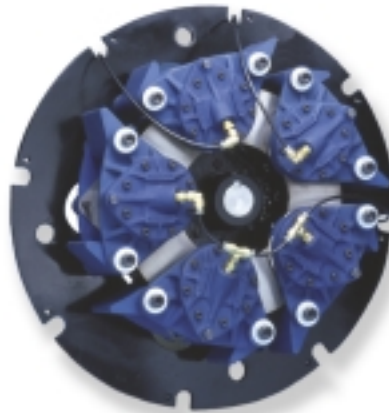




“Web Controls”

SINGLE AND DUAL ROTOR TENSION CONTROL BRAKES MODELS: XTB-10, XTB-12, XTB-14, XTB-18, AND XTB-22 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.

CAUTION

This unit has rotating parts. Per OSHA regulations, Nexen recommends using a guard that will not restrict the flow of cooling air around the unit. Contact your local Nexen Distributor for information about guards designed for Nexen brakes.

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INSTALLATION

MACHINE PREPARATION

- Using the machine shaft as a center point, scribe a bolt circle on the machine surface (See Figure 1).
- Drill four holes spaced as shown (See Figure 1).

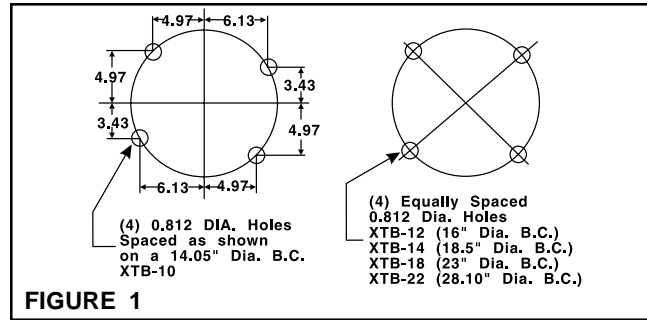


FIGURE 1

MOUNTING PLATE

- Thread one Hex. Head Jam Nut (Item 9) part way onto one end of each Mounting Stud Standoff (Item 8) (See Figure 2).
- Insert the Mounting Stud Standoffs with Hex. Head Jam Nuts into the holes drilled into the machine surface (See Figure 2).
- From the back side of the machine surface, install the second set of Hex. Head Jam Nuts onto the Mounting Stud Standoffs (See Figure 2).
- Tighten the Hex. Head Jam Nuts to 131 Ft. Lbs. [178 N•m] torque.

NOTE

Do not tighten the Hex. Head Jam Nuts (Item 9) installed in Steps 5 and 7.

- Thread a third Hex. Head Jam Nut onto each Mounting Stud Standoff (See Figure 2).
- Slide the Mounting Ring (Item 7) onto the Mounting Stud Standoffs (See Figure 2).
- Thread the fourth Hex. Head Jam Nut onto each Mounting Stud Standoff to hold the Mounting Ring in place (See Figure 2).

NOTE

The Mounting Ring must be perpendicular to the brake shaft.

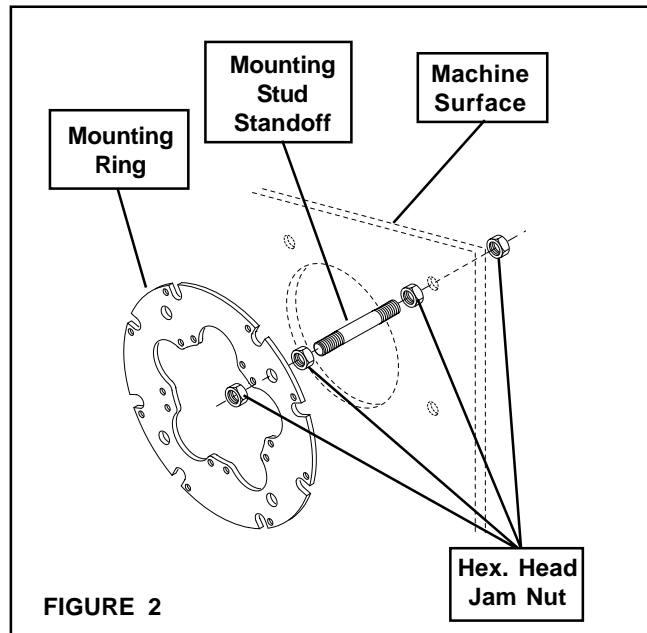


FIGURE 2

ROTOR

- Insert the Key (Item 6) into the machine shaft (See Figure 3).

NOTE

The Rotor(s) and Hub are available in both clockwise and counterclockwise rotation. The direction of rotation is stamped into the Rotor. Make sure rotational direction is correct for the application.

- Slide the Rotor(s) and Hub (Item 2) onto the machine shaft and Key (See Figure 3).

NOTE

Do not tighten the Set Screws at this time.

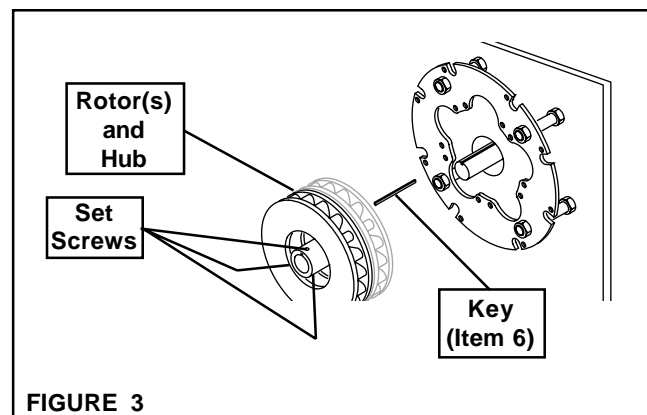


FIGURE 3

CALIPER

- Slide one Caliper Assembly over the Rotor and Hub (See Figure 4).

NOTE

For best thermal dissipation, align the Caliper Assembly as shown in relation to the direction of Rotor rotation. Direction of Rotor rotation is stamped in the Rotor (See Figure 5).

NOTE

Remove and discard the two Hex. Nuts used to hold the Caliper Assembly together during shipping.

- Using Socket Head Cap Screws, Flat Washers, and Lock Washers, secure the Caliper Assembly to the Mounting Ring (See Figure 4).
- Tighten the Socket Head Cap Screws (See Figure 4).

NOTE

On Models XTB-10, 12, 14, and 18, tighten the Socket Head Cap Screws to 45 Ft. Lbs. [61 N•m] torque.

On Model XTB-22, tighten the Socket Head Cap Screws to 110 Ft. Lbs. [149 N•m] torque.

- Repeat Steps 1-3 to install the remaining Caliper Assemblies.
- Slide the Rotor and Hub on the machine shaft until it is snug against the Caliper Assemblies.
- Tighten Set Screws (See Figure 4).
- Align the Mounting Ring and Calipers to the Rotor(s) and Hub Assembly by adjusting the Nuts until a 1/16-3/32" spacer can be inserted between the tabs on the Caliper and Rotor (See Figure 6 for Single Rotor and Figure 7 for Dual Rotor alignment procedures).
- Tighten the Hex. Head Jam Nuts to 131 Ft. Lbs. [178 N•m] torque.

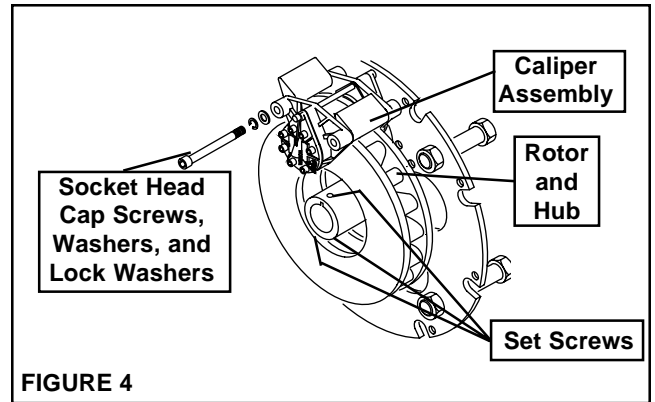


FIGURE 4

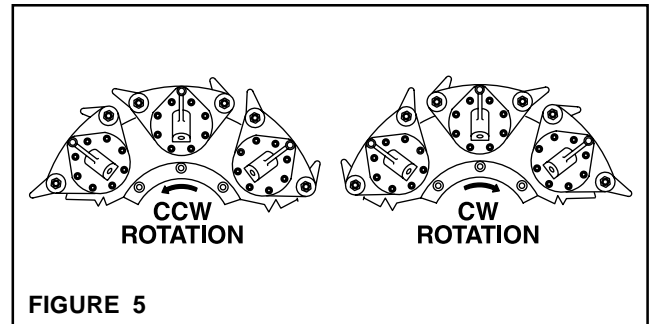


FIGURE 5

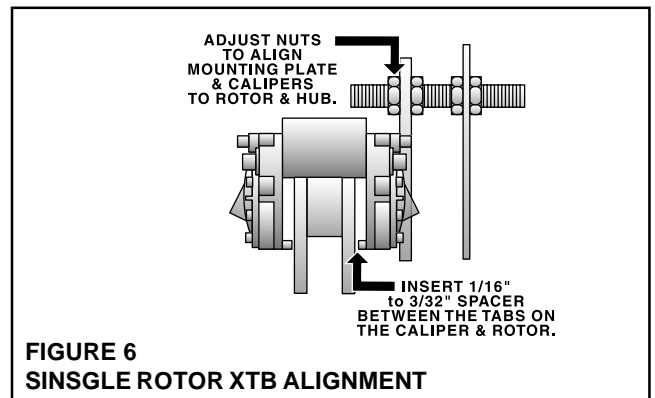


FIGURE 6
SINGLE ROTOR XTB ALIGNMENT

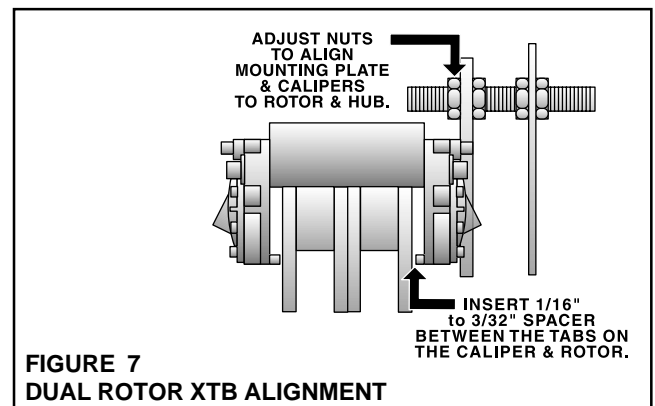


FIGURE 7
DUAL ROTOR XTB ALIGNMENT

FRICITION FACING

NOTE

STD Friction Facings have a red stripe and LOCO Friction Facings have a green stripe.

1. Pull out the Shoe Retaining Pin (See Figure 8).
2. Slide the Friction Facings into the space between the Caliper and Rotor until the cutout on each Friction Facing is against the lug on the Caliper (See Figure 8).
3. Secure the Friction Facings by sliding the Shoe Retaining Pin back into the Caliper and through the holes in the Friction Facings.
4. Repeat Steps 1-3 to install all Friction Facings.

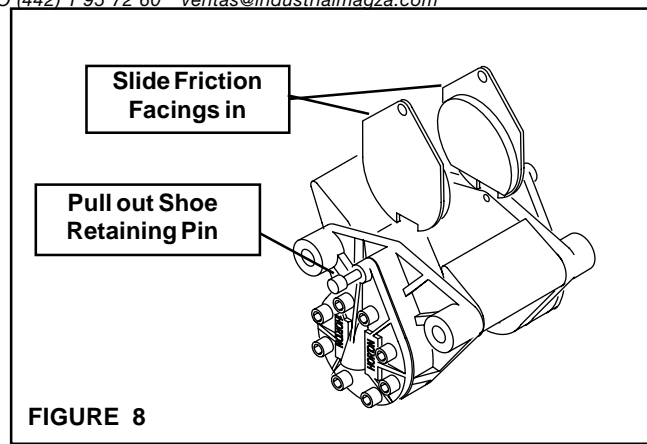


FIGURE 8

AIR LINE CONNECTIONS

A length of 5/32" [4 mm] O.D. nylon air line for connections between Caliper Assemblies and Air Controls is supplied (See Table 1 for Tubing Specifications). Each Caliper comes with one Elbow fitting, two Tee fittings, and a 13-1/2" [342.9 mm] nylon air line.

O.D.	I.D.	MINIMUM BEND RADIUS	BURST PRESSURE	MATERIAL
0.15-60	0.106	3/4"	1000 PSI @ 75 Deg. F.	NYLON - 11

TABLE 1

NOTE

Use the length of air line supplied to make the connections between Calipers.

The Elbows and Tees are push-lock fittings. To install the air line, simply push the air line into the fitting until it stops. To disconnect, push in on the fitting collar and pull the air line out (See Figure 9).

There are a variety of plumbing options with the multi-caliper XTB Brake. Figures 10 through 13 show typical air line connections.

NOTE

Not all the fittings are used for making Caliper connections. Save the extra fittings for use as replacement parts.

The Four Stage Caliper Manifold (Product No. 835134) directs air pressure to three separate sets of calipers connected as a single pair or series, providing three torque ranges with just one brake for handling a variety of web materials. It consists of a 3-Way, ON/OFF Toggle switch and three other Toggle switches allowing the user to select caliper operating stages and vary torque output (See Figures 10-13).

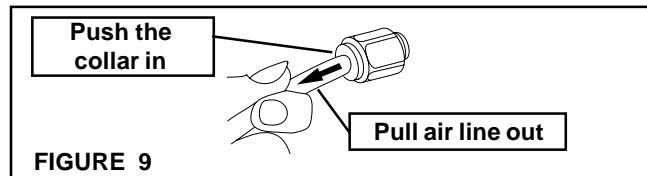


FIGURE 9

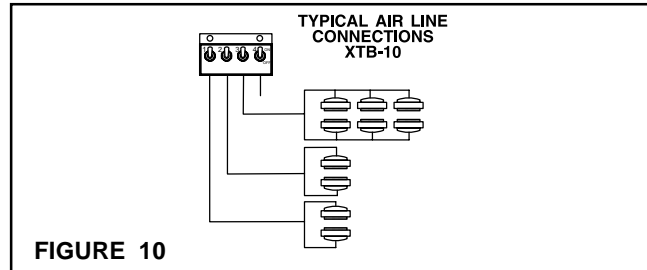


FIGURE 10

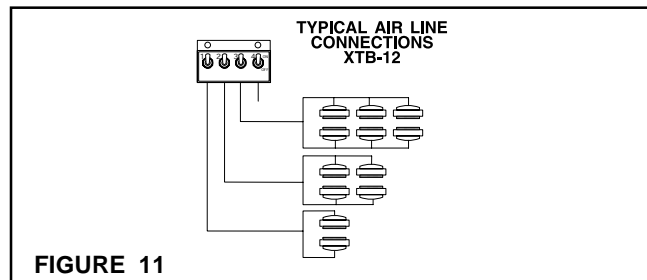


FIGURE 11

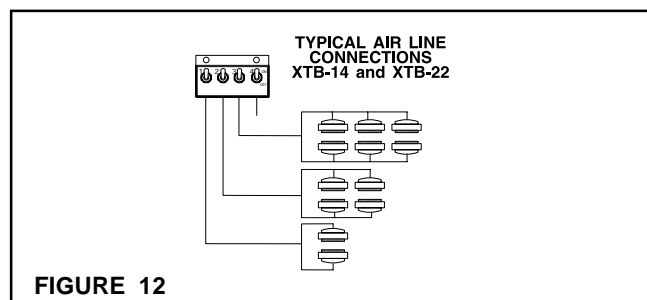


FIGURE 12

Any number of Calipers may be used in each stage. Actuating one switch, two switches, or all three switches will vary the torque output to meet a predetermined braking requirement.

WARNING

After making the air line connections, install a Ring Guard. Failure to install a Ring Guard may result in personal injury when the XTB Caliper Brake is in use.

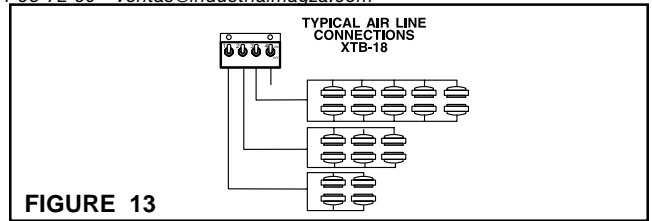


FIGURE 13

RING GUARD INSTALLATION

NOTE

OSHA requires the use of a brake guard with the XTB Brake. Nexen recommends the use of a Ring Guard or equivalent with all XTB brakes. See Page 10 for Ring Guard product numbers.

- Slide the Ring Guard over the XTB Caliper Brake Assembly by aligning the Ring Guard attachment hook ends with the notches in the XTB Mounting Ring; then, turn the Ring Guard to the closest attachment hole (See Figure 14).
- Secure the Ring Guard to the Mounting Ring of the XTB Caliper Brake Assembly using the eight Socket Head Cap Screws, Lock Washers, and Flat Washers provided with the Ring Guard (See Figure 14).
- If the Ring Guard is shipped with an End Cap, slide the End Cap onto the Ring Guard; then, secure it in place by bending the tabs on the End Cap around the Ring Guard (See Figure 14).

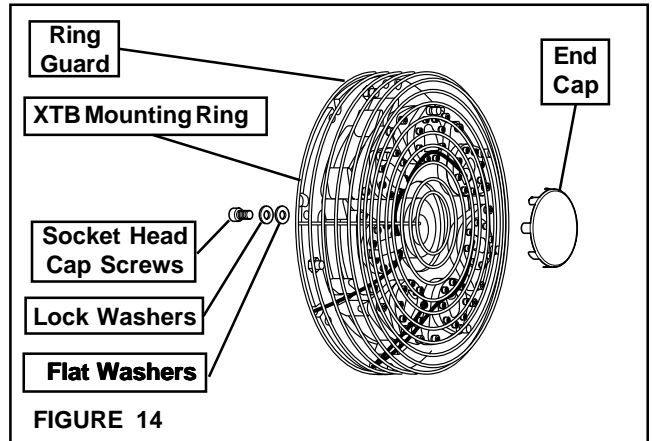


FIGURE 14

OPERATION

WARNING

Before placing the XTB Caliper Brake into service, check that all Fasteners have been tightened to the proper torque (See Table 2).

Always have the Ring Guard in place when operating the XTB Caliper Brake. Failure to do so may result in severe personal injury.

Never exceed maximum operating speeds (See Table 3).

To properly set the XTB Caliper Brake:

- Set all controls to **OFF**.
- Set the regulator to the desired air pressure.

TIGHTENING TORQUES			
MODEL	HEX. HEAD JAM NUTS (ITEM 9)	CALIPER SOCKET HEAD CAP SCREWS (ITEM 11)	ROTOR TO HUB SOCKET HEAD CAP SCREWS (ITEM 3)
XTB-10	131 Ft. Lbs. [178N•m]	30 Ft. Lbs. [40.7 N•m]	12 Ft. Lbs. [16.3 N•m]
XTB-12	131 Ft. Lbs. [178 N•m]	30 Ft. Lbs. [40.7 N•m]	45 Ft. Lbs. [61 N•m]
XTB-14	131 Ft. Lbs. [178 N•m]	30 Ft. Lbs. [40.7 N•m]	45 Ft. Lbs. [61 N•m]
XTB-18	131 Ft. Lbs. [178 N•m]	30 Ft. Lbs. [40.7 N•m]	108 Ft. Lbs. [146 N•m]
XTB-22	131 Ft. Lbs. [178 N•m]	110 Ft. Lbs. [149 N•m]	108 Ft. Lbs. [146 N•m]

TABLE 2

3. Set the Control Toggle Switches (selected for the desired braking torque) to **ON**.
4. Set the Toggle Switch No. 4 to **ON** to start the Control System.

MAXIMUM OPERATING SPEEDS				
XTB-10	XTB-12	XTB-14	XTB-18	XTB-22
4,000 RPM	3,300 RPM	3,000 RPM	2,500 RPM	1,800 RPM

TABLE 3

LUBRICATION

The Caliper Diaphragms of the XTB Caliper Brake do not require lubrication. If an air line lubricator is used on the air line for the controls, the lubricant must be compatible with the

Caliper Diaphragm material. Contact Nexen for information regarding compatible lubricants.

MAINTENANCE

WARNING

During normal operation, XTB Caliper Brake components may become hot enough to create a burn hazard. Before performing maintenance, allow the XTB Caliper Brake to cool or use protective gear to prevent burns when handling the unit.

Inspect all Fasteners on a routine basis to make sure they are tightened to the recommended torque (See Table 2, Page 5).

Inspect the Friction Facings and replace them when they are worn to approximately 5/32" [4 mm] thick.

TROUBLESHOOTING

SYMPTOM	PROBABLE CAUSE	SOLUTION
Failure to engage.	Air not getting to brake.	Check controls and replace if necessary.
	Low air pressure.	Check controls and air lines for restrictions and replace them if necessary.
	Control malfunction.	Replace control.
Failure to disengage.	Air not being exhausted.	Check controls and air lines for restrictions.
	Incorrect alignment of Caliper or Mounting Ring.	Review Caliper and Mounting Ring procedure (See INSTALLATION, CALIPER).
	Control malfunction.	Replace control.
Loss of torque.	Air leaks.	Check controls and air lines for leaks. Replace the air lines or controls if leaks exist.
	Friction Facings worn or contaminated.	Replace Friction Facings.
Friction Facing squeal or chatter.	Air pressure too high.	Reduce air pressure.
	Wrong Friction Facing for application.	Replace Friction Facings with correct Friction Facings for the application.

PARTS REPLACEMENT

FRICITION FACINGS

1. Stop the machine, shut off the air supply, and ensure safety lockouts are installed to prevent accidental machine start-up.
2. Remove the Ring Guard.
3. Pull out the Shoe Retaining Pin (See Figure 15).
4. Slide the old Friction Facings out of the Caliper (See Figure 15).
5. Slide two new Friction Facings into the space between the Caliper and Rotor until the cutout on the Friction Facings are against the lugs on the Caliper (See Figure 15).
6. Secure the new Friction Facings by sliding the Shoe Retaining Pin back into the Caliper and through the holes in the Friction Facings.
7. Repeat Steps 1 -5 until all the facings have been replaced.
8. Reinstall the Ring Guard (See **RING GUARD INSTALLATION**).

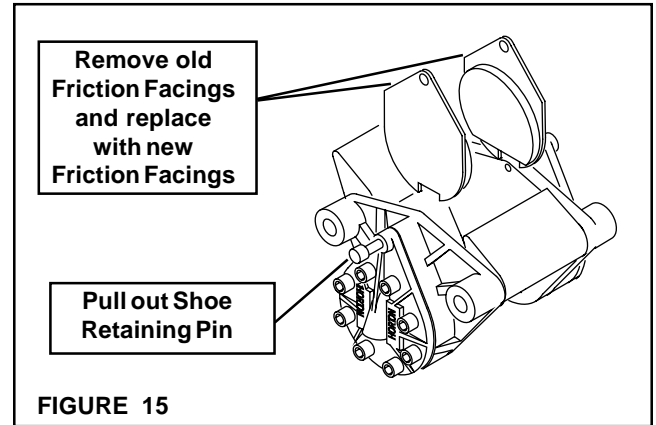


FIGURE 15

DIAPHRAGM

1. Stop the machine, shut off the air supply, and ensure safety lockouts are installed to prevent accidental machine start-up.
2. Remove the Ring Guard.
3. Remove the Friction Facings (See **PARTS REPLACEMENT—FRICITION FACINGS**).
4. Disconnect the air lines from the Caliper by pushing in on collar of the fitting; then, pull the air line out of the fitting (See Figure 16).

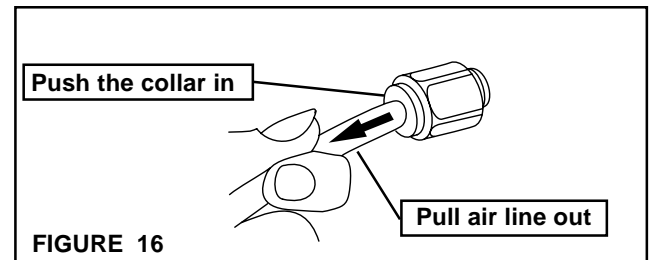


FIGURE 16

NOTE
 Mark the orientation of the Caliper Spacers (Item 9) in relation to the Caliper Housing (Item 1) to ensure correct orientation during reassembly (See Figure 18).

5. Remove the Caliper Assembly from the Mounting Ring (See Figure 17).
 - a. Remove the Socket Head Cap Screw securing the Caliper to the Mounting Ring (See Figure 17).
 - b. Slide the Caliper free of the Rotor and Mounting Ring (See Figure 17).
6. Remove the Socket Head Cap Screws securing the Caliper Cap to the Caliper Housing and remove the Caliper Cap (See Figure 18).
7. Remove the old Diaphragm and Piston (See Figure 18).
8. Remove the old Diaphragm from the Piston; then, slide the Piston back into the Caliper Housing (See Figure 18).

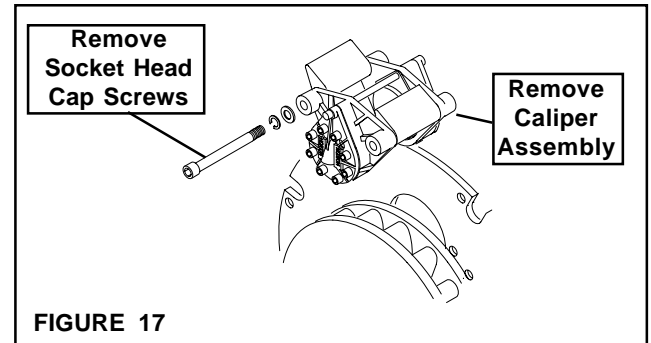


FIGURE 17

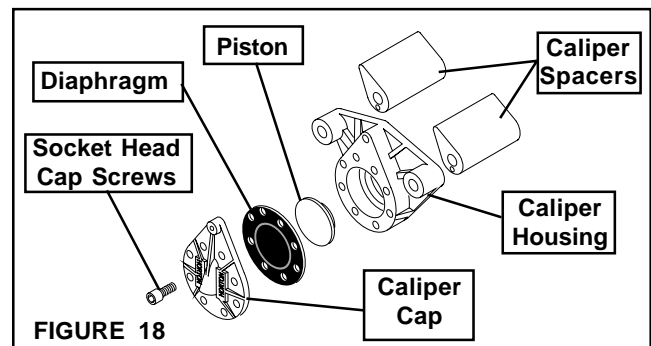


FIGURE 18

NOTE

The holes in the Diaphragm must be aligned with the holes in the Caliper Housing.

9. Place a new Diaphragm (dull side towards Caliper Housing) over the Piston and Caliper Housing (See Figure 18).
10. Place the Caliper Cap on the Caliper Assembly (See Figure 19).
11. Install and tighten the Socket Head Cap Screws to 1.75 Ft. Lbs. [2.4 N•m] torque.

12. Install the Caliper to the Mounting Ring (See **INSTALLATION—CALIPER**).

13. Install the Friction Facings (See **INSTALLATION—FRICTION FACINGS**).

14. Connect the air lines.

15. Reinstall the Ring Guard (See **RING GUARD INSTALLATION**).

ROTOR

1. Stop the machine, shut off the air supply, and ensure safety lockouts are installed to prevent accidental machine start-up.
2. Remove the Ring Guard (See **RING GUARD INSTALLATION**).
3. Remove Calipers (See **PARTS REPLACEMENT—DIAPHRAGM**, Steps 3 and 4).
4. Remove the Socket Head Cap Screws securing the Rotor(s) to the Hub (See Figure 20 for Single Rotor and Figure 21 for Dual Rotor).

NOTE

The Rotor(s) may be resurfaced. The minimum Rotor(s) thickness after resurfacing must be no less than 1.937" [49.2 mm] for XTB-10, XTB-12, XTB-14, XTB-18, and 2.925" [50.3 mm] for XTB-22.

5. Apply Loctite® 242 to the Socket Head Cap Screws to avoid loosening. Using the Socket Head Cap Screws, secure the new or resurfaced Rotor(s) to the Hub (See Figure 20 for Single Rotor and Figure 21 for Dual Rotor).
6. Tighten the Socket Head Cap Screws to the recommended torque (See Table 4).
7. Install the Rotor and Hub (See **INSTALLATION—ROTOR**).
8. Install the Calipers (See **INSTALLATION—CALIPER**).
9. Install the Friction Facings (See **INSTALLATION—FRICTION FACINGS**).
10. Install the Ring Guard (See **RING GUARD INSTALLATION**).

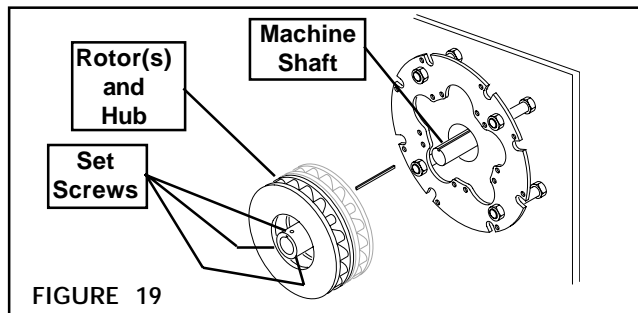


FIGURE 19

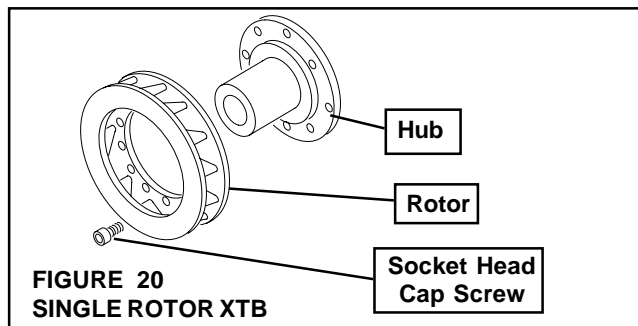


FIGURE 20
SINGLE ROTOR XTB

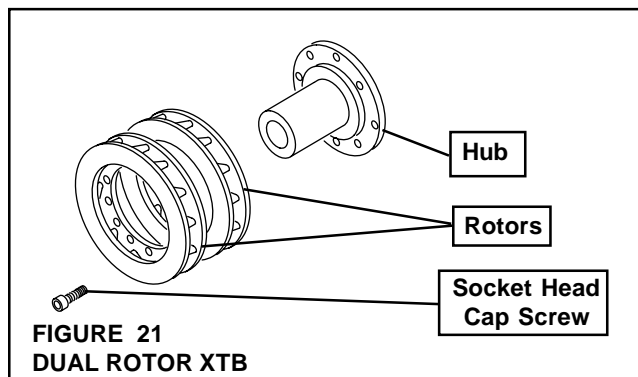


FIGURE 21
DUAL ROTOR XTB

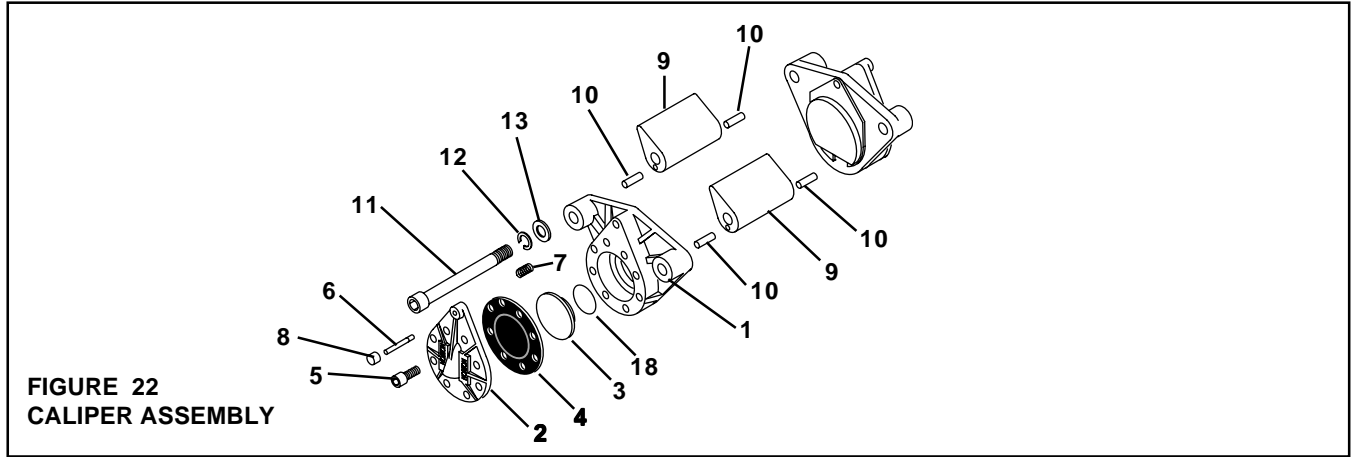
SOCKET HEAD CAP SCREW (ITEM 3) HUB TO ROTOR TIGHTENING TORQUES

XTB-10	XTB-12	XTB-14	XTB-18	XTB-22
12 Ft. Lbs. [16.3 N•m]	45 Ft. Lbs. [61 N•m]	45 Ft. Lbs. [61 N•m]	108 Ft. Lbs. [146 N•m]	108 Ft. Lbs. [146 N•m]

TABLE 4

PARTS LIST

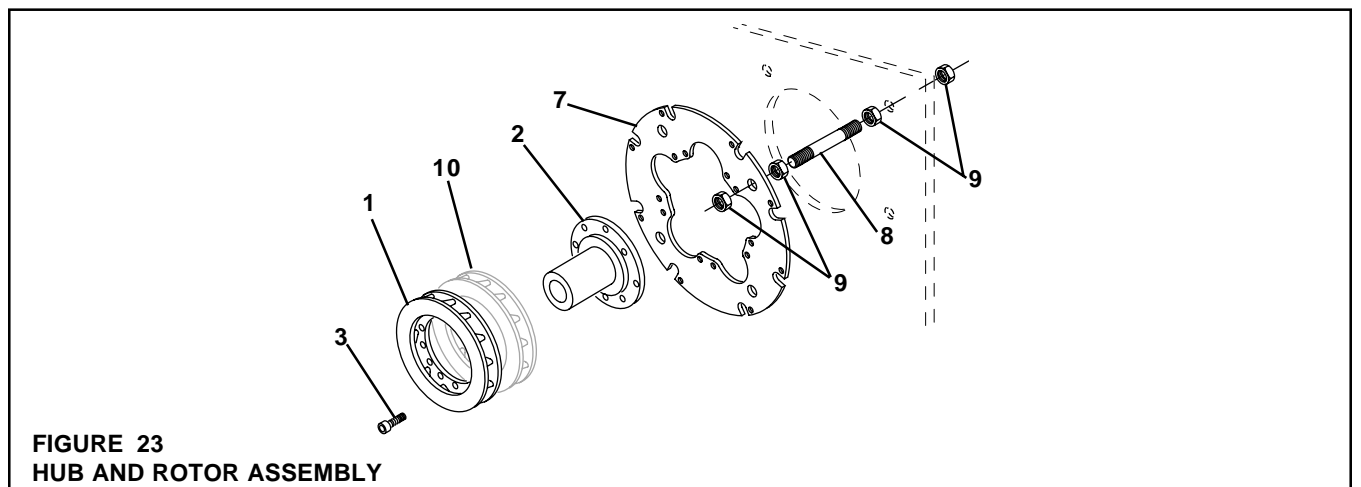
CALIPER ASSEMBLY



ITEM	DESCRIPTION	QTY
1	Caliper Housing	2
2	Caliper Cap	2
3	Piston	2
4	Diaphragm	2
5	Socket Head Cap Screw	16
6	Shoe Retaining Pin	2
7	Compression Spring	2
8	Retaining Pin Knob	2
9	Caliper Spacer	2

ITEM	DESCRIPTION	QTY
10	Spring Pin (Slotted)	4
11	Socket Head Cap Screw	2
12	Lock Washer	2
13	Flat Washer	2
14	Hex. Nut (Not Shown)	2
15	Elbow Fitting (Not Shown)	1
16	Tee Fitting (Not Shown)	2
17	Nylon Air Line (Not Shown)	--
18	O-Ring	2

MOUNTING PLATE AND ROTOR ASSEMBLY



ITEM	DESCRIPTION	QTY
1	Rotor	1
2	Hub	1
3	Socket Head Cap Screw	8
4	Set Screw (Not Shown)	1
5	Set Screw (Not Shown)	2

ITEM	DESCRIPTION	QTY
6	Key (Not Shown)	1
7	Mounting Ring	1
8	Mounting Stud Standoff	4
9	Hex Head Jam Nut	16
10 ¹	Rotor	1

¹ Item 10 is for Dual Rotor XTB only.

COMPONENT PRODUCT NUMBERS

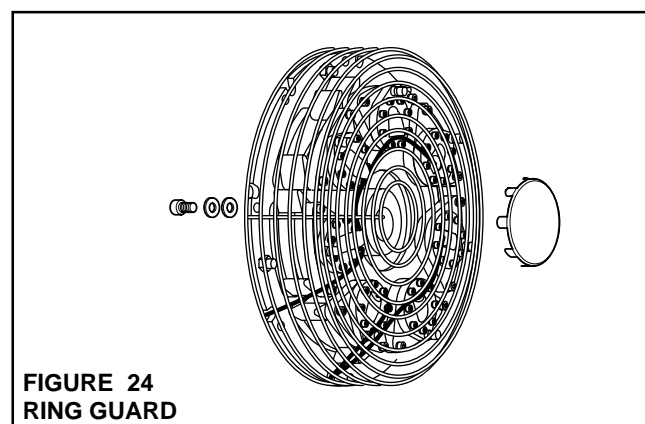
HUB AND ROTOR PRODUCT NUMBERS

SINGLE ROTOR XTB	CW ROTATION P/N	CCW ROTATION P/N
XTB-10 1-1/8" Hub Bore	835401	835402
XTB-10 1-3/8" Hub Bore	835403	835404
XTB-10 1-5/8" Hub Bore	835405	835406
XTB-12 1-1/4" Hub Bore	835411	835412
XTB-12 1-5/8" Hub Bore	835413	835414
XTB-12 2-1/8" Hub Bore	835415	835416
XTB-14 1-5/8" Hub Bore	835421	835422
XTB-14 1-15/16" Hub Bore	835423	835424
XTB-14 2-1/2" Hub Bore	835425	835426
XTB-18 2-1/2" Hub Bore	835431	835432
XTB-18 2-15/16" Hub Bore	835433	835434
XTB-18 4-1/2" Hub Bore	835435	835436
XTB-22 2-1/2" Hub Bore	835540	835541
XTB-22 3-3/4" Hub Bore	835542	835543
XTB-22 5" Hub Bore	835544	835545
Best thermal dissipation is achieved if the brake is ordered for the direction of rotation.		

DUAL ROTOR XTB	CW ROTATION P/N	CCW ROTATION P/N
XTB-10 1-1/8" Hub Bore	835510	835511
XTB-10 1-3/8" Hub Bore	835512	835513
XTB-10 1-5/8" Hub Bore	835514	835515
XTB-12 1-1/4" Hub Bore	835520	835521
XTB-12 1-5/8" Hub Bore	835522	835523
XTB-12 2-1/8" Hub Bore	835524	835525
XTB-14 1-5/8" Hub Bore	835530	835531
XTB-14 1-15/16" Hub Bore	835532	835533
XTB-14 2-1/2" Hub Bore	835534	835535
XTB-18 2-1/2" Hub Bore	835491	835492
XTB-18 2-15/16" Hub Bore	835493	835494
XTB-18 4-1/2" Hub Bore	835495	835496
XTB-22 2-1/2" Hub Bore	835550	835551
XTB-22 3-3/4" Hub Bore	835552	835553
XTB-22 5" Hub Bore	835554	835555
Best thermal dissipation is achieved if the brake is ordered for the direction of rotation.		

RING GUARD PRODUCT NUMBERS

MODEL	RING GUARD P/N
Single and Dual Rotor XTB-10	835446
Single and Dual Rotor XTB-12	835447
Single and Dual Rotor XTB-14	835448
Single and Dual Rotor XTB-18	835445
Single and Dual Rotor XTB-22	835449



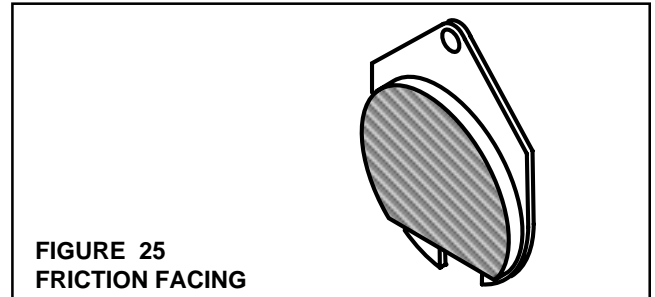
CALIPER ASSEMBLY PRODUCT NUMBERS

MODEL	PRODUCT NUMBER
Single Rotor XTB-10, 12, 14, 18	835451
Single Rotor XTB-22	835560

MODEL	PRODUCT NUMBER
Dual Rotor XTB-10, 12, 14, 18	835500
Dual Rotor XTB-22	835570

FRICION FACING PRODUCT NUMBERS

MODEL	LOCO (0.15)	STD (0.35)
Single and Dual Rotor XTB-10, 12, 14, and 18	835471	835461
Single and Dual Rotor XTB-22	835581	835580



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.

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.

nexen®

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