




Models FWB, LWB, MWB and HWB Brakes

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="548 569 846 625"> 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 486 Nm (4300 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 27.5 kg (60 lbs)

GENERAL SAFETY PRECAUTIONS




CAUTION

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




CAUTION

Use lifting aids and proper lifting techniques when installing, removing or placing this product in service.




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.




CAUTION

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




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."



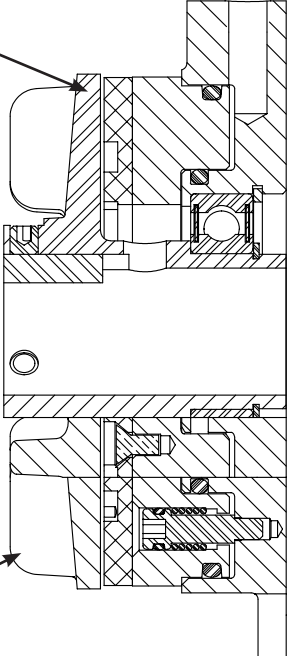
CAUTION

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



CAUTION

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



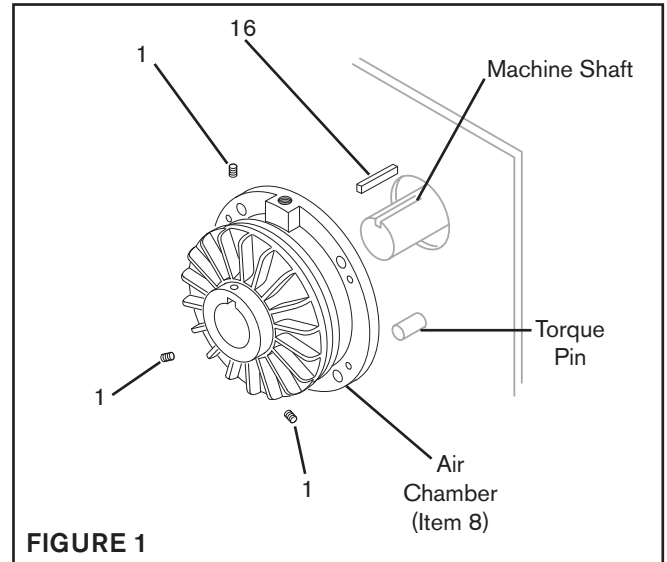
INSTALLATION

REFER TO FIGURE 1.

NOTE

The brake may be secured to the machine surface by using either the four holes in the Air Chamber (Item 8) and bolting the brake to the machine housing or by using a torque pin through the slot in the bottom of the Air Chamber.

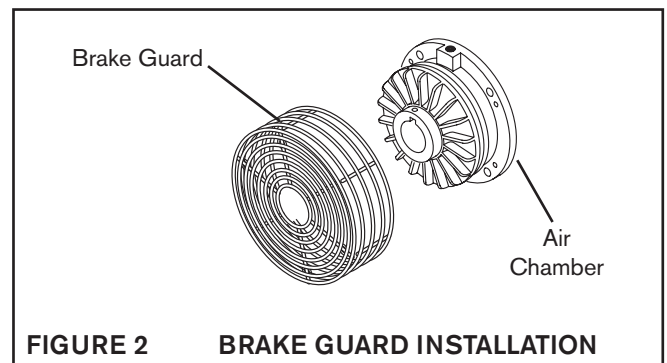
1. Insert the Key (Item 16) into the machine shaft and slide the brake over the machine shaft and Key.
2. Install and tighten the three Set Screws (Item 1) to secure the brake to the machine shaft.



BRAKE GUARD INSTALLATION

REFER TO FIGURE 2.

1. Align the mounting holes of the Brake Guard with the four tapped holes in the Air Chamber or the brake.
2. Using four Phillips Head Pan Screws, secure the Brake Guard to brake. Tighten to 35 in-lbs [4 Nm].



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

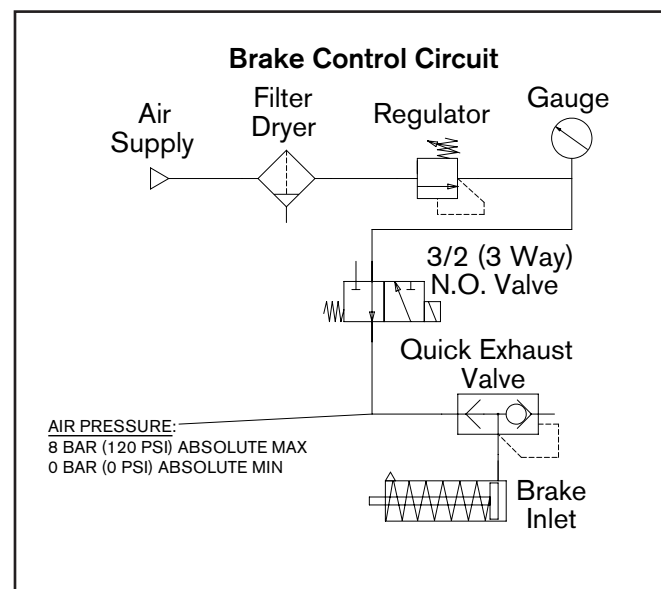
For quick response, Nexen recommends a quick exhaust valve and short air lines between the Control Valves and the unit. Align the air inlet ports to a down position to allow condensation to drain out of the air chambers of the product.




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




⚠ 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

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:

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



⚠ CAUTION

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

TABLE 1

Size	Max RPM
FWB-450	1800
LWB-600	1800
MWB-800	1800
HWB-1000	1800

PARTS REPLACEMENT

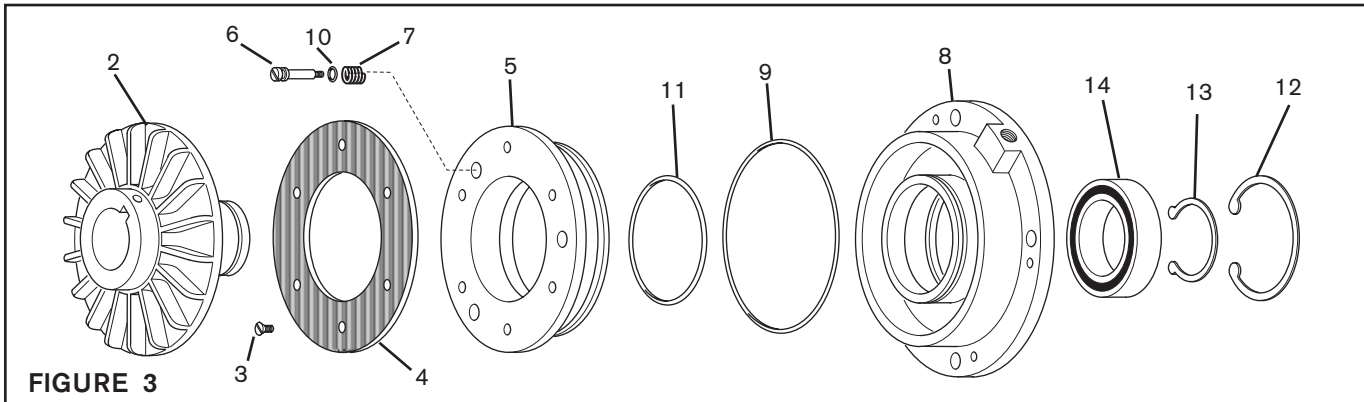


FIGURE 3



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 FIGURE 3.

1. Remove the Retaining Ring (Item 13) and press the Hub Assembly (Item 2) out of the Ball Bearing (Item 14) and Air Chamber (Item 8).
2. Remove the Retaining Ring (Item 12) from the Air Chamber (Item 8); then, press the old Ball Bearing (Item 14) out of the Air Chamber.
3. Remove the six old Flat Head Machine Screws (Item 3) securing the old Friction Facing (Item 4) to the Piston (Item 5); then, remove the Friction Facing.

NOTE

The, LWB, MWB, and HWB have six Shoulder Bolts (Item 6), Compression Springs (Item 7), and O-ring Seals (Item 10). The FWB has three Shoulder Bolts (Item 6), Compression Springs (Item 7), and O-ring Seals (Item 10).

4. Remove the old Shoulder Bolts (Item 6), O-ring Seals (Item 10), and Compression Springs (Item 7) from the Piston (Item 5).
5. Slide the Piston (Item 5) out of the Air Chamber (Item 8) and remove the O-ring Seals (Item 9 and 11) from the Piston and Air Chamber.
6. Clean the bearing bore of the Air Chamber (Item 8) with fresh solvent, making sure all old Loctite® residue is removed.
7. Apply an adequate amount of Loctite® 680 to evenly coat the outer race of the new Ball Bearing (Item 14) and press the new Ball Bearing into the Air Chamber (Item 8).

8. Reinstall the Retaining Ring (Item 12).
9. Apply a thin film of o-ring lubricant to the new O-ring Seals (Items 9, 10, and 11) and the o-ring contact surfaces of the Piston (Item 5), Air Chamber (Item 8), and new Shoulder Bolts (Item 6).
10. Install the new O-ring Seals (Items 9, 10, and 11).
11. Slide the Piston into the Air Chamber, aligning the holes in the Piston with the holes in the Air Chamber.
12. Slide a new Compression Spring (Item 7) onto each new Shoulder Bolt (Item 6).
13. Install the new Shoulder Bolts (Item 6), Compression Springs (Item 7), and O-ring Seals (Item 10) through the Piston (Item 5) and into the Air Chamber (Item 8).
14. Alternately and evenly tighten the new Shoulder Bolts (Item 6) to the torque specified in Table 2.
15. Using six new Flat Head Machine Screws (Item 3), secure the new Friction Facing (Item 4) to the Piston (Item 5).
16. Tighten the six Flat Head Machine Screws (Item 3) to 22 in-lbs [2.50 Nm] torque.
17. While supporting the inner race of the new Ball Bearing (Item 14), press the Hub Assembly (Item 2) into the new Ball Bearing and Air Chamber (Item 8).
18. Reinstall the Retaining Ring (Item 13).

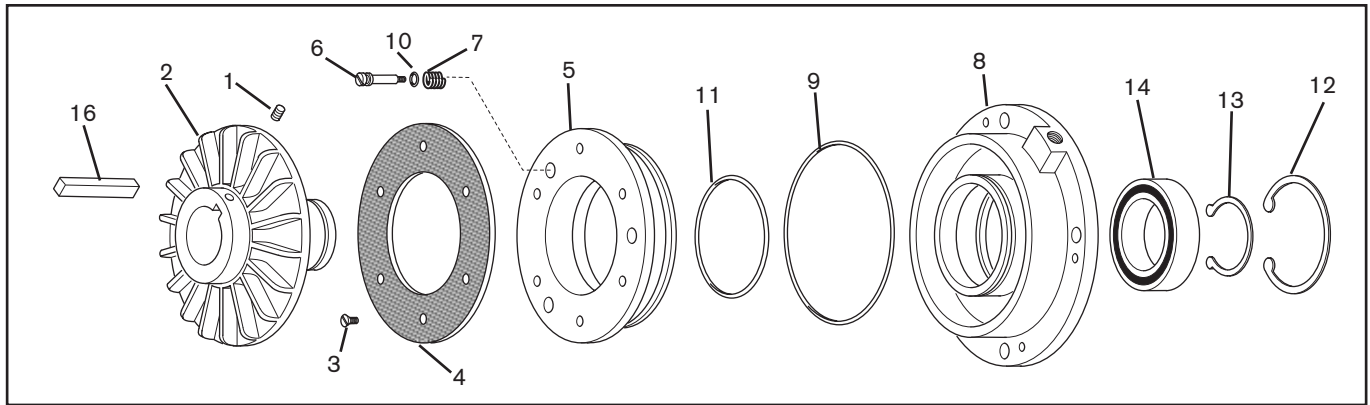
TABLE 2 SHOULDER BOLT TIGHTENING TORQUE

Model	Torque
FWB	43 in-lbs [4.8 Nm]
LWB	43 in-lbs [4.8 Nm]
MWB	205 in-lbs [23.1 Nm]
HWB	345 in-lbs [40 Nm]

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.



ITEM	DESCRIPTION	QTY
1	Set Screw	3
2	Hub Assembly	1
3 ¹	Flat Head Machine Screw	6
4 ¹	Friction Facing	1
5	Piston	1
6 ¹	Shoulder Bolt	*
7 ¹	Compression Spring	*
8	Air Chamber	1

* QTY. 3 on FWB and QTY. 6 on LWB, MWB, and HWB

ITEM	DESCRIPTION	QTY
9 ¹	O-ring Seal	1
10 ¹	O-ring Seal	*
11 ¹	O-ring Seal	1
12	Retaining Ring (large)	1
13	Retaining Ring (small)	1
14 ¹	Ball Bearing	1
16 ²	Key	1

¹ Denotes Repair Kit item.

² When ordering Bushing (Item 15), state the Model Number and required bore size.

REPAIR KITS	
Model	Product Number
FWB	847300
LWB	847400
MWB	847500
HWB	847600

ACCESSORIES

Model	Torque Pin Bracket Product Number	Brake Guard Product Number
FWB	819900	817700
LWB	821400	818300
MWB	823400	826300
HWB	825500	828200

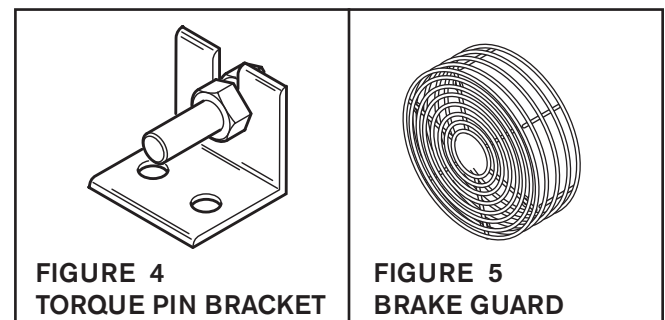


FIGURE 4
TORQUE PIN BRACKET

FIGURE 5
BRAKE GUARD

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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