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AIR CHAMP[®] PRODUCTS

User Manual



Flange Mounted Clutch Models 625 and 875

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
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www.nexengroup.com



WARNING

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.
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Vadnais Heights, Minnesota 55127



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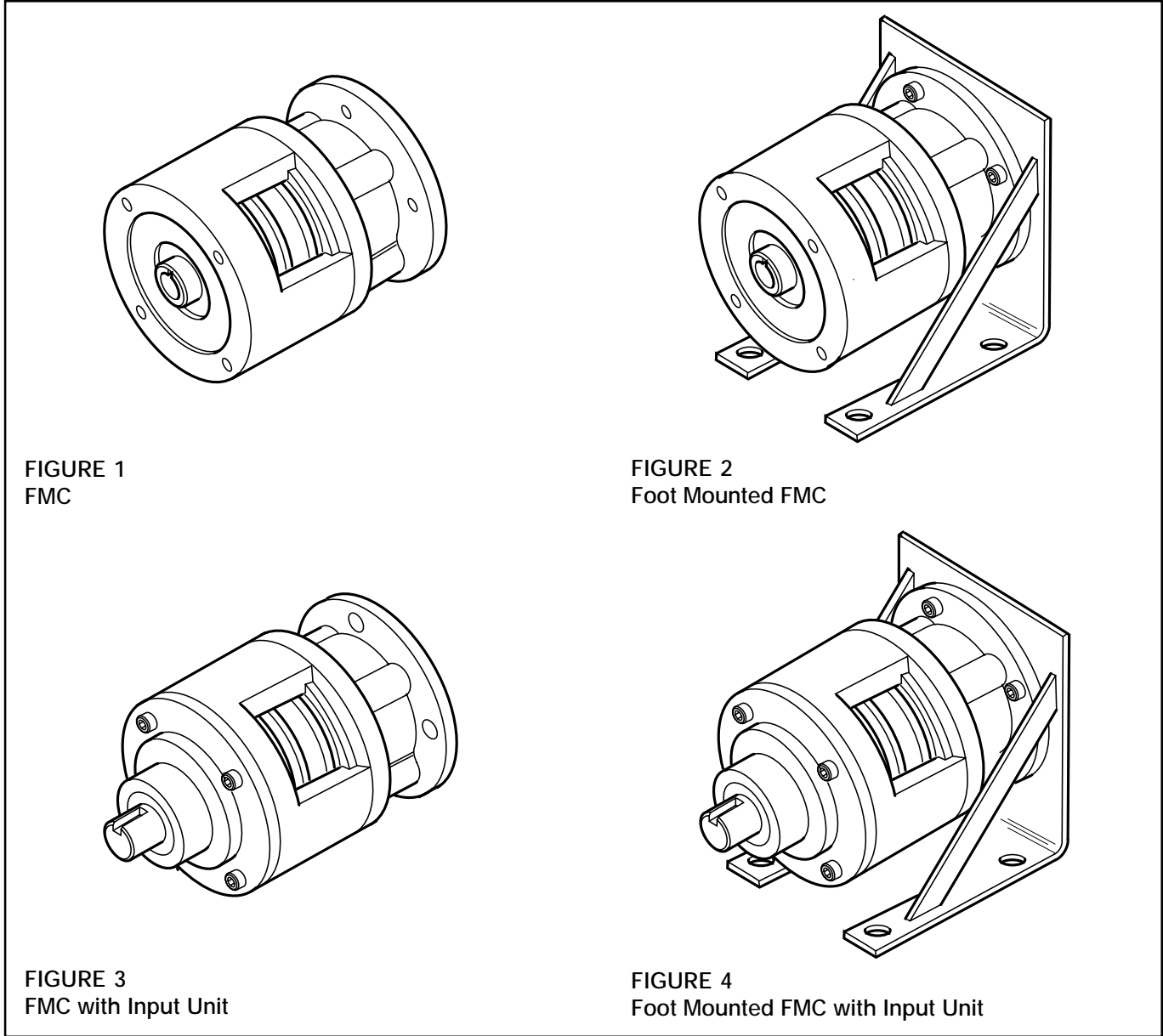
INTRODUCTION

Read this manual carefully, making full use of its explanations and instructions. The “Know How” of safe, continuous, trouble-free operation depends on the degree of your understanding of the system and your willingness to keep all components in proper operating condition. Pay particular attention to all NOTES, CAUTIONS, and WARNINGS to avoid the risk of personal injury or property damage. It is important to understand that these NOTES, CAUTIONS, and WARNINGS are not exhaustive. Nexen cannot possibly know or evaluate all conceivable methods in which service may be performed, or the possible hazardous consequences of each method. Accordingly, anyone who uses a procedure that is not recommended by Nexen must first satisfy themselves that neither their safety or the safety of the product will be jeopardized by the service method selected.

Nexen's Air Champ Flange Mounted Clutch (FMC) is designed to fasten directly onto NEMA C-Face motors and reducers to provide absolute control.

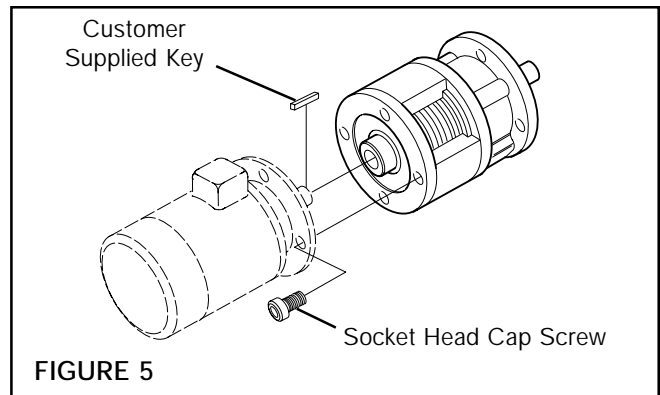
INSTALLATION

Nexen's FMC is available in four configurations (See Figs. 1, 2, 3, & 4).



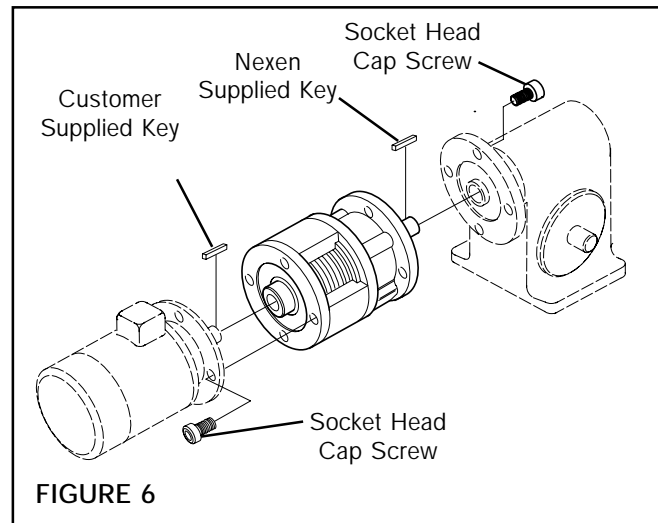
FMC MOUNTED ON NEMA C-FACED MOTOR

1. Insert customer supplied key into motor shaft keyway (See Fig. 5).
2. Slide FMC onto motor shaft and secure with customer supplied socket head cap screw (See Fig. 5).
3. Tighten customer supplied socket head cap screws to 12 ft. lbs. [16.3 Nm].



FMC MOUNTED BETWEEN GEAR REDUCER AND NEMA C-FACE MOTOR

1. Insert Nexen supplied key into FMC output shaft (See Fig. 6).
2. Slide FMC output shaft into gear reducer (See Fig. 6).
3. Secure FMC to gear reducer, using customer supplied socket head cap screws, nuts, and lockwashers (See Fig. 6).
4. Mount NEMA C-Face motor to FMC (**INSTALLATION**, FMC Mounted on NEMA C-Faced Motor).



AIR CONNECTIONS

For quick response, a short air line between the control valve and the FMC is recommended. Where long air lines are required, a quick exhaust valve should be used to insure rapid disengagement.

Locate air inlet in the Six o'clock down position to allow condensation in the air chamber to drain out of the exhaust port.

LUBRICATION

Pneumatically actuated devices require clean, pressure regulated, and lubricated air for maximum performance and long life. Your local Nexen Distributor carries filters, regulators, and lubricators specifically designed to operate with Nexen Clutches.

The most effective and economical way to lubricate the clutch is with an air line lubricator. Available from Nexen, the lubricator injects oil into the pressurized air, forcing an oil mist into the air chamber.

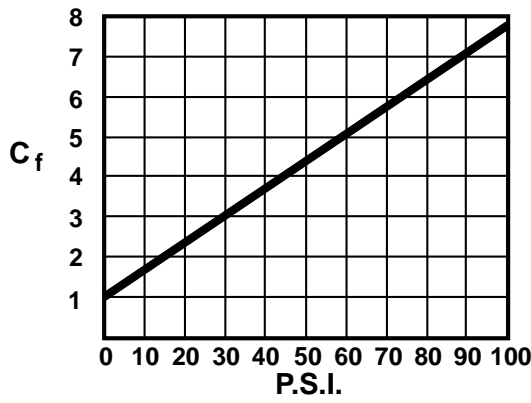
Locate lubricator above and within ten feet of clutch, and use a low viscosity oil such as SAE-10.

NOTE: Synthetic lubricants are not recommended.

To properly set Air Line Lubricator,

1. Determine C_f (See Table 1).
2. Multiply C_f by 0.54 to determine cu. in. / min.
3. Divide cu. in./min. by 1728 to determine cu. ft./min.

TABLE I



4. Multiply cu. ft./min. by cycles per minute.

NOTE: Nexen recommends one drop of oil every 20 SCFM.

5. Divide twenty by the result of Step 4 to determine time in minutes between drops of oil formed in the Lubricator Sight Gauge.

TROUBLESHOOTING

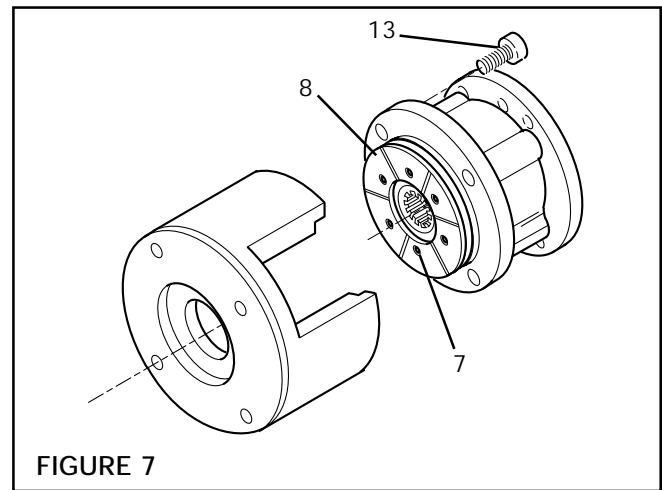
Symptom	Probable Cause	Remedy
Failure to Engage	Air not getting to Clutch	Check to control valve malfunction or low air pressure.
	Air leaks around O-ring Seals	Replace O-ring Seals.
	Lack of lubrication on Hub Spline	Lubricate Hub Spline.
	Rigid pipe or tubing on air connections	Use flexible tubing only.
Failure to Disengage	Friction lock	Lack of lubrication on Hub Spline or in Air Chamber.
	Broken Return Springs	Replace Return Springs.
	Unexhausted air	Check for control valve malfunction.

PARTS REPLACEMENT - FMC

NOTE: If an Input Unit has been Installed on the FMC, the Input Unit must be removed prior to servicing of the FMC.

FRICION FACINGS

1. Remove Socket Head Cap Screws (Item 13) and separate two halves of FMC (See Fig. 7).
2. Remove Machine Screws (Item 7) and Friction Facing (item 8) (See Fig. 7).
3. Apply Loctite 222 to threads of Machine Screws (Item 7).
4. Install new Friction Facing and Machine Screws.
5. Tighten Machine Screws (Item 7) to 22 in. lbs. torque.



BEARING (Housing)

1. Separate two halves of FMC (See Step 1 of Friction Facing Replacement).
2. Remove Retaining Ring (Item 6) and press Drive Disc (Item 4) out of Housing (Item 1) (See Fig. 8).

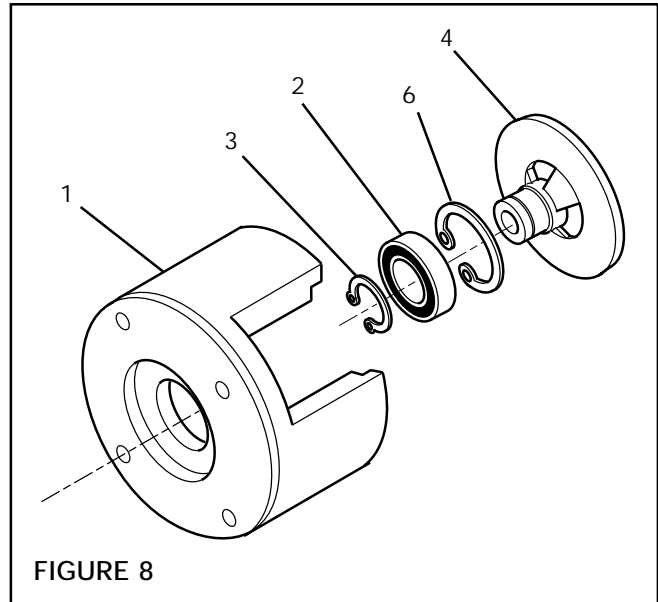
CAUTION

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

3. Remove Retaining Ring (Item 3) (See Fig.8).
4. Fully supporting Housing (Item 1), press Bearing (item 2) out of Housing (See Fig. 8).

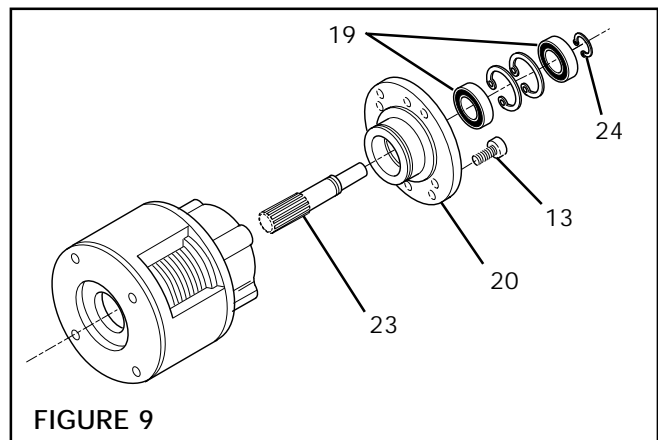
NOTE: Do not rouse bearing. Applying force on Inner bearing race to remove bearing held by outer race causes damage to bearing.

5. Carefully align O.D. of new bearing with Housing bore and press bearing into place.
6. Reverse above procedure to reassemble FMC.



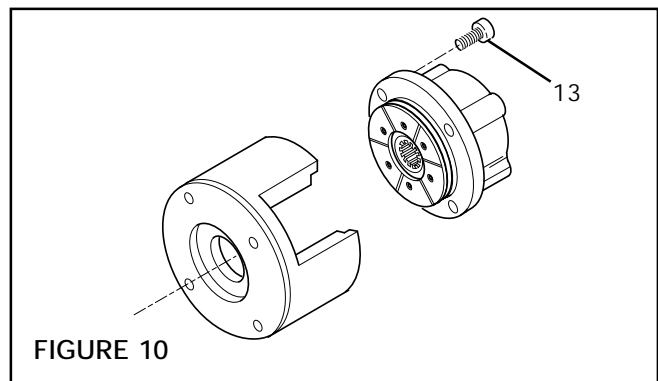
BEARINGS (Male Pilot & Piston)

1. Remove Socket Head Cap Screws (Item 13), Male Pilot (Item 20), Bearings (Item 19), and Stub Shaft (Item 23) (See fig. 9).
2. Using a bearing puller, remove Bearings (Item 19) from Male Pilot (Item 20) (See Fig. 9).
3. Align O.D. of new Bearings (Item 19) with bore of Male Pilot (Item 20) and press new bearings into place.
4. Remove Socket Head Cap Screws (Item 13) and separate two halves of FMC (See Fig. 10).
5. Remove Retaining Ring (Item 6) and press Splined Hub (Item 10) out of Piston (Item 16) (See Fig. 11).



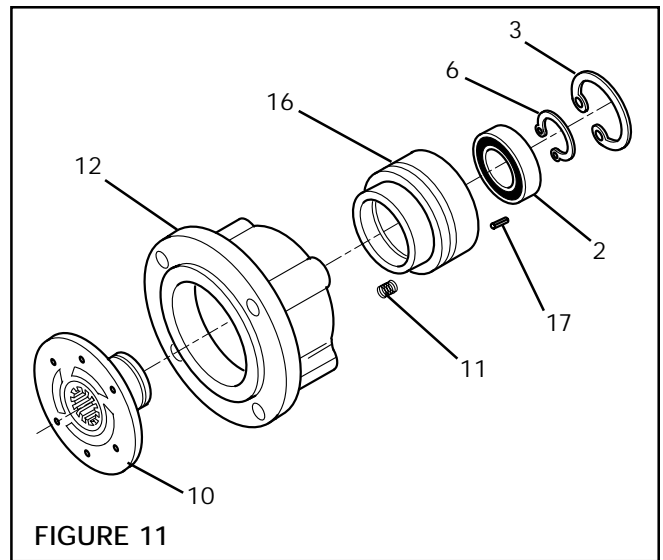
CAUTION

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



6. Remove Retaining Ring (Item 3) and press Bearing (Item 2) out of Piston (Item 16) (See Fig. 11).
7. Align O.D. of new Bearing (item 2) with bore of Piston (Item 16) and press new bearing into piston.
8. Reverse above procedure to reassemble FMC.
9. Tighten Socket Head Cap Screws (Item 13) to 136 in. lbs. torque on Model 625, and 325 in. lbs. torque for all other Models.

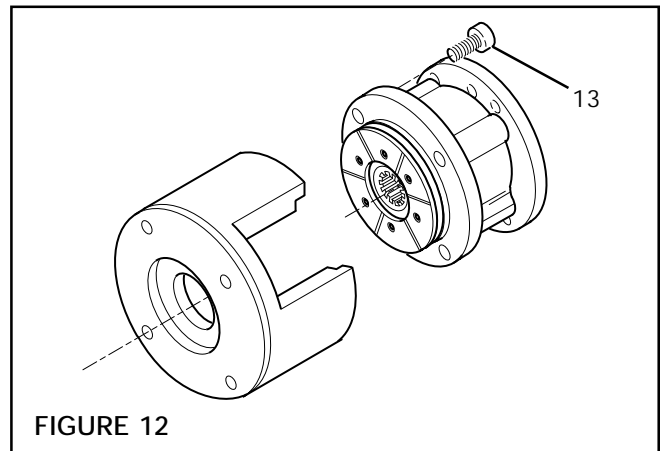
NOTE: Make sure that Spring (Item 11) have been inserted Into correct holes of Air Chamber (Item 12) and Spring Pin (Item 17) Is aligned with hole In Male Pilot (Item 20) (See Fig. 11).



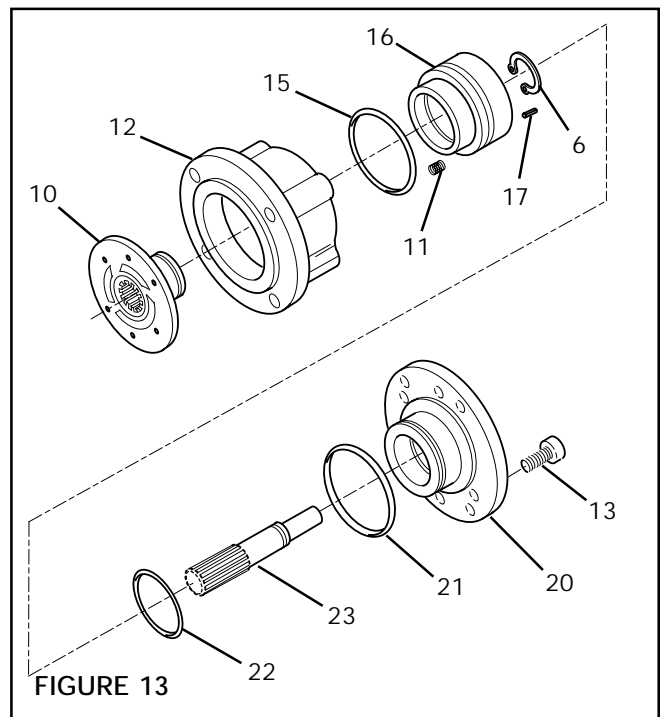
O-RING SEALS

1. Remove Socket Head Cap Screws. (Item 13) and separate two halves of FMC (See Fig. 12).
2. Remove Socket Head Cap Screws (Item 13) and slide Male Pilot (Item 20) and Stub Shaft (Item 23) out of Piston (Item 16) (See Fig. 13).
3. Remove Retaining Ring (item 6) and press Splined Hub (Item 10) out of Piston (Item 16) (See Fig. 13).

CAUTION
 Special attention should be exercised when working with Retaining Rings. Always wear safety goggles when working spring or tension loaded fasteners or devices.



4. Slide Piston (Item 16) out of Air Chamber (Item 12) (See Fig. 13).
5. Remove O-rings (Items 15, 21, & 22) (See Fig. 13).
6. Clean O-ring grooves and O-ring contact surfaces.
7. Lubricate new O-rings and O-ring contact surfaces with O-ring lubricant.
8. Install new O-rings and reassemble FMC.
9. Tighten Socket Head Cap Screws (Item 13) to 136 in. lbs. torque on Model 625, and 325 in. lbs. torque for all other Models.



PARTS REPLACEMENT - INPUT UNIT

1. Remove Socket Head Cap Screws (Item 29), Lockwashers (Item 30), and Nuts (Item 31), then separate Input Unit from FMC (See Fig. 14).
2. Fully supporting Input Unit, press Shaft (Item 28) out of Input Unit (See Fig. 15).
3. Using a bearing puller, remove Bearing (Item 19) from input Flange (Item 27) (See Fig. 15).

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

4. Carefully align O.D. of new bearing with bore of Input Flange (Item 27) and press new bearing into place (See Fig. 15).
5. Press Input Shaft (item 28) into Input Unit (See Fig. 15).

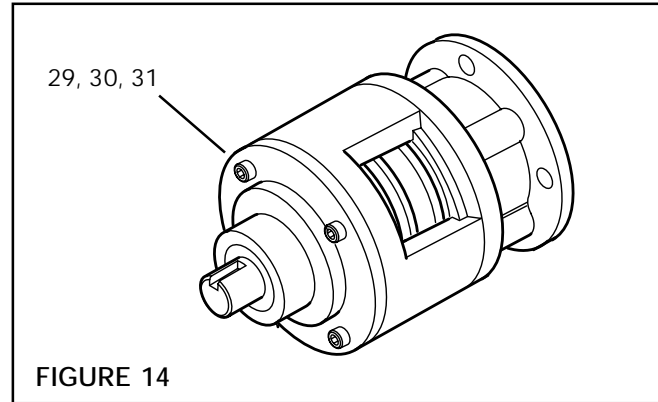


FIGURE 14

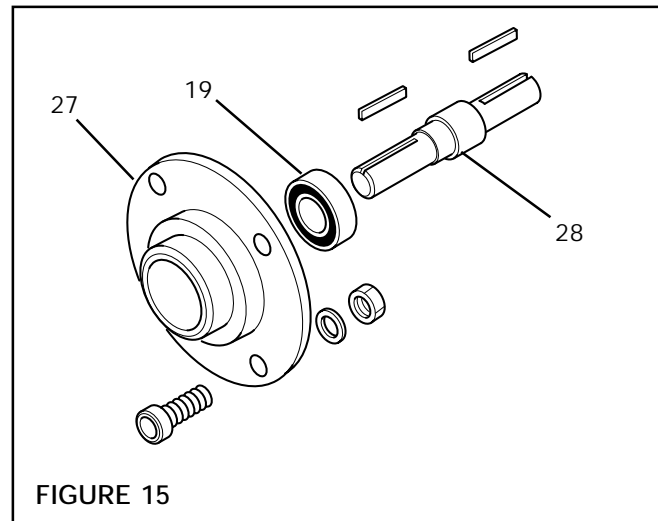


FIGURE 15

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.

PARTS LIST - FMC

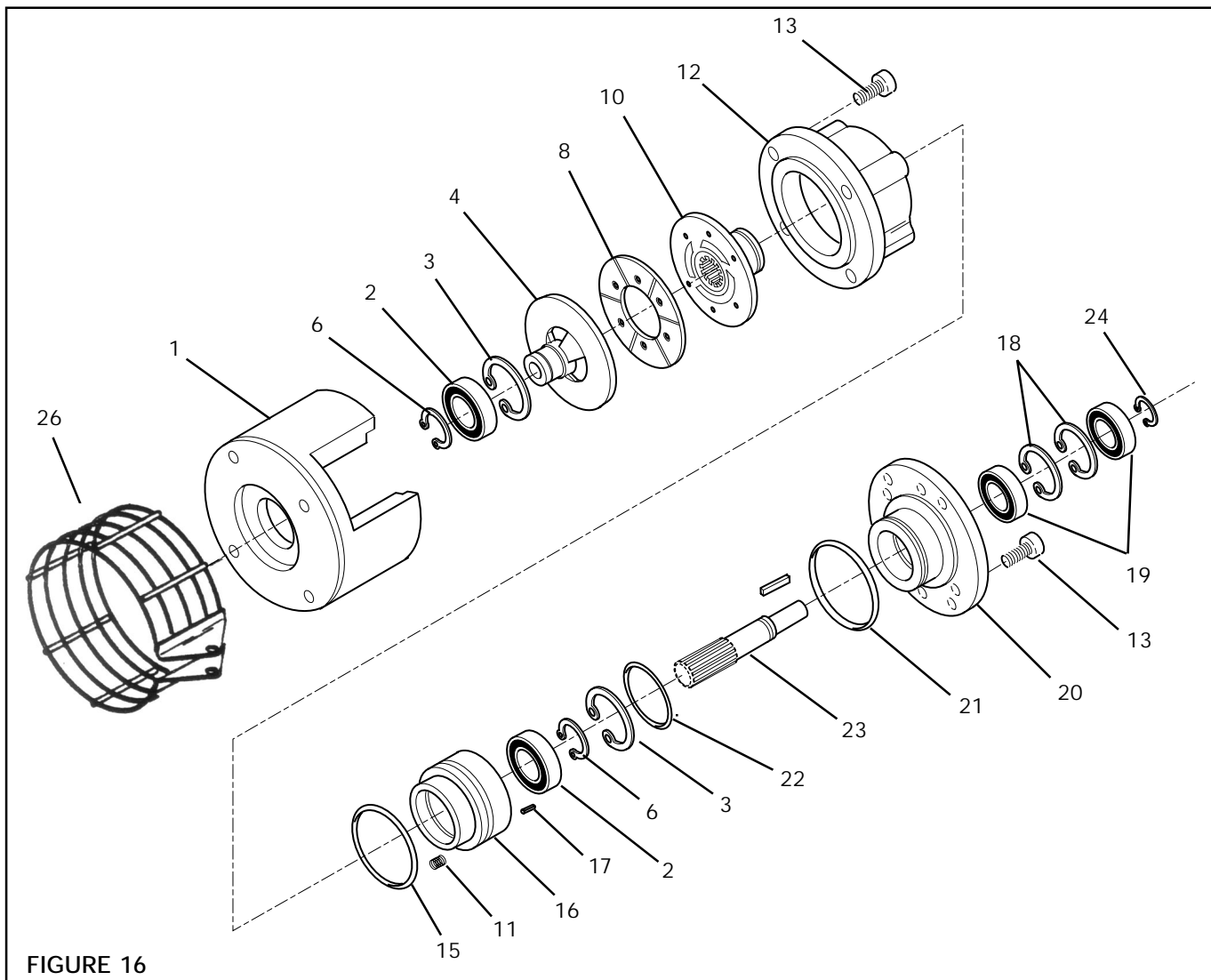


FIGURE 16

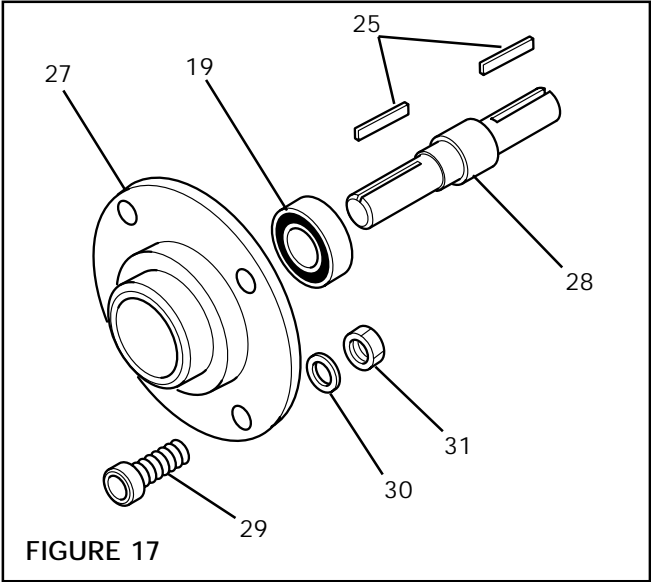
ITEM	DESCRIPTION	625	875
1	Housing	1	1
2 ¹	Bearing	2	2
3	Retaining Ring (int.)	2	2
5	Set Screw (Not Shown)	3	-
6	Retaining Ring (Ext.)	2	2
7	Flat Head Screw	6	6
10	Splined Disc	1	1
11	Compression Spring	6	6
12	Air Chamber	1	1
13	Socket Head Cap Screw	8	8

ITEM	DESCRIPTION	625	875
15 ¹	O-ring Seal	1	1
16	Piston	1	1
17	Spring Pin	1	1
15	Retaining Ring (Int.)	1	2
19 ¹	Ball Bearing	2	2
20	Male Pilot	1	1
21 ¹	O-ring Seal	1	1
22 ¹	O-ring Seal	1	1
24	Retaining Ring (Ext.)	1	1
26	Guard	1	1

¹ Denotes Repair Kit Item

PARTS LIST - INPUT UNIT

ITEM	DESCRIPTION	QTY
19	Bearing	1
25	Key	2
27	Flange (Input)	1
28	Shaft (input)	1
29	Cap Screw	4
30	Lockwasher	4
31	Hex Nut	4





WARRANTIES

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.

Exclusive Remedy

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.

Limitation of Nexen's Liability

TO THE EXTENT PERMITTED BY LAW NEXEN SHALL HAVE NO LIABILITY TO BUYER OR ANY OTHER PERSON FOR INCIDENTAL DAMAGES, SPECIAL DAMAGES, CONSEQUENTIAL DAMAGES OR OTHER DAMAGES OF ANY KIND OR NATURE WHATSOEVER, WHETHER ARISING OUT OF BREACH OF WARRANTY OR OTHER BREACH OF CONTRACT, NEGLIGENCE OR OTHER TORT, OR OTHERWISE, EVEN IF NEXEN SHALL HAVE BEEN ADVISED OF THE POSSIBILITY OR LIKELIHOOD OF SUCH POTENTIAL LOSS OR DAMAGE. For all of the purposes hereof, the term "consequential damages" shall include lost profits, penalties, delay images, liquidated damages or other damages and liabilities which Buyer shall be obligated to pay or which Buyer may incur based upon, related to or arising out of its contracts with its customers or other third parties. In no event shall Nexen be liable for any amount of damages in excess of amounts paid by Buyer for Products or services as to which a breach of contract has been determined to exist. The parties expressly agree that the price for the Products and the services was determined in consideration of the limitation on damages set forth herein and such limitation has been specifically bargained for and constitutes an agreed allocation of risk which shall survive the determination of any court of competent jurisdiction that any remedy herein fails of its essential purpose.

Limitation of Damages

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.

Warranty Claim Procedures

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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