Disc-O-Torque Hydraulic Clutches D5

Installation & Maintenance Manual

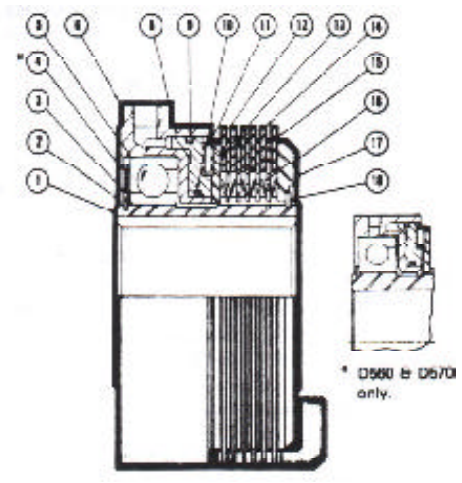
P-5055-TBW
Form 1384

TB Wood's®
Altra Industrial Motion

⚠ WARNING: Rotating equipment must be properly guarded. It is the responsibility of the user to properly guard all rotating equipment to comply with OSHA or any applicable regulations. Failure to properly guard may contribute to severe injury should someone come in contact with the rotating parts or should the rotating part fail.

⚠ WARNING: DO NOT use TB Wood's products on any primary aircraft drive or any other drive which could endanger human life should a drive component fail.

⚠ WARNING: Cancer - www.P65Warnings.ca.gov



Rebuild Kits

Disc Kit D5xxDK		**Seal Kit** D5xxSK		**Bearing Kit ***** D5xxBK	
Item	Description	Item	Description	Item	Description
14	Friction Disc	9	Outer Piston Ring	5	Cylinder Bearing
15	Separator Disc	10	Inner Piston Ring	11	Piston Bearing
16	Separator Spring			12	Thrust Race
17	Snap Ring			2	Snap Ring
				3	Shim(s)
				4	Shield
					Spacer (for D560 and D570 only)

Components not included in rebuild kits.

Item	Description	Notes
1	Hub	When and if these parts require replacement, it is usually a sign unseen damage may have occurred to other components in the clutch assembly. It is recommended that the entire clutch assembly be replaced.
6	Cylinder	
8	Piston	
13	Pressure Plate	
17	Back Plate	
19	Plug (not shown)	

INSTALLATION

Friction disc lugs must be slip fit in driven cup slots. When installing the cup, align lugs and slots carefully. Do not force during assembly; bent lugs will cause the clutch to malfunction.

When installing the clutch, be sure the oil line connection to the clutch is aligned correctly and flexibility or "float" is provided to prevent cocking loads on the clutch bearings.

ACTUATING FLUID & LUBRICATING OIL

Standard D5 models are provided with a separate inlet for lubricating oil, to provide a continuous oil flow to the bearings. Adjacent to the cylinder bearing (5) is located a shield (4) which contains the lubricant. For models D560 & D570, the shield is located between the bearing (5) and the cylinder (6).

NOTE: Non-Standard models have this separate port plugged at the factory. The ball bearing will be open at the outer end (shield removed). External oil must be directed into this area. (mist, spray, or splash). The piston will incorporate a bleed hole for actuation oil to seep through to the piston bearing.

TYPES OF OIL

Secony-Mobil DTE 24 oil or equivalent. For others, contact TB Wood's.

IMPORTANT: The actuating oil must have a viscosity of at least 70 SUS at operating temperature.

TABLE OF FLOW RATE REQUIREMENT FOR AUXILIARY LUBRICATION

Model	Lube Flow*	Model	Lube Flow*
D530	0.05	***D560***	0.40
D535	0.07	***D570***	0.50
D545	0.13	***D580***	0.70
D555	0.25		

*Gallons per minute required using a lubricant having a viscosity of about 150 SUS @ 100 degrees F and 20 psi. Recommended maximum lubrication oil pressure = 50 psi.

MAINTENANCE

The Model D5 DISC-O-TORQUE clutch, when properly applied and installed, will operate for a long period of time without attention. However, at equipment overhaul time, or when clutch repairs are necessary, all worn parts should be replaced. In addition, all parts subject to cyclic fatigue should be replaced to restore the clutch to "like-new" condition. Rebuild Kits are available for rebuilding clutches in the field.

HOW TO SELECT AND ORDER THE DISC-O-TORQUE REBUILD KITS:

Disc-O-Torque rebuild kits can be easily ordered by specifying the proper kit number, series, model number and bore size of the clutch.

Example: (Seal Kit)	**Kit No.**	**Series**	**Model No.**	**Bore**
	D545SK	**D5**	**45**	**1 1/2**

Kits should be obtained from the manufacturer of the machine in which the clutch is used, i.e., the original equipment manufacturer, or from the local **TB Wood's** distributor.

DISASSEMBLY

1. Compress the disc pack by depressing the clutch backplate (17).

2. With the backplate depressed, remove the snap ring (18).

3. Remove friction discs, separator plates and separator springs as a pack (14,15, and 16). If removing parts individually, note order of assembly.

4. Remove pressure plate (13), thrust bearing and thrust races (11 and 12).

5. If any of the above parts are worn, overheated or warped, they should be replaced. Compare each part to a new part to determine degree of wear or distortion.

6. If necessary, disassemble the remainder of the clutch as follows:
   A. Remove the hub (1) from the assembly by removing the snap ring (2), shims (3), and shield (4). Then block the cylinder and press-out the hub. The bearing will stay in the cylinder. It can be removed by tapping on the other end of the cylinder with a soft mallet. For 60 & 70 models, the shield is removed after the bearing.

   B. Remove the piston (8) from the cylinder (6). This can be accomplished by a short burst of compressed air in the inlet to push the piston out. Cover the piston with a cloth to prevent damage during this operation.

   C. Examine the piston quadrings (9 & 10), cylinder, and bearings (6,5, & 11) for wear. Replace parts as required. NOTE: The seal diameters in the cylinder must be smooth and undamaged to prevent damage to the quadrings and leakage of oil.

REASSEMBLY

1. For 60 & 70 models, install shield (4) into cylinder.

2. Install new bearing in cylinder. It will slide into the pocket without difficulty. Be sure the thrust shoulder is to the inside.

3. Block the inner race of the bearing and press the hub into position from the opposite end of the clutch.

4. Install the shield, shims, and snap ring to retain the bearing in the hub.

5. If necessary, install new quadrings on the piston. Do not stretch them anymore than necessary. Apply a small amount of grease to the sealing edges.

6. Slide the piston into the cylinder.

7. Install the inner thrust washer, thrust bearing, and outer thrust washer.

8. Install the pressure plate.

9. Install the disc pack (friction discs, separator plates, and separator springs) in the original manner.

10. Place the backplate over the disc pack. With an arbor press, compress the disc pack and install the snap ring.

CAUTION: *The discs should be centered in the pack before pressing to avoid damage.*

TEST THE CLUTCH

After assembly is completed, the unit should be checked in two ways:

1. Check clearance in the disc pack. All discs should be free with no binding. There should be .054-.155" total clearance in the pack. This can be measured by pressing on the backplate until it just bottoms (using an indicator on the backplate face). Clearance is adjusted by the shims (3).

2. Check leakage. Apply normal operating pressure to the clutch and see if oil leaks out. There should be only a minimum amount--about one drop per minute. If excessive leakage is experienced, reinspect the quadrings and seal diameters in the cylinder.

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