

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 belt from crankshaft pulley.

OPERATION

Hydraulic pressure is delivered through 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 greater in one direction than in 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 just begins to move out, then turn counterclockwise until rod just begins to move in. Now turn nut clockwise exactly one-half of rotation needed to change direction of piston rod movement. If rod extends upon starting engine, move nut counterclockwise until rod begins to retract, then clockwise until rod begins to move

out again. Now position nut exactly one-half of 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 since this is a special friction nut.

2) With valve balanced it should be possible to move the rod in and out manually. Turn off ignition 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, TROUBLESHOOTING & 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. 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 into a con-

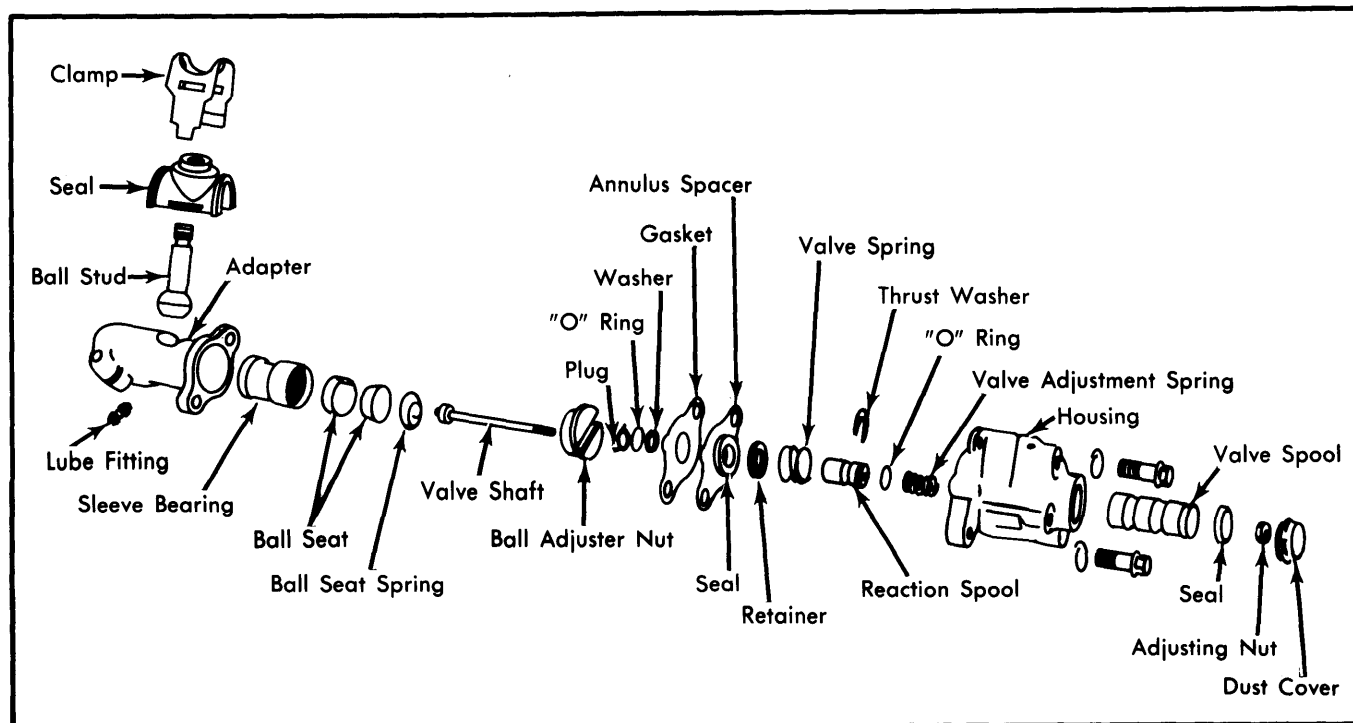


Fig. 1 Power Steering Control Valve Assembly

Power Steering

CORVETTE LINKAGE (Cont.)

tainer, 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; drain and dispose of fluid. 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 power cylinder from vehicle. Inspect all parts for leaks, cracks or damage and replace as necessary. To install, reverse removal procedure.

POWER STEERING HOSES

When servicing power steering hoses be sure to align in correct position. Always make hose installations with 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 a suitable puller (J-25034).

CAUTION — Do not hammer on puller to aid pulley removal or installation.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs.
Pitman Shaft Nut	185
Idler Arm to Frame Bolt Nuts	30
Idler Arm to Relay Rod Stud Nut	35 ^①
Power Steering Pump Mounting Bolts	25
Power Steering Pump Mounting Stud Nut	20
Power Cylinder to Relay Rod Stud Nut	45 ^①
Power Cylinder to Frame Bracket Nut	23 ^②
Power Cylinder Frame Bracket to Frame Nuts	17
Control Valve and Adapter Assembly to Relay Rod Clamp Bolt	25
Control Valve and Adapter Assembly to Pitman Arm Nut	45 ^①
Power Steering Pump Hose Fittings	25
Power Cylinder Assembly Hose Fittings	8
Control Valve and Adapter Assembly Hose Fittings Outlet	25
Inlet	8

- ① — Plus additional torque to align castellation with cotter pin hole (not to exceed 50 ft. lbs.)
- ② — Plus additional torque to align castellation with cotter pin hole (not to exceed 30 ft. lbs.)

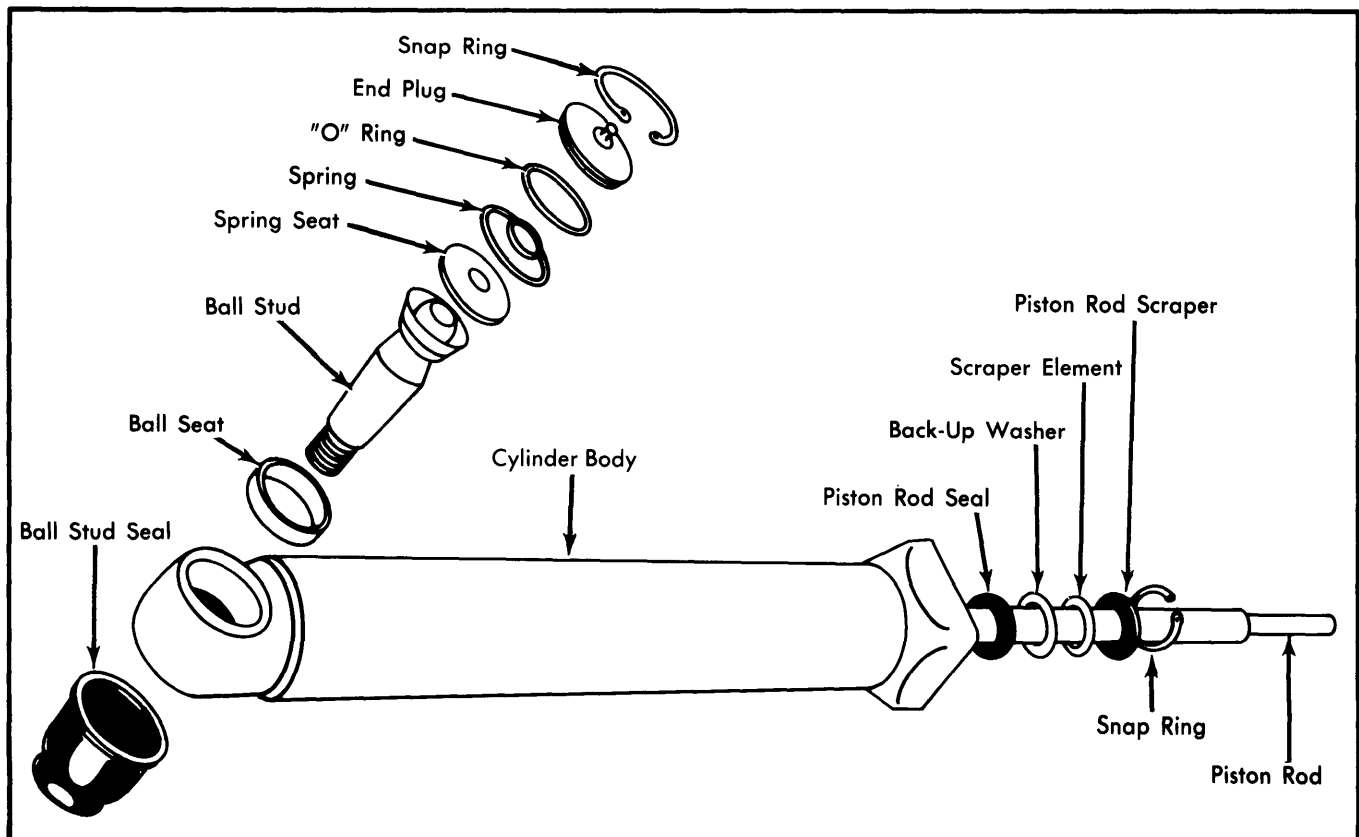


Fig. 2 Power Cylinder Assembly