



Motor Brake




Models MB450S, MB600S & MB800S



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 203 Nm (1800 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 13.6 kg (30 lbs)

GENERAL SAFETY PRECAUTIONS




CAUTION

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




CAUTION

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




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."



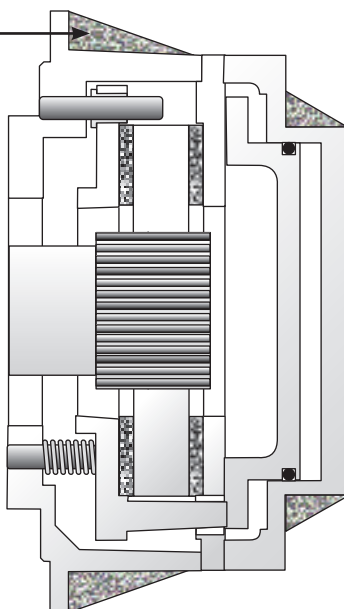
WARNING

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



CAUTION

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



INSTALLATION

REFER TO FIGURES 1-3.

NOTE

The Nexen MB Series Motor Brake must be mounted horizontally.

1. Using the Socket Head Cap Screws (Item 16), mount the Adapter Ring (Item 15) to the motor.
2. Tighten the Socket Head Cap Screws (Item 16) to the recommended torque (See Table 1).
3. Insert the Key (Item 21) into the motor shaft.
4. Slide the Hub (Item 19) onto the motor shaft.
5. Install and tighten the Set Screws (Item 20).

NOTE

The face of the Hub (Item 19) must be flush with the surface of the Adapter Ring (Item 15).

6. Slide Motor Brake Assembly onto the Hub (Item 19).
7. Apply 65 psi of air pressure to the Motor Brake to release the Motor Brake.
8. Align the mounting holes of the Motor Brake with the holes of the Adapter Ring (Item 15) and install the Socket Head Cap Screws (Item 17).

NOTE

Align the air inlet to the six o'clock down position to allow condensation in the air chamber of the Motor Brake to drain out of the exhaust port.

9. Tighten the Socket Head Cap Screws (Item 17) to the recommended torque (See Table 2).
10. Release hold off air pressure.

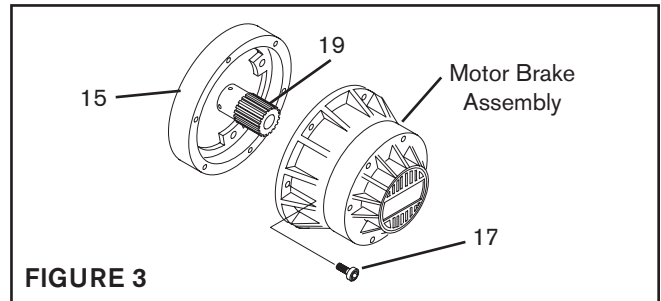
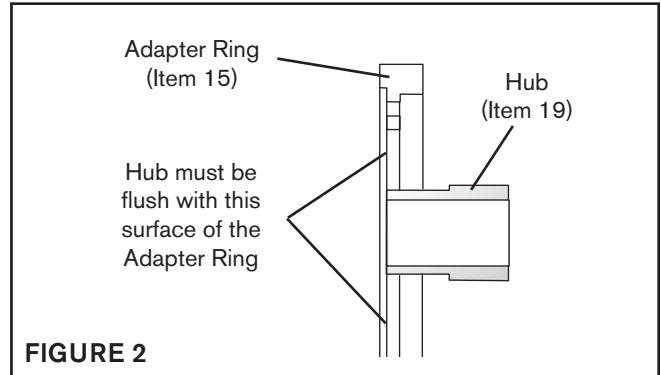
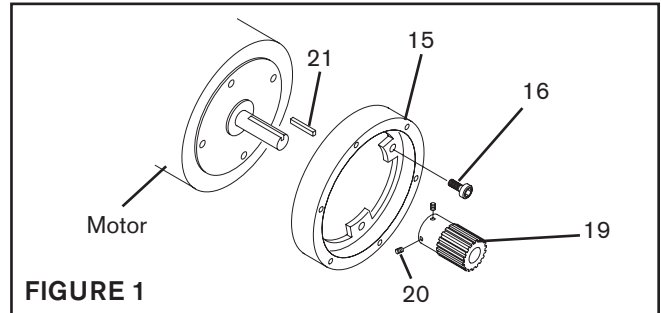


TABLE 1 Recommended Tightening Torque

Socket Head Cap Screw (Item 16)	
MB450S	143 in-lbs [16.16 Nm]
MB600S	313 in-lbs [35.37 Nm]
MB800S	313 in-lbs [35.37 Nm]

TABLE 2 Recommended Tightening Torque

Socket Head Cap Screw (Item 17)	
MB450S	46 in-lbs [5.19 Nm]
MB600S	80 in-lbs [9.04 Nm]
MB800S	143 in-lbs [16.16 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, dry air that meets or exceeds ISO 8573.1:2001 Class 4.4.3 to 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.

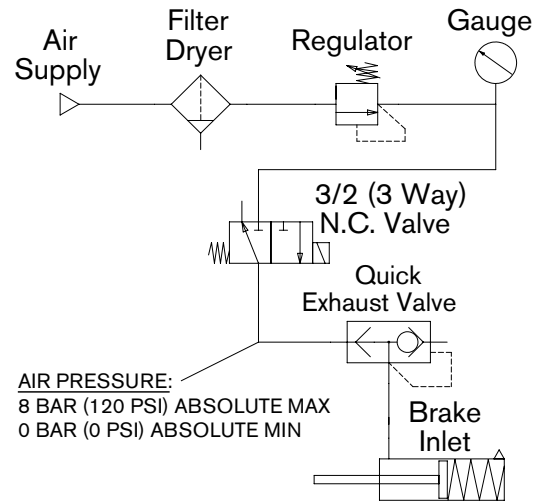


CAUTION

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.

Typical Brake Control Circuit



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."



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:

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



WARNING

Never exceed maximum operating speeds listed for your product (See Table 3).



CAUTION

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

TABLE 3 Maximum Operating Speeds

Model	RPM
MB450S	3600
MB600S	3600
MB800S	1800

TROUBLESHOOTING

Symptom	Probable Cause	Solution
Failure to Engage	Broken Compression Springs	Replace the Compression Springs.
	Worn Friction Facings	Replace the Friction Facings.
Failure to Disengage	Air leaks around the O-ring Seal	Replace the O-ring Seal.
	Low air pressure	Check air line for leaks and replace air line if necessary. Minimum Motor Brake release air pressure is 65 psi.

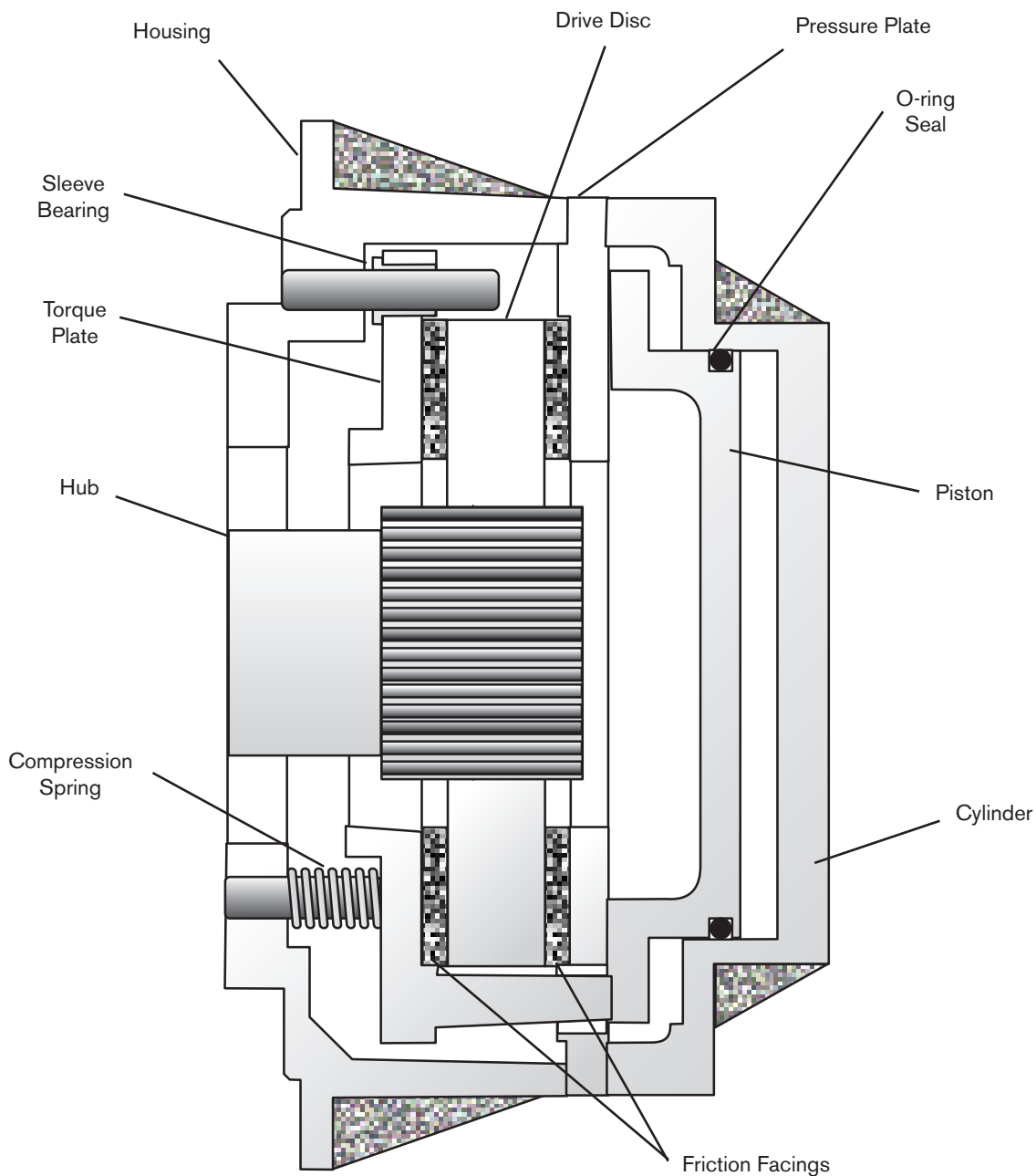


FIGURE 4

PARTS REPLACEMENT



CAUTION

Nexen MB Series Motor Brakes are spring engaged. The Compression Springs (Item 14) may force the Cylinder Assembly off the Housing resulting in operator injury. Use caution when removing the Socket Head Cap Screws.

REFER TO FIGURES 5-7.

1. Alternately and evenly remove the six Socket Head Cap Screws (Item 12).
2. Remove the Cylinder Assembly and separate the Piston (Item 5) from the Cylinder (Item 6).
3. Remove the old O-ring Seal (Item 9) and clean the O-ring seal contact surfaces with fresh safety solvent.
4. Lubricate the new O-ring Seal (Item 9) with fresh O-ring lubricant and install the new O-Ring Seal onto the Piston (Item 5).
5. Slide the Piston (Item 5) and O-Ring Seal (Item 9) into the Cylinder (Item 6).
6. Slide the Pressure Plate (Item 4), Drive Disc (Item 3), and Torque Plate (Item 2) out of Housing (Item 1).
7. Remove the twelve old Machine Screws (Item 8) securing the old Friction Facings (Item 7) to the Torque Plate (Item 2) and the Pressure Plate (Item 4).
8. Using twelve new Machine Screws (Item 8), secure the new Friction Facings (Item 7) to the Torque Plate (Item 2) and the Pressure Plate (Item 4).
9. Tighten the twelve Machine Screws (Item 8) to the recommended torque (See Table 4).
10. Remove old Sleeve Bearings (Item 11) and install new Sleeve Bearings provided in repair kit.
11. Inspect the Compression Springs (Item 14) for signs of wear or fatigue and replace them if necessary.
12. Slide the Pressure Plate (Item 4), Drive Disc (Item 3), and Torque Plate (Item 2) into the Housing (Item 1).
13. Apply a drop of Loctite® 242 to the six Socket Head Cap Screws (Item 12) and secure the Piston (Item 5) and Cylinder (Item 6) to the Housing (Item 1).
14. Alternately and evenly tighten the six Socket Head Cap Screws (Item 12) to the recommended torque (See Table 5).

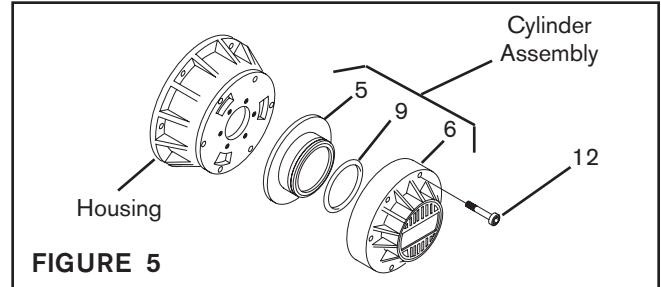


FIGURE 5

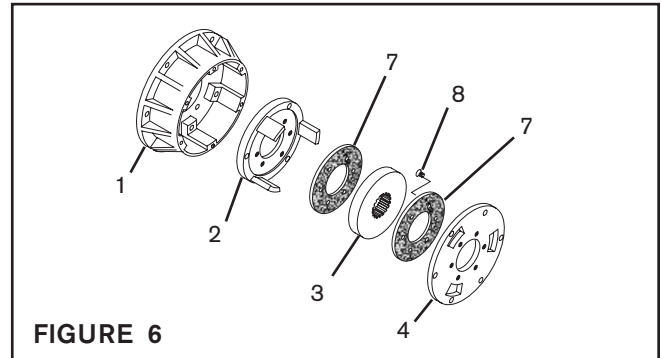


FIGURE 6

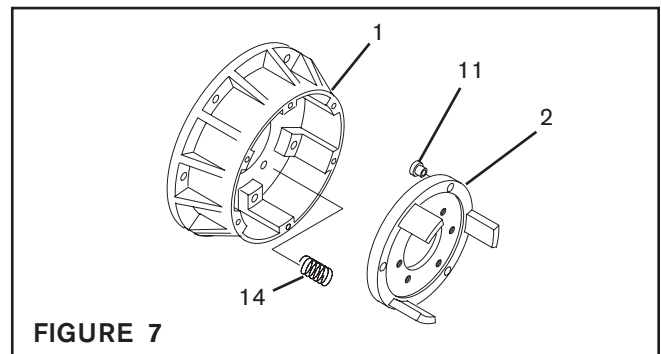


FIGURE 7

TABLE 4 Recommended Tightening Torque

Machine Screw (Item 8)	
MB450S	14 in-lbs [1.58 Nm]
MB600S	14 in-lbs [1.58 Nm]
MB800S	46 in-lbs [5.19 Nm]

TABLE 5 Recommended Tightening Torque

Socket Head Cap Screw (Item 17)	
MB450S	14 in-lbs [1.58 Nm]
MB600S	46 in-lbs [5.19 Nm]
MB800S	80 in-lbs [9.03 Nm]

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.

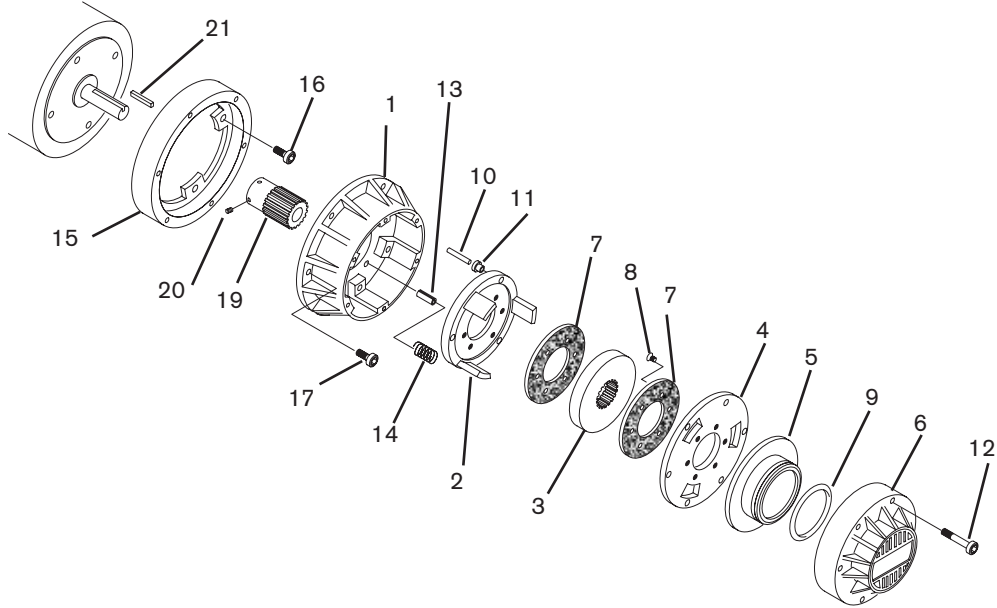


FIGURE 8

ITEM	DESCRIPTION	QUANTITY		
		MB450S	MB600S	MB800S
1	Housing	1	1	1
2	Torque Plate	1	1	1
3	Drive Disc	1	1	1
4	Pressure Plate	1	1	1
5	Piston	1	1	1
6	Cylinder	1	1	1
7	Friction Facing	2	2	2
8	Machine Screw	21	12	12
9	O-ring Seal	1	1	1
10	Dowel Pin	3	3	3
11	Sleeve Bearing	3	3	3
12	Socket Head Cap Screw	6	6	6
13	Spring Pin	4	10	12
14	Compression Spring	4	10	12
15	Adapter Ring	1	1	1
16	Socket Head Cap Screw	4	4	4
17	Socket Head Cap Screw	6	6	6
19	Hub	1	1	1
20	Set Screw	3	3	3
21	Key	1	1	1

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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