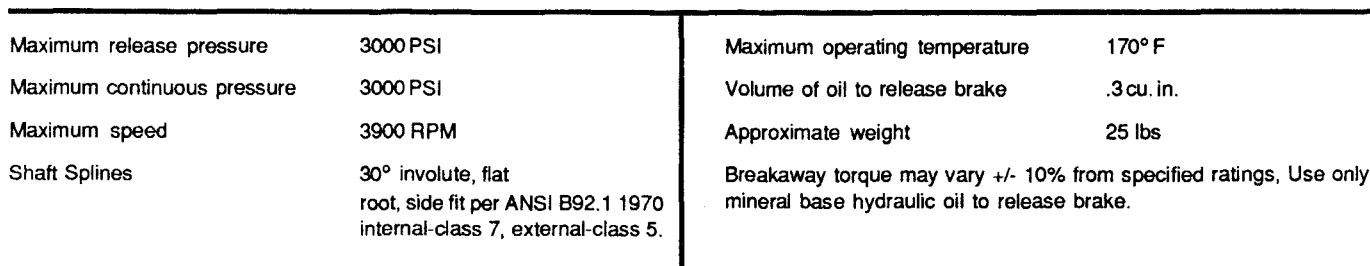
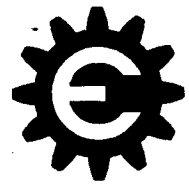




**Model 90B**

**Multiple Disc Brake  
Service & Repair Manual**

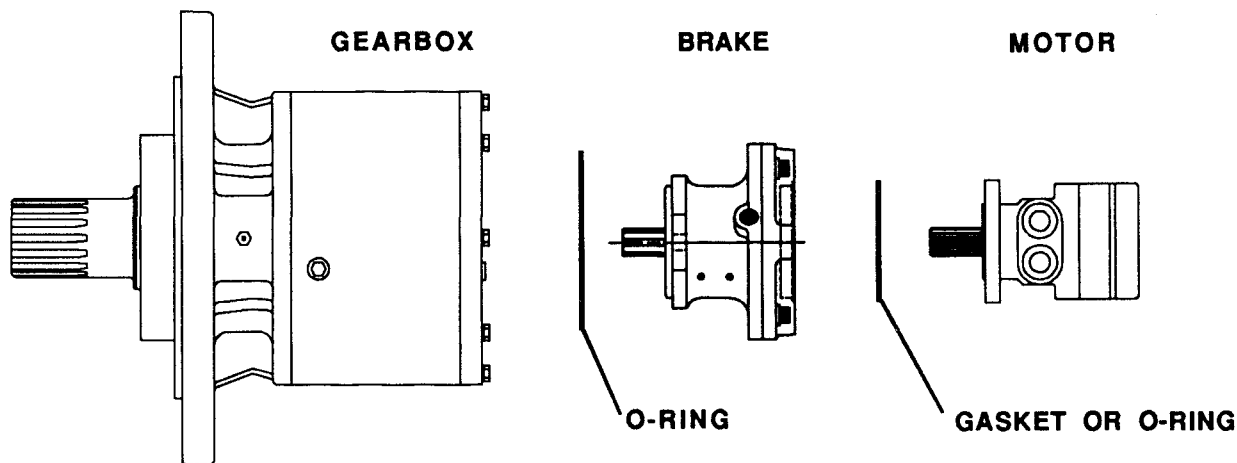




The 90B series Eskridge brake is manufactured for two specific types of holding torque requirements. The standard "fail-safe" requirement and the "slip protection" requirement. Both types are spring loaded ( normally applied ) with a hydraulic pressure required for release.

All brakes are individually tested at the factory for function, leaks and static breakaway torque. Fail-safe type brakes are tested to be assured they are in excess of 110% of the fail-safe torque rating for the unit. A fail-safe brake should be used when the only requirement is a minimum static holding torque.

A slip protection brake should be used where an accurate specified torque is required, such as a side load protection on a crane or overload protection in a drivetrain. These brakes are tested to be within +/- 10% of the slip protection rating for the unit.



## Installation

**NOTE:** Before beginning installation procedures, visually inspect brake mounting flanges and shaft splines for damage due to poor handling during shipping. If damage is excessive, do not use brake.

1. Mount 90B brake with two 1/2-13 capscrews through brake mounting flange and gasket holes. Torque bolts to 75 ft-lbs. On horizontal shaft mounting, one o-ring port should be oriented as close to top as practical (bleeder port). Some installations may require that the brake be "released" so it can be rotated to align bolt holes (see step 4 of installation instructions).

2. Attach motor to input end of brake with appropriate sized bolts through motor flange and gasket to give approximately 1/2 " thread engagement. Torque 1/2" bolts to 75 ft-lbs or 3/8" bolts to 32 ft-lbs.

3. Remove plastic protective plug from pressure port of brake and attach a pressure line with 7/16-20 UNF-2B straight thread o-ring fitting.

4. Apply low pressure to brake release port. Loosen Hollow Hex Plug, opposite of pressure port, just enough to allow hydraulic fluid to bleed from cavity. After air has been bled from brake, tighten plug.



## Model 90B Service Manual

### Disassembly:

1. Remove motor from brake.
2. Loosen the four 1/2-13 12-Point Capscrews (ITEM 10). Alternately unscrew capscrews 1/2 turn at a time until all internal spring force is relieved. Remove the Cover (ITEM 2).

**CAUTION:** Do not clamp or otherwise restrain cover while removing the Cover Bolts (ITEM 10) since the brake is under high compressive spring load.

3. Apply low air pressure (20-30 psi) to brake release port while holding one hand on top of the Piston (ITEM 4) and Springs (ITEM 13). The air will force piston out of the Case (ITEM 1).
4. Remove the Brake Shaft (ITEM 5).
5. The Friction Discs (ITEM 14), Separator Plates (ITEM 15) and Spacer (ITEM 6) may now be removed from the Case (ITEM 1).

### Alternate Disassembly:

1. To replace Output Bearing (ITEM 8), Base Basket (ITEM 7), or Seal (ITEM 21), it is not necessary to remove Cover (ITEM 2). Invert brake and remove the six Socket Head Cap Screws (ITEM 11). Remove Base (ITEM 3), Base Gasket (ITEM 7), Output Bearing (ITEM 8), or Seal (ITEM 21) may now be removed if needed. When reassembling torque #10-24 Cap Screws (ITEM 11) to 50 in-lbs.

**NOTE:** Loss of fluid media may occur through input area when inverting brake to remove Base (ITEM 3). Bolt motor or install plastic protective plug (used during shipping) to brake input to prevent any loss of fluid. If fluid is lost during this disassembly procedure additional fluid must be added to brake before operation. To add fluid media\*, fully reassemble brake and position with input face upward. Remove cover and piston (Disassembly procedure steps 2 and 3). Pour fluid over friction plates until fluid level is even with the top Friction Disc (ITEM 14). Reassemble brake.

#### \*NOTE

Unless otherwise specified, series 90B brakes use automatic transmission fluid (ATF Type F) as a fluid media. ATF-Dextron will give somewhat different torque characteristics. Some brakes are specifically designed to use hydraulic oil, gear lube or other fluid media.

Thrust Washer (P/N 01-112-0290) is used in place of Input Bearing (ITEM 9) on all brakes with 14 tooth input spline.

Total qty. of separator (ITEM 15) and spacers (ITEM 6) must equal 7. Qty. of Friction Discs (ITEM 14) equals qty. of Separators (ITEM 15) plus 1. Full complement brake includes 8 Friction Discs (ITEM 14), 7 Separators (ITEM 15), and 0 Spacers (ITEM 6).

SPRING COLOR	PART NO.
RED	01-261-0310
GOLD	01-261-0300
GREEN	01-261-0290



## Model 90B Service Manual

### NOTE:

If installing new Friction Discs (ITEM 14), soak all discs in specified fluid media\* for approx. ten minutes before installation.

3. Pour fluid media\* over the friction plates until the fluid level is even with the top Friction Disc (ITEM 14).
4. If replacing piston O-rings (ITEMS 18 & 19), be sure o-rings are nearest each other with the Back-up Rings (ITEMS 16 & 17) to the outside after installing onto Piston (ITEM 4). Flat side of Back-up Ring must be placed next to o-ring groove wall. Gently slide Piston (ITEM 4) into Case (ITEM 1) until large o-ring (ITEM 19) touches case. Press down firmly on piston using heel of both hands. This will squeeze o-rings into case and set piston against friction plates.
5. Insert Springs (ITEM 13) into Piston (ITEM 4).
6. Install cover o-ring (ITEM 20) around lip on Case (ITEM 1).
7. Set Cover (ITEM 2) on top of springs and over input end of Shaft (ITEM 5). Bearing (ITEM 9) should start onto shaft before cover touches the springs. Start four Cover Bolts (ITEM 10) through cover and into case with your fingers. Alternately tighten cover bolts 1/2 turn at a time until cover is tight against case. Torque bolts to 80 ft-lbs.

### Assembly:

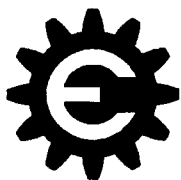
Assembly should be in reverse order of disassembly with the following additional instructions.

1. Install Shaft (ITEM 5) by pushing shaft downward through the bearing (ITEM 8), and Seal (ITEM 21) until bearing shoulder on shaft is seated against bearing.
2. Friction pack - Spacer (ITEM 6), Friction Disc (ITEM 14) and Separator Plate (ITEM 15) must be installed in exactly the same order as they were removed. There must always be a Friction Disc (ITEM 14) on top and bottom ends of plates. If a Separator Plate (ITEM 15) is placed next to the Piston (ITEM 4) or Spacer (ITEM 6) the unit will overheat and seize up. Be careful not to contaminate the friction surfaces with dirt, grease or fluid media\* other than what is specified for your particular brake.

NOTE	PART NO.	DESCRIPTION
A	90-004-1023	COVER - SAE "A"
	90-004-1413	COVER - SAE "A" (2 BOLT)
	90-004-1143	COVER - SAE "B"
B	90-004-1043	SHAFT - 6B IN/13T OUT
	90-004-1163	SHAFT - 13T IN/13T OUT
	90-004-1303	SHAFT - 6B IN/6B OUT
	90-004-1383	SHAFT - 14T IN/6B OUT
	90-004-1403	SHAFT - 14T IN/13T OUT
	90-004-1573	SHAFT - 13T /6B OUT

\* Specific torque ratings and release pressure requirements will determine the no. of friction disc and separator plates, the part no. of the springs (different spring rates), and the quantity and thickness of the spacers. For details, contact your local Eskridge dealer or Eskridge at (913) 782-1238.

21	1	01-405-0340	SEAL
20	1	01-402-0580	O-RING
19	1	01-402-0470	O-RING
18	1	01-402-0450	O-RING
17	1	01-400-0140	BACK UP RING
16	1	01-400-0120	BACK UP RING
15	*	01-288-0020	SEPARATOR PLATE
14	*	01-288-0010	FRICITION DISC
13	*	01-261-C	SPRING
12	1	01-208-0020	HOL. HEX. PLUG (7/16-20)
11	6	01-150-1030	SOC. HD. CAP SCR. (10-24 X 3/4)
10	4	01-150-1040	12 POINT CAP SCR. (1/2-13 X 1)
9	1	01-100-0120	BEARING-INPUT
8	1	01-100-0110	BEARING-OUTPUT
7	1	90-004-1111	GASKET-BASE
6	*	90-004-1031	SPACER
5	1	90-004-B	SHAFT
4	1	90-004-1182	PISTON
3	1	90-004-1052	BASE
2	1	90-004-A	COVER
1	1	90-004-1194	CASE
ITEM	QTY	PART #	DESCRIPTION



## Repair Kits Model 90B

### NOTE:

*Due to the many combinations of torques and release pressures available for the 90B, it is impossible to detail each style and supply a repair kit for each individual model. The repair kits listed below will work with all combinations of torque vs. release pressure, input mountings and friction plates. It is entirely possible to have "extra" parts left over from the repair kits after you*

*have completed the repair or maintenance. If you are not sure about what is required for your brake and its configuration, please contact Eskridge, Inc. sales or engineering department.*

Repair kits listed below are for use with the model 90B multiple disc brake.

### **FRICTION DISC KIT, 90B - 90-016-2131**

- 01-288-0010 FRICTION PLATE (8)

### **SEPARATOR PLATE KIT, 90B - 90-016-2141**

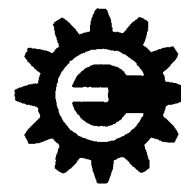
- 01-288-0020 SEPARATOR PLATE (9)

### **SEAL KIT, 90B - 90-016-2011**

- 01-400-0120 BACK UP RING, PISTON (1)
- 01-400-0140 BACK UP RING, PISTON (1)
- 01-402-0450 O-RING, PISTON (1)
- 01-402-0470 O-RING, PISTON (1)
- 01-402-0580 O-RING, CASE SEAL (1)
- 01-405-0340 SHAFT SEAL (1)
- 90-004-1061 GASKET, MTR.,SAE "A" 4 BOLT (1)
- 90-004-1081 GASKET, MTR.,SAE "A" 2 BOLT (1)
- 90-004-1091 GASKET, MTR.,SAE "B" 2 BOLT (1)

### **MASTER REBUILD KIT, 90B - 90-015-3021**

- 90-016-2131 FRICTION DISC KIT, 90B (1)
- 90-016-2011 SEAL KIT, 90B (1)
- 01-100-0110 BEARING, OUTPUT (1)
- 01-100-0120 BEARING, INPUT (1)



## Warranty Multiple Disc - Failsafe Brakes

ESKRIDGE, inc. ("Eskridge") warrants to its original purchaser ("Customer") that new component parts sold by Eskridge ("unit (s)", at the time of delivery by Eskridge to the customer will be free of defects in material and workmanship and will conform to standard specifications set forth in current Eskridge sales literature and to any custom specifications of the customer acknowledged in writing by Eskridge, subject to the following qualifications and limitations.

1. Prior to placing warranted units in service, the customer shall provide proper storage such that foreign objects (e.g., rain or debris) cannot enter any unit via entry ports which are normally closed during operation.
2. The customer must notify Eskridge in writing of any claim for breach of this warranty promptly after discovery of a defect and in any event prior to the termination of the warranty period, which shall commence when a unit is shipped to the customer by Eskridge and shall expire twelve (12) months thereafter.
3. This warranty shall not apply with respect to units which, upon inspection by Eskridge, show signs of disassembly, rework, modification or improper installation, mounting use or maintenance.
4. Claims under this warranty will be satisfied only by repair of any defect(s) or, if repair is determined by Eskridge in its sole, absolute and uncontrolled discretion to be impossible or impractical, by replacement of the unit or any defective part thereof. No cash payment or credit will be made for defective materials or workmanship. IN NO EVENT SHALL ESKRIDGE BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND OR NATURE.
5. From time to time, Eskridge may make design changes in the component parts manufactured by it without incorporating such changes in units previously shipped.
6. All freight charges in units returned for warranty service are the responsibility of the customer.

THE FOREGOING WARRANTY IS THE SOLE WARRANTY MADE BY ESKRIDGE WITH RESPECT TO ANY UNIT, AND IS IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, ESKRIDGE EXPRESSLY DISCLAIMS ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE, REGARDLESS OF ANY KNOWLEDGE ESKRIDGE MAY HAVE OF ANY PARTICULAR USE OR APPLICATION INTENDED BY THE PURCHASER. THE SUITABILITY OR FITNESS OF THE UNIT FOR THE CUSTOMERS INTENDED USE, APPLICATION OR PURPOSE AND THE PROPER METHOD OF INSTALLATION OR MOUNTING MUST BE DETERMINED BY THE CUSTOMER.