

Spring Engaged, Adjustable Friction Brake




SEFB-275



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="545 579 842 636"> 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	Adjustable 15 to 25 Nm [133 to 221 in-lbs)
Service Temperature	4.5 - 104 C (40 - 220 F)
Approximate Weight	1.2 kg (2.6 lbs)

GENERAL SAFETY PRECAUTIONS




CAUTION

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




CAUTION

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




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".



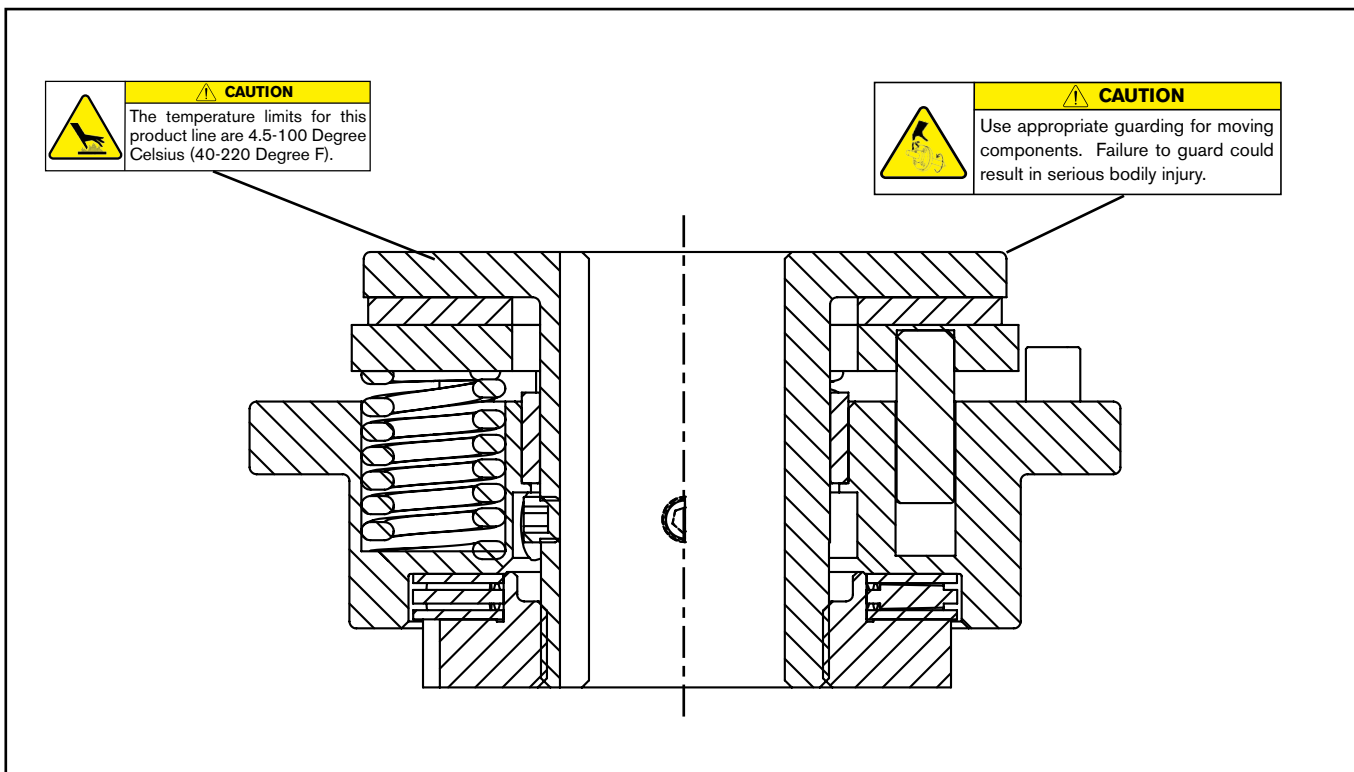
CAUTION

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



WARNING

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



INSTALLATION

NOTE: Refer to Figure 1.

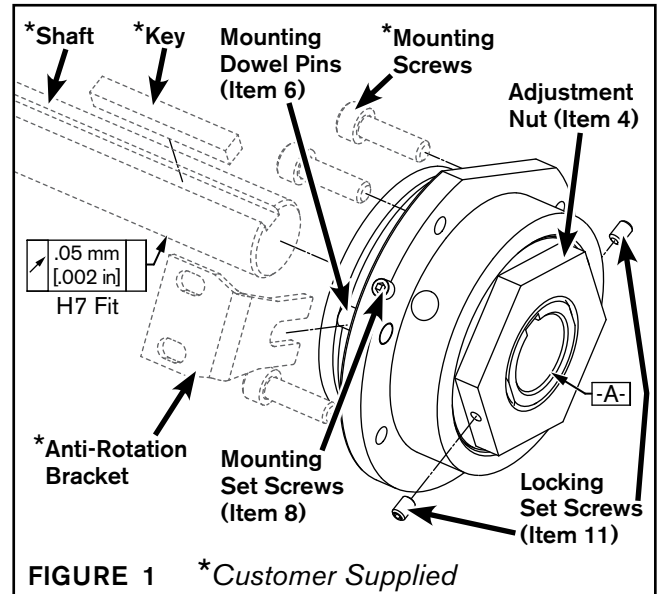
See *Product Sales Drawing for Torque Adjustment Values, Anti Rotation, Mounting Hole & Dowel Pin Locations.*

1. Insert the Key (customer supplied) into the shaft keyway.
2. Ensure both Locking Set Screws (Item 11) and Mounting Set Screws (Item 8) are loose prior to Installation.
3. Slide the Brake over the Key and on the Shaft.
4. Utilize the Mounting Dowel Pins (Items 12) and/or Customer Mounting Screws in the Spring Housing (Item 3) threaded mounting holes to keep Spring Housing from rotating with Friction Disc Hub (Item 1).

Important Note: Verify that mounting/anti-rotation setup doesn't put radial load on the Brake. Customer Shaft must be supported by its own bearing setup.

5. See Section Below for Drag Torque **Adjustment** if needed.
6. Ensure Key is positioned correctly and install and tighten the two Mounting Set Screws (Items 8) by inserting an allen wrench into the access hole in the Spring Housing (Item 3) and rotating Friction Disc Hub (Item 1) until Set Screws line up with access hole. Adjustment Nut (Item 4) must be turned to a position which Locking Set Screws

(Items 11) are centered on the flats on the Friction Disc Hub (Item 1). Tighten Locking Set Screws (Items 11) to torque values Shown in **Table 2**.



ADJUSTMENT

1. With Brake Installed, Loosen both Locking Set Screws (Item 11) and Mounting Set Screws (Item 8) and turn Adjustment Nut (Item 4) to desired allowable torque ranges as specified on Brake's Sales Drawing (15 to 25 N-M), see www.nexengroup.com. See **Figure 2** below for reference only. Use a caliper to measure the **GAP Dimension**, ensure that it does not exceed the range specified in **Figure 2**. Friction Disc Hub (Item 1) will move slightly along shaft as the brake is adjusted. As Friction Facing nears the end of its life, unit drag torque

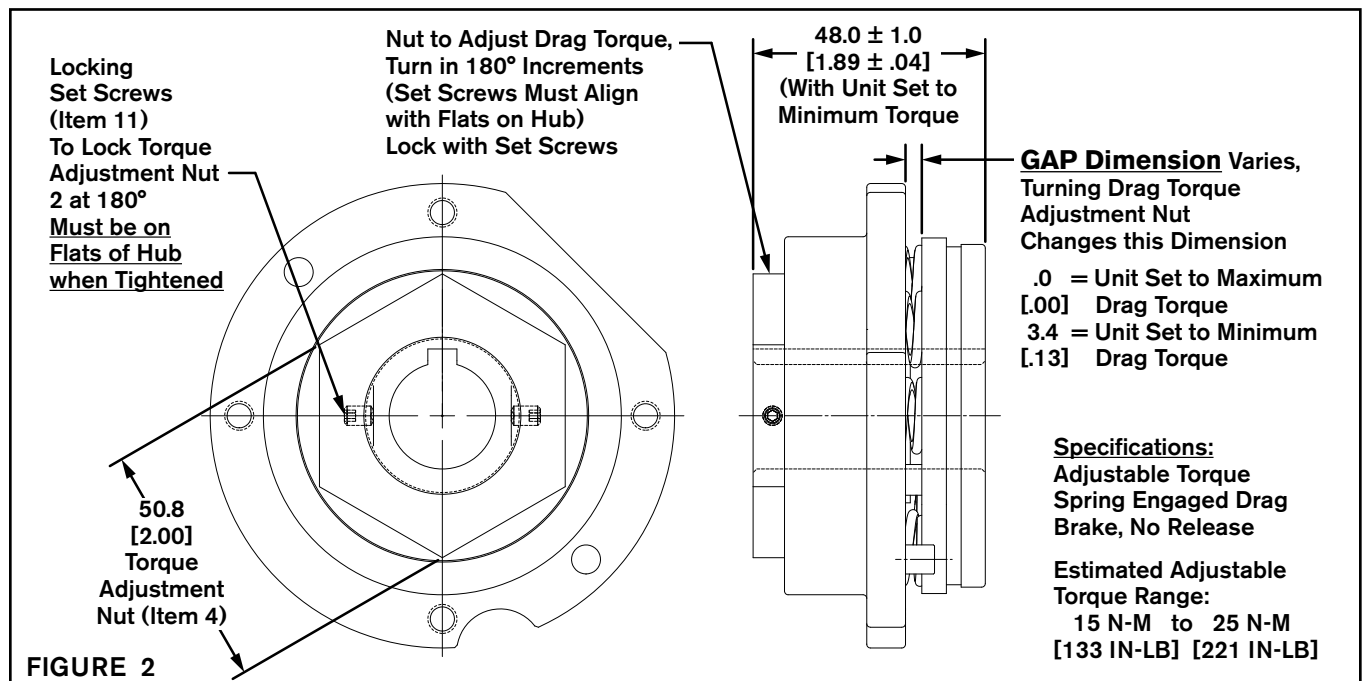
will slightly decrease, re-adjust unit to restore desired drag torque.

Important Note: Do not back Nut off past the edge of Friction Disc Hub or Brake may come dis-assembled.

2. Repeat **Step 6** in Installation Section Above.

TABLE 2 Set Screws (Items 8 & 11) Tightening Torque

Size	Tightening Torque
SEFB-275	1.8 to 2.5 N-M [16 to 22 in-lbs]



FRICION FACING REPLACEMENT

NOTE: Refer to Figures 3 & 4

1. Rotate Friction Disc Hub (Item 1) until Mounting Set Screws (Item 8) line up with access hole. Insert Allen wrench into the access hole in the Spring Housing (Item 3) and loosen Mounting Set Screws.
2. Remove customer supplied mounting/anti rotation hardware.
3. Slide the brake off the Key and shaft.
4. Rotate Friction Disc Hub (Item 1) until Mounting Set Screws (Item 8) line up with access hole. Insert Allen wrench into the access hole in the Spring Housing (Item 3) and tighten Mounting Set Screws until they fall into the bore of Friction Disc Hub.
5. Loosen Locking Set Screws (Items 11) and turn Adjustment Nut (Item 4) counter clockwise until it is off of Friction Disc Hub (Item 1) to dis-assemble brake. Take care that Thrust Bearing Washers (Items 10) and Thrust Bearing (Item 9) do not fall out and become damaged (Reference **Figure 4**). Use caution as the springs may still have some force. Remove Friction Disc Hub (Item 1) from brake. Ensure that Alignment Bearing (Item 13) does not come out with Friction Disc Hub.
6. Slide Friction Facing Sub-Assembly (Item 5) out of Spring Housing (Item 3), while taking care not to allow Engagement Springs (Item 7) to fall out. Slide new replacement Facing Sub-Assembly into Spring Housing while taking care to line up its included Assembly Dowel Pins (Item 12) with the holes in Spring Housing.
7. Re-assemble and re-install brake by inserting Friction Disc Hub (Item 1) back into brake. Ensure Thrust Bearing Washers (Item 10) and Thrust Bearing (Item 9) are installed as shown in **Figure 4**. Thread on Adjustment Nut (Item 4) clockwise to desired allowable torque ranges as specified on Brake's Sales Drawing, see www.nexengroup.com. Adjustment Nut must be turned to a position which Locking Set Screws (Items 11) are centered on the flats on the Friction Disc Hub (Item 1). Tighten Locking Set Screws (Items 11) to torque values Shown in **Table 4**. Do not back Nut off past the edge of Friction Disc Hub after assembly or Brake may come dis-assembled.

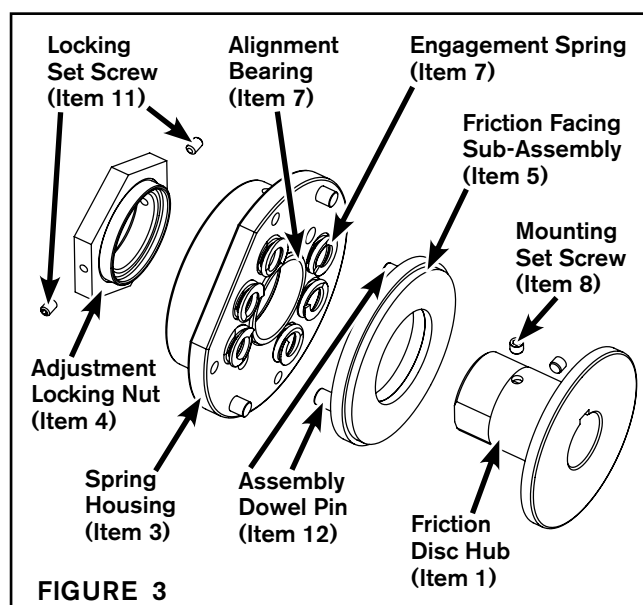


FIGURE 3

TABLE 4 Set Screws (Items 11) Tightening Torque

Size	Tightening Torque
SEFB-275	1.8 to 2.5 N-M [16 to 22 in-lbs]

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

8. Insert the Key (customer supplied) into the shaft keyway.
9. Slide the brake over the Key and on the shaft.
10. Install and tighten the two Set Screws (Items 8) by inserting an allen wrench into the access hole in the Spring Housing (Item 3) and rotating Friction Disc Hub (Item 1) until Set Screws line up with access hole.
11. Utilize the Mounting Dowel Pins (Items 12) and/or Mounting Holes in Spring Housing (Item 3) to keep Spring Housing from rotating with Friction Disc Hub (Item 1). Do not put radial load on the Brake.

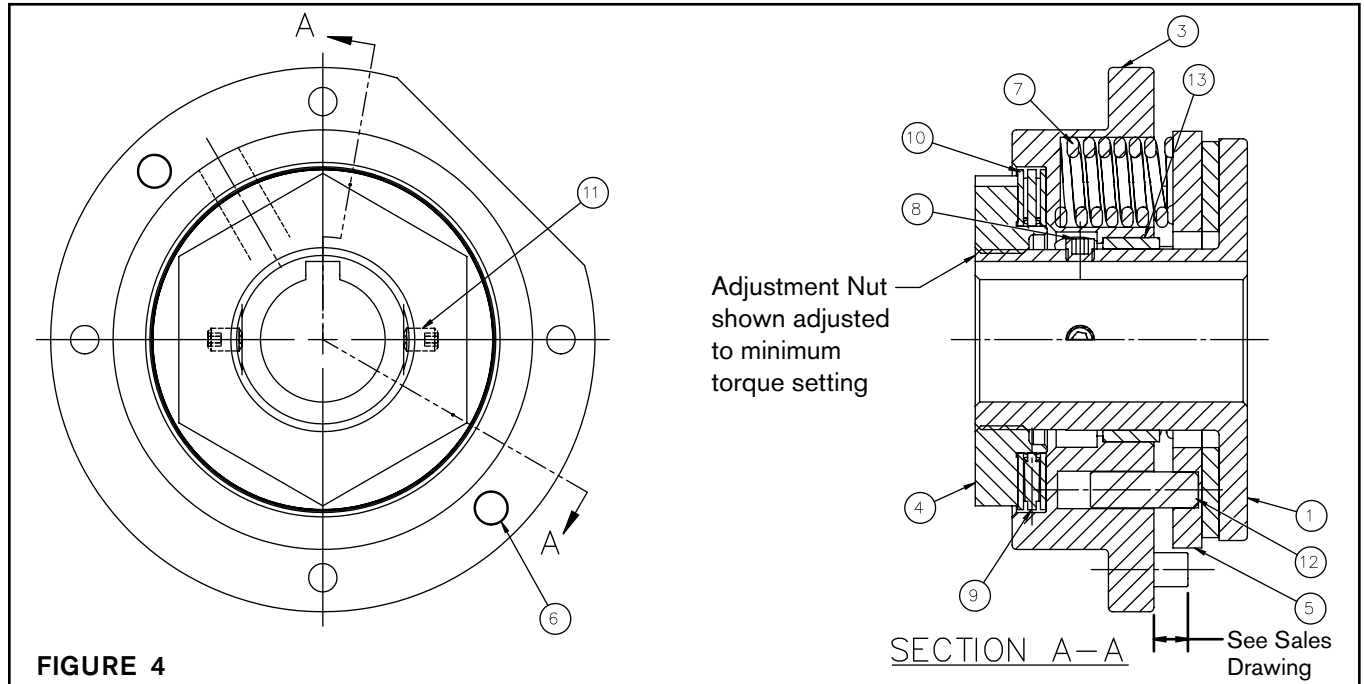
TROUBLESHOOTING

SYMPTOM	PROBABLE CAUSE	SOLUTION
Loss of torque	Worn or dirty Friction Facings	Replace the Friction Facing Sub-Assembly (Item 5)

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.



Typical Replacement Part >>>

ITEM	DESCRIPTION	QTY
1	Friction Disc Hub	1
3	Spring Housing	1
4	Adjustment Locking Nut	1
5	Friction Facing Sub-Assembly	1
6	Mounting/ Anti-Rotation Dowel Pin	2
7	Engagement Spring	6
8	Mounting Set Screw	2
9	Thrust Bearing	1
10	Thrust Bearing Washer	2
11	Locking Set Screw	2
12	Assembly Dowel Pin	2
13	Alignment Bearing	1

OPERATION

	WARNING Never exceed maximum operating speeds listed for your product. (See Table 3).
	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: $\text{Time} = \text{Volume} / (\text{Power} * \text{Wear Rate})$.

TABLE 3

Size	Max RPM
SEFB-275	50 RPM

*Consult Nexen for higher speed applications.

	CAUTION The temperature limits for this product line are 4.5-100 Degree Celsius (40-220 Degree F).
	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".

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.

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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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