

## Instruction Manual for DODGE Airport Baggage Handling Systems Speed Reducers

**ABHS TXT109A - TXT115A - TXT125A**  
**ABHS TXT209A - TXT215A - TXT225A**  
**ABHS TXT 309C - TXT315C - TXT325C**  
**ABHS TXT 409C - TXT415C - TXT425C**  
**ABHS TXT 509C - TXT515C - TXT525C**  
**ABHS TXT105 - TXT 205 - TXT305A - TXT 405A - TXT 505A**

These instructions must be read thoroughly before installation or operation. This instruction manual was accurate at the time of printing. Please see [dodgeindustrial.com](http://dodgeindustrial.com) for updated instruction manuals.

**WARNING:** To ensure the 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:** All products over 25 kg (55 lbs) are noted on the shipping package. Proper lifting practices are required for these products.

**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 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.

**NOTES:** This reducer is compatible with the Dodge Smart Sensor that can be installed in the adapter plug labeled "smart sensor". The plug and sensor can be moved to different locations as required by mounting position.

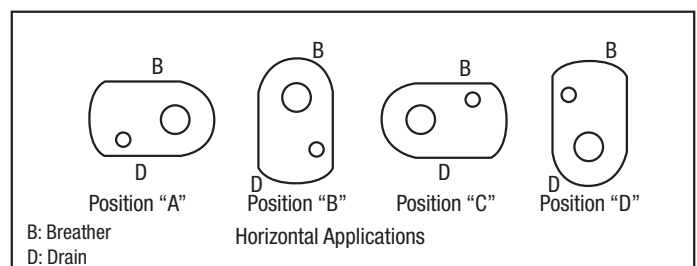
### Installation

1. On ABHS reducers, use eye bolt to lift reducers.
2. Determine the running positions of the reducers. (See Figure 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 Mermatex 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 the topmost hole.

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

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



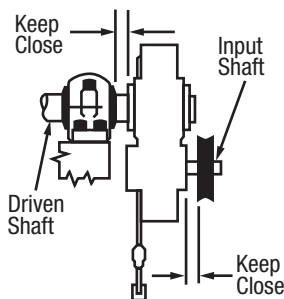
**NOTE:** To verify oil quantity, drain and measure amount drained and add accordingly.

ABHS 1	24 Fl. oz.
ABHS 2	32 Fl. oz.
ABHS 3	64 Fl. oz.
ABHS 4	80 Fl. oz.
ABHS 5	128 Fl. oz.

3. Mount reducer on driven shaft as follows:

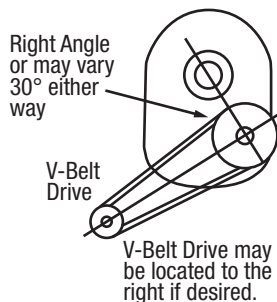
**For Tapered Bushed:** per instruction manual for tapered bushings.

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



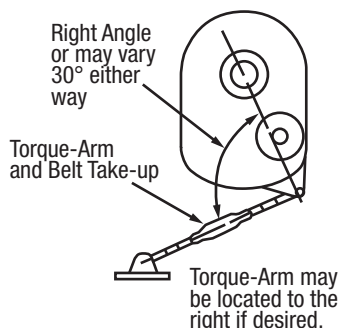
5. Install motor and V-belt drive so belt pull will approximately be at right angles to the center line between driven and input shaft as shown in Figure 3. This will permit tightening the V-belt drive with the torque arm.

6.



7. 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.

8. 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 as shown in Figure 4. Make sure that there is sufficient take-up in the turnbuckle for belt tension adjustment when using V-belt drive.



## 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

**DANGER: The user is responsible for conforming with the National Electric 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.**

1. Remove the two or three bolts required for mounting the TAM motor mount from the reducer housing. Install the front and rear supports using the new reducer bolts supplied with the motor mount. Make sure support flanges face output side of reducer. Tighten bolts securely.
2. Mount bottom plate on supports with bolts supplied. Insert bolts from top through slotted holes. Add flat washer, lock washer and nut. Hand tighten.
3. Thread two nuts on each threaded stud 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 on the stud and tighten securely.
4. Slide top plate over the threaded stud, making sure center handling hole is positioned opposite input side of reducer. Thread a hex nut on the studs and tighten securely.
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 securely.
7. Install V-belts and tension belts by alternately adjusting nuts 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 (VC10-105 oil by Daubert Chemical Co.) in accordance with Table 4.
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**

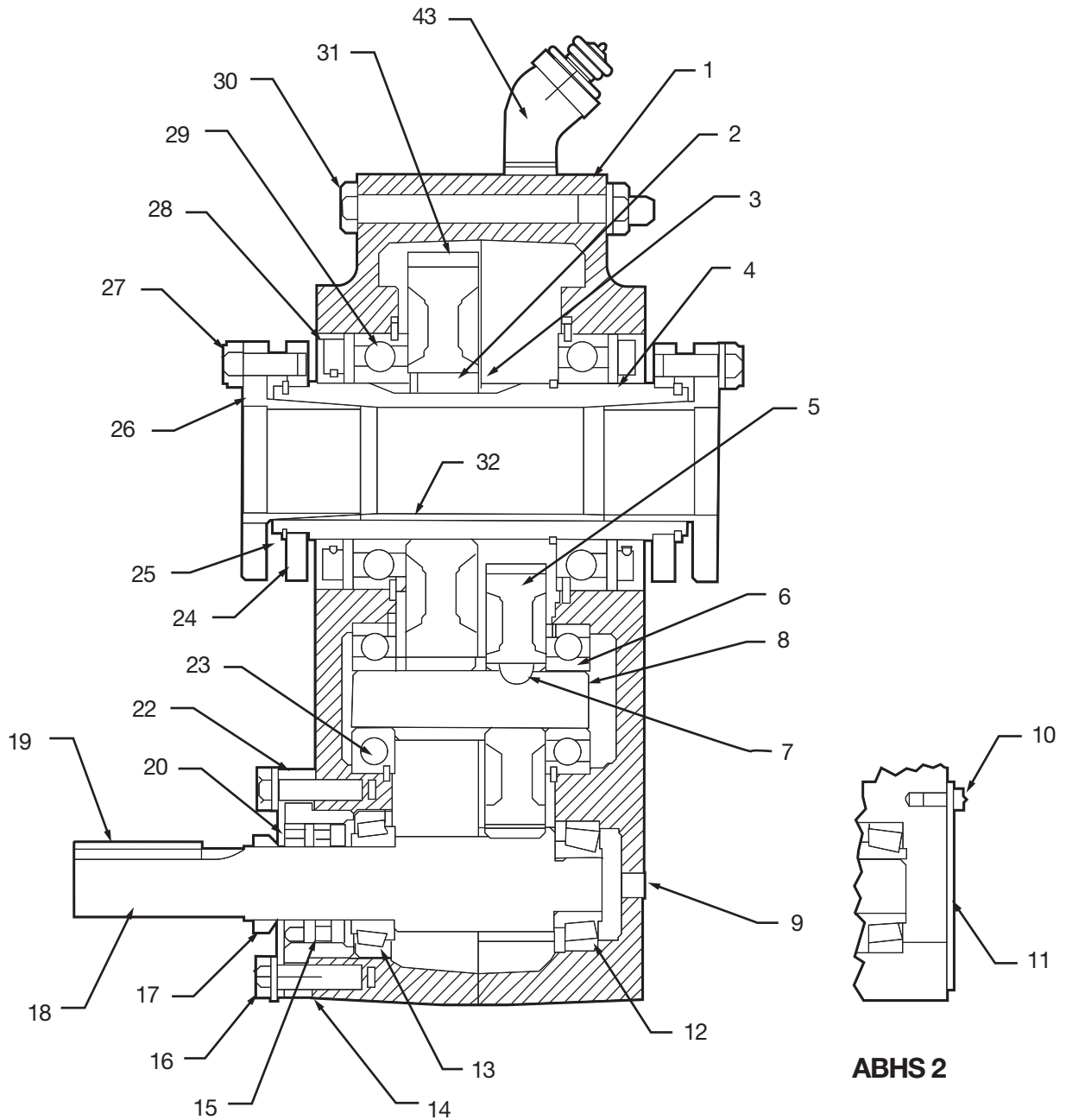
1. Assemble the vent plug into the proper hole.
2. Clean the shaft extensions with petroleum solvents.
3. Fill the unit to the proper oil level using a recommended lubricant as described in the lubrication section of this instruction manual. The VCI oil will not affect the new lubricant.
4. Follow the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

Table 3 - Quantities of VCI #105 Oil	
Case Size	Quarts or Liters
ABHS TXT1, TXT2, TXT3	.1
ABHS TXT4	.2
ABHS TXT5	.3

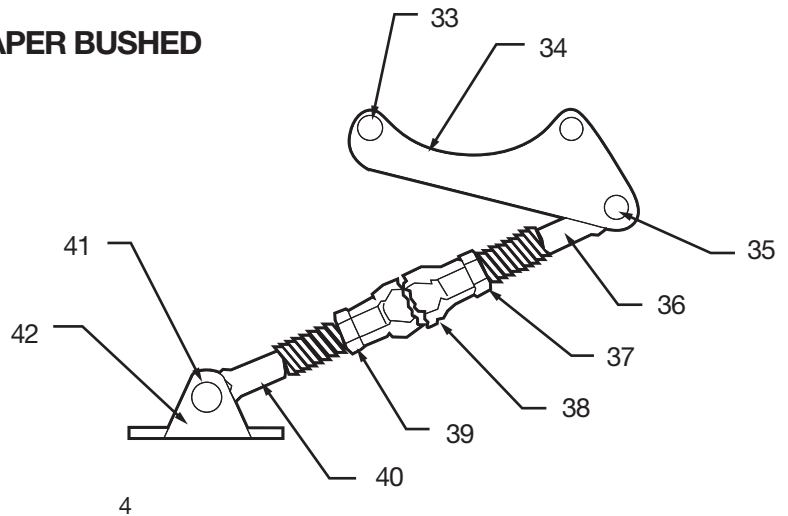
VCI #105 and #10 are interchangeable

VCI #105 is more readily available

PARTS FOR DOUBLE ABHS TXT1A AND TXT2A 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.

Parts for Double ABHS TXT1A and TXT2A Taper Bushed Speed Reducers						
Ref	Name of Part	ABHS TXT1 Part Number	Qty Req'd	ABHS TXT2 Part Number	Qty Req'd	
1	Housing Assembly	241195	1	242282	1	
			2			
30	Housing Bolts	411418	4	411418	5	
33	Adapter - Housing Bolts	411420	2	411420	2	
30	Bolt Washers	419011	4	419011	5	
30	Bolt Nuts	407087	6	407087	7	
③	Flat Washers	419092	2	419092	2	
43	Vent Assembly	A38983	1	A38983	1	
③	Magnetic Plug	430060	1	430060	1	
9	Oil Plug	430031	3	430031	3	
③	Smart Sensor Adapter	966905	1	966905	1	
11	Bearing Cover			A45613	1	
10	Cover Screws			415022	4	
11	Cover Gasket			243220	1	
9	Bearing Cover					
18	Input Pinion	9:1 Ratio	241196	1	242279	1
		15: Ratio	241160	1	242266	1
		25:1 Ratio	241185	1	242278	1
8	Countershaft Pinion	241216	1	242185	1	
4	Output Hub	241265	1	242134	1	
3	Snap Rings	421013	2	421017	2	
24	Bushing Backup Plates	241266	2	242137	2	
25	Retaining Rings	421111	2	421112	2	
31	Output Gear	241007	1	242181	1	
2	Output Gear Key	241217	1	443399	1	
31	Output Gear	241007	1	242181	1	
2	Output Gear Key	241217	1	443399	1	
5	1st Gear	9:1 Ratio	241482	1	242482	1
		15: Ratio	241170	1	242008	1
		25:1 Ratio	241171	1	242005	1
7	1st Gear Key	241309	1	242218	1	
28	Output Seal	241214	2	242113	2	
15	Input Seal	276173	2	242281	2	
29	Output Bearings	See Chart				
6	Countershaft Bearings					
12	Input Bearings					
13	Input Bearings					
22	Input Seal Carrier	241159	1	242265	1	
16	Carrier Bolts	411391	4	411391	4	
16	Carrier Bolt Washers	419010	1	419010	4	
14	Input Bearing Shim Pack	389585		389586		
		.002	241161	3	242267	3
		.005	241162	3	242268	3
		.010	241163	3	242269	3
		.025	241164	3	242271	3
17	Auxiliary Seal	241166	1	242272	1	
20	Auxiliary Seal Plate	241167	1	272275	1	
19	Input Shaft Key	443020	1	443020	1	
	TORQUE ARM ASSEMBLY①	241213	1	242280	1	
34	Adapter Plate LH	C16239	1	C16241	1	
		RH	C16240	1	C16242	1
35	Adapter Bolt	411412	1	411437	1	

Parts for Double ABHS TXT1A and TXT2A Taper Bushed Speed Reducers						
Ref	Name of Part	ABHS TXT1 Part Number	Qty Req'd	ABHS TXT2 Part Number	Qty Req'd	
35	Lockwasher	419011	1	419012	1	
35	Hex Nut	407087	1	407089	1	
35	Adapter Bushing	242243	1	243243	1	
36	Rod End	A73092	1	A73087	1	
37	Rod End Nut	407093	1	407095	1	
38	Turnbuckle	A73086	1	A73089	1	
40	Extension	A73085	1	A73088	1	
39	Extension Nut	407242	1	407244	1	
42	Fulcrum	241249	1	243249	1	
41	Fulcrum Bolt	411456	1	411484	1	
	Hex Nut	409091	1	407093	1	
26	Bushing Assembly	1" Bore	241278	1	.....	
		1-1/16" Bore	241280	1	.....	
		1-1/8" Bore	241282	1	242146	1
		1-3/16" Bore	241286	1	242148	1
		1-1/4" Bore	241288	1	242150	1
		1-5/16" Bore	241290	1	242152	1
		1-3/8" Bore	241924	1	242154	1
		1-7/16" Bore	241292	1	242156	1
		1-1/2" Bore	.....		242158	1
		1-5/8" Bore	.....		242162	1
		1-11/16" Bore	.....		242164	1
		1-3/4" Bore	.....		242166	1
		1-15/16" Bore	.....		242168	1
27	Bushing Screw②	411405	6	411390	6	
27	Lockwasher②	419010	6	419010	6	
32	Key, Bushing to Shaft②	1" Bore	443274	1	.....	
		1-1/16" Bore	443274	1	.....	1
		1-1/8" Bore	443271	1	443281	1
		1-3/16" Bore	241308	1	443281	1
		1-1/4" Bore	241307	1	443281	1
		1-5/16" Bore	241306	1	443281	1
		1-3/8" Bore	241310	1	443280	1
		1-7/16" Bore	241305	1	443282	1
		1-1/2" Bore	.....		443282	1
		1-5/8" Bore	.....		242172	1
		1-11/16" Bore	.....		242172	1
		1-3/4" Bore	.....		242170	1
		1-15/16" Bore	.....		443283	1
③	Key Bushing to Output Hub			443284		
③	Key, Bushing to Output Hub②		243272	1	.....	1④
		1" Bore	443273	1	.....	
		1-1/8" Bore				

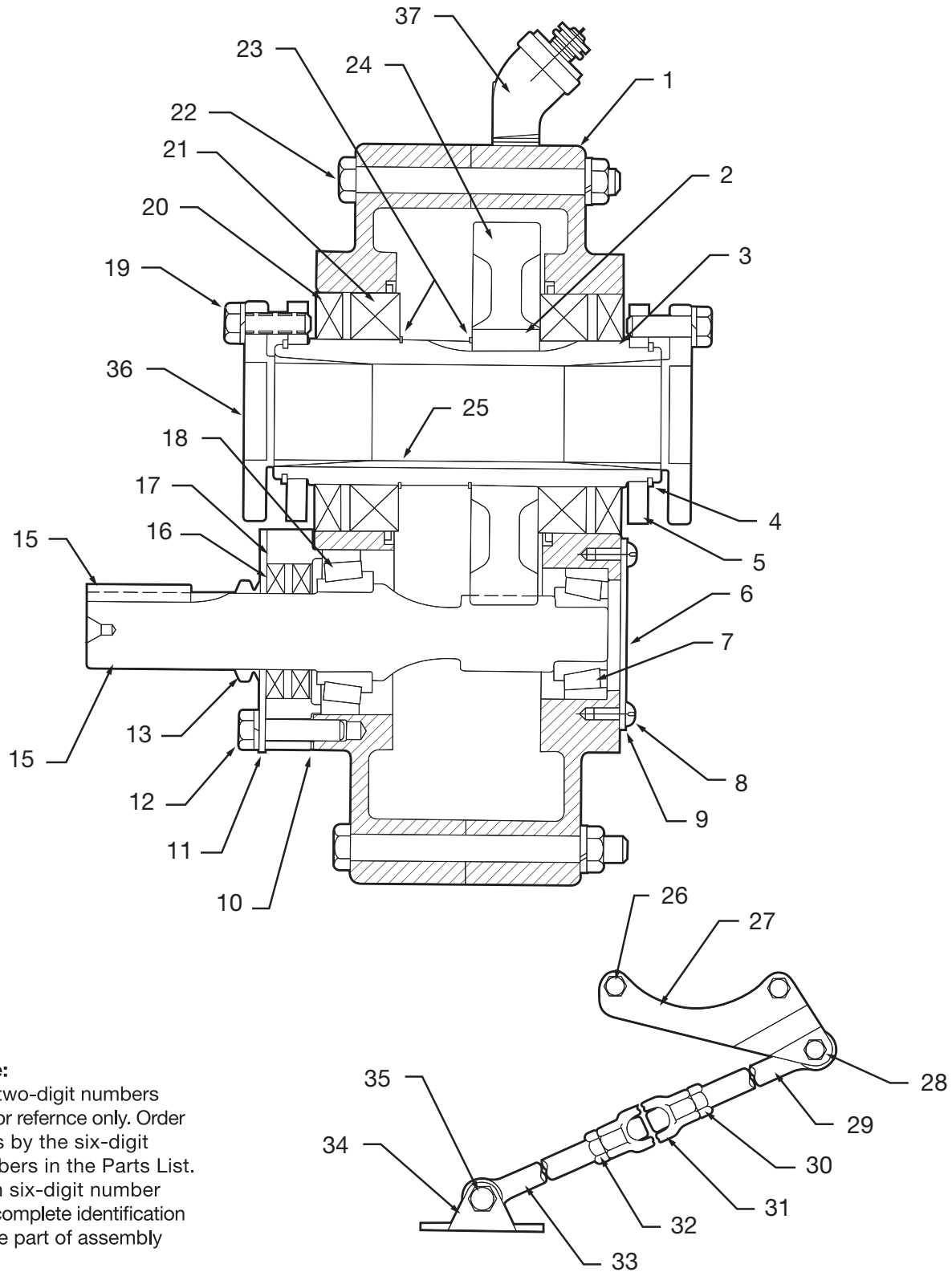
① Includes parts listed immediately below marked "②". Housing assemblies also includes a two-piece housing. Bushing assembly includes 2 bushings.

② Makes up the assemblies under which they are listed. Housing Assembly also includes two-piece housing.

③ Not shown on drawing.

④ On size TXT2A 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 of assembly

Parts for Single Reduction ABHS TXT105 and TXT205 Taper Bushed Speed Reducers									
Ref	Name of Part	ABHS TXT105 Part Number	Qty Req.	ABHS TXT205 Part Number	Qty Req.				
1	Housing	251121	1	252121	1				
③	Dowel Pins	420091	2	420091	2				
22	Housing Bolts	414418	4	411418	5				
26	Adapter - Housing Bolts	411420	2	411420	2				
22	Bolt Washers	419011	4	419011	5				
22	Bolt Nuts	407087	6	407087	7				
③	Flat Washers	419092	2	419092	2				
37	Vent Assembly	A38983	1	A38983	1				
③	Magnetic Plug	430060	1	430060	4				
③	Oil Plug	430031	2	430031	1				
③	Smart Sensor Adapter	966905	1	966905	1				
6	Bearing Cover	242221	1	242221	1				
8	Cover Screws	415022	4	415022	4				
9	Cover Gasket	424220	1	243220	1				
14	Input Pinion	251124	1	252134	1				
3	Output Hub	241265	1	242134	1				
23	Snap Rings	421013	2	421017	2				
5	Bushing Backup Plates	241266	2	242137	2				
4	Retaining Rings	421111	2	421112	2				
24	Output Gear	241007	1	242181	1				
2	Output Gear Key	241217	1	443399	1				
20	Output Seal	241214	1	242113	2				
16	Input Seal	242281	1	252019	2				
21	Output Bearings	See Chart							
7	Input Bearings								
18	Input Bearings								
17	Input Seal Carrier					251126	1	252124	1
12	Carrier Bolts	411391	4	411391	4				
12	Carrier Bolt Washers	419010	4	419010	4				
10	Input Bearing Shims								
	.002					251127	3	252126	3
	.005					251128	3	252167	3
	.010					251129	3	252128	3
	.025					251130	3	252129	3
13	Auxiliary Seal	242272	1	252131	1				
11	Auxiliary Seal Plate	251131	1	252132	1				
15	Input Shaft Key	334020	1	443445	1				
27	TORQUE ARM ASSEMBLY	241213		242280					
	Adapter Plate LH	C16239	1	C162241	1				
	RH	C16240	1	C162242	1				
28	Adapter Bolt	411412	1	411437	1				
28	Lockwasher	419011	1	419012	1				
28	Hex Nut	407087	1	407089	1				
28	Adapter Bushing	242243	1	242243	1				
29	Rod End	241245	1	243245	1				
30	Rod End Nut	407093	1	407095	1				
31	Turnbuckle	241246	1	243246	1				
33	Extension	241247	1	243247	1				
32	Extension Nut	407242	1	407244	1				

Parts for Single Reduction ABHS TXT105 and TXT205 Taper Bushed Speed Reducers						
Ref	Name of Part	ABHS TXT105 Part Number	Qty Req.	ABHS TXT205 Part Number	Qty Req.	
34	Fulcrum	241249	1	243249	1	
35	Fulcrum Bolt	411456	1	411484	1	
35	Hex Nut	407491	1	407493	1	
36	① Bushing Assembly	1" Bore	241278	1	.....	
		1-1/16" Bore	241280	1	.....	
		1-1/8" Bore	241282	1	242146	1
		1-3/16" Bore	241286	1	242148	1
		1-1/4" Bore	241288	1	242150	1
		1-5/16" Bore	241290	1	242152	1
		1-3/8" Bore	.....		242154	1
		1-7/16" Bore	241292	1	242156	1
		1-1/2" Bore	.....		242158	1
		1-5/8" Bore	.....		242162	1
		1-11/16" Bore	.....		242164	1
		1-3/4" Bore	.....		242165	1
1-15/16" Bore	.....		242168	1		
19	Bushing Screw②	411390	6	411390	6	
19	Lockwasher②	419010	6	419010	6	
25	Key Bushing to Shaft ②	1" Bore	443274	1	.....	
		1-1/16" Bore	443274	1	.....	
		1-1/8" Bore	443271	1	242146	1
		1-3/16" Bore	241308	1	242148	1
		1-1/4" Bore	241307	1	242150	1
		1-5/16" Bore	241306	1	242152	1
		1-3/8" Bore	.....		242154	1
		1-7/16" Bore	241305	1	242156	1
		1-1/2" Bore	.....		242158	1
		1-5/8" Bore	.....		242162	1
		1-11/16" Bore	.....		242164	1
		1-3/4" Bore	.....		242165	1
1-15/16" Bore	.....		242168	1		
③	Key Bushing to Output Hub②	443272	1④	443284	1④	
③	Key Bushing to Output Hub②	443273	1⑤	.....		

① Includes parts listed immediately below marked "②". Housing assemblies also includes a two-piece housing. Bushing assembly includes 2 bushings.  
② Makes up the assemblies under which they are listed. Housing Assembly also includes two-piece housing.  
③ Not shown on drawing.  
④ On size TXT2A for 1-1/8" through 1-1/2" bores.  
⑤ One size - TXT105 for 1-1/16" bores and 1-1/8" bores

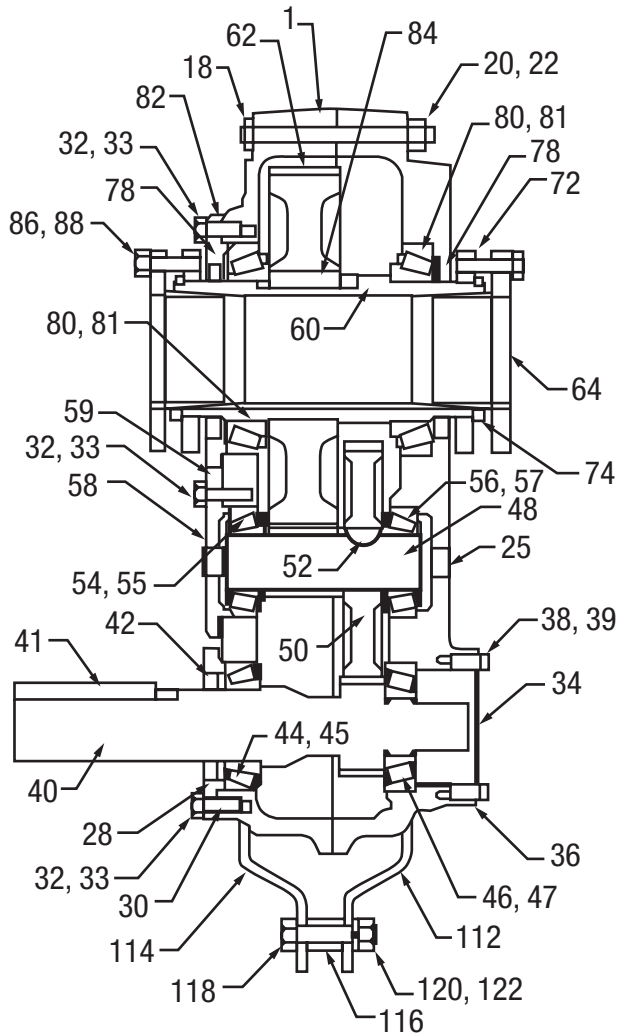
<b>Table 4 - Manufacturers' Part Numbers for Replacement Output Hub Bearings for ABHS TXT1 and TXT2</b>	
<b>TORQUE-ARM Reducer Drive Size</b>	<b>Output Bearing</b>
	<b>DODGE Part Number</b>
ABHS TXT105 ABHS TXT109 ABHS TXT115 AHBH TXT125	424020
ABHS TXT205 ABHS TXT209 ABHS TXT215 AHBH TXT225	424022

<b>Table 5 - Manufacturers' Part Numbers for Replacement Countershaft Bearings for ABHS TXT1 and TXT2</b>		
<b>TORQUE-ARM Reducer Drive Size</b>	<b>Counter Bearing Input Side</b>	<b>Countershaft Bearing Adapter Side</b>
ABHS TXT109 ABHSTXT115 ABHS TXT125	424006	424006
ABHS TXT209 ABHSTXT215 ABHS TXT225	424000	424000

<b>Table 6 - Part Numbers for Replacement Input Shaft Bearings for ABHS TXT1 and TXT2</b>		
<b>TORQUE-ARM Reducer Drive Size</b>	<b>Counter Bearing Input Side Part Number</b>	<b>Countershaft Bearing Adapter Side Part Number</b>
ABHS TXT105	Cone - 402283 Cup - 403094	Cone - 402286 Cup - 403167
ABHS TXT205	Cone - 402130 Cup - 403168	Cone - 304707 Cup - 403094
ABHS TXT109 ABHSTXT115 ABHS TXT125	Cone - 402284 Cup - 403166	Cone - 402265 Cup - 403165
ABHS TXT209 ABHSTXT215 ABHS TXT225	Cone - 402283 Cup - 403094	Cone - 304707 Cup - 403707

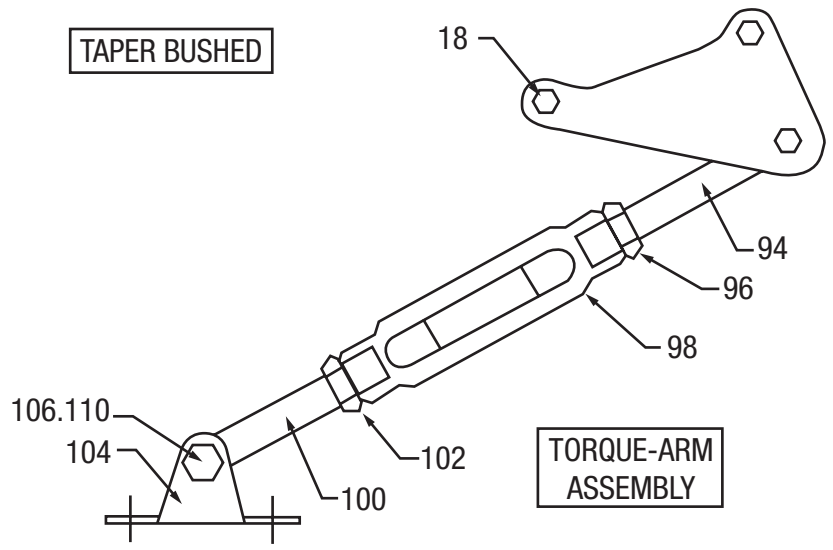


PARTS FOR DOUBLE REDUCTION ABHS TXT3C, TXT4C, TXT5C TAPER BUSHED SPEED REDUCERS



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

Parts for Double Reduction ABHS TXT3C, TXT4C, TXT5C Taper Bushed Speed Reducers						
Ref.	Name of Part		No. Req.	TXT3C	TXT4C	TXT5C
	Housing Assembly		1	243244	244508	245544
③	Breather Assembly		1	A38983	A38983	A38983
③	Breather Adapter		1	.....	.....	240054
16	Housing Bolt		6	411440	411442	411464
18	Adapter Housing Bolt		2	411442	411444	411466
19	Washer③④		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
25	Pipe Plug		2	430031	130031	430033
③	Smart Sensor Adapter		1	966905	966905	966906
③	Magnetic Plug		1	430060	430060	430062
28	Input Shaft Seal Carrier		1			245597
30	Complete Shim Kit			243800	244800	245139
32	Carrier/Cover Screws		⑤	411930	411407	411407
33	Lock Washer		⑤	419010	409011	419011
34	Backstop Cover		1	243560	244493	245547
38	Backstop Cover Screw		4	416524	411035	411406
39	Lock Washer		4	419007	419009	419009
40⑥	Input Shaft with Pinion	9:1 Ratio	1	243549	244579	245599
		15:1 Ratio	1	243550	244580	245600
		25:1 Ratio	1	243551	244581	245601
41	Input Shaft Key		1	443032	443082	443113
	Input Bearing Kit①		1	389587	389590	389594
44⑥	Input Shaft Brg②	Cone	1	402204	402280	402144
45⑥	(Input Side)②	Cup	1	403139	403027	403104
46⑥	Input Shaft Brg②	Cone	1	402273	402142	402266
47⑥	(Backstop Side)②	Cup	1	403094	403102	403073
	Countershaft Assembly①	9:1 Ratio	1	389729	389730	389731
		15:1 Ratio	1	389700	389707	389714
		25:1 Ratio	1	389701	389708	389715
48	②Countershaft with Pinion		1	243555	244590	245596
	First Reduction Gear②	9:1 Ratio	1	243237	244482	245582
		15:1 Ratio	1	243238	244214	245214
		25:1 Ratio	1	243239	244212	245212
52⑥	Key②		1	243215	244215	245215
	Countershaft Bearing Kit①		1	389588	389591	389595
54⑥	Countershaft Brg①	Cone	1	402273	402000	402203
55⑥	(Input Side)	Cup	1	403094	403000	403027
56⑥	Countershaft Brg	Cone	1	402273	402000	402203
57⑥	(Backstop Side)	Cup	1	403094	403000	403027
58	C'shaft Brg Cover (Input Shaft)		1			245594
	Output Hub Assembly①	Tapered	1	389703	389710	389717
60⑥	Output Hub②	Tapered	1	243556	244588	245590
62⑥	Output Gear②		1	243570	244188	245186
64⑥	Output Gear Key②		1	389733	389105	391026
72	Bushing Backup Plate		2	243308	244099	245114
74	Retaining Ring		2	421109	421108	421107
76	Output Hub Seal Carrier (Input Side)		1			245592
	Output Hub Bearing Kit①		1	389589	389592	389596
80⑥	Output Hub②	Cone	2	402272	402268	402193

Parts for Double Reduction ABHS TXT3C, TXT4C, TXT5C Taper Bushed Speed Reducers						
Ref.	Name of Part		No. Req.	TXT3C	TXT4C	TXT5C
81⑥	Bearing②	Cup	2	403127	403163	403016
36⑥	Backstop Cover Gasket		1	243561	244593	244220
42⑥	Input Shaft Seal		1	A73106	A73108	245543
78⑥	Output Hub Seal		2	A73107	A73109	245444
③	RTV Sealant, Tube		1	465044	465044	465044
84	①Bushing Assembly	1-5/16" Bore	1	243382	.....	.....
		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	244093	.....
		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	273274	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 Screw②		6	411407	411408	411435
88	Lockwasher②		6	419011	419011	419012
③	Key, Bushing to Shaft②	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	.....
		1-7/8" Bore	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		
③	Key, Bushing to Output Hub②	2-3/16" Bore	1⑦	443262	.....	443202
		2-1/2" Bore	1	.....	443257	.....
		2-7/16" Bore		.....	.....	.....
		3" Bore	1	.....	443257	.....
	Torque-Arm Assembly①		1	243254	244254	245254
94	Rod End②		1	A730087	A73146	A73146
96	Hex Nut②		1	407095	407097	407097
98	Turnbuckle②		1	A73089	A73147	A73147
100	Extension②		1	A73088	A73148	A73148

Parts for Double Reduction ABHS TXT3C, TXT4C, TXT5C Taper Bushed Speed Reducers					
Ref.	Name of Part	No. Req.	TXT3C	TXT4C	TXT5C
102	LH Hex Nut <sup>②</sup>	1	407244	407246	407246
104	Fulcrum <sup>②</sup>	1	243249	246249	246249
106	Fulcrum Screw <sup>②</sup>	1	411484	411484	411484
110	Hex Nut <sup>②</sup>	1	407093	407093	407093
112	RH Adapter Plate <sup>②</sup>	1	243242	244244	245242
114	LH Adapter Plate <sup>②</sup>	1	243241	244243	245241
116	Adapter Bushing <sup>②</sup>	1	243243	245243	245243
118	Adapter Bolt <sup>②</sup>	1	411437	411460	411430
120	Lock Washer <sup>②</sup>	1	419012	419013	419013
122	Hex Nut <sup>②</sup>	1	407089	407091	407091

① Includes parts listed immediately below marked "②". Housing assemblies also includes a two-piece housing. Bushing assembly includes 2 bushings.

② Makes up the assemblies under which they are listed. Housing Assembly also includes two-piece housing.

③ Not Shown on drawing

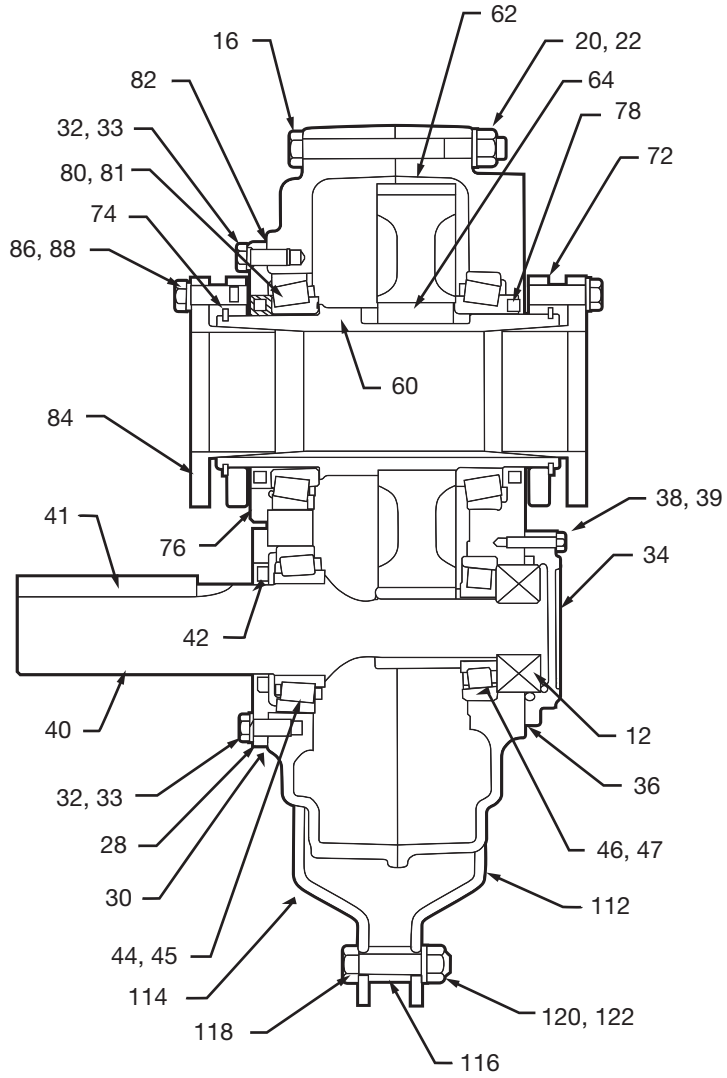
④ Washer is used on housing bolts at dowel pin locations

⑤ 15 required on TXT5C

⑥ Recommended spare parts

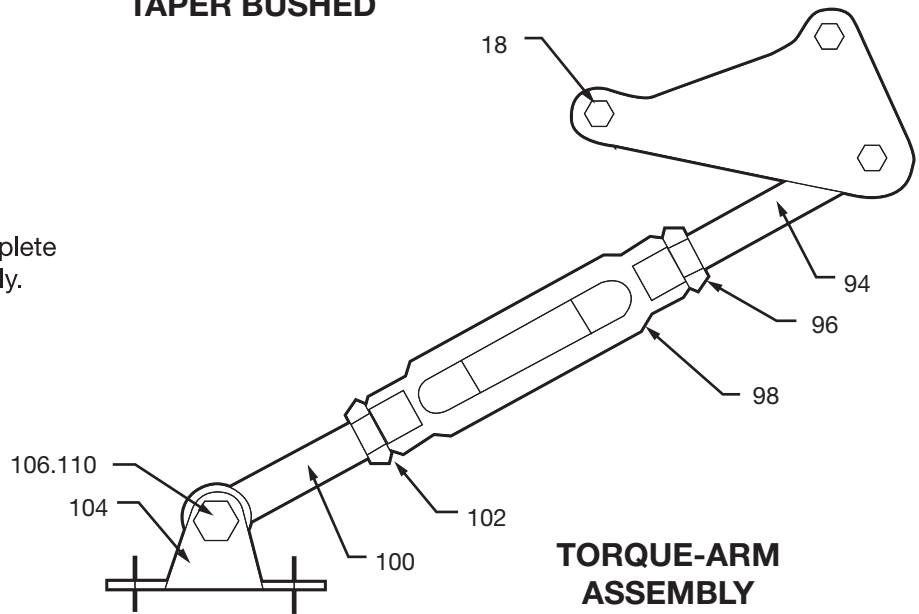
⑦ On size TXT 3C for 1- 15/16" thru 1-3/4" bores and TXT 5C for 1/7/16" thru 2-1/4" Bores.

PARTS FOR SINGLE REDUCTION ABHS TXT305A, TXT405A, TXT 505A 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**

**Parts for Single Reduction ABHS TXT305A, TXT405A TXT505A  
Taper Bushed Speed Reducers**

Ref.	Name of Part	No. Req	TXT305A	TXT405A	TXT505A	
	Housing	1	253165	254218	255216	
③	Breather Assembly	1	A38983	A38983	A38983	
③	Breather Adapter	1	.....	.....	240054	
16	Housing Bolt	6	411440	411442	411464	
18	Adapter Housing Bolt	2	411442	411444	411466	
19	Washer③④	4	419094	419094	419096	
20	Lock Washer	6	419012	419012	419013	
22	Hex Nut	8	409089	409089	407091	
24	Dowel Pin	2	420055	420055	420110	
③	Pipe Plug	2	430031	430031	430033	
③	Smart Sensor Adapter	1	966905	966905	966906	
③	Magnetic Plug	1	430060	430060	430062	
28	Input Shaft Seal Carrier	1	253177	254224	255224	
30④	Complete Shim Kit	1	240125	240126	240127	
32	Carrier / Cover Screws	⑤	411390	411407	411407	
33	Lock Washer	⑤	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	
40④	Input Shaft with Pinion	1	253170	254230	255221	
41	Input Shaft Key	1	443078	443096	443113	
44④	Input Shaft Brg	Cone	1	402190	402179	402270
45④	(Input Side)	Cup	1	403132	403006	403026
46④	Input Shaft Brg	Cone	1	402271	402285	402266
47④	(Backstop Side)	Cup	1	403101	403125	403073
	Output Hub Assembly	Tapered	1	389703	389710	389717
60④	Output Hub	Tapered	1	243556	244588	245590
62④	Output Gear		1	243570	244188	245186
64④	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 Gearing Kit①		1	389589	389592	389596
80④	Output Hub②	Cone	2	402272	402268	402193
81④	Bearing②	Cup	2	403127	403163	403016
36④	Backstop Cover Gasket		1	243561	244593	245220
42④	Input Shaft Seal		1	351123	245534	245546
78④	Output Hub Seal		2	A73107	A73109	245444
③	RTV Sealant, Tube		1	465004	465004	465004

**Parts for Single Reduction ABHS TXT305A, TXT405A TXT505A  
Taper Bushed Speed Reducers**

Ref.	Name of Part	No. Req	TXT305A	TXT405A	TXT505A
84	1-5/16" Bore	1	243282	.....	.....
	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	
③	Key, ①Bushing	1 ⑦	443262	.....	443202
	to Output Hub	1 ⑧	.....	443257	.....
	Torque-Arm Assembly ①	1	243254	244254	245254
94	Rod End ②	1	A73087	A73146	A73146
96	Hex Nut ②	1	407095	407097	409097
98	Turnbuckle ②	1	A73089	A73147	A73147
100	Extension ②	1	A73088	A73148	A73148
102	LH Hex Nut ②	1	407244	407246	407246
104	Fulcrum ②	1	243249	246249	246279
106	Fulcrum Screw ②	1	411484	411484	411484
110	Hex Nut ②	1	409093	407093	407093
112	RH Adapter Plate ②	1	243242	244244	245242
114	LH Adapter Plate ②	1	243241	244243	245241
116	Adapter Bushing ②	1	243243	245243	245243
118	Adapter Bolt ②	1	411437	411460	411460
120	Lock Washer ②	1	419012	419013	419013
122	Hex Nut ②	1	407089	407091	407091

① Includes parts listed immediately below marked "②". Housing assemblies also includes a two-piece housing. Bushing assembly includes 2 bushings.

② Makes up the assemblies under which they are listed. Housing Assembly also includes two-piece housing.

③ Not Shown on drawing

④ Recommended spare parts

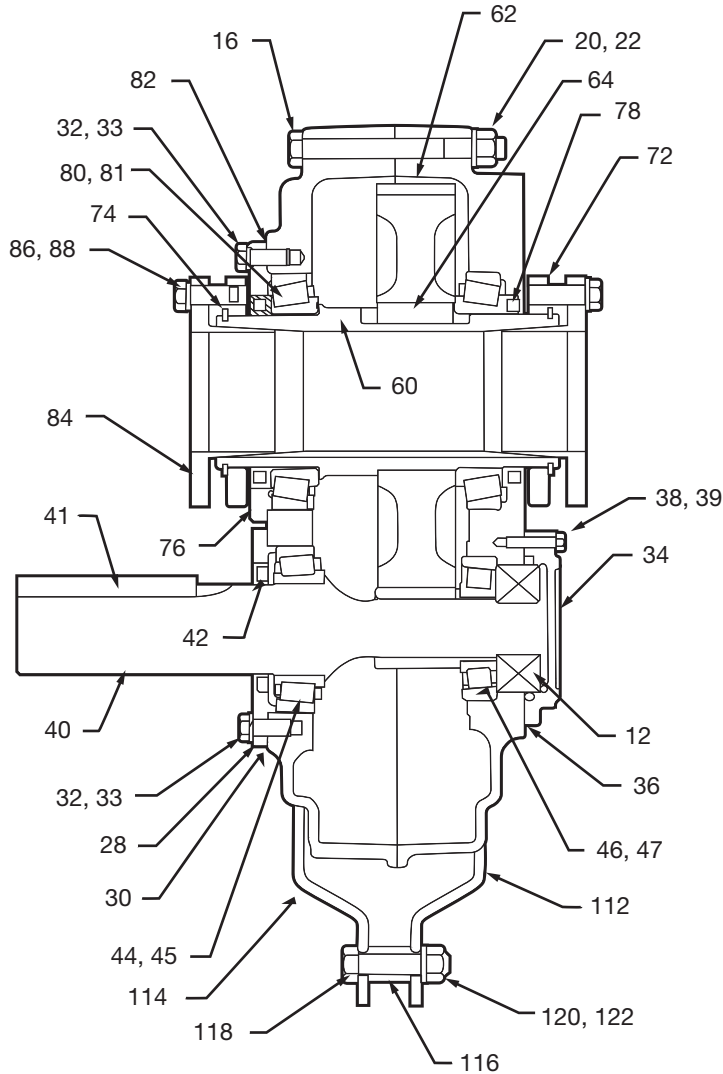
⑤ 10 required on 305A; 12 required on 405A and 505A

⑥ Recommended spare parts

⑦ 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

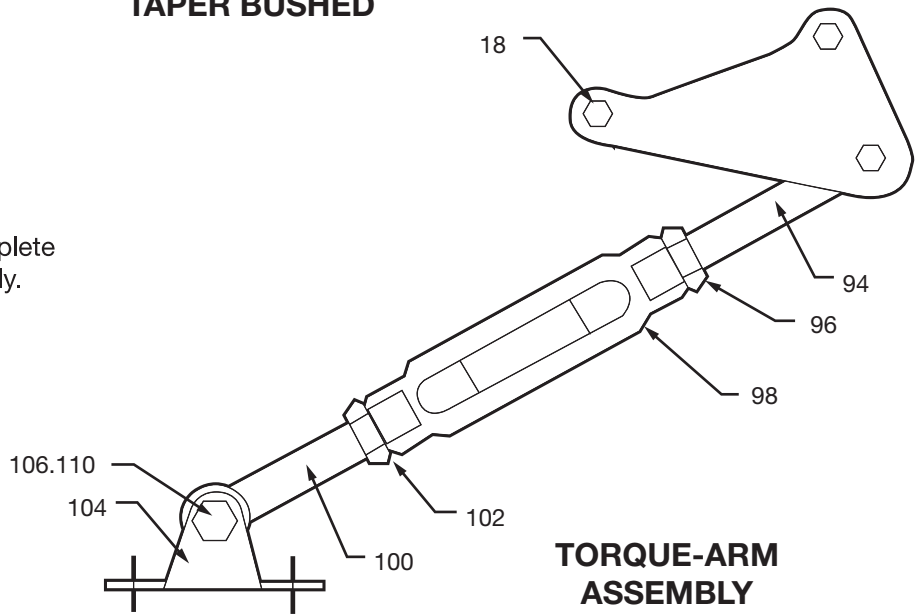
⑧ On size 405A for 1-15/16" and 2" Bores

PARTS FOR SINGLE REDUCTION ABHS TXT305A, TXT405A, TXT 505A 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**



<b>Table 7 - Part Numbers for Replacment Ouput Hub Bearings</b>	
<b>Torque-Arm Reducer Drive Size</b>	<b>Ouput Hub Bearing Part Number</b>
TXT305A	402272 403127
TXT309C TXT315C TXT325C	402272 403127
TXT405A	402268 403163
TXT409C TXT415C TXT425C	402268 403163
TXT505A	402193 403016
TXT509C TXT515C TXT525C	402193 403016

<b>Table 8 - Part Numbers for Replacement Countershaft Bearings</b>	
<b>Torque-Arm Reducer Drive Size</b>	<b>Countershaft Bearing Input Side Part Number</b>
TXT309C TXT315C TXT325C	402273 403094
TXT409C TXT415C TXT425C	402000 403000
TXT509C TXT515C TXT525C	402203 403027
<b>Torque-Arm Reducer Drive Size</b>	<b>Countershaft Bearing Output Side Part Number</b>
TXT309C TXT315C TXT325C	402273 403094
TXT409C TXT415C TXT425C	402000 403000
TXT509C TXT515C TXT525C	402203 403027

<b>Table 9 - Part Numbers for Replacement Input Bearings</b>	
<b>Torque-Arm Reducer Drive Size</b>	<b>Input Bearings Input Side Part Number</b>
TXT305A	402190 403132
TXT309C TXT315C TXT325C	402204 403139
TXT405A	402179 403006
TXT409C TXT415C TXT425C	402280 403027
TXT505A	402270 403026
TXT509C TXT515C TXT525C	402144 403104
<b>Torque-Arm Reducer Drive Size</b>	<b>Input Bearings Output Side Part Number</b>
TXT305A	402271 403101
TXT309C TXT315C TXT325C	402273 403094
TXT405A	402285 403125
TXT409C TXT415C TXT425C	402142 403102
TXT505A	402266 403073
TXT509C TXT515C TXT525C	402266 403073

## Replacement 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: 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 bushing 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 belts. 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.
3. Drive the two dowel pins into place in the right-housing half. Position right half of housing (as showing 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 half, 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".

<b>Table 10 - Recommended Torque Values for ABHS Reducers</b>		
<b>Reducer Size</b>	<b>Dry Torque (lb.-ft.)</b>	
	<b>Housing Bolts</b>	<b>Output Hub Seal Carrier Screws</b>
TXT1A	30-24	N/A
TXT2A	30-24	N/A
TXT305A and 3C	50-45	17-15
TXT405A and 4C	50-45	30-27
TXT505A and 5C	75-68	30-27
<b>Reducer Size</b>	<b>Dry Torque (lb.-ft.)</b>	
	<b>Countershaft Bearing Cover Screws</b>	<b>Input Shaft Seal Carrier Screws</b>
TXT1A	See Note	17-15
TXT2A	See Note	17-15
TXT305A and 3C	17-15	17-15
TXT405A and 4C	30-27	30-27
TXT505A and 5C	30-27	30-27

- 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.

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