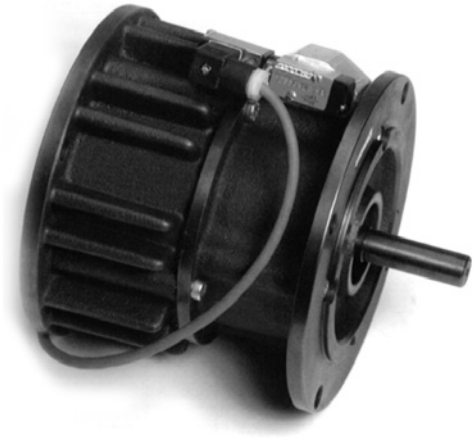
nexen®

AIR CHAMP® PRODUCTS

User Manual



FLANGE MOUNTED ENCLOSED CLUTCH-BRAKES

FMCBE MODELS 625, 875, 1125 AND 1375 WITH LOCKING KEY AND INTEGRAL VALVE

FORM NO L-20347-H-1112

In accordance with Nexen's established policy of constant product improvement, the specifications contained in this manual are subject to change without notice. Technical data listed in this manual are based on the latest information available at the time of printing and are also subject to change without notice.

Technical Support: 800-843-7445
(651) 484-5900

www.nexengroup.com

DANGER

Read this manual carefully before installation and operation.

Follow Nexen's instructions and integrate this unit into your system with care.

This unit should be installed, operated and maintained by qualified personnel ONLY.

Improper installation can damage your system or cause injury or death.

Comply with all applicable codes.

Nexen Group, Inc.
560 Oak Grove Parkway
Vadnais Heights, Minnesota 55127

ISO 9001 Certified

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INSTALLATION

1. Coat the threads of the Bar (Item 38) with Loctite® 242; then, thread the Bar into the Stub Shaft (Item 23) until the end of the Bar is visible in the keyway slot of the Stub Shaft (See Figure 1).

2. Apply a thin film of Never-Seez® to Key (Item 25) (See Figure 1).

3. Place the Key (Item 25) into the keyway of the Stub Shaft (Item 23) (See Figure 1).

NOTE: Align the air inlet port to a down position to allow condensation to drain out of the air chamber.

4. Slide the FMCBE output shaft into the gear reducer (See Figure 2).

5. Secure the FMCBE to the gear reducer, using customer supplied socket head cap screws, lock washers, and nuts (See Figure 2).

6. Tighten the Bar (Item 38) to the recommended tightening torque (See Table 1).

NOTE: Model 625 does not have a Female Pilot; proceed with Step 8 for this model.

7. On Models 875, 1125 &1375, first remove the Socket Head Cap Screws (Item 27) and Female Pilot (Item 26); then, secure the Female Pilot to the motor face using Socket Head Cap Screws (Item 29) and Lock Washers (Item 30). Tighten them to recommended torque (See Table 1 and Figure 3).

8. Insert the customer supplied key into the motor shaft keyway (See Figure 2).

9. On Model 625, secure the FMCBE to the motor using Socket Head Cap Screws (Item 29) and Lock Washers (Item 30) and tighten them to the recommended torque (See Table 1 and Figure 2).

   On Model 875, secure the Housing (Item 1) to the Female Pilot (Item 26) using Socket Head Cap Screws (Item 27) and tighten them to the recommended torque (See Table 1 and Figure 3).

10. Align the tapped hole in the Drive Disc (Item 4) with the hole in the Housing (Item 1) (See Figure 1).

NOTE: On Model 625, the Set Screw is Item 26. On Models 875, 1125 and 1375, the Set Screw is Item 31.

On Model 625 the Plug is Item 27. On Models 875, 1125 and 1375 the Plug is Item 32.

11. Tighten the Set Screw and install the Plug (See Figure 2).

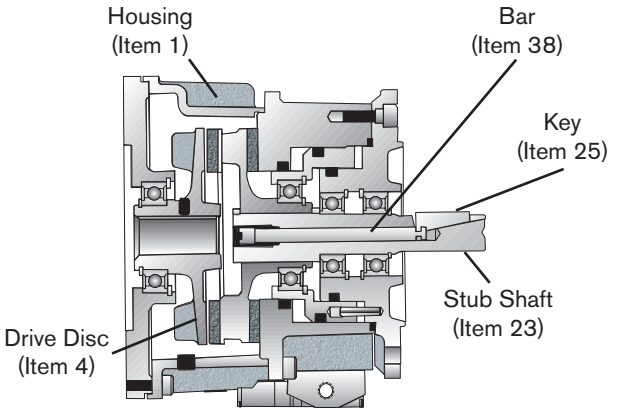


FIGURE 1

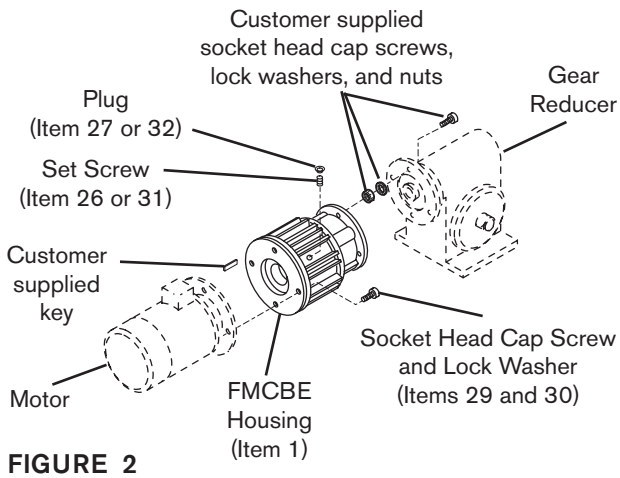


FIGURE 2

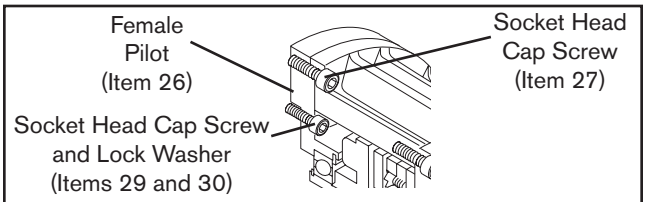


FIGURE 3

TABLE 1

MODEL	RECOMMENDED TIGHTENING TORQUE		
	Item 27	Item 29	Item 38
FMCBE-625	N/A	63.5 Nm 48.3 ft-lb	6.8 Nm [5 ft-lb]
FMCBE-875	14.24 Nm [10.5 ft-lb]	63.5 Nm 48.3 ft-lb	6.8 Nm [5 ft-lb]
FMCBE-1125	33.22 Nm [24.5 ft-lb]	161.0 Nm 118.8 ft-lb	14.9 Nm [11 ft-lb]
FMCBE-1375	67.12 Nm [49.5 ft-lb]	161.0 Nm 118.8 ft-lb	16.0 Nm [16 ft-lb]

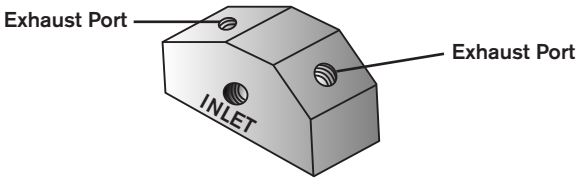
AIR AND ELECTRICAL CONNECTIONS

⚠WARNING

Prior to connecting any wires, be sure that AC power is turned off, locked and proper signage applied according to safety regulations. Avoid splicing wires.

NOTE: the clutch brake's integral valve manifold has three 0.125-18 NPT holes; one is marked "INLET" and the other two are exhaust ports.

1. Connect the air supply to the port marked "INLET."



2. Install the gasket included with the DIN Connector (See Figure 4, Item 40) onto the Solenoid Valve (Item 36).

3. Attach DIN Connector Cable to integral valve by pressing DIN Connector onto valve power pins and tightening DIN Connector fastener.

4. Connect DIN Connector Cable wires using the following chart to the appropriate power supply (Table 3).

DIN Connector Cable Wire Color	Valve Type		
	24 VDC	115 VAC	Valve Pin
Brown	+	Line	1
White	-	Neutral	2
Green	Ground	Ground	Ground

CAUTION

24 VDC valve has a suppression diode installed across its coil. Observe proper voltage polarity or coil damage will result.

NOTE: 24 VDC and 115 VAC valves require different power cables. Power cables for 24 VDC valve is a straight-through type. Power cables for 115 VAC valve has a full bridge rectifier and surge suppressor built in.

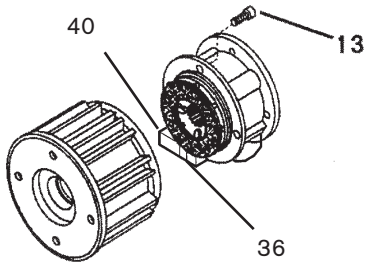


FIGURE 4

Table 3

Integral Valve Specifications			
Voltage	**Power**	**Resistance**	**Current**
115 VAC	2.5 W	5500 ohms	.021 A
24 VDC	.6 W	1100 ohms	.027 A

CONTROL VALVE OPERATION

A clear plastic window located in the valve body provides visual indication of spool shift. When the yellow stripe on the spool is visible, the valve is in the energized mode.

The red LED, when illuminated, indicates that the valve coil is energized.

When the valve coil is energized the air supply is directed to the clutch .

When the valve coil is de-energized the air supply is directed to the brake.

AIR PREPARATION

NON-LUBRICATED AIR

NOTE: Lubrication is not required to operate the Integral Valve, but it may be used if necessary. The use of non-lubricated air is a matter of customer choice and may be influenced by the machine environment and the products which the machine produces.

Nexen recommends the use of filtered, lubricated air to avoid premature seal wear.

When conditions do not allow the use of lubricated air, the preparation of the air is critical to the life of clutch-brake seals. Seals are lubricated prior to product assembly, which allows them to be operated with clean, dry non-lubricated air.

The air preparation should include filtering the air to 5 microns or better. The dew point specification should be 40°F or lower.

LUBRICATED AIR

Nexen recommends one drop of oil for every 20 cubic feet of air.

LUBRICATOR DRIP RATE SETTINGS

NOTE: These settings are for Nexen supplied lubricators. If you are not using a Nexen lubricator, calibration must replicate the following procedure. Locate the lubricator above and within ten feet of the Clutch/Brake, and use a low viscosity oil such as SAE-10. Synthetic lubricants are not recommended.

1. Close and disconnect the air line from the unit.
2. Turn the Lubricator Adjustment Knob clockwise three complete turns.
3. Open the air line.
4. Close the air line to the unit when a drop of oil forms in the Lubricator Sight Gage.
5. Connect the air line to the unit.
6. Turn the Lubricator Adjustment Knob counterclockwise until closed.
7. Turn the Lubricator Adjustment Knob clockwise one-third turn.
8. Open the air line to the unit.

TROUBLESHOOTING

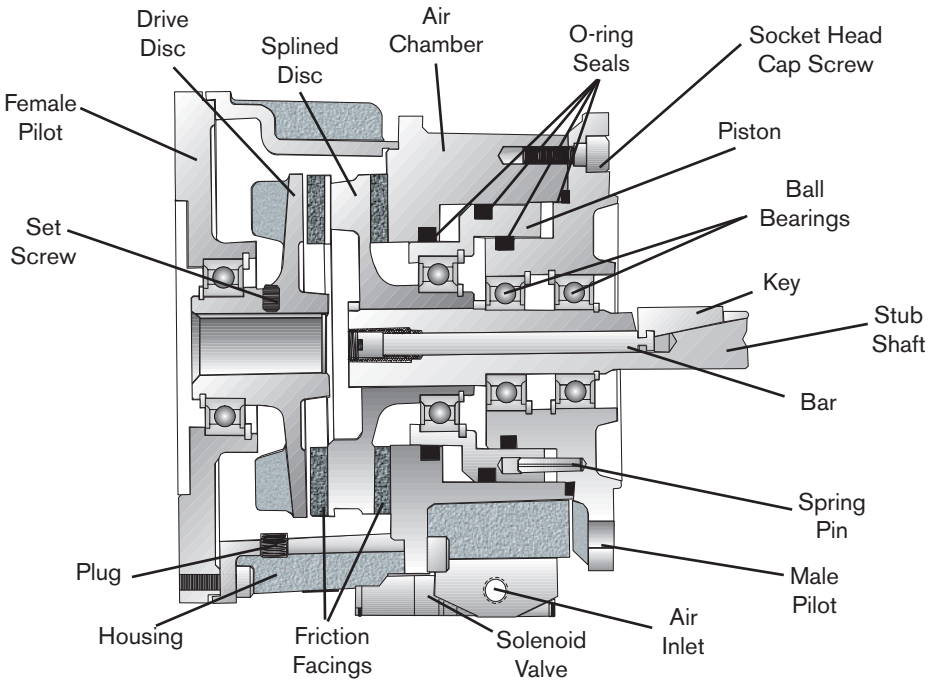


FIGURE 5

SYMPTOM	PROBABLE CAUSE	SOLUTION
Failure to engage.	Air not getting to the FMCBE due to a control valve malfunction.	Check for a control valve malfunction or low air pressure and replace the control valve if necessary.
	Air leaks around the O-ring Seals.	Replace the O-ring Seals.
Failure to disengage.	Unexhausted air due to a control valve malfunction.	Check for a control valve malfunction and replace the control valve if necessary.
Loss of torque.	Air leaks around the O-ring Seals.	Replace the O-ring Seals.
	Worn or dirty Friction Facings.	Replace the Friction Facings.

FMCBE REMOVAL

1. Remove the Plug (Item 27 or 32) and loosen the Set Screw (Item 26 or 31) securing the FMCBE to the motor or Input Unit (See Figure 6).

2. On Model 625, remove the Socket Head Cap Screws (Item 29) and Lock Washers (Item 30) that secure the FMCBE to the motor or Input Unit; then, slide the motor or Input Unit off the FMCBE.

   On Models 875, 1125 and 1375, remove the Socket Head Cap Screws (Item 27) that secure the FMCBE Housing (Item 1) to the Female Pilot (Item 26); then, remove the Socket Head Cap Screws (Item 29) and Lock Washers (Item 30) to remove the Female Pilot from the motor or Input Unit.

CAUTION

Unscrewing the Bar (Item 38) more than one-half turn will damage the bar.

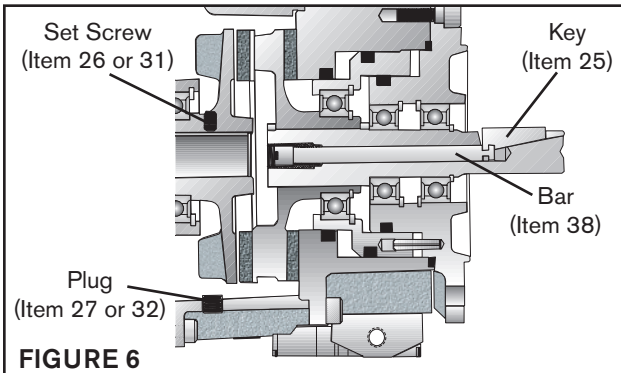


FIGURE 6

3. Slowly unscrew the Bar (Item 38) one-half turn to release the Key (Item 25).

4. Remove the FMCBE from the gear reducer.

PARTS REPLACEMENT–FRICTION FACINGS

NOTE: If an Input Unit is installed on the FMCBE, it must be removed before servicing the FMCBE.

1. Remove the four Socket Head Cap Screws (Item 13) and separate the two halves of the FMCBE (See Figure 7).

NOTE: The Flat Head Machine Screws (Item 7) are assembled with an anaerobic locking compound. Inserting a properly fitting screwdriver into the head of the Flat Head Machine Screw and striking the end of the screwdriver with a hammer will break the crystalline structure of the locking compound and allow removal of the Flat Head Machine Screws. Never use an impact wrench to remove the Flat Head Machine Screws.

2. Remove the six old Flat Head Machine Screws (Item 7) and the first old split Friction Facings (Item 11) (See Figure 8).

3. Align the holes in the Splined Disc (Item 9) with the Flat Head Machine Screws (Item 7) that secure the second split Friction Facing (Item 11) (See Figure 8).

4. Remove the six old Flat Head Machine Screws (Item 7) and the second old split Friction Facing (Item 11) (See Figure 8).

5. Install the first new split Friction Facings (Item 11) and new Flat Head Screws (Item 7) (See Figure 8).

6. Tighten the six new Flat Head Machine Screws to the recommended torque (See Table 4).

7. Install the second new split Friction Facings (Item 11) and six new Flat Head Machine Screws (Item 7) (See Figure 8).

8. Tighten the six new Flat Head Machine Screws to the recommended torque (See Table 4).

9. Apply a drop of Loctite® 242 to the threads of the four Socket Head Cap Screws (Item 13) (See Figure 7).

10. Install and tighten the four Socket Head Cap Screws (Item 13) securing the two halves of the FMCBE to the recommended torque (See Table 4).

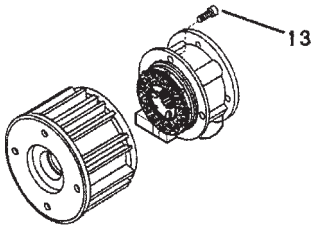


FIGURE 7

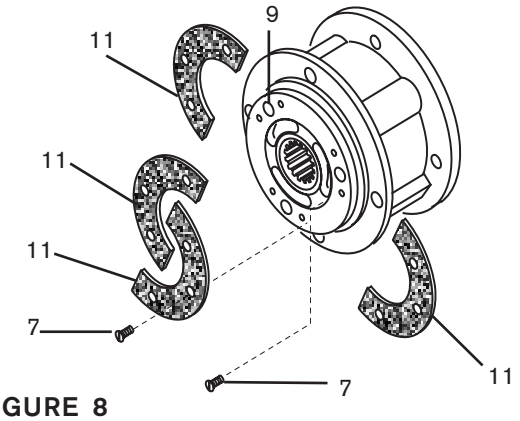


FIGURE 8

TABLE 4

RECOMMENDED TIGHTENING TORQUES		
FMCBE MODEL	**ITEM 7**	**ITEM 13**
FMCBE-625	2.9 Nm [26 in-lb]	14.24 Nm [10.5 ft-lb]
FMCBE-875	2.9 Nm [26 in-lb]	33.22 Nm [24.5 ft-lb]
FMCBE-1125	8.02 Nm [71 in-lb]	33.22 Nm [24.5 ft-lb]
FMCBE-1375	8.02 Nm [71 in-lb]	67.12 Nm [49.5 ft-lb]

PARTS REPLACEMENT–INPUT BEARING

NOTE: The following sections are arranged by model. Verify that you are in the correct section for your model.

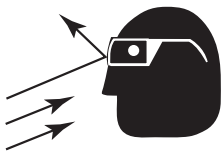
If an Input Unit is installed on the FMCBE, it must be removed before servicing the FMCBE.

MODEL 625

1. Remove the four Socket Head Cap Screws (Item 13) and separate the two halves of the FMCBE (See Figure 9).

WARNING

Use caution and always wear safety glasses when working with spring or tension loaded devices such as retaining rings.



2. Remove the Retaining Ring (Item 6) and press the Drive Disc (Item 4) out of Housing (Item 1) (See Figure 10).

3. Remove Retaining Ring (Item 3) (See Figure 10).

4. Fully supporting the Housing (Item 1), press the old Ball Bearing (Item 2) out of the Housing (See Figure 10).

NOTE: Do not reuse the bearing. Applying force on inner bearing race to remove bearing held by outer race causes damage to the bearing.

5. Clean the bearing bore of the Housing (Item 1) with fresh safety solvent, making sure all old Loctite® residue is removed (See Figure 10).

6. Apply an adequate amount of Loctite® 680 to evenly coat the outer race of the new Ball Bearing (Item 2) (See Figure 10).

7. Carefully align the outer race of the new Ball Bearing (Item 2) with the bore of the Housing (Item 1) (See Figure 10).

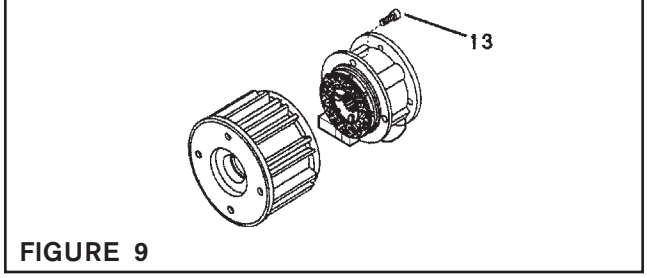


FIGURE 9

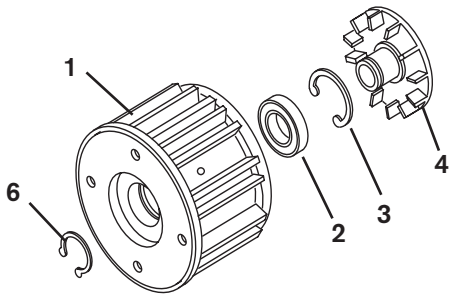


FIGURE 10

8. Supporting the Housing (Item 1) and pressing on the outer race of the new Ball Bearing (Item 2), press the new Ball Bearing into the Housing (See Figure 10).

9. Reinstall Retaining Ring (Item 3) (See Figure 10).

10. Support the inner race of the new Ball Bearing (Item 2) and press Drive Disc (Item 4) into the new Ball Bearing and Housing (Item 1) (See Figure 10).

11. Reinstall Retaining Ring (Item 6) (See Figure 10).

NOTE: Proceed with PARTS REPLACEMENT–BEARINGS AND O-RING SEALS.

MODELS 875, 1125 AND 1375

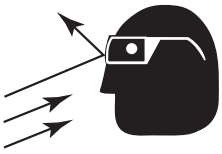
1. Remove the four Socket Head Cap Screws (Item 13) and separate the two halves of the FMCBE (See Figure 11).

2. Remove the four Socket Head Cap Screws (Item 27) (See Figure 12).

3. Remove the Female Pilot (Item 26) from the Housing (Item 1) (See Figure 12).

WARNING

Use caution and always wear safety glasses when working with spring or tension loaded devices such as retaining rings.



4. Remove the Retaining Ring (Item 6) and press the Drive Disc (Item 4) out of Female Pilot (Item 26) (See Figure 12).

5. Remove Retaining Ring (Item 3) (See Figure 12).

6. Fully supporting the Female Pilot (Item 26), press the old Ball Bearing (Item 2) out of the Female Pilot (See Figure 12).

NOTE: Do not reuse bearing. Applying force on inner bearing race to remove bearing held by outer race causes damage to bearing.

7. Clean the bearing bore of the Female Pilot (Item 26) with fresh safety solvent, making sure all old Loctite® residue is removed (See Figure 12).

8. Apply an adequate amount of Loctite® 680 to evenly coat the outer race of the new Ball Bearing (Item 2) (See Figure 12).

9. Supporting the Female Pilot (Item 26) and pressing on the outer race of the new Ball Bearing (Item 2), press the new Ball Bearing into the Female Pilot (See Figure 12).

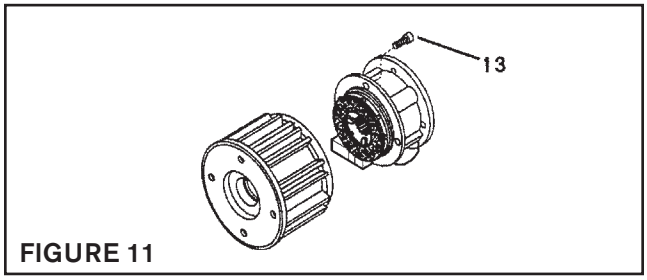


FIGURE 11

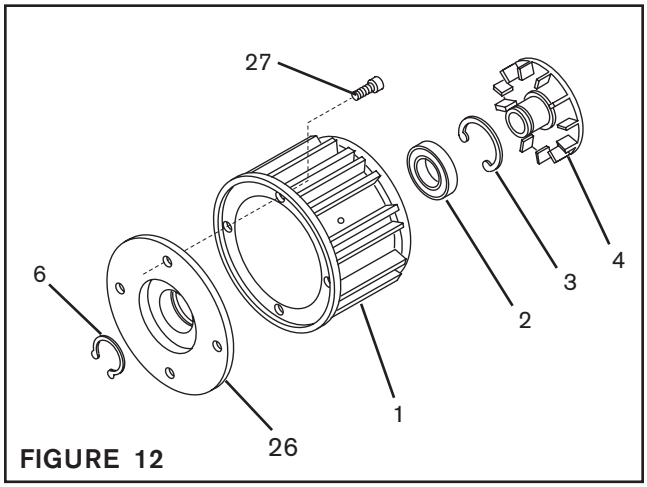


FIGURE 12

10. Reinstall Retaining Ring (Item 3) (See Figure 12).

11. Support the inner race of the new Ball Bearing (Item 2) and press the Drive Disc (Item 4) into the new Ball Bearing and Female Pilot (Item 26) (See Figure 12).

12. Reinstall Retaining Ring (Item 6) (See Figure 12).

13. Using the four Socket Head Cap Screws (Item 27), secure the Female Pilot (Item 26) to the Housing (Item 1) (See Figure 12).

NOTE: Do not tighten the four Socket Head Cap Screws (Item 27).

Proceed with PARTS REPLACEMENT–BEARINGS AND O-RING SEALS.

PARTS REPLACEMENT–BEARINGS AND O-RING SEALS

ALL MODELS

1. Remove the four Socket Head Cap Screws (Item 13) and separate the two halves of the FM-CBE (See Figure 13).

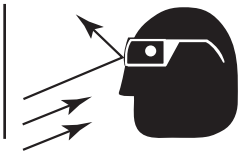
2. Remove the four remaining Socket Head Cap Screws (Item 13) and slide the Male Pilot (Item 20), Stub Shaft (Item 23), and the two Ball Bearings (Item 19) out of the Air Chamber (Item 12) (See Figure 14).

3. Remove the old O-ring Seals (Items 21 and 22) from the Male Pilot (Item 20) (See Figure 14).

NOTE: Ensure the Key (Item 25) is removed from Stub Shaft (Item 23).

WARNING

Use caution and always wear safety glasses when working with spring or tension loaded devices such as retaining rings.



Stub Shaft (Item 23) out of the Male Pilot (Item 20) (See Figure 15).

NOTE: The two old Ball Bearings (Item 19) are removed from opposite ends of the Male Pilot (Item 20). Do not remove Retaining Rings (Item 18) (See Figure 15).

5. Remove one of the old Ball Bearings (Item 19) from the Stub Shaft (Item 23) (See Figure 15).

6 Remove the other old Ball Bearing (Item 19) from the Male Pilot (Item 20) (See Figure 15).

7. Clean the bearing bore of the Male Pilot (Item 20) with fresh safety solvent, making sure all old Loctite® residue is removed (See Figure 15).

8. Press one new Ball Bearing (Item 19) onto the Stub Shaft (Item 23) (See Figure 15).

9. Apply an adequate amount of Loctite® 680 to evenly coat the outer race of the second new Ball Bearing (Item 19) and press it into the output side of the Male Pilot (Item 20) until it is seated against the Retaining Ring (Item 18) inside the Male Pilot (See Figure 15).

NOTE: Model 625 FMCBE does not have a second Retaining Ring (Item 18).

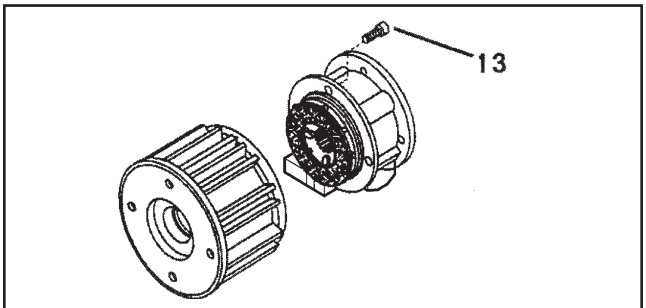


FIGURE 13

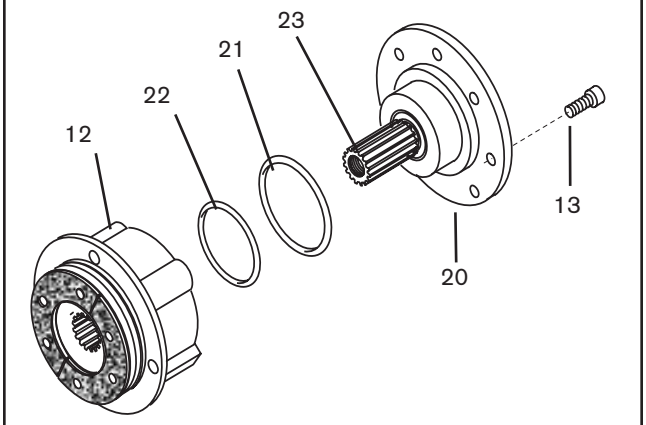


FIGURE 14

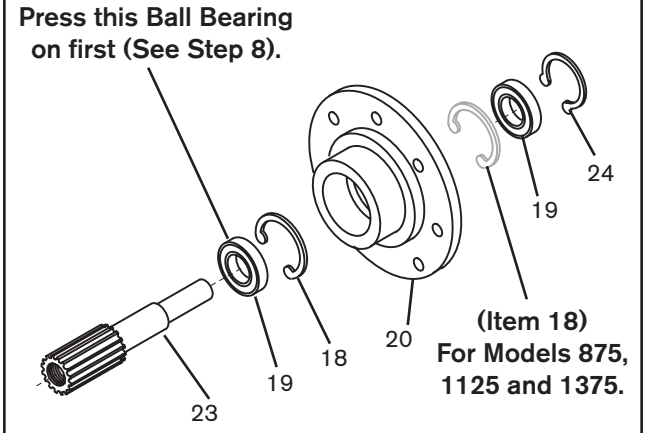


FIGURE 15

10. Apply an adequate amount of Loctite® 680 to evenly coat the outer race of the new Ball Bearing (Item 19) pressed onto the Stub Shaft (Item 23). Then, press the new Ball Bearing and Stub Shaft into the Male Pilot (Item 20) until the Ball Bearing is seated against the Retaining Ring (Item 18) (See Figure 15).

11. Reinstall Retaining Ring (Item 24) (See Figure 15).

12. Remove the Retaining Ring (Item 6) and press the Splined Disc (Item 9) out of the Air Chamber (Item 12) (See Figure 16).

13. Slide the Piston (Item 16) out of the Air Chamber (Item 12) (See Figure 16).

14. Remove the O-ring Seals (Items 14 and 15) from the Piston (Item 16) and the Air Chamber (Item 12) (See Figure 16).

15. Remove the Retaining Ring (Item 3) from the Piston (Item 16) (See Figure 16).

16. Press the old Ball Bearing (Item 2) out of the Piston (Item 16) (See Figure 16).

17. Clean the bearing bore of the Piston (Item 16) with fresh safety solvent, making sure all old Loctite® residue is removed (See Figure 16).

18. Apply an adequate amount of Loctite® 680 to evenly coat the outer race of the new Ball Bearing (Item 2); then, press the new Ball Bearing (Item 2) into the Piston (Item 16) and reinstall the Retaining Ring (Item 3) (See Figure 16).

19. Lubricate the new O-ring Seals (Items 14 and 15) and the contact surfaces on the Piston (Item 16) and Air Chamber (Item 12) with a thin film of fresh o-ring lubricant (See Figure 16).

20. Install the new O-ring Seals (Items 14 and 15) (See Figure 16).

21. Slide the Piston (Item 16) back into the Air Chamber (Item 12) (See Figure 16).

22. Support the inner race of the Ball Bearing (Item 2) located inside the Piston (Item 16) and press the Splined Disc (Item 9) into the Air Chamber (Item 12) and Piston (Item 16) (See Figure 16).

23. Reinstall Retaining Ring (Item 6) (See Figure 16).

24. Lubricate the new O-ring Seals (Items 21 and 22) and the contact surfaces on the Male Pilot (Item 20) and Air Chamber (Item 12) with a thin film of fresh o-ring lubricant (See Figure 17).

25. Install the new O-ring Seals (Item 21 and 22) (See Figure 17).

26. Align the Spring Pin (Item 17) on the Male Pilot (Item 20) with the hole in the Piston (Item 16) and slide the Male Pilot into the Piston and Housing (Item 1) (See Figure 17).

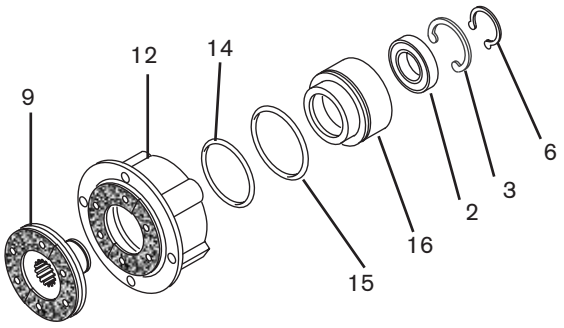


FIGURE 16

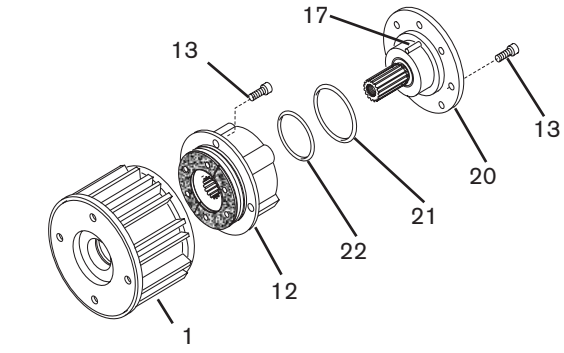


FIGURE 17

TABLE 5

MODEL	RECOMMENDED TIGHTENING TORQUE
FMCBE-625	14.17 Nm [10.5 ft-lb]
FMCBE-875	33.22 Nm [24.5 ft-lb]
FMCBE-1125	33.22 Nm [24.5 ft-lb]
FMCBE-1375	67.12 Nm [49.5 ft-lb]

27. Apply a drop of Loctite® 242 to the threads of four Socket Head Cap Screws (Item 13) and secure the Male Pilot (Item 20) to the Air Chamber (Item 12) (See Figure 17).

28. Tighten the four Socket Head Cap Screws to the recommended torque (See Table 4).

29. Apply a drop of Loctite® 242 to the threads of four Socket Head Cap Screws (Item 13) and secure the Male Pilot (Item 20) and Air Chamber (Item 12) to the Housing (Item 1) (See Figure 17).

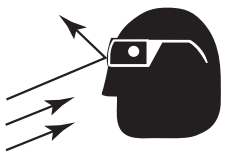
30. Tighten the four Socket Head Cap Screws to the recommended torque (See Table 5).

ALL MODELS

1. Remove the Retaining Ring (Item 35) from the output end of the Input Unit (See Figure 18).

WARNING

Use caution and always wear safety glasses when working with spring or tension loaded devices such as retaining rings.



2. Press the Stub Shaft (Item 11) out of the Bearing Flange (Item 20) (See Figure 18).

NOTE: One old Ball Bearing (Item 30) will come out of the Bearing Flange (Item 20) with the Stub Shaft (Item 11).

3. Press the first old Ball Bearing (Item 30) off the Stub Shaft (Item 11) (See Figure 18).

4. Press the first new Ball Bearing (Item 30) onto the Stub Shaft (Item 11) until it is seated against the Retaining Ring (Item 35) (See Figure 18).

5. Press the second old Ball Bearing (Item 30) out of the Bearing Flange (Item 20) (See Figure 18).

6. Clean the bearing bore of the Bearing Flange (Item 20) with fresh safety solvent, making sure all old Loctite® residue is removed (See Figure 18).

7. Apply an adequate amount of Loctite® 680 to evenly coat the outer race of the first new Ball Bearing (Item 30) on the Stub Shaft (Item 11) and press the first new Ball Bearing and Stub Shaft into the Bearing Flange (Item 20) until the Ball Bearing is seated against the Retaining Ring (Item 58) (See Figure 18).

8. Apply an adequate amount of Loctite® 680 to evenly coat the outer race of the second new Ball Bearing (Item 30) and press the second new Ball Bearing onto the Stub Shaft and into the Bearing Flange (Item 20) until the Ball Bearing is seated against the Retaining Ring
(Item 58) (See Figure 18).

9. Reinstall Retaining Ring (Item 35) (See Figure 18).

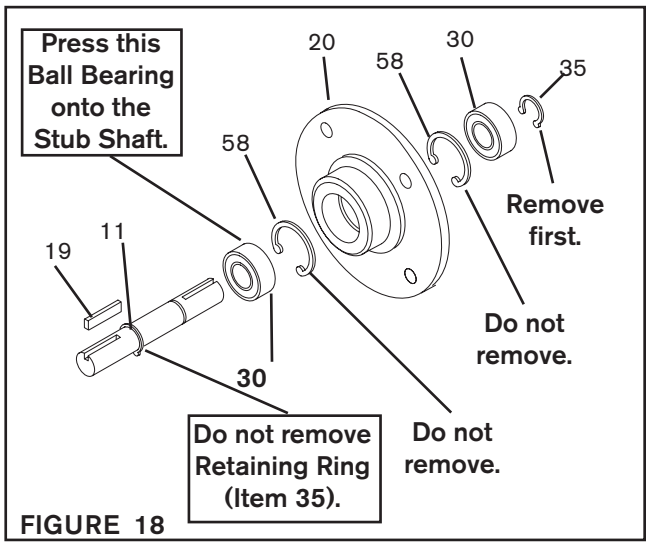


FIGURE 18

PARTS LIST

FMCBE-625

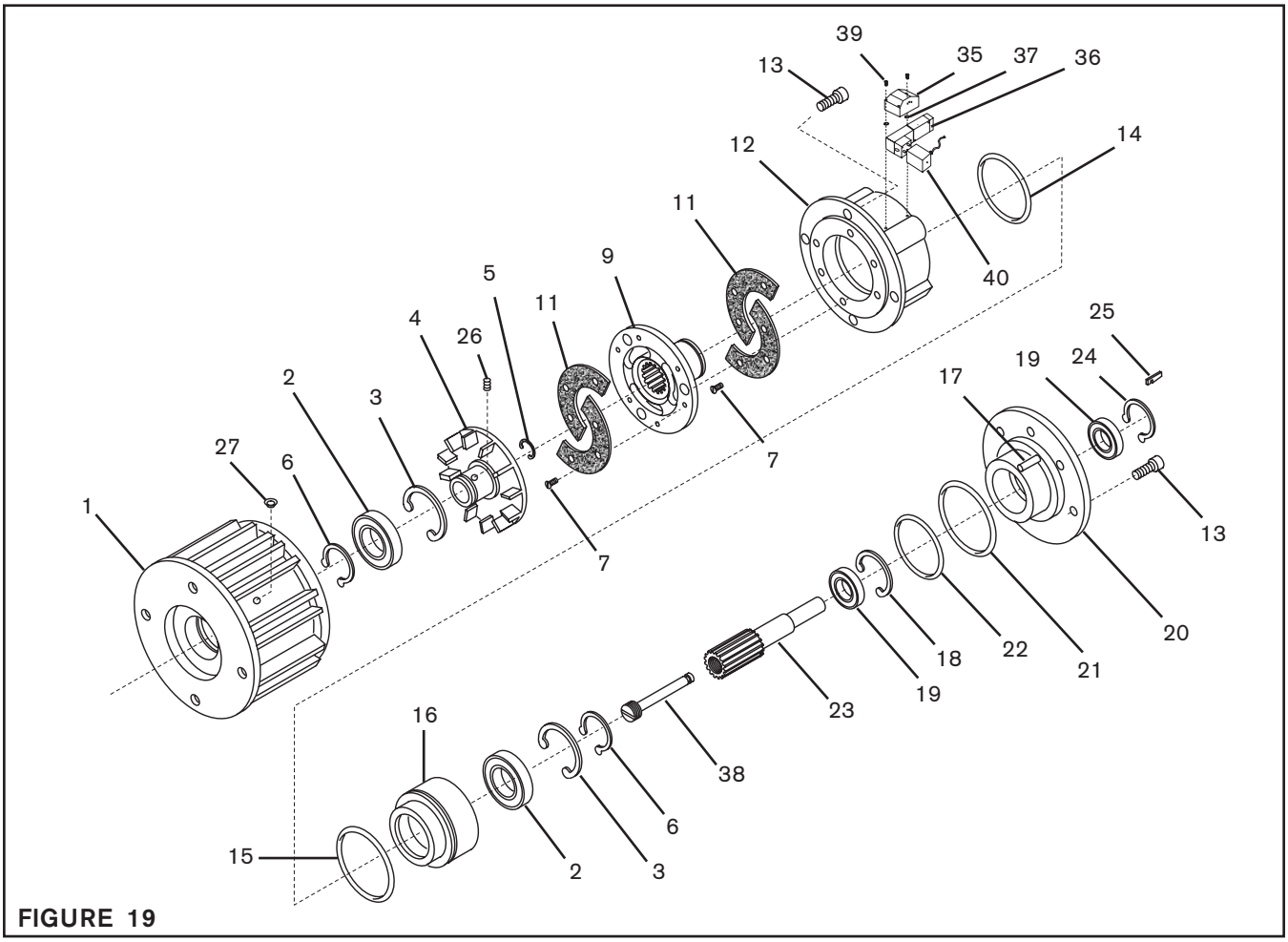


FIGURE 19

ITEM	DESCRIPTION	QTY
1	Housing	1
2[1]	Ball Bearing	2
3	Retaining Ring (Int.)	2
4	Drive Disc	1
5	Retaining Ring (Int.)	1
6	Retaining Ring (ext.)	2
7[2]	Flat Head Machine Screw	12
9	Splined Disc	1
11[2]	Friction Facing	2
12	Air Chamber	1
13	Socket Head Cap Screw	8
14[1]	O-ring Seal	1
15[1]	O-ring Seal	1
16	Piston	1
17[3]	Spring Pin	1
18[3]	Retaining Ring (Int.)	1
19[1]	Ball Bearing	2

[1] Denotes Repair Kit item.
Repair Kit No. 801447.

ITEM	DESCRIPTION	QTY
20	Male Pilot	1
21[1]	O-ring Seal	1
22[1]	O-ring Seal	1
23	Stub Shaft	1
24	Retaining Ring (Ext.)	1
25	Key	1
26	Set Screw	1
27	Plug	1
29	Socket Head Cap Screw (not shown)	4
30	Lock Washer (not shown)	4
35	Manifold	1
36	Solenoid Valve	1
37	O-ring Seal	2
38	Bar	1
39	Socket Head Cap Screw	3
40	DIN Connector	1

[2] Denotes Facing Kit item.
Facing Kit No. 801448 (two kits required per unit).

[3] Items 17 and 18 are part of sub-assembly #20.

FMCBE-875

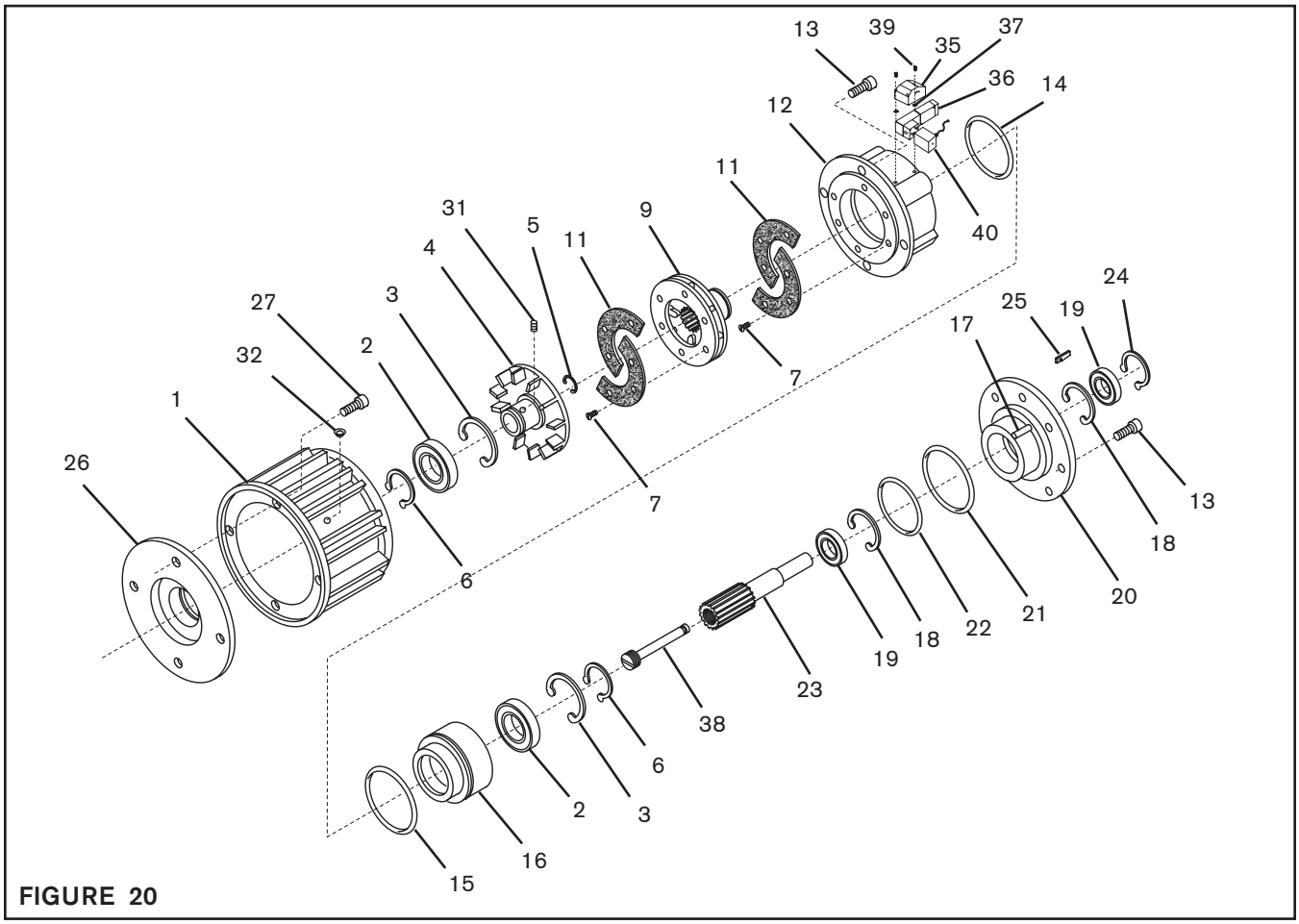


FIGURE 20

ITEM	DESCRIPTION	QTY
1	Housing	1
2[1]	Ball Bearing	2
3	Retaining Ring (Int.)	2
4	Drive Disc	1
5	Retaining Ring (Int.)	1
6	Retaining Ring (Ext.)	2
7[2]	Flat Head Machine Screw	12
9	Splined Disc	1
11[2]	Friction Facing	2
12	Air Chamber	1
13	Socket Head Cap Screw	8
14[1]	O-ring Seal	1
15[1]	O-ring Seal	1
16	Piston	1
17[3]	Spring Pin	1
18[3]	Retaining Ring (Int.)	2
19[1]	Ball Bearing	2
20	Male Pilot	1

[1] Denotes Repair Kit item.
Repair Kit No. 801428.

ITEM	DESCRIPTION	QTY
21[1]	O-ring Seal	1
22[1]	O-ring Seal	1
23	Stub Shaft	1
24	Retaining Ring (Ext.)	1
25	Key	1
26	Female Pilot	1
27	Socket Head Cap Screw	4
29	Socket Head Cap Screw (not shown)	4
30	Lock Washer (not shown)	4
31	Set Screw	1
32	Plug	1
35	Manifold	1
36	Solenoid Valve	1
37	O-ring Seal	2
38	Bar	1
39	Socket Head Cap Screw	3
40	DIN Connector	1

[2] Denotes Facing Kit item.
Facing Kit No. 801430 (two kits required per unit).

[3] Items 17 and 18 are part of sub-assembly #20.

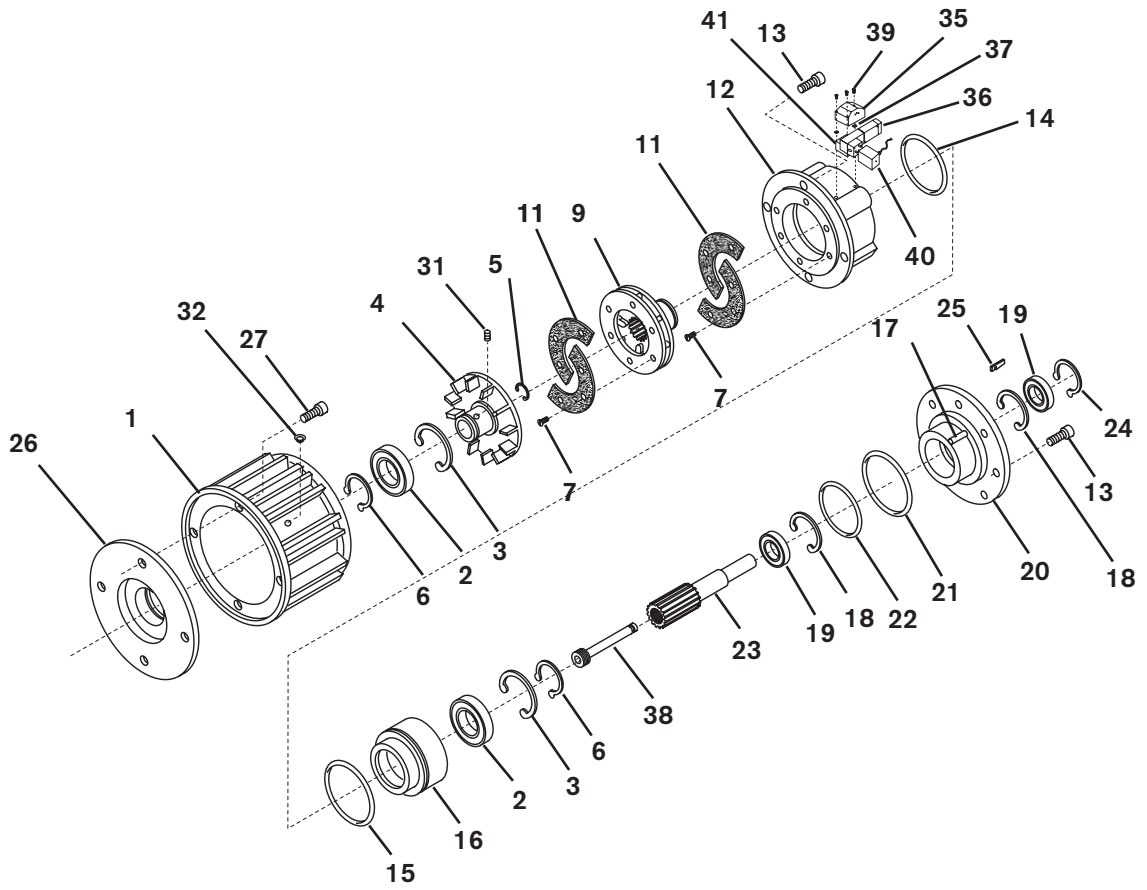


FIGURE 21

ITEM	DESCRIPTION	QTY
1	Housing	1
2[1]	Ball Bearing	2
3	Retaining Ring (Int.)	2
4	Drive Disc	1
5	Retaining Ring (Int.)	1
6	Retaining Ring (Ext.)	2
7[2]	Flat Head Machine Screw	12
9	Splined Disc	1
11[2]	Friction Facing	2
12	Air Chamber	1
13	Socket Head Cap Screw	8
14[1]	O-ring Seal	1
15[1]	O-ring Seal	1
16	Piston	1
17[3]	Spring Pin	1
18[3]	Retaining Ring (Int.)	2
19[1]	Ball Bearing	2
20	Male Pilot	1

ITEM	DESCRIPTION	QTY
21[1]	O-ring Seal	1
22[1]	O-ring Seal	1
23	Stub Shaft	1
24	Retaining Ring (Ext.)	1
25	Key	1
26	Female Pilot	1
27	Socket Head Cap Screw	4
29	Socket Head Cap Screw (not shown)	4
30	Lock Washer (not shown)	4
31	Set Screw	1
32	Plug	1
35	Manifold	1
36	Solenoid Valve	1
37	O-ring Seal	4
38	Bar	1
39	Socket Head Cap Screw	6
40	DIN Connector	1
41	Adapter Plate	1

[1] Denotes Repair Kit item.
Repair Kit No. 801604.

[2] Denotes Facing Kit item.
Facing Kit No. 801605 (two kits required per unit).

[3] Items 17 and 18 are part of sub-assembly #20.

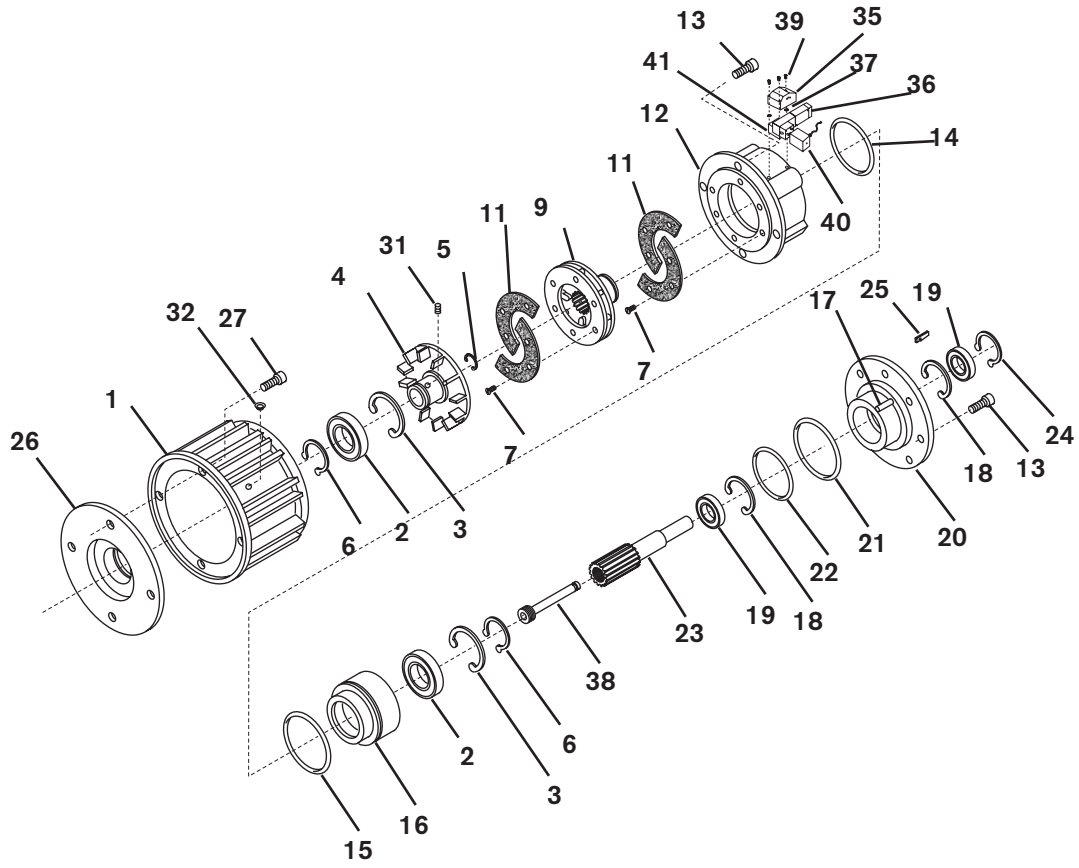


FIGURE 22

ITEM	DESCRIPTION	QTY
1	Housing	1
2[1]	Ball Bearing	2
3	Retaining Ring (Int.)	2
4	Drive Disc	1
5	Retaining Ring (Int.)	1
6	Retaining Ring (Ext.)	2
7[2]	Flat Head Machine Screw	12
9	Splined Disc	1
11[2]	Friction Facing	2
12	Air Chamber	1
13	Socket Head Cap Screw	8
14[1]	O-ring Seal	1
15[1]	O-ring Seal	1
16	Piston	1
17[3]	Spring Pin	1
18[3]	Retaining Ring (Int.)	2
19[1]	Ball Bearing	2
20	Male Pilot	1

ITEM	DESCRIPTION	QTY
21[1]	O-ring Seal	1
22[1]	O-ring Seal	1
23	Stub Shaft	1
24	Retaining Ring (Ext.)	1
25	Key	1
26	Female Pilot	1
27	Socket Head Cap Screw	4
29	Socket Head Cap Screw (not shown)	4
30	Lock Washer (not shown)	4
31	Set Screw	1
32	Plug	1
35	Manifold	1
36	Solenoid Valve	1
37	O-ring Seal	4
38	Bar	1
39	Socket Head Cap Screw	6
40	DIN Connector	1
41	Adapter Plate	1

[1] Denotes Repair Kit item.
Repair Kit No. 801651.

[2] Denotes Facing Kit item.
Facing Kit No. 801647 (two kits required per unit).

[3] Items 17 and 18 are part of sub-assembly #20.

INPUT UNIT

ITEM	DESCRIPTION	QTY
11	Stub Shaft	1
19	Key	2
20	Bearing Flange	1
30	Ball Bearing	2
35	Retaining Ring	2
45	Hex. Head Jam Nut (not shown)	4
58	Retaining Ring	2

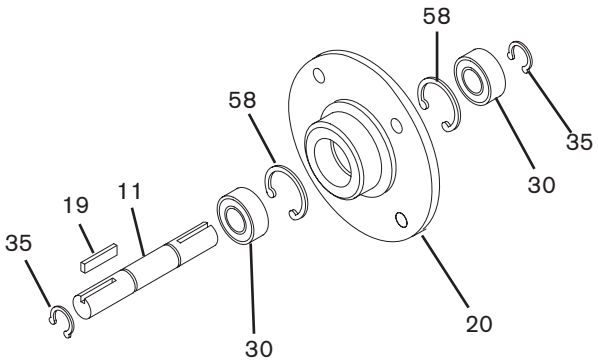


FIGURE 23

REPLACEMENT PARTS

The item or balloon number for all Nexen products is used for part identification on all product parts lists, product price lists, unit assembly drawings, bills of materials, and instruction manuals.

When ordering replacement parts, specify model designation, item number, part description, and quantity. Purchase replacement parts through your local Nexen Distributor.

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