




BC Brake Caliper



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="620 562 915 613"> 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 8,880 in-lbs (24" Disc)
Actuation Pressure:	1-80 psi
Service Temperature:	4.5-104C (40-220F)
Approximate Weight:	Up to 20 lbs.

GENERAL SAFETY PRECAUTIONS




CAUTION

The temperature limits for the product are 4.5-100 degree Celsius (40-220 degree F).




CAUTION

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



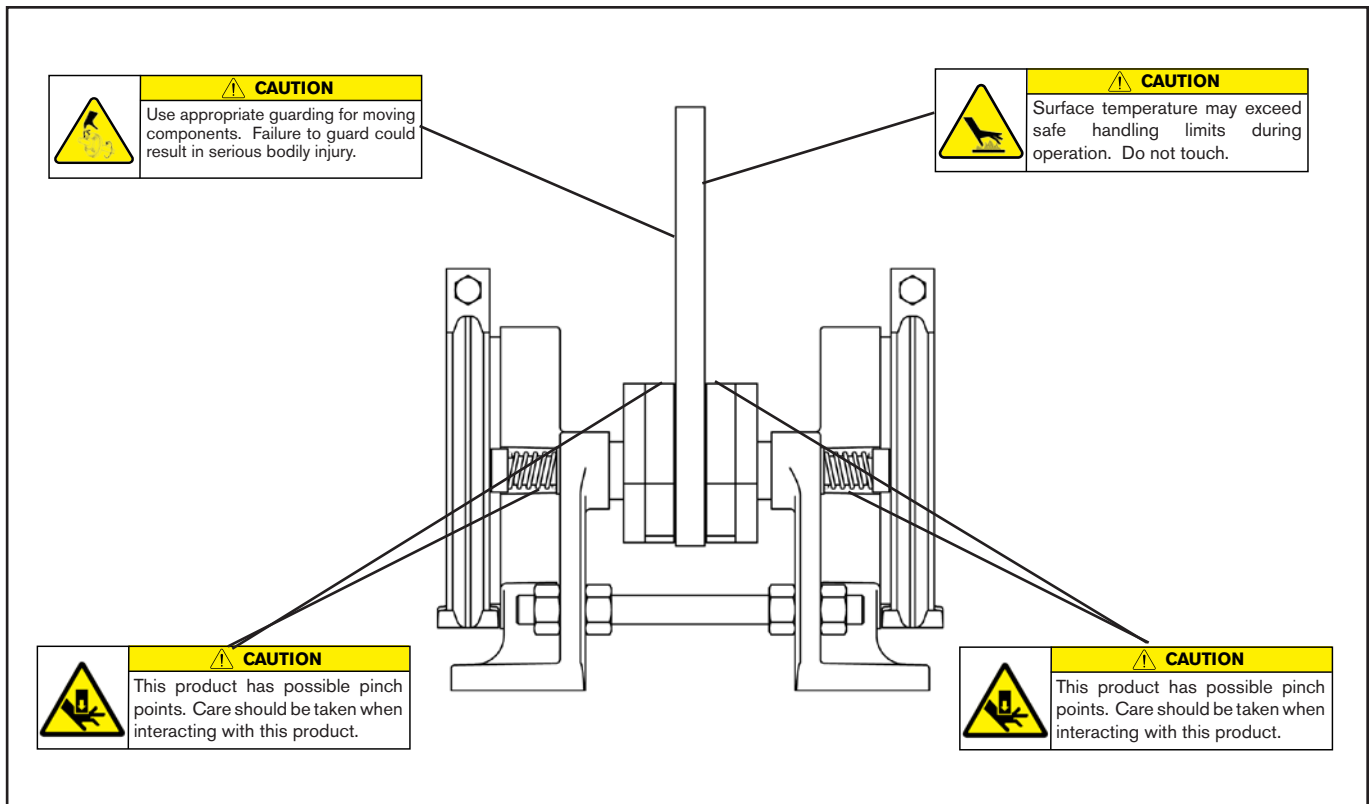
CAUTION

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".



INSTALLATION

1. Assemble the two Brake Caliper halves together with the Connecting Rods (Item 7) and Hex Nuts (Item 17). At this time, adjust the space between the Friction Facings (Item 5) to the thickness of the disc or linear device used. Add 1/16 inch for facing clearance. Tighten the Hex Nuts to the torque recommended in Table 1.

NOTE: Before mounting the Spring-Actuated Brake Caliper: Be sure the brake is in the manual released position (See paragraph two of the OPERATION SECTION); and Install the air connection fittings and tube (See step two in the AIR CONNECTIONS section).

2. Mount the Brake Caliper assembly on a support that is capable of sustaining the loads produced during braking. See the mounting cap screw size and tightening torque recommendations in Table 1.
3. Position the brake so there is 1/32 inch between both sides of the disc and the facings. The outside radius of the disc should run approximately 1/16 inch below the radius of the friction facing. The friction facings should be as parallel to the disc as possible to minimize facing wearing time,

TABLE 1

Description	BC 288		BC 425	
	Size	Torque	Size	Torque
Shoulder Screw (Item 11)	5/16--18	13 ft-lb [17.6 Nm]	3/8--16	27 ft-lb [36.6 Nm]
Hex Nut (Item 17)	3/8--16	24 ft-lb [32.5 Nm]	1/2--13	59 ft-lb [80 Nm]
Mounting Cap Screws Soc. Hd.	3/8--16	48 ft-lb [65.1 Nm]	1/2--13	119 ft-lb [161.3 Nm]
Clamp Bolt	5/16--18	20 ft-lb [27.1 Nm]	5/16--18	20 ft-lb [27.1 Nm]

OPERATION

AIR ACTUATED UNIT

This unit engages when air is applied to both calipers. Return Springs (Item 12) disengage the calipers when air exhausts from the cylinders.

SPRING ACTUATED UNIT

Manual Release:

1. Loosen the Hex Nut (Item 17) attached to the Set Screw (Item 20). Use an Allen wrench to turn the Set Screw CCW until the Return Springs (item #12) pull the Shoe/Facing assembly back against the cylinder (Item 1).
2. Adjust the caliper halves for the space requirements as described in the INSTALLATION section.

Reset:

1. Apply 90 PSI hold-off air pressure at the air inlet.
2. Turn the Set Screws CW until the Shoe/Facing assembly just starts to move towards the disc; tighten the Hex Nuts.
3. Release the hold-off pressure to engage the spring actuated Brake Caliper.

Friction Facing Wear Adjustment:

1. To maintain new facing torque levels, periodic adjustments for facing wear is necessary. Optimum torque is derived with a 1/32 inch gap on each side of the disc.
2. Apply 90 PSI hold-off air pressure at the air inlet and inspect the gap between the friction facing and the disc.
3. Loosen the set screw hex nut (item #17) and turn the set screw CW until a 1/32 inch spacer can be slid between the facing and the disc.
4. Remove the spacer and retighten the hex nut.

LUBRICATION

NOTE

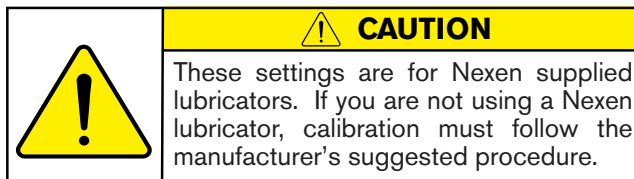
Note: Nexen pneumatically actuated devices require clean, pressure regulated air for maximum performance and life. All seals in Nexen pneumatically operated devices are lubricated for life, and do not require additional lubrication.

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



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.

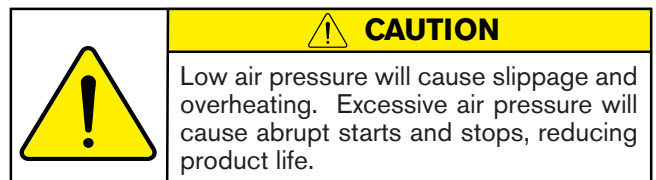
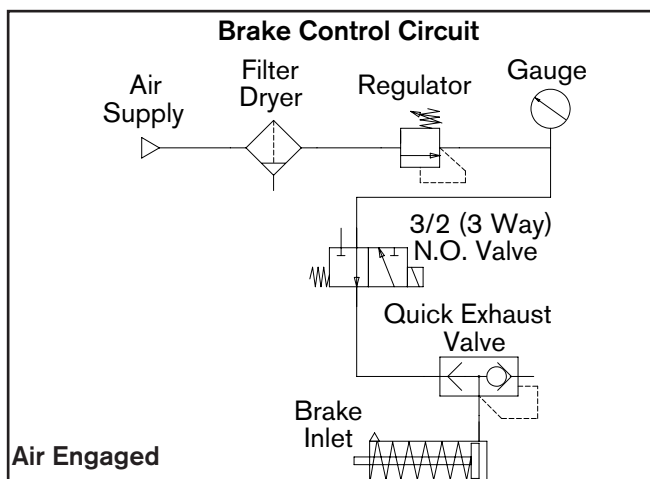
AIR CONNECTIONS

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.

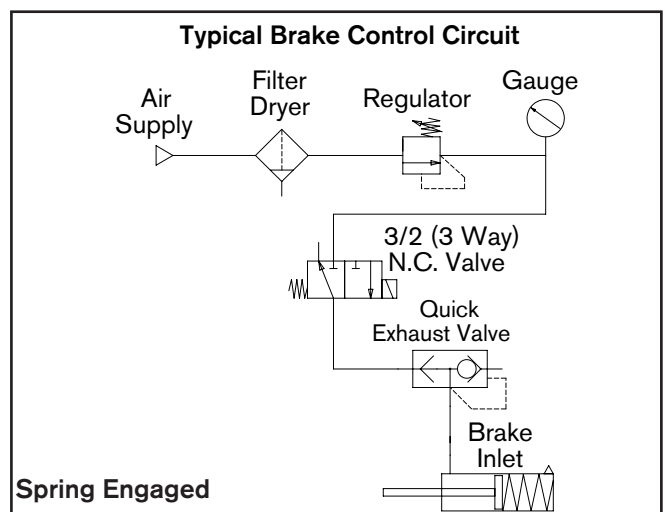
The following are common air supply schemes used with this product. These are examples and not an all-inclusive list. All air circuits to be used with this product must be designed following ISO-4414 guidelines.



Air Pressure (Gage) Limits

6.9 Bar (100 PSI) Absolute Max.

0 Bar (0 PSI) Absolute Min.

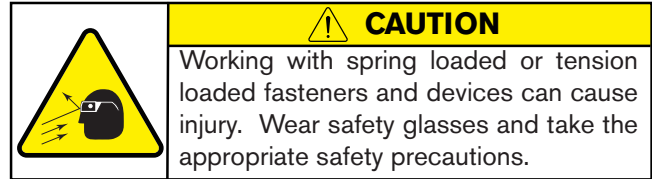


MAINTENANCE AND REPAIR

NOTE: Periodically inspect all airline connections for leaks. Inspect all fasteners to make sure they are tightened to the torques recommended in Table 1.

NOTE: Depending upon the Brake Caliper accessibility, friction facing replacement and piston seal maintenance can be performed without removing the brake from it's mounting.

2. Replace the Friction Facings (Item 5) when they are approximately 3/16 inch thick:
 - a. Spring Actuated Unit: Apply 90 PSI hold-off pressure at the air inlet or manually release the brake as described in paragraph B.1 of the OPERATION section.
 - b. All models: Remove the Shoulder Screws (Item 11). Remove the facing/shoe assembly (Items 4 & 5) and Spacer (Item 6). Remove the Machine Screws (Item 9) and replace the Friction Facings.
 - c. All models: Reassemble the Spacer, Shoe/Facing assembly, Springs and Shoulder screws. Tighten the Shoulder Screws to the torque recommended in Table 1.
 - d. Spring Actuated Unit: Reset as described in paragraph B.2 of the OPERATION section.
3. Air Actuated U-cup and O-ring replacement (Items 10 & 14):
 - a. Disconnect the air supply to both cylinders.
 - b. Remove the clamps (Item 8) and end caps (Item 2).
 - c. Pull the Pistons (Item 3) out of the Cylinders (Item 1) and remove the U-cups (Item 10). Inspect the Sleeve Bushings (Item 15) for wear and replace if necessary.
 - d. Lubricate the new u-cups with O-ring lube and place them, with the seal lip upward, over the small diameters of the pistons and into the grooves. Slide the pistons into the cylinders.
 - e. Lubricate the new O-rings (Item 14) with O-ring lube, place them into the end cap grooves and reinstall the end caps and clamps. Tighten the clamp bolts to the torque recommended in Table 1.

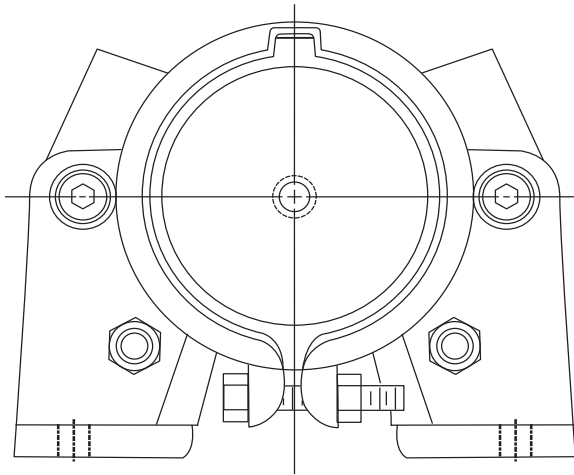


4. Spring Actuated u-cup and O-ring replacement (Items 10 & 21):
 - a. Disconnect the air supply from the air inlet.
 - b. Manually release the Brake Caliper as described in Section IV, paragraph 2.
 - c. Loosen the clamp bolt and carefully remove the Clamp (Item 8) The actuating springs will push the End Cap (Item 2) away from the cylinder. Remove the Springs (Item 19).
 - d. Slide the Piston, Spacer, Set Screw and Hex Nut assembly (Items 3, 18, 20, 17) out of the Cylinder and remove the U-cups and O-rings.
 - e. Lubricate the new U-cups with O-ring lube and place them, with the seal lip upward, over the small diameter of the pistons and into the grooves.
 - f. Lubricate the new O-rings (Item 21) with O-ring lube and install in the O-ring grooves.
 - g. Slide the Piston, Spacer, Set Screw and Hex Nut assembly back into the Cylinder. Install the springs and place the end caps on top of the springs. Push down on the end caps until they are flush with the Cylinder Flange; install the clamp and tighten the clamp bolt to the torque recommended in Table 1.

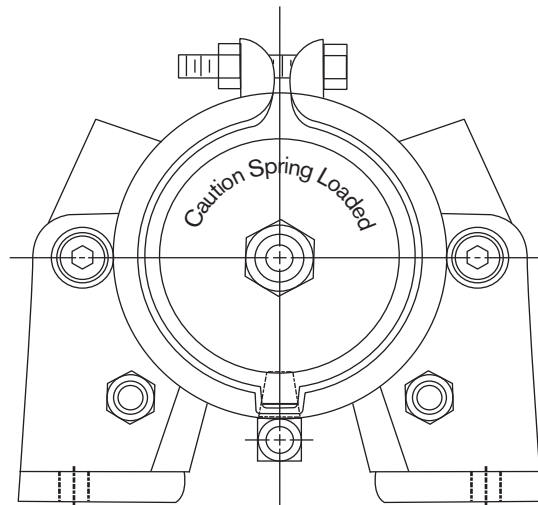
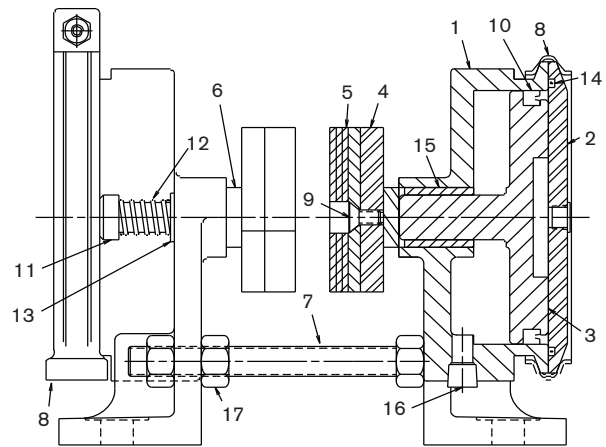
NOTE: A 'C' clamp, used to compress the End Cap against the Cylinder Flange, will facilitate assembly.

- h. Reset as described in the OPERATION section.

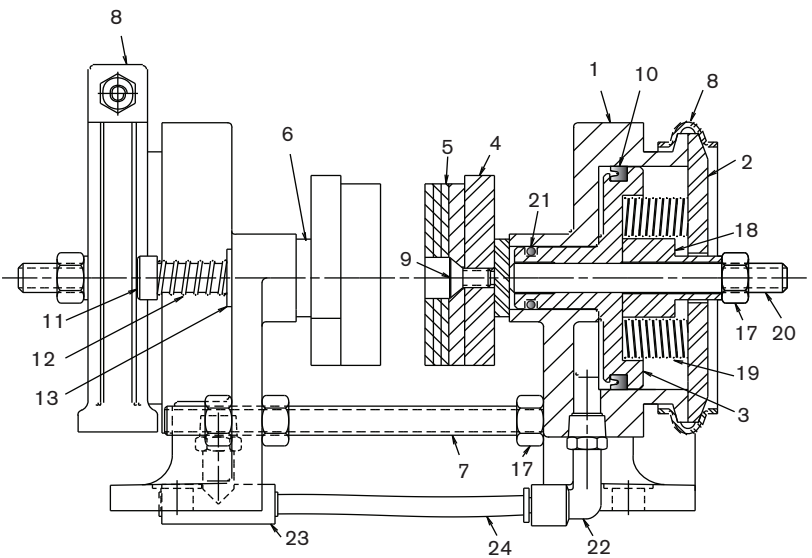
PARTS LIST



AIR ACTUATED BRAKE CALIPER



SPRING ACTUATED BRAKE CALIPER



		Quantity				Quantity	
Item No.	Description	Air Actuated	Spring Actuated	Item No.	Description	Air Actuated	Spring Actuated
1	Cylinder	2	2	13	Flange Bushing	4	4
2	End Cap ¹	2	2	14	O-ring	2	--
3	Piston ¹	2	2	15	Sleeve Bushing	2	--
4	Shoe	2	2	16	Breather	2	--
5	Friction Facing	*	*	17	Hex Nut	8	10
6	Spacer	2	2	18	Spacer	--	2
7	Connecting Rod	2	2	19	Die Spring	--	12
8	Clamp	2	2	20	Set Screw	--	2
9	Machine Screw	*	*	21	O-ring	--	2
10	U-cup	2	2	22	Elbow	--	2
11	Shoulder Screw	4	4	23	Tee	--	1
12	Return Spring	4	4	24	Polyethylene Tube	--	1

¹ Specify Air Actuated or Spring Actuated

* BC288, Qty. 4 / BC 425, Qty. 6

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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