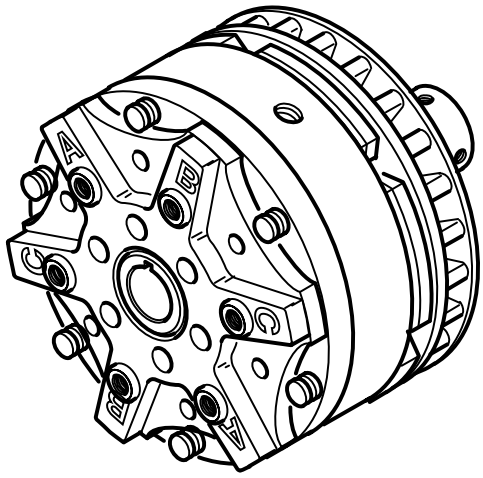
FORM NO. L-20300-B-1099

nexen™

"Web Controls"

TENSION CONTROL BRAKE
MODELS STB600 AND STB940
INSTALLATION, OPERATION, AND MAINTENANCE INSTRUCTIONS



Read this manual carefully, making full use of its explanations and instructions. The "Know How" of safe, continuous, trouble-free operation depends on the degree of your understanding of the system and your willingness to keep all components in proper operating condition. Pay particular attention to all NOTES, CAUTIONS, and WARNINGS to avoid the risk of personal injury or property damage. It is important to understand that these NOTES, CAUTIONS, and WARNINGS are not exhaustive. Nexen cannot possibly know or evaluate all conceivable methods in which service may be performed, or the possible hazardous consequences of each method. Accordingly, anyone who uses a procedure that is not recommended by Nexen must first satisfy themselves that neither their safety or the safety of the product will be jeopardized by the service method selected.

CONTENTS

INSTALLATION

1. Insert the Nexen supplied Key (Item 30) into the shaft and slide the STB onto the shaft (See Figure 1).

2. Install and tighten the two Nexen supplied Set Screws (Item 29) (See Figure 1).

NOTE

Two 3/8-16 tapped holes at 180° are provided in the Piston Guide for securing the STB to the machine frame (See Figure 1).

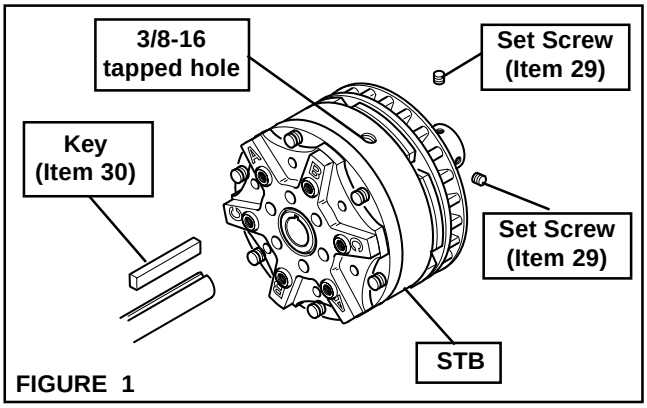


FIGURE 1

RING GUARD INSTALLATION

1. Align the mounting holes of the Ring Guard with the six tapped holes on the STB Mounting Flange (See Figure 2).

2. Using the six .190-24 X 3/8 Phillips Head Pan Screws, Washers, and Internal Tooth Lock Washers, secure the Ring Guard to the STB (See Figure 2).

3. Place the End Cap onto the Ring Guard and secure it in place by bending its tabs around the Ring Guard (See Figure 2).

4. Route air lines through fitting on top of guard.

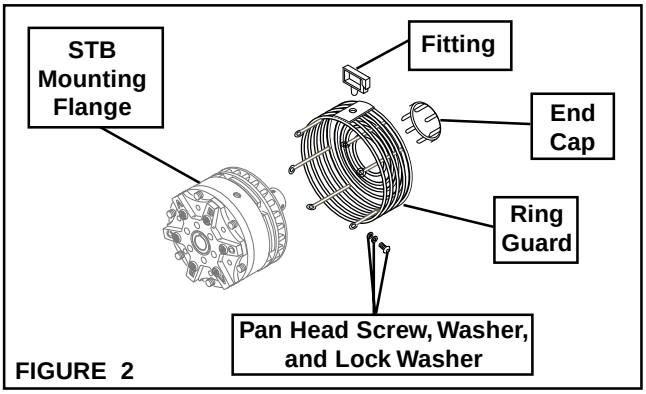


FIGURE 2

AIR LINE CONNECTIONS

The Nexen STB has six air ports. All six air ports accept 1/8" NPT fittings. Air line connections can be made in two ways.

The first method requires three air sources and allows the operator to interrupt or supply air to any combination of the three pairs of ports. The three pairs of ports supply pressure to three different sized pistons. Each port is labeled "A," "B," or "C." The two "A" ports supply the smallest pistons. The two "B" ports supply the intermediate sized pistons. The two "C" ports supply the largest pistons. The torque output is related to a change in air pressure and the number and size of the pistons used (See Figure 3).

NOTE

Only <u>pairs</u> of pistons A, B, or C should be used. Do not use only <u>one</u> port.

The second method is to plumb all six ports together so they are supplied by one source. This method relates the change in torque performance to change in air pressure only (See Figure 4).

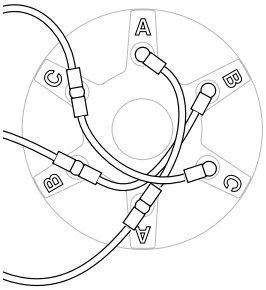


FIGURE 3
THREE SOURCE PLUMBING

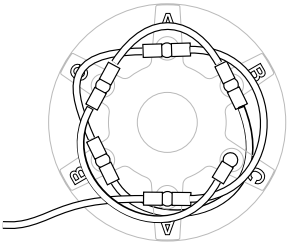


FIGURE 4
ONE SOURCE PLUMBING

TROUBLESHOOTING

SYMPTOM	PROBABLE CAUSE	SOLUTION
Failure to engage.	Air not getting to the STB.	Check for a control valve malfunction or low air pressure.
Failure to disengage.	Unexhausted air.	Check for a control valve malfunction.
Friction Facing squeal or chatter.	Air pressure too high.	Reduce the air pressure.
	Wrong Friction Facings for the application.	Replace the Friction Facing with correct facing for application.
Wobble or vibration.	Shaft misalignment.	Inspect the shaft and realign it if necessary.

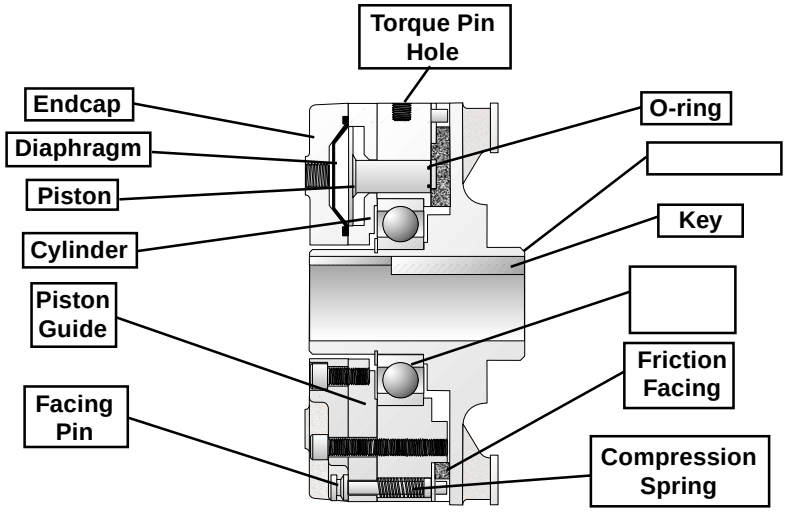


FIGURE 5

FRICTION FACING ASSEMBLY REPLACEMENT

1. Pull out on the Finger Nut (Item 32) of the Facing Pin (Item 7) to release the Friction Facing Assembly (Item 4) (See Figure 6).

2. Slide the old Friction Facing Assembly (Item 4) out of the STB (See Figure 6).

3. Slide a new Friction Facing Assembly (Item 4) into the STB (See Figure 6).

4. Release the Finger Nut (Item 32) allowing the Facing Pin (Item 7) to lock the new Friction Facing Assembly (Item 4) in place (See Figure 6).

5. Repeat Steps **1**-**4** until all six of the Friction Facing Assemblies (Item 4) have been replaced.

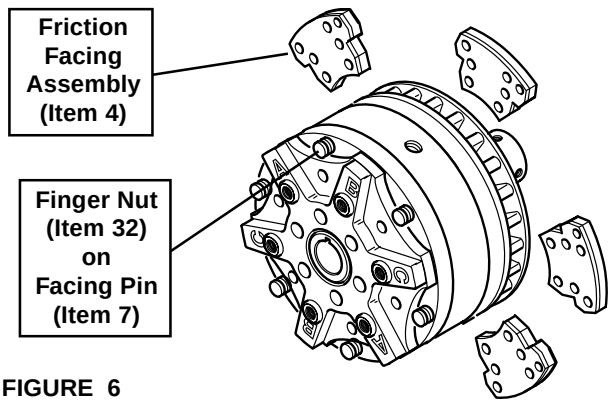


FIGURE 6

PARTS REPLACEMENT

1. Pull out on the Finger Nut (Item 32) of the Facing Pin (Item 7) to release the Friction Facing Assembly (Item 4) (See Figure 7).

2. Slide the old Friction Facing Assembly (Item 4) out of the STB (See Figure 7).

3. Repeat Steps **1** and **2** until all six of the Friction Facing Assemblies (Item 4) have been removed.

4. Remove the six Socket Head Cap Screws (Item 25) (See Figure 8).

5. Remove the Endcap (Item 3) and Cylinder (Item 1) (See Figure 8).

6. Remove the six Socket Head Cap Screws (Item 26); then, separate the Cylinder (Item 1) from the Endcap (Item 3) (See Figure 9).

NOTE

There are three sizes of Diaphragms (See Table 1). When replacing the six Diaphragms, make sure the correct size Diaphragm is used for each Diaphragm location (See Figure 9).

7. Remove the six old Diaphragms (Items 12, 13, and 14) from the Endcap (Item 3) (See Figure 9).

8. Remove the six old O-rings (Item 31) from the ends of the Pistons (Items 8, 9, and 10) (See Figure 9).

9. Remove the six Finger Nuts (Item 32) from the six Facing Pins (Item 7) by gently holding the Facing Pin with a pair of pliers: then, slide the Facing Pins and six Compression Springs (Item 19) out of the Cylinder (Item 1) (See Figure 9).

10. Replace the six old Compression Springs (Item 19) with six new Compression Springs; then, slide the six Facing Pins (Item 7) and new Compression Springs back into the Cylinder (Item 1) (See Figure 9).

11. Apply a drop of Loctite® 242 to the threads of the six Facing Pins (Item 7); then, gently screw the six Finger Nuts onto the six Facing Pins while holding the Facing Pin with a pair of pliers, securing the six Facing Pins and new Compression Springs (Item 19) into the Cylinder (Item 1) (See Figure 9).

12. Install the six new Diaphragms (Items 12, 13, and 14) into their respective locations in the Endcap (Item 3) (See Figure 9).

13. Match the Pistons (Items 8, 9, and 10) in the Cylinder (Item 1) with the Diaphragms (Items 12, 13, and 14) in the Endcap (Item 3) (See Figure 9).

14. Install new O-rings (Item 31) onto the ends of the Pistons (Items 8, 9, and 10) (See Figure 9).

15. Apply a drop of Loctite® 242 to the threads of the six Socket Head Cap Screws (Item 26) and secure the Endcap (Item 3) to the Cylinder (Item 1) (See Figure 10).

16. Alternately and evenly tighten the six Socket Head Cap Screws (Item 26) to the recommended torque (See Table 2).

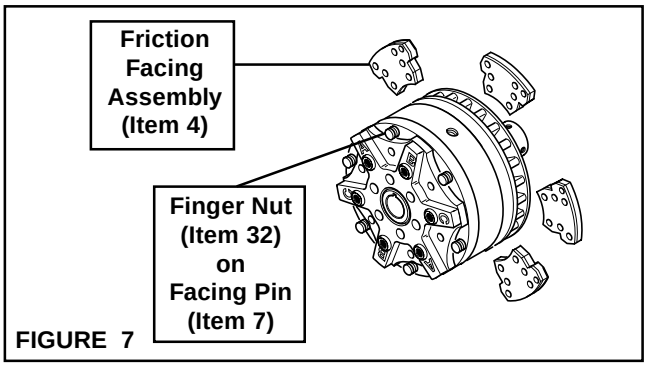


FIGURE 7

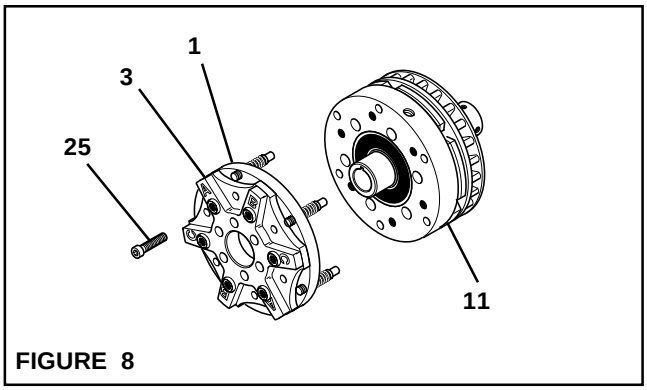


FIGURE 8

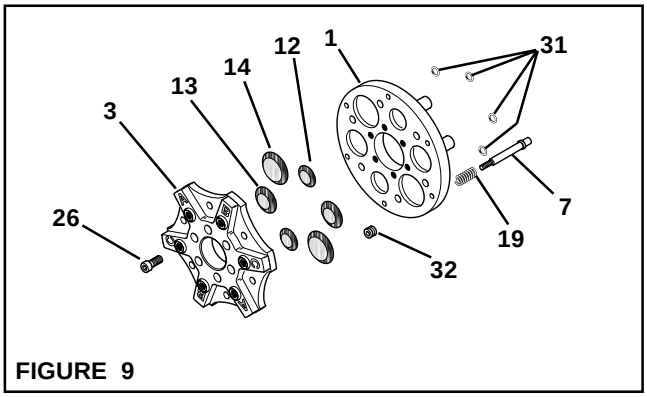


FIGURE 9

DIAPHRAGM O.D.	ITEM 12	ITEM 13	ITEM 14
STB 600	1.25 In. [31.75 mm]	1.50 In. [38.10 mm]	1.75 In. [44.45 mm]
STB940	2.25 In. [57.15 mm]	2.50 In. [63.50 mm]	2.75 In. [69.85 mm]

TABLE 1

MODEL	RECOMMENDED TORQUE SOCKET HEAD CAP SCREWS (ITEM 26)
STB600	45 In. Lbs. [5.1 N m]
STB940	143 In. Lbs. [16.2 N m]

TABLE 2

WARNING

Special attention should be exercised when working with retaining rings. Always wear safety goggles when working with spring or tension loaded fasteners or devices.

17. Remove the Retaining Ring (Item 21) (See Figure 10).

18. Press the Piston Guide (Item 11) and Ball Bearing (Item 22) off the Hub/Rotor (Item 5) (See Figure 10).

19. Press the old Ball Bearing (Item 22) out of the Piston Guide (Item 11) (See Figure 10).

20. Clean the bearing bore of the Piston Guide (Item 11) with fresh solvent, making sure all old Loctite® residue is removed.

21. Apply an adequate amount of Loctite® 680 to evenly coat the outer race of the new Ball Bearing (Item 22).

22. Align the outer race of the new Ball Bearing (Item 22) with the bearing bore of the Piston Guide (Item 11); then, press the new Ball Bearing (Item 22) into place (See Figure 10).

23. Support the inner race of the new Ball Bearing (Item 22); then, press the Hub/Rotor (Item 5) into the new Ball Bearing (Item 22) and Piston Guide (Item 11) (See Figure 10).

24. Reinstall the Retaining Ring (Item 21) (See Figure 10).

25. Slide the Endcap (Item 3) and Cylinder (Item 1) onto the Hub/Rotor (Item 5) and Piston Guide (Item 11) (See Figure 11).

26. Apply a drop of Loctite® 242 to the threads of the six Socket Head Cap Screws (Item 25) and secure the Endcap (Item 3) and Cylinder (Item 1) to the Piston Guide (Item 11) (See Figure 11).

27. Alternately and evenly tighten the six Socket Head Cap Screws (Item 25) to the recommended torque (See Table 3).

28. Pull out the Finger Nut (Item 32) of the Facing Pin (Item 7) and slide a new Friction Facing Assembly (Item 4) into the STB (See Figure 12).

29. Release the Finger Nut (Item 32) allowing the Facing Pin (Item 7) to lock the new Friction Facing Assembly (Item 4) into place (See Figure 12).

30. Repeat Steps **28** and **29** until all six of the Friction Facing Assemblies (Item 4) have been reinstalled.

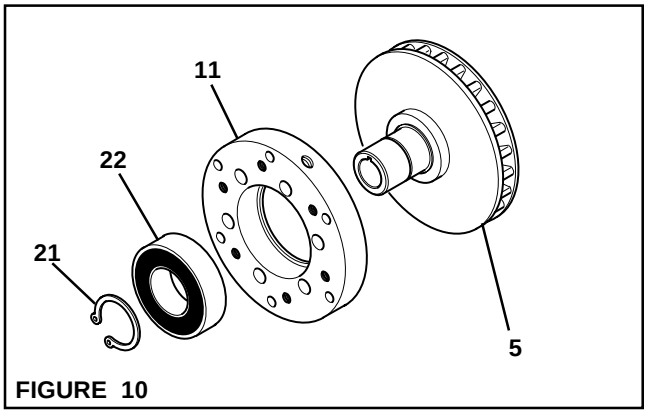


FIGURE 10

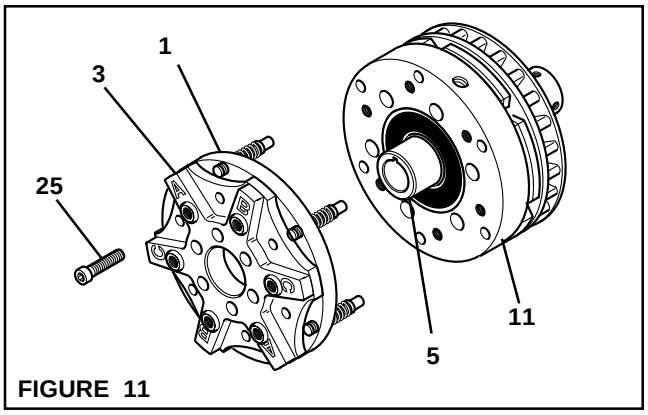


FIGURE 11

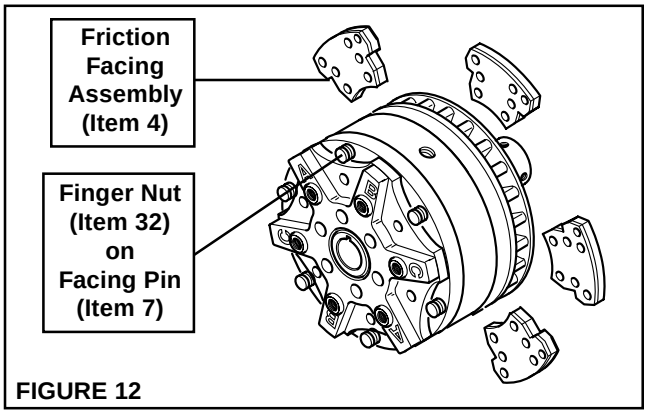


FIGURE 12

MODEL	RECOMMENDED TORQUE SOCKET HEAD CAP SCREWS (ITEM 26)
STB600	45 In. Lbs. [5.1 N m]
STB940	143 In. Lbs. [16.2 N m]

TABLE 3

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.

ACCESSORIES

RING GUARDS

MODEL	PRODUCT NO.
STB600	927206
STB940	927210

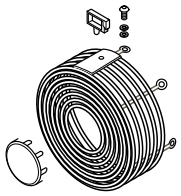


FIGURE 13
RING GUARD

PARTS LIST

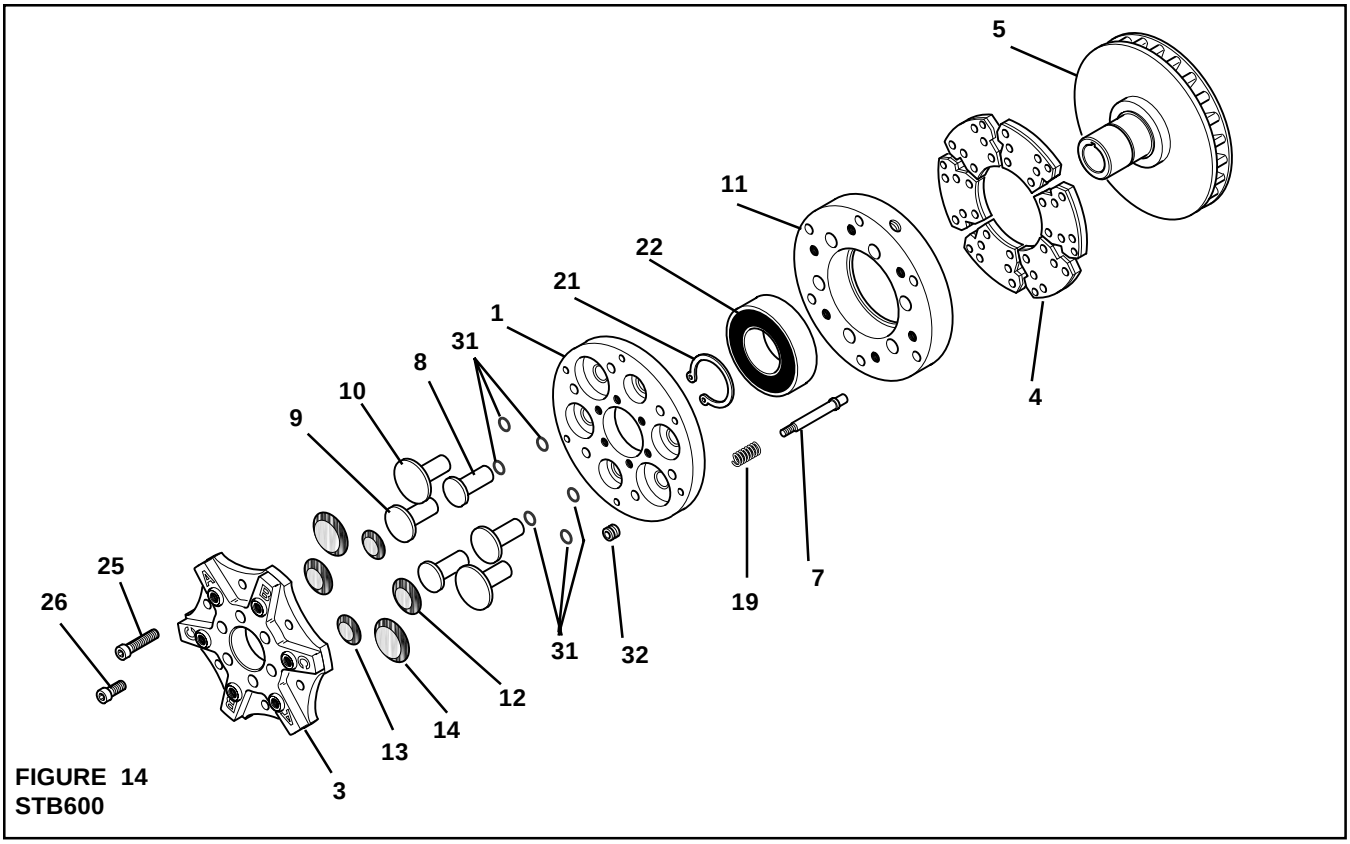


FIGURE 14
STB600

ITEM	DESCRIPTION	QTY
1	Cylinder	1
3	Endcap	1
4[1,2]	Friction Facing Assembly	6
5	Hub/Rotor	1
7	Facing Pin	6
8	Piston (1.00" O.D.)	2
9	Piston (1.25" O.D.)	2
10	Piston (1.50" O.D.)	2
11	Piston Guide	1
12[1]	Diaphragm (1.25" O.D.)	2
13[1]	Diaphragm (1.50" O.D.)	2
14[1]	Diaphragm (1.75" O.D.)	2

ITEM	DESCRIPTION	QTY
19[1]	Compression Spring	6
21[1]	Retaining Ring (Ext.)	1
22[1]	Ball Bearing	1
25	Socket Head Cap Screw	6
26	Socket Head Cap Screw	6
29	Set Screw (Not Shown)	2
30	Key (Not Shown)	1
31[1]	O-ring	6
32	Finger Nut	6
36	Air Line (Not Shown)	--
37	Elbow Fitting (Not Shown)	3
38	Tee Fitting (Not Shown)	5

[1] Denotes Rebuild Kit item.
STB600 Rebuild Kit No. 927204.

[2] Denotes Facing Kit item.
STB600 Facing Kit No. 927205.

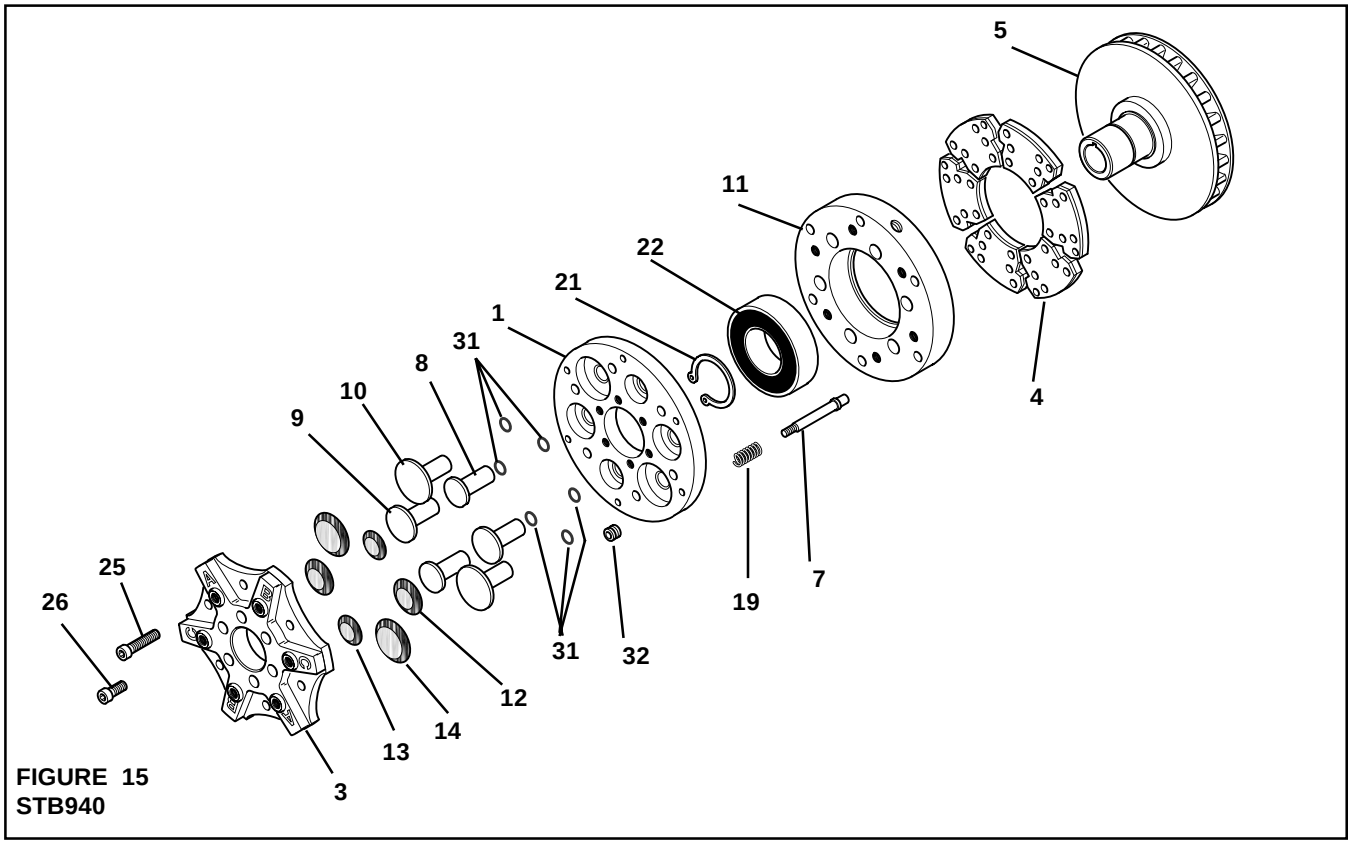


FIGURE 15
STB940

ITEM	DESCRIPTION	QTY
1	Cylinder	1
3	Endcap	1
4[1,2]	Friction Facing Assembly	6
5	Hub/Rotor	1
7	Facing Pin	6
8	Piston (2.00" O.D.)	2
9	Piston (2.25" O.D.)	2
10	Piston (2.50" O.D.)	2
11	Piston Guide	1
12[1]	Diaphragm (2.25" O.D.)	2
13[1]	Diaphragm (2.50" O.D.)	2
14[1]	Diaphragm (2.75" O.D.)	2

[1] Denotes Rebuild Kit item.
STB940 Rebuild Kit No. 927208.

ITEM	DESCRIPTION	QTY
19[1]	Compression Spring	6
21[1]	Retaining Ring (Ext.)	1
22[1]	Ball Bearing	1
25	Socket Head Cap Screw	6
26	Socket Head Cap Screw	6
29	Set Screw (Not Shown)	2
30	Key (Not Shown)	1
31[1]	O-ring	6
32	Finger Nut	6
36	Air Line (Not Shown)	--
37	Elbow Fitting (Not Shown)	3
38	Tee Fitting (Not Shown)	5

[2] Denotes Facing Kit item.
STB940 Facing Kit No. 927209.

WARRANTY

Nexen Group, Inc. (Nexen) warrants its product(s) [the Product(s)] will be free from defects in materials and workmanship under normal use and service conditions for a period of 12 months from the date of shipment. NO OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED, OR STATUTORY, INCLUDING WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY, OR OF FITNESS FOR A PARTICULAR PURPOSE, ARE GIVEN, AND ALL SUCH OTHER WARRANTIES ARE HEREBY EXPRESSLY DISCLAIMED.

Conditions
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) the claimant has complied with the warranty claim procedures set out below in Warranty Claim Procedures.

Exclusive Remedy
The sole and exclusive remedy for a breach of this warrant shall be, at Nexen's sole election, repair or replacement with new, serviceably used or reconditioned Product, or issuance of a credit in the amount of the current Nexen discounted price for the Product.

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 Nexen and deliver the Product to Nexen within one year of the date on which the alleged defect first became apparent.

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