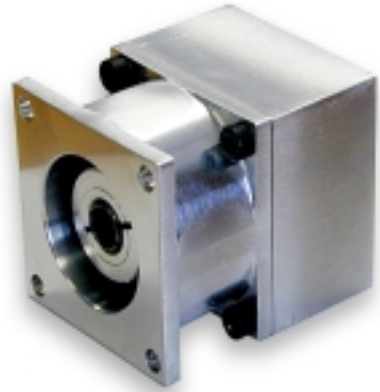
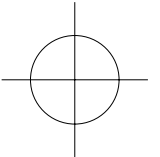


# ECLIPSE™ PRODUCTS

User Manual



## Eclipse Stage Brake

NEMA 23 Sizes

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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ISO 9001 Certified



# 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.

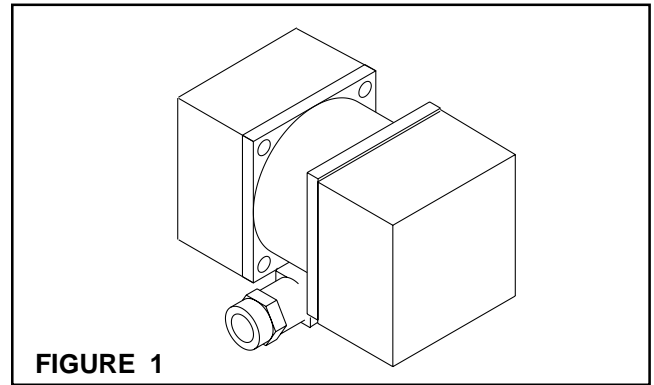
Improper installation can damage your system or cause injury or death.

Comply with all applicable codes.

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**MOUNTED ON THE SHAFT END OF A THOMSON LINEAR STAGE**

1. Clean the output shaft of the Thomson Linear Stage with a non-petroleum-based solvent such as isopropyl alcohol. **DO NOT** lubricate either the input bore of the brake or the output shaft of the stage. Lubricants will reduce the coefficient of friction, thus reducing the clamp load capability of the joint.
2. Remove the plastic NPT plug from the access hole on the Nexen Stage Brake.
3. Rotate the Clamp Collar, supplied on the input bore of the Stage Brake, until its Socket Head Cap Screw is aligned with the access port.
4. Slide the Stage Brake onto the output shaft of the Thomson Linear Stage (See Figure 1).

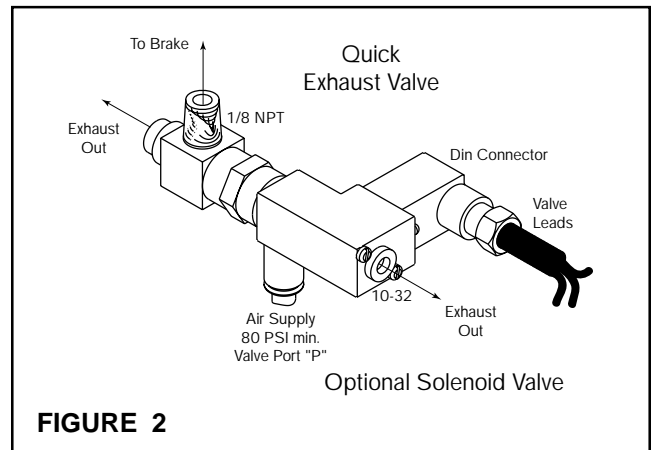


**FIGURE 1**

**NOTE**

**Space permitting, align the air inlet ports in the down position to allow condensation to drain out of the air chamber.**

5. Secure the Stage Brake to the Stage by tightening the 4 customer-supplied Socket Head Cap Screws until they are finger-tight.
6. Tighten the Clamp Collar, which was aligned with the access port in step 2, to the torque specifications listed in Table 1.



**FIGURE 2**

**CAUTION**

**DO NOT over-torque the fasteners. Overtightening can lead to premature brake failure.**

7. Tighten the 4 Socket Head Cap Screws to the customer-supplied torque values.
8. Reinsert the plastic NPT Plug into the access hole on the Nexen Stage Brake.
9. Install the Nexen Quick Exhaust Valve on the Stage Brake. Use Teflon tape and/or pipe sealant on the threads. If you are using the optional Solenoid Valve, assemble this valve onto the Quick Exhaust Valve (See Figure 2).

**TABLE 1**

BRAKE MODEL	BORE SIZE	TORQUE REQUIRED
964630	0.1875	15 In. Lbs. [2 Nm]
964631	0.250	28 In. Lbs. [3.2 Nm]
964632	0.375	49 In. Lbs. [5.5 Nm]
964633	8 mm	41 In. Lbs. [4.6 Nm]
964634	10 mm	41 In. Lbs. [4.6 Nm]
964635	12 mm	84 In. Lbs. [9.5 Nm]

**NOTE**

**The Quick Exhaust Valve maximizes the brake response time. Since the Stage Brake is spring-engaged (for fail-safe operation) and pneumatically disengaged, the quicker the air pressure is removed from the air chamber, the quicker the load will be brought to rest.**

**TABLE 2**

OPTIONAL SOLENOID VALVE SPECIFICATIONS				
Voltage	Power	Resistance	Current	CV
Standard Coil: *24 VDC	2.5 Watts	235 Ohms	.100 Amps	.08

\* Can be used as either AC (50/60 Hz) or DC.  
 Use Nexen's rectifier lead wire for AC (50/60 Hz) operation.

10. If you are using the optional Solenoid Valve INSTEAD OF the Quick Exhaust Valve, install the Solenoid Valve directly to the Stage Brake using the supplied fittings. Use Teflon tape or pipe sealant on the threads. The fitting for the air line is O-ring sealed and does not need any tape or sealant (See Figure 2).

11. Connect the lead wires from the optional Solenoid Valve to the brake control connection points on the Motor Drive or the PLC. Refer to the valve specifications shown in Table 2. On the lead wire cable, the Brown wire is Positive, the White wire is Common, and the Green wire is Ground.

12. The lead wire assembly includes a full bridge rectifier plus a surge suppressor; these components convert AC power to rectified DC power with circuit protection.

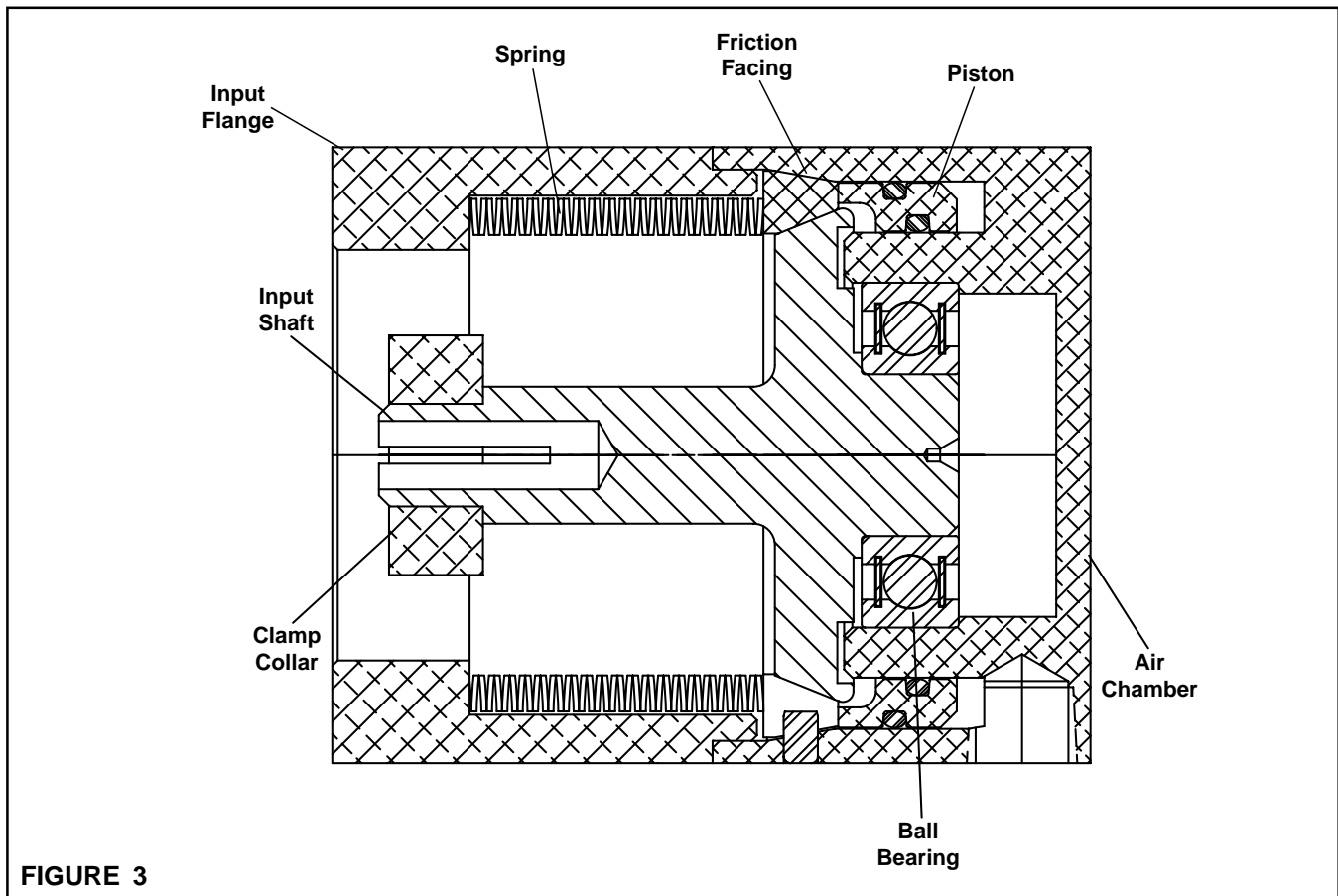
**CAUTION**

**The Stage Brake will disengage if air pressure is supplied and you press the brass button on the Solenoid Valve. The LED will illuminate when the Solenoid Valve is actuated and the Stage Brake is disengaged. Pressure needed to disengage the Stage Brake should not exceed 80 psi.**

**AIR PREPARATION**

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

**BRAKE ASSEMBLY**



**FIGURE 3**



## TROUBLESHOOTING

Problem	Probable Cause	Solution
Failure to engage (brake)	Weak or broken Wave Spring	Replace the unit.
	Air not exhausting	Check control valves.
Failure to disengage	Control valve malfunction-air not getting to the brake	Check for low air pressure or replace the control valve. <b>NOTE:</b> Unit has been designed to release before (at or below) 5.5 Bar [80 psi]. Required disengagement pressure higher than 5.5 Bar [80 psi] may indicate improper assembly.
	Air leaking around the O-ring seals	Replace the unit.
Loss of torque	Worn or dirty Friction Facing	Replace the unit.

## SPECIFICATIONS

Size	Min Holding Torque	Max RPM	Inertia w/coupling	Weight
NEMA 23 Stage Brakes	2.25 Nm (20 in-lb)	10,000	.5 kg x cm <sup>2</sup> (.0004 in-lb-s <sup>2</sup> )	1.5 lbs

Pneumatic units accept an optional solenoid valve (normally closed) controlled by 24VDC at 104 mA. Solenoid valves are fitted with 18" flying leads standard. To order the solenoid valve (optional), refer to Nexen product #964650.

## ACCESSORIES

DESCRIPTION	PROD. NO.
Optional Solenoid Valve .....	964650

**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.

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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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