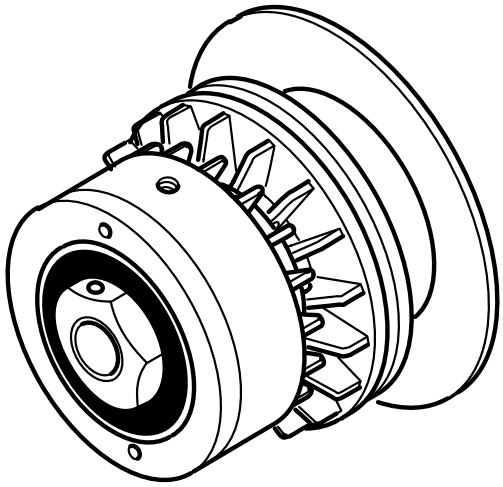
FORM NO. L-20265-A-1199

nexen
formerly Horton Industrial Products
"Air Champ"®

BANDAG H-1000
INSTALLATION, OPERATION, AND MAINTENANCE INSTRUCTIONS



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.

CONTENTS

INSTALLATION

1. Insert the Key (Item 19) into the solid shaft keyway (See Figure 1).
2. Insert the two Keys (Item 23) into the hollow shaft keyways (See Figure 1).
3. Slide the H-1000 onto both shafts as far as possible until the Keys (Items 19 and 23) are fully seated into the keyways of the H-1000 Hub and Drive Disc (See Figure 1).
4. Insert the two Set Screws (Item 18) through the hole in the Drive Disc and into the Hub (See Figure 1).
5. Tighten the two Set Screws (Item 18).
6. Insert the two Set Screws (Item 22) into the Drive Disc and tighten them to 43 Ft. Lbs. [58 N•m] torque.

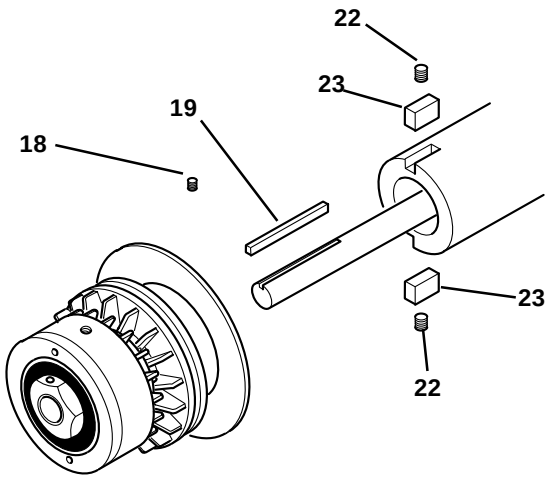


FIGURE 1

FRICTION FACING ADJUSTMENT

1. Ensure the Set Screw (Item 17) that locks the Adjustment Nut (Item 16) is released to allow the Adjustment Nut to be rotated on the Hub (See Figure 2).
2. Using a 0.020" and a 0.030" inch feeler gauge, check the gap between the Friction Disc and the Friction Facing (See Figure 2).
3. If the gap is less than 0.020", rotate the Adjustment Nut counterclockwise until one set screw hole is over the flat on the Hub and the 0.020" feeler gauge can be inserted (See Figure 2).
4. If the gap is greater than 0.030", rotate the Adjustment Nut clockwise until one set screw hole is over the flat on the Hub and the 0.030" feeler gauge can not be inserted (See Figure 2).
5. Tighten the Set Screw.

NOTE

Do not adjust the gap to less than 0.020". The H-1000 will not disengage if the gap is closed.

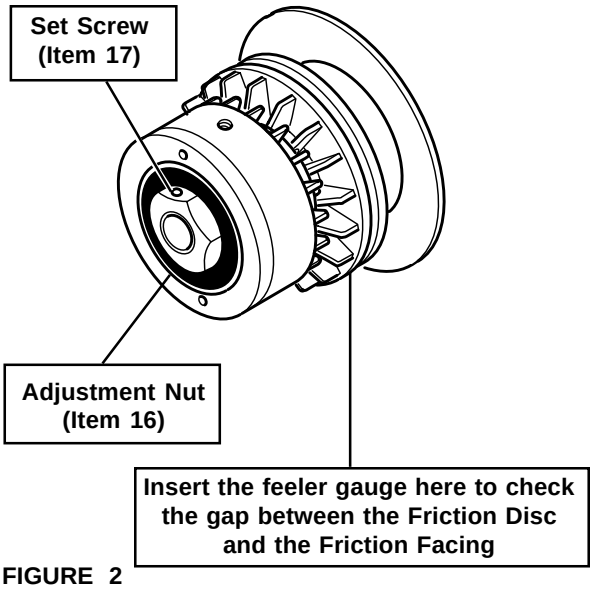


FIGURE 2

AIR CONNECTIONS

For quick response, a short air hose between the control valve and the H-1000 is recommended. An Air Hose (Item 20) is furnished and air controls with 1/8 NPT ports are recommended. Where long air hoses are required, a Quick Exhaust Valve (Nexen Product No. 945100) is recommended to ensure rapid disengagement.

NOTE

Because of the necessary movement of the air chamber and hose upon engagement, flexible tubing or air hoses must be used on the H-1000.

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

Due to bearing seal drag, the outer portion of the H-1000 will rotate when it is engaged. Rest the air hose against a support that is parallel to the centerline of the H-1000 to stop this rotation.

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 H-1000 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 H-1000, 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

PROBLEM	PROBABLE CAUSE
Failure to Engage.	Air not getting to the H-1000 due to a control valve malfunction or low air pressure.
	Defective O-ring Seals, causing air leaks.
	Lack of lubrication on the Hub spline or in the air chamber.
	Rigid pipe instead of flexible tubing for air line connections.
Failure to Disengage.	Friction lock due to a lack of lubrication on the Hub spline or in the air chamber.
	Broken Compression Spring.
	Unexhausted air due to a control valve malfunction.
Excessive drag on the air hose.	Defective Bearings.
	Air hose not properly supported.

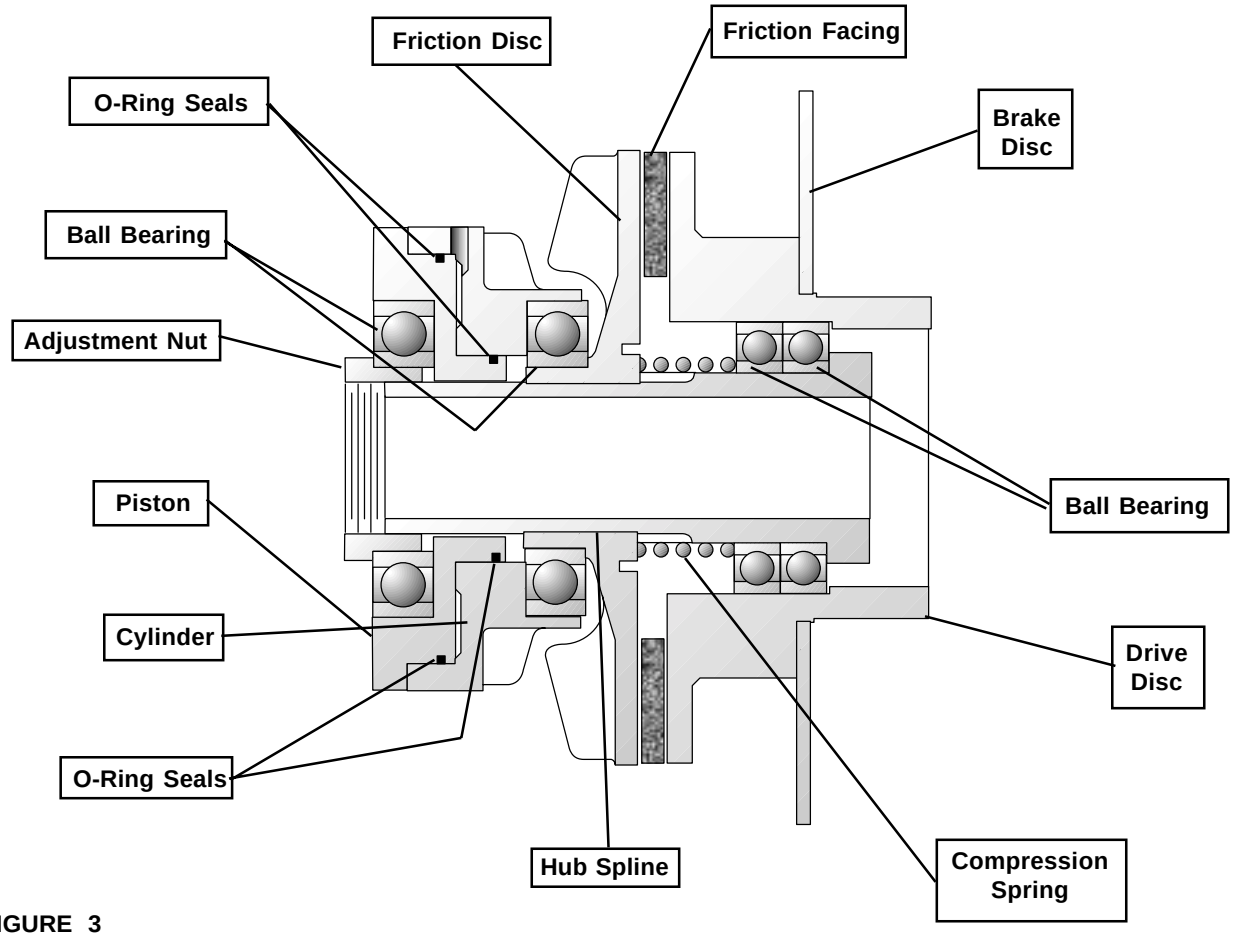


FIGURE 3

PARTS REPLACEMENT

1. Loosen the Set Screw (Item 17) and remove the Adjustment Nut (Item 16) (See Figure 4).
2. Slide the Cylinder, Piston, Compression Spring, and Friction Disc off of the Hub (See Figure 4).
3. Apply air pressure to separate the Piston (Item 13) from the Cylinder (Item 11) and Friction Disc (Item 9) (See Figure 5).
4. Remove the two O-ring Seals (Items 14 and 15) from the Piston (Item 13) (See Figure 5).
5. Pull the Ball Bearing (Item 10) out of the Piston (Item 13) (See Figure 6).
6. Clean the bearing bore of the Piston with fresh safety solvent, making sure all old Loctite® residue has been removed.
7. Apply Loctite® 680 to the outer race of the new Ball Bearing (Item 10) and align it with the bore of the Piston (Item 13); then pressing on the outer bearing race, press the new Ball Bearing into the Piston.
8. Using a bearing puller, remove the Cylinder (Item 11) from the Ball Bearing (Item 10) and Friction Disc (Item 9) (See Figures 7 and 8).
9. Using a bearing puller, remove the Ball Bearing (Item 10) from the Friction Disc (Item 9) (See Figure 7).
10. Pressing on the inner bearing race, press the new Ball Bearing (Item 10) onto the Friction Disc (Item 9) (See Figure 7).
11. Clean the bearing bore of the Cylinder (Item 11) with fresh safety solvent, making sure all old Loctite® residue has been removed.
12. Apply an adequate amount of Loctite® 680 to the outer race of the new Ball Bearing (Item 10) and align it with the bore of the Cylinder (Item 11); then, press the new Ball Bearing (Item 10) and Friction Disc (Item 9) into the Cylinder (Item 11).
13. Clean the O-ring Seal contact surfaces of the Piston (Item 13) and Cylinder (Item 11) with fresh safety solvent (See Figure 9).
14. Coat the new O-ring Seals (Items 14 and 15) and the O-ring Seal contact surfaces of the Piston (Item 13) and Cylinder (Item 11) with fresh O-ring lubricant (See Figure 9).
15. Install the new O-ring Seals (Items 14 and 15) onto the Piston (Item 13); then, wipe off any excess O-ring lubricant (See Figure 9).
16. Slide the Piston (Item 13) into the Cylinder (Item 11) (See Figure 9).
17. Press the Hub (Item 6) out of the Ball Bearings (Item 2) and Drive Disc (Item 1) (See Figure 10).

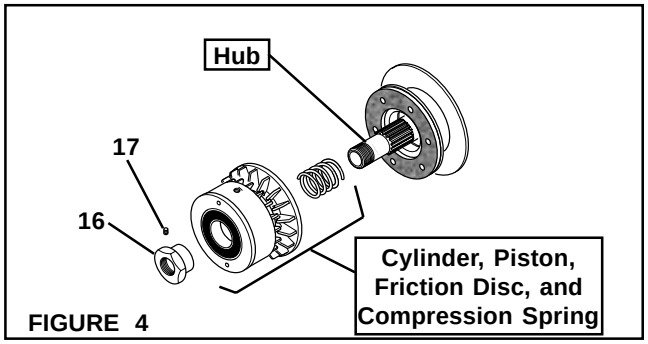


FIGURE 4

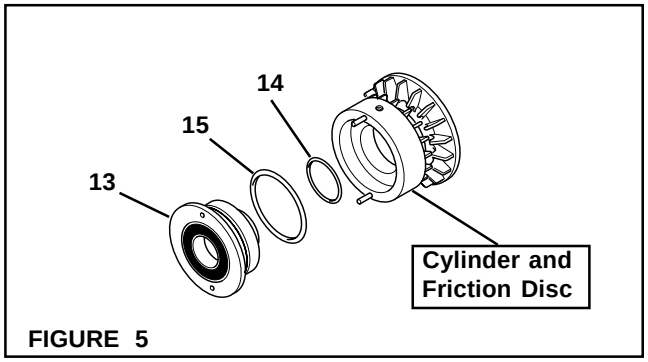


FIGURE 5

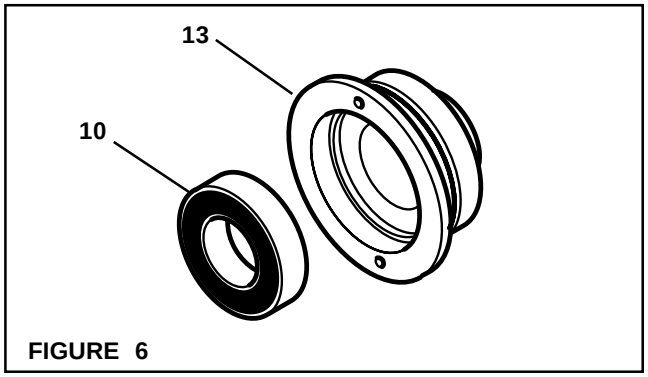


FIGURE 6

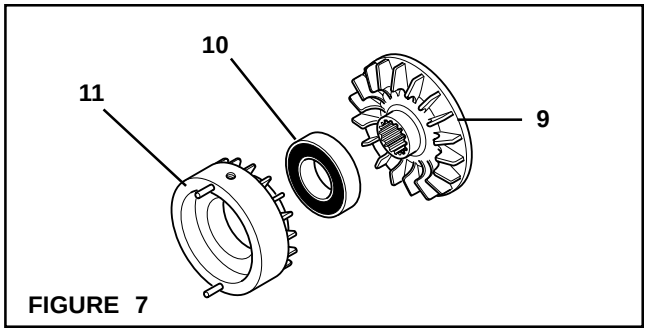


FIGURE 7

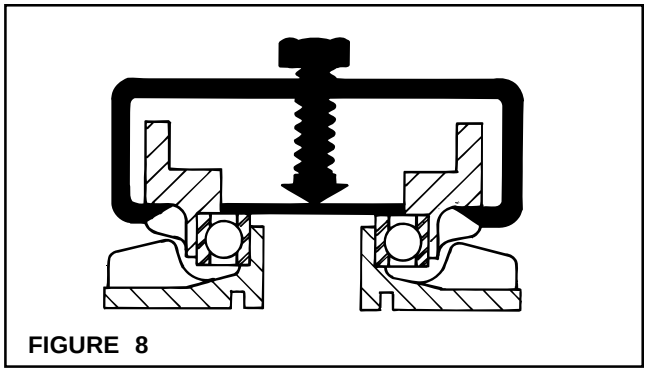


FIGURE 8

18. Remove the Retaining Ring (Item 3) from the Drive Disc (Item 1) (See Figure 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.

19. Press the Ball Bearings (Item 2) out of the Drive Disc (Item 1) (See Figure 10).

20. Clean the bearing bore of the Drive Disc (Item 1) with fresh safety solvent, making sure all old Loctite® residue has been removed.

21. Apply an adequate amount of Loctite® 680 to the outer race of the new Ball Bearings (Item 2) and align it with the bore of the Drive Disc (Item 1); then, press the new Ball Bearings (Item 2) and Drive Disc (Item 1).

22. Install the Retaining Ring (Item 3) (See Figure 10).

23. Fully support the inner races of the new Ball Bearings (Item 2) and press the Hub (Item 6) into the new Ball Bearings (See Figure 10).

24. Remove the six Flat Head Screws (Item 5) and the old Friction Facing (Item 4) from the Drive Disc (Item 1) (See Figure 11).

25. Using six new Flat Head Screws (Item 5), secure the new Friction Facing (Item 4) to the Drive Disc (Item 1) (See Figure 11).

26. Alternately and evenly tighten the six Flat Head Screws (Item 5) to 5 Ft. Lbs. [6.92 N•m] torque.

27. Apply a thin film of Never-Seez® to the splines of the Hub (See Figure 12).

28. Slide the Compression Spring (Item 7) onto the Hub (See Figure 12).

29. Slide the Cylinder, Piston, and Friction Disc onto the Hub (See Figure 12).

30. Screw the Adjustment Nut (Item 16) onto the Hub (See Figure 12).

31. Adjust the H-1000 (See **FRICTION FACING ADJUSTMENT**).

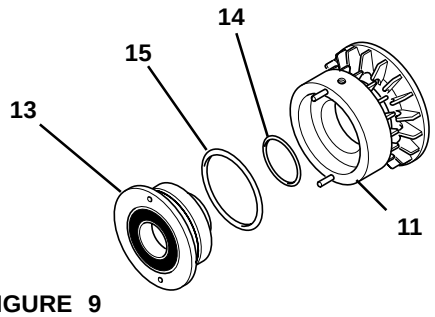


FIGURE 9

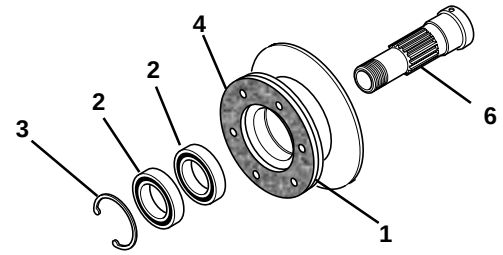


FIGURE 10

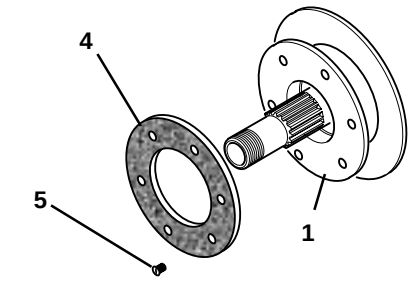


FIGURE 11

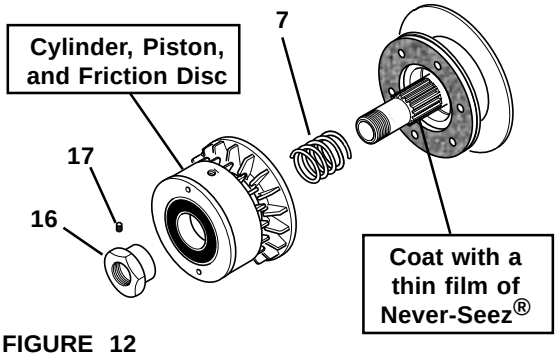


FIGURE 12

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

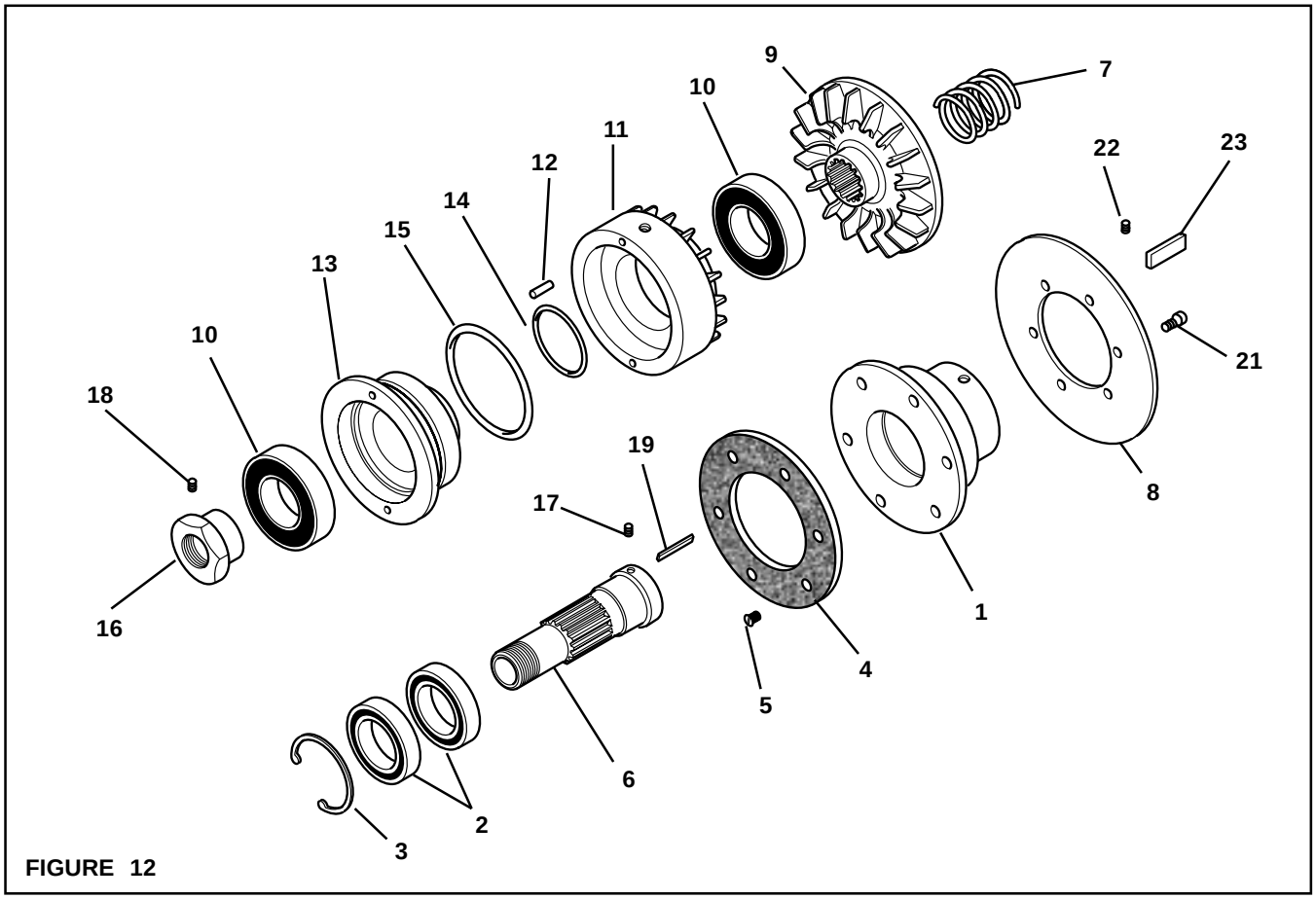


FIGURE 12

ITEM	DESCRIPTION	QTY
1	Drive Disc	1
2	Ball Bearing	2
3	Retaining Ring (Int.)	1
4	Friction Facing	1
5	Flat Head Screw	6
6	Hub	1
7	Compression Spring	1
8	Brake Disc	1
9	Friction Disc	1
10	Ball Bearing	2
11	Cylinder	1
12	Slotted Spring Pin	1

ITEM	DESCRIPTION	QTY
13	Piston	1
14	O-ring Seal (Small)	1
15	O-ring Seal (Large)	1
16	Adjustment Nut	1
17	Set Screw (0.375-16)	2
18	Set Screw (0.250-28)	1
19	Key	1
20	Air Hose (Not Shown)	1
21	Socket Head Cap Screw (0.250-20)	6
22	Set Screw (0.500-13)	2
23	Key	2

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

WARRANTY

Nexen Group, Inc. (Nexen) warrants its product(s) [the Product(s)] will be free from defects in materials and workmanship under normal use and service conditions for a period of 12 months from the date of shipment. NO OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED, OR STATUTORY, INCLUDING WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY, OR OF FITNESS FOR A PARTICULAR PURPOSE, ARE GIVEN, AND ALL SUCH OTHER WARRANTIES ARE HEREBY EXPRESSLY DISCLAIMED.

Conditions
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) the claimant has complied with the warranty claim procedures set out below in Warranty Claim Procedures.

Exclusive Remedy
The sole and exclusive remedy for a breach of this warrant shall be, at Nexen's sole election, repair or replacement with new, serviceably used or reconditioned Product, or issuance of a credit in the amount of the current Nexen discounted price for the Product.

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 Nexen and deliver the Product to Nexen within one year of the date on which the alleged defect first became apparent.

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