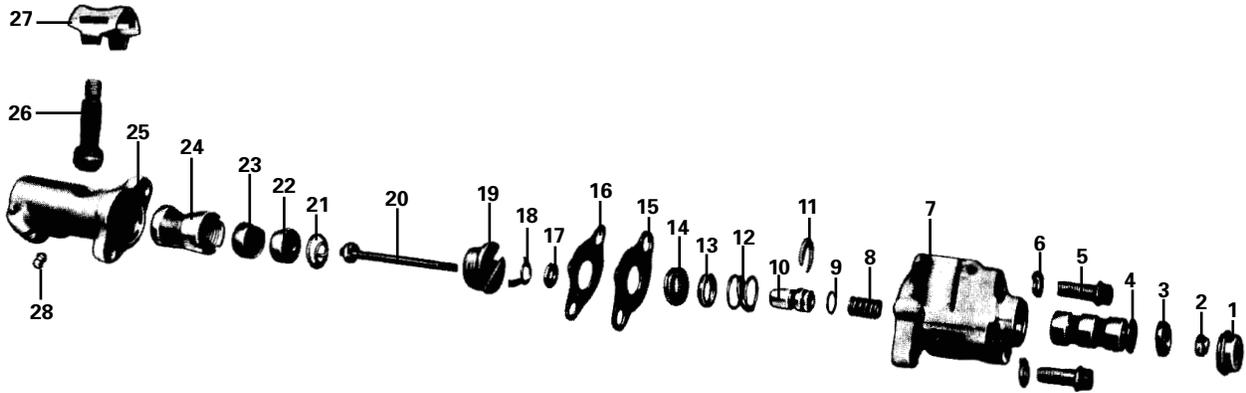


1963-1982 Corvette Power Steering Control Valve Rebuild Kit

Product # ZSC-323



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|-------------------------|----------------------------|------------------------|-------------------------|
| 1. Dust Cover | 8. Valve Adjustment Spring | 15. Annulus Spacer | 22. Ball Seat |
| 2. Adjusting Nut | 9. "O" Ring Seal | 16. Gasket | 23. Ball Seat |
| 3. Vee Block Seal | 10. Valve Reaction Spool | 17. Valve Shaft Washer | 24. Sleeve Bearing |
| 4. Valve Spool | 11. Spring Thrust Washer | 18. Plug to Sleeve Key | 25. Adapter Housing |
| 5. Valve Mounting Bolts | 12. Valve Spring | 19. Ball Adjuster Nut | 26. Ball Stud |
| 6. Lock Washer | 13. Spring Retainer | 20. Valve Shaft | 27. Dust Shield |
| 7. Valve Housing | 14. Annulus Seal | 21. Ball Seat Spring | 28. Lubrication Fitting |

Removal

1. Raise the front of the vehicle off the floor and place it on stands.
2. Remove the relay rod to control valve clamp bolt.
3. Disconnect the two pump to control valve hose connections and allow fluid to drain into a container, then disconnect the two remaining valve to power cylinder hoses.
4. Remove the retaining nut from the ball stud to pitman arm connection and disconnect the control valve from the pitman arm.
5. Turn the pitman arm to the right clear of the control valve and unscrew the control valve from the relay rod.
6. Remove the control valve from the vehicle.

Disassembly

1. Place the valve in a vise and remove dust cover (1).
2. Remove adjusting nut (2).

3. Remove valve to adapter bolts (5) and remove valve housing (7) and spool from adapter.
4. Remove spool from housing (4).
5. Remove spring (8), reaction spool (10), washer (11), valve spring (12), spring retainer (13) and seal (14). "O" ring (9) may now be removed from the reaction spool.
6. Remove the annulus spacer (15), valve shaft washer (17), and plug to sleeve key (18).
7. Carefully, so as not to nick the top surface, turn adjuster plug (19) out of sleeve.
8. Remove the adapter from the vise and invert, permitting the spring (21) and one of the two ball seats (22) to fall free.
9. Remove the ball stud and the other ball seat (23) and the sleeve (24) will fall free.

Inspection

1. Wash all metal parts in non-toxic solvent and blow dry with compressed air.

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2. Inspect all parts for scratches, burrs, distortion, evidence of wear and replace all worn or damaged parts, including mating parts when necessary.
3. Replace all seals, gaskets, covers with approved service parts.

Assembly

1. Replace the seat and ball seat in the adapter, then the ball stud, and finally the other ball seat and the spring, small coil down.
2. Clamp the adapter in vise, put the shaft through the seat in the adjuster plug and screw adjuster plug in sleeve.
3. Turn the plug in until it is tight, then back it off until the slot lines up with the notches in the sleeve.
4. Insert the key, making sure that the small tangs on the ends of the key fit into the notches in the sleeve.
5. Install the valve shaft washer, annulus spacer, and the reaction seal (lip up) spring retainer, reaction spring and spool, washer and adjustment spring. (Install "O" ring seal on reaction spool before installing spool on shaft.) Install the washer with the chamfer "up".
6. Install the seam on the valve spool (lip down), then install spool in housing being careful not to jam spool in housing.
7. Install housing and spool onto adapter. The side ports should be on the same side as the ball stud. Bolt the housing to the adapter.
8. Depress the valve spool and turn the lock nut onto the shaft about four turns with a clean wrench or socket.

NOTE: Always use a new nut.

Installation

1. Install the control valve on the relay rod so that the control valve bottoms, then back off enough (if necessary) to install clamping bolt. Do not exceed two full turns of the valve. There will be approximately 1/16" to 1/8" gap.
2. Tighten the control valve clamping bolt and assemble ball stud to pitman arm.
3. Reconnect the four hydraulic hoses to the control valve.
4. Fill the system with type "a" fluid, bleed out air and grease the valve. Before replacing the dust cap the valve must be balanced as described in the following paragraphs.

Valve Balancing

The control valve must be adjusted, after being disassembled, as outlined in the following procedure. The same procedure may be followed to correct a complaint of harder steering effort required in one direction than the other.

1. Install valve in vehicle. Connect all hoses and fill the pump reservoir with oil. Do not connect the piston rod to the frame bracket. If the vehicle is already in operation, it will be necessary to detach the piston rod from the frame bracket.

2. With the car on a hoist, start the engine. One of the following two conditions will exist:

- a. If the piston rod remains retracted, turn the adjusting nut clockwise until the rod begins to move out. Then turn the nut counterclockwise until the rod just begins to move in. Now turn the nut clockwise to exactly one-half the rotation needed to change the direction of the piston rod movement.

- b. If the rod extends upon starting the pump, move the nut counterclockwise until the rod begins to retract, then clockwise until the rod begins to move out again. Now position the rod to exactly one-half the rotation needed to change the direction of the piston rod movement.

CAUTION: Do not turn the nut back and forth more than is absolutely necessary to balance the valve.

3. With the valve balanced, it should be possible to move the rod in and out manually.
4. Turn off the engine and connect the cylinder rod to the frame bracket.
5. Restart the engine. If the front wheels (still on the hoist) do not turn in either direction from center the valve has been properly balanced. Correct the valve adjustment if necessary.
6. When the valve is properly adjusted, grease end of valve and install the dust cap.