



BRAKE FUNCTION - WINCH APPLICATIONS

The Failsafe Brake is spring loaded to apply the brake. Hydraulic pressure is required to release the brake. In winch applications, the one way clutch allows rotation to raise the load, even though the brake is applied. When the load is stopped or if pressure is lost due to a failure in the hydraulic system, any reverse rotation engages the clutch and the load is held by the applied brake. No incremental dropping of the load is experienced. While lowering the load, the brake must be released and the control must be provided by a counter balance valve or other suitable hydraulic control. The brake then assumes normal failsafe operation.

BRAKE OPERATION

P/N 29599, 29701, 30278, 33669, 34347, 36320:

Brake/Clutch (CCW Rotating Hydraulic Motor Shaft)

Counter clockwise rotation of motor shaft results in a free wheeling output shaft.

Clockwise rotation of the motor shaft engages the brake output shaft to the brake stack.

P/N 29600, 29702, 30279, 33670, 34348, 36321:

Brake/Clutch (CW Rotation Hydraulic Motor Shaft)

Clockwise rotation of motor shaft results in a free wheeling output shaft.

Counter clockwise rotation of the motor shaft engages the brake output shaft to the brake stack.

INSTALLATION INSTRUCTIONS

1. Place the gasket (22) onto the mounting face of the brake.
2. Engage the brake and the gear reducer shafts.
3. Move the brake into position with the gear reducer, assuring proper gasket location.
4. The bleeder screw should be in the vertical position.
5. Similarly place a gasket (22) onto the flange of the motor.
6. Insert the shaft of the motor into the brake and push into position, assuring proper gasket location.
7. Place the sealing washers (21) under the head of the mounting bolts and insert the four half-inch bolts (Grade 5) through the motor flange, the gasket, the brake, the second gasket, and into the threaded hole in the gear reducer mounting flange. Insure that the bolts are not too long so that they do not bottom out in the reducer before clamping.
8. Run bolts in alternately, to prevent binding, until snug. Then torque the bolts to 75-85 lb-ft.
9. Note: Both shafts must slide together freely - DO NOT use bolts to force the unit together.
10. With motor and brake bolted into position, remove cap plug and connect "inlet" hydraulic line to brake.
11. Bleed air from brake via bleeder screw.
12. Note: Maximum pressure to brake is 3000 psi.
13. Remove pipe plug from side of brake and fill to plug level with 20W oil or allow for splash lubrication from gear box. However, gear box lube must not contain EP (Extreme Pressure) additives.

DISASSEMBLY PROCEDURE (Ref: Exploded View)

1. Loosen 2 bolts (23) alternately.
2. Separate Power Plate (18) assembly from the remainder of the brake.
3. Remove O-rings (3 & 4).
4. Remove Rotating Disc (28) from Splined Shaft (11), remove Springs (29) and Stationary Disc (27) from Pins (31).

"C" SERIES

FAILSAFE BRAKE

WITH ONEWAY CLUTCH

29701 CCM/29702 CW
29599 CCM/29600 CW
30278 CCM/29279 CW
33669 CCM/33670 CW
34347 CCM/34348 CW
36320 CCM/36321 CW

5. Repeat until all Rotating Discs (28), Stationary Disc (27) and Springs (29) are removed.
6. Remove Primary Disc (30).
7. Remove Pins (31).
8. Remove Springs (5 & 6) from counterbores.
9. Remove Thrust Washer (12).
10. Remove the Inner Shaft (9), Outer Shaft (11), Retainer (10) and Clutch (18) as a unit. Further disassembly is not recommended and replacement of specific parts is necessary for replacement of specific parts.
11. Remove Thrust Washer (7).
12. To remove the Inner Shaft (9) from the shaft sub-assembly, rotate the inner shaft in the free wheel direction while withdrawing the shaft from the sub-assembly.
13. Remove Clutch (8) from Outer Shaft (11).
14. Removal of Bearings (10) from Shaft (11) will damage the bearings and should not be attempted unless necessary for replacement.
15. Remove the Piston (13) from the Power Plate (18) by introducing low pressure air - 15 psi - into the hydraulic inlet. Make sure piston is directed away from the operator.
16. Remove O-rings (15 & 17) and teflon Back-up Rings (14 & 16) from the O.D. and I.D. ring grooves. Removal of the teflon Back-up Rings (14 & 16) may cause damage to the teflon rings and should not be attempted unless necessary.
17. Remove Snap Ring (20).
18. Remove Bearing (25) by tapping lightly with a plastic mallet.

ASSEMBLY PROCEDURE

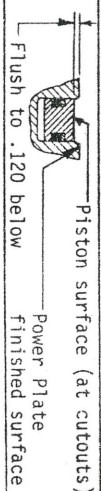
IMPORTANT: There may be more parts in a service kit than your brake requires. Check the parts list carefully for the exact quantity. In the case of springs, space the required quantity equally.

All parts must be thoroughly clean prior to reassembly.

Use the reverse of the disassembly procedure with the following notes and additions:

1. All parts must be clean and free of contamination.
2. Horn O-rings ~~and teflon back-up rings~~ must be replaced.
3. The cylinder of the Power Plate, Piston, and O-rings must be clean prior to assembly, and pre-lubed with system hydraulic fluid.
4. Assemble Piston (13) into Power Plate (18) using a shop press, being careful not to damage the O-rings or Back-up Rings. Visually align the center of the cut-outs in the Piston (13) with the Torque Pin (31) holes in the Power Plate (18).

Depth of piston installation into the Power Plate is critical. DO NOT exceed .120 depth or piston will cock, resulting in a complete loss of braking.



5. See Fig. 2 for correct assembly of the Sprag Clutch (8). Note the location of the O.D. retainer flange relative to the outer shaft. For right hand units, the O.D. retainer flange is at the bottom of the race in the outer shaft. For left hand units, the O.D. retainer flange is at the outside edge of the outer race. (If the brake assembly number is unknown, it is stamped on the exterior surface of the Power Plate (18), adjacent to the motor mounting flange). **IMPROPER ASSEMBLY OF THE CLUTCH, RESULTING IN THE IMPROPER FREE-WHEEL DIRECTION OF THE BRAKE, WILL RESULT IN LOSS OF BRAKING AND MAY BE EXTREMELY HAZARDOUS.**

6. Check the free-wheel direction of the brake prior to installation to verify proper function. See Brake Operation Section for proper free-wheel direction.
7. The Clutch (8) should be placed in the Outer Shaft (11) first. Then install the Inner Shaft (9) by inserting the inner race into the Clutch (8) while rotating the inner race in the free-wheel direction. Do not force when the parts are properly aligned, the inner race will slide in easily.
8. Rotating Discs must be clean. There should be no particulate contamination on the lining material or the mating surfaces of the Stationary Disc.
9. Install Bolts (23). Tighten sequentially, one turn at a time, until Power Plate (18) is properly seated. Torque to 75-85 lb-ft.

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FIG. 2

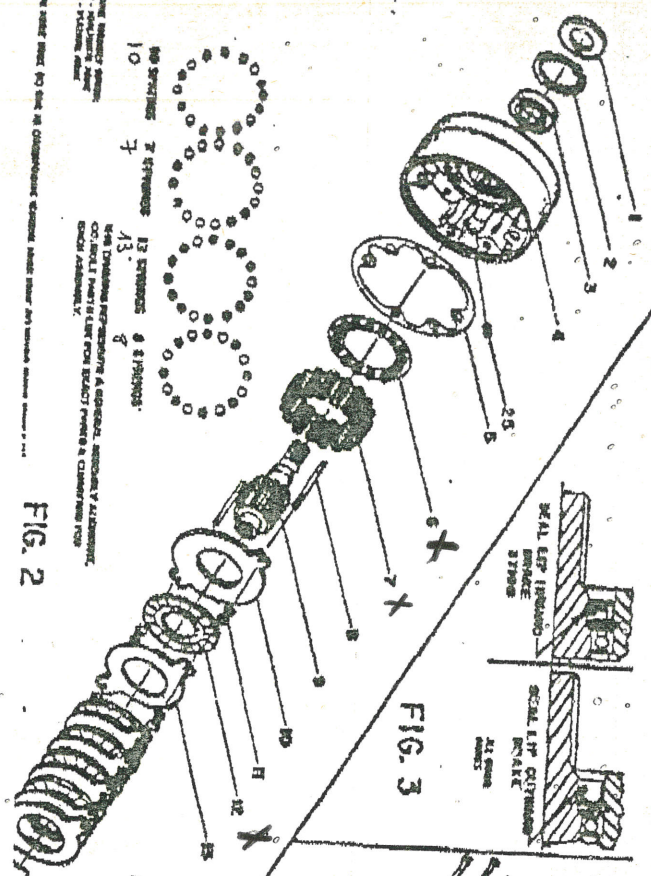


FIG. 3

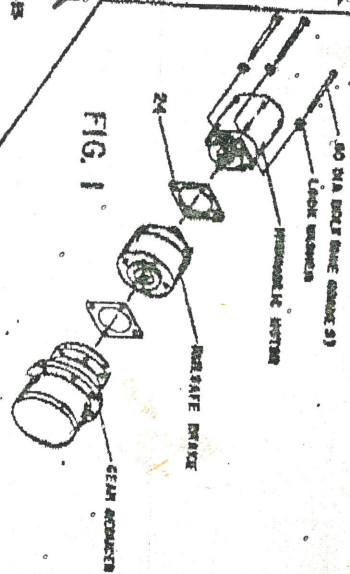


FIG. 1

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 SEP-21-90 FRI 12:18 C.T.F TUNIS P.03

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90-09-05 15:44
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95638 WILSON B
 ATTN: COMMERCIAL DIRECTIO

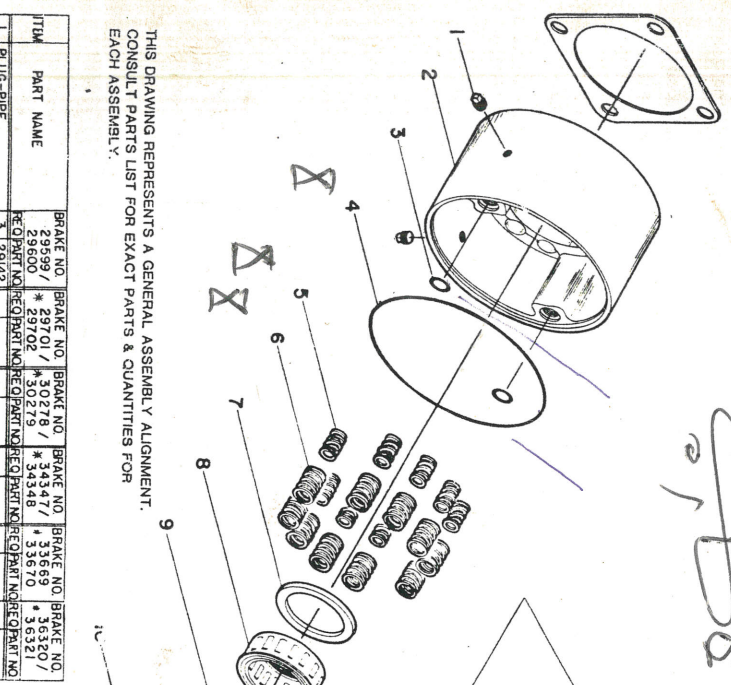
YOUR: C 206/90

OUR: E 1993

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*Attention de l'Atelier
à Chabani Ahmed*

THIS DRAWING REPRESENTS A GENERAL ASSEMBLY ALIGNMENT.
CONSULT PARTS LIST FOR EXACT PARTS & QUANTITIES FOR
EACH ASSEMBLY.



ITEM	PART NAME	BRAKE NO.	BRAKE NO.	BRAKE NO.	BRAKE NO.	BRAKE NO.	BRAKE NO.
1	PLUG PIPE	29599 / 29600	* 29701 / 30278	* 30279 / 30279	* 34347 / 34348	* 33659 / 33670	* 33320 / 33321
2	HOUSING	29632	29632	29632	29632	29632	29632
3	O-RING	29478	29478	29478	29478	29478	29478
4	O-RING	29478	29478	29478	29478	29478	29478
5	SPRING-COMPRESSION	10	29555	29555	29555	29555	29555
6	SPRING-COMPRESSION	10	30899	30899	30899	30899	30899
7	WASHER-THRUST	1	29569	29569	29569	29569	29569
8	WASHER-THRUST	1	29569	29569	29569	29569	29569
9	SHAFT-INNER SPLINED	2	29580	29580	29580	29580	29580
10	BEARING-NEEDLE	2	29580	29580	29580	29580	29580
11	SHAFT-OUTER SPLINED	2	29580	29580	29580	29580	29580
12	WASHER-THRUST	1	29579	29579	29579	29579	29579
13	PISTON	27937	27937	27937	27937	27937	27937
14	RING-PISTON BACKUP	27941	27941	27941	27941	27941	27941
15	RING-PISTON BACKUP	27941	27941	27941	27941	27941	27941
16	RING-PISTON BACKUP	27941	27941	27941	27941	27941	27941
17	O-RING	27938	27938	27938	27938	27938	27938
18	PLATE-POWER	29674	29674	29674	29674	29674	29674
19	PLUG-PROTECTIVE	29435	29435	29435	29435	29435	29435
20	RING-RETAINING	29885	29885	29885	29885	29885	29885
21	WASHER-SPLITTING	29370	29370	29370	29370	29370	29370
22	SCREW-HEX FLANGE	29627	29627	29627	29627	29627	29627
23	SCREW-HEX FLANGE	29627	29627	29627	29627	29627	29627
24	BEARING-BALL	29884	29884	29884	29884	29884	29884
25	SCREW-BLEEDER	29035	29035	29035	29035	29035	29035
26	DISC-ROTATING	5	29913	29913	29913	29913	29913
27	DISC-ROTATING	5	35144	35144	35144	35144	35144
28	DISC-ROTATING	5	35144	35144	35144	35144	35144
29	DISC-ROTATING	5	35144	35144	35144	35144	35144
30	DISC-ROTATING	5	35144	35144	35144	35144	35144
31	DISC-ROTATING	5	35144	35144	35144	35144	35144

* ALL ITEMS ARE IDENTICAL TO 29599/29600 EXCEPT AS SHOWN
-- NOT APPLICABLE FOR THIS BRAKE

FIG. 1

SERVICE KITS

The following kits are available as service items. All other parts may be ordered individually.

0-Ring Kit	Consists of items 3, 4, 14, 15, 16, 17	BRAKE ASSEMBLY
Stack Kit	Consists of items 5, 6, 27, 28, 29, 31	PK 816
Bearing Kit	Consists of items 10, 20, 25	PK 817
Gasket Kit	Consists of items 21, 22	PK 818

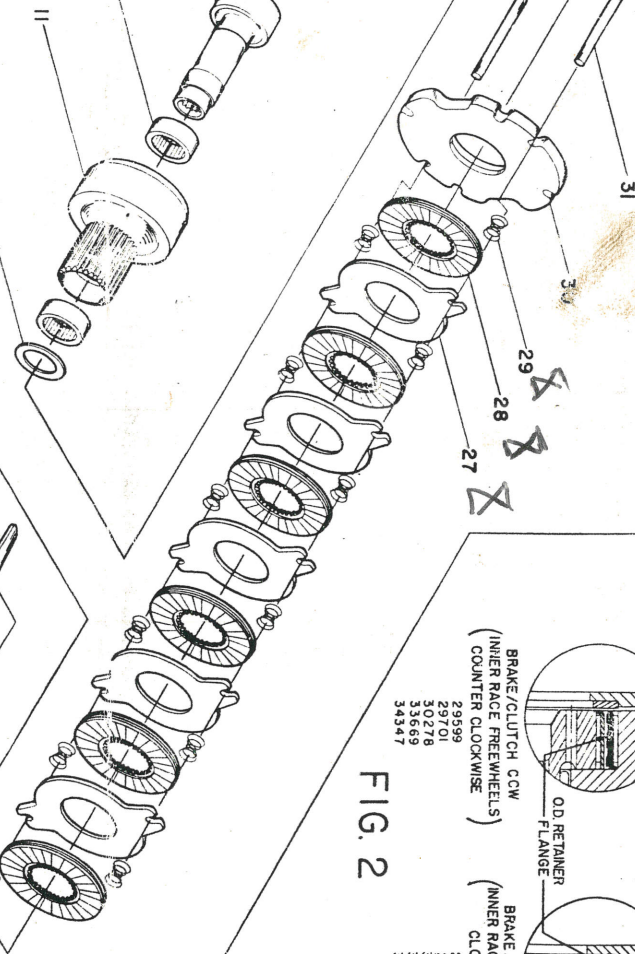


FIG. 2

SPRAG CLUTCH FLANGE POSITION

