




Sheave & Pilot Mount Clutch-Brake Model BCB-275



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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	<div data-bbox="537 562 834 617"> DANGER</div> <p>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, cause injury or death. Comply with all applicable codes.</p>	
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This document is the original, non-translated, version.

Conformity Declaration: In accordance with Appendix II B of CE Machinery Directive (2006/42/EC):

A Declaration of Incorporation of Partly Completed Machinery evaluation for the applicable EU directives was carried out for this product in accordance with the Machinery Directive. The declaration of incorporation is set out in writing in a separate document and can be requested if required.

This machinery is incomplete and must not be put into service until the machinery into which it is to be incorporated has been declared in conformity with the applicable provisions of the Directive.

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ISO 9001 Certified

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GENERAL SPECIFICATIONS


Specifications	
Torque	Up to 9 Nm (80 in-lbs)
Actuation Pressure	1 - 5.5 bar (14.5 - 80 psi)
Service Temperature	4.5° - 104° C (40° - 220° F)
Approximate Weight	Up to 3 kg (6.6 lbs)

GENERAL SAFETY PRECAUTIONS




CAUTION

Use appropriate guarding for moving components. Failure to guard could result in serious bodily injury.




CAUTION

Watch for sharp features when interacting with this product. The parts have complex shapes and machined edges.




CAUTION

This product has possible pinch points. Care should be taken when interacting with this product.




WARNING

This product is capable of emitting a spark if misused, therefore is not recommended for use in any explosive environment.




WARNING

Ensure proper guarding of the product is used. Nexen recommends the machine builder design guarding in compliance with OSHA 29 CFR 1910 "Occupational Safety and Health Hazards."



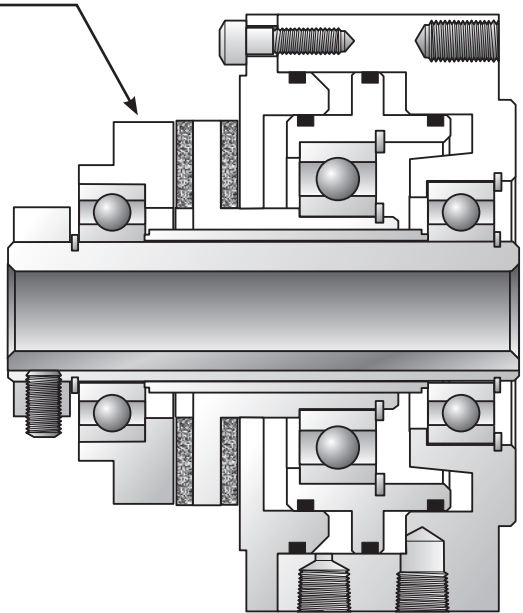
CAUTION

Surface temperature may exceed safe handling limits during operation. Do not touch.



CAUTION

Use appropriate guarding for moving components. Failure to guard could result in serious bodily injury.



INSTALLATION

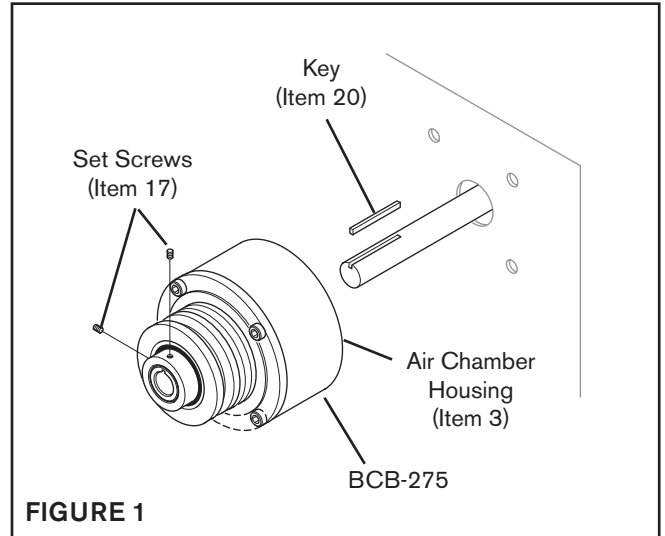
NOTE

These are "hub-stop" clutch-brakes. They stop the shaft on which they are mounted. Therefore, they must be mounted on the driven shaft.

SHEAVE MOUNT BCB-275

REFER TO FIGURE 1.

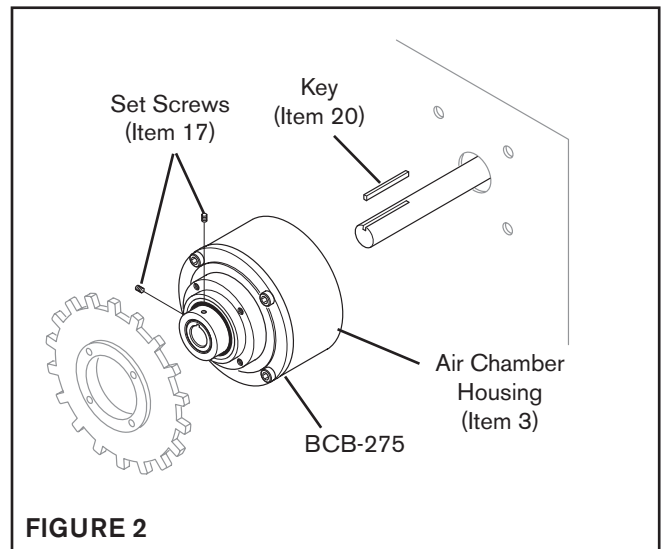
1. Insert the Key (Item 20) into the machine shaft; then slide the BCB-275 onto the machine shaft and Key.
2. Install and tighten the Set Screws (Item 17).
3. Align the BCB-275 air inlet ports to the six o'clock down position to allow condensation to drain out of the ports.
4. Using customer supplied 1/4-20 bolts, secure the Air Chamber Housing (Item 3) to a fixed member of the machine.



PILOT MOUNT BCB-275

REFER TO FIGURE 2.

1. Secure a customer supplied sheave or sprocket to the BCB.
2. Insert the Key (Item 20) into the machine shaft; then slide the BCB-275 onto the machine shaft and Key.
3. Install and tighten the Set Screws (Item 17).
4. Align the BCB-275 air inlet ports to the six o'clock down position to allow condensation to drain out of the ports.
5. Using customer supplied 1/4-20 bolts, secure the Air Chamber Housing (Item 3) to a fixed member of the machine.



LUBRICATION

NOTE

Nexen pneumatically actuated devices require clean, pressure regulated air for maximum performance and life. All seals in Nexen pneumatically operated devices are lubricated for life, and do not require additional lubrication.

However, some customers prefer to use an air line lubricator, which injects oil into the pressurized air, forcing an oil mist into the air chamber. This is acceptable, but care must be taken to ensure once an air mist lubrication system is used, it is continually used over the life of the product as the oil mist may wash free the factory installed lubrication.

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

Synthetic lubricants are not recommended.

Nexen product's bearings are shielded and pre-lubricated, and require no further lubrication.

LUBRICATOR DRIP RATE SETTINGS



CAUTION

These settings are for Nexen supplied lubricators. If you are not using a Nexen lubricator, calibration must follow the manufacturer's suggested procedure.

1. Close and disconnect the air line from the unit.
2. Turn the Lubricator Adjustment Knob counterclockwise 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 clockwise until closed.
7. Turn the Lubricator Adjustment Knob counterclockwise one-third turn.
8. Open the air line to the unit.

AIR CONNECTIONS

All Nexen pneumatically actuated devices require clean and dry air, which meets or exceeds ISO 8573.1:2001 Class 4.4.3 quality.

NOTE

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

The following are common air supply schemes used with this product. These are examples and not an all-inclusive list. All air circuits to be used with this product must be designed following ISO-4414 guidelines.



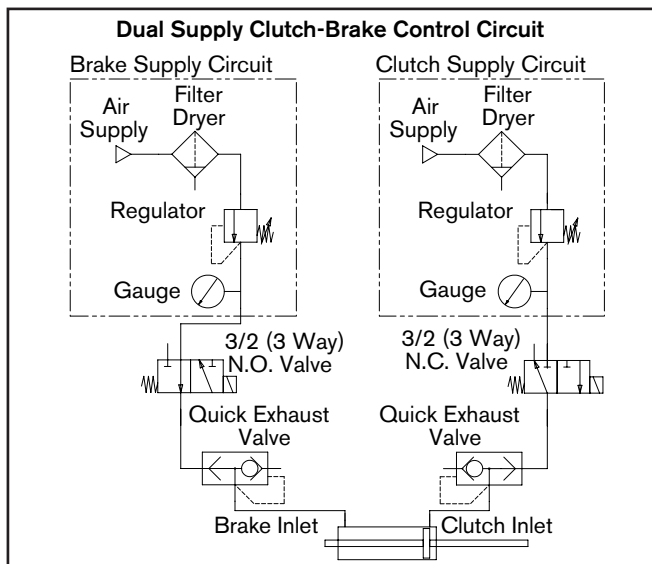
CAUTION

Low air pressure will cause slippage and overheating. Excessive air pressure will cause abrupt starts and stops, reducing product life.

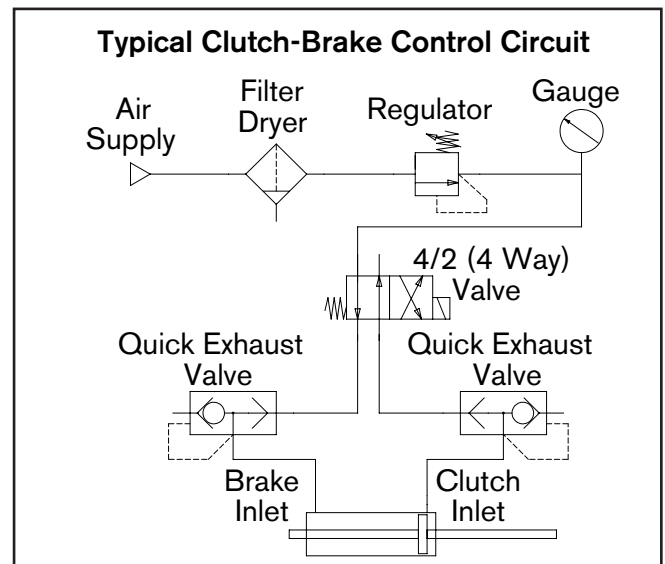
Air Pressure (Gage) Limits

8 Bar (120 PSI) Absolute Max.

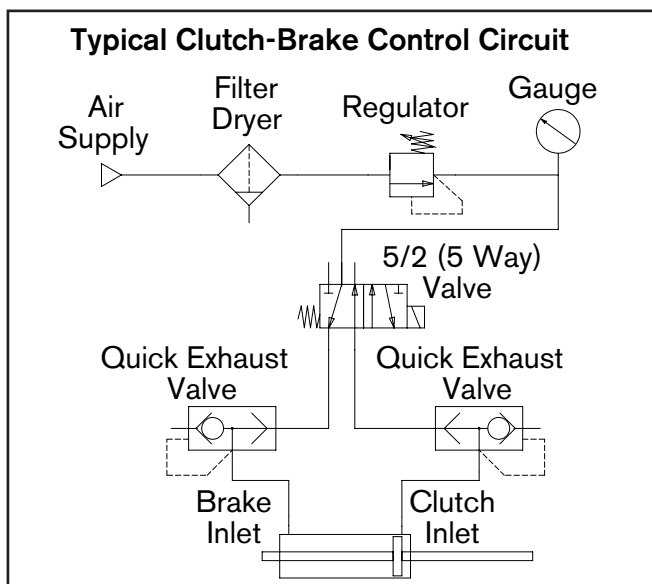
0 Bar (0 PSI) Absolute Min.



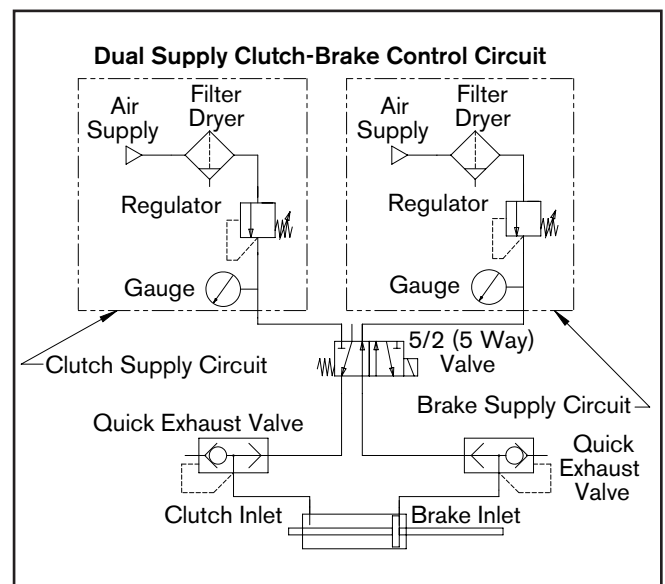
3/2 (3 Way)



4/2 (4 Way)




5/2 (4 Way)




5/2 (5 Way)

OPERATION




WARNING

Ensure proper guarding of the product is used. Nexen recommends the machine builder design guarding in compliance with OSHA 29 CFR 1910 "Occupational Safety and Health Hazards."




WARNING

Never exceed maximum operating speeds listed for your product (See Table 1).



CAUTION

The temperature limits for this product line are 4.5° - 104° C (40°-220° F).



CAUTION

Never exceed life of facing material. Facing life depends on the volume of material and the total energy over the life of the unit. Expected life (in hrs) can be found by:

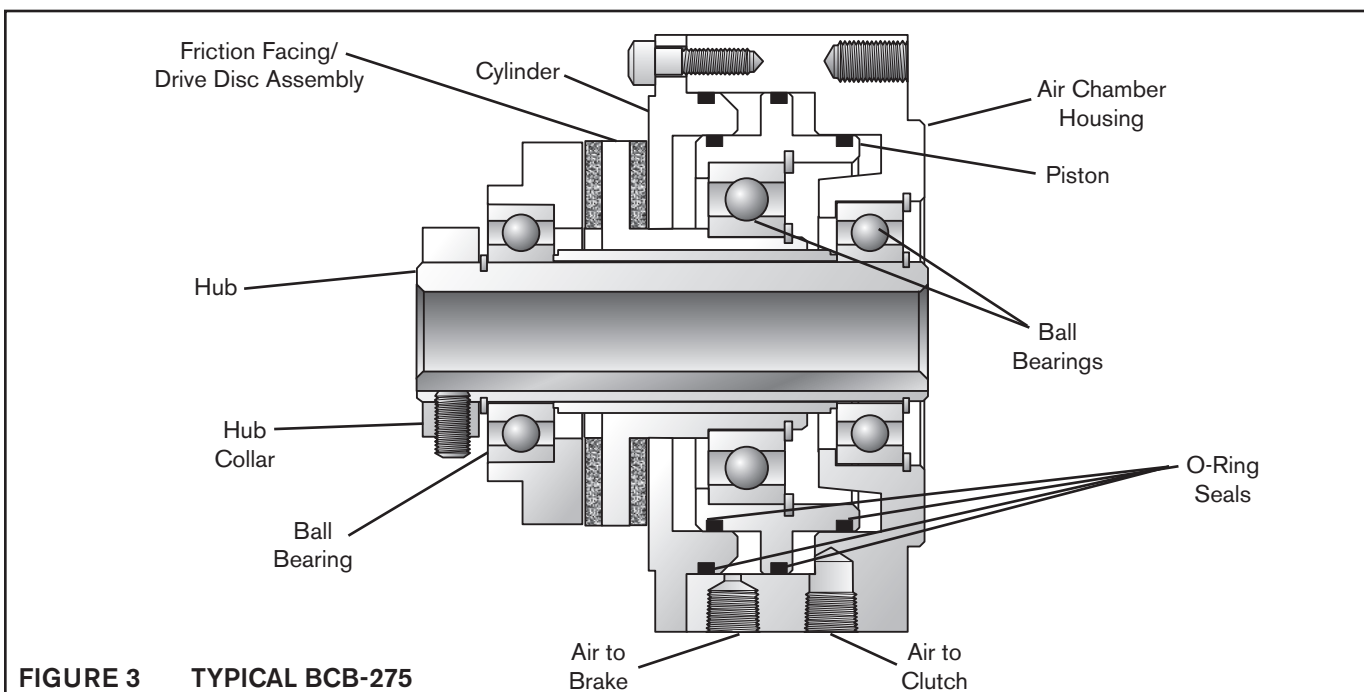
$$\text{Time} = \frac{\text{Volume}}{(\text{Power} \cdot \text{Wear Rate})}$$

TABLE 1

Size	Max RPM
BCB-275	3,600

TROUBLESHOOTING

Problem	Probable Cause	Solution
Failure to engage	Air not getting to the BCB-275 due to a control malfunction.	Check for a control valve malfunction and replace the control valve if necessary.
	Air leaks at the air lines or O-ring Seals.	Replace the air lines and/or 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.
	Air leaks at the air lines or O-ring Seals.	Replace the air lines and/or O-ring Seals.
Loss of torque	Air leaks at the air lines or O-ring Seals.	Replace the air lines and/or O-ring Seals.
	Worn Friction Facing / Drive Disc Assembly	Replace Friction Facing / Drive Disc Assembly



PARTS REPLACEMENT

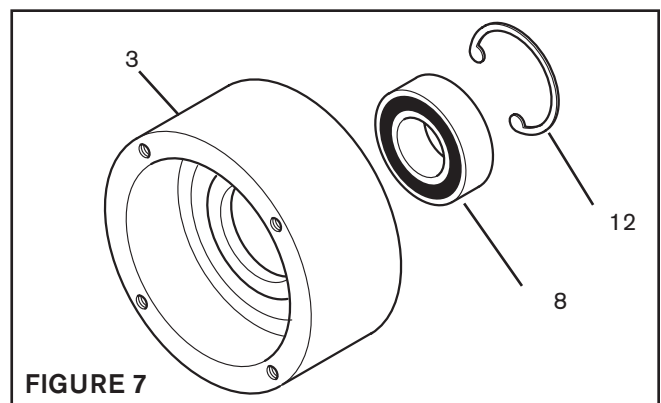
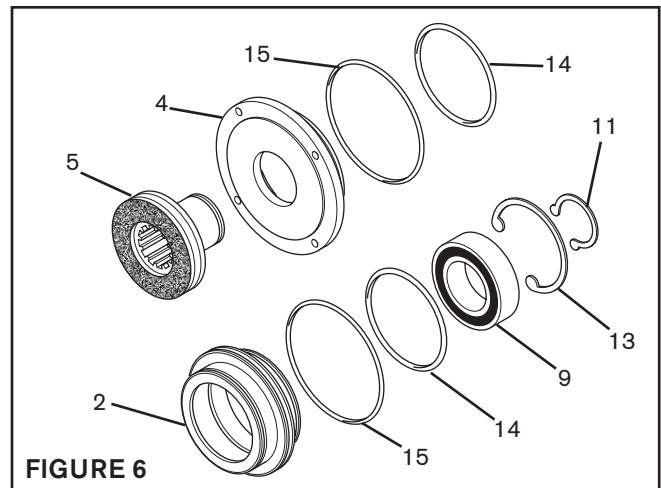
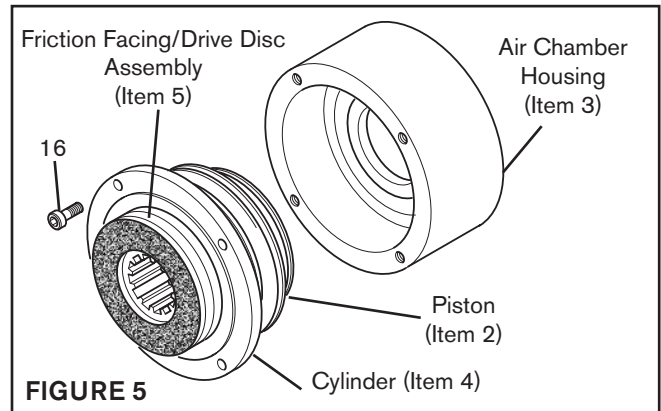
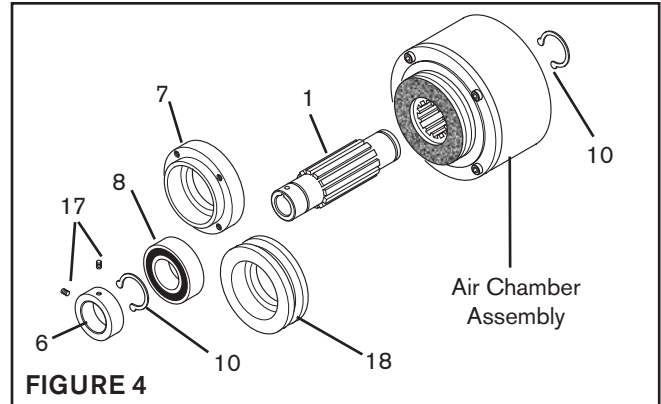


CAUTION

Working with spring loaded or tension loaded fasteners and devices can cause injury. Wear safety glasses and take the appropriate safety precautions.

REFER TO FIGURES 4-9.

1. Remove the Retaining Ring (Item 10) and press the Air Chamber Assembly off the Hub (Item 1).
2. Loosen the Set Screws (Item 17) and slide the Hub Collar (Item 6) off the Hub (Item 1); then, remove the Retaining Ring (Item 10).
3. Press the Pilot Mount Drive Disc (Item 7) or Sheave (Item 18) off the Hub (Item 1).
4. Press the old Ball Bearing (Item 8) out of the Pilot Mount Drive Disc (Item 7) or Sheave (Item 18).
5. Clean the bearing bore of the Pilot Mount Drive Disc (Item 7) or Sheave (Item 18) with fresh safety solvent, making sure all old Loctite® residue is removed.
6. Apply an adequate amount of Loctite® 680 to evenly coat the outer race of the new Ball Bearing (Item 8).
7. Supporting the Pilot Mount Drive Disc (Item 7) or the Sheave (Item 18) and pressing on the outer race of the new Ball Bearing (Item 8), press the new Ball Bearing into the Pilot Mount Drive Disc or Sheave.
8. Press the new Ball Bearing (Item 8) and Pilot Mount Drive Disc (Item 7) or Sheave (Item 18) onto the Hub (Item 1); then, reinstall the Retaining Ring (Item 10).
9. Remove the four Socket Head Cap Screws (Item 16); then, slide the Friction Facing/Drive Disc Assembly (Item 5), Cylinder (Item 4), and Piston (Item 2) out of the Air Chamber Housing (Item 3).
10. Remove the Retaining Ring (Item 11) and press the Friction Facing/Drive Disc Assembly (Item 5) out of the Cylinder (Item 4) and Piston (Item 2).
11. Slide the Piston (Item 2) out of the Cylinder (Item 4); then, remove the old O-ring Seals (Items 14 and 15) from the Piston and Cylinder.
12. Remove the Retaining Ring (Item 13) from the Piston (Item 2); then, press the old Ball Bearing (Item 9) out of the Piston.



PARTS REPLACEMENT (continued)



CAUTION

Working with spring loaded or tension loaded fasteners and devices can cause injury. Wear safety glasses and take the appropriate safety precautions.

REFER TO FIGURES 4-9.

13. Clean the bearing bore of the Piston (Item 2) with fresh safety solvent, making sure all old Loctite® residue is removed.
14. Apply an adequate amount of Loctite® 680 to evenly coat the outer race of the new Ball Bearing (Item 9).
15. Supporting the Piston (Item 2) and pressing on the outer race of the new Ball Bearing (Item 9), press the new Ball Bearing into the Piston.
16. Reinstall the Retaining Ring (Item 13).
17. Clean the o-ring grooves and o-ring contact surfaces of the Piston (Item 2) and Cylinder (Item 4) with fresh safety solvent and lubricate the o-ring grooves and contact surfaces with fresh o-ring lubricant.
18. Lubricate the new O-ring Seals (Items 14 and 15) and install the new O-ring Seals onto the Piston (Item 2) and Cylinder (Item 4); then, slide the Piston back into the Cylinder.
19. Support the inner race of the new Ball Bearing (Item 9) and press the new Friction Facing/Drive Disc Assembly (Item 5) into the Cylinder (Item 4), Piston (Item 2), and new Ball Bearing (Item 9).
20. Reinstall the Retaining Ring (Item 11).
21. Remove the Retaining Ring (Item 12) from the Air Chamber Housing (Item 3).
22. Press the old Ball Bearing (Item 8) out of the Air Chamber Housing (Item 3).
23. Clean the bearing bore of the Air Chamber Housing (Item 3) with fresh safety solvent, making sure all old Loctite® residue is removed.
24. Apply an adequate amount of Loctite® 680 to evenly coat the outer race of the new Ball Bearing (Item 8).
25. Supporting the Air Chamber Housing (Item 3) and pressing on the outer race of the new Ball Bearing (Item 8), press the new Ball Bearing into the Air Chamber Housing.
26. Re-install the Retaining Ring (Item 12).

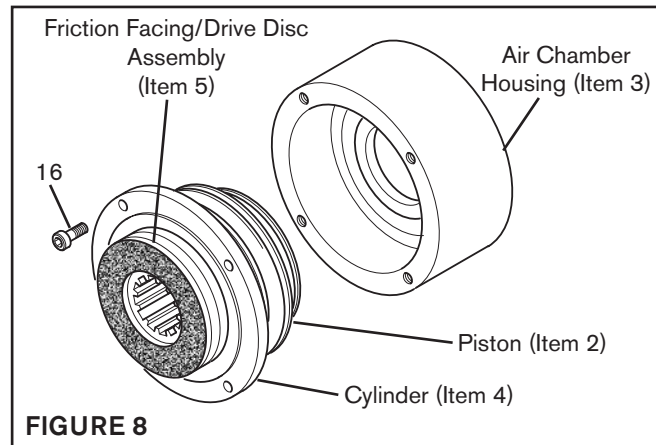


FIGURE 8

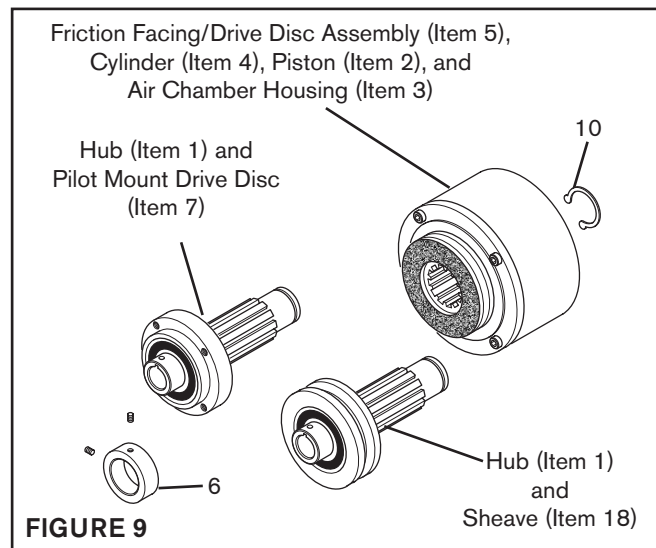


FIGURE 9

27. Slide the Friction Facing/Drive Disc Assembly (Item 5), Cylinder (Item 4), and Piston (Item 2) into the Air Chamber Housing (Item 3).
28. Apply a drop of Loctite® 242 to the threads of the four Socket Head Cap Screws (Item 16); then, using the four Socket Head Cap Screws, secure the Friction Facing/Drive Disc Assembly (Item 5), Cylinder (Item 4), and Piston (Item 2) to the Air Chamber Housing (Item 3).
29. Alternately and evenly tighten the four Socket Head Cap Screws (Item 16) to 66 in-lbs [7.4 Nm].
30. Press the Hub (Item 1) and Pilot Mount Drive Disc (Item 7) or Sheave (Item 18) back into the Friction Facing/Drive Disc Assembly (Item 5), Cylinder (Item 4), Piston (Item 2), & Air Chamber Housing (Item 3).
31. Reinstall the Retaining Ring (Item 10); then, slide the Hub Collar (Item 6) back onto the Hub (Item 1).

REPLACEMENT PARTS LIST

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.

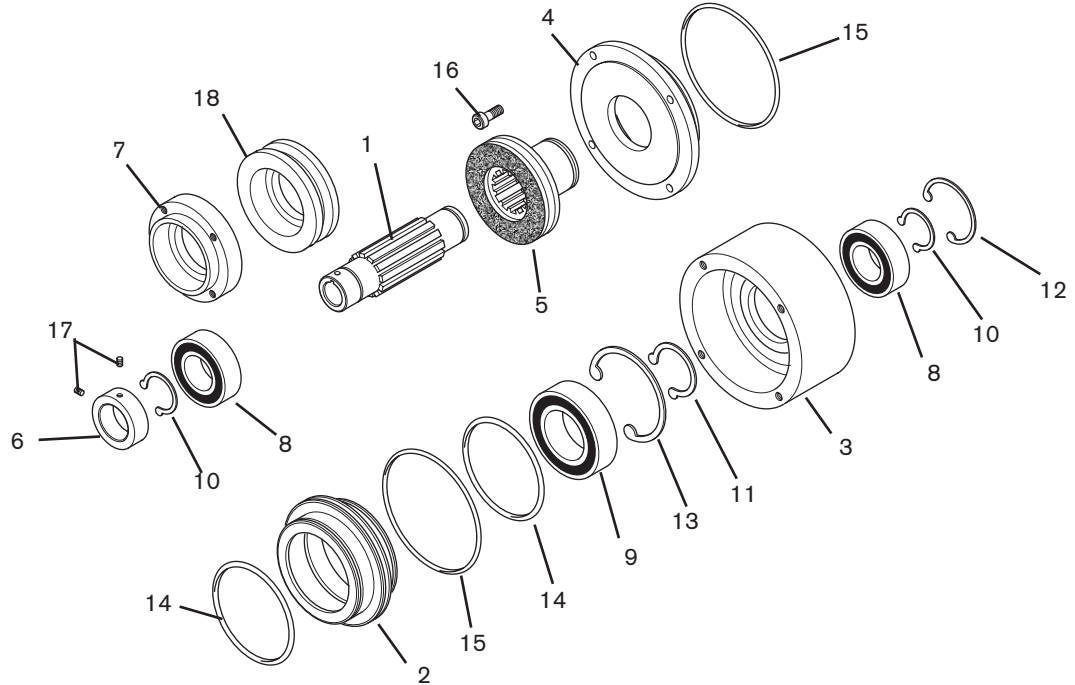


FIGURE 10

ITEM	DESCRIPTION	QTY
1	Hub	1
2	Piston	1
3	Air Chamber Housing	1
4	Cylinder	1
5 ¹	Friction Facing/Drive Disc Assembly	1
6	Hub Collar	1
7	Pilot Mount Drive Disc (<i>Pilot Mount Only</i>)	1
8 ¹	Ball Bearing	2
9 ¹	Ball Bearing	1
10	Retaining Ring (Ext.)	2

ITEM	DESCRIPTION	QTY
11	Retaining Ring (Ext.)	1
12	Retaining Ring (Int.)	1
13	Retaining Ring (Int.)	1
14 ¹	O-ring Seal (small)	2
15 ¹	O-Ring Seal (large)	2
16	Socket Head Cap Screw	4
17	Set Screw	2
18	Sheave (<i>Sheave Mount Only</i>)	1
19	Air Line Assembly (not shown)	2
20	Key (not shown)	1

¹ Denotes Repair Kit Item. Repair Kit Product No. 826070.

WARRANTY

Warranties

Nexen warrants that the Products will (a) be free from any defects in material or workmanship for a period of 12 months from the date of shipment, and (b) will meet and perform in accordance with the specifications in any engineering drawing specifically for the Product that is in Nexen's current product catalogue, or that is accessible at the Nexen website, or that is attached to this Quotation and that specifically refers to this Quotation by its number, subject in all cases to any limitations and exclusions set out in the drawing. 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 for the Buyer for any breach of any warranties provided in connection with this agreement will be, at the election of Nexen: (a) repair or replacement with new, serviceably used, or reconditioned parts or products; or (b) issuance of credit in the amount of the purchase price paid to Nexen by the Buyer for the Products.

Agent's Authority

Buyer agrees that no agent, employee or representative of Nexen has authority to bind Nexen to any affirmation, representation, or warranty concerning the Products other than those warranties expressly set forth herein.

Limitation on 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 damages, 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.

Inspection

Buyer shall inspect all shipments of Products upon arrival and shall notify Nexen in writing, of any shortages or other failures to conform to these terms and conditions which are reasonably discoverable upon arrival without opening any carton or box in which the Products are contained. Such notice shall be sent within 14 days following arrival. All notifications shall be accompanied by packing slips, inspection reports and other documents necessary to support Buyer's claims. In addition to the foregoing obligations, in the event that Buyer receives Products that Buyer did not order, Buyer shall return the erroneously shipped Products to Nexen within thirty (30) days of the date of the invoice for such Products; Nexen will pay reasonable freight charges for the timely return of the erroneously shipped Products, and issue a credit to Buyer for the returned Products at the price Buyer paid for them, including any shipping expenses that Nexen charged Buyer. All shortages, overages and nonconformities not reported to Nexen as required by this section will be deemed waived.

Limitation on Actions

No action, regardless of form, arising out of any transaction to which these terms and conditions are applicable may be brought by the Buyer more than one year after the cause of action has accrued.

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