

# CATERPILLAR D7R

3ZR / SEBP2945

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## MOUNTING GP

Mounting Gp

Drawing 1 of 2

### INSTRUCTIONS:

#### CAUTION

**Cleanliness is of utmost importance when working on hydraulic equipment. Contamination may cause damage to close tolerances of the hydraulic components which may result in erratic operation and reduced service life.**

NOTE: Refer to the appropriate Caterpillar service manuals for additional information regarding steps 1 & 2.

1. Drain hydraulic oil into a suitable container. Recycle or dispose of drain oil in an environmentally responsible manner. Securely install hydraulic reservoir drain plug after oil has drained.
2. Remove and discard the ripper hose junction block (if equipped) from the tapped mounting pad on the bottom of the fuel tank.
3. Clean all paint, oil, grease, rust and dirt from the mounting surfaces of the winch adapter brackets and tractor.
4. Apply Loc-tite 271 to the threads and install studs, item 5, into the top four locations on the rear face of the tractor. Install the winch adapters onto the

studs on the rear of the tractor. Install the motor union bracket (item 6 control group) onto the top RH studs, item 5. Install valve bracket (item 3 control group) onto top LH studs.

5. Apply Loc-tite 242 to the threads of the studs, item 5, and capscrews, item 4, then tighten to 1,100 lb•ft (1,490 N•m) torque.

#### WARNING

**Winch weighs approximately 4,050 lb (1,890 kg). Use a hoist with sufficient capacity.**

6. Install winch onto adapters. Apply Loc-tite 242 to threads of capscrews, item 4, then tighten to 1,110 lb•ft (1,490 N•m) torque.

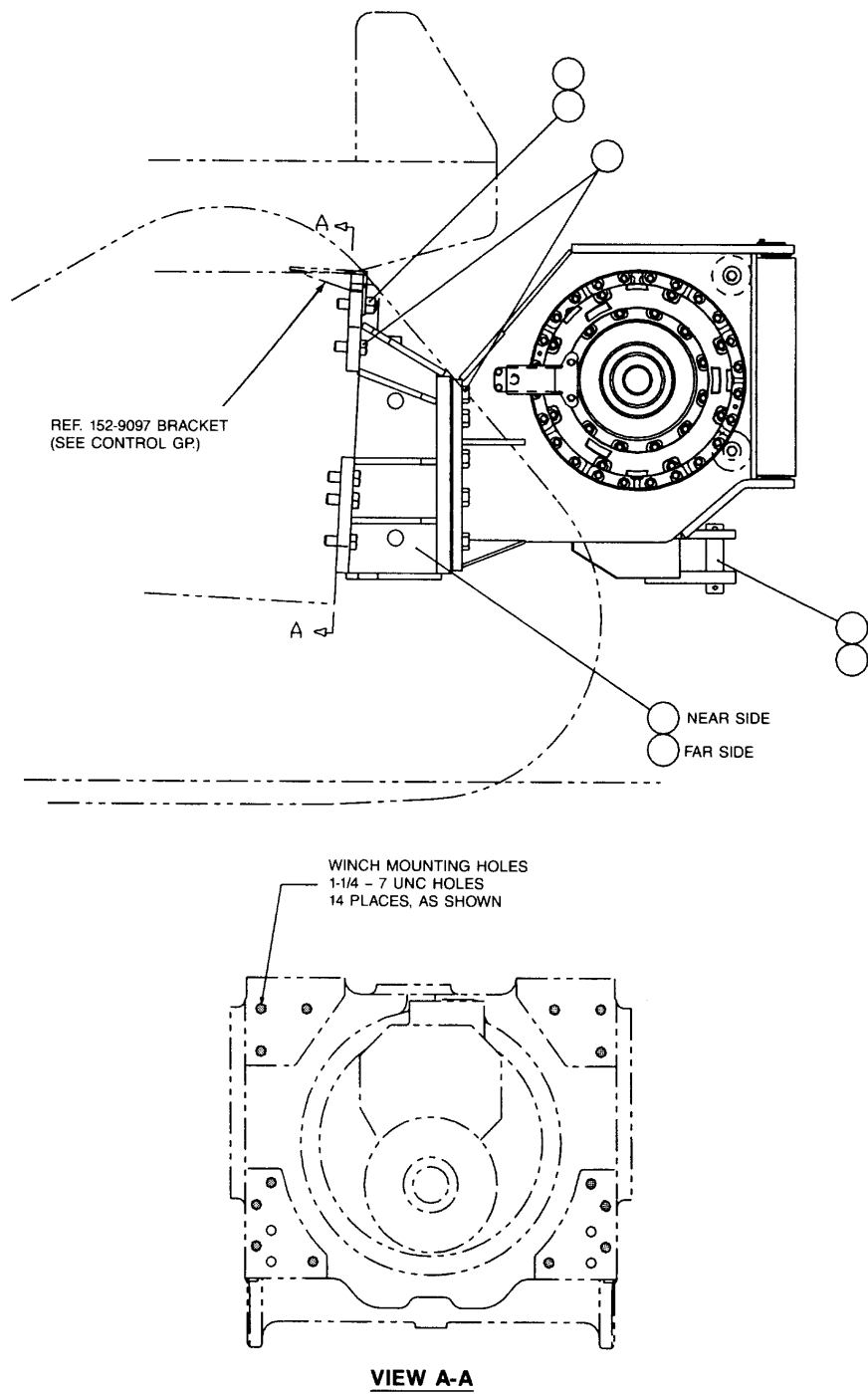
#### CAUTION

**Fill winch to proper level with recommended oil BEFORE operating. Component damage may occur if winch is operated without oil.**

| ITEM NO. | PART NO. | DESCRIPTION           | QTY. |
|----------|----------|-----------------------|------|
| 1        | 152-8371 | ADAPTER, RH           | 1    |
| 2        | 152-8372 | ADAPTER, LH           | 1    |
| 3        | 7X-0451  | NUT, HEX (1¼ - 7)     | 4    |
| 4        | 1J-5484  | BOLT (1¼ - 7 x 3¼ G8) | 20   |
| 5        | 135-1934 | STUD (1¼ - 7 x 5)     | 4    |
| 6        | 126-0860 | DRAWBAR PIN           | 1    |
| 7        | 3B-5320  | COTTER PIN            | 2    |

MOUNTING GP (continued)

Drawing 2 of 2



| Ref. | Part number | Description                 | Qty | Code | Group page |
|------|-------------|-----------------------------|-----|------|------------|
| 1    | 152-8371    | ADAPTER, RH                 | 1   |      |            |
| 2    | 152-8372    | ADAPTER, LH                 | 1   |      |            |
| 3    | 7X-0451     | NUT, HEX (1 1/4 - 7)        | 4   |      |            |
| 4    | 1J-5484     | BOLT (1 1/4 - 7 X 3 1/4 G8) | 20  |      |            |

MOUNTING GP (continued)

| Ref. | Part number | Description          | Qty | Code | Group page |
|------|-------------|----------------------|-----|------|------------|
| 5    | 135-1934    | STUD (1 1/4 - 7 X 5) | 4   |      |            |
| 6    | 126-0860    | DRAWBAR PIN          | 1   |      |            |
| 7    | 3B-5320     | COTTER PIN           | 2   |      |            |

# CONTROL GP - HYDRAULIC

## Control Gp - Hydraulic

Drawing 1 of 4

### INSTRUCTIONS – D7R D/S

#### CAUTION

**Cleanliness is of the utmost importance when working on hydraulic equipment. Contamination may cause damage to close tolerance hydraulic components which may result in erratic operation and reduced service life.**

NOTE: Refer to the appropriate Caterpillar service manuals for additional information regarding the tractor.

1. To prepare the tractor for service, lower the blade to the ground. Turn the engine off and remove trapped oil pressure in the blade circuits by cycling the blade control lever in all directions. Relieve trapped oil pressure in the hydraulic reservoir by opening the fill cap. Turn the tractor master electrical circuit switch off.
2. Remove the operator's seat and cab floor plate and RH console top and side cover plates to gain access to hydraulic plumbing.
3. If required, perform the tractor conversion updates as described on page 7.
4. Preassemble fittings to logic valve assembly, item 2, as shown on page 18.
5. Mount logic valve assembly to logic valve mounting bracket item 3 (already installed to tractor rear face), utilizing fasteners, items 4 and 5. Torque capscrew to 33 lb•ft (45 N•m). Assembly may be aided by removing the bracket from the tractor before installing the valve assembly.
6. Attach manifold, item 7, to mounting bracket, item 6 (already installed to tractor rear face), utilizing fasteners, items 8 and 9.
7. Install MOTOR SHIFT hose, item 28, to -4 elbow in "X" port on the forward side of the winch motor. Install opposite end to "X" port on logic valve.
8. Install MOTOR DRAIN hose, item 30, to -8 elbow on the winch motor. Install opposite end to one of the -8 "T" ports on the logic valve.
9. Remove and discard shipping cover and capscrews from top motor port. Install REEL-OUT hose, item 18, to this port and to inboard manifold port, utilizing split flange halves, item 11, D-ring, item 12, and fasteners, items 13, 14 and 15. Torque capscrews to 50 lb•ft (70 N•m).
10. Install REEL-IN hose, item 16, to port in brake valve on bottom motor port, utilizing adapter, item 17. Attach opposite end to outboard manifold port utilizing split flange halves, item 11, D-ring, item 12, and fasteners, items 13 and 15. Torque capscrews to 50 lb•ft (70 N•m).
11. Attach REEL-IN hose, item 20, and REEL-OUT hose, item 19, to forward face of manifold utilizing split flange halves, item 11, D-ring, item 12, and fasteners, items 13 and 15. REEL-IN hose should be attached to the outboard port. Attach opposite ends to the winch section of the tractor stack valve – REEL-IN to the rearmost port – utilizing the existing split flange halves and fasteners, and new D-rings, item 12. Torque capscrews to 50 lb•ft (70 N•m).
12. Preassemble fittings to joystick valve assembly as shown on page 18.
13. Attach REEL-IN pilot hose, item 21, to the forward wet end cap on the stack valve utilizing elbow, item 38. Orient the elbow so that it provides the maximum available clearance with the dozer control linkages. Attach opposite end to port 1 on the joystick assembly.
14. Attach REEL-OUT pilot hose, item 24, to the rearmost wet end cap on the stack valve utilizing adapter, item 23. Attach opposite end to port 3 on the joystick assembly.
15. Attach PRESSURE hose, item 26, between logic valve "J" port and port "P" on the joystick assembly.
16. Attach RETURN hose, item 26, between logic valve "T" (-6 size) port and port "T" on the joystick assembly.
17. Attach DRUM CLUTCH RELEASE hose, item 27, between elbow located on RH side of winch case and port 4 on the joystick assembly.
18. Install adapter, item 32, into plugged port located in tractor hydraulic reservoir below hydraulic oil filter.
19. Attach hydraulic tube assembly, item 33, to the adapter in the hydraulic reservoir.
20. Attach RETURN line, item 31, between hydraulic tube assembly and "T" (-8 size) port on logic valve.
21. Remove the pressure test fitting at the tractor implement pump. Install the tee, item 73, into this port. Install the provided test fitting, item 35, to the end of the tee which points toward the LH side of the tractor.
22. Install PRESSURE hose, item 69, between the tractor implement pump tee and the "P" port on the logic valve.

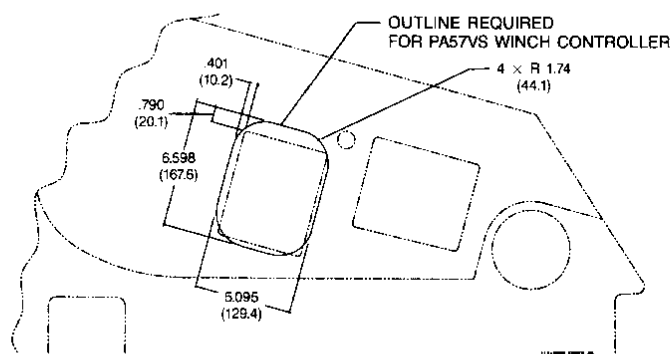
## CONTROL GP - HYDRAULIC (continued)

Drawing 2 of 4

23. Attach the electrical harness, item 36, to the toggle switch, indicator light and joystick, and to circuit #199 of the tractor harness, located below the operator RH console. See page 13 for electrical schematic.
24. Route and bundle hoses and electrical harness approximately as shown, and tie down utilizing clips and fasteners as specified.
25. Install the controller assembly, item 1, up through the bottom of the console cover plate, item 102. Fasten with capscrews, item 10, and washers, item 5.
26. Attach the console cover plate to the tractor console using the existing tractor hardware. Re-attach the dozer blade controller to the cover plate using the existing hardware. Re-attach all removed covers, plates, etc., and the operator's seat.
27. If so equipped, modify and reinstall the plastic console cover. See below for cover modification details.
28. Carefully install the control decal, item 43, to either the console cover or the cover plate, as required. The decal should be located adjacent to the control stand, as shown in View B-B.
29. Turn on the tractor master switch. Turn the starter key switch on – **DO NOT START ENGINE**. Pressing the rocker switch should cause the indicator lamp and solenoid valve to activate. Pull toggle switch upward and move to enable hydraulics to winch. Disable solenoid should activate. Leave switch in disable position when winch is not in use.
30. Check all hydraulic connections for tightness. Make certain all hoses and wires are routed and secured to prevent chafing.
31. Fill the hydraulic reservoir to the proper level. Refer to the Caterpillar oil specs.
32. Start the engine and operate at low idle to purge air from the lines. Operate winch in all functions and refill the hydraulic reservoir as required. Check for leaks and correct as required. If winch REEL-IN and REEL-OUT functions at joystick do not match drum rotation, reverse hoses at joystick ports 1 and 3.
33. Record winch and tractor serial numbers on delivery report form(s). Conduct winch operator training as required.

### TRACTOR CONVERSION INSTRUCTIONS - D7R D/S

1. Make sure the hydraulics are locked out.
2. If the tractor is equipped with a ripper section in the implement stack valve, replace the ripper valve section with the new winch valve section, item 100.
3. If the tractor is not equipped with a ripper section in the implement stack valve, disassemble the valve one section at a time. Replace the tie bolts with new bolts, item 107. Reassemble the valve, section by section. Add the new winch valve section, item 100, as the last section in the stack.
4. Install the new valve cover plate, item 110. Torque fasteners to 75 lb•ft (100 N•m).
5. Remove the drive screw and I.D. plate from the valve assembly. Attach the new I.D. plate, item 109, using the drive screw, item 108.



NOTE:  
THIS DRAWING FOR USE IN MODIFYING  
EXISTING COVER, 111-7094 FOR USE WITH  
PA57VS WINCH.

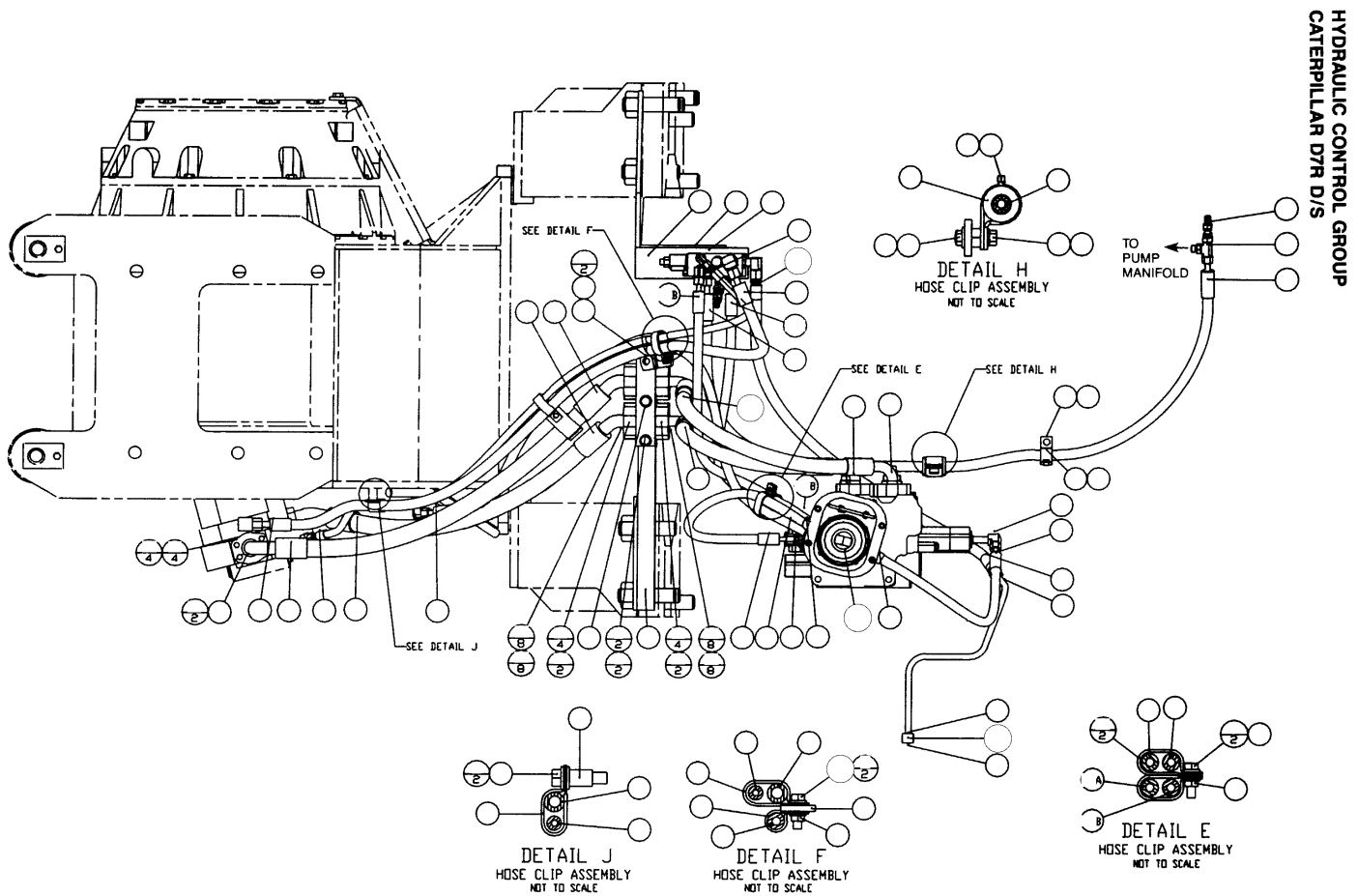
OPTIONAL: PROCURE NEW COVER, 152-7538  
FROM CATERPILLAR.

DIMENSIONS IN INCH (MM).

### CONSOLE COVER MODIFICATION

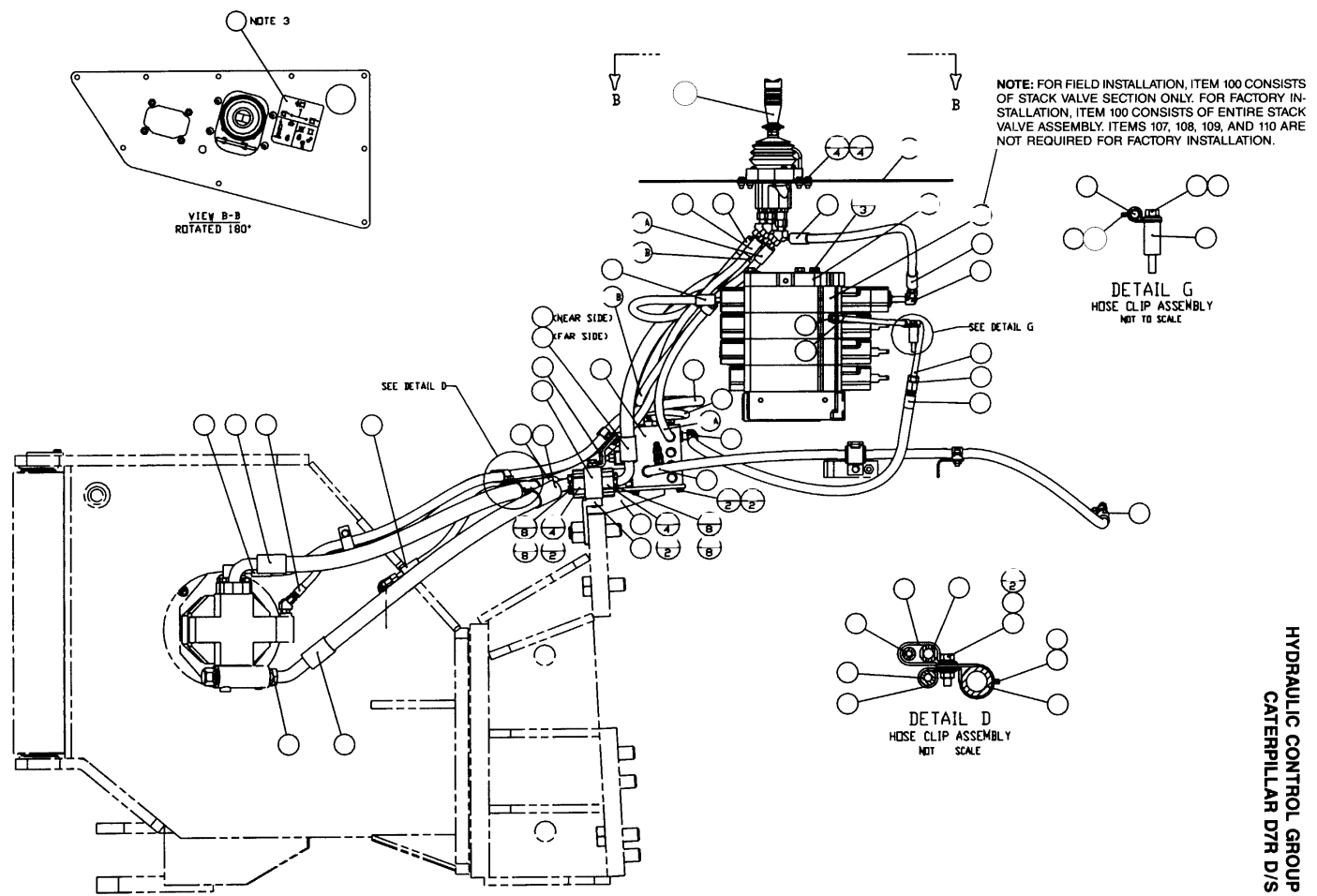
CONTROL GP - HYDRAULIC (continued)

Drawing 3 of 4



CONTROL GP - HYDRAULIC (continued)

Drawing 4 of 4



| Ref. | Part number | Description                          | Qty | Code | Group page |
|------|-------------|--------------------------------------|-----|------|------------|
| 1    | 152-8375    | CONTROL ADAPTER AS.                  | 1   |      |            |
| 2    | 152-8377    | LOGIC VALVE AS.                      | 1   |      |            |
| 3    | 152-9097    | BRACKET, LOGIC VALVE                 | 1   |      |            |
| 4    | 4L-6454     | CAPSCREW, HEX HEAD (3/8 NC X 1)      | 3   |      |            |
| 5    | 8T-4896     | WASHER, HARD (3/8)                   | 14  |      |            |
| 6    | 152-9098    | BRACKET, MANIFOLD                    | 1   |      |            |
| 7    | 152-9099    | MANIFOLD                             | 1   |      |            |
| 8    | 6V-4432     | CAPSCREW, HEX HEAD (1/2 NC X 4)      | 3   |      |            |
| 9    | 8T-4223     | WASHER, HARD (1/2)                   | 6   |      |            |
| 10   | 6J-0488     | CAPSCREW, BUTTON HEAD (3/8 NC X 7/8) | 4   |      |            |
| 11   | 1P-5766     | SPLIT FLANGE HALF (CAT -16)          | 10  |      |            |
| 12   | 1P-3703     | D-RING (CAT -16)                     | 7   |      |            |
| 13   | 8C-6877     | CAPSCREW, HEX HEAD (7/16 NC X 1 3/4) | 16  |      |            |
| 14   | 7X-0313     | CAPSCREW, HEX HEAD (7/16 NC X 2 3/4) | 4   |      |            |
| 15   | 8T-5360     | WASHER, HARD (7/16)                  | 20  |      |            |

**CONTROL GP - HYDRAULIC** (continued)

| Ref. | Part number | Description                          | Qty | Code | Group page |
|------|-------------|--------------------------------------|-----|------|------------|
| 16   | 152-9100    | HOSE AS., -16 x 38.12 in. (968.2 mm) | 1   |      |            |
| 17   | 148-8314    | ADAPTER, -12/-16                     | 1   |      |            |
| 18   | 152-9101    | HOSE AS., -16 x 38 in. (965.2 mm)    | 1   |      |            |
| 19   | 152-9102    | HOSE AS., -16 x 37.50 in. (952.5 mm) | 1   |      |            |
| 20   | 152-9103    | HOSE AS., -16 x 31.13 in. (790.7 mm) | 1   |      |            |
| 21   | 152-9104    | HOSE AS., -6 x 23 in. (584.2 mm)     | 1   |      |            |
| 22   | 148-8338    | ADAPTER, -6                          | 3   |      |            |
| 23   | 148-8336    | ADAPTER, -6                          | 5   |      |            |
| 24   | 152-9105    | HOSE AS., -6 x 27 in. (685.8 mm)     | 1   |      |            |
| 25   | 148-8371    | ELBOW, 45 deg SWIVEL, -6             | 4   |      |            |
| 26   | 152-8360    | HOSE AS., -6 x 36 in. (914.4 mm)     | 2   |      |            |
| 27   | 152-9107    | HOSE AS., -6 x 67 in. (1701.8 mm)    | 1   |      |            |
| 28   | 152-9108    | HOSE AS., -4 x 53 in. (1346.2 mm)    | 1   |      |            |
| 29   | 148-8369    | ELBOW, 90 deg LONG -4                | 1   |      |            |
| 30   | 158-6529    | HOSE AS., -8 x 60 in. (1524 mm)      | 1   |      |            |
| 31   | 152-9111    | HOSE AS., -8 x 49.5 in. (1257.3 mm)  | 1   |      |            |
| 32   | 148-8340    | ADAPTER, -8                          | 2   |      |            |
| 33   | 152-9112    | HYDRAULIC TUBE AS.                   | 1   |      |            |
| 34   | 152-9113    | BRACKET                              | 1   |      |            |
| 35   | 126-0814    | TEST FITTING                         | 2   |      |            |
| 36   | 152-9114    | WIRING HARNESS                       | 1   |      |            |
| 37   | 6V-8188     | NUT, HEX (1/2 NC)                    | 1   |      |            |
| 38   | 169-8428    | ELBOW, 90 deg LONG -6                | 2   |      |            |
| 39   | 148-8370    | ELBOW, 90 deg -8                     | 1   |      |            |
| 40   | 6D-4247     | CLIP                                 | 4   |      |            |
| 41   | 9B-7237     | CAPSCREW, HEX HEAD (3/8 NC X 1 1/4)  | 3   |      |            |
| 42   | 6V-8801     | NUT, HEX (3/8 NC)                    | 5   |      |            |
| 43   | 152-9120    | DECAL                                | 1   |      |            |
| 44   | 6D-7573     | CLIP                                 | 1   |      |            |
| 45   | 9B-0523     | SPACER                               | 1   |      |            |
| 46   | 7S-3916     | CLIP                                 | 1   |      |            |
| 47   | 7S-3919     | CLIP                                 | 1   |      |            |
| 51   | 7S-8920     | CLIP                                 | 1   |      |            |
| 52   | 7S-8921     | CLIP                                 | 1   |      |            |
| 53   | 1S-0994     | CLIP                                 | 2   |      |            |
| 54   | 8T-4835     | CAPSCREW, HEX HEAD (1/2 NC X 2)      | 1   |      |            |

**CONTROL GP - HYDRAULIC** (continued)

| Ref. | Part number | Description                         | Qty | Code | Group page |
|------|-------------|-------------------------------------|-----|------|------------|
| 55   | 148-8364    | ELBOW, 90 deg -8                    | 1   |      |            |
| 56   | 8T-1885     | CLIP                                | 1   |      |            |
| 57   | 008-1886    | CLIP                                | 1   |      |            |
| 58   | 8T-9101     | CAPSCREW, HEX HEAD (3/8 NC X 2 3/4) | 1   |      |            |
| 59   | 5T-6374     | SPACER                              | 1   |      |            |
| 60   | 4P-7581     | CLIP                                | 1   |      |            |
| 61   | 5P-8167     | CAPSCREW, HEX HEAD (3/8 NC X 5/8)   | 1   |      |            |
| 62   | 7K-1181     | STRAP                               | 6   |      |            |
| 63   | 6V-1249     | GROMMET                             | 1   |      |            |
| 64   | 5P-7464     | CLIP                                | 1   |      |            |
| 65   | 5P-7465     | CLIP                                | 1   |      |            |
| 66   | 4L-9337     | CAPSCREW, HEX HEAD (3/8 NC X 1 1/2) | 1   |      |            |
| 67   | 5P-1075     | WASHER, HARD (3/8)                  | 1   |      |            |
| 68   | 164-7908    | ELBOW, 45 deg, -6 / -4              | 1   |      |            |
| 69   | 152-9110    | HOSE AS., -6 x 69 in. (1752.6 mm)   | 1   |      |            |
| 71   | 6V-8398     | O-RING                              | 1   |      |            |
| 73   | 148-8439    | TEE, -6                             | 1   |      |            |
| 100  | 110-7700    | STACK VALVE SECTION, WINCH          | 1   |      |            |
| 102  | 152-7536    | COVER AS.                           | 1   |      |            |
| 107  | 1M-6857     | BOLT, STACK VALVE                   | 3   |      |            |
| 108  | 4B-4158     | DRIVE SCREW                         | 1   |      |            |
| 109  | 149-6279    | PLATE, I.D.                         | 1   |      |            |
| 110  | 153-6978    | COVER, STACK VALVE                  | 1   |      |            |
| 111  | 8T-4223     | WASHER, HARD (1/2)                  | 3   |      |            |

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