SERVICE MANUAL

T8.320 / T8.350 / T8.380 / T8.410 / T8.380 SmartTrax™ / T8.410 SmartTrax™

Powershift Transmission (PST)

Tractor

PIN ZFRE03123 and above

Part number 47917993
1st edition English
October 2015

NEW HOLLAND AGRICULTURE

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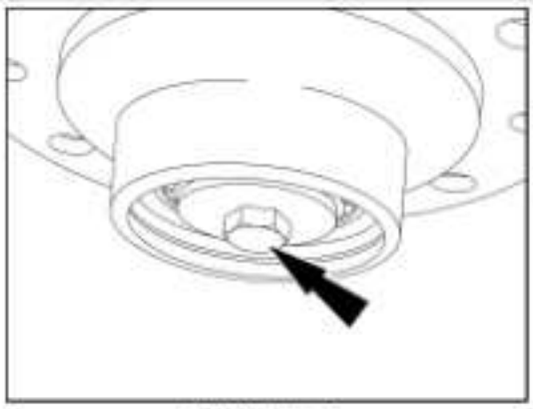
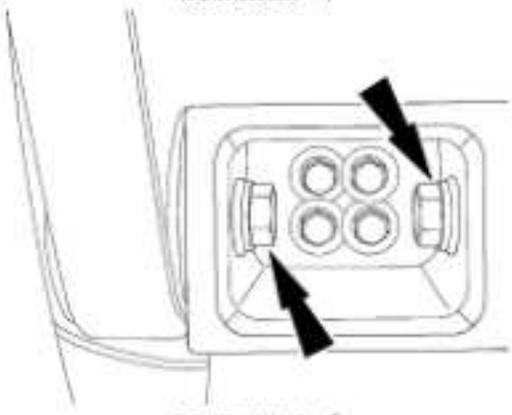
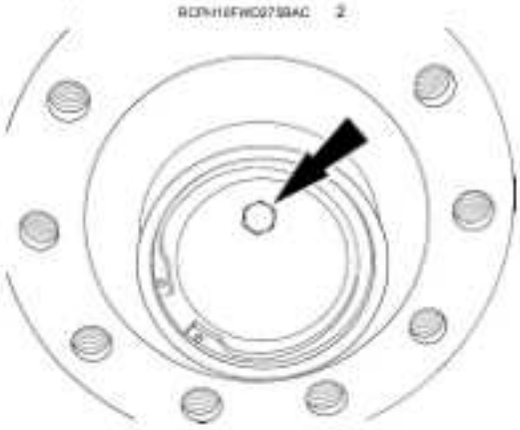
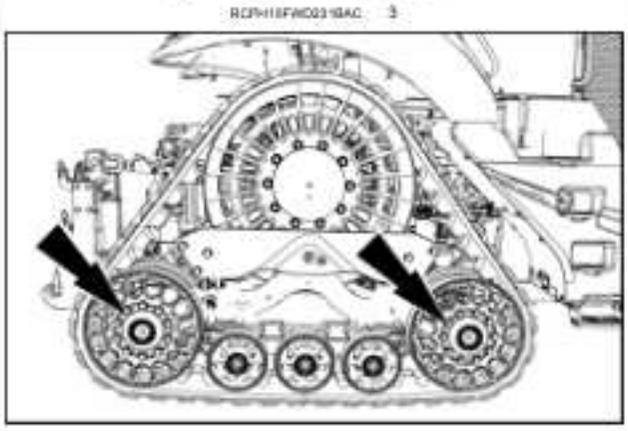
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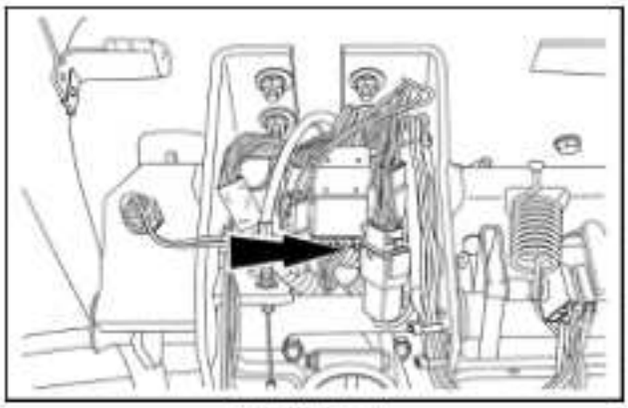
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Track pivot - Torque

T8.380 SmartTrax™ PST TIER 4B [ZFRE03123 -]
T8.410 SmartTrax™ PST TIER 4B [ZFRE03123 -]

Component	N·m	Identification	lb-ft/lb in
Idler wheel bearing retainer bolt (lubricated)	455 - 510 Nm		335 - 380 lb ft
Front idler pivot bolts	575 - 630 Nm		425 - 465 lb ft
Wheel bearing cap fill plug (plastic cap with steel plug)	3.1 - 3.6 Nm		28 - 32 lb in
Idler Wheel Mounting Bolts	575 - 630 Nm		425 - 465 lb ft

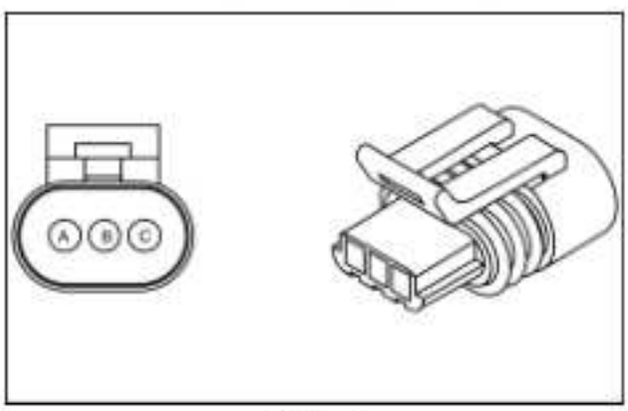
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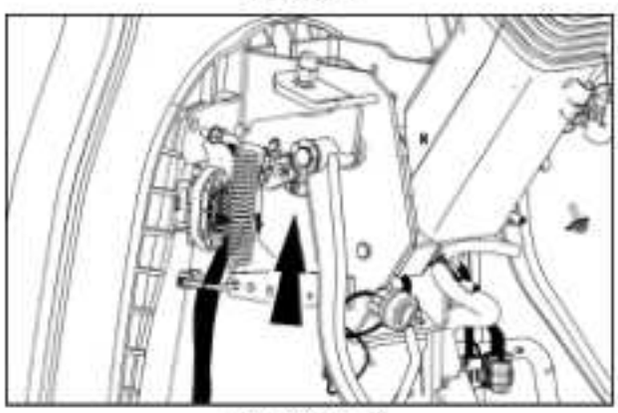
Pin	From	Wire	Description	Color-Size	Frame
1	SP-563L-P-X	CB-561A	FNRP 5V REF	PK - 0.8	**SHEET 40**
2	**X-010 (Male) pin AD7** TO CAB HARNESS	CB-551A	FNRP-F	YE - 0.8	
3	**X-010 (Male) pin BA1** TO CAB HARNESS	CB-552A	FNRP-R	YE - 0.8	
4	**X-010 (Male) pin AB1** TO CAB HARNESS	CB-313B	LSD	YE - 0.8	
5	SP-314A-P-X	CB-314C	FNRP SWITCHED B+	OR - 0.8	
6	**X-010 (Male) pin BA4** TO CAB HARNESS	CB-315A	FORWARD OR REVERSE	YE - 0.8	
7	SP-553-P-X	CB-553B	FNRP SW B+ OUT	WH - 0.8	**SHEET 13**
8	SP-171-P-X	CB-171D	FNRP GROUND	BK - 0.8	**SHEET 09**

X-052 - MASTER CLUTCH PEDAL POD [B-009] (87697648) (Female)



87697648 5

87697648



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18026-Rear hitch slip control potentiometer - voltage too high

NOTE: *When the cause of the error code has been rectified, clear the error code and test the system for normal operation.*

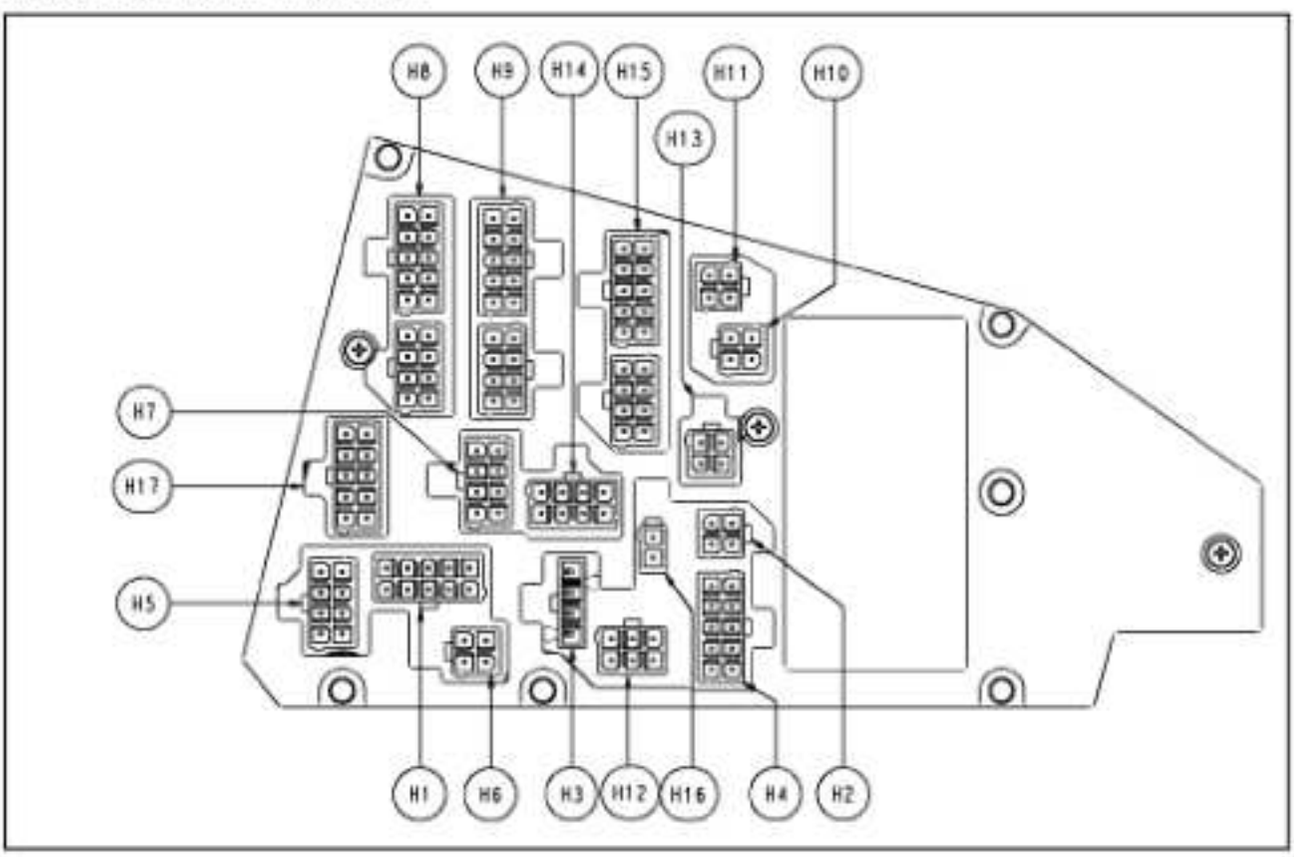
Cause:
Voltage from sensor too high (above **4.8 V**) as measured at armrest controller.

Possible failure modes:

1. Faulty connector
2. Faulty slip control potentiometer
3. Faulty harness
4. Faulty controller

Solution:

1. Check if the fault code is still active. Clear all fault codes. Operate the tractor under normal conditions.
   A. Fault code does not redisplay. Return unit to field operation and monitor for continuing problems.
   B. Fault code redisplays. Continue to step **2**.
2. Use the monitor screen function on the electronic service tool (EST) to check operation of the slip control potentiometer. Refer to the EST user guide.
   A. Slip control potentiometer not operating correctly. Continue with step **3**.
   B. Slip control potentiometer operating correctly. Return unit to field operation and monitor operation.
3. Check the slip control potentiometer.

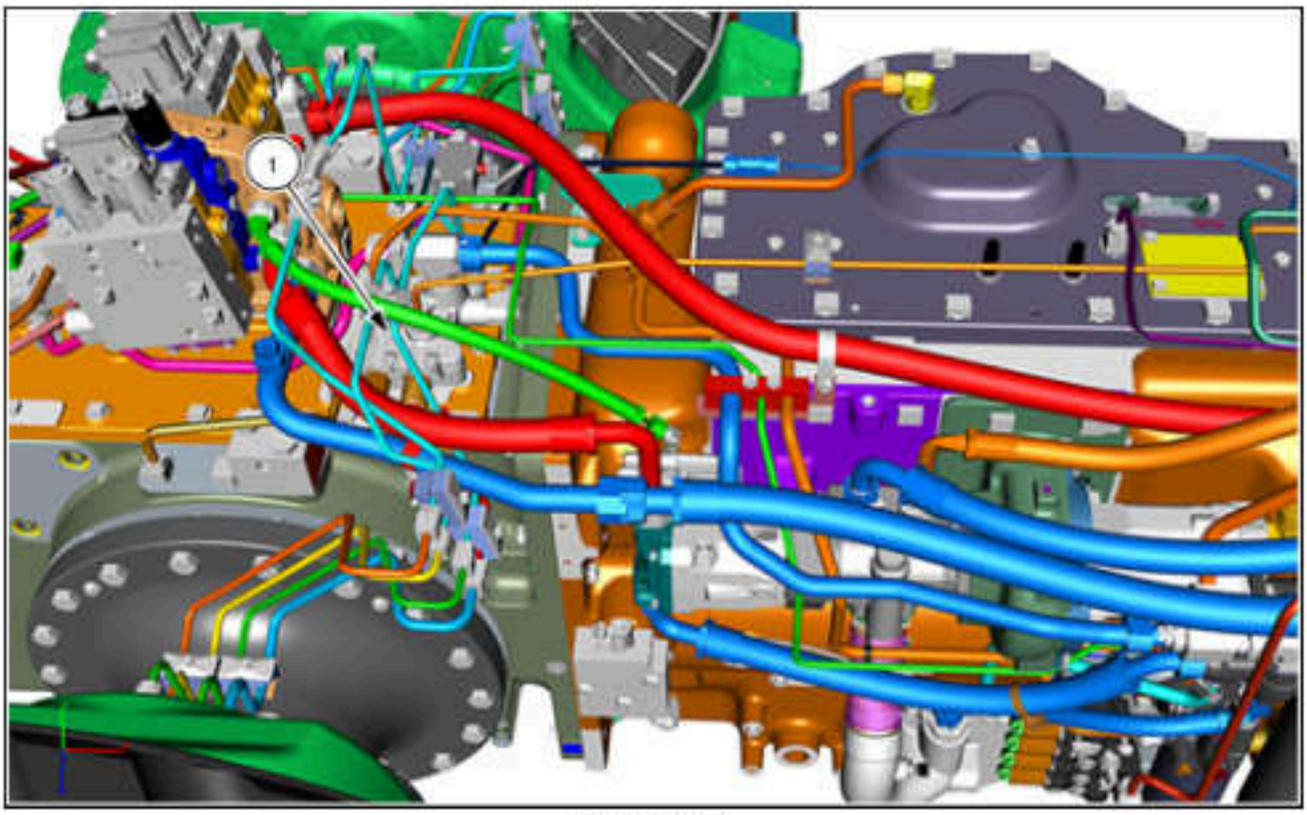


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Power Take-Off (PTO) control valve - Dynamic description

T8.380 SmartTrax™ PST TIER 4B [ZFRE03123 -]	
T8.410 SmartTrax™ PST TIER 4B [ZFRE03123 -]	

The Power Take-Off (PTO)/differential lock/lube valve is located on top of the rear frame housing. The PTO/differential lock/lube valve controls the PTO and differential lock operation and distributes lube flow.



RAIL141T9481220A 1

1. PTO/differential lock/lube valve	

The regulated pressure circuit supplies the PTO and differential lock functions. The regulated supply to both the PTO and differential lock is limited to **22.4 - 24.5 bar** (**325 - 355 psi**). The supply to the PTO clutch and differential lock are internally ported through the rear frame assembly.

The charge/lube circuit supplies the lubrication functions of the valve for these lubrication points: differential lock, pinion, front and rear hydro bearings, rear axle final drives, and service brakes. The amount of lube to the left and right brakes is controlled with the lube solenoid valve. The lube solenoid is used by the Tractor Control Unit (TCU) to minimize lube to the brakes and direct oil to the lube points when the brakes are not applied. When the brakes are applied, a signal from brake pedal switch energizes the lube solenoid to increase flow to the brakes.

The Tractor Control Unit (TCU) controller lubricates the rear axle final drive when these conditions are met:

- engine speed is above **1400 RPM**
- or ground speed is above **35 km/h** (**22 mph**)
- and oil temperature is above **65 °C** (**149 °F**).

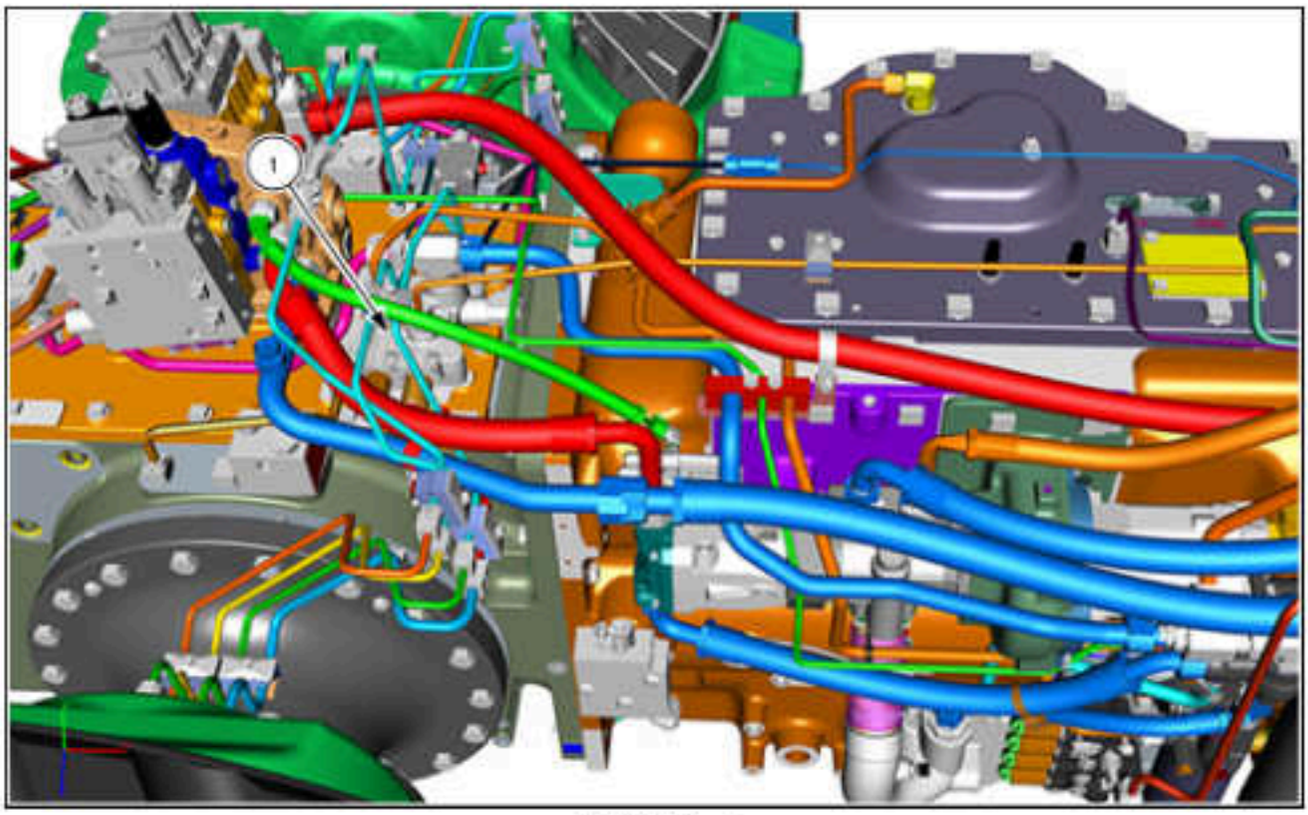
When the TCU detects no ground speed or when transmission temperature is below **65 °C** (**149 °F**), the lubrication solenoid is deenergized, which blocks lube oil flow to the rear axle final drives.

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Differential lock control valve - Dynamic description

T8.380 SmartTrax™ PST TIER 4B [ZFRE03123 -]	
T8.410 SmartTrax™ PST TIER 4B [ZFRE03123 -]	

The Power Take-Off (PTO)/differential lock/lube valve is located on top of the rear frame housing. The PTO/differential lock/lube valve controls the PTO and differential lock operation and distributes lube flow.



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1. PTO/differential lock/lube valve	

The regulated pressure circuit supplies the PTO and differential lock functions. The regulated supply to both the PTO and differential lock is limited to **22.4 - 24.5 bar** (**325 - 355 psi**). The supply to the PTO clutch and differential lock are internally ported through the rear frame assembly.

The charge/lube circuit supplies the lubrication functions of the valve for these lubrication points: differential lock, pinion, front and rear hydro bearings, rear axle final drives, and service brakes. The amount of lube to the left and right brakes is controlled with the lube solenoid valve. The lube solenoid is used by the Tractor Control Unit (TCU) to minimize lube to the brakes and direct oil to the lube points when the brakes are not applied. When the brakes are applied, a signal from brake pedal switch energizes the lube solenoid to increase flow to the brakes.

The Tractor Control Unit (TCU) controller lubricates the rear axle final drive when these conditions are met:

- engine speed is above **1400 RPM**
- or ground speed is above **35 km/h** (**22 mph**)
- and oil temperature is above **65 °C** (**149 °F**).

When the TCU detects no ground speed or when transmission temperature is below **65 °C** (**149 °F**), the lubrication solenoid is deenergized, which blocks lube oil flow to the rear axle final drives.

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Hydraulic schematic 47904542 — Sheet 2— PowershiftTransmission. Optional mega flow

	PFC PISTON PUMP
	REGULATED CIRCUIT PRESSURE
	CHARGE / LUBE PUMP FLOW
	RETURN TO TANK / SUMP
	OIL COOLER / FILTRATION AUX. CHARGE PUMP FLOW
	TWIN FLOW PUMP MEGA FLOW PUMP

1. REMOTE SECTION	33. INLET BRAKE VALVE
2. LOAD SENSE DIAGNOSTIC	34. PRIORITY REGULATOR VALVE T8.380 and T8.410 only See sheet 4 or 5 for other models.
3. PILOT / HITCH DRAIN	35. THERMAL BYPASS VALVE
4. PILOT SUPPLY	36. OIL COOLER
5. RETURN	37. LUBE REGULATOR
6. SUPPLY	38. PRESSURE AND FLOW COMPENSATED (PFC) PISTON PUMP
7. HITCH VALVE	39. FILTER
8. CATEGORY 4 HITCH	40. PTO CLUTCH LUBE
9. HITCH CYLINDERS	41. ODD / EVEN LUBE
10. RETURN	42. DROP BOX LUBE
11. SUPPLY	43. CREEP DRIVE LUBE
12. SIGNAL	44. MASTER CLUTCH LUBE
13. CASE DRAIN	45. RIGHT BRAKE / DIFFERENTIAL LUBE
14. POWER BEYOND MANIFOLD (OPTIONAL)	46. MFD / RANGE LUBE
15. PTO / DIFFERENTIAL LOCK VALVE	47. LEFT BRAKE / DIFFERENTIAL LUBE
16. PTO CLUTCH / BRAKE	48. TO PARK BRAKE VALVE SOLENOID
17. DIFFERENTIAL LOCK CLUTCH	49. SERVICE BRAKE
18. BEVEL PINION LUBE	50. MASTER CLUTCH
19. LUBE SUPPLY	51. INLET
20. MFD CLUTCH	52. MASTER CLUTCH INCHING VALVE
21. LOW CLUTCH	53. PARK / EMERGENCY BRAKE
22. MEDIUM CLUTCH	54. BRAKE RELEASE PUMP
23. HIGH CLUTCH	55. STEERING HAND PUMP
24. REVERSE CLUTCH	56. STEERING CYLINDERS
25. FIFTH CLUTCH	57. BYPASS VALVE
26. THIRD CLUTCH	58. BRAKE VALVE
27. FIRST CLUTCH	59. NOTE: SWITCH IS OPENED WHEN PEDAL REACHES FULL STROKE WHEN HYDRAULIC POWER IS LOST
28. EVEN CLUTCH	60. ACCUMULATOR
29. ODD CLUTCH	61. TWINFLOW PUMP MEGAFLOW PUMP
30. CREEPER CLUTCH	62. TWINFLOW MANIFOLD PLUGS MEGAFLOW MANIFOLD PLUGS
31. TRANSMISSION CONTROL VALVES	63. NOT USED
32. PARK CLUTCH	64. MARKER DRAIN

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