

nexen[®]

AIR CHAMP[®] PRODUCTS

User Manual



Model XHW Clutch

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



WARNING

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.

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

TABLE OF CONTENTS

Introduction ----- 1

Installation ----- 2

Air Connections ----- 3

Lubrication ----- 3

Maintenance ----- 3

Troubleshooting ----- 4

Parts Replacement ----- 4

Replacement Parts ----- 5

Parts List ----- 6

Warranties ----- 7



INTRODUCTION

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.

The Nexen “XHW” Clutch is designed for extra heavy duty applications – up to 5000 inch lbs. of torque at speeds up to 1200 rpm.

This manual provides necessary information for installation, operation, and maintenance of your Nexen XHW Series Clutch.

To obtain optimal performance from your Nexen XHW Series Clutch, familiarize yourself with this manual and the procedures outlined in it.

INSTALLATION

SHEAVE MOUNT AND PILOT MOUNT

1. Insert Key (Item #21) into shaft keyway.
2. Slide clutch onto shaft, fully seating Key (Item #21) into Hub (Item #1).
3. Align sheaves and belts.
4. Tighten Set Screws (Item #17 and #28) to 12 ft. lbs. torque.

COUPLING MOUNT

Consists of Pilot Mount Clutch and Coupling Half. Use Dodge Taper-lock bushing #3030 in Coupling Half.

1. Determine the parallel misalignment of the shafts to be coupled. Place a straightedge across the shafts and measure the maximum offset at various points around the periphery of the shafts.
2. Make necessary corrections to keep within the parallel misalignment limits of the clutch coupling.

NOTE: Fix the driving shaft and allow the driven shaft to float. Refer to Table 1 for max. misalignment values.

3. Attach Coupling Adapter Plate Assembly (Item #22) to the clutch, using Cap Screws (Item #31) and Lock washer (Item #32).
4. Slide clutch assembly onto the driving shaft until end of clutch is flush with the shaft end.
5. Insert Key (Item #21) into driving shaft key way.
6. Tighten Set Screws (Item #17 and #23) to 12 ft. lbs. torque.
7. Place the coupling's Flexible Disc (Item #23) over the coupling's adapter plate pins.
8. Insert Dodge Taper-lock bushing (customer supplied) into coupling half.
9. Align the hole (not threads) and slide Taper-lock bushing assembly onto the driven shaft until bushing end is flush with the shaft end.
10. Thread screws into the threaded holes in the coupling and tighten alternately and evenly.
11. Align the pins in the Coupling Flange (Item #24) with the holes in the flexible disc.

TABLE 1

ANGULAR MISALIGNMENT	PARALLEL MISALIGNMENT	DRIVING SHAFT INSERTION	DRIVEN SHAFT INSERTION
.150	.015	10.25	3.0

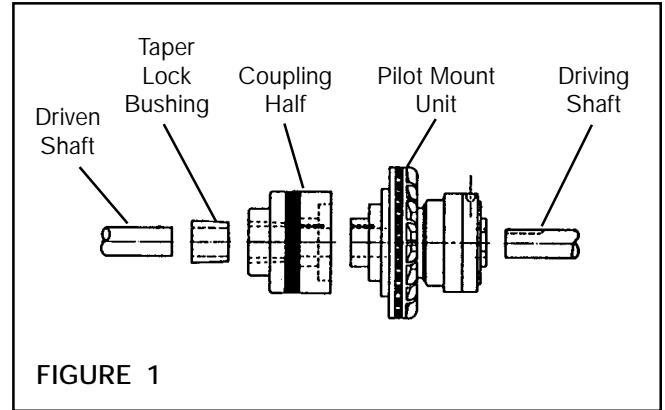


FIGURE 1

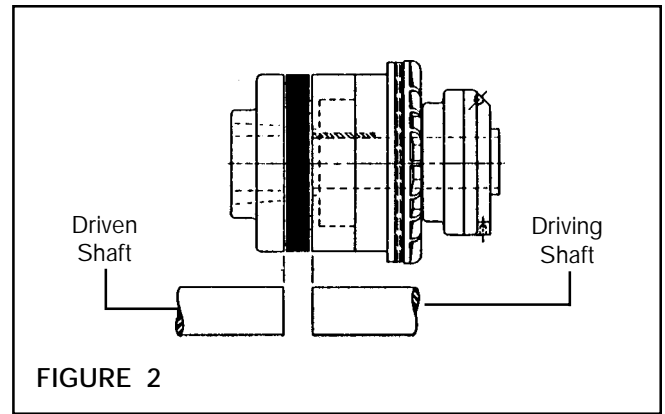


FIGURE 2

12. Push entire assembly together.

NOTE: Automatic spacing is accomplished by spacers molded into the flexible coupling.

13. Secure the driven shaft.

CAUTION
 This unit has rotating parts. Provide a guard that will not restrict the flow of cooling air around the unit when installed in an area where injury to an operation could occur.

AIR CONNECTIONS

For quick response, a short air line between the control valve and clutch is recommended. If long air lines are required, use a quick exhaust valve to ensure rapid disengagement.

Locate the air inlet port in the six o'clock position to allow condensation in the air chamber to drain out the exhaust port.

NOTE: The use of rigid pipe or tubing, when connected directly to the clutch will prevent proper actuation of the unit due to the necessary movement of the air chamber and hose upon engagement. Use only flexible hose or tubing.

Due to bearing seal drag, the outer portion of the clutch will rotate when the clutch is engaged, a 7/16 inch diameter rod inserted into the 1/2 inch diameter hole located in the Piston (Item #6) and fastened to a fixed pipe will prevent damage to the hose.

LUBRICATION

The most effective way to lubricate the XHW Clutch air chamber is with an air line lubricator.

Available from Nexen, the lubricator injects an oil mist into the pressurized air, forcing a constant oil mist into the air chamber.

1. Lubricator drip rate is properly set when oil drops form in the site gauge every time the clutch is cycled.

2. Locate the lubricator above and within ten feet of the clutch.

3. Use a low viscosity petroleum base oil such as SAE 10. Do not use synthetic lubricants.

4. For clutches cycled infrequently, apply two or three drops of oil into the air inlet every two weeks.

MAINTENANCE

1. Inspect the Friction Facing (Item #4), and replace when worn to approximately 3/16 inch to 1/4 inch thick.

2. Check that air line connections and mounting screws are properly tightened.



TROUBLESHOOTING

Failure to Engage

1. Air not getting to clutch, due to control valve malfunction or low air pressure.
2. Defective o-rings (Item #14 and #15) causing air leaks.
3. Lack of lubrication on hub spline or in air chamber.
4. Rigid pipe instead of flexible air line connections.

Failure to Disengage

1. Friction lock, due to lack of lubrication on hub spline or in air chamber.
2. Broken return spring.
3. Unexhausted air, due to control valve malfunction.

Excessive drag load on air line

1. Defective bearings.
2. Air hose not properly supported.

PARTS REPLACEMENT

FRICTION FACING (ITEM #4)

1. Remove Retaining ring (Item #13) and Bearing Adapter (Item #7).
2. Slide Piston (Item #6), Air Chamber (Item #5) and Friction Disc (Item #3) off Hub (Item #1).
3. Remove the eight brass Machine Screws (Item #16) and the Friction Facing (Item #4).

NOTE: The machine screws are assembled with a red anaerobic compound. If removal is difficult, strike the end of the screwdriver with a hammer to break the crystalline structure of the compound before attempting to remove the screws.

4. Install new friction facing.
5. Reassemble clutch.

O-RING (ITEM #14 and #15)

1. Remove Retaining Ring (Item #13) and Bearing Adapter (Item #7).
2. Gently apply air pressure to the air inlet, and separate the Piston (Item #6) and Air Chamber (Item #5).
3. Remove O-rings (Item #14 and #15).
4. Lubricate with O-ring lubricant and install new O-rings.
5. Align the Spring Pin (Item #18) with the piston and air chamber.
6. Reassemble the clutch.

AIR CHAMBER BEARING (ITEM #11)

1. Remove Retaining Ring (Item #13) and Bearing Adapter (Item #7).
2. Remove Air Chamber (Item #5) and Piston (Item #6) from Hub (Item #1).
3. Separate Air Chamber (Item #5) and Piston (Item #6).

NOTE: Care must be taken to prevent damage to O-rings (Items #14 and #15).

4. Using a bearing puller, remove the bearing from the piston and air chamber.

NOTE: When installing new bearings, carefully align the bearing O.D. with the housing bore. Apply Loctite RC601 or equivalent to the outer race of the new bearing.

5. Press new bearings into the air chamber bore and into the piston.
6. Reinstall O-rings (Items #14 and #15).
7. Align the Spring Pin (Item #18) with the piston and air chamber.
8. Reassemble the clutch.

SHEAVE, PILOT, OR DISC DRIVE BEARINGS (ITEM #11)

1. Remove Retaining Rings (Items #9 and #12).
2. Fully support the sheave, pilot, or drive disc and press out the Hub (Item #1).
3. Remove Bearings (Item #11) and Spacer (Item #8).



4. Press first bearing into place and install spacer, the press second bearing into place.
5. Reassemble the clutch.
2. Slide Piston (Item #6), Air Chamber (Item #5) and Friction Disc (Item #3) off Hub (Item #1).
3. Remove old Return spring and install new Return Spring (Item #10).
4. Reassemble the clutch.

RETURN SPRING (ITEM #10)

1. Remove Retaining Ring (Item 313) and Bearing Adapter (Item #7).

REPLACEMENT PARTS

The Item or "Balloon" Number for all Nexen Products is used for part identification on all Product Parts List, Product Price List, 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

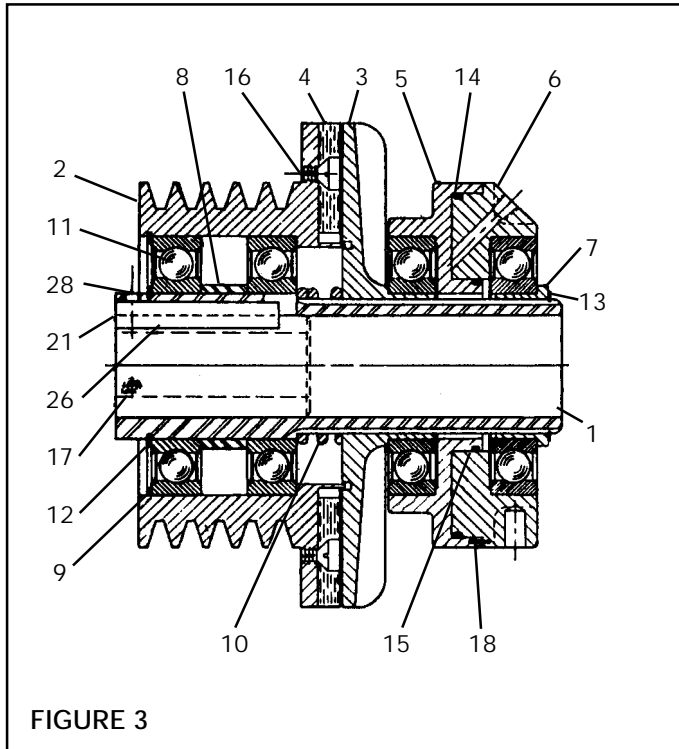


FIGURE 3

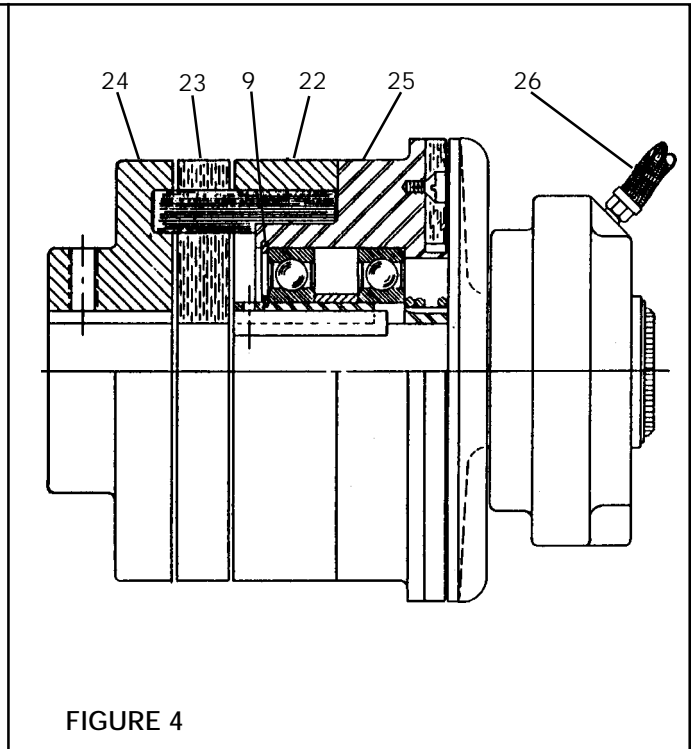


FIGURE 4

ITEM NO.	DESCRIPTION	NO. REQD.
1	Hub	1
2 ¹	Sheave	1
3	Friction Disc	1
4 ³	Friction Facing	1
5	Air Chamber	1
6	Piston	1
7	Adapter-Bearing	1
8	Spacer-Bearing-Inner	1
9	Retaining Ring	1
10 ³	Spring	1
11 ³	Bearing (Sheave, Pilot, Air Chamber, & Piston)	4
12	Retaining Ring	1
13	Retaining Ring	1
14 ³	O-Ring (Large)	1

ITEM NO.	DESCRIPTION	NO. REQD.
15 ³	O-Ring (Small)	1
16 ³	F.H.M. Screws (Brass)	8
17	Set Screws	2
18	Spring Pin	1
19	Plug, Neoprene (Not Shown)	1
21	Key (Shaft)	1
22	Adapter Plate (Coupling)	1
23	Flexible Disc (Coupling)	1
24	Coupling Flange (Coupling)	1
25	Drive Disc (Pilot Mount)	1
26	Flexible Air Hose	1
27 ²	Bushings	1
28	Set Screws	1
31	Screw, Cap (Coupling)	6
32	Lockwasher (Coupling)	6

¹ State diameter size desired.

² State bore size desired.

³ Repair Kit Items (Repair Kit and product number 8482)



WARRANTIES

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[®]

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

800.843.7445
Fax: 651.286.1099
www.nexengroup.com

ISO 9001 Certified