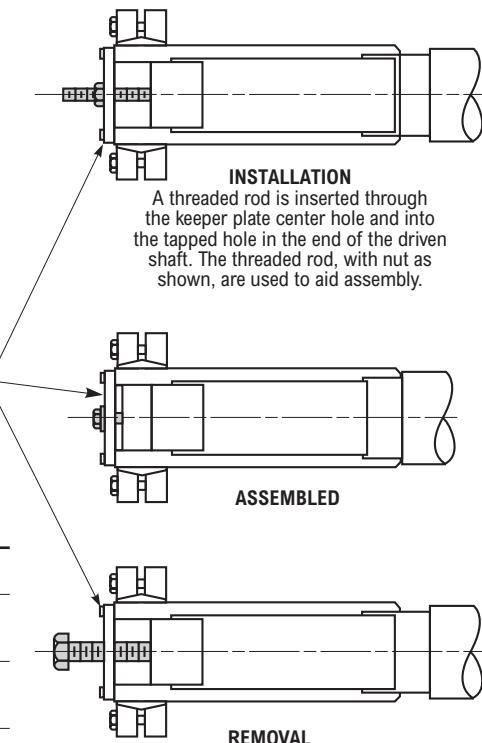
## Hollow Low-Speed Shaft — Shrink Disc Mounted/Dimensions — Inches

The drive package includes the keeper plate and keeper plate retention hardware



Z - QUANTITY  
ZA - DIA. UNC TAPPED HOLES IN HOLLOW SHAFT  
ZB - DEEP  
Y - DIA. BOLT CIRCLE - EQUALLY SPACED HOLES  
FOR KEEPER PLATE RETENTION

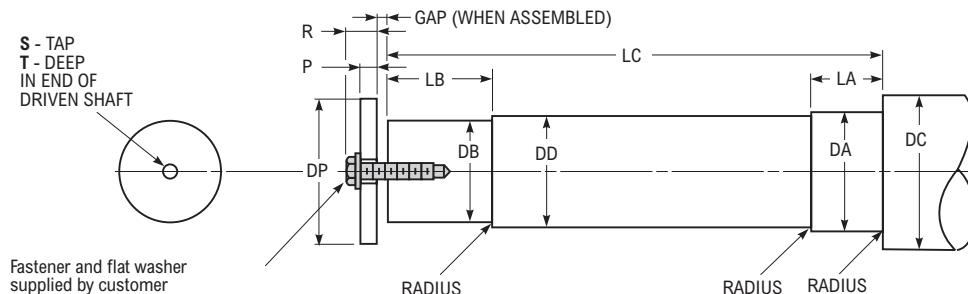
Installation and removal can be assisted through the use of additional hardware items shown shaded (customer-supplied)



## Hollow Low-Speed Shaft Dimensions — Inches

DRIVE SIZE	AJ*	D	L1	L2	L3	U*	Z	ZA	ZB	Y
133	5.3150J7	5.433	3.54	3.543	20.630	5.5118H7	8	M8 X 1.25-6H	0.63	5.83
137										
143	5.9055J7	6.024	3.74	3.740	22.165	6.1031H7	8	M8 x 1.25-6H	0.63	6.575
145										
147										
153	6.4961J7	6.614	4.33	4.134	24.961	6.6937H7	6	M12 x 1.75-6H	1.10	7.52
155										
157										
163	7.0866J7	7.205	4.724	4.134	27.008	7.2835H7	6	M12 x 1.75-6H	1.10	8.268
165										
167										
173	7.8740J7	8.071	5.118	4.724	29.921	8.2677H7	6	M12 x 1.75-6H	0.945	9.055
175										
177										
187	8.0709J7	8.189	5.008	4.724	29.921	8.2677H7	6	M12 x 1.75-6H	0.945	9.055

\* See table 1 on page 59 for tolerance



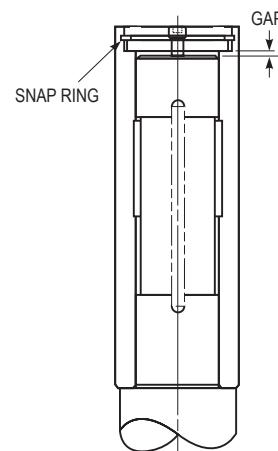
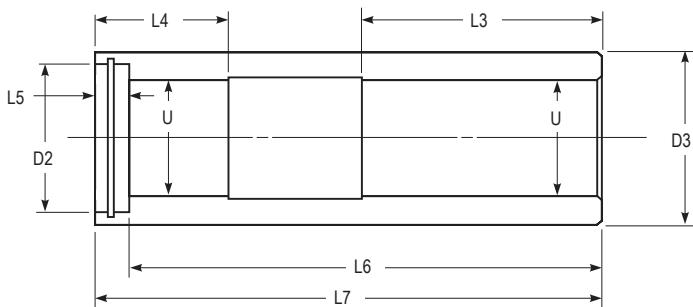
## Driven Shaft Recommended Dimensions — Inches

DRIVE SIZE	DA*	DB*	DC Min	DD	Radius Max	LA	LB	LC	DP	P	R	S	T	Fastener Length	Tapped Hole in Center of Keeper Plate	Gap
133	5.5118h6	5.3150g6	6.10	5.4331c11	0.118	3.307	3.780	20.472	6.46	0.79	1.54	M24 x 3-6H	1.89	2.76	M36 x 4-6H	0.157
137																
143	6.1024h6	5.9055g6	6.69	6.0236c11	0.118	3.504	3.976	22.008	6.85	0.79	1.69	M30 x 3.5-6H	2.36	3.15	M42 x 4.5-6H	0.157
145																
147																
153	6.6929h6	7.2835g6	7.28	6.6142c11	0.118	4.094	4.331	24.803	8.62	0.79	1.89	M36 x 4-6H	2.91	3.54	M48 x 5-6H	0.157
155																
157																
163	7.2835h6	7.0866g6	7.874	7.2047c11	0.118	4.488	4.094	26.850	9.25	0.748	1.85	M36 x 4-6H	2.913	3.54	M48 X 5-6H	0.157
165																
167																
173	8.2677h6	7.8740g6	9.055	8.0709c11	0.118	4.882	4.646	29.764	10.16	0.984	2.09	M36 x 4-6H	2.913	3.94	M48 X 5-6H	0.157
175																
177																
187	8.2677h6	8.0709g6	9.055	8.1890c11	0.118	4.882	4.646	29.764	10.16	0.984	2.09	M36 x 4-6H	2.913	3.94	M48 X 5-6H	0.157

\* See table 1 on page 59 for tolerance

# Type VPQ & VRQ Sizes 133-187

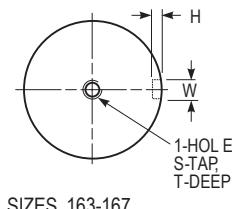
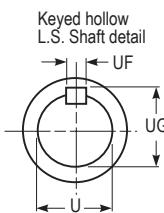
## Hollow Low-Speed Shaft With Keeper Plate/Dimensions — Inches



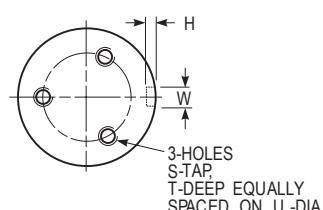
### Hollow Low-Speed Shaft Dimensions — Inches

DRIVE SIZE★	Shaft-Diameters					L3	L4	L5	L6	L7	Gap Between Shaft & Plate
	U*	UF*	UG	D2 +0.009 -0.000	D3						
133, 137	5.315H7	1.417D10	5.654	6.575	7.087	3.543	4.685	2.047	16.181	18.228	0.197
143, 145, 147	5.906H7	1.417D10	6.244	7.283	7.874	3.543	4.803	2.835	15.827	18.661	0.197
153, 155, 157	6.693H7	1.575D10	7.071	8.071	8.661	4.331	6.220	2.677	18.189	20.866	0.197
163, 165, 167	7.283H7	1.772D10	7.693	8.937	9.449	4.724	7.913	2.598	19.961	22.598	0.197
173, 175, 177	8.661H7	1.969D10	9.110	9.449	11.024	5.118	6.969	2.953	21.811	24.764	0.197
187	8.661H7	1.969D10	9.110	9.449	11.024	5.118	6.969	2.953	21.811	24.764	0.197

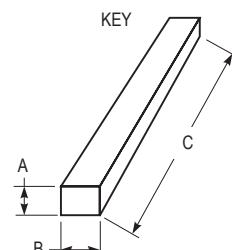
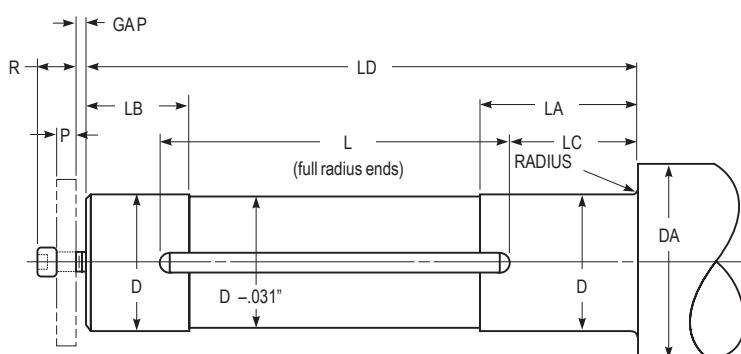
\* See table 1 on page 62 for tolerance



SIZES 163-167



SIZES 173-187



### Driven Shaft Recommended Dimensions — Inches

DRIVE SIZE★	Shaft		Radius Max	LD	LA	LB	LC	P +0.000 -0.005	R	Thrust Plate (Keeper Plate)					Keyway					
	D*	DA Min								Snap Ring • (mm)	S	T	U <sub>1</sub>	Fastener Length	W*	H ■	L	A*	B*	C
133, 137	5.315g6	6.496	0.118	15.984	4.213	2.244	1.772	0.925	1.870	167	M24	1.890	...	2.559	1.417N9	0.472	12.441	1.417	0.787	11.024
143, 145, 147	5.906g6	7.480	0.118	16.630	4.016	1.575	0.984	0.925	2.106	185	M30	2.362	...	2.756	1.417N9	0.472	14.016	1.417	0.787	12.598
153, 155, 157	6.693g6	8.268	0.118	17.992	5.118	3.150	1.181	0.925	2.067	205	M30	2.362	...	2.756	1.575N9	0.512	15.748	1.575	0.866	14.173
163, 165, 167	7.283g6	9.055	0.118	19.803	7.402	4.921	1.496	0.886	2.067	227	M30	2.362	...	2.756	1.772N9	0.591	17.520	1.772	0.866	15.748
173, 175, 177	8.661g6	10.433	0.118	21.614	8.661	3.622	1.575	1.476	2.657	240	M30	2.362	3.346	3.543	1.969N9	0.669	17.717	1.969	0.866	15.748
187	8.661g6	10.433	0.118	21.614	8.661	3.622	1.575	1.476	2.657	240	M30	2.362	3.346	3.543	1.969N9	0.669	17.717	1.969	0.866	15.748

★ Dimensions are for reference only and are subject to change without notice unless certified.

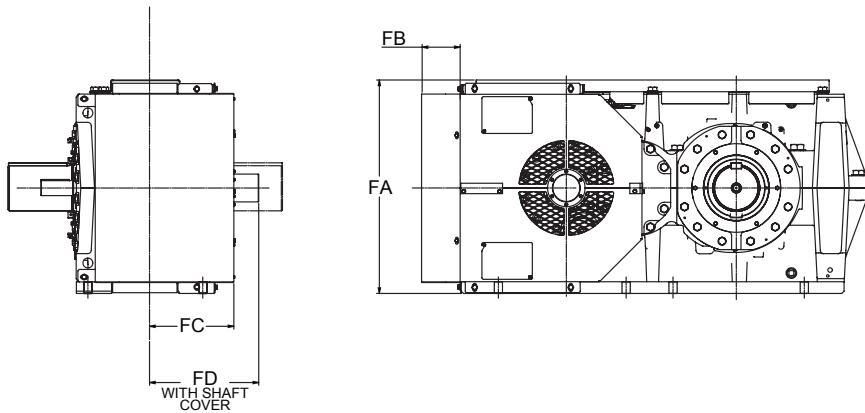
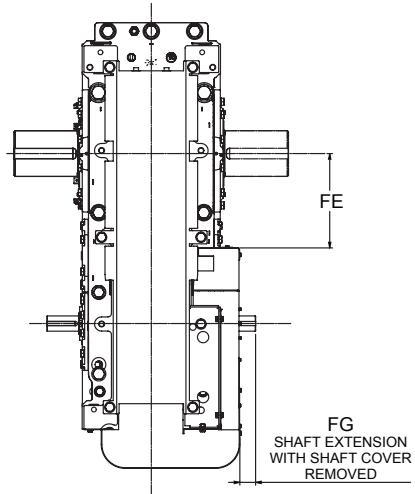
● Rotor clip DHO series or equivalent.

■ Keyway tolerance for 163 thru 187 +0.0012 inch/-0.000 inch.

\* See table 1 on page 59 for tolerance

# Type VP2 & VP3 Sizes 133-187

## Shaft-Driven Fan Clearance/Dimensions — Inches



### VP2 Shaft-Driven Fan Clearance Dimensions — Inches

DRIVE SIZE	RATIOS	FA	FB	FC	FD	FE	FG ‡
133 137	5.60 - 28.0	22.25	6.65	11.04	13.49	8.65	2.17
143 145 147	5.60 - 28.0	24.61	6.63	11.25	14.83	8.76	3.23
153 155 157	5.60 - 28.0	26.38	6.65	12.43	16.00	10.62	3.27
163 165 167	5.60-28.0	29.64	6.54	13.66	17.83	12.87	3.74
173 175 177	5.00-25.0	35.55	6.61	14.84	19.06	14.84	3.74
187	5.60-28.0	35.55	6.61	14.84	19.06	15.83	3.74

‡ Allows 0.12" clearance from shroud.

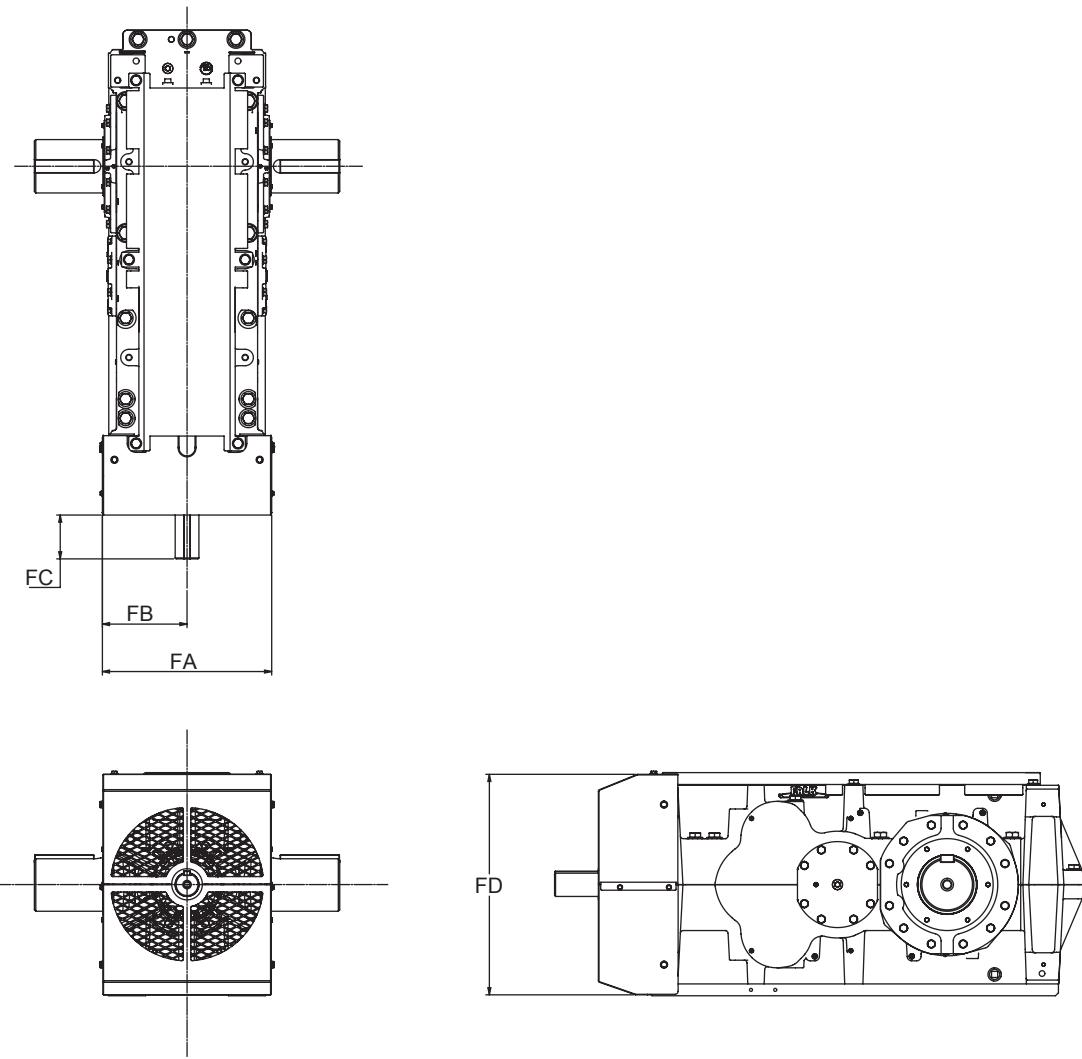
### VP3 Shaft-Driven Fan Clearance Dimensions — Inches

DRIVE SIZE	RATIOS	FA	FB	FC	FD	FE	FG ‡
133 137	31.5-160	22.25	6.65	10.58	13.02	8.65	1.46
143 145 147	31.5-160	24.61	6.65	11.25	14.83	8.65	2.05
153 155 157	31.5-160	26.38	6.65	12.43	16.00	10.62	2.09
163 165 167	31.5-160	29.64	6.54	13.07	15.55	16.02	2.01
173 175 177	28.0-140	35.55	6.61	14.84	19.06	14.84	2.56
187	31.5-160	35.55	6.61	14.84	19.06	15.83	2.56

‡ Allows 0.12" clearance from shroud.

# Type VR2 & VR3 Sizes 133-187

## Shaft-Driven Fan Clearance/Dimensions — Inches



**VR2 Shaft-Driven Fan Clearance Dimensions — Inches**

DRIVE SIZE	Ratios	FA	FB	FC‡	FD
133 137	7.10-12.5	18.19	9.09	4.73	21.93
143 145 147	7.10-12.5	20.28	10.14	4.57	24.70
153 155 157	7.10-12.5	22.67	11.33	4.57	26.27
163 165 167	7.10-12.5	22.32	11.18	5.67	29.29
173 175 177	6.30-11.2	29.21	14.61	6.69	35.20
187	7.10-12.5	29.21	14.61	6.69	35.20

‡ Allows 0.12" clearance from shroud.

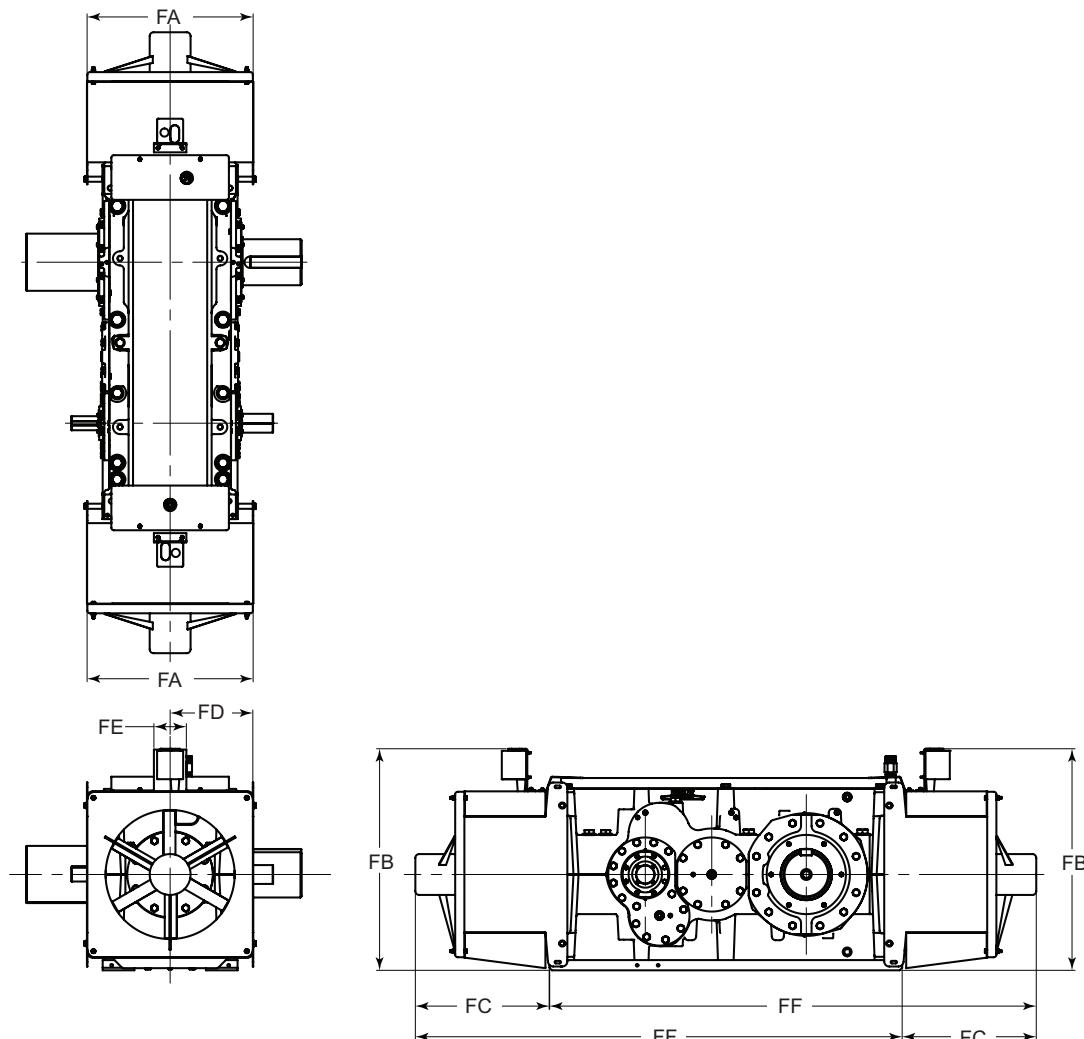
**VR3 Shaft-Driven Fan Clearance Dimensions — Inches**

DRIVE SIZE	Ratios	FA	FB	FC‡	FD
133 137	14.0-125	18.19	9.09	4.73	21.93
143 145 147	14.0-125	20.28	10.14	4.57	24.70
153 155 157	14.0-125	22.67	11.33	4.57	26.27
163 165 167	14.0-125	22.32	11.18	5.67	29.29
173 175 177	12.5-112	29.21	14.61	6.69	35.20
187	14.0-125	29.21	14.61	6.69	35.20

‡ Allows 0.12" clearance from shroud.

# Type VP1, VP2 & VP3 Sizes 133-187

## Electric Fan Clearance/Dimensions — Inches

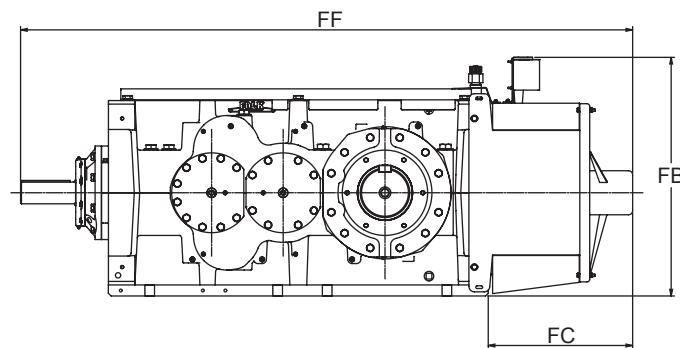
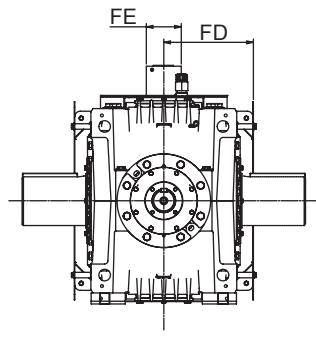
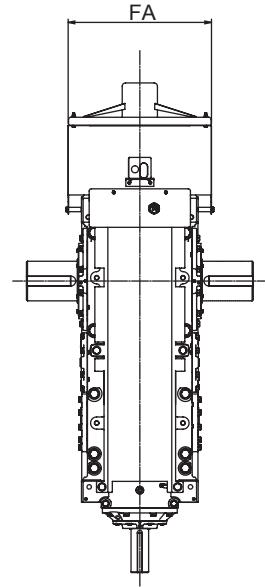


### All Reductions and Ratios — Inches

DRIVE SIZE	FA	FB	FC	FD	FE	FF
133 137	21.50	28.21	18.69	10.75	5.00	57.06
143 145 147	21.50	29.59	19.69	10.75	5.00	62.07
153 155 157	23.46	31.38	21.00	11.73	5.00	68.09
163 165 167	25.63	34.13	20.67	12.83	5.00	75.00
173 175 177	28.58	40.16	24.69	14.29	5.00	88.98
187	28.58	40.16	24.69	14.29	5.00	88.98

# Type VR2 & VR3 All Reductions — Sizes 133-187

Electric Fan Clearance/Dimensions — Inches



## VR2 All Reductions and Ratios — Inches

DRIVE SIZE	FA	FB	FC	FD	FE	FF
<b>133</b> <b>137</b>	21.50	28.21	18.69	10.75	5.00	72.24
<b>143</b> <b>145</b> <b>147</b>	21.50	29.59	19.69	10.75	5.00	76.41
<b>153</b> <b>155</b> <b>157</b>	23.46	31.38	21.00	11.73	5.00	84.16
<b>163</b> <b>165</b> <b>167</b>	25.63	34.13	20.67	12.83	5.00	87.56
<b>173</b> <b>175</b> <b>177</b>	28.58	40.16	24.69	14.29	5.00	103.74
<b>187</b>	28.58	40.16	24.69	14.29	5.00	103.74

## VR3 All Reductions and Ratios — Inches

DRIVE SIZE	FA	FB	FC	FD	FE	FF
<b>133</b> <b>137</b>	21.50	28.21	18.69	10.75	5.00	72.24
<b>143</b> <b>145</b> <b>147</b>	21.50	29.59	19.69	10.75	5.00	76.41
<b>153</b> <b>155</b> <b>157</b>	23.46	31.38	21.00	11.73	5.00	84.16
<b>163</b> <b>165</b> <b>167</b>	25.63	34.13	20.67	12.83	5.00	87.56
<b>173</b> <b>175</b> <b>177</b>	28.58	40.16	24.69	14.29	5.00	103.74
<b>187</b>	28.58	40.16	24.69	14.29	5.00	103.74

# Type VP1

## Pump and Cooler Selections, Oil-to-Air Coolers, Reducer Mounted

Input rpm	Nominal Ratio	REDUCER SIZE						
		133, 137	143, 145, 147	153, 155, 157	163, 165, 167	173, 175, 177	187	
1750	1.25	Cooler Not Available	Cooler Not Available	Cooler Not Available	Cooler Not Available	630PA	630PA	
	1.40					620PA		
	1.60							
	1.80					620PA		
	2.00							
	2.24					620PA		
	2.50							
	2.80					620PA		
	3.15							
	3.55							
1430	4.00	610PA	610PA	610PA	610PA	630PA	630PA	
	4.50					620PA		
	5.00							
	1.25					620PA		
	1.40							
	1.60					620PA		
	1.80							
	2.00					620PA		
	2.24							
	2.50							
1170	2.80	605PA	605PA	610PA	610PA	630PA	630PA	
	3.15					620PA		
	3.55							
	4.00					620PA		
	4.50							
	5.00					610PA		
	1.25							
	1.40							
	1.60							
	1.80							

Minimum mechanical service factor = 1.25

Maximum ambient temperature = 120°F

Maximum altitude = 10,000 ft

For input speeds below 1170 rpm, use 1170 rpm selection

# Type VP2

## Pump and Cooler Selections, Oil-to-Air Coolers, Reducer Mounted

Input rpm	Nominal Ratio	REDUCER SIZE					
		133, 137	143, 145, 147	153, 155, 157	163, 165, 167	173, 173, 177	187
1750	5.00						
	5.60						
	6.30		610PA				
	7.10				620PA	630PA	630PA
	8.00						
	9.00				Cooler Not Available		
	10.0						
	11.2						
	12.5	605PA					
	14.0		605PA				
	16.0						
	18.0						
	20.0						
	22.4						
	25.0						
	28.0	Cooler Not Available					
1430	5.00						
	5.60						
	6.30						
	7.10				620PA		
	8.00						
	9.00						
	10.0	605PA					
	11.2		605PA				
	12.5						
	14.0						
	16.0						
	18.0						
	20.0						
	22.4						
	25.0						
	28.0	Cooler Not Available					
1170	5.00						
	5.60						
	6.30						
	7.10				620PA		
	8.00						
	9.00						
	10.0	605PA					
	11.2		605PA				
	12.5						
	14.0						
	16.0						
	18.0						
	20.0						
	22.4						
	25.0						
	28.0	Cooler Not Available					

Not applicable.

Minimum mechanical service factor = 1.25

Maximum ambient temperature = 120°F

Maximum altitude = 10,000 ft

For input speeds below 1170 rpm, use 1170 rpm selection

# Type VP3

## Pump and Cooler Selections, Oil-to-Air Coolers, Reducer Mounted

Input rpm	Nominal Ratio	REDUCER SIZE					
		133, 137	143, 145, 147	153, 155, 157	163, 165, 167	173, 175, 177	187
1750	28.0						
	31.5						
	35.5						
	40.0	605PA			610PA		
	45.0		605PA			610PA	
	50.0			605PA			610PA
	56.0						
	63.0						
	71.0						
	80.0						
	90.0						
	100						
	112						
	125						
	140						
	160						
1430	28.0						
	31.5						
	35.5						
	40.0		605PA		610PA		
	45.0			605PA		610PA	610PA
	50.0						
	56.0						
	63.0						
	71.0						
	80.0						
	90.0						
	100						
	112						
	125						
	140						
	160						
1170	28.0						
	31.5						
	35.5						
	40.0		605PA		610PA		
	45.0			605PA		610PA	610PA
	50.0						
	56.0						
	63.0						
	71.0						
	80.0						
	90.0						
	100						
	112						
	125						
	140						
	160						

Not applicable.

Minimum mechanical service factor = 1.25

Maximum ambient temperature = 120°F

Maximum altitude = 10,000 ft

For input speeds below 1170 rpm, use 1170 rpm selection

# Type VR2

## Pump and Cooler Selections, Oil-to-Air Coolers, Reducer Mounted

Input rpm	Nominal Ratio	REDUCER SIZE					
		133, 137	143, 145, 147	153, 155, 157	163, 165, 167	173, 175, 177	187
1750	6.30	605PA	605PA	610PA	Cooler Not Available	630PA	630PA
	7.10		610PA				
	8.00						
	9.00		605PA				
	10.0				610PA	630PA	630PA
	11.2						
	12.5						
1430	6.30	605PA	605PA	610PA	Cooler Not Available	630PA	630PA
	7.10						
	8.00					620PA	
	9.00				610PA		620PA
	10.0						
	11.2						
	12.5						
1170	6.30	605PA	605PA	610PA	Cooler Not Available	630PA	630PA
	7.10						
	8.00					620PA	
	9.00				610PA		620PA
	10.0						
	11.2						
	12.5						

Not applicable.

Minimum mechanical service factor = 1.25

Maximum ambient temperature = 120°F

Maximum altitude = 10,000 ft

For input speeds below 1170 rpm, use 1170 rpm selection

# Type VR3

## Pump and Cooler Selections, Oil-to-Air Coolers, Reducer Mounted

Input rpm	Nominal Ratio	REDUCER SIZE					
		133, 137	143, 145, 147	153, 155, 157	163, 165, 167	173, 175, 177	187
1750	12.5						
	14.0						
	16.0						
	18.0						
	20.0						
	22.4						
	25.0						
	28.0						
	31.5						
	35.5						
	40.0	605PA	605PA				
	45.0						
	50.0						
	56.0						
	63.0						
	71.0						
	80.0						
	90.0						
	100						
	112						
	125				Cooler Not Required		
1430	12.5						
	14.0						
	16.0						
	18.0						
	20.0						
	22.4						
	25.0						
	28.0						
	31.5						
	35.5						
	40.0	605PA	605PA				
	45.0						
	50.0						
	56.0						
	63.0						
	71.0						
	80.0						
	90.0						
	100						
	112						
	125				Cooler Not Required		
1170	12.5						
	14.0						
	16.0						
	18.0						
	20.0						
	22.4						
	25.0						
	28.0						
	31.5						
	35.5						
	40.0	605PA	605PA				
	45.0						
	50.0						
	56.0						
	63.0						
	71.0						
	80.0						
	90.0						
	100						
	112						
	125				Cooler Not Required		Cooler Not Required

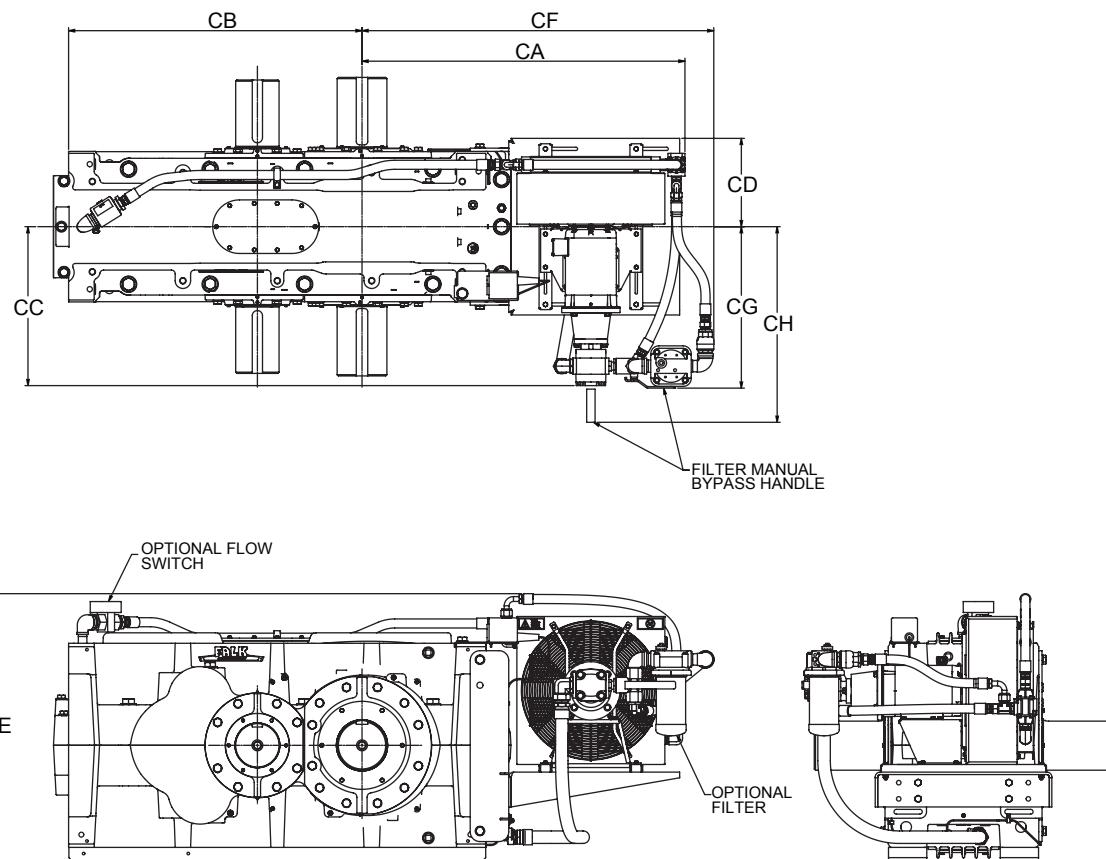
Not applicable.

Minimum mechanical service factor = 1.25  
Maximum ambient temperature = 120°F

Maximum altitude = 10,000 ft  
For input speeds below 1170 rpm, use 1170 rpm selection

# Type VP1, VP2, VP3, VR2 & VR3 600PA Sizes 133-187

Type PA Pump and Cooler Clearance/Dimensions — Inches



DRIVE SIZE	Pump & Cooler	CA	CB	CC	CD	CE	Optional Filter		
							CF	CG	CH
133 137	605PA	36.02	27.95	24.39	12.37	34.19	38.76	---	29.59
	610PA	36.02	27.95	25.31	12.37	36.63	36.76	---	30.52
	620PA	41.02	27.95	22.14	14.20	39.70	45.99	24.33	---
143 145 147	605PA	36.85	31.50	24.39	12.37	33.57	39.58	---	29.59
	610PA	36.85	31.50	25.31	12.37	36.02	37.59	---	30.52
	620PA	41.85	31.50	22.72	13.63	39.08	46.82	24.91	---
	630PA	45.85	31.50	25.48	14.37	45.72	52.65	27.67	---
153 155 157	605PA	38.15	35.24	24.39	12.37	32.31	40.88	---	29.59
	610PA	38.15	35.24	24.11	12.37	34.75	38.89	---	30.51
	620PA	43.15	35.24	22.72	13.63	38.63	48.10	24.91	---
	630PA	47.15	35.24	25.48	14.37	45.27	53.94	27.67	---
163 165 167	610PA	41.83	39.57	24.43	12.38	37.18	41.65	---	30.51
	620PA	45.44	39.57	24.52	13.63	40.25	49.67	24.91	---
	630PA	50.71	39.57	27.41	14.38	46.89	54.94	27.67	---
173 175 177	610PA	46.29	45.28	24.43	12.38	38.07	46.37	---	30.51
	620PA	49.76	45.28	24.52	13.63	41.12	54.28	24.91	---
	630PA	55.10	45.28	27.41	14.38	47.77	59.57	27.67	---
187	610PA	47.28	46.26	24.43	12.38	38.07	47.35	---	30.51
	620PA	48.78	46.26	24.52	13.63	41.12	53.29	24.91	---
	630PA	54.12	46.26	27.41	14.38	47.77	58.59	27.67	---

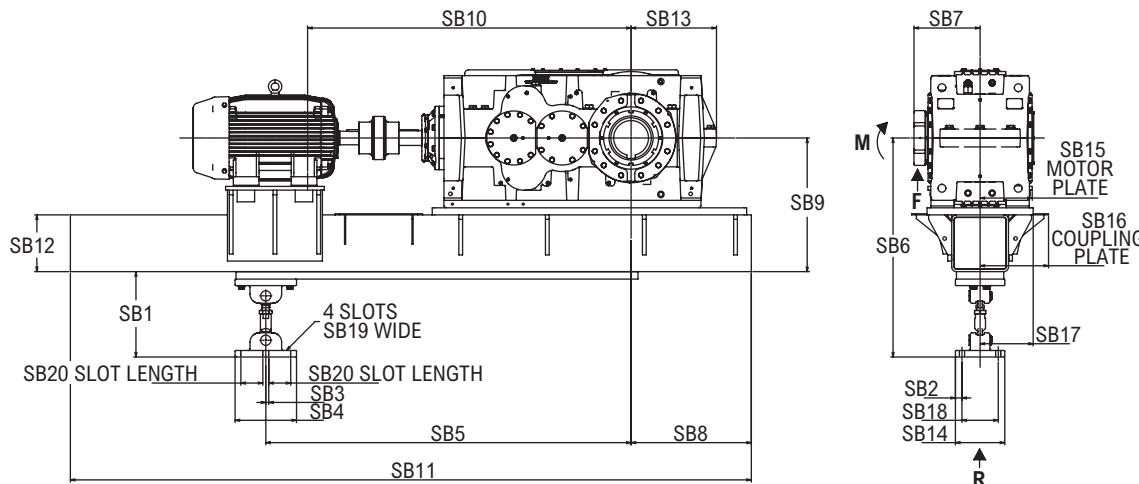
# Type VRT2 & VRT3 Sizes 133-187

## Swing Base and Reaction Loads/Dimensions — Inches

DRIVE DIMENSIONS - REFER TO PAGE 125-130

STANDARD ARRANGEMENTS AVAILABLE TO SUIT:  
 VRT Drives (with TA Bushing)  
 NEMA or IEC Motors to limits shown below  
 Falk Steelflex® (T10), Falk Wrapflex® (R10), or Falk Fluid Couplings

Consult the Factory for non-standard arrangements.



### Dimensions - Inches

DRIVE SIZE	SB1					SB6		SB7	SB8	SB9	SB10	SB11	SB12	SB13	SB14	SB15	SB16	SB17	SB18	SB19	SB20	
	Min	Max	SB2	SB3	SB4	SB5	Min	Max														
133, 137	16.77	17.32	1.38	0.63	12.99	66.97	*	*	11.93	18.50	*	*	*	10.00	13.06	10.43	*	*	9.25	7.68	1.10	4.65
143, 145, 147	16.77	17.32	1.38	0.63	12.99	66.18	40.43	40.98	11.81	15.55	23.66	*	*	10.00	13.91	10.43	*	*	9.25	7.68	1.10	4.65
153, 155, 157	17.60	18.50	1.38	0.63	12.99	64.80	42.05	42.95	12.91	12.99	24.45	*	*	10.00	15.32	10.43	*	*	9.25	7.68	1.10	4.65
163, 165, 167	17.60	18.50	1.38	0.63	12.99	77.24	45.86	46.76	13.98	25.43	28.26	*	*	12.00	18.07	10.43	*	*	11.22	7.68	1.10	4.65
173, 175, 177	18.78	19.40	1.38	0.63	12.99	100.00	49.99	50.61	13.03	18.10	31.21	*	*	12.00	22.99	10.43	*	*	11.22	7.68	1.10	4.65
187	18.78	19.40	1.38	0.63	12.99	101.00	49.99	50.61	13.03	17.13	31.21	*	*	12.00	22.01	10.43	*	*	11.22	7.68	1.10	4.65

\* Consult Factory.

### Loads Generated★/Torque Arm Forces, Shaft Forces & Motor Limits

DRIVE SIZE	Maximum Torque Arm Force †	Maximum Loads at Face of Bushing Nut †		IEC Motors ‡			NEMA Motors ‡	
		Radial Force	Bending Force	Frame	Weight (lb)	Frame	Weight (lb)	Frame
	R (lb)	F (lb)	M (lb-in)	Frame	Weight (lb)	Frame	Weight (lb)	Frame
133, 137	10,500	8,700	95,100	160M-280M	238-1455	254T-449T	250-2300	
143, 145, 147	13,800	11,700	138,300	160L-315L	287-2646	284T-449T	335-2300	
153, 155, 157	19,000	16,000	210,700	180M-315L	364-2646	286T-449T	410-2300	
163, 165, 167	24,200	20,700	288,800	200M-355L	529-4409	324T-449T	565-2300	
173, 175, 177	30,600	21,900	296,000	315S-400L	1830-6614	404T-449T	1100-2300	
187	31,600	25,000	326,100	315S-400L	1830-6614	404T-449T	1100-2300	

★ The loads generated are based on a combination of the most unfavorable conditions of rotation, speed, selection horsepower, motor weight and a 200% start factor.

† Values for R, F and M are the maximum loads at the position shown during start-up. The loads may NOT be acting in the direction of the arrows. Use the worst case loading condition when designing the driven equipment.

‡ Refer to the factory for larger motors or other input speeds.

# Type VRC2 & VRC3 Sizes 133-187

## Swing Base and Reaction Loads/Dimensions — Inches

### DRIVE DIMENSIONS - REFER TO PAGE 119-124

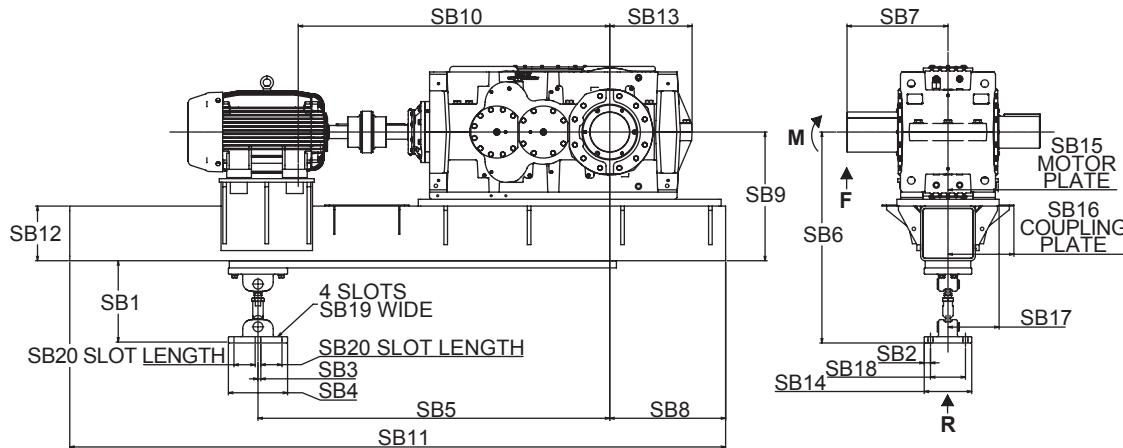
STANDARD ARRANGEMENTS AVAILABLE TO SUIT:

VRC Drives (Solid LS Shaft)

NEMA or IEC Motors to limits shown below

Falk Steelflex (T10), Falk Wrapflex (R10), or Falk Fluid Couplings

Consult the Factory for non-standard arrangements.



#### Dimensions - Inches

DRIVE SIZE	SB1		SB2	SB3	SB4	SB5	SB6		SB7	SB8	SB9	SB10	SB11	SB12	SB13	SB14	SB15	SB16	SB17	SB18	SB19	SB20
	Min	Max					Min	Max														
133, 137	16.77	17.32	1.38	0.63	12.99	66.97	*	*	11.93	18.50	*	*	*	10.00	13.06	10.43	*	*	9.25	7.68	1.10	4.65
143, 145, 147	16.77	17.32	1.38	0.63	12.99	66.18	40.43	40.98	11.81	15.55	23.66	*	*	10.00	13.91	10.43	*	*	9.25	7.68	1.10	4.65
153, 155, 157	17.60	18.50	1.38	0.63	12.99	64.80	42.05	42.95	12.91	12.99	24.45	*	*	10.00	15.32	10.43	*	*	9.25	7.68	1.10	4.65
163, 165, 167	17.60	18.50	1.38	0.63	12.99	77.24	45.86	46.76	20.28	25.43	28.26	*	*	12.00	18.07	10.43	*	*	11.22	7.68	1.10	4.65
173, 175, 177	18.78	19.40	1.38	0.63	12.99	100.00	49.99	50.61	23.03	18.10	31.21	*	*	12.00	22.99	10.43	*	*	11.22	7.68	1.10	4.65
187	18.78	19.40	1.38	0.63	12.99	101.00	49.99	50.61	23.03	17.13	31.21	*	*	12.00	22.01	10.43	*	*	11.22	7.68	1.10	4.65

\* Consult Factory.

#### Loads Generated/Torque Arm Forces, Shaft Forces & Motor Limits

DRIVE SIZE★	Maximum Torque Arm Force †	Maximum Loads at End of Shaft †		IEC Motors ‡		NEMA Motors ‡	
		Radial Force		Bending Force		Frame	
		R (lb)	F (lb)	M (lb-in)		Frame	Weight (kg)
133, 137	10,500		8,900	147,300	160M-280M	238-1455	254T-449T
143, 145, 147	13,800		11,900	201,200	160L-315L	287-2646	284T-449T
153, 155, 157	19,000		16,300	292,500	180M-315L	364-2646	286T-449T
163, 165, 167	24,200		20,900	424,900	200M-355L	529-4409	324T-449T
173, 175, 177	30,600		22,600	519,400	315S-400L	1830-6614	404T-449T
187	31,600		25,300	583,100	315S-400L	1830-6614	404T-449T

★ The loads generated are based on a combination of the most unfavorable conditions of rotation, speed, selection horsepower, motor weight and a 200% start factor.

† Values for R, F and M are the maximum loads at the position shown during start-up. The loads may NOT be acting in the direction of the arrows. Use the worst case loading condition when designing the driven equipment.

‡ Refer to the Factory for larger motors or other input speeds.

# Type VP Double & Triple Reduction Sizes 133-167

## Motor Mounts — Top Mount/Dimensions — Inches

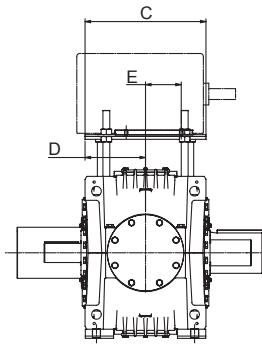


FIGURE 1

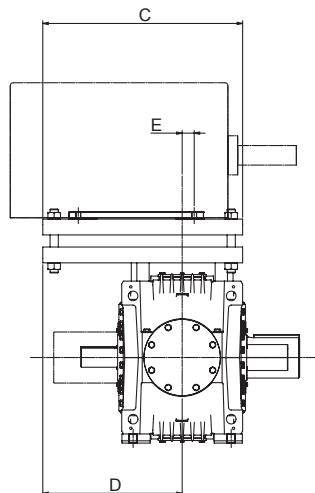
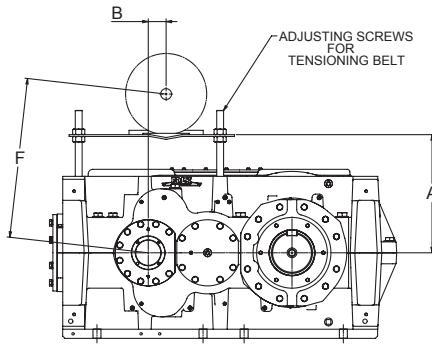
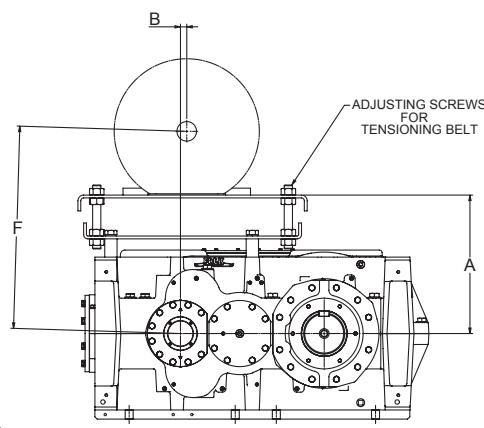


FIGURE 2



DRIVE SIZE★	213T				250T - 320				360T - 440T						
	A		B	C	D	A		B	C	D	A		B	C	D
	Min	Max				Min	Max				Min	Max			
133, 137	16.67	20.17	3.00	21.42	13.03	16.67	20.17	3.00	21.42	13.03	16.22	19.73	2.95	34.59	26.22
143, 145, 147	---	---	---	---	---	17.65	21.15	3.40	21.42	13.19	17.20	20.71	1.37	34.59	26.02
153, 155, 157	---	---	---	---	---	18.63	22.13	6.66	24.42	13.19	18.19	21.69	6.70	34.59	24.92
163, 165, 167	---	---	---	---	---	18.70	22.20	3.07	20.87	10.43	20.94	24.45	1.09	34.49	24.76

DRIVE SIZE★	213T				250T				280T				320T			
	E ‡	F †		Figure No.	E ‡	F †		Figure No.	E ‡	F †		Figure No.	E ‡	F †		Figure No.
		Min	Max			Min	Max			Min	Max			Min	Max	
133, 137	5.26	22.12	25.59	1	4.51	23.11	26.59	1	101.6	23.86	27.33	1	3.51	24.85	28.33	1
143, 145, 147	---	---	---	---	4.65	24.14	27.61	1	105.2	24.88	28.35	1	6.65	25.87	29.35	1
153, 155, 157	---	---	---	---	5.79	25.76	29.15	1	134.1	26.48	29.88	1	4.8	27.45	30.86	1
163, 165, 167	---	---	---	---	6.69	25.16	28.62	1	6.18	25.88	29.36	1	5.67	26.88	30.35	1

DRIVE SIZE★	360T				400T				440T			
	E ‡	F †		Figure No.	E ‡	F †		Figure No.	E ‡	F †		Figure No.
		Min	Max			Min	Max			Min	Max	
133, 137	2.89	25.40	28.88	2	2.13	26.39	29.87	2	1.26	27.38	30.87	2
143, 145, 147	3.02	26.24	29.74	2	2.27	27.24	30.74	2	1.40	28.24	31.74	2
153, 155, 157	4.17	28.00	31.41	2	3.43	28.97	32.39	2	2.52	29.95	33.37	2
163, 165, 167	5.04	29.96	33.47	2	4.30	30.94	34.45	2	3.43	31.93	35.43	2

★ Dimensions are for reference only and are subject to change without notice unless certified.

Due to interferences, Falk cannot offer a drive with both shaft fan and backstop.

Shaft Fan Only - Mount shaft fan on bushing side.

Backstop Only - Mount backstop on bushing side.

Backstop and Fan - Mount backstop on bushing side, use electric fan.

† Minimum center distance does not include belt installation allowance. When determining belt length for minimum shaft centers, follow manufacturer's installation allowance recommendations and also provide for future belt tensioning.

‡ "E" is the distance from the centerline of the housing to the motor front mounting hole.

# Type VRC/VRT Double & Triple Reduction Sizes 133-187

Alignment-Free Drive/Dimensions — Inches

DRIVE DIMENSIONS - REFER TO PAGES 119-124 & 125-130

Refer to Pages 143-144 for standard bushing bores.

STANDARD ARRANGEMENTS AVAILABLE TO SUIT:

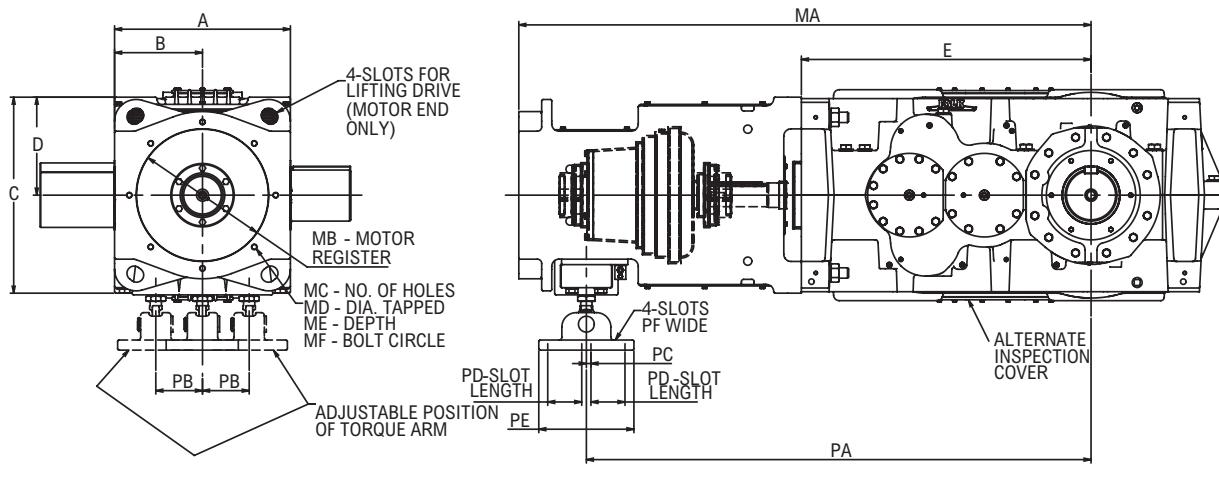
VRC or VRT Drives, nominal ratios 14:1 through 50:1

NEMA TD Flange, NEMA TC C-FACE or IEC B5 Flange Motors as shown below

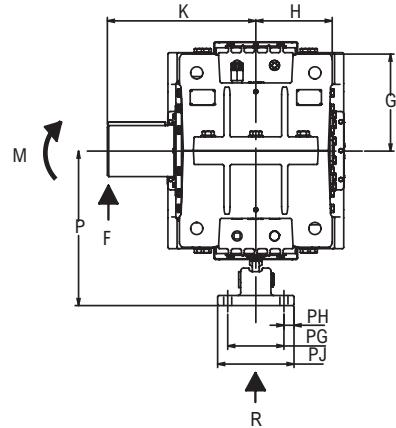
Falk True Torque® Fluid (HFDD-20 or 28) Couplings

Also Falk Lifelign® (G52 Floating Shaft), Steelflex® (T50 Floating Shaft),  
and Thomas® (SN Floating Shaft) couplings

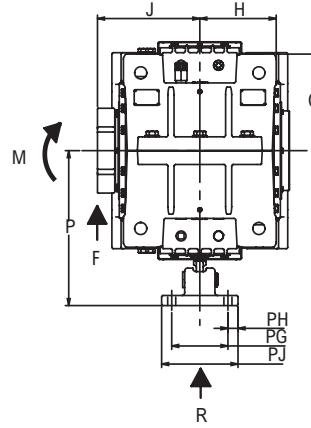
Consult the Factory for non-standard arrangements and  
non-Falk-branded couplings.



SOLID LOW SPEED SHAFT, VRC



HOLLOW LOW SPEED SHAFT, VRT



## Loads Generated/Torque Arm Forces, Low-Speed Shaft Forces

DRIVE SIZE	Max Torque Arm Force R (lb)	Max Loads at Face of Bushing Nut, VRT †		Max Loads at End of Shaft, VRC †		Available Motors to Suit Adapter			
		Radial Force F (lb)	Bending Moment M (in-lb)	Radial Force F (lb)	Bending Moment M (in-lb)	NEMA	IEC	Siemens	Brook & Crompton
133, 137	12,400	8,600	94,000	10,800	179,200	365T - 499T	225M - 315L	---	---
143, 145, 147	17,300	11,400	134,900	14,200	240,500	365T - 499T	225M - 355S	5011, 588	585, 586, 587SDZ
153, 155, 157	24,800	14,400	189,500	14,600	262,000	404T - 449T	250M - 355L	5011, 588, 5809	585, 586, 587SDZ
163, 165, 167	29,400	19,000	267,000	19,400	393,000	404T - 449T	280S - 355L	5011, 588, 5810	585, 586, 587SDZ
173, 175, 177	32,800	22,000	286,000	22,500	519,000	444T - 449T	280M - 355L	5011, 588, 5810	585, 586, 587SDZ
187	34,700	26,000	337,000	26,500	610,000	444T - 449T	280M - 355L	5011, 588, 5810	585, 586, 587SDZ

★ The loads generated are based on a combination of the most unfavorable conditions of rotation, speed, selection horsepower, motor weight, and a 200% start factor.

† Values for R, F, and M are the maximum loads at the position shown during start-up. The loads may NOT be acting in the direction of the arrows. Use the worst case loading condition when designing the driven equipment. Bending Moment is for torque arm located farthest from driven equipment.

# Type VRC/VRT Double & Triple Reduction Sizes 133-187

## Alignment-Free Drive/Dimensions — Inches

### Fluid Coupling

COUPLING SIZE*	DRIVE SIZE★	A	B	C	D	P		PB	PC	PD	PE	PF	PG	PH	PJ
						Min	Max								
1420HFDD	133, 137 143, 145, 147 153, 155, 157 163, 165, 167	24.02	12.01	26.77	13.39	20.67	21.65	6.38	0.63	4.65	12.99	1.10	7.68	1.38	10.43
1480HFDD	133, 137 143, 145, 147 153, 155, 157 163, 165, 167 173, 175, 177 187	26.38	13.19	31.89	15.94	21.57	22.56	7.56	0.63	4.65	12.99	1.10	7.68	1.38	10.43
1584HFDD	143, 145, 147 153, 155, 157 163, 165, 167 173, 175, 177 187	31.10	15.55	31.89	15.94	24.53	25.43	9.02	0.63	4.65	12.99	1.10	7.68	1.38	10.43
1660HFDD	153, 155, 157 163, 165, 167 173, 175, 177 187	35.04	17.52	35.83	17.91	26.50	27.40	10.94	0.63	4.65	12.99	1.10	7.68	1.38	10.43

★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, shaft-mounted operation unless specifically stated otherwise. Consult Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

\* Fluid coupling size selected based on motor power. See Falk selection guide, True Torque fluid couplings, 521-110 for information

DRIVE SIZE★	E	G	H	J	K	Motor Adapter						PA - HS Coupling Size and Type							
						MA	MB	MC	MD	ME	MF	1420HFDD		1480HFDD		1584HFDD		1660HFDD	
												Type 20	Type 28	Type 20	Type 28	Type 20	Type 28	Type 20	Type 28
133, 137	27.95	9.65	8.37	11.93	16.61	‡	†	0.31	†	†	†	57.24	57.48	57.24	57.48	---	---	---	---
143, 145, 147	31.50	10.63	8.46	11.81	16.93	‡	†	0.31	†	†	†	59.57	59.80	61.46	61.57	64.45	64.49	---	---
153, 155, 157	35.24	11.61	9.65	12.91	17.91	‡	†	0.31	†	†	†	64.61	64.84	66.30	66.61	68.23	68.78	72.40	72.40
163, 165, 167	39.57	13.19	10.43	13.98	20.28	‡	†	8	†	†	†	68.94	69.17	70.63	70.94	72.56	73.11	71.38	71.38
173, 175, 177	45.28	15.75	11.61	13.03	23.03	‡	†	8	†	†	†	---	---	78.43	78.74	80.35	80.91	79.17	79.17
187	46.26	15.75	11.61	13.03	23.03	‡	†	8	†	†	†	---	---	79.41	79.72	81.34	81.89	80.16	80.16

★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, shaft-mounted operation unless specifically stated otherwise. Consult Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

† Dimensions vary with motor selections. Certified prints will be provided after receipt or order.

‡ "MA" dimension typically varies from 200% to 250% of "E" dimension.

### VFD Floating Shaft Coupling

DRIVE SIZE★	Motor Frame	A	B	C	D	P		PA	PB	PC	PD	PE	PF	PG	PH	PJ	E	G	H	J	K	Motor Adapter					
						Min	Max															MA	MB	MC	MD	ME	MF
133, 137	ALL	24.02	12.01	26.77	13.39	20.67	21.65	57.24	6.38	0.63	4.65	12.99	1.10	7.68	1.38	10.43	27.95	11.02	8.37	11.93	16.61	‡	†	8	†	†	†
143, 145, 147	◆	24.02	12.01	26.77	13.39	20.67	21.65	59.57	6.38	0.63	4.65	12.99	1.10	7.68	1.38	10.43	31.50	12.40	8.46	11.81	16.93	‡	†	8	†	†	†
	■	31.10	15.55	31.89	15.94	24.53	25.43	63.19	9.02	0.63	4.65	12.99	1.10	7.68	1.38	10.43											
153, 155, 157	◆	24.02	12.01	26.77	13.39	20.67	21.65	64.61	6.38	0.63	4.65	12.99	1.10	7.68	1.38	10.43	35.24	13.19	9.65	13.19	17.91	‡	†	8	†	†	†
	■	31.10	15.55	31.89	15.94	24.53	25.43	68.23	9.02	0.63	4.65	12.99	1.10	7.68	1.38	10.43											
163, 165, 167	◆	24.02	12.01	26.77	13.39	20.67	21.65	68.94	6.38	0.63	4.65	12.99	1.10	7.68	1.38	10.43	39.57	14.76	10.43	13.98	20.28	‡	†	8	†	†	†
	■	31.10	15.55	31.89	15.94	24.53	25.43	72.56	9.02	0.63	4.65	12.99	1.10	7.68	1.38	10.43											
173, 175, 177	ALL	31.10	15.55	31.89	15.94	24.53	25.43	80.35	9.02	0.63	4.65	12.99	1.10	7.68	1.38	10.43	45.28	17.72	11.61	13.03	23.03	‡	†	8	†	†	†
	ALL	31.10	15.55	31.89	15.94	24.53	25.43	81.34	9.02	0.63	4.65	12.99	1.10	7.68	1.38	10.43	46.26	17.72	11.61	13.03	23.03	‡	†	8	†	†	†
187	ALL	31.10	15.55	31.89	15.94	24.53	25.43	81.34	9.02	0.63	4.65	12.99	1.10	7.68	1.38	10.43	46.26	17.72	11.61	13.03	23.03	‡	†	8	†	†	†

★ Drawings are representative of this series of drives and do not agree in exact detail for all sizes. Gear drives are for horizontal, shaft-mounted operation unless specifically stated otherwise. Consult Factory for other mountings. Dimensions are for reference only and are subject to change without notice unless certified.

◆ NEMA 449T (up to and including 300 HP) or IEC 280M and smaller motors.

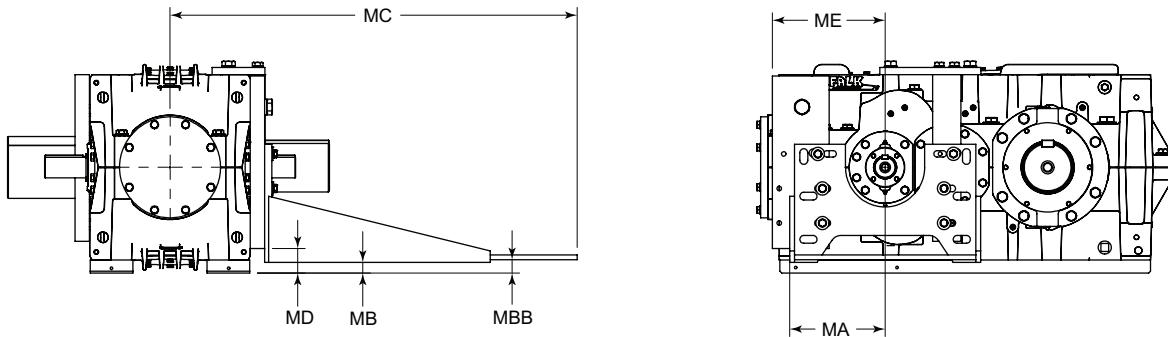
■ NEMA 449T (larger than 300 HP) or IEC 315S and larger motors.

† Dimensions vary with motor selections. Certified prints will be provided after receipt or order.

‡ "MA" dimension typically varies from 200% to 250% of "E" dimension.

# Type VP Double & Triple Reduction Sizes 133-137

## Motor Brackets/Dimensions — Inches



### VP Motor Bracket — Inches

Drive Size*	Motor Frame	High Speed Coupling		MA	MB	MC	MD	ME	MBB
		Wrapflex	Steelflex						
133, 137	160	20R10	1060T10	8.67	3.46	38.27	2.57	11.81	4.20
	180	20R10	1060T10	8.67	3.46	39.06	2.57	11.81	3.52
	200	20R10	1060T10	8.63	3.46	41.85	2.57	11.81	2.52
	225	30R10	1070T10	9.94	1.13	42.40	2.57	11.81	1.40
	254T, 256T	20R10	1060T10	8.67	3.46	35.27	2.57	11.81	4.33
	284T, 286T	20R10	1060T10	8.67	3.46	39.05	2.57	11.81	3.52
	324T, 326T	20R10	1060T10	8.63	3.46	41.85	2.57	11.81	2.52
	364T, 365T	30R10	1070T10	9.94	1.12	42.41	2.57	11.81	1.40

\* Dimensions are for reference only and are subject to change without notice unless certified. Available only for use with base-mounted drives; cannot be used with shaft-mounted drives.

Due to interference, motor brackets cannot be used on the same side of the housing as a backstop or shaft fan.

Shaft fan only - Mount shaft fan opposite bracket side.

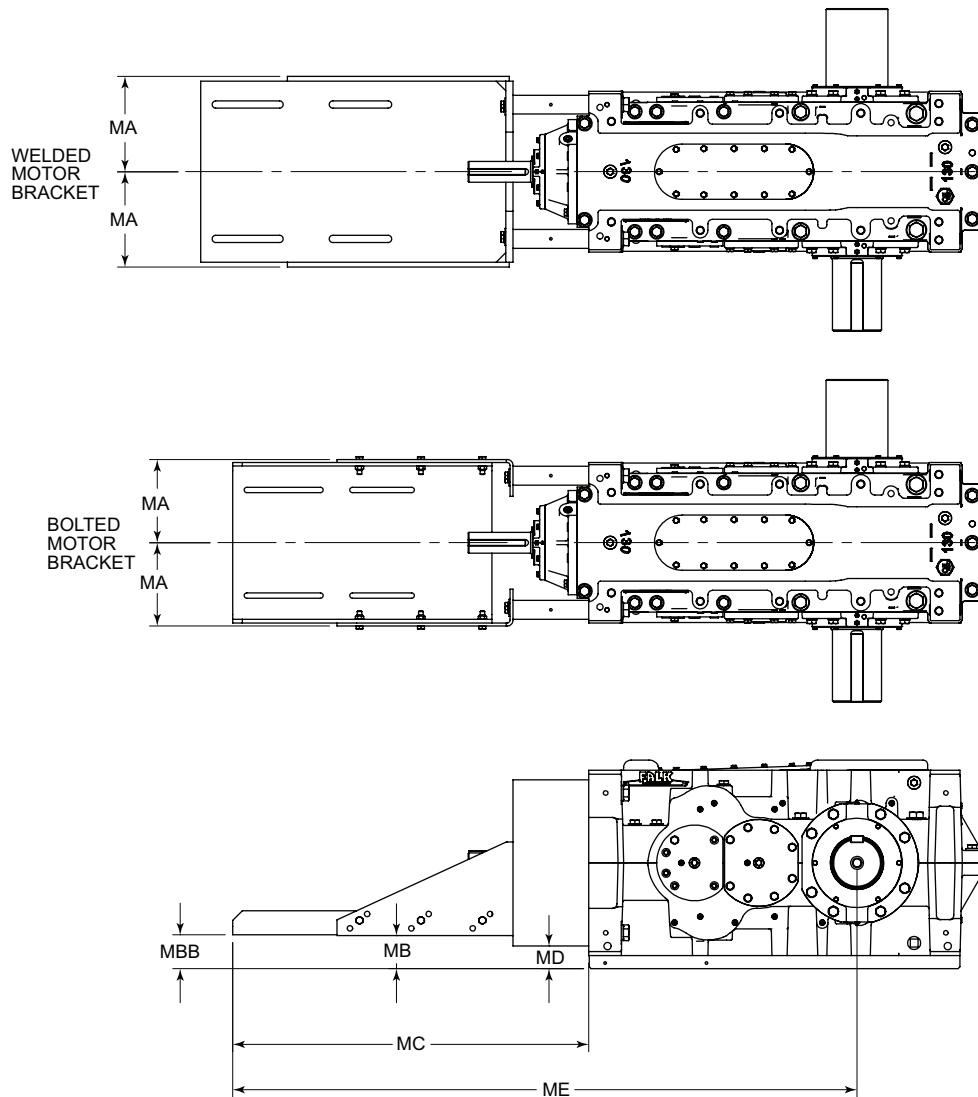
Backstop only - Mount backstop opposite bracket side.

Backstop and fan - Mount backstop opposite bracket side, use electric fan.

Brackets for IEC motors are furnished blank/undrilled.

# Type VR Double & Triple Reduction Sizes 133-137

Motor Brackets/Dimensions — Inches



## VR Motor Bracket — Inches

Drive Size*	Motor Frame	High Speed Coupling		MA	MB	MC	MD	ME	MBB
		Wrapflex	Steelflex						
133, 137	160	20R10	1060T10	8.67	3.46	34.29	2.36	62.24	4.30
	180	20R10	1060T10	8.67	3.46	37.07	2.36	65.04	3.52
	200	20R10	1060T10	8.63	3.46	39.87	2.36	67.83	2.67
	225	30R10	1070T10	9.94	1.12	40.43	2.36	68.39	1.55
	254T, 256T	20R10	1060T10	8.67	3.46	33.27	2.36	61.33	4.33
	284T, 286T	20R10	1060T10	8.67	3.46	37.07	2.36	65.13	3.52
	324T, 326T	20R10	1060T10	8.63	3.46	39.87	2.36	67.93	2.52
	364T, 365T	30R10	1070T10	9.94	1.12	40.39	2.36	68.45	1.40

\* Dimensions are for reference only and are subject to change without notice unless certified. Available only for use with base-mounted drives; cannot be used with shaft-mounted drives.

Due to interference, motor brackets cannot be used on the same side of the housing as a backstop or shaft fan.

Shaft fan only - Mount shaft fan opposite bracket side.

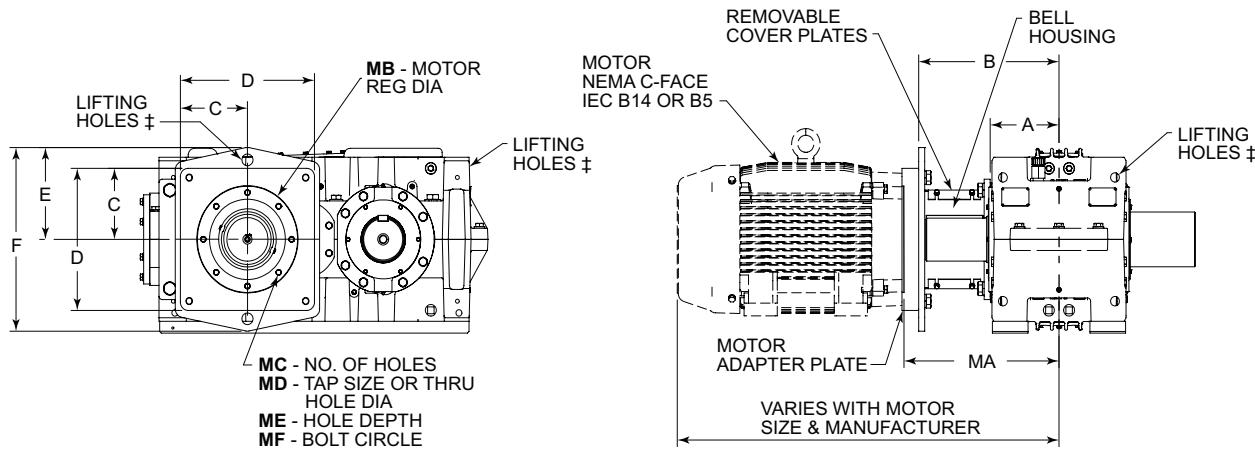
Backstop only - Mount backstop opposite bracket side.

Backstop and fan - Mount backstop opposite bracket side, use electric fan.

Brackets for IEC motors are furnished blank/undrilled.

# Type VP Double & Triple Reduction Sizes 133-137

## C-Face Adapters/Dimensions — Inches



‡ TO LIFT ENTIRE ASSEMBLY-USE TWO HOLES AT LOW SPEED END OF DRIVE  
ONE HOLE AT H.S. END OF DRIVE  
AND ONE HOLE IN BELL HOUSING

DRIVE SIZE ★	Motor Type	Motor Frame	Motor Coupling				DIMENSIONS - INCHES †									
			Drive Reduction & Nominal Ratio													
			VP2		VP3											
			5.60-20.0	22.4-28.0	31.5-112	125-160	A	B	C	D	E	F	MA	MB	MC	MD
133, 137	IEC B5	160	...	...	20R35	8.37	17.50	8.37	16.73	10.83	21.65	18.66	250.0 H7	4	M16 Tap	11.81
		180	...	...	20R35	8.37	17.50	8.37	16.73	10.83	21.65	18.66	250.0 H7	4	M16 Tap	11.81
		200	...	...	30R35	8.37	17.50	8.37	16.73	10.83	21.65	18.66	300.0 H7	4	M16 Tap	13.78
		225	...	40R10	40R10	8.37	17.50	8.37	16.73	10.83	21.65	20.00	350.0 H7	8	M16 Tap	15.75
		250	...	40R10	40R10	8.37	17.50	11.38	22.76	10.83	21.65	19.49	450.0 H7	8	M16 Tap	19.69
	IEC B14	160	...	...	20R35	8.37	17.50	8.37	16.73	10.83	21.65	18.66	180.0 H7	4	0.57 Dia.	8.46
		254/256TC	...	...	20R35	8.37	17.50	8.37	16.73	10.83	21.65	18.23	215.9 H7	4	0.5625	7.25
		284/286TC	...	...	20R35	8.37	17.50	8.37	16.73	10.83	21.65	18.71	266.7 H7	4	0.5625	9.00
		324/326TC	...	...	30R35	8.37	17.50	8.37	16.73	10.83	21.65	19.33	317.5 H7	4	0.6875	11.00
		364/365TC	...	40R10	40R10	8.37	17.50	8.37	16.73	10.83	21.65	19.33	317.5 H7	8	0.6875	11.00
	NEMA	405TC	...	40R10	40R10	8.37	17.50	8.37	16.73	10.83	21.65	20.28	317.5 H7	8	0.6875	11.00

★ Dimensions are for reference only and are subject to change without notice unless certified.

† Due to interference, motor flanges cannot be used on the same side of the housing as a backstop or shaft fan.

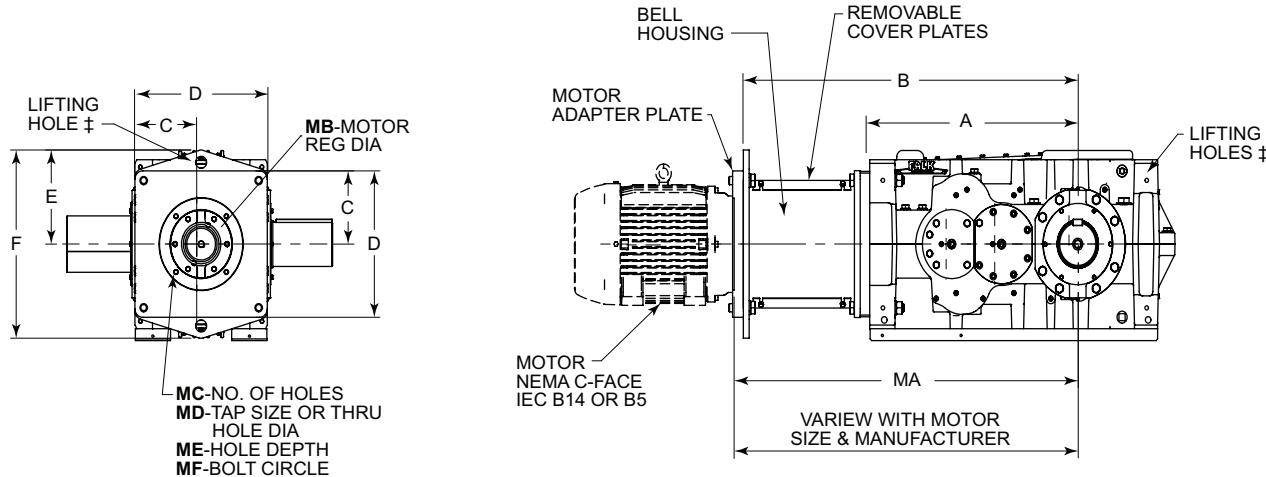
Shaft fan only - Mount shaft fan opposite bracket side.

Backstop only - Mount backstop opposite bracket side.

Backstop and fan - Mount backstop opposite bracket side, use electric fan.

# Type VR Double & Triple Reduction Sizes 133-137

C-Face Adapters/Dimensions — Inches



‡ TO LIFT ENTIRE ASSEMBLY-USE TWO HOLES AT LOW SPEED END OF DRIVE  
AND ONE HOLE IN BELL HOUSING

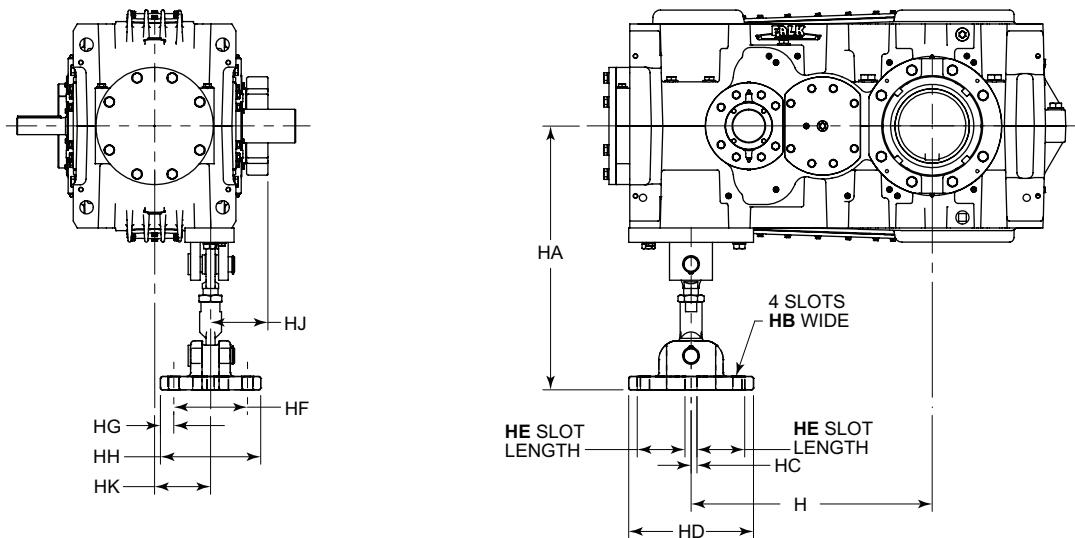
DRIVE SIZE ★	Motor Type	Motor Frame	Motor Coupling				DIMENSIONS - INCHES †									
			Drive Reduction & Nominal Ratio													
			VR2	VR3												
			ALL	14.0-71.0	80.0-125	A	B	C	D	E	F	MA	MB	MC	MD	ME
133, 137	IEC B5	160	20R10	20R10	46.08	1.16	1.26	16.73	11.02	21.57	44.92	250 H7	4	M16 Tap	11.81	
		180	20R10	20R10	46.08	1.16	1.26	16.73	11.02	21.57	44.92	250 H7	4	M16 Tap	11.81	
		200	30R10	30R10	46.08	1.16	1.24	16.73	11.02	21.57	44.92	300 H7	4	M16 Tap	13.78	
		225	30R10	30R10	47.42	2.50	1.42	16.73	11.02	21.57	44.92	350 H7	8	M16 Tap	15.75	
		250	40R10	40R10	46.89	1.97	0.87	16.73	11.02	21.57	44.92	450 H7	8	M16 Tap	19.69	
	IEC B14	160	20R10	20R10	45.87	0.94	1.02	16.73	11.02	21.57	44.92	180 H7	4	14.5 Dia.	8.46	
		254/256TC	20R10	20R10	45.65	0.73	1.39	16.73	11.02	21.57	44.92	8.5 H7	4	0.5625	7.25	
	NEMA	284/286TC	20R10	20R10	46.13	1.21	1.24	16.73	11.02	21.57	44.92	10.5 H7	4	0.5625	9.00	
		324/326TC	30R10	30R10	46.76	1.83	1.24	16.73	11.02	21.57	44.92	12.5 H7	4	0.6875	11.00	
		364/365TC	40R10	40R10	46.76	1.83	0.62	16.73	11.02	21.57	44.92	12.5 H7	8	0.6875	11.00	
		405TC	40R10	40R10	47.70	2.78	0.20	16.73	11.02	21.57	44.92	12.5 H7	8	0.6875	11.00	

★ Dimensions are for reference only and are subject to change without notice unless certified.

† Due to interference, motor flanges cannot be used with a shaft fan. If cooling is required, use electric fan.

# Type VP Double & Triple Reduction Sizes 133-157

Torque Arm/Dimensions — Inches

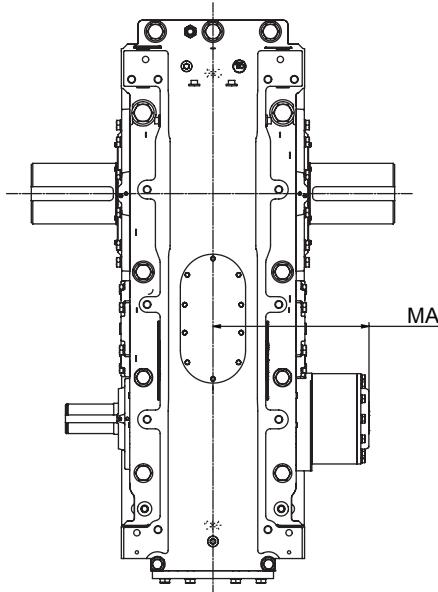


DRIVE SIZE*	H	HA		HB	HC	HD	HE	HF	HG	HH	HJ	HK
		Min	Max									
133, 137	20.55	26.10	26.89	1.10	0.63	12.99	4.65	7.68	1.38	10.43	5.94	5.98
143, 145, 147	25.12	27.09	27.87	1.10	0.63	12.99	4.65	7.68	1.38	10.43	5.98	5.83
153, 155, 157	29.33	28.07	28.86	1.10	0.63	12.99	4.65	7.68	1.38	10.43	6.38	6.81

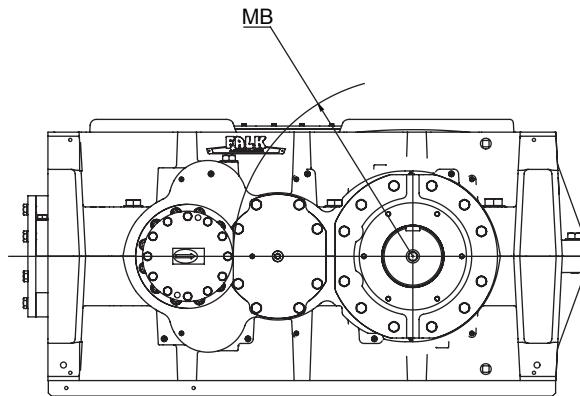
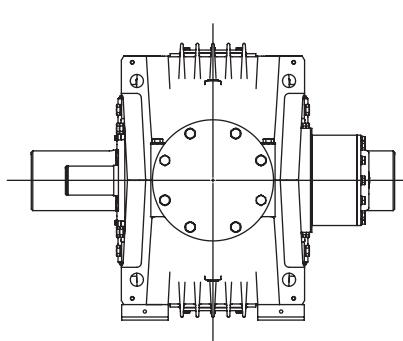
\* Dimensions are for reference only and are subject to change without notice unless certified.

# Type VP2 & VP3 Sizes 133-187

## Backstop Clearance/Dimensions — Inches



**NOTE:** Check for backstop interference with couplings, sprockets, and sheaves.



### VP2 Backstop Clearance Dimensions — Inches

DRIVE SIZE★	Ratios	MA	MB
133, 137	5.60:1 - 20:1	14.13	13.18
	22.4:1 - 28:1	12.05	13.48
143, 145, 147	5.60:1 - 20:1	13.07	14.95
	22.4:1 - 28:1	12.60	15.34
153, 155, 157	5.60:1 - 20:1	16.34	17.90
	22.4:1 - 28:1	13.39	18.30
163, 165 ,167	5.60:1 - 20:1	16.85	19.96
	22.4:1 - 28:1	14.06	20.63
173, 175, 177	5.60:1 - 18:1	19.76	21.81
	20:1 - 25:1	16.54	22.72
187	5.60:1 - 20:1	19.76	22.80
	22.4:1 - 28:1	16.54	23.70

★ Dimensions are for reference only and are subject to change without notice unless certified.

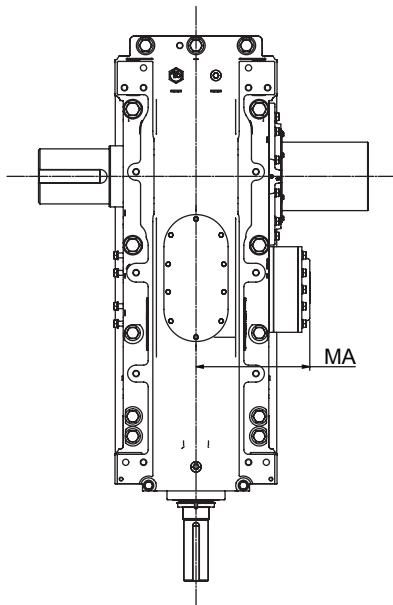
### VP3 Backstop Clearance Dimensions — Inches

DRIVE SIZE★	Ratios	MA	MB
133, 137	31.5:1 - 112:1	10.63	13.97
	125:1 - 160:1	10.41	15.06
143, 145, 147	31.5:1 - 112:1	11.99	15.65
	125:1 - 160:1	11.12	17.03
153, 155, 157	31.5:1 - 112:1	12.70	18.61
	125:1 - 160:1	11.92	19.45
163, 165 ,167	31.5:1 - 112:1	14.33	20.63
	125:1 - 160:1	12.28	22.01
173, 175, 177	28:1 - 100:1	15.24	21.26
	112:1 - 140:1	13.62	24.57
187	31.5:1 - 112:1	15.24	24.37
	125:1 - 160:1	13.62	25.55

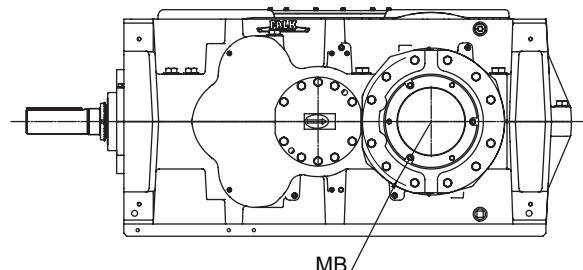
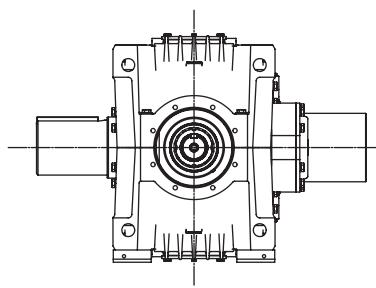
★ Dimensions are for reference only and are subject to change without notice unless certified.

# Type VR2 Sizes 133-187

## Backstop Clearance/Dimensions — Inches



NOTE: Check for backstop interference with couplings, sprockets, and sheaves.



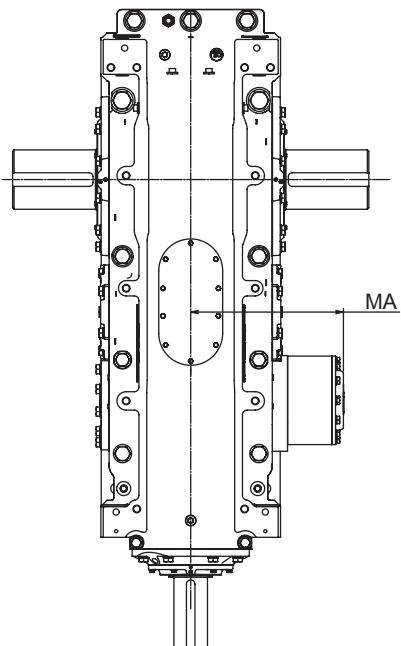
## VR2 Backstop Clearance Dimensions — Inches

DRIVE SIZE★	Ratios	MA	MB
133, 137	ALL	13.23	5.39
143, 145, 147	ALL	15.47	7.28
153, 155, 157	ALL	14.96	7.48
163, 165, 167	ALL	14.65	9.06
173, 175, 177	ALL	19.41	10.39
187	ALL	19.41	11.38

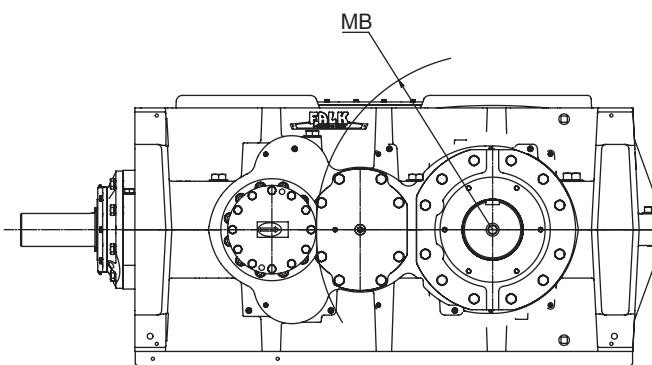
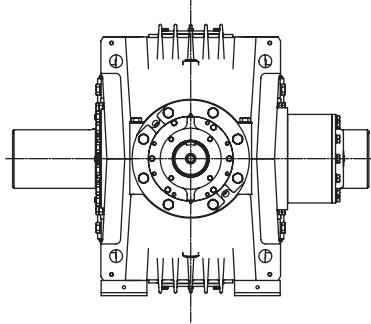
★ Dimensions are for reference only and are subject to change without notice unless certified.

# Type VR3 Sizes 133-187

## Backstop Clearance/Dimensions — Inches



**NOTE:** Check for backstop interference with couplings, sprockets, and sheaves.



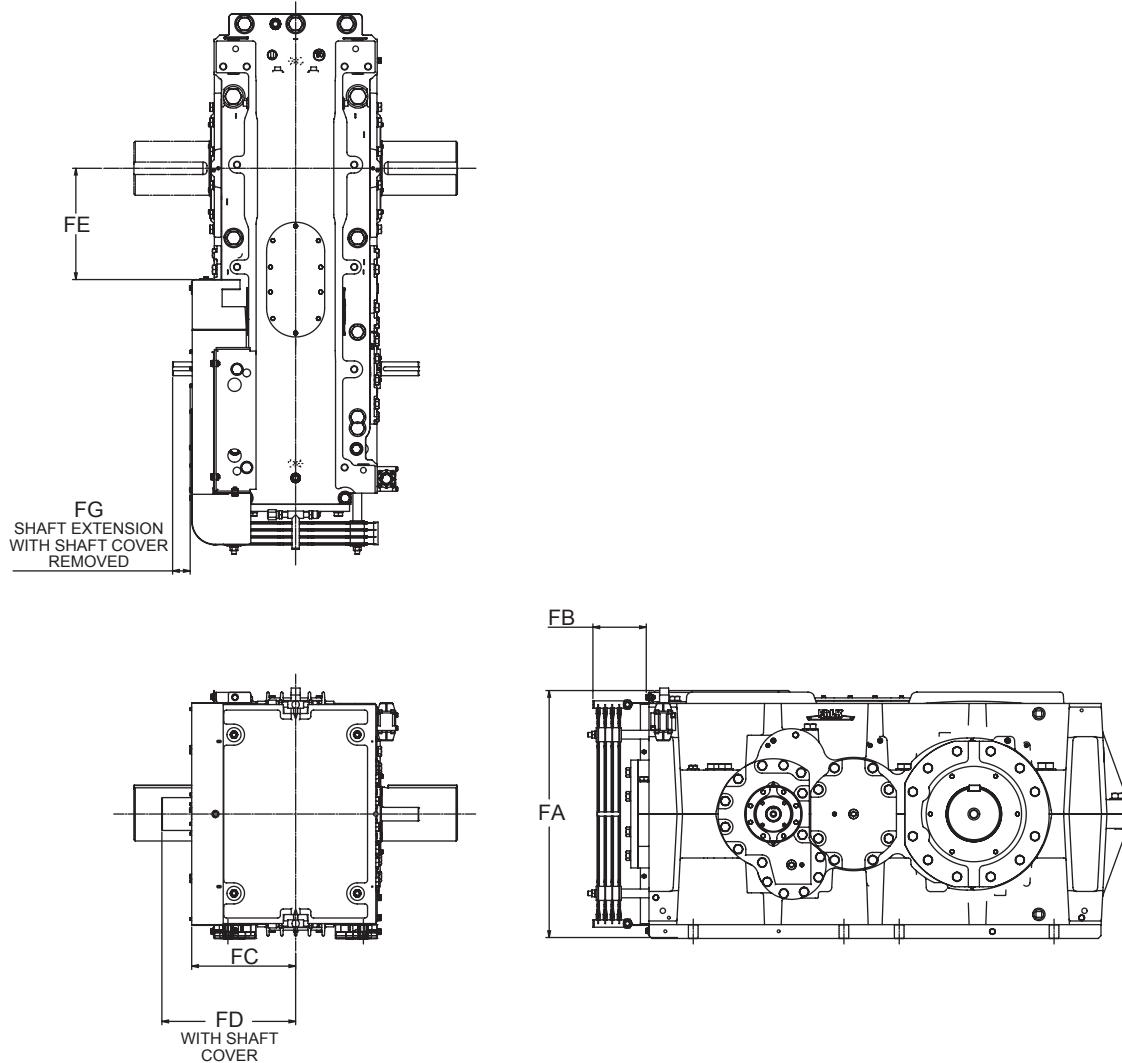
### VR3 Backstop Clearance Dimensions — Inches

DRIVE SIZE★	Ratios	MA	MB
133, 137	14.0:1-50.0:1 & 80.0:1-90.0:1	14.13	13.18
	56.0:1-71.0:1 & 100:1-125:1	12.05	13.48
143, 145, 147	14.0:1-50.0:1 & 80.0:1-90.0:1	13.07	14.95
	56.0:1-71.0:1 & 100:1-125:1	12.60	15.34
153, 155, 157	14.0:1-50.0:1 & 80.0:1-90.0:1	16.34	17.90
	56.0:1-71.0:1 & 100:1-125:1	13.39	18.30
163, 165, 167	14.0:1-50.0:1 & 80.0:1-90.0:1	16.85	19.96
	56.0:1-71.0:1 & 100:1-125:1	14.06	20.63
173, 175, 177	12.5:1-45.0:1 & 71.0:1-80.0:1	19.76	21.81
	50.0:1-63.0:1 & 90.0:1-112:1	16.54	22.72
187	14.0:1-50.0:1 & 80.0:1-90.0:1	19.76	22.80
	56.0:1-71.0:1 & 100:1-125:1	16.54	23.70

★ Dimensions are for reference only and are subject to change without notice unless certified.

# Type VP2 & VP3 Sizes 133-187

DuraPlate/Dimensions — Inches



## VP2 DuraPlate Clearance Dimensions — Inches

DRIVE SIZE	RATIOS	FA	FB	FC	FD	FE	FG‡
133, 137	ALL	24.61	7.09	10.91	13.50	8.46	2.17
143, 145, 147	ALL	27.64	7.09	11.10	14.84	8.46	3.23
153, 155, 157	ALL	28.58	7.09	12.28	16.02	10.43	3.27
163, 165, 167	ALL	31.85	6.73	13.62	17.83	12.48	3.74
173, 175, 177	ALL	37.56	7.56	14.72	19.06	15.43	3.86
187	ALL	37.56	7.56	14.72	19.06	16.42	3.86

‡ Allows 0.12" clearance from shroud.

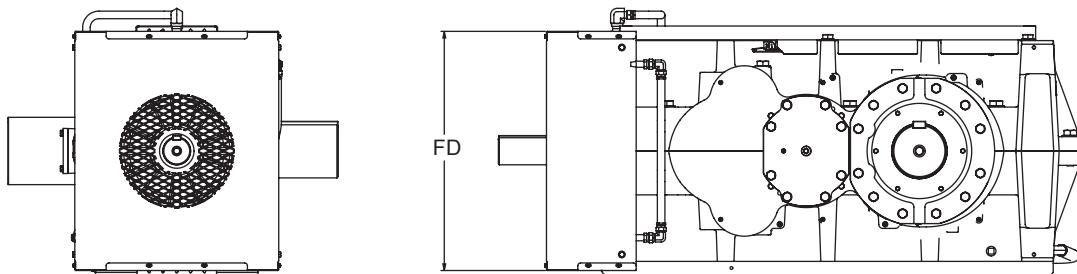
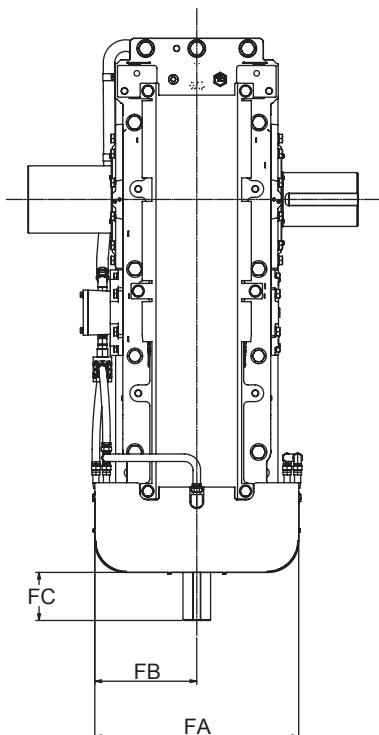
## VP3 DuraPlate Clearance Dimensions — Inches

DRIVE SIZE	RATIOS	FA	FB	FC	FD	FE	FG‡
133, 137	31.5-112	24.61	7.09	10.39	13.03	8.46	1.46
143, 145, 147	31.5-112	27.64	7.09	11.10	14.84	8.46	2.60
153, 155, 157	31.5-112	28.58	7.09	12.28	16.02	10.43	2.09
163, 165, 167	31.5-80.0	31.85	6.73	13.62	15.59	12.48	2.72
173, 175, 177	28.0-71.0	37.56	7.56	14.72	19.06	15.43	2.68
187	31.5-80.0	37.56	7.56	14.72	19.06	16.42	2.68

‡ Allows 0.12" clearance from shroud.

# Type VR2 & VR3 Sizes 133-187

## DuraPlate/Dimensions — Inches



### VR2 DuraPlate Clearance Dimensions — Inches

DRIVE SIZE	RATIOS	FA	FB	FC‡	FD
133, 137	ALL	23.19	11.61	4.80	21.02
143, 145, 147	ALL	24.72	12.36	4.53	23.78
153, 155, 157	ALL	25.08	12.52	5.16	25.51
163, 165, 167	ALL	26.73	13.35	5.67	28.50
173, 175, 177	ALL	29.06	14.53	6.73	34.02
187	ALL	29.06	14.53	6.73	34.02

‡ Allows 0.12" clearance from shroud.

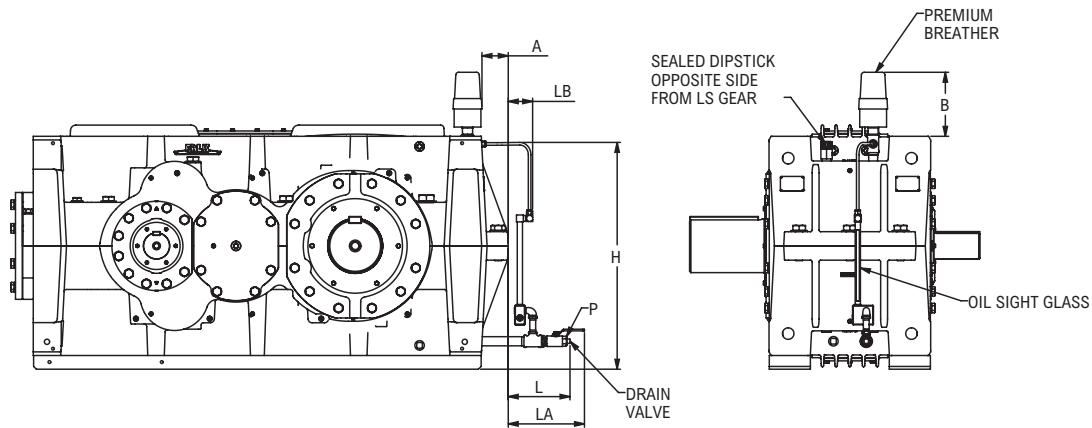
### VR3 DuraPlate Clearance Dimensions — Inches

DRIVE SIZE	RATIOS	FA	FB	FC‡	FD
133, 137	ALL	23.19	11.61	4.80	21.02
143, 145, 147	ALL	24.72	12.36	4.53	23.78
153, 155, 157	ALL	25.08	12.52	5.16	25.51
163, 165, 167	ALL	27.36	13.66	5.67	28.50
173, 175, 177	ALL	29.09	14.53	6.73	34.09
187	ALL	29.09	14.53	6.73	34.09

‡ Allows 0.12" clearance from shroud.

# Type VP & VR Sizes 133-187

## Lubrication Package/Dimensions — Inches

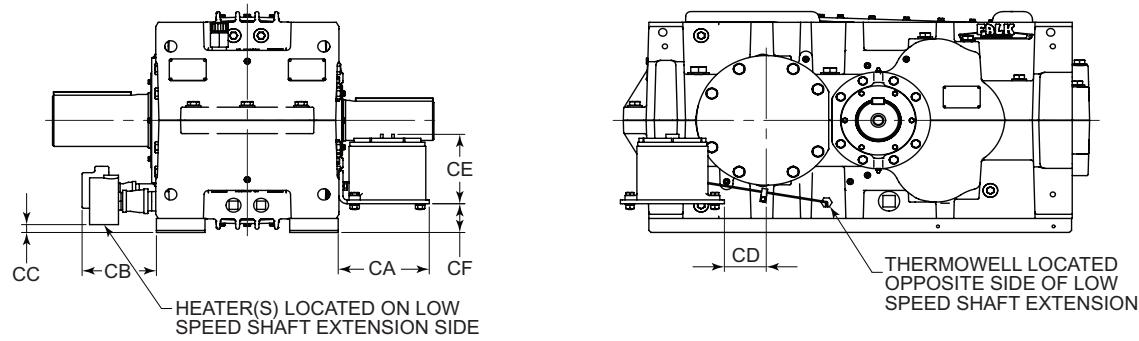


### All Reductions and Ratios

DRIVE SIZE	A	B	H	L	LA	LB	P
133, 137	1.81	9.45	18.62	8.86	10.94	3.46	0.75-14 NPT
143, 145, 147	1.57	9.76	20.94	9.17	11.26	3.78	0.75-14 NPT
153, 155, 157	1.85	9.57	22.72	8.94	11.02	3.58	0.75-14 NPT
163, 165, 167	2.99	8.82	25.08	8.90	10.94	3.50	0.75-14NPT
173, 175, 177	3.78	9.21	30.59	8.90	10.94	3.50	0.75-14NPT
187	3.78	9.21	30.59	8.90	10.94	3.50	0.75-14NPT

# Type VP1 Sizes 133-137

## Immersion Heater Package/Dimensions — Inches

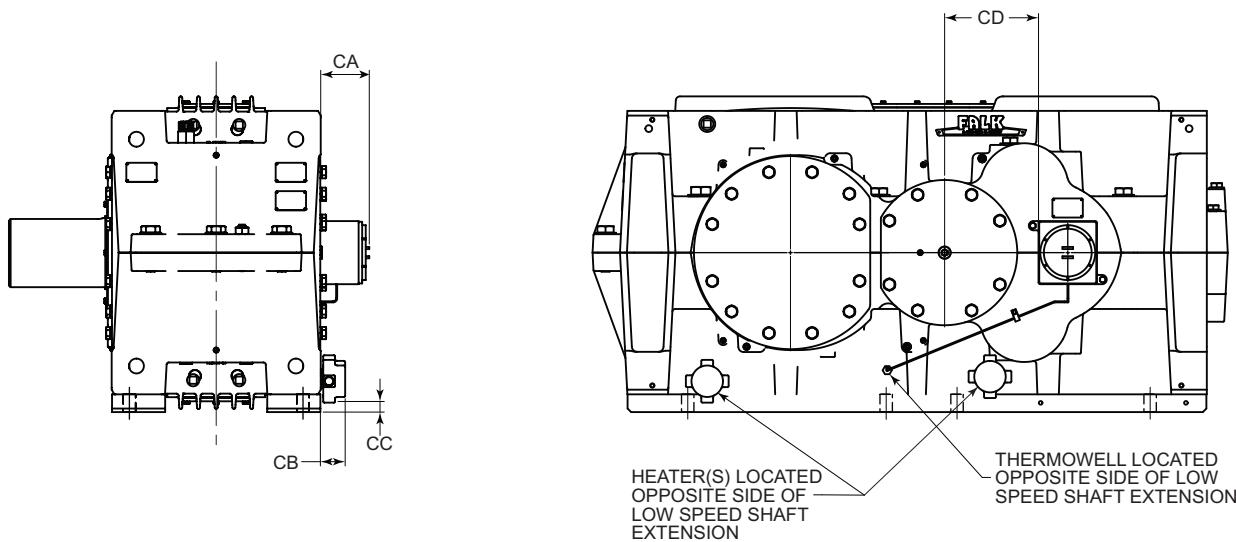


### Single Reduction and Ratios

DRIVE SIZE	CA	CB	CC	CD	CE	CF
133, 137	8.31	6.79	0.77	3.82	6.83	2.82

# Type VP1 Sizes 163-187

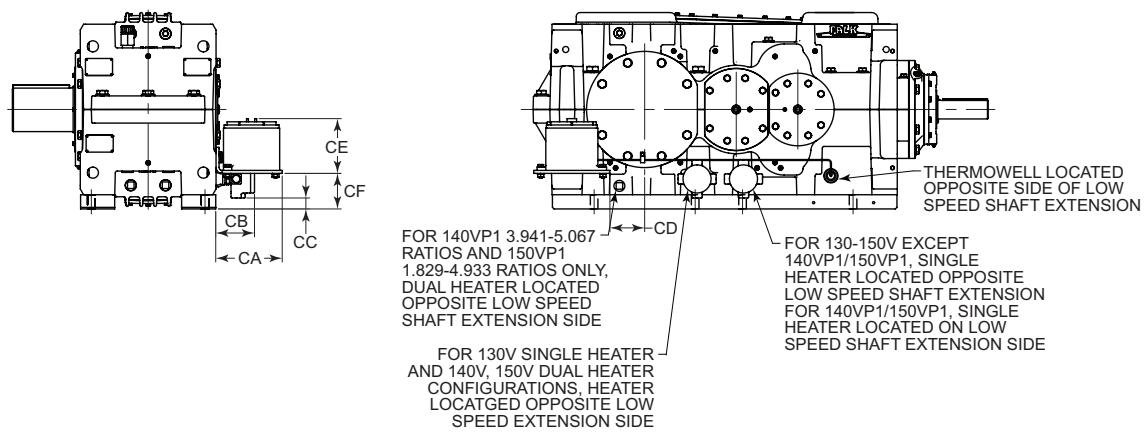
## Immersion Heater Package/Dimensions — Inches



### Single Reduction and Ratios

DRIVE SIZE	CA	CB	CC	CD
<b>163, 165, 167</b>	5.39	4.41	0.98	7.60
<b>173, 175, 177</b>	5.39	3.70	1.06	10.43
<b>187</b>	5.39	3.70	1.06	10.43

# Type VP1(except 133 & 137), VP2, VP3, VR2 & VR3 Sizes 133-157 Immersion Heater Package/Dimensions — Inches

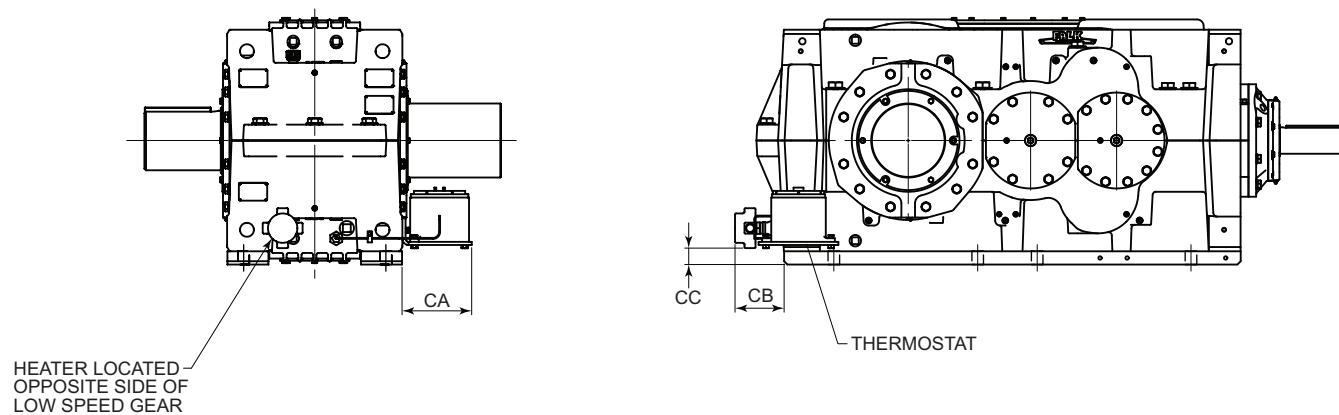


## All Reductions and Ratios

DRIVE SIZE	CA	CB	CC	CD	CE	CF
133, 137	8.31	3.89	0.93	3.80	6.83	2.82
143, 145, 147	8.29	4.83	1.37	5.52	6.83	4.43
153, 155, 157	8.29	4.01	0.19	5.89	6.83	2.19

# Type VP2, VP3, VR2 & VR3 Sizes 163-187

Immersion Heater Package/Dimensions — Inches

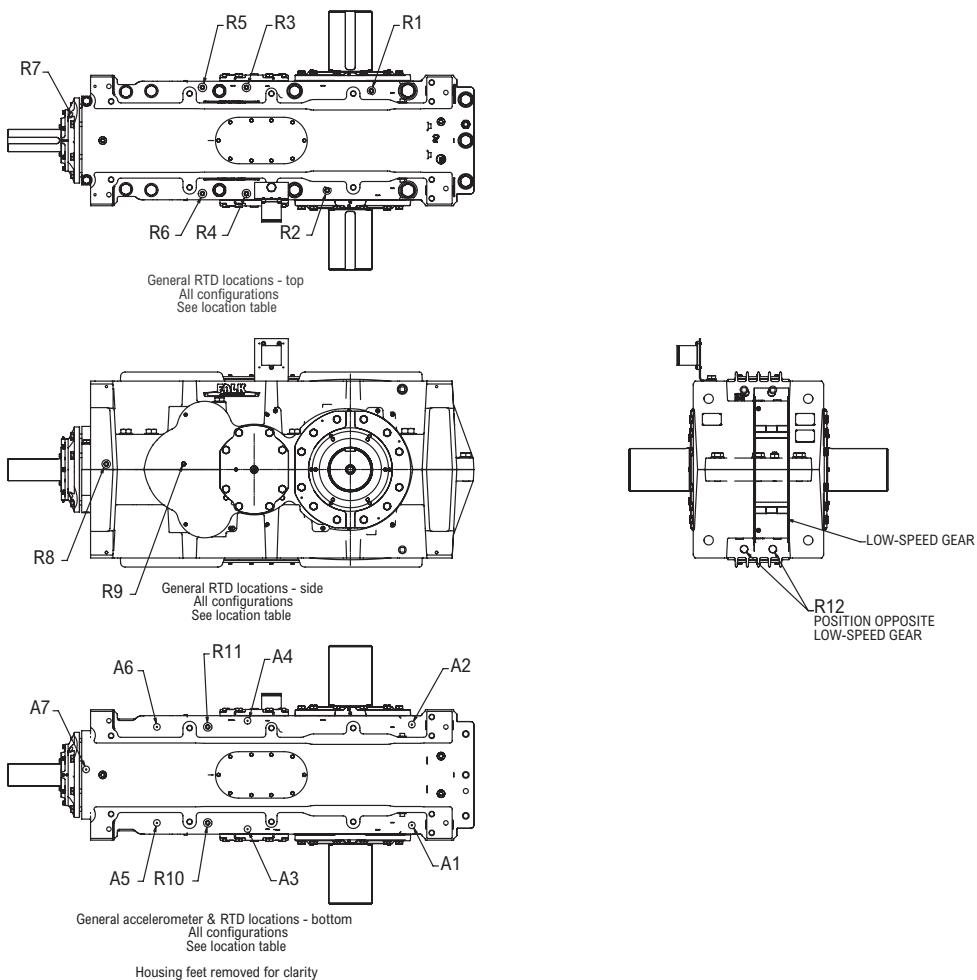


## All Reductions and Ratios

DRIVE SIZE	CA	CB	CC
<b>163, 165, 167</b>	8.27	6.10	1.93
<b>173, 175, 177</b>	8.27	5.39	1.81
<b>187</b>	8.27	5.39	1.81

# Type VP & VR Sizes 133-157

## Condition Monitoring Package/Dimensions — Inches

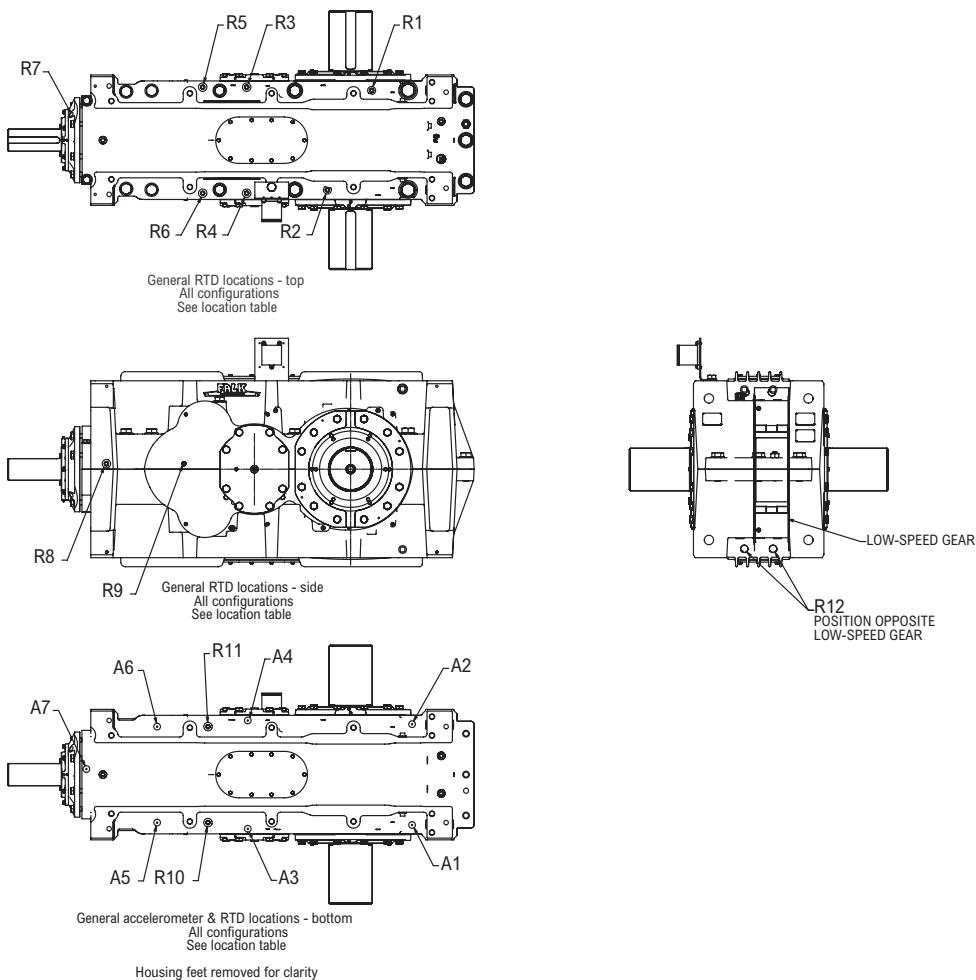


**LOCATION TABLE**

Description	Item Number Location	Quantity	Drive Size and Type														
			133, 137					143, 145, 147					153, 155, 157				
			VP1	VP2	VP3	VR2	VR3	VP1	VP2	VP3	VR2	VR3	VP1	VP2	VP3	VR2	VR3
<b>Ratios</b>			AII	AII	AII	AII	AII	AII	AII	AII	AII	AII	AII	AII	AII	AII	14-71 80-125
RTD	R1	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
RTD	R2	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
RTD	R3	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
RTD	R4	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
RTD	R5	1	...	X	X	...	X	...	X	X	...	X	...	X	X	...	X
RTD	R6	1	...	X	X	...	X	...	X	X	...	X	...	X	X	...	X
RTD	R7	1	...	...	...	...	X	...	...	X	X	...	...	...	...	...	X
RTD	R8	1	...	...	...	X	X	...	...	...	X	...	...	...	X	X	X
RTD	R9	1	...	...	...	X	...	...	...	...	X	...	...	...	X	...	...
RTD	R10	1	...	...	X	...	...	...	...	X	...	...	...	...	X	...	...
RTD	R11	1	...	...	X	...	...	...	...	X	...	...	...	...	X	...	...
Sump RTD	R12	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Accelerometer	A1	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Accelerometer	A2	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Accelerometer	A3	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Accelerometer	A4	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Accelerometer	A5	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Accelerometer	A6	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Accelerometer	A7	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

# Type VP & VR Sizes 163-187

## Condition Monitoring Package/Dimensions — Inches



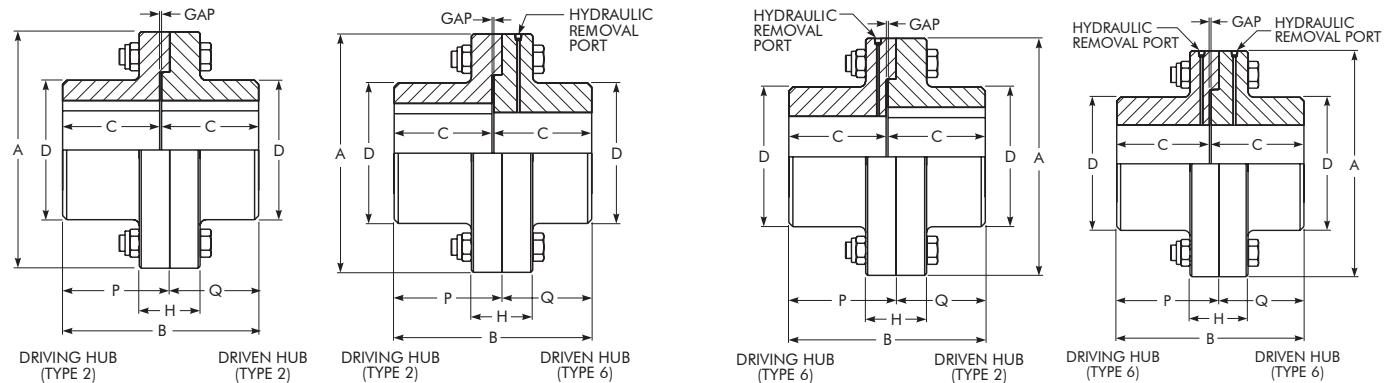
**LOCATION TABLE**

Description	Item Number Location	Qty.	Drive Size and Type																			
			163, 165, 167						173, 175, 177						187							
			VP1	VP2	VP3	VR2	VR3	VP1	VP2	VP3	VR2	VR3	VP1	VP2	VP3	VR2	VR3	VP1	VP2	VP3	VR2	VR3
<b>Ratios</b>			AII	AII	AII	AII	14-71	80-125	AII	AII	28-100	12-140	AII	12.5-63	71-112	AII	AII	31.5-112	25-160	AII	14-71	80-125
RTD	R1	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
RTD	R2	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
RTD	R3	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
RTD	R4	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
RTD	R5	1	...	X	X	...	X	X	...	X	X	X	...	X	X	...	X	X	X	...	X	X
RTD	R6	1	...	X	X	...	X	X	...	X	X	X	...	X	X	...	X	X	X	...	X	X
RTD	R7	1	...	...	...	...	X	X	...	...	...	...	X	X	...	...	...	...	...	...	X	X
RTD	R8	1	...	...	...	X	X	X	...	...	...	X	X	X	...	...	...	X	X	X	X	X
RTD	R9	1	...	...	...	X	...	...	...	...	...	X	...	...	...	...	...	X	...	...	...	...
RTD	R10	1	...	...	X	...	...	...	...	...	X	X	...	...	...	...	...	X	X	...	...	...
RTD	R11	1	...	...	X	...	...	...	...	...	X	X	...	...	...	...	...	X	X	...	...	...
Sump RTD	R12	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Accelerometer	A1	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Accelerometer	A2	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Accelerometer	A3	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Accelerometer	A4	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Accelerometer	A5	1	...	X	X	...	X	X	...	X	X	X	...	X	X	...	X	X	X	...	X	X
Accelerometer	A6	1	...	X	X	...	X	X	...	X	X	X	...	X	X	...	X	X	X	...	X	X
Accelerometer	A7	1	...	...	...	X	X	X	...	...	...	X	X	X	...	...	...	X	X	...	X	X

# Type 2000 MCF Couplings

## Flange Connection/Dimensions — Inches

**WARNING:** Drive system analysis must be performed by Rexnord Application Engineering. Driven shaft loads will be furnished to check shaft stresses and bearing loads. Improper installation and maintenance of this coupling may result in injury.



DRIVE SIZE	Coupling Size †	Hub Type				Minimum/Maximum Bore				Cplg Wt lb ‡	A	B	C	D	H	P	Q	Gap							
		Driving Hub		Driven Hub		Driving Hub		Driven Hub																	
		Type ★	Hydraulic Removal Port Size BSPP	Type ★	Hydraulic Removal Port Size BSPP	Bore	Fit	Bore Range	Fit																
133 137	2160MCF	2	...	2	...	5.1181	Keyed	4.50-6.50	Keyed	343	16.25	13.12	6.50	10.00	4.00	7.12	6.00	0.12							
		2	...	6	0.125-28		Keyed		Keyless																
		6	0.125-28	2	...		Keyless		Keyed																
		6	0.125-28	6	0.125-28		Keyless		Keyless																
143 145 147	2170MCF	2	...	2	...	5.5118	Keyed	5.00-7.50	Keyed	496	18.00	14.88	7.38	11.62	4.00	8.00	6.88	0.12							
		2	...	6	0.250-19		Keyed		Keyless																
		6	0.250-19	2	...		Keyless		Keyed																
		6	0.250-19	6	0.250-19		Keyless		Keyless																
153 155 157	2180MCF	2	...	2	...	6.2992	Keyed	5.00-8.00	Keyed	604	19.12	14.88	7.38	12.88	4.50	8.00	6.88	0.12							
		2	...	6	0.250-19		Keyed		Keyless																
		6	0.250-19	2	...		Keyless		Keyed																
		6	0.250-19	6	0.250-19		Keyless		Keyless																
163 165 167	2190MCF	2	...	2	0.250-19	7.0866	Keyed	5.50-9.00	Keyed	803	21.12	17.62	8.75	13.88	4.76	9.37	8.25	0.12							
		2	...	6	0.250-19		Keyed		Keyless																
		6	0.250-19	2	...		Keyless		Keyed																
		6	0.250-19	6	0.250-19		Keyless		Keyless																
173 175 177	2200MCF	2	...	2	0.250-19	7.6772	Keyed	6.50-9.50	Keyed	946	22.00	19.12	9.50	14.75	5.00	10.12	9.00	0.12							
		2	...	6	0.250-19		Keyed		Keyless																
		6	0.250-19	2	...		Keyless		Keyed																
		6	0.250-19	6	0.250-19		Keyless		Keyless																
187	2210MCF	2	...	2	0.250-19	7.6772	Keyed	7.00-10.00	Keyed	1207	23.50	21.36	10.62	15.50	6.00	11.24	10.12	0.12							
		2	...	6	0.250-19		Keyed		Keyless																
		6	0.250-19	2	...		Keyless		Keyed																
		6	0.250-19	6	0.250-19		Keyless		Keyless																

† Refer to Factory for all applications above 100 rpm. Dimensions are for reference only and are subject to change without notice unless certified.

‡ Coupling weights are for hubs with rough bores.

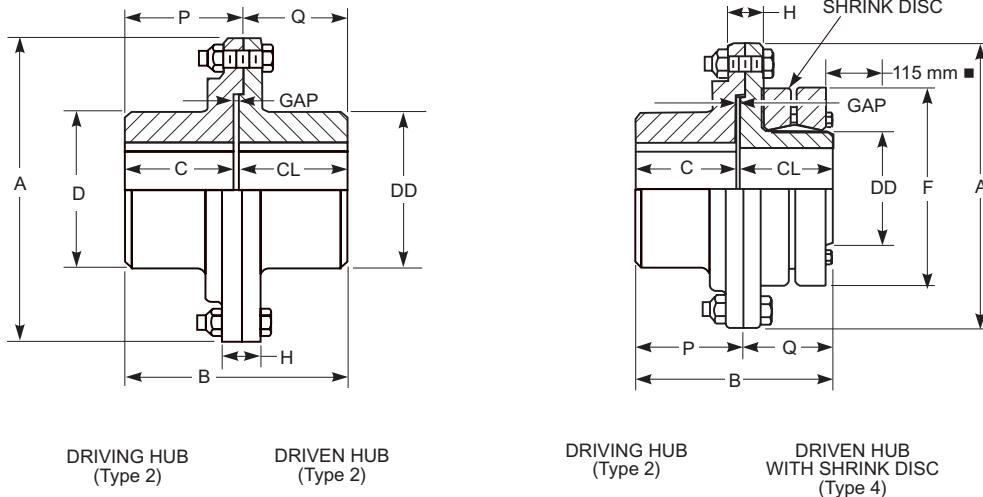
★ Type 2 hub is straight bored with keyed hub; Type 6 hub is straight bored KEYLESS hub with hydraulic removal.

Type 2 and Type 6 hubs are interference fit. Driven shaft tolerance is expected to be: +0.000/-0.001 inches for inch shafts, or M6 for metric shafts.

# Type MCF Couplings

## Flange Connection/Dimensions — Inches

**WARNING:** Drive system analysis must be performed by Rexnord Application Engineering. Driven shaft loads will be furnished to check shaft stresses and bearing loads. Improper installation and maintenance of this coupling may result in injury.



Drive Size	Cplg Size ★	Hub Type				Min/Max Bore ‡		Cplg • Wt-lb	A	B	C	CL	D	DD	H	P	Q	Gap
		Driving Hub	No. †	Driven Hub	No. †	Driving Hub	Driven Hub											
133 137	1045MCF	RSB	2	RSB	2	3.000-7.000	3.000-7.000	510	19.68	14.12	7.00	7.00	10.00	10.00	2.50	7.62	6.50	.12
		RSB	2	175SD	4	3.000-7.000	4.921-5.315	500	19.68	12.74	7.00	5.62	10.00	6.89	2.50	7.62	5.12	.12
		RSB	2	185SD	4	3.000-7.000	5.315-5.709	560	19.68	13.68	7.00	6.56	10.00	7.28	2.50	7.62	6.06	.12
		RSB	2	200SD	4	3.000-7.000	5.709-6.102	570	19.68	13.68	7.00	6.56	10.00	7.87	2.50	7.62	6.06	.12
143 145 147	1045MCF	RSB	2	RSB	2	3.000-7.000	3.000-7.000	510	19.68	14.12	7.00	7.00	10.00	10.00	2.50	7.62	6.50	.12
		RSB	2	175SD	4	3.000-7.000	4.921-5.315	500	19.68	12.74	7.00	5.62	10.00	6.89	2.50	7.62	5.12	.12
		RSB	2	185SD	4	3.000-7.000	5.315-5.709	560	19.68	13.68	7.00	6.56	10.00	7.28	2.50	7.62	6.06	.12
		RSB	2	200SD	4	3.000-7.000	5.709-6.102	570	19.68	13.68	7.00	6.56	10.00	7.87	2.50	7.62	6.06	.12
153 155 157	1055MCF	RSB	2	RSB	2	3.500-8.000	3.500-8.000	720	21.84	16.12	8.00	8.00	11.50	11.50	2.50	8.62	7.50	.12
		RSB	2	200SD	4	3.500-8.000	5.709-6.102	710	21.84	14.68	8.00	6.56	11.50	7.87	2.50	8.62	6.06d	.12
		RSB	2	220SD	4	3.500-8.000	6.299-6.693	770	21.84	15.56	8.00	7.44	11.50	8.66	2.50	8.62	6.94	.12
		RSB	2	240SD	4	3.500-8.000	6.693-7.480	840	21.84	16.12	8.00	8.00	11.50	9.45	2.50	8.62	7.50	.12
163 165 167	1060MCF	RSB	2	RSB	2	4.000-9.000	4.000-9.000	990	23.25	18.12	9.00	9.00	13.00	13.00	3.00	9.62	8.50	.12
		RSB	2	220SD	4	4.000-9.000	6.299-6.693	960	23.25	16.81	9.00	7.69	13.00	8.66	3.00	9.62	7.19	.12
		RSB	2	240SD	4	4.000-9.000	6.693-7.480	1040	23.25	17.31	9.00	8.19	13.00	9.45	3.00	9.62	7.69	.12
		RSB	2	260SD	4	4.000-9.000	7.480-8.268	1110	23.25	18.12	9.00	9.00	13.00	10.24	3.00	9.62	8.50	.12
173 175 177 187	1065MCF	RSB	2	RSB	2	5.000-10.000	5.000-10.000	1260	24.50	20.12	10.00	10.00	14.00	14.00	3.50	10.62	9.50	.12
		RSB	2	240SD	4	5.000-10.000	6.693-7.480	1230	24.50	18.56	10.00	8.44	14.00	9.45	3.50	10.62	7.94	.12
		RSB	2	260SD	4	5.000-10.000	7.480-8.268	1300	24.50	19.18	10.00	9.06	14.00	10.24	3.50	10.62	8.56	.12
		RSB	2	280SD	4	5.000-10.000	8.268-9.055	1410	24.50	19.65	10.00	9.53	14.00	11.02	3.50	10.62	9.03	.12
		RSB	2	300SD	4	5.000-10.000	9.055-9.646	1460	24.50	19.81	10.00	9.69	14.00	11.81	3.50	10.62	9.19	.12

★ Refer to the Factory all applications above 100 rpm. Dimensions are for reference only and are subject to change without notice unless certified.

■ Distance required for torque wrench clearance to tighten the shrink disc fasteners. Consult Factory for alternatives if axial space is not available.

† Driven shaft tolerance is expected to be: +0.000/-0.001 inches for inch shafts, or M6 for metric shafts.

● Coupling weights are for hubs with no bore and include shrink disc(s).

† Number 2 hub is straight bored without shrink disc; Number 4 hub is straight bored with shrink disc.

# World Class Customer Service

Rexnord is a global, multi-platform industrial company that serves a wide variety of mission-critical industries. Our diverse line of highly engineered power transmission products provide an array of key systems components including bearings, couplings, gears, modular conveyor belting and industrial chain, all designed for the toughest applications. Customers worldwide have consistently relied on Rexnord's efficiency, knowledge and experience to deliver dependable solutions at the lowest total cost of ownership.

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