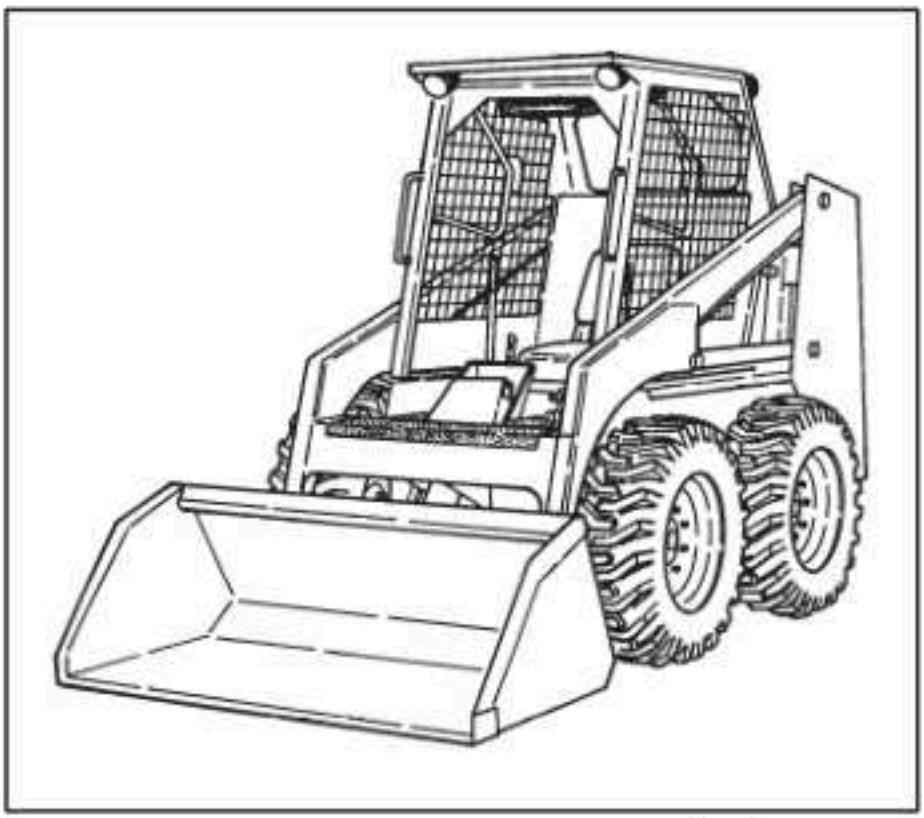
742
742B
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Service Manual



MELROE
INGERSOLL-RAND

6720772(7–92)

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CALIFORNIA
PROPOSITION 65 WARNING
Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects and other reproductive harm.

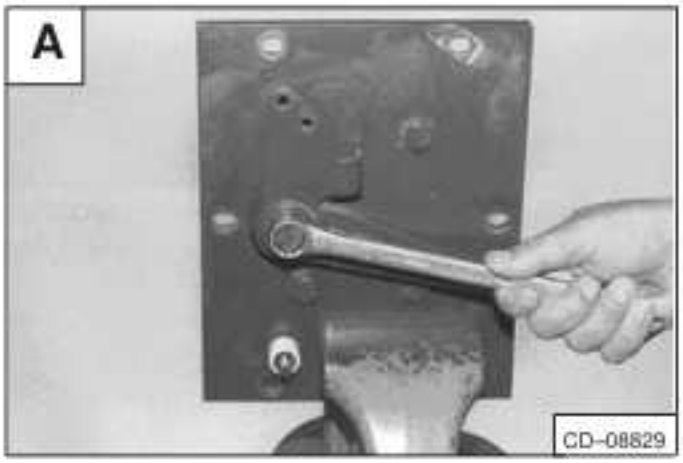
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PARKING BRAKE (Cont'd)

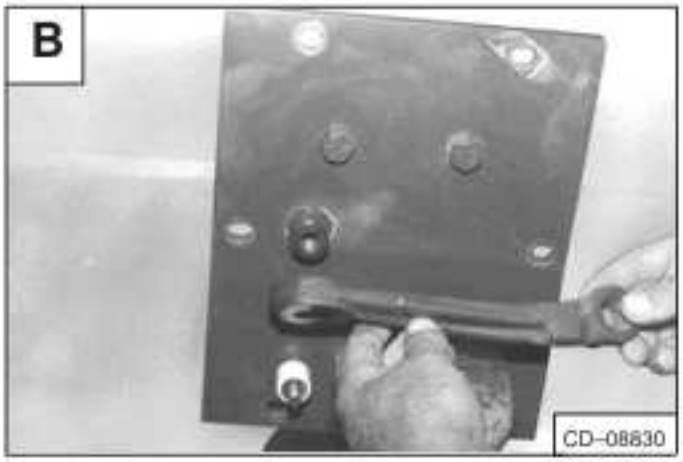
Brake Block And Pads

Remove the brake lever bolt **[A]**.

Assembly: Tighten the bolt to 65–70 ft.–lbs. (88–95 Nm) torque.

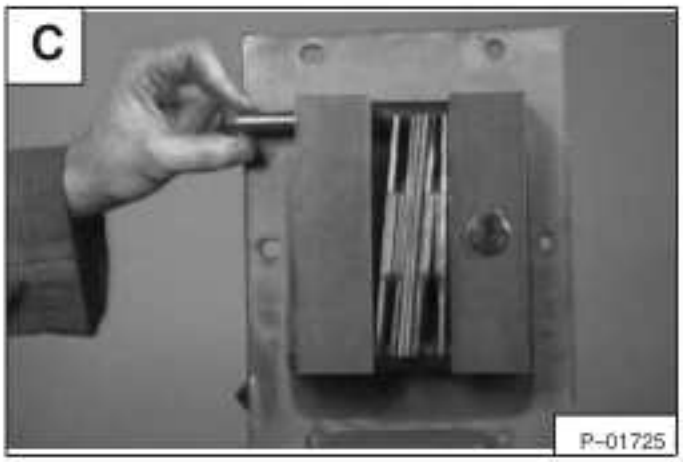


Remove the brake lever **[B]**.



Remove the bolt from the brake block **[C]**.

Assembly: Tighten the bolts to 65–70 ft.–lbs. (88–95 Nm) torque.



Remove the guide and pads **[D]**.

Assembly: Note location of pads and spacers.

Check the pads for wear and replace them as needed **[D]**.



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STARTER (Cont'd)

Cleaning and Inspection

Use a brush and air pressure to clean the drive, field coils, armature and starter housing.

NOTE: Do not use solvent to clean the drive assembly. The solvent will remove the lubricant and the drive will slip.

Check the following items:

Armature
- Broken or burned insulation.
- Loose connections at commutator.
- Open or grounded circuits **[C]** & **[D]**.
- Worn shaft or bearings.
- Rough commutator.

Brush Holders
- Broken springs.
- Broken insulation.
- Spring tension.

Field Coils
- Broken or burned insulation.
- Electrical continuity.
- Brush connections.

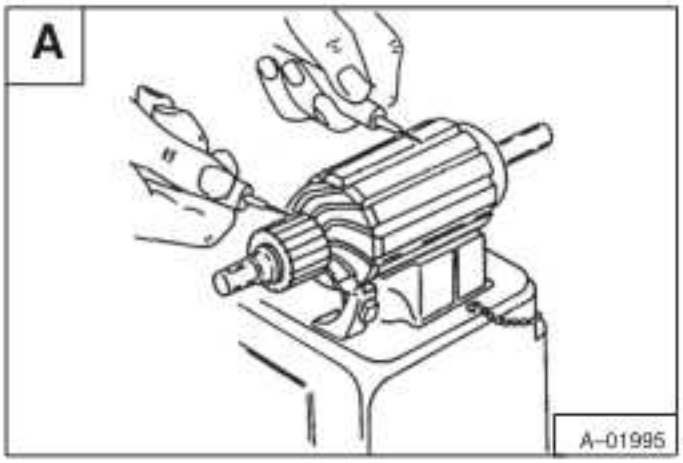
Drive Gears
- Worn teeth.
- Tooth engagement.

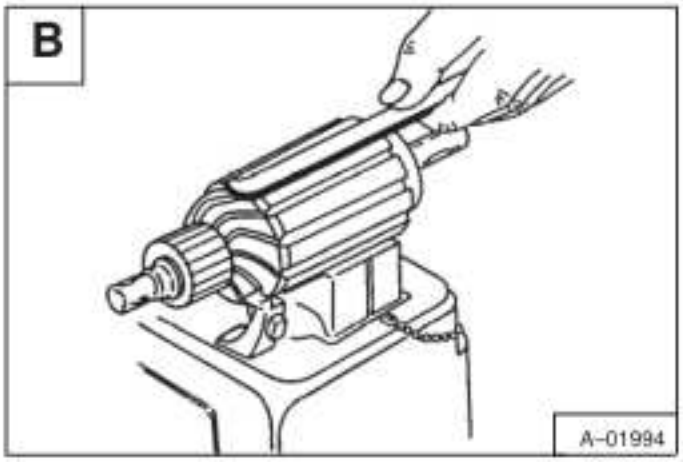
Field Coils
- Broken or burned insulation
- Electrical continuity **[C]**.

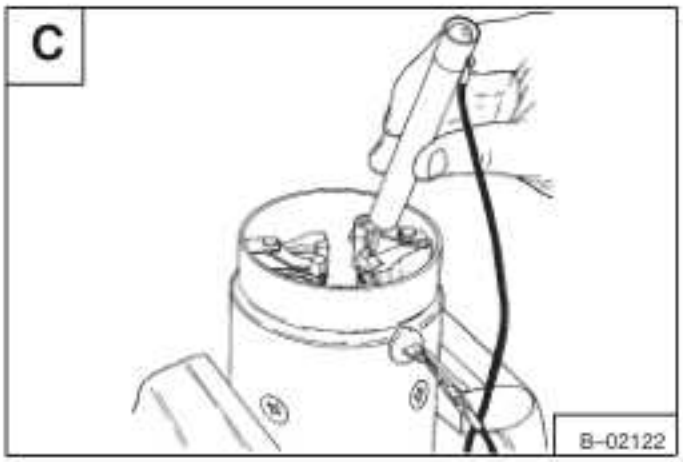
Brush connections.

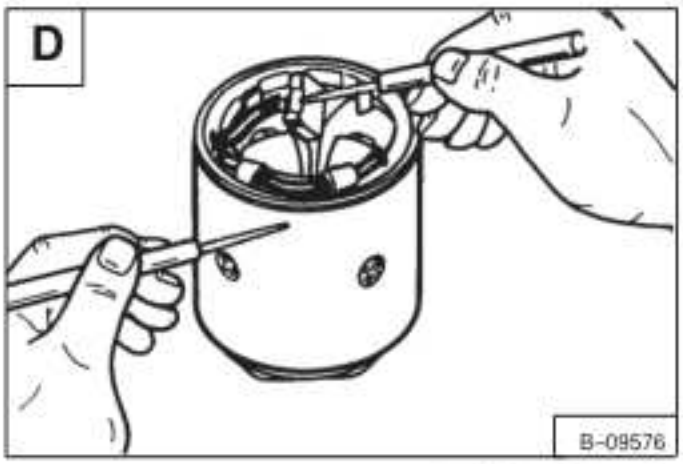
Drive Gear:
- Worn teeth
- Tooth engagement (drive gear must engage ring gear by 1/2 the depth of the ring gear tooth)

To test for ground, use a test light and touch one probe to the body and the other probe to the field winding end of the brush. The lamp should not light **[D]**.









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Engine Bolt Torques (Cont'd)

BOLT TORQUES			
MATERIAL GRADE	STANDARD BOLT	SPECIAL BOLT	SPECIAL BOLT
NOMINAL DIAMETER	SS42, S20C	S43C, S48C (Refined)	SCR3, SCM3 (Refined)
M6	5.8 to 6.9 ft.–lbs. (7.8 to 9.3 Nm)	7.2 to 8.3 ft.–lbs. (9.8 to 11.3 Nm)	9.0 to 10.5 ft.–lbs. (12.3 to 14.2 Nm)
M8	13 to 15 ft.–lbs. (18 to 20 Nm)	17 to 20 ft.–lbs. (23 to 27 Nm)	21 to 25 ft.–lbs. (28 to 34 Nm)
M10	28 to 33 ft.–lbs. (38 to 45 Nm)	35 to 41 ft.–lbs. (47 to 56 Nm)	44 to 52 ft.–lbs. (60 to 71 Nm)
M12	46 to 53 ft.–lbs. (62 to 72 Nm)	57 to 66 ft.–lbs. (77 to 89 Nm)	75 to 86 ft.–lbs. (102 to 117 Nm)
M14	79 to 92 ft.–lbs. (107 to 125 Nm)	91 to 108 ft.–lbs. (123 to 146 Nm)	123 to 144 ft.–lbs. (167 to 195 Nm)
M16	123 to 141 ft.–lbs. (167 to 191 Nm)	144 to 166 ft.–lbs. (195 to 225 Nm)	191 to 224 ft.–lbs. (159 to 303 Nm)
M18	180 to 209 ft.–lbs. (244 to 283 Nm)	202 to 235 ft.–lbs. (274 to 318 Nm)	153 to 196 ft.–lbs. (343 to 401 Nm)
M20	245 to 289 ft.–lbs. 332 to 392 Nm)	271 to 318 ft.–lbs. (367 to 431 Nm)	361 to 419 ft.–lbs. (489 to 568 Nm)

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FLUID FLOW EXPLANATION

The fluid flows by gravity from the reservoir ❶ to the port block ⓬ which is located inside the right fender. Return fluid from the oil cooler by-pass valve ⓬ joins with the fluid from the oil cooler ㉜ and hydrostatic pump ❻ through the bearing of the pump ❻ and supplies fluid to the hydraulic pump ❺ .

The hydraulic pump ❺ is driven by a shaft through the hydrostatic pumps ❻ . The fluid goes from the hydraulic pump ❺ to the hydraulic control valve ㉗ .

The control valve ㉗ has an adjustable relief valve ㉔ . When all three spools of the control valve are in the neutral position, the fluid goes through the control valve ㉗ and to the oil cooler ㉜ . If one of the spools is activated, the fluid goes out the respective port and to either the base end, or the rod end of the cylinder(s) ⓰ ⓱ . ALSO SEE OPTIONAL BUCKET POSITIONING SYSTEM OPERATION. As the fluid goes into one end of the cylinder(s) ⓰ ⓱ , the fluid from the other side of the cylinder flows back into the control valve ㉗ . When the cylinder(s) ⓰ ⓱ reach the end of the stroke, the fluid pressure reaches the setting of the relief valve ㉔ , it will open and let the fluid by-pass the hydraulic circuit (internally) and go back to the oil cooler ㉜ . When the spool goes back to neutral position, then there is fluid available for the other sections of the control valve ㉗ . Two sections of the control valve ㉗ can be used at the same time if the main relief valve ㉔ is not open.

The fluid flows from the oil cooler ㉜ through the filter ㉙ to the center section of the hydrostatic pumps ❻ . This fluid is called ''charge supply fluid''. In the center section of the pumps ❻ the fluid is against two high pressure relief/replenishing valves ❾ , two replenishing valves ❼ and the charge relief valve ❽ . When the fluid gets to the pumps ❻ it activates the high pressure relief/replenishing valves ❾ and replenishing valve ❼ . The replenishing valves ❼ ❾ open and let fluid into the pumps ❻ for replenishing, lubrication and cooling. The pumps ❻ do not need the full volume of fluid flow so there is extra fluid. This extra fluid goes to the charge relief valve ❽ .

There are two hydrostatic pumps ❻ and hydrostatic motors ❹ . One pump and one motor work together as a pair to drive on one side of the loader. The other pump and motor work as a pair to drive the opposite side of the loader.

When the steering levers are in neutral, the pumps ❻ and the motors ❹ are not working, but do have charge pressure. When the steering levers are moved, the swashplates in the pumps ❻ are angled and the fluid is forced out of the pressure side of the pumps ❻ and to the motors ❹ .

This flow of fluid is called ''drive pressure fluid''. Drive pressure is much higher than charge pressure causing the replenishing valves ❼ ❾ to close, allowing the flow of fluid to go to the motors ❹ . There are four replenishing valves ❼ ❾ , two for each pump ❻ . One

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WIRE LEGEND

NO.'s	COLOR	GAUGE
1D	Red	12
1F	Red	16
10A	Black	12
10B	Black	14
10AB	Black	12
12A	Orange	18
12B	Orange	16
12C	Orange	16
12F	Orange	16
12L	Orange	18
12T	Orange	18
12V	Orange	18
19C	Red/White	16
19F	Red/White	16
19H	Red/White	18
19L	Red/White	16
19S	Red/White	16
19W	Red/White	16
21R	White	16
21RM	White	16
23F	White/Black	16
26	Lt. Blue	16
26A	Lt. Blue	16
28	Lt. Blue/Black	16
30	Black	16
30G	Black	16
30T	Black	16
31	Yellow/Green	18
31P	Yellow/Green	18
32	Yellow	18
32PT	Yellow	18
35H	Yellow/Brown	18
36	Purple	16
36T	Purple/White	18
40R	Black	16
40FL	Black	16
40FR	Black	16
41	Pink	16
42FL	Dk. Blue	16
42FR	Dk. Blue	16
42R	Dk. Blue/White	16
46	Brown	16
46L	Brown	16
46R	Brown	16
49F	Gray	18
49T	Gray	18
49V	Gray	18
60W	Black	16
66	Orange/Green	16

PARTS LEGEND

1. Harness Connectors
2. Ground
3. Fuel Sender
4. Back-Up Alarm (Opt.)
5. Rear Light (Opt.)
6. Tail Light (Opt.)
7. Left Flasher Light (Opt.)
8. Left Front Light (Opt.)
9. Wiper Switch (Opt.)
10. Wiper (Opt.)
11. Shut Down Module (Opt.)
12. Flasher (Opt.)
13. Right Front Light (Opt.)
14. Right Flasher Light (Opt.)
15. Trans. Warning Light
16. Engine Warning Light
17. Voltmeter
18. Temperature Gauge
19. Fuel Gauge
20. Hourmeter
21. Fuse (Ignition)
22. Fuse (Accessory)
23. Light Switch (Opt.)
24. Ignition Switch

* Wire 26A is connected to wire 26 when module is not used.

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HYDRAULIC / HYDROSTATIC FLOW CHART

For Model

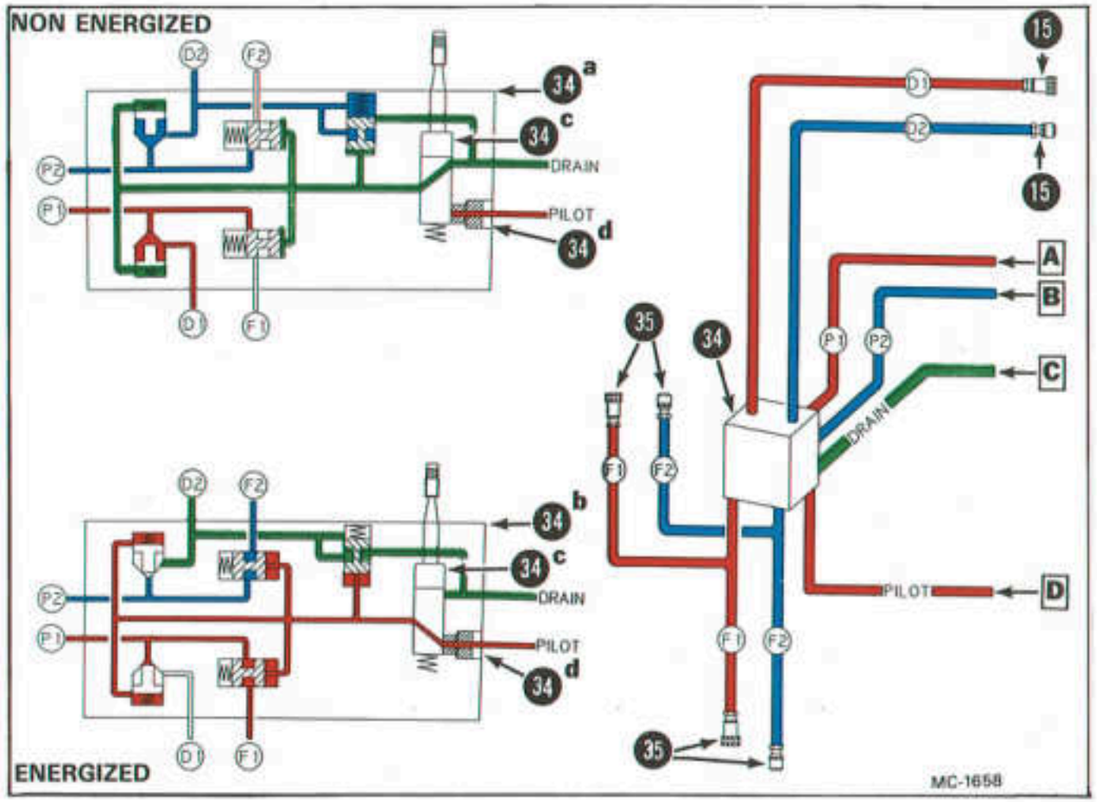
742B, 743B (S/N 18001 & Above)

Chart # 6722239 (Printed January 1993)

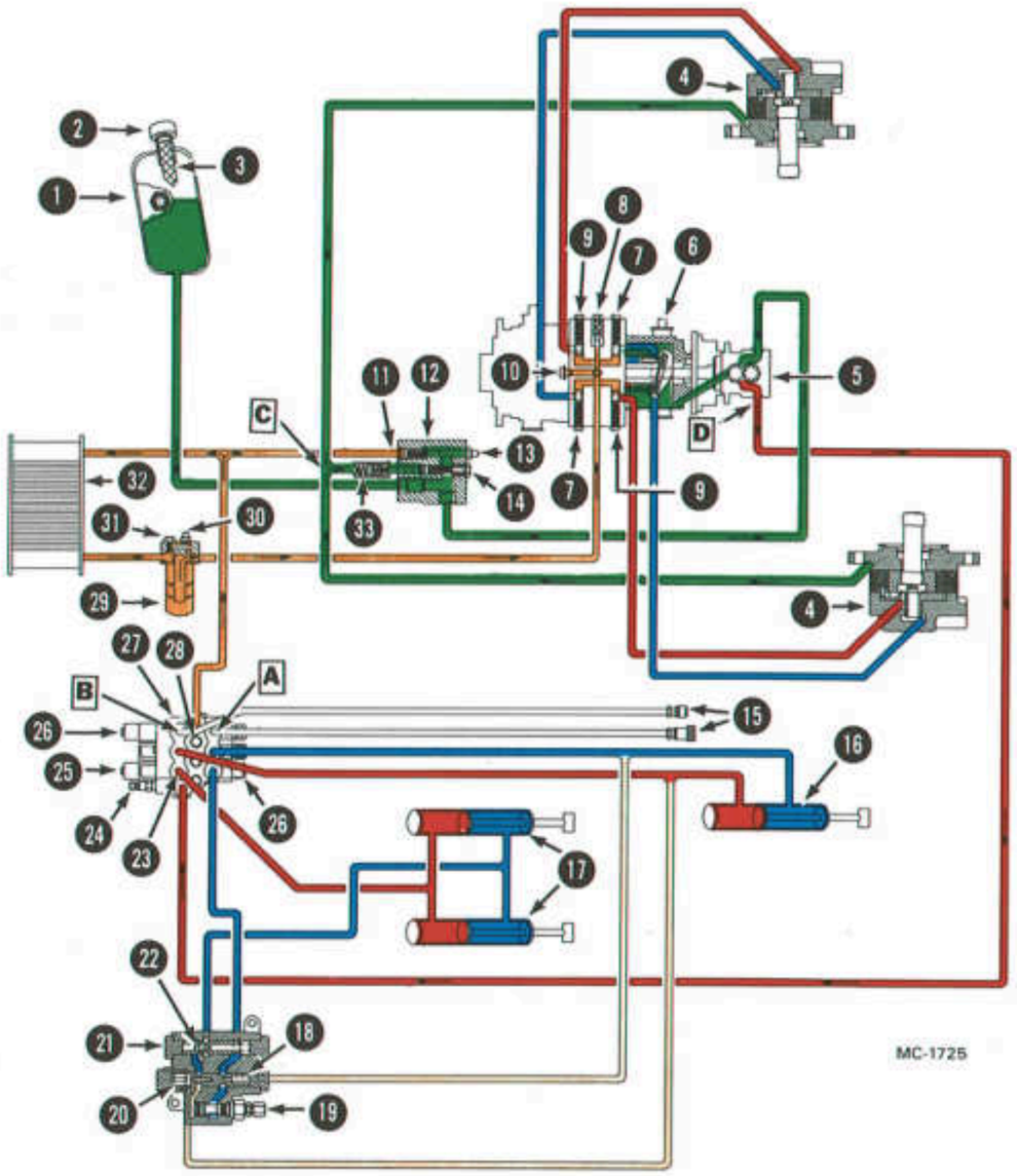
NOTE
Chart shows oil flow in Forward Drive Position and with Hydraulic Cylinders Partially Extended. For Hydraulic/ Hydrostatic System Operation, refer to Sheet 2 of this publication.

RED - - - - - - - - High Pressure
BLUE - - - - - - - Low Pressure
GREEN - - - - - - Case Drain & Reservoir
ORANGE - - - - - Charge Pressure
LT. ORANGE - - Bucket Positioning Fluid

REAR AUXILIARY HYDRAULICS (OPTIONAL)



A	Connects to	A	Control Valve Linkage End Port
B	Connects to	B	Control Valve Detent End Port
C	Connects to	C	Tee Fitting At Port Block
D	Connects to	D	Tee Fitting At Hydraulic Pump



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