

Instruction Manual For DODGE® Airport Baggage Handling Systems Speed Reducers

**ABHS TXT109 - TXT115 - TXT125
ABHS TXT209 - TXT215 - TXT225
ABHS TXT309A - TXT315A - TXT325A
ABHS TXT409A - TXT415A - TXT425A
ABHS TXT509B - TXT515B - TXT525B
ABHS TXT105 - TXT205 - TXT305A - TXT405A - TXT505A**

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.

INSTALLATION

WARNING

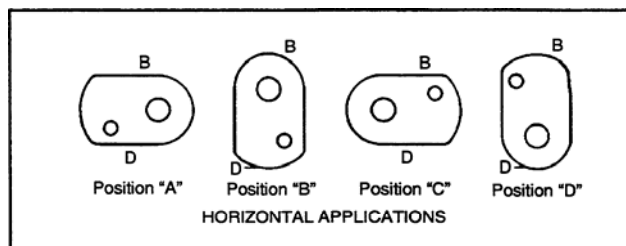
Equipment may be too heavy to control manually. Support it by external means. Failure to observe this precaution could result in bodily injury.

The products described in this instruction manual are manufactured by Reliance Industrial Company.

1. On ABHS reducers, use eye bolt to lift reducers.
2. Determine the running positions of the reducer. (See Fig. 1.) Note that the reducer is supplied with plugs. These plugs must be arranged relative to the running positions as follows. Vent assembly and magnetic plug must have Permatex or equivalent applied before installing.

Install the magnetic drain plug in the hole closest to the bottom of the reducer. The vent breather is wired to reducer. Install in topmost hole.

Note: ABHS reducers are not designed for vertical applications and should be installed only in accordance with Fig. 1 and these instructions.



B: Breather; D: Drain

Fig. 1 — Mounting Positions

The running position of the reducer in a horizontal application is not limited to the four positions shown in Figure 1.

WARNING

To ensure 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.

Note: To verify oil quantity, drain and measure amount drained and add accordingly.

ABHS 1	24 Fl. oz.
ABHS 2	32 Fl. oz.
ABHS 3	64 Fl. oz.
ABHS 4	80 Fl. oz.
ABHS 5	28 Fl. oz.

3. Mount reducer on driven shaft as follows:

For Taper Bushed:

Mount reducer on driven shaft per instruction sheet No. 499629 packed with tapered bushings.

4. Install sheave on input shaft as close to reducer as practical. (See Fig. 2.)
5. Install motor and V-belt drive so belt pull 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 drive with the torque arm.

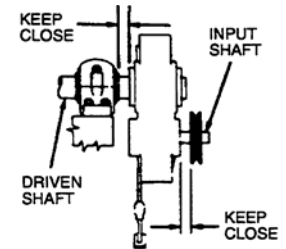


Fig. 2

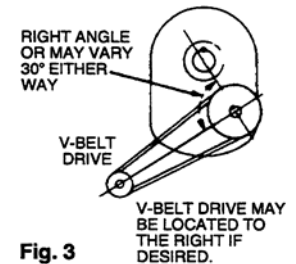


Fig. 3

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.

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 Fig. 4.) Make sure that there is sufficient take-up in the turn-buckle for belt tension adjustment when using V-belt drive.

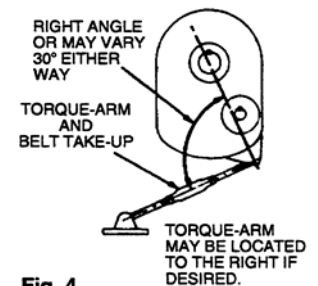


Fig. 4

LUBRICATION

CAUTION

Use only recommended lubricants. Failure to observe these precautions could result in damage to, or destruction of, the equipment.

ABHS TORQUE-ARM reducers are serviced with Mobil DTE BB oil, a high quality long life rust and oxidation inhibiting oil, at the factory. Do not add additional oil and change when maintenance requires the reducer to be opened and disassembled.

CAUTION

Extreme pressure (EP) lubricants are not recommended for average operating conditions. Failure to observe these precautions could result in damage to, or destruction of, the equipment.

MOTOR MOUNT INSTALLATION

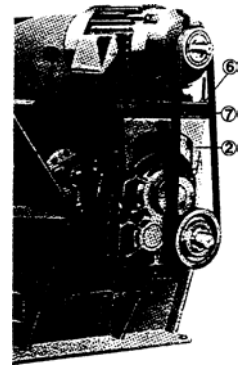
Note: Refer to photo for position of all parts before installation.

1. Remove the two or three bolts required for mounting the TAM motor mount from the reducer housing. Install the front and rear supports (2) using the new reducer bolts (1) supplied with the motor mount. Make sure support flanges face output side of reducer. Tighten bolts securely.
2. Mount bottom plate (3) on supports with bolts supplied. Insert bolts (7) from top through slotted holes. Add flatwasher, lockwasher and nut. Hand tighten.
3. Thread two nuts (6) on each threaded stud (5) leaving approximately 1 of stud protruding at one end. Insert threaded stud with 1 of threads through corner holes of bottom plate, thread a hex nut (6) on the stud and tighten securely.
4. Slide top plate (4) over the threaded stud, making sure center handling hole is positioned opposite input side of reducer. Thread a hex nut (6) on the studs and tighten securely.

DANGER

The user is responsible for conforming with the National Electrical Code and all other applicable local codes. Guarding and wiring practices, grounding, disconnects and overcurrent protection are of particular importance. Failure to observe these precautions could result in severe bodily injury or loss of life.

Note: Guards have been removed for photographic purposes.



WARNING

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

5. Locate the proper position for the motor and bolt it to the top plate. Tighten bolts securely.
6. Install motor sheave and reducer sheave as close to motor and reducer housings as possible. Accurately align the motor and reducer sheave by sliding bottom plate in relation to supports. Tighten bolts (7) securely.
7. Install V-belts and tension belts by alternately adjusting nuts (6) on the threaded studs (jackscrews). Make certain that all bolts are securely tightened, the V-belt drive is properly aligned and the belt guard is installed before operating the drive.

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 (VC1-105 oil by Daubert Chemical Co.) in accordance with Table 3.
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

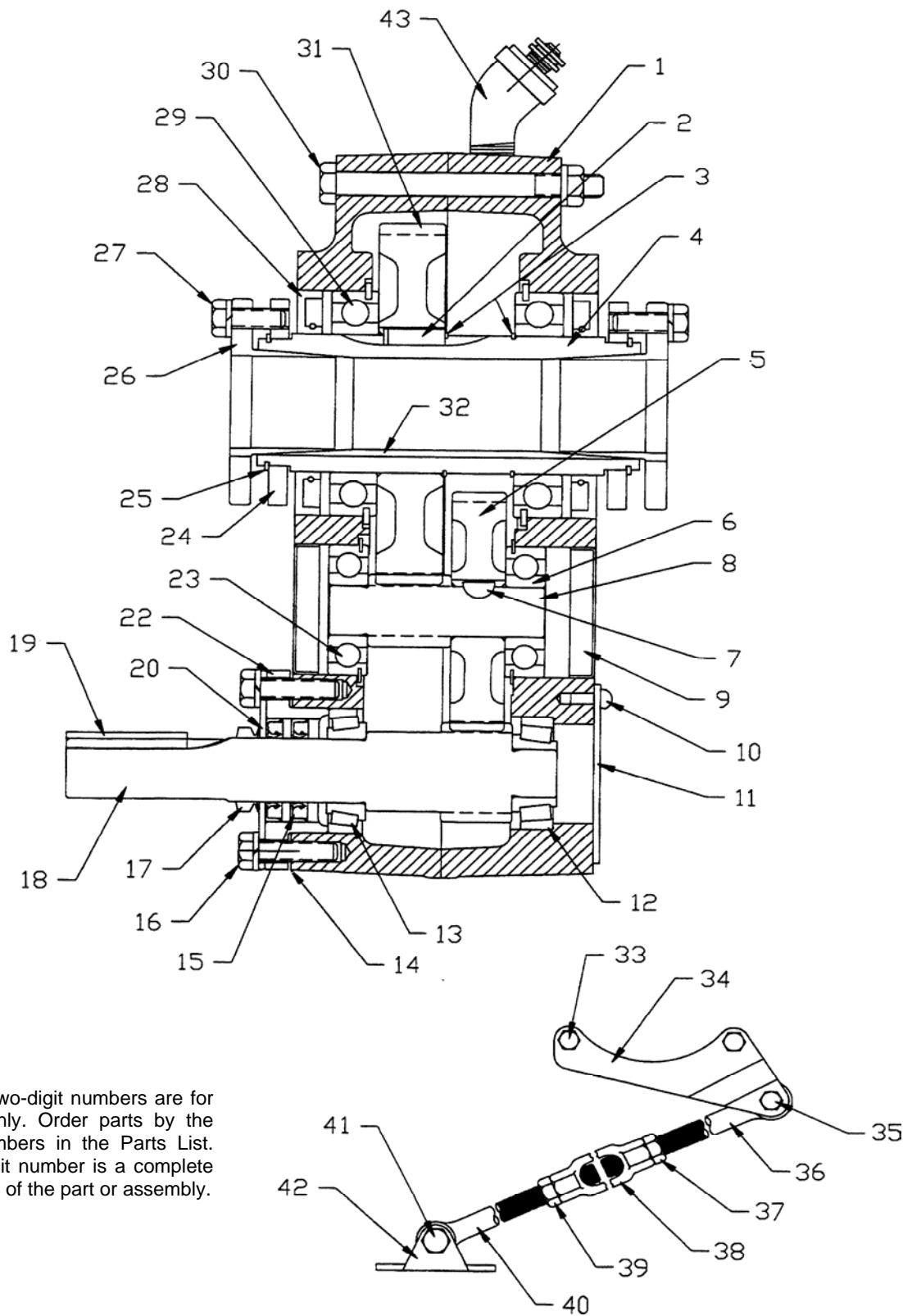
1. Assemble the vent plug into the proper hole.
2. Clean the shaft extensions with petroleum solvents.
3. Fill the unit to the proper oil level using a recommended lubricant as described in the lubrication section of this instruction manual. The VCI oil will not affect the new lubricant.
4. Follow the installation instructions provided in this manual.

Table 3—Quantities of VCI #105 Oil

Case Size	Quarts or Liters
ABHS TXT1, TXT2, TXT3A	.1
ABHS TXT 4A	.2
ABHS TXT5B, TXT505A	.3

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

PARTS FOR DOUBLE REDUCTION ABHS TXT1 AND TXT2 TAPER BUSHED SPEED REDUCERS



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	ABHS TXT1 Part No.	No. Req'd.	ABHS TXT2 Part No.	No Req'd.	Reference	Name of Part	ABHS TXT1 Part No.	No. Req'd.	ABHS TXT2 Part No.	No Req'd.		
1	Housing	241156	1	242262	1	19	Input Shaft Key	443020	1	443020	1		
**	Dowell Pins	420091	2	420091	2	34	TORQUE ARM ASSEMBLY* •Adapter Plate LH RH	241213		242280			
30	Housing Bolts	411418	4	411418	5			C16239	1	C16241	1		
33	Adapter – Housing Bolts	411420	2	411420	2			C16240	1	C16242	1		
30	Bolt Washers	419011	4	419011	5			411412	1	411437	1		
30	Bolt Nuts	407087	6	407087	7			419011	1	419012	1		
**	Flat Washers	419092	2	419092	2			407087	1	407089	1		
43	VENT ASSEMBLY	A38983	1	A38983	1			35	•Adapter Bolt	411412	1	411437	1
**	Magnetic Plug	430060	1	430060	1			35	•Lockwasher	419011	1	419012	1
**	Oil Plug	430031	2	430031	2			35	•Hex Nut	407087	1	407089	1
11	Bearing Cover	243559	1	243221	1			35	•Adapter Bushing	242243	1	243243	1
10	Cover Screws	416524	4	415022	4	36	•Rod End	A73092	1	A73087	1		
11	Cover Gasket	NA		243220	1	37	•Rod End Nut	407093	1	407095	1		
9	Bearing Cover	242224	2	242212	2	38	•Tumbuckle	A73086	1	A73089	1		
18	Input Pinion	241196	1	242279	1	40	•Extension	A73085	1	A73088	1		
	9:1 Ratio	241160	1	242266	1	39	•Extension Nut	407242	1	407244	1		
	15:1 Ratio	241160	1	242266	1	42	•Fulcrum	241249	1	243249	1		
	25:1 Ratio	241185	1	242278	1	41	•Fulcrum Bolt	411456	1	411484	1		
8	Countershaft Pinion	241216	1	242185	1		•Hex Nut	407091	1	407093	1		
4	Output Hub	241265	1	242134	1	26	BUSHING ASSEMBLY*	1" Bore	241278	1	.....	
3	Snap Rings	421013	2	421017	2			1 1/16" Bore	241280	1	.....	
24	Bushing Backup Plates	241266	2	242137	2			1 1/8" Bore	241282	1	242146	1	
25	Retaining Rings	421111	2	421112	2			1 3/16" Bore	241286	1	242148	1	
31	Output Gear	241007	1	242181	1			1 1/4" Bore	241288	1	242150	1	
2	Output Gear Key	241217	1	443399	1			1 5/16" Bore	241290	1	242152	1	
5	1st Gear	241482	1	242482	1			1 3/8" Bore	241924	1	242154	1	
	9:1 Ratio	241170	1	242008	1			1 7/16" Bore	241292	1	242156	1	
	15:1 Ratio	241171	1	242005	1			1 1/2" Bore	.....		242158	1
7	1st Gear Key	241309	1	242218	1			1 5/8" Bore	.....		242162	1
28	Output Seal	241214	2	242113	2	1 11/16" Bore	.....		242164	1		
15	Input Seal	276173	2	242281	2	1 3/4" Bore	.....		242166	1		
29	Output Bearings	See Chart				27	▲Bushing Screw	411405	6	411390	6		
6	Countershaft Bearings					27	▲Lockwasher	419010	6	419010	6		
12	Input Bearings												
13	Input Bearings					32	▲Key, Bushing to Shaft	1" Bore	443274	1	.....	
22	Input Seal Carrier	241159	1	242265	1			1 1/16" Bore	443274	1	.....	
16	Carrier Bolts	411391	4	411391	4			1 1/8" Bore	443271	1	443281	1	
16	Carrier Bolt Washers	419010	4	419010	4			1 3/16" Bore	241308	1	443281	1	
14	Input Bearing Shim Pack	389585		389586				1 1/4" Bore	241307	1	443281	1	
	.002	241161	3	242267	3			1 5/16" Bore	241306	1	443280	1	
	.005	241162	3	242268	3			1 3/8" Bore	241310	1	443280	1	
	.010	241163	3	242269	3			1 7/16" Bore	241305	1	443282	1	
	.025	241164	3	242270	3			1 1/2" Bore	.....		443282	1
17	Auxiliary Seal	241166	1	242272	1			1 5/8" Bore	.....		242172	1
20	Auxiliary Seal Plate	241167	1	242275	1			1 11/16" Bore	.....		242171	1
						1 3/4" Bore	.....		242170	1		
						1 15/16" Bore	.....		443283	1		
						▲Key Bushing to Output Hub	.....		443284	1 B		
						▲Key Bushing	1" Bore	243272	1	.....		
						to Output Hub	1 1/8" Bore	443273	1	.....		

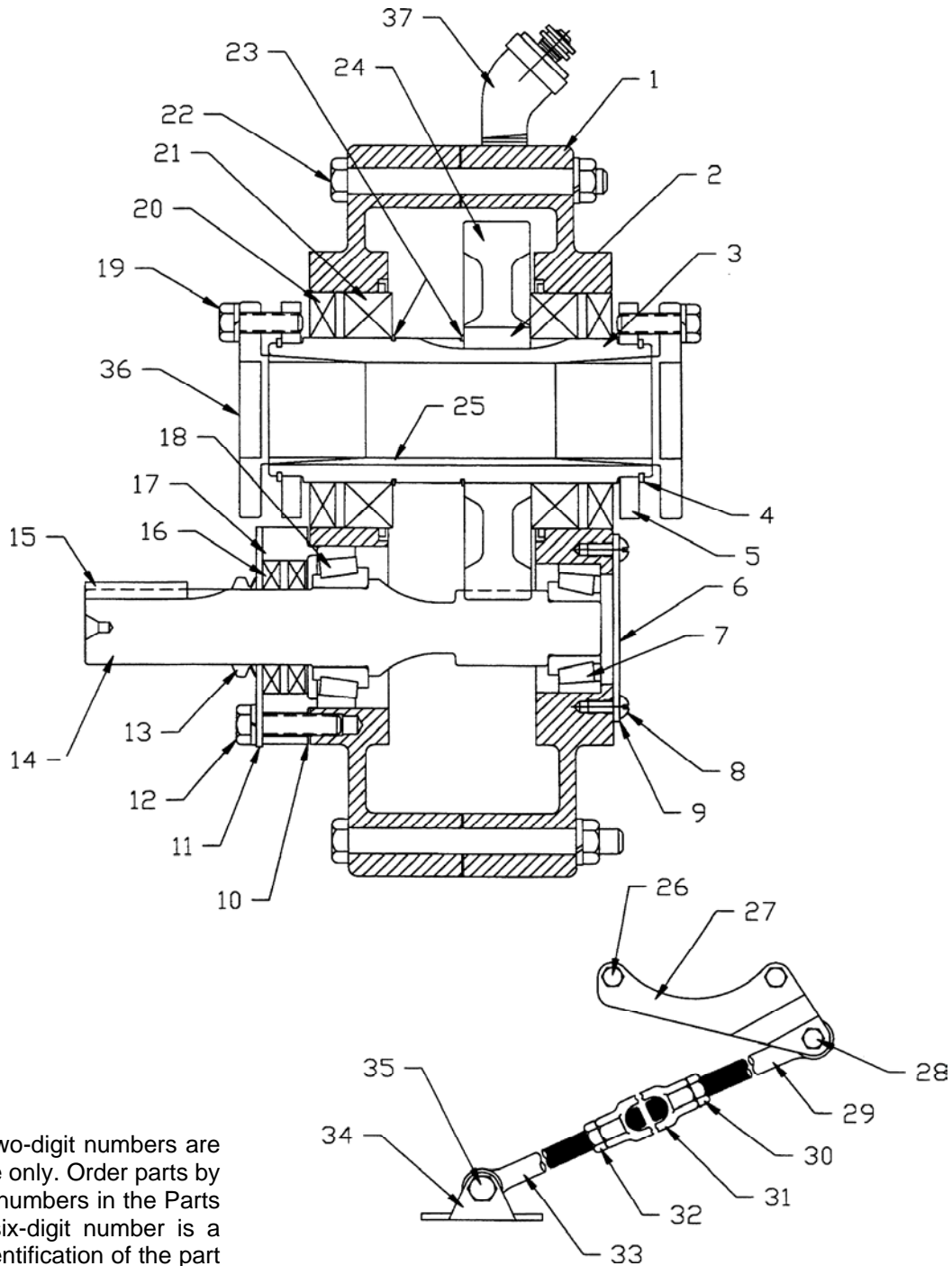
* Includes parts listed immediately below marked "▲."

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

** Not shown on drawing.

B On size TXT2 for 1 1/8" through 1 1/2" bores.

PARTS FOR SINGLE REDUCTION ABHS TXT105 AND TXT205 TAPER BUSHED SPEED REDUCERS



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	ABHS TXT105 Part No.	No. Req'd.	ABHS TXT205 Part No.	No. Req'd.	Reference	Name of Part	ABHS TXT105 Part No.	No. Req'd.	ABHS TXT205 Part No.	No. Req'd.	
1	Housing	251121	1	252121	1	28	TORQUE ARM ASSY. CONT.					
**	Dowell Pins	420091	2	420091	2		▲Adapter Bolt	411412	1	411437	1	
22	Housing Bolts	411418	4	411418	5		▲Lockwasher	419011	1	419012	1	
26	Adapter – Housing Bolts	411420	2	411420	2		▲Hex Nut	407087	1	407089	1	
22	Bolt Washers	419011	4	419011	5		▲Adapter Bushing	242243	1	242243	1	
22	Bolt Nuts	407087	6	407087	7		▲Rod End	241245	1	243245	1	
**	Flat Washers	419092	2	419092	2		▲Rod End Nut	407093	1	407095	1	
							▲Turnbuckle	241246	1	243246	1	
37	VENT ASSEMBLY	A38983	1	A38983	1		▲Extension	241247	1	243247	1	
**	Magnetic Plug	430060	1	430060	1		▲Extension Nut	407242	1	407244	1	
**	Oil Plug	430031	2	430031	2	▲Fulcrum	241249	1	243249	1		
6	Bearing Cover	242221	1	242221	1	▲Fulcrum Bolt	411456	1	411484	1		
8	Cover Screws	415022	4	415022	4	▲Hex Nut	407491	1	407493	1		
9	Cover Gasket	242220	1	243220	1	36	1" Bore	241278	1	.....	
14	Input Pinion	251124	1	252134	1		1 1/16" Bore	241280	1	.....	
							1 1/8" Bore	241282	1	242146	1	
3	Output Hub	241265	1	242134	1		1 3/16" Bore	241286	1	242148	1	
23	Snap Rings	421013	2	421017	2		1 1/4" Bore	241288	1	242150	1	
5	Bushing Backup Plates	241266	2	242137	2		1 5/16" Bore	241290	1	242152	1	
4	Retaining Rings	421111	2	421112	2		1 3/8" Bore	.....	242154	1	
24	Output Gear	241007	1	242181	1		1 7/16" Bore	241292	1	242156	1	
2	Output Gear Key	241217	1	443399	1		1 1/2" Bore	.....	242158	1	
20	Output Seal	241214	2	242113	2		1 5/8" Bore	.....	242162	1	
16	Input Seal	242281	2	252019	2	1 11/16" Bore	.....	242164	1		
						1 3/4" Bore	.....	242165	1		
21	Output Bearings	See Chart					1 15/16" Bore	.....	242168	1	
7	Input Bearings					19	▲Bushing Screw	411390	6	411390	6	
18	Input Bearings						▲Lockwasher	419010	6	419010	6	
17	Input Seal Carrier	251126	1	252124	1		25	1" Bore	443274	1	.....
12	Carrier Bolts	411391	4	411391	4	1 1/16" Bore		443274	1	.....	
12	Carrier Bolt Washers	419010	4	419010	4	1 1/8" Bore		443271	1	443281		
						1 3/16" Bore		241308	1	443281		
10	Input Bearing Shims					1 1/4" Bore		241307	1	443281		
	.002	251127	3	252126	3	1 5/16" Bore		241306	1	443280		
	.005	251128	3	252167	3	1 3/8" Bore		.....	443280	1	
	.010	251129	3	252128	3	1 7/16" Bore		241305	1	443282		
	.025	251130	3	252129	3	1 1/2" Bore		.....	443282	1	
13	Auxiliary Seal	242272	1	252131	1	1 5/8" Bore		.....	242172	1	
11	Auxiliary Seal Plate	251131	1	252132	1	1 11/16" Bore	.....	242171	1		
15	Input Shaft Key	443020	1	443445	1	1 3/4" Bore	.....	242170	1		
						1 15/16" Bore	.....	443283	1		
27	TORQUE ARM ASSEMBLY*	241213		242280		**	▲Key Bushing to Output Hub	443272	1B	443284	1B	
	▲Adapter Plate LH	C16239	1	C16241	1	**	▲Key Bushing to Output Hub	443273	1A	.....	
	RH	C16240	1	C16242	1							

* Includes parts listed immediately below marked "▲".

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

** Not shown on drawing.

B On size TXT105 for 1" bores; TXT205 for 1 1/8" bores.

λ One size – TXT105 for 1 1/16" bores and 1 1/8" bores.

Table 4 - Manufacturers' Part Numbers for Replacement Output Hub Bearings for ABHS TXT1 and TXT2

TORQUE-ARM Reducer Drive Size	Output Bearing	
	DODGE Part No.	SKF Part No.
ABHS TXT105 ABHS TXT109 ABHS TXT115 ABHS TXT125	424020	6011NR
ABHS TXT205 ABHS TXT209 ABHS TXT215 ABHS TXT225	424022	6013NR

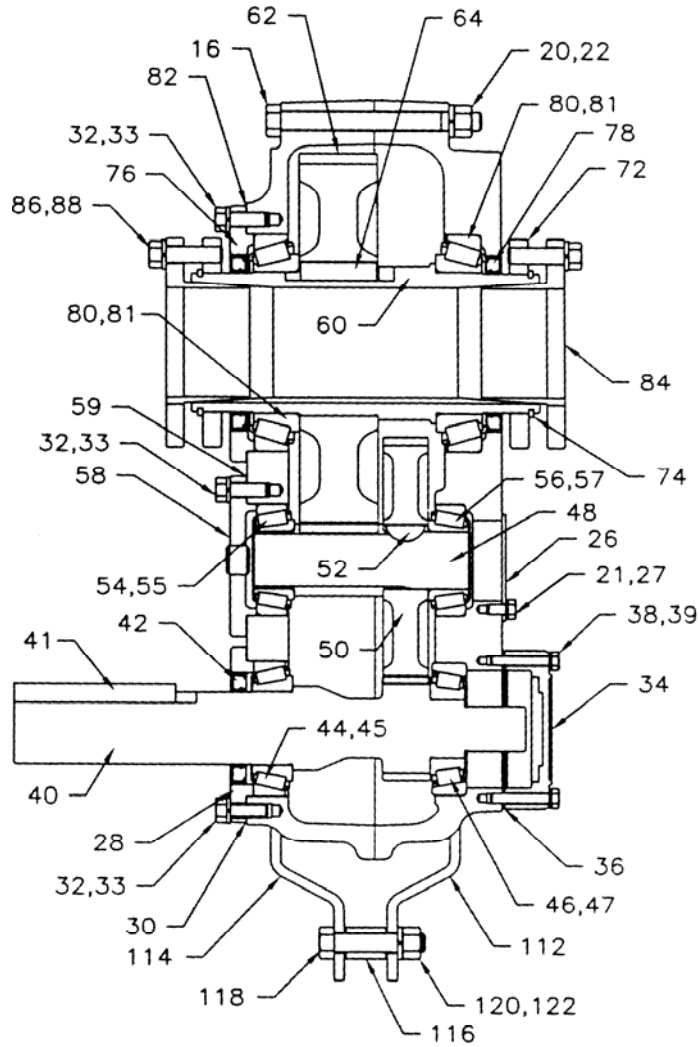
Table 5 - Manufacturers' Part Numbers for Replacement Countershaft Bearings for ABHS TXT1 and TXT2

TORQUE-ARM Reducer Drive Size	Counter Bearing Input Side		Countershaft Bearing Adapter Side	
	DODGE Part No.	SKF Part No.	DODGE Part No.	SKF Part No.
ABHS TXT109 ABHS TXT115 ABHS TXT125	424006	304SG	424006	304SG
ABHS TXT209 ABHS TXT215 ABHS TXT225	424000	305MG	424000	305MG

Table 6 - Manufacturers' Part Numbers for Replacement Input Shaft Bearings for ABHS TXT1 and TXT2

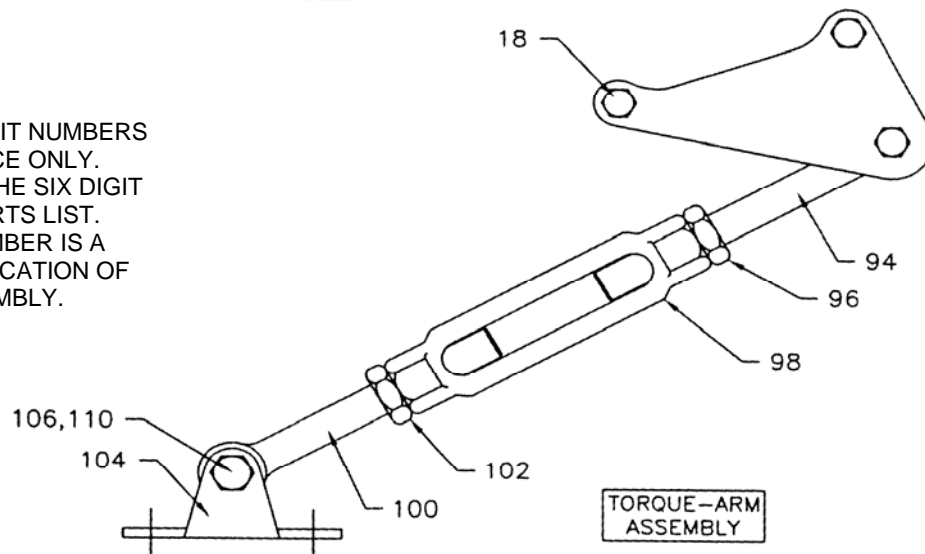
TORQUE-ARM Reducer Drive Size	Input Bearing Input Side		Input Bearing Adapter Side	
	DODGE Part No.	Timken Part No.	DODGE Part No.	Timken Part No.
ABHS TXT105	Cone - 402283 Cup - 403094	15117 15245	Cone - 402286 Cup - 403167	12580 12520
ABHS TXT205	Cone - 402130 Cup - 403168	11162 11300	Cone - 304707 Cup - 403094	15101 15245
ABHS TXT109 ABHS TXT115 ABHS TXT125	Cone - 402284 Cup - 403166	L44643 L44610	Cone - 402265 Cup - 403165	LM11949 LM11910
ABHS TXT209 ABHS TXT215 ABHS TXT225	Cone - 402283 Cup - 403094	15117 15245	Cone - 304707 Cup - 403707	15101 15245

PARTS FOR DOUBLE REDUCTION ABHS TXT3A, TXT4A, TXT5B TAPER BUSHED SPEED REDUCERS



TAPER BUSHED

NOTE: THE TWO DIGIT NUMBERS ARE FOR REFERENCE ONLY. ORDER PARTS BY THE SIX DIGIT NUMBER IN THE PARTS LIST. EACH SIX DIGIT NUMBER IS A COMPLETE IDENTIFICATION OF THE PART OR ASSEMBLY.



TORQUE-ARM ASSEMBLY

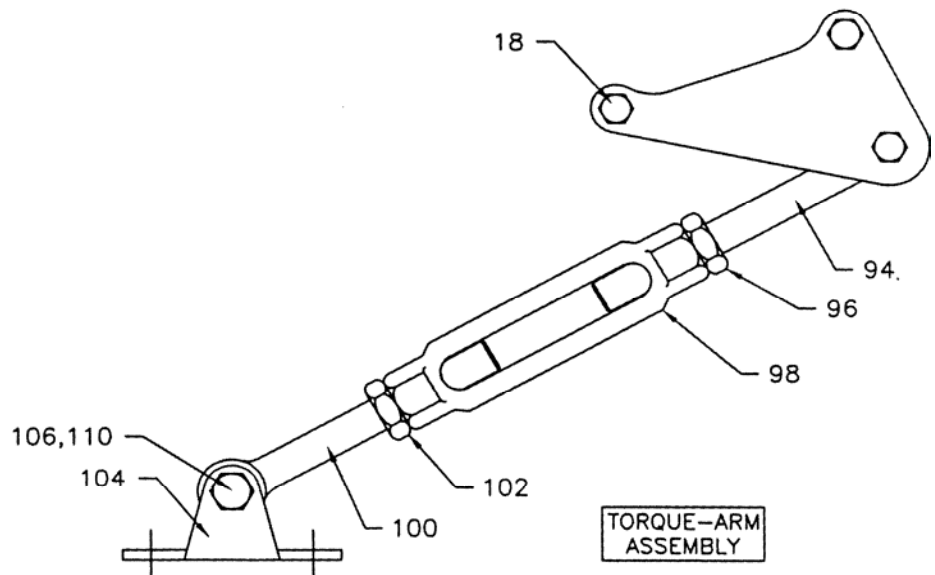
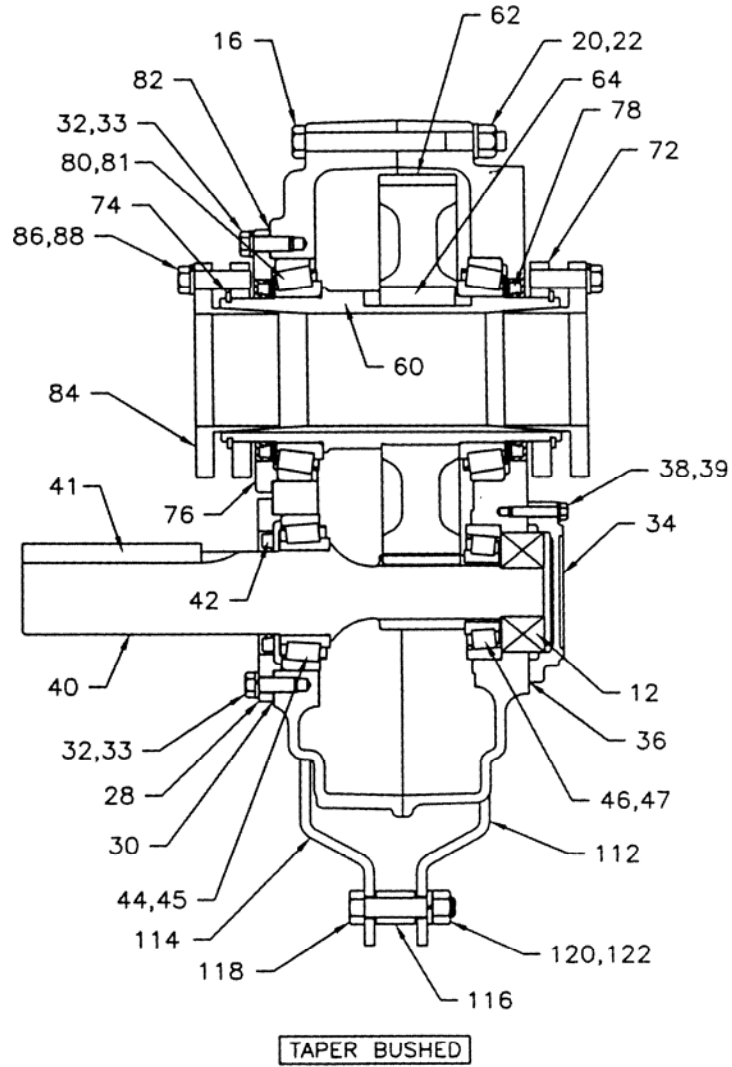
Ref.	Name of Part	No. Req'd	TXT3A	TXT4A	TXT5B
16	Housing ★	1	243534	244567	245587
17	Breather Assembly	1	A38983	A38983	A38983
18	Breather Adapter	1	---	---	240054
19	Housing Bolt	6	411440	411442	411464
20	Adapter Housing Bolt	2	411442	411444	411466
21	Washer †	4	419094	419094	419096
22	Lock Washer	6	419012	419012	419013
23	Hex Nut	8	407089	407089	407091
24	Dowel Pin	2	420055	420055	420110
25	Pipe Plug	2	430031	430031	430033
26	Magnetic Plug	1	430060	430060	430062
27	C'shaft Bearing Cover (Backstop Side)	1	243559	244574	244574
28	C'shaft Cover Screw	4	416524	411035	411394
29	Lock Washer	4	419007	419009	419009
30*	Input Shaft Seal Carrier	1	243543	244577	245597
31*	Input Shaft Brg Shim Pack	2	389704	389711	389732
32	Carrier/Cover Screws	+	411390	411407	411407
33	Lock Washer	+	419010	419011	419011
34	Backstop Cover	1	243560	244493	245547
35	Backstop Cover Screw	4	416524	411035	411406
36	Lock Washer	4	419007	419009	419009
40*	Input Shaft 9:1 Ratio with Pinion 15:1 Ratio	1	243549	244579	245599
41	Input Shaft Key	1	243550	244580	245600
42*	Input Shaft 25:1 Ratio	1	243551	244581	245601
43*	Input Bearing Kit ★	1	389587	389590	389594
44*	▲ Input Shaft Brg Cone	1	402204	402280	402144
45*	▲ (Input Side) Cup	1	403139	403027	403104
46*	▲ Input Shaft Brg Cone	1	402273	402142	402266
47*	▲ (Backstop Side) Cup	1	403094	403102	403073
48	Countershaft 9:1 Ratio Assembly ★ 15:1 Ratio	1	389729	389730	389731
49	Countershaft 25:1 Ratio	1	389700	389707	389714
50*	▲ C'shaft with Pinion	1	389701	389708	389715
51*	▲ First 9:1 Ratio	1	243237	244482	245582
52*	Reduction 15:1 Ratio	1	243238	244214	245214
53*	Gear 25:1 Ratio	1	243239	244212	245212
54*	▲ Key	1	243215	244215	244215
55*	Countershaft Brg Kit ★	1	389588	389591	389595
56*	▲ Countershaft Brg Cone	1	402273	402000	402203
57*	▲ (Input Side) Cup	1	403094	403000	403027
58*	▲ Countershaft Brg Cone	1	402273	402000	402203
59*	▲ (Backstop Side) Cup	1	403094	403000	403027
60*	C'shaft Brg Cover (Input Shaft)	1	243545	244578	245594
61*	C'shaft Brg Shim Pack	2	389705	389712	389718
62*	Output Hub Assembly ★ Tapered	1	389703	389710	389717
63*	▲ Output Hub Tapered	1	243556	244588	245590
64*	▲ Output Gear	1	243570	244188	245186
65*	▲ Output Gear Key	1	389733	391015	391026
72	Bushing Backup Plate	2	243308	244099	245114
74	Retaining Ring	2	421109	421108	421107
76	Output Hub Seal Carrier (Input Side)	1	243547	244591	245592
80*	Output Hub Brg Kit ★	1	389589	389592	389596
81*	▲ Output Hub Cone	2	402272	402268	402193
82*	▲ Bearing Cup	2	403127	403163	403016
83*	Output Hub Bearing Shim Pack	2	389706	389713	389719

- ★ Includes parts listed immediately below marked "▲".
Housing assembly includes a two-piece housing.
Bushing assembly includes 2 bushings.
- ▲ Makes up assembly under which it is listed.
- § Not shown on drawing.
- † Washer is used on housing bolts at dowel pin locations.
- + 14 req'd on TXT3A & TXT4A ; 15 req'd on TXT5B ;
- * Recommended spare parts.

Ref.	Name of Part	No. Req'd	TXT3A	TXT4A	TXT5B
36*	Backstop Cvr Gasket	1	243561	244593	245220
42*	Input Shaft Seal	1	A73106	A73108	245543
78*	Output Hub Seal	2	A73107	A73109	245444
§	RTV Sealant, Tube	1	465044	465044	465044
84	Bushing 1-5/16" Bore	1	243282	---	---
85	Assembly 1-3/8" Bore	1	243284	---	---
86	★ 1-7/16" Bore	1	243260	244079	---
87	1-1/2" Bore	1	243262	244081	---
88	1-5/8" Bore	1	243264	244083	---
89	1-11/16" Bore	1	243268	244085	---
90	1-3/4" Bore	1	243266	244087	---
91	1-7/8" Bore	1	243270	244089	245084
92	1-15/16" Bore	1	243272	244093	245086
93	2" Bore	1	243274	244095	245088
94	2-1/8" Bore	1	---	244109	---
95	2-3/16" Bore	1	243276	244111	245090
96	2-1/4" Bore	1	---	244113	245092
97	2-7/16" Bore	1	---	244115	245094
98	2-1/2" Bore	1	---	---	245099
99	2-11/16" Bore	1	---	---	245110
100	2-15/16" Bore	1	---	---	245112
86	▲ Bushing Screw	6	411407	411408	411435
88	▲ Lock Washer	6	419011	419011	419012
101	1-5/16" Bore	1	443264	---	---
102	1-3/8" Bore	1	443264	---	---
103	1-7/16" Bore	1	443265	443254	---
104	1-1/2" Bore	1	443265	443254	---
105	1-5/8" Bore	1	443265	443254	---
106	1-11/16" Bore	1	443266	443254	---
107	1-3/4" Bore	1	443266	443254	---
108	1-7/8" Bore	1	443267	443255	443251
109	to 1-15/16" Bore	1	443269	443255	443251
110	2" Bore	1	443268	443255	443251
111	2-1/8" Bore	1	---	443258	---
112	2-3/16" Bore	1	443270	443259	443251
113	2-1/4" Bore	1	---	443260	443251
114	2-7/16" Bore	1	---	443261	443243
115	2-1/2" Bore	1	---	---	443244
116	2-11/16" Bore	1	---	---	443245
117	2-15/16" Bore	1	---	---	443250
118	Key, ▲	1	443262	---	443202
119	§ Bushing 2-3/16" to	1	---	443257	---
120	2-1/2" Bore	1	---	443257	---
121	Output Hub 2-7/16" to	1	---	---	---
122	3" Bore	1	---	---	---
94	Torque-Arm Assembly ★	1	243254	244254	245254
96	▲ Rod End	1	A73087	A73146	A73146
98	▲ Hex Nut	1	407095	407097	407097
100	▲ Turnbuckle	1	A73089	A73147	A73147
102	▲ Extension	1	A73088	A73148	A73148
104	▲ LH Hex Nut	1	407244	407246	407246
106	▲ Fulcrum	1	243249	246249	246249
108	▲ Fulcrum Screw	1	411484	411484	411484
110	▲ Hex Nut	1	407093	407093	407093
112	▲ RH Adapter Plate	1	243242	244244	245242
114	▲ LH Adapter Plate	1	243241	244243	245241
116	▲ Adapter Bushing	1	243243	245243	245243
118	▲ Adapter Bolt	1	411437	411460	411460
120	▲ Lock Washer	1	419012	419013	419013
122	▲ Hex Nut	1	407089	407091	407091

- ♥ On size TXT 3A for 1-15/16" thru 1-3/4" bores
and TXT 5B for 1-7/16" thru 2-1/4" bores.

PARTS FOR SINGLE REDUCTION ABHS TXT305A, TXT405A, TXT505A TAPER BUSHED SPEED REDUCERS



NOTE; THE TWO DIGIT NUMBERS ARE FOR REFERENCE ONLY. ORDER PARTS BY THE SIX DIGIT NUMBER IN THE PARTS LIST. EACH SIX DIGIT NUMBER IS A COMPLETE IDENTIFICATION OF THE PART OR ASSEMBLY.

Ref.	Name of Part	No. Req'd	TXT305A	TXT405A	TXT505A
	Housing	1	253165	254218	255216
§	Breather Assembly	1	A38983	A38983	A38983
§	Breather Adaptor	1	--	--	240054
16	Housing Bolt	6	411440	411442	411464
18	Adapter Housing Bolt	2	411442	411444	411466
19	Washer § †	4	419094	419094	419096
20	Lock Washer	6	419012	419012	419013
22	Hex Nut	8	407089	407089	407091
24	Dowel Pin	2	420055	420055	420110
§	Pipe Plug	2	430031	430031	430033
§	Magnetic Plug	1	430060	430060	430062
28	Input Shaft Seal Carrier	1	253177	254224	255224
30*	Imp Shft Brg Shim Pack	2	389723	389724	389725
32	Carrier/Cover Screws	+	411390	411407	411407
33	Lock Washer	+	419010	419011	419011
34	Backstop Cover	1	253175	254223	255019
38	Backstop Cover Screw	4	416524	411035	411406
39	Lock Washer	4	419007	419009	419009
40*	Input Shaft with Pinion	1	253170	254230	255221
41	Input Shaft Key	1	443078	443096	443113
44*	▲ Input Shaft Brg Cone	1	402190	402179	402270
45*	▲ (Input Side) Cup	1	403132	403006	403026
46*	▲ Input Shaft Brg Cone	1	402271	402285	402266
47*	▲ (Backstop Side) Cup	1	403101	403125	403073
	Output Hub Assembly ★ Tapered	1	389703	389710	389717
60*	▲ Output Hub Tapered	1	243556	244588	245590
62*	▲ Output Gear	1	243570	244188	245186
64*	▲ Output Gear Key	1	389733	391015	391026
72	Bushing Backup Plate	2	243308	244099	245114
74	Retaining Ring	2	421109	421108	421107
76	Output Hub Seal Carrier (Input Side)	1	243547	244591	245592
	Output Hub Brg Kit ★	1	389589	389592	389596
80*	▲ Output Hub Cone	2	402272	402268	402193
81*	▲ Bearing Cup	2	403127	403163	403016
82*	Output Hub Bearing Shim Pack	2	389706	389713	389719
36*	Backstop Cvr Gasket	1	243561	244593	245220
42*	Input Shaft Seal	1	351123	245534	245546
78*	Output Hub Seal	2	A73107	A73109	245444
§	RTV Sealant, Tube	1	465044	465044	465044

- ★ Includes parts listed immediately below marked "▲".
Housing assembly includes a two-piece housing.
Bushing assembly includes 2 bushings.
▲ Makes up assembly under which it is listed.
§ Not shown on drawing.
† Washer is used on housing bolts at dowel pin locations.
+ 10 req'd on 305A ; 12 req'd on 405A & 505A.
* Recommended spare parts.
♡ On size 305A for 1-15/16" thru 1-3/4" bores.
On size 405A for 1-7/16" thru 1-7/8" bores.
On size 505A for 1-7/8" thru 2-1/4" bores.
◇ On size 405A for 1-15/16" and 2" bores.

Ref.	Name of Part	No. Req'd	TXT305A	TXT405A	TXT505A
	Bushing 1-5/16" Bore	1	243282	--	--
	Assembly 1-3/8" Bore	1	243284	--	--
★	1-7/16" Bore	1	243260	244079	--
	1-1/2" Bore	1	243262	244081	--
	1-5/8" Bore	1	243264	244083	--
	1-11/16" Bore	1	243268	244085	--
	1-3/4" Bore	1	243266	244087	--
	1-7/8" Bore	1	243270	244089	245084
	1-15/16" Bore	1	243272	244093	245086
	2" Bore	1	243274	244095	245088
	2-1/8" Bore	1	--	244109	--
	2-3/16" Bore	1	243276	244111	245090
	2-1/4" Bore	1	--	244113	245092
	2-7/16" Bore	1	--	244115	245094
	2-1/2" Bore	1	--	--	245099
	2-11/16" Bore	1	--	--	245110
	2-15/16" Bore	1	--	--	245112
86	▲ Bushing Screw	6	411407	411408	411435
88	▲ Lock Washer	6	419011	419011	419012
	1-5/16" Bore	1	443264	--	--
	1-3/8" Bore	1	443264	--	--
	1-7/16" Bore	1	443265	443254	--
	1-1/2" Bore	1	443265	443254	--
	1-5/8" Bore	1	443265	443254	--
	1-11/16" Bore	1	443266	443254	--
	1-3/4" Bore	1	443266	443254	--
§	Key, ▲ Bushing to Shaft	1	443267	443255	443251
	1-15/16" Bore	1	443269	443255	443251
	2" Bore	1	443268	443255	443251
	2-1/8" Bore	1	--	443258	--
	2-3/16" Bore	1	443270	443259	443251
	2-1/4" Bore	1	--	443260	443251
	2-7/16" Bore	1	--	443261	443243
	2-1/2" Bore	1	--	--	443244
	2-11/16" Bore	1	--	--	443245
	2-15/16" Bore	1	--	--	443250
§	▲ Key, Bushing to Output Hub	1 ♡	443262	--	443202
		1 ◇	--	443257	--
	Torque-Arm Assembly ★	1	243254	244254	245254
94	▲ Rod End	1	A73087	A73146	A73146
96	▲ Hex Nut	1	407095	407097	407097
98	▲ Turnbuckle	1	A73089	A73147	A73147
100	▲ Extension	1	A73088	A73148	A73148
102	▲ LH Hex Nut	1	407244	407246	407246
104	▲ Fulcrum	1	243249	246249	246249
106	▲ Fulcrum Screw	1	411484	411484	411484
110	▲ Hex Nut	1	407093	407093	407093
112	▲ RH Adapter Plate	1	243242	244244	245242
114	▲ LH Adapter Plate	1	243241	244243	245241
116	▲ Adapter Bushing	1	243243	245243	245243
118	▲ Adapter Bolt	1	411437	411460	411460
120	▲ Lock Washer	1	419012	419013	419013
122	▲ Hex Nut	1	407089	407091	407091

Table 7 – Manufacturers’ Part Numbers for Replacement Output Hub Bearings For ABHS TXT3A, TXT4A, TXT5A, TXT5B

Torque-Arm Reducer Drive Size	Output Bearing	
	Dodge Part No.	Timken Part No.
TXT 305A	402272 403127	LM814849 LM814810
TXT 309A TXT 315A TXT 325A	402272 403127	LM814849 LM814810
TXT 405A	402268 403163	498 492A
TXT 409A TXT 415A TXT 425A	402268 403163	498 492A
TXT 505A	402193 403016	42381 42584
TXT 509B TXT 515B TXT 525B	402193 403016	42381 42584

Table 8 – Manufacturers’ Part Numbers for Replacement Countershaft Bearings For ABHS TXT3A, TXT4A, TXT5A, TXT5B

Torque-Arm Reducer Drive Size	Countershaft Bearing Input Side	
	Dodge Part No.	Timken Part No.
TXT 309A TXT 315A TXT 325A	402273 403094	15102 15245
TXT 409A TXT 415A TXT 425A	402000 403000	M86649 M86610
TXT 509B TXT 515B TXT 525B	402203 403027	2789 2720

Table 8 cont’d– Manufacturers’ Part Numbers for Replacement Countershaft Bearings For ABHS TXT3A, TXT4A, TXT5A, TXT5B

Torque-Arm Reducer Drive Size	Countershaft Bearing Input Side	
	Dodge Part No.	Timken Part No.
TXT 309A TXT 315A TXT 325A	402273 403094	15102 15245
TXT 409A TXT 415A TXT 425A	402000 403000	M86649 M86610
TXT 509B TXT 515B TXT 525B	402203 403027	2789 2720

Table 9 – Manufacturers’ Part Numbers for Replacement Input Bearings For ABHS TXT3A, TXT4A, TXT5A, TXT5B

Torque-Arm Reducer Drive Size	Input Bearings Input Side	
	Dodge Part No.	Timken Part No.
TXT 305A	402190 403132	LM603049 LM603011
TXT 309A TXT 315A TXT 325A	402204 403139	LM48548A LM48510
TXT 405A	402179 403006	368 362A
TXT 409A TXT 415A TXT 425A	402280 403027	2788 2720
TXT 505A	402270 403026	45289 45220
TXT 509B TXT 515B TXT 525B	402144 403104	28579 28521

Torque-Arm Reducer Drive Size	Input Bearings output Side	
	Dodge Part No.	Timken Part No.
TXT 305A	402271 403101	02872 02820
TXT 309A TXT 315A TXT 325A	402273 403094	15102 15245
TXT 405A	402285 403125	339 332
TXT 409A TXT 415A TXT 425A	402142 403102	26118 26283
TXT 505A	402266 403073	350A 352
TXT 509B TXT 515B TXT 525B	402266 403073	350A 352

REPLACEMENT OF PARTS

A DODGE TORQUE-ARM Speed Reducer can be disassembled and reassembled by careful attention to the instructions following, using tools normally found in a maintenance department.

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.

WARNING

The keyseat in the input shaft and sharp edges on the output hub should be covered with tape or paper before disassembly or reassembly. Failure to observe these precautions could result in bodily injury as well as damage to, or destruction of, the equipment.

CAUTION

Exercise care to avoid damage to the surfaces on which the oil surfaces rub during disassembly and reassembly. Remove any burrs or nicks on the surfaces of the input shaft or output hub before disassembly or reassembly. Failure to observe these precautions could result in damage to or destruction of the equipment.

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 with a gear assembled on the hub be ordered to ensure 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:

WARNING

To ensure 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

External loads may cause machine movement. Block machine before removing any drive train components. Failure to observe these precautions could result in bodily injury.

TAPER BUSHED—

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.
3. Remove the outside bushing, the reducer and then the inboard bushing.

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 parts inside.
2. Lift shaft, gear and bearing assemblies from housing.
3. Remove seals from housing.

REASSEMBLY:

1. Output Hub Assembly: Heat gear to 325° to 350°F to shrink onto hub. Heat bearing to 250° to 270°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. Input Shaft Assembly: Shaft and pinion are integral. Press bearings on shaft. Press against inner (not outer) race of bearings. (Note: Roller bearings are used on input pinion.)
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 bearing cup into housing. Tap into place. Place input pinion assembly into housing. Tap assemblies lightly with rawhide hammer to ensure proper seating. Apply a few drops of oil on bearing. Spin gears to check for any binding. Gears should turn freely.

5. Clean housing flange surfaces on both halves, making sure not to nick or scratch flange face. Place a new bead of gasket replacer 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 Table 10. Place input bearing cup in housing and tap in place. Install input seal carrier and draw down with two (2) bolts 180° apart to 50 inch-pounds torque. Loosen bolts and retighten finger tight. Measure clearance between housing and carrier flange at each bolt and average. Add .005 to average and make up shim pack. Install shim pack and torque down all seal carrier bolts per Table 10. Use dial indicator to check end play. Add or remove shims until indicator reads .002" to .004".

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 danger of 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 deburr housing bore if end of bore is sharp or rough. Fill cavity between lips of seal with grease. A light coating of RTV silicone sealant applied to the outside diameter of the seals may be required. 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 10 – Recommended Torque Values For ABHS Reducers

Reducer Size	Dry Torque (lb.-ft.)	
	Housing Bolts	Output Hub Seal Carrier Screws
TXT 1	30–24	N/A
TXT2	30–24	N/A
TXT 305A & 3A	50–45	17–15
TXT 405A & 4A	50–45	30–27
TXT 505A & 5B	75–68	30–27
Reducer Size	Dry Torque (lb.-ft.)	
	C'shaft Bearing Cover Screws	Input Shaft Seal Carrier Screws
TXT 1	See Note	17–15
TXT2	See Note	17–15
TXT 305A & 3A	17–15	17–15
TXT 405A & 4A	30–27	30–27
TXT 505A & 5B	30–27	30–27

NOTE: Tighten sufficient to prevent oil leaks.



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