nexen®

AIR CHAMP® PRODUCTS

User Manual

Nexen Clutch Coupling

Models CC450, CC600, CC700, and CC800

FORM NO. L-20107-F-0208

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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ISO 9001 Certified

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.

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INSTALLATION

Nexen's Clutch Coupling combines the features of a coupling with the ability to connect and disconnect the driving shaft and the driven shaft features of a clutch.

The Clutch Coupling has "built-in" shaft stops for simplified installation.

1. Determine the parallel misalignment of the shafts to be coupled by placing a straightedge across the shafts and measuring the maximum offset at various points around the periphery of the shafts. Make the necessary corrections to keep within the parallel misalignment limits of the Clutch Coupling.

Model	Angular Misalign-ment	Parallel Misalign-ment	Shaft Insertion		Min. Shaft Spacing
			Max	Min	
CC450	½°	.010"	2.03	1.31	.52
CC600	½°	.010"	2.20	1.69	.46
CC700	½°	.010"	2.53	2.06	.57
CC800	½°	.010"	2.78	2.44	.65

TABLE 1

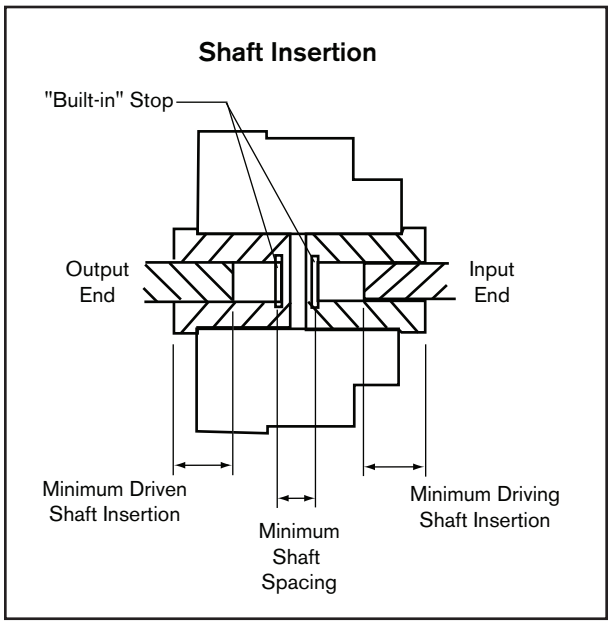


FIGURE 1

NOTE: If the distance between shafts is greater than the minimum shaft spacing, refer to Table 1, Minimum Shaft Insertion dimensions. The minimum shaft insertion is 1½ times the shaft diameter.

2. With one shaft fixed, slide the Clutch Coupling onto the shaft, over the key (Item 21), and up to the built-in stop. Tighten the set screws (Item 13) to the recommended torque value given in Table 2.

NOTE: Maximum cooling efficiency is attained with the driving shaft inserted into the input end.

3. Slide the floating shaft into the output end over the key and up to the built-in stop. Tighten the set screws to the recommended torque value given in Table 2.

IMPORTANT

Pull on the floating shaft until the piston and cylinder are flush as shown on the parts list drawing. Lock the floating shaft in position.

4. AIR CONNECTION: Use the flexible hose supplied (Item 22) to connect the air supply to the Clutch Coupling. DO NOT USE RIGID PIPE OR TUBING FOR THIS CONNECTION.

5. Check the alignment. Angular and parallel misalignment must not exceed ½ °.

	CC450	CC600	CC700	CC800
Cap Screw (Item 9)	6 ft-lbs	6 ft-lbs	13 ft-lbs	27 ft-lbs
Set Screw (Item 13)	3 ft-lbs	6 ft-lbs.	13 ft-lbs	13 ft-lbs

TABLE 2

FORM NO. L-20107-F-0208

OPERATION

1. Before operating make sure all screws are tightened securely. Recommended tightening torques are shown in Table 2.

2. Connect the air controls as close to the Clutch Coupling as possible for fast engagement and disengagement. Use a quick exhaust valve where long air lines or high cycle rates are required. Pneumatically actuated devices need clean, pressure regulated and lubricated air for maximum performance and long life. Use a filter, regulator and lubricator in the air line ahead of the control valve.

3. Nexen's Clutch Coupling consists of two opposing friction discs which connect the driven and driving shafts, by friction, when air pressure is applied at the air inlet.

   The driven disc and driving disc are splined to the hubs, which are keyed to the input and output shafts. When air pressure is applied, torque is transmitted through the splines to the hubs and shafts. When air exhausts from the air cylinder, return springs separate the disc interfaces disconnecting the two shafts.

4. The maximum recommended operating speed of all Clutch Coupling models is 1800 RPM.

5. Clutch Couplings are equipped with a guard (Item 14) for personnel protection.

CAUTION

Be sure the guard is in place before operating.

MAINTENANCE

1. Periodically insert air line connections for tightness. Inspect the cap screws (Item 9) and set screws (Item 13) for tightness. Recommended tightening torque is given in Table 2.

2. FRICTION FACING. (Item 5)

   Replace the friction facing when it is worn to approximately 1/8 inch thick. To replace the friction facing proceed as follows:

   a) Disconnect the air supply at the air inlet.

   b) Loosen the set screws (Item 13) in the hub (Item 1) attached to the floating shaft. Slide the shaft out of the Clutch Coupling unit until it clears the hub.

   c) Remove the six cap screws (Item 9) and separate the cylinder (Item 3) from the housing (Item 6).

   d) Remove the six brass machine screws (Item 15) and replace the worn facing. Apply Loctite Threadlocker 271 to the brass machine screws before re-installing.

   e) Place the guard (Item 14) into position over the housing and re-assemble the cylinder to the housing.

   f) Replace the cap screws (Item 9) and tighten to the torque recommended in Table 2.

   g) Refer to the installation instructions, Section II for shaft installation.

3. O-RING

If there are air leaks or loss of torque replace the o-rings (Items 19 &20):

   a) Follow disassembly steps (a) through (c) as described for facing replacement, paragraph 2.

NOTE: the air chamber/piston half of the Clutch Coupling must be removed from the shaft to replace the o-rings. If this half is attached to the floating shaft it is not necessary to remove the entire assembly.

b) Separate the cylinder (Item 3) from the piston (Item 2) and remove the worn o-rings.

c) Lubricate new o-rings with an o-ring lubricant and install in the piston grooves.

d) Make sure the cylinder bore is clean and push the cylinder into place over the piston.

CAUTION

Align the anti-rotation pin (Item 10) in the cylinder with the hole in position.

e) Follow assembly steps (e) through (g) as described for friction facing replacement, paragraph 2.

4. BEARING REPLACEMENT

a) Disconnect the hose assembly (Item 22) at the air inlet of the Clutch Coupling.

b) Remove all set screws (Item 13) and remove the entire Clutch Coupling from both shafts.

c) Remove the six cap screws (Item 9) and separate the cylinder (Item 3) from the housing (Item 6). Remove the guard (Item14).

d) INPUT SIDE BEARING: Remove retaining rings (Items 17, 18 & 24) and the hub (Item 1). Press the driving disc (Item 4) out of the bearing (Item 11). Push the bearing out of the housing.

NOTE: When installing new bearings, carefully align the bearing O.D. with the housing bore to prevent slivers of aluminum from getting trapped under the bearing.

Apply Loctite, RC 601, to the outer race of a new bearing and push it into the housing. Replace retaining ring (Item 17). Support the bearing's inner race and press the driving disc into the bearing. Replace retaining ring (Item 24) and the hub. Replace retaining ring (Item 18).

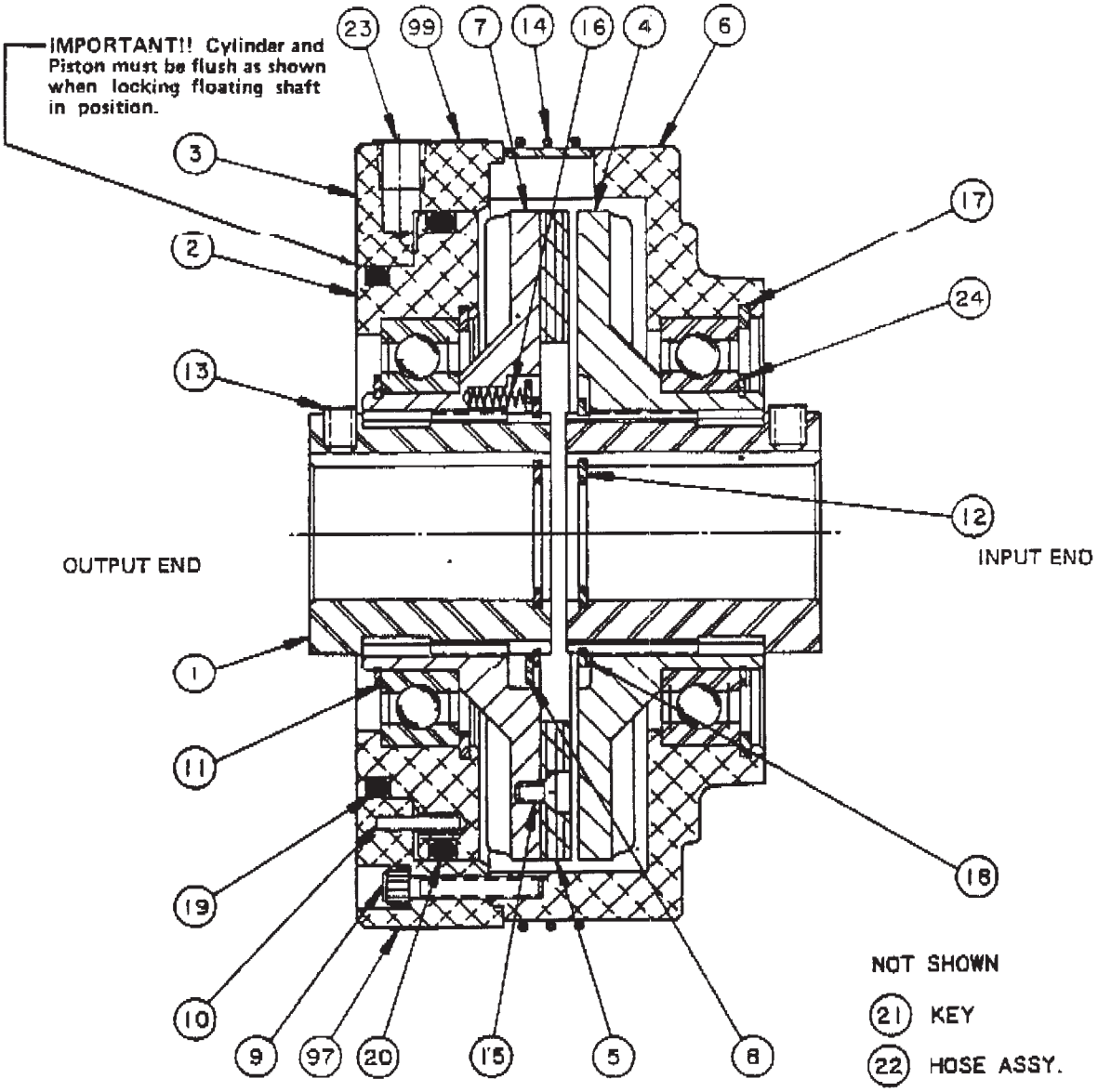
e) OUTPUT SIDE BEARING: Remove retaining ring (Item 18), back-up washer (Item 8) and the springs (Item 16). Remove the hub (Item1). Remove retaining ring (Item 24) and press the driven disc (Item 7) out of the bearing. Remove the retaining ring (Item 17) and push the bearing out of the piston/cylinder assembly (Item 2 & 3). Apply Loctite, RC 601, to the outer race of the new bearing and push it into the piston/cylinder assembly. Replace retaining ring (Item 17). Support the bearing's inner race and press the driven disc in the bearing. Replace retaining ring (Item 24). Replace the hub, springs, back-up washer and retaining ring (Item 18).

f) Replace the guard and assemble the piston/cylinder assembly to the housing assembly.

g) Replace the cap screws (Item 9) and tighten to the torque recommended in Table 2.

h) Re-mount the Clutch Coupling as described in the installation instructions.

PARTS



ITEM	DESCRIPTION	QTY.	ITEM	DESCRIPTION	QTY.
1	Hub	2	13	Screw, Set	6
2	Piston	1	14	Guard	1
3	Cylinder	1	15	Screw, Machine	6
4	Disc, Driving	1	16	Spring	6*
5	Facing, Friction	1	17	Ring, Retaining	2
6	Housing	1	18	Ring, Retaining	1
7	Disc, Driven	1	19	O-ring	1
8	Washer, Back-up	1	20	O-ring	1
9	Screw, Cap	6	21	Key	2
10	Pin, Spring	1	22	Hose Assembly	1
11	Bearing	2	24	Ring, Retaining	2
12	Ring, Retaining	2			

* CC700, Qty. 8
CC800, Qty. 10

WARRANTY

Warranties

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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.

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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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