GROUP 5
SUPER TURBINE "400"
AUTOMATIC TRANSMISSION

SECTION IN GROUP 5

SECTION 5-A
AUTOMATIC TRANSMISSION SPECIFICATION AND OPERATION

CONTENTS OF SECTION 5-A

5-1 AUTOMATIC TRANSMISSION GENERAL SPECIFICATIONS

a. Transmission Identification Number

A production identification number is stamped on a metal tag, located in the lower left side of the transmission case.

The production code number is located along the bottom of the tag. See Figure 5-1. Since the production identification number furnishes the key to construction and interchangeability of parts in each transmission, the number should be used when selecting replacement parts as listed in the master parts list. The number should always be furnished on product reports, AFA forms, and all correspondence with the factory concerning a particular transmission.

b. General Specifications

Oil Capacity	22 Pints
Oil Capacity indicated between Marks on Gauge Rod	1 Pint
Oil Specification	Automatic Transmission Fluid Type A, Suffix A
Drain and Refill Mileage and Change Filter Recommendations	24,000 Mi.
Planetary Gearing Type	Compound

Use a reliable torque wrench to tighten the attaching bolts or nuts of the parts listed below.

NOTE: These specifications are for clean and lubricated threads only. Dry or dirty threads produce increased friction which prevents accurate measurement of tightness.

Location	Thread Size	Torque Ft. Lbs.
Solenoid Ass'y to Case	1/4-20	6-10
Valve Body to Case	1/4-20	6-10
Pump Body to Cover	5/16-18	15-20
Pump Body to Cover	5/16-18	15-20
Pump Assembly to Case	5/16-18	15-20
Rear Servo Cover to Case	5/16-18	15-20
Governor Cover to Case	5/16-18	15-20
Parking Brake Bracket to Case	5/16-18	15-20
Vacuum Modulator Retainer to Case	5/16-18	15-20
Valve Body to Case	5/16-18	6-10
Oil Pan to Case	5/16-18	10-13
Case Extension to Case	3/8-16	20-25

5-2 DESCRIPTION AND MECHANICAL OPERATION

The Super Turbine Automatic 400 Transmission, is a fully automatic unit consisting primarily of a 3-element hydraulic torque converter and a compound planetary gear set. Three multiple-disc clutches, two sprag units, and two bands provide the friction elements required to obtain the desired function of the compound planetary gear set.

The torque converter couples the engine to the planetary gears through oil and provides hydraulic torque multiplication when required. The compound planetary gear set produces three forward speeds and reverse.

A hydraulic system pressurized by an internal-external type gear pump provides the working pressure required to operate the friction elements and automatic controls.

External control connections to transmission are:

Manual Linkage - To select the desired operating range.

Engine Vacuum - To operate a vacuum modulator unit.

12 Volt Electrical Signal - To operate an electrical detent solenoid.

A vacuum modulator is used to automatically sense any change in the torque input to the transmission. The vacuum modulator transmits this signal to the pressure regulator, which controls line pressure, so that all torque requirements of the transmission are met and smooth shifts are obtained at all throttle openings.

The detent solenoid is activated by an electric switch on the carburetor. When the throttle is fully open, the switch on the carburetor is closed, activating the detent solenoid and causing the transmission to downshift at speeds below approximately 70 MPH.

The selector quadrant has five selector positions: P, R, N, D, L.

P. - Park position positively locks the output shaft to the transmission case by means of a locking pawl to prevent the vehicle from rolling either direction. This position should be selected whenever the driver leaves the vehicle. The engine may be started in park position.

R. - Reverse enables the vehicle to be operated in a reverse direction.

N. - Neutral position enables the engine to be started and run without driving the vehicle.

DR. - Drive position is used for all normal forward driving. It allows the transmission to automatically upshift and downshift through the various speeds to provide the most desirable engine-to-rear-wheel ratios.

L. - Lo range prevents the transmission from shifting out of first gear, and should be used where maximum torque multiplication is desired, such as pulling a heavy load or descending a steep grade. Lo range can be selected at any vehicle speed, and the transmission will shift to second gear and remain in second gear until vehicle is reduced to the normal 2-1 downshift speed.

a. Neutral—Engine Running

In neutral, all clutches and bands are released; therefore no power is transmitted from the torque converter turbine to the planetary gear train and output shaft.

b. Low Range—First Speed

With the selector lever in Drive Range, the forward clutch is applied. This delivers turbine torque to the mainshaft and turns the rear internal gear in a clockwise direction. (Converter torque ratio = 2.:1.)

Clockwise motion of the rear internal gear causes the rear pinions to turn clockwise to drive the sun gear counter-clockwise. In turn, the sun gear drives the front pinions clockwise, thus turning the front internal gear, output carrier, and output shaft

clockwise in a reduction ratio of 2.4815:1. The reaction of the front pinions against the front internal gear is taken by the reaction carrier and sprag assembly to the transmission case. (Maximum torque multiplication at stall = 4.963:1)

Downshill braking is provided in Lo range by applying the rear band as this prevents the reaction carrier from overrunning on the sprag. See Figure 5-200.

c. Low Range—Second Speed

In second speed, the intermediate clutch is applied to allow the intermediate sprag to hold the sun gear against counterclockwise rotation. Turbine torque through the forward clutch is now applied through the mainshaft to the rear internal gear in a clockwise direction.

Clockwise rotation of the rear internal gear turns the rear pinions clockwise against the stationary sun gear. This causes the output carrier and output shaft to turn clockwise in a reduction ratio of 1.4815:1.

In second speed, overrun braking is provided by the front band as it holds the sun gear fixed. Without the band applied, the sun gear would overrun the intermediate sprag. See Figure 5-201.

d. Drive Range—Third Speed

In direct drive, both the forward clutch and direct clutch are applied to connect the mainshaft and sun gear shaft to the converter turbine. Turbine torque is then split; a portion being directed through the mainshaft to the rear internal gear, and the remainder through the sun gear shaft to the sun gear. This causes the planetary gear set to react against each other and turn as one unit in direct drive or a ratio of 1:1. See Figure 5-203.

e. Reverse

In reverse, the direct clutch is applied to direct turbine torque to the sun gear shaft and sun gear. The rear band is also applied, holding the reaction carrier.

Clockwise torque to the sun gear causes the front pinions and front internal gear to turn counterclockwise in reduction. The front internal gear is connected directly to the output shaft, thus providing the reverse output gear ratio of 2.0769:1. The total reverse torque multiplication at stall (converter and gear ratios) is 4.1538:1. See Figure 5-204.

f. Neutral (Engine Running)

Whenever the engine is running, line pressure is directed to the:

1. Pressure Regulator Valve
2. Converter
   a. Cooler
   b. Cooler By-Pass Valve
   c. Transmission Lubrication
   d. Lubrication Check Valve
3. Manual Valve
4. Detent Valve
5. Detent Solenoid
6. Vacuum Modulator Valve
7. 2-3 Shift Valve

Oil flows from the pump to the pressure regulator valve which regulates the output of the pump to line pressure. When the pump output exceeds the demand to meet line pressure, oil from the pressure regulator is directed to the converter feed passage to fill the converter. Oil from the converter, termed converter return oil, is directed to the transmission cooler. Oil returning from the cooler is directed to the lube system and the cooler by-pass valve. The cooler by-pass valve permits oil to be fed directly from the converter to the lube circuit if the cooler becomes restricted. To insure flow through the cooler and converter, lube oil is directed to a check valve and excessive lube pressure is exhausted.

Line pressure acts on the manual valve, detent valve, detent solenoid, and the 2-3 modulator valve. Line pressure also acts on the modulator.

SUMMARY

The converter is filled, the forward clutch is released. The transmission is in Neutral.

5-3 HYDRAULIC OPERATION

a. Pressure Control

The transmission is automatically controlled by a hydraulic system. Hydraulic pressure is supplied by the transmission IX gear type oil pump, which is engine driven. Main line pressure is controlled by a pressure regulator valve train located in the pump. This regulator controls line pressure automatically, in response to a pressure signal from a modulator valve, in such a way that the torque requirements of the transmission are met and smooth shifts are obtained at all throttle openings. See Figure 5-205.

To control line pressure properly, a modulator pressure is used which varies in the same manner as torque input to the transmission. Since the torque input is the product of engine torque and converter ratio, modulator pressure must compensate for changes in either or both of these.

To meet these requirements, modulator pressure is regulated by engine vacuum which is an indicator of engine torque and carburetor opening, and will decrease with an increase in vehicle speed because convertor torque ratio does the same.

Figure 5-200—Low Range First Speed

Figure 5-201—Low Range-Second Speed

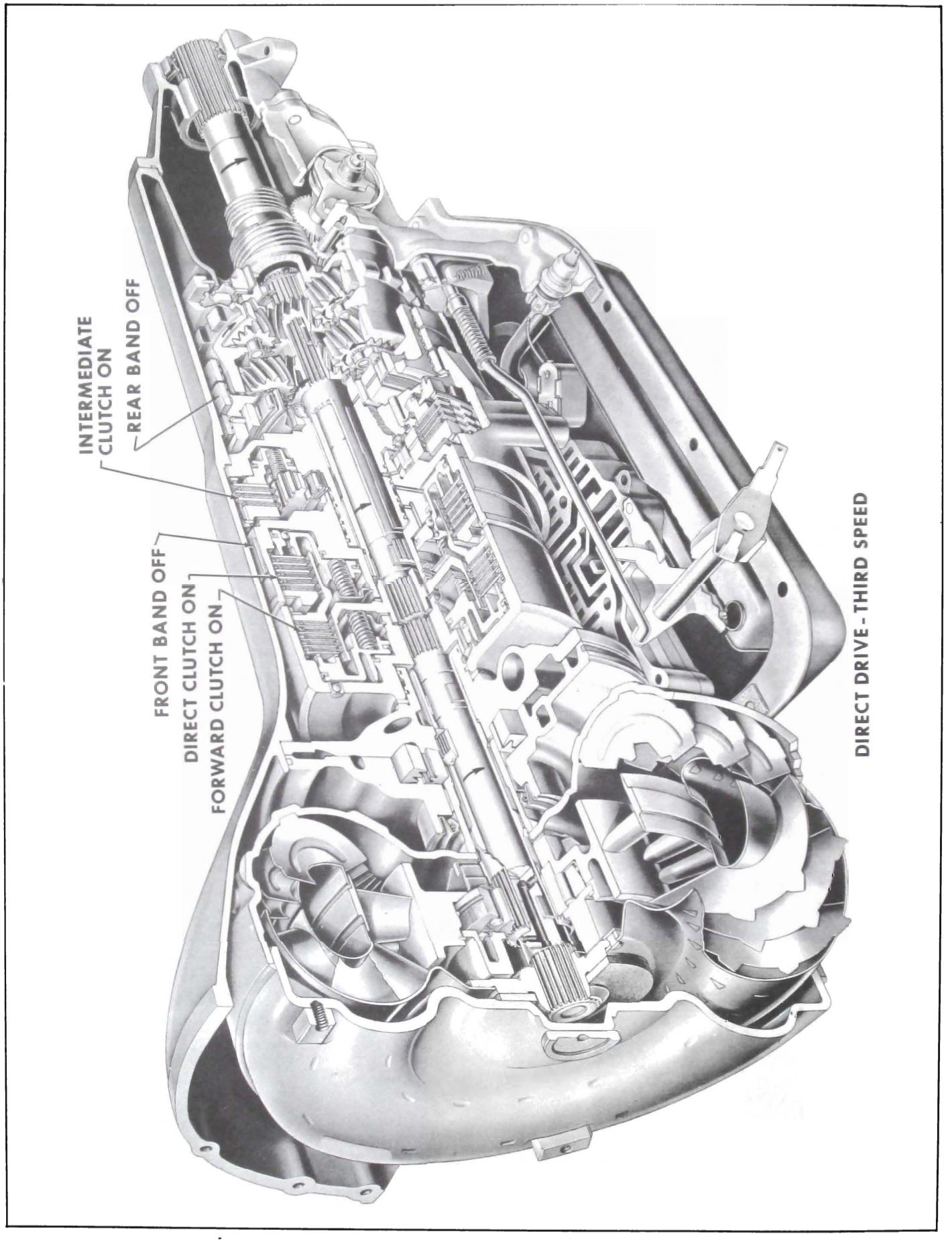

Figure 5-203—Drive Range-Third Speed

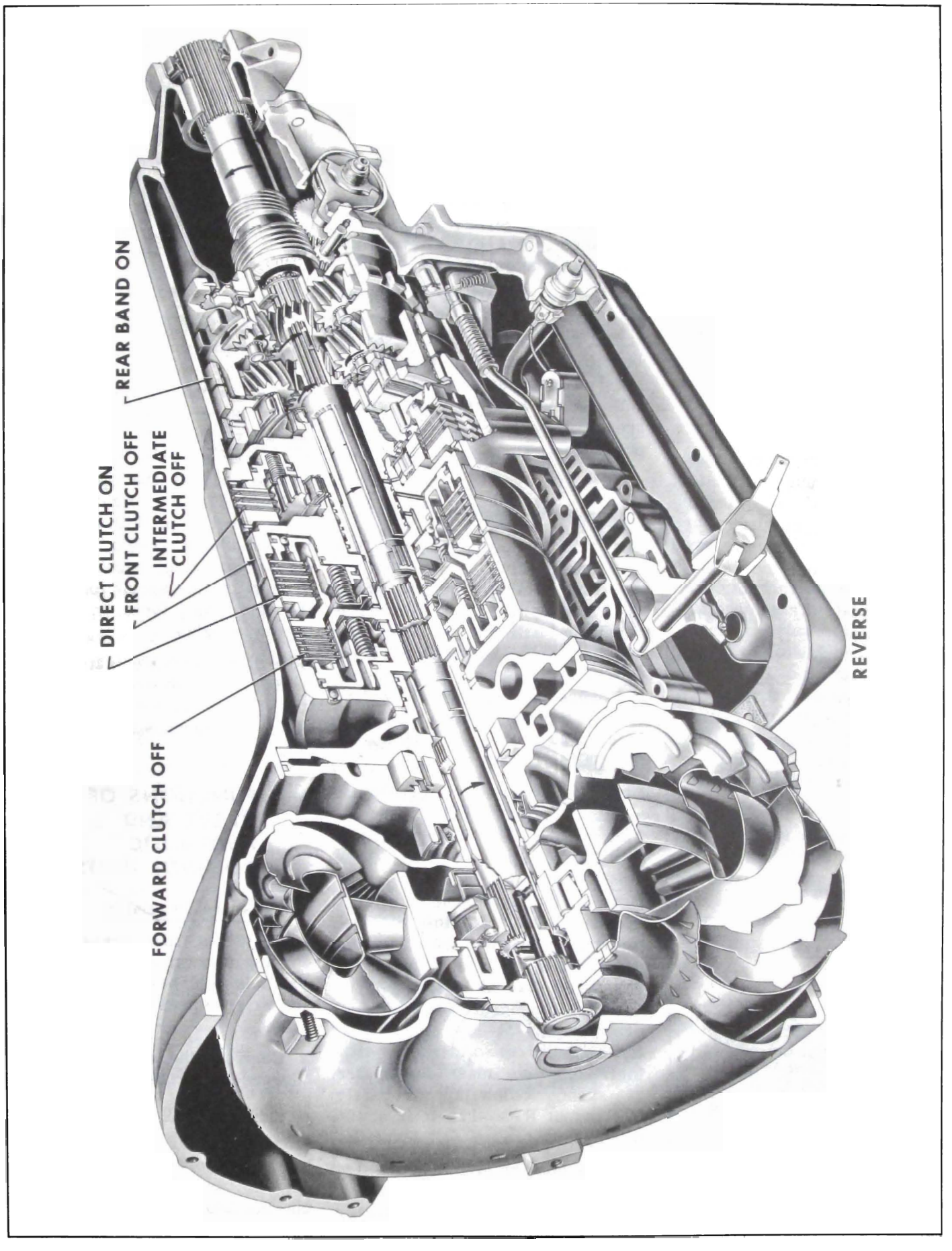

Figure 5-204—Reverse

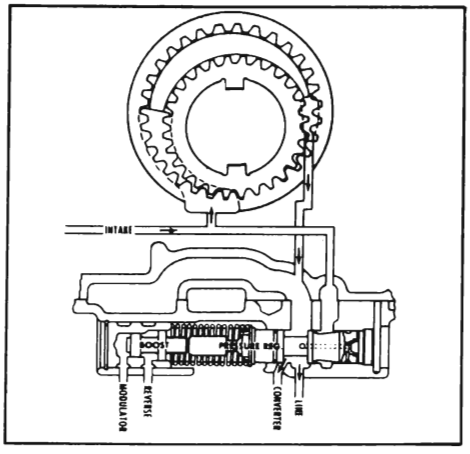

Figure 5-205—Pump and Pressure Regulator Valve

b. Vacuum Modulator Assembly

The engine vacuum signal is provided by the vacuum modulator, which consists of an evacuated metal bellows, a diaphragm and a spring. These are so arranged that when installed the bellows applies a force which acts on the modulator valve. This force acts on the modulator valve so that it increases modulator pressure. Engine vacuum and the spring acts in the opposite direction to decrease modulator, or low engine vacuum, high modulator pressure; high engine vacuum, and low modulator pressure. See Figure 5-206.

If the diaphragm area were exactly equal to the bellows area, the resulting force would match the torque characteristics of the engine very well. It would be accurate at any altitude because it would depend only on engine vacuum and be unaffected by atmospheric pressure. In practice, however, it has been discovered that such a vacuum modulator would lower shift points more than is desirable at high altitudes. This would adversely affect performance particularly when climbing mountains.

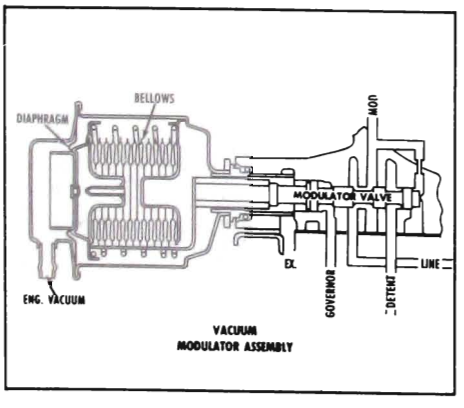

Figure 5-206—Vacuum Modulator Assembly

To reduce the effect of altitude on shift points, the effective area of the diaphragm is made somewhat larger than that of the bellows. Atmospheric pressure then acts on the resulting differential area to reduce modulator pressure.

c. Governor Assembly

The vehicle speed signal to the modulator valve is supplied by the transmission governor, which is driven by the output shaft. The governor consists of two flyweights and a regulator valve. Centrifugal force of the flyweights is imposed on the regulator valve, causing it to regulate a pressure signal that increases with speed. See Figure 5-207.

Centrifugal force is proportional to the square of vehicle speed. This means that a given change in vehicle speed results in a smaller change in governor pressure at low speeds than at high speeds. Because of this characteristic a governor with a single weight only is less accurate at low speed than at high speed. To increase the accuracy of the governor signal at low speeds, the flyweights are so designed that their effective mass is greater at speeds below approximately 720 output RPM than it is above this speed.

This is done by dividing each flyweight into two parts and arranging them so that the primary weights act through preloaded springs on the secondary weights, which in turn acts on the valve. At approximately 720 RPM the centrifugal force on each primary weight exceeds the spring force and the primary weights move to a grounded stop. With the primary weights grounded, the force on the governor regulator valve is equal to the spring forces plus the centrifugal force on the secondary weights.

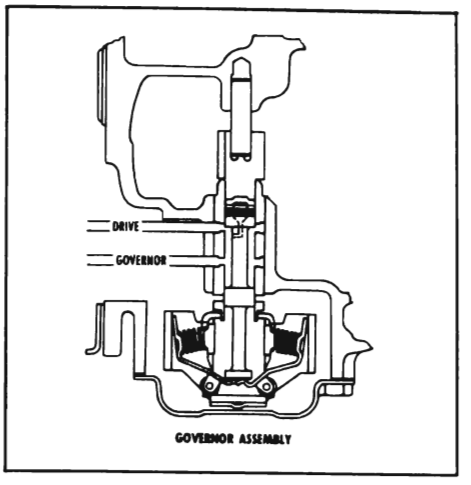

Figure 5-207—Governor Assembly

Governor pressure acts on the modulator valve to cause modulator pressure to decrease as vehicle speed increases.

5-4 FUNCTIONS OF VALVE AND HYDRAULIC CONTROL UNITS

1. Pressure Regulator

a. Regulates line pressure according to a variable spring force which is controlled by modulator and reverse pressure. See Figure 5-208.

b. Controls the flow of oil that charges the torque convertor.

2. Manual Valve

Establishes the range of transmission operation, ie P, R, N, DR, LO, as selected by the vehicle operator through the manual selector lever. See Figure 5-210.

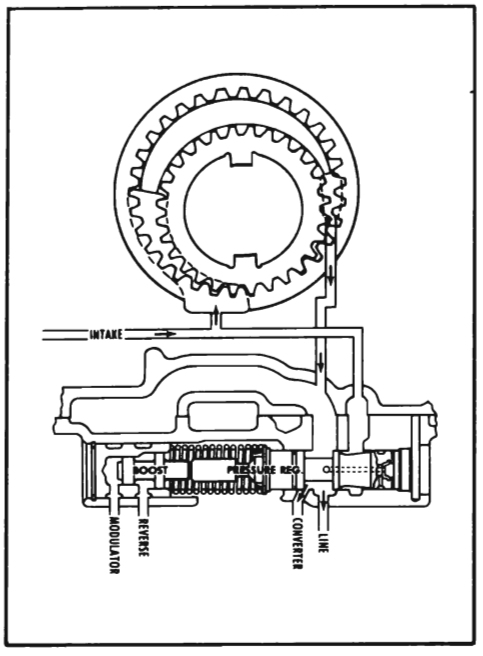

Figure 5-208—Pressure Regulator

3. Governor Assembly

Generates a speed sensitive oil pressure that increases with output shaft or vehicle speed. Governor pressure is used to control the shift points and modulator pressure regulation. See Figure 5-211.

4. Modulator Valve

Regulates line pressure to modulator pressure that varies with torque to the transmission. See Figure 5-212. It senses forces created by:

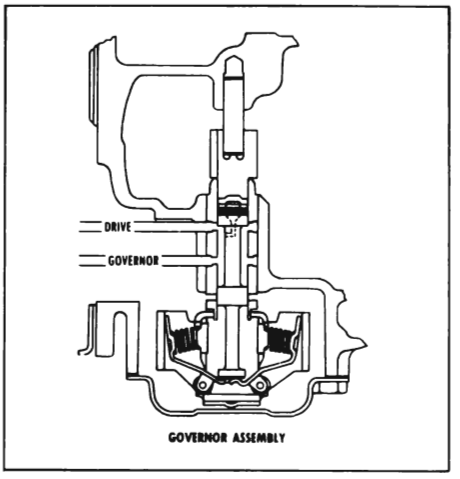

Figure 5-211—Governor Assembly

a. The vacuum modulator bellows that increases modulator pressure.

b. Engine vacuum acting on a diaphragm to decrease modulator pressure.

c. Governor pressure which is generated by the governor assembly. Governor pressure tends to decrease modulator pressure.

5. 1-2 Shift Valve

Controls the oil pressure that causes the transmission to shift from 1-2 or 2-1. Its operation is controlled by governor pressure, detent pressure, modulator pressure, Lo pressure and a spring force. See Figure 5-213.

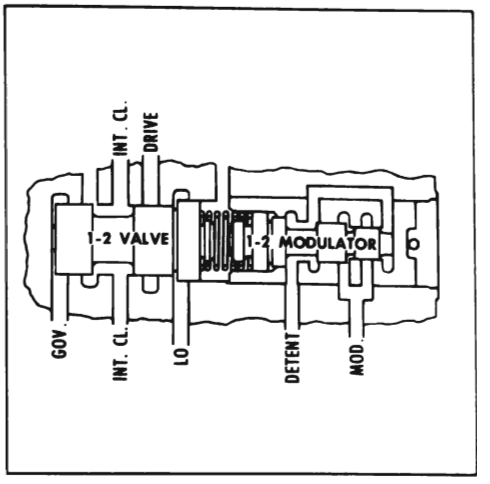

Figure 5-213—1-2 Shift Valve and 1-2 Modulator Valve

6. 1-2 Modulator Valve

Acts as a buffer to control the modulator pressure forces tending to keep the 1-2 shift valve in the downshift position. See Figure 5-213.

7. 2-3 Shift Valve

Controls the oil pressure that causes the transmission to shift from 2-3 or 3-2. Its operation is controlled by line, modulator, intermediate, governor and detent pressure as well as a spring force. See Figure 5-214.

8. 2-3 Modulator Valve

Senses modulator pressure to apply a variable force proportional to modulator pressure

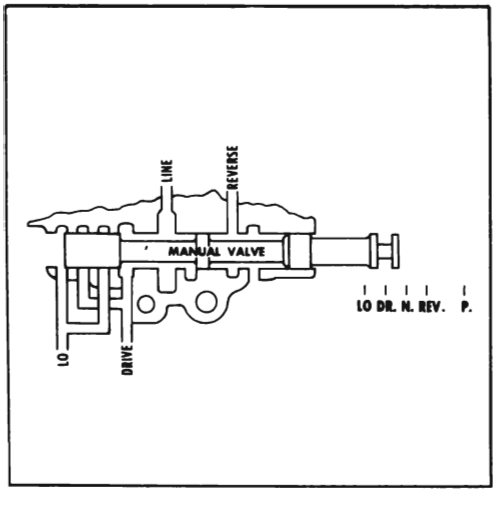

Figure 5-210—Manual Valve

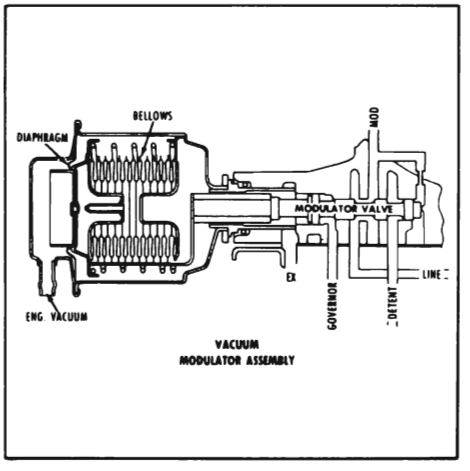

Figure 5-212—Vacuum Modulator Valve

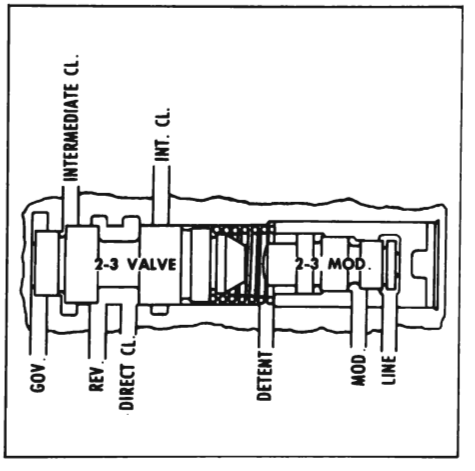

Figure 5-214—2-3 Shift Valve and 2-3 Modulator Valve

which tends to hold the 2-3 shift valve downshifted. See Figure 5-214.

9. 3-2 Valve

Shuts off modulator pressure from acting on the shift valve trains after the direct clutch has been applied. The valve shifts when direct clutch pressure is 26 psi greater than modulator pressure. This allows fairly heavy throttle operation in third speed without downshifting. In third speed detent pressure can be directed to the shift valves to provide the downshift forces. See Figure 5-215.

10. 1-2 Accumulator Valve

Regulates drive oil to a proportional lesser value, and is used in the rear accumulator to compensate for variations in engine torque during the 1-2 shift. Detent pressure and Lo oil cause higher pressure to become available.

11. Detent Valve

Shifts when line oil is exhausted at the end of the valve when the solenoid is energized. This blocks modulator pressure from flowing to the 1-2 and 2-3 modulator valves, and also allows the detent regulator valve to regulate. See Figure 5-216.

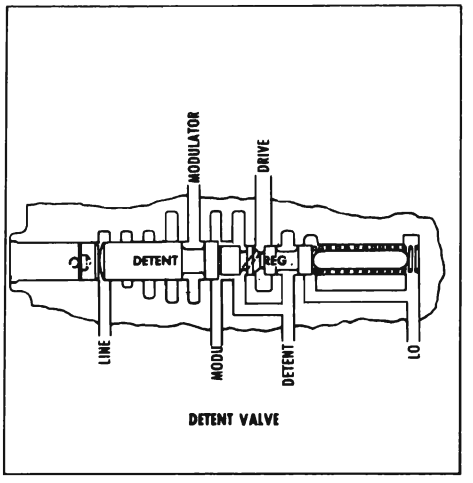

Figure 5-216—Detent Valve and Detent Regulator Valve

12. Detent Regulator Valve

When the detent valve shifts, the detent regulator is freed to allow drive oil to enter the detent passage and thus becomes regulated to a value of 56 psi. Detent pressure will also flow into the modulator passage which flows to the shift valves. Lo oil holds the detent regulator against line oil allowing drive oil to enter the modulator and detent passages. See Figure 5-516.

13. Rear Servo and Accumulator Assembly

The rear servo and accumulator assembly serves a three fold function, namely:

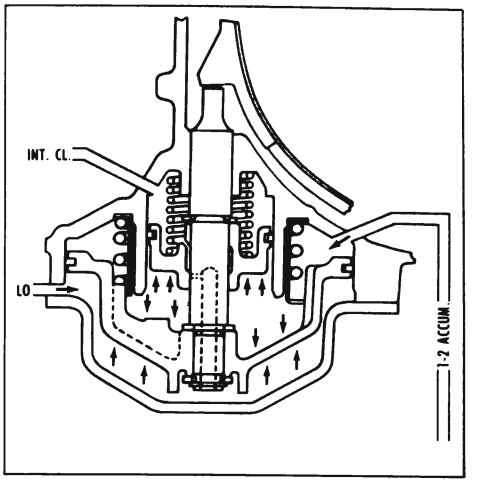

Figure 5-218

a. The large reverse band apply piston provides the band apply force to hold the rear band in reverse. See Figure 5-217.

b. The accumulator piston provides the band apply force for over-run band apply in lo range first speed. See Figure 5-218.

c. The accumulator piston in conjunction with 1-2 accumulator oil provides the accumulator function for intermediate clutch apply. During the stroke of the accumulator piston a quantity of intermediate clutch oil is allowed to bleed to exhaust through the orifice in the accumulator to functionally appear as though it could absorb a larger volume. See Figure 5-220.

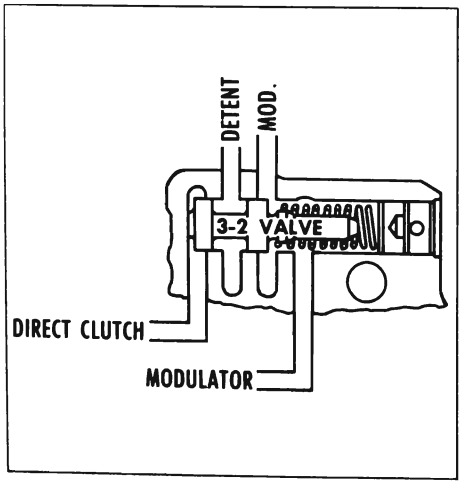

Figure 5-215—3-2 Valve

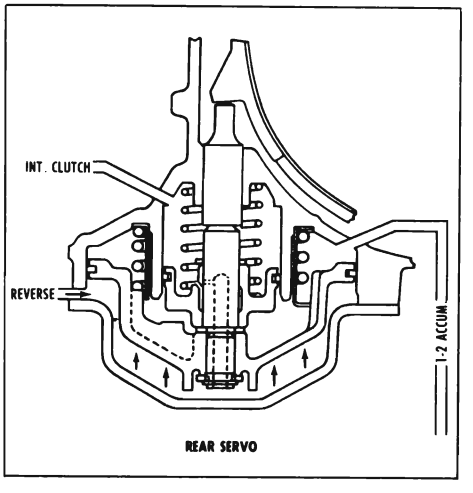

Figure 5-217

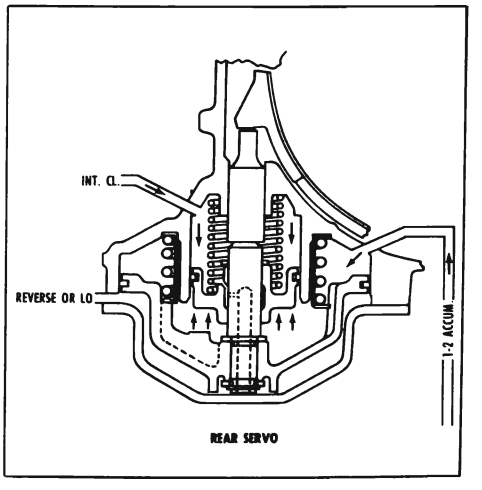

Figure 5-220

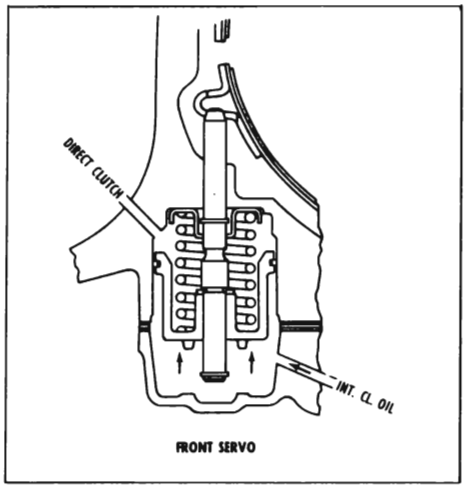

Figure 5-221

14. Front Servo

The front servo serves two functions:

a. Intermediate clutch oil applies the front servo to apply the front band in second gear. See Figure 5-221.

b. During a 2-3 shift, direct clutch oil releases the front band and utilizes the servo as an accumulator for direct clutch apply. See Figure 5-222.

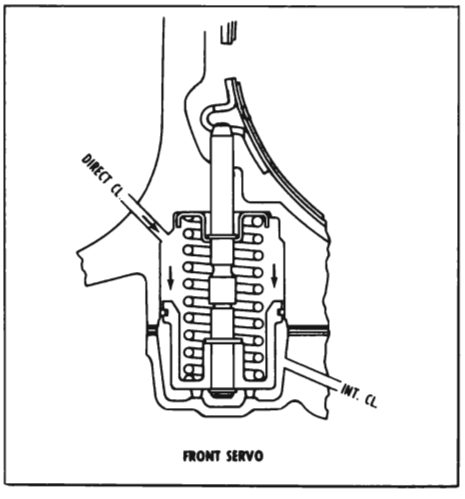

Figure 5-222

5-5 HYDRAULIC OPERATION

a. Drive Range—First Gear

Moving the selector lever to the Drive position, the manual valve is repositioned to allow line pressure to enter the Drive circuit. Drive oil then flows to the following: See Figure 5-223.

1. Forward Clutch
2. 1-2 Shift Valve
3. Governor
4. 1-2 Accumulator Valve
5. Detent Regulator Valve

Drive oil is directed to the forward clutch where it acts on two areas of the clutch piston to apply the forward clutch. The first, or smaller area of the piston, is fed through an unrestricted passage. The larger area is fed through a restricting orifice to insure a smooth shift from Neutral to Drive.

Drive oil is regulated to a variable pressure by the governor. This pressure, termed governor oil, increases with vehicle speed and acts against the ends of the 1-2 and 2-3 shift valves and the modulator valve.

Drive oil to the 1-2 accumulator valve is regulated to a pressure called 1-2 accumulator oil, which is directed between the reverse piston and the accumulator piston of the rear servo. Oil from the 1-2 accumulator strokes the accumulator piston against its spring.

b. Drive Range—Second Gear

As both vehicle speed and governor pressure increase, the force of governor oil acting on the 1-2 shift valve will overcome the force of the 1-2 shift valve spring and the modulator oil pressure. This allows the 1-2 shift valve to open, permitting drive oil to enter the intermediate clutch. Oil in this passage is termed intermediate clutch oil. See Figure 5-224.

Intermediate clutch oil from the 1-2 shift valve is directed to:

1. Intermediate Clutch
2. Rear Servo
3. Front Servo
4. 2-3 Shift Valve (To be used on the 2-3 shift)

Intermediate clutch oil from the 1-2 shift valve seats a one way check ball and flows through an orifice to the intermediate clutch piston to apply the intermediate clutch. At the same time, intermediate clutch oil plus the accumulator spring, strokes the accumulator piston of the rear servo against the 1-2 accumulator oil for a smooth clutch apply. Intermediate clutch oil seats a second one way check ball and flows to the front servo through an orifice to apply the front band. Front band application occurs only after the intermediate clutch is fully applied, due to location of the second orifice and the strength of the front servo spring. The oil that is applying the band is also directed to the 2-3 shift valve and will cancel the effect of line oil on the 2-3 modulator valve after the band is applied.

c. Third Gear

As vehicle speed and governor pressure increase, the force of governor oil acting on the 2-3 shift valve overcomes the force of the 2-3 shift valve spring and modulator oil. This allows the 2-3 shift valve to move, feeding intermediate clutch oil to the direct clutch passage. This oil is now termed direct clutch oil. See Figure 5-225.

From the 2-3 shift valve, direct clutch oil is directed to:

1. Direct Clutch
2. Front Servo
3. 3-2 Valve

Direct clutch oil from the 2-3 shift valve flows past a one way check valve to the small inner area of the direct clutch piston

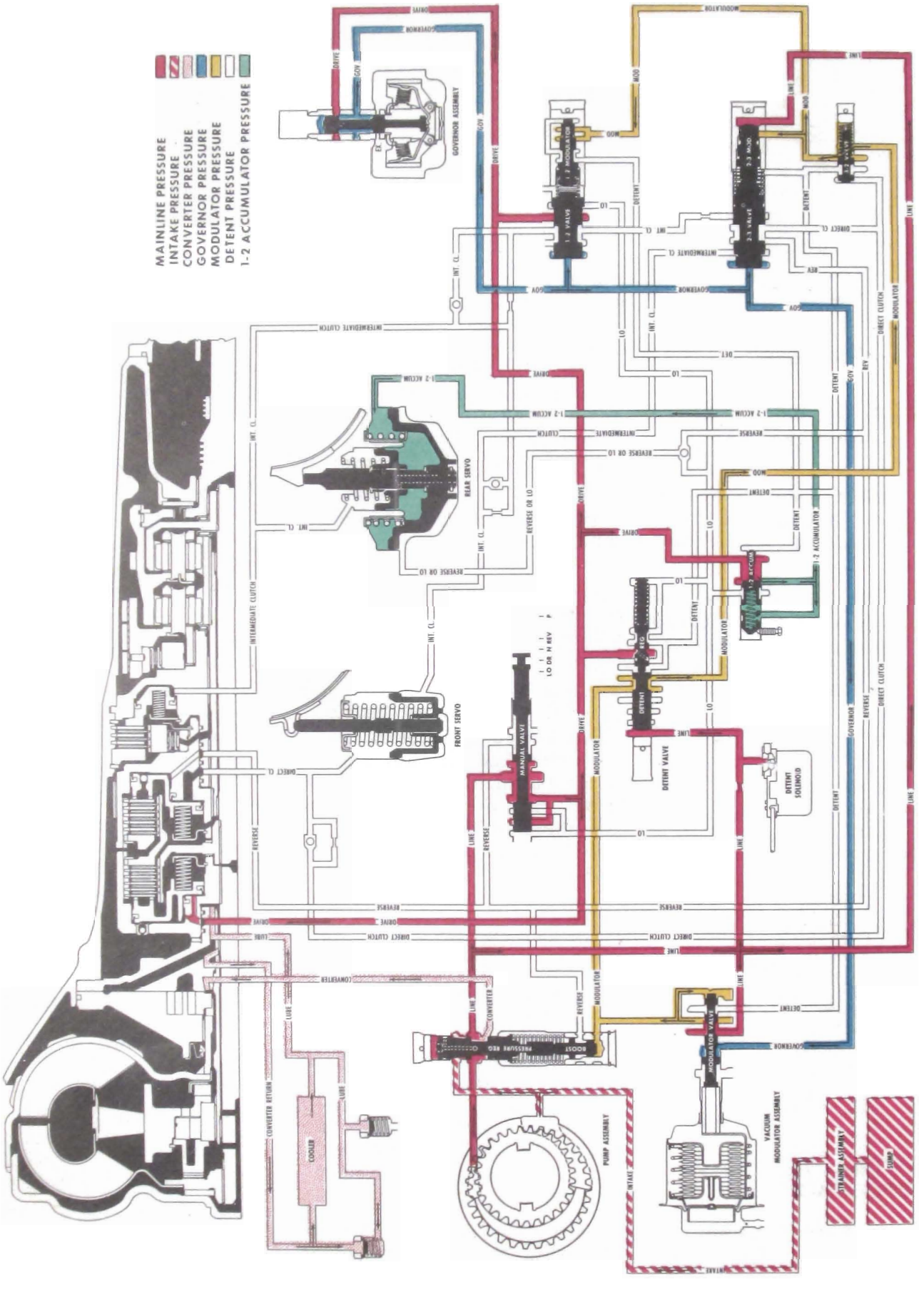

Figure 5-223—Drive Range - First Gear

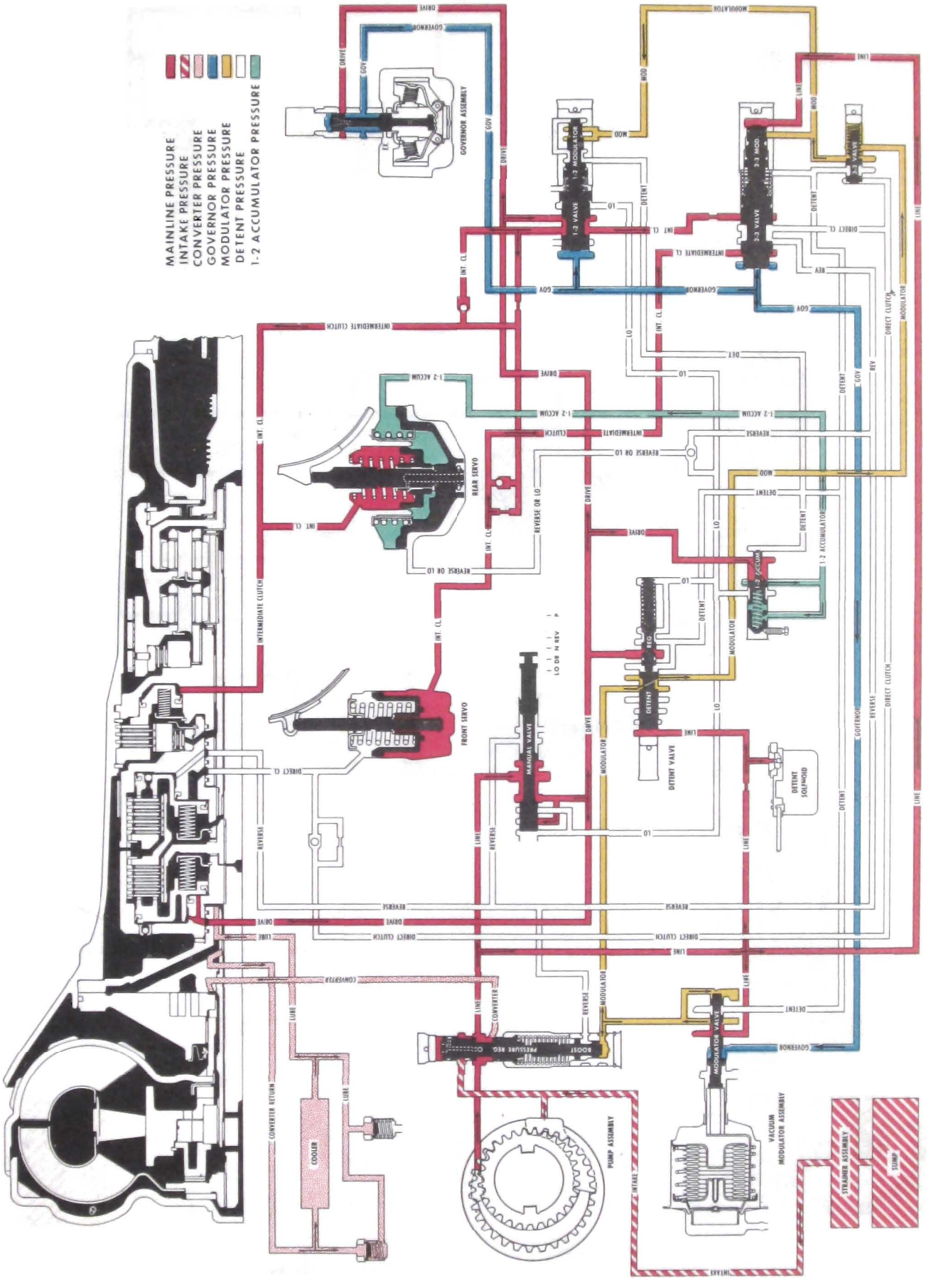

Figure 5-224—Drive Range - Second Gear

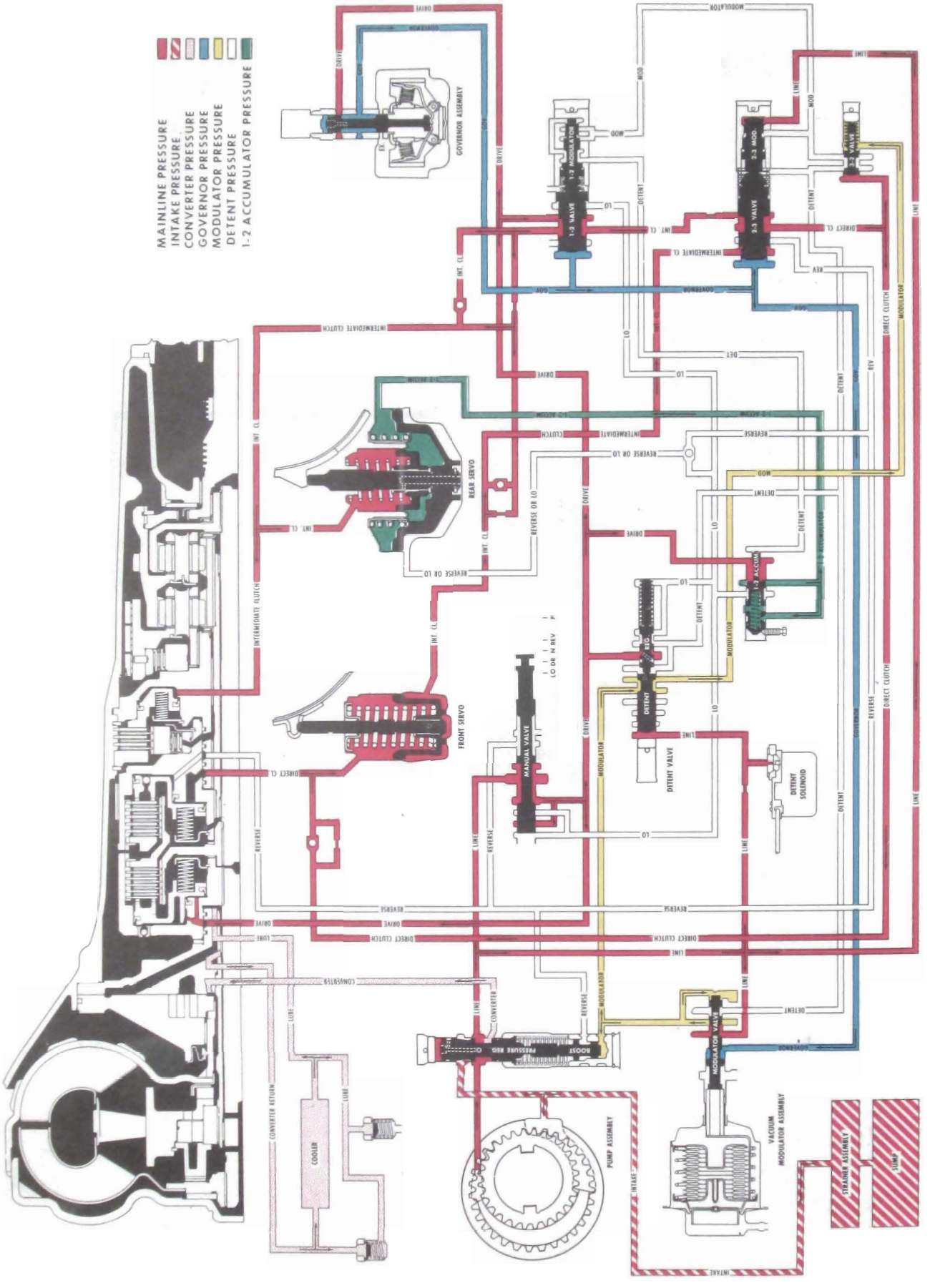

Figure 5-225—Third Gear Drive

to apply the direct clutch. Simultaneously, direct clutch oil is fed to the front servo to release the band.

The pressure of the direct clutch oil, combined with the front servo spring, moves the front servo piston against the intermediate clutch oil pressure. The front servo releases the band and acts as an accumulator for a smooth direct clutch apply.

Direct clutch oil is also supplied to the 3-2 valve to move the 3-2 valve against its spring and modulator pressure when modulator pressure is below 94 psi. This cuts off modulator oil to the 1-2 and 2-3 modulator valves and allows the transmission to utilize the torque multiplying characteristics of the converter without downshifting.

When modulator pressure is above 94 psi, the 3-2 valve will move against direct clutch oil and allow modulator oil to act on the 2-3 and 1-2 shift valves.

SUMMARY

The forward, intermediate, and direct clutches are applied. The transmission is in Third Gear (Direct Drive).

d. Reverse

When the selector lever is moved to the reverse position, the manual valve is repositioned to allow line pressure to enter the reverse circuit. Reverse oil then flows to the following components: See Figure 5-226.

1. Direct Clutch
2. 2-3 Shift Valve
3. Rear Servo
4. Pressure Boost Valve

Reverse oil from the manual valve flows to the large area of the direct clutch piston and to the 2-3 shift valve. From the 2-3 shift valve, it enters the direct clutch passage and is directed to the small area of the direct clutch piston to apply direct clutch.

Reverse oil flows to the rear servo and acts on the reverse piston to apply the rear band. Reverse oil also acts on the pressure boost valve to boost line pressure.

SUMMARY

The direct clutch and the rear band are applied. The transmission is in Reverse.

e. Detent Downshifts

While operating at speeds below approximately 70 miles per hour, a forced or detent 3-2 downshift is possible by depressing the accelerator fully. This engages an electrically-operated switch at the carburetor and actuates the detent solenoid. The detent solenoid opens an orifice that allows line oil at the detent valve to be exhausted, thus permitting the detent regulator valve to operate. Line oil acting on the detent valve and solenoid is supplied by a smaller orifice. This orifice will insure stable line pressure throughout the system.

Drive oil on the detent regulator valve is then regulated to a pressure of approximately 56 psi and called detent oil. Detent oil is routed into the modulator passage to the 1-2 and 2-3 modulator valves and to the 1-2 and 2-3 shift valves. Below approximately 70 mph, the 2-3 shift valve will close, allowing the transmission to shift to second gear.

A detent 2-1 downshift can also be accomplished at approximately 20 MPH by pressing the accelerator through detent, the pressure of the detent oil on the 1-2 shift and 1-2 modulator valve will further downshift the transmission to first gear.

To insure a firm 1-2 upshift under detent conditions, detent oil is directed to the 1-2 accumulator valve to increase 1-2 accumulator oil pressure acting on the rear servo accumulator piston.

f. Low Range—First Gear

(Valves in First Gear Position)

Maximum downhill braking can be attained at speeds below 20 MPH with the selector lever in Lo position as this directs Lo oil from the manual valve to the following areas:

1. 1-2 Shift Valve
2. Rear Servo
3. 1-2 Accumulator Valve
4. Detent Regulator Valve and Spacer

Lo oil to the 1-2 shift valve assists governor oil to hold the 1-2 shift valve in the upshifted position. This prevents the transmission from downshifting to first gear until the vehicle is slowed to approximately 20 MPH.

Lo oil flows past a ball check to the apply side of the rear servo piston and through the 1-2 accumulator valve to raise the 1-2 accumulator oil to line pressure. With line pressure on both sides of the rear servo piston, the accumulator piston will apply the band.

Lo oil acts on both the detent regulator valve and spacer. Combined with the detent spring, Lo oil holds the detent valve against line oil acting on the detent valve, causing drive oil to flow through the detent regulator valve into the detent and modulator passages. This increases line, detent, and modulator oil pressures to 150 psi. Modulator oil at line pressure acting on the 1-2 modulator valve overcomes both Lo and governor oil on the 1-2 shift valve at any vehicle speed below 20 MPH and the transmission will shift to first gear.

With the transmission in first gear-Lo range, the transmission

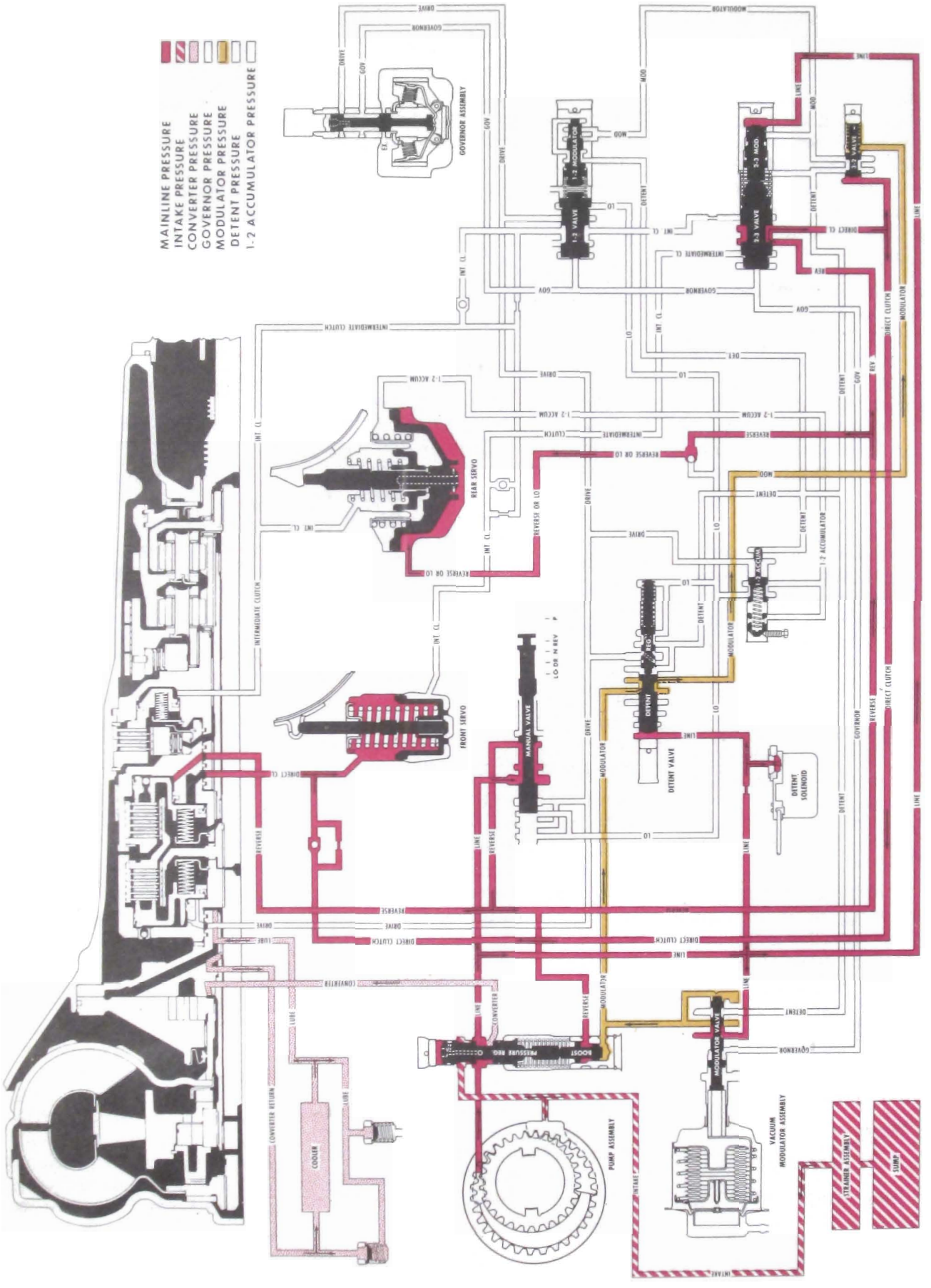

Figure 5-226—Reverse

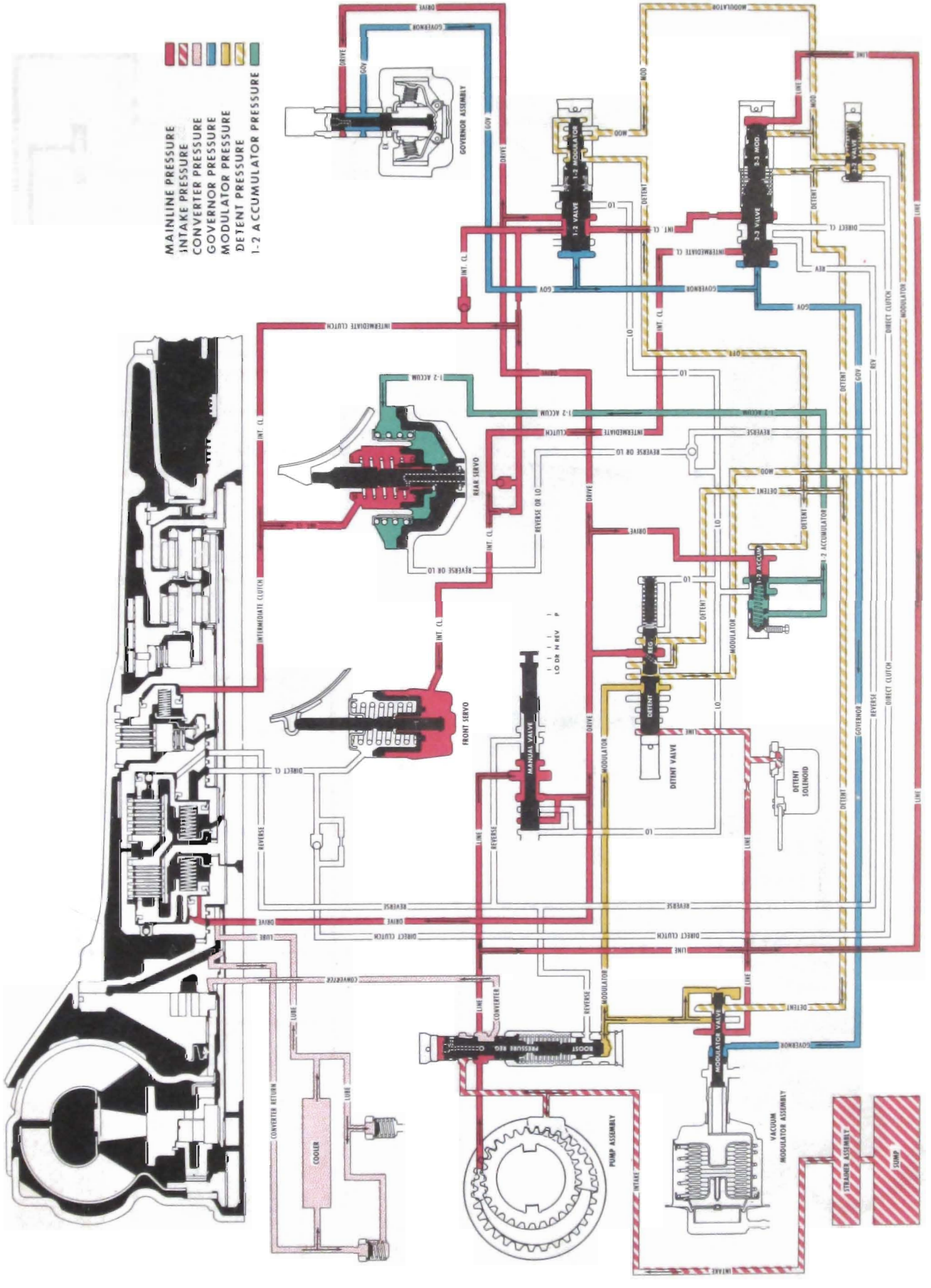

Figure 5-227—Second Gear Detent

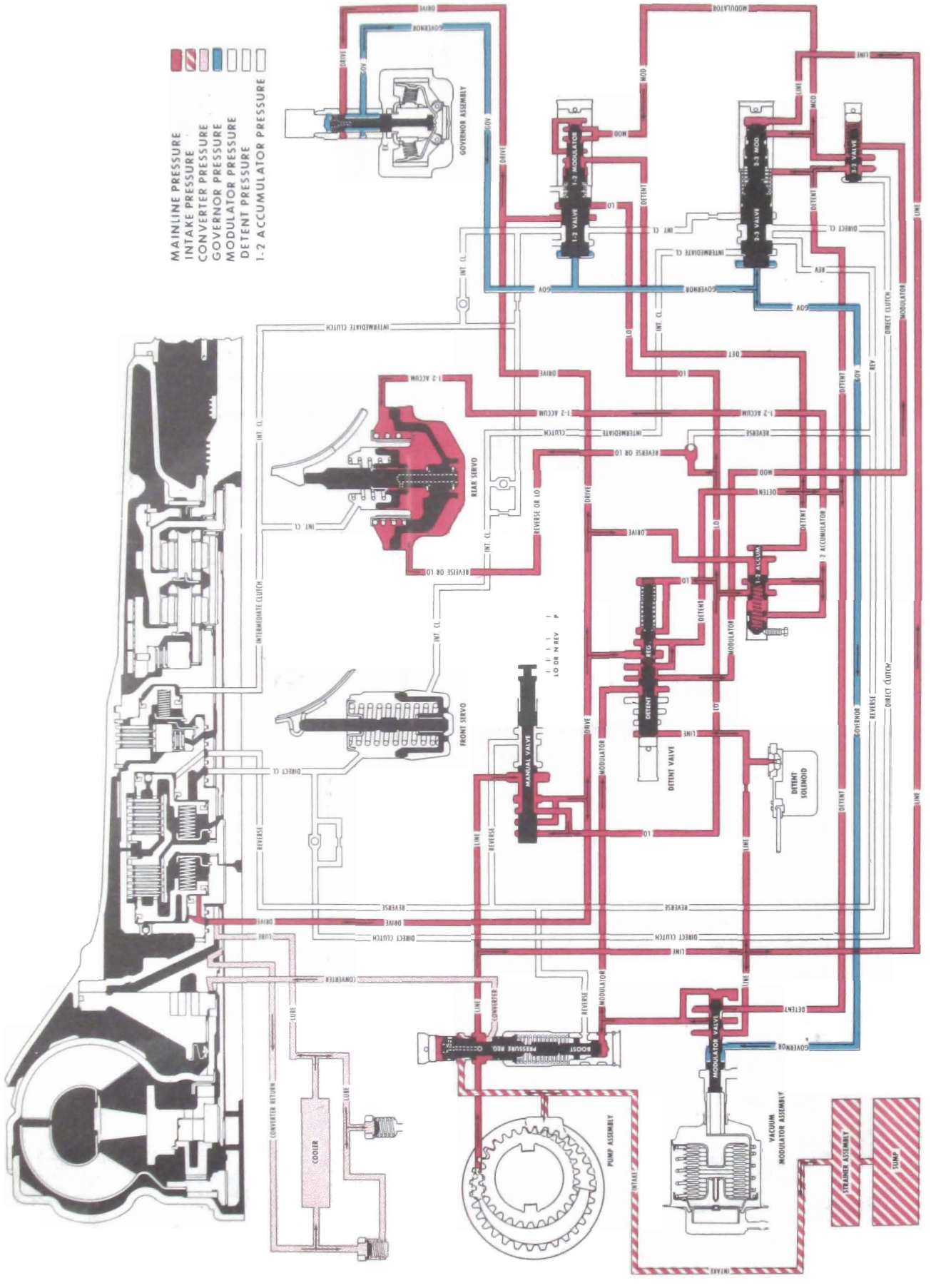

Figure 5-228—First Gear Low

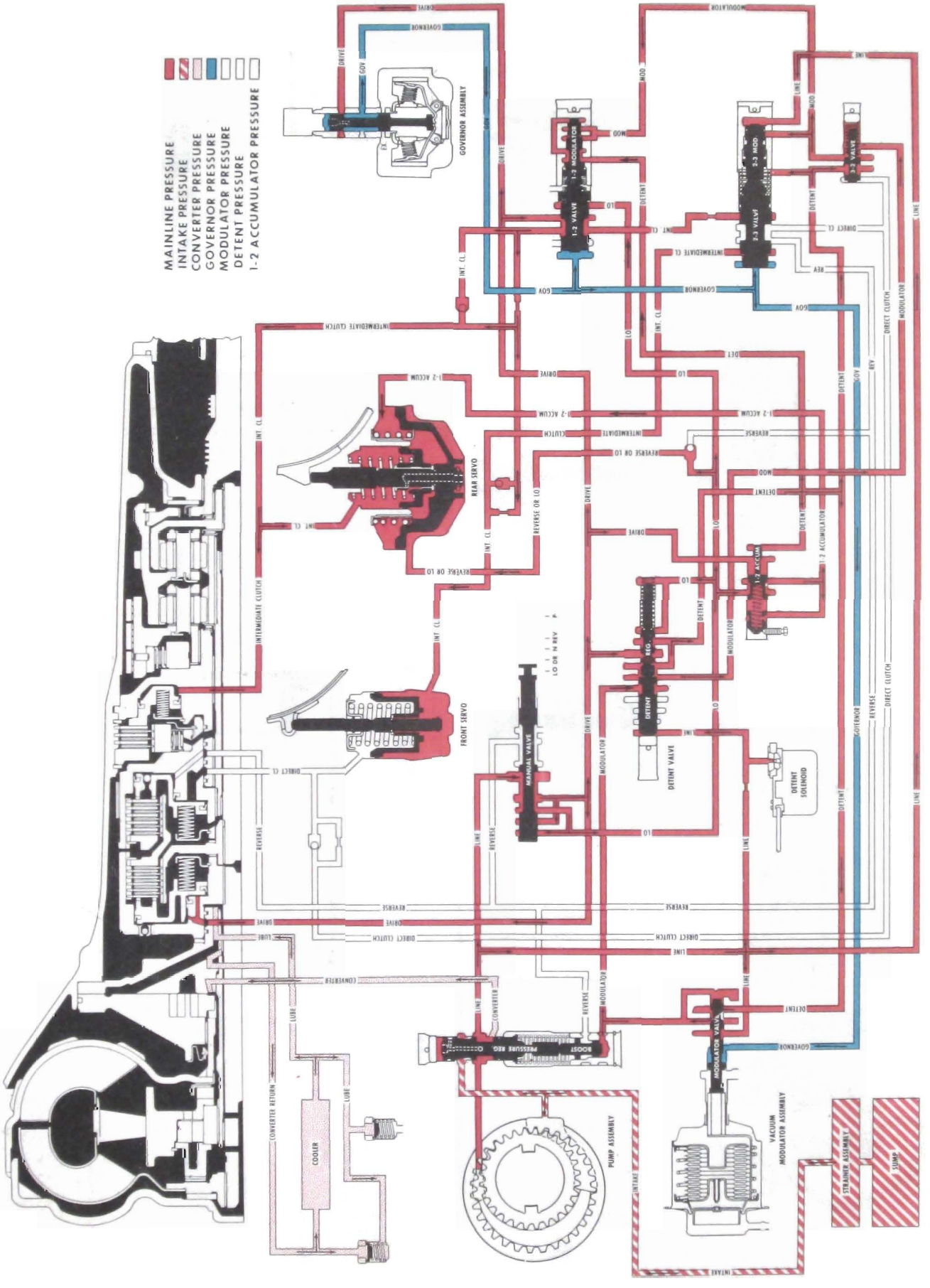

Figure 5-229—Second Gear Low

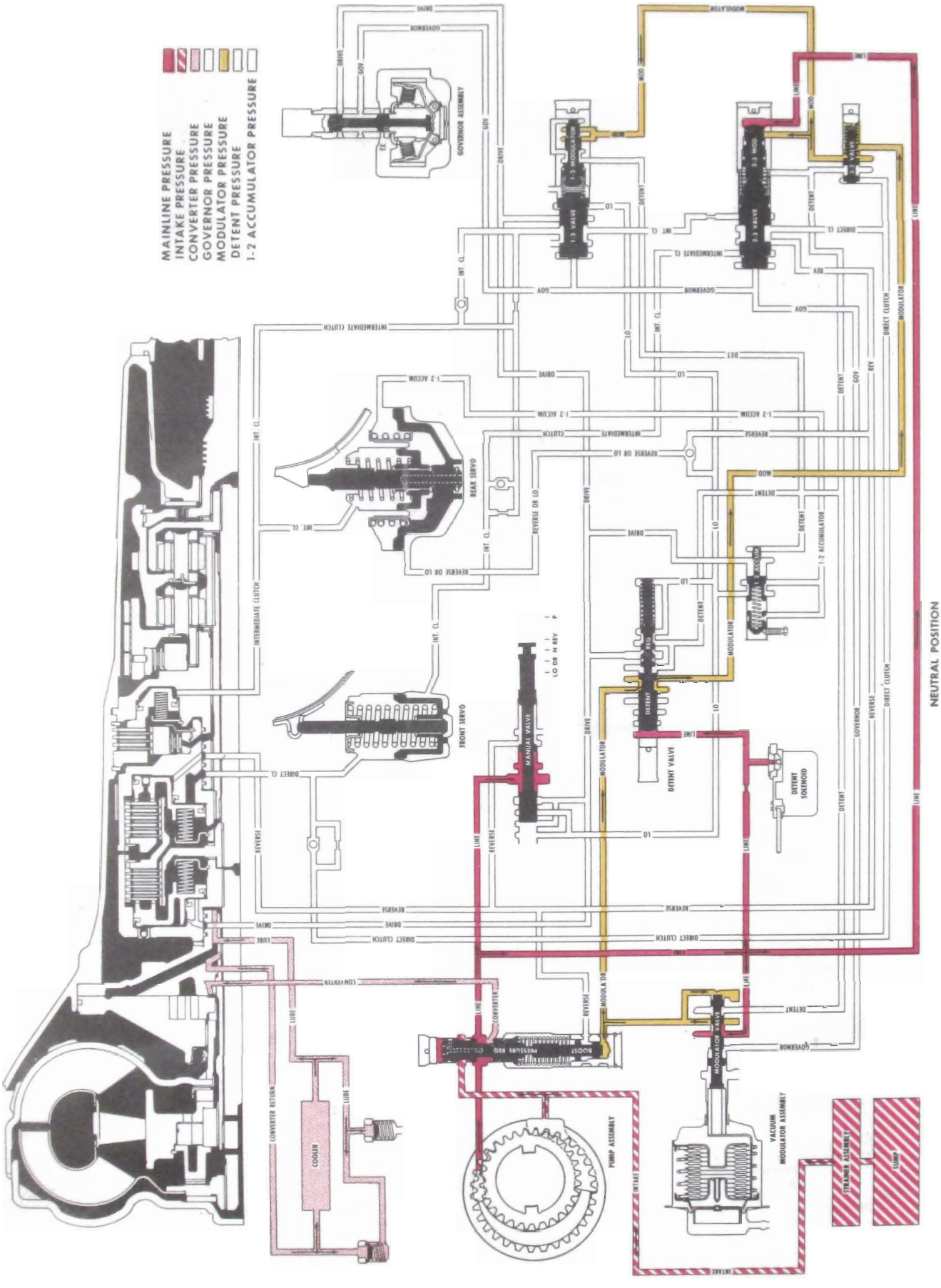
MAINLINE PRESSURE
INTAKE PRESSURE
CONVERTER PRESSURE
GOVERNOR PRESSURE
MODULATOR PRESSURE
DETENT PRESSURE
1-2 ACCUMULATOR PRESSURE
NEUTRAL POSITION
GOVERNOR ASSEMBLY
1-2 VALVE
1-2 MODULATOR
2-3 VALVE
2-3 MOD.
REAR SERVO
FRONT SERVO
MANUAL VALVE
DETENT VALVE
DETENT SOLENOID
1-2 ACCUMULATOR
MODULATOR
DIRECT CLUTCH
INTERMEDIATE CLUTCH
REVERSE
GOVERNOR
PUMP ASSEMBLY
VACUUM MODULATOR ASSEMBLY
STRAINER ASSEMBLY
SUMP
COOLER
CONVERTER RETURN

Figure 5-230

cannot upshift to second gear regardless of vehicle or engine speed.

SUMMARY

The forward clutch and rear band are applied. The transmission is in First Gear - Lo Range.

g. Low Range—Second Gear

(Valves in Second Gear Position)

A 3-2 downshift for downhill braking can be accomplished by moving the selector lever to Lo position. When the selector lever is moved to Lo position, Lo oil from the manual valve is directed to the following components:

1. Detent Regulator Valve and Spacer
2. 1-2 Shift Valve
3. Rear Servo
4. 1-2 Accumulator Valve

Lo oil from the manual valve flows to the detent regulator valve and spacer to hold the valve train against line pressure. Drive oil then flows through the detent regulator valve into the detent and modulator passages to increase line, detent, and modulator oil pressures to 150 psi. This higher pressure of the detent and modulator oil on the 2-3 shift valve will force the transmission to downshift to second gear, regardless of vehicle speed.

Lo oil is also directed to the rear servo and the 1-2 accumulator valve to boost 1-2 accumulator oil in the rear servo to 150 psi.

To keep the 1-2 shift valve upshifted until approximately 20 MPH, Lo oil is also supplied to the 1-2 shift valve.