

SE BRAKE MODELS:




**SE-100-1, SE-200-1,  
SE-500-1, and SE-1000-1**



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  
(651) 484-5900

[www.nexengroup.com](http://www.nexengroup.com)

	<p style="text-align: center;"> <b>DANGER</b></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 <b>ONLY</b>. 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.

Nexen Group, Inc.  
560 Oak Grove Parkway  
Vadnais Heights, Minnesota 55127

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## GENERAL SPECIFICATIONS

Specifications	
Torque	Up to 130 Nm (1150 in-lbs)
Actuation Pressure	1 - 5.5 bar (14.5 - 80 psi)
Service Temperature	4.5 - 104 C (40 - 220 F)
Approximate Weight	Up to 12.7 kg (28 lbs)


## GENERAL SAFETY PRECAUTIONS




**CAUTION**  
Use lifting aids and proper lifting techniques when installing, removing, or placing this product in service.




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



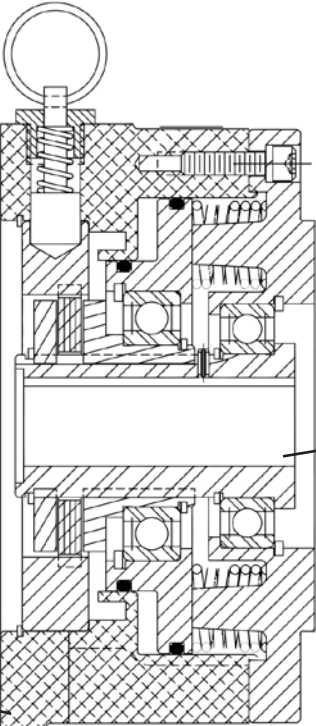
**CAUTION**  
Watch for sharp features when interacting with this product. The parts have complex shapes and machined edges.




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




**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**  
The temperature limits for the product are 4.5-104 degree Celsius (40-220 degree F).



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

## INTRODUCTION

Nexen's Air Champ Spring Engaged Brakes offer worker protection on conveyors, hoists, and other equipment where fast, dependable stopping may prevent physical injury.

SE Brakes also protect equipment with controlled engagement where sudden stops may damage valuable equipment.

When power to the control valve is lost, or air is exhausted, springs engage the SE Brake, and the load is held in a stable position. Nexen's SE Brake also incorporates a manual release, which is used to disengage the brake if no air pressure is available.

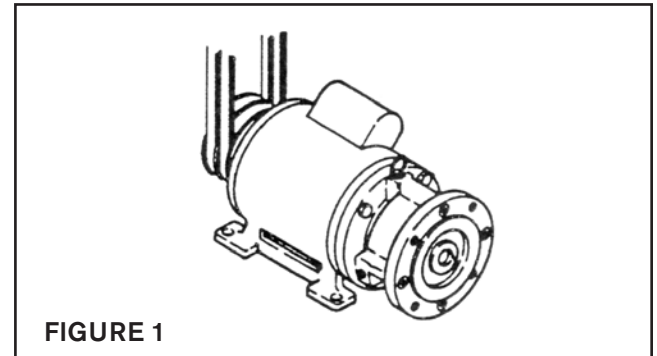
## INSTALLATION

### MOTOR SHAFT MOUNTED SE BRAKE

Opposite Drive End on Double "C" Faced Motor

Refer to Figure 1.

1. Insert the Key (Item 37) into shaft keyway.
2. Slide the SE Brake onto motor shaft and secure with mounting bolts.

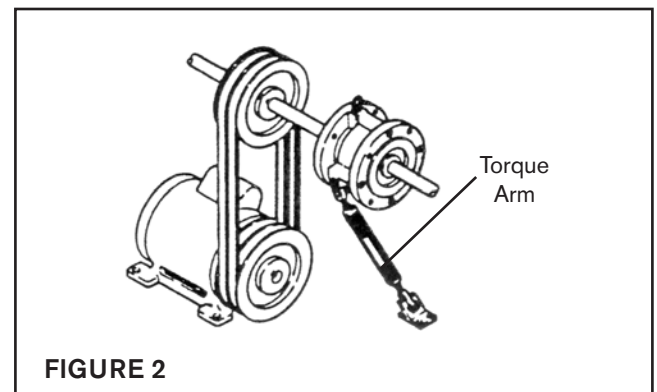


### SHAFT MOUNTED SE BRAKE

with Torque Arm

Refer to Figure 2.

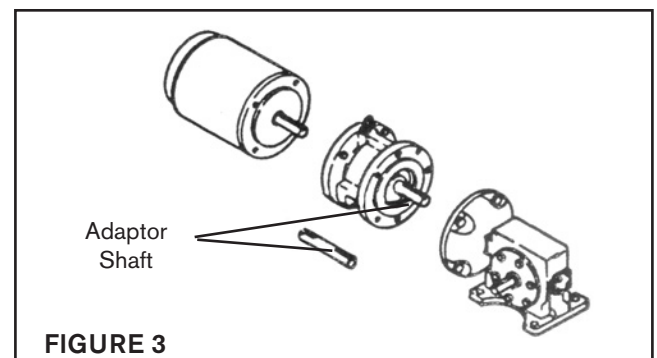
1. Insert the Key (Item 37) into the shaft keyway.
2. Slide the SE Brake onto the shaft.
3. Retain the Key with the set collar.



### SE BRAKE MOUNTED BETWEEN A MOTOR AND GEAR REDUCER

Refer to Figure 3.

1. Insert the Key (Item 37) into the shaft keyway.
2. Slide the SE Brake onto motor shaft and secure it with mounting bolts.
3. Insert the first Key into Adaptor Shaft and insert Adaptor Shaft into the SE Brake.
4. Insert the second key into Adaptor Shaft; then, insert Adaptor Shaft into reducer, and bolt the SE Brake and motor to gear reducer.

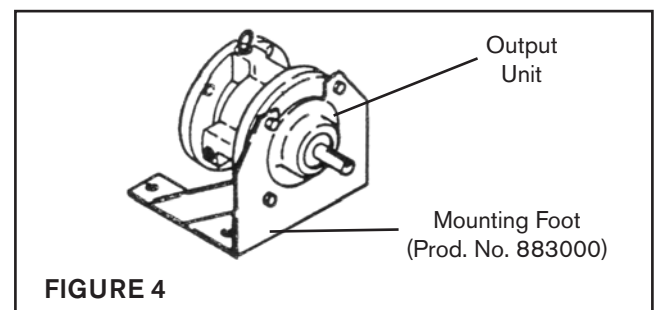


### MOUNTING AN OUTPUT UNIT

Refer to Figure 4.

An Output Unit can be mounted to the SE Brake when a drive through arrangement is desired. The Output Unit can then be used to mount a sheave, sprocket, or other desired drive.

With the Output Unit attached, the SE Brake may be foot mounted to provide a free standing drive through arrangement (Models SE-100-1 and SE-200-1 only).



## LUBRICATION

### 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.

Nexen product's bearings are shielded and pre-lubricated, and require no further lubrication.

### LUBRICATOR DRIP RATE SETTINGS



#### CAUTION

These settings are for Nexen supplied lubricators. If you are not using a Nexen lubricator, calibration must follow the manufacturer's suggested procedure.

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.



### CAUTION

Low air pressure will cause slippage and overheating. Excessive air pressure will cause abrupt starts and stops, reducing product life.

Nexen's SE Brakes engage when the air supply is exhausted by the control valve or when there is a loss of air supply, and disengage when air pressure is applied (See Table 1).

For maximum performance, mount the control valve as close to the SE Brake as possible. A Hose Assembly (Item 36) is supplied.

SE Brake engagement is controlled by a Restrictor Valve (Item 41). For faster response, remove the Restrictor Valve. If maximum response time is needed, install a Quick Exhaust Valve in place of the Restrictor Valve.

The following is a common air supply scheme used with this product. This is an example and not an all-inclusive list. All air circuits to be used with this product must be designed following ISO 4414 guidelines.

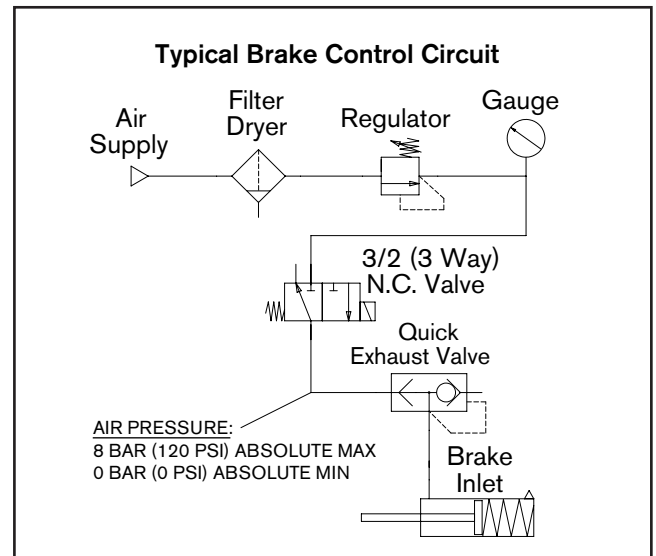


TABLE 1

MINIMUM DISENGAGEMENT AIR PRESSURES	
MODEL	AIR PRESSURE
SE-100	40 PSI
SE-200	50 PSI
SE-500	30 PSI
SE-1000	50 PSI

## OPERATION



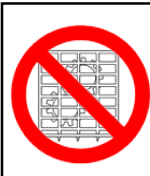
### WARNING

Never exceed maximum operating speeds listed for your product. (See Table 2).



### 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:  $\text{Time} = \text{Volume} / (\text{Power} * \text{Wear Rate})$ .



### 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".

TABLE 2

Model	Max RPM
SE 100-1000	1,800



### CAUTION

The temperature limits for this product line are 4.5-104 Degree Celsius (40-220 Degree F).



### WARNING

Do not run the SE Brake in disengaged position (*locking pin pulled out*). Always manually reengage the SE Brake before starting motor.

## TROUBLESHOOTING

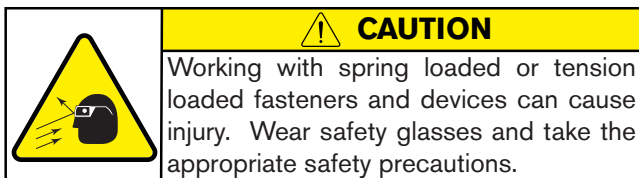
SYMPTOM	CAUSE	SOLUTION
Failure to Engage.	Air not being exhausted due to Control Valve malfunction.	Replace Control Valve.
	Broken Engagement Springs.	Replace Engagement Springs.
	Internal contamination or corrosion.	Align exhaust port to the six o'clock down position to allow condensation to drain out of exhaust port.
Failure to Disengage.	Low or lack of air pressure.	Check for Control Valve malfunction; replace if defective.
		Check for leaks in air lines and replace if defective.
	Friction lock due to lack of lubrication on Hub Spline or in Air Chamber.	Lubricate Hub Spline with NEVER-SEEZ®.
		Use an Air Line Lubricator.
	Internal contamination or corrosion.	Align exhaust port to the six o'clock down position to allow condensation to drain out of exhaust port.
Damaged Locking Pin.	Replace Locking Pin.	
Loss of Torque.	Worn or dirty Friction Facings	Replace Friction Facings.

## PARTS REPLACEMENT

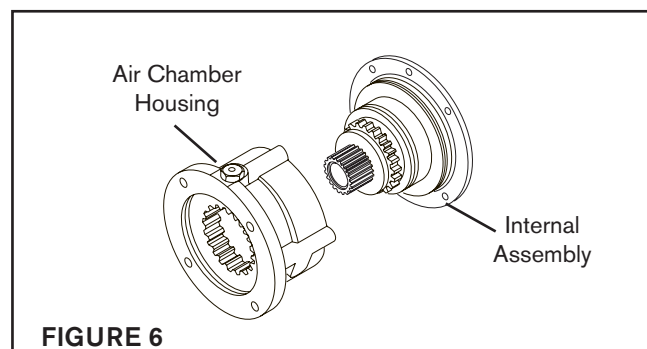
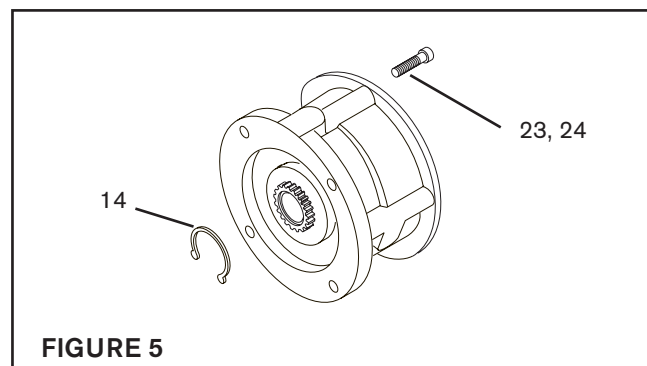
### SE DISASSEMBLY

Refer to Figures 5 & 6.

1. Apply air pressure to disengage the SE Brake.



2. Remove the Retaining Ring (Item 14).
3. Exhaust air pressure.
4. Slowly, and in a cross pattern, remove Socket Head Cap Screws (Item 23), and Lockwashers (Item 24).
5. Slide the Air Chamber Housing (Item 2) off internal assembly of the SE Brake.





# PARTS REPLACEMENT (continued)

## FRICITION FACING REPLACEMENT

Refer to Figure 7.

1. Remove the Friction Plates (Item 5) and Friction Facings (Item 7).

NOTE: SE Brakes Models SE-100-1 , and SE-200-1 have one Friction Plate and Friction Facing, while Models SE-500-1 and SE-1000-1 have three Friction Plates and Friction Facings.

2. Install the new Friction Facings (Item 7).

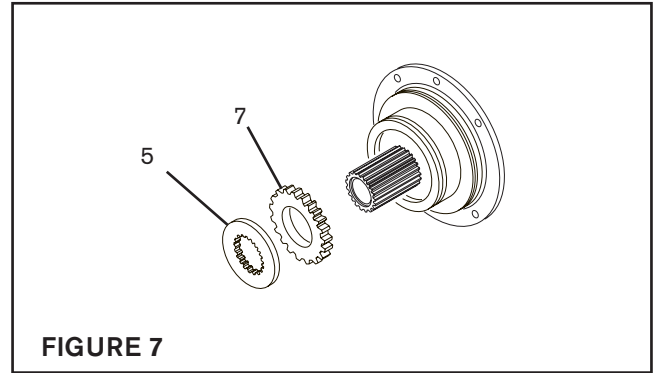


FIGURE 7

## O-Rings (ITEMS 12 and 13).

Refer to Figure 8.

1. Remove old O-Rings (Items 12 and 13).
2. Clean O-Ring contact surfaces of the Piston (Item 3) and Air Chamber Housing (Item 2) with fresh safety solvent.
3. Lubricate new O-Rings (Items 12 and 13) and O-Ring contact surfaces with fresh O-Ring lubricant.
4. Install new O-Rings (Items 12 and 13).

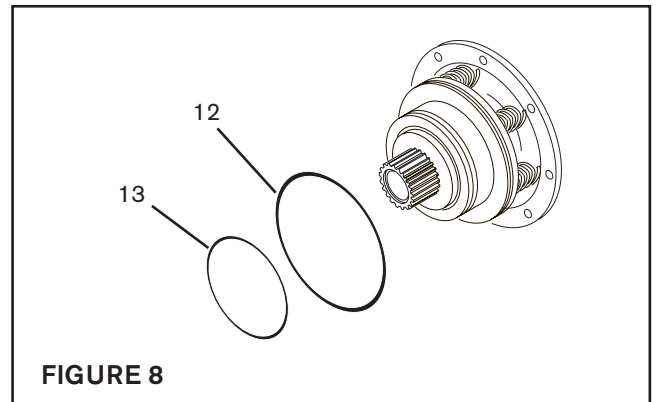


FIGURE 8

## BEARINGS (ITEMS 21 and 22).

Refer to Figures 9 & 10.

1. Slide Friction Disc (Item 6) and Piston (Item 3) off Hub (Item 1).

NOTE: Inspect Engagement Springs (Item 19) for signs of wear or fatigue. Replace if worn or if signs of fatigue exist.

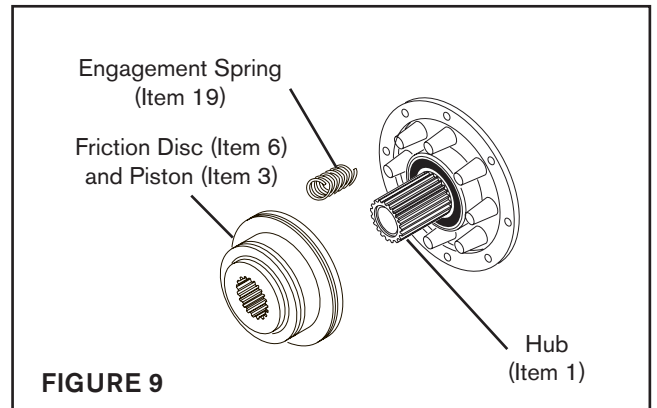


FIGURE 9

	<p><b>CAUTION</b></p> <p>Working with spring loaded or tension loaded fasteners and devices can cause injury. Wear safety glasses and take the appropriate safety precautions.</p>
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2. Remove Retaining Ring (Item 15) and press Friction Disc (Item 6) out of Bearing (Item 21).
3. Remove the Retaining Ring (Item 16) and press the Bearing (Item 21) out of the Piston (Item 3).
4. Clean the bearing bore of the Piston (Item 3) with fresh safety solvent.

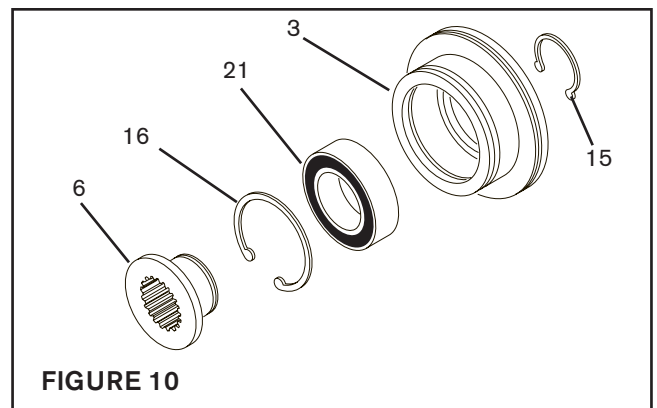


FIGURE 10

## PARTS REPLACEMENT (continued)

### BEARINGS (ITEMS 21 and 22). (continued)

Refer to Figures 11 - 13.

5. Remove the Retaining Ring (Item 14) on Models SE-100-1 and SE-200-1, or (Item 33) on Models SE-500-1 and SE-1000-1.
6. Press the Hub (Item 1) out of the Spring Housing (Item 4) and Bearing (Item 22).
7. Remove the Retaining Ring (Item 17).
8. Press the Bearing (Item 22) out of the Spring Housing (Item 4).
9. Clean the bearing bore of the Spring Housing (Item 4) with fresh safety solvent.
10. Apply Loctite® 601, or equivalent, to the outer races of the new Bearings (Items 21 and 22).
11. Carefully align the O.D. of the Bearing (Item 22) with the bore of the Spring Housing (Item 4) and press the new Bearing into the Spring Housing.
12. Carefully align the O.D. of the Bearing (Item 21) with the bore of the Piston (Item 3) and press the new Bearing into the Piston.
13. Reverse Steps 1-7 to reassemble the internal brake components.

### BRAKE REASSEMBLY

Refer to Figures 14 & 15.

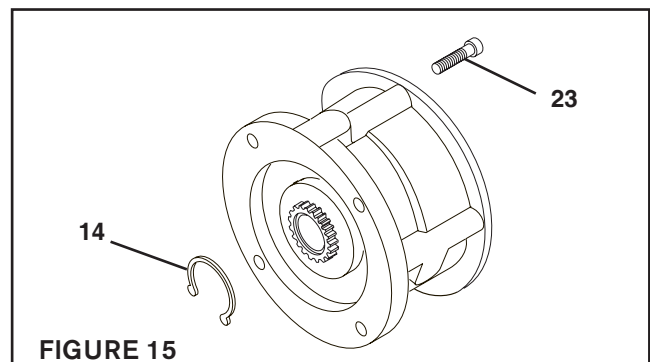
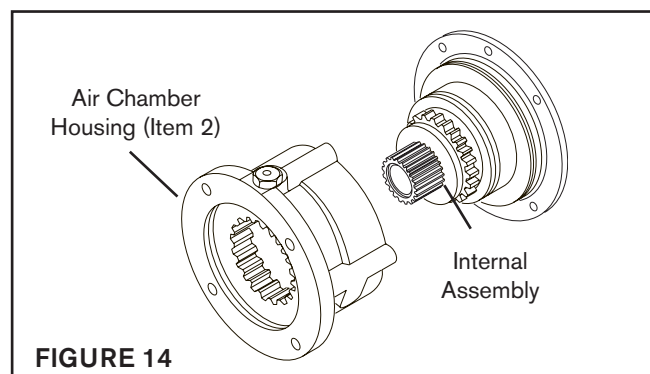
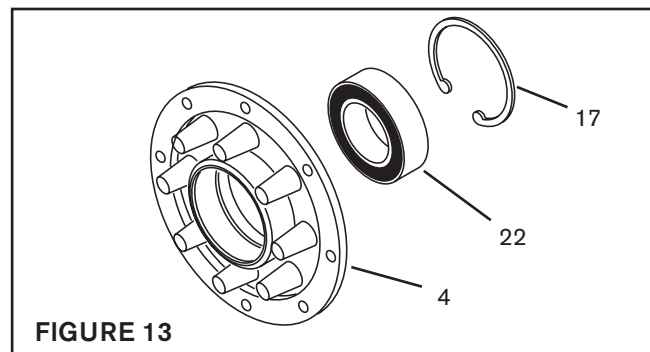
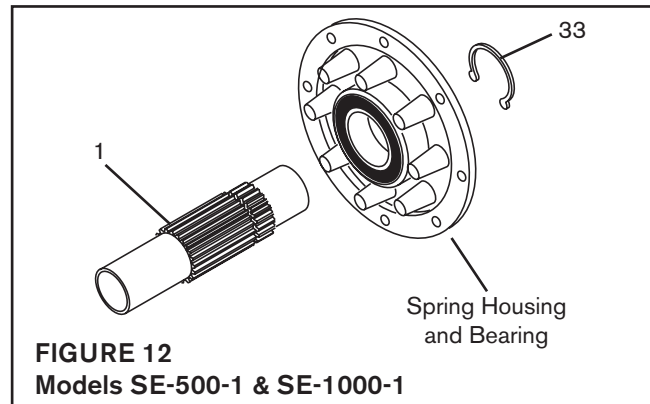
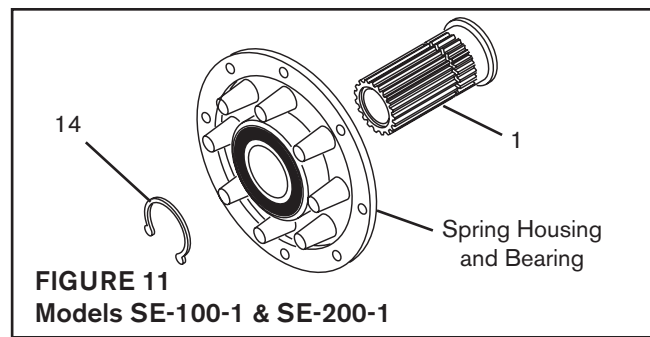
1. Slide the Air Chamber Housing (Item 2) onto the Internal Assembly.
2. Using Cap Screws (Item 23), secure the SE Brake halves together.
3. Alternately and evenly tighten the Cap Screws (Item 23) to 8 Ft. Lbs. [10.8 N•m].
4. Apply air pressure to disengage the SE Brake.



#### CAUTION

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

5. Install Retaining Ring (Item 14)
6. Exhaust air pressure.



## REPLACEMENT PARTS

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.

## PARTS LIST / SE-100-1 AND SE-200-1

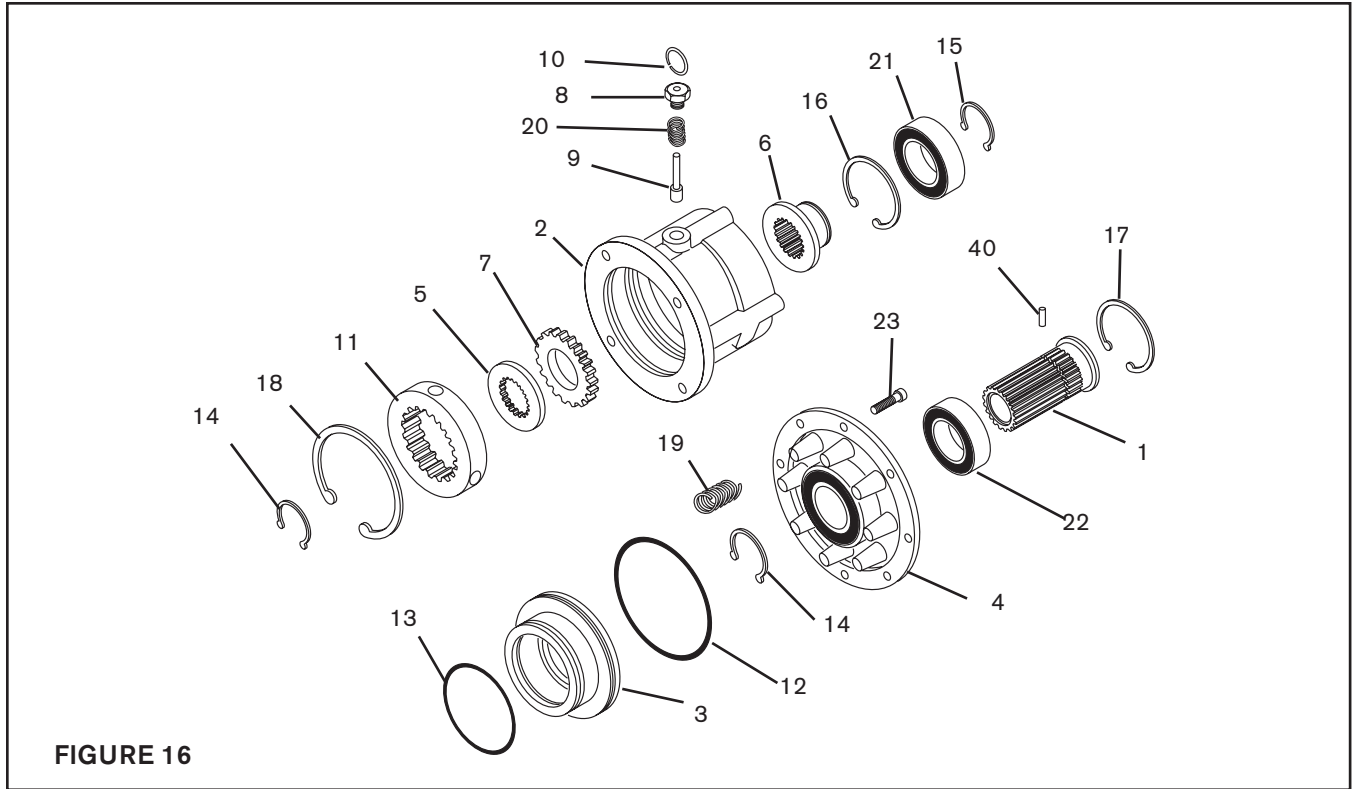


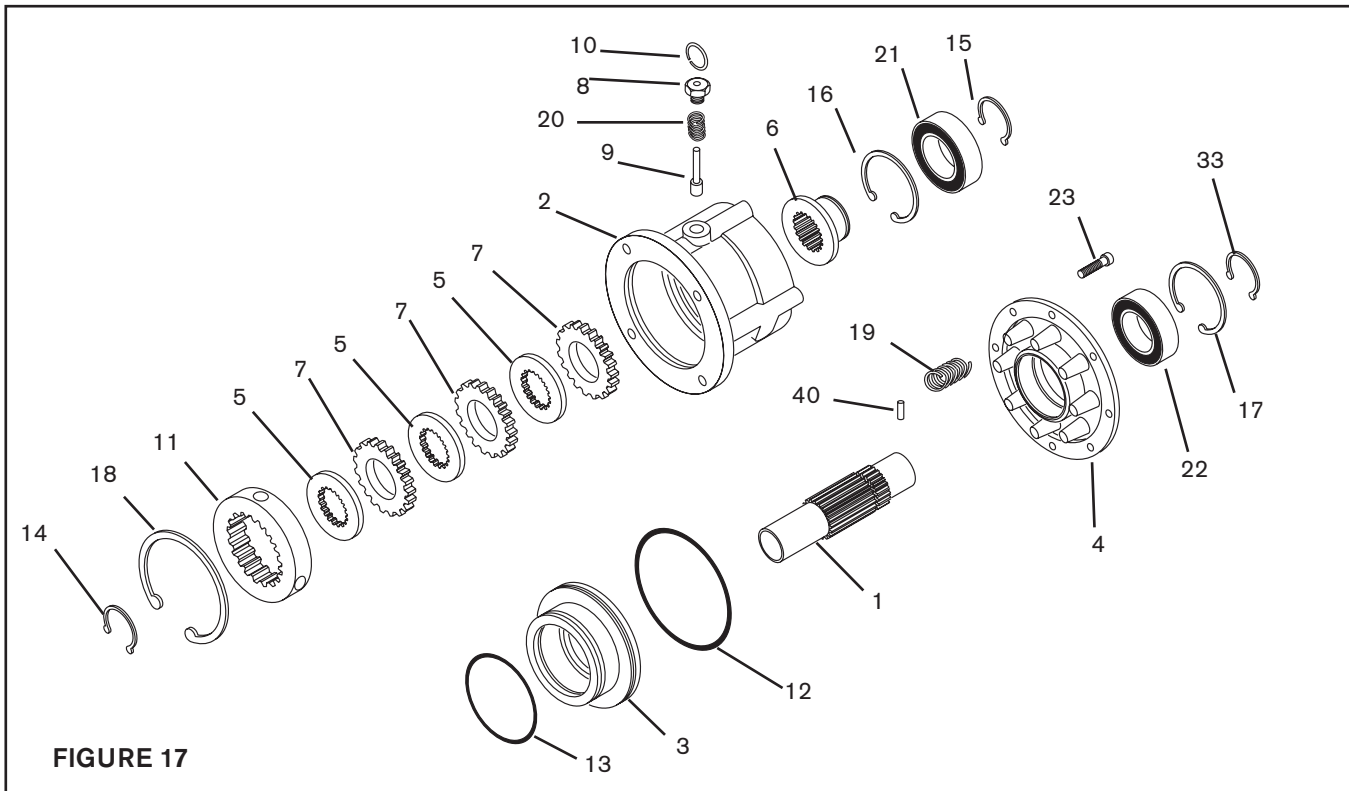
FIGURE 16

ITEM	DESCRIPTION	QTY
1	Hub	1
2	Air Chamber Housing	1
3	Piston	1
4	Spring Housing	1
5	Friction Plate	1
6	Friction Disc	1
7 <sup>1</sup>	Friction Facing	1
8	Locking Pin Retainer	1
9	Locking Pin	1
10	Locking Pin Handle	1
11	Splined Sleeve	1
12 <sup>1</sup>	O-Ring Seal (Large)	1
13 <sup>1</sup>	O-Ring Seal (Small)	1
14	Retaining Ring	2
15	Retaining Ring	1
16	Retaining Ring	1

ITEM	DESCRIPTION	QTY
17	Retaining Ring	1
18	Retaining Ring	1
19 <sup>1</sup>	Engagement Spring	8
20	Locking Pin Spring	1
21 <sup>1</sup>	Bearing	1
22 <sup>1</sup>	Bearing	1
23	Cap Screws	4
24	Lockwashers	4
25	Plug (Not Shown)	1
26	Hose Assembly (Not Shown)	1
27	Hub Key (Not Shown)	1
28	Cap Screws (Not Shown)	4
29	Lockwashers (Not Shown)	4
30	Spring Pin	1
31	Restrictor Valve (Optional, Not Shown)	1
32	Air House Coupling (Not Shown)	1

<sup>1</sup> Denotes Repair Kit Items

**PARTS LIST / SE-500-1 AND SE-1000-1**



**FIGURE 17**

ITEM	DESCRIPTION	QTY
1	Hub	1
2	Air Chamber Housing	1
3	Piston	1
4	Spring Housing	1
5	Friction Plate	3
6	Friction Disc	1
7 <sup>1</sup>	Friction Facing	3
8	Locking Pin Retainer	1
9	Locking Pin	1
10	Locking Pin Handle	1
11	Splined Sleeve	1
12 <sup>1</sup>	O-Ring Seal (Large)	1
13 <sup>1</sup>	O-Ring Seal (Small)	1
14	Retaining Ring	1
15	Retaining Ring	1
16	Retaining Ring	1

ITEM	DESCRIPTION	QTY
17	Retaining Ring	1
18	Retaining Ring	1
19 <sup>1</sup>	Engagement Spring	8
20	Locking Pin Spring	1
21 <sup>1</sup>	Bearing	1
22 <sup>1</sup>	Bearing	1
23	Cap Screws	4
24	Lockwashers	4
33	Retaining Ring	1
35	Plug (Not Shown)	1
36	Hose Assembly (Not Shown)	1
37	Hub Key (Not Shown)	1
38	Cap Screws (Not Shown)	4
39	Lockwashers (Not Shown)	4
40	Spring Pin	1
41	Restrictor Valve (Optional, Not Shown)	1

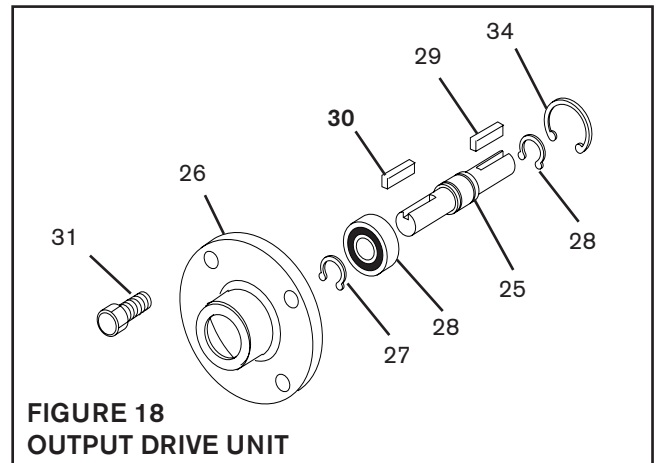
<sup>1</sup> Denotes Repair Kit Items

## PARTS LIST / OUTPUT DRIVE UNIT

### OUTPUT DRIVE UNIT

ITEM	DESCRIPTION	QTY
25	Shaft	1
26	Bearing Flange	1
27	Bearing	1
28	Retaining Ring	2
29	Key	2**
30	Key	**
31	Cap Screw	4
32	Lockwasher (Not Shown)	4
34	Retaining Ring	1

\*\* Qty.1 / SE-100-1 and SE-200-1



## REPAIR KITS & ACCESSORIES

REPAIR KITS	
MODEL	PRODUCT NUMBER
SE-100-1	808400
SE-200-1	808500
SE-500-1	812700
SE-1000-1	812800

ACCESSORIES		
MODEL	DESCRIPTION	PRODUCT NUMBER
SE-100 SE-200 SE-500 SE-1000	Output Unit	932600 932700 933000 933000 933100
SE-100 SE-200 SE-500 SE-1000	Adaptor Shaft	805700 805800 812500 812600
SE-100 & SE-200 SE-500 & SE-1000	Torque Arm	932900 933200
SE-100 & SE-200	'L' Mounting	883000

## 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.

**nexen**<sup>®</sup>

Nexen Group, Inc.  
560 Oak Grove Parkway  
Vadnais Heights, MN 55127

800.843.7445  
Fax: 651.286.1099  
www.nexengroup.com

ISO 9001 Certified