nexen®

ECLIPSE™ PRODUCTS

User Manual

Eclipse Motor Brake

Nema Sizes: 182, 184, 213, 215, 254, and 256 TC
IEC Sizes: 100, 112, 123, 132

FORM NO. L-21068-D-0402

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.

Technical Support: 800-843-7445
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www.nexengroup.com

DANGER

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 or cause injury or death.

Comply with all applicable codes.

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ISO 9001 Certified

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INSTALLATION ONTO MOTOR SHAFT

NOTE: Before beginning any assembly, check the position of the Set Screw (Item 7) in the Output Shaft (Item 1). It is important that the bottom be high enough to allow the installation of the supplied key (Item 12). Interference between the set screw and key could cause damage and will not allow full motor shaft insertion.

1. Remove one of the Access Plugs (Item 14) from the Input Flange (Item 10). Insert an Allen Driver or T-Handle wrench through the access hole, and engage the head of the set screw.

NOTE: Nexen has designed the Input Flange (Item 10) with two access holes, 180˚ apart from each other. Only one hole is needed for access to the set screw. This design allows for ease of access in tight applications and shorter shaft rotations if a problem arises. Only one plug must be removed to have access to the set screw.

2. Install the supplied Key (Item 12) into the slot on the Motor Shaft. A small amount of grease can aid in the securing of the Key while installing the Brake.

3. Slide the Motor Shaft into the input (female) end of the Output Shaft (Item 1) until the Flanges of the Motor and Brake come together.

4. Using four customer supplied Socket Head Cap Screws (½ -13 UNC), bolt the Flanges together. Tighten the Cap Screws evenly to the recommended torque (1400 in-lb).

5. Using the allen driver or wrench used in step 2, tighten the Set Screw (Item 7) to the recommended torque (100 in-lb).

6. Reinstall the Access Plug (Item 14) in the access hole in the Input Flange (Item 10).

7. Assemble the Gear Reducer or load to the output end of the Brake Shaft.

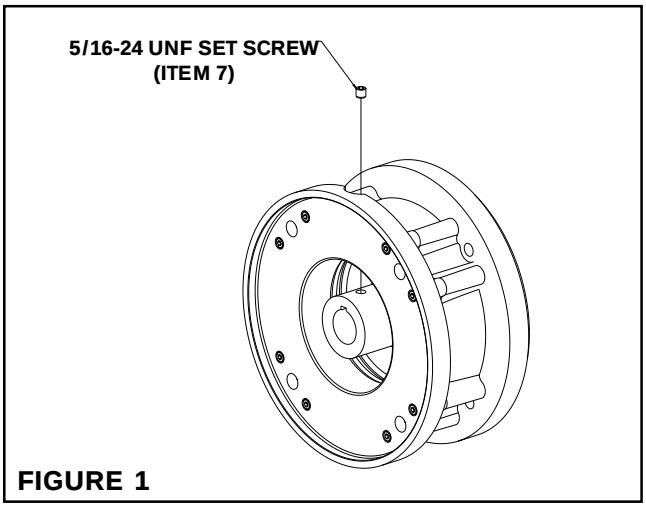

FIGURE 1

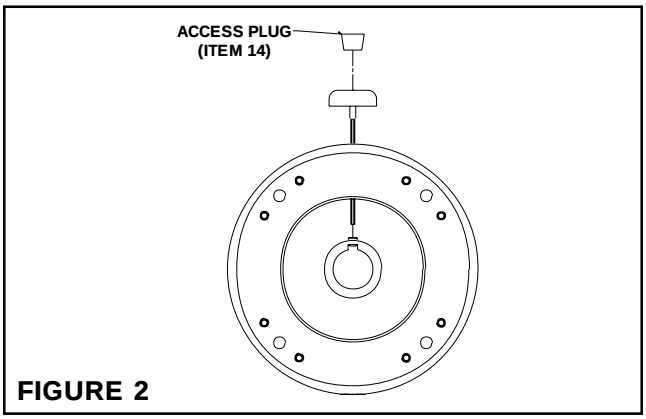

FIGURE 2

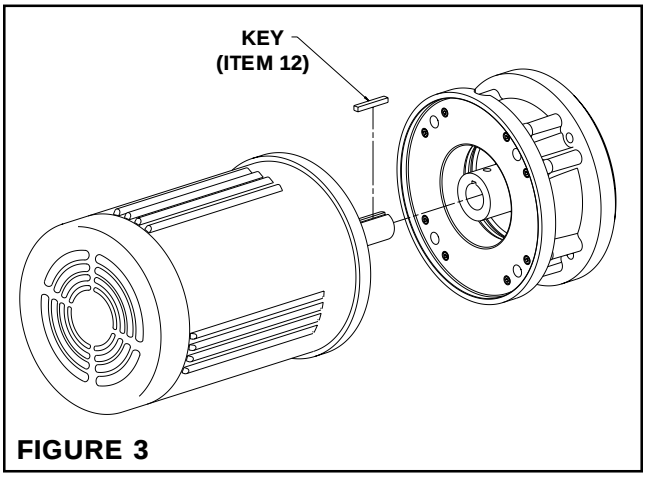

FIGURE 3

DANGER

Support the load before disengaging the brake.
Failure to support the load could result in serious bodily injury.

AIR PREPARATION

For long life, the Brake requires clean and pressure regulated air (filtered to five microns or better). Nexen does not recommend lubricated air for this product.

BRAKE ASSEMBLY

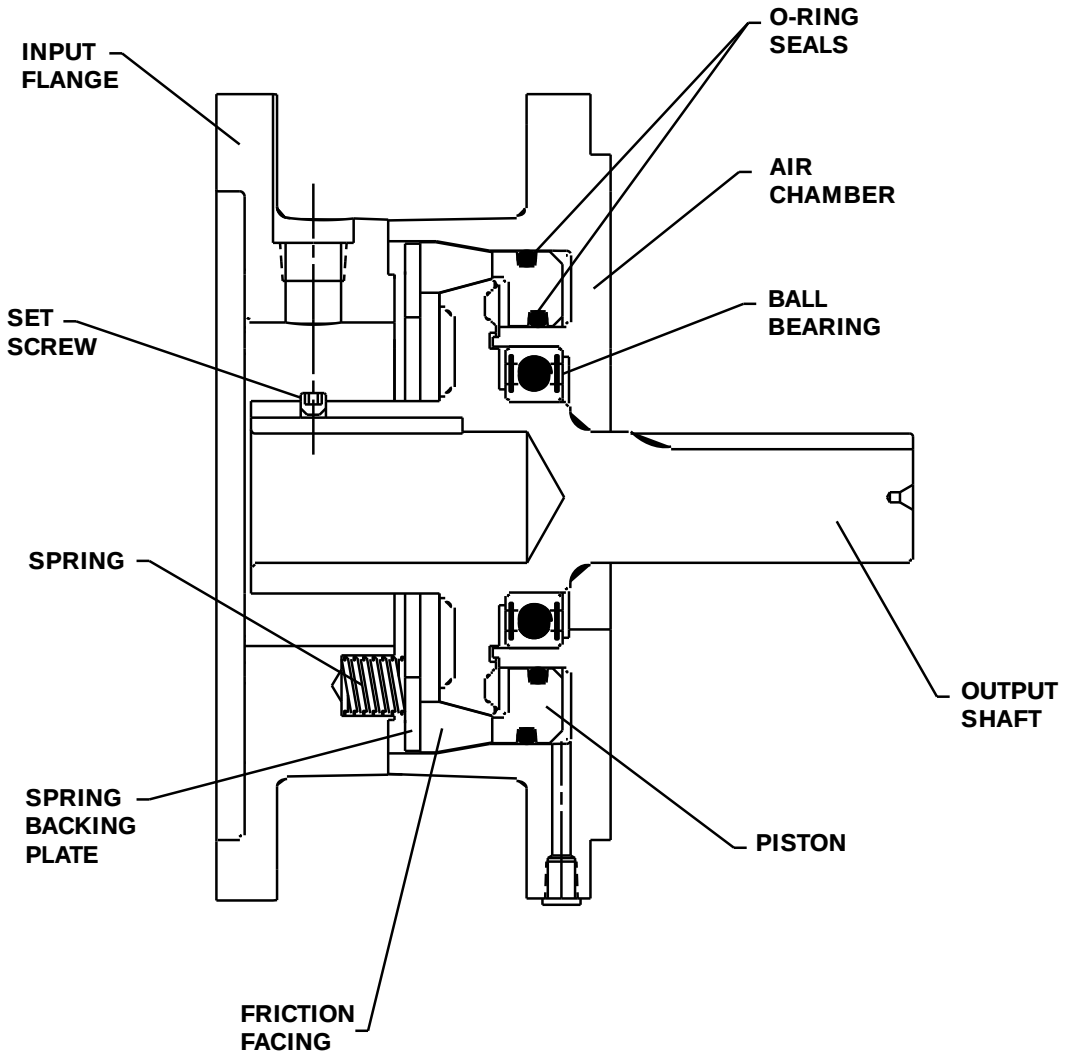

FIGURE 5

BEARING, O-RING, SEALS, AND SPRINGS ASSEMBLY

NEMA SIZES: 184-256 TC

IEC SIZES: 100-132

NOTE: Refer to Figures 6 & 7.

1. Alternately and evenly, remove the 8 Socket Head Cap Screws (Item 11) and separate the Air Chamber (Item 6) from the Input Flange (Item 10).
2. Remove the Spring Backing Plate (Item 15), Piston (Item 5) and Springs (Item 9) from the Air Chamber (Item 6). You may need to apply compressed air to the air inlet to remove the Piston.
3. Press in on the Output Shaft (Item 1) to separate it from the Ball Bearing (Item 2).
4. Remove the old O-ring Seals (Items 3, 4) from the Piston (Item 5).
5. Press the Ball Bearing (Item 2) out of the Air Chamber (Item 6).
6. Clean the bearing bore of the Air Chamber (Item 6) with fresh solvent, removing all old Loctite®.
7. Apply a continuous bead of Loctite® 680 (green) around the inner circumference of the bearing bore of the Air Chamber (Item 6).
8. Carefully align the outer race of the new Bearing (Item 2) with the bore of the Air Chamber (Item 6).
9. Supporting the Air Chamber (Item 6) and, pressing on the outer race of the new Bearing (Item 2), press the new Bearing into the Air Chamber.
10. Visually inspect the inner diameter grooves and the outer diameter grooves of the Piston (Item 5) for debris. Clean as necessary.
11. Coat the O-ring contact surfaces of the Air Chamber (Item 6), the Piston (Item 5), and the O-ring Seals (Items 3, 4) with a thin film of O-ring lubricant and install the 2 new O-ring Seals (3, 4).
12. Slide the Piston (Item 5) into the Air Chamber (Item 6).
13. Clean the friction surface of the Output Shaft (Item 1) and the Air Chamber (Item 6) with solvent. Ensure that it is clean and dry before installing the Friction Facing (Item 8) in Step 15.

Caution

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

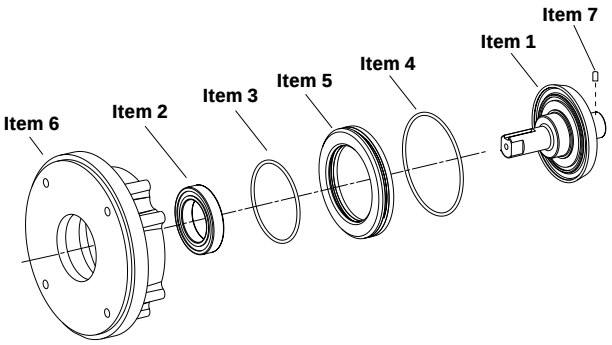

FIGURE 6

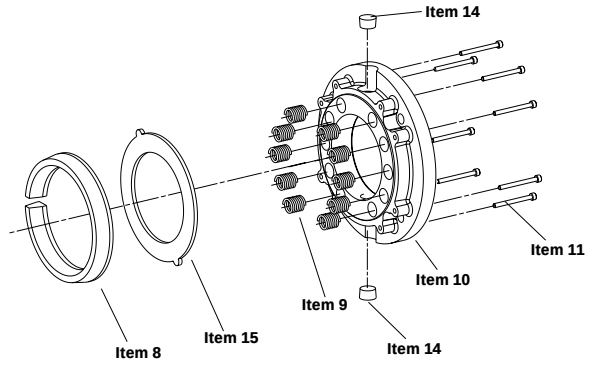

FIGURE 7*

*Number of springs varies depending on model.

(continued...)

BEARING, O-RING, SEALS AND SPRINGS ASSEMBLY (continued...)

14. While supporting the inner race of the new Ball Bearing (Item 2), press the Output Shaft (Item 1) into the new Bearing (Item 2) and Air Chamber (Item 6).

15. Position the Friction Facing (Item 8) in the Air Chamber (Item 6) so the angled surfaces match up with the wall of the Air Chamber and the tapered disc of the Output Shaft (Item 1).

16. Replace the Backing Plate (Item 15), Springs (Item 9) and Input Flange (Item 10).

17. Apply one drop of Loctite® 242 (blue) to the threads of each of the 8 Socket Head Cap Screws (Item 11).

18. Reinstall and tighten the 8 Socket Head Cap Screws (Items 11), securing the Air Chamber (Item 6) to the Input Flange (Item 10). Alternately tighten the (8) Cap Screws (Item 11) to keep the input flange parallel to the Air Chamber. (Recommended tightening torque: 7.0-9.2 Nm [62-81 in-lb].)

FRICTION FACING ASSEMBLY

NOTE: Refer to Figures 8 and 9

1. Alternately and evenly remove the eight Socket Head Cap Screws (Item 11) and separate the Air Chamber (Item 6) from the Input Flange (Item 10).

2. Remove the Input Flange (Item 10), Backing Plate (Item 15) and 8 Springs (Items 9).

3. Remove and replace the Friction Facing (Item 8) in the Air Chamber (Item 6). Make certain that the angled sides mate with the wall of the Air Chamber and the tapered disc of the Output Shaft (Item 1).

4. Replace the Springs (Item 9) and Input Flange (Item 10).

5. Apply a drop of Loctite® 242 (blue) to the threads of each of the 8 Socket Head Cap Screws (Item 11).

6. Reinstall and tighten the 8 Socket Head Cap Screws (Item 11), securing the Air Chamber (Item 6) to the Input Flange (Item 10). Alternately tighten the 8 Cap Screws so the Input Flange stays parallel to the Air Chamber (Item 6) and does not pinch any of the Springs (Item 9). Refer to Table 3 (page 5) for the recommended assembly torque.

CAUTION

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

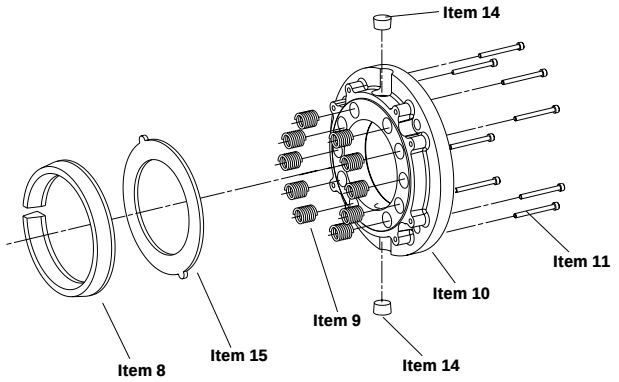

FIGURE 8*

*Number of springs varies depending on model.

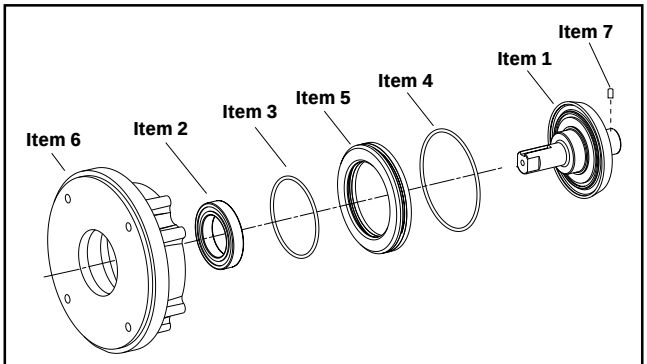

FIGURE 9

SPECIFICATIONS

Size	Min Holding Torque	Torsional Rigidity (Estimated)	Inertia (Calculated)	Weight	Min. Disengagement Air Pressure
EMB 1125 IEC 100, 112	75 Nm [55 ft-lb]	54,240 Nm/RAD [40,000 ft-lb/RAD]	0.0039 kg-m^2 [0.093 lb-ft^2]	16 kg [36 lbs]	3.3 bar [48 psi]
EMB 1375 IEC 123, 132	100 Nm [73 ft-lb]	106,771 Nm/RAD [78,740 ft-lb/RAD]	0.0039 kg-m^2 [0.093 lb-ft^2]	17 kg [37 lbs]	4.4 bar [64 psi]
EMB 1625	125 Nm [92 ft-lb]	177,254 Nm/RAD [130,718 ft-lb/RAD]	0.0044 kg-m^2 [0.104 lb-ft^2]	23 kg [50 lbs]	5.5 bar [80 psi]

TROUBLESHOOTING

Problem	Probable Cause	Solution
Failure to engage (brake).	Weak or broken springs.	Replace broken springs.
Failure to disengage (1).	Control valve malfunction - air not getting to the brake.	Check for low air pressure or replace the control valve. **NOTE:** Pressure needed to disengage is shown in the specifications table, page 7.
Failure to disengage (2).	Air is leaking around the O-ring seals.	Replace the O-rings.
Loss of torque.	Friction Facing is worn or dirty.	Replace the Friction Facing.

REPLACEMENT PARTS LIST

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

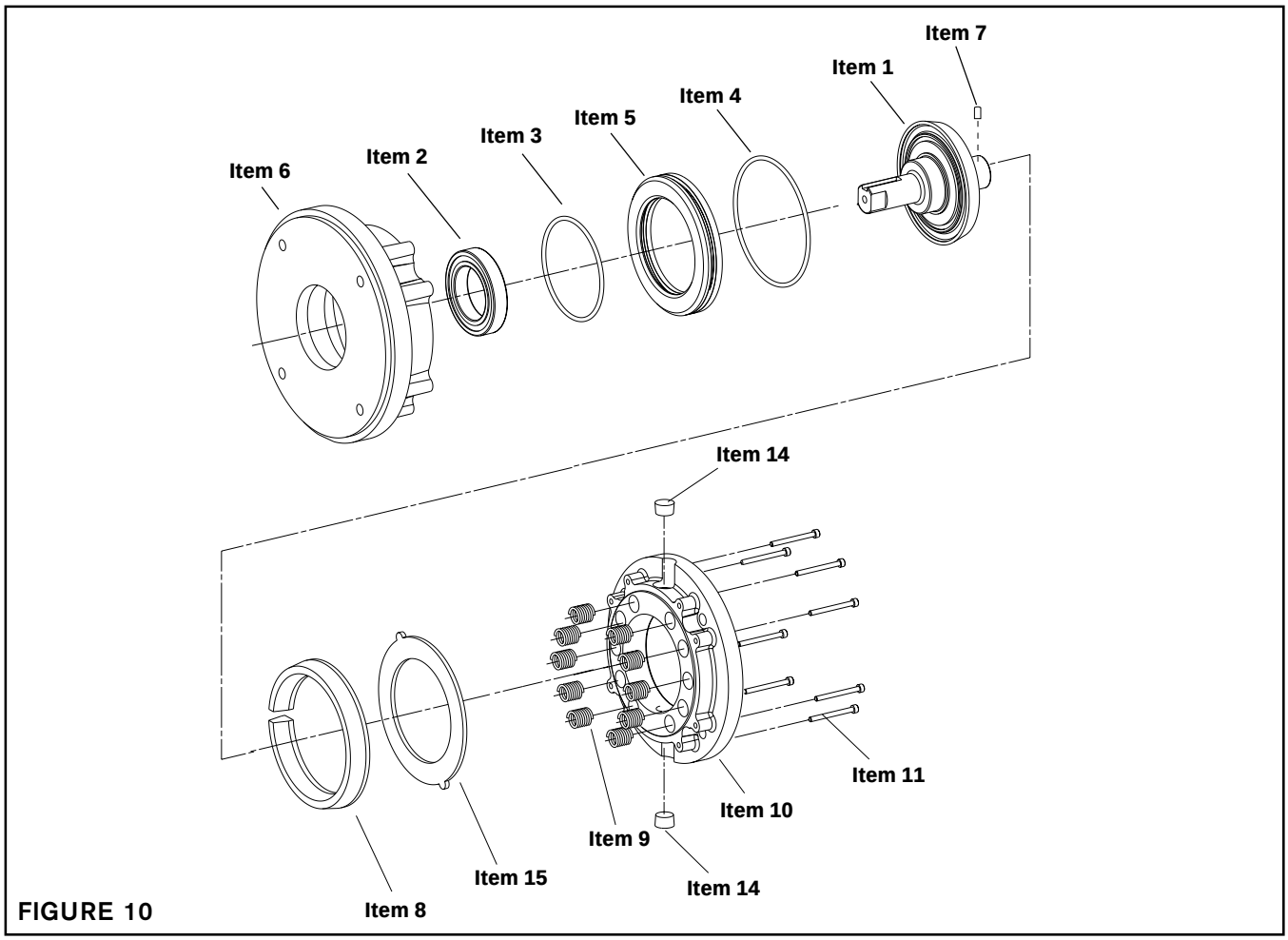

FIGURE 10

ITEM	DESCRIPTION	QTY
1	Output Shaft	1
2	Ball Bearing	1
3	O-ring Seal	1
4	O-ring Seal	1
5	Piston	1
6	Air Chamber*	1
7	Set Screw	1
8	Friction Facing	1
9	Springs	**
10	Input Flange*	1
11	Socket Head Cap Screw	8
12	Rectangular Key	1
14	Access Plugs	2
15	Backing Plate, Spring	1
	* Unpainted if Ordered Separately.	

MODEL	ITEM 9 QTY
EMB 1125 IEC 100, 112	6
EMB 1375 IEC 123, 132	8
EMB 1675	10

** Number of springs varies depending on model.

WARRANTY

Warranties

Nexen warrants that the Products will be free from any defects in material or workmanship for a period of 12 months from the date of shipment. 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 of the Buyer for any breach of the warranties set out above will be, at the sole discretion of Nexen, a repair or replacement with new, serviceably used or reconditioned Product, or issuance of credit in the amount of the purchase price paid to Nexen by the Buyer for the Products.

Limitation of 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 images, 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.

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 whom the Product was purchased from and deliver the Product to same within one year of the date on which the alleged defect first became apparent.

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