

Electric Shift Control Plumbing

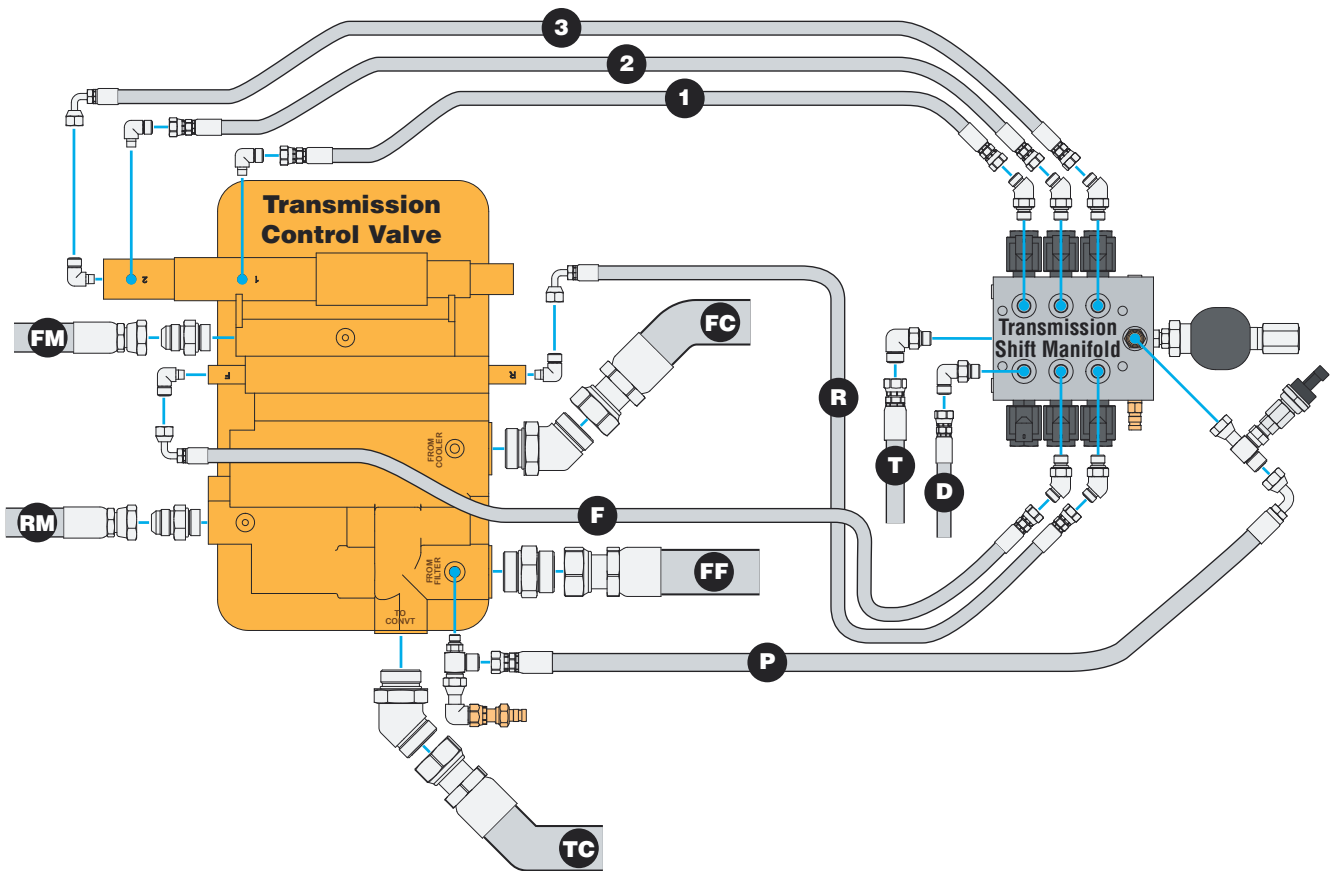


Figure 1 Plumbing Diagram

Hose	Description
1	Energized anytime that 1st gear is selected. Is de-energized for 2nd, 3rd, and 4th gears.
2	Energized anytime that 1st or 2nd gear is selected, or when 3rd and 4th gears are locked out. Is de-energized for 3rd and 4th gears.
3	Energized anytime that 1st, 2nd, or 3rd gear is selected, or when 4th gear is locked out. Is de-energized for 4th gear.
F	Energized when "Forward" is selected. De-energized in neutral and reverse.
R	Energized when "Reverse" is selected. De-energized in neutral and forward.
FF	Energized whenever the machine is running. Receives system clutch pressure (180-220 psi) from the transmission filters.
P	Energized whenever the machine is running. Sends system clutch pressure (180-220 psi) to the transmission shift manifold.
T	Returns oil to the transmission oil sump.
D	Energized when "4WD" is selected. De-energized in 2WD. Sends system clutch pressure to the disconnect assembly to engage 4WD. Not used on 2WD units.
FM	Energized when "Forward" is selected. De-energized in neutral and reverse. Sends system clutch pressure to the forward modulator valve.
RM	Energized when "Reverse" is selected. De-energized in neutral and forward. Sends system clutch pressure to the reverse modulator valve.
TC	Sends low pressure oil to the converter and transmission oil cooler.
FC	Receives low pressure oil from the transmission oil cooler.

Neutral

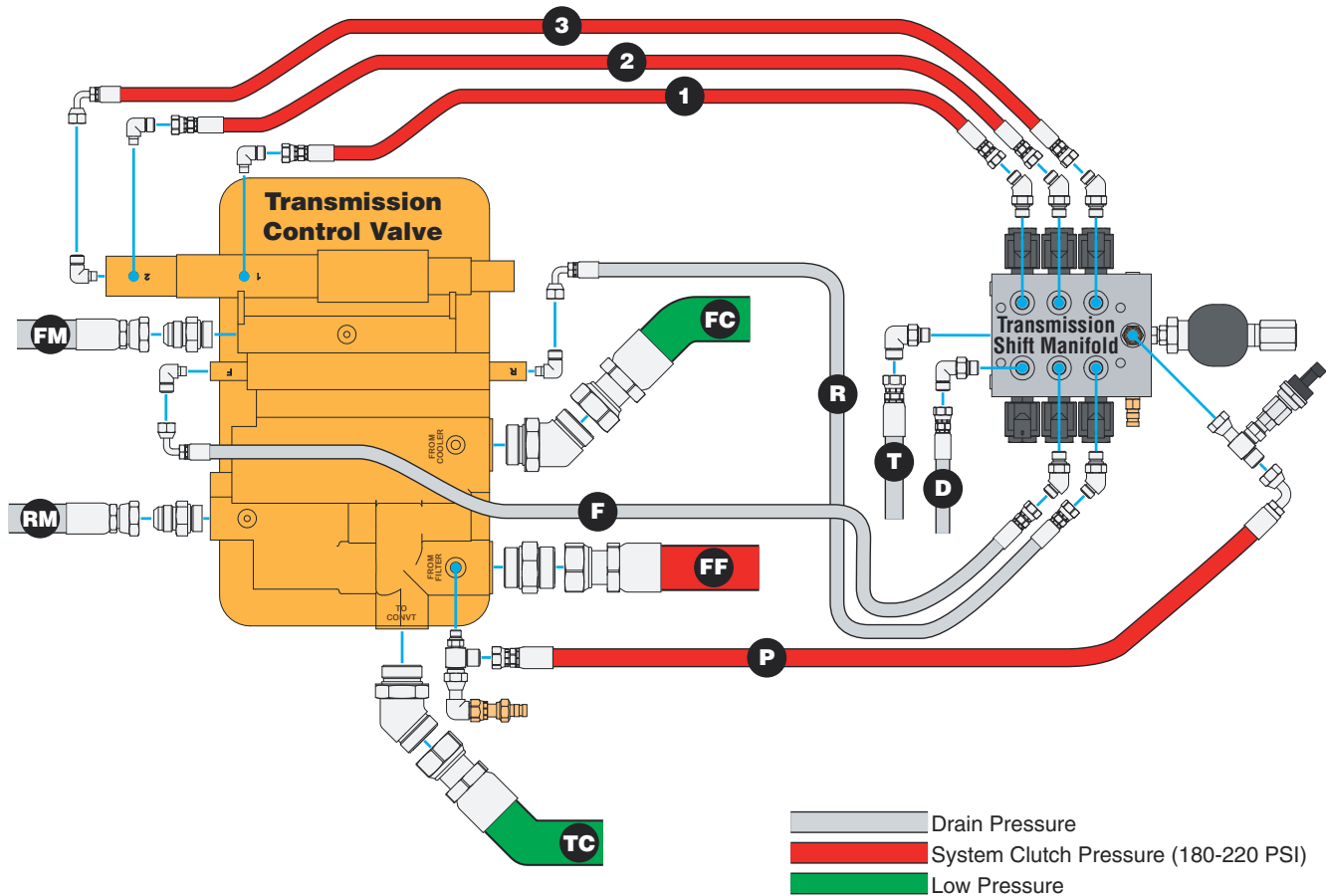


Figure 2 Plumbing Diagram (Neutral)

Neutral

When the transmission direction selected is “Neutral”, neither the forward (F) or Reverse (R) hoses are energized. Any gear may be selected when in Neutral (1st gear is selected in this example).

N
1st Gear
2WD

Hose	State
1	Energized (180-220 PSI)
2	Energized (180-220 PSI)
3	Energized (180-220 PSI)
F	De-Energized
R	De-Energized
FF	Energized (180-220 PSI)
P	Energized (180-220 PSI)
T	De-Energized
D	De-Energized
FM	De-Energized
RM	De-Energized
TC	Energized (Low Pressure)
FC	Energized (Low Pressure)

Forward

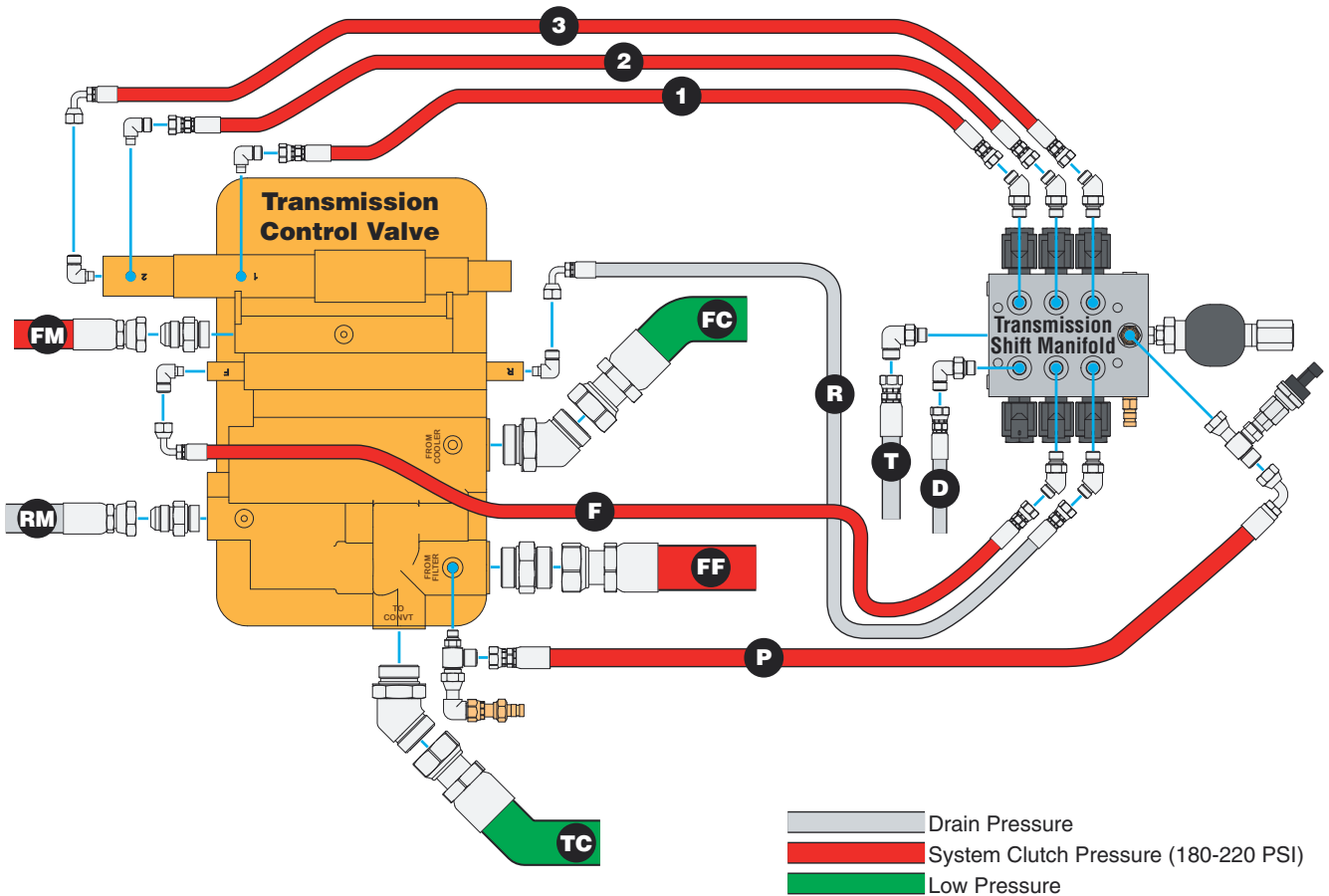


Figure 3 Plumbing Diagram (Forward)

Forward

When the transmission direction selected is “Forward”, the forward (F) hose is energized. Additionally, the Forward Modulator Valve (FM) hose is energized. Any gear may be selected when in Forward (1st gear is selected in this example).

F
1st Gear
2WD

Hose	State
1	Energized (180-220 PSI)
2	Energized (180-220 PSI)
3	Energized (180-220 PSI)
F	Energized (180-220 PSI)
R	De-Energized
FF	Energized (180-220 PSI)
P	Energized (180-220 PSI)
T	De-Energized
D	De-Energized
FM	Energized (180-220 PSI)
RM	De-Energized
TC	Energized (Low Pressure)
FC	Energized (Low Pressure)

Reverse

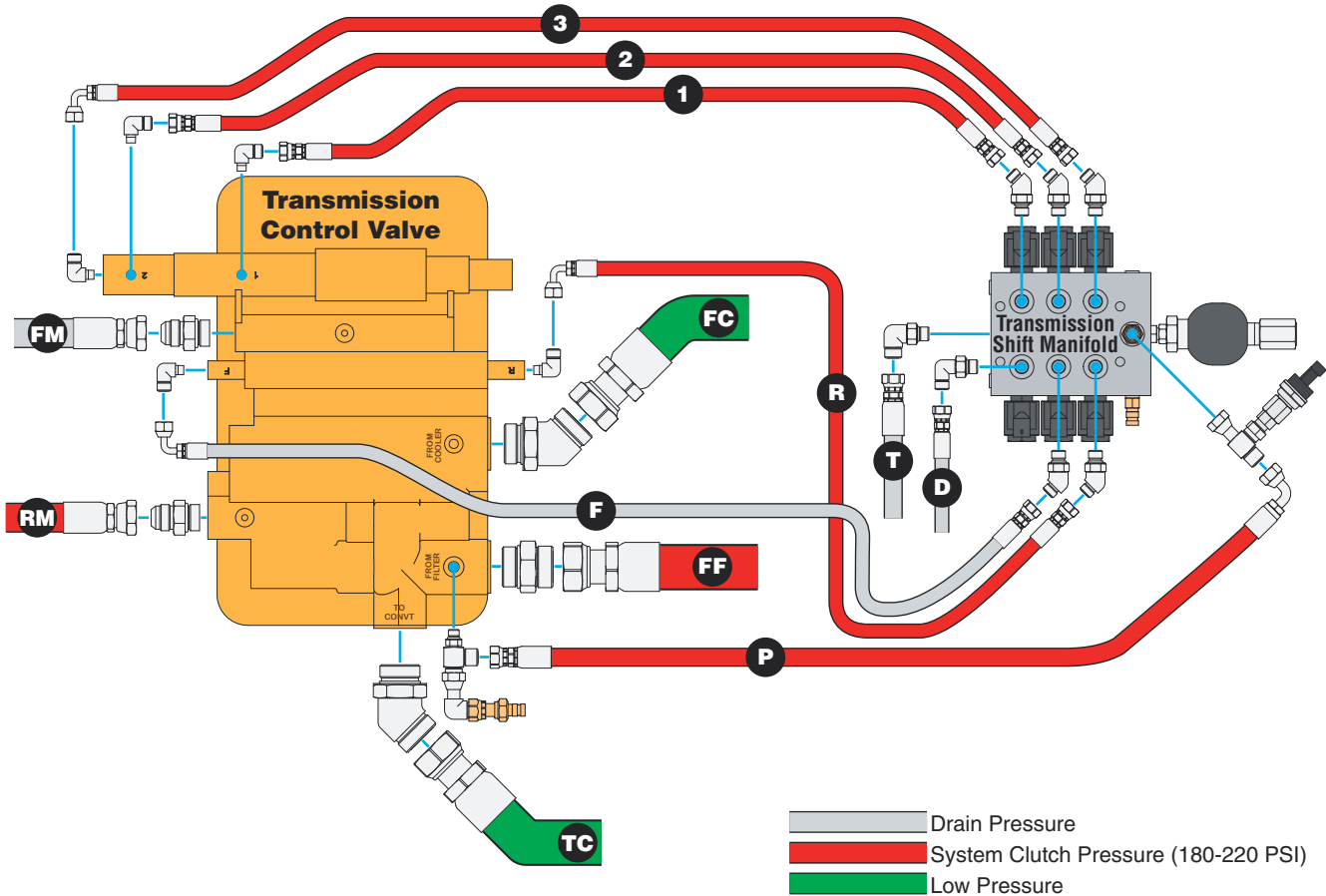


Figure 4 Plumbing Diagram (Reverse)

Reverse

When the transmission direction selected is “Reverse”, the reverse (R) hose is energized. Additionally, the Reverse Modulator Valve (RM) hose is energized. Any gear may be selected when in Reverse (1st gear is selected in this example).

R
1st Gear
2WD

Hose	State
1	Energized (180-220 PSI)
2	Energized (180-220 PSI)
3	Energized (180-220 PSI)
F	De-Energized
R	Energized (180-220 PSI)
FF	Energized (180-220 PSI)
P	Energized (180-220 PSI)
T	De-Energized
D	De-Energized
FM	De-Energized
RM	Energized (180-220 PSI)
TC	Energized (Low Pressure)
FC	Energized (Low Pressure)

4WD

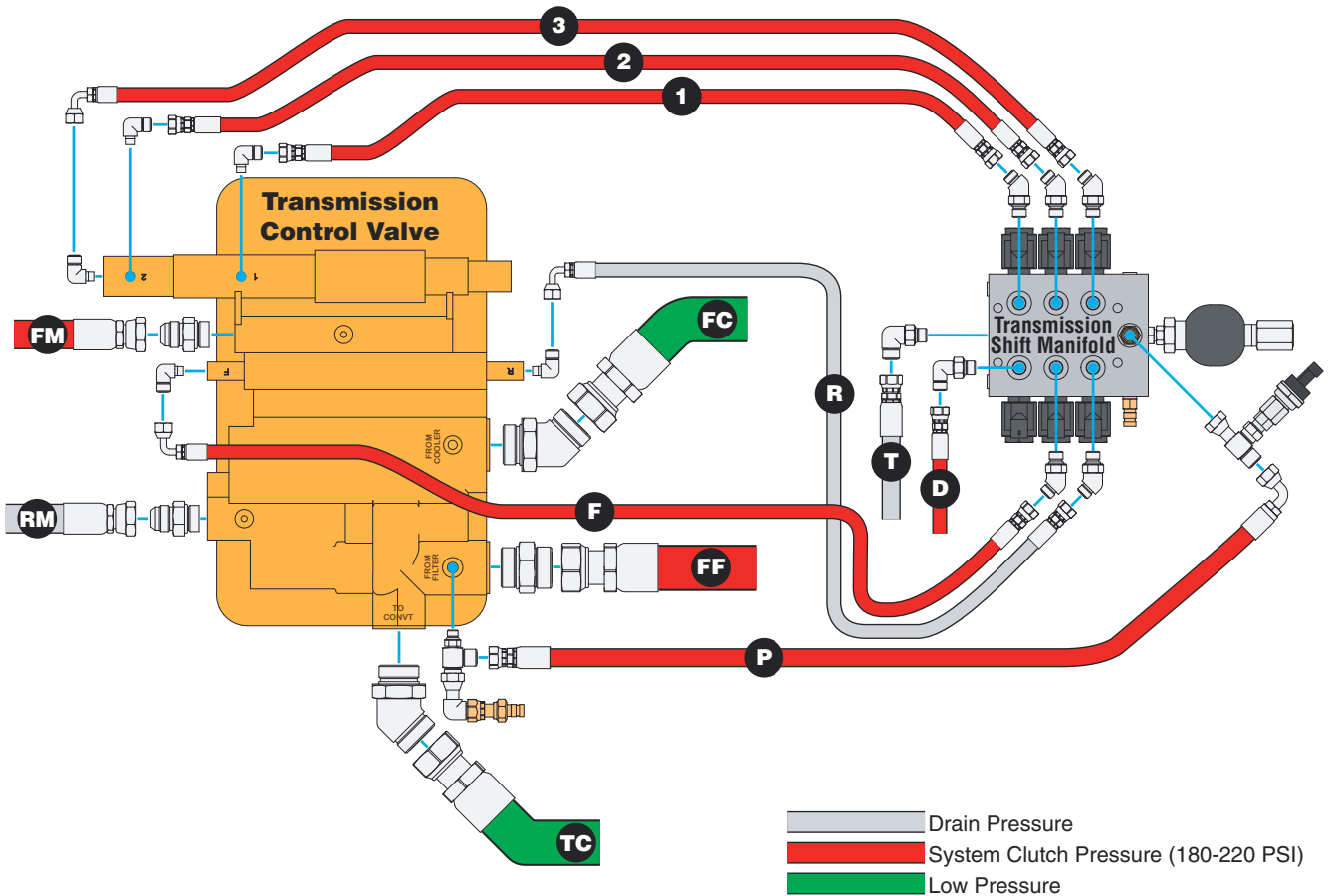


Figure 5 Plumbing Diagram (4WD)

4WD

For 4WD units, when 4WD is selected, the 4WD disconnect (D) hose is energized to engage the rear axle. Any gear or direction may be selected when in 4WD (1st gear Forward is selected in this example).

F
1st Gear
4WD

Hose	State
1	Energized (180-220 PSI)
2	Energized (180-220 PSI)
3	Energized (180-220 PSI)
F	Energized (180-220 PSI)
R	De-Energized
FF	Energized (180-220 PSI)
P	Energized (180-220 PSI)
T	De-Energized
D	Energized (180-220 PSI)
FM	Energized (180-220 PSI)
RM	De-Energized
TC	Energized (Low Pressure)
FC	Energized (Low Pressure)

2nd Gear

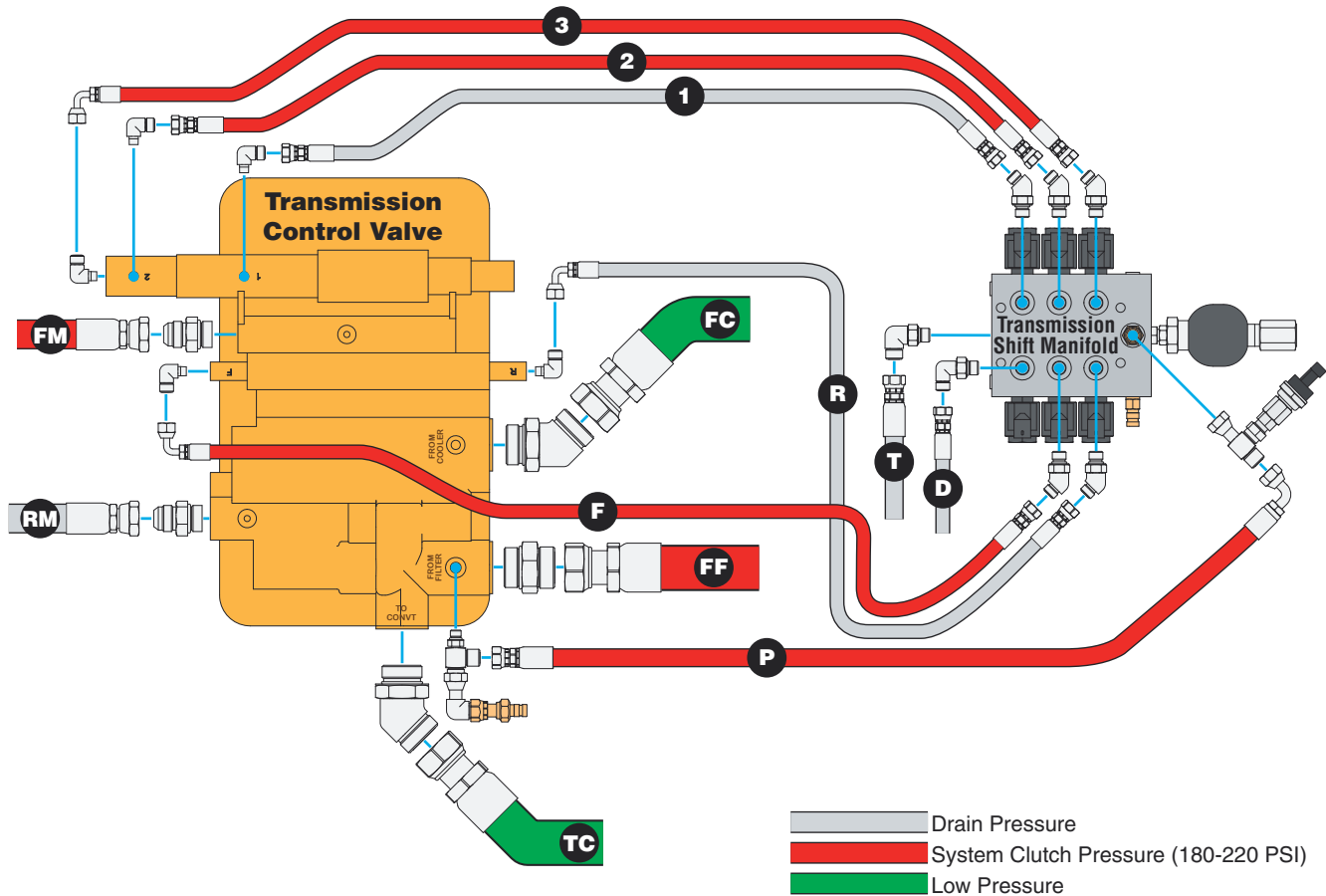


Figure 6 Plumbing Diagram (2nd Gear)

2nd Gear

When 2nd Gear is selected, the first gear (1) hose is de-energized. Any direction may be selected when in 2nd Gear (Forward is selected in this example).

F
2nd Gear
2WD

Hose State	
1	De-Energized
2	Energized (180-220 PSI)
3	Energized (180-220 PSI)
F	Energized (180-220 PSI)
R	De-Energized
FF	Energized (180-220 PSI)
P	Energized (180-220 PSI)
T	De-Energized
D	De-Energized
FM	Energized (180-220 PSI)
RM	De-Energized
TC	Energized (Low Pressure)
FC	Energized (Low Pressure)

3rd Gear

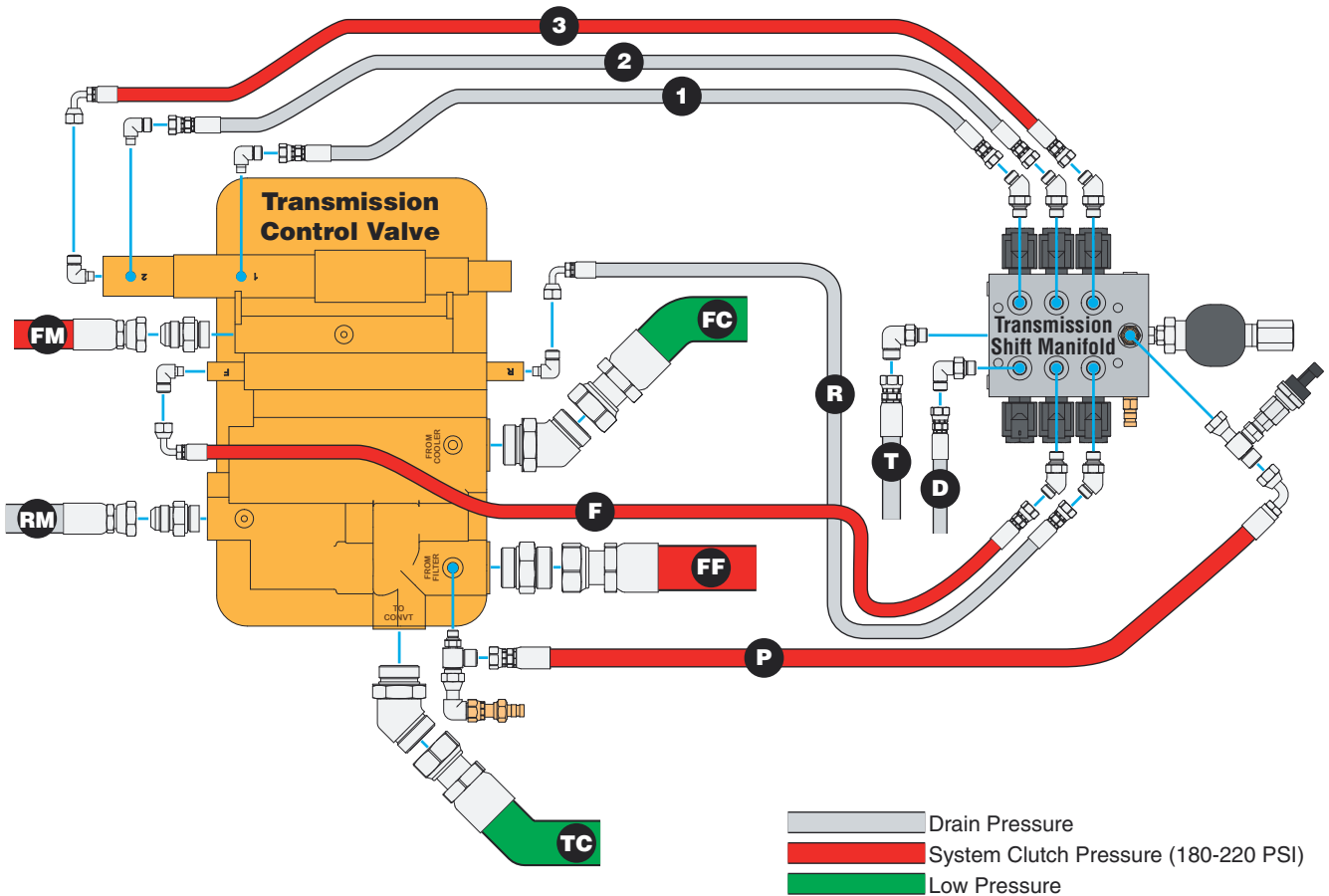


Figure 7 Plumbing Diagram (3rd Gear)

3rd Gear

When 3rd Gear is selected, the first gear (1) and second gear (2) hoses are de-energized. 3rd gear may be locked out on some units.

Any direction may be selected when in 3rd Gear (Forward is selected in this example).



Hose	State
1	De-Energized
2	De-Energized
3	Energized (180-220 PSI)
F	Energized (180-220 PSI)
R	De-Energized
FF	Energized (180-220 PSI)
P	Energized (180-220 PSI)
T	De-Energized
D	De-Energized
FM	Energized (180-220 PSI)
RM	De-Energized
TC	Energized (Low Pressure)
FC	Energized (Low Pressure)

4th Gear

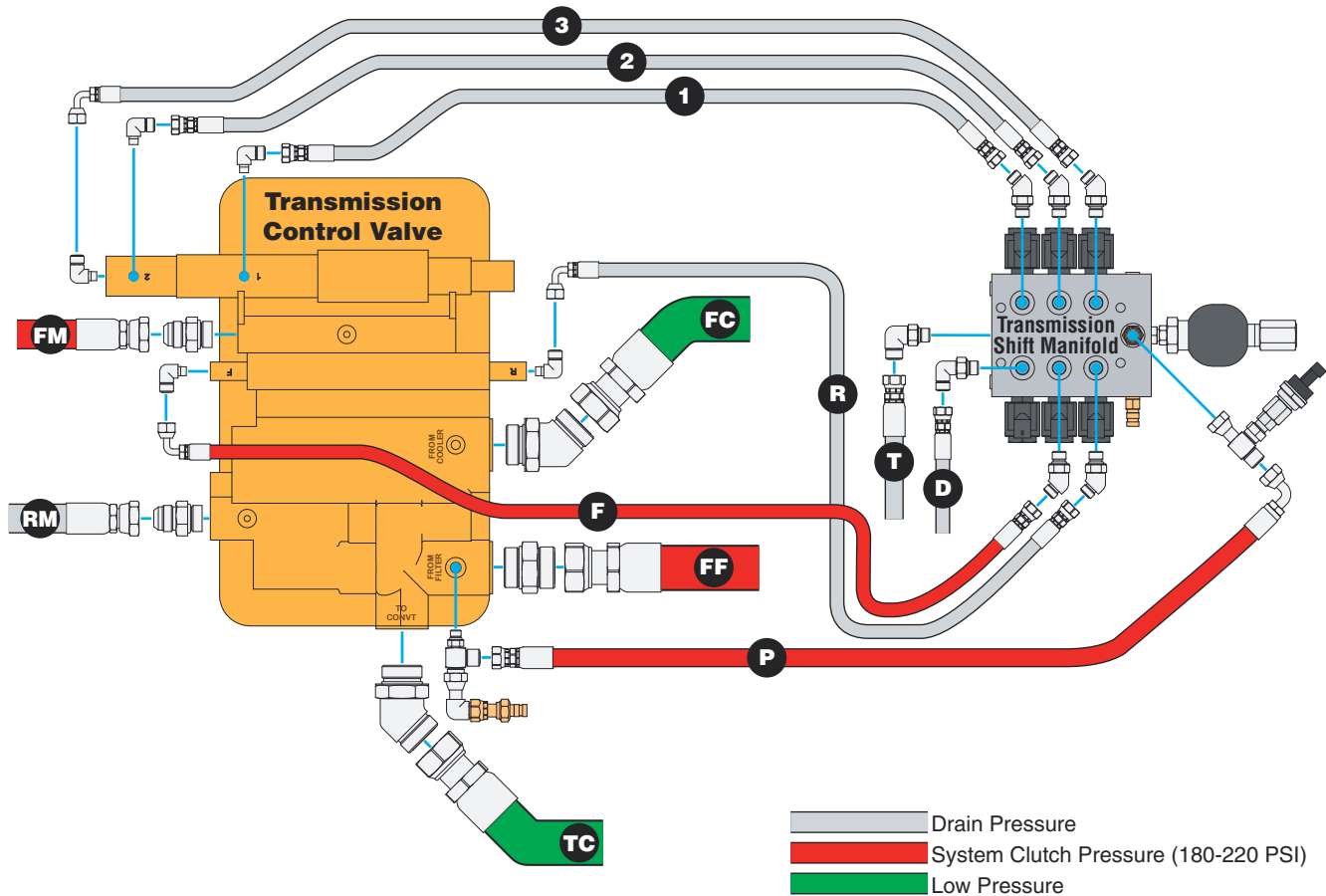


Figure 8 Plumbing Diagram (4th Gear)

4th Gear

When 4th Gear is selected, the first gear (1), second gear (2), and third gear (3) hoses are de-energized. 4th gear may be locked out on some units.

Any direction may be selected when in 4th Gear (Forward is selected in this example).

F
4th Gear
2WD

Hose	State
1	De-Energized
2	De-Energized
3	De-Energized
F	Energized (180-220 PSI)
R	De-Energized
FF	Energized (180-220 PSI)
P	Energized (180-220 PSI)
T	De-Energized
D	De-Energized
FM	Energized (180-220 PSI)
RM	De-Energized
TC	Energized (Low Pressure)
FC	Energized (Low Pressure)