




Eclipse Servomotor Brake
NEMA 23 Electric

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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	<p style="text-align: center;"> DANGER</p> <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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GENERAL SPECIFICATIONS


TABLE 1

Size	Min Holding Torque	Max RPM	Torsional Rigidity	Inertia	Weight
23-3/8	0.45 Nm (4.0 in-lbs)	5000	1308 Nm/Rad (965 ft-lb/Rad)	0.87 kg-cm ² (7.7 x 10 ⁻⁵ in-lb-s ²)	0.64 Kg (1.42 lbs)
23-1/4	0.45 Nm (4.0 in-lbs)	5000	349 Nm/Rad (258 ft-lb/Rad)	0.78 Kg-cm ² (6.96 x 10 ⁻⁵ in-lb-s ²)	0.60 Kg (1.33 lbs)

TABLE 2

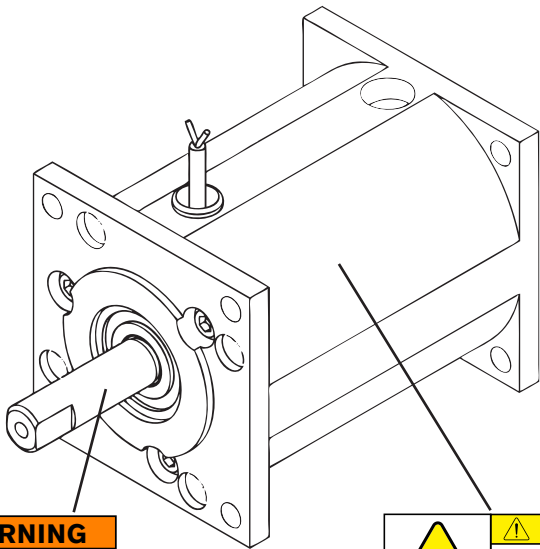
Specifications	
Ambient Temperature:	4.5-45°C (40° - 113°F)
Power Supply:	24VDC ± 2%
Current:	0.40 Amp Continuous
Coil Resistance:	60-65 Ohms at 25°C
Recommended Fuse:	600mA, Voltage Rating >24VDC, Slow Blow
Recommended Transient Voltage Suppressor:	Bidirectional TVS Zener Diode, Reverse Standoff Voltage >43VDC, 500 Watt


GENERAL SAFETY PRECAUTIONS



! WARNING


Keep indoors. This product is intended for indoor environments only. Use of the brake outdoors will damage components.





! WARNING

The output shaft needs to be enclosed either by gear reducer or appropriate guarding. Failure to guard could result in serious bodily injury.



! CAUTION


Hot surface. Do not touch.

INSTALLATION


INSTALLATION ONTO MOTOR SHAFT

NOTE: Refer to Figures 1, 2, 3

1. Place the Clamping Collar (item 7) on the input (female) end of the servo brake shaft, then slide the Collar down the Shaft until it is firmly against the shaft step.
2. Remove the Access Plug (Item 14) from the Input Flange (Item 10). Rotate the Clamping Collar (item 7) and the Shaft (Item 1) until they are aligned with the access hole. Then insert a hex key through the access hole and engage the head of the cap screw. Leave hex key in place while you perform the next two steps.

	CAUTION
	Do not lubricate either the Clamping Collar or the Shaft. Any lubricant on the contact surfaces could result in torque transfer failure. If necessary, clean the Shaft with a non-petroleum based solvent, such as isopropyl alcohol, then wipe dry before assembly.

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, bolt the Flanges together. Then tighten the cap screws evenly.
5. Using the hex key used in Step 2, tighten the cap screw in the Clamping Collar (Item 7) to the recommended torque listed in Table 4.

	CAUTION
	Under-tightening the Collar may cause slippage between the Motor and the Brake. This can cause damage to the System, Motor and/or Brake.

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.

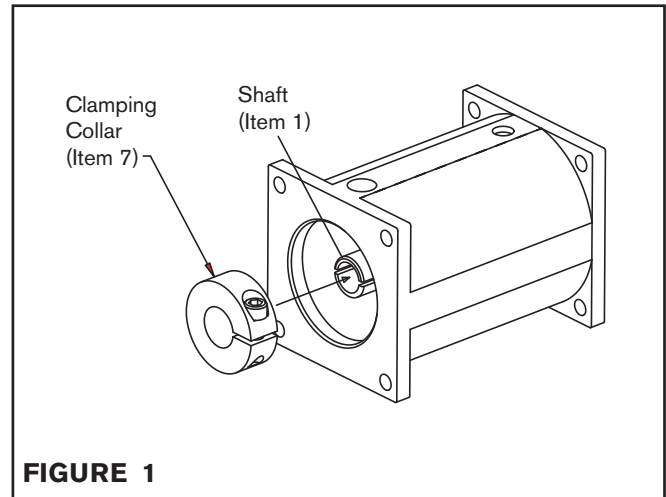


FIGURE 1

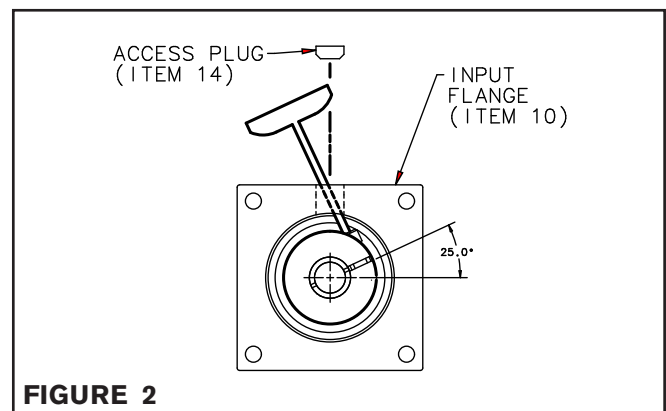


FIGURE 2

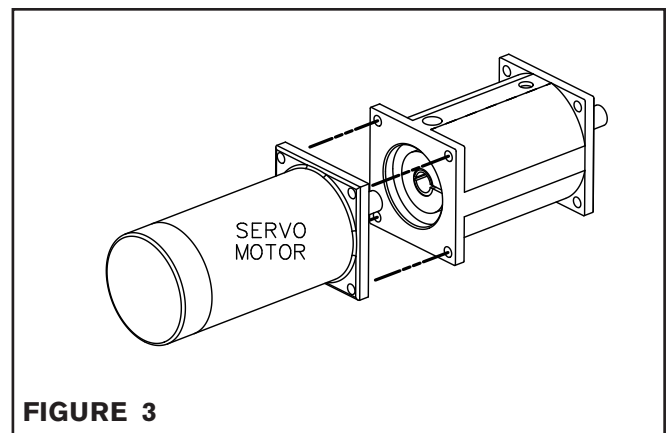



FIGURE 3

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

INSTALLATION

INSTALLATION BETWEEN A MOTOR SHAFT AND A GEAR REDUCER

NOTE: Refer to Figure 4.

1. Mount the Servo Brake to the Motor Shaft by performing steps 1-6 on page 5.
2. Insert the Output Shaft into the customer-supplied gear reducer coupling.
3. Bolt the flanges together using customer-supplied cap screws, washers and nuts. Before assembly, apply a drop of Loctite® 242 (blue), or equivalent, to the threads of each cap screw. Torque these cap screws evenly (i.e., those in opposite corners) to the recommended torques listed in Table 4.
4. Tighten the Coupling according to the instructions supplied with the Gear Reducer.
5. Install any plugs or related items that are detailed in the Gear Reducer instructions.
6. If the output shaft is not enclosed, proper guarding is required.

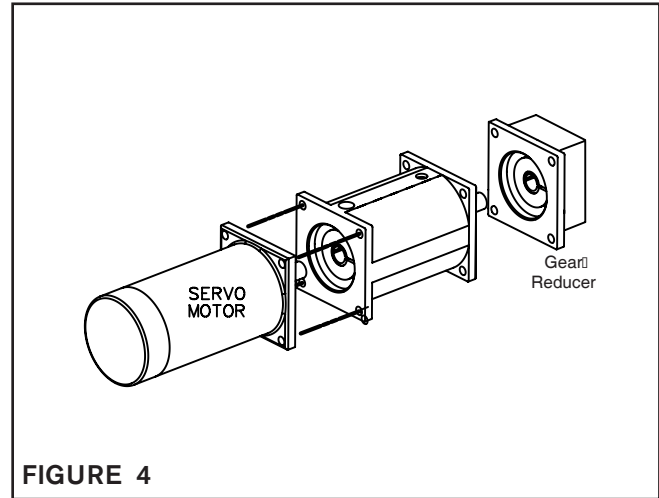
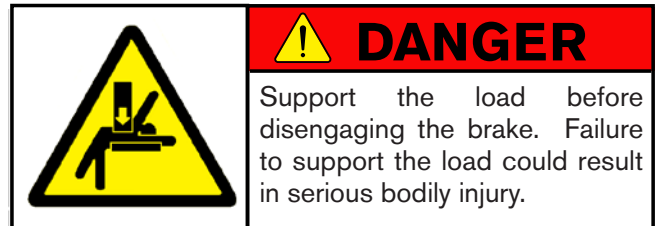
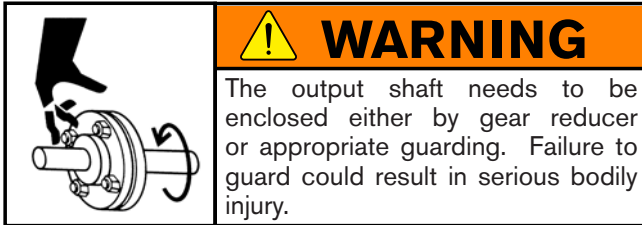


FIGURE 4



INSTALLATION

INSTALLATION OF ELECTRICAL CONNECTION

1. Attach wire leads of Brake to a 24 V DC power supply. This brake is not sensitive to the direction of power through the unit. The brake leads are AWG 26 UL1429 wire.
2. Protect against high inductive switch-off peaks by installing a Transient Voltage Suppressor device to prolong contact life of switching device. See Table 2 for recommended device.
3. Suitable fusing should be added to circuit to protect against damage from short circuits and ground fault conditions. See Table 2 for recommended fuse sizing.
4. Figure 5 shows a recommended electrical configuration providing a default to engaged configuration.
5. Ensure a low resistance path between brake chassis and earth ground.
6. Cycle the brake by applying power to the coil and then removing it. If you hear an audible click each time power is either applied or removed, the brake is functioning correctly.

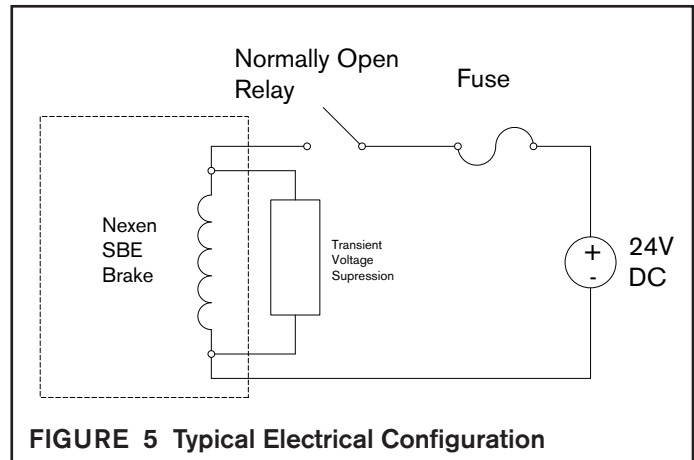


FIGURE 5 Typical Electrical Configuration

TROUBLESHOOTING

Problem	Probable Cause	Solution
Failure of brake to engage.	One or both ends of brake shaft may be loose.	Check that both ends of brake shaft are secured by either a collar or set screw; unless both ends are tightened to the required torque, the final drive will not operate properly.
Failure of brake to disengage.	24V DC power may not be applied to the brake.	Verify that 24V DC power is applied to the brake.
	Shorted or open coil (in the brake).	Use an ohmmeter to check for a coil resistance of 60-65 ohms. Replace the brake if the coil is shorted or open.

GENERAL DIMENSIONS

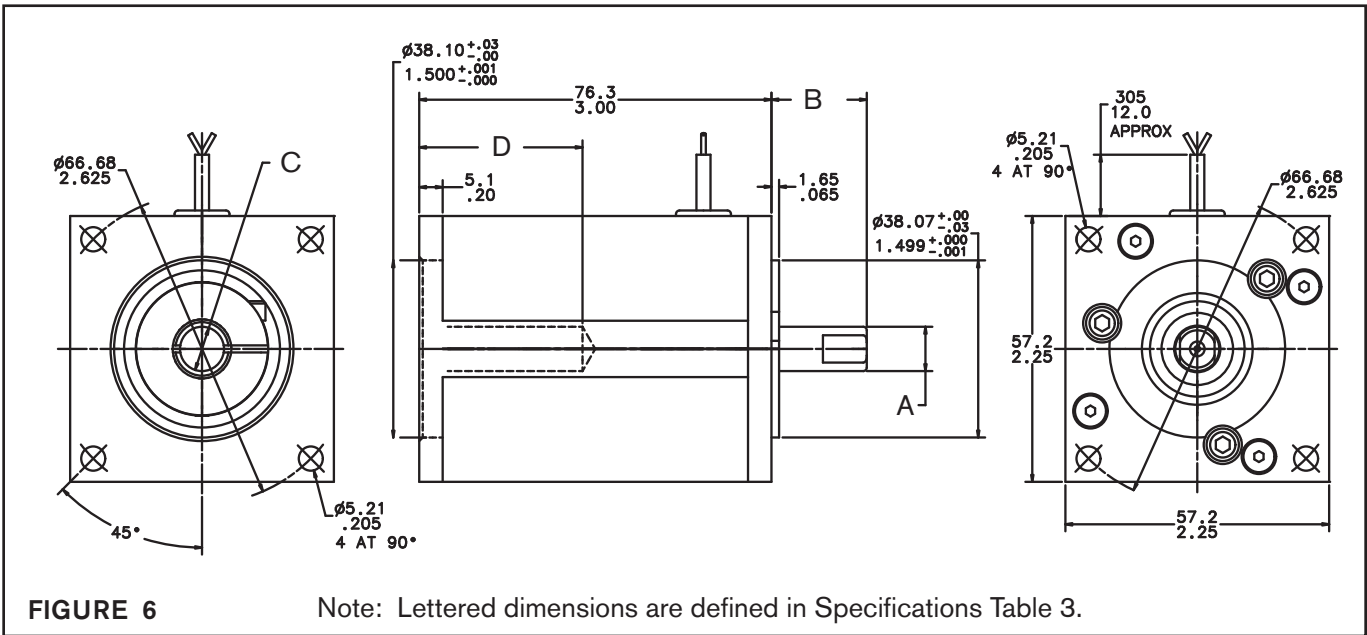


TABLE 3

Brake Model	A	B	C	D
Size 23 - 1/4 in.	.2500 +.0000 in. -.0005 in.	20.65 mm .813 in.	.2500 +.0005 in. -.0000 in.	23.2 mm .91 in.
Size 23 - 3/8 in.	.3750 +.0000 in. -.0005 in.	31.75 mm 1.25 in.	.3750 +.00005 in. -.0000 in.	35.4 mm 1.39 in.

TABLE 4

Size	Recommended Seating Torque UNC (38-43 Rc)
6-32	34 in-lb
8-32	59 in-lb
10-24	77 in-lb

SERVICE RESTRICTIONS

Note: The servo Motor Brake assembly is designed for extended service life. Due to this long product life, stored spring energy, and internal component tolerance, Nexen recommends that all service be performed by trained personnel.

Do not attempt to remove or dismantle any part of the Rail Brake assembly. This product is spring loaded and under pressure. If the product malfunctions, replace the unit or contact Nexen.

	WARNING
	Brake is spring loaded under extreme pressure. Do not disassemble.

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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