




DIAPHRAGM BRAKES MODELS "J" AND "K"



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="553 527 850 579"> 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> |  |
|---|---|---|

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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Table of Contents


| | |
|---|----|
| General Specifications | 4 |
| General Safety Precautions | 4 |
| Installation: | |
| "J" or "K" Diaphragm Brake with Optional Drum | 5 |
| "J" or "K" Diaphragm Brake without Optional Drum | 5 |
| "J" or "K" Diaphragm Brake with Optional Self-Centering Bracket | 5 |
| Lubrication | 6 |
| Air Connections | 6 |
| Operation | 7 |
| Troubleshooting | 8 |
| Diaphragm Brake Assembly | 8 |
| Friction Facing Replacement: | |
| "J" Diaphragm Brake | 9 |
| "K" Diaphragm Brake | 9 |
| Diaphragm and Spring Replacement: | |
| "J" Diaphragm Brake | 10 |
| "K" Diaphragm Brake | 10 |
| Replacement Parts List: | |
| "J" Diaphragm Brake | 11 |
| "K" Diaphragm Brake | 11 |
| Accessories: | |
| "J" Diaphragm Brake | 12 |
| "K" Diaphragm Brake | 12 |
| Warranty | 13 |

GENERAL SPECIFICATIONS

Specifications:


| | |
|---------------------|-----------------------------|
| Torque | Up to 136 Nm (1200 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 3.6 kg (8 lbs) |

GENERAL SAFETY PRECAUTIONS




CAUTION

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




CAUTION

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




CAUTION

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



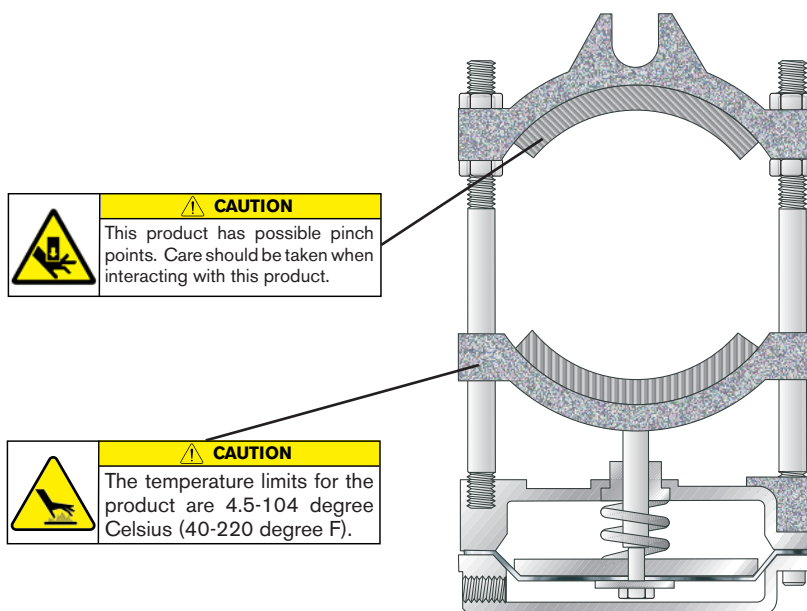
WARNING

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".

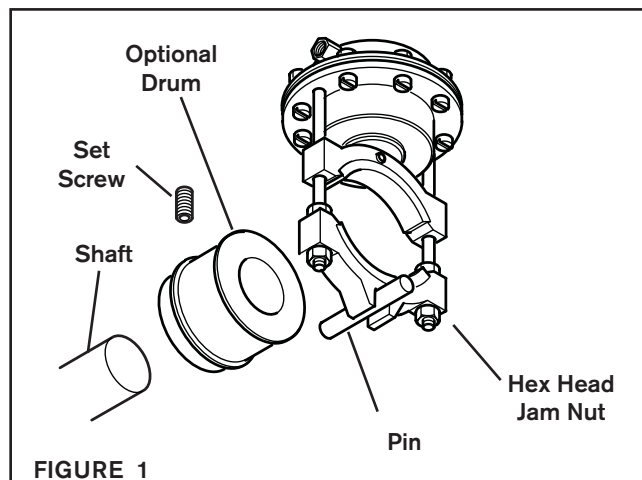


INSTALLATION

"J" OR "K" DIAPHRAGM BRAKE WITH OPTIONAL DRUM

NOTE: Refer to Figure 1.

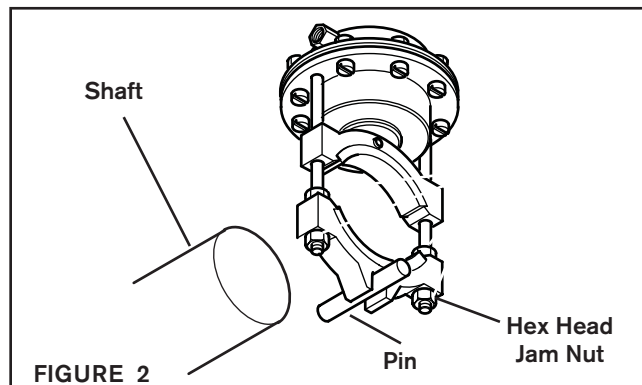
1. Slide the Optional Drum onto the shaft.
2. Tighten the Set Screw; securing the Optional Drum to the shaft.
3. Position the "J" or "K" Diaphragm Brake on the Optional Drum, with the Pin passing through the slot in the Fixed Shoe.
4. Adjust the Fixed Shoe by loosening the Hex. Head Jam Nuts to provide sufficient clearance between the Facings and Optional Drum to allow free rotation of the Optional Drum; then, tighten the Hex. Head Jam Nuts.



"J" OR "K" DIAPHRAGM BRAKE WITHOUT OPTIONAL DRUM

NOTE: Refer to Figure 2.

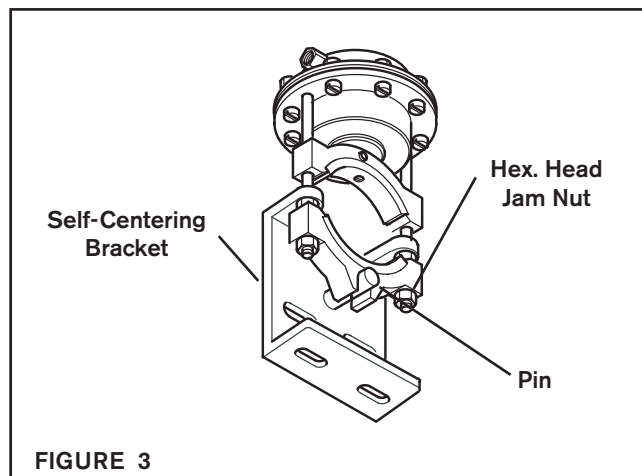
1. Position the "J" or "K" Diaphragm Brake on the shaft, with the Pin passing through the slot in the Fixed Shoe.
2. Adjust the Fixed Shoe by loosening the Hex. Head Jam Nuts to provide sufficient clearance between the Facings and shaft to allow free rotation of the shaft; then, tighten the Hex. Head Jam Nuts.



OPTIONAL SELF-CENTERING BRACKET

NOTE: Refer to Figure 3.

1. Position the "J" or "K" Diaphragm Brake with the diaphragm facing up on the shaft or Optional Drum with the Pin passing through the slot in the Fixed Shoe.
2. Secure the Optional Self-Centering Bracket to the machine or support.
3. Adjust the Fixed Shoe by loosening the Hex. Head Jam Nuts to provide sufficient clearance between the Facings and shaft or Optional Drum to allow free rotation of the shaft or Optional Drum; then, tighten the Hex. Head Jam Nuts.



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.

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 meet or exceeds ISO 8573.1:2001 Class 4.4.3 quality.

NOTE

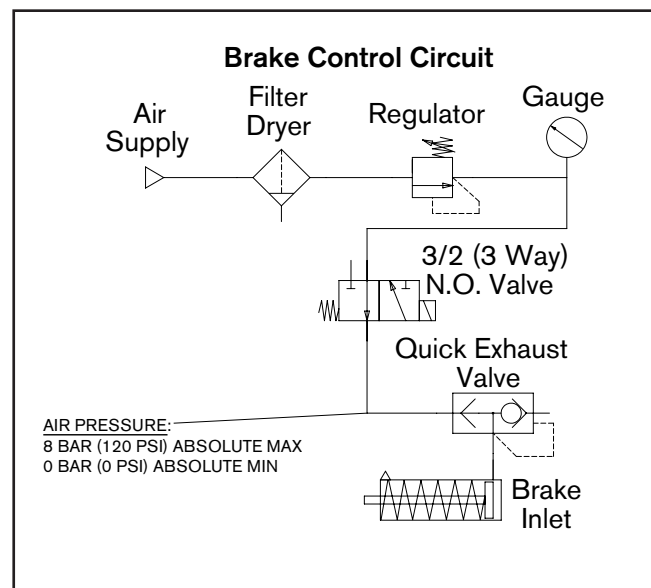
For quick response, Nexen recommends a quick exhaust valve and short air lines between the Control Valves and the product. Align the air inlet ports to a down position to allow condensation to drain out of the air chambers of the product.




CAUTION


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

The following is a common air supply scheme used with this product. This is an example and not an all-inclusive list. All air circuits to be used with this product must be designed following ISO 4414 guidelines.



OPERATION

| | |
|---|--|
|  | <p>WARNING</p> <p>Never exceed maximum operating speeds listed for your product. (See Table 1).</p> |
|---|--|

| | |
|---|--|
|  | <p>CAUTION</p> <p>Never exceed life of facing material. Facing life depends on the volume of the material and the total energy over the life of the unit. Expected life (in hrs) can be found by: $\text{Time} = \text{Volume} / (\text{Power} * \text{Wear Rate})$.</p> |
|---|--|

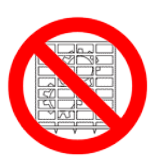

| | |
|---|--|
|  | <p>WARNING</p> <p>Ensure proper guarding of the product is used. Nexen recommends the machine builder design guarding in compliance with OSHA 29 CFR 1910 "Occupational Safety and Health Hazards".</p> |
|---|--|

TABLE 1

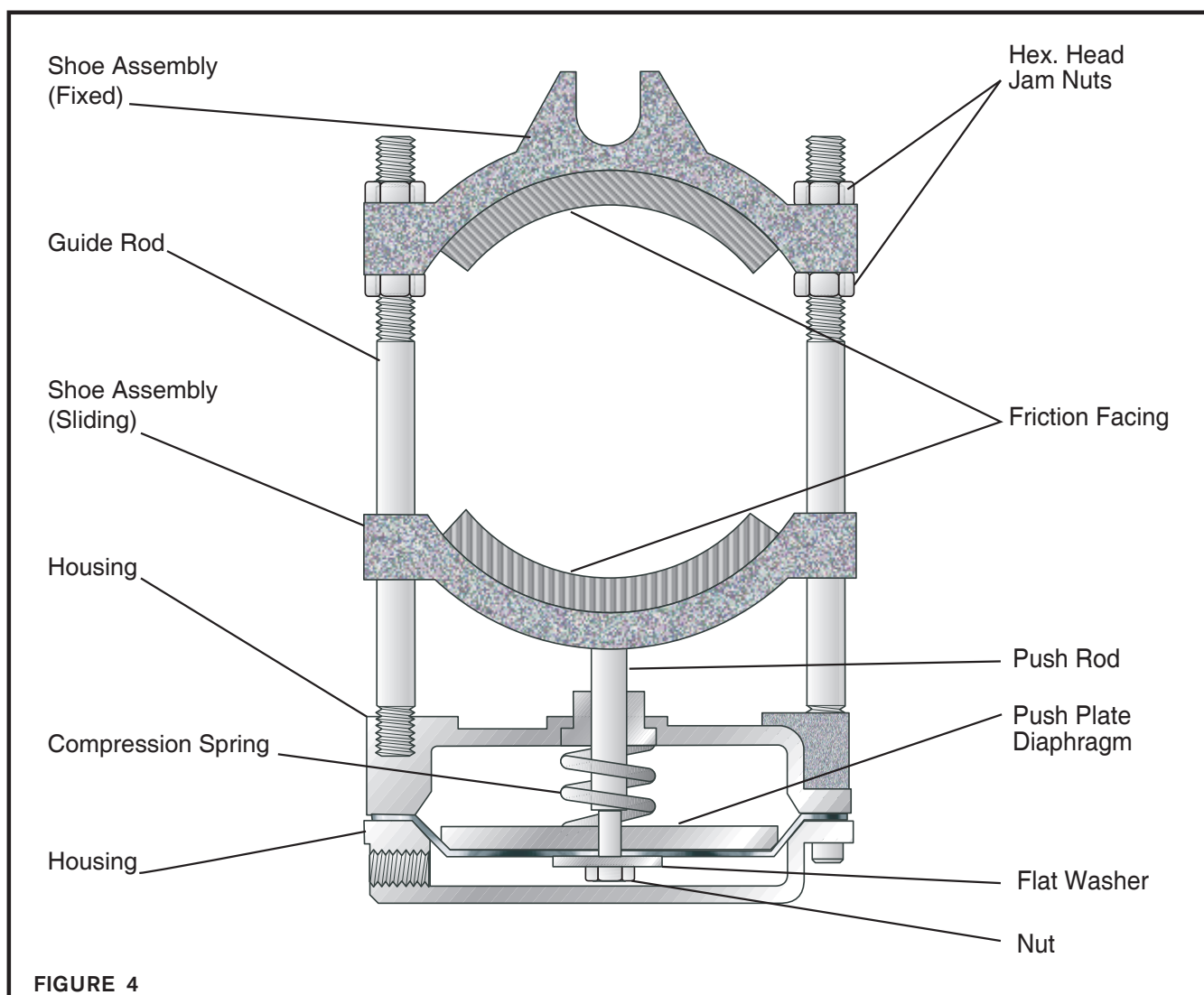
| Model | Max RPM |
|------------|---------|
| J/K Brakes | 5,500 |

| | |
|--|---|
|  | <p>CAUTION</p> <p>The temperature limits for this product line are 4.5-104 Degree Celsius (40-220 Degree F).</p> |
|--|---|

TROUBLESHOOTING

| Problem: | Probable Cause: | Solution |
|-------------------------------------|--|---|
| Failure to engage | Ruptured Diaphragm | Replace the Diaphragm |
| | Faulty air controls | Check the air controls for proper operation |
| Failure to disengage | Faulty or damaged Compression Spring | Replace the Compression Spring |
| | Faulty air controls | Check the air controls for proper operation |
| "J" or "K" Diaphragm Brake slippage | Foreign material on the Option Brake Drum or on the shaft | Clean the optional Brake Drum or the shaft |
| | Foreign material on the Friction Facings | Replace the Friction Facings |
| | "J" or "K" Diaphragm Brake working outside its torque and heat dissipating range | Check the application |

DIAPHRAGM BRAKE ASSEMBLY



FRICTION FACING REPLACEMENT

"J" DIAPHRAGM BRAKE

NOTE: Refer to Figure 5.

1. Remove the first two Hex. Head Jam Nuts (Item 11).
2. Remove the Fixed Shoe Assembly (Item 1).
3. Remove the second two Hex. Head Jam Nuts (Item 11).
4. Remove the Set Screw (Item 12).
5. Remove the Sliding Shoe Assembly (Item 2).
6. Install a new Sliding Shoe Assembly (Item 2).
7. Reinstall and tighten the Set Screw (Item 12).
8. Reinstall two Hex. Head Jam Nuts (Item 11).
9. Install the new Fixed Shoe Assembly (Item 1).
10. Reinstall the second two Hex. Head Jam Nuts (Item 11).

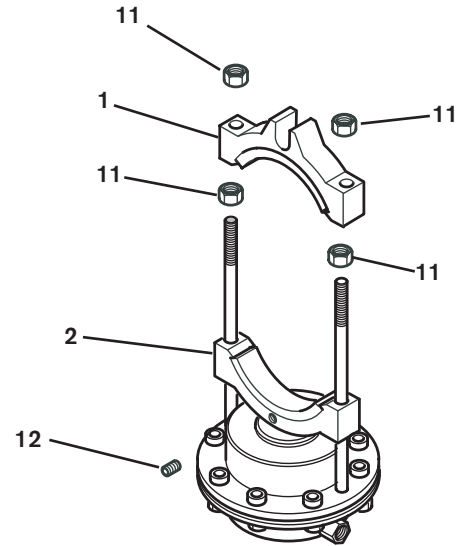


FIGURE 5

NOTE

The Flat Head Machine Screws (Item 20) are assembled with an anaerobic locking compound. If you insert a screwdriver into a Flat Head Machine screw and strike the end of the screwdriver, you will break the crystalline structure of this locking compound and the Flat Head Machine Screw can be removed or fall out. Do NOT use any impact on the Flat Head Machine Screws. Do NOT use an impact wrench to remove the Flat Head Machine Screws.

"K" DIAPHRAGM BRAKE

NOTE: Refer to Figure 6.

1. Remove the first two Hex. Head Jam Nuts (Item 11).
2. Remove the Fixed Shoe (Item 1)
3. Remove the second two Hex. Head Jam Nuts (Item 11).
4. Remove the Set Screw (Item 13).
5. Remove the Sliding Shoe (Item 2).
6. Remove the Flat Head Machine Screws (Item 20) from the Fixed Shoe (Item 1) and the Sliding Shoe (Item 2). Remove the old Friction Facings (Item 3) from the Fixed Shoe and Sliding Shoe.
7. Using new Flat Head Machine Screws (Item 20), secure the new Friction Facings (Item 3) to the Fixed Shoe (Item 1) and the Sliding Shoe (Item 2).
8. Tighten the Flat Head Machine Screws (Item 20) to 26 In. Lbs. [2.9 Nm] torque.
9. Install the Sliding Shoe (Item 2).
10. Reinstall and tighten the Set Screw (Item 13).
11. Reinstall two Hex. Head Jam Nuts (Item 11) .
12. Install the Fixed Shoe (Item 1).
13. Reinstall the second two Hex. Head Jam Nuts (Item 11).

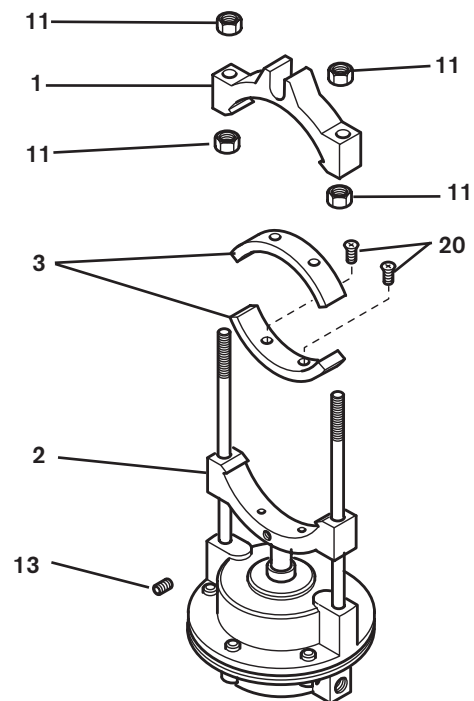


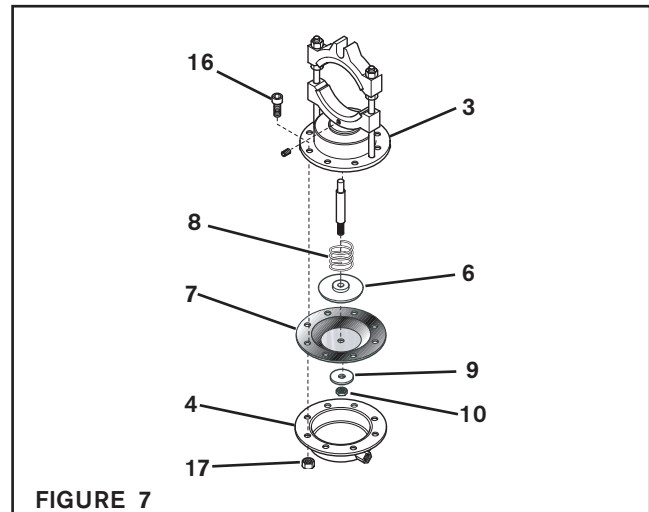
FIGURE 6

DIAPHRAGM AND SPRING REPLACEMENT

"J" DIAPHRAGM BRAKE

NOTE: Refer to Figure 7.

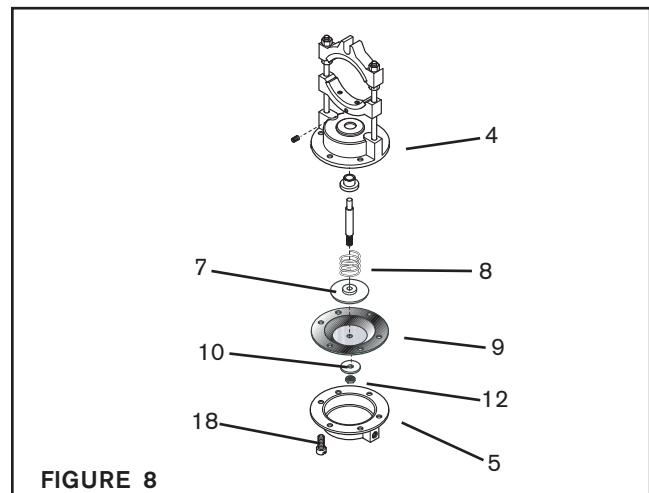
1. Remove the Cap Screws (Item 16) and Hex. Nuts (Item 17).
2. Remove the Top Diaphragm Housing (Item 4).
3. Remove the Jam Nut (Item 10) and Washer (Item 9).
4. Remove the Diaphragm (Item 7), Push Plate (Item 6), and Compression Spring (Item 8).
5. Inspect the Compression Spring (Item 8) for signs of damage, and install a new Compression Spring if the old Compression Spring is damaged.
6. Reinstall the Push Plate (Item 6).
7. Install a new Diaphragm (Item 7); then, reinstall the Washer (Item 9) and Jam Nut (Item 10).
8. Using the Cap Screws (Item 16) and Hex. Nuts (Item 17), secure the Bottom Diaphragm Housing (Item 4) to the Housing Rod Assembly (Item 3).



"K" DIAPHRAGM BRAKE

NOTE: Refer to Figure 8.

1. Remove the Socket Head Cap Screws (Item 18).
2. Remove the Bottom Diaphragm Housing (Item 5).
3. Remove the Jam Nut (Item 12) and Washer (Item 10).
4. Remove the Diaphragm (Item 9), Push Plate (Item 7), and Compression Spring (Item 8).
5. Inspect the Compression Spring (Item 8) for signs of damage. If the Compression Spring is damaged, install a new Compression Spring.
6. Reinstall the Push Plate (Item 7).
7. Install a new Diaphragm (Item 9); then, reinstall the Washer (Item 10) and Jam Nut (Item 12).
8. Use the Socket Head Cap Screws (Item 18) to secure the Bottom Diaphragm Housing (Item 5) to the Top Diaphragm Housing (Item 4).



REPLACEMENT PARTS LIST

The item numbers identify the product parts on all parts lists, price lists, unit assembly drawings, bills of materials, and instruction manuals.

To order replacement parts, indicate model designation, item number, part description, and quantity. Replacement parts are available through your local Nexen Distributor.

"J" DIAPHRAGM BRAKE (See Figure 9)

| ITEM | DESCRIPTION | QTY |
|----------------|-------------------------|-----|
| 1 ¹ | Fixed Shoe Assembly | 1 |
| 2 ¹ | Sliding Shoe Assembly | 1 |
| 3 | Housing-Rod Assembly | 1 |
| 4 | Bottom Housing Assembly | 1 |
| 5 | Push Rod | 1 |
| 6 | Push Plate | 1 |
| 7 | Diaphragm | 1 |
| 8 | Compression Spring | 1 |
| 9 | Flat Washer | 1 |
| 10 | Hex. Head Jam Nut | 1 |
| 11 | Hex. Head Jam Nut | 4 |
| 12 | Set Screw | 1 |
| 16 | Socket Head Cap Screw | 8 |
| 17 | Hex. Nut | 8 |

¹ Denotes Facing Kit Item.
Facing Kit No. 845175.

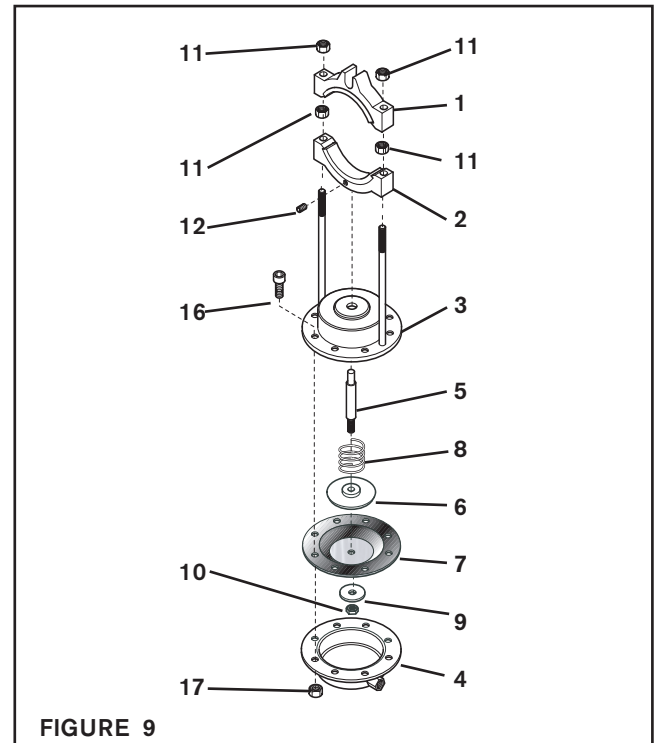


FIGURE 9

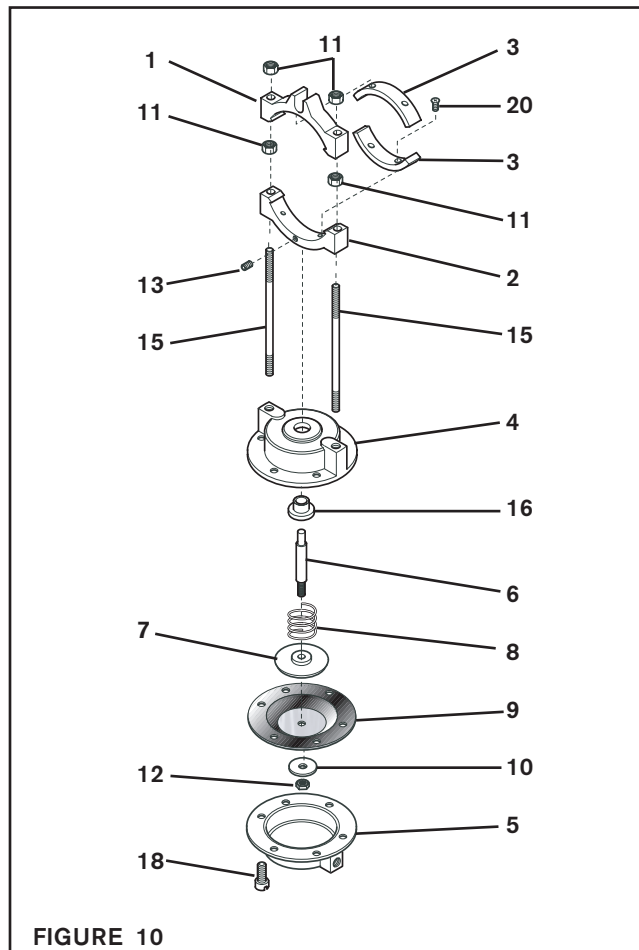


FIGURE 10

"K" DIAPHRAGM BRAKE (See Figure 10)

| ITEM | DESCRIPTION | QTY |
|-----------------|--------------------------|-----|
| 1 | Fixed Shoe | 1 |
| 2 | Sliding Shoe | 1 |
| 3 ¹ | Friction Facing | 2 |
| 4 | Top Diaphragm Housing | 1 |
| 5 | Bottom Diaphragm Housing | 1 |
| 6 | Push Rod | 1 |
| 7 | Push Plate | 1 |
| 8 | Compression Spring | 1 |
| 9 | Diaphragm | 1 |
| 10 | Flat Washer | 1 |
| 11 | Hex. Head Jam Nut | 4 |
| 12 | Hex. Head Jam Nut | 1 |
| 13 | Set Screw | 1 |
| 15 | Guide Rod | 1 |
| 16 | Sleeve Bearing | 1 |
| 18 | Socket Head Cap Screw | 6 |
| 20 ¹ | Machine Screw | 4 |

¹ Denotes Facing Kit Item.
Facing Kit No. 845171.

ACCESSORIES

"J" DIAPHRAGM BRAKE (See Figure 11)

| DESCRIPTION | PROD. NO. |
|---|-----------|
| Drum 2-3/4" [69.85 mm] no bore | 842000 |
| Drum 2-3/4" [69.85 mm] 1" [25.40 mm] bore | 842300 |
| Self-Centering Bracket | 842100 |

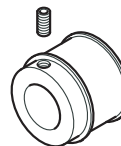


FIGURE 11
DRUM

"K" DIAPHRAGM BRAKE (See Figure 12)

| DESCRIPTION | PROD. NO. |
|--|-----------|
| Drum 4" [101.60 mm] no bore | 843600 |
| Drum 4" [101.60 mm] 1" [25.40 mm] bore | 844000 |
| Self-Centering Bracket | 843700 |

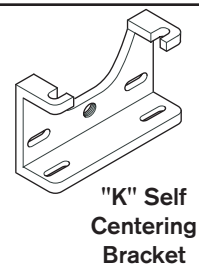


FIGURE 12
SELF CENTERING BRACKETS

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.

nexen[®]

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