

**Instruction Manual
For
Metric
DODGE® TORQUE-ARM™
Speed Reducers
Taper Bushed**

**SIZES:
TXTM1 thru TXTM12
TXTM105 thru TXTM905**

WARNING: Because of the possible danger to persons(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 risk 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.

INSTALLATION

WARNING

To insure that drive is not unexpectedly started, turn off and lock out or tag power source before proceeding. Failure to observe these precautions could result in bodily injury.

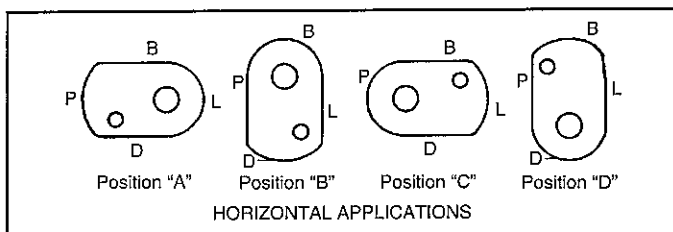
1. On sizes TXTM3A, TXTM4A, TXTM5B and TXTM6, use lifting lug to lift reducers.

On sizes TXTM7, TXTM8, TXTM9, TXTM10, TXTM12, replace plastic plug that protects the threaded hole in the reducer housing with the eyebolt supplied with the reducer.

2. Determine the mounting position of the reducer (see Fig. 1). Note that the reducer is supplied with 4 plugs around the sides for horizontal installations. These plugs must be arranged relative to the mounting position 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 filler/ventilation plug in shipment and install plug in topmost hole. Of the 3 remaining plugs on the sides of the reducer, the lowest one is the minimum oil level plug.

Vertical Installations—Install the filler/ventilation plug in the hole provided in the top face of the reducer housing. Use the hole in the bottom face for the magnetic drain plug. Of the 5 remaining holes on the sides of the reducer, use a plug in the upper housing half for the minimum oil level plug.



B: Breather; D: Drain; L: Oil Level Plug; P: Plug

Fig. 1 — Mounting Positions

The mounting position of the reducer in a horizontal application is not limited to the four positions shown in Figure 1. However, if mounting position is over 20° either way from sketches, the oil level plug cannot be safely used to check the oil level unless during the checking the torque arm is disconnected and the reducer is swung to within 20° either way of mounting position "B" or "D," shown in Figure 1, or 5° either way of mounting position "A" or "C," 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 fitting holes furnished along

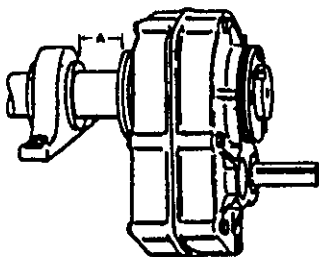


Table 1 — Bushing Installation

with other standard pipe fittings, stand pipes and oil level gauges as required.

3. Mount reducer on driven shaft as follows:

(1) One bushing assembly is required to mount the reducer on the driven shaft. An assembly consists of two tapered bushings, bushing screws and necessary shaft key or keys.

The driven shaft must extend through the full length of the reducer. The reducer should be mounted the recommended minimum distance from the shaft bearing (shown as dimension "A" in Figure 2 and table below).

(2) Place one bushing on the shaft and position per dimension "A" (as shown in the drawing and Table 1).

If the reducer must be positioned closer to the bearing than dimension "A," place the screws in the unthreaded holes in the bushing before positioning. Allow 3.175 mm between the screw heads and the bearing.

(3) Insert the output key in the shaft and bushing. For ease of installation, shaft keyseat should be at the top position.

(4) Place the reducer in position on the shaft, aligning hub keyway with the shaft key.

(5) Insert screws in the unthreaded holes in bushing flange and align with threaded holes in bushing backup plate. If necessary, rotate bushing backup plate to align with bushing screws. Tighten the screws lightly.

(6) Place the second taper 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 backup plate. If necessary, rotate the backup plate to align with bushing holes. Insert bushing screws and tighten lightly.

(7) Tighten the screws in both bushings alternately and evenly to the recommended wrench torque given in Table 1. See page 9 for complete Bushing Installation.

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

5. Install motor and V-belt drive so belt will approximately be at right angles to the center line between driven and input shaft (see Fig. 3). This will permit tightening the V-belt with the TORQUE-ARM. If a TAM/TAMM motor mount is to be used, refer to page 5.

6. Install TORQUE-ARM and adapter plates using the long reducer bolts. The bolts may be shifted to any of the holes on the input end of the reducer. On TXTM605 install the adapter plate on the opposite side from the input shaft (see Figure 2).

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

WARNING

Insure 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.

CAUTION

Unit is shipped without oil. Add proper amount of recommended lubricant before operating. Failure to observe these precautions could result in damage to, or destruction of, the equipment.

8. Fill gear unit with recommended lubrication.

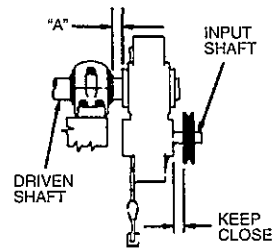


Fig. 2

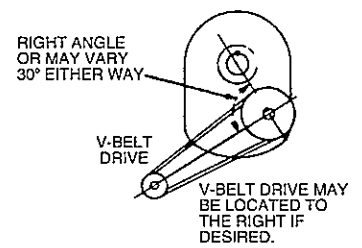


Fig. 3

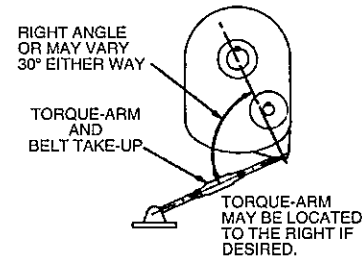


Fig. 4

REMOVAL

WARNING

To insure that drive is not unexpectedly started, turn off and lock out or tag power source before proceeding. Failure to observe these precautions could result in bodily injury.

WARNING

Equipment being removed may be too heavy to control manually. Support it by external means. Failure to observe these precautions could result in bodily injury.

WARNING

Machine loads may cause movement when reducer is removed. Block all external loads before proceeding. Failure to observe these precautions could result in bodily injury.

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 bushing flanges are clean.

If the reducer was positioned closer than the recommended minimum distance, loosen the inboard bushing screws until clear of bushing flange (approximately 3 mm). Use two (2) wedges at 180° between the bushing flange and the bushing backup plate. Drive 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

WARNING

Do not use EP oils containing slippery additives such as graphite or molybdenum disulphide in the reducer when backstop is used. These additives will destroy sprag action. Failure to observe these precautions could result in bodily injury.

CAUTION

Too much oil will cause overheating and too little will result in gear failure. Check oil level regularly. Failure to observe these precautions could result in damage to, or destruction of, the equipment.

Use a high grade petroleum base, rust and oxidation inhibited (R & O) gear oil—see tables.

Under 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 paraffin, clean magnetic drain plug and refill to proper level with new lubricant.

Under extreme operating conditions, such as rapid rise and fall of temperature, dust, dirt, chemical particles, chemical fumes, or oil sump temperatures above 93°C, the oil should be changed every 1 to 3 months depending on severity of conditions.

Table 2—Oil Volumes

REDUCER SIZE	Volume of Oil Required to Fill Reducer to Oil Level Plug																	
	† Position A			† Position B			† Position C			† Position D			† Position E			† Position F		
	Fluid Ounces (Approx)	Quarts▲ (Approx)	Litres (Approx)	Fluid Ounces (Approx)	Quarts▲ (Approx)	Litres (Approx)	Fluid Ounces (Approx)	Quarts▲ (Approx)	Litres (Approx)	Fluid Ounces (Approx)	Quarts▲ (Approx)	Litres (Approx)	Fluid Ounces (Approx)	Quarts▲ (Approx)	Litres (Approx)	Fluid Ounces (Approx)	Quarts▲ (Approx)	Litres (Approx)
TXTM109 TXTM115 TXTM125	16	1/2	.47	16	1/2	.47	20	5/8	.59	24	3/4	.71	32	1	.95	40	1 1/4	1.19
TXTM209 TXTM215 TXTM225	28	7/8	.83	32	1	.95	20	5/8	.59	32	1	.95	52	1 5/8	1.54	56	1 3/4	1.66
TXTM309A TXTM315A TXTM325A	48	1 1/2	1.42	48	1 1/2	1.42	24	3/4	.71	44	2 1/4	2.13	84	2 5/8	2.48	96	3	2.84
TXTM409A TXTM415A TXTM425A	60	1 7/8	1.77	72	2 1/4	2.13	40	1 1/4	1.18	56	1 1/4	1.66	108	3 3/8	3.19	136	4 1/4	4.02
TXTM509B TXTM515B TXTM525B	104	3 1/4	3.08	128	4	3.79	104	3 1/4	3.08	128	4	3.79	224	7	6.62	272	8 1/2	8.04
TXTM615 TXTM625	136	4 1/4	4.0	160	5	4.7	136	4 1/4	4.0	160	5	4.7	276	8 5/8	8.2	292	9 1/8	8.6
TXTM715 TXTM725	208	6 1/2	6.1	256	8	7.6	232	7 1/4	6.9	296	9 1/4	8.7	492	15 3/8	14.6	524	16 3/8	15.5
TXTM815 TXTM825	272	8 1/2	8.0	352	11	10.41	184	5 3/4	5.4	272	8 1/2	8.0	612	19 1/8	18.10	612	19 1/8	18.10
TXTM915 TXTM926	412	12 7/8	12.2	416	13	12.30	200	6 1/4	5.9	456	14 1/4	13.5	812	25 3/8	24.01	812	25 3/8	24.01
TXTM1015 TXTM1024	736	23	21.8	448	14	13.25	504	15 3/4	14.9	600	16 3/4	17.7	1312	41	38.80	1312	41	38.80
TXTM12	1884	58 7/8	55.7	1216	38	36	1884	58 7/8	55.7	1164	36 3/8	34.4	3200	100	95	3200	100	95
TXTM105	20	5/8	.59	24	3/4	.71	20	5/8	.59	24	3/4	.71	36	1 1/8	1.06	44	1 3/8	1.30
TXTM205	24	3/4	.71	28	7/8	.83	28	7/8	.83	28	7/8	.83	56	1 3/4	1.66	72	2 1/4	2.13
TXTM305A	28	7/8	.83	48	1 1/2	1.42	44	1 3/8	1.30	44	1 3/8	1.30	80	2 1/2	2.37	100	3 1/8	2.96
TXTM405A	48	1 1/2	1.42	72	2 1/4	2.13	68	2 1/8	2.01	60	1 7/8	1.77	128	4	3.79	166	4 7/8	4.62
TXTM505A	108	3 3/8	3.19	136	4 1/4	4.02	124	3 7/8	3.67	120	3 3/4	3.54	248	7 3/4	7.33	288	9	8.52
TXTM605	144	4 1/2	4.3	184	5 3/4	5.4	144	4 1/2	4.3	160	5	4.7	384	12	11.4	352	11	10.4
TXTM705	240	7 1/2	7.1	288	9	8.5	240	7 1/2	7.1	296	9 1/4	8.8	608	19	18.0	552	17 1/4	16.3
TXTM805	192	6	5.7	480	15	14.2	320	10	9.5	272	8 1/2	8.0	704	22	20.8	600	18 3/4	17.7
TXTM905	472	14 3/4	14.0	480	15	14.2	216	6 3/4	6.4	440	13 3/4	13.0	1020	31 7/8	30.2	1020	31 7/8	30.2

† Refer to Fig. 1 on page 2 for mounting positions.

▲ U.S. Measure: 1 quart = 32 fluid ounces = .94646 litres.

Note: If reducer position is to vary from those shown in Figure 1, either more or less oil may be required. Consult factory.

Table 3—Minimum Oil Recommendations for Average Operating Conditions

		Lubrication Recommendations — ISO Grades for Ambient Temperatures of 15° to 60°														
		Reducer Size														
Output RPM		1	2	3	4	5	6	7	8	9	10	12	13	14	15	
301-400	220	220	150	150	150	150	150	150	150	150	150	150	150	150	150	
201-300	220	220	150	150	150	150	150	150	150	150	150	150	150	150	150	
151-200	220	220	150	150	150	150	150	150	150	150	150	150	150	150	150	
126-150	220	220	220	150	150	150	150	150	150	150	150	150	150	150	150	
101-125	220	220	220	220	150	150	150	150	150	150	150	150	150	150	150	
81-100	220	220	220	220	220	150	150	150	150	150	150	150	150	150	150	
41-80	220	220	220	220	220	220	150	150	150	150	150	150	150	150	150	
11-40	220	220	220	220	220	220	220	220	220	220	220	150	150	150	150	
1-10	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	

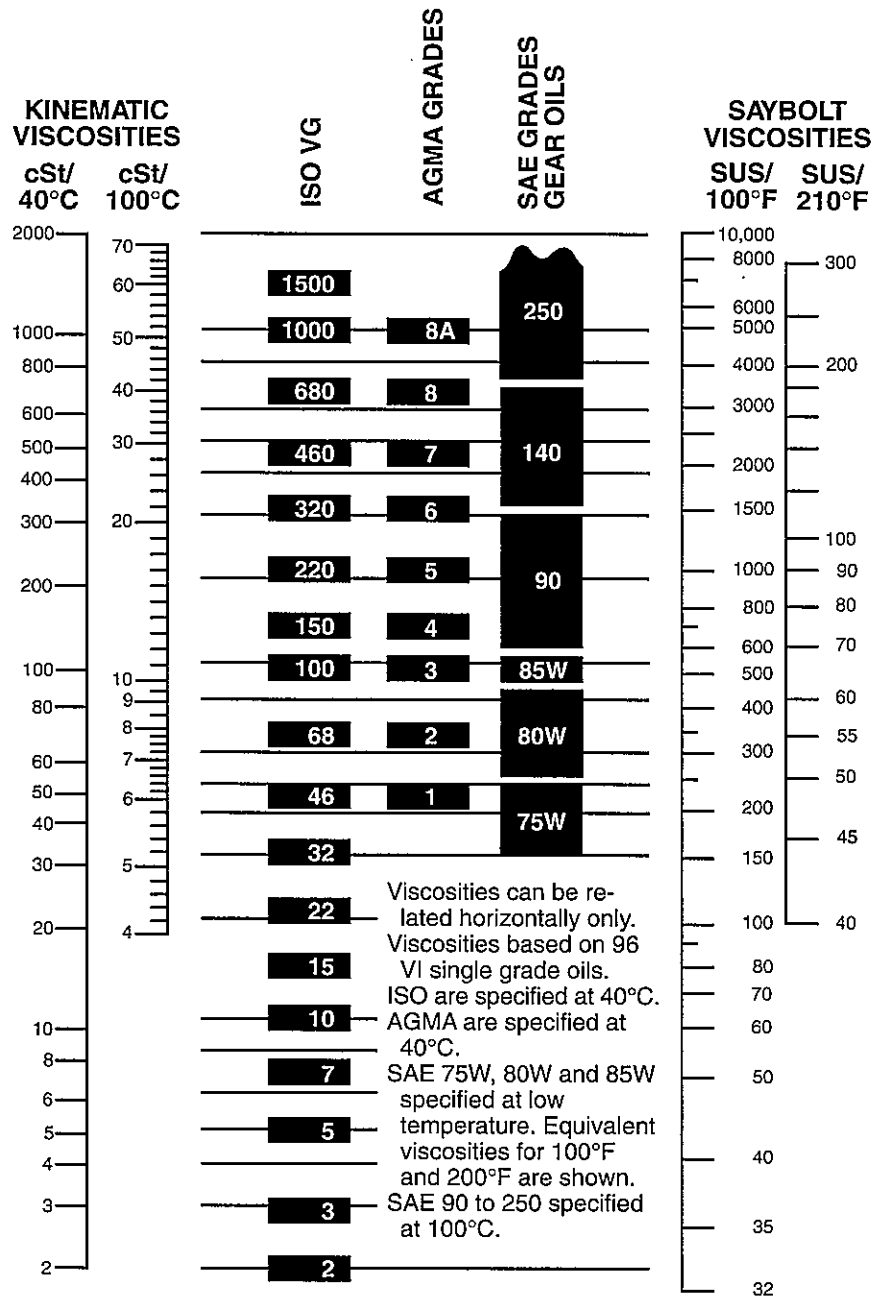
		Lubrication Recommendations — ISO Grades for Ambient Temperatures of 50° to 125°														
		Reducer Size														
Output RPM		1	2	3	4	5	6	7	8	9	10	12	13	14	15	
301-400	320	320	220	220	220	220	220	220	220	220	220	220	220	220	220	
201-300	320	320	220	220	220	220	220	220	220	220	220	220	220	220	220	
151-200	320	320	220	220	220	220	220	220	220	220	220	220	220	220	220	
126-150	320	320	320	220	220	220	220	220	220	220	220	220	220	220	220	
101-125	320	320	320	320	220	220	220	220	220	220	220	220	220	220	220	
81-100	320	320	320	320	320	220	220	220	220	220	220	220	220	220	220	
41-80	320	320	320	320	320	320	220	220	220	220	220	220	220	220	220	
11-40	320	320	320	320	320	320	320	320	320	320	320	220	220	220	220	
1-10	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320	

NOTE:

Pour point of lubricant selected should be at least -12°C lower than expected minimum ambient starting temperature.

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 recommendation.

VISCOSITY CLASS EQUIVALENTS



GUIDELINES FOR TORQUE-ARM 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 the 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 the oil from the unit. Add a vapor phase corrosion inhibiting oil (VCI-105 oil by Daubert Chemical Co.) in accordance with Table titled "Quantities of VCI."
2. Seal the unit air tight. Replace the vent plug with a standard pipe plug and wire the vent to the unit.
3. Cover the shaft extension with a waxy rust preventative compound that will keep oxygen away from the bare metal (Non-Rust X-110 by Daubert Chemical Co.).
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 the 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. Assemble the vent plug into the proper hole.
2. Clean the shaft extensions with a suitable solvent.
3. Fill the unit to the proper oil level using a recommended lubricant. The VCI oil will not affect the new lubricant.
4. Follow the installation instructions provided in this manual.

Quantities of VCI #105 Oil

Case Size	Quarts or Liters
TXTM 1	.05
TXTM 2	.06
TXTM 3A	.1
TXTM 4A	.2
TXTM 5B	.3
TXTM 6	.4
TXTM 7	.5
TXTM 8	.6
TXTM 9	.8
TXTM 10	1.0
TXTM 12	2.0

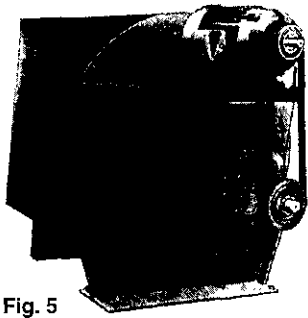


Fig. 5

Note: Belt guard removed for photographic purposes.

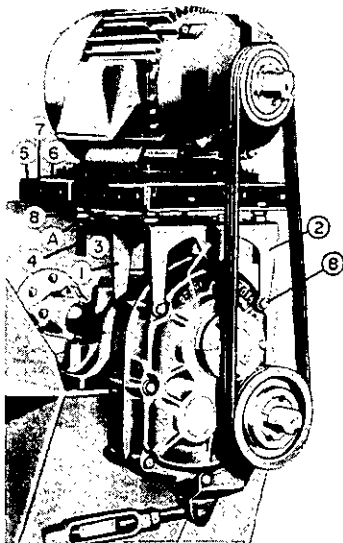


Fig. 6 Note: Belt guard removed for photographic purposes.

MOTOR MOUNTS

TXTM1 thru TXTM7

The motor mount must be installed on output end of reducer as shown in Figure 5.

Remove two or three (as required) housing bolts on output end of reducer. Place the motor mount in position and install the longer housing bolts supplied with the motor mount.

Install motor, drive pulley and driven pulley so that driven pulley is as close to the reducer housing as practical. Install V-belt and tension with the four adjusting screws provided on TMM Motor Mount.

Check all bolts to see that they are securely tightened.

TXTM8 thru TXTM12

The motor mount must be installed on output end of reducer as shown in Figure 6.

Referring to Figure 6, remove two or three (as required) housing bolts on output end of reducer. Install back support 1 and front support 2 with new housing bolts 8. Install mounting bolts 3.

Install mounting plate 5 with adjusting studs 4 as shown in Figure 6.

Assemble one motor rail 6 by loosely bolting through the two front holes on each side of mounting plate with mounting rail bolts 7.

Measure the distance between front and rear mounting holes of motor. Position the rear motor rail to this distance and loosely bolt to the mounting plate.

Center the motor on the motor rails. Use a plain washer under each slot in the motor rails when the motor mounting bolts are less than 15.875 mm diameter. Bolt motor snugly to motor rails.

Install motor pulley and reducer pulley on their shafts as close as possible to the motor and reducer housing. **Note:** The motor rails may be moved forward or backward from the position shown in Figure 6 to permit alignment of the V-belt pulleys. It is permissible for the front motor rail to extend beyond the mounting plate 5. Align the V-belt pulleys carefully and tighten all bolts securely.

Install V-belts and adjust belt tension. Figure 6 shows the mount near the minimum left center position. To increase the center distance, loosen the four nuts "A" on the adjusting studs and tighten the four nuts "B" alternately and evenly until the belts are properly tensioned.

Check all bolts to see that they are securely tightened.

BACKSTOPS

INSTALLATION

Step 1. Remove backstop cover plate. This plate is directly opposite the extended end of the input shaft.

Step 2. Face reducer looking at the side from which the cover plate was removed. Determine carefully the direction of rotation desired. The directions of rotation of input and output shafts are identical in double reduction reducers (Nos. TXTM1-TXTM12) and opposite in single reduction reducers (Nos. TXTM105-TXTM905). 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 reinstall it.

Step 3. Match arrow on backstop to direction of rotation desired for input shaft. Note that reversing backstop end for end changes direction of arrow. The input shaft will rotate in the same direction as the arrow on the backstop.

Step 4. Proceed as follows:

Nos. TXTM109-TXTM525B and TXTM105-TXTM505A Reducers — For ease of installation, slowly rotate input shaft in same direction as arrow on backstop. Without removing cardboard retainer from backstop, push backstop into reducer. When pushing backstop into reducer, it is very important not to hammer on backstop although it can be tapped gently if necessary. Cardboard retainer will be pushed out automatically as backstop is pushed into reducer. Throw away retainer.

Nos. TXTM609, TXTM615, TXTM625 and TXTM605 Reducers — Some of the backstops have keys of different lengths. Place the longer key in the input shaft keyseat. For ease of installation, backstop complete with inner race must be pushed into reducer as a unit. When pushing backstop into reducer, it is very important not to hammer on backstop although it can be tapped gently if necessary. Place small snap ring in snap ring groove on input shaft.

Nos. TXTM815-TXTM1225 and TXTM705-TXTM905 Reducers — Place large snap ring in I.D. of carrier. **Note:** Large snap ring is not required for Nos. TXTM7 and TXTM705

reducer and may be discarded. Some of the backstops require two keys on the input pinion. Dispose of extra key with units that require only one key. For ease of installation, backstop complete with inner race must be pushed into reducer as a unit. When pushing backstop into reducer, it is very important not to hammer on backstop although it can be tapped gently if necessary. Place a small snap ring in snap ring groove on input shaft.

Step 5. Line up keyways between backstop and reducer by rotating input shaft in opposite direction from its driving direction. If backstop is properly installed, it will rotate with input shaft in this opposite direction.

Step 6. Insert key and replace gasket, cover plate, and screws. When input shaft will be located higher than output shaft, put some grease in cover plate for the purpose of lubricating backstop. Use a high grade grease made especially for roller bearing service.

WARNING

Do not use EP oils containing slippery additives such as graphite or molybdenum disulphide in the reducer when backstop is used. These additives will destroy sprag action. Failure to observe these precautions could result in bodily injury.

NOTE: Some backstops have keys that are rectangular in cross-section. Keys should fit freely into respective keyways. Forcing keys into place could result in premature failure of backstop.

TO REMOVE BACKSTOP

WARNING

To insure that drive is not unexpectedly started, turn off and lock out or tag power source before proceeding. Failure to observe these precautions could result in bodily injury.

WARNING

Machine loads may cause movement when backstop is removed. Block all external loads before proceeding. Failure to observe these precautions could result in bodily injury.

Step 1: Remove backstop cover plate.

Step 2: Remove snap ring from end of shaft (snap ring is used only on Nos. TXTM615-TXTM1225 and TXTM605-TXTM905).

Step 3: Insert tool, such as screwdriver, in groove around O.D. of backstop and pry backstop from retainer housing.

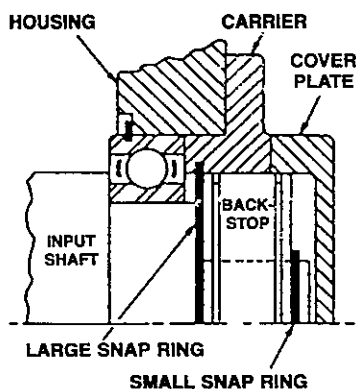


Figure 7

PROPER SHAFT TOLERANCES FOR BACKSTOP INSTALLATION WITH TAPERED BEARING REDUCERS

Shaft Endplay: While the backstop is removed check the amount of endplay in the shaft, if tapered roller bearings are used. It is possible that bearing wear or looseness might have increased the amount of endplay to an unacceptable level. Shaft endplay must not exceed 0.13 mm.

Endplay is measured with a dial indicator at the end of the backstop shaft. The base of the indicator is attached to the reducer housing. From the other end of the shaft, an axial force must be applied in both directions—push and pull.

Concentricity: The amount of T.I.R. (total indicated run out) between the inner race (shaft) and the backstop bore in the housing is a critical measurement. It takes into consideration the effects of bearing endplay as well as machining eccentricities. The T.I.R. should not exceed 0.08 mm T.I.R.

The base of the dial indicator can be mounted on the end of the shaft, as shown in Figure 8, with the needle at the backstop bore in the housing. Rotating the shaft sweeping the bore 360 degrees will give T.I.R.

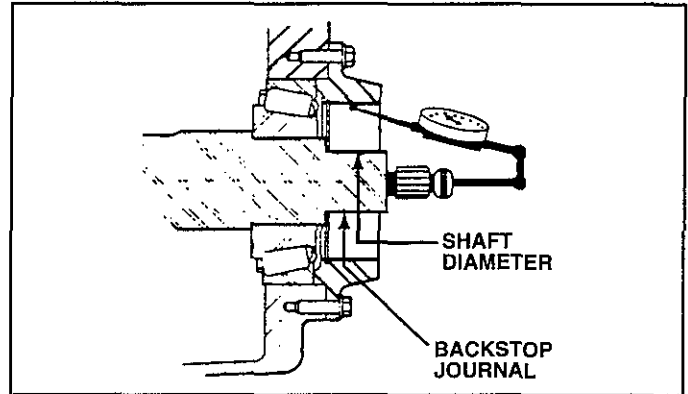
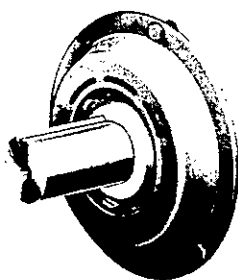


Figure 8

Table 4 — Backstop Assemblies for Metric Reducers

Backstop Size	Used On TXTM Reducers	Part Number
TXTM1	TXTM1, TXTM505	242101
TXTM2	TXTM2, TXTM205, TXTM305A	252101
TXTM3A	TXTM3A	243106
TXTM4A	TXTM4A	244106
TXTM405	TXTM405	244148
TXTM5B	TXTM5B	245154
TXTM505A	TXTM505A	246101
TXTM6	TXTM6, TXTM605	246092
TXTM7	TXTM7, TXTM705	247260
TXTM8	TXTM8, TXTM9	249260
TXTM905	TXTM905	272259
TXTM10	TXTM10, TXTM12 TXTM805	250260

COOLING FAN INSTALLATION



WARNING

To insure that drive is not unexpectedly started, turn off and lock out or tag power source before proceeding. Failure to observe these precautions could result in bodily injury.

TXTM5B thru TXTM12

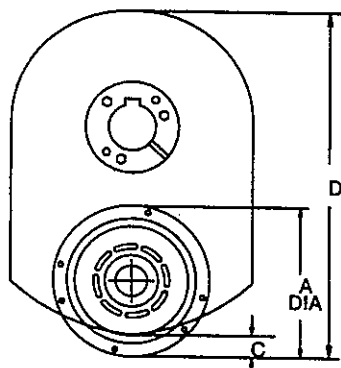
1. Examine all parts for possible damage during shipping. Ensure that all parts are free of any foreign materials prior to assembly.
2. Remove every other bolt in the input shaft seal carrier and set aside. Refer to Figure 9 for bolts to be removed.
3. Set shroud mounting straps in place and re-install input shaft seal carrier bolts until finger tight. Mount fan shroud so that it is centered and align mounting straps. Remove shroud and tighten carrier bolts to recommended torque in Table 5. **Note: It is important that straps do not move after they are aligned.**
4. Place safety screen on shaft against straps. Place fan blade on input shaft with fan blade edge distance "B" (Figure 9 and Table 5) from end of shaft. Install setscrews in fan blade hub and tighten securely.
5. Mount fan shroud making sure it is centered and install bolts through shroud and safety screen. Install lockwashers and hex nuts, tightening securely.
6. **Check clearance between fan blades and shroud to ensure that they do not touch.**
7. Dimension "C" is the distance that fan shroud extends beyond housing.

TXTM3A thru TXTM4A

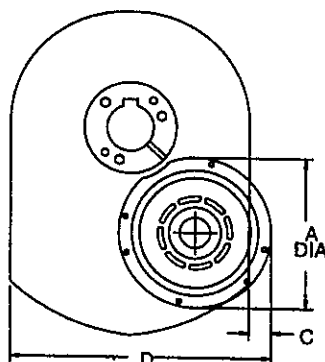
1. Examine all parts for possible damage during shipping. Insure that all parts are free of any foreign materials prior to assembly.
2. Place fan blade on input shaft with fan blade edge distance "B" (Fig. 9—Table 5) from end of shaft. Secure fan blade with set screws supplied.
3. Mount fan shroud to fan blade using hex head bolts and washers. Tighten securely.

Table 5 — TXTM Cooling Fan Installation Dimensions

Reducer Size	A in mm	B in mm	C in mm	D in mm	Torque Nm
TXTM3A	124	54.1	3.81	238	3.96
TXTM305A	100	47.8	—	—	—
TXTM4A	149	74.7	12.7	276	12.3
TXTM405A	119	74.7	—	—	—
TXTM5B	180	87.4	—	—	40.7
TXTM505A	146	87.4	—	—	40.7
TXTM6	260	87.4	33.3	418	40.7
TXTM605	180	86.9	—	—	40.7
TXTM7	324	93.5	55.4	532	40.7
TXTM705	235	98.6	—	—	40.7
TXTM8	324	106	60.5	575	40.7
TXTM805	324	108	—	—	40.7
TXTM9	426	160	95.3	670	40.7
TXTM905	324	168	—	—	40.7
TXTM10	426	156	57.2	705	40.7
TXTM12	426	149	82.6	1188	203



TXTM305A thru TXTM905
TXTM1225



TXTM3A thru TXTM10
Ratios 9, 15, 25:1

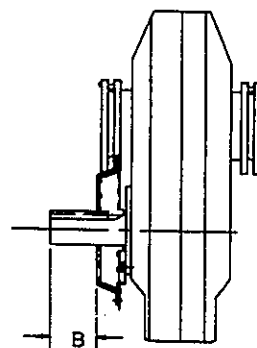


Figure 9

REPLACEMENT PARTS FOR COOLING FANS

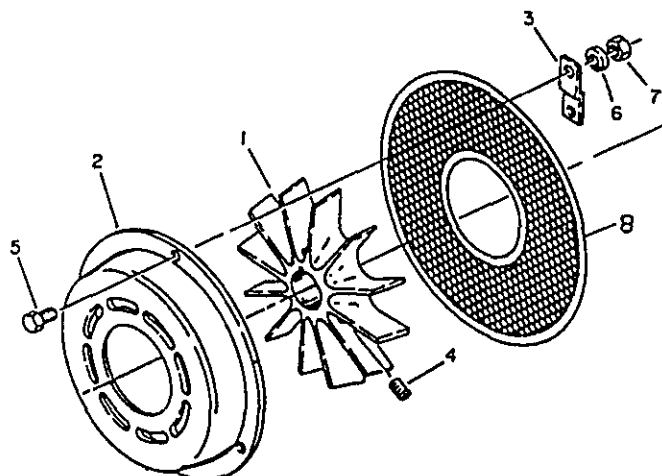


Figure 10

Table 6

Reference	Description	Qty. Req'd.	Numbers					
			TXTM3A	TXTM305A	TXTM4A	TXTM405A	TXTM5B	TXTM505A
	COOLING FAN ASSY.	1	264724	264726	264856	264744	264728	264746
1	Δ Fan Blade	1	264725	264727	264865	264745	264866	264747
2	Δ Fan Shroud	1	243579	253190	272596	254246	272422	255233
3	Δ Mounting Straps	**	—	—	—	—	245636	255234
4	Δ Setscrews	2	400026	400026	400026	400026	400026	400026
5	Δ Cap Screw	*	411396	416526	411396	416526	411394	411394
6	Δ Lockwashers	*	419009	419007	419009	419007	419009	419009
7	Δ Hex Nut	*	—	—	—	—	407083	407083
8	Safety Screen	—	—	—	—	—	—	—
9	Fan Shroud Bracket	**	—	—	—	—	255235	255235
10	Machine Screw	▲	—	—	—	—	411022	411022
11	Machine Screw Washer	▲	—	—	—	—	419007	419007

* TXTM3A-2, TXTM305A-2, TXTM4A-2, TXTM405A-2, TXTM5B-3, TXTM505A-2

** TXTM5B-3, TXTM505A-2

▲ TXTM5B-6, TXTM505A-4

Reference	Description	Qty. Req'd.	Numbers						
			TXTM6	TXTM7	TXTM8-805	TXTM9	TXTM10	TXTM12	TXTM905
	COOLING FAN ASSY.*	1	264858	264859	264860	264861	264863	264864	264862
1	Δ Fan Blade	1	264868	264867	264867	264869	264870	264870	264867
2	Δ Fan Shroud	1	272344	272346	272346	272347	272347	272347	232346
3	Δ Mounting Strap	†	272353	272354	272355	272356	272356	272357	272360
4	Δ Set Screw	2	400026	400086	400086	400094	400090	400090	400086
5	Δ CapScrew	†	411409	411409	411409	411407	411407	411407	411409
6	Δ Lockwasher	†	419011	419011	419011	419011	419011	419011	419011
7	Δ Hex Nut	†	407087	407087	407087	407087	407087	407087	407087
8	SAFETY SCREEN	1	242750	242751	242751	242753	242753	242753	—

* Assembly includes parts listed immediately below marked "Δ."

Δ Included in assemblies under which they are listed.

† 3 required on sizes TXTM6 & TXTM7; 4 required on sizes TXTM8, TXTM15 & TXTM905.

REPLACEMENT OF PARTS

Using tools normally found in a maintenance department, a DODGE TORQUE-ARM 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 should be available for shrinking these parts on shafts.

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 of the rubbing type and 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 part name, part number and quantity.

It is strongly recommended that when a pinion or gear is replaced, the mating gear or pinion be replaced also.

If the large gear on the output hub must be replaced, it is recommended that an output hub assembly of a gear assembled on a hub be ordered to secure undamaged surfaces on the output hub where the oil 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 outer race 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:

Refer to "Removal" instructions elsewhere in this manual.

DISASSEMBLY:

1. Position reducer on its side and remove all bolts. Gently tap the output hub and input shaft with a soft hammer (rawhide, not a lead hammer) to separate the housing halves. Open housing evenly to prevent damage to the parts inside.
2. Lift shaft, gear and bearing assemblies from housing.
3. Remove seals from housing.

REASSEMBLY:

TXTM1 and TXTM2

1. Output Hub Assembly: Heat gear to 163°C to 177°C to shrink onto hub. Heat bearings to 132°C to 143°C 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 (not outer) race of bearings.

3. Input Shaft Assembly: Shaft and pinion are integral. Press bearings on shaft. Press against inner (not outer) race of bearings.

4. Drive the two dowel pins into place in the right-hand housing half. Position right half of housing on blocks to allow clearance for protruding end of output hub.

5. Apply a few drops of oil to all bearings. Mesh output hub assembly, countershaft assembly and input shaft assembly together and place in the housing half. Tap lightly with a soft hammer (nylon or rawhide, not a lead hammer) until bearings are properly seated. Gearing should spin freely if bearings are properly seated.

6. Clean housing flange surfaces on both halves, making sure not to nick or scratch flange face. Place a new bead of Dow Corning RTV732 on flange face and spread evenly over entire flange leaving no bare spots. Place other housing half into position and tap with a soft hammer until housing bolts can be used to draw housing halves together. Torque housing bolts to 40.7 Nm.

7. Extreme care should be used in installing seals on input shaft and output hub to avoid damage to seals due to contact with sharp edges of the keyseat in the input shaft or the retaining ring groove in the output hub. This damage and consequent oil leakage can be decreased by covering the keyseat and groove with tape or paper.

REASSEMBLY:

TXTM3A thru TXTM10

1. Output Hub Assembly: Heat gear to 163°C to 177°C to shrink on output hub. Heat bearing cones to 132°C to 143°C to shrink on hub.

2. Countershaft Assembly: Heat gear to 163°C to 177°C and bearing cones to 132°C to 143°C to shrink on shaft.

3. Input Shaft Assembly: Heat bearing cones to 132°C to 143°C to shrink on shaft.

4. Place a 0.254 mm shim on output hub seal carrier, countershaft cover and backstop carrier for right-hand half of housing (as viewed in drawing). Place a 3.175 mm diameter bead of Dow Corning RTV732 sealant on the face around the I.D. of the shim (seal is to be between reducer housing and shim).

CAUTION

Too much sealant will run into bearing causing failure. Too little sealant will result in an ineffective seal. Failure to observe these precautions could result in bodily injury.

Install right-hand carriers and cover in housing half and torque screws to torque values in Table 8. Place bearing cups in right-hand housing half. Make certain the cups are properly seated in housing and are pressed against carriers and cover. Place housing half on blocks to allow for protruding end of output hub.

5. Mesh output hub assembly and countershaft assembly together and place in housing half. Place input shaft assembly in housing half. Tap lightly with a soft hammer (rawhide, not a lead hammer) until bearings are properly seated in the housing.

6. Place a bead of RTV732 on housing flange and spread evenly. Place other half of housing (without covers or carrier installed) in position and draw together evenly to prevent damage to parts. The final wrench torque should be per torque values in Table 7.

7. Place the output hub seal carrier in position without shims and install two cap screws diametrically opposed. Torque each screw to 2.82 Nm. Rotate the shaft to roll in the bearings and then torque each screw once to 5.649 Nm. **Do not retorquer the screws.** Turn shaft again to roll in the bearings. With a feeler gauge, check the gap between carrier and housing, clockwise from and next to each screw. To determine required shim thickness, add the average of the two feeler gauge readings to 0.25 mm. Remove the carrier and install the required shims. **Note:** Total shim thickness per carrier or cover should not include more than 0.229 mm plastic shims. All other shims should be metal and each plastic shim should be inserted between two metal shims. Place a 3.175 mm diameter bead of Dow Corning RTV732 sealant on the face around the I.D. of the last shim and install output hub carrier in reducer housing. Torque carrier bolts to torque values in Table 7 below. Output hub should have an axial end play of 0.025 mm to 0.076 mm.

8. Adjust the countershaft bearings using the same method as in step 7, except to determine the shim thickness required add the average of the feeler gauge readings to 0.305 mm, and the axial play should be 0.025 mm to 0.178 mm.

9. Again using the same procedure as in step 7, adjust the input shaft bearings, except add the average of the feeler gauge readings to 0.406 mm to determine required shim thickness, and axial play should be 0.051 mm to 0.203 mm.

10. Apply sealant to backstop cover gasket and install backstop cover. Extreme care should be used in installing seals to avoid damage due to contact with sharp edges of the keyseat in the input shaft and holes in the output hub. This damage and consequent oil leakage can be decreased by covering the keyseat and the holes with paper or tape which can be removed after seals are in place. Chamfer or de-burr housing bore if end of bore is sharp or rough. Fill cavity between lips of seal with grease. Seals should be pressed or tapped with a soft hammer evenly into place in the housing, applying force only on the outer corner of the seals. A slight oil leakage at the seal may be evident during initial running in, but will disappear unless the seals have been damaged.

Table 7—Torque Values

Reducer Size	Recommended Torque - Newton Meters			
	Housing Bolts	Ctrshaft. Brg. Cover Screws	Output Hub Seal Carrier Screws	Input Brg. Cover Screws
TXTM3A	101.7 Nm	23 Nm	23 Nm	23 Nm
TXTM4A	101.7 Nm	40.7 Nm	40.7 Nm	40.7 Nm
TXTM5B	101.7 Nm	40.7 Nm	40.7 Nm	40.7 Nm
TXTM6	101.7 Nm	40.7 Nm	40.7 Nm	40.7 Nm
TXTM7	183.0 Nm	67.8 Nm	67.8 Nm	67.8 Nm
TXTM8	183.0 Nm	40.7 Nm	40.7 Nm	40.7 Nm
TXTM9	183.0 Nm	40.7 Nm	40.7 Nm	40.7 Nm
TXTM10	186.4 Nm	40.7 Nm	40.7 Nm	40.7 Nm

REASSEMBLY:

TXTM12

1. **Output Hub Assembly:** Heat gear to 163°C to 177°C to shrink onto hub. Heat bearings to 132°C to 143°C 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. Heat gear to 163°C to 177°C to shrink on shaft. Heat bearing cones to 132°C to 143°C to shrink on shaft.

3. **Input Shaft Assembly:** Slide pinion on shaft. Heat bearing cones to 132°C to 143°C to shrink on shaft.

4. Place a 3.175 mm diameter bead of Dow Corning RTV732 sealant on the face around the I.D. of the shim (sealant is to be between shim and reducer).

CAUTION

Too much sealant will run into bearing causing failure. Too little sealant will result in an ineffective seal. Failure to observe these precautions could result in bodily injury.

Install bearing covers, output hub seal carrier and backstop carrier on right half of housing. Put bearing cups in place. Make sure the cups are properly seated in the housing and are pressed against the countershaft bearing, output seal carrier and backstop carrier. Place housing on blocks to allow clearance for protruding end of output hub.

5. Mesh output hub assembly and countershaft assemblies together and place in housing half. Place input shaft assembly in position. Make sure rollers are properly seated in bearing cups. Make sure input pinion is central between bearings on input shaft. If not central, re-engage gear teeth properly to make central to assure equal power flow through split power path.

6. Clean housing flange surfaces on both halves, making sure not to nick or scratch flange face. Place a new bead of Dow Corning RTV732 on flange face and spread evenly over entire flange leaving no bare spots. Place other housing half into position and tap with a soft hammer until housing bolts can be used to draw housing halves together. Torque housing bolts per torque values listed in Table 8.

7. Install the output hub seal carrier and the shims previously removed. **Note:** If the housing, hub, bearing or carrier has been replaced, use more shims than previously removed. Tighten the carrier cap screws. Rotate the hub while tightening these screws to assure that the bearing does not bind. If the bearing starts to bind, add more shims. Attach an indicator to the housing and set the gauge on the top end of the output hub. Insert a pry bar under the other end of the hub and force it upward. The axial play of the hub will be given by the indicator reading. Remove or add shims until the indicator reading is 'M' in Table 8. Tighten screws per torque values listed in Table 8.

8. Using similar procedure adjust the bearings on one of the countershafts. (This can be accomplished by removing the plugs from the covers, placing a piece of rod on the pry bar and prying through the cover.) Remove or add shims until indicator reading is 'BB' in Table 8. Tighten screws to torque values listed in Table 8. Then similarly adjust the bearings on the other countershaft.

9. Again using similar procedure adjust the bearings on the input shaft. (Backstop cover must be removed.) Remove or add shim stock until the indicator reading is 'CC' in Table 8. Tighten screws per torque values listed in Table 8.

10. Extreme care should be used in installing seals on input shaft and output hub to avoid damage which would result in oil leakage. This damage and consequent oil leakage can be decreased by covering the keyseat and retaining ring groove with tape or paper which can be removed subsequently. Chamfer or de-burr housing bore if end of bore is sharp or rough. Fill cavity between lips of seal with grease. Seals should be pressed or tapped with a soft hammer evenly into place in the housing, applying force only on outer corner of seals. A slight oil leakage at the seals may be evident during initial running in, but will disappear unless the seals have been damaged.

Table 8—Torque Values

Reducer Size	Housing Bolts	Output Hub Seal Carrier	AA	C'shaft & Input Shaft Carrier	BB	CC
TXT12M	183.0	272 Nm	0.025 mm to 0.076 mm	136 Nm	0.0254 mm to 0.0762 mm	0.0508 mm to 0.0762 mm

REASSEMBLY:

TXTM105 and TXTM205

1. **Output Hub Assembly:** Heat gear to 163°C to 177°C to shrink onto hub. Heat bearings to 132°C to 143°C 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. **Input Shaft Assembly:** Shaft and pinion are integral. Press bearings on shaft. Press against inner (not outer) race of bearings.

3. Drive the two dowel pins into place in the right-hand housing half. Position right half of housing (as shown in drawing) on blocks to allow clearance for protruding end of output hub.

4. Place output hub assembly in housing half. Place input shaft assembly in housing half. Tap lightly with a soft hammer (rawhide, not lead hammer) until bearings are properly seated in the housing. Make sure that the snap rings on the O.D. of the bearings come into contact with the housing.

5. Clean housing flange surfaces on both halves, making sure not to nick or scratch flange face. Place a new bead of Dow Corning RTV732 on flange face and spread evenly over entire flange leaving no bare spots. Place other housing half into position and tap with a soft hammer until housing bolts can be used or draw housing halves together. Torque housing bolts per torque to 40.7 Nm.

6. Extreme care should be used in installing seals on input shaft and output hub to avoid damage to seals due to contact with sharp edges of the keyseat in the input shaft or the retaining ring groove in the output hub. This damage and consequent oil leakage can be decreased by covering the keyseat and groove with tape or paper which can be removed subsequently. Chamfer or de-burr housing bore if end of bore is sharp or rough. Fill cavity between lips of seal with grease. Seals should be pressed or tapped with a soft hammer evenly into place in the housing, applying force only on outer corner of seals. A slight oil leakage at the seals

may be evident during initial running in, but will disappear unless the seals have been damaged.

REASSEMBLY:

TXTM305A thru TXTM905

1. **Output Hub Assembly:** Heat gear to 163°C to 177°C to shrink on output hub. Heat bearing cones to 132°C to 143°C to shrink on hub.

2. **Input Shaft Assembly:** Heat bearing cones to 132°C to 143°C to shrink on shaft.

3. Drive the two dowel pins into place in the right-hand housing half. Position right half of housing on blocks to allow clearance for protruding end of output hub.

4. Place a 0.254 mm shim on output hub seal carrier for right-hand half of housing (as viewed in drawing). Place a 3.175 mm diameter bead of Dow Corning RTV732 sealant on the face around the I.D. of the shim (seal is to be between reducer housing and shim).

CAUTION

Too much sealant will run into bearing causing failure. Too little sealant will result in an ineffective seal. Failure to observe these precautions could result in bodily injury.

Install output hub seal carrier in right-hand housing half and torque screws to 40.7 Nm. Place bearing cups in right-hand housing half. Make certain the cups are properly seated in housing. Place housing half on blocks to allow for protruding end of output hub.

5. Clean housing flange surfaces on both halves, making sure not to nick or scratch flange face. Place a bead of Dow Corning RTV732 on flange and spread evenly. Place the other half of housing (without covers or carrier installed) in position and tap with a soft hammer (rawhide, not lead hammer) until housing halves are together. Install housing bolts and tighten evenly. Torque housing bolts per torque values listed in Table 9.

6. Place the output hub seal carrier in position without shims and install two cap screws diametrically opposed. Torque each screw to 2.82 Nm. Rotate the shaft to roll in the bearings and then torque each screw once to 5.65 Nm. **Do not retorquing the screws.** Turn shaft again to roll in the bearings. With a feeler gauge, check the gap between carrier and housing, clockwise from and next to each screw. To determine required shim thickness, add the average of the two feeler gauge readings to 0.330 mm. Remove the carrier and install the required shims. **Note:** Total shim thickness per carrier or cover should not include more than 0.229 mm plastic shims. All other shims should be metal, and each plastic shim should be inserted between two metal shims. Place a 3.175 mm diameter bead of Dow Corning RTV732 sealant on the face around the I.D. of the last shim and install output hub carrier in reducer housing. Torque carrier bolts to 40.7 Nm. Output hub should have an axial end play of 0.025 mm to 0.076 mm.

7. Using similar procedure as in step 6, adjust the bearing on the input shaft. Backstop cover must be removed. Remove or add shim stock until indicator reading is from 0.051 mm to 0.203 mm.

8. Install backstop cover and oil seals. Extreme care should be observed when installing seals on the output hub and input shaft to avoid contact with the keyseat or any sharp edges. This damage and consequent oil leakage can be decreased by covering all sharp edges with tape or paper. Chamfer or de-burr housing bore if end of bore is sharp or rough. Fill cavity between lips of seal with grease. Seals should be pressed or tapped with a soft hammer evenly into place in the carrier, applying force only on outer edge of seals. A slight oil leakage at the seals may be evident during initial running in, but will disappear unless seals have been damaged.

Table 9—Torque Values

Reducer Size	Recommended Torque—Newton Meters		
	Housing Bolts	Output Hub Seal Carrier Screws	Input Brg Cover Screws
TXTM305A	101.7 Nm	23 Nm	23 Nm
TXTM405A	101.7 Nm	40.7 Nm	40.7 Nm
TXTM505A	101.7 Nm	40.7 Nm	40.7 Nm
TXTM605	101.7 Nm	40.7 Nm	13.6 Nm
TXTM705	183 Nm	67.8 Nm	13.6 Nm
TXTM805	183 Nm	40.7 Nm	13.6 Nm
TXTM905	183 Nm	67.8 Nm	13.6 Nm

PARTS FOR TXTM1 AND TXTM2 TAPER-BUSHED SPEED REDUCERS

Reference	Name of Part	No. Req'd.	TXTM1 Part No.	TXTM2 Part No.	Reference	Name of Part	No. Req'd.	TXTM1 Part No.	TXTM2 Part No.
12	Backstop Assembly	1	242101	252101	70	25 mm Bore	1	241370	.....
14	Air Vent	1	241190	242190		BUSHING	1	241371	.....
15		.....	.....	.....		ASSEMBLY*	1	241372	242370
16		1	241237	241237		(Taper	1	241373	242371
17		1	411418	411418		Bushed	1	.....	242372
18		2	411420	411420		Only)	1	.....	242773
20	Lockwasher	1	419011	419011		42 mm Bore	1	.....	242374
22	Hex Nut	1	407087	407087		45 mm Bore	1	.....	242375
24	Dowel Pin	2	420091	420091		50 mm Bore	1	.....	242376
25	Pipe Plug	2	430031	430031	39	BEARING KIT	1	389905	389906
25	Magnetic Plug	1	430060	430060		Δ Input Shaft Brg. (Input)	1	424112	424019
25	Washer	4	419092	419204		Δ Input Shaft Brg. (Backstop)	1	424111	424090
26	Backstop Cover	1	242221	243221		Δ Countershaft Brg. (Input)	1	424006	424000
28	Backstop Cover Gasket	1	242220	243220		Δ Countershaft Brg. (Backstop)	1	424006	424000
30	Backstop Cover Screw	4	415022	415022		Δ Output Hub Bearing	2	424020	424022
32	C'Shaft Brg. Cover (Input)	1	242224	242212		Δ Bushing Screw	6	411405	411390
33	C'Shaft Brg. Cover (Backstop)	1	242224	243224		Δ Lockwasher	6	419010	419010
*	Input Shaft 9:1 Ratio	1	264915	264919	76	25 mm Bore	1	241360	.....
38	with Pinion 15:1 Ratio	1	264913	264917		30 mm Bore	1	241361	.....
39	Input Shaft Brg. (Input)	1	264914	264918		32 mm Bore	1	241362	242360
40	Input Shaft Brg. (Backstop)	1	424112	424019		35 mm Bore	1	241363	242360
45	COUNTER-SHAFT ASSEMBLY*	1	392100	392101		38 mm Bore	1	.....	242361
46*	Δ Countershaft with Pinion	1	241216	242185		40 mm Bore	1	.....	242362
50*	Δ First Reduction Gear 9:1 Ratio	1	241482	242482		42 mm Bore	1	.....	242363
52*	Δ Gear Key 15:1 Ratio	1	241170	242008		45 mm Bore	1	.....	243364
53*	Countershaft Brg. (Input) §	1	241309	242218		Δ Key, Bushing to Output Hub	1B	.....	.....
53*	Countershaft Brg. (Backstop)	1	424006	424000		25 mm Bore	1	.....	.....
55*	OUTPUT HUB ASSEMBLY*	1	390878	392111	80	30 mm Bore	1	443273	.....
56*	Δ Output Hub (Taper Bush)	1	241265	264748		TORQUE-ARM ASSEMBLY*	1	241097	243097
58*	Δ Output Gear	1	241007	242181		Δ Rod End	1	241245	243245
60*	Δ Output Gear Key	1	241217	443399		Δ Hex Nut	1	407093	407095
62*	Output Hub Bearing	2	424020	424022		Δ Turnbuckle	1	241246	243246
68	Bushing Back-Up Plate ■	2	241266	242137		Δ Extension	1	241247	243247
69	Retaining Ring ■	2	421111	421112		Δ L.H. Hex Nut	1	407242	407244
28*	SEAL KIT*	1	392119	392120		Δ Fulcrum	1	241249	243249
29*	Backstop Cover Gasket	1	242220	243220		Δ Fulcrum Screw	1	411456	411484
64*	Gasket Eliminator Tube	1	465044	465044		Δ Hex Nut	1	407091	407093
					96	ADAPTER ASSEMBLY*	1	259151	259152
						Δ R.H. Adapter Plate	1	241242	242136
						Δ L.H. Adapter Plate	1	241241	242135
						Δ Adapter Bushing	1	242243	243243
						Δ Adapter Bolt	1	411412	411437
						Δ Lockwasher	1	419011	419012
						Δ Hex Nut	1	407087	407089

* Includes parts listed immediately below marked "Δ." Series TXTM1 and TXTM5 housing assemblies also include a two-piece housing. Bushing assembly includes 2 bushings.

Δ The parts marked "Δ" make up the assemblies under which they are listed.

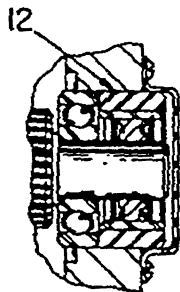
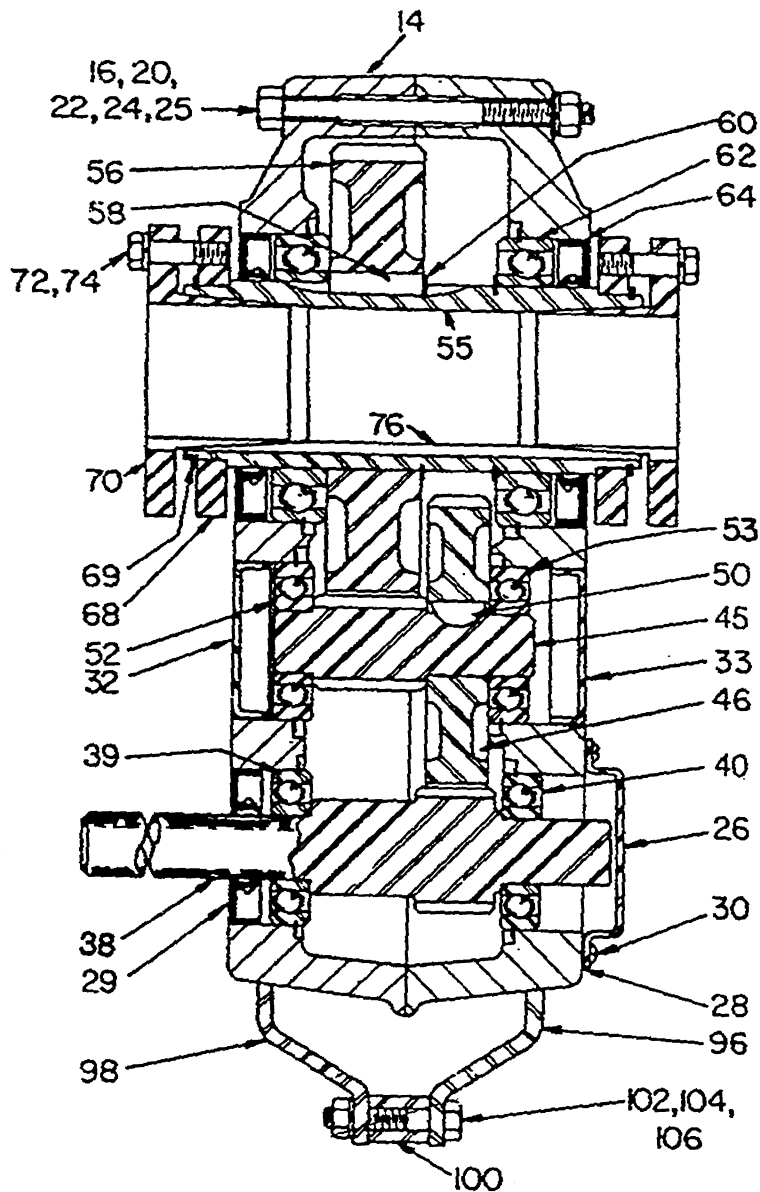
† 4 required on TXTM1; 5 required on TXTM2.

‡ 6 required on TXTM1; 7 required on TXTM2.

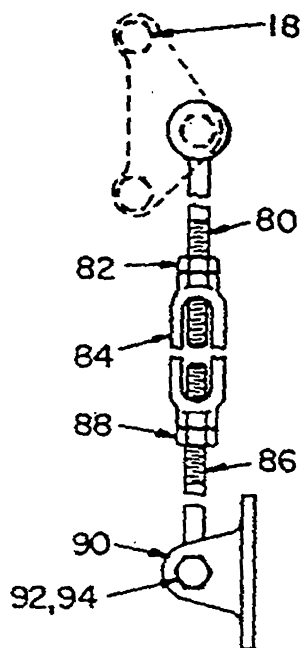
§ On size TXTM2 for 32 mm thru 38 mm bores.

* Recommended spare parts.

◆ Not shown on drawing.



Backstop Assembly



TORQUE-ARM Assembly

Note: The two-digit numbers are for reference only. Order parts by the six-digit numbers in the Parts List. Each six-digit number is a complete identification of the part or assembly.

PARTS FOR TXTM3A, TXTM4A AND TXTM5B TAPER-BUSHED SPEED REDUCERS

Reference	Name of Part	No. Req'd.	TXTM3A Part No.	TXTM4A Part No.	TXTM5B Part No.	Reference	Name of Part	No. Req'd.	TXTM3A Part No.	TXTM4A Part No.	TXTM5B Part No.
12	Backstop Assembly	1	243106	244106	245154	76	Output Hub Seal Carrier (Input Side)	1	243547	244591	245592
❖	HOUSING	1	243534	244567	245587	77	Roll Pin	1	409022	409022	409022
16	Air Vent	1	241237	241237	245237	80*	Output Hub Cone	2	402272	402286	402193
18	Housing Bolt	6	411440	411442	411464	81*	Bearing Cup	2	403127	403163	403016
19#	Adapter Housing Bolt	2	411442	411444	411466	82*	Output Hub Bearing Shim Pack	2 ‡	389706	389713	389719
	Washer	4	419094	419094	419096		SEAL KIT*	1	389720	389721	389722
20	Lockwasher	6	419012	419012	419013	36*	Δ Backstop Cover Gasket	1	243561	244593	245220
22	Hex Nut	8	407089	407089	407091	42*	Δ Input Shaft Seal	1	243558	244524	355011
24	Dowel Pin	2	420055	420055	420110	78*	Δ Output Hub Seal	2	243578	244673	245545
❖	Pipe Plug	2	430031	430031	430033	❖	RTV Sealant, Tube	1	465044	465044	465044
❖	Magnetic Plug	1	430060	430060	430062						
21	Countershaft Cover Screw (Backstop Side)	4	416524	411035	411394	84	BUSHING ASSEMBLY*	1	243486	.....	.....
26	Countershaft Brg. Cover (Backstop Side)	1	243559	244574	244574		38 mm	1	243487	.....	.....
27	Lockwasher	4	419007	419009	419009		40 mm	1	243488	244370	.....
28	Input Seal Carrier	1	243543	244577	245597		42 mm	1	243489	244371	.....
30*	Input Shaft Bearing Shim Pack	2 ‡	389704	389711	391799		45 mm	1	243490	244372	.....
32	Carrier and Cover Screws	14 •	411390	411407	411407		50 mm	1	243491	244373	245275
33	Lockwasher	14 •	419010	419011	419011		55 mm	1	.....	244374	245276
34	Backstop Cover	1	243560	244493	245547		60 mm	1	.....	.....	245277
38	Backstop Cover Screw	4	416524	411035	411406		65 mm	1	.....	.....	245278
39	Lockwasher	4	419007	419009	419009		70 mm	1	.....	.....	245279
40*	Input Shaft 9:1 Ratio with Pinion	1	264713	264717	264721	86	Δ Bushing Screw	6	411407	411408	411435
	15:1 Ratio	1	264714	264718	264722	88	Δ Lockwasher	6	419011	419011	419012
	25:1 Ratio	1	264715	264719	264723		38 mm Bore	1	243395	.....	.....
44*	Input Shaft Brg. Cone	1	402204	402280	402144		40 mm Bore	1	243395	.....	.....
45*	(Input Side) Cup	1	403139	403027	403104		42 mm Bore	1	243396	244360	.....
46*	Input Shaft Brg. Cone	1	402273	402142	402266		45 mm Bore	1	243397	244361	.....
47*	(Backstop Side) Cup	1	403094	403102	403073	90	to Shaft	1	243398	244362	.....
							50 mm Bore	1	243398	244363	245395
							55 mm Bore	1	243399	244364	245396
							60 mm Bore	1	.....	.....	245397
							63 mm Bore	1	.....	.....	245398
							70 mm Bore	1	.....	.....	245399
							75 mm Bore	1	.....	.....	.....
							Δ Key, Bushing to Output Hub	1	443262	.....	433202
48	COUNTER-SHAFT ASSEMBLY* 9:1 Ratio	1	389729	389730	389731		TORQUE-ARM ASS'Y*	1	243097	245097	245097
	15:1 Ratio	1	389700	389707	389714	94	Δ Rod End	1	243245	245245	245245
	25:1 Ratio	1	389701	389708	389715	96	Δ Hex Nut	1	407095	407097	407097
	Δ Countershaft with Pinion	1	243555	244590	245596	98	Δ Turnbuckle	1	243246	245246	245246
50*	Δ First Reduction 9:1 Ratio	1	243482	244482	245482	100	Δ Extension	1	243247	245247	245247
	15:1 Ratio	1	243214	244214	245214	102	Δ L.H. Hex Nut	1	407244	407246	407246
	25:1 Ratio	1	243212	244212	245212	104	Δ Fulcrum	1	243249	246249	246249
52*	Δ Key	1	243215	244215	244215	106	Δ Fulcrum Screw	1	411484	411484	411484
						110	Δ Hex Nut	1	407093	407093	407093
54*	Countershaft Brg. Cone	1	402273	402000	402203		ADAPTER ASSEMBLY*	1	259153	259154	259155
55*	(Input Side) Cup	1	403094	403000	403027	112	Δ R.H. Adapter Plate	1	243242	244244	245242
56*	Countershaft Brg. Cone	1	402273	402000	402203	114	Δ L.H. Adapter Plate	1	243241	244243	245241
57*	(Backstop Side) Cup	1	403094	403000	403027	116	Δ Adapter Bushing	1	243243	245243	245243
56	Countershaft Brg. Cover (Input Side)	1	243545	244578	245594	118	Δ Adapter Bolt	1	411437	411460	411460
59*	Countershaft Brg. Shim Pack	2 ‡	389705	389712	389718	120	Δ Lockwasher	1	419012	419013	419013
						122	Δ Hex Nut	1	407089	407091	407091
60*	OUTPUT HUB ASSEMBLY*	1	389703	389710	389717						
62*	Δ Output Hub	1	243556	244588	245590						
64*	Δ Output Gear	1	243570	244188	245186						
	Δ Output Gear Key	2	243216	244217	355064						
72	Bushing Back-up Plate	2	243308	244099	245114						
74	Retaining Ring	2	421109	421108	421107						

* Includes parts listed immediately below marked "Δ." Housing assembly also includes a two-piece housing. Bushing assemblies include 2 bushings.

Δ Parts marked "Δ" make-up the assemblies under which they are listed.

❖ Not shown on drawing.

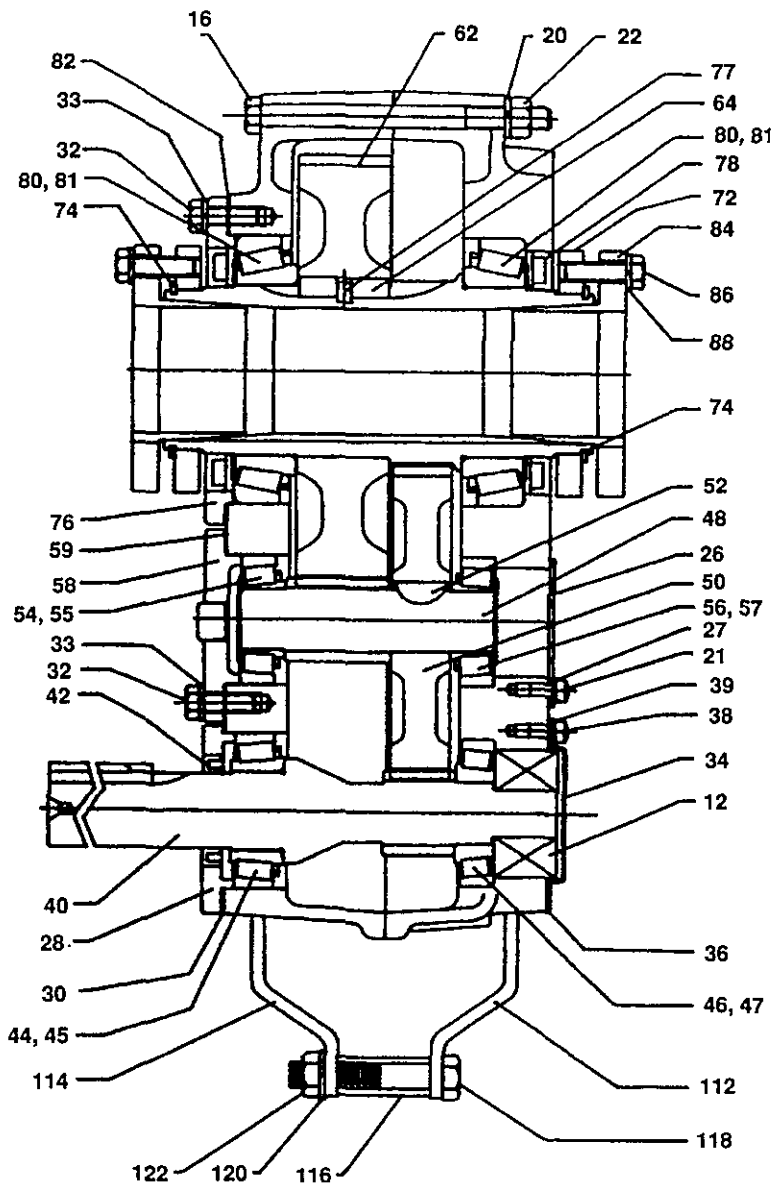
• 15 required on TXT

Ref. #19 is listed but not shown on parts drawing. Washer is used on housing bolts at the dowel pin locations.

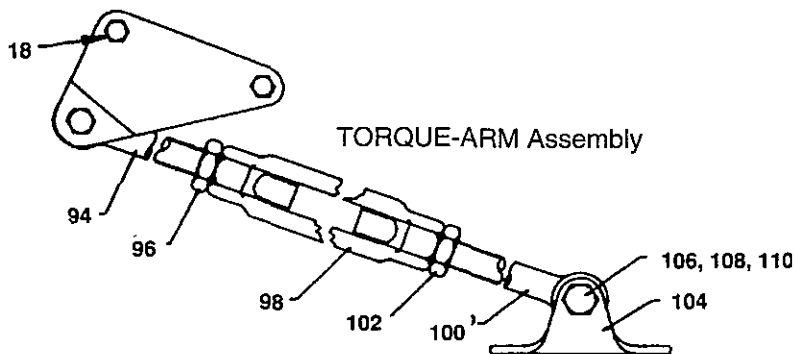
‡ One set consists of one each of the shims listed immediately below marked "‡."

† See last paragraph under "ORDERING PARTS."

* Recommended spare parts.



Taper Bushed



Note: The two-digit numbers are for reference only. Order parts by the six-digit numbers in the Parts List. Each six-digit number is a complete identification of the part or assembly.

PARTS FOR TXTM6 AND TXTM7 TAPER-BUSHED SPEED REDUCERS

Reference	Name of Part	No. Req'd.	TXTM6 Part No.	TXTM7 Part No.	Reference	Name of Part	No. Req'd.	TXTM6 Part No.	TXTM7 Part No.
12	Backstop Assembly	1	246092	247260	76	Output Hub Seal Carrier (Input Side)	1	246187	247315
14	HOUSING	1	246170	247180	77	Output Hub Seal Carrier (Backstop Side)	1	246186	247315
16	Air Vent	1	245237	390061	80*	Output Hub Cone	2	402050	402058
18	Housing Bolt	6	411466	411498	81*	Bearing Cup	2	403140	403111
19	Adapter Housing Bolt	2	411468	411499	82*	Output Hub Bearing Shim Pack	2 ±	391187	390444
20	Washer	2	419096	419082		SEAL KIT* *	1	246340	247345
22	Lockwasher	8	419013	419016	36*	Δ Backstop Cover Gasket	1	246220	246220
24	Hex Nut	8	407091	407095	42*	Δ Input Shaft Seal	1	242210	242210
	Dowel Pin	2	420112	420128	78*	Δ Output Hub Seal	2	246310	247310
	Pipe Plug	2	430033	430035		+ RTV Sealant, Tube	1	465044	465044
25	Magnetic Plug	1	430062	430064		60 mm Bore	1	246490	
26	Countershaft Bearing Cover (Backstop Side)	1	244224	355060		65 mm Bore	1	246491	
28	Input Shaft Seal Carrier	1	246184	247320		70 mm Bore	1	246492	
30*	Input Shaft Bearing Shim Pack	2 ±	391164	390420		75 mm Bore	1	246493	
32	Carrier and Cover Screws	•	411408	411433	84	BUSHING ASSEMBLY*	1	246494	247490
33	Lockwasher	•	419011	419012		80 mm Bore	1	246495	247491
34	Backstop Cover	1	246221	247221		85 mm Bore	1	.....	247492
38	Backstop Cover Screw	6	411404	411402		90 mm Bore	1	.....	247493
39	Lockwasher	6	419009	419009		95 mm Bore	1	.....	247494
40*	Input Shaft with Pinion	9:1 Ratio 1 15:1 Ratio 1 25:1 Ratio 1	264935 264933 264934	264939 264937 264938	86	Δ Bushing Screw	6	411435	411456
44*	Input Shaft Brg. (Input Side)	Cone 1 Cup 1	402196 409091	402150 403096	88	Δ Lockwasher	6	419012	419013
46*	Input Shaft Brg. (Backstop Side)	Cone 1 Cup 1	402197 408091	402088 403047	90	Δ Key, Bushing to Shaft	60 mm Bore 1 65 mm Bore 1 70 mm Bore 1 75 mm Bore 1 80 mm Bore 1 85 mm Bore 1 90 mm Bore 1 95 mm Bore 1 100 mm bore 1	246361 246361 246362 246363 246364 246365 ..... ..... .....	..... ..... ..... ..... 247361 247362 247363 247364 247365
48	COUNTERSHAFT ASSEMBLY*	9:1 Ratio 1 15:1 Ratio 1 25:1 Ratio 1	392140 391171 891186	392141 391196 891197		Δ Key, Bushing to Output Hub	60 mm thru 1 63 mm Bore 1	443212	.....
50*	Δ Countershaft with Pinion	9:1 Ratio 1	246294	247002					
	Δ First Reduction Gear	9:1 Ratio 1 15:1 Ratio 1 25:1 Ratio 1	246482 246292 246293	247478 247008 247005					
x 52*	Δ Key	2	245218	247218					
54*	Countershaft Brg. (Input Side)	Cone 1 Cup 1	402054 403159	402256 403053	94	TORQUE-ARM ASSEMBLY*	1	246097	247098
56*	Countershaft Brg. (Backstop Side)	Cone 1 Cup 1	402052 403142	402256 403053	96	Δ Rod End	1	245245	247239
57*	Countershaft Brg. Cover (Input Side)	1			98	Δ Hex Nut	1	407097	407099
58*	Countershaft Brg. Shim Pack	1	246185	247194	100	Δ Turnbuckle	1	245246	247246
59*	Countershaft Brg. Shim Pack	2±	391165	390429		Δ Extension	1	245247	247240
	OUTPUT HUB ASSEMBLY*	1	390935	390941	102	Δ L.H. Hex Nut	1	407246	407248
60*	Δ Output Hub	1	246269	272137	104	Δ Fulcrum	1	247248	247248
62*	Δ Output Gear	1	246295	247215	106	Δ Fulcrum Screw	1	411489	411489
64*	Δ Output Gear Key	2	245217	245217	108	Δ Lockwasher	1	419014	419014
66*	Δ Output Hub Snap Ring	1	421033	421038	110	Δ Hex Nut	1	407093	407093
72	Bushing Back-up Plate	2	246270	272138	112	ADAPTER ASSEMBLY*	1	259156	259157
74	Retaining Ring	2	421055	421099	114	Δ R.H. Adapter Plate	1	246242	247242
					116	Δ L.H. Adapter Plate	1	246241	247241
					118	Δ Adapter Bushing	1	245243	247244
					120	Δ Adapter Bolt	1	411460	411489
					122	Δ Lockwasher	1	419013	419014
						Δ Hex Nut	1	407091	407093

* Includes parts listed immediately below marked "Δ." TXM6 and TXM7 housing assembly also includes a two-piece housing. Bushing assemblies include 2 bushings.

Δ Parts marked "Δ" make up the assemblies under which they are listed.

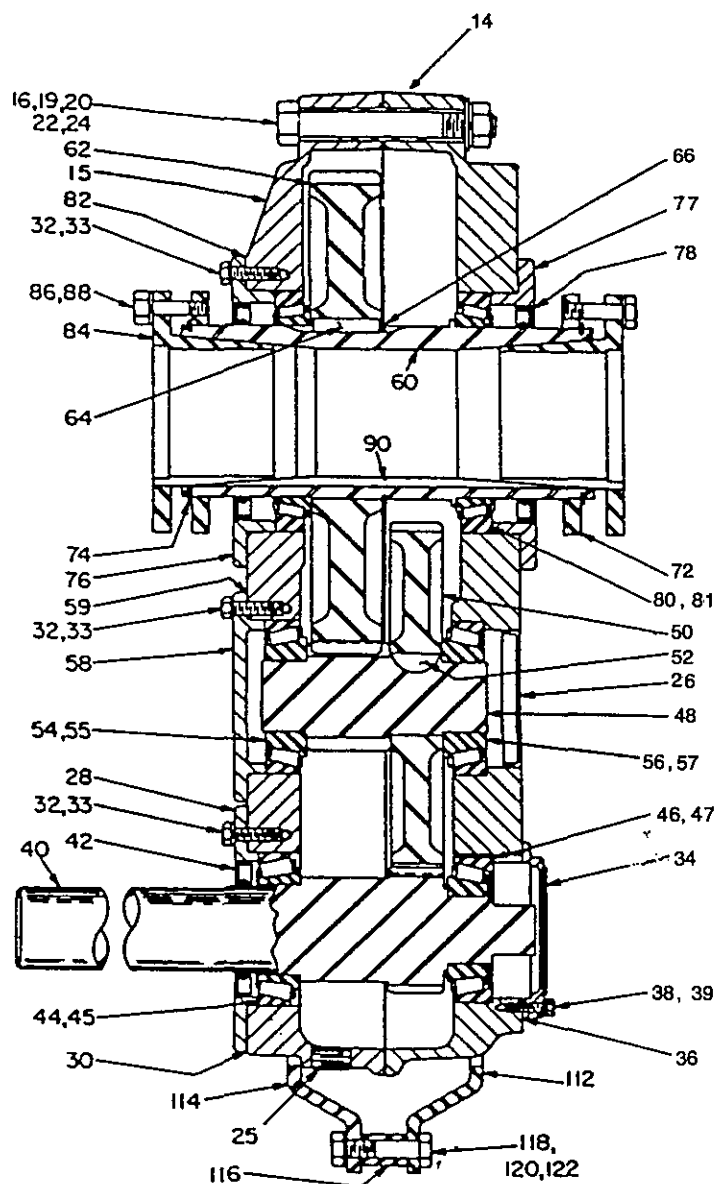
x 1 required on TXM7.

‡ One set consists of one each of the shims listed immediately below marked "†."

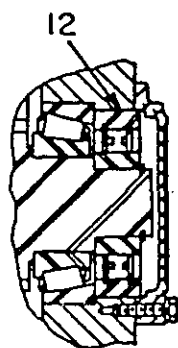
† See last paragraph under "ORDERING PARTS."

+ 24 required on TXM6; 28 required on TXM7.

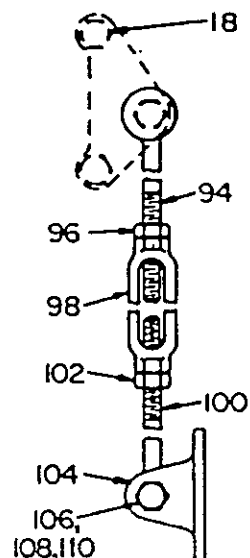
* Recommended spare parts.



Note: The two-digit numbers are for reference only. Order parts by the six-digit numbers in the Parts List. Each six-digit number is a complete identification of the part or assembly.



Backstop Assembly



TORQUE-ARM Assembly

PARTS FOR TXTM8 THRU TXTM10 TAPER-BUSHED SPEED REDUCERS

Reference	Name of Part	No. Req'd.	TXTM8 Part No.	TXTM9 Part No.	TXTM10 Part No.	Reference	Name of Part	No. Req'd.	TXTM8 Part No.	TXTM9 Part No.	TXTM10 Part No.
12	Backstop Assembly	1	249260	249260	250260		OUTPUT HUB ASSEMBLY*	1	390944	390949	390954
14	HOUSING	1	248180	249180	250174	62*	Δ Output Hub	1	272036	272081	272241
	Air vent with Bushing	1	390061	390061	390061	63*	Δ Output Gear	1	248215	249007	250007
16	Housing Bolt	◇	411499	411500	411502	64*	Δ Output Gear Key & Roll Pin	2	390112	390112	390113
18	Housing Bolt—Adapter	2	411502	411502	411504						
20	Lockwasher	■	419016	419016	419016	72	Bushing Back-up Plate	2	272037	272082	272242
22	Plain Washer	2	419082	419082	419082	74	Retaining Ring	2	421098	421097	421069
24	Hex Nut	■	407095	407095	407095		Output Hub Seal Carrier—				
26	Dowel Pin	2	420128	420128	420132	77	Input Side	1	258021	249221	250011
	Pipe Plug	+	430035	430035	430035	78	Backstop Side	1	258020	249220	250011
	Magnetic Plug	1	430064	430064	430064		Output Hub Bearing				
29	Input Shaft Seal Carrier	1	258023	249211	249211	80*	Cone	2	402147	402160	402168
30*	Input Shaft Brg. Shim Pack	2 Sets ‡	390038	390168	390168	81*	Cup	2	403105	403110	403116
31	Backstop Carrier	1	258022	249222	250022	82*	Output Hub Shim Pack	2 Sets ‡	390048	390171	390172
32	Backstop Carrier Gasket	1	.....	248216	248216		SEAL KIT**	1	248340	249340	272460
33	Carrier and Cover Screws	48	411408	411408	411408	36*	Δ Backstop Cover Gasket	1	248220	248220	248220
34	Lockwasher	48	419011	419011	419011	42*	Δ Input Shaft Seal	1	248211	248211	248211
35	Backstop Cover	1	248221	248221	248221	76*	Δ Output Hub Seal	2	258019	249210	250010
37	Backstop Cover Screw	6	411402	411402	411402		RTV Sealant, Tube	2	465044	465044	465044
38	Lockwasher	6	419009	419009	419009						
40*	Input Shaft 15:1 Ratio with Pinion § Ratio	1	264941	264944	264946		90 mm Bore	1	248490	.....	.....
	Input Shaft Bearing—	1	264942	264945	264947	84	BUSHING ASS'Y ■	1	248491	.....	.....
	Input Side						100 mm Bore	1	248492	.....	.....
44*	Cone	1	402098	402114	402114		110 mm Bore	1	248493	249490	.....
45*	Cup	1	403072	403080	403080		120 mm Bore	1	.....	249491	250370
	Input Shaft Bearing—						125 mm Bore	1	.....	249492	250371
	Backstop Side						130 mm Bore	1	.....	.....	250372
46*	Cone	1	402097	402107	402112	86	Δ Bushing Screw	6	411457	411484	411484
47*	Cup	1	403072	403076	403080	88	Δ Lockwasher	6	419013	419014	419014
	COUNTERSHAFT ASSEMBLY* 15:1 Ratio § Ratio	1	391184	390124	390983		90 mm Bore	1	248361	.....	.....
48	Δ Countershaft with Pinion	1	391185	390139	390998		95 mm Bore	1	248362	.....	.....
50*	Δ First Reduction 15:1 Ratio § Ratio	1	248002	249006	272249		100 mm Bore	1	248363	.....	.....
	Δ Gear	1	248213	249008	250301		110 mm Bore	1	248364	249360	.....
52*	Δ Key	2	248214	249005	250005		120 mm Bore	1	.....	249361	250360
			248218	248218	248218		125 mm Bore	1	.....	249362	250360
							130 mm Bore	1	.....	.....	250361
							Δ Key, Bushing to Output Hub	1	443162	443121	443191
54*	Countershaft Bearing—					92	TORQUE ARM ASS'Y*	1	390129	390129	390129
55*	Input Side					94	Δ Rod End	1	271050	271050	271050
	Cone	1	402057	402109	402232	96	Δ Hex Nut	1	407104	407104	407104
	Cup	1	403143	403078	402231	98	Δ Turnbuckle	1	271051	271051	271051
56*	Countershaft Bearing—					100	Δ Extension	1	271052	271052	271052
57*	Backstop Side					102	Δ L.H. Hex Nut	1	407250	407250	407250
	Cone	1	402148	402109	402232	104	Δ Fulcrum	1	271054	271054	271054
	Cup	1	403106	403078	402231	106	Δ Fulcrum Screw	1	411516	411516	411516
58	Countershaft Brg. Cover—					108	Δ Lockwasher	1	419020	419020	419020
59	Input Side	1	248223	249225	272251		Δ Hex Nut	1	407099	407099	407099
	Countershaft Brg. Cover—					110	ADAPTER ASSEMBLY*	1	.....	.....	.....
	Backstop Side	1	248373	249224	250245	112	Δ Adapter Plate	2	272053	249241	250041
60*	Countershaft Bearing Shim Pack—					114	Δ Adapter Bushing	1	271046	271046	271046
	Input Side	Sets ‡	391182	390168	390575	116	Δ Adapter Bolt	1	411510	411512	411512
61*	Countershaft Bearing Shim Pack—					118	Δ Lockwasher	1	419020	419020	419020
	Backstop Side	Sets ‡	390419	390168	390575		Δ Hex Nut	1	407099	407099	407099

* Includes parts listed immediately below marked "Δ." Housing assembly also includes a two-piece housing. Bushing assembly includes 2 bushings.

Δ Parts marked "Δ" make up the assemblies under which they are listed.

§ Ratios are 24:1 on TXTM10; 25:1 on TXTM8; 26:1 on TXTM9.

◇ 9 required for sizes TXTM8 & TXTM9; 11 required for size TXTM10.

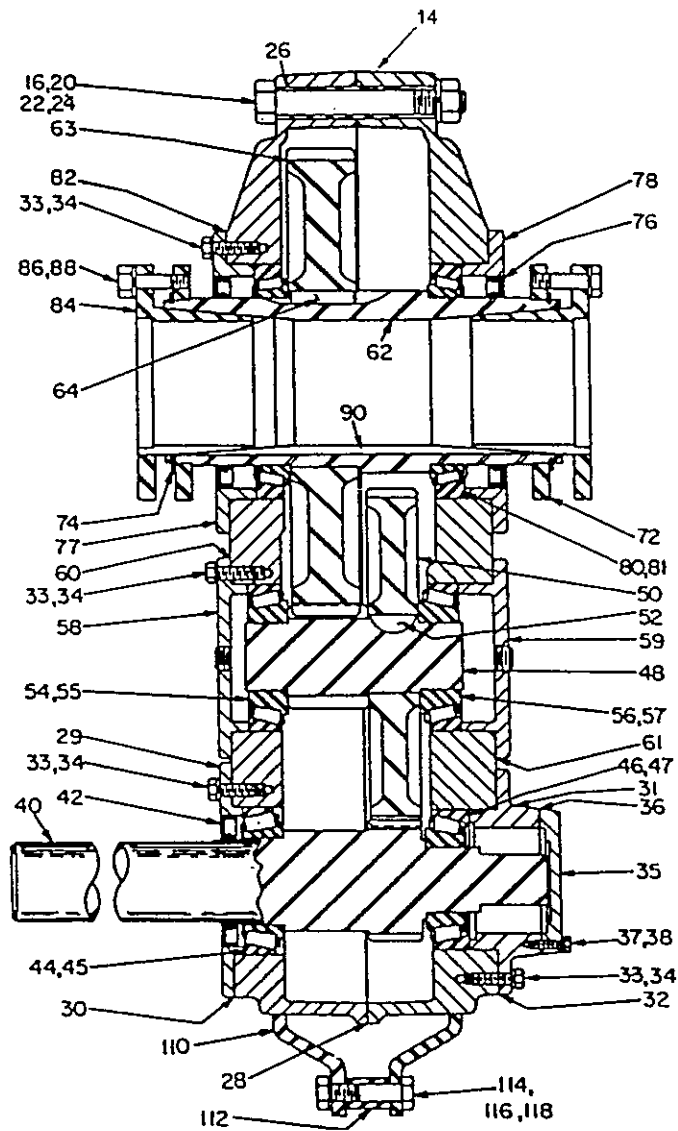
■ 11 required for sizes TXTM8 & TXTM9; 13 required for size TXTM10.

+ 3 required for size TXTM8; 2 required for size TXTM9; 4 required for size TXTM10.

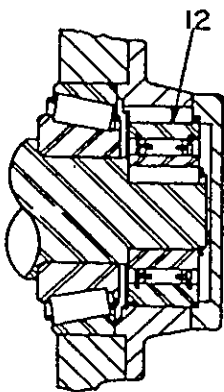
* Recommended spare parts.

‡ One set consists of one each of the shims listed immediately below marked "+."

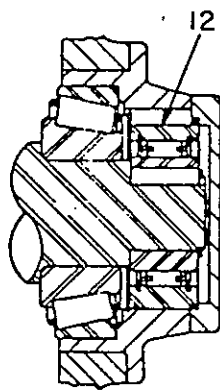
† See last paragraph under "ORDERING PARTS."



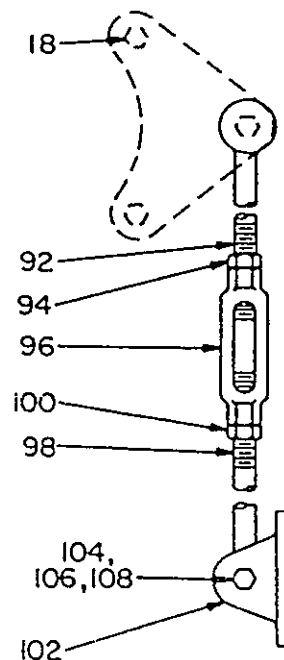
Taper Bushed



TXTM8 & TXTM10



TXTM9



Note: The two-digit numbers are for reference only. Order parts by the six-digit numbers in the Parts List. Each six-digit number is a complete identification of the part or assembly.

Backstop Assembly

PARTS FOR TXTM12 TORQUE-ARM SPEED REDUCERS

Reference	Name of Part	No. Req'd.	TXTM12 Part No	Reference	Name of Part	No. Req'd.	TXTM12 Part No
12	Backstop Assembly	1	250260	74	Countershaft Brg. Cone	4	402127
14	HOUSING	1	252163	76	Countershaft Brg. Cup	4	403089
15	Air Vent	1	271041	78	Countershaft Brg. Spacer	2	272017
16	Housing Bolt	12	411506	80	Countershaft Brg. Cover	4	272016
18	Adapter Housing Bolt	4	411508	84	Cover Plug	4	430035
20	Lockwasher	16	419016	86	Countershaft Bearing Shim Pack	Sets ‡	392151
22	Plain Washer	2	419082		OUTPUT HUB ASSEMBLY *	1	
24	Hex Nut	16	407095	88	Δ Output Hub	1	272220
26	Dowel Pin	2	420132	90	Δ Output Gear	1	272007
30	Pipe Plug	■	430035	92	Δ Gear Key & Roll Pin	3	
32	Magnetic Plug	1	430064	94	Bushing Back-up Plate	2	272221
34	Input Shaft Seal Carrier	1	272019	96	Retaining Ring	2	421053
38	Input Shaft Bearing Shim Pack	2 Sets ‡	392150	98	BUSHING 150 mm Bore	1	272670
40	Backstop Carrier	1	264948		ASSEMBLY * 160 mm Bore	1	272671
42	Carrier & Cover Screw	16	411483	100	Δ Key (Bushing 150 mm Bore to Shaft) 160 mm Bore	1	252170
43	Countershaft Cover Screw	32	411483	102	Δ Bushing Screw	8	411485
44	Lockwasher	48	419014	104	Δ Lockwasher	8	419014
46	Backstop Cover	1	248221	106	Output Hub Seal	2	272010
48	Cover Gasket	1	248220	110	Output Hub Seal Carrier	2	272014
50	Backstop Cover Cap Screw	1	411402	114	Carrier Screw	16	411493
52	Lockwasher	6	419009	116	Lockwasher	16	419016
	Input Shaft & Pinion Assembly 15:1 Ratio *	1	272690	118	Output Hub Brg.—Cone	2	402039
54	Δ Input Shaft	1	264948	120	Output Hub Brg.—Cup	2	403119
56	Δ Input Pinion	1	272212	122	Output Hub Brg.—Spacer	1	272012
	Input Shaft & Pinion Assembly 25:1 Ratio *	1	272691	124	Output Hub Bearing Shim Pack	◇ Sets ‡	392152
	Δ Input Shaft	1	264948				
	Δ Input Pinion	1	272003	126	Rod End	1	272050
58	Input Seal	1	272211	128	Hex Nut	1	407108
63	Input Shaft Brg. Cone—Input End	1	402125	130	Turnbuckle	1	272051
64	Input Shaft Brg. Cone—B'Stop End	1	402125	132	Extension	1	272052
66	Input Shaft Brg. Cup	2	403087	134	L.H. Hex Nut	1	407251
	COUNTERSHAFT ASSEMBLY Left Hand Spiral * 15:1 Ratio	1	❖	136	Fulcrum	1	272054
68	Δ Countershaft with Pinion	1	272006	138	Fulcrum Screw	1	411524
70	Δ L.H. 1st Reduction Gear	1	272026		ADAPTER ASSEMBLY *	1	.....
	15:1 Ratio	1	272005	140	Δ Adapter Plate	2	272049
	25:1 Ratio	1	248218	142	Δ Adapter Bushing	1	272046
72	Δ Key	2		144	Δ Adapter Bolt	1	411520
	COUNTERSHAFT ASSEMBLY Right Hand Spiral *			146	Δ Lockwasher	2	419024
	15:1 Ratio	1	❖	148	Δ Hex Nut	2	407104
	25:1 Ratio	1	❖				
68	Δ Countershaft with Pinion	1	272006				
71	Δ R.H. 1st Reduction Gear	1	272028				
	15:1 Ratio	1	272011				
72	Δ Key	2	248218				

★ Includes parts listed immediately below marked "Δ." Housing assembly also includes a two-piece bushing. Bushing assemblies include 2 bushings.

Δ Parts marked "Δ" make up the assemblies under which they are listed. Housing assembly also includes a two-piece housing.

■ 2 required on TXM12.

‡ One set consists of one each of the shims listed immediately below marked "‡."

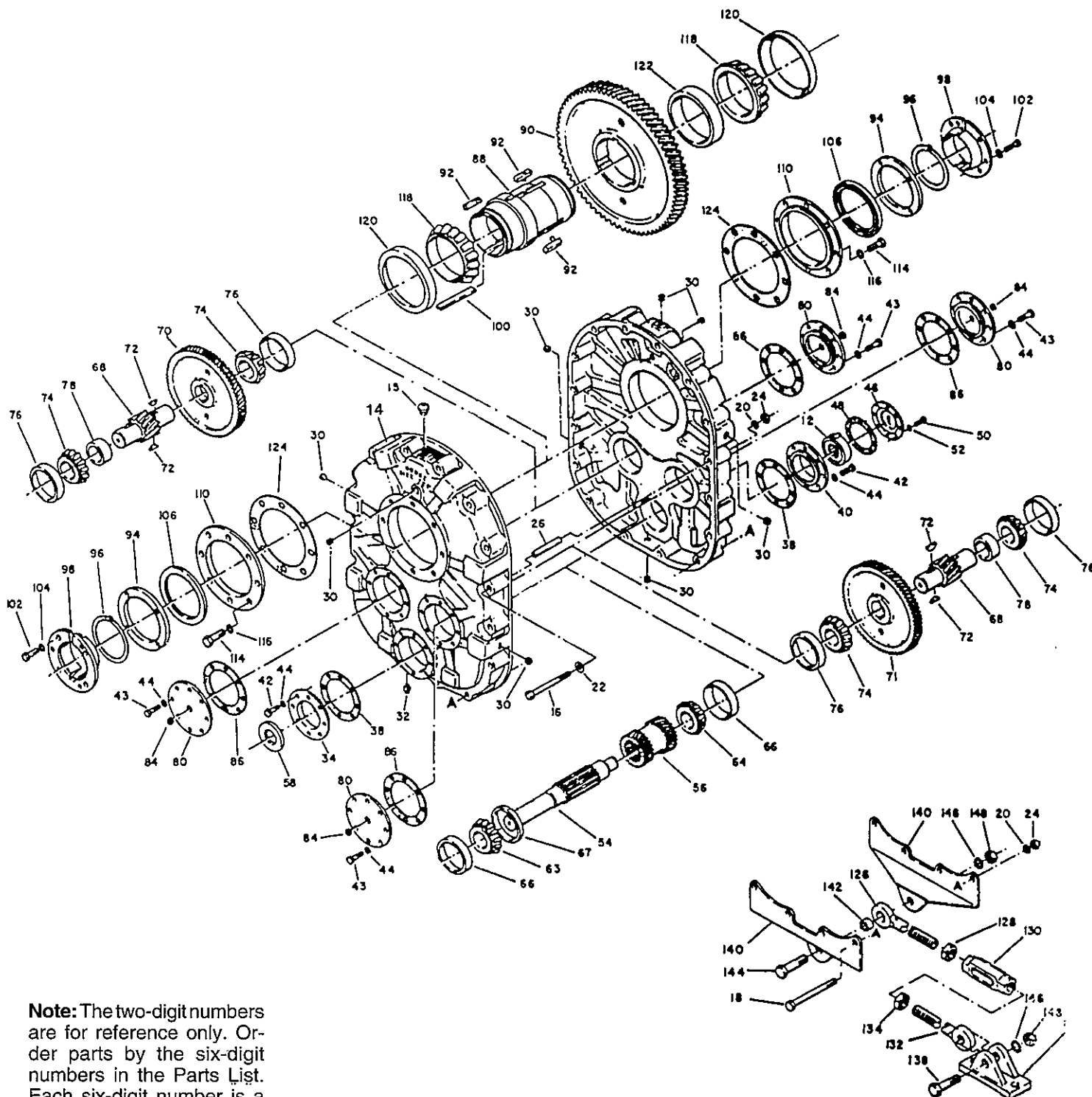
† See last paragraph under "ORDERING PARTS."

❖ Use reference number when ordering giving complete part identification.

4 sets required on TXM12.

◇ 2 sets required on TXM12.

* Recommended spare parts.



Note: The two-digit numbers are for reference only. Order parts by the six-digit numbers in the Parts List. Each six-digit number is a complete identification of the part or assembly.

PARTS FOR TXTM105 THRU TXTM205 TAPER-BUSHED SPEED REDUCERS

Reference	Name of Part	No. Req'd.	TXTM105 Part No.	TXTM205 Part No.	Refer- ence	Name of Part	No. Req'd.	TXTM105 Part No.	TXTM205 Part No.
12	Backstop Assembly	1	242101	252101		BEARING KIT *	1	389910	389911
14	Housing	1	241186	242194	40	Δ Input Shaft Brg. (Input)	1	424076	424078
❖	Air Vent	1	241237	241237	42	Δ Input Shaft Brg. (Backstop)	1	424012	424000
16	Housing Bolt	†	411418	411418	62	Δ Output Hub Bearing	2	424020	424022
18	Adaptor— Housing Bolt	2	411420	411420	72	Δ Bushing Screw	6	411390	411390
20	Lockwasher	‡	419011	419011	74	Δ Lockwasher	6	419010	419010
22	Hex Nut	‡	407087	407087			25 mm	1	241360
24	Dowel Pin	2	420092	420091			30 mm	1	241361
❖	Pipe Plug	2	430031	430031			32 mm	1	241362
❖	Magnetic Plug	1	430060	430060			35 mm	1	241363
25	Washer	4	419092	419204			38 mm	1	.....
26	Backstop Cover	1	242221	243221	76	Δ Key, Bushing to Shaft	40 mm	1	.....
30	Backstop Cover Screw	4	415022	415022			42 mm	1	.....
❖	Lockwasher	4	.....	.....			45 mm	1	.....
36*	Input Shaft with Pinion	1	264916	264920			50 mm	1	.....
	OUTPUT HUB ASSEMBLY *						55 mm	1	.....
55*	Taper-Bushed Δ Output Hub (Taper-Bushed)	1	390878	392111	❖	Δ Key, Bushing to Output Hub	60 mm	1	.....
56*	Δ Output Gear	1	241265	264748	❖	Δ Key, Bushing to Output Hub	65 mm	1	.....
58*	Δ Output Gear Key	1	241217	443399			70 mm	1	.....
60*	Δ Output Hub Snap Ring	2	421013	421017		TORQUE-ARM ASSEMBLY *	1	241097	243097
68	Bushing Back-up Plate	2	241266	242017	80	Δ Rod End	1	241245	243245
69	Retaining Ring	2	421111	421112	82	Δ Hex Nut	1	407093	407095
					84	Δ Turnbuckle	1	241246	243246
					86	Δ Extension	1	241247	243247
					88	Δ L.H. Hex Nut	1	407242	407244
					90	Δ Fulcrum	1	241249	242249
					92	Δ Fulcrum Screw	1	411456	411484
					94	Δ Hex Nut	1	407091	407093
70	BUSHING ASSEMBLY *					ADAPTER ASSEMBLY *	1	259151	259152
	25 mm	1	241370	.....	96	Δ R.H. Adapter Plate	1	241242	242136
	30 mm	1	241371	.....	98	Δ L.H. Adapter Plate	1	241241	242135
	32 mm	1	241372	242370	100	Δ Adapter Bushing	1	242243	243243
	35 mm	1	241373	242371	102	Δ Adapter Bolt	1	411412	411437
	38 mm	1	.....	242372	104	Δ Lockwasher	1	419011	419012
	40 mm	1	.....	242373	106	Δ Hex Nut	1	407087	407089
	42 mm	1	.....	242374					
	45 mm	1	.....	242375					
	50 mm	1	.....	242376					
	55 mm	1	.....	.....			
	60 mm	1	.....	.....			
	65 mm	1	.....	.....			
	70 mm	1	.....	.....			
	SEAL KIT *	1	272700	272701					
28	Δ Backstop Cover Gasket	1	242220	243220					
38	Δ Input Seal	1	242211	244211					
64	Δ Output Seal	2	241210	242210					

★ Includes parts listed immediately below marked "Δ." TXM105 also includes a two-piece housing. Bushing assembly includes 2 bushings.

Δ Parts marked "Δ" make up the assemblies under which they are listed.

❖ Not shown on drawing.

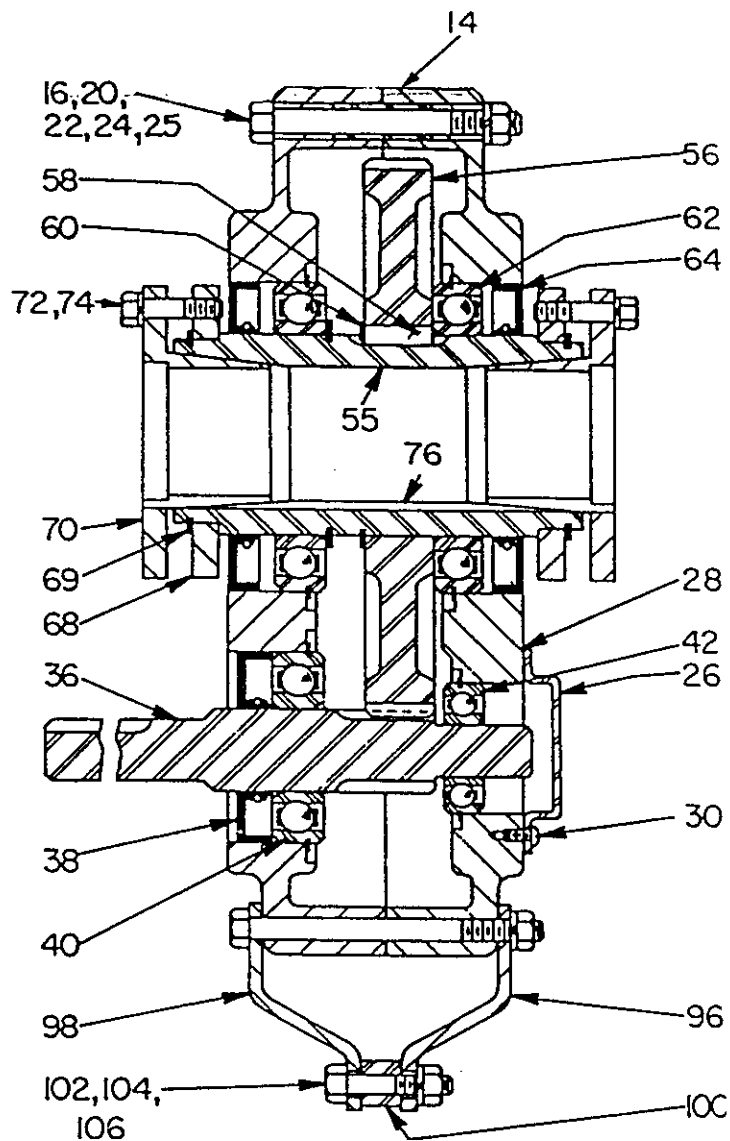
† 4 required on TXM105; 5 required on TXTM205.

± 6 required on TXM105; 7 required on TXTM205.

* Recommended spare parts.

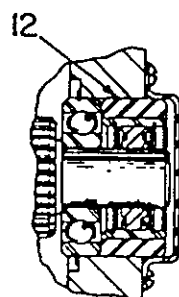
B On size TXTM105 for 25 mm Code.

λ On size TXTM105 for 30 mm Code; TXTM405 for 50 mm.

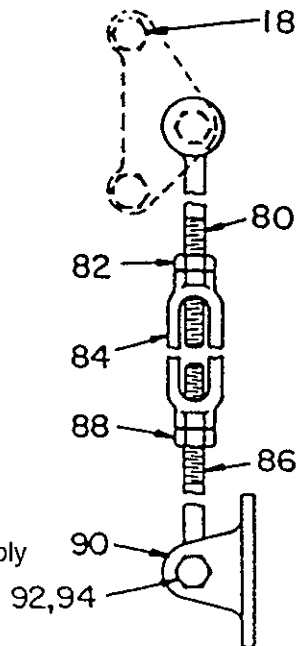


Taper Bushed

Note: The two-digit numbers are for reference only. Order parts by the six-digit numbers in the Parts List. Each six-digit number is a complete identification of the part or assembly.



Backstop Assembly



TORQUE-ARM Assembly

PARTS FOR TXTM305A THRU TXTM505A TAPER-BUSHED SPEED REDUCERS

Reference	Name of Part	No. Req'd	TXTM305A Part No.	TXTM405A Part No.	TXTM505A Part No.	Reference	Name of Part	No. Req'd	TXTM305A Part No.	TXTM405A Part No.	TXTM505A Part No.
12	Backstop Assembly	1	252101	244148	245154	❖	RTV Sealant, Tube	1	465044	465044	465044
16 18 19#	HOUSING	1	253165	254218	255216	84	BUSHING ASSEMBLY *	38 mm	1	243486	.....
	Air Vent	1	241237	241237	245237			40 mm	1	243487	.....
	Housing Bolt	6	411440	411442	411464			42 mm	1	243488	244370
	Adapter Housing Bolt	2	411442	411444	411466			45 mm	1	243489	244371
	Washer	4	419094	419094	419096			50 mm	1	243490	244372
Lockwasher	6	419012	419012	419013	55 mm			1	243491	244373	
Hex Nut	8	407089	407089	407091	60 mm			1	.....	244374	
Dowel Pin	2	420055	420055	420110	65 mm			1	.....	.....
❖	Pipe Plug	2	430031	430031	430033	70 mm	1	.....	.....
❖	Magnetic Plug	1	430060	430060	430062	75 mm	1	.....	.....
28	Input Shaft Seal Carrier	1	253177	254224	255224	86	Δ Bushing Screw	6	411408	411410	411435
30*	Input Shaft Brg. Shim Pack	2 ±	389723	389724	389725	88	Δ Lockwasher	6	419011	419011	419012
32	Carrier and Cover Screws	10	411390	411407	411407	90	Δ Key, Bushing to Shaft	38 mm	1	243395	.....
33	Lockwasher	10	419010	419011	419011			40 mm	1	243395	.....
34	Backstop Cover	1	253175	254223	255019			42 mm	1	243396	244360
38	Backstop Cover Screw	6	416524	411035	411406			45 mm	1	243397	244361
39	Lockwasher	6	419007	419009	419009			50 mm	1	243398	244362
40*	Input Shaft with Pinion	1	264712	264716	264720			55 mm	1	243399	244363
44*	Input Shaft Brg. Cone	1	402190	402179	402270			60 mm	1	.....	244364
45*	(Input Side) Cup	1	403132	403006	403026			65 mm	1	.....	.....
46*	Input Shaft Brg. Cone	1	402271	402285	402266	70 mm	1	.....	.....
47*	(Backstop Side) Cup	1	403101	403125	403073	75 mm	1	.....	.....
60*	OUTPUT HUB ASSEMBLY *					94 96 98 100	TORQUE-ARM ASSEMBLY *		1†	433262	443257
	Taper Bushed Δ Output Hub	1	389703	389710	389717				1	243097	245097
	Taper Bushed Δ Output Gear	1	243556	244588	245590				1	243245	245245
	Δ Output Gear Key	2	243216	244217	355064				1	407095	407097
72	Bushing Back-up Plate	2	243308	244099	245114	102 104 106 110	Δ Extension		1	243246	245246
74	Retaining Ring	2	421109	421108	421107				1	243247	245247
76	Output Hub Seal Carrier (Input Side)	1	243547	244591	245592				1	407244	407246
77	Roll Pin	1	409022	409022	409022				1	243249	246249
80*	Output Hub Cone	2	402272	402268	402193	112 114 116 118 120 122	ADAPTER ASSEMBLY *		1	411484	411484
81*	Bearing Cup	2	403127	403163	403016				1	407093	407093
82*	Output Hub Brg. Shim Pack	2 ±	389706	389713	389719				1	259153	259154
36*	SEAL KIT * *	1	389726	389727	389728				1	243242	244244
42*	Backstop Cover Gasket	1	253176	254221	255020			1	243241	244243	
78*	Input Shaft Seal	1	351123	355011	245546			1	243243	245243	
	Output Hub Seal	2	243578	244673	245545			1	411437	411460	
								1	419012	419013	
								1	407089	407091	

* Includes parts listed immediately below marked "Δ." Housing assembly also includes a two-piece housing. Bushing assemblies include 2 bushings.

Δ Parts marked "Δ" make up the assemblies under which they are listed.

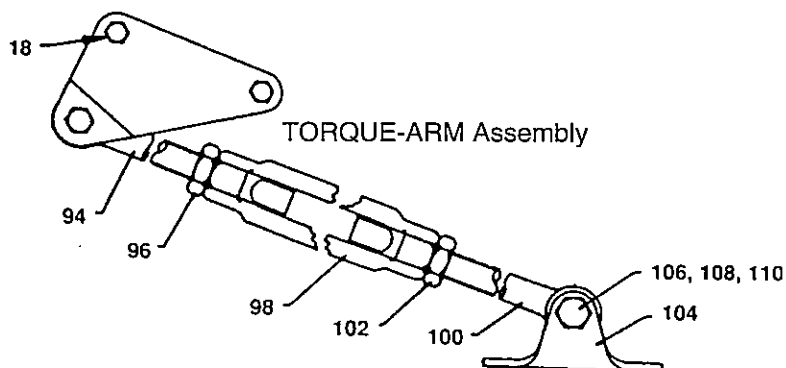
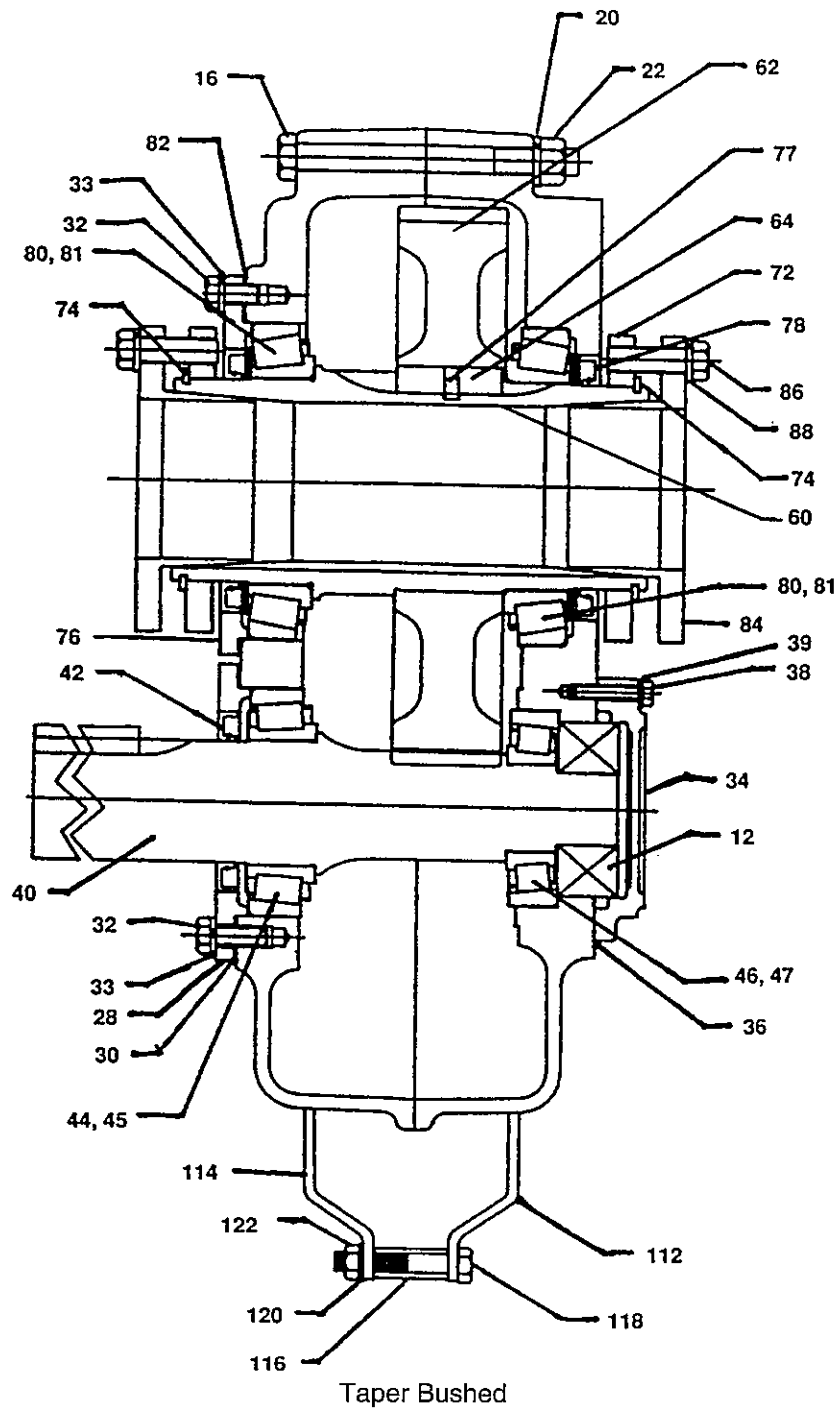
❖ Not shown on drawing.

Ref. #19 is listed but not shown on parts drawing. Washer is used on housing bolts at the dowel pin locations.

‡ One set consists of one each of the shims listed immediately below marked "‡."

† See last paragraph under "ORDERING PARTS."

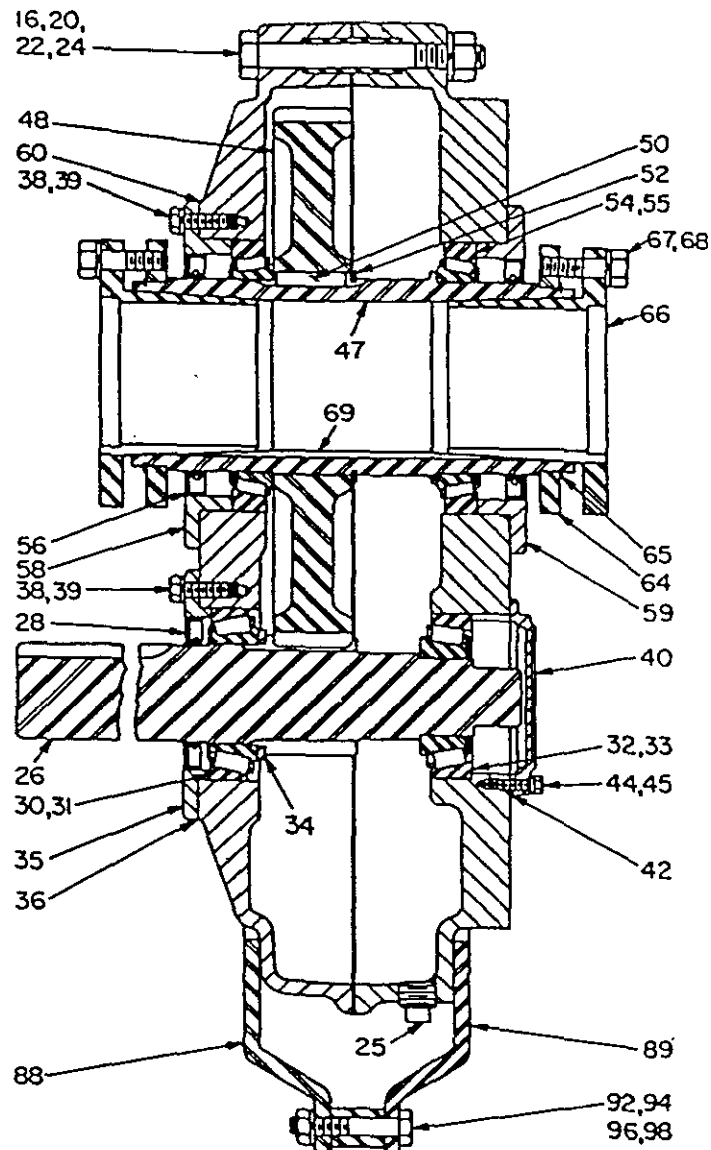
* Recommended spare parts.



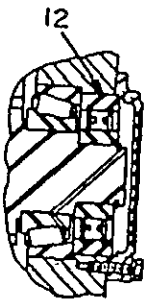
Note: The two-digit numbers are for reference only. Order parts by the six-digit numbers in the Parts List. Each six-digit number is a complete identification of the part or assembly.

Reference	Name of Part	No. Req'd.	TXTM605 Part No.	TXTM705 Part No.	Reference	Name of Part	No. Req'd.	TXTM605 Part No.	TXTM705 Part No.	
12	Backstop Assembly	1	246092	247260		SEAL KIT *	1	272705	247345	
14	HOUSING	1	246174	247184	28	Δ Input Shaft Seal	1	256032	242210	
❖	Air Vent	1	245237	390061	42	Δ Backstop Cover Gasket	1	246220	246220	
16	Housing Bolt	6	411466	411498	56	Δ Output Hub Seal	2	246310	247310	
18	Adapter Housing Bolt	2	411468	411499						
❖	Washer	2	419096	419082						
20	Lockwasher	8	419013	419016						
22	Hex Nut	8	407091	407095						
24	Dowel Pin	2	420112	420128	66	BUSHING ASSEMBLY *	60 mm	1	246490
❖	Pipe Plug	2	430033	430035			65 mm	1	246491
25	Magnetic Plug	1	430062	430064			70 mm	1	246492
26*	Input Shaft with Pinion	1	264936	264940			75 mm	1	246493
	Input Shaft Bearing—Input Side						80 mm	1	246494	247490
30*	Cone	1	402053	402057	67	Δ Bushing Screw	6	411435	411456	
31*	Cup	1	403106	403143	68	Δ Lockwasher	6	419012	419013	
	Input Shaft Bearing—Backstop Side									
32*	Cone	1	402123	402078			60 mm	1	246361
33*	Cup	1	403009	403034			65 mm	1	246361
34*	Input Bearing Spacer—Input side	1	256030	69	Δ Key, Bushing to Shaft	70 mm	1	246762
35	Input Shaft Seal Carrier	1	246184	257045			75 mm	1	246363
36*	Input Shaft Bearing Shim Pack	2 Sets ±	391164	390420			80 mm	1	246364	247361
38	Carrier Screw	■	411408	411433			85 mm	1	246365	247362
39	Lockwasher	■	419011	419012			90 mm	1	247363
40	Backstop Cover	1	246221	247221			95 mm	1	247364
44	Backstop Cover Screw	6	411404	411402			100 mm	1	247365
45	Lockwasher	6	419009	419009			Δ Key, Bushing to Output Hub 60 mm thru 65 mm Bore	1	443212
	OUTPUT HUB ASSEMBLY *				70	TORQUE-ARM ASSEMBLY *	1	246097	247098	
46*	Taper-Bushed	1	390935	390941	72	Δ Rod End	1	245245	247239	
47*	Δ Output Hub (Taper-Bushed)	1	246269	272137	74	Δ Hex Nut	1	407097	407099	
48*	Δ Output Gear	1	246295	247215	76	Δ Turnbuckle	1	245246	247246	
50*	Δ Output Gear Key	2	245217	245217			1	245247	247240	
52*	Δ Output Hub Snap Ring	1	421033	421038	78	Δ L.H. Hex Nut	1	407246	407248	
❖	Output Hub Key ♂ (Max. Bore)	1	443135	443147	80	Δ Fulcrum	1	247248	247248	
	Output Hub Bearing				82	Δ Fulcrum Bolt	1	411489	411489	
54*	Cone	2	402050	402058	84	Δ Lockwasher	1	419014	419014	
55*	Cup	2	403140	403111	86	Δ Hex Nut	1	407093	407093	
	Output Hub Seal Carrier—									
58	Input Side	1	246187	247315	88	ADAPTER ASSEMBLY *	1	259159	259157	
59	Backstop Side	1	246186	247315	89	Δ Adapter Plate—R.H.	1	247242	
60*	Output Hub Brg. Shim Pack	2 Sets ±	391187	390444	90	Δ Adapter Plate—L.H.	1	247241	
64	Bushing Back-up Plate	2	246270	272138	92	Δ Adapter Plate Assembly	1	256096	
65	Retaining Ring	2	421055	421099	94	Δ Adapter Bushing	1	245243	247244	
					96	Δ Adapter Bolt	1	411460	411468	
					98	Δ Lockwasher	1	419013	419014	
						Δ Hex Nut	1	407019	407093	

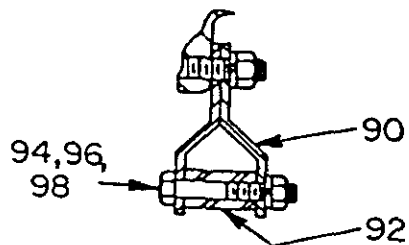
- 18 required on TXM605; 22 required on TXTM705.



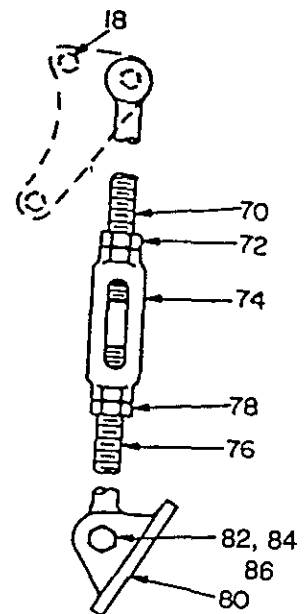
Taper Bushed



Backstop Assembly



Adapter Plate Assembly
(TXTM605 Only)



TORQUE-ARM Assembly

Note: The two-digit numbers are for reference only. Order parts by the six-digit numbers in the Parts List. Each six-digit number is a complete identification of the part or assembly.

PARTS FOR TXTM805 THRU TXTM905 TAPER-BUSHED SPEED REDUCERS

Reference	Name of Part	No. Req'd.	TXTM605 Part No.	TXTM705 Part No.	Reference	Name of Part	No. Req'd.	TXTM605 Part No.	TXTM705 Part No.
12	Backstop Assembly	1	250260	272259	61*	Output Hub Brg. Shim Pack	◇ Set ‡	390048	390171
14	HOUSING	1	248174	249174	64	Bushing Back-up Plate	2	272037	272082
❖	Air Vent with Bushing	1	390061	390061	65	Retaining Ring	+	421098	421097
15	Housing Bolt	9	411499	411499	66	BUSHING ASSEMBLY *	90 mm Bore	1	248490
16	Adapter—Housing Bolt	2	411502	411502			95 mm Bore	1	248491
17	Lockwasher	11	419016	419016			100 mm Bore	1	248492
18	Plain Washer	2	419082	419082			110 mm Bore	1	248493
							120 mm Bore	1	249490
19	Hex Nut	11	407095	407095			125 mm Bore	1	249491
20	Dowel Pin	2	420128	420128	67	Δ BushingScrew	6	411457	411484
❖	Pipe Plug	+	430035	430035	68	Δ Lockwasher	6	419013	419014
❖	Magnetic Plug	1	430064	430064	❖	Δ Key, Bushing to Shaft	90 mm Bore	1	248361
23	Input Shaft Seal Carrier	1	258034	249211			95 mm Bore	1	248362
24*	Input Shaft Shim Pack	• ‡	390038	390168			100 mm Bore	1	248363
25	Backstop Carrier	1	258036	259035			110 mm Bore	1	248364
27	Carrier Screw	32	411408	411408			120 mm Bore	1	249360
28	Lockwasher	32	419011	419011	❖	Δ Key, Bushing to Output Hub◇	125 mm Bore	1	249361
29	Backstop Cover	1	248221	259037				1	249362
30	Backstop Cover Gasket	1	248220	259038				1	443121
31	Backstop Cover Screw	6	411402	411402					
32	Lockwasher	6	419009	419009					
33*	Input Shaft with Pinion	1	264943	264949	70	TORQUE-ARM ASSEMBLY *	1	390129	390129
34*	Input Shaft Seal	1	248203	248203	72	Δ Rod End	1	271050	271050
	Input Shaft Bearing—Input Side				74	Δ Hex Nut	1	407104	407104
36*	Cup	1	403051	403080	76	Δ Turnbuckle	1	271051	271051
37*	Cone	1	402199	402114		Δ Extension	1	271052	271052
	Input Shaft Brg.—Backstop Side				78	Δ L.H. Hex Nut	1	407250	407250
38*	Cup	1	403051	402231	80	Δ Fulcrum	1	271054	271054
39*	Cone	1	402198	402232	82	Δ Fulcrum Bolt	1	411516	411516
					84	Δ Lockwasher	1	419020	419020
					88	Δ Hex Nut	1	407099	407099
	OUTPUT HUB ASSEMBLY *					ADAPTER ASSEMBLY *			
	Taper Bushed	1	.....	.....	88	Δ Adapter Plate	2	272053	272053
48*	Δ Output Hub (Taper Bushed)	1	272036	272081	92	Δ Adapter Bushing	1	271046	271046
50*	Δ Output Gear	1	248215	249007	94	Δ Adapter Bolt	1	411510	411510
52*	Δ Output Gear Key & Roll Pin	2	390112	390112	96	Δ Lockwasher	1	419020	419020
					98	Δ Hex Nut	1	407099	407099
54*	Output Hub Seal	2	258004	249202		SEAL KIT		248340	.....
	Output Hub Seal Carrier					Δ Input Seal	1	248211	.....
55	Input Side	1	258021	249221		Δ Output Seal	2	258019	.....
56	Backstop Side	1	258020	249220		Δ Backstop Cover Gasket	1	248220	.....
	Output Hub Bearing								
57*	Cone	2	402147	402160					
58*	Cup	2	403105	403110					

* Includes parts listed immediately below marked "Δ." Bushing assembly includes 2 bushings.

Δ Parts marked "Δ" make up the assemblies under which they are listed.

• 1 set required for TXTM805; 2 sets required for TXTM905.

◇ 2 sets required for TXTM805; 1 set required for TXTM905.

‡ One set consists of one each of the shims listed immediately below marked "†."

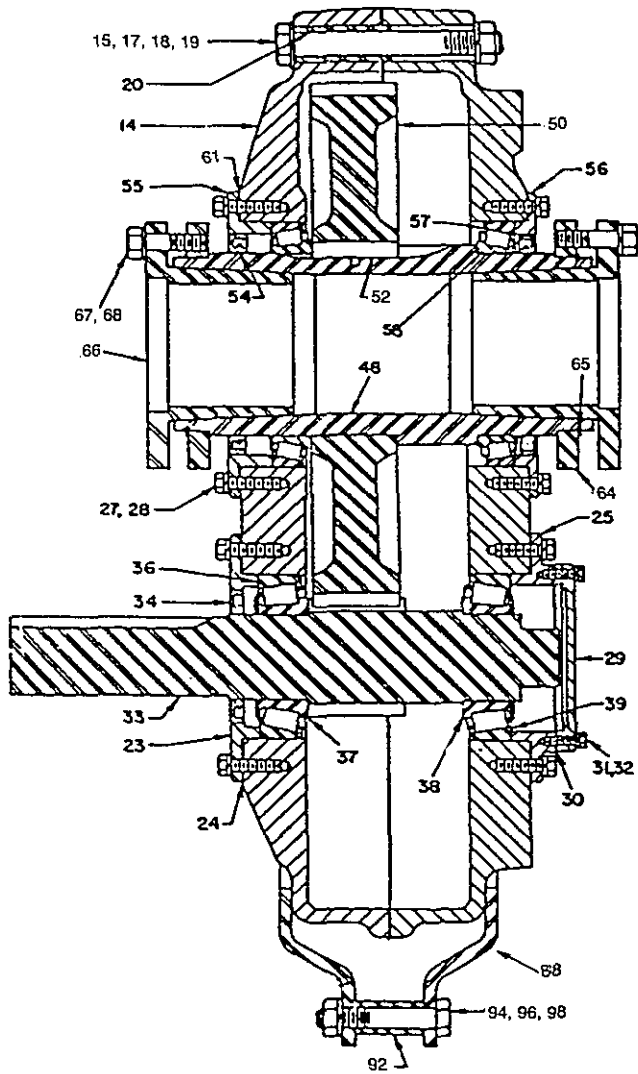
† See last paragraph under "ORDERING PARTS."

+ 2 sets required for TXTM805; 4 sets required for TXTM905.

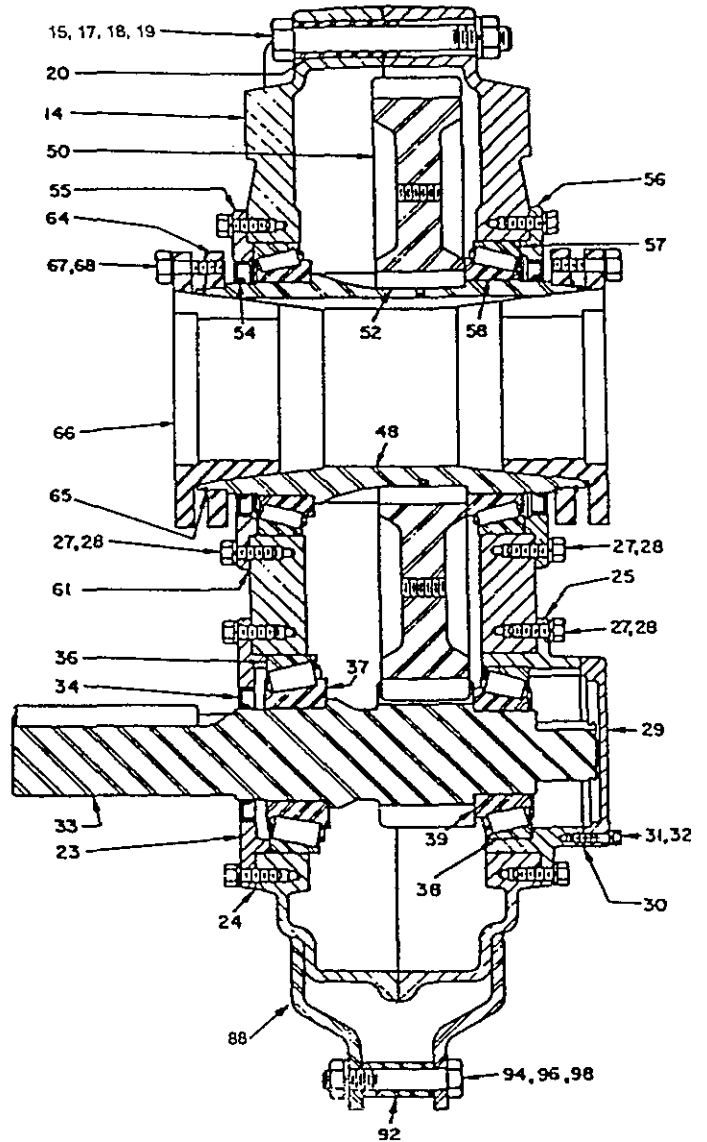
◇ For 90 mm bores on TXTM805; and 110 mm bores on TXTM905.

* Recommended spare parts.

❖ Not shown on drawing.

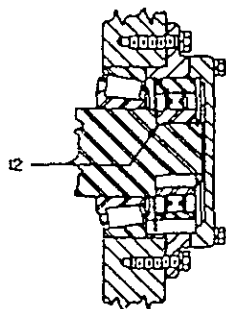


TXTM805

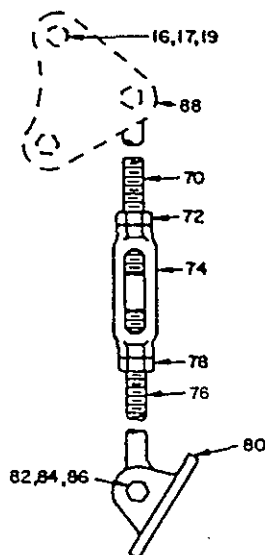


TXTM905

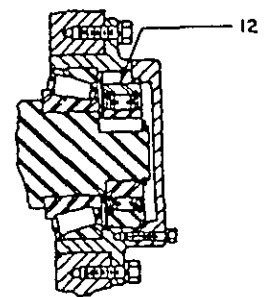
Note: The two-digit numbers are for reference only. Order parts by the six-digit numbers in the Parts List. Each six-digit number is a complete identification of the part or assembly.



TXTM805 Backstop Assembly



TORQUE-ARM Assembly



TXTM905 Backstop Assembly



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