

Disc-O-Torque Hydraulic Clutches D4

Installation & Maintenance Manual

Form 1385



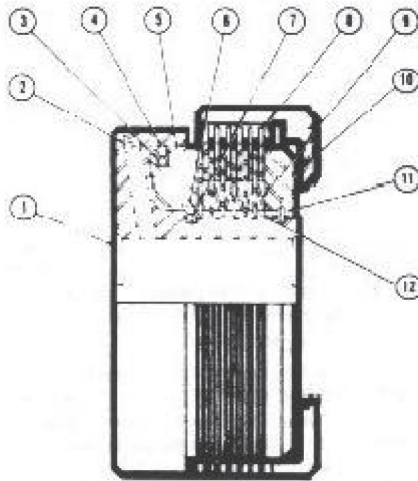
WARNING:

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 Wood's products on any primary aircraft drive or any other drive which could endanger human life should a drive component fail.



Rebuild Kits			
Disc Kit D4xxDK		Seal Kit D4xxSK	
Item	Description	Item	Description
8	Friction Disc	4	Outer Piston Ring
12	Separator Disc	6	Inner Piston Ring
9	Separator Spring	3	Outer O-Ring
11	Snap Ring	7	Inner O-Ring

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
5	Piston	
10	Back Plate	
2	Plug	

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 actuation hole in your rifle drilled shaft is properly located in relation to the actuation port in the clutch bore

ACTUATING FLUID & LUBRICATING OIL

Standard D4 models do not have bearings and therefore require no internal lubrication. Disc pack cooling can be accomplished with external spray, mist or splash.

TYPES OF OIL

Use any high grade ATF (automatic transmission fluid) or Socony-Mobile DTE 24 oil (or equivalent).

MAINTENANCE

Model D4 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. 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
	D445SK	D4	45	1 3/8

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 Woods** distributor.

DISASSEMBLY

1. Compress the disc pack by depressing the clutch backplate (10).
2. With the backplate depressed, remove the snap ring (11).
3. Remove friction discs, separator plates and separator springs as a pack (8,12, and 9). If removing parts individually, note order of assembly.
4. Remove the piston (5) from the hub (1). Cover the piston with a cloth to prevent damage after this operation.
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. Examine the teflon seals (4 & 6) and "O" rings (3 & 7); remove if badly worn.

REASSEMBLY

1. Install the "O" ring (8) and teflon seal (6) into the hub groove.

NOTE: Teflon seals must be installed with a proper tool, such as an automotive type piston ring compressor.

2. Place the piston ring compressor over the teflon seal and tighten. This will compress the teflon seal to allow installation of the piston.
3. Install the "O" ring (3) and the teflon seal (4) into the piston groove in the same manner outlined above.
4. Install the disc pack (friction discs, separator plates, and separator springs) in the original order of assembly.
5. Place the backplate over the disc pack. With an arbor press, compress the disc pack and install the snap ring (11).

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. Following is clearance required in the disc pack:

SIZE	AVERAGE	MAXIMUM
D430	.072"	.105"
D435	.096"	.130"
D445	.096"	.134"
D455	.108"	.142"
D460	.114"	.149"
D470	.126"	.161"

This can be measured with a dial test indicator by depressing the backplate (10) until all discs are engaged. .

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 teflon seals and seal diameters in the hub and piston.

All Customer Service phone numbers shown in bold

Electromagnetic Clutches and Brakes

Warner Electric

Electromagnetic Clutches and Brakes

New Hartford, CT - USA
1-800-825-6544

For application assistance:
1-800-825-9050

St Barthelemy d'Anjou, France
+33 (0) 2 41 21 24 24

Precision Electric Coils and Electromagnetic Clutches and Brakes

Columbia City, IN - USA
1-260-244-6183

Matrix International

Electromagnetic Clutches and Brakes, Pressure Operated Clutches and Brakes

Brechin, Scotland
+44 (0) 1356 602000

New Hartford, CT - USA
1-800-825-6544

Inertia Dynamics

Spring Set Brakes; Power On and Wrap Spring Clutch/Brakes

New Hartford, CT - USA
1-800-800-6445

Linear Products

Warner Linear

Linear Actuators
Belvidere, IL - USA
1-800-825-6544

For application assistance:
1-800-825-9050

St Barthelemy d'Anjou, France
+33 (0) 2 41 21 24 24

Couplings

Ameridrives Couplings

Mill Spindles, Ameriflex, Amerisc

Erie, PA - USA
1-814-480-5000

Gear Couplings

San Marcos, TX - USA
1-800-458-0887

Bibby Turboflex

Disc, Gear, Grid Couplings, Overload Clutches

Dewsbury, England
+44 (0) 1924 460801

Boksburg, South Africa
+27 11 918 4270

TB Wood's

Elastomeric Couplings

Chambersburg, PA - USA
1-888-829-6637 – Press #5

For application assistance:
1-888-829-6637 – Press #7

General Purpose Disc Couplings

San Marcos, TX - USA
1-888-449-9439

Ameridrives Power Transmission

Universal Joints, Drive Shafts, Mill Gear Couplings

Green Bay, WI - USA
1-920-593-2444

Huco Dynatork

Precision Couplings and Air Motors

Hertford, England
+44 (0) 1992 501900

Chambersburg, PA - USA
1-888-829-6637

Lamiflex Couplings

Flexible Couplings, Bearing Isolators, and Coupling Guards

São Paulo, SP - Brasil
+55-11-5679-6533

Heavy Duty Clutches and Brakes

Wichita Clutch

Pneumatic Clutches and Brakes

Wichita Falls, TX - USA
1-800-964-3262

Bedford, England
+44 (0) 1234 350311

Twiflex Limited

Caliper Brakes and Thrusters

Twickenham, England
+44 (0) 20 8894 1161

Industrial Clutch

Pneumatic and Oil Immersed Clutches and Brakes

Waukesha, WI - USA
1-262-547-3357

Gearing

Boston Gear

Enclosed and Open Gearing, Electrical and Mechanical P.T. Components

Charlotte, NC - USA
1-800-825-6544

For application assistance:
1-800-816-5608

Bauer Gear Motor

Geared Motors

Esslingen, Germany
+49 (711) 3518 0

Somerset, NJ - USA
1-732-469-8770

Nuttall Gear and Delroyd Worm Gear

Worm Gear and Helical Speed Reducers

Niagara Falls, NY - USA
1-716-298-4100

Overrunning Clutches

Formsprag Clutch

Overrunning Clutches and Holdbacks

Warren, MI - USA
1-800-348-0881 – Press #1

For application assistance:
1-800-348-0881 – Press #2

Marland Clutch

Roller Ramp and Sprag Type Overrunning Clutches and Backstops

South Beloit, IL - USA
1-800-216-3515

Stieber Clutch

Overrunning Clutches and Holdbacks

Heidelberg, Germany
+49 (0) 6221 30 47 0

Belted Drives and Sheaves

TB Wood's

Belted Drives

Chambersburg, PA - USA
1-888-829-6637 – Press #5

For application assistance:
1-888-829-6637 – Press #7

Engineered Bearing Assemblies

Kilian Manufacturing

Engineered Bearing Assemblies

Syracuse, NY - USA
1-315-432-0700

For information concerning our sales offices in Asia Pacific check our website www.altramotion.com.cn



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