

AIR CHAMP[®] PRODUCTS

USER MANUAL



Flange Mounted Enclosed Clutch with Spring Engaged Brake

FMCBES Models 625, 875, 1125 and 1375

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.

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ISO 9001 Certified



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.

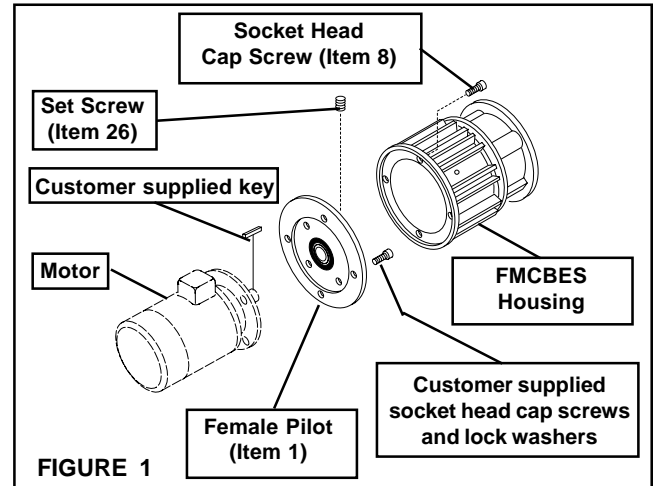
Comply with all applicable codes.

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INSTALLATION

FMCBES MOUNTED ON THE SHAFT END OF A MOTOR

1. Insert the customer supplied key into the motor shaft keyway (See Figure 1).
2. Slide the Female Pilot (Item 1) onto the motor shaft, then secure it to the motor using customer supplied socket head cap screws and lock washers (See Figure 1).
3. Tighten the Set Screw (Item 26) (See Figure 1).
4. Apply a drop of Loctite® 242 to the threads of four Socket Head Cap Screws (Item 8) (See Figure 1).
5. Using four Socket Head Cap Screws (Item 8), secure the FMCBES Housing to the Female Pilot (Item 1) (See Figure 1).
6. Tighten the four Socket Head Caps Screws (Item 8) to the recommended torque (See Table 1).

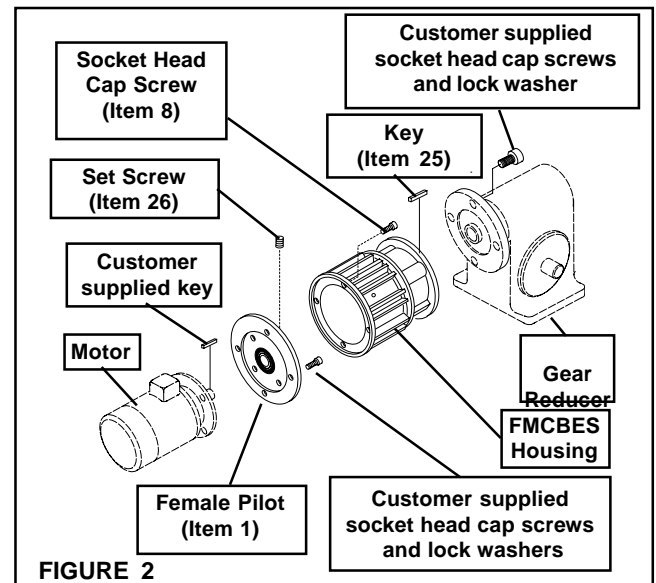


| FMCBES MODEL | RECOMMENDED TIGHTENING TORQUE SOCKET HEAD CAP SCREW |
|---------------|---|
| 625 (item 8) | 137-178 in.- Lbs. [16-20 N•m] |
| 875 (item 8) | 137-178 in.- Lbs. [16-20 N•m] |
| 1125 (item 8) | 232-301 in.- Lbs. [26-34 N•m] |
| 1375 (item 8) | 509-662 in.- Lbs. [57-75 N•m] |

TABLE 1

FMCBES MOUNTED BETWEEN A GEAR REDUCER AND A MOTOR

1. Insert the Key (Item 25) into the output shaft of the FMCBES (See Figure 2).
2. Slide the FMCBES output shaft into the gear reducer (See Figure 2).
3. Secure the FMCBES to the gear reducer using customer supplied socket head cap screws, lock washers, and nuts (See Figure 2).
4. Slide the Female Pilot (Item 1) onto the motor shaft, then secure it to the motor using customer supplied socket head cap screws and lock washers (See Figure 2).
5. Tighten the Set Screw (Item 26) (See Figure 2).
6. Apply a drop of Loctite® 242 to the threads of four Socket Head Cap Screws (Item 8).
7. Using four Socket Head Cap Screws (Item 8), secure the FMCBES Housing to the Female Pilot (Item 1) (See Figure 2).
8. Tighten the four Socket Head Caps Screws (Item 8) to the recommended torque (See Table 2).



| FMCBES MODEL | RECOMMENDED TIGHTENING TORQUE SOCKET HEAD CAP SCREW |
|---------------|---|
| 625 (item 8) | 137-178 in.- Lbs. [16-20 N•m] |
| 875 (item 8) | 137-178 in.- Lbs. [16-20 N•m] |
| 1125 (item 8) | 232-301 in.- Lbs. [26-34 N•m] |
| 1375 (item 8) | 509-662 in.- Lbs. [57-75 N•m] |

TABLE 2



NOTE

For quick response, Nexen recommends a quick exhaust valve and short air lines between the Control Valves and the FMCBES. Align the air inlet ports to a down position to allow condensation to drain out of the air chambers.

LUBRICATION

NOTE

Pneumatically actuated devices require clean, pressure regulated, and lubricated air for maximum performance and long life. The most effective and economical way to lubricate the FMCBES is with an Air Line Lubricator, which injects oil into the pressurized air, forcing an oil mist into the air chamber.

Locate the lubricator above and within ten feet of the FMCBES, and use a low viscosity oil such as SAE-10.

Synthetic lubricants are not recommended.

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.

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

| SYMPTOM | PROBABLE CAUSE | SOLUTION |
|--------------------------------|---|---|
| Failure to engage (clutch). | Air not getting to the FMCBES due to a control valve malfunction. | Check for a control valve malfunction or low air pressure and replace the control valve if necessary. |
| | Lack of lubrication on Stub Shaft spline. | Lubricate Stub Shaft spline with Never-Seez®. |
| | Air leaks around the O-ring Seals. | Replace the O-ring Seals. |
| Failure to engage (brake). | Weak or broken Compression Springs. | Replace the Compression Springs. |
| | Lack of lubrication on Stub Shaft spline. | Lubricate Stub Shaft spline. |
| Failure to disengage (clutch). | Unexhausted air due to a control valve malfunction. | Check for a control valve malfunction and replace the control valve if necessary. |
| | Lack of lubrication on Stub Shaft spline. | Lubricate Stub Shaft spline with Never-Seez®. |
| Failure to disengage (brake). | Air not getting to the FMCBES due to a control valve malfunction. | Check for a control valve malfunction or low air pressure and replace the control valve if necessary. |
| | Lack of lubrication on Stub Shaft spline. | Lubricate Stub Shaft spline. |
| Loss of torque. | Air leaks around the O-ring Seals. | Replace the O-ring Seals. |
| | Worn or dirty Friction Facings. | Replace the Friction Facings. |
| | Weak or broken Compression Springs. | Replace the Compression Springs. |

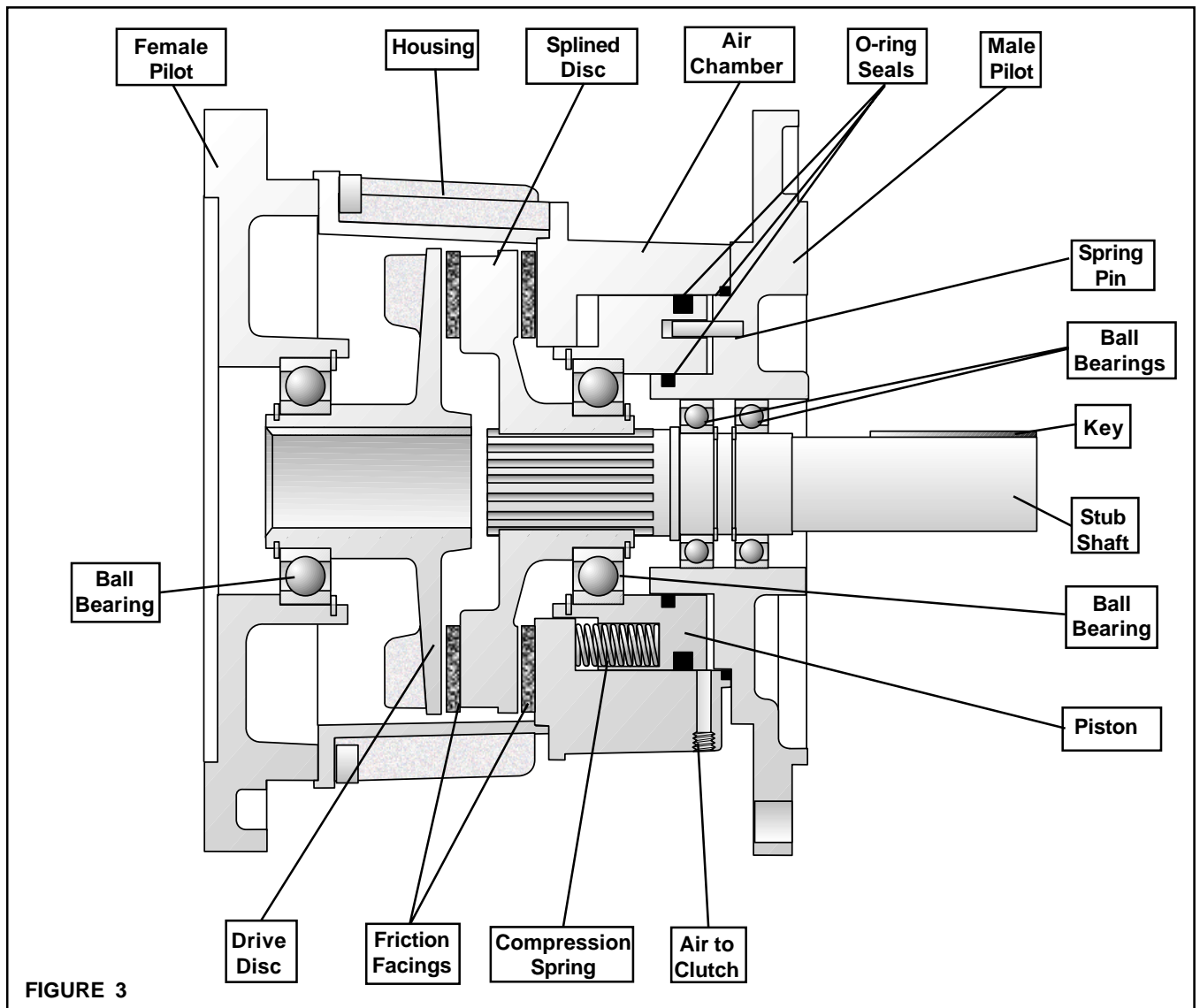


FIGURE 3

PARTS REPLACEMENT—FRICTION FACINGS

FMCBES 625, 875, 1125, AND 1375

1. Remove the four Socket Head Cap Screws (Item 14) and separate the two halves of the FMCBES (See Figure 4).

NOTE

The Flat Head Machine Screws 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 this 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 Screws (Item 12) and the first old split Friction Facing (Item 11) (See Figure 5).

NOTE

Apply sufficient air pressure to the brake to release the brake portion of the FMCBES.

3. Align the holes in the Splined Disc (Item 9) with the Flat Head Screws (Item 12) that secure the second split Friction Facing (Item 11) (See Figure 5).
4. Remove the six old Flat Head Screws (Item 12) and the second old Friction Facing (Item 11) (See Figure 5).
5. Install the first new split Friction Facing (Item 11) and new Flat Head Screws (Item 12).
6. Tighten the six new Flat Head Screws (Item 12) to 20 In. Lbs. [2.9 N•m] torque on Models 625 and 875, and 62 In. Lbs. [6.9 N•m] torque on Models 1125 and 1375.

NOTE

Release the air pressure to the FMCBES.

7. Install the second new split Friction Facing (Item 11) and new Flat Head Screws (Item 12) (See Figure 5).
8. Tighten the six new Flat Head Screws (Item 12) to 20 In. Lbs. [2.9 N•m] torque on Models 625 and 875, and 62 In. Lbs. [6.9 N•m] torque on Models 1125 and 1375.
9. Apply a drop of Loctite[®] 242 to the threads of the Socket Head Cap Screws (Item 14) (See Figure 4).
10. Install and tighten the four Socket Head Cap Screws (Item 14), securing the two halves of the FMCBES to the recommended torque (See Figure 4 and Table 3).

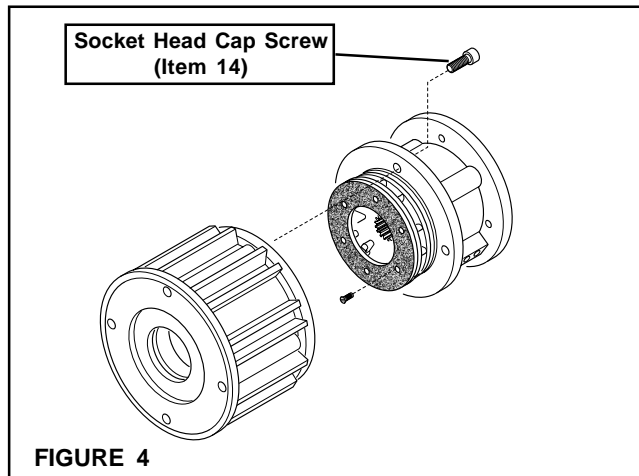


FIGURE 4

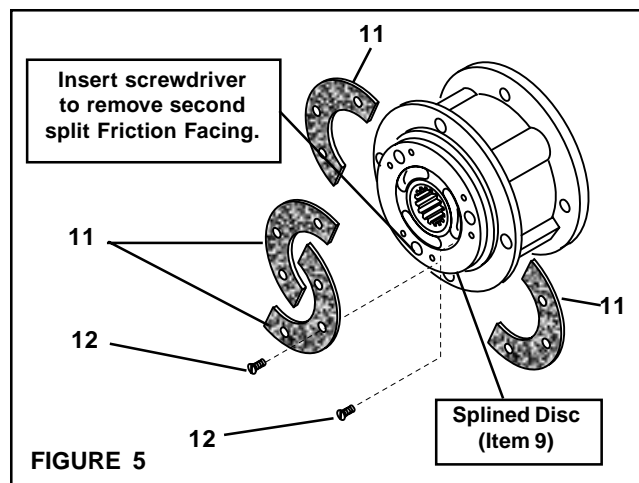


FIGURE 5

| FMCBES MODEL | RECOMMENDED TORQUE SOCKET HEAD CAP SCREWS |
|----------------|---|
| 625 (Item 14) | 232-301 in.- Lbs. [26-34 N•m] |
| 875 (Item 14) | 232-301 in.- Lbs. [26-34 N•m] |
| 1125 (Item 14) | 232-301 in.- Lbs. [26-34 N•m] |
| 1375 (Item 14) | 509-662 in.- Lbs. [57-75 N•m] |

TABLE 3

PARTS REPLACEMENT-FEMALE PILOT BEARING

FMCBES 625, 875, 1125, AND 1375

1. Remove the four Socket Head Cap Screws (Item 8) and slide the Female Pilot (Item 1), Bearing (Item 2), and the Drive Disc (Item 4) out of the FMCBES (See Figure 6).

NOTE

If an Input Unit is installed on the FMCBES, it must be removed before servicing the FMCBES. Remove the Plug (Item 27) and loosen the Set Screw (Item 26) to release the FMCBES from the Input Unit shaft (See Figure 6).

WARNING

Special attention should be exercised when working with retaining rings. Always wear safety goggles when working with spring or tension loaded fasteners or devices.

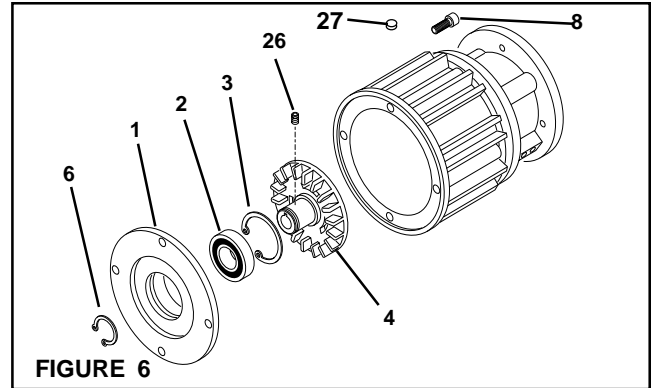


FIGURE 6

2. Remove the Retaining Ring (Item 6) (See Figure 6).
3. Press the Drive Disc (Item 4) out of the Bearing (Item 2) and the Female Pilot (Item 1) (See Figure 6).
4. Remove the Retaining Ring (Item 3) (See Figure 6).
5. Fully supporting the Female Pilot (Item 1), press the old Bearing (Item 2) out of the Female Pilot (Item 1) (See Figure 6).

NOTE

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

6. Clean the bearing bore of the Female Pilot (Item 1) with fresh safety solvent, making sure all old Loctite[®] residue is removed (See Figure 6).
7. Apply an adequate amount of Loctite[®] 680 to evenly coat the outer race of the new Bearing (Item 2) (See Figure 6).
8. Carefully align the outer race of the new Bearing (Item 2) with the bore of the Female Pilot (Item 1) (See Figure 6).
9. Supporting the Female Pilot (Item 1) and pressing on the outer race of the new Bearing (Item 2), press the new Bearing into the Female Pilot (See Figure 6).

| FMCBES MODEL | RECOMMENDED TIGHTENING TORQUE SOCKET HEAD CAP SCREW |
|---------------|---|
| 625 (item 8) | 137-178 in.- Lbs. [16-20 N•m] |
| 875 (item 8) | 137-178 in.- Lbs. [16-20 N•m] |
| 1125 (item 8) | 232-301 in.- Lbs. [26-34 N•m] |
| 1375 (item 8) | 509-662 in.- Lbs. [57-75 N•m] |

TABLE 4

10. Reinstall the Retaining Ring (Item 3) (See Figure 6).
11. Support the inner race of the new Bearing (Item 2) and press the Drive Disc (Item 4) into the new Bearing and Female Pilot (Item 1) (See Figure 6).
12. Reinstall the Retaining Ring (Item 6) (See Figure 6).
13. Apply a drop of Loctite[®] 242 to the threads of the Socket Head Cap Screws (Item 8) (See Figure 6).
14. Slide the Female Pilot (Item 1), Bearing (Item 2), and Drive Disc (Item 4) into the FMCBES and reinstall the four Socket Head Cap Screws (Item 8) (See Figure 6).
15. Tighten the four Socket Head Cap Screws (Item 8) to the recommended torque (See Table 4).

PARTS REPLACEMENT—BEARING, O-RING SEALS, AND COMPRESSION SPRINGS

1. Remove the four Socket Head Cap Screws (Item 14) and separate the Air Chamber (Item 13) from the Housing (Item 7) (See Figure 7).
2. Remove the four Socket Head Cap Screws (Item 14) securing the Male Pilot (Item 18) to the Air Chamber (Item 13) (See Figure 7).
3. Remove the Male Pilot (Item 18) and Stub Shaft (Item 24) from the Air Chamber (Item 13) (See Figure 7).

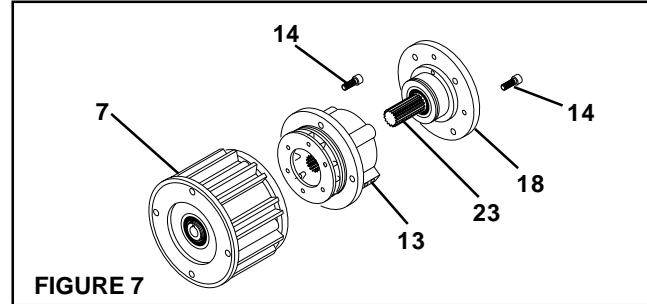


FIGURE 7

WARNING

The Piston is spring loaded and under extreme pressure. Special attention should be also exercised when working with retaining rings. Always wear safety goggles when working with spring or tension loaded fasteners or devices. Failure to follow the disassembly instructions may result in serious bodily injury.

4. Using a “C”-clamp or Arbor press fixture, press the Piston (Item 15) into the Air Chamber (Item 13); then, remove the Retaining Ring (Item 6) from the Splined Disc (Item 9) (See Figure 8).
5. Slowly remove the “C”-clamp or release the Arbor press.
6. Press the Splined Disc (Item 9) from the Bearing (Item 2) (See Figure 8).
7. Remove the Piston (Item 15) and Compression Springs (Item 17) from the Air Chamber (Item 13) (See Figure 8).
8. Remove the Retaining Ring (Item 3) from the Piston (See Figure 8).
9. Remove the old O-ring Seal (Item 16) from the Piston (See Figure 8).
10. Press the Bearing (Item 2) out of the Piston (Item 15) (See Figure 8).
11. Clean the bearing bore of the Piston with fresh safety solvent, making sure all old Loctite[®] residue is removed.
12. Apply an adequate amount of Loctite[®] 680 to evenly coat the outer race of the new Bearing.
13. Carefully align the outer race of the new Bearing (Item 2) with the bore of the Piston (Item 15) (See Figure 8).
14. Supporting the Piston and pressing on the outer race of the new Bearing, press the new Bearing into the Piston.
15. Reinstall the Retaining Ring (Item 3), securing the Bearing to the Piston.
16. Coat the o-ring contact surfaces of the Air Chamber, Piston, and the O-ring Seals with a thin film of o-ring lubricant and install the new O-ring Seals (item 16) (See Figure 8).
17. Reinstall the Compression Springs (Item 17) into the Piston (Item 15) (See Figure 8).
18. Slide the Piston (Item 15) into the Air Chamber (Item 13) (See Figure 8).

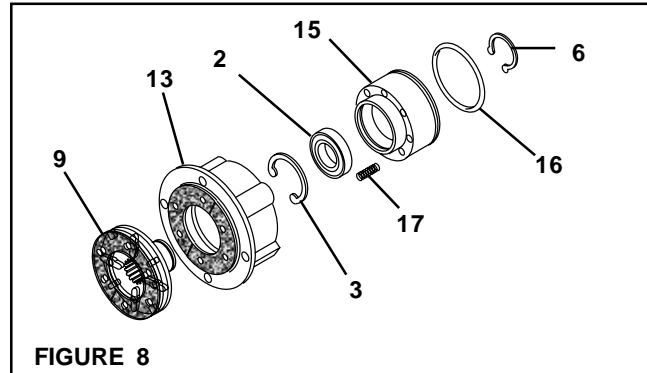


FIGURE 8

| FMCBES MODEL | RECOMMENDED TORQUE SOCKET HEAD CAP SCREWS |
|----------------|---|
| 625 (Item 14) | 232-301 in.- Lbs. [26-34 N•m] |
| 875 (Item 14) | 232-301 in.- Lbs. [26-34 N•m] |
| 1125 (Item 14) | 232-301 in.- Lbs. [26-34 N•m] |
| 1375 (Item 14) | 509-662 in.- Lbs. [57-75 N•m] |

TABLE 5

19. Support the inner race of the new Bearing and press the Splined Disc into the new Bearing and Piston.
20. Use a “C”-clamp or Arbor press fixture to compress the Piston (Item 15) into the Air Chamber (Item 13); then, reinstall the Retaining Ring (Item 6) that secures the Splined Disc to the Bearing.
21. Remove the “C”-clamp or release the Arbor press.
22. Apply a drop of Loctite[®] 242 to the threads of the Socket Head Cap Screws (Item 14) (See Figure 7).
23. Reinstall and tighten the four Socket Head Cap Screws, securing the Air Chamber (Item 13) to the Housing (Item 7) to the recommended torque (See Figure 7 and Table 5).

PARTS REPLACEMENT-MALE PILOT, BEARINGS AND O-RING SEALS

1. Remove the O-ring Seals (Items 22 and 23) from the Male Pilot (Item 18) (See Figures 9 and 10).

WARNING

Special attention should be exercised when working with retaining rings. Always wear safety goggles when working with spring or tension loaded fasteners or devices.

2. Remove the Retaining Ring (Item 28) from the Stub Shaft (Item 24) (See Figure 9).
3. Press the Stub Shaft (Item 24) out of the Male Pilot (Item 18) (See Figure 9).

NOTE

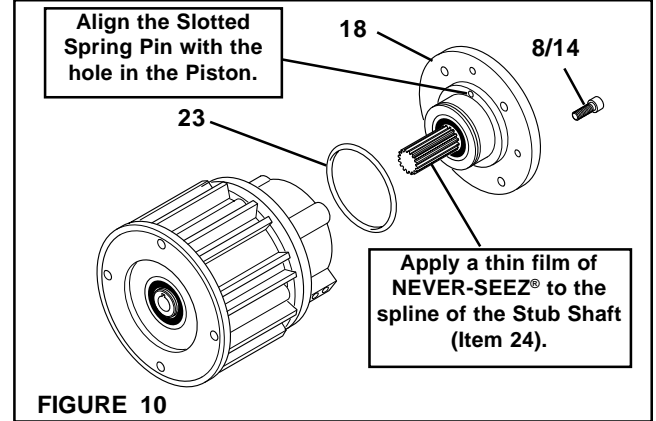
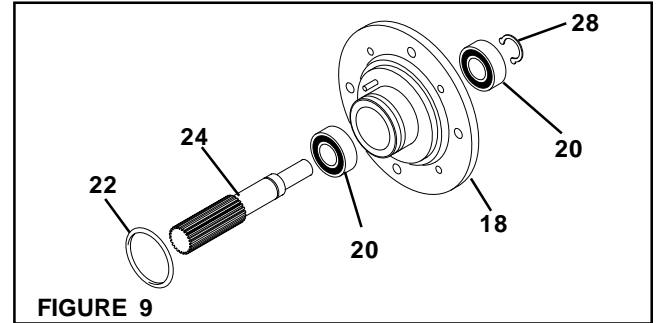
One old Bearing (Item 20) will remain attached to the Stub Shaft (Item 24) (See Figure 9).

4. Press the old Bearing from the Stub Shaft (Item 24) (See Figure 9).
5. Press the other old Bearing out of the Male Pilot (Item 18) (See Figure 9).

NOTE

It is not necessary to remove the Retaining Ring from the inside of the Male Pilot.

6. Clean the bearing bore of the Male Pilot with fresh safety solvent, making sure all old Loctite® residue is removed.
7. Apply an adequate amount of Loctite® 680 to evenly coat the outer race of one new Bearing; then, press it into the output side of the Male Pilot until it is seated against the Retaining Ring inside the Male Pilot (See Figure 9).
8. Press a new Bearing onto the Stub Shaft (Item 24) (See Figure 9).
9. Apply an adequate amount of Loctite® 680 to evenly coat the outer race of the second new Bearing.
10. Carefully align the outer race of the new Bearing with the bore of the Male Pilot; then, pressing on the outer race of this Bearing and supporting the inner race of the new Bearing already in the Male Pilot, press the new Bearing and Stub Shaft into the Male Pilot until it is seated against the Retaining Ring inside Male Pilot (See Figure 9).
11. Reinstall the Retaining Ring (Item 28) (See Figure 9).
12. Coat the o-ring contact surfaces of the Male Pilot, Piston, and the new O-ring Seals (Items 22 and 23) with a thin film of fresh o-ring lubricant and install the new O-ring Seals onto the Male Pilot (See Figures 9 and 10).



| FMCBES MODEL | RECOMMENDED TORQUE SOCKET HEAD CAP SCREWS |
|----------------|---|
| 625 (Item 14) | 232-301 in.- Lbs. [26-34 N•m] |
| 875 (Item 14) | 232-301 in.- Lbs. [26-34 N•m] |
| 1125 (Item 14) | 232-301 in.- Lbs. [26-34 N•m] |
| 1375 (Item 14) | 509-662 in.- Lbs. [57-75 N•m] |

TABLE 6

13. Apply a thin film of NEVER-SEEZ® to the spline of the Stub Shaft (Item 24); then, align the Pin on the Male Pilot with the hole in the Piston and slide the Male Pilot and Stub Shaft into the FMCBES (See Figure 10).
14. Apply a drop of Loctite® 242 to the threads of the four Socket Head Cap Screws (Item 14).
15. Reinstall the four Socket Head Cap Screws (Item 14), securing the Male Pilot (Item 18) to the Air Chamber (Item 13) (See Figure 10).
16. Alternately and evenly tighten the four Socket Head Cap Screws (Item 14) to the recommended torque (See Table 6).

PARTS REPLACEMENT-INPUT UNIT

NOTE

Remove the Plug (Item 27) and loosen the Set Screw (Item 26) one full turn to release the Input Unit from the FMCBES. Both the Plug (Item 27) and Set Screw (Item 26) are located on the FMCBES Housing.

1. Remove the socket head cap screws and Hex. head nuts securing the Input Unit to the FMCBES; then, remove the Input Unit from the FMCBES.

WARNING

Special attention should be exercised when working with retaining rings. Always wear safety goggles when working with spring or tension loaded fasteners or devices.

2. Remove the Retaining Ring (Item 35) from the output end of the Input Unit (See Figure 11).
3. Fully supporting the Flange (Item 20), press the Shaft (Item 11) out of the Input Unit (See Figure 11).

NOTE

It is not necessary to remove the retaining rings from the inside of the flange.

NOTE

One Bearing (Item 30) will come out of the Flange (Item 20) with the Shaft (Item 11) (See Figure 11).

4. Press the old Bearing (Item 30) out of the Flange (Item 20) (See Figure 11).
5. Press the old Bearing (Item 30) off the Shaft (Item 11) (See Figure 11).

NOTE

Do not reuse the old Bearings (Item 30). Applying force to the inner race of a bearing to remove a bearing held by the outer race causes damage to the bearing.

6. Clean the bearing bore of the Flange (Item 20) with fresh safety solvent, making sure all old Loctite® residue is removed.
7. Press one new Bearing (Item 30) onto the Shaft (Item 11) until it is seated against the retaining ring on the Shaft (See Figure 11).

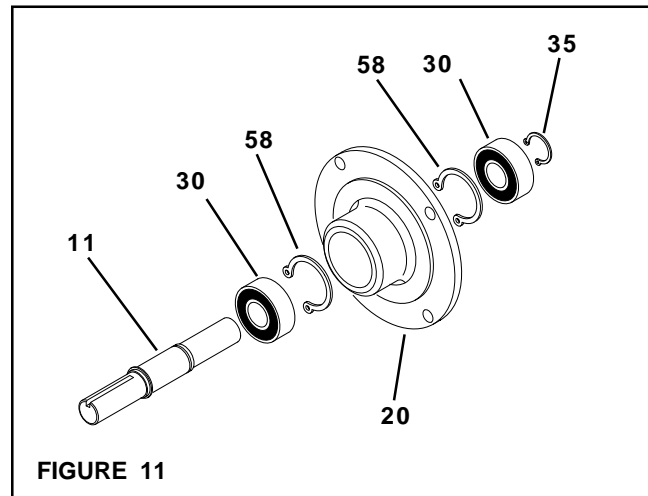


FIGURE 11

8. Apply an adequate amount of Loctite® 680 to evenly coat the outer race of the second new Bearing (Item 30) (See Figure 11).
9. Carefully align the outer race of this new bearing with the bore of the Flange (Item 20) and press this Bearing into the output end of the Flange until it is seated against the retaining ring inside the Flange (See Figure 11).
10. Apply an adequate amount of Loctite® 680 to evenly coat the outer race of the new Bearing (Item 30) previously pressed onto the Shaft (Item 11) (See Figure 11).
11. Support the inner race of the new Bearing (Item 30) inside the Flange (Item 20); then, pressing on the inner and outer race of the Bearing (Item 20) on the Shaft (Item 11), press the new Bearing and Shaft into the Flange and Bearing until they are seated against the Retaining Ring (Item 58) (See Figure 11).
12. Reinstall the Retaining Ring (Item 35) (See Figure 11).

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.

FMCBES 625

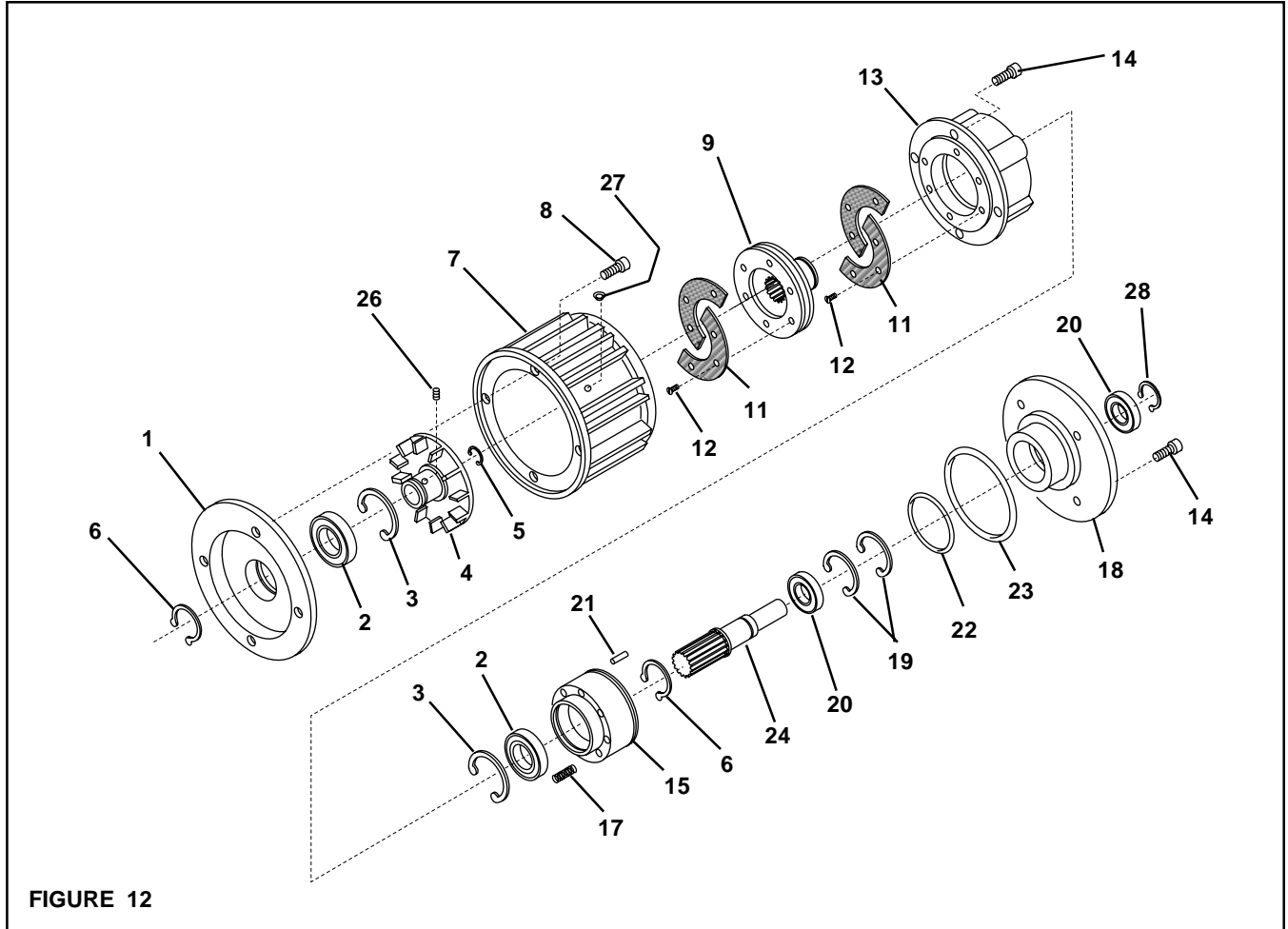


FIGURE 12

| ITEM | DESCRIPTION | QTY |
|-----------------|-----------------------|-----|
| 1 | Female Pilot | 1 |
| 2 ¹ | Bearing | 2 |
| 3 | Retaining Ring (Int.) | 2 |
| 4 | Drive Disc | 1 |
| 5 | Retaining Ring (Int.) | 1 |
| 6 | Retaining Ring (Ext.) | 2 |
| 7 | Housing | 1 |
| 8 | Socket Head Cap Screw | 4 |
| 9 | Splined Disc | 1 |
| 11 ² | Friction Facing | 2 |
| 12 ² | Flat Head Screw | 12 |
| 13 | Air Chamber | 1 |
| 14 | Socket Head Cap Screw | 8 |
| 15 | Piston | 1 |
| 16 ¹ | O-ring Seal | 1 |

| ITEM | DESCRIPTION | QTY |
|-----------------|-----------------------------------|-----|
| 17 | Compression Spring | 6 |
| 18 | Male Pilot | 1 |
| 19 | Retaining Ring (Int.) | 2 |
| 20 ¹ | Bearing | 2 |
| 21 | Spring Pin | 1 |
| 22 ¹ | O-ring Seal | 1 |
| 23 ¹ | O-ring Seal | 1 |
| 24 | Stub Shaft | 1 |
| 25 | Key (Not Shown) | 1 |
| 26 | Set Screw | 1 |
| 27 | Plug | 1 |
| 28 | Ret. Ring | 1 |
| 29 | Socket Head Cap Screw (Not Shown) | 4 |
| 30 | Lock Washer (Not Shown) | 4 |

¹ Denotes Repair Kit items.
 Repair Kit No. 801652.

² Denotes Facing Kit items.
 Facing Kit No. 801399.

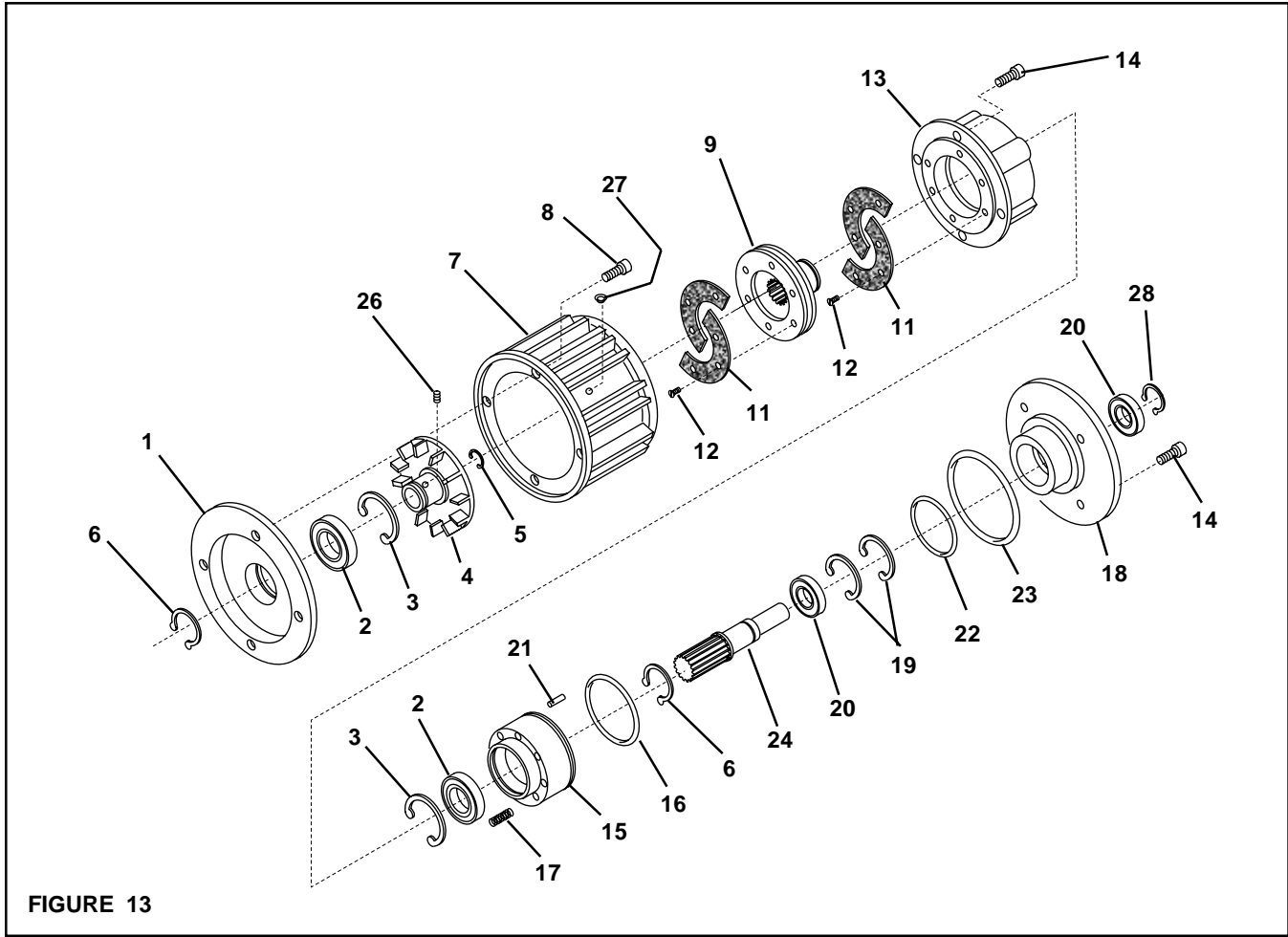


FIGURE 13

| ITEM | DESCRIPTION | QTY |
|-----------------|-----------------------|-----|
| 1 | Female Pilot | 1 |
| 2 ¹ | Bearing | 2 |
| 3 | Retaining Ring (Int.) | 2 |
| 4 | Drive Disc | 1 |
| 5 | Retaining Ring (Int.) | 1 |
| 6 | Retaining Ring (Ext.) | 2 |
| 7 | Housing | 1 |
| 8 | Socket Head Cap Screw | 4 |
| 9 | Splined Disc | 1 |
| 11 ² | Friction Facing | 2 |
| 12 ² | Flat Head Screw | 12 |
| 13 | Air Chamber | 1 |
| 14 | Socket Head Cap Screw | 8 |
| 15 | Piston | 1 |
| 16 ¹ | O-ring Seal | 1 |

| ITEM | DESCRIPTION | QTY |
|-----------------|-----------------------------------|-----|
| 17 | Compression Spring | 8 |
| 18 | Male Pilot | 1 |
| 19 | Retaining Ring (Int.) | 2 |
| 20 ¹ | Bearing | 2 |
| 21 | Spring Pin | 1 |
| 22 ¹ | O-ring Seal | 1 |
| 23 ¹ | O-ring Seal | 1 |
| 24 | Stub Shaft | 1 |
| 25 | Key (Not Shown) | 1 |
| 26 | Set Screw | 1 |
| 27 | Plug | 1 |
| 28 | Ret. Ring | 1 |
| 29 | Socket Head Cap Screw (Not Shown) | 4 |
| 30 | Lock Washer (Not Shown) | 4 |

¹ Denotes Repair Kit items.
 Repair Kit No. 801652.

² Denotes Facing Kit items.
 Facing Kit No. 801399.

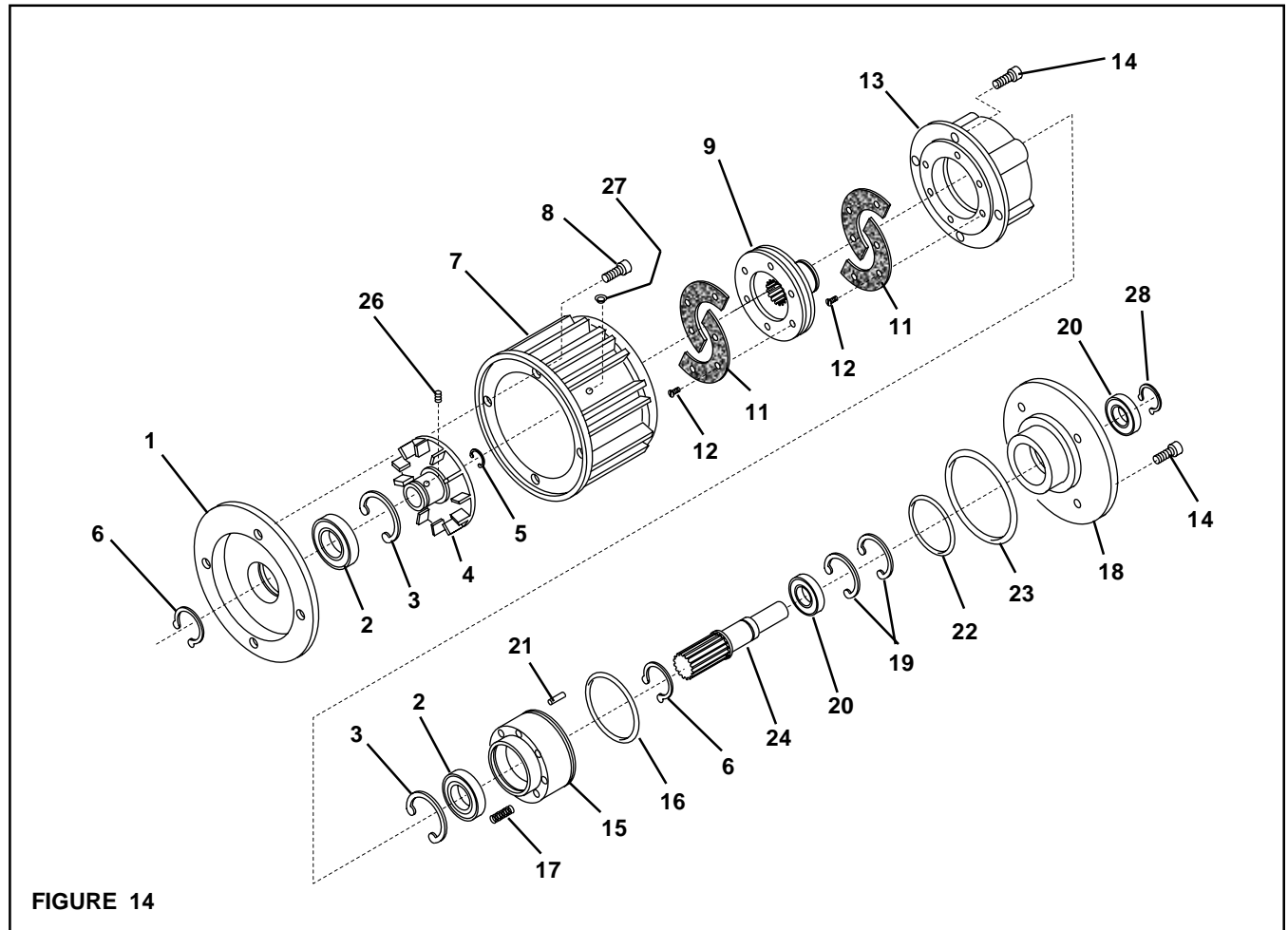


FIGURE 14

| ITEM | DESCRIPTION | QTY |
|-----------------|-----------------------|-----|
| 1 | Female Pilot | 1 |
| 2 ¹ | Bearing | 2 |
| 3 | Retaining Ring (Int.) | 2 |
| 4 | Drive Disc | 1 |
| 5 | Retaining Ring (Int.) | 1 |
| 6 | Retaining Ring (Ext.) | 2 |
| 7 | Housing | 1 |
| 8 | Socket Head Cap Screw | 4 |
| 9 | Splined Disc | 1 |
| 11 ² | Friction Facing | 2 |
| 12 ² | Flat Head Screw | 12 |
| 13 | Air Chamber | 1 |
| 14 | Socket Head Cap Screw | 8 |
| 15 | Piston | 1 |
| 16 ¹ | O-ring Seal | 1 |

¹ Denotes Repair Kit items.
 Repair Kit No. 801653.

| ITEM | DESCRIPTION | QTY |
|-----------------|-----------------------------------|-----|
| 17 | Compression Spring | 12 |
| 18 | Male Pilot | 1 |
| 19 | Retaining Ring (Int.) | 2 |
| 20 ¹ | Bearing | 2 |
| 21 | Spring Pin | 1 |
| 22 ¹ | O-ring Seal | 1 |
| 23 ¹ | O-ring Seal | 1 |
| 24 | Stub Shaft | 1 |
| 25 | Key (Not Shown) | 1 |
| 26 | Set Screw | 1 |
| 27 | Plug | 1 |
| 28 | Ret. Ring | 1 |
| 29 | Socket Head Cap Screw (Not Shown) | 4 |
| 30 | Lock Washer (Not Shown) | 4 |

² Denotes Facing Kit items.
 Facing Kit No. 801605.

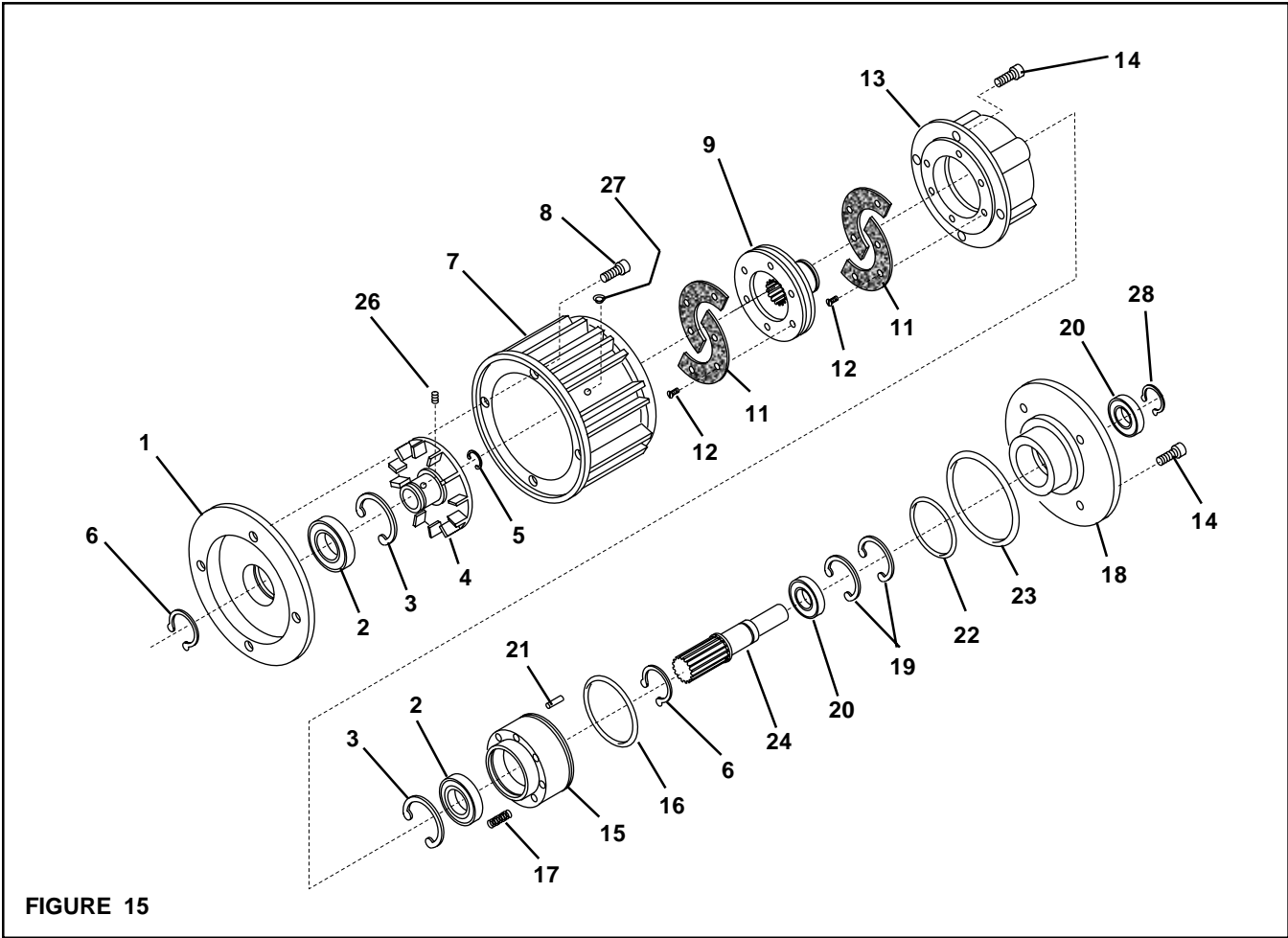


FIGURE 15

| ITEM | DESCRIPTION | QTY |
|-----------------|-----------------------|-----|
| 1 | Female Pilot | 1 |
| 2 ¹ | Bearing | 2 |
| 3 | Retaining Ring (Int.) | 2 |
| 4 | Drive Disc | 1 |
| 5 | Retaining Ring (Int.) | 1 |
| 6 | Retaining Ring (Ext.) | 2 |
| 7 | Housing | 1 |
| 8 | Socket Head Cap Screw | 4 |
| 9 | Splined Disc | 1 |
| 11 ² | Friction Facing | 2 |
| 12 ² | Flat Head Screw | 12 |
| 13 | Air Chamber | 1 |
| 14 | Socket Head Cap Screw | 8 |
| 15 | Piston | 1 |
| 16 ¹ | O-ring Seal | 1 |

¹ Denotes Repair Kit items.
 Repair Kit No. 801654.

| ITEM | DESCRIPTION | QTY |
|-----------------|-----------------------------------|-----|
| 17 | Compression Spring | 12 |
| 18 | Male Pilot | 1 |
| 19 | Retaining Ring (Int.) | 2 |
| 20 ¹ | Bearing | 2 |
| 21 | Spring Pin | 1 |
| 22 ¹ | O-ring Seal | 1 |
| 23 ¹ | O-ring Seal | 1 |
| 24 | Stub Shaft | 1 |
| 25 | Key (Not Shown) | 1 |
| 26 | Set Screw | 1 |
| 27 | Plug | 1 |
| 28 | Ret. Ring | 1 |
| 29 | Socket Head Cap Screw (Not Shown) | 4 |
| 30 | Lock Washer (Not Shown) | 4 |

² Denotes Facing Kit items.
 Facing Kit No. 801647.

PARTS LIST-INPUT UNIT

| ITEM | DESCRIPTION | QTY |
|-----------------|-----------------------|-----|
| 11 | Shaft | 1 |
| 19 | Key | 2 |
| 20 | Flange | 1 |
| 30 ¹ | Bearing | 2 |
| 35 | Retaining Ring (Ext.) | 2 |
| 45 | Jam Nut (Not Shown) | 1 |
| 58 | Retaining Ring (Int.) | 2 |

¹ Denotes Input Unit Repair Kit item.
 FMCBE 625 Input Unit Repair Kit No. 930000.
 FMCBE 875 Input Unit Repair Kit No. 930000.
 FMCBE 1125 Input Unit Repair Kit No. 937100.
 FMCBE 1375 Input Unit Repair Kit No. 937100.

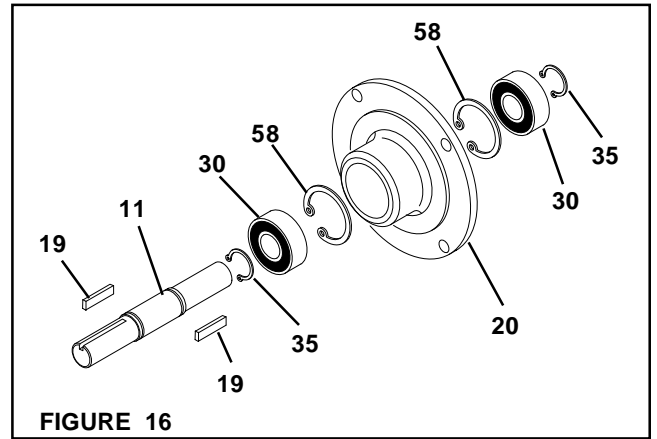


FIGURE 16

WARRANTY

Warranties

Nexen warrants that the Products will be free from any defects in material or workmanship for a period of 12 months from the date of shipment. NEXEN MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND ALL IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. This warranty applies only if (a) the Product has been installed, used and maintained in accordance with any applicable Nexen installation or maintenance manual for the Product; (b) the alleged defect is not attributable to normal wear and tear; (c) the Product has not been altered, misused or used for purposes other than those for which it was intended; and (d) Buyer has given written notice of the alleged defect to Nexen, and delivered the allegedly defective Product to Nexen, within one year of the date of shipment.

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The exclusive remedy of the Buyer for any breach of the warranties set out above will be, at the sole discretion of Nexen, a repair or replacement with new, serviceably used or reconditioned Product, or issuance of credit in the amount of the purchase price paid to Nexen by the Buyer for the Products.

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In no event shall Nexen be liable for any consequential, indirect, incidental, or special damages of any nature whatsoever, including without limitation, lost profits arising from the sale or use of the Products.

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To make a claim under this warranty, the claimant must give written notice of the alleged defect to whom the Product was purchased from and deliver the Product to same within one year of the date on which the alleged defect first became apparent.

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