TRANSFLUID

TRANSFLUID
industrial transmissions

KRAFTPOWER
The power of performance

drive with us

FLUID COUPLINGS

INDEX

DESCRIPTION

The TRANSFLUID coupling (K series) is a constant filling type comprising three main elements:
1 Driving impeller (pump) mounted on the input shaft.
2 Driven impeller (turbine) mounted on the output shaft.
3 Cover, flanged to the output impeller, with an oil-tight seal.
The first two elements can work both as pump and/or turbine.

OPERATING CONDITIONS

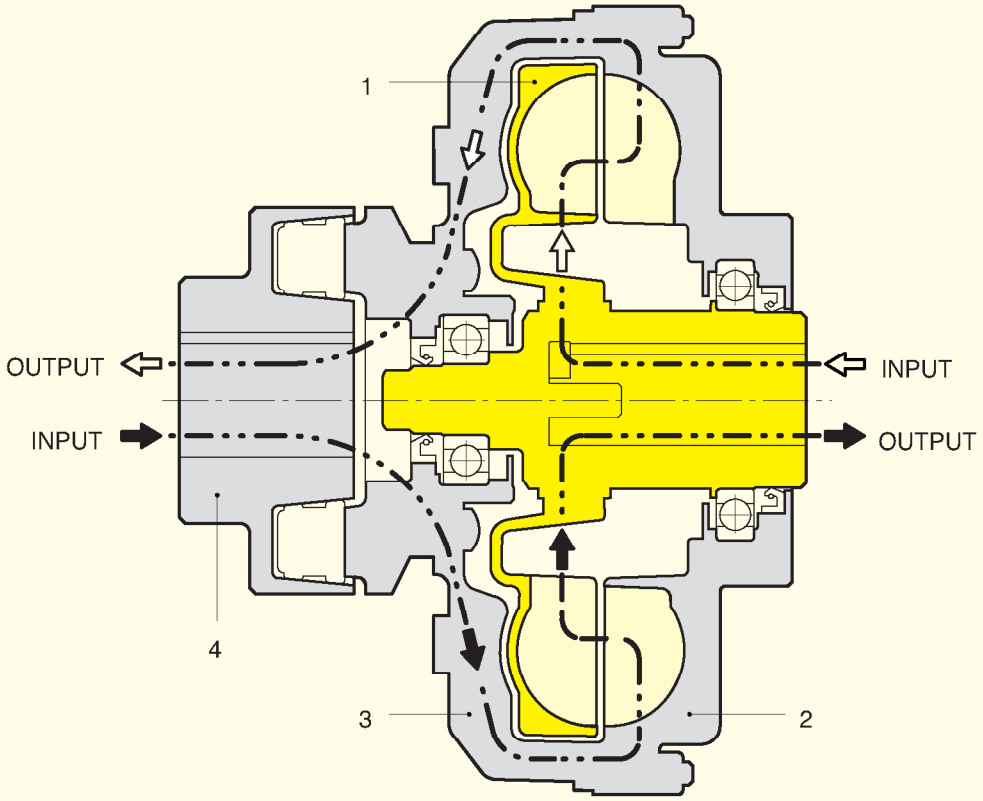
The TRANSFLUID coupling is a hydrokinetic transmission. The impellers perform like a centrifugal pump and a hydraulic turbine. With an input drive to the pump (i.e. electric motor or Diesel engine) kinetic energy is transfered to the oil in the coupling. The oil moves by centrifugal force across the blades of the turbine towards the outside of the coupling.
This absorbs the kinetic energy and develops a torque which is always equal to input torque thus causing rotation of the output shaft. The wear is practically zero since there are no mechanical connections.
The efficiency is influenced only by the speed difference (slip) between pump and turbine.

The slip is essential to the functioning of the coupling: there could not be torque transmission without slip! The formula for slip, from which the power loss can be deduced is as follows:

$$\text{slip } \% = \frac{\text{input speed} - \text{output speed}}{\text{input speed}} \times 100$$

In normal conditions (standard duty), slip can vary from 1.5% (large power) to 6% (small power).
TRANSFLUID couplings follow the laws of all centrifugal machines:

1 Transmitted torque is proportional to the square of input speed;
2 Transmitted power is proportional to the cube of input speed;
3 Transmitted power is proportional to the fifth power of circuit outside diameter.



1 INTERNAL IMPELLER
2 EXTERNAL IMPELLER
3 COVER
4 FLEX COUPLING

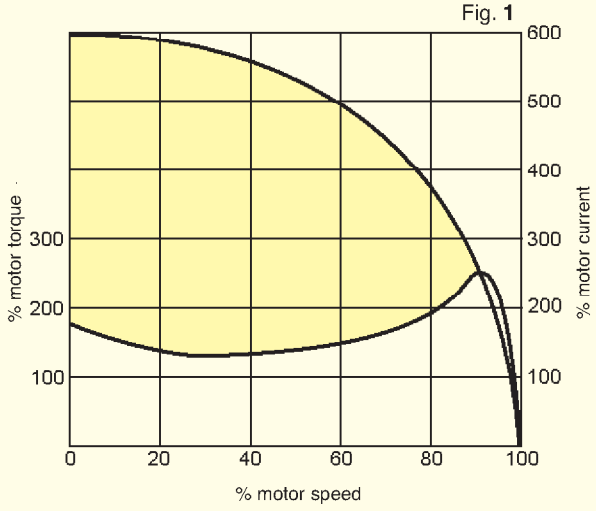
TRANSFLUID COUPLING FITTED ON ELECTRIC MOTORS

Three phase synchronous squirrel cage motors are able to supply maximum torque only near 100% synchronous speed. Direct starting the system utilizes the most current. Figure 1 illustrates the relationship between torque and current. It can be seen that the absorbed current is proportional to the torque only between 85% and 100% of the synchronous speed. With a motor connected directly to the load, there are the following disadvantages:

- The difference between available torque and the torque required by the load is very low until the rotor has accelerated to between 80-85% of the synchronous speed
- The absorbed current is high (up to 6 times the nominal current) throughout the starting phase causing overheating of the windings, overloads in the electrical lines and, in cases of frequent starts, major production costs.
- Oversized motors are required by the limitations indicated above.

To limit the absorbed current of the motor during the acceleration of the load, a Y-Δ (wye – delta) starting system is frequently used which reduces the absorbed current by about 1/3 during starting. Unfortunately, during operation of the motor under the delta configuration, the available torque is also reduced by 1/3 and for machines with high inertias to accelerate, oversizing of the motor is still required. Finally, this system does not eliminate current peaks originating from the insertion or the commutation of the device.

Fig. **1**



Any drive system using a Transfluid fluid coupling has the advantage of the motor starting without load. Figure 2 compares the current demands of an electric motor when the load is directly attached verses the demand when a fluid coupling is mounted between the motor and load. The colored area shows the energy that is lost, as heat, during start-up when a fluid coupling is not used. A Transfluid fluid coupling reduces the motor's current draw during start-up thus reducing peak current demands. This not only reduces power costs but also reduces brown outs in the power grid and extends the life of the motor. Also at start-up, a fluid coupling allows more torque to pass to the load for acceleration than in drive systems without a fluid coupling.

Figure 3 shows two curves for a single fluid coupling and a characteristic curve of an electric motor. It is obvious from the stall curve of the fluid coupling (s=100%) and the available motor torque, how much torque is available to accelerate the rotor of the motor (colored area). In about 1 second, the rotor of the motor accelerates passing from point A to point B. The acceleration of the load, however, is made gradually by the fluid coupling, utilizing the motor in optimal conditions, along the part of the curve between point B, 100% and point C, 2-5%. Point C is the typical point of operation during normal running.

Fig. **2**

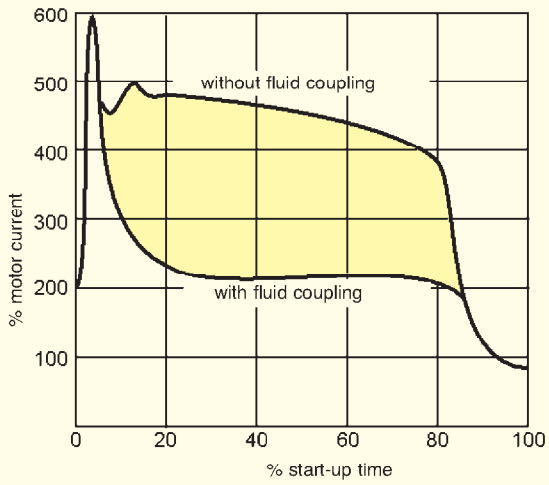
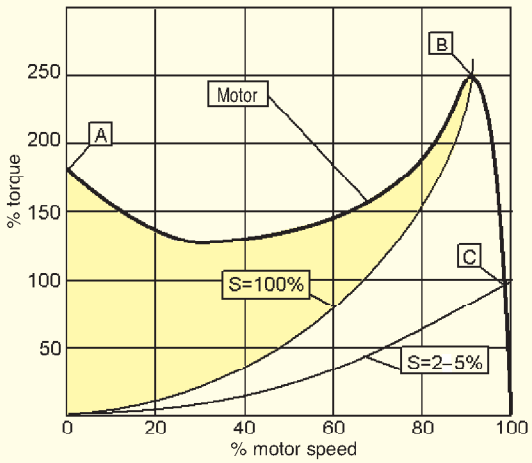


Fig. **3**



TRANSFLUID FLUID COUPLINGS WITH A DELAYED FILL CHAMBER

With the standard circuit in a maximum oil fill condition, fluid couplings may transmit over **200%** of the nominal motor torque. It is possible to decrease the starting torque **down to 160%** of the nominal torque, by decreasing oil fill. This, however, leads to higher slip and working temperature in the fluid coupling, during the steady running conditions.
The most convenient solution to provide lower starting torque while maintaining low slip at steady running is to provide a delayed fill chamber mounted on the main circuit. This chamber holds a percentage of the oil which at start-up is gradually released into the main circuit through **calibrated bleed orifices** as the coupling spins. For couplings sized **15CK** and above these orifices are set in **externally mounted valves**.
The external mounting provides easy adjustment of the orifice size which controls starting time and the maximum transmitted torque.

When the coupling is at rest, the **delay fill chamber** contains a percentage of oil quantity in the main circuit (Fig. **4a**). This **reduces the torque** the coupling transmits and allows the motor to quickly reach its steady running speed, **as if it was started without load**.

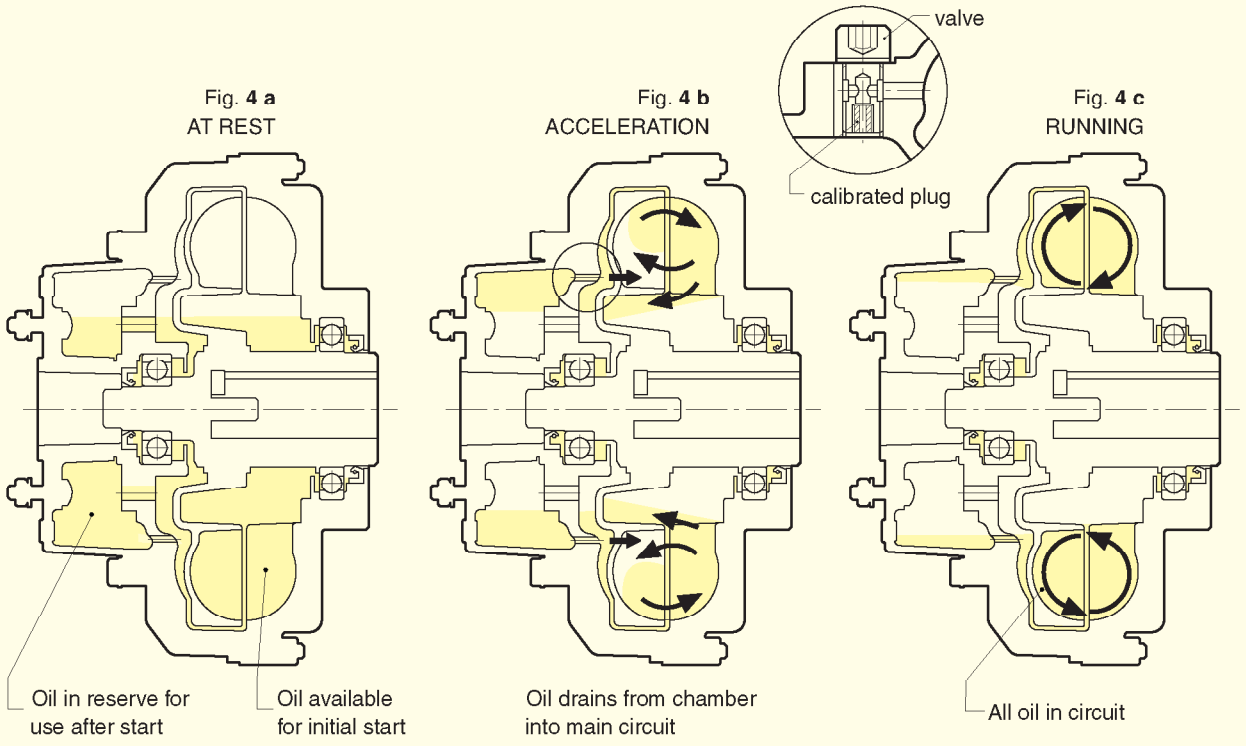
As the coupling accelerates, the oil flows from the **delay fill chamber** to the main circuit (Fig. **4b**) at a rate proportional to the coupling's rotational speed.
The oil continues to transfer from the delay fill chamber to the main circuit emptying the delay fill chamber. Once all the oil is in the main circuit (Fig. **4c**) the coupling is then transmitting 100% of the motor torque and the **minimum slip value is reached**.

With a **single delay fill chamber**, the ratio between starting and nominal torque may reach **150** %. This ratio can be reduced to **120 % with a double delay fill chamber**. This lower start-up torque results from a smaller amount of oil in the main circuit due to more oil in the bigger delay fill chamber.

Fluid couplings with single or double delay fill chamber provide very smooth start-ups with low start-up torque transmission, and this makes them excellent for applications with high inertia loads and for use on belt conveyors.
The single size chamber is available from size 11CK and above. The double size chamber is available from size 15CCK and above

SUMMARY OF THE ADVANTAGES GIVEN BY FLUID COUPLINGS:

- **Very smooth start-ups**
- **Reduction** of **absorbed current** during the starting phase: the motor starts with very low load
- **Protection** of the motor and the driven machine **from jams and overloads**
- Utilization of **asynchronous squirrel cage motors** instead of special motors with soft start devices
- **Longer life** and **up time** of the whole drive train, thanks to the protection provided by the fluid coupling
- **Energy saving**, due to current peak reduction
- **Limits starting torque** to 120% with a double delayed fill chamber
- **Same torque at input and output**: the motor can supply the maximum torque even when load is jammed
- Torsional **vibration** absorption for internal combustion engines, thanks to the presence of a fluid as a power transmission element
- Possibility to achieve a high number of **start-ups**, or reversal of the rotational direction.
- **Load balancing** with dual motor drive: fluid couplings **automatically adjust** load speed to the individual motor's speed
- **High efficiency** and **minimum maintenance**
- Viton rotating seals and O-rings

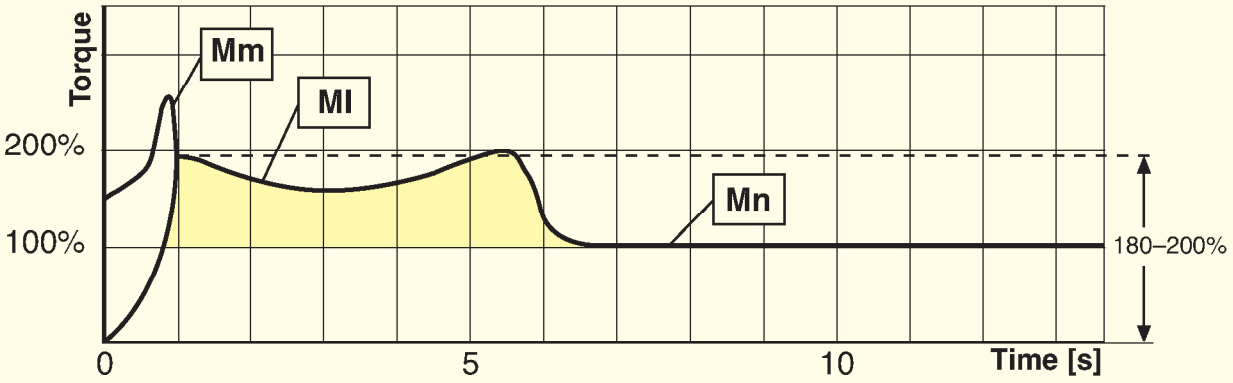


STARTING TORQUE CHARACTERISTICS

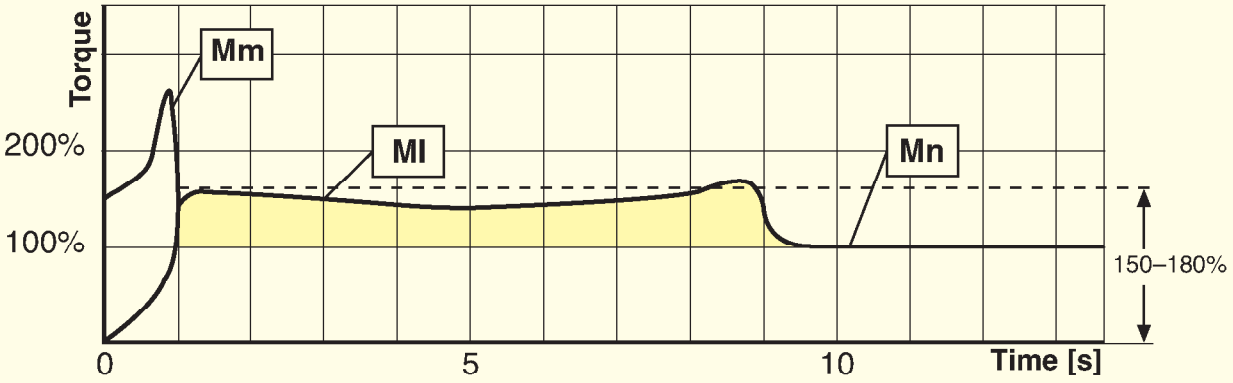
CHARACTERISTIC CURVES

Ml : transmitted torque from fluid coupling
Mm : starting torque of the electric motor
Mn : nominal torque at full load
..... : accelerating torque

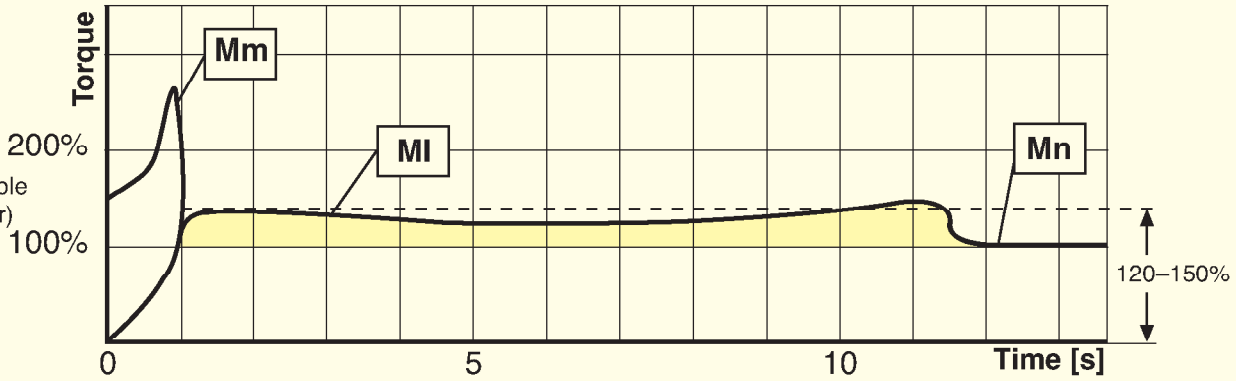
K type
(standard circuit)



CK type
(circuit with a delayed chamber)



CCK type
(circuit with a double delayed chamber)



IN LINE

KR-CKR-CCKR : Basic coupling (KR), with a single (CKR) or double (CCKR) delayed fill chamber.

KRG-CKRG-CCKRG : Basic coupling with elastic coupling
KRM-CKRM-CCKRM (clamp type), or superelastic.

KRB-CKRB-CCKRB : like ..KRG, but with brake drum or
...KRBP brake disc.

KRD-CKRD-CCKRD : basic coupling ..KR with output shaft. It allows the utilization of other flex couplings; it is possible to place it (with a convenient housing) between the motor and a hollow shaft gearbox.

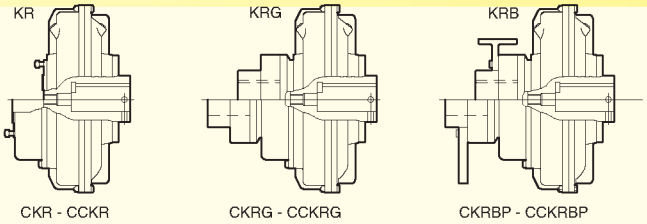
EK : fluid coupling fitted with a bell housing, to be placed between a flanged electric motor and a hollow shaft gearbox.

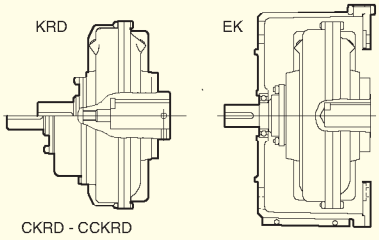
KCM-CKCM-CCKCM : basic coupling for half gear couplings.

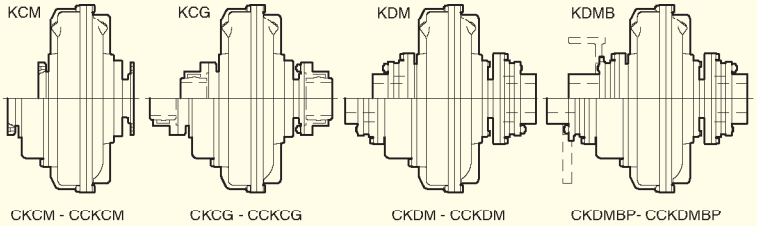
KCG-CKCG-CCKCG : basic ..KCM with half gear couplings. On request, is available with brake drum or brake disc.

KDM-CKDM-CCKDM : fluid coupling with disc couplings.

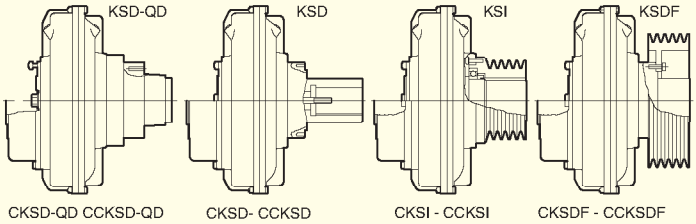
...KDMB : like ..KDM, but with brake drum or
...KDMBP brake disc.







Note: The ..KCG - ..KDM versions allow a radial disassembly without moving the motor or the driven machine.



IN LINE VERSIONS MOUNTING EXAMPLES

Fig. **A** Horizontal axis between the motor and the driven machine (KR-CKR-CCKR and similar).

Fig. **B** It allows a radial disassembly without moving the motor and the driven machine (KCG-KDM and similar).

Fig. **C** Between a flanged electric motor and a hollow shaft gearbox by means of a bell housing (..KRD and EK).

Fig. **D** Vertical axis mounting between the electric motor and a gearbox or driven machine. **When ordering, please specify motor shaft pointing up (type 1) or motor shaft pointing down (type 2)**.

Fig. **E** Between the motor and a supported pulley for high powers and heavy radial loads.

Fig. **F**

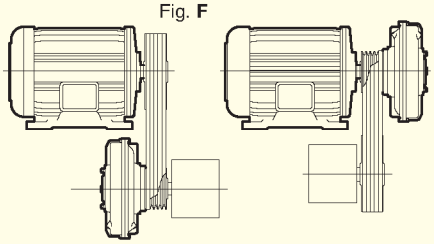
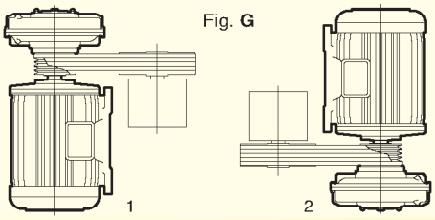


Fig. **G**



PULLEY

KSD-QD–CKSD-QD CCKSD-QD : fluid coupling that will use a QD style pulley

KSD–CKSD–CCKSD : basic coupling that accepts a flanged pulley, with single (CK..) or double (CCK..) delayed fill chamber

KSI-CKSI-CCKSI : fluid coupling with an incorporated pulley, which is fitted from inside.

KSDF-CKSDF CCKSDF : basic ..KSD coupling with flanged pulley, externally mounted and therefore to be easily disassembled.

Fig. **A**

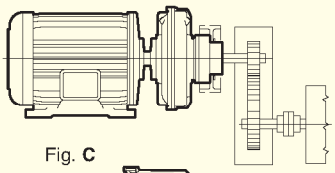


Fig. **B**

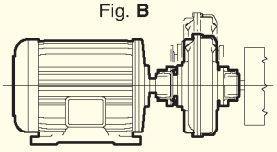


Fig. **C**

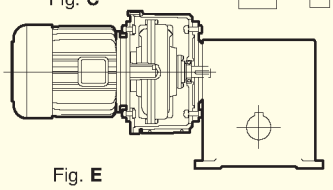


Fig. **D**

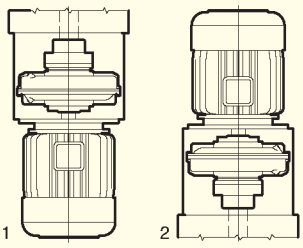
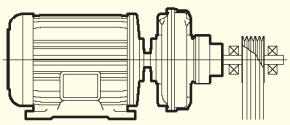


Fig. **E**



PULLEY VERSIONS MOUNTING EXAMPLES

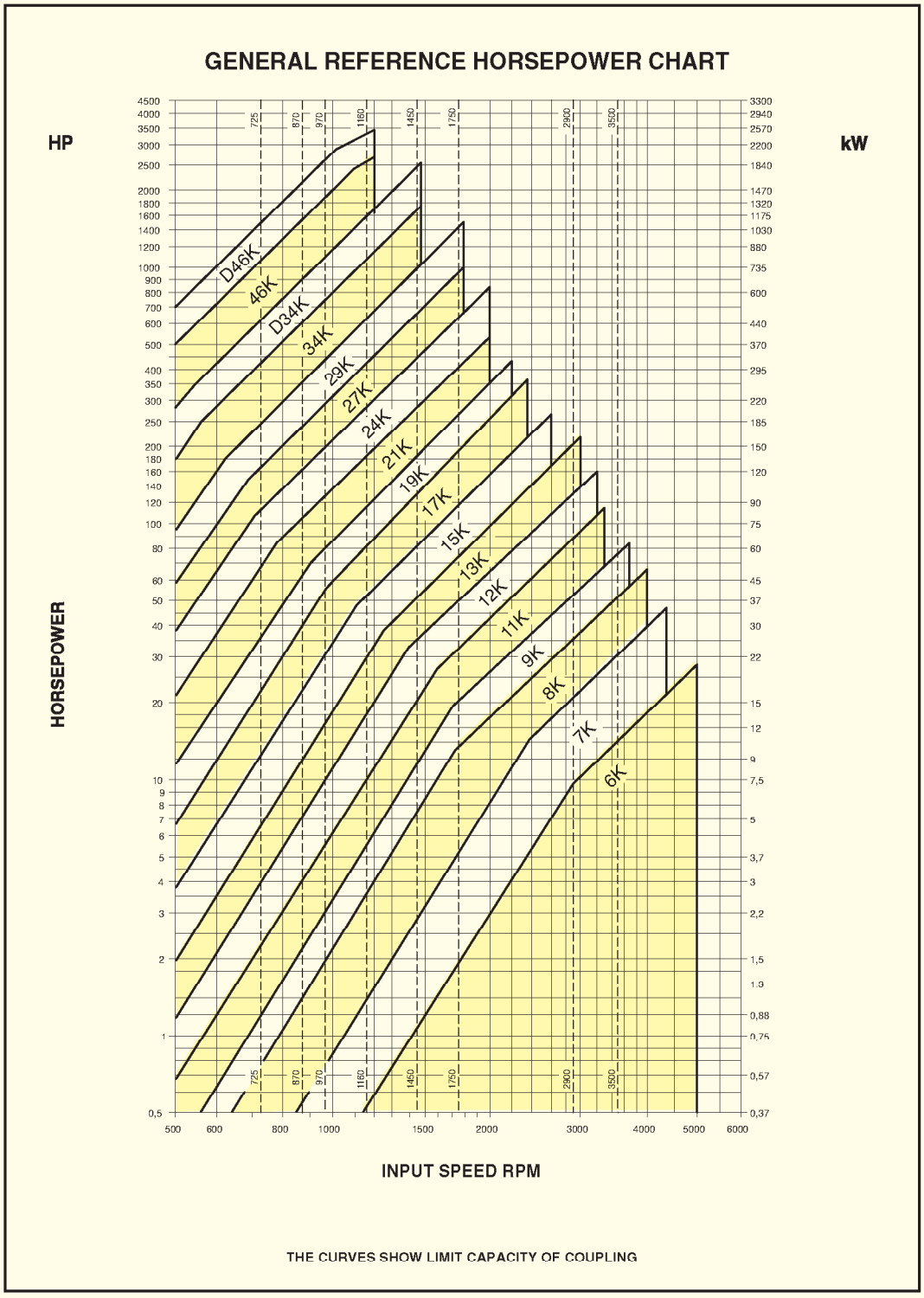
Fig. **F** Horizontal axis.

Fig. **G** Vertical axis. **When ordering, please specify motor shaft pointing up (type 1) or motor shaft pointing down (type 2)**.

7. SELECTION

7.1 SELECTION CHART

The chart below may be used to select a unit size from the horsepower and input speed. If the selection point falls on the line dividing one size from the other, select the larger size with a proportionally reduced oil fill.

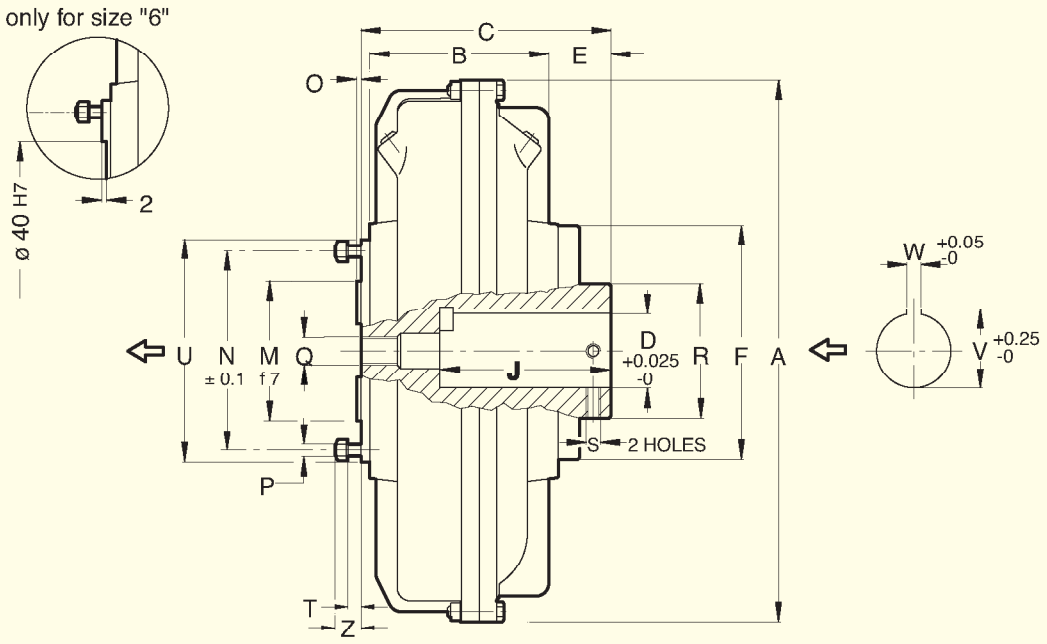


SELECTION TABLE

Fluid couplings for standard electric motor

MOTOR		(1) 3600 rpm		1800 rpm		1200 rpm		900 rpm	
FRAME	SHAFT DIA. mm (inch)	HP	COUPLING	HP	COUPLING	HP	COUPLING	HP	COUPLING
143T	22.275 (0.875)	1.5	6 K	1	6 K	0.75	7 K	0.5	7 K
145T		2		1.5 - 2		1		0.75	8 K
182T	28.575 (1.125)	3	7 K	3	7 K	1.5	8 K	1	
184T		5		5		2		1.5	9 K
213T	34.925 (1.375)	7.5		7.5	8 K	3		2	
215T		10 - 15		10		5	9 K	3	11 K
254	41.275 (1.625)	15 - 20	8K	15	9 K	7.5	11 K	5	12 K
256T		20 - 25		20		10		7.5	13 K
284T	47.625 (1.875)	-	-	25	11 K	15	12 K	10	
284TS	41.275 (1.625)	30	9K	-	-	-	-	-	-
286T	47.625 (1.825)	-	-	30	12 K	20	13 K	15	15 K
286TS	41.275 (1.625)	40	9K	-	-	-	-	-	-
324T	53.975 (2.125)	-	-	40	12 K	25	13 K	20	17 K
324TS	47.625 (1.875)	50	9K	-	-	-	-	-	-
326T	53.975 (2.125	-	-	50	13 K	30	15 K	25	17 K
364T	60.325 (2.375)			60		40		30	
365T				75	15 K	50		40	
404T	73.025 (2.875)			100		60	17 K	50	19 K
405T				125	17 K	75		60	
444T	85.725 (3.375)			150		100	19 K	75	21 K
445T				200-250	19 K	125	21 K	100	
				max		max		max	
NON - STANDARD MOTOR				400	21 K	270	24 K	150	24 K
				600	24 K	400	27 K	220	27 K
				958	27 K	598	29 K	350	29 K
				1360	29 K	1088	34 K	600	34 K
						1350	D 34 K	1000	D 34 K
						2700	46 k	2000	46 k
						3400	D 46 K	2700	D 46 K

General note: The fluid coupling size is tied to the motor shaft dimensions
(1) Special version, 24 hours/day service



KR

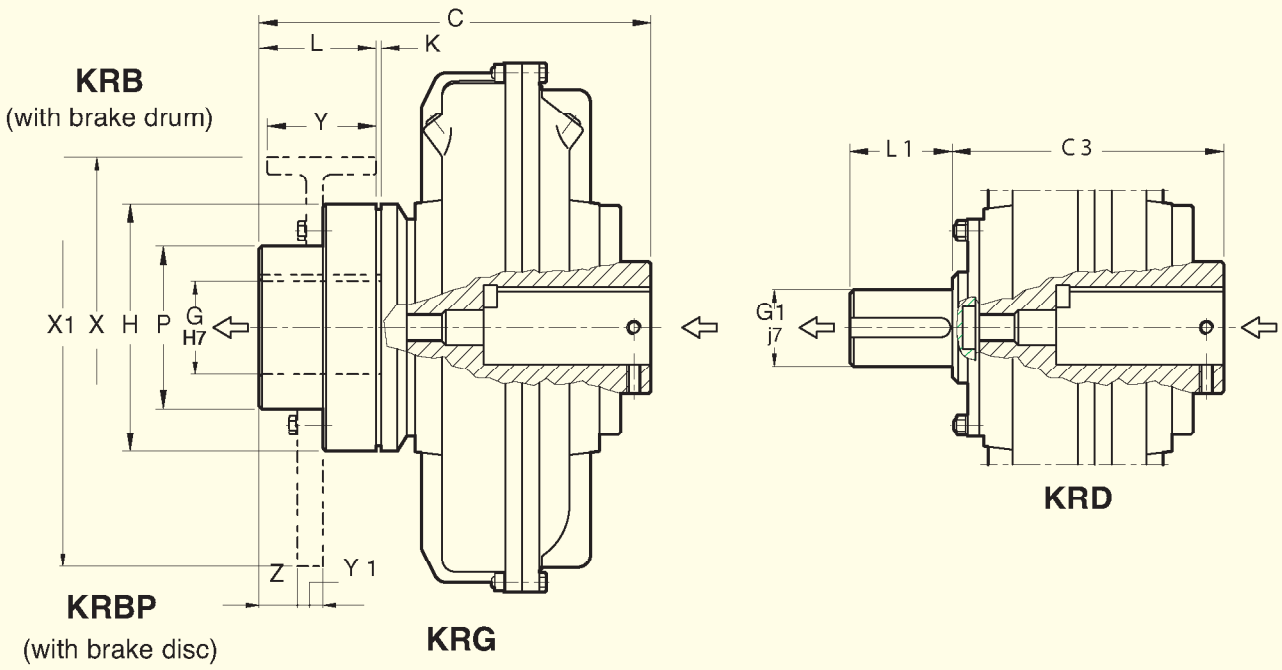
Note: The arrows ⇦ indicate input and output of the standard version.

⇨ Dimensions

Size	D mm.	D inch	J	W	V	A	B	C	E	F	M	N	O	P Nr.	P ø	Q	R	S	T	U	Z	Weight kg (less oil)	Oil lt max
6	•22.225	.875	57.2	4.762	24.5	195	60	90.5	29	88	*	53	*	4	7	–	33	1/4 20 UNC	6	68	16.5	2.7	0.5
	15.875	.625	47.6		18																		
7	•34.925	1.375	79.4	7.937	38.6	228	77	124	34	114	60	73	3	6		1/2 13 UNC	50	5/16 18 UNC		88	14	5.1	0.92
	28.575	1.125	63.5	6.35	31.5																		
	22.225	.875	57	4.762	24.5																		
8	•34.925	1.375	79.4	7.937	38.6	256	91	129	30												15	5.5	1.5
	28.575	1.125	63.5	6.35	31.5																		
9	•41.275	1.625	95.3	9.525	45.6	295	96	160	46	128	80	88.9	8		8	3/4 10 UNC	70	7/16 14 UNC		107		10	1.95
	34.925	1.375	79.4	7.937	38.6																		

- • MAX BORE WITH A KEYWAY AS PER USAS SQUARE B17.1
- * SEE DRAWING
- – WHEN ORDERING, SPECIFY SIZE, MODEL AND **D** DIAMETER, EXAMPLE: 7 KR D. 34.925

DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE



Note: The arrows ⇦ indicate input and output of the standard version.

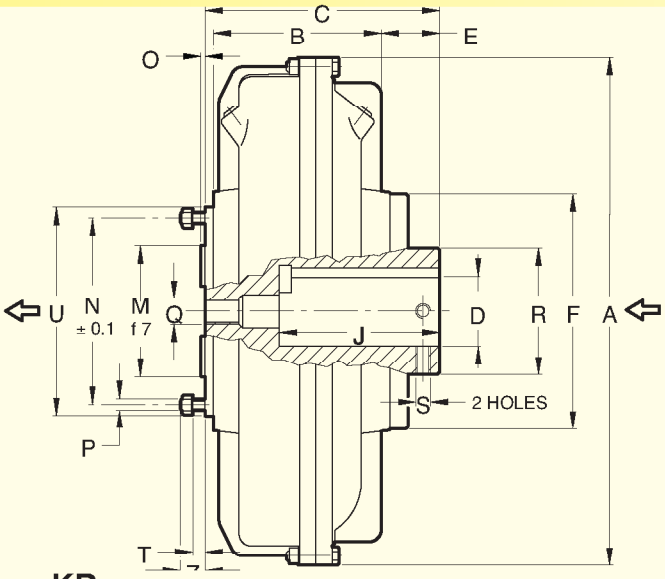
Dimensions mm

Size	C	C_3	G max	G_1	H	K	L	L_1	P	Flex coupling	Brake drum X - Y	Weight kg (less oil) KRG	KRD
6	149	107	28	22.225	73	2	40	41.275	45	BT02	on request	3.9	3
7	201	145	42	34.925	110	2	60	50.8	70	BT10	160 - 60	8.3	5.7
8	206	150	42	34.925	110	2	60	50.8	70	BT10	160 - 60	8.7	6.1
9	261	191	55	47.625	132	2	80	63.5	85	BT20	160 - 60 200 - 75	16	11.6

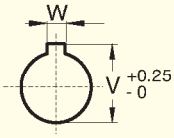
- G_1 SHAFT WITH SQUARE KEYWAY AS PER USAS B17.1
- UPON REQUEST: BORE **G** MACHINED - G_1 SPECIAL SHAFT
- WHEN ORDERING, SPECIFY SIZE, MODEL AND **D** DIAMETER, EXAMPLE: 8 KRB D.28.575 BRAKE DRUM 160 x 60

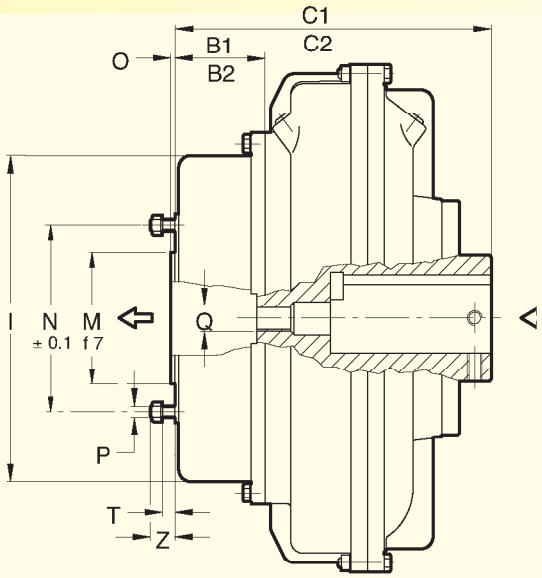
DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

SERIES 11 - 34 KR / CKR / CCKR - 46CCKR

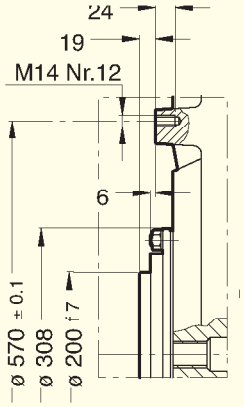


KR

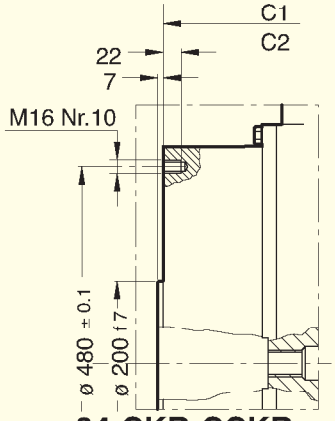




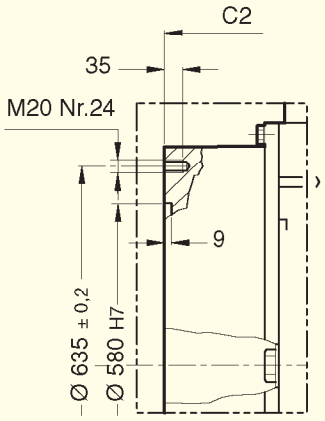
CKR - CCKR



34 KR



34 CKR-CCKR



46CCKR

Size	Weight Kg (less oil)			Oil max lt		
	KR	CKR	CCKR	KR	CKR	CCKR
11	12	14.5	–	2.75	3.35	–
12	155	18.5		4.1	4.8	
13	24	27		5.2	5.8	
15	37	41	48.7	7.65	8.6	9.3
17	51	57	66	11.7	13.6	14.9
19	58	64	73	14.2	16.5	18. 5
21	87	97	105	19	23	31
24	105	115	129	28.4	31.2	39
27	161	179	198	42	50	61
29	214	232	242	55	63	73
34	350	367	377	82.5	92.5	101
46			918			219

Dimensions

Note: The arrows ⇦ indicate input and output of the standard version.

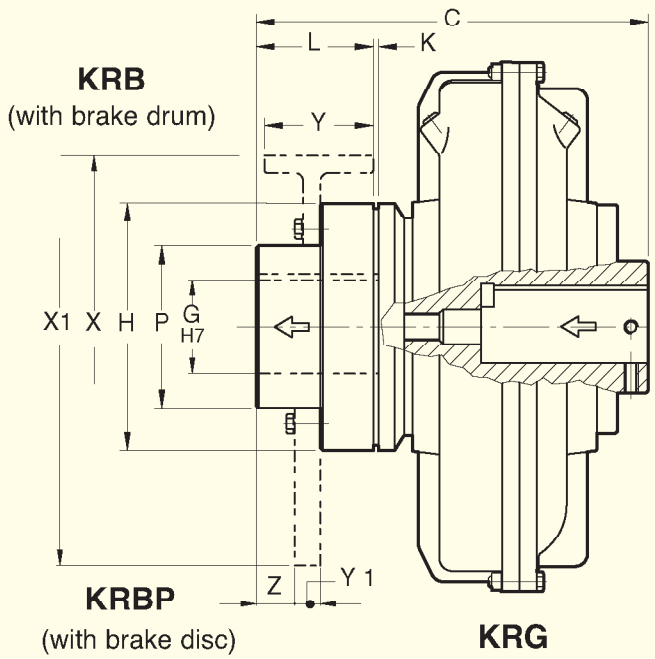
Size	D mm.	D inch	J	A	B	B_1 KR	B_2 CKR	C CCKR	C_1 KR	C_2 CKR	E CCKR	F	I	M	N	O	P Nr.	P Ø	Q	R	S	T	U	V	W	Z
11	47.625••	1.875	111	12.7	50	325	107	68.5	–	169	215	–	42	128	195	60	88.9	8	6	M8	3/4 10 UNC	70	7/16 14 UNC	6	107	15
	41.275	1.625	95.3	9.525	45.6																					
12	47.625••	1.875	111	12.7	50	370	122				236		39	145												
13	60.325••	2.375	143	15.875	63	398	137	75		199	258		46	179	224	80	122.2	5	8		7/8 9 UNC	89	9/16 12 UNC	7	142	17
	53.975	2.125	127	12.7	59.7																					
15	73.025••	2.875	178	19.05	76	460	151	87	135	226	294	342	56	206	259	90	136			M10		101	5/8 11 UNC	8	156	19
	60.325	2.375	143	15.875	67.3																					
	53.975	2.125	127	12.7	50.7																					
17	85.725••	3.375	194	22.225	92.3	520	170	96	176	248	328	408	62	225	337	125	160	15	12		1 1/4 7 UNC	126	3/4 10 UNC		180	
	73.025	2.875	178	19.05	81.4																					
19	85.725••	3.375	194	22.225	92.3	565	190						42													
	73.025	2.875	178	19.05	81.4																					
21	98.425••	3.875	216	25.4	104.3	620	205	110	200	286	386	476	71	250	400	160	228	5	8	M14		136		14	255	30
	85.725	3.375	210	22.225	95.5																					
24	98.425••	3.875	216	25.4	104.3	714	229						47													
	85.725	3.375	210	22.225	95.5																					
27	120.65••	4.750	216	31.75	129.8	780	278	131	231	322	440	539	41	315	537	200	275	7		M16	1 3/4 5 UNC	185	7/8 9 UNC		308	33
29	133.35••	5.250	241	31.75	142.7	860	295			349	467	566		350								205				
34	150.8••	5.938	265	38.1	161.2	1000	368			422	553	662	54	400		*	*	*	*	*		240		–	–	–
46	180 max	7.086	320	1330	–	–	310	–	–	797	–	–	695	*	*	*	*	*	*	M52	190	M36	*	(2)	(2)	(2)

•• MAX BORE WITH REDUCED **V** DEPTH KEY WAY
* SEE DRAWING
– WHEN ORDERING, SPECIFY SIZE, MODEL AND **D** DIAMETER, EXAMPLE: 29 CCKR D. 133.36

Dim. **D** tolerance: up to 50.8 $^{+0.025}_{-0}$; from 50.8 to 101.6 $^{+0.038}_{-0}$; from 101.6 to 152.4 $^{+0.05}_{-0}$

Dim. **W** tolerance: up to 12.7 $^{+0.05}_{-0}$; from 15.875 to 25.4 $^{+0.076}_{-0}$; from 25.4 to 38.1 $^{+0.1}_{-0}$

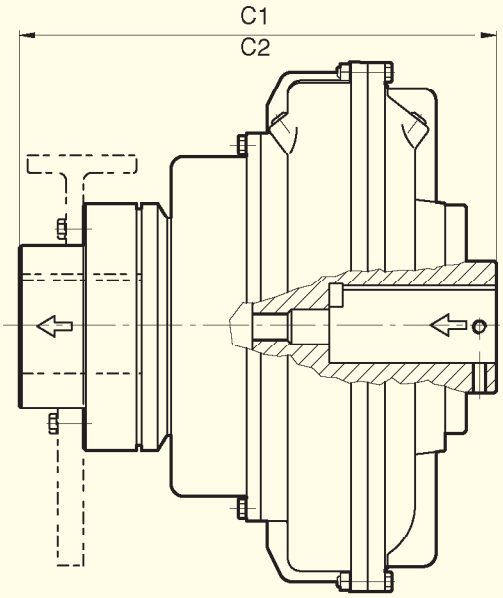
DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE



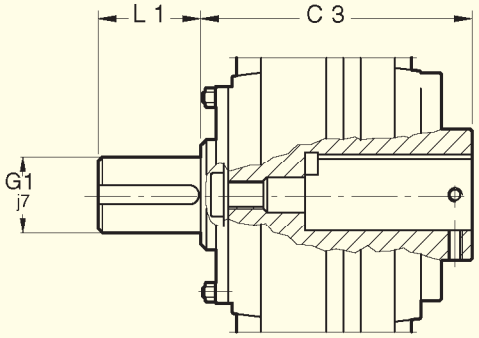
KRB
(with brake drum)

KRBP
(with brake disc)

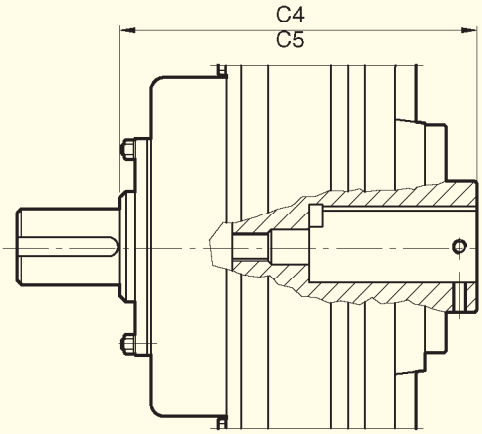
KRG



CKRG - CCKRG



KRD



CKRD - CCKRD

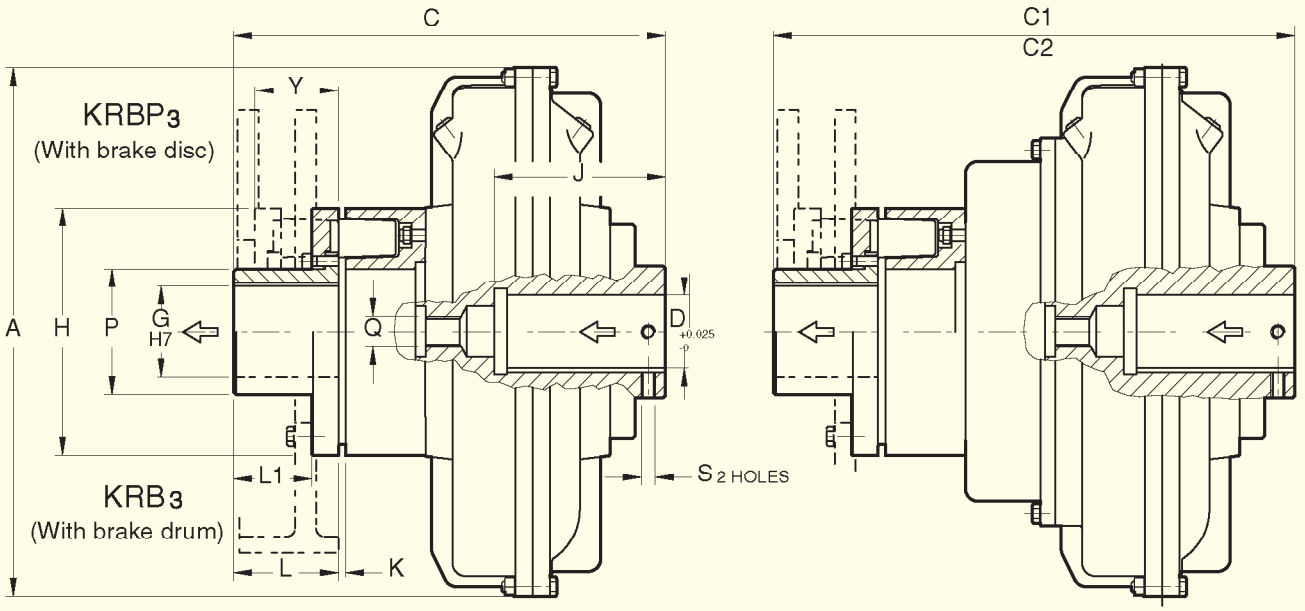
Dimensions mm.

Note: The arrows ⇦ indicate input and output of the standard version.

Size	C KRG	C CKRG	C CCKRG	C KRD	C CKRD	C CCKRD	G max	G_1	H	K	L	L_1	P	Flex coupling	Brake drum X - Y	Brake disc X_1 - Y_1	Z	Weight kg (less oil) KRG	CKRG	CCKRG	KRD	CKRD	CCKRD
11	270	316	–	200	246	–	55	47.625	132	2	80	63.5	85	BT20	160 x 60 200 x 75	on request	–	18	20.5	–	13	15.5	–
12		337			267													21.5	24.5		16.7	19.7	
13	303	363		230	290		70	53.975	170			89	100	BT30	200 x 75 250 x 95	400 x 30 450 x 30	5	34	37		26.3	29.3	
15	364	432	480	251	319	367	80	60.325					120	BT40	250 x 95 315 x 118	400 x 30 450 x 30	35	50.3	54.3	62	40.4	44.4	52.1
17	387	467	547	288	368	448	90	73.025	250	3	110	108	135	BT50	315 x 118 400 x 150	445 x 30 450 x 30	15	77	83	92	58.1	64.1	73.1
19																		84	90	99	65.1	71.1	80.1
21	459	559	649	318	418	508	110	85.725	290		140	127	170	BT60	400 x 150 500 x 190	560 x 30 630 x 30	45	129	139	147	99.5	109.5	117.5
24																710 x 30 795 x 30		147	157	165	117.5	127.5	135.5
27	509	627	726	358	476	575	130	101.6	354	4	150	139.7	200	BT80	500 x 190	710 x 30 795 x 30	20	231	249	268	181	189	218
29	536	654	753	385	503	602												284	302	311	234	252	261
34	673	784	893	472	603	702	160	139.7	395	5	170	152.4	240	BT90	630 x 236	1000 x 30	18	491	486	496	376	395	401

– G_1 SHAFT WITH SQUARE KEYWAY AS PER USAS B17.1
– UPON REQUEST BORE **G** MACHINED - G_1 SPECIAL SHAFT
– WHEN ORDERING, SPECIFY SIZE, MODEL AND **D** DIAMETER, EXAMPLE: 17 CKRBP D. 73.025
BRAKE DISC 450 x 30

DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE



KRG3 **CKRG3 - CCKRG3**

The three pieces flexible coupling **B3T**, allows the removal of the elastic elements (rubber blocks), without removal of the electric motor; only with the **..KRB3** (with brake drum) coupling the electric motor must be moved by the value of **Y**.
Y = axial displacement male part of the coupling **B3T** necessary for the removal of the elastic elements.

Dimensions

Note: The arrows indicate input and output of the standard version.

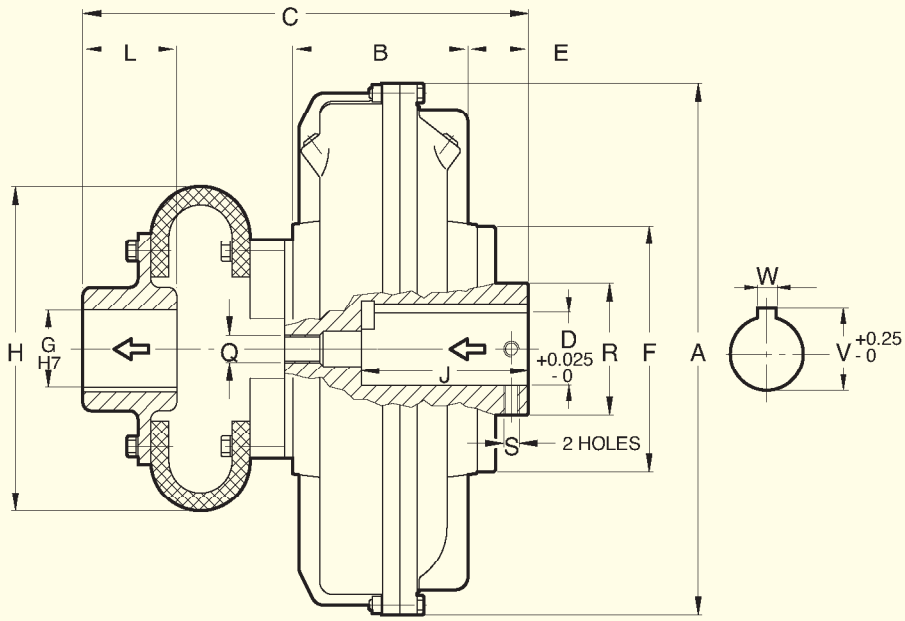
Size	D mm.	D inch.	J	W	V	A	C KRG3	C_1 CKRG3	C_2 CCKRG3	G max	H	K	L	L_1	P	Q	Y	Elastic coupling	Weight kg (less oil) KRG3	CKRG3	CCKRG3
17	85.725••	3.375	194	22.225	92.3	520	443	523	603	80	240	3	110	82	130	1 1/4 7 UNC	82	B3T50	84	90	99
	73.025	2.875	178	19.05	81.4																
19	85.725••	3.375	194	22.225	92.3	565													91	97	106
	73.025	2.875	178	19.05	81.4																
21	98.425••	3.875	216	25.4	104.3	620	483	583	673	110	290		140	78	150			B3T60	134	144	152
	85.725	3.375	210	22.225	95.3																
24	98.425••	3.875	216	25.4	104.3	714													152	162	176
	85.725	3.375	210	22.225	95.3																
27	120.65••	4.750	216	31.75	128.8	780	591	709	808	130	354	4	150	112	180	1 3/4 5 UNC	120	B3T-80	250	268	287
29	133.35••	5.250	241	31.75	142.7	860	618	736	835										303	321	391
34	150.8••	5.938	265	38.1	161.2	1000	721	852	951		395	5	170	119	205		151	B3T-90	488	496	506
46	180 max	7.086	320			1330	-	-	1092	180	490	7	195	138	290		122	B3T-90	-	-	1102

- MAX BORE WITH A KEYWAY AS PER USAS B17.1
•• MAX BORE WITH REDUCED **V** DEPTH KEYWAY
– UPON REQUEST BORE G MACHINED
– WHEN ORDERING, SPECIFY SIZE, MODEL AND **D** DIAMETER, EXAMPLE: 15 KRM D. 60.325

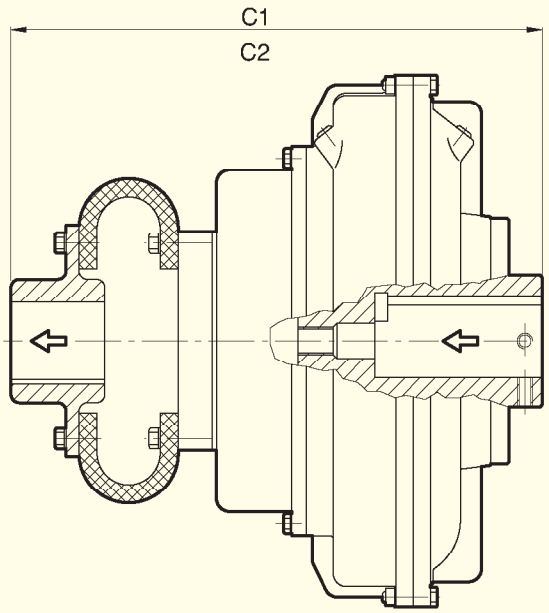
Dim. **D** tolerance: up to 50.8 $^{+0.025}_{-0}$; from 50.8 to 101.6 $^{+0.038}_{-0}$; from 101.6 $^{+0.05}_{-0}$

Dim. **W** tolerance: up to 12.7 $^{+0.05}_{-0}$; from 15.875 to 25.4 $^{+0.076}_{-0}$; from 25.4 to 38.1 $^{+0.1}_{-0}$

DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE



KRM



CKRM - CCKRM

Note: The arrows ⇦ indicate input and output of the standard version.

⇨ Dimensions

Size	D mm.	D inch.	J	W	V	A	B	C KRM	C_1 CKRM	C_2 CCKRM	E	F	G max	H	L	Q	R	S	Flex coupling	Weight kg (less oil) KRM	CKRM	CCKRM
9	41.275•	1.625	95.3	9.525	45.6	295	96	291	–		46	128								14.5	–	
	34.925	1.375	79.4	7.937	38.6																	
11	47.625••	1. 875	111	12.7	50	325	107	300	346	–	42		50	185	50	3/4 10 UNC	70	7/16 14 UNC	53 F	16.5	19	–
	41.275	1.625	95.3	9.525	45.6																	
12	47.625••	1.875	111	12.7	50	370	122		367		39	145								20	23	
13	60.325••	2.375	143	15.875	63	398	137	351	411		46	179	65	228	72	7/8 9 UNC	89	9/16 12 UNC	55 F	33	36	
	53.975	2.125	127	12.7	59.7																	
15	73.025••	2.875	178	19.05	76	460	151	388	456	504	56	206	70	235	80		101	5/8 11 UNC	56 F	48	52	59.7
	60.325	2.375	143	15.875	67.3																	
	53.975	2.125	127	12.7	59.7																	
17	85.725••	3.375	194	22.225	92.3	520	170	405	485	565	62	225	75	288	90	1 1/4 7 UNC	126	3/4 10 UNC	58 F	67	73	82
	73.025	2.875	178	19.05	81.4																	
19	85.725••	3.375	194	22.225	92.3	565	190				42									74	80	89
	73.025	2.875	178	19.05	81.4																	
21	98.425••	3.875	216	25.4	104.3	620	205	522	622	712	71	250	90	378	110		136		65 F	124	134	142
	85.725	3.375	210	22.225	95.5																	
24	98.425••	3.875	216	25.4	104.3	714	229				47									142	152	160
	85.725	3.375	210	22.225	95.3																	
27	120.65••	4.750	216	31.75	129.8	780	278	550	668	767	41	315	100	462	122	1 3/4 5 UNC	185	7/8 9 UNC	66 F	214	232	251
29	133.35••	5.250	241	31.75	142.7	860	295	600	718	817		350	120	530	145		205		68 F	296	314	324
34	150.8••	5.938	265	38.1	161.2	1000	368	683	814	913	54	400	140	630	165		240		610 F	480	497	507

• MAX BORE WITH A KEYWAY AS PER USAS B17.1
•• MAX BORE WITH REDUCED **V** DEPTH KEYWAY
– UPON REQUEST BORE G MACHINED
– WHEN ORDERING, SPECIFY SIZE, MODEL AND **D** DIAMETER, EXAMPLE: 15 KRM D. 60.325

Dim. **D** tolerance: up to 50.8 $^{+0.025}_{-0}$; from 50.8 to 101.6 $^{+0.038}_{-0}$; from 101.6 $^{+0.05}_{-0}$

Dim. **W** tolerance: up to 12.7 $^{+0.05}_{-0}$; from 15.875 to 25.4 $^{+0.076}_{-0}$; from 25.4 to 38.1 $^{+0.1}_{-0}$

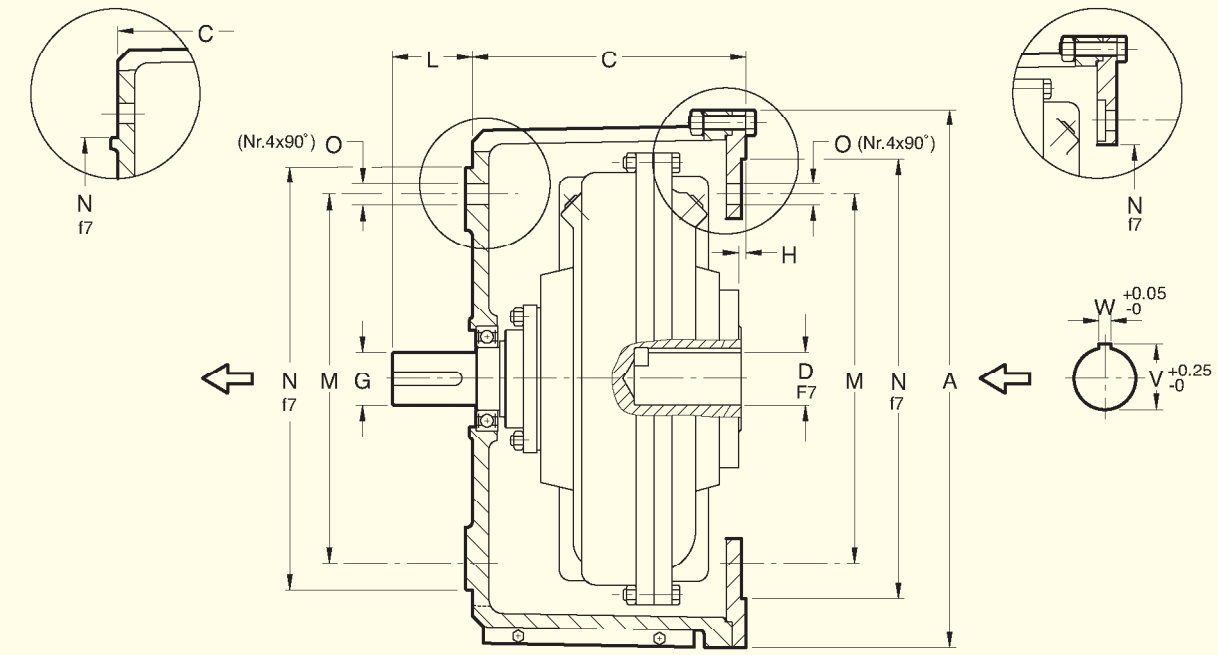
DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

TRANSFLUID
industrial transmissions

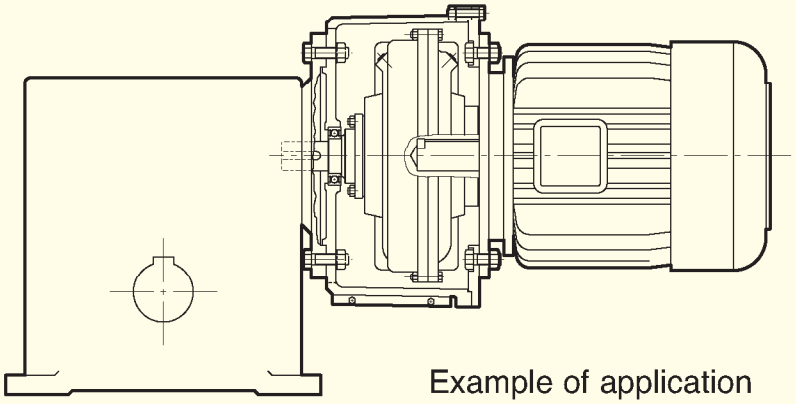
only for size “6”

EK

only for size “6”



Note: The arrows ⇦ indicate input and output of the standard version.



Example of application

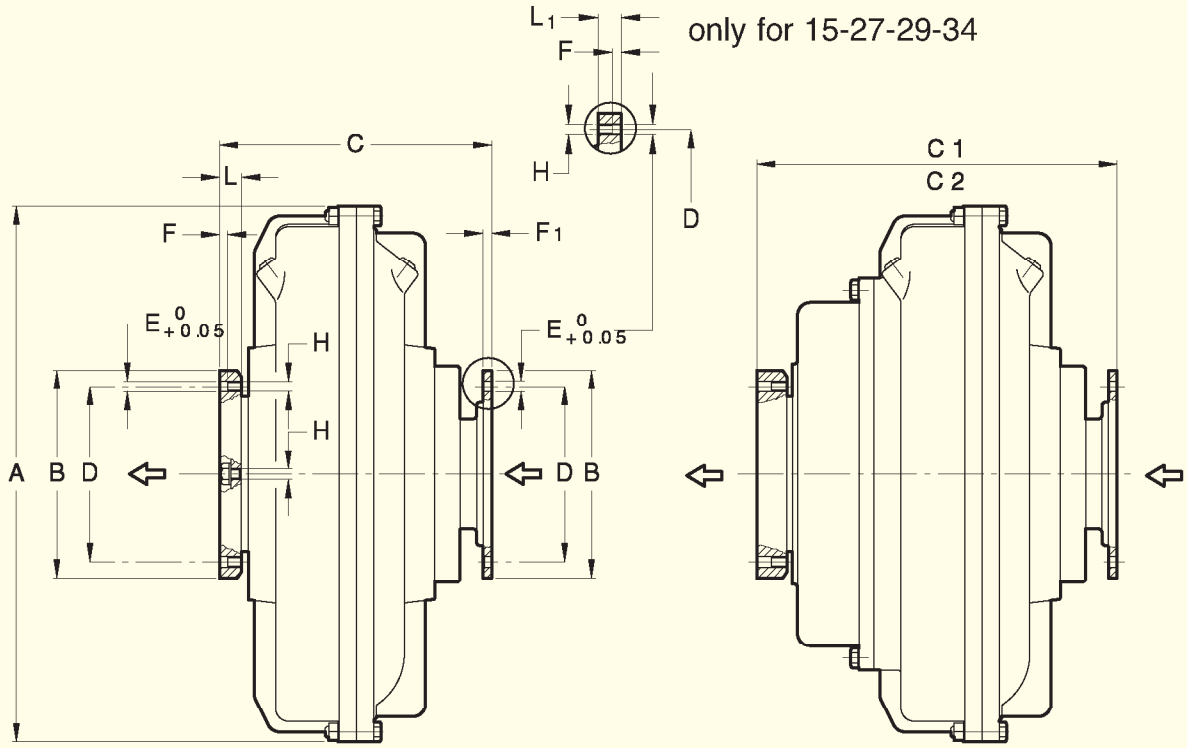
Dimensions

Size	D mm.	D inch	J	W	V	G	L	A	C	H	M	N	O	Oil max lt	Electric Motor HP at 1800 RPM size	RPM
6	•22.225	.875	50.5	4.762	24.5	22.225	50.2	248	110	4.7	149.2	114.3	11	0.5	145TC	1.5 - 2 (2)
	15.875	.625	48		18	15.875	44.8			3.8					145TC	1
															56C	0.75
7	28.575	1.125	71	6.35	31.5	28.575	47	269	132	–2.6	184.2	215.9	13.5	0.92	182TC	3
															184TC	5
8	34.925	1.375	80	7.937	38.5	34.925	54	299	145.5	1.4				1.5	213TC	7.5
															215TC	10
9	41.275	1.625	95.2	9.525	45.6	41.275	63	399	187	0				1.95	254TC	15
															256TC	20 (2)
11	••47.625	1.875	111	12.7	50	47.625	73				228.6	266.7		2.75	284TC	25
															286TC	30

• MAX BORE WITH A KEYWAY AS PER USAS B17.1
•• MAX BORE WITH REDUCED **V** DEPTH KEYWAY
G SHAFT SUPPLIED WITH SQUARE KEY USAS B 17.1
(2) WHEN FULL POWER IS ABSORBED USE HIGH DENSITY FIRE RESISTANT OIL

Dim. **G** tolerance: up to 34.925 $^{+0}_{-0.013}$; from 41.925 to 47,625 $^{+0}_{-0.025}$

DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE



KCM

CKCM - CCKCM

Note: The arrows ⇦ indicate input and output of the standard version.

THIS FLUID COUPLING MOUNTS ONE (1) HALF GEAR COUPLING ON EACH SIDE.
THIS ALLOWS THE REMOVAL OF THE FLUID COUPLING WITHOUT MOVING THE MOTOR OR THE DRIVEN MACHINE

Dimensions

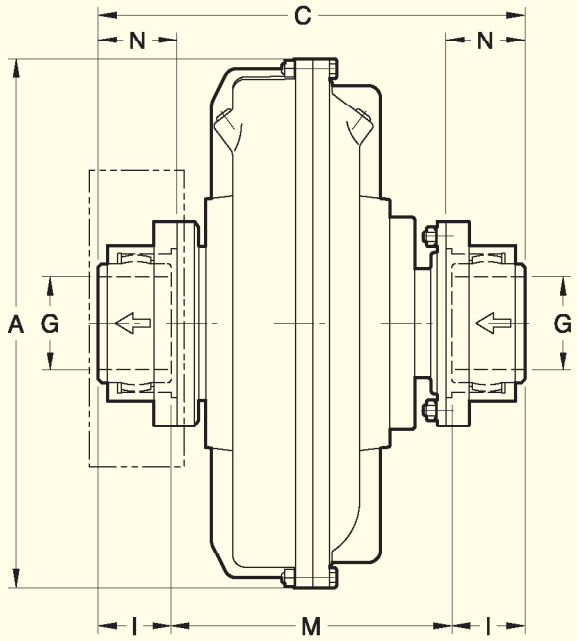
Size	A	B	C KCM	C CKCM	C CCKCM	D	E Nr.	E Ø	F	F1	H	L	L1	Weight kg (less oil) KCM	Weight kg (less oil) CKCM	Weight kg (less oil) CCKCM	Gear coupling size
7	228	116	140	–	–	95.25	6	6.4	7	6.5	1/4 28 UNF	17	–	7.3	–	–	1" S (3)
8	256		145											7.7			
9	295	152.5	177	–	–	122.22	8	9.57			3/8 24 UNF	18.5	–	14	–	–	1" 1/2 S (3)
11	325		186	244										16	19.4		
12	370		198	265								21		20.5	23.4		
13	398		208	289.5										28	32.6		
15	460	213	252	320	368	180.975	6	15.87		–	5/8 11 UNC	23	22	50.5	54.5	62.2	2" 1/2 E (4)
17	520		250	332	412	177.8	10	12.75	9.5	10	1/2 20 UNF	25.4	–	66	72	81	2" 1/2 S (3)
19	565													75	81	90	
21	620		320	422	512							32		108	114	122	
24	714													129	132	140	
27	780	280	408	526	625	241.3	8	19.05	22	28	3/4 10 UNC	57	51	194	213	232	3" 1/2 E (4)
29	860		437	555	654									248	266	276	
34	1000	318	503	634	733	279.4							58	403	418	428	4" E (4)
46	1330	457.2	-	-	937	400.05	14	22.225	22	-	7/8 11 UNC	-	56	-	-	1058	6" E

(3) S = SHROUDED BOLTS

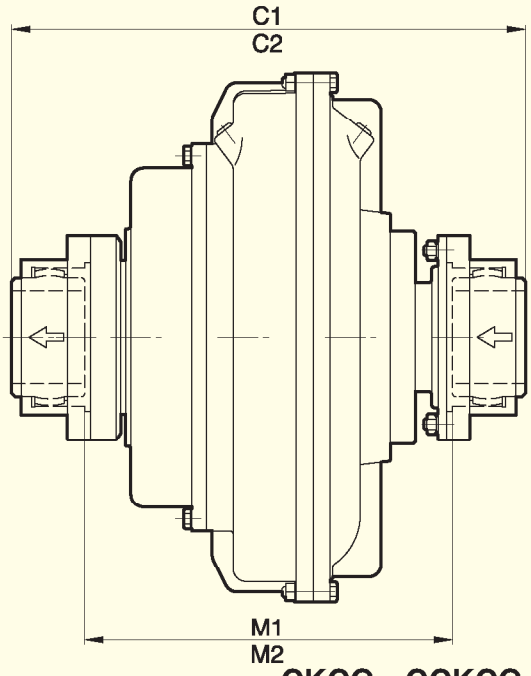
(4) E = EXPOSED BOLTS

WHEN ORDERING, SPECIFY SIZE AND MODEL EXAMPLE: 34 CKCM

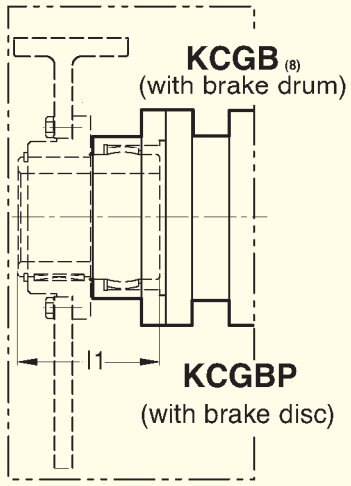
DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE



KCG



CKCG - CCKCG



Brake drum or disc upon request
(8) For ...KCGB dimension
M - M1 - M2 may vary
(contact Transfluid)

Note: The arrows ⇦ indicate input and output of the standard version.

THIS FLUID COUPLING MOUNTS ONE (1) HALF GEAR COUPLING ON EACH SIDE. THIS ALLOWS THE REMOVAL OF THE FLUID COUPLING WITHOUT MOVING THE MOTOR OR THE DRIVEN MACHINE

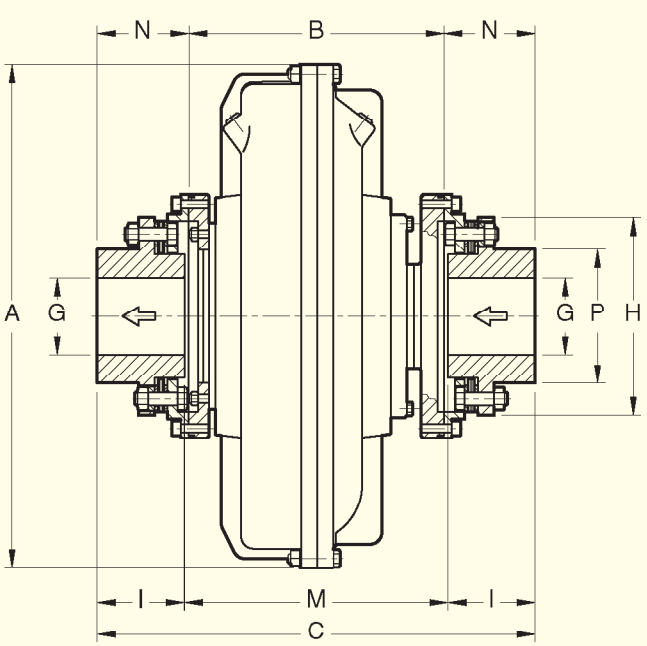
⇨ Dimensions

Size	A	C KCG	C_1 CKCG	C_2 CCKCG	G max	I	I_1	M KCG	M_1 CKCG	M_2 CCKCG	N
7	228	229	–	–	50	43	101.6	143	–	–	44.5
8	256	234						148			
9	295	278.6						180			
11	325	287.6	345.6		65	49.3	114.3	236	247		50.8
12	370	299.6	366.6					201	268		
13	398	309.6	385.1					211	286.5		
15	460	411	479	527	95	77	140.4	257	325	373	79.5
17	520	409	491	571				255	337	417	
19	565										
21	620	479	581	671				325	427	517	
24	714										
27	780	627	745	845	134	106.5	184.2	414	532	631	109.5
29	860	656	774	874				443	561	660	
34	1000	750	881	980	160	120.5	203.2	509	640	739	123.5
46	1330	-	-	1313.4	244	188.2	304.8	-	-	937	192.2

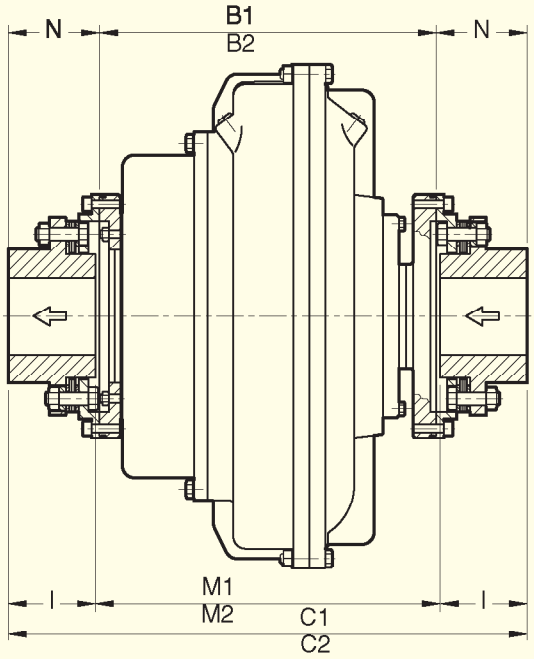
Gear coupling	
Size	Weight Kg
1" S (3)	4
1" 1/2 S (3)	8
(4) 2" 1/2 E	23.5
2" 1/2 S (3)	
3" 1/2 E (4)	56.6
(4) 4" E	81.5
6" E (5)	306

(3) S = SHROUDED BOLTS
(4) E = EXPOSED BOLTS
WHEN ORDERING, SPECIFY SIZE AND MODEL EXAMPLE: 34 CKCG

DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE



KDM



CKDM - CCKDM

Note: The arrows ⇦ indicate input and output of the standard version.

THIS FLUID COUPLING MOUNTS A HALF DISC COUPLING TO THE INPUT AND OUTPUT SIDE. THE DISC PACK REQUIRES MINIMAL MAINTENANCE AND ALLOWS THE REMOVAL OF THE FLUID COUPLING WITHOUT MOVING THE MOTOR OR DRIVEN MACHINE.

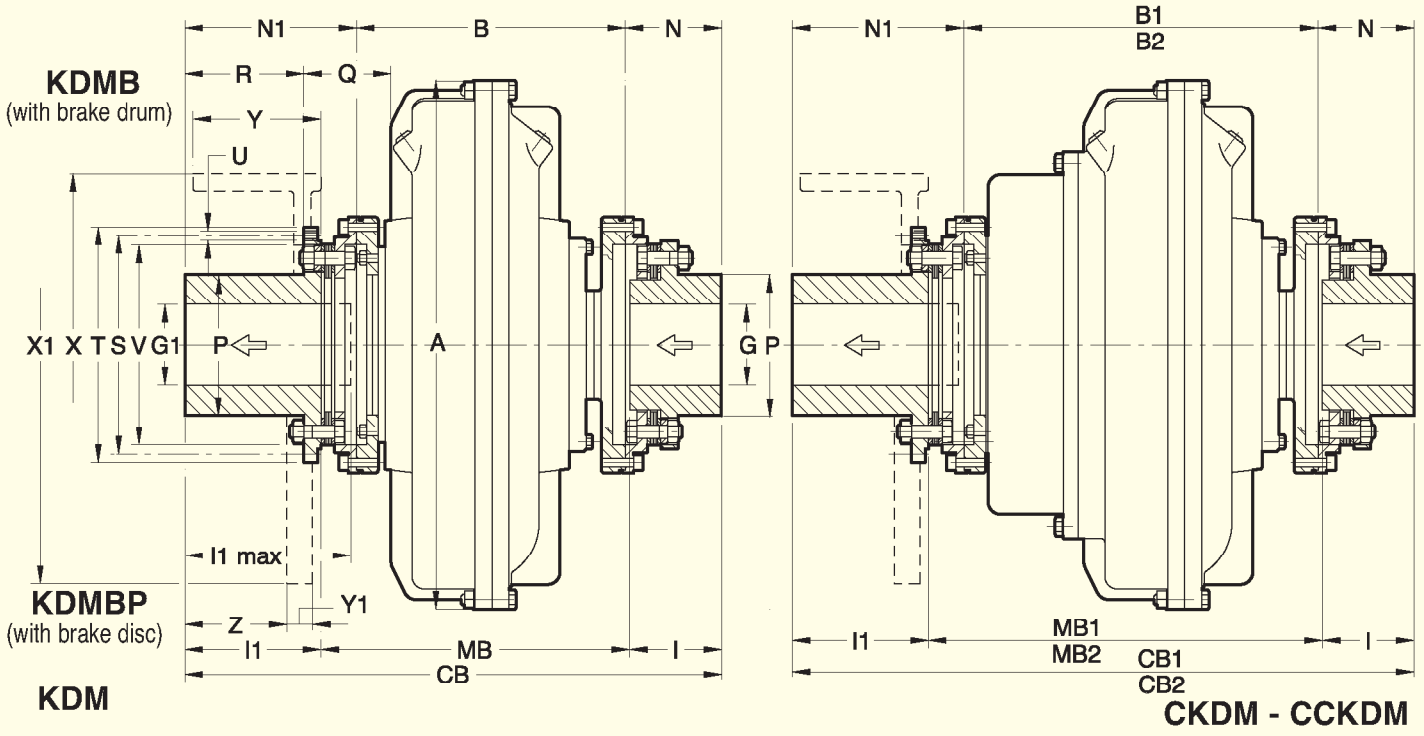
Dimensions

Size	A	B	B_1	B_2	C	C_1	C_2	G	H	I	M	M_1	M_2	N	P	Disc coupling	Weight kg (less oil)		
		KDM	CKDM	CCKDM	KDM	CKDM	CCKDM	max			KDM	CKDM	CCKDM				KDM	CKDM	CCKDM
9	295	177			278						180	–					20.5	–	
11	325	186	232	–	289	336	–	55	123	50	189	235	–	51.5	76	1055	22.5	25	–
12	370		253			356						256					26	29	
13	398	216	276		339	399		65	147	60	219	279		61.5	88	1065	41.3	44.3	
15	460	246	314	362	391	459	507	75	166	70	251	319	367	72.5	104	1075	65	69	76.7
17	520	269	349	429	444	524	604	90	192	85	274	354	434	87.5	122	1085	89	95	104
19	565																96	102	111
21	620	315	415	505	540	640	730	115	244	110	320	420	510	112.5	154	1110	159	169	177
24	714																177	187	195
27	780	358	476	575	644	762	861	135	300	140	364	482	581	143	196	1140	289	307	326
29	860	387	505	604	673	792	890				393	511	610				342	360	370
34	1000	442	573	672	768	899	998	165	340	160	448	579	678	163	228	1160	556	555	565

– UPON REQUEST BORED **G** MACHINED

– WHEN ORDERING, SPECIFY SIZE AND MODEL, EXAMPLE: 27 CKDM

DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE



Note: The arrows ⇦ indicate input and output of the standard version.

KDM / CKDM / CCKDM TYPE FLUID COUPLING, BUT MODIFIED TO INCORPORATE A BRAKE DRUM OR DISC

Dimensions

Size	Brake drum X - Y	Brake disc X_1 x Y_1	Weight kg (less oil) KDM	CKDM	CCKDM
12	200 - 75	on request	27	30	–
13			42.8	45.8	
15	250 - 95	450 - 30	69.3	73.3	81
17	315 - 118	500 - 30	99	105	114
19	400 - 150	560 - 30	105	112	125
21	400 - 150	630 - 30	179	189	197
24	500 - 190	710 - 30	197	207	215
27	500 - 190	800 - 30	317	335	354
29			370	388	398
34	on request	800 - 30 1000 - 30	599	587	597

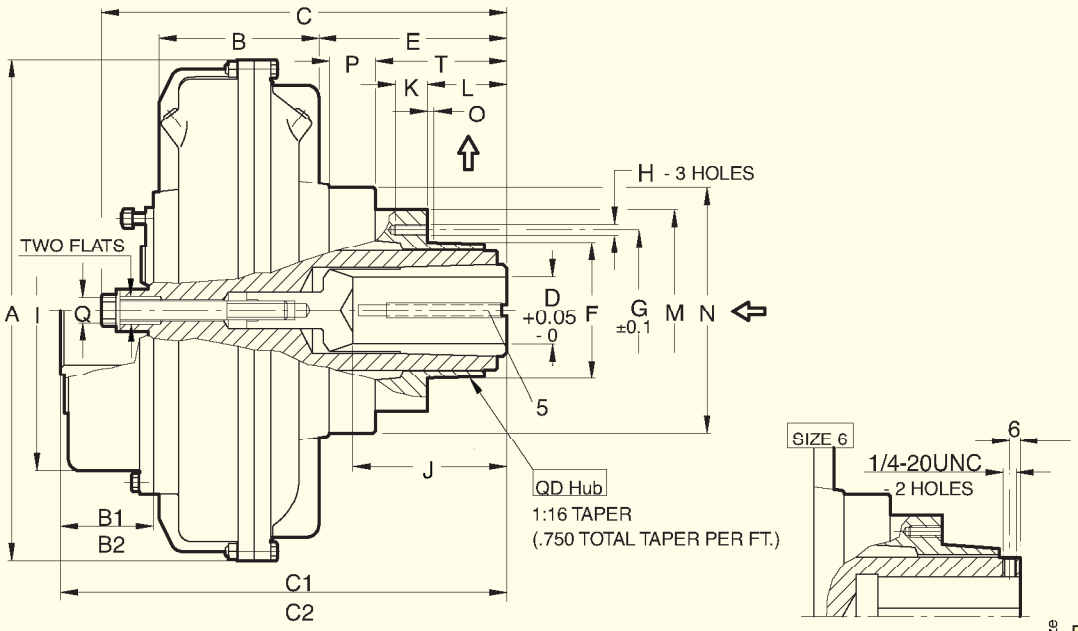
Dimensions

Size	A	B KDM	B_1 CKDM	B_2 CCKDM	CB KDM	CB_1 CKDM	CB_2 CCKDM	G max	G_1 max	I	I_1 std	I_1 max	MB KDM	MB_1 CKDM	MB_2 CCKDM	N std	N_1	P	Q	R	S ±0.1	T f7	U Nr.	U Ø	V	Z	Disc coupling
12	370	186	253	–	336.5	403.5	–	55	60	50	80		206.5	273.5	–	51.5	99	76	67	69	128	142	8	M8	114	–	1055
13	398	216	276		440.5	500.5		65	70	60	140	170	240.5	300.5		61.5	163	88	78	129	155	170			140		1065
15	460	246	314	362	495.5	563.5	611.5	75	80	70	150		275.5	343.5	391.5	72.5	177	104	98	134	175	192		M10	157	109	1075
17	520	269	349	429	548.5	628.5	708.5	90	95	85	160	210	303.5	383.5	463.5	87.5	192	122	107	143	204	224	12		185	118	1085
19	565																		87								
21	620	315	415	505	628.5	728.5	818.5	115	120	110		240	358.5	458.5	548.5	112.5	201	154	133	137	256	276		M12	234	112	1110
24	714																		109								
27	780	358	476	575	731.5	849.5	948.5	135	145	140	180		411.5	529.5	628.5	143	230.5	196	107	155	315	338		M14	286	133	1140
29	860	987	505	604	760.5	878.5	977.5						440.5	558.5	657.5				109								
34	1000	442	573	672	845.5	976.5	1075.5	165	175	160			505.5	636.5	735.5	163	240.5	228	124	152	356	382		M16	325	130	1160

– UPON REQUEST BORES **G** AND G_1 MACHINED
– WHEN ORDERING, SPECIFY SIZE, MODEL AND **D** DIAMETER, EXAMPLE: 17 KDMB BRAKE DRUM 400 x 150

DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

KSD-QD



CKSD-QD - CCKSD-QD

Note: The arrows ⇦ indicate input and output of the standard version.

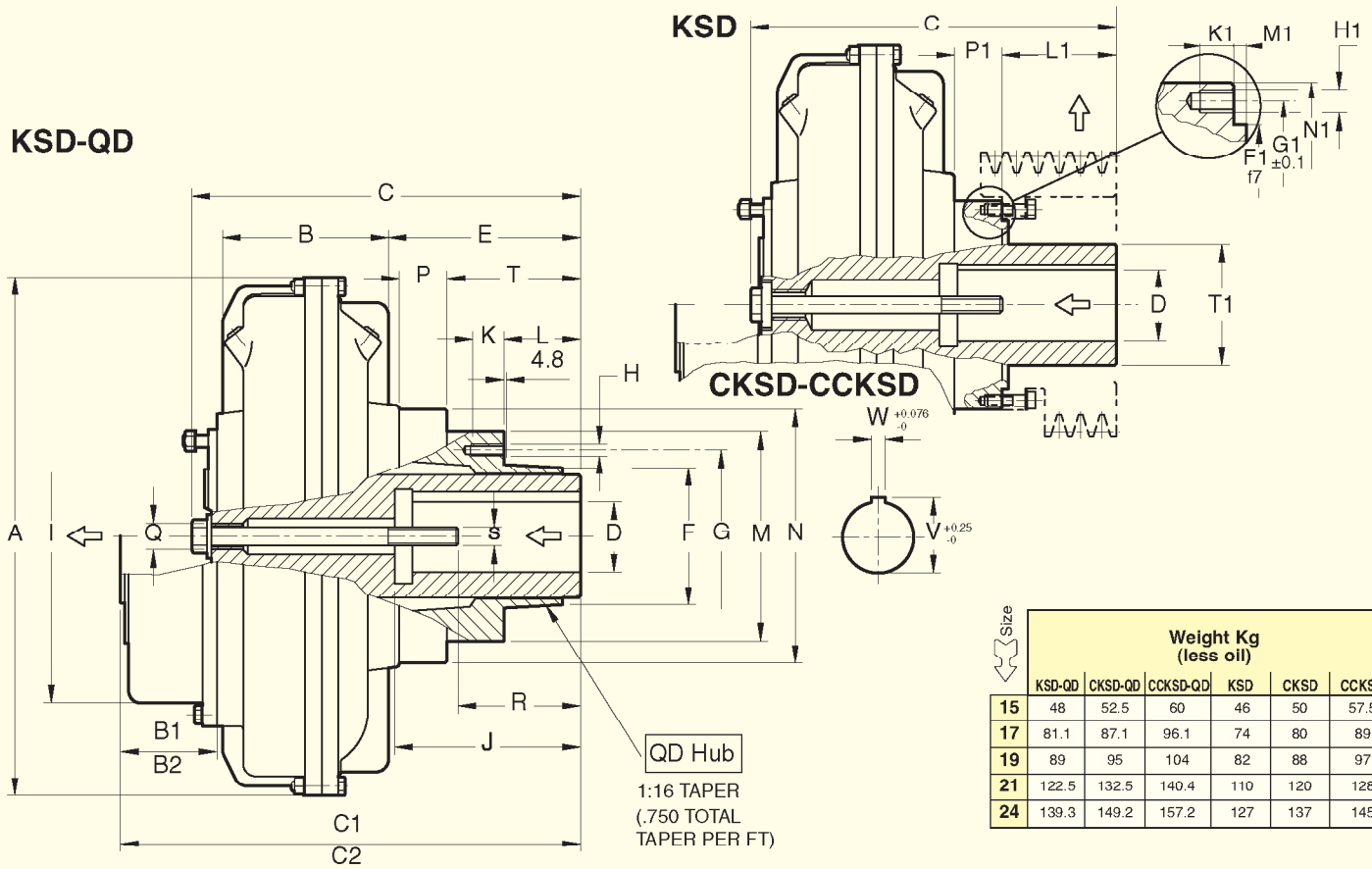
Size	Weight Kg (less oil)		
	KSD-QD	CKSD-QD	CCKSD-QD
6	3.4	–	–
7	6	–	–
8	6.7	–	–
9	13	–	–
11	15.5	18	–
12	23	26	–
13	33.5	36.5	–
15	48	52	59.5
17	70	76	85
19	78	84	93

Dimensions

Size	D mm.	D Inch	J	A	B KSD	B_1 CKS..	B_2 CCKS..	C KSD	C_1 CKS..	C_2 CCKS..	E	F	G	H Nr.	H DIA	I	K	L	M	N	O	P	Q	T	QD hub size
6	22.225•	.875	50.8	195	60			140			62	47.5285	57.2					33	68	88		14.5	–	44.5	SH
	15.875	.625	47.6																						
7	34.925•	1.375		228	77	–		180	–		70.3	55.5625	68.3		1/4 20 UNC	–	15	29.3	79	114		15	1/2 13 UNC	49.3	SDS
	28.575	1.125																							
	22.225	.875	61																						
8	34.925•	1.375		256	91			186			66.3														
	28.575	1.125																							
9	41.275•	1.625	84	295	96		–	249		–	101	71.4375	84.1	3	5/16 18 UNC		18	36.8	98	128	3	26.5		63	SK
	34.925	1.375																							
11	47.625•	1.875	101.6	325	107	73.5		259	289.5		98	79.375	98.4		3/8 16 UNC	195	21		116	140		20	3/4 10 UNC	70	SF
	41.275	1.625																							
12	53.975•	2.125		370	122			293.5	331.5		129.5											23.5		101	
	47.625	1.875																47.5		155					E
	41.275	1.625	108			80						97.3836	127		1/2 13 UNC	224	27		152						
13	60.325•	2.375		398	137			353	380		163							71.4		178		27.5		132.5	
	53.975	2.125																							
	47.625	1.875																							
15	73.025•	2.875	143	460	151	92	140	396	424	472	181	112.7125	142.9		9/16 12 UNC	259	30	86	168	204		35	7/8 9 UNC	138	F
	60.325	2.375																							
	53.975	2.125																							
17	85.725	3.375		520	170						245										4.8	70			
	73.025	2.875	171.5			101	181	487	516	596		130.7694	158.75	4	5/8 11 UNC	337	35	110	184	228			1-1/8 7 UNC	170	J
19	85.725	3.375		565	190						225											45			
	73.025	2.875																							

• MAX BORE WITH A KEYWAY AS PER USAS B 17-1
(5) STEP KEY INCLUDED AS PER USAS B 17-1
– WHEN ORDERING, SPECIFY SIZE, MODEL AND **D** DIAMETER, EXAMPLE: 11 KSD-QD D.34.925

DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE



Size	Weight Kg (less oil)					
	KSD-QD	CKSD-QD	CCKSD-QD	KSD	CKSD	CCKSD
15	48	52.5	60	46	50	57.5
17	81.1	87.1	96.1	74	80	89
19	89	95	104	82	88	97
21	122.5	132.5	140.4	110	120	128
24	139.3	149.2	157.2	127	137	145

Dimensions

Size	D mm.	D Inch	J	W	V	A	B KSD	B_1 CKS..	B_2 CCK..	C max KSD	C_1 CK..	C_2 CCK..	E	F	G	H Nr.	H Ø	I	K	L	M	N	P	Q	R	S	T	QD hub size
15	73.025••	2.875	177.8	19.05	76	460	151	92	140	384	438	486	195	112.7125	142.9		9/16 12 UNC	259	30	100	168	204	49	7/8 9 UNC	136	3/4 10 UNC	152	F
	60.325	2.375	143	15.875	67.3																				99			
17	85.725••	3.375	210	22.225	92.3	520	170	101	181	455	516	596	245	130.7694	158.75	3	5/8 11 UNC	337	35	110	210	228	70	1-1/8 7 UNC	160	7/8 9 UNC	214.6	J
	73.025	2.875	177.8	19.05	81.4																				127			
19	85.725••	3.375	210	22.225	92.3	565	190						225										55		160			
	73.025	2.875	177.8	19.05	81.4																				127			
21	98.425•	3.875	216	25.4	109.6	620	205	115	205	545	620	710	300	165.1	200	4	3/4 10 UNC	400	40	180	229	264	55	1-1/4 7 UNC	167		280	M
	85.725	3.375	210	22.225	95.5					505	580	670	260							140					165		240	
24	98.425•	3.875	216	25.4	109.6	714	229			545	620	710	276							180			36		167		280	
	85.725	3.375	210	22.225	95.5					505	580	670	236							140					165		240	

• MAX BORE WITH A KEYWAY AS PER USAS B 17-1
•• MAX BORE WITH REDUCED **V** DEPTH KEY WAY
– WHEN ORDERING, SPECIFY SIZE, MODEL AND **D** DIAMETER, EXAMPLE: 15 KSD D. 73.025 OR 15KSD-QD D.73.025

Dim. **D** tolerance
up to 50.8 $^{+0.025}_{-0}$
from 50.8 to 101.6 $^{+0.038}_{-0}$
from 101.6 to 152.4 $^{+0.05}_{-0}$

Dim. **W** tolerance
up to 12.7 $^{+0.05}_{-0}$
from 15.875 to 25.4 $^{+0.076}_{-0}$
from 25.4 to 38.1 $^{+0.1}_{-0}$

Dimensions (Only for ...KSD)

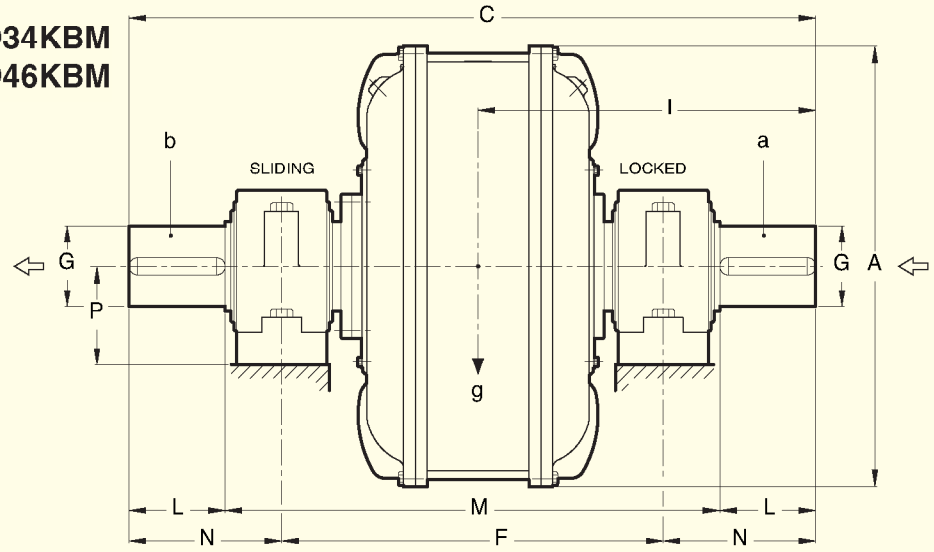
Size	F_1	G_1	H_1 Nr.	H_1 Ø	K_1	L_1	M_1	N_1	P_1	T_1
15	150	178	12	M10	17	159	7	206	28	100
17	180	200		M14	20	180		225	60	132
19									45	
21	200	228	8			230		250	57	145
						190				
24						230			46	
						190				
27	CONSULT OUR ENGINEERING									

DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

SERIES D34 KBM - D34 KDM
RECOMMENDED OIL FILLING

FLUID COUPLING WITH DOUBLE CIRCUIT, FITTED WITH MAIN JOURNALS AND INPUT AND OUTPUT SHAFTS

D34KBM
D46KBM



SERIES	A	C	F	G m6	L	M	N	P
D34KBM	1000	1400	855	140	140	1220	257.5	170
D46KBM	1330	1900	1275	160	200	1550	312.5	170

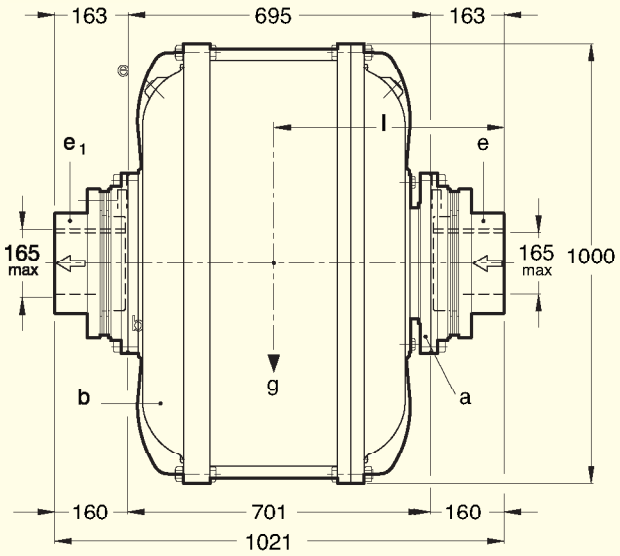
WEIGHT Kg (without oil) KBM	KDM	KCG	OIL max. lt
810	880	–	162
2200	–	2339	390

KEYWAYS ACCORDING TO ISO 773 - DIN 6885/1

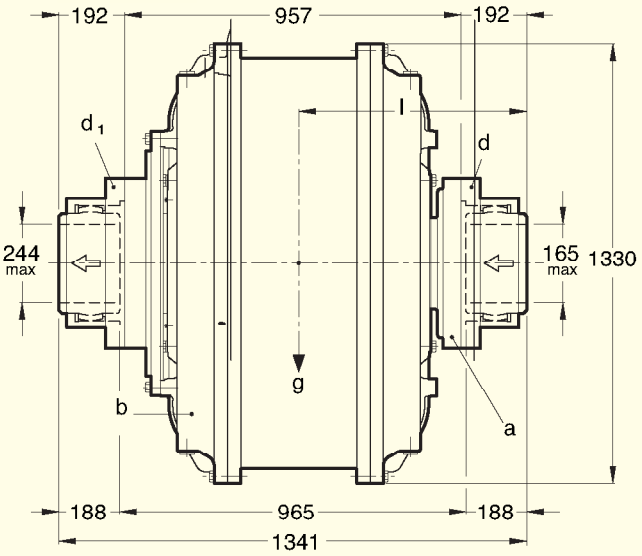
FLUID COUPLING FITTED WITH DOUBLE CIRCUIT, TO BE RADIALLY DISASSEMBLED WITHOUT MOVING THE MACHINES.
D34KDM
WITH HALF DISC COUPLINGS, WITHOUT MAINTENANCE AND PRESCRIBED
FOR PARTICULAR AMBIENT CONDITIONS

WITH HALF GEAR COUPLINGS

D34KDM



D46KCG



NB: The arrows ⇦ indicate input and output in the standard version.

Dimensions

Size	CENTER OF GRAVITY KBM g kg	KBM l mm	KDM g kg	KDM l mm	KCG g kg	KCG l mm
D34	952	710	1022	512	–	
D46	2514	955	–		2680	675

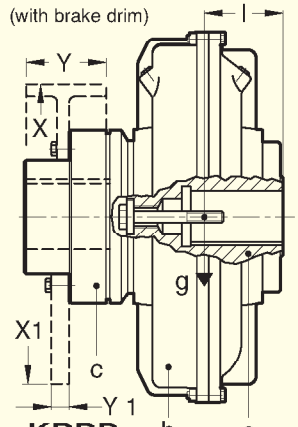
MOMENT OF INERTIA J(WR²) KBM a	KBM b	KDM a	KDM b	KDM e	KDM e_1	KCG a	KCG b	KCG d	KCG d_1
26.19	64.25	26.08	65.53	0.955	0.955	–			
91.25	183.7	–				92.51	183.6	2.665	2.665

g = TOTAL WEIGHT INCLUDING OIL (MAX FILL)
a = INTERNAL ELEMENT
b = EXTERNAL ELEMENT
d-e = HALF FLEXIBLE COUPLING (INTERNAL ELEMENT)
d_1-e_1 = HALF FLEXIBLE COUPLING (EXTERNAL ELEMENT)

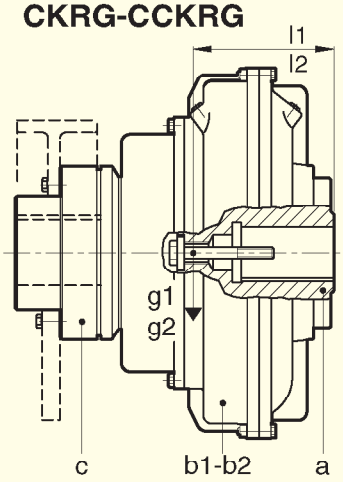
DIMENSIONS ARE SUBJECT TO ALTERATION WITHOUT NOTICE

TRANSFLUID
industrial transmissions

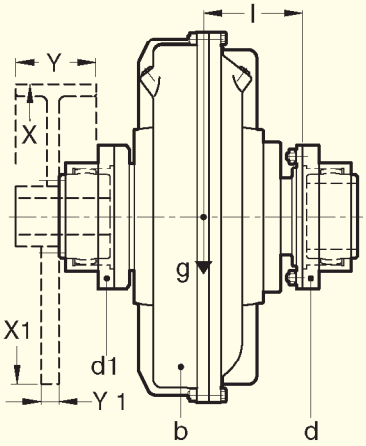
KRB (with brake drim) **KRG**



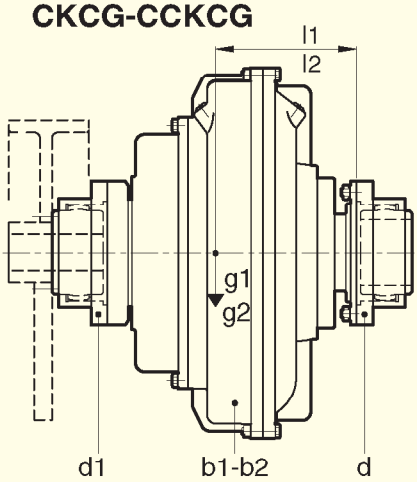
CKRG-CCKRG



KCG

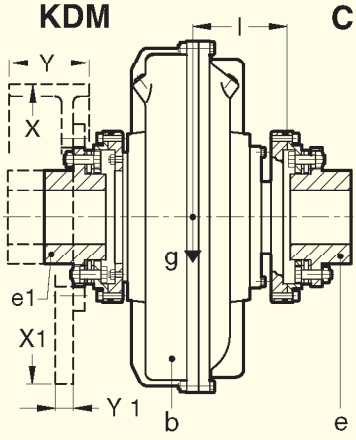


CKCG-CCKCG

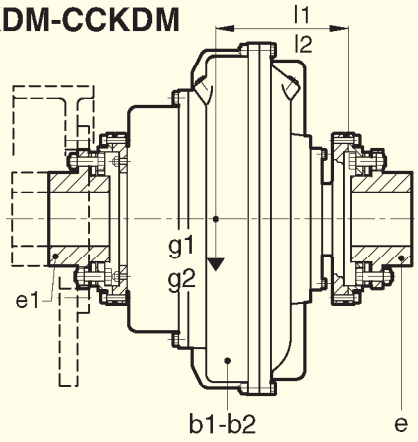


KRBP (with disc brake)

KDM



CKDM-CCKDM



Dimensions

Size	MOMENT OF INERTIA With brake drum X - Y	(WR²)	Weight Kg	With disc brake $X_1 - Y_1$		(WR²)	Weight Kg
13-15	250 - 95	0.143	11.9	400		0.587	27
	315 - 118	0.379	20.1	450		0.944	34.9
17-19	315 - 118	0.378	19.8	450		0.941	34.2
				500		1.438	43
	400 - 150	1.156	37.5	560		2.266	54.7
21-24	400 - 150	1.201	38.9	560		2.255	52.7
				630	30	3.623	68.1
	500 -190	3.033	64.1	710		5.856	88
				795		9.217	111.6
27-29	500 - 190	3.022	62.8	710		5.840	86
				795		9.200	109.6
				800		9.434	111.1
34	630 - 236	10.206	132.6	800		9.418	109.6
				1000		23.070	176.2

Dimensions

Size	CENTER OF GRAVITY KRG g Kg.	KRG l mm.	CKRG g_1 Kg.	CKRG l_1 mm.	CCKRG g_2 Kg.	CCKRG l_2 mm.	KCG g Kg.	KCG l mm.	CKCG g_1 Kg.	CKCG l_1 mm.	CCKCG g_2 Kg.	CCKCG l_2 mm.	KDM g Kg.	KDM l mm.	CKDM g_1 Kg.	CKDM l_1 mm.	CCKDM g_2 Kg.	CCKDM l_2 mm.
6	4.3	8.4					–	–										
7	9.1	107	–	–			12.1	70	–	–					–	–		
8	10	108					13	73										
9	17.7	134					24.6	86					22.2	81				
11	20.4	136	23.4	151			27.3	93	30.2	107			24.9	85	27.9	98		
12	25.1	142	28.7	154			32.1	98	35.6	113			20.6	92	33.2	104		
13	38.5	157	42	176			42.2	104	45.7	115			45.8	101	49.3	109		
15	57	174	61.8	195	70.2	216	80.7	124	85.5	135	93.8	147	71.7	121.5	76.5	130	85.7	145
17	87.2	205	94.8	225	106.5	238	88.7	138	106.5	152	130	185	99.2	135	106.9	145	118.3	163
19	96.4	201	104.4	221	116	227	108		116		130.4	182	108.4		116.4		127.4	161
21	145.6	233	159	265	169.3	288	156	157	169.3	174	205	211	175.6	156	189	168	201	182
24	172	227	184	255	195.5	280	182		195	170	230	201	202		214.3	166	226	178
27	265	262	290	298	313	338	287	185	313	210	370	248	326	164	351	174	378	195
29	320	277	354	305	368	321	353	198	368	218	424	251	383	176	411	188	432	200
34	521	333	549	364	580	376	557	235	580	243	591	250	628	209	636	214	650	222
46					1204	485					1555	368						

MOMENT OF INERTIA J (WR²) a	b	b_1	b_2	c	d	e	d_1	e_1
0.003	0.008			0.001	–		–	
0.006	0.010			0.004	0.004		0.004	
0.012	0.034	–						
0.020	0.068							
0.039	0.109			0.011	0.017	0.016	0.014	0.016
0.072	0.180	0.217						
0.122	0.307	0.359		0.032			0.031	0.036
0.236	0.501	0.601	0.887	0.082	0.091	0.102	0.063	0.064
0.465	1.025	1.281	1.372	0.192	0.091	0.101	0.121	0.125
0.770	1.533	1.788	1.879					
1.244	2.407	2.997	3.181	0.370	0.145	0.210	0.375	0.373
2.546	4.646	5.236	5.420					
3.278	7.353	9.410	10.037	1.350	0.500	0.486	0.934	0.887
4.750	11.070	13,126	13.754					
11.950	27.299	29.356	29.983	3.185	0.798	1.649	1.565	2.773

lb-in² = W R² x 3418
g-g_1-g_2 = TOTAL WEIGHT, INCLUDING OIL (MAX FILL)

a = INTERNAL ELEMENT - b = EXTERNAL ELEMENT + COVER
b_1 = b + DELAY CHAMBER - b_2 = b + DOUBLE DELAY CHAMBER
c FLEXIBLE COUPLING
d-e = HALF FLEXIBLE COUPLING (INTERNAL ELEMENT)
d_1-e_1 = HALF FLEXIBLE COUPLING (EXTERNAL ELEMENT)

DIMENSIONS ARE SUBJECT TO ALTERATION WITHOUT NOTICE

OIL FILL

Transfluid fluid couplings are generally delivered without oil. Therefore, it is necessary to follow the filling procedures listed below :

1 - For a fluid coupling mounted on a horizontal shaft, turn the coupling body until the appropriate fill mark is at the vertical (12 o'clock) position. These marks are raised "X", "1", "2", "3", "4" that are part of the cast aluminum housing of the coupling Fig. 5. This will place the two oil fill plugs (one on each side of the coupling) near the 2 o'clock position.

2 - Remove both plugs, if access permits, and fill until oil overflows from the fill hole(s). Install both plugs and rotate the coupling slowly by hand to insure no air pockets are trapped in the fill area. Reposition the coupling as before and add more oil if needed. (NOTE: Removing both plugs allows one hole to vent air as the other is used to fill the coupling).

3 - Reinstall both plugs using non-locking thread sealant as needed to prevent leaks. Do not over tighten the tapered fill plugs because they will crack the aluminum housing.

4 - The fill marks allow operators to correctly fill the coupling, without using any measuring tools, and they also provide reference points if the quantity of oil needs to be changed to improve the softness of the start or reduce the slip at steady running.

5 - For normal operating conditions, use only **ISO HM32** hydraulic (or the equivalent **SAE 10W** non-detergent motor oil). At low ambient temperatures (near 0°C), it is recommended to use **ISO FD 10** (or equivalent **SAE 5W**) oil.

6 - For fluid couplings mounted on vertical shafts, use the oil quantities listed in Tab. **E** below.

7 - **NOTE : Maximum fill quantities cannot exceed the following fill positions (quantities):**

A) For the "K" series couplings – "X"
(i.e. for a 21K max fill is 19 liters)

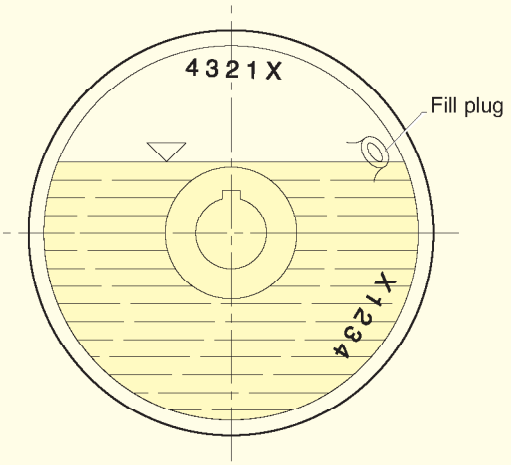
B) For the "CK" series couplings – "2"
(i.e. for a 21CK max fill is 23 liters)

C) For the "CCK" series couplings – "3"
(i.e. for a 21CCK max fill is 27.3 liters)

Tab. **E**

Size ⇩ / Fillings ⇨		OIL QUANTITY lt				
		FILL X		FILL 2		FILL 3
6	SERIES K	0.50	SERIES CK	–	SERIES CCK	–
7		0.92		–		–
8		1.50		–		–
9		1.95		–		–
11		2.75		3.35		–
12		4.1		4.8		–
13		5.2		5.6		–
15		7.65		8.6		9.3
17		11.7		13.6		16.4
19		14.2		16.5		18.8
21		19		23		27.3
24		28.4		31.2		35.5
27		42		50		59.5
29		55		63		70.6
34		82.5		92.5		96.7
D34		162		–		–
D46		Consult Kraft Power				

Fig. **5**



SAFETY DEVICES

FUSIBLE PLUG

In case of a load lock-up or high slip in the fluid coupling the oil temperature in the coupling will reach very high levels. This heat damages the seals causing them to leak.
To avoid this problem Transfluid uses melt-out or fusible plugs to release the oil when the the temperature reaches certain set points. Once the coupling is empty, it can neither transmit power or create internal heat. The standard fusible plug melts out at 280°F ± 5° (other temperatures available are 250°F and 390°F).

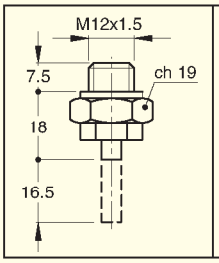
SWITCHING PIN

For applications where the release of oil through the fusible plug is not acceptable, Transfluid provides a switching pin device. This device has a meltout ring that releases a pin which slides out and trips a relay cam switch. The relay provides a signal that can be used to either stop the power source or send out an alarm. No oil is released from the coupling when this device activates, and the pins are available to trip at the two fusible plug temperatures. Page 25 provides a more detailed description of this device.

SWITCHING PIN DEVICE

This device includes a percussion fusible plug installed on the taper plug pos. 13 (Fig. 6).
The percussion fusible plug is made of a threaded plug and a pin, held by a fusible ring, coming out due to the centrifugal force when the foreseen melting temperature is reached.
Such increase of temperature can be due to overload, machinery blockage or insufficient oil filling. The pin, moving by approx. 16 mm, intercepts the cam of the switch to operate an alarm or motor trip signal.
After a possible intervention and removal of the over-temperature cause, this device can be easily restored with the replacement of the percussion plug or even the fusible ring following the specific instructions included in the instruction manual.
With external wheel as driver, as indicated in Fig. 6, the percussion plug operates in any condition, while in case of driven external wheel it can operate correctly only during an increase of slip due to overload or excessive absorption.
It is possible to install this system on all fluid couplings starting from size 13K even when it has not been included in the initial supply, by asking for a kit including percussion fusible plug, gasket, taper plug, counterweight for balancing, glue and installation instructions.
In order to increase the safety of the fluid coupling a standard fusible plug is always installed with a set temperature greater than that of the percussion fusible plug.
For a correct operation, please refer to the instructions relevant to the standard or reverse installation described at page 28.

Switching pin



MELTING TEMPERATURE +10°C 0

250°F	SPEC.	1004-B
280°F	SPEC.	1004-C

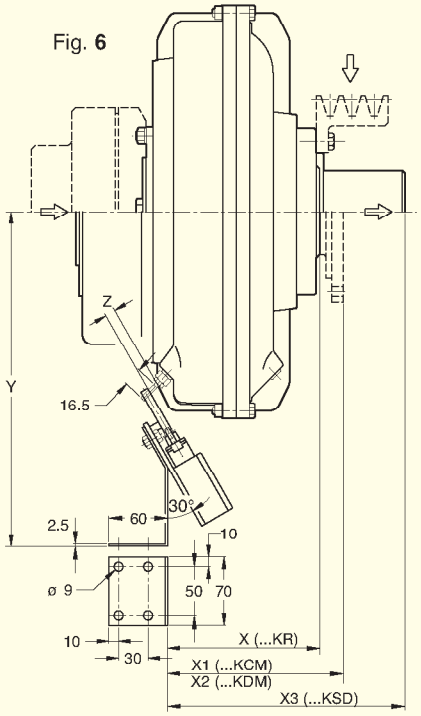
ELECTRONIC OVERLOAD CONTROLLER

This device consists of a proximity sensor, speed controller panel, and (as an option) an LED rpm readout panel. The sensor measures the fluid coupling output speed and when this speed falls below a settable threshold in the control panel, a signal is produced that can be used for an alarm or as a power source shut down. This device does not require any replacement parts when it trips. It only requires that the control panel be reset, and it is ready for reuse. Page 26 provides a more detailed description.

INFRARED TEMPERATURE CONTROLLER

This device consists of an infrared heat sensor and control panel with temperature readout display. Like the proximity sensor above, no contact with the coupling is required and the controller has two settable thresholds at which an alarm or a shut down signal is produced. Since this device monitors heat it is the most effective safety device for preventing heat damage to a fluid coupling. Also, like the speed controller above, this unit can be reset and reused without replacements parts. Page 27 provides more details.

Fig. **6**



DIM.	X	X_1	X_2	X_3	Y	Z
7	107	108	–	143	262	–
8	116	117		152	272	
9	138	153.5	136	195	287.5	
11	145	152	143	201	300.5	
12	155	163.5	153	245.5	323	15
13	172	175	170	289	335	16
15	198	200	199	(6) 323	358	16
17	222	200	218	405	382	12
19	214	190	210	397	400.5	9
21	262	264	260	(7) 451	423	8
24	263	265	261	(7) 452	460	4
27	286	311	277	–	491	9
29	299	336	302		524	8
34	361	393	353		584	4

(6) For cylindrical bore: +14 mm
(7) For bore 98.425: +40 mm
REFERENCE DIMENSIONS

DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

TRANSFLUID
industrial transmissions

OVERLOAD CONTROLLER

When load torque increases, slip also increases and output speed consequently decreases.
The said speed variation can be measured by means of a sensor sending a pulse train to the speed controller. If the rotating speed goes lower than the set threshold (see diagram) on the controller, a signal is given through the activation of the controller s relays.
The device has got a "TC" timer with a blind time before starting (1 - 120 s) avoiding the alarm intervention during the starting phase, and another "T" timer (1 – 30 s) preventing from undesired relay intervention during sudden changes of torque.
The device also provides a speed proportional analogic output signal (0 – 10 V), to be forwarded to a display or a signal transducer (4 – 20 mA).
Standard supply is 230 V ac, other supplies are available upon request: 115 V ac, 24 V ac or 24 V dc, to be specified with the order.

CONTROLLER PANEL (Fig. 8)

(TC) Blind time for starting

Set screw regulation up to 120 s.

(DS) Speed range regulation

Programmable DIP-SWITCH (5 positions), selecting relay status, proximity type, reset system, acceleration or deceleration. Programming speed Dip-Switch with 8 positions allows to choose the most suitable speed range, according to the application being performed.

(SV) Speed level (set point)

Set screw regulation with digits from 0 to 10. The value 10 corresponds to full range set with Dip-Switch.

(R) Reset

Local manual reset is possible through R button, or remote reset by connecting a N.O. contact at pins 2-13.

(SS) Threshold overtaking

(RED LED) It lights up every time that the set threshold (set point) is overtaken.

(A) Alarm led

(RED LED) It lights up when alarm is ON and the inner relay is closed.

(E) Enable

(YELLOW LED) It lights up when the device is enabled.

(T) Delay time

Set screw regulation up to 30 s.

(ON) Supply

(GREEN LED) It shows that the device is electrically supplied.

FOR FURTHER DETAILS, ASK FOR TF 5800-A.

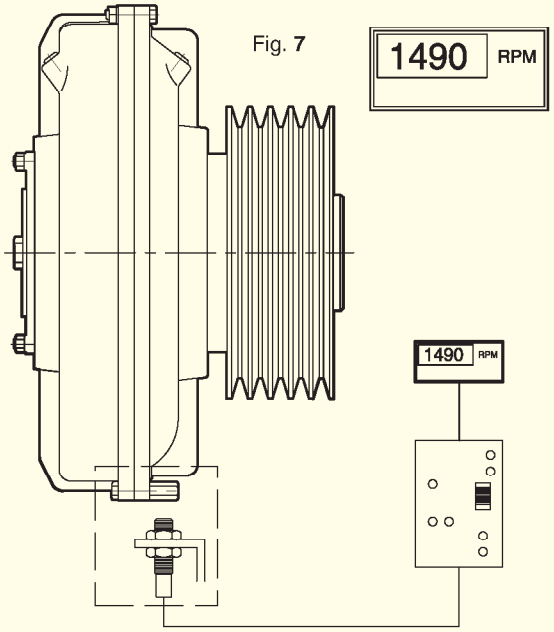


Fig. 7

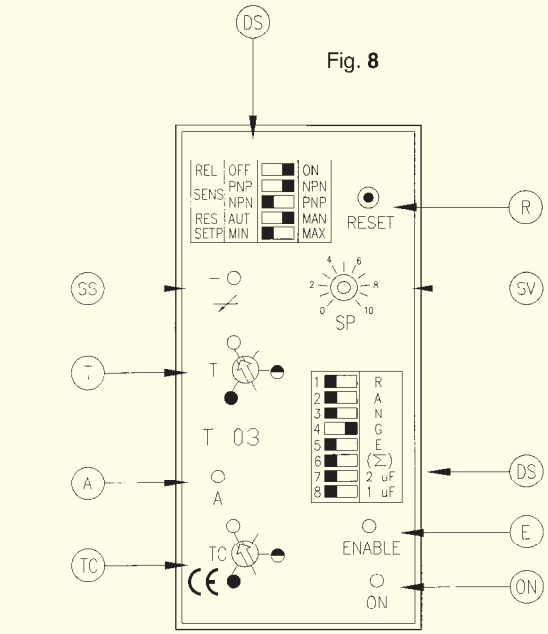
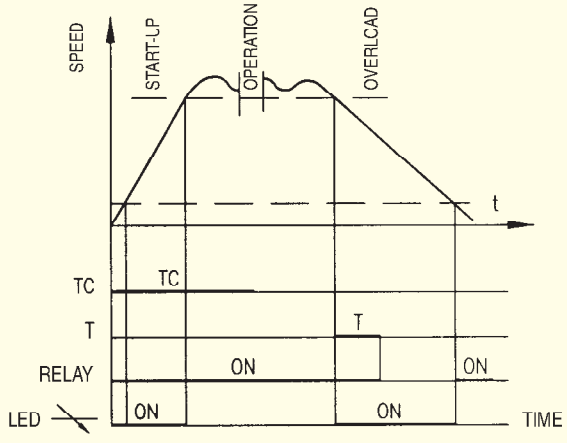


Fig. 8



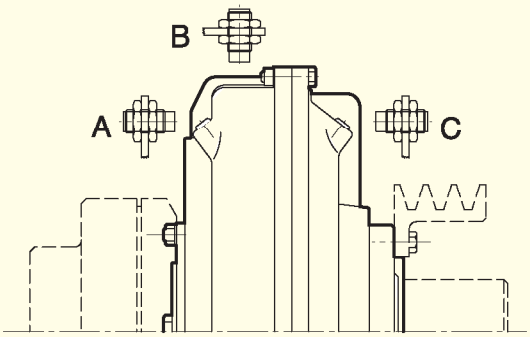
Diagram

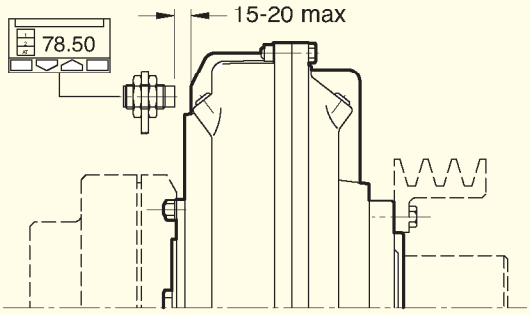
INFRARED TEMPERATURE CONTROLLER

This is a non contacting system to check fluid coupling temperature. It is reliable and easily mounted.
It has 2 adjustable thresholds with a logical alarm on the former, and a relay alarm on the latter.

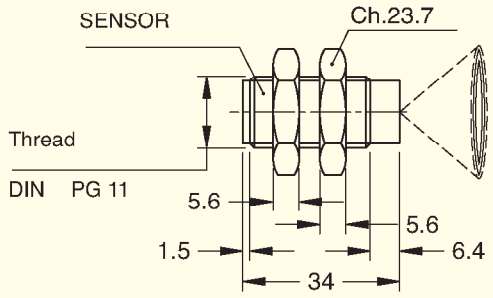
The proximity sensor must be positioned near the fluid coupling outer impeller or cover, according to one of the layouts shown in Fig. **9**.
It is adviced to place it in **A** or **C** positions, as the air flow generated by the fluid coupling during rotation helps to remove possible dirt particles that may lay on the sensor lens.
The distance between the sensor and the fluid coupling must be about 15-20 mm (cooling fins do not disturb the correct operation of the sensor).
To avoid the bright surface of the fluid coupling reflecting light and producing an incorrect temperature reading, it is necessary to paint the surface, which is directly facing the sensor, a flat black color (a stripe of 6-7 cm is sufficient).
The sensor cable has a standard length of 90 cm. In the case where, a longer cable is required, use one that is twisted and shielded as per type "K" thermocouples.

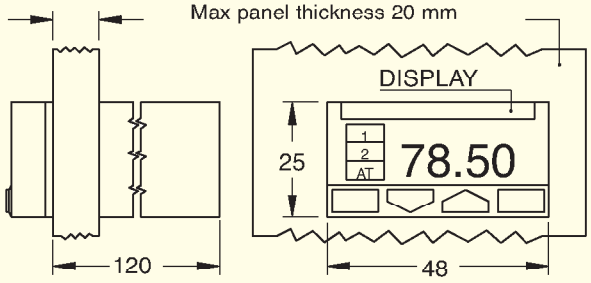
Fig. **9**





SENSOR	
Temperature range	0 - 200 °C
Ambient temperature	-18 - 70 °C
Accuracy	0.0001 °C
Dimensions	32.5 x 20 mm
Standard wire length •	0.9 m
Body	ABS
Protection	IP 65
CONTROLLER	
Power supply	85…264 Vac / 48…63 Hz
Relay output OP1	NO (2A – 250V)
Logical output OP2 (5Vdc, ±10%, 30 mA max)	Not insulated
AL1 alarm (display)	Logic (OP2)
AL2 alarm (display)	Relay (OP1) (NO, 2A / 250Vac)
Pins protection	IP 20
Body protection	IP 30
Display protection	IP 65
Dimensions	1/32 DIN – 48x24x120 mm
Weight	100 gr

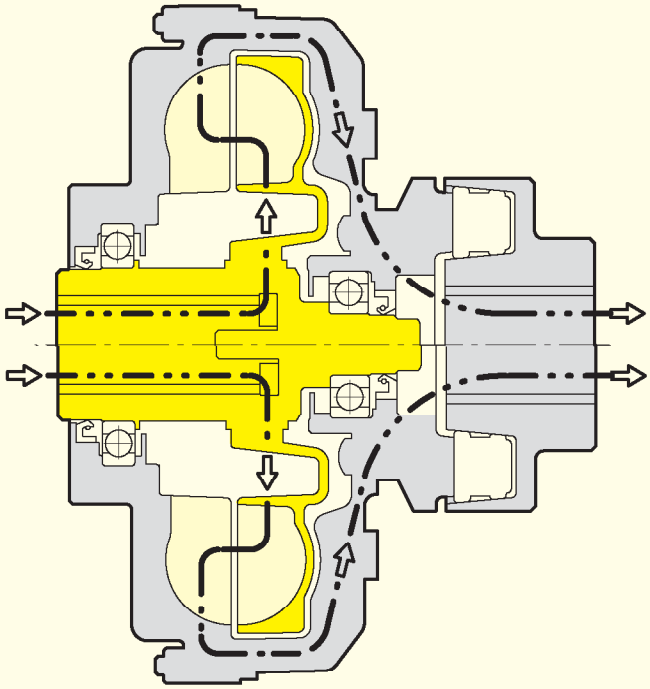




• TO BE MADE LONGER WITH TWISTED AND SHIELDED WIRES FOR TYPE K THERMOCOUPLES (NOT SUPPLIED)

INSTALLATION

STANDARD MOUNTING
Driver **inner** impeller



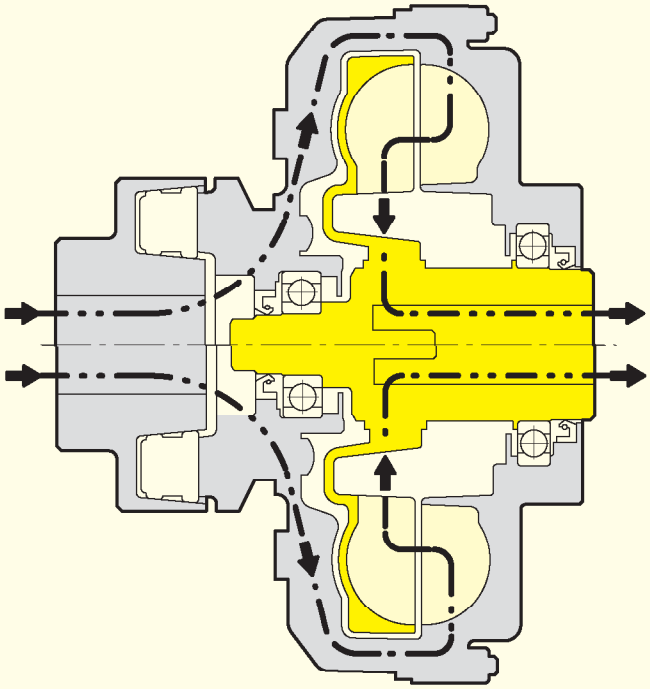
Minimum possible inertia is added to the motor, which allows it to accelerate more quickly.

If a braking system is required, it is **convenient and easy to install a brake drum or disc** on the flex coupling.

The delayed fill chamber, when present, is fitted on the driven side. The rotating speed of the chamber gradually increases during start-up, thus **leading to a longer starting time,** given the bleed orifices diameters are not changed.

Flex coupling is protected by the presence of the fluid coupling in front of it, and therefore this configuration is fit for applications with **frequent start-ups or reversals**.

REVERSE MOUNTING
Driver **outer** impeller



The outer impeller, being directly connected to the motor, reaches synchronous speed at once. **Ventilation** is therefore **maximum** from the beginning.

The outer impeller and cover are connected to the motor, **it is possible to manually rotate the coupling** to check alignment and oil level, and for refilling.

The delayed fill chamber is fitted on the driver side, and reaches the synchronous speed in a few seconds. Oil is therefore centrifuged into the main circuit gradually and completely.

The **switching pin operation is always assured,** as the outer impeller, always rotates because it is mounted on the driver shaft.

FIELDS OF APPLICATION

• MISCELLANEOUS
- Centrifugal fans
- Centrifugal and reciprocating compressors
- Belt and bucket conveyors
- Chain conveyors
- Bridge cranes (translation and rotation)
- Rotating jib cranes
- Winders
- Winches
- Ski lifts
- Merry-go-round, thrill rides
- Mine car haulage

• BUILDING MACHINERY
- Tower cranes (translation and rotation)
- Screw and slat conveyors

• MACHINES FOR QUARRIES
- Crushers
- Ball, barrel and hammer mills
- Bucket excavators
- Screening drums

• MACHINES FOR CONCRETE
- Mixers
- Rotating furnaces

• MACHINES FOR CERAMIC INDUSTRY
- Continuous and non continuous ball mills
- Mixers
- Presses

• BRICK MACHINES
- Clod crushers
- Crushing mills
- Rolling mills
- Brick-molding machines

• MACHINES FOR STONE CUTTING AND FINISHING
- Frame cranes
- Stone cutting machines

• TEXTILE MACHINES
- Barrels for tannery
- Centrifuges
- Carding machines
- Washing machines

• WOOD WORKING MACHINES
- Debarking drums
- Plywood pressing machines
- Chipping machines

• PULP AND PAPER MACHINERY
- Paper winding drums
- Pulpers

• BITUMINOUS ROAD MIX MACHINES

• MACHINES FOR WASTE DISPOSAL
- Grinders
- Water depurators

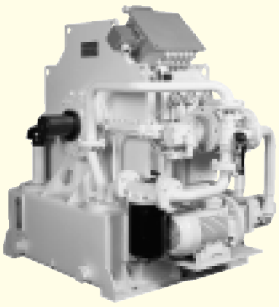
• CHEMICAL, FOOD AND BOTTLING MACHINERY
- Centrifugal agitators
- Centrifugal idroextractors
- Rotating filters
- Soap cutters
- Rubber calenders and mixers
- Pallettizers
- Labeling machines

• MECHANICAL AND AUTOMOTIVE INDUSTRY
- Balancing machines
- Gate closing control drives

• METAL WORKING MACHINES
- Machines to twist ropes and wires
- Bar-straightening machines
- Presses
- Forming machines
- Wiredrawing machines

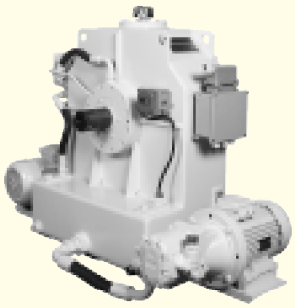
FLUID COUPLING
KSL SERIES

Start up and variable
speed drive up to 4000 kW



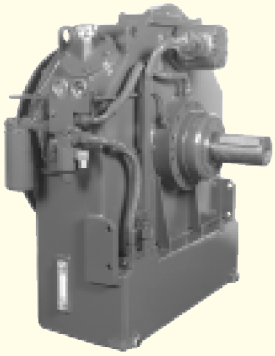
FLUID COUPLING
KPT SERIES

Start up and variable
speed drive up to 1700 kW



FLUID COUPLING
KPTO SERIES

For internal combustion engines
P.T.O. for pulley and cardan shaft
up to 1700 kW



FLUID COUPLING
K SERIES

For diesel engines
Up to 1300 kW

OIL ACTUATED
HFO - HFU SERIES

For internal combustion engine
up to 750 KW

FLUID COUPLING
KX SERIES

Constant fill
Up to 1000 kW

OTHER POWER TRANSMISSION PRODUCTS AVAILABLE FROM KRAFT

ELASTIC COUPLING
RBD SERIES

For internal combustion engine
up to 16000 Nm

POWER SHIFT TRANSMISSION

With torque converter
one or more speeds
manual or electic selector
up to 95 kW

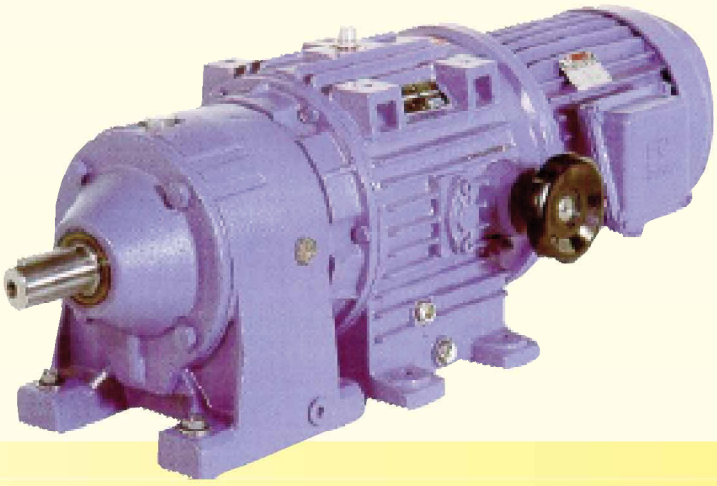
MULTI PUMP DRIVE
MPD SERIES

Up to 1100 kW

PNEUMATIC CLUTCH
TPO SERIES

Up to 11500 Nm

VAR-SPE VARIATORS



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