Parts Replacement Manual for Torque-Arm® Speed Reducers

TD915 - TD926
TD1015 - TD1024

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

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 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 assembly and reassembly to avoid damage to the surface which the seals rub on.

The keyseat in the input shaft as well as the six holes in the output hub should be covered with adhesive 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 No., Reducer Serial No., part name, part number and quantity.

It is strongly recommended that gears be replaced only in pairs; that is, 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 parts are damaged in removal.

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

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

If replacing a bearing, hub or shaft it is advisable to order a set of shims for adjustment of the affected bearings. If replacing the housing it is advisable to order a set of shims for the output hub assembly and the shaft assemblies because the adjustment of all the bearings may be affected.

REMOVING REDUCER FROM SHAFT:

Loosen screws in both output hub collars. Remove the collar next to end of shaft. This exposes three puller holes in output hub to permit use of wheel puller. In removing reducer from shaft be careful not to damage ends of hub. Remove inboard collar.

DISASSEMBLY:

1. Remove all bolts from housing. Open housing evenly to prevent damage to parts inside.
2. Lift shaft, gear, and bearing assemblies from housing.
3. Remove seals and bearing cups from housing.
4. Remove cover and seal carriers fro left half of housing (as viewed in drawing).

REASSEMBLY:

1. **Output Hub Assembly:** Heat gear to 325° to 350°F to shrink onto hub. Heat bearing cones to 270° 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:** Heat gear to 325° to 350°F to shrink on shaft. Heat bearing cones to 270° to 290°F to shrink on shaft.
3. **Input Shaft Assembly:** Heat bearing cones to 270° to 290°F to shrink on shaft.
4. Place bearing cups in right half of housing (as viewed in drawing). Make sure the cups are properly seated in the housing and are pressed against the cover and carriers. Place housing on blocks to allow clearance for protruding end of output hub.
5. Mesh output hub and countershaft assemblies together and place in housing half. Place input shaft assembly in position. Make sure rollers are properly seated in bearing cups.
6. Place a new housing gasket on the housing half. Place other half of housing (without cover and carriers assembled on housing) in position and draw halves together evenly to prevent damage to parts. The final wrench torque should be 1650 lb-in. When a torque wrench is not available, this value can be approximated by using a piece of pipe on an ordinary wrench and pulling 165 pound at 10” distance from center of pull to center of screw, or 82.5 pounds at 20” distance, etc.

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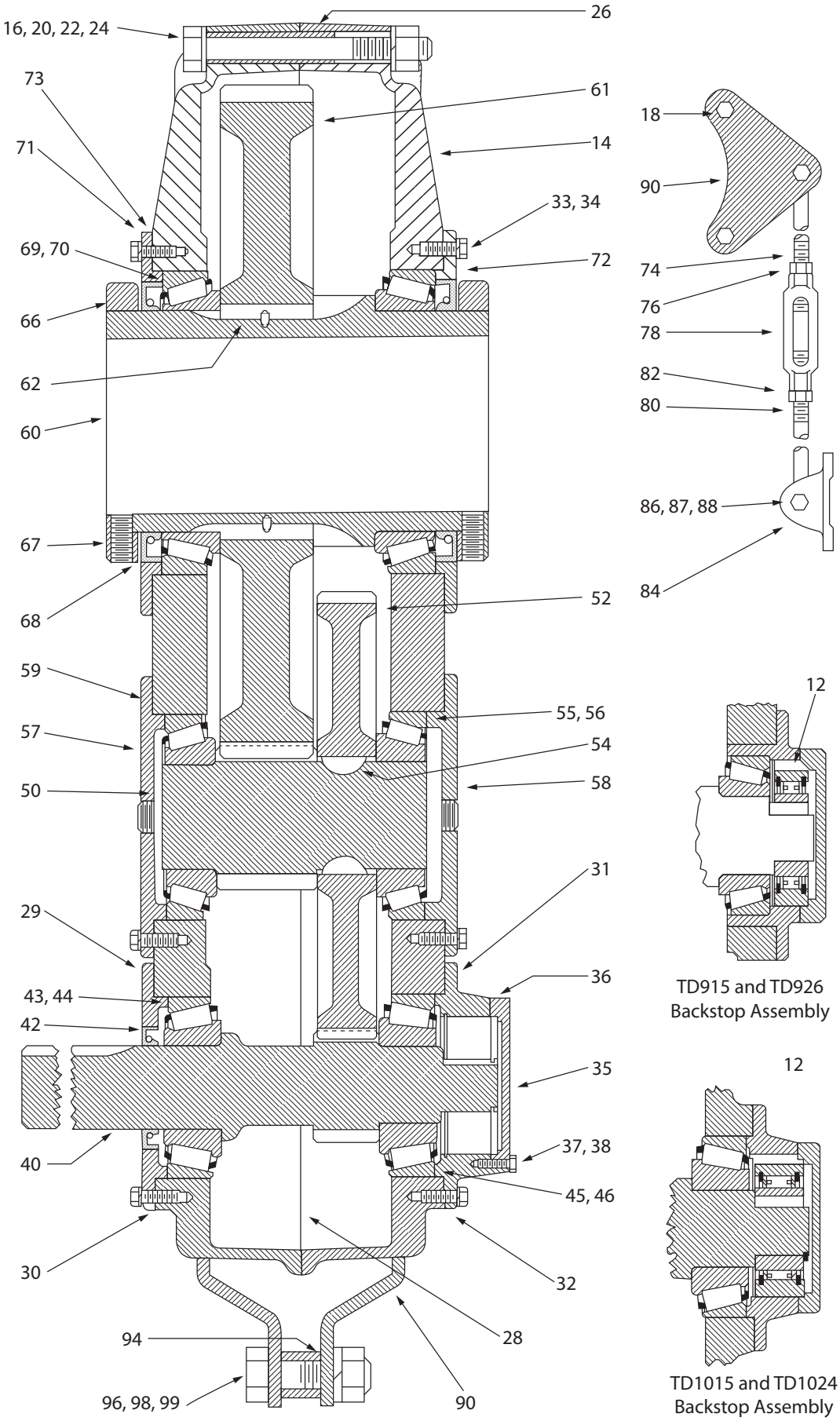
7. Place the output hub seal carrier in position without shims and install two cap screws diametrically opposed. Torque each screw to 25 lb-in. Rotate the shaft to roll in the bearings and then torque each screw **once** to 50 lb-in. Do not re-torque the screws. Turn the shaft again to roll in the bearings. With a feeler gage, check the gap between carrier and housing clockwise from, but next to, each screw. To determine the shim thickness required add the average of the two feeler gage readings to .05" for TD915 and TD926 sizes; to .020" for TD1015 and TD1024 sizes. Remove the carrier and install the required shims.
8. NOTE: Shim thickness should not include more than .009" plastic shims with the metal shims. Also, each plastic shim should be inserted between 2 metal shims. Torque all carrier screws to 360 lb-in. Final clearance should be .001-.003".
9. Adjust the countershaft bearings using the same procedure as in Step 7 except to determine the shim thickness required add the average of the two feeler gage readings to .015" for TD915 and TD926 sizes; to .011" for TD1015 and TD1024 sizes. Final clearance should be .002-.007"
10. Adjust the input shaft bearings using the same procedure as in Step 7 except to determine the shim thickness required add the average of the two feeler gage readings to .015" for TD915 and TD926 sizes; to .015" for TD1015 and TD1024 sizes. Final clearance should be .002-.005"
11. Extreme care should be used in installing seals to avoid damage 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 adhesive tape or paper with 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 TD915, TD926 , TD1015 and TD1024 Torque-Arm Speed Reducers



Parts for TD915, TD926 , TD1015 and TD1024 Torque-Arm Speed Reducers

Ref	Name of Part	No. Req'd	TD915 & TD926 Reducers	TD1015 & TD1024 Reducers
			Part Number	Part Number
12	Backstop Assembly	1	248101	250101
14	HOUSING	1	249260	250260
①	Air Vent with Bushing	1	249147	250197
16	Housing Bolt	②	411499	411500
18	Adapter-Housing Bolt	2	411502	411504
20	Lockwasher	③	419016	419016
22	Plain Washer	2	419082	419082
24	Hex Nut	③	407095	407095
26	Dowel Pin	2	420128	420132
28	Housing Gasket	1	249219	250019
①	Pipe Plug	2	430035	430035
①	Magnetic Plug	1	430064	430064
29	Input Shaft Seal Carrier	1	249211	249211
30	Input Shaft Bearing Shim Pack	1 Set④	390168	390168
	.001" Thick	⑤	427575	427575
	.002" Thick	⑤	427580	427580
	.005" Thick	⑤	427591	427591
	.010" Thick	⑤	427601	427601
	.025" Thick	⑤	427619	427619
31	Backstop Carrier	1	249222	250022
32	Backstop Carrier Gasket	1	248216	248216
33	Carrier and Cover Screw	48	411408	411408
34	Lockwasher	48	419011	419011
35	Backstop Cover	1	248221	248221
36	Backstop Cover Gasket	1	248220	248220
37	Cover Cap Screw	6	411402	411402
38	Lockwasher	6	419009	419009
40	Input Shaft TD915 and TD1015	1	249009	250300
	with Pinion TD926 and TD1024	1	249004	250004
42	Input Shaft Seal	1	248211	248211
43	Input Shaft Bearing Cone - Input End	1	390328	390328
44	Input Shaft Bearing Cup - Input End	1	390329	390329
45	Input Shaft Bearing Cone - Backstop End	1	390336	390340
46	Input Shaft Bearing Cup - Backstop End	1	390337	390329
40	COUNTERSHAFT TD915 and TD1015	1	390124	390125
	ASSEMBLY ⑥ TD926 and TD1024	1	390139	390140
50	⑦ Countershaft with Pinion	1	249006	250006
52	⑦First Reduction TD915 and TD1015	1	249008	250301
	Gear TD926 and TD1024	1	249005	250005
54	⑦Key	2	248218	248218
55	Countershaft Bearing Cone	2	390338	390341
56	Countershaft Bearing Cup	2	390339	390702
57	Countershaft Bearing Cover-Input Side	1	249225	250023
58	Countershaft Bearing Cover-Backstop Side	1	249224	250024

Ref	Name of Part	No. Req'd	TD915 & TD926 Reducers	TD1015 & TD1024 Reducers
			Part Number	Part Number
59	Countershaft Bearing Shim Pack	1 Set④	390168	390169
	.001" Thick	⑤	427575	427625
	.002" Thick	⑤	427580	427628
	,005" Thick	⑤	427591	427632
	.010" Thick	⑤	427601	427636
	.025" Thick	⑤	427619	427640
	OUTPUT HUB ASSEMBLY ⑥	1	390159	390160
60	⑦ Output Hub	1	249208	250008
61	⑦ Output Gear	1	249007	250007
62	⑦ Key	2	390112	390113
66	Output Hub Collar with Screws	2	249209	250009
67	Collar Screw	4	400194	400194
68	Output Hub Seal	2	249210	250010
69	Output Hub Bearing Cone	2	390334	390342
70	Output Hub Bearing Cup	2	390335	390343
71	Output Hub Seal Carrier - Input Side	1	249221	250011
72	Output Hub Seal Carrier - Backstop Side	1	249220	250011
73	Output Hub Bearing Shim Pack	1 Set	390171	390172
	.001" Thick		427500	427501
	.002" Thick		427505	427506
	.005" Thick		427518	427519
	.010" Thick		427530	427531
	.025" Thick		427560	427561
74	TORQUE ARM ASSEMBLY⑥	1	390129	390129
76	⑦ Rod End	1	271050	271050
78	⑦ Hex Nut	1	407104	407104
80	⑦ Turnbuckle	1	271051	271051
	⑦ Extension	1	271052	271052
82	⑦ L.H. Hex Nut	1	407250	407250
84	⑦ Fulcrum	1	271054	271054
86	⑦ Fulcrum Screw	1	411516	411516
87	⑦ Lockwasher	1	419020	419020
88	⑦ Hex Nut	1	407099	407099
90	Adapter Plate	2	249241	250041
94	Adapter Bushing	1	271046	271046
96	Adapter Bolt	1	411510	411510
98	Lockwasher	1	419020	419020
99	Hex Nut	1	407099	407099

① Not shown on drawing
② 9 required for TD915 and TD926; 11 required for TD1015 and TD1024
③ 11 required for TD915 and TD926; 13 required for TD1015 and TD1024
④ One set consists of one each of the shims listed immediately below
⑤ If replacing a bearing, hub or shaft it is advisable to order a set of shims for adjustment of the affected bearings. If replacing the housing it is advisable to order a set of shims for the output hub assembly and the shaft assemblies because the adjustment of all the bearings may be affected.
⑥Order parts listed immediately below. Housing Assembly also includes two-piece housing.
⑦These parts make up the assemblies under which they are listed. Housing Assembly also includes two-piece housing.

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