

Instruction Manual

DODGE® TORQUE-ARM™ II Speed Reducers

Ratios 5, 9, 15, 25, and 40:1

TA0107L
TA1107H
TA2115H
TA3203H
TA4207H
TA5215H

TA6307H
TA7315H
TA8407H
TA9415H
TA10507H
TA12608H

These instructions must be read thoroughly before installation or operation.

WARNING: To ensure that drive is not unexpectedly started, turn off and lock out or tag power source before proceeding. Remove all external loads from drive before removing or servicing drive or accessories. Failure to observe these precautions could result in bodily injury.

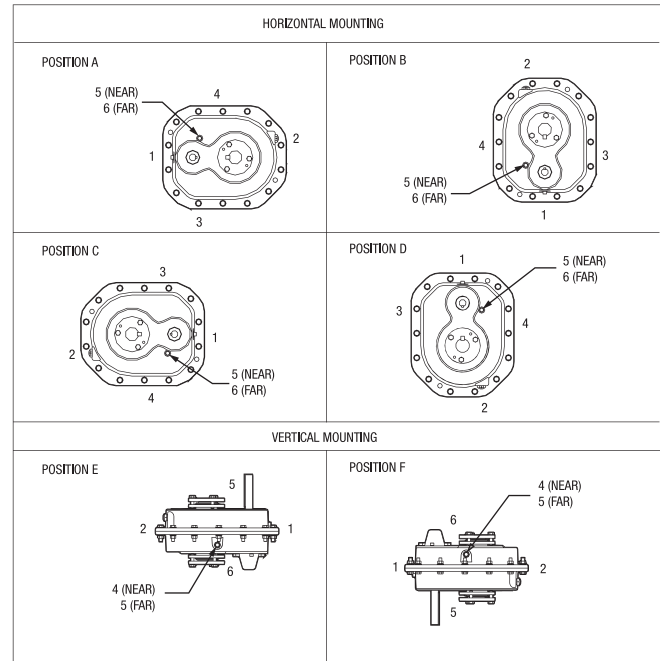
INSTALLATION

1. Use lifting bracket to lift reducer.
2. Determine the running positions of the reducer (Figure 1). Note that the reducer is supplied with 6 plugs; 4 around the sides for horizontal installations and 1 on each face for vertical installations. These plugs must be arranged relative to the running positions as follows:

Horizontal Installations -Install the magnetic drain plug in the hole closest to the bottom of the reducer. Throw away the tape that covers the filter/ventilation plug in shipment and install plug in topmost hole. Of the 2 remaining plugs on the sides of the reducer, the lowest one is the minimum oil level plug.

Vertical Installations -Install the filter/ventilation plug in the hole provided in the upper face of the reducer housing as installed. If space is restricted on the upper face, install the vent in the highest hole on the side of the reducer per Figure 1. Install a plug in the hole in the bottom face of the reducer. Do not use this hole for the magnetic drain plug. Of the remaining holes on the sides of the reducer, use the plug in the upper housing half for the minimum oil level plug.

WARNING: Because of the possible danger to person(s) or property from accidents which may result from the improper use of products, it is important that correct procedures be followed. Products must be used in accordance with the engineering information specified in the catalog. Proper installation, maintenance and operation procedures must be observed. The instructions in the instruction manuals must be followed. Inspections should be made as necessary to assure safe operation under prevailing conditions. Proper guards and other suitable safety devices or procedures, as may be desirable, or as may be specified in safety codes should be provided, and are neither provided by Baldor Electric Company, nor are the responsibility of Baldor Electric Company. This unit and its associated equipment must be installed, adjusted and maintained by qualified personnel who are familiar with the construction and operation of all equipment in the system and the potential hazards involved. When risks to persons or property may be involved, a holding device must be an integral part of the driven equipment beyond the speed reducer output shaft.



| Output Speeds Above 15 RPM | | | | | | |
|----------------------------|-------------------------|-------|-------|-------|------|------|
| Mounting Position | Vent and Plug Locations | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Position A | Level | Plug | Drain | Vent | Plug | Plug |
| Position B | Drain | Vent | Level | Plug | Plug | Plug |
| Position C | Plug | Level | Vent | Drain | Plug | Plug |
| Position D | Vent | Drain | Level | Plug | Plug | Plug |
| Position E | Level | Plug | Plug | Drain | Vent | Plug |
| Position F | Plug | Drain | Level | Plug | Plug | Vent |

| Output Speeds Above 15 RPM and Below • | | | | | | |
|--|-------------------------|-------|-------|-------|------|------|
| Mounting Position | Vent and Plug Locations | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Position A | Plug | Level | Drain | Vent | Plug | Plug |
| Position B | Drain | Vent | Plug | Level | Plug | Plug |
| Position C | Level | Plug | Vent | Drain | Plug | Plug |
| Position D | Vent | Drain | Level | Plug | Plug | Plug |
| Position E | Level | Plug | Plug | Drain | Vent | Plug |
| Position F | Plug | Drain | Level | Plug | Plug | Vent |

- Below 15 RPM output speed, oil level must be adjusted to reach the highest oil level plug. If reducer position is to vary from those shown in Figure 1, either more or less oil may be required. Consult Baldor Electric Company Dodge Engineering in Greenville, SC.

Figure 1 - Mounting Positions



The running position of the reducer in a horizontal application is not limited to the four positions shown in Fig. 1. However, if running position is over 20° in position “B” & “D” or 5° in position “A” & “C”, either way from sketches, the oil level plug cannot be used safely to check the oil level, unless during the checking, the torque arm is disconnected and the reducer is swung to within 5° for position “A” & “C” or 20° for position “B” & “D” of the positions shown in Figure 1. Because of the many possible positions of the reducer, it may be necessary or desirable to make special adaptations using the lubrication filling holes furnished along with other standard pipe fittings, stand pipes and oil level gauges as required.

If mounting the Torque-Arm II reducer on an inclined angle, consult Dodge for proper oil level.

3. Mount reducer on driven shaft as follows:

For Taper Bushed Reducer: Mount reducer on driven shaft per instruction in Torque-Arm II Bushing Installation section of this manual.

4. Install sheave on input shaft as close to reducer as practical (Figure 2).

5. If not using a Dodge Torque-Arm II motor mount, install motor and V-belt drive so belt will approximately be at right angles to the centerline between driven and input shaft (Figure 3). This will permit tightening the V-belt with the torque arm.

6. Install torque arm and adapter plates reusing the reducer bolts. The adapter plates will fit in any position around the input end reducer.

7. Install torque arm fulcrum on a flat and rigid support so that the torque arm will be approximately at right angles to the centerline through the driven shaft and the torque arm anchor screw (Figure 4). Make sure that there is sufficient take-up in the turnbuckle for belt tension adjustment when using V-belt drive.

CAUTION: Unit is shipped without oil. Add proper amount of recommended lubricant before operating. Failure to observe this precaution could result in damage to or destruction of the equipment.

8. Fill gear reducer with recommended lubricant (Table 2).

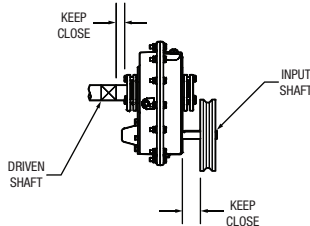


Figure 2 - Reducer and Sheave Installation

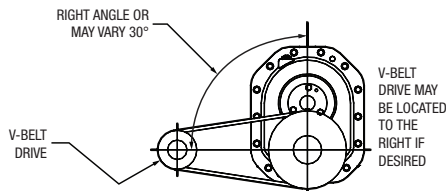


Figure 3 - Angle of V-Drive

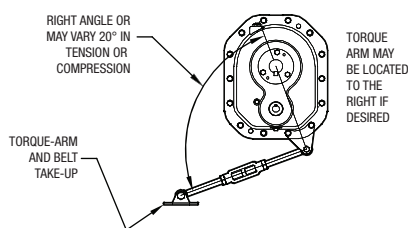


Figure 4 - Angle of Torque-Arm

TORQUE-ARM II BUSHING INSTALLATION

WARNING: To ensure that drive is not unexpectedly started, turn off and lock out or tag power source before proceeding. Remove all external loads from drive before removing or servicing drive or accessories. Failure to observe these precautions could result in bodily injury.

The Dodge Torque-Arm II reducer is designed to fit both standard and short length driven shafts. The Standard Taper Bushings series is designed where shaft length is not a concern. The Short Shaft Bushing series is to be used where the driven shaft does not extend through the reducer.

Standard Taper Bushings:

1. One bushing assembly is required to mount the reducer on the driven shaft. An assembly consists of two tapered bushings, bushing screws and washers, two bushing backup plates and retaining rings, and necessary shaft key or keys. The driven shaft must extend through the full length of the reducer. If the driven shaft does not extend through the reducer do not use the standard tapered bushings; instead use the short shaft bushings as described in the Short Shaft Bushings section that follows. The minimum shaft length, as measured from the end of the shaft to the outer edge of the bushing flange (Figure 5), is given in Table 1.

2. Install one bushing backup plate on the end of the hub and secure with the supplied retaining ring. Repeat procedure for other side.

3. Place one bushing, flange end first, onto the driven shaft and position per dimension “A”, as shown in Table 1. This will allow the bolts to be threaded into the bushing for future bushing and reducer removal.

4. Insert the output key in the shaft and bushing. For easy of installation, rotate the driven shaft so that the shaft keyseat is at the top position.

5. Mount the reducer on the driven shaft and align the shaft key with the reducer hub keyway. Maintain the recommended minimum distance “A” from the shaft bearing.

6. Insert the screws, with washers installed, in the unthreaded holes in the bushing flange and align with the threaded holes in the bushing backup plate. If necessary, rotate the bushing backup plate to align with the bushing screws. Tighten the screws lightly. If the reducer must be positioned closer than dimension “A”, place the screws with washers installed, in the unthreaded holes in the bushing before positioning reducer making sure to maintain at least 1/8” between the screw heads and the bearing.

7. Place the second tapered bushing in position on the shaft and align the bushing keyway with the shaft key. Align the unthreaded holes in the bushing with the threaded holes in the bushing backup plate. If necessary, rotate the bushing backup plate to align with the bushing holes. Insert bushing screws, with washers installed in the unthreaded holes in the bushing. Tighten screws lightly.

8. Alternately and evenly tighten the screws in the bushing nearest the equipment to the recommended torque given in Table 1. Repeat procedure on outer bushing.

Short Shaft Bushings:

1. One bushing assembly is required to mount the reducer on the driven shaft. An assembly consists of one long tapered bushing, one short tapered bushing, one tapered bushing wedge, bushing screws and washers, two bushing backup plates and retaining rings, and necessary shaft key or keys. The driven shaft does not need to extend through the reducer for the short shaft bushing to operate properly. The minimum shaft length, as measured from the end of the shaft to the outer edge of the bushing flange (Figure 5), is given in Table 1.

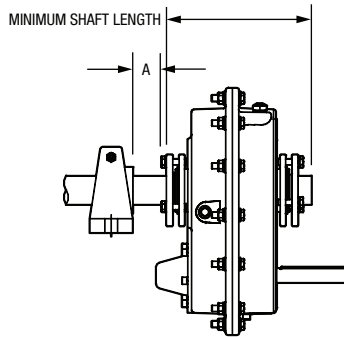


Figure 5 – Minimum Recommended Dimensions

Table 1 – Minimum Mounting Dimensions and Bolt Torques

| Minimum Required Shaft Length | | |
|-------------------------------|------------------------|---------------------|
| Reducer Size | Standard Taper Bushing | Short Shaft Bushing |
| TA0107L | 6.83 | 4.32 |
| TA0107L | 6.83 | 4.32 |
| TA1107H | 6.95 | 4.43 |
| TA2115H | 7.80 | 4.80 |
| TA3203H | 8.55 | 5.46 |
| TA4207H | 8.94 | 5.66 |
| TA5215H | 10.33 | 6.35 |
| TA6307H | 10.82 | 6.72 |
| TA7315H | 11.87 | 7.62 |
| TA8407H | 12.82 | 8.10 |
| TA9415H | 13.74 | 8.56 |
| TA10507H | 15.46 | 9.67 |
| TA12608H | 18.32 | 11.60 |

| Bushing Screw Information and Minimum Clearance for Removal | | | |
|---|---------------|-----------------|------|
| Reducer Size | Fastener Size | Torque in lb-ft | A |
| TA0107L | 5/16-18 | 20-17 | 1.08 |
| TA1107H | 5/16-18 | 20-17 | 1.20 |
| TA2115H | 3/8-16 | 20-17 | 1.20 |
| TA3203H | 3/8-16 | 20-17 | 1.20 |
| TA4207H | 3/8-16 | 26-23 | 1.48 |
| TA5215H | 1/2-13 | 77-67 | 1.81 |
| TA6307H | 1/2-13 | 77-67 | 1.81 |
| TA7315H | 1/2-13 | 77-67 | 2.06 |
| TA8407H | 1/2-13 | 77-67 | 2.06 |
| TA9415H | 5/8-11 | 86-75 | 2.39 |
| TA10507H | 5/8-11 | 86-75 | 2.39 |
| TA12608H | 5/8-11 | 86-75 | 2.39 |

2. The long bushing is designed to be installed from the side of the reducer opposite the driven equipment as shown in Figure 6. The long bushing when properly installed is designed to capture the end of the customer shaft that does not extend through the reducer. Normally the reducer would be mounted such that the input shaft extends from the side of the reducer opposite the driven equipment however the reducer design allows installation of the reducer to be mounted in the opposite direction.
3. Install the tapered bushing wedge into the hollow bore of the reducer from the same side as the long bushing will be installed. When installing the tapered bushing wedge into the reducer hub, install the flange end first so that the thin taper is pointing outwards towards the long bushing as shown in Figure 6. The wedge is properly installed when it snaps into place in the reducer hub.

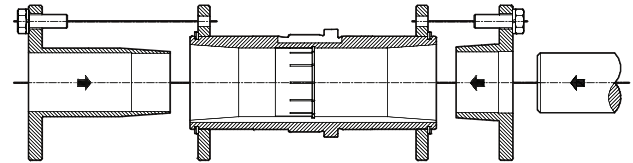


Figure 6 – Short Shaft Bushing and Output Hub Assembly

4. Align the tapered bushing wedge keyway with the reducer hub keyway. The keyway in the wedge is slightly wider than the keyway in the reducer hub allowing for easier installation.
5. Install one bushing backup plate on the end of the hub and secure with the supplied retaining ring. Repeat procedure for other side.
6. Install the short bushing; flange first, on the driven shaft and position per dimension "A", as shown in Table 1. This will allow the bolts to be threaded into the bushing for future bushing and reducer removal.
7. Insert the output key in the shaft and bushing. For easy of installation, rotate the driven shaft so that the shaft keyseat is at the top position.
8. Mount the reducer on the driven shaft and align the shaft key with the reducer hub keyway. Maintain the recommended minimum distance "A" from the shaft bearing.
9. Insert the screws, with washers installed, in the unthreaded holes in the bushing flange and align with the threaded holes in the bushing backup plate. If necessary, rotate the bushing backup plate to align with the bushing screws. Tighten the screws lightly. If the reducer must be positioned closer than dimension "A", place the screws with washers installed, in the unthreaded holes in the bushing before positioning reducer making sure to maintain at least 1/8" between the screw heads and the bearing.
10. Place the long bushing in position on the shaft and align the bushing keyway with the shaft key. Use care to locate the long bushing with the tapered bushing wedge installed earlier. Align the unthreaded holes in the bushing with the threaded holes in the bushing backup plate. If necessary, rotate the bushing backup plate to align with the bushing holes. Insert bushing screws, with washers installed in the unthreaded holes in the bushing. Tighten screws lightly.
11. Alternately and evenly tighten the screws in the bushing nearest the equipment to the recommended torque given in Table 1. Repeat procedure on outer bushing.

Bushing Removal for Standard Taper or Short Shaft Bushings:

1. Remove bushing screws.
2. Place the screws in the threaded holes provided in the bushing flanges. Tighten the screws alternately and evenly until the bushings are free on the shaft. For ease of tightening screws make sure screw threads and threaded holes in the bushing flanges are clean. If the reducer was positioned closer than the recommended minimum distance "A" as shown in Table 1, loosen the inboard bushing screws until they are clear of the bushing flange by 1/8". Locate two (2) wedges at 180 degrees between the bushing flange and the bushing backup plate. Drive the wedges alternately and evenly until the bushing is free on the shaft.
3. Remove the outside bushing, the reducer, and then the inboard bushing.

LUBRICATION

IMPORTANT: Because reducer is shipped without oil, it is necessary to add the proper amount of oil before operating reducer. Use a high-grade petroleum base rust and oxidation inhibited (R&O) gear oil (Tables 2 and 3). Follow instructions on reducer warning tags, and in the installation manual.

For average industrial operating conditions, the lubricant should be changed every 2500 hours of operation or every 6 months, whichever occurs first. Drain reducer and flush with kerosene, clean magnetic drain plug and refill to proper level with new lubricant.

CAUTION: Too much oil will cause overheating and too little will result in gear failure. Check oil level regularly. Failure to observe this precaution could result in bodily injury.

Under extreme operating conditions, such as rapid rise and fall of temperature, dust, dirt, chemical particles, chemical fumes, or oil sump temperatures above 200°F, the oil should be changed every 1 to 3 months, depending on severity of conditions.

Table 2—Oil Volumes

| Approximate Reducer Size | | Volume of Oil to Fill Reducer to Oil Level Plug ① ④ | | | | | | | | | | | |
|--------------------------|--------|---|------|-------------|------|-------------|------|-------------|------|-------------|------|-------------|------|
| | | ②Position A | | ②Position B | | ②Position C | | ②Position D | | ②Position E | | ②Position F | |
| | | ③Qt | L | ③Qt | L | ③Qt | L | ③Qt | L | ③Qt | L | ③Qt | L |
| TA0107L | Single | 0.7 | 0.6 | 0.5 | 0.5 | 0.7 | 0.6 | 1.4 | 1.3 | 1.3 | 1.2 | 1.5 | 1.4 |
| | Double | 0.7 | 0.6 | 0.5 | 0.5 | 0.6 | 0.6 | 1.3 | 1.3 | 1.2 | 1.2 | 1.4 | 1.3 |
| TA1107H | Single | 1.3 | 1.3 | 0.7 | 0.7 | 0.7 | 0.6 | 1.7 | 1.6 | 1.5 | 1.4 | 1.9 | 1.8 |
| | Double | 1.3 | 1.3 | 0.7 | 0.7 | 0.6 | 0.6 | 1.7 | 1.6 | 1.5 | 1.4 | 1.9 | 1.8 |
| TA2115H | Single | 2.1 | 2.0 | 1.2 | 1.2 | 1.1 | 1.0 | 2.7 | 2.5 | 2.3 | 2.2 | 3.1 | 2.8 |
| | Double | 2.1 | 2.0 | 1.1 | 1.1 | 1.0 | 1.0 | 2.6 | 2.5 | 2.4 | 2.3 | 3.0 | 2.9 |
| TA3203H | Single | 2.8 | 2.7 | 1.6 | 1.6 | 1.8 | 1.7 | 4.1 | 3.9 | 3.3 | 3.1 | 4.4 | 4.2 |
| | Double | 2.8 | 2.7 | 1.5 | 1.4 | 1.7 | 1.6 | 4.0 | 3.8 | 3.4 | 3.3 | 4.2 | 4.0 |
| TA4207H | Single | 4.4 | 4.2 | 2.6 | 2.5 | 2.9 | 2.8 | 7.4 | 7.0 | 6.3 | 6.0 | 7.8 | 7.3 |
| | Double | 4.4 | 4.2 | 2.5 | 2.4 | 2.8 | 2.6 | 7.3 | 6.9 | 6.4 | 6.0 | 7.5 | 7.1 |
| TA5215H | Single | 7.4 | 7.0 | 4.9 | 4.7 | 5.8 | 5.5 | 13.2 | 12.5 | 11.6 | 11.0 | 13.1 | 12.4 |
| | Double | 7.4 | 7.0 | 4.7 | 4.4 | 5.5 | 5.2 | 12.9 | 12.2 | 11.4 | 10.8 | 12.6 | 11.9 |
| TA6307H | Single | 8.8 | 8.4 | 5.8 | 5.5 | 6.6 | 6.2 | 16.1 | 15.3 | 13.2 | 12.5 | 16.1 | 15.3 |
| | Double | 8.8 | 8.4 | 5.5 | 5.2 | 6.2 | 5.9 | 15.8 | 15.0 | 13.9 | 13.1 | 15.3 | 14.5 |
| TA7315H | Single | 8.4 | 8.0 | 11.8 | 11.1 | 13.9 | 13.2 | 22.5 | 21.3 | 22.1 | 20.9 | 25.1 | 23.7 |
| | Double | 8.4 | 8.0 | 10.8 | 10.3 | 13.2 | 12.5 | 22.0 | 20.9 | 22.4 | 21.2 | 23.1 | 21.8 |
| TA8407H | Single | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | Double | 7.7 | 7.3 | 11.7 | 11.1 | 13.7 | 12.9 | 25.1 | 23.8 | 24.0 | 22.7 | 25.8 | 24.4 |
| TA9415H | Single | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | Double | 17.0 | 16.1 | 16.8 | 15.9 | 18.1 | 17.1 | 33.2 | 31.4 | 33.2 | 31.4 | 38.6 | 36.5 |
| TA10507H | Single | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | Double | 38.0 | 36.0 | 27.6 | 26.1 | 25.8 | 24.4 | 53.5 | 50.6 | 53.8 | 50.9 | 56.1 | 53.0 |
| TA12608H | Single | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | Double | 53.0 | 50.2 | 41.5 | 39.3 | 37.1 | 35.1 | 70.7 | 66.9 | 72.2 | 68.3 | 80.4 | 76.1 |

① Oil quantity is approximate. Service with lubricant until oil runs out of oil level hole.

② Refer to Figure 1 for mounting positions.

③ US measure: 1 quart = 32 fluid ounces = .94646 liters.

④ Below 15 RPM output speed, oil level must be adjusted to reach the highest oil level plug. If reducer position is to vary from those shown in Figure 1, either more or less oil may be required. Consult Baldor Electric Company, Dodge Engineering, Greenville, SC.

Table 3 – Oil Recommendations

| Output RPM | ISO Grades For Ambient Temperatures of 50° F to 125° F * | | | | | | | | | | | |
|------------|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|----------|
| | Torque-Arm II Reducer Size | | | | | | | | | | | |
| | TA0107L | TA1107H | TA2115H | TA3203H | TA4207H | TA5215H | TA6307H | TA7315H | TA8407H | TA9415H | TA10507H | TA12608H |
| 301 – 400 | 320 | 320 | 320 | 220 | 220 | 220 | 220 | 220 | 220 | 220 | 220 | 220 |
| 201 – 300 | 320 | 320 | 320 | 220 | 220 | 220 | 220 | 220 | 220 | 220 | 220 | 220 |
| 151 – 200 | 320 | 320 | 320 | 220 | 220 | 220 | 220 | 220 | 220 | 220 | 220 | 220 |
| 126 – 150 | 320 | 320 | 320 | 220 | 220 | 220 | 220 | 220 | 220 | 220 | 220 | 220 |
| 101 – 125 | 320 | 320 | 320 | 320 | 220 | 220 | 220 | 220 | 220 | 220 | 220 | 220 |
| 81 – 100 | 320 | 320 | 320 | 320 | 320 | 220 | 220 | 220 | 220 | 220 | 220 | 220 |
| 41 – 80 | 320 | 320 | 320 | 320 | 320 | 220 | 220 | 220 | 220 | 220 | 220 | 220 |
| 11 – 40 | 320 | 320 | 320 | 320 | 320 | 320 | 320 | 320 | 320 | 320 | 220 | 220 |
| 1 – 10 | 320 | 320 | 320 | 320 | 320 | 320 | 320 | 320 | 320 | 320 | 320 | 320 |

| Output RPM | ISO Grades For Ambient Temperatures of 15° F to 60° F * | | | | | | | | | | | |
|------------|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|----------|
| | Torque-Arm II Reducer Size | | | | | | | | | | | |
| | TA0107L | TA1107H | TA2115H | TA3203H | TA4207H | TA5215H | TA6307H | TA7315H | TA8407H | TA9415H | TA10507H | TA12608H |
| 301 – 400 | 220 | 220 | 220 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 201 – 300 | 220 | 220 | 220 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 151 – 200 | 220 | 220 | 220 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 126 – 150 | 220 | 220 | 220 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 101 – 125 | 220 | 220 | 220 | 220 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 81 – 100 | 220 | 220 | 220 | 220 | 220 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 41 – 80 | 220 | 220 | 220 | 220 | 220 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 11 – 40 | 220 | 220 | 220 | 220 | 220 | 220 | 220 | 220 | 220 | 220 | 150 | 150 |
| 1 – 10 | 220 | 220 | 220 | 220 | 220 | 220 | 220 | 220 | 220 | 220 | 220 | 220 |

NOTES:

1. Assumes auxiliary cooling where recommended in the catalog.
2. Pour point of lubricant selected should be at least 10°F lower than expected minimum ambient starting temperature.
3. Extreme pressure (EP) lubricants are not necessary for average operating conditions. When properly selected for specific applications, TORQUE-ARM II backstops are suitable for use with EP lubricants.
4. Special lubricants may be required for food and drug industry applications where contact with the product being manufactured may occur. Consult a lubrication manufacturer's representative for his recommendations.
5. For reducers operating in ambient temperatures between -22°F (-30°C) and 20°F (-6.6°C) use a synthetic hydrocarbon lubricant, 100 ISO grade or AGMA 3 grade (for example, Mobil SHC627). Above 125°F (51°C), consult Baldor Electric Company, Dodge Gear Application Engineering, Greenville, SC for lubrication recommendation.
6. Mobil SHC630 Series oil is recommended for high ambient temperatures.

GUIDELINES FOR TORQUE-ARM II REDUCER LONG-TERM STORAGE

During periods of long storage, or when waiting for delivery or installation of other equipment, special care should be taken to protect a gear reducer to have it ready to be in the best condition when placed into service.

By taking special precautions, problems such as seal leakage and reducer failure due to lack of lubrication, improper lubrication quantity, or contamination can be avoided. The following precautions will protect gear reducers during periods of extended storage:

Preparation:

1. Drain oil from the unit. Add a vapor phase corrosion inhibiting oil (VCI-105 oil by Daubert Chemical Co.) in accordance with Table 4.
2. Seal the unit airtight. Replace the vent plug with a standard pipe plug and wire the vent to the unit.
3. Cover all unpainted exterior parts with a waxy rust preventative compound that will keep oxygen away from the bare metal. (Non-Rust X-110 by Daubert Chemical Co. or equivalent).
4. The instruction manuals and lubrication tags are paper and must be kept dry. Either remove these documents and store them inside, or cover the unit with a durable waterproof cover which can keep moisture away.
5. Protect reducer from dust, moisture, and other contaminants by storing the unit in a dry area.

6. In damp environments, the reducer should be packed inside a moisture-proof container or an envelope of polyethylene containing a desiccant material. If the reducer is to be stored outdoors, cover the entire exterior with a rust preventative.

When placing the reducer into service:

1. Fill the unit to the proper oil level using a recommended lubricant. The VCI oil will not affect the new lubricant.
2. Clean the shaft extensions with petroleum solvents.
3. Assemble the vent plug into the proper hole.

Follow the installation instructions provided in this manual.

Table 4 – Quantities of VCI #105 Oil

| Reducer Size | Quantity (Ounces / Milliliter) |
|--------------|--------------------------------|
| TA0107L | 1 / 30 |
| TA1107H | 1 / 30 |
| TA2115H | 1 / 30 |
| TA3203H | 1 / 30 |
| TA4207H | 1 / 30 |
| TA5215H | 2 / 59 |
| TA6307H | 2 / 59 |
| TA7315H | 3 / 89 |
| TA8407H | 3 / 89 |
| TA9415H | 4 / 118 |
| TA10507H | 6 / 177 |
| TA12608H | 8 / 237 |

VCI #105 and #10 are interchangeable.
VCI #105 is more readily available.

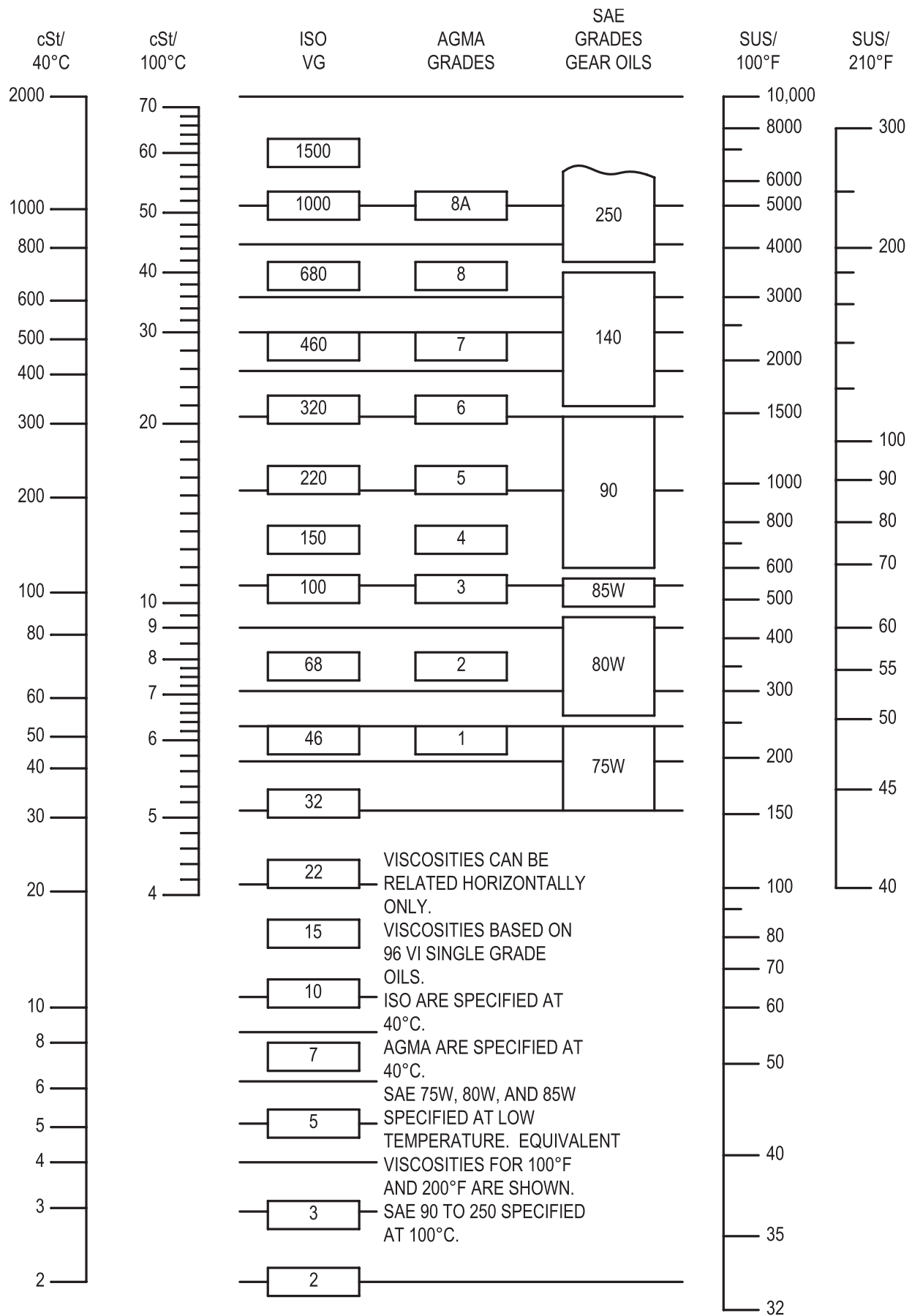


Figure 7 - OIL VISCOSITY EQUIVALENCY CHART

COOLING FAN INSTALLATION

WARNING: To ensure that drive is not unexpectedly started, turn off and lock out or tag power source before proceeding. Remove all external loads from drive before removing or servicing drive or accessories. Failure to observe these precautions could result in bodily injury.

Unpack all components and inspect for shipping damage. Do not use any component that has been damaged or modified. Make sure all components are clean and free of any foreign material prior to assembly. Cooling fan assembly is designed to fit onto the input shaft before placement of sheaves or belt guard assembly.

Installation for TA4207CF and TA5215CF:

1. Referring to Figure 9, install tapered bushing (9) into bore of fan blade assembly (2) and loosely install the three set screws provided with fan. Snug set screws but do not tighten at this time.
2. Slide fan assembly onto input shaft and install input shaft key. Note: Key is supplied with the TAll reducer. Locate fan blade edge distance "A" (Figure 8) from end of shaft per Table 5. Make sure fan assembly rotates without interference when input shaft is rotated.
3. Alternately tighten the set screws until fan assembly is securely installed on the input shaft.
4. Recheck fan assembly for proper location and clearance. Loosen set screws and repeat steps 2 and 3 above if not properly located.

Installation for TA6307CF through TA12608CF:

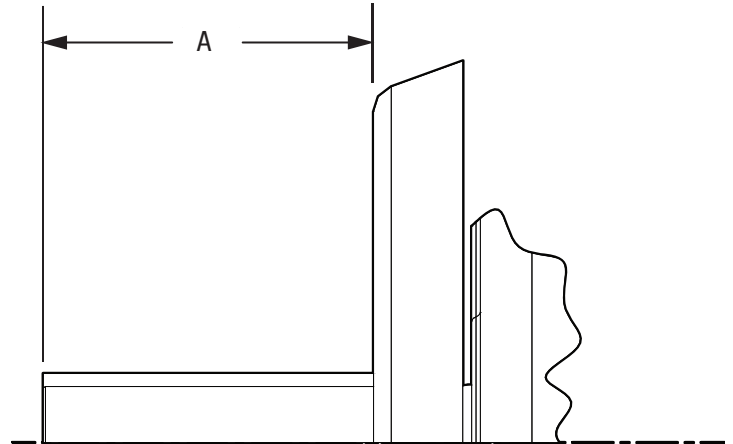
1. Referring to Figure 9, install fan guard back plate assembly (1) using the four bolts (4) provided. Note that the screen is mounted towards the reducer. Tighten to recommended torque in Table 5.

CAUTION: Fan guard screen has sharp edges. Use caution when installing to avoid lacerations.

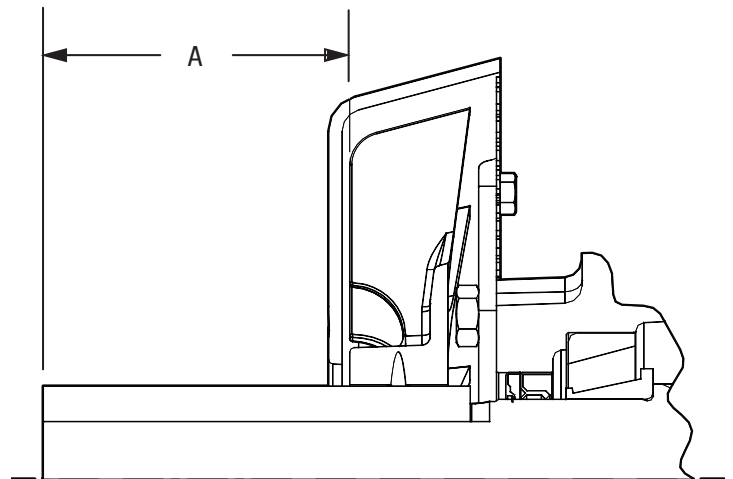
2. Slide fan blade assembly (2) onto input shaft and install key and set screws (5). Note: Key is supplied with the TAll reducer. Position fan blade edge distance "A" (Figure 8) from end of shaft per Table 5. Make sure fan assembly rotates without interference when input shaft is rotated. Tighten the two fan blade set screws (5) securely.
3. Install fan guard cover (3) with four bolts (6), lockwashers (7), and hex nuts (8). Tighten securely.
4. Verify fan blade rotates freely and does not interfere with fan guard back plate (1) or fan guard cover (3). Adjust fan blade if necessary.

Table 5 - Dimensions and Bolt Torque

| Reducer Size | Dim."A" mm | Torque (Ft.-Lbs.) |
|--------------|------------|-------------------|
| TA4207H | 3-3/4 | |
| TA5215H | 4-5/8 | |
| TA6307H | 4-1/4 | 33 - 30 |
| TA7315H | 4-3/8 | 33 - 30 |
| TA8407H | 5-1/16 | 33 - 30 |
| TA9415H | 6-1/4 | 33 - 30 |
| TA10507H | 6-7/16 | 33 - 30 |
| TA12608H | 6-7/16 | 33 - 30 |



TYPICAL FOR REDUCER SIZES 4 AND 5



TYPICAL FOR REDUCER SIZES 6 AND 12

Figure 8 - Fan Blade Placement

Figure 9 - Parts Identification

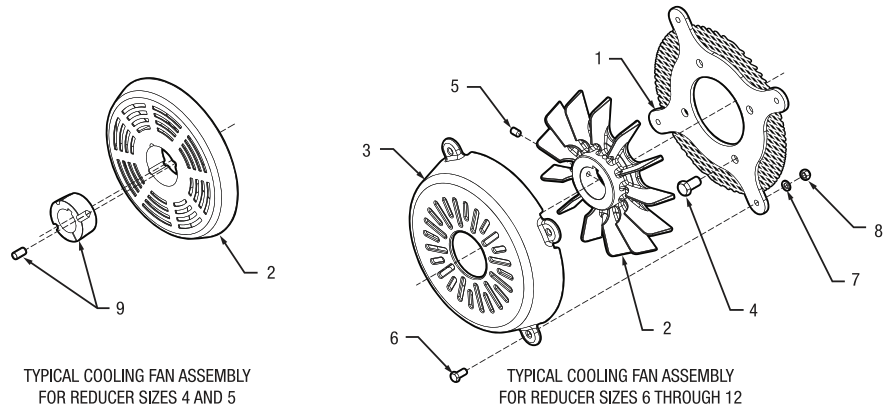


Table 6 – Cooling Fan Part Numbers

| Description | Ref. Number | Quantity | TA4207 | TA5215 | TA6307 | TA7315 | TA8407 | TA9415 | TA10507 | TA12608 |
|-------------------------|-------------|----------|--------|--------|--------|--------|--------|--------|---------|---------|
| Cooling Fan Assembly ❶ | ----- | 1 | 904106 | 905106 | 906106 | 907106 | 907106 | 909106 | 910106 | 912106 |
| Fan Guard Plate Assy. ❷ | 1 | 1 | ----- | ----- | 906519 | 906519 | 906519 | 909519 | 909519 | 912519 |
| Fan Blade ❷ | 2 | 1 | 904517 | 905517 | 906517 | 907517 | 907517 | 909517 | 910517 | 910517 |
| Fan Guard Cover ❷ | 3 | 1 | ----- | ----- | 906521 | 906521 | 906521 | 909521 | 909521 | 909521 |
| Mounting Bolt ❷ | 4 | 4 | ----- | ----- | 411294 | 411294 | 411294 | 411294 | 411294 | 411394 |
| Fan Set Screw ❷ | 5 | 2 | ----- | ----- | 400086 | 400086 | 400086 | 400086 | 400086 | 400086 |
| Cover Bolt ❷ | 6 | 4 | ----- | ----- | 411390 | 411390 | 411390 | 411390 | 411390 | 411390 |
| Lockwasher ❷ | 7 | 4 | ----- | ----- | 419010 | 419010 | 419010 | 419010 | 419010 | 419010 |
| Hex Nut ❷ | 8 | 4 | ----- | ----- | 407085 | 407085 | 407085 | 407085 | 407085 | 407085 |
| Taper Bushing Assy. ❷ ❸ | 9 | 1 | 117162 | 117092 | ----- | ----- | ----- | ----- | ----- | ----- |

❶ Assembly includes parts listed below marked ❷

❸ Set screws are included with taper bushing assembly.

BACKSTOPS

WARNING: To ensure that drive is not unexpectedly started, turn off and lock out or tag power source before proceeding. Remove all external loads from drive before removing or servicing drive or accessories. Failure to observe these precautions could result in bodily injury.

1. Remove backstop shaft cover and gasket, shown in Figure 10. These parts will not be reused. This cover is directly opposite the extended end of the input shaft.
2. Clean the face of the gearbox to remove any gasket material or contamination from the cover mounting surface. It is important that contamination not get into the gearbox or the backstop during the backstop installation/servicing process.
3. Face reducer looking at the side from which the cover was removed. Determine carefully the desired direction of free rotation. It is important that the direction be correctly determined because to reverse the direction after the backstop is installed, it is necessary to remove the backstop, turn it end-for-end and then reinstall it.
4. Match the arrow on the backstop inner race to the direction of free rotation for the desired shaft. Note that reversing the backstop end-for end changes the direction of the arrow. The shaft will rotate in the same direction as the arrow on the backstop.
5. If the backstop kit has a spacer ring included, install it onto the shaft first, adjacent to the bearing inner ring.
6. Install the backstop inner race and sprag cage assembly onto the shaft. DO NOT remove the cage from the inner race or the shipping strap from the sprag set at this time. Insert the key into the inner race and mating shaft keyway. These parts should slip onto the shaft easily, a light coating of oil may assist in assembly. Do not use a hammer to force the installation, damage can occur to the shaft and/or the backstop. Slide the race against the spacer or the shaft shoulder and install the retaining ring into the groove in the shaft. Only use the supplied key, as it is specifically designed for each backstop.

7. Apply a thin coating of RTV silicone onto the gearbox mating surface for the outer race (same as the cover area). It is important to apply the sealant around the fastener holes to prevent leakage. Do not allow excessive amounts of silicone to enter the gearbox or to be applied to other parts.
8. Install the outer race by gently rotating it opposite the shaft rotation while pressing lightly inwards. Do not force the outer race into position as backstop damage may occur. Once the outer race is well piloted onto the sprag set, remove the shipping strap from the sprag set by cutting it, being careful not to let the outer race back off the sprags. The outer race should slide easily into position with a slight turning motion. A light coating of oil on the race inner diameter may ease installation.
9. Align the fastener holes in the outer race with the mating holes in the gearbox. Use the supplied grade 5 fasteners and lock washers only. Torque the fasteners in an alternating pattern per Table 5.

Table 5 – Backstop Fastener Torque Values

| Reducer Size | Fastener Size | Torque in Ft.-Lbs. |
|--------------|---------------|--------------------|
| TA0107L | 1/4-20 | 8 – 7 |
| TA1107H | 1/4-20 | 8 – 7 |
| TA2115H | 1/4-20 | 8 – 7 |
| TA3203H | 1/4-20 | 8 – 7 |
| TA4207H | 1/4-20 | 8 – 7 |
| TA5215H | 5/16-18 | 17 – 15 |
| TA6307H | 5/16-18 | 17 – 15 |
| TA7315H | 3/8-16 | 30 – 27 |
| TA8407H | 5/16-18 | 17 – 15 |
| TA9415H | 3/8-16 | 30 – 27 |
| TA10507H | 3/8-16 | 30 – 27 |
| TA12608H | 3/8-16 | 30 – 27 |

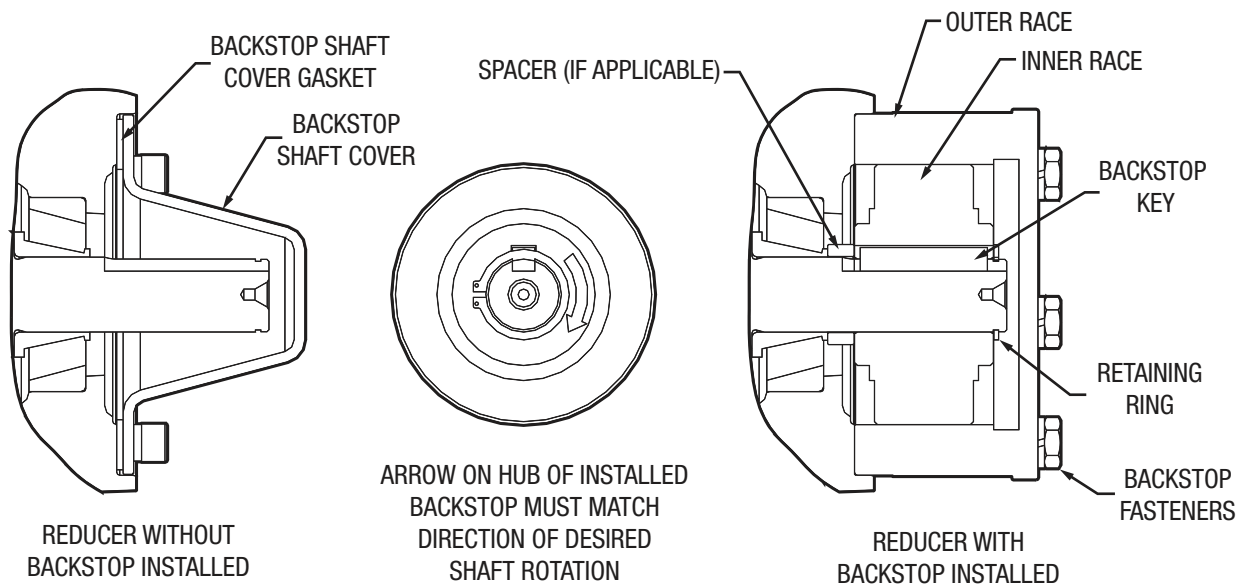


Figure 10 - Backstop Assembly

MOTOR MOUNTS

Motor Mount Assembly:

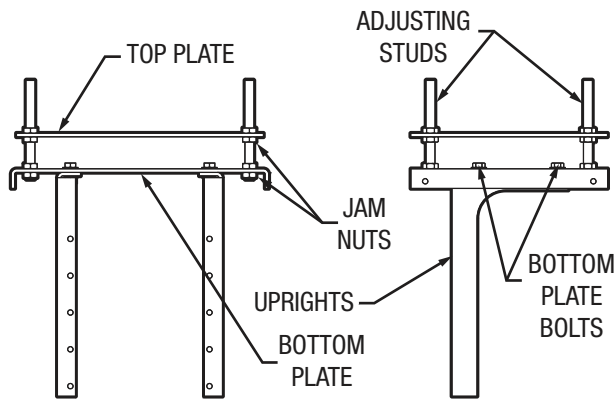


Figure 11 – Motor Mount Components

Refer to Figure 11 for descriptions of component parts. Using the hardware provided, assemble uprights (the angled parts to which the reducer is fastened) to the u-shaped, rectangular bottom plate. Notice that there are eight slots cut into the plate. If the reducer is to be mounted in Positions A or C, as illustrated in Figure 8, assemble the uprights in the outermost slots. If the reducer is to be mounted in Positions B or D, assemble the uprights in the innermost slots. The bottom plate may be mounted with the vertical flanges up or down (as shown in Figure 11). Snug bolts only, do not torque bolts at this time.

Fasten long threaded studs to the four corners of bottom plate using jam nuts, one on each side of the plate. Securely tighten these nuts, as they will not require any further adjustment. Add one additional jam nut to each stud and thread approximately to the middle of the stud. Assemble top motor plate (the flat rectangular plate with many holes) on top of the jam nuts. Assemble the remaining jam nuts on studs to secure top motor plate. Do not fully tighten these nuts yet.

The motor mount may be installed in any of the four positions (A, B, C or D) and in any of the mounting levels (M1, M2, M3 or M4) shown in Figure 12. Note that the motor mount uprights attach to the input side of the reducer when mounted in either the "B" or "D" positions.

Motor Mount Installation:

WARNING: To ensure that drive is not unexpectedly started, turn off and lock out or tag power source before proceeding. Remove all external loads from drive before removing or servicing drive or accessories. Failure to observe these precautions could result in bodily injury.

Remove four or six (as required) housing bolts from the reducer. Place the motor mount in position and reinstall the bolts through the motor mount uprights and reducer housing. Where reducer is shaft mounted in positions A or C, the torque-arm adapter plate must be mounted between the reducer housing and the motor mount upright. Tighten bolts to the torque specified in Table 9.

Mount the motor onto the top plate and bolt securely. Install the motor sheave and reducer sheave as close to the motor and reducer housings as practical. Loosen the bottom plate bolts and slide the motor and mounting plate to accurately align the motor and reducer sheave. Securely tighten the bottom plate bolts. Install the required number of V-belts and tension belts by alternately adjusting the jam nuts on the four adjusting studs provided on the motor mount. Check all bolts to see that they are securely tightened. Verify that the V-belt drive is properly aligned before operating the reducer.

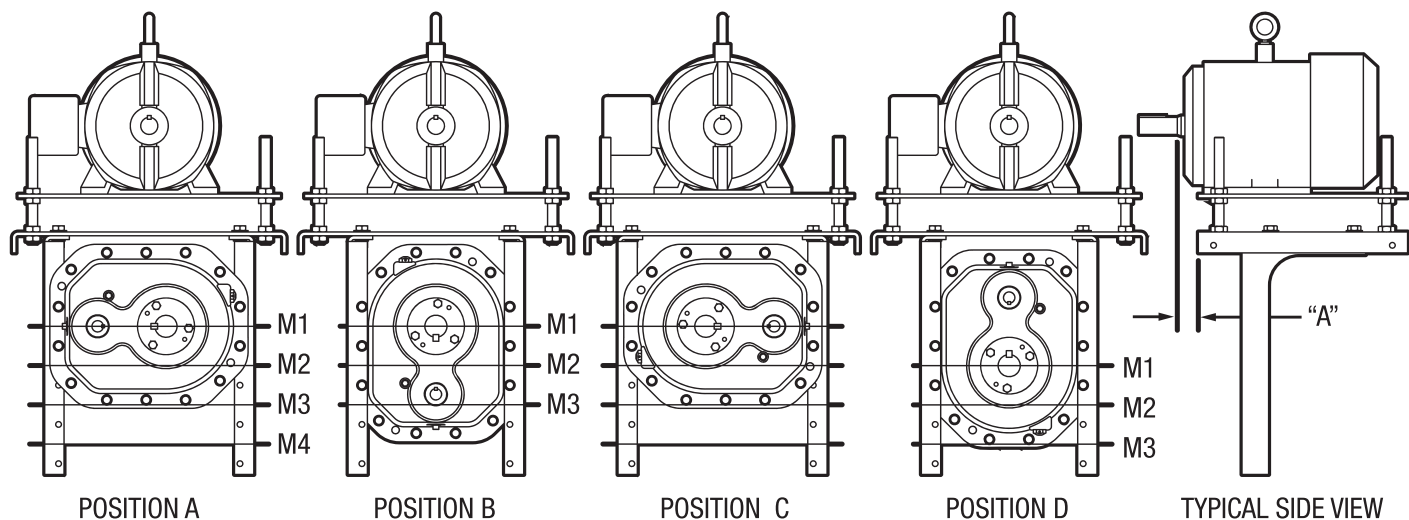


Figure 12 - Motor Mount Positions

Table 6 - V-Drive Center Distances

| TA0107L Reducer | Position | Mtg. | Motor Frame / Motor Shaft Offset Dimensions “A” | | | | | | |
|--------------------|----------|-------------|---|---------------|---------------|---------------|------|------|------|
| | | | 56T / A=.78 | 140T / A=1.22 | 180T / A=1.37 | 210T / A=1.55 | 250T | 280T | 320T |
| | A | M1 | 14.4 – 18.2 | 14.4 – 18.2 | 15.4 – 19.2 | 16.2 – 19.9 | ---- | ---- | ---- |
| | | M2 | 16.8 – 20.5 | 16.8 – 20.5 | 17.8 – 21.5 | 18.5 – 22.3 | ---- | ---- | ---- |
| | | M3 | 19.1 – 22.9 | 19.1 – 22.9 | 20.1 – 23.9 | 20.8 – 24.6 | ---- | ---- | ---- |
| | | M4 | 21.5 – 25.2 | 21.5 – 25.2 | 22.5 – 26.2 | 23.2 – 27.0 | ---- | ---- | ---- |
| | B | M1 | 17.2 – 21.0 | 17.2 – 21.0 | 18.2 – 22.0 | 19.0 – 22.8 | ---- | ---- | ---- |
| | | M2 | 19.6 – 23.4 | 19.6 – 23.4 | 20.6 – 24.4 | 21.3 – 25.1 | ---- | ---- | ---- |
| | | M3 | 22.0 – 25.8 | 22.0 – 25.8 | 23.0 – 26.8 | 23.7 – 27.5 | ---- | ---- | ---- |
| | C | M1 | 12.6 – 16.4 | 12.6 – 16.4 | 13.6 – 17.4 | 14.3 – 18.1 | ---- | ---- | ---- |
| M2 | | 14.9 – 18.7 | 14.9 – 18.7 | 15.9 – 19.7 | 16.7 – 20.4 | ---- | ---- | ---- | |
| M3 | | 17.3 – 21.1 | 17.3 – 21.1 | 18.3 – 22.1 | 19.0 – 22.8 | ---- | ---- | ---- | |
| M4 | | 19.6 – 23.4 | 19.6 – 23.4 | 20.6 – 24.4 | 21.4 – 25.2 | ---- | ---- | ---- | |
| D | M1 | 11.8 – 15.6 | 11.8 – 15.6 | 12.8 – 16.6 | 13.5 – 17.3 | ---- | ---- | ---- | |
| | M2 | 14.1 – 17.9 | 14.1 – 17.9 | 15.1 – 18.9 | 15.9 – 19.7 | ---- | ---- | ---- | |
| | M3 | 16.5 – 20.3 | 16.5 – 20.3 | 17.5 – 21.3 | 18.3 – 22.1 | ---- | ---- | ---- | |

| TA1107L Reducer | Position | Mtg. | Motor Frame / Motor Shaft Offset Dimensions “A” | | | | | | |
|-----------------|----------|-------------|---|---------------|---------------|---------------|--------------|------|------|
| | | | 56T / A=.78 | 140T / A=1.22 | 180T / A=1.37 | 210T / A=1.55 | 250T / =1.56 | 280T | 320T |
| | A | M1 | 13.8 – 17.9 | 13.8 – 17.9 | 14.7 – 18.9 | 15.4 – 19.6 | 16.4-20.6 | ---- | ---- |
| | | M2 | 16.2 – 20.5 | 16.2 – 20.5 | 17.2 – 21.4 | 17.9 – 22.2 | 18.9-23.2 | ---- | ---- |
| | | M3 | 18.8 – 23.0 | 18.8 – 23.0 | 19.7 – 24.0 | 20.5 – 24.7 | 21.5-25.7 | ---- | ---- |
| | | M4 | 21.3 – 25.6 | 21.3 – 25.6 | 22.3 – 26.6 | 23.0 – 27.3 | 24.0-28.3 | ---- | ---- |
| | B | M1 | 17.7 – 22.0 | 17.7 – 22.0 | 18.7 – 23.0 | 19.5 – 23.8 | 20.5-24.7 | ---- | ---- |
| | | M2 | 20.3 – 24.6 | 20.3 – 24.6 | 21.3 – 25.6 | 22.1 – 26.4 | 23.1-27.4 | ---- | ---- |
| | | M3 | 22.9 – 27.2 | 22.9 – 27.2 | 23.9 – 28.2 | 24.6 – 29.0 | 25.6-30.0 | ---- | ---- |
| | C | M1 | 13.8 – 17.9 | 13.8 – 17.9 | 14.7 – 18.9 | 15.4 – 19.6 | 16.4-20.6 | ---- | ---- |
| M2 | | 16.2 – 20.5 | 16.2 – 20.5 | 17.2 – 21.4 | 17.9 – 22.2 | 18.9-23.2 | ---- | ---- | |
| M3 | | 18.8 – 23.0 | 18.8 – 23.0 | 19.7 – 24.0 | 20.5 – 24.7 | 21.5-25.7 | ---- | ---- | |
| M4 | | 21.3 – 25.6 | 21.3 – 25.6 | 22.3 – 26.6 | 23.0 – 27.3 | 24.0-28.3 | ---- | ---- | |
| D | M1 | 11.3 – 15.7 | 11.3 – 15.7 | 12.3 – 16.7 | 13.1 – 17.4 | 14.1-18.4 | ---- | ---- | |
| | M2 | 13.9 – 18.2 | 13.9 – 18.2 | 14.9 – 19.2 | 15.7 – 20.0 | 16.7-21.0 | ---- | ---- | |
| | M3 | 16.5 – 20.8 | 16.5 – 20.8 | 17.5 – 21.8 | 18.3 – 22.6 | 19.3-23. | ---- | ---- | |

| | Position | Mtg. | Motor Frame / Motor Shaft Offset Dimensions "A" | | | | | | |
|-----------------|----------|------|---|---------------|---------------|---------------|---------------|------|------|
| | | | 56T / A=.78 | 140T / A=1.22 | 180T / A=1.37 | 210T / A=1.55 | 250T / A=1.56 | 280T | 320T |
| TA2115H Reducer | A | M1 | 13.6 – 17.2 | 13.6 – 17.2 | 14.6 – 18.1 | 15.3 – 18.9 | 16.3 – 19.8 | ---- | ---- |
| | | M2 | 16.6 – 20.1 | 16.6 – 20.1 | 17.5 – 21.1 | 18.3 – 21.9 | 19.2 – 22.8 | ---- | ---- |
| | | M3 | 19.5 – 23.1 | 19.5 – 23.1 | 20.5 – 24.1 | 21.2 – 24.9 | 22.2 – 25.9 | ---- | ---- |
| | | M4 | 22.5 – 26.2 | 22.5 – 26.2 | 23.5 – 27.1 | 24.2 – 27.9 | 25.2 – 28.9 | ---- | ---- |
| | B | M1 | 18.5 – 22.2 | 18.5 – 22.2 | 19.5 – 23.2 | 20.3 – 24.0 | 21.3 – 25.0 | ---- | ---- |
| | | M2 | 21.6 – 25.3 | 21.6 – 25.3 | 22.6 – 26.3 | 23.3 – 27.0 | 24.3 – 28.0 | ---- | ---- |
| | | M3 | 24.6 – 28.3 | 24.6 – 28.3 | 25.6 – 29.3 | 26.4 – 30.1 | 27.4 – 31.1 | ---- | ---- |
| | C | M1 | 13.6 – 17.2 | 13.6 – 17.2 | 14.6 – 18.1 | 15.3 – 18.9 | 16.3 – 19.8 | ---- | ---- |
| | | M2 | 16.6 – 20.1 | 16.6 – 20.1 | 17.5 – 21.1 | 18.3 – 21.9 | 19.2 – 22.8 | ---- | ---- |
| | | M3 | 19.5 – 23.1 | 19.5 – 23.1 | 20.5 – 24.1 | 21.2 – 24.9 | 22.2 – 25.9 | ---- | ---- |
| | | M4 | 22.5 – 26.2 | 22.5 – 26.2 | 23.5 – 27.1 | 24.2 – 27.9 | 25.2 – 28.9 | ---- | ---- |
| | D | M1 | 10.4 – 14.1 | 10.4 – 14.1 | 11.4 – 15.1 | 12.2 – 15.9 | 13.2 – 16.9 | ---- | ---- |
| | | M2 | 13.5 – 17.2 | 13.5 – 17.2 | 14.5 – 18.2 | 15.3 – 19.0 | 16.3 – 20.0 | ---- | ---- |
| | | M3 | 16.6 – 20.3 | 16.6 – 20.3 | 17.6 – 21.3 | 18.3 – 22.0 | 22.0 – 23.0 | ---- | ---- |

| | Position | Mtg. | Motor Frame / Motor Shaft Offset Dimension "A" | | | | | | |
|-----------------|----------|------|--|---------------|---------------|---------------|---------------|------|------|
| | | | 140T / A=1.22 | 180T / A=1.37 | 210T / A=1.55 | 250T / A=1.56 | 280T / A=1.16 | 320T | 360T |
| TA3203H Reducer | A | M1 | 14.6 – 18.4 | 15.5 – 19.4 | 16.2 – 20.1 | 17.2 – 21.1 | 17.9 – 21.8 | ---- | ---- |
| | | M2 | 17.9 – 21.8 | 18.9 – 22.8 | 19.6 – 23.5 | 20.5 – 24.5 | 21.3 – 25.2 | ---- | ---- |
| | | M3 | 21.2 – 25.2 | 22.2 – 26.2 | 22.9 – 26.9 | 23.9 – 27.9 | 24.7 – 28.6 | ---- | ---- |
| | | M4 | 24.6 – 28.6 | 25.6 – 29.6 | 26.3 – 30.3 | 27.3 – 31.3 | 28.1 – 32.1 | ---- | ---- |
| | B | M1 | 19.8 – 23.9 | 20.8 – 24.9 | 21.6 – 25.6 | 22.6 – 26.6 | 23.3 – 27.4 | ---- | ---- |
| | | M2 | 23.3 – 27.3 | 24.3 – 28.3 | 25.0 – 29.1 | 26.0 – 30.1 | 26.8 – 30.8 | ---- | ---- |
| | | M3 | 26.7 – 30.8 | 27.7 – 31.8 | 28.5 – 32.5 | 29.5 – 33.5 | 30.2 – 34.3 | ---- | ---- |
| | C | M1 | 13.6 – 17.4 | 14.5 – 18.4 | 15.2 – 19.1 | 16.2 – 20.1 | 16.9 – 20.8 | ---- | ---- |
| | | M2 | 16.9 – 20.8 | 17.8 – 21.7 | 18.6 – 22.5 | 19.5 – 23.5 | 20.2 – 24.2 | ---- | ---- |
| | | M3 | 20.2 – 24.2 | 21.2 – 25.1 | 21.9 – 25.9 | 22.9 – 26.9 | 23.6 – 27.6 | ---- | ---- |
| | | M4 | 23.6 – 27.6 | 24.6 – 28.5 | 25.3 – 29.3 | 26.3 – 30.3 | 27.0 – 31.0 | ---- | ---- |
| | D | M1 | 10.2 – 14.2 | 11.2 – 15.2 | 11.9 – 16.0 | 12.9 – 17.0 | 13.7 – 17.7 | ---- | ---- |
| | | M2 | 13.6 – 17.7 | 14.6 – 18.7 | 15.4 – 19.4 | 16.4 – 20.4 | 17.1 – 21.2 | ---- | ---- |
| | | M3 | 17.1 – 21.1 | 18.1 – 22.1 | 18.8 – 22.9 | 19.8 – 23.9 | 20.6 – 24.6 | ---- | ---- |

| | Position | Mtg. | Motor Frame / Motor Shaft Offset Dimension "A" | | | | | | |
|-----------------|----------|------|--|---------------|---------------|---------------|---------------|--------------|------|
| | | | 140T / A=1.22 | 180T / A=1.37 | 210T / A=1.55 | 250T / A=1.56 | 280T / A=1.16 | 320T / A=.38 | 360T |
| TA4207H Reducer | A | M1 | 17.3 – 21.1 | 18.3 – 22.1 | 19.0 – 22.8 | 19.9 – 23.8 | 20.6 – 24.5 | 21.6 – 25.5 | ---- |
| | | M2 | 21.2 – 25.1 | 22.2 – 26.1 | 22.9 – 26.8 | 23.9 – 27.8 | 24.6 – 28.6 | 25.6 – 29.5 | ---- |
| | | M3 | 25.2 – 29.2 | 26.2 – 30.2 | 26.9 – 30.9 | 27.9 – 31.9 | 28.7 – 32.6 | 29.6 – 33.6 | ---- |
| | | M4 | 29.3 – 33.2 | 30.2 – 34.2 | 31.0 – 34.9 | 32.0 – 35.9 | 32.7 – 36.7 | 33.7 – 37.7 | ---- |
| | B | M1 | 22.6 – 26.7 | 23.6 – 27.7 | 24.4 – 28.4 | 25.4 – 29.4 | 26.1 – 30.2 | 27.1 – 31.2 | ---- |
| | | M2 | 26.8 – 30.8 | 27.8 – 31.8 | 28.5 – 32.5 | 29.5 – 33.5 | 30.3 – 34.3 | 31.3 – 35.3 | ---- |
| | | M3 | 30.9 – 34.9 | 31.9 – 35.9 | 32.6 – 36.7 | 33.6 – 37.7 | 34.4 – 38.4 | 35.4 – 39.4 | ---- |
| | C | M1 | 15.4 – 19.2 | 16.3 – 20.1 | 17.0 – 20.8 | 18.0 – 21.8 | 18.7 – 22.5 | 19.6 – 23.5 | ---- |
| | | M2 | 19.3 – 23.1 | 20.2 – 24.1 | 20.9 – 24.8 | 21.9 – 25.8 | 22.6 – 26.5 | 23.6 – 27.5 | ---- |
| | | M3 | 23.2 – 27.2 | 24.2 – 28.1 | 24.9 – 28.9 | 25.9 – 29.9 | 26.6 – 30.6 | 27.6 – 31.6 | ---- |
| | | M4 | 27.3 – 31.2 | 28.2 – 32.2 | 29.0 – 32.9 | 29.9 – 33.9 | 30.7 – 34.6 | 31.7 – 35.6 | ---- |
| | D | M1 | 12.2 – 16.2 | 13.2 – 17.2 | 14.0 – 18.0 | 15.0 – 19.0 | 15.7 – 19.7 | 16.7 – 20.7 | ---- |
| | | M2 | 16.3 – 20.4 | 17.3 – 21.4 | 18.1 – 22.1 | 19.1 – 23.1 | 19.8 – 23.9 | 20.8 – 24.9 | ---- |
| | | M3 | 20.4 – 24.5 | 21.4 – 25.5 | 22.2 – 26.2 | 23.2 – 27.2 | 23.9 – 28.0 | 24.9 – 29.0 | ---- |

| | Position | Mtg. | Motor Frame / Motor Shaft Offset Dimension "A" | | | | | | |
|-----------------|----------|------|--|---------------|---------------|---------------|--------------|---------------|------|
| | | | 180T / A=1.37 | 210T / A=1.55 | 250T / A=1.56 | 280T / A=1.16 | 320T / A=.38 | 360T / A=1.01 | 400T |
| TA5215H Reducer | A | M1 | 19.5 – 23.4 | 20.2 – 24.1 | 21.1 – 25.1 | 21.8 – 25.8 | 22.8 – 26.8 | 23.8 – 27.8 | ---- |
| | | M2 | 24.2 – 28.3 | 25.0 – 29.0 | 25.9 – 30.0 | 26.7 – 30.7 | 27.6 – 31.7 | 28.6 – 32.7 | ---- |
| | | M3 | 29.1 – 33.2 | 29.8 – 33.9 | 30.8 – 34.9 | 31.5 – 35.6 | 32.5 – 36.6 | 33.5 – 37.6 | ---- |
| | | M4 | 34.0 – 38.1 | 34.7 – 38.8 | 35.7 – 39.8 | 36.5 – 40.6 | 37.4 – 41.5 | 38.4 – 42.5 | ---- |
| | B | M1 | 26.2 – 30.3 | 26.9 – 31.1 | 27.9 – 32.1 | 28.7 – 32.8 | 29.7 – 33.8 | 30.7 – 34.8 | ---- |
| | | M2 | 31.2 – 35.3 | 31.9 – 36.1 | 32.9 – 37.1 | 33.7 – 37.8 | 34.7 – 38.8 | 35.7 – 39.8 | ---- |
| | | M3 | 36.2 – 40.3 | 36.9 – 41.1 | 37.9 – 42.1 | 38.7 – 42.8 | 39.7 – 43.8 | 40.7 – 44.8 | ---- |
| | C | M1 | 16.4 – 20.3 | 17.1 – 21.0 | 18.0 – 21.9 | 18.7 – 22.6 | 19.7 – 23.6 | 20.6 – 24.6 | ---- |
| | | M2 | 21.1 – 25.1 | 21.8 – 25.8 | 22.8 – 26.8 | 23.5 – 27.5 | 24.4 – 28.5 | 25.4 – 29.4 | ---- |
| | | M3 | 25.9 – 29.9 | 26.6 – 30.7 | 27.6 – 31.6 | 28.3 – 32.4 | 29.3 – 33.4 | 30.3 – 34.3 | ---- |
| | | M4 | 30.8 – 34.8 | 31.5 – 35.6 | 32.5 – 36.6 | 32.2 – 37.3 | 34.2 – 38.3 | 35.2 – 39.3 | ---- |
| | D | M1 | 17.7 – 21.8 | 18.4 – 22.6 | 19.4 – 23.6 | 20.2 – 24.3 | 21.2 – 25.3 | 22.2 – 26.3 | ---- |
| | | M2 | 22.7 – 26.8 | 23.4 – 27.6 | 24.4 – 28.6 | 25.2 – 29.3 | 26.2 – 30.3 | 27.2 – 31.3 | ---- |
| | | M3 | N/A | N/A | N/A | N/A | N/A | N/A | ---- |

| | Position | Mtg. | Motor Frame / Motor Shaft Offset Dimension "A" | | | | | | |
|-----------------|----------|------|--|---------------|---------------|---------------|--------------|---------------|--------------|
| | | | 180T / A=1.37 | 210T / A=1.55 | 250T / A=1.56 | 280T / A=1.16 | 320T / A=.38 | 360T / A=1.01 | 400T / A=.75 |
| TA6307H Reducer | A | M1 | 21.2 – 25.0 | 21.9 – 25.8 | 22.9 – 26.7 | 23.6 – 27.4 | 24.5 – 28.4 | 25.5 – 29.4 | 26.5 – 30.4 |
| | | M2 | 26.2 – 30.1 | 26.9 – 30.8 | 27.9 – 31.8 | 28.6 – 32.5 | 29.6 – 33.5 | 30.5 – 34.5 | 31.5 – 35.4 |
| | | M3 | 31.2 – 35.1 | 32.0 – 35.9 | 32.9 – 36.9 | 33.7 – 37.6 | 34.6 – 38.6 | 35.6 – 39.6 | 36.6 – 40.6 |
| | | M4 | 36.3 – 40.3 | 37.0 – 41.0 | 38.0 – 42.0 | 38.8 – 42.7 | 39.7 – 43.7 | 40.7 – 44.7 | 41.7 – 45.7 |
| | B | M1 | 27.5 – 31.5 | 28.2 – 32.3 | 29.2 – 33.3 | 30.0 – 34.0 | 31.0 – 35.0 | 32.0 – 36.0 | 33.0 – 37.0 |
| | | M2 | 32.7 – 36.7 | 33.4 – 37.5 | 34.4 – 38.5 | 35.2 – 39.2 | 36.2 – 40.2 | 37.2 – 41.2 | 38.2 – 42.2 |
| | | M3 | 37.9 – 41.9 | 38.6 – 42.7 | 39.6 – 43.7 | 40.4 – 44.4 | 41.4 – 45.4 | 42.4 – 46.4 | 43.4 – 47.4 |
| | C | M1 | 17.9 – 21.6 | 18.6 – 22.3 | 19.5 – 23.3 | 20.2 – 24.0 | 21.1 – 25.0 | 22.1 – 25.9 | 23.0 – 26.9 |
| | | M2 | 22.8 – 26.6 | 23.5 – 27.3 | 24.4 – 28.3 | 25.2 – 29.0 | 26.1 – 30.0 | 27.1 – 31.0 | 28.0 – 32.0 |
| | | M3 | 27.8 – 31.7 | 28.5 – 32.4 | 29.5 – 33.4 | 30.2 – 34.1 | 31.2 – 35.1 | 32.1 – 36.1 | 33.1 – 37.1 |
| | | M4 | 32.8 – 36.8 | 33.5 – 37.5 | 34.5 – 38.5 | 35.3 – 39.2 | 36.2 – 40.2 | 37.2 – 41.2 | 38.2 – 42.2 |
| | D | M1 | 14.4 – 18.4 | 15.2 – 19.2 | 16.1 – 20.2 | 16.9 – 20.9 | 17.9 – 21.9 | 18.9 – 22.9 | 19.9 – 23.9 |
| | | M2 | 19.6 – 23.6 | 20.3 – 24.3 | 21.3 – 25.3 | 22.1 – 26.1 | 23.1 – 27.1 | 24.1 – 28.1 | 25.1 – 29.1 |
| | | M3 | 24.8 – 28.8 | 25.5 – 29.5 | 26.5 – 30.5 | 27.3 – 31.3 | 28.3 – 32.3 | 29.3 – 33.3 | 30.2 – 34.3 |

| | Position | Mtg. | Motor Frame / Motor Shaft Offset Dimension "A" | | | | | | |
|-----------------|----------|------|--|---------------|---------------|--------------|---------------|--------------|------|
| | | | 210T / A=1.55 | 250T / A=1.56 | 280T / A=1.16 | 320T / A=.38 | 360T / A=1.01 | 400T / A=.75 | 440T |
| TA7315H Reducer | A | M1 | 27.4 – 31.4 | 28.4 – 32.4 | 29.1 – 33.1 | 30.1 – 34.1 | 31.1 – 35.1 | 32.1 – 36.1 | ---- |
| | | M2 | 33.3 – 37.3 | 34.3 – 38.3 | 35.0 – 39.0 | 36.0 – 40.0 | 37.0 – 41.0 | 38.0 – 42.0 | ---- |
| | | M3 | 39.2 – 43.2 | 40.2 – 44.2 | 41.0 – 45.0 | 42.0 – 46.0 | 43.0 – 47.0 | 44.0 – 48.0 | ---- |
| | | M4 | 45.2 – 49.2 | 46.2 – 50.2 | 46.9 – 50.9 | 47.9 – 51.9 | 48.9 – 52.9 | 49.9 – 53.9 | ---- |
| | B | M1 | 30.0 – 34.0 | 31.0 – 35.0 | 31.8 – 35.7 | 32.8 – 36.7 | 33.7 – 37.7 | 34.7 – 38.7 | ---- |
| | | M2 | 36.0 – 40.0 | 37.0 – 40.9 | 37.7 – 41.7 | 38.7 – 42.7 | 39.7 – 43.7 | 40.7 – 44.7 | ---- |
| | | M3 | 41.9 – 45.9 | 42.9 – 46.9 | 43.6 – 47.6 | 44.6 – 48.6 | 45.6 – 49.6 | 46.6 – 50.6 | ---- |
| | C | M1 | 17.4 – 21.3 | 18.4 – 22.4 | 19.1 – 23.0 | 20.0 – 23.9 | 21.0 – 24.9 | 22.0 – 25.9 | ---- |
| | | M2 | 23.2 – 27.1 | 24.2 – 28.1 | 24.9 – 28.8 | 25.9 – 29.8 | 26.9 – 30.8 | 27.8 – 31.8 | ---- |
| | | M3 | 29.1 – 33.0 | 30.0 – 34.0 | 30.8 – 34.7 | 31.8 – 35.7 | 32.8 – 36.7 | 33.7 – 37.7 | ---- |
| | | M4 | 35.0 – 39.0 | 36.0 – 39.9 | 36.7 – 40.7 | 37.7 – 41.7 | 38.7 – 42.7 | 39.7 – 43.7 | ---- |
| | D | M1 | 20.5 – 24.4 | 21.5 – 25.4 | 22.2 – 26.1 | 23.2 – 27.1 | 24.2 – 28.1 | 25.1 – 29.1 | ---- |
| | | M2 | 26.4 – 30.3 | 27.4 – 31.3 | 28.1 – 32.0 | 29.1 – 33.0 | 30.1 – 34.0 | 31.0 – 35.0 | ---- |
| | | M3 | 32.3 – 36.3 | 33.3 – 37.2 | 34.0 – 38.0 | 35.0 – 39.0 | 36.0 – 40.0 | 37.0 – 41.0 | ---- |

| | Position | Mtg. | Motor Frame / Motor Shaft Offset Dimension "A" | | | | | | |
|-----------------|----------|------|--|---------------|---------------|--------------|---------------|--------------|------|
| | | | 210T / A=1.55 | 250T / A=1.56 | 280T / A=1.16 | 320T / A=.38 | 360T / A=1.01 | 400T / A=.75 | 440T |
| | | | | | | | | | |
| TA8407H Reducer | A | M1 | 27.4 – 31.3 | 28.3 – 32.3 | 29.1 – 33.0 | 30.1 – 34.0 | 31.0 – 35.0 | 32.0 – 36.0 | ---- |
| | | M2 | 33.2 – 37.2 | 34.2 – 38.2 | 35.0 – 39.0 | 36.0 – 39.9 | 37.0 – 40.9 | 37.9 – 41.9 | ---- |
| | | M3 | 39.2 – 43.2 | 40.2 – 44.2 | 40.9 – 44.9 | 41.9 – 45.9 | 42.9 – 46.9 | 43.9 – 47.9 | ---- |
| | | M4 | 45.1 – 49.1 | 46.1 – 50.1 | 46.9 – 50.9 | 47.9 – 51.9 | 48.8 – 52.8 | 49.8 – 53.8 | ---- |
| | B | M1 | 30.2 – 34.2 | 31.2 – 35.2 | 32.0 – 35.9 | 32.9 – 36.9 | 33.9 – 37.9 | 34.9 – 38.9 | |
| | | M2 | 36.2 – 40.1 | 37.1 – 41.1 | 37.9 – 41.9 | 38.9 – 42.9 | 39.9 – 43.9 | 40.9 – 44.9 | ---- |
| | | M3 | 42.1 – 46.1 | 43.1 – 47.1 | 43.8 – 47.8 | 44.8 – 48.8 | 45.8 – 49.8 | 46.8 – 50.8 | ---- |
| | C | M1 | 17.6 – 21.4 | 18.5 – 22.4 | 19.2 – 23.1 | 20.2 – 24.1 | 21.2 – 25.1 | 22.1 – 26.0 | ---- |
| | | M2 | 23.3 – 27.3 | 24.3 – 28.2 | 25.0 – 29.0 | 26.0 – 30.0 | 27.0 – 30.9 | 28.0 – 31.9 | ---- |
| | | M3 | 29.2 – 33.2 | 30.2 – 34.1 | 30.9 – 34.9 | 31.9 – 35.9 | 32.9 – 36.9 | 33.9 – 37.8 | ---- |
| | | M4 | 35.1 – 39.1 | 36.1 – 40.1 | 36.8 – 40.8 | 37.8 – 41.8 | 38.8 – 42.8 | 39.8 – 43.8 | ---- |
| | D | M1 | 20.3 – 24.2 | 21.3 – 25.2 | 22.0 – 25.9 | 23.0 – 26.9 | 23.9 – 27.9 | 24.9 – 28.9 | ---- |
| | | M2 | 26.1 – 30.1 | 27.1 – 31.1 | 27.9 – 31.8 | 28.8 – 32.8 | 29.8 – 33.8 | 30.8 – 34.8 | ---- |
| | | M3 | 32.1 – 36.0 | 33.0 – 37.0 | 33.8 – 37.8 | 34.8 – 38.8 | 35.8 – 39.7 | 36.7 – 40.7 | ---- |

| | Position | Mtg. | Motor Frame / Motor Shaft Offset Dimension "A" | | | | | |
|------------------|----------|------|--|---------------|--------------|---------------|--------------|---------------|
| | | | 250T / A=1.56 | 280T / A=1.16 | 320T / A=.38 | 360T / A=1.01 | 400T / A=.75 | 440T / A=1.62 |
| | | | | | | | | |
| TA10507H Reducer | A | M1 | N/A | N/A | N/A | N/A | N/A | N/A |
| | | M2 | N/A | N/A | N/A | N/A | N/A | N/A |
| | | M3 | N/A | N/A | N/A | N/A | N/A | N/A |
| | | M4 | N/A | N/A | N/A | N/A | N/A | N/A |
| | B | M1 | 46.7 – 50.5 | 47.5 – 51.2 | 48.5 – 52.2 | 49.5 – 53.2 | 50.5 – 54.2 | 51.5 – 55.2 |
| | | M2 | 52.1 – 55.9 | 52.8 – 56.6 | 53.8 – 57.6 | 54.8 – 58.6 | 55.8 – 59.6 | 56.8 – 60.6 |
| | | M3 | N/A | N/A | N/A | N/A | N/A | N/A |
| | C | M1 | N/A | N/A | N/A | N/A | N/A | N/A |
| | | M2 | N/A | N/A | N/A | N/A | N/A | N/A |
| | | M3 | N/A | N/A | N/A | N/A | N/A | N/A |
| | | M4 | N/A | N/A | N/A | N/A | N/A | N/A |
| | D | M1 | 17.7 – 21.4 | 18.4 – 22.2 | 19.4 – 23.2 | 20.4 – 24.2 | 21.4 – 25.2 | 22.4 – 26.2 |
| | | M2 | 23.0 – 26.8 | 23.8 – 27.5 | 24.8 – 28.5 | 25.8 – 29.5 | 26.8 – 30.5 | 27.8 – 31.5 |
| | | M3 | N/A | N/A | N/A | N/A | N/A | N/A |

| | Position | Mtg. | Motor Frame / Motor Shaft Offset Dimension "A" | | | | | |
|------------------|----------|------|--|---------------|--------------|---------------|--------------|---------------|
| | | | 250T / A=1.56 | 280T / A=1.16 | 320T / A=.38 | 360T / A=1.01 | 400T / A=.75 | 440T / A=1.62 |
| | | | | | | | | |
| TA12608H Reducer | A | M1 | N/A | N/A | N/A | N/A | N/A | N/A |
| | | M2 | N/A | N/A | N/A | N/A | N/A | N/A |
| | | M3 | N/A | N/A | N/A | N/A | N/A | N/A |
| | | M4 | N/A | N/A | N/A | N/A | N/A | N/A |
| | B | M1 | 48.9 – 52.7 | 49.7 – 53.5 | 50.7 – 54.5 | 51.7 – 55.5 | 52.7 – 56.5 | 53.7 – 57.5 |
| | | M2 | 54.5 – 58.3 | 55.3 – 59.1 | 56.3 – 60.1 | 57.3 – 61.1 | 58.3 – 62.1 | 59.3 – 63.1 |
| | | M3 | N/A | N/A | N/A | N/A | N/A | N/A |
| | C | M1 | N/A | N/A | N/A | N/A | N/A | N/A |
| | | M2 | N/A | N/A | N/A | N/A | N/A | N/A |
| | | M3 | N/A | N/A | N/A | N/A | N/A | N/A |
| | | M4 | N/A | N/A | N/A | N/A | N/A | N/A |
| | D | M1 | 22.0 – 25.8 | 22.8 – 26.6 | 23.8 – 27.6 | 24.8 – 28.6 | 25.8 – 29.6 | 26.8 – 30.6 |
| | | M2 | N/A | N/A | N/A | N/A | N/A | N/A |
| | | M3 | N/A | N/A | N/A | N/A | N/A | N/A |

TORQUE-ARM II BELT GUARD INSTALLATION

Two different belt guards are available for the Torque-Arm II speed reducer. One belt guard assembly is designed for mounting in position “B” and the other belt guard assembly is designed for mounting in position “C” as shown in Figure 13. It is important that the mounting position of the Torque-Arm II motor mount be determined prior to purchase of the belt guard as these two guards do not interchange and will be attached to the motor mount uprights.

WARNING: To ensure that drive is not unexpectedly started, turn off and lock out or tag power source before proceeding. Remove all external loads from drive before removing or servicing drive or accessories. Failure to observe these precautions could result in bodily injury.

WARNING: Ensure that all guards are properly installed before proceeding. Exercise extreme care to avoid contacting rotating parts. Failure to observe these precautions could result in bodily injury.

Vertical Installation (Position B):

1. Move belt guard and hardware from box and verify all parts are available. The belt guard assembly consists of one back cover, one front cover, two brackets, and necessary hardware.
2. Using the hardware provided, assemble the two brackets to the back cover as shown in Figure 14. Note that the brackets are mounted so that the angles of the brackets are mounted to the inside. Do not fully tighten these bolts.
3. Position back cover over the motor shaft and reducer input shaft. The long slot in the back cover fits over the motor shaft.
4. Align the back cover assembly to the Torque-Arm II motor mount and attach using four cap screws, washers, and nuts. Securely tighten the brackets to the motor mount and back cover.
5. Install motor and reducer sheaves. Install belts and adjust accordingly.
6. Align hinges on front cover to pins on back cover and assemble.
7. Close cover and secure with two cap screws and washers.
8. Check machine for proper operation.

Horizontal Installation (Position C):

1. Remove belt guard and hardware from box and verify all parts are available. The belt guard assembly consists of one back cover, one front cover, two brackets, and necessary hardware.
2. Using the hardware provided, assemble the two brackets to the back cover as shown in Figure 15. Note that the brackets are mounted so that the angles of the brackets are mounted in the same direction. Do not fully tighten these bolts.
3. Position back cover over the motor shaft and reducer input shaft. The long slot in the back cover fits over the motor shaft.
4. Align the back cover assembly to the Torque-Arm II motor mount and attach using four cap screws, washers, and nuts. Securely tighten the brackets to the motor mount and back cover.
5. Install motor and reducer sheaves. Install belts and adjust accordingly.

6. Align hinges on front cover to pins on back cover and assemble.
7. Close cover and secure with two cap screws and washers.
8. Check machine for proper operation.

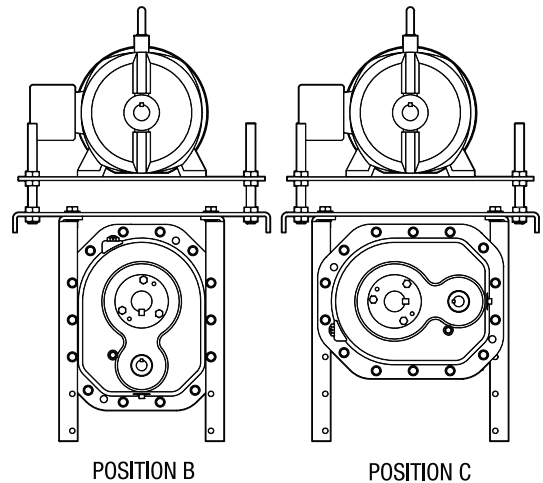


Figure 13 – Belt Guard Mounting Positions

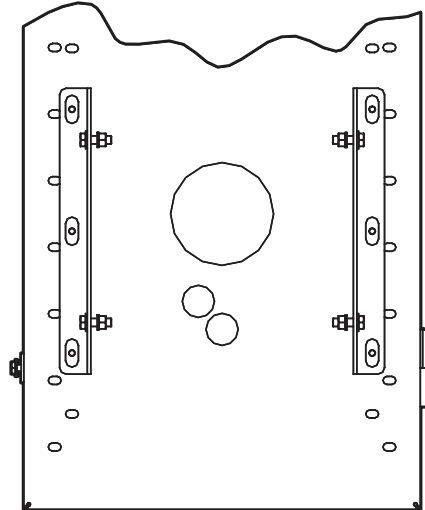


Figure 14 – Mounting Brackets in Position B

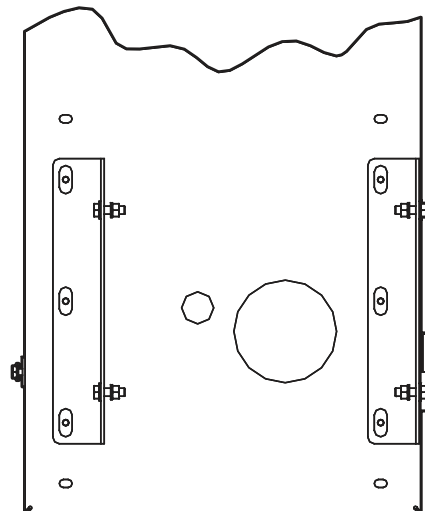


Figure 15 – Mounting Brackets in Position C

SCREW CONVEYOR ADAPTER ASSEMBLY

1. Install seals (408) into adapter housing as shown in Figure 16. If the optional packing adapter is to be used, install only one seal in the small end of the adapter. Use extreme care when installing seals to avoid damage to the seals. Press or tap seals into place by applying pressure only on the outer edge of the seal. Make sure seals are install evenly and are not tilted.
2. If using the optional packing adapter, install the two studs (413), retaining ring (412), and two nuts (414). Thread the nuts onto the studs about 4-5 threads. Install the three braided type seals (415) in a circular direction into the adapter cavity. Shoulder the braided seals against the adjustable retaining ring (412). To aid in installation of the driveshaft in step 7, the braided seals can be flattened out slightly with a soft hammer prior to installation. When installing the braided seals offset the joints from each other.
3. Lightly tap the large washer (407) into the counterbore on the large end of the adapter to seal the braided material installed in step 2 or the seal installed in step 1.
4. Place reducer on blocks so that it lays flat with the input shaft down.
5. Position screw conveyor adapter (400) on the reducer output hub so that the small end (end with four drilled holes) rests on reducer. The approximate 1/8" piloting projection should locate in the output seal bore next to the auxiliary seal. Adapter projection should not touch the face of the gear case casting.
6. Place four adapter screws (409) and lock washers (410) through the adapter and thread into the reducer. Tighten the four cap screws (409) to the torque specified in Table 9.
7. Turn reducer onto its side. Use caution not to damage either type seals and install driveshaft through the adapter housing into the reducer. Line up the keyway in the driveshaft with the keyway in the reducer hub bore. Slide or gently tap key into reducer through the input shaft side of the output hub.
8. Install the retaining ring (411) into the screw conveyor wedge (402). Making sure the driveshaft is fully seated into the reducer, slide the wedge onto driveshaft.
9. Install keeper plate (401), driveshaft cap screw (404), and lockwasher (405). Torque to specifications in Table 9.

DRIVESHAFT REMOVAL

To remove the driveshaft from the reducer the following steps are required.

1. Remove the driveshaft retaining bolt (404) and lock washer (405), the keeper plate (401), and the retaining ring (411).
2. Referring to Table 7, install the correct size hex head set screw into the end of the driveshaft until flush. Note TA6307H and TA7315H does not require a set screw.
3. Position the keeper plate (401) flush against the end of the driveshaft and with the small end facing out. Next install the retaining ring (411). When properly installed, the retaining ring holds the keeper plate (401) in place.
4. Screw removal bolt(s) into the keeper plate (401) and tighten until the driveshaft wedge (402) is dislodged. Once the driveshaft wedge (402) is dislodged, pull the assembly free from the reducer. If installed, remove the hex head set screw from the end of the driveshaft. The driveshaft can now be easily removed from the reducer by pulling the driveshaft straight out of the reducer.

Note: The removal bolt is not the same bolt as the retaining bolt. Refer to Table 7 for the correct bolt to be used for removal.

Table 7 – Removal Hardware

| Reducer Size | Removal Bolt | Hex Head Set Screw |
|--------------|-------------------------|--------------------|
| TA0107L | 3/4-10 x 2 | 5/8-11 x 3/4 |
| TA1107H | 3/4-10 x 2 | 5/8-11 x 3/4 |
| TA2115H | 3/4-10 x 2 | 5/8-11 x 3/4 |
| TA3203H | 7/8-9 x 2 | 3/4-10 x 3/4 |
| TA4207H | 7/8-9 x 2 | 3/4-10 x 3/4 |
| TA5215H | 7/8-9 x 2 | 3/4-10 x 3/4 |
| TA6307H | 3/8-16 x 2 (4 required) | N/A |
| TA7315H | 1/2-13 x 2 (4 required) | N/A |

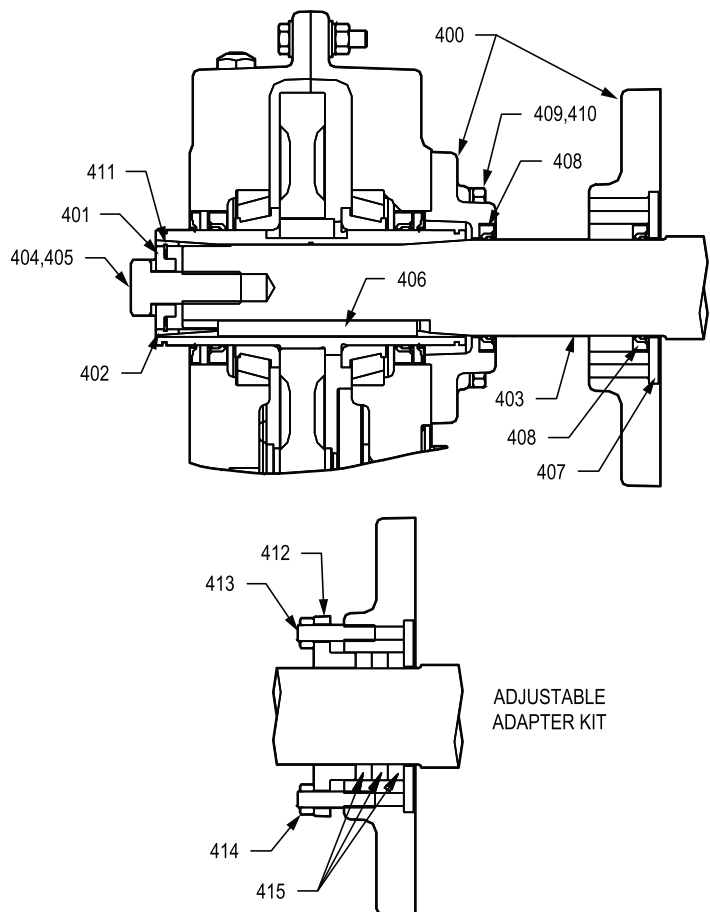


Figure 16 – Screw Conveyor Adapter Assembly

REPLACEMENT OF PARTS

IMPORTANT: Using tools normally found in a maintenance department, a Dodge Torque-Arm II speed reducer can be disassembled and reassembled by careful attention to the instructions following.

Cleanliness is very important to prevent the introduction of dirt into the bearings and other parts of the reducer. A tank of clean solvent, an arbor press, and equipment for heating bearings and gears (for shrinking these parts on shafts) should be available. Our factory is prepared to repair reducers for customers who do not have proper facilities or who, for any reason, desire factory service.

The oil seals are contact lip seals. Considerable care should be used during disassembly and reassembly to avoid damage to the surface on which the seals rub.

The keyseat in the input shaft, as well as any sharp edges on the output hub should be covered with tape or paper before disassembly or reassembly. Also, be careful to remove any burrs or nicks on surfaces of the input shaft or output hub before disassembly or reassembly.

Ordering Parts: When ordering parts for reducer, specify reducer size number, reducer model number, part name, part number, and quantity.

It is strongly recommended that, when a pinion or gear is replaced, the mating pinion or gear is replaced also. If the large gear on the output hub must be replaced, it is recommended that an output hub assembly consisting of a gear assembled on a hub be ordered to ensure undamaged surfaces on the output hub where the output seals rub. However, if it is desired to use the old output hub, press the gear and bearing off and examine the rubbing surface under the oil seal carefully for possible scratching or other damage resulting from the pressing operation. To prevent oil leakage at the shaft oil seals, the smooth surface of the output hub must not be damaged.

If any parts must be pressed from a shaft or from the output hub, this should be done before ordering parts to make sure that none of the bearings or other parts are damaged in removal. Do not press against rollers or cage of any bearing.

Because old shaft oil seals may be damaged in disassembly, it is advisable to order replacements for these parts.

Removing Reducer from Shaft:

WARNING: To ensure that drive is not unexpectedly started, turn off and lock out or tag power source before proceeding. Remove all external loads from drive before removing or servicing drive or accessories. Failure to observe these precautions could result in bodily injury.

Taper Bushed:

1. Disconnect and remove belt guard, v-drive, and motor mount as required. Disconnect torque arm rod from reducer adapter.
2. Remove bushing screws.
3. Place the screws in the threaded holes provided in the bushing flanges. Tighten the screws alternately and evenly until the bushings are free on the shaft. For ease of tightening screws, make sure screw threads and threaded holes in bushing flanges are clean. A tap can be used to clean out the threads. Use caution to use the proper size tap to prevent damage to the threads.
4. Remove the outside bushing, the reducer, and then the inboard bushing.

Disassembly:

1. Drain all oil from the reducer.
2. Position the reducer on its side and remove all housing bolts. Drive dowel pins from housing. Using the three pry slots around the periphery of the flange, gently separate the housing halves. Open housing evenly to prevent damage to the parts inside.
3. Lift input shaft, all gear assemblies, and bearing assemblies from housing.
4. Remove seals from housing.
5. Remove bearings from shafts and hubs. Be careful not to scratch or damage any assembly or seal area during bearing removal. The hub assembly can be disassembled for gear replacement but if scratching or grooving occurs on the hub, seal leakage will occur and the hub will need to be replaced.

Reassembly:

1. **Output Hub Assembly:** Heat gear to 325°F to 350°F to shrink onto hub. Heat bearings to 270°F to 290°F to shrink onto hub. Any injury to the hub surfaces where the oil seals rub will cause leakage, making it necessary to use a new hub.
2. **Countershaft Assembly:** Shaft and pinion are integral. Press gear and bearings on shaft. Press against inner race (not cage or rollers) of bearings.
3. **Input Shaft Assembly:** Shaft and pinion are integral. Press bearings on shaft. Press against inner race (not cage or rollers) of bearings.
4. Drive the two dowel pins into place in the right-hand housing half.
5. Place R.H. housing half on blocks to allow for protruding end of output hub.
6. Install bearing cups in right-hand housing half, making sure they are properly seated. The output hub assembly has one bearing pressed against the gear and the other bearing pressed against a shoulder on the hub. For double reduction reducers, install the output hub assembly so that the end where the bearing is pressed against the gear is up. For single reduction reducers, install the output hub assembly so that the end where the bearing is pressed against the gear is down.
7. Mesh output hub gear and small countershaft gear together and set in place in housing. Set input shaft assembly in place in the housing. Make sure bearing rollers (cones) are properly seated in their cups. Set bearing cups for left-hand housing half in place on their rollers.
8. Making sure both housing halves are clean, set left-hand housing half into position and tap with a soft hammer (rawhide, not lead hammer) until housing bolts can be used to draw housing halves together. Make sure reducer shafts do not bind while tightening housing bolts.
9. Rotate the input shaft and seat all bearings with a soft hammer. Using a magnetic base and indicator, measure and record the end play of the input shaft, countershaft, and output hub. Remove left housing half and shim behind the bearing cup as required to achieve the correct bearing end play or preload per Table 8. Repeat this process and check end play until proper end play is obtained. Note that the output shaft is preloaded. After end play is determined, add the correct shim thickness to the end play reading to obtain the correct preload.

10. Remove left housing half and clean housing flange surfaces on both halves, making sure not to nick or scratch flange face. Place a 1/8" bead of Dow RTV732 sealant or equivalent on flange face (make sure RTV is placed around bolt holes and inside of flange face). Place left housing half into position and tap with a soft hammer (rawhide, not lead hammer) until housing bolts can be used to draw housing halves together. Torque housing bolts per torque values listed in Table 9.

11. Install input seal, output seals, and auxiliary seals. Extreme care should be used when installing seals to avoid damage due to contact with sharp edges on the input shaft or output hub. The possibility of damage and consequent oil leakage can be decreased by covering all sharp edges with tape prior to seal installation. Lightly coat the seal lips with Mobilith AW2 All-Purpose grease or equivalent. Seals should be pressed or tapped with a soft hammer evenly into place in the reducer housing, applying pressure only on the outer edge of the seals. A slight oil leakage at the seals may be evident during initial running, but should disappear unless seals have been damaged.

12. Install bushing backup plates and snap rings on Taper Bushed reducers or hub collars on straight bore reducers.

Table 8 - Bearing Adjustment Tolerances

| Reducer Size | Bearing Endplay Values | | |
|--------------|------------------------|------------------|-------------------|
| | Input | Countershaft | Output |
| TA0107L | .002-.004 Loose | .0005-.003 Loose | .002-.004 Preload |
| TA1107H | .002-.004 Loose | .0005-.003 Loose | .002-.004 Preload |
| TA2115H | .002-.004 Loose | .0005-.003 Loose | .002-.004 Preload |
| TA3203H | .002-.004 Loose | .0005-.003 Loose | .002-.004 Preload |
| TA4207H | .002-.004 Loose | .0005-.003 Loose | .002-.004 Preload |
| TA5215H | .002-.004 Loose | .0005-.003 Loose | .003-.005 Preload |
| TA6307H | .002-.004 Loose | .0005-.003 Loose | .006-.008 Preload |
| TA7315H | .002-.004 Loose | .0005-.003 Loose | .006-.008 Preload |
| TA8407H | .002-.004 Loose | .0005-.003 Loose | .004-.006 Preload |
| TA9415H | .002-.004 Loose | .0005-.003 Loose | .004-.006 Preload |
| TA10507H | .002-.004 Loose | .0005-.003 Loose | .006-.008 Preload |
| TA12608H | .002-.004 Loose | .0005-.003 Loose | .006-.008 Preload |

Table 9 - Recommended Bolt Torque Values

| Housing Bolt Recommended Torque Values | | |
|--|---------------|--------------------|
| Reducer Size | Fastener Size | Torque in Ft.-Lbs. |
| TA0107L | 5/16-18 | 17 – 15 |
| TA1107H | 5/16-18 | 17 – 15 |
| TA2115H | 3/8-16 | 30 – 27 |
| TA3203H | 3/8-16 | 30 – 27 |
| TA4207H | 1/2-13 | 75 – 70 |
| TA5215H | 1/2-13 | 75 – 70 |
| TA6307H | 1/2-13 | 75 – 70 |
| TA7315H | 5/8-11 | 90 – 82 |
| TA8407H | 5/8-11 | 90 – 82 |
| TA9415H | 5/8-11 | 90 – 82 |
| TA10507H | 3/4-10 | 148 – 138 |
| TA12608H | 3/4-10 | 148 – 138 |

| Backstop Cover Bolt Recommended Torque Values | | |
|---|---------------|--------------------|
| Reducer Size | Fastener Size | Torque in Ft.-Lbs. |
| TA0107L | 1/4-20 | 8 – 7 |
| TA1107H | 1/4-20 | 8 – 7 |
| TA2115H | 1/4-20 | 8 – 7 |
| TA3203H | 1/4-20 | 8 – 7 |
| TA4207H | 1/4-20 | 8 – 7 |
| TA5215H | 5/16-18 | 17 – 15 |
| TA6307H | 5/16-18 | 17 – 15 |
| TA7315H | 3/8-16 | 30 – 27 |
| TA8407H | 5/16-18 | 17 – 15 |
| TA9415H | 3/8-16 | 30 – 27 |
| TA10507H | 3/8-16 | 30 – 27 |
| TA12608H | 3/8-16 | 30 – 27 |

| Screw Conveyor Adapter Bolt Recommended Torque Values | | |
|---|---------------|--------------------|
| Reducer Size | Fastener Size | Torque in Ft.-Lbs. |
| TA0107L | 3/8-16 | 30 – 27 |
| TA1107H | 3/8-16 | 30 – 27 |
| TA2115H | 7/16-14 | 50 – 45 |
| TA3203H | 1/2-13 | 75 – 70 |
| TA4207H | 1/2-13 | 75 – 70 |
| TA5215H | 5/8-11 | 90 – 82 |
| TA6307H | 3/4-10 | 148 – 138 |
| TA7315H | 3/4-10 | 148 – 138 |

| Screw Conveyor Drive Shaft Retainer Bolt Recommended Torque Values | | |
|--|---------------|--------------------|
| Reducer Size | Fastener Size | Torque in Ft.-Lbs. |
| TA0107L | 5/8-11 | 90 – 82 |
| TA1107H | 5/8-11 | 90 – 82 |
| TA2115H | 5/8-11 | 90 – 82 |
| TA3203H | 3/4-10 | 148 – 138 |
| TA4207H | 3/4-10 | 148 – 138 |
| TA5215H | 3/4-10 | 148 – 138 |
| TA6307H | 1-8 | 210 – 190 |
| TA7315H | 1-8 | 210 – 190 |

REPLACEMENT PART AND KIT NUMBERS

Table 10 – Part Numbers for Replacement Bearings, Single and Double Reduction Reducers

| Reducer Size | Output Hub Bearing – LH and RH Sides Part Number |
|--------------|---|
| TA0107L | 900250/900251 |
| TA1107H | 901250/901251 |
| TA2115H | 403003/402003 |
| TA3203H | 903252/402268 |
| TA4207H | 403016/402193 |
| TA5215H | 403140/402050 |
| TA6307H | 906250/906251 |
| TA7315H | 403105/402147 |
| TA8407H | 403105/402147 |
| TA9415H | 403110/402160 |
| TA10507H | 910250/910251 |
| TA12608H | 912250/912251 |

| Reducer Size | Countershaft Bearing – LH Side Part Number |
|--------------|---|
| TA0107L | 304833/304740 |
| TA1107H | 403165/402265 |
| TA2115H | 304836/411626-05-B |
| TA3203H | 403101/402271 |
| TA4207H | 304809/304710 |
| TA5215H | 403005/402001 |
| TA6307H | 403026/906257 |
| TA7315H | 403159/907260 |
| TA8407H | 411626-06-BE/411626-05BM |
| TA9415H | 403036/304701 |
| TA10507H | 403087/402023 |
| TA12608H | 402233/912253 |

| Reducer Size | Countershaft Bearing – Backstop (RH) Side Part Number |
|--------------|--|
| TA0107L | 304833/304740 |
| TA1107H | 403165/402265 |
| TA2115H | 304836/411626-05-B |
| TA3203H | 403101/402271 |
| TA4207H | 304809/304710 |
| TA5215H | 403005/402001 |
| TA6307H | 403026/906257 |
| TA7315H | 403159/907260 |
| TA8407H | 411626-06-BE/908253 |
| TA9415H | 403036/304701 |
| TA10507H | 403087/402023 |
| TA12608H | 402233/912253 |

Table 10 – Part Numbers for Replacement Bearings, Single and Double Reduction Reducers (Cont.)

| Reducer Size | | Input Shaft Bearing – LH Side Part Number |
|--------------|---------------|--|
| TA0107L | 5:1 | 403166/402284 |
| | 9:1 | |
| | 15:1 | |
| | 25:1 | |
| TA1107H | 40:1 | 402169/402294 |
| | 5:1 | |
| | 9:1 | |
| | 15:1 | |
| TA2115H | 25:1 | 403094/304753 |
| | 40:1 | |
| | 5:1 | |
| | 9:1 | |
| TA3203H | 15:1 | 403094/304707 |
| | 25:1 | |
| | 40:1 | |
| | 5:1 | |
| TA4207H | 9:1 | 304809/411626-05-K |
| | 15:1 | |
| | 25:1 | |
| | 40:1 | |
| TA5215H | 403101/402271 | 304809/411626-05-K |
| | 5:1 | |
| | 9:1 | |
| | 15:1 | |
| TA6307H | 25:1 | 403005/402001 |
| | 40:1 | |
| | 5:1 | |
| | 9:1 | |
| TA7315H | 15:1 | 403005/304717 |
| | 25:1 | |
| | 40:1 | |
| | 5:1 | |
| TA8407H | 9:1 | 403026/906260 |
| | 15:1 | |
| | 25:1 | |
| | 40:1 | |
| TA9415H | 5:1 | 304802/402041 |
| | 9:1 | |
| | 15:1 | |
| | 25:1 | |
| TA10507H | 40:1 | 908259/908260 |
| | 5:1 | |
| | 9:1 | |
| | 15:1 | |
| TA12608H | 25:1 | 403036/304701 |
| | 40:1 | |
| | 5:1 | |
| | 9:1 | |
| | 15:1 | 402231/402232 |
| | 25:1 | |
| | 40:1 | |
| | 5:1 | |
| | 9:1 | 402231/402232 |
| | 15:1 | |
| | 25:1 | |
| | 40:1 | |

Note: LH is input side of reducer, and RH is backstop or output side of reducer. Bearing part numbers refer to Cup/Cone combinations, respectively, and apply to all ratios unless otherwise specified. For actual reducer ratios, refer to Table 12.

Table 10 – Part Numbers for Replacement Bearings, Single and Double Reduction Reducers (Cont.)

| Reducer Size | | Input Shaft Bearing – RH Side Part Number |
|--------------|------|---|
| TA0107L | 5:1 | 403165/402265 |
| | 9:1 | |
| | 15:1 | |
| | 25:1 | |
| | 40:1 | 402169/402294 |
| TA1107H | 5:1 | 403063/402108 |
| | 9:1 | |
| | 15:1 | |
| | 25:1 | |
| | 40:1 | 403094/304753 |
| TA2115H | 5:1 | 403094/304707 |
| | 9:1 | |
| | 15:1 | |
| | 25:1 | |
| | 40:1 | 304809/411626-05-K |
| TA3203H | 5:1 | 403101/402271 |
| | 9:1 | |
| | 15:1 | |
| | 25:1 | |
| | 40:1 | 304809/411626-05-K |
| TA4207H | 5:1 | 904256/904257 |
| | 9:1 | |
| | 15:1 | |
| | 25:1 | |
| | 40:1 | 904256/904258 |
| TA5215H | 5:1 | 403005/402001 |
| | 9:1 | |
| | 15:1 | |
| | 25:1 | |
| | 40:1 | 403005/411626-05-V |
| TA6307H | 5:1 | 403026/906260 |
| | 9:1 | |
| | 15:1 | |
| | 25:1 | |
| | 40:1 | 403026/906257 |
| TA7315H | 5:1 | 403159/907260 |
| | 9:1 | |
| | 15:1 | |
| | 25:1 | |
| | 40:1 | 403159/402054 |
| TA8407H | 15:1 | 9082569/908257 |
| | 25:1 | 304804/908258 |
| | 40:1 | |
| TA9415H | 15:1 | 411626-06-BE/411626-05-BM |
| | 25:1 | |
| | 40:1 | 304804/908258 |
| TA10507H | 15:1 | 411626-06-BE/411626-05-BM |
| | 25:1 | |
| | 40:1 | 304804/908258 |
| TA12608H | 15:1 | 403036/304701 |
| | 25:1 | 403036/912258 |
| | 40:1 | |

Table 11 – Replacement Parts Kit Numbers

| Reducer Size | Ratio | Seal Kit * | Output Hub Assembly ** | Countershaft Assembly *** | Bearing Kit **** | Shim Kit |
|--------------|-------|------------|------------------------|---------------------------|------------------|----------|
| TA0107L | 5:1 | 900126 | 900120 | --- | 900128 | 900180 |
| | 9:1 | | | 900122 | 900129 | |
| | 15:1 | | | 900123 | | |
| | 25:1 | | | 900124 | | |
| | 40:1 | | | 900125 | | |
| TA1107H | 5:1 | 901126 | 901120 | --- | 901128 | 901180 |
| | 9:1 | | | 901122 | 901129 | |
| | 15:1 | | | 901123 | | |
| | 25:1 | | | 901124 | | |
| | 40:1 | | | 901125 | | |
| TA2115H | 5:1 | 902126 | 902120 | --- | 902128 | 902180 |
| | 9:1 | | | 902122 | 902129 | |
| | 15:1 | | | 902123 | | |
| | 25:1 | | | 902124 | | |
| | 40:1 | 902127 | | 901125 | 902130 | |
| TA3203H | 5:1 | 903126 | 903120 | --- | 903128 | 903180 |
| | 9:1 | | | 903122 | 903129 | |
| | 15:1 | | | 903123 | | |
| | 25:1 | | | 903124 | | |
| | 40:1 | 903127 | | 903125 | 903130 | |
| TA4207H | 5:1 | 904126 | 904120 | --- | 904128 | 904180 |
| | 9:1 | | | 904122 | 904129 | |
| | 15:1 | | | 904123 | | |
| | 25:1 | | | 904124 | | |
| | 40:1 | | | 904125 | | |
| TA5215H | 5:1 | 905126 | 905120 | --- | 905128 | 905180 |
| | 9:1 | | | 905122 | 905129 | |
| | 15:1 | | | 905123 | | |
| | 25:1 | | | 905124 | 905130 | |
| | 40:1 | | | 905125 | 905131 | |
| TA6307H | 5:1 | 906126 | 906120 | --- | 906128 | 906180 |
| | 9:1 | | | 906122 | 906129 | |
| | 15:1 | | | 906123 | | |
| | 25:1 | | | 906124 | 906130 | |
| | 40:1 | | | 906125 | | |
| TA7315H | 5:1 | 907126 | 907120 | --- | 907128 | 907180 |
| | 9:1 | | | 907122 | 907129 | |
| | 15:1 | | | 907123 | | |
| | 25:1 | | | 907124 | | |
| | 40:1 | | | 907125 | 907130 | |
| TA8407H | 15:1 | 908126 | 908120 | 908123 | 908129 | 908180 |
| | 25:1 | | | 908124 | | |
| | 40:1 | | | 908125 | 908130 | |
| TA9415H | 15:1 | 909126 | 909120 | 909123 | 909129 | 909180 |
| | 25:1 | | | 909124 | | |
| | 40:1 | | | 909125 | 909130 | |
| TA10507H | 15:1 | 910126 | 910120 | 910123 | 910129 | 910180 |
| | 25:1 | | | 910124 | | |
| | 40:1 | | | 910125 | 910130 | |
| TA12608H | 15:1 | 912126 | 912120 | 912123 | 912129 | 912180 |
| | 25:1 | | | 912124 | | |
| | 40:1 | | | 919125 | 912130 | |

*Seal Kit consists of Input Seal, Output Seals, Backstop Cover Gasket and RTV Sealant.

**Output Hub Assembly consists of Output Hub, Output Gear and Gear Key.

***Countershaft Assembly consists of Countershaft Pinion, Countershaft Gear and Gear Key.

****Bearing Kit consists of LH and RH Output Bearing Cup/Cone, LH and RH Countershaft Bearing Cup/Cone (double reduction only) and LH and RH Input Bearing Cup/Cone.

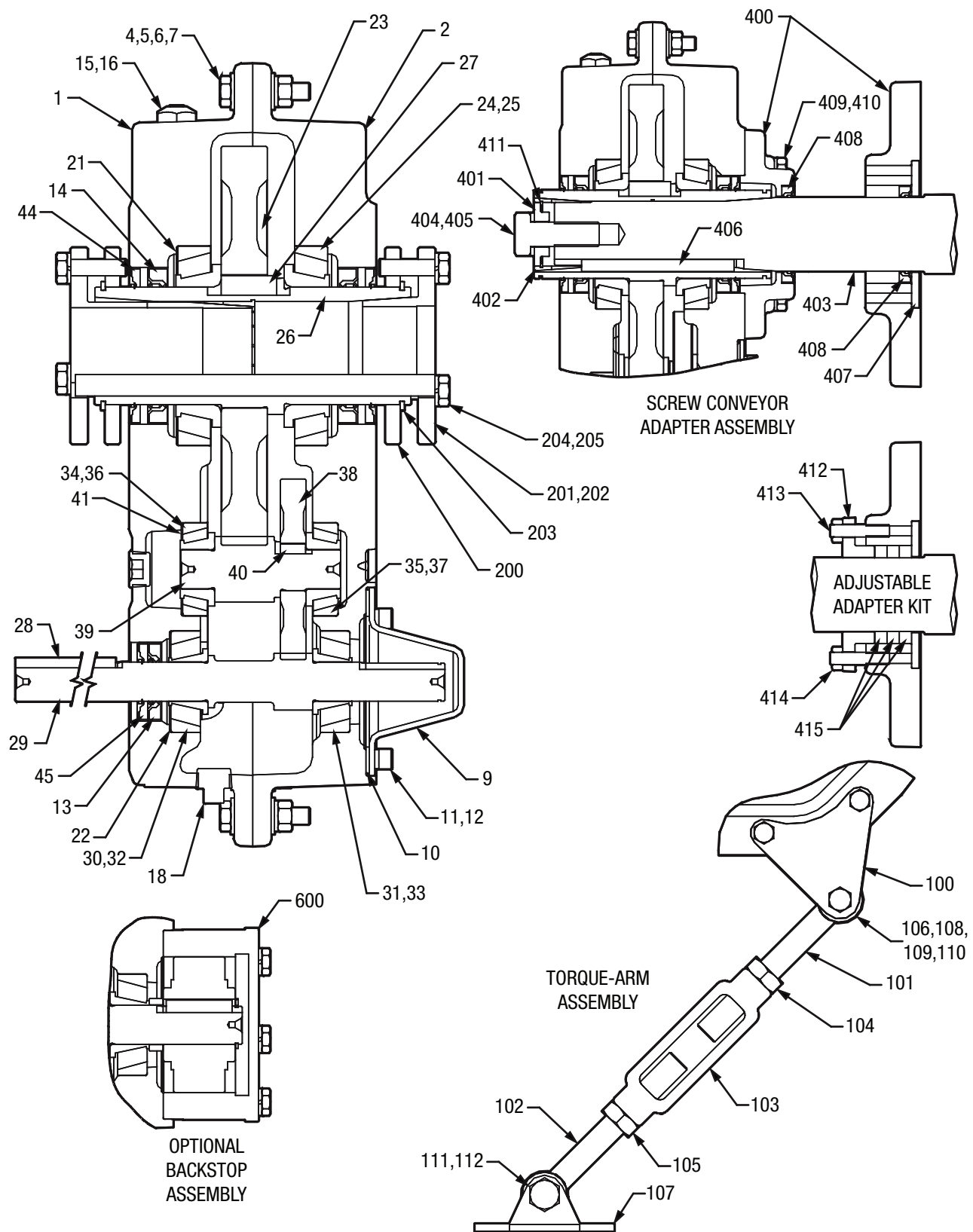


Figure 17 - Parts for TA0107L thru TA12608H Taper Bushed Double Reduction Reducers

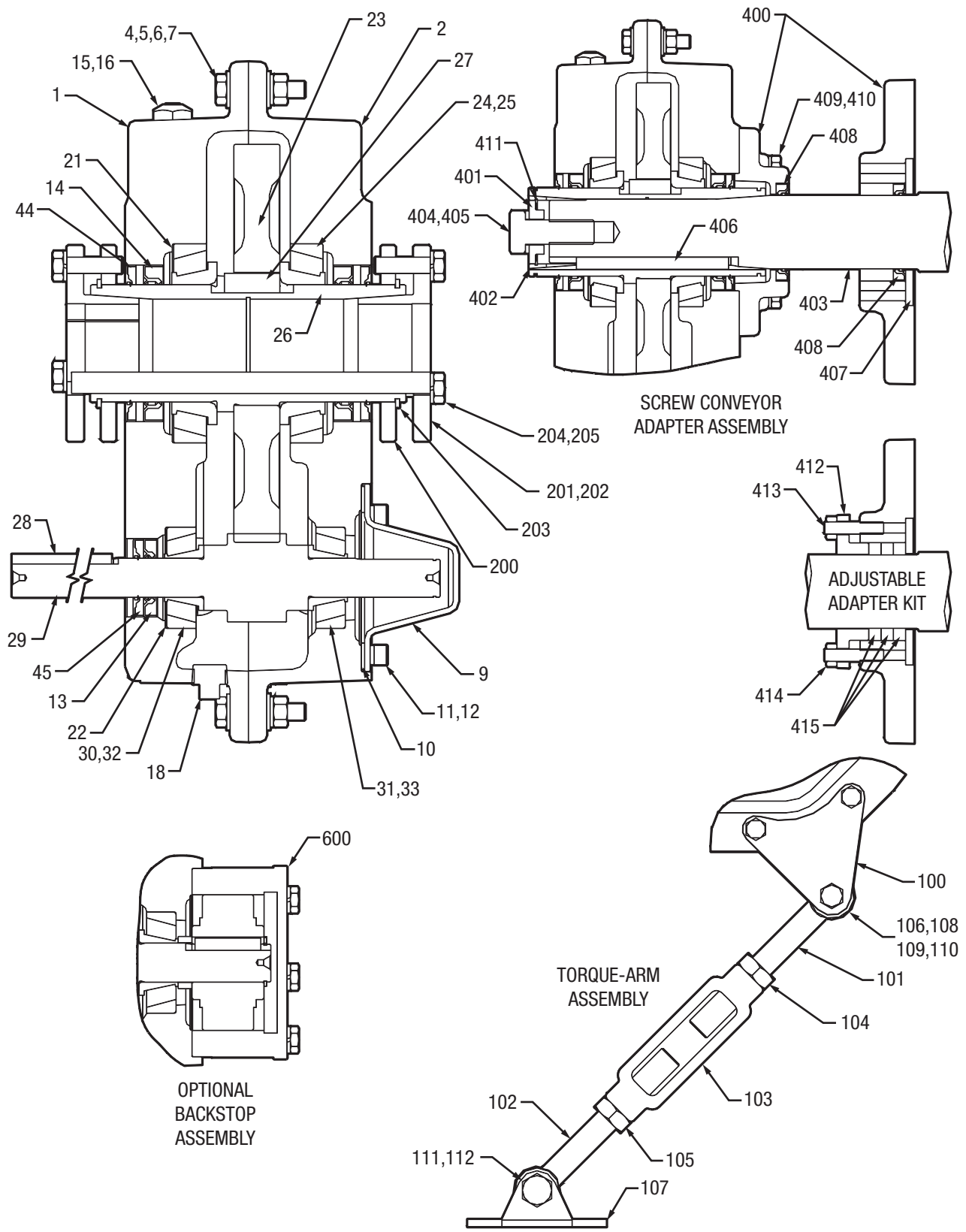


Figure 18 - Parts for TA0107L thru TA7315H Taper Bushed Single Reduction Reducers

Table 12 - Parts for TA0107L through TA5215H Taper Bushed and Single Reduction Reducers

| Ref. | Description | Qty. | TA0107L | TA1107H | TA2115H | TA3203H | TA4207H | TA5215H |
|------|------------------------------|------------------------------|-----------|---------|---------|-------------|-------------|-------------|
| 1 | Housing-LH | 1 | 900202 | 901202 | 902202 | 903202 | 904202 | 905202 |
| 2 | Housing-RH | 1 | 900203 | 901203 | 902203 | 903203 | 904203 | 905203 |
| § | RTV Sealant, Tube | 1 | 465044 | 465044 | 465044 | 465044 | 465044 | 465044 |
| 4 | Housing Bolt | 14 | 411253 | 411253 | 411412 | 411412 | 411460 | 411460 |
| 5 | Flat Washer | 28 | 900241 | 900241 | 902241 | 902241 | 904241 | 904241 |
| 6 | Nut | 14 | 407085 | 407085 | 407087 | 407087 | 407091 | 407091 |
| 7 | Lockwasher | 14 | 419010 | 419010 | 419011 | 419011 | 419013 | 419013 |
| 8 § | Dowel Pin | 2 | 901248 | 901248 | 304624 | 901248 | 304624 | 304624 |
| 9 | Backstop Shaft Cover | 1 | 901279 | 901279 | 901279 | 903279 | 904279 | 905279 |
| 10 | Backstop Cover Gasket | 1 | 901280 | 901280 | 901280 | 903280 | 904280 | 905280 |
| 11 | Backstop Cover Screw | 6 ■ | 417038 | 417038 | 417038 | 417038 | 417038 | 417074 |
| 12 | Lockwasher | 6 ■ | 419045 | 419045 | 419045 | 419045 | 419045 | 419046 |
| 13 | Input Oil Seal | 5:1, 9:1, 15:1 ♦ | 1 276173 | 276173 | 276285 | 276280 | A73108 | 905266 |
| | | 25:1 Ratio ♦ | 1 276173 | 276173 | 276285 | 276280 | A73108 | 905266 |
| | | 40:1 Ratio ♦ | 1 276173 | 276173 | 276173 | 242281 | A73108 | 905266 |
| 14 | Output Oil Seal | 2 | 900286 | 901286 | 902286 | A73109 | 904286 | 905286 |
| 15 | Air Vent | 1 | 241237 | 241237 | 241237 | 241237 | 245237 | 245237 |
| 16 | Bushing | 1 | N/A | N/A | N/A | N/A | 430079 | 430079 |
| 17 § | Oil Plug | 4 | 430031 | 430031 | 430031 | 430031 | 430035 | 430035 |
| 18 | Magnetic Oil Plug | 1 | 430060 | 430060 | 430060 | 430060 | 430064 | 430064 |
| 21 | Output Bearing Shim-As Req'd | .015" Shim | 900263 | 901263 | 902263 | 903263 | 904263 | 905263 |
| | | .007" Shim | 900265 | 901265 | 902265 | 903265 | 904265 | 905265 |
| | | .005" Shim | 900264 | 901264 | 902264 | 903264 | 904264 | 905264 |
| 22 | Input Bearing Shim-As Req'd | .015" Shim | 900271 | 901271 | 902271 | 903267 | 903267 | 905271 |
| | | .007" Shim | 900273 | 901273 | 902273 | 903269 | 903269 | 905273 |
| | | .005" Shim | 900272 | 901272 | 902272 | 903268 | 903268 | 905272 |
| 23 | Output Gear | 1 | 900208 | 901208 | 902208 | 903208 | 904208 | 905208 |
| 24 | Output Bearing Cup | 2 | 900250 | 901250 | 403003 | 903252 | 403016 | 403140 |
| 25 | Output Bearing Cone | 2 | 900251 | 901251 | 402003 | 402268 | 402193 | 402050 |
| 26 | Output Hub | 1 | 900230 | 901230 | 902230 | 903230 | 904230 | 905230 |
| 27 | Output Gear Key | 1 | 900275 | 901275 | 901275 | 903275 | 904275 | 905275 |
| 28 | Input Pinion Key | 5:1, 9:1, 15:1, 25:1 Ratio ♦ | 1 443634 | 443634 | 902277 | 903277 | 904277 | 905277 |
| | | 40:1 Ratio ♦ | 1 443634 | 443634 | 902277 | 903298 | 904277 | 905277 |
| 29 | Input Pinion | 5:1 Ratio ♦ | 1 900222A | 901222A | 902222 | 903222 | 904222 | 905222 |
| | | 9:1 Ratio ♦ | 1 900221A | 901221A | 902221 | 903221 | 904221 | 905221 |
| | | 15:1 Ratio ♦ | 1 900220A | 901220A | 902220 | 903220 | 904220 | 905220 |
| | | 25:1 Ratio ♦ | 1 900219A | 901219A | 902219 | 903219 | 904219 | 905219 |
| | | 40:1 Ratio ♦ | 1 900218A | 901218A | 902218 | 903218 | 904218 | 905218 |
| | | | | | | | | |
| 30 | Input Bearing Cup-LH | 5:1 Ratio ♦ | 1 403166 | 402169 | 403094 | 304809 | 304809 | 403005 |
| | | 9:1 Ratio ♦ | 1 403166 | 402169 | 403094 | 304809 | 304809 | 403005 |
| | | 15:1 Ratio ♦ | 1 403166 | 402169 | 403094 | 304809 | 304809 | 403005 |
| | | 25:1 Ratio ♦ | 1 403166 | 402169 | 403094 | 304809 | 304809 | 403005 |
| | | 40:1 Ratio ♦ | 1 403166 | 402169 | 403094 | 403101 | 304809 | 403005 |
| 31 | Input Bearing Cup-RH | 5:1 Ratio ♦ | 1 403165 | 403063 | 403094 | 403101 | 904256 | 403005 |
| | | 9:1 Ratio ♦ | 1 403165 | 403063 | 403094 | 403101 | 904256 | 403005 |
| | | 15:1 Ratio ♦ | 1 403165 | 403063 | 403094 | 403101 | 904256 | 403005 |
| | | 25:1 Ratio ♦ | 1 403165 | 403063 | 403094 | 403101 | 904256 | 403005 |
| | | 40:1 Ratio ♦ | 1 403165 | 403063 | 403094 | 403101 | 904256 | 403005 |
| 32 | Input Bearing Cone-LH | 5:1 Ratio ♦ | 1 402284 | 402294 | 304753 | 411626-05-K | 411626-05-K | 402001 |
| | | 9:1 Ratio ♦ | 1 402284 | 402294 | 304753 | 411626-05-K | 411626-05-K | 402001 |
| | | 15:1 Ratio ♦ | 1 402284 | 402294 | 304753 | 411626-05-K | 411626-05-K | 402001 |
| | | 25:1 Ratio ♦ | 1 402284 | 402294 | 304753 | 411626-05-K | 411626-05-K | 304717 |
| | | 40:1 Ratio ♦ | 1 402284 | 402294 | 304707 | 402271 | 411626-05-K | 304717 |
| 33 | Input Bearing Cone-RH | 5:1 Ratio ♦ | 1 402265 | 402108 | 304707 | 402271 | 904257 | 402001 |
| | | 9:1 Ratio ♦ | 1 402265 | 402108 | 304707 | 402271 | 904257 | 402001 |
| | | 15:1 Ratio ♦ | 1 402265 | 402108 | 304707 | 402271 | 904257 | 402001 |
| | | 25:1 Ratio ♦ | 1 402265 | 402108 | 304707 | 402271 | 904257 | 402001 |
| | | 40:1 Ratio ♦ | 1 402265 | 402108 | 304707 | 402271 | 904258 | 411626-05-V |
| 34 | Countershaft Bearing Cup-LH | 1 | 304833 | 403165 | 304836 | 403101 | 304809 | 403005 |
| 35 | Countershaft Bearing Cup-RH | 1 | 304833 | 403165 | 304836 | 403101 | 304809 | 403005 |

NOTES:

- § Not shown on drawing.
- 8 required on TA5215H.
- ♦ See Table 14 for actual ratio.

Table 12 - Parts for TA0107L through TA5215H Taper Bushed and Single Reduction Reducers (Continued)

| Ref. | Description | Qty. | TA0107L | TA1107H | TA2115H | TA3203H | TA4207H | TA5215H |
|------|------------------------------------|--------------------------------|---------|---------|-------------|---------|---------|---------|
| 36 | Countershaft Bearing Cone-LH | 1 | 304740 | 402265 | 411626-05-B | 402271 | 304710 | 402001 |
| 37 | Countershaft Bearing Cone-RH | 1 | 304740 | 402265 | 411626-05-B | 402271 | 304710 | 402001 |
| 38 | First Stage Gear | 9:1 Ratio ♦ | 1 | 900217 | 901217 | 902217 | 903217 | 905217 |
| | | 15:1 Ratio ♦ | 1 | 900215 | 901215 | 902215 | 903215 | 905215 |
| | | 25:1 Ratio ♦ | 1 | 900213 | 901213 | 902213 | 903213 | 905213 |
| | | 40:1 Ratio ♦ | 1 | 900211 | 901211 | 902211 | 903211 | 905211 |
| 39 | Countershaft Pinion | 1 | 900209 | 901209 | 902209 | 903209 | 904209 | 905209 |
| 40 | First Stage Gear Key | 1 | 900276 | 901276 | 902276 | 903276 | 904276 | 905276 |
| 41 | Countershaft Bearing Shim-As Req'd | .015" Shim | 900271 | 901271A | 901271 | 903267 | 903267 | 905271 |
| | | .007" Shim | 900272 | 901273A | 901273 | 903269 | 903269 | 905273 |
| | | .005" Shim | 900273 | 901272A | 901272 | 903268 | 903268 | 905272 |
| 44 | Auxiliary Output Seal | 2 | 900236 | 901236 | 902236 | 903236 | 904236 | 905236 |
| 45 | Auxiliary Input Seal | 5:1, 9:1, 15:1, 25:1 Ratio ♦ | 1 | 442023 | 442023 | 902238 | 903238 | 905238 |
| | | 40:1 Ratio ♦ | 1 | 442023 | 442023 | 442023 | N/A | 904238 |
| 100 | Torque-Arm Adapter Bracket | 2 | 900500 | 901500 | 902500 | 903500 | 904500 | 905500 |
| | Torque-Arm Rod Kit ★ | 1 | 241244 | 241244 | 242244 | 242244 | 244245 | 244245 |
| 101 | ▲ Torque-Arm Rod End | 1 | 241245 | 241245 | 243245 | 243245 | 245245 | 245245 |
| 102 | ▲ Torque-Arm Extension | 1 | 241247 | 241247 | 243247 | 243247 | 245247 | 245247 |
| 103 | ▲ Torque-Arm Turnbuckle | 1 | 241246 | 241246 | 243246 | 243246 | 245246 | 245246 |
| 104 | ▲ RH Nut | 1 | 407093 | 407093 | 407095 | 407095 | 407097 | 407097 |
| 105 | ▲ LH Nut | 1 | 407242 | 407242 | 407244 | 407244 | 407246 | 407246 |
| 106 | Torque-Arm Bushing | 1 | 242243 | 242243 | 243243 | 243243 | 245243 | 245243 |
| 107 | Torque-Arm Fulcrum | 1 | 241249 | 241249 | 243249 | 243249 | 246249 | 246249 |
| 108 | Torque-Arm Bolt | 1 | 411412 | 411412 | 411437 | 411437 | 411460 | 411460 |
| 109 | Torque-Arm Lockwasher | 1 | 419011 | 419011 | 419012 | 419012 | 419013 | 419013 |
| 110 | Torque-Arm Nut | 1 | 407087 | 407087 | 407089 | 407089 | 407091 | 407091 |
| 111 | Torque-Arm Bolt | 1 | 411456 | 411456 | 411484 | 411484 | 411484 | 411484 |
| 112 | Torque-Arm Nut | 1 | 407091 | 407091 | 407093 | 407093 | 407093 | 407093 |
| 113 | Lockwasher | 1 | N/A | N/A | N/A | N/A | N/A | N/A |
| 200 | Bushing Back-Up Plate | 2 | 241266 | 901301 | 243308 | 903301 | 904301 | 905301 |
| 203 | Retaining Ring | 2 | 421111 | 901304 | 421109 | 903304 | 421107 | 421055 |
| 204 | Bushing Cap Screw | 6 | 411405 | 411390 | 902306 | 411408 | 411408 | 411456 |
| 205 | Bushing Lockwasher | 6 | 419010 | 419010 | 419011 | 419011 | 419011 | 419013 |
| 400 | Screw Conveyor Adapter | 1 | 900401 | 901401 | 902401 | 903401 | 904401 | 905401 |
| 401 | Screw Conveyor Keeper Plate | 1 | 900402 | 901402 | 902402 | 903402 | 904402 | 905402 |
| 402 | Screw Conveyor Wedge | 1 | 900403 | 901403 | 902403 | 903403 | 904403 | 905403 |
| 403 | Screw Conveyor Drive Shaft | 1-1/2" Shaft | 1 | 900421 | 901421 | 902421 | 903421 | N/A |
| | | 1-1/2" Shaft, Stainless Steel | 1 | 900429 | 901429 | 902429 | 903429 | N/A |
| | | 2" Shaft | 1 | 900422 | 901422 | 902422 | 903422 | 904422 |
| | | 2" Shaft, Stainless Steel | 1 | 900430 | 901430 | 902430 | 903430 | 904430 |
| | | 2-7/16" Shaft | 1 | 900423 | 901423 | 902423 | 903423 | 904423 |
| | | 2-7/16" Shaft, Stainless Steel | 1 | 900431 | 901431 | 902431 | 903431 | 904431 |
| | | 3" Shaft | 1 | 900424 | 901424 | 902424 | 903424 | 904424 |
| | | 3" Shaft, Stainless Steel | 1 | 900432 | 901432 | 902432 | 903432 | 904432 |
| | | 3-7/16" Shaft | 1 | N/A | N/A | N/A | N/A | 904425 |
| | | 3-7/16" Shaft, Stainless Steel | 1 | N/A | N/A | N/A | N/A | 904433 |
| 404 | Retaining Bolt | 1 | 411549 | 411549 | 411549 | 411551 | 411551 | 411551 |
| 405 | Lockwasher | 1 | 419014 | 419014 | 419014 | 419016 | 419016 | 419016 |
| 406 | Drive Shaft Key | 1 | 900405 | 901405 | 902405 | 903405 | 904405 | 905405 |
| 407 | Drive Shaft Washer | 1 | 900404 | 901404 | 902404 | 903404 | 904404 | 905404 |
| 408 | Seal | 2 | 900411 | 901411 | 902411 | 353085 | 904411 | 905411 |
| 409 | Bolt | 4 | 411410 | 411410 | 411435 | 411456 | 411456 | 411483 |
| 410 | Lockwasher | 4 | 419011 | 419011 | 419012 | 419013 | 419013 | 419014 |
| 411 | Retaining Ring | 1 | 900406 | 901406 | 902406 | 903406 | 904406 | 905406 |
| 412 | Adjustable Packing Retainer | 1 | 900413 | 901413 | 902413 | 903413 | 904413 | 905413 |
| 413 | Adjustable Packing Gland Stud | 2 | 400404 | 400404 | 400404 | 400404 | 400404 | 400404 |
| 414 | Adjustable Packing Gland Nut | 2 | 407202 | 407202 | 407202 | 407202 | 407202 | 407202 |
| 415 | Sealing Rings | 3 | 900416 | 901416 | 902416 | 903416 | 904416 | 905416 |
| 600 | Backstop Assembly | 5:1, 9:1, 15:1, 25:1 Ratio ♦ | 1 | 901102 | 901102 | 902102 | 903102 | 904102 |
| | | 40:1 Ratio ♦ | 1 | 901102 | 901102 | 902102 | 903102 | 904103 |

NOTES:

- ★ Includes parts listed immediately below marked "▲".
- ▲ Makes up assembly under which it is listed marked "★".
- ♦ See Table 14 for actual ratio.

Table 13 - Parts for TA6307H through TA12608H Taper Bushed and Single Reduction Reducers

| Ref. | Description | Qty. | TA6307H | TA7315H | TA8407H | TA9415H | TA10507 | TA12608 |
|------|------------------------------|--------------------|---------|---------|---------|--------------|--------------|---------|
| 1 | Housing-LH | 1 | 906202 | 907202 | 908202 | 909202 | 910202 | 912202 |
| 2 | Housing-RH | 1 | 906203 | 907203 | 908203 | 909203 | 910203 | 912203 |
| § | RTV Sealant, Tube | 1 | 465044 | 465044 | 465044 | 465044 | 465044 | 465044 |
| 4 | Housing Bolt | 14 ♣ | 411460 | 411488 | 411488 | 411488 | 411496 | 411496 |
| 5 | Flat Washer | 28 † | 904241 | 907241 | 907241 | 907241 | 910241 | 910241 |
| 6 | Nut | 14 ♣ | 407091 | 407093 | 407093 | 407093 | 407095 | 407095 |
| 7 | Lockwasher | 14 ♣ | 419013 | 419014 | 419014 | 419014 | 419016 | 419016 |
| 8 § | Dowel Pin | 2 | 304624 | 304624 | 304624 | 304624 | 304624 | 304624 |
| 9 | Backstop Shaft Cover | 1 | 906279 | 907279 | 908279 | 907279 | 910279 | 912279 |
| 10 | Backstop Cover Gasket | 1 | 906280 | 907280 | 908280 | 907280 | 910280 | 912280 |
| 11 | Backstop Cover Screw | 6 ■ | 417074 | 907281 | 417074 | 907281 | 907281 | 907281 |
| 12 | Lockwasher | 6 ■ | 419046 | 419047 | 419046 | 419047 | 419047 | 419047 |
| 13 | Input Oil Seal | 5:1, 9:1 ♦ | 901286 | 907266 | N/A | N/A | N/A | N/A |
| | | 15:1 ♦ | 901286 | 907266 | 907266 | 907266 | 902286 | 902286 |
| | | 25:1 Ratio ♦ | 901286 | 907266 | 907266 | 907266 | 902286 | 902286 |
| | | 40:1 Ratio ♦ | 901286 | 907266 | 907266 | 907266 | 902286 | 902286 |
| 14 | Output Oil Seal | 2 | 906286 | 907286 | 907286 | 909286 | 910286 | 912286 |
| 15 | Air Vent | 1 | 245237 | 245237 | 245237 | 245237 | 245237 | 245237 |
| 16 | Bushing | 1 | 430079 | 430079 | 430079 | 430079 | 430079 | 430079 |
| 17 § | Oil Plug | 4 | 430035 | 430035 | 430035 | 430035 | 430035 | 430035 |
| 18 | Magnetic Oil Plug | 1 | 430064 | 430064 | 430064 | 430064 | 430064 | 430064 |
| 21 | Output Bearing Shim-As Req'd | .015" Shim | 906263 | 907263 | 907263 | 909263 | 910263 | 912263 |
| | | .007" Shim | 906265 | 907265 | 907265 | 909265 | 910265 | 912265 |
| | | .005" Shim | 906264 | 907264 | 907264 | 909264 | 910264 | 912264 |
| 22 | Input Bearing Shim-As Req'd | .015" Shim | 906271 | 907271 | 903263 | 909267 | 910267 | 910267 |
| | | .007" Shim | 906273 | 907273 | 903265 | 909269 | 910269 | 910269 |
| | | .005" Shim | 906272 | 907272 | 903264 | 909268 | 910268 | 910268 |
| 23 | Output Gear | 1 | 906208 | 907208 | 908208 | 909208 | 910208 | 912208 |
| 24 | Output Bearing Cup | 2 | 906250 | 403105 | 403105 | 403110 | 910250 | 912250 |
| 25 | Output Bearing Cone | 2 | 906251 | 402147 | 402147 | 402160 | 910251 | 912251 |
| 26 | Output Hub | 1 | 906230 | 907230 | 908230 | 909230 | 910230 | 912230 |
| 27 | Output Gear Key | 1 • | 906275 | 907275 | 908275 | 909275 | 910275 | 912275 |
| 28 | Input Pinion Key | 5:1, 9:1 ♦ | 906277 | 907277 | N/A | N/A | N/A | N/A |
| | | 15:1, 25:1 Ratio ♦ | 906277 | 907277 | 908277 | 909277 | 909277 | 909277 |
| | | 40:1 Ratio ♦ | 906277 | 907277 | 908277 | 909277 | 909277 | 909277 |
| 29 | Input Pinion | 5:1 Ratio ♦ | 906222 | 907222 | N/A | N/A | N/A | N/A |
| | | 9:1 Ratio ♦ | 906221 | 907221 | N/A | N/A | N/A | N/A |
| | | 15:1 Ratio ♦ | 906220 | 907220 | 908220 | 909220 | 910220 | 912220 |
| | | 25:1 Ratio ♦ | 906219 | 907219 | 908219 | 909219 | 910219 | 912219 |
| | | 40:1 Ratio ♦ | 906218 | 907218 | 908218 | 909218 | 910218 | 912218 |
| 30 | Input Bearing Cup-LH | 5:1 Ratio ♦ | 403026 | 304802 | N/A | N/A | N/A | N/A |
| | | 9:1 Ratio ♦ | 403026 | 304802 | N/A | N/A | N/A | N/A |
| | | 15:1 Ratio ♦ | 403026 | 304802 | 908259 | 403036 | 402231 | 402231 |
| | | 25:1 Ratio ♦ | 403026 | 304802 | 908259 | 403036 | 402231 | 402231 |
| | | 40:1 Ratio ♦ | 403026 | 304802 | 908259 | 403036 | 402231 | 402231 |
| 31 | Input Bearing Cup-RH | 5:1 Ratio ♦ | 403026 | 403159 | N/A | N/A | N/A | N/A |
| | | 9:1 Ratio ♦ | 403026 | 403159 | N/A | N/A | N/A | N/A |
| | | 15:1 Ratio ♦ | 403026 | 403159 | 908256 | 411626-06-BE | 411626-06-BE | 403036 |
| | | 25:1 Ratio ♦ | 403026 | 403159 | 908256 | 411626-06-BE | 411626-06-BE | 403036 |
| | | 40:1 Ratio ♦ | 403026 | 403159 | 304804 | 304804 | 304804 | 403036 |
| 32 | Input Bearing Cone-LH | 5:1 Ratio ♦ | 906260 | 402041 | N/A | N/A | N/A | N/A |
| | | 9:1 Ratio ♦ | 906260 | 402041 | N/A | N/A | N/A | N/A |
| | | 15:1 Ratio ♦ | 906260 | 402041 | 908260 | 304701 | 402232 | 402232 |
| | | 25:1 Ratio ♦ | 906260 | 402041 | 908260 | 304701 | 402232 | 402232 |
| | | 40:1 Ratio ♦ | 906260 | 402041 | 908260 | 304701 | 402232 | 402232 |
| 33 | Input Bearing Cone-RH | 5:1 Ratio ♦ | 906260 | 907260 | N/A | N/A | N/A | N/A |
| | | 9:1 Ratio ♦ | 906260 | 907260 | N/A | N/A | N/A | N/A |
| | | 15:1 Ratio ♦ | 906260 | 907260 | 908257 | 411626-05-BM | 411626-05-BM | 304701 |
| | | 25:1 Ratio ♦ | 906257 | 907260 | 908257 | 411626-05-BM | 411626-05-BM | 304701 |
| | | 40:1 Ratio ♦ | 906257 | 402054 | 908258 | 908258 | 908258 | 912258 |

NOTES:

- § Not shown on drawing.
- 8 required on TA6307H, TA7315H, TA8407H and TA9415H; 12 required on TA10507H and TA12608H.
- ♣ 18 required on TA9415H; 20 required on T10507H; 22 required on TA12608H
- † 36 required on TA9415H; 40 required on TA10507H; 44 required on TA12608H
- 2 required on TA7315H, TA8407H, TA9415H, and TA10507H
- ♦ See Table 14 for actual ratio.

Table 13 - Parts for TA6307H through TA12608H Taper Bushed and Single Reduction Reducers (Continued)

| Ref. | Description | Qty. | TA6307H | TA7315H | TA8407H | TA9415H | TA10507H | TA12608H |
|------|------------------------------------|--------------------------------|---------|---------|--------------|---------|----------|----------|
| 34 | Counter-Shaft Bearing Cup-LH | 1 | 403026 | 403159 | 411626-06-BE | 403036 | 403087 | 402233 |
| 35 | Counter-Shaft Bearing Cup-RH | 1 | 403026 | 403159 | 411626-06-BE | 403036 | 403087 | 402233 |
| 36 | Counter-Shaft Bearing Cone-LH | 1 | 906257 | 907260 | 411626-05-BM | 304701 | 402023 | 912253 |
| 37 | Counter-Shaft Bearing Cone-RH | 1 | 906257 | 907260 | 908253 | 304701 | 402023 | 912253 |
| 38 | First Stage Gear | 9:1 Ratio ♦ | 1 | 906217 | 907217 | N/A | N/A | N/A |
| | | 15:1 Ratio ♦ | 1 | 906215 | 907215 | 908215 | 909215 | 910215 |
| | | 25:1 Ratio ♦ | 1 | 906213 | 907213 | 908213 | 909213 | 910213 |
| | | 40:1 Ratio ♦ | 1 | 906211 | 907211 | 908211 | 909211 | 910211 |
| 39 | Counter-Shaft Pinion | 1 | 906209 | 907209 | 908209 | 909209 | 910209 | 912209 |
| 40 | First Stage Gear Key | 1 | 906276 | 907276 | 908276 | 909276 | 910276 | 912276 |
| 41 | Countershaft Bearing Shim-As Req'd | .015" Shim | 906271 | 906271 | 908267 | 909267 | 904263 | 912267 |
| | | .007" Shim | 906273 | 906273 | 908269 | 909269 | 909265 | 912269 |
| | | .005" Shim | 906272 | 906272 | 908268 | 909268 | 904264 | 912268 |
| 44 | Auxiliary Output Seal | 2 | 906236 | 907236 | 907236 | 909236 | 910236 | 912236 |
| 45 | Auxiliary Input Seal | 5:1, 9:1 Ratio ♦ | 1 | 901236 | 907238 | N/A | N/A | N/A |
| | | 15:1, 25:1 Ratio ♦ | 1 | 901236 | 907238 | 907238 | 907238 | 902236 |
| | | 40:1 Ratio ♦ | 1 | 901236 | 907238 | 907238 | 907238 | 902236 |
| 100 | Torque-Arm Adapter Bracket | 2 | 906500 | 907500 | 907500 | 909500 | 910500 | 912500 |
| | Torque-Arm Rod Kit ★ | 1 | 247238 | 248240 | 248240 | 272416 | 272416 | |
| 101 | ▲ Torque-Arm Rod End | 1 | 247239 | 271050 | 271050 | 272050 | 272050 | 272151 |
| 102 | ▲ Torque-Arm Extension | 1 | 247240 | 271052 | 271052 | 272052 | 272052 | 272153 |
| 103 | ▲ Torque-Arm Turnbuckle | 1 | 247246 | 271051 | 271051 | 272051 | 272051 | 272152 |
| 104 | ▲ RH Nut | 1 | 407099 | 407104 | 407104 | 407108 | 407108 | 407110 |
| 105 | ▲ LH Nut | 1 | 407248 | 407250 | 407250 | 407251 | 407251 | 407111 |
| 106 | Torque-Arm Bushing | 1 | 247244 | 271046 | 271046 | 272046 | 272046 | 272187 |
| 107 | Torque-Arm Fulcrum | 1 | 247248 | 271054 | 271054 | 272054 | 272054 | 272154 |
| 108 | Torque-Arm Bolt | 1 | 411489 | 411510 | 411510 | 411520 | 411520 | 411527 |
| 109 | Torque-Arm Lockwasher | 1 | 419014 | 419020 | 419020 | 419024 | 419024 | 419025 |
| 110 | Torque-Arm Nut | 1 | 407093 | 407099 | 407099 | 407104 | 407104 | 407108 |
| 111 | Torque-Arm Bolt | 1 | 411489 | 411516 | 411516 | 419524 | 411524 | 411528 |
| 112 | Torque-Arm Nut | 1 | 407093 | 407099 | 407099 | 407104 | 407104 | 407108 |
| 113 | Lockwasher | 1 | 419014 | 419020 | 419020 | 419024 | 419024 | 419025 |
| 200 | Bushing Back-Up Plate | 2 | 906301 | 272037 | 908301 | 909301 | 910301 | 912301 |
| 203 | Retaining Ring | 2 | 906304 | 421098 | 908304 | 909304 | 910304 | 912304 |
| 204 | Bushing Cap Screw | 6 ✱ | 411456 | 411457 | 411457 | 411484 | 411484 | 411484 |
| 205 | Bushing Lockwasher | 6 ✱ | 419013 | 419013 | 419013 | 419014 | 419014 | 419014 |
| 400 | Screw Conveyor Adapter | 1 | 906401 | 907401 | N/A | N/A | N/A | N/A |
| 401 | Screw Conveyor Keeper Plate | 1 | 906402 | 907402 | N/A | N/A | N/A | N/A |
| 402 | Screw Conveyor Wedge | 1 | 906403 | 907403 | N/A | N/A | N/A | N/A |
| 403 | Screw Conveyor Drive Shaft | 2-7/16" Shaft | 1 | 906423 | 907423 | N/A | N/A | N/A |
| | | 2-7/16" Shaft, Stainless Steel | 1 | 906431 | 907431 | N/A | N/A | N/A |
| | | 3" Shaft | 1 | 906424 | 907424 | N/A | N/A | N/A |
| | | 3" Shaft, Stainless Steel | 1 | 906432 | 907432 | N/A | N/A | N/A |
| | | 3-7/16" Shaft | 1 | 906425 | 907425 | N/A | N/A | N/A |
| | | 3-7/16" Shaft, Stainless Steel | 1 | 906433 | 907433 | N/A | N/A | N/A |
| 404 | Retaining Bolt | 1 | 411552 | 411552 | N/A | N/A | N/A | N/A |
| 405 | Lockwasher | 1 | 419020 | 419020 | N/A | N/A | N/A | N/A |
| 406 | Drive Shaft Key | 1 | 906405 | 907405 | N/A | N/A | N/A | N/A |
| 407 | Drive Shaft Washer | 1 | 906404 | 907404 | N/A | N/A | N/A | N/A |
| 408 | Seal | 2 | 906411 | 907411 | N/A | N/A | N/A | N/A |
| 409 | Bolt | 4 | 411983 | 411493 | N/A | N/A | N/A | N/A |
| 410 | Lockwasher | 4 | 419016 | 419016 | N/A | N/A | N/A | N/A |
| 411 | Retaining Ring | 1 | 906406 | 907406 | N/A | N/A | N/A | N/A |
| 412 | Adjustable Packing Retainer | 1 | 906413 | 907413 | N/A | N/A | N/A | N/A |
| 413 | Adjustable Packing Gland Stud | 2 | 400404 | 400404 | N/A | N/A | N/A | N/A |
| 414 | Adjustable Packing Gland Nut | 2 | 407202 | 407202 | N/A | N/A | N/A | N/A |
| 415 | Sealing Rings | 3 | 906416 | 907416 | N/A | N/A | N/A | N/A |
| 600 | Backstop Assembly | 5:1, 9:1 ♦ | 1 | 906102 | 907102 | N/A | N/A | N/A |
| | | 15:1 Ratio ♦ | 1 | 906102 | 907102 | 908102 | 909102 | 910102 |
| | | 25:1 Ratio ♦ | 1 | 906103 | 907102 | 908102 | 909102 | 910102 |
| | | 40:1 Ratio ♦ | 1 | 906103 | 907103 | 908103 | 907103 | 910103 |

NOTES:

- ★ Includes parts listed immediately below marked "▲".
- ▲ Makes up assembly under which it is listed marked "★".
- ✱ 8 required on TA12608H
- ♦ See Table 14 for actual ratio.

Table 14 - Actual Ratios

| Reducer Size | Nominal Ratios | | | | |
|--------------|----------------|-------|--------|--------|--------|
| | 5:1 | 9:1 | 15:1 | 25:1 | 40:1 |
| TA0107L | 5.200 | 9.000 | 14.928 | 25.091 | 30.942 |
| TA1107H | 5.000 | 8.990 | 14.912 | 25.064 | 30.909 |
| TA2115H | 5.200 | 9.103 | 15.619 | 25.067 | 33.333 |
| TA3203H | 4.913 | 9.234 | 15.067 | 24.954 | 32.451 |
| TA4207H | 5.000 | 9.231 | 15.000 | 25.125 | 39.107 |
| TA5215H | 5.105 | 9.183 | 14.923 | 24.996 | 38.907 |
| TA6307H | 4.944 | 9.215 | 15.451 | 24.868 | 38.319 |
| TA7315H | 5.188 | 9.716 | 14.914 | 24.837 | 39.656 |
| TA8407H | N/A | N/A | 15.120 | 24.965 | 39.667 |
| TA9415H | N/A | N/A | 15.103 | 25.435 | 39.406 |
| TA10507H | N/A | N/A | 15.092 | 25.184 | 39.676 |
| TA12608H | N/A | N/A | 14.788 | 25.025 | 38.188 |

Supplemental Instructions For the Installation, Operation and Maintenance of ATEX Approved Torque-Arm II Shaft Mount Reducers (Zone 1) Sizes TA0107 – TA12608

PREFACE

The products described in this manual are manufactured by Baldor Electric Company, Fort Smith, AR USA.

This manual is intended to provide basic information on the safe operation and maintenance of ATEX approved Torque-Arm II shaft mount reducers. These instructions do not cover all details or variations in equipment nor provide every possible contingency or hazard to be met in connection with installation, operation, and maintenance. Should further information be desired or should particular problems arise which are not covered in the manual, the matter should be referred to your local Baldor Electric Company representative.

The reducer was manufactured under the guidelines of the ATEX directive 94/9/EC.

Torque-Arm II reducers are suitable for ATEX Category 2 and M2, Group II and I, for gas and dust environments and are also suitable for ATEX Category 3 for all gas or dust environments with ignition temperatures higher than T4 - 135°C.

Typical reducer marking is contained on a certification plate similar to the following:

| | | | | | |
|---|---|-------------------------------|---|---------------------|------|
| DODGE | | ® TORQUE-ARM II SPEED REDUCER | | OIL QTY | U.S. |
| | | | | POS. B | QTS |
| PART NUMBER | | RATIO | | USA PATENTS | |
| | | | | 5,667,333 6,375,196 | |
| | | | | 5,951,198 6,527,276 | |
| | | | | 6,202,507 6,530,138 | |
| | | | | 6,253,640 6,599,052 | |
| CLASS I RATING | HP AT | MAX INPUT RPM | SERVICE PER INSTRUCTION MANUAL | | |
| Ex | Tamb -30°C to +50°C I M2 c / II 2 GD c T4 SIRA 04 ATEX 9360 | | WARNING Do not open when an explosive atmosphere may be present | | |
| MFG. BY BALDOR ELEC CO/FT SMITH, AR 72901 USA | | | S000001 | | |

ATTENTION

The reducer is designed to operate with a surface temperature at or below 200°F. Failure to operate the reducer properly can cause this maximum surface temperature to be exceeded. If applied in a Division 1 or Zone 1 environment this excessive temperature may cause ignition of hazardous materials.

The use of supplemental cooling devices such as a shaft-mounted cooling fan or heat exchanger may be required to ensure operating temperature below 200°F if indicated by catalog selection tables or if the reducer is operated at ambient temperatures above 80°F. Proper use of supplemental cooling, if provided, and avoidance of undesirable operating conditions is required.

ABNORMAL CONDITIONS

Operating the reducer under any of the following conditions can cause higher than normal operating temperatures:

1. reducer load exceeding nameplate ratings
2. ambient temperatures above nameplate rating
3. inadequate cooling
4. operation above maximum nameplate speed
5. insufficient amount or improper type of lubricant

ADDITIONAL INSTRUCTIONS FOR SAFE INSTALLATION AND USE

- Do not open reducer when an explosive atmosphere may be present.
- All rotating parts should be guarded to prevent contact with foreign objects which could result in sparks and ignition.
- The reducer should be periodically inspected for proper oil level, signs of oil leakage, and dust or dirt buildup that would impede heat dissipation.
- Follow lubrication instructions and service schedule in this manual. Use gear lubricant with flash point temperature 300°F or higher.
- Increasing levels of vibration and noise could indicate the need for repair or replacement of the reducer, including replacement of bearings.
- Electrical sparks are a source of ignition. To reduce this risk, proper electrical bonding and grounding are recommended. Under standard operating conditions, the reducer is electrically bonded to the driven equipment through the output shaft connection.



EC Declaration of Conformity

The undersigned, representing the following supplier and the authorised representative established within the Community

Baldor Electric Company
5711 R. S. Boreham, Jr. Street
Fort Smith, Arkansas 72901
USA

Baldor Electric Germany GmbH
Dieselstrasse 22a
85551 Kirchheim
Germany

herewith declare that the Products

Product identification (brand and catalogue number/part number):

Gear Reducers



**Dodge Torque Arm II, Sizes TA0107 through TA12608,
Equipment Group I, Category M2 c/Equipment Group II Category
2 GD c T4 TAMB - 30°C to +50°C**

are in conformity with the provisions of the following EC Directive(s) when installed in accordance with the installation instructions contained in the product documentation:

94/9/EC

ATEX

and that the standards and/or technical specifications referenced below have been applied:

EN 1127-1:1998

Explosive Atmospheres - Explosion Prevention And Protection - Part 1: Basic Concepts And Methodology

EN 13463-1:2001

Non - Electrical Equipment For Potentially Explosive Atmospheres -Method And Requirements

EN13463-5:2003

Non-Electrical Equipment Intended For Use In Potentially Explosive Atmospheres - Part 5: Protection By Constructional Safety "C"

Supplier:

Signature

Authorised Representative in the Community:

Signature

Name: L. Evans Massey

Position: Manager Standards and Certification

Date: 20-July-09

Name: Michael Klein

Position: Product Group Director Europe

Date: 20-July-09

Document Control Number: DOC-BEZ-DG-M11-A-EN.DOC

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