

# Parts Replacment Manual for TD015 & TD025 Torque Arm Speed Reducers

These instructions must be read thoroughly before installing or operating this product.

## IMPORTANT

Using tools normally found in a maintenance department, a Dodge Torque-Arm Speed Reducer can be disassembled and reassembled by careful attention to all instructions given below. 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.

The oil seals are of the rubbing type and considerable care should be used during disassembly and reassembly to avoid damage to the surface which the seals rub upon.

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

## ORDERING PARTS

When ordering parts for reducer specify Reducer Size Number, Reducer Serial Number, 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 the shaft or from the output hub, this should be done before ordering parts to make sure that none of the parts are damaged in removal. Do not press against outer race of the ball bearings.

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

If a new housing or output hub bearing, gear, or spacer is required, shims totalling .070" should be ordered.

**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 Dodge nor are the responsibility of Dodge. 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.**

## DISASSEMBLY

1. In removing reducer from shaft be careful not to damage ends of hub.
2. Remove all bolts from housing. Open housing evenly to prevent damage to parts inside.
3. Shift shaft, gear, and bearing assemblies from housing. Save all shims behind output hub bearing cup.
4. Remove seals and bearing cups from housing.

## REASSEMBLY

1. **Output Hub Assembly:** Install snap ring on output hub. Place output hub spacer against snap ring. Heat gear to 325°F. to 350°F to shrink onto hub. Heat bearing cones 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 on shaft. Install spacer and press 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. Place right half of housing (as shown in drawing) on blocks to allow clearance 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 rawhide hammer (not lead hammer) until bearings are properly seated in the housing.
6. Place a new housing gasket on the housing half. Place other half of housing into position and tap with a soft hammer until the housing bolts can be used to draw the halves together. Draw halves together evenly to prevent damage to parts. Final recommended wrench torque should be 360 pound-inches.
7. Attach an indicator to the housing and set the gauge on the top end of output hub. Insert a pry bar under the hub and force it upward. The end play of the hub will be given by the indicator reading. Remove the left hand housing half and install just enough shims behind the left hand bearing cup to reduce the end play to + .002 to + .008.

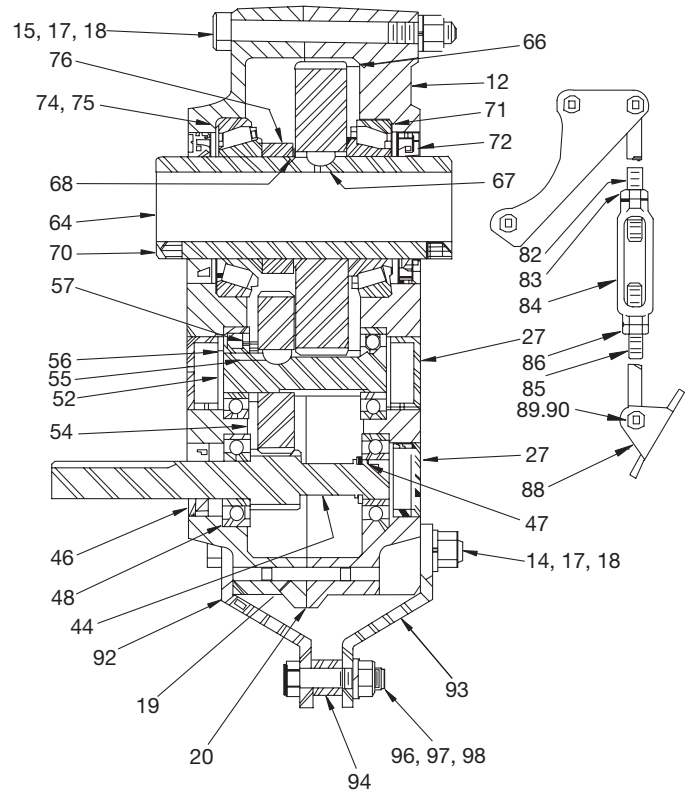
**Note: If the output hub assembly has not been disassembled or replaced and the housing not replaced, the same amount of shims can be installed as were removed without checking bearing end float.**

8. 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 holes in the output hub. This danger of damage and consequent oil leakage can be decreased by covering the keyseat and holes with scotch tape or paper which can be removed subsequently. Chamfer or 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.



## Parts for No. TD015 & TD025 Speed Reducers

Reference	Name of Part	No. Required	Part Number
12	HOUSING ASSEMBLY ②	1	390100
①	③ Air vent	1	241237
14	③ Housing Bolt (3/8 x 4-1/2)	2	411420
15	③ Housing Bolt (3/8 x 4)	2	411418
①	③ Housing Bolt (3/8 x 3)	2	411416
17	③ Lockwasher	6	419011
18	③ Hex Nut	6	407087
19	③ Dowel Pin	2	409026
20	③ Housing Gasket	1	240219
①	③ Pipe Plug	2	430031
①	③ Magnetic Plug	1	430060
27	③ Bearing Cover	3	240221
44	Input Shaft with Pinion	15 to 1 Ratio ④ 25 to 1 Ratio ⑤	1 1 240009 240004
46	Input Shaft Seal	1	240203
47	Input Shaft Snap Ring	1	421045
48	Input Shaft Bearing (3203X1A) ⑥	2	390275
	COUNTER SHAFT ASSEMBLY ②	for 15 to 1 Ratio ④ for 25 to 1 Ratio ⑤	1 1 390115 390130
52	③ Countershaft with Pinion	1	240006
54	③ First Reduction Gear	for 15 to 1 Ratio ④ for 25 to 1 Ratio ⑤	1 1 240008 240005
55	③ Key	1	443301
56	Countershaft Bearing (3203X1A) ⑥	2	390275
57	Countershaft Spacer	1	240222
	OUTPUT HUB ASSEMBLY ②	for 1-3/16" Bore for 1-1/4" Bore	1 1 390149 390150
64	Output Hub	for 1-3/16" Bore for 1-1/4" Bore	1 1 240260 240208
66	③ Output Gear	1	240007
67	③ Key	1	443300
68	③ Output Hub Snap Ring	1	421010
70	③ Output Hub Setscrew	4	400048
71	Output Bearing	Cone Cup	2 2 390318 390319
72	Output Hub Seal	2	240202
74	.005 Output Hub Shim	⑦	427510
75	.015 Output Hub Shim	⑦	427540
76	Output Hub Spacer	1	240220
82	TORQUE ARM ASSEMBLY ②	1	390040
83	③ Rod End	1	240245
84	③ Hex Nut	1	407091
	③ Turnbuckle	1	240246
85	③ Extension	1	240247
86	③ L.H. Hex Nut	1	407240
88	③ Fulcrum	1	240249
89	③ Fulcrum Bolt	1	411435
90	③ Hex Nut	1	407089
92	L.H. Adapter Plate	1	241241
93	R.H. Adapter Plate	1	241242
94	Adapter Bushing	1	240243
96	Adapter Bolt	1	411410
97	Lockwasher	1	419011
98	Hex Nut	1	407087



### NOTES:

- ① Not shown on drawing
- ② Includes parts listed immediately. Housing Assembly also includes two-piece housing.
- ③ The parts make up the assemblies under which they are listed. Housing Assembly also includes two-piece housing.
- ④ Approximate ratio of TD015 reducer
- ⑤ Approximate ratio of TD025 reducer
- ⑥ New Departure part number
- ⑦ As required

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