

CORVETTE LINKAGE

Corvette

DESCRIPTION

Linkage type with power cylinder mounted between steering relay rod and bracket on frame side rail. Control valve assembly is mounted on left side relay rod and is operated by pitman arm acting on spool valve assembly. Control valve assembly is adjustable to provide greater uniformity of operation and faster response. Power steering pump is mounted on engine and driven by a belt from crankshaft pulley.

OPERATION

Hydraulic pressure is delivered through a hose from the pump to a valve which senses requirements for power assistance and supplies power cylinder accordingly. Steering gear, used with this system, is the same basic unit used on manually steered vehicles.

ADJUSTMENT

CONTROL VALVE BALANCING

NOTE – This adjustment is required after valve overhaul, or whenever steering effort is harder in one direction than the other. Piston rod must be disconnected from frame bracket.

1) With car on a hoist, start engine. If piston rod remains retracted, turn adjusting nut clockwise until rod begins to move out. Then turn nut counterclockwise until rod just begins to move in. Now turn nut clockwise to exactly one-half rotation needed to change direction of piston rod movement. If rod extends upon starting the pump, move nut counterclockwise until rod begins to retract, then

clockwise until rod begins to move out again. Now position rod to exactly one-half rotation needed to change direction of piston rod movement. **CAUTION** – Do not turn nut back and forth more than is absolutely necessary to balance valve, as this is a special friction nut.

2) With valve balanced, it should be possible to move the rod in and out manually. Turn off engine and connect cylinder rod to frame bracket. Restart engine. If front wheels (still on hoist) do not turn in either direction from center the valve has been properly balanced. Grease end of valve and install dust cap.

LUBRICATION, TROUBLE SHOOTING & TESTING

See *Power Steering General Servicing* in this section.

REMOVAL & INSTALLATION

BALL STUD SEAL REPLACEMENT

Remove pitman arm. Remove clamp by removing nut, bolt and spacer or, if crimped type clamp is used, straighten clamp end and pull clamp and seal off end of stud. Install new seal and clamp over stud so lips on seal mate with clamp (a nut and bolt attachment type clamp replaces the crimped type for service). Center ball stud, seal and clamp at opening in adapter housing, then install spacer, bolt and nut.

CONTROL VALVE

Raise front of car and support on stands. Remove relay rod to control valve clamp bolt. Disconnect the two pump-to-control valve hose connections and allow fluid to drain

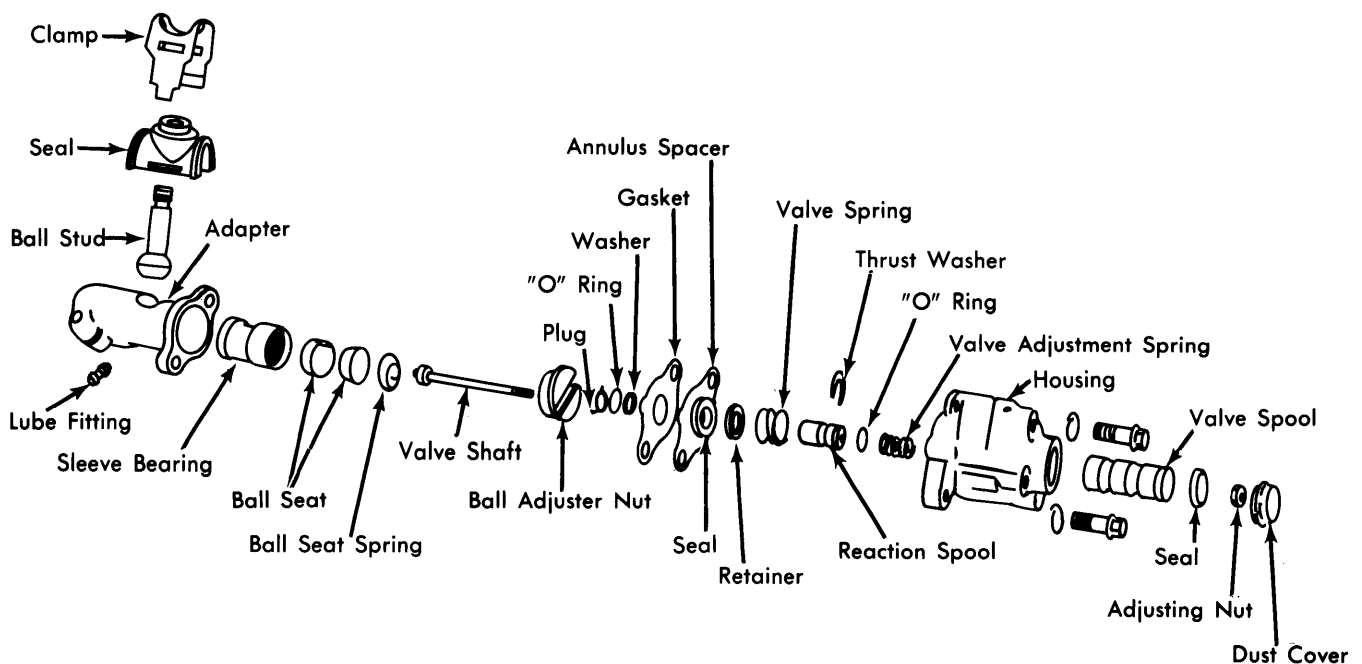


Fig. 1 Power Steering Control Valve Assembly

CORVETTE LINKAGE (Cont.)

into a container, then disconnect the two remaining valve-to-power cylinder hoses. Remove retaining nut from ball stud to pitman arm connection and disconnect control valve from pitman arm. Turn pitman arm to the right to clear the control valve and unscrew the control valve from the relay rod. Remove control valve from vehicle. To install, reverse removal procedure.

POWER CYLINDER

Disconnect hydraulic lines connected to power cylinder and drain fluid into a container (do not reuse). Remove cotter pin, nut, retainer and grommet from power cylinder rod attached to frame bracket. Remove grommet and retainer from bracket if replacement parts are required. Remove cotter pin, nut and ball stud at relay rod. Remove power cylinder from vehicle. Inspect all parts for leaks, cracks or damage, replace as necessary. To install, reverse removal procedure.

POWER STEERING HOSES

When servicing power steering hoses be sure to align hoses in their correct position. Always make hose installations on Corvette with front wheels in straight ahead position. **CAUTION** - Do not start engine with any power steering hose disconnected.

POWER STEERING PUMP

Disconnect hoses at pump or steering gear. Secure hose ends in raised position to prevent oil drainage. Remove pump belt and pump from mounting brackets. Pump pulley is a press fit on shaft and must only be removed with suitable puller (J-25033). **CAUTION** - Do not hammer on puller to aid pulley removal or installation.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs.
Steering Wheel Nut	30
Steering Column Bracket Screws	19
Steering Coupling-to-Shaft Flange Nuts	20
Steering Coupling Pinch Clamp Bolt	30
Steering Gear Mounting Bolts	30
Ignition Switch Screw	35 INCH Lbs.
Turn Signal Housing Screws	45 INCH Lbs.
Lock Bolt Spring Screw	35 INCH Lbs.
Bearing Housing Support Screws	60 INCH Lbs.
Column Support-to-Bracket Support Nuts	150 INCH Lbs.
Floor Pan Screws	35 INCH Lbs.

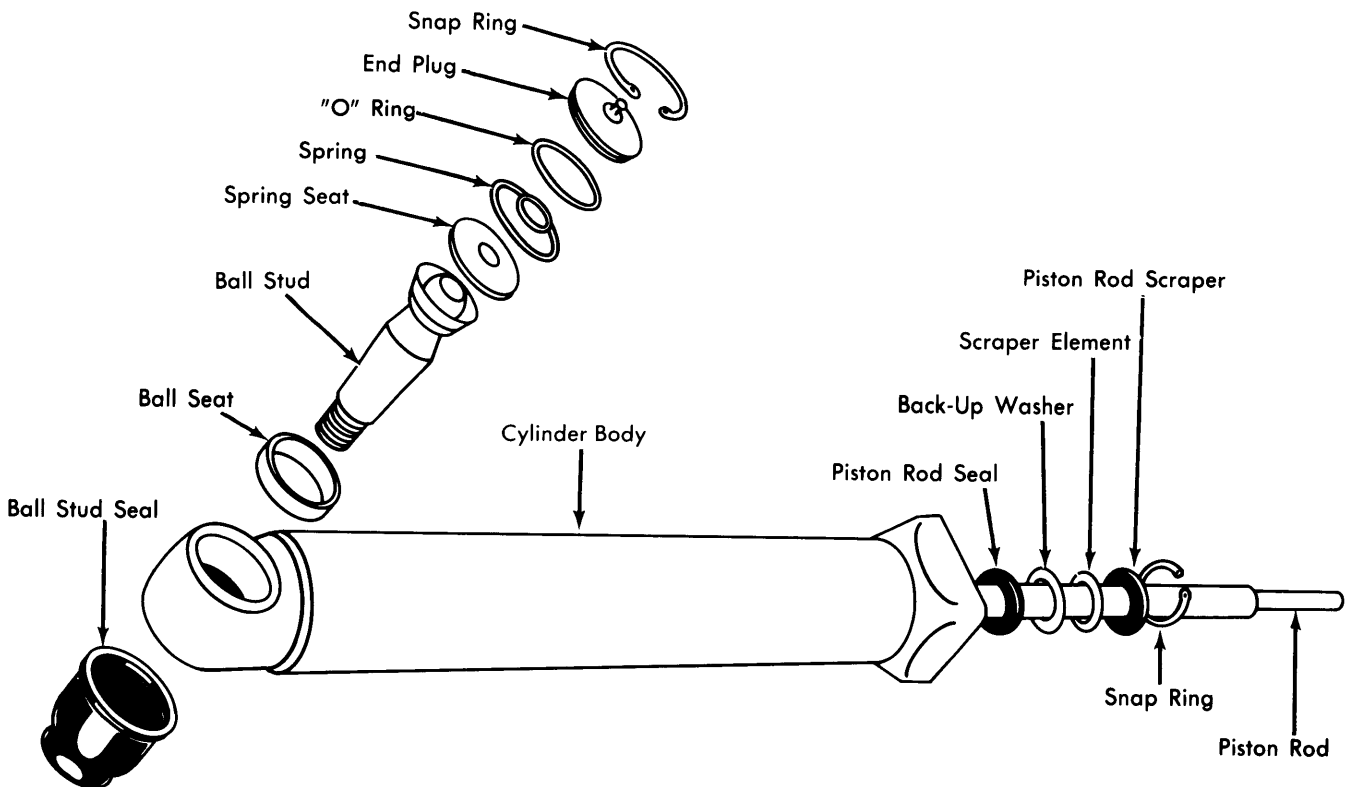


Fig. 2 Power Cylinder Assembly