CATERPILLAR®

Service Manual

Models
TH336C, TH337C, TH406C, TH407C, TH414C, TH514C, TH417C

S/N MJR00150 & After, S/N THM00150 & After,
S/N DJB00150 & After, S/N SXJ00150 & After,
S/N GAT00150 & After, S/N RCH00150 & After,
S/N MLH00150 & After, S/N JJT00150 & After,
S/N KEK00150 & After, S/N RWW00150 & After,
S/N MWC00150 & After, S/N KKW00150 & After,
S/N RRJ00150 & After, S/N RRW00150 & After

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b. TH414C

Size	Tire Type	Minimum Ply/ Star Rating	Fill Type	Pressure
15.5/80-24	TR01	16 Ply	Pneumatic	4,25 Bar (62 psi)
			Liquid Filled	Approx 6,0 L (200 oz)
15.5-25	L-2	12 Ply	Pneumatic	4,0 Bar (58 psi)
			Liquid Filled	Approx 4,6 L (155 oz)
400/80-24	Power CL	N/A	Pneumatic	4,5 Bar (65 psi)
			Liquid Filled	Approx 6,0 L (200 oz)
440-80-24	Power CL	N/A	Pneumatic	4,0 Bar (58 psi)
			Liquid Filled	Approx 6,4 L (215 oz)

c. TH514C & TH417C

Size	Tire Type	Minimum Ply/ Star Rating	Fill Type	Pressure
14-24	TG02	16 Ply	Pneumatic	4,25 Bar (61 psi)
			Foam Filled (ANSI only)	Approx 264 kg (582 lb)
			Liquid Filled	Approx 4,6 L (155 oz)
14-24	SGG-2A	16 Ply	Pneumatic	5,25 Bar (76 psi)
			Foam Filled (ANSI only)	Approx 264 kg (582 lb)
			Liquid Filled	Approx 4,6 L (155 oz)

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9.20.2 74.5 kW - S/N MJR00150, DJB00150, GAT00150, MLH00150, KEK00150, MWC00150 & RRJ00150

Fault Code Description	DTC/Code (SPN)	SYMPTOM (FMI)
Very Low Aftertreatment 1 Diesel Particulate Filter NMHC Conversion Efficiency (Level 2)	5310	17
Aftertreatment 1 Diesel Particulate Filter Regeneration too Frequent (emissions non compliance)	5397	31
Diesel Particulate Filter Active Regeneration Inhibited Due to Temporary System Lockout High	3714	15
Diesel Particulate Filter Active Regeneration Inhibit Status - Current Below Normal	3702	5
Diesel Particulate Filter Active Regeneration Inhibit Status - Current Above Normal	3702	6
Diesel Particulate Filter Active Regeneration Inhibit Status - Current Above Normal	3702	6
Diesel Particulate Filter Active Regeneration Inhibit Status - Current Below Normal	3702	5
Exhaust System High Temperature Lamp Command Current Below Normal	3698	5
Exhaust System High Temperature Lamp Command Current Above Normal	3698	6
Exhaust System High Temperature Lamp Command Current Above Normal	3698	6
Exhaust System High Temperature Lamp Command Current Below Normal	3698	5
Diesel Particulate Filter Lamp Command Current Below Normal	3697	5
Diesel Particulate Filter Lamp Command Current Above Normal	3697	6
Diesel Particulate Filter Lamp Command Current Above Normal	3697	6
Diesel Particulate Filter Lamp Command Current Below Normal	3697	5
Low Aftertreatment 1 Diesel Particulate Filter NMHC Conversion Efficiency (Level 1).	5310	17
High Diesel Particulate Filter 1 Soot Load Percent (2)	3719	16
Very High Diesel Particulate Filter 1 Soot Load Percent (3)	3719	0
Aftertreatment 1 Diesel Particulate Filter Incomplete Regeneration	5319	31
High Aftertreatment 1 Diesel Particulate Filter Differential Pressure (1)	3251	15
High Aftertreatment 1 Diesel Particulate Filter Differential Pressure (2)	3251	16
Diesel Particulate Filter Active Regeneration Inhibited Due to Inhibit Switch Intermittent	3703	2
Diesel Particulate Filter 1 Conditions Not Met for Active Regeneration	3750	31
Customer or System Parameters Incorrect	630	2

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TH336 Before S/N TDE00337 excluding TDE00297-313, 328 & 332
TH337 Before S/N TDF00329 excluding TDF00297, 299-302, 317, 320, 321, 323, 324 & 327
TH406 Before S/N TBX00454
TH407 Before S/N TBY01110 including TBY01121, 1122 & 1128
TH414 Before S/N TBZ00561
TH514 Before S/N TBW00201
TH417 Before S/N TBT00216

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Electrical Schematic
31200483

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Neutral Into First Gear (End of Shift) (FORWARD)

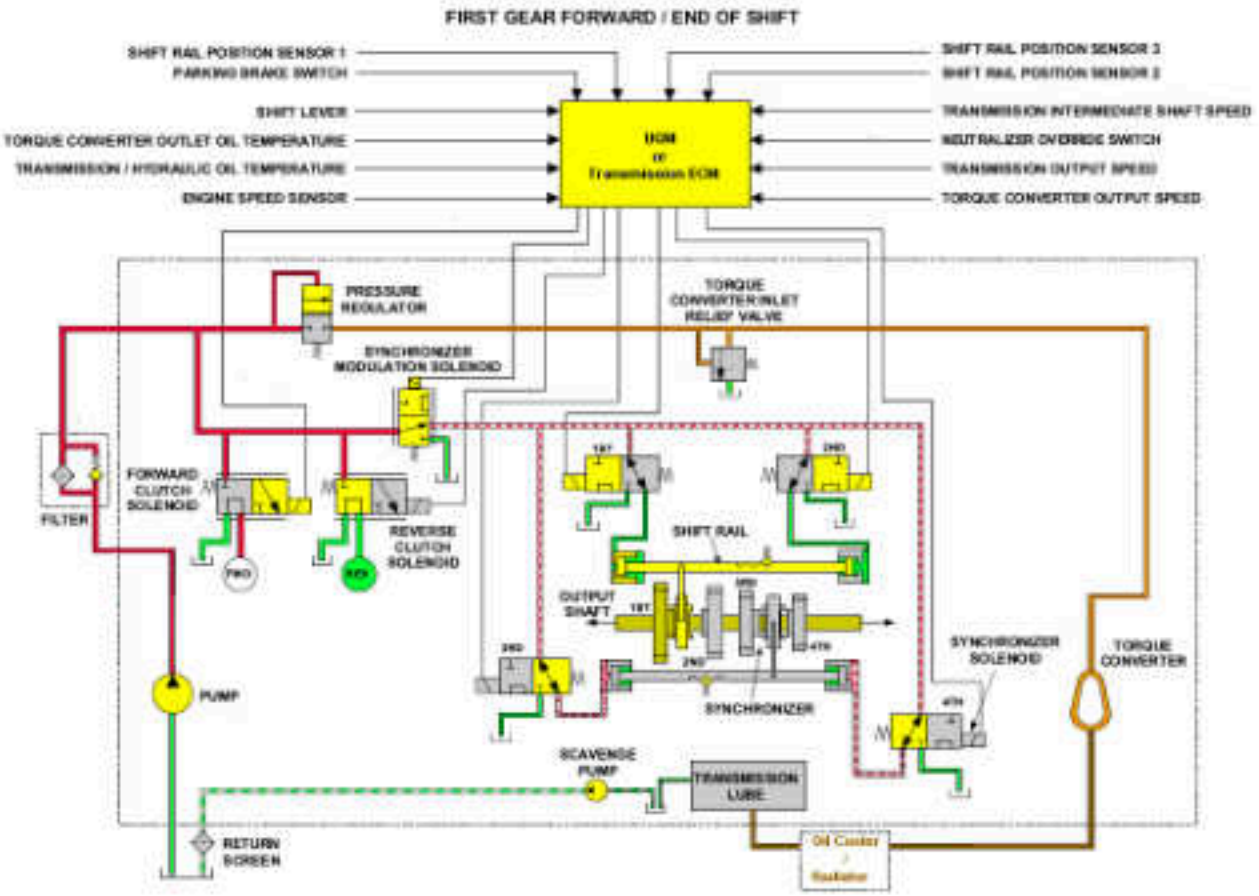


Illustration 51

The position sensor detects the position of the shift rail. When the shift rail is in the ENGAGED Position, the solenoid for the synchronizer that is on the opposite end of the same shift rail is energized. The oil that is on that end of the shaft is sent to the tank. The gear is kept in the engaged position by the spring and ball detents that are in the synchronizers.

When a gear change is made, all energized solenoids for the synchronizer are de-energized. Oil is then sent to both ends of the shift rail and the shift rail is moved to the NEUTRAL Position. There is a double piston arrangement on each end of each shift rail. The smaller piston is used to push the shift rail into gear and the larger piston is used to shift that particular shift rail into neutral.

For example, the port for the small piston is blocked on the "in gear end" of the shift rail and the oil acts on the large piston. The oil on the other end of the shift rail is acting on the small piston. This imbalance pushes the shift rail to the Neutral Position. As the shift rail gets closer to the NEUTRAL Position, less oil acts on the large piston and more oil acts on the small piston. When neutral for that particular shift rail is attained, oil on both ends of the shaft acts on the small piston and the shaft stops moving. The spring and ball detents hold the shift rail in the NEUTRAL Position.

When the transmission control lever is placed into the NEUTRAL Position, only the direction clutch is disengaged and the synchronizers stay in gear.

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Systems Operation Section

i01971789

Graphic Color Codes

SMCS Code: 4000

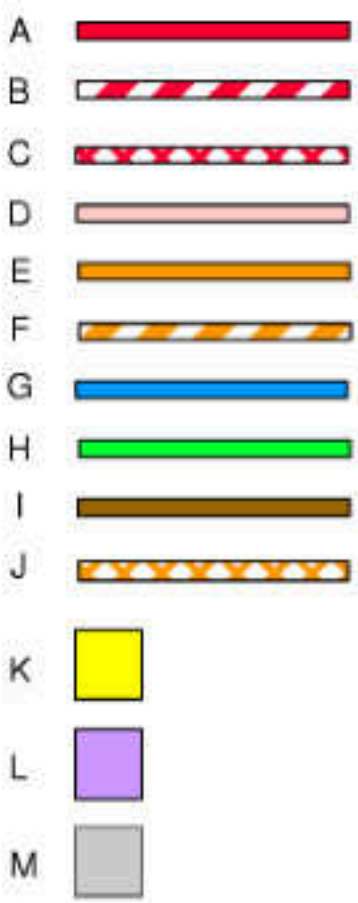


Illustration 1 g01023555

(A) Red ..... High pressure oil

(B) Red Stripes and White Stripes ..... First pressure reduction

(C) Red Crosshatch ..... Second pressure reduction

(D) Pink ..... Third pressure reduction

(E) Orange ..... Pilot, signal or torque converter oil

(F) Orange Stripes and White Stripes ..... Reduced pilot, signal or torque converter oil

(G) Blue ..... Trapped oil

(H) Green ..... Tank, sump or return oil

(I) Brown ..... Lubricating oil

(J) Orange Crosshatch ..... Second reduction in pilot, signal or torque converter oil

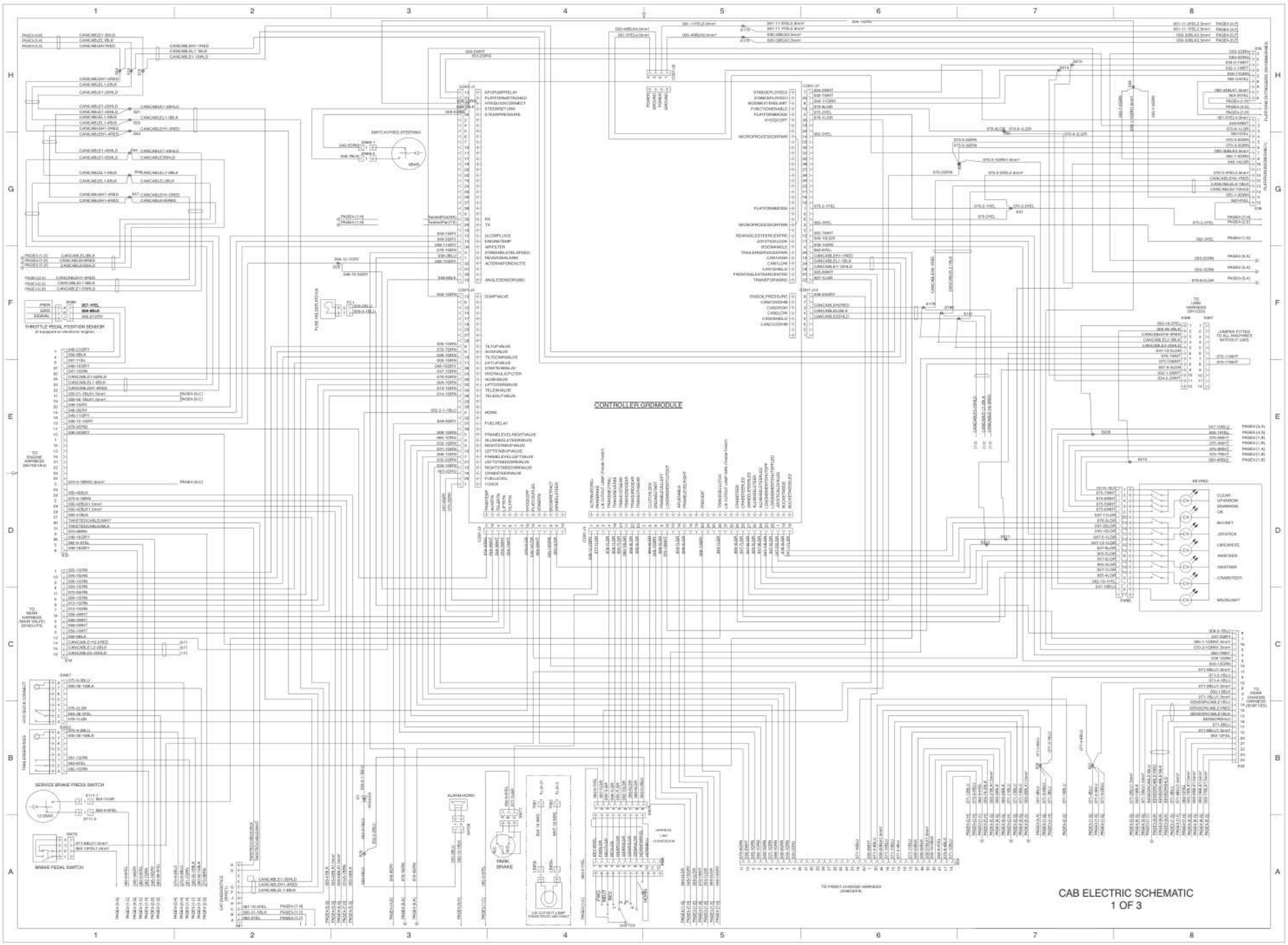
(K) Yellow ..... Moving or activated components

(L) Purple ..... Pneumatic pressure

(M) Light Gray ..... Surface color

Note: The information that is covered in this manual may not require all of the colors in Illustration 1.

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S/N TBY01110 & After excluding TBY01121, 1122 & 1128
S/N TBZ00561 & After
S/N TBW00201 & After
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