

Hydraulic Control Valve Body

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AOD Transmission

- ☐ What pressures control the shift timing and feel.
 - Governor Pressure
 - Throttle Pressure
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Governor Pressure

- ☐ What is governor pressure?
 - "The transmission's pressure that is directly related to output shaft speed. Used to control shift points."
 - Hydraulic pressure that is directly proportional to the speed of the vehicle.

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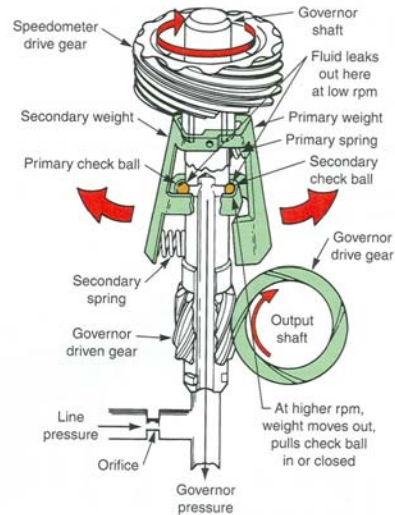
Types of governors

- ☐ Gear driven with spool valve
- ☐ Gear driven with check balls
- ☐ Shaft mounted
- ☐ Note: Line pressure from the manual valve must be regulated down.

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Gear driven w/ check balls

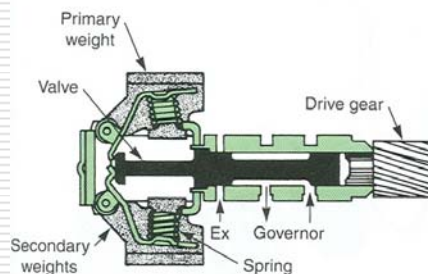
- ❑ Uses only port for governing pressure
- ❑ Hydraulic pressure is dumped to the sump past check balls.
- ❑ As speed increases the weights fly out forcing the check balls to close off the dump.
 - The weights reach around the governor body to the ball on the opposite side.



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Gear driven w/ spool valve

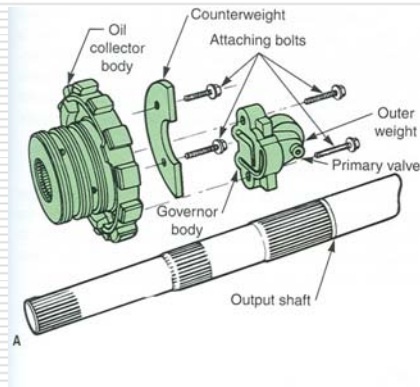
- ❑ Uses pressure inlet line, dump and governor outlet ports.
- ❑ When not spinning the fluid pressure pushes up on the spool valve opening the dump port.
- ❑ The faster it spins the more force the weights push down on the spool valve blocking off the dump port.



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Shaft mounted

- ❑ Not gear driven, mounted directly to the output shaft.
- ❑ Almost exclusively used on rear wheel drive transmissions
- ❑ Fluid pressure is forced into a spring loaded cap.
- ❑ At low speeds fluid pressure is dumped, the faster the shaft spins the more force the cap exerts on the fluid and spring. This blocks off the fluid dump.



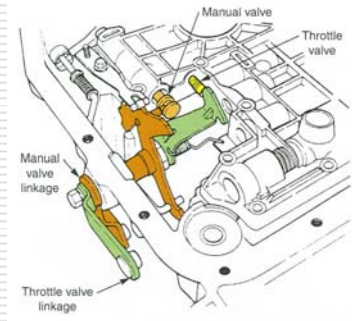
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Throttle pressure

- ❑ Types of throttle pressures:
 - T.V. Pressure (throttle valve)
 - Vacuum modulator
 - Kick-down/Detent valve

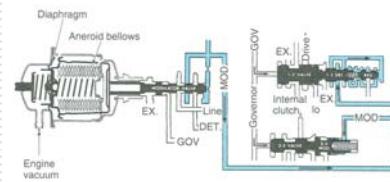
T.V. pressure

- Constantly acted upon by the accelerator pedal
- As accelerator pedal increases input the higher the T.V. Pressure.
- Uses:
 - May be only engine load input.
 - May be used with vacuum modulator valve.
 - May include some component of a Detent valve.



Vacuum Modulator

- Used to give load of engine signal to transmission.
- Uses manifold vacuum.
- High vacuum = low engine load.
- Low vacuum = high engine load.
- Uses:
 - Must be used with kick down or T.V.



Kick-down/Detent Valve

- ☐ Simply provides the transmission with a throttle input which would require a downshift.
 - ☐ Only activated with close to or at WOT.
 - ☐ Uses:
 - May be integrated into T.V. operation
 - May be independent of T.V. operation
-

What happens when we ...

- ☐ Vehicle stopped in Drive ?
 - Governor: Minimum pressure, does not rise
 - Throttle pressure: Minimum pressure, does not rise
 - ☐ Vehicle stops accelerating?
 - Governor:
 - Throttle pressure:
 - ☐ Slowing to a stop?
 - Governor:
 - Throttle pressure:
-

What happens when we ...

- ☐ Slowing to a stop?
 - Governor:
 - Throttle pressure:
 - ☐ Vehicle is cruising at steady speed light throttle input?
 - Governor:
 - Throttle pressure:
-

What happens when we have a problem?

- ☐ Governor pressure never increases from minimum?
 - Concern:
 - ☐ Governor pressure is always at maximum?
 - Concern:
-

What happens when we have a problem?

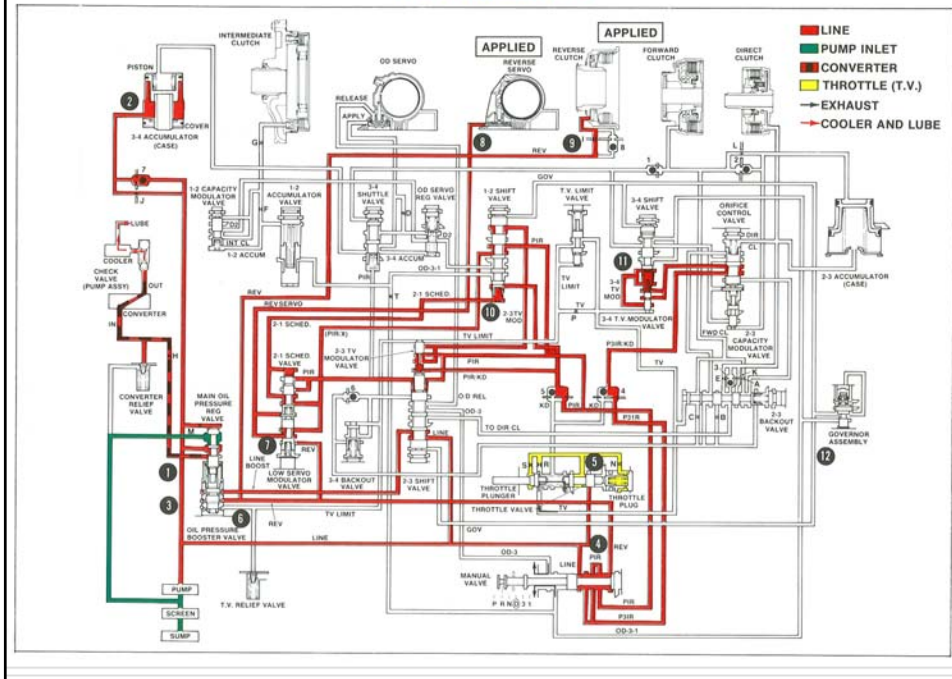
- ☐ Throttle pressure never increases from minimum?
 - Concern:

 - ☐ Throttle pressure is always at maximum?
 - Concern:
-

T.V. and Governor

- ☐ Driving conditions: (terms)
 - Stopped neutral C/T
 - Stopped Park C/T
 - Stopped O/D 1st gear
 - Stopped Rev/Dr. C/T
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REVERSE GEAR



1ST GEAR IN OVERDRIVE RANGE

