

SERVICE REFERENCE BOOK

"POWER STEERING"



Prepared by
CHRYSLER CORPORATION
PLYMOUTH • DODGE • DE SOTO
AND CHRYSLER DIVISIONS
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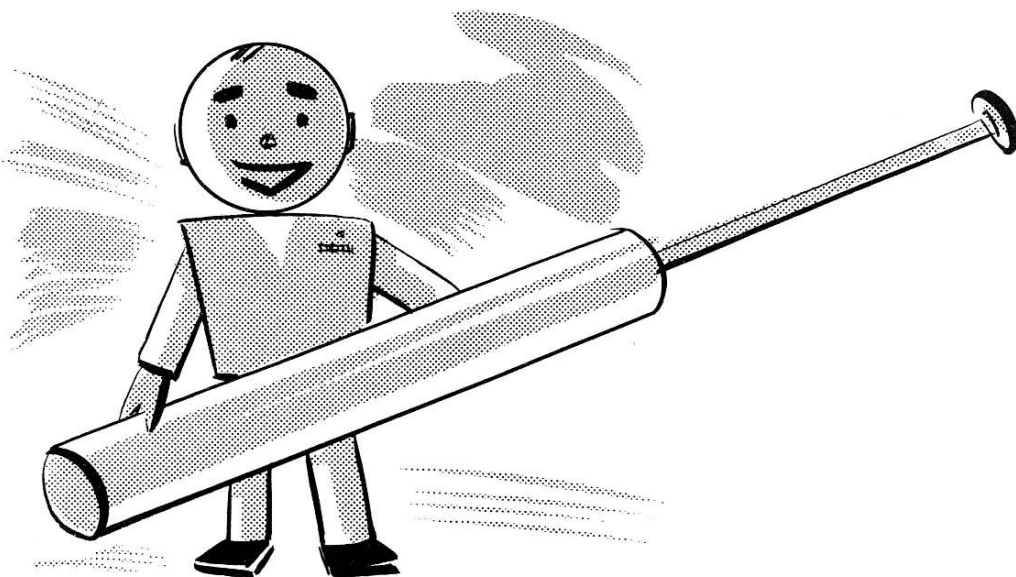
Tech Sez:

HERE'S THE STORY ON POWER STEERING

Power steering is one of the newest units of the car. Therefore, it is something we all want to know more about.

There are two new units being used—Plymouth and the Dodge Six use one type, and the Dodge V-8 uses another type. Both units are very similar, the main differences being in construction details. Both operate in much the same manner as far as oil flow and application of power are concerned.

The Reference Book gives the detailed story on the operation of both units, and also contains a service diagnosis section that will be of assistance in normal maintenance and adjustment.

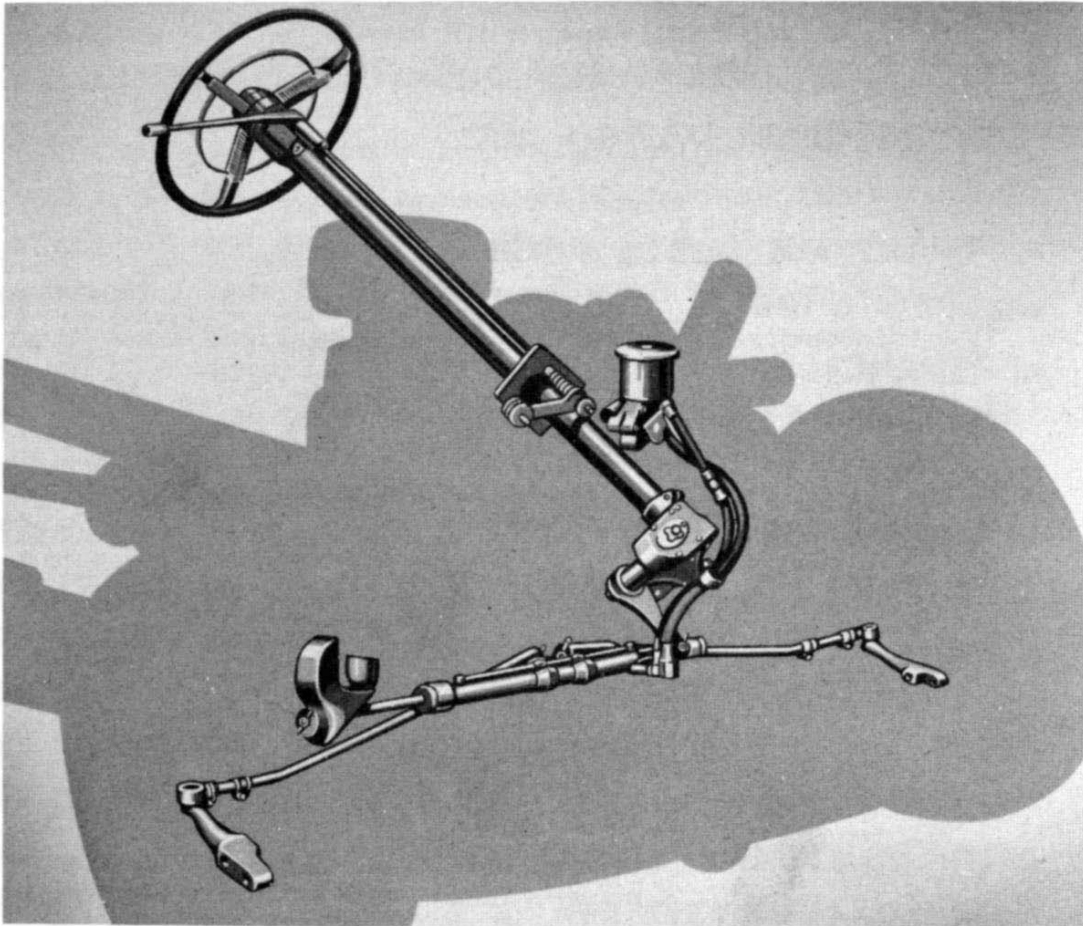


Here's how the information is arranged:

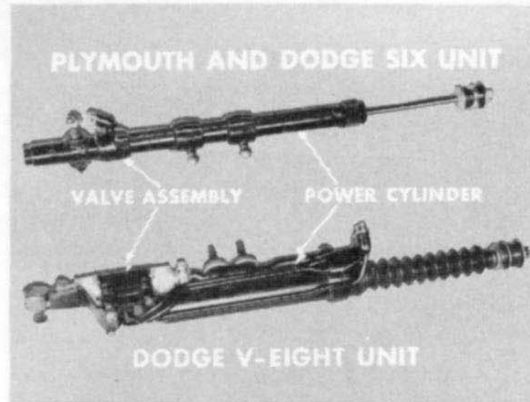
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GENERAL

The new type power steering unit used on Plymouth and Dodge cars is connected between the steering gear arm and the tie rods.



The unit used on Plymouth, and on the Dodge Six (except Suburban models) is a one-piece unit. The valve assembly is enclosed in one end of the power cylinder assembly. The type unit used on the Dodge V-8 models consists of three assemblies—the control valve assembly, the cylinder assembly, and the reactor link assembly—bolted together.

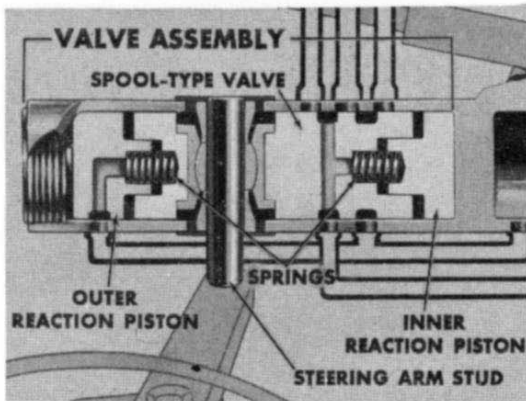


The power steering unit comes into operation whenever a slight force is exerted on the rim of the steering wheel. It is designed to take the effort out of steering the car, but at the same time retains the “feel of the road” for the driver.



PLYMOUTH AND DODGE SIX

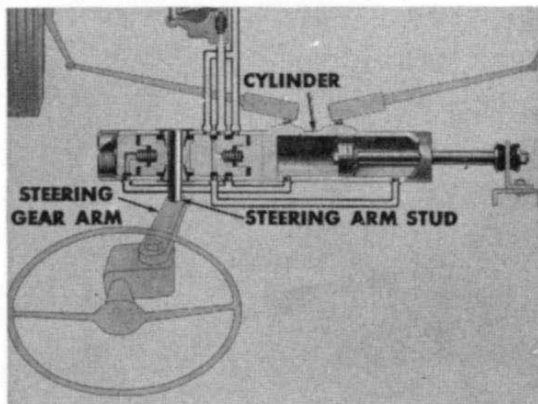
The heart of the power steering unit is the valve assembly. It is located in the left end of the power steering assembly. The valve assembly consists of the spool valve, the inner and outer reaction



pistons and springs, the piston follower, and the steering gear arm stud. The stud extends through the valve assembly, and is held in the center position by the reaction piston springs. Two replaceable steel ball seats bear against the ball around the stud. These seats help to center the stud.

The reaction pistons, the piston follower and the valve are fitted with "O" rings to prevent leakage.

The power cylinder assembly consists of the cylinder, to which are attached the two studs for mounting the tie rods. Inside the cylinder is the piston and rod assembly, and the piston rod guide.

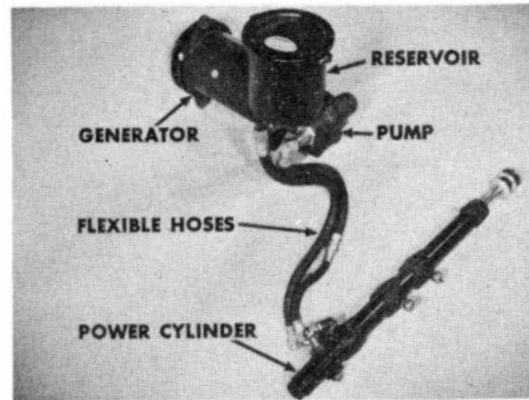


An "O" ring and two seals are assembled to the rod guide to prevent leakage and also to prevent dirt on the piston rod from entering the power cylinder. The piston is attached to the left end of the rod. The right end of the rod is attached by means of a nut and rubber insulator bushing to a bracket

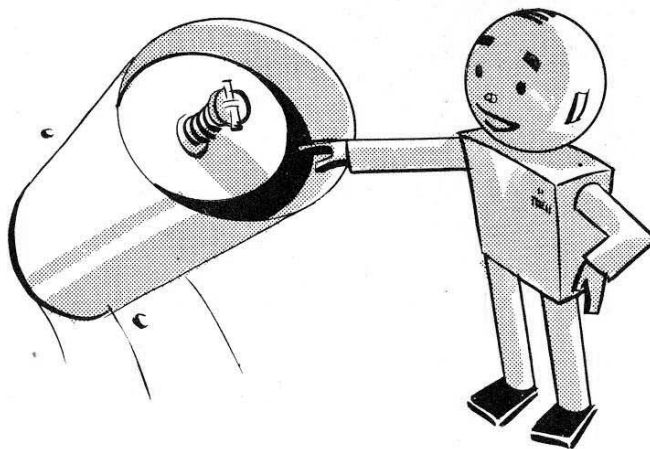
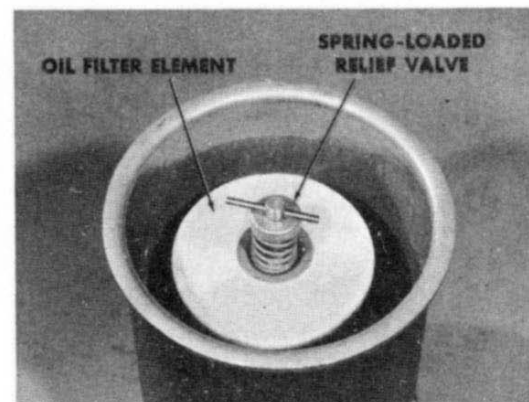
welded to the frame right side rail. The left end of the cylinder is mounted to the steering gear arm by means of the steering arm stud which extends through the valve assembly.

PUMP AND RESERVOIR

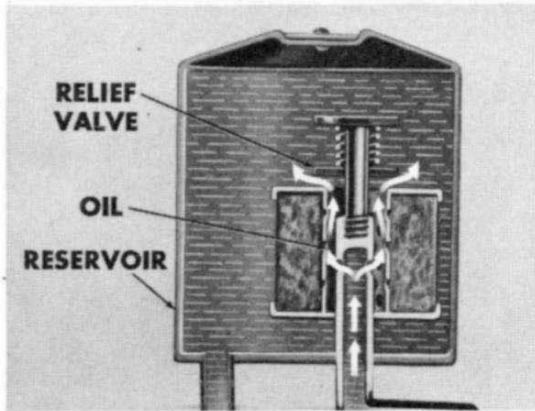
Oil for the unit is supplied from a reservoir, through a rotary-type hydraulic pump mounted at the rear of the generator. The generator drives the pump through a flexible coupling. Flexible hoses connect the pump to the power cylinder. Capacity of the system is three pints of SAE 10-W engine oil.



The reservoir, mounted on top of the oil pump, has a cartridge-type oil filter element. There is a spring-loaded relief valve in the top of the filter element.



When the oil is cold, its viscosity is higher. Therefore, the oil



may not pass through the filter as fast as the pump returns it. Under this condition the oil pressure becomes high enough to force this relief valve open, and the return oil enters the reservoir without going through the filter.

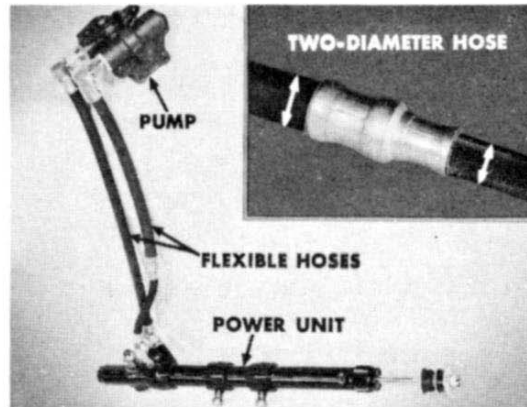


There is a small diaphragm vent valve in the reservoir cover to relieve air pressure that might build up in the reservoir. Oil will come out of this vent if the reservoir is too full.



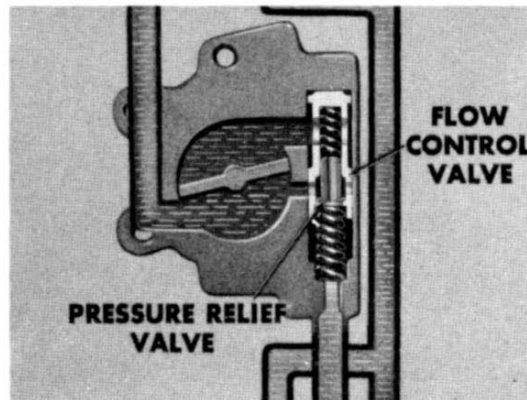
Rubber "O" rings are used at the oil passages between the reservoir and the pump to prevent oil leaks.

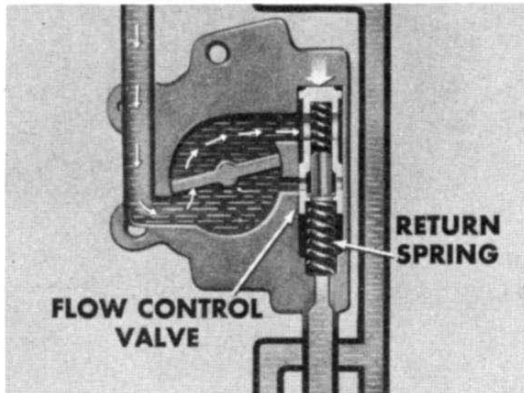
The two flexible hoses – pressure and return – which connect the pump to the power unit are easily identified. The pressure hose is a special two-diameter hose which was developed to eliminate harmonic vibrations sometimes present in hydraulic systems.



Oil Pump Flow Control and Pressure Relief Valve

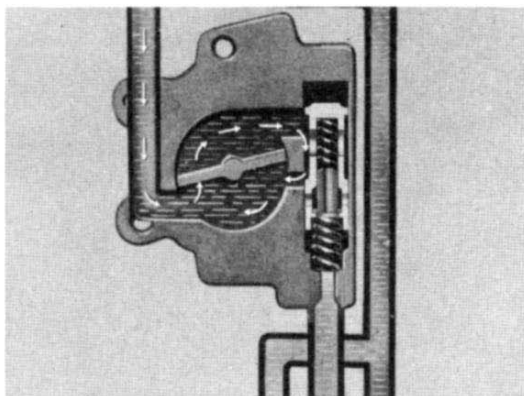
The oil pump contains a combination flow control valve and a pressure relief valve. Actually, there are two valves; the pressure relief valve is located inside the flow control valve. As its name implies, the flow control valve controls the amount of oil flow through the system. The pressure relief valve controls the maximum oil pressure in the system.



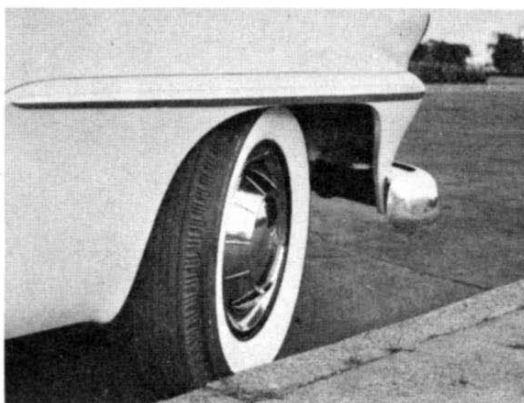


system. So, when the circulation rises to two gallons per minute, which is the maximum flow, the flow control valve is forced to move against the pressure of the return spring.

Since the generator drives the oil pump, you'd expect the pump to circulate a lot of oil through the system at high speeds. But, with the front wheels straight ahead, you are not using the power steering

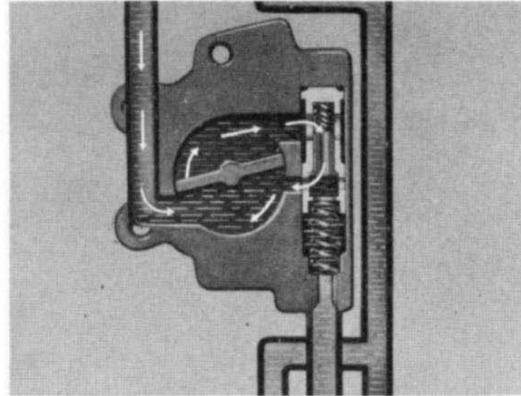


As the valve moves, it opens up a passage between the inlet and outlet sides of the pump. Excess oil, then, simply recirculates within the pump.



As an example of the pressure relief valve action, let's assume that a car is being parked against the curb. The engine is running a little above the idle speed, and the front wheels are cramped against the curb.

When pressure builds up to about six hundred and fifty pounds per square inch, the pressure against the relief valve forces it to move against its spring pressure. This movement uncovers an opening to the inlet side of the pump, permitting circulation within the pump. This prevents the pressure in the system from going over the fixed limit.

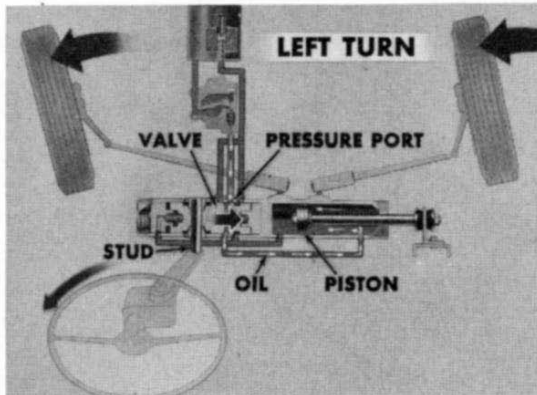


OPERATION OF UNIT

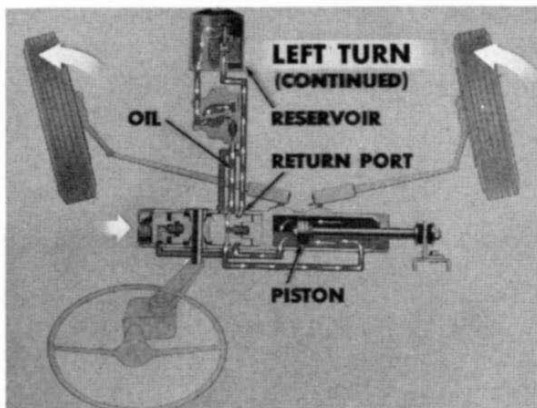
It is important to keep in mind that it is the *cylinder* which moves to turn the front wheels. Since the piston and rod assembly is securely mounted to the bracket on the right frame side rail, oil pressure within the cylinder will react against the piston and cause the cylinder to move. The tie rods are connected to the cylinder, and to the steering knuckle arms. So, when the cylinder moves, the tie rods cause the front wheels to turn.

LEFT TURN

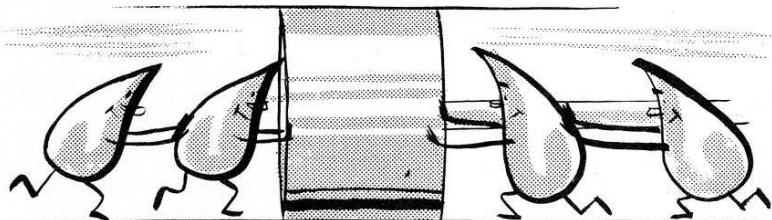
When the steering wheel is turned to the left, the steering gear arm moves to the right. The steering arm stud slides the spool valve to the right.



When this happens, the pressure port for the passage leading to the *right* side of the piston is opened wider, increasing the oil pressure on that side of the piston.

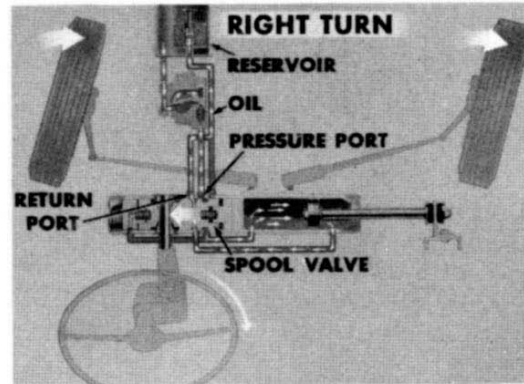


At the same time, the return passage port leading from the *left* side of the piston is opened wider, permitting oil on that side of the piston to return to the reservoir. This difference in pressure on the piston causes the cylinder to move to the *right*, turning the wheels to the *left*.



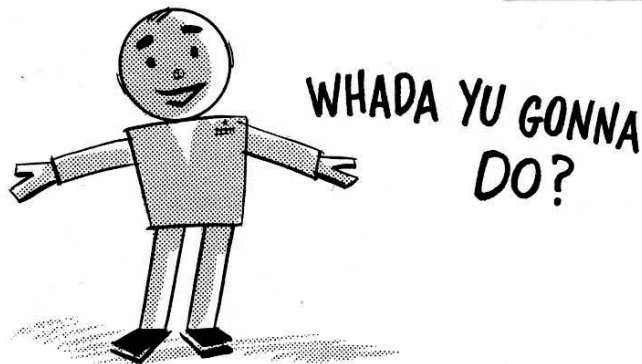
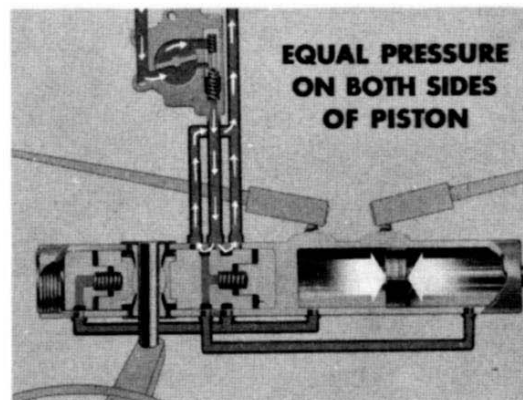
RIGHT TURN

For a right turn, the action is just the opposite. The spool valve is moved to the *left*. This opens the pressure port wider increasing the pressure on the *left* side of the piston. At the same time, the return port leading from the *right* side of the piston is opened wider, permitting oil on that side to return to the reservoir.



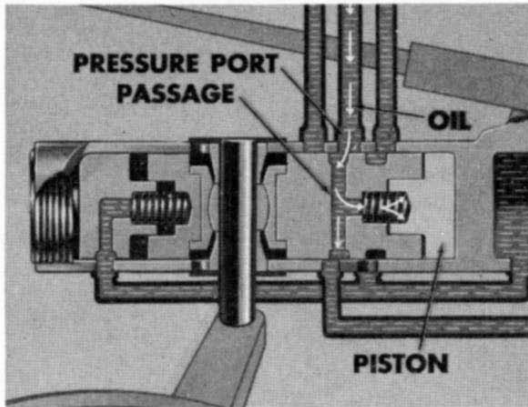
NEUTRAL POSITION

In the neutral position, no steering effort is being exerted on the steering wheel. This means that the spool valve is in the neutral position. Oil from the pressure side of the pump passes through the valve body and back to the pump. Since equal force is being exerted on each side of the piston, the cylinder remains stationary.



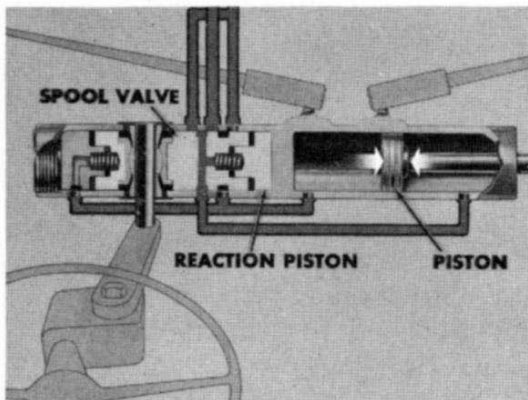
WHADA YU GONNA
DO?

RETURN OF WHEELS TO STRAIGHT-AHEAD POSITION



When the front wheels are turned either to the right or left, a small portion of the oil from the pressure port is fed through a passage to the rear face of the reaction piston.

So, when the driver releases the steering wheel, the reaction piston forces the spool valve back to neutral, reducing oil pressure to the power cylinder. As soon as pressure is equalized on each side of the piston, the steering geometry takes over and returns the wheels to the straight-ahead position with very little effort by the driver.

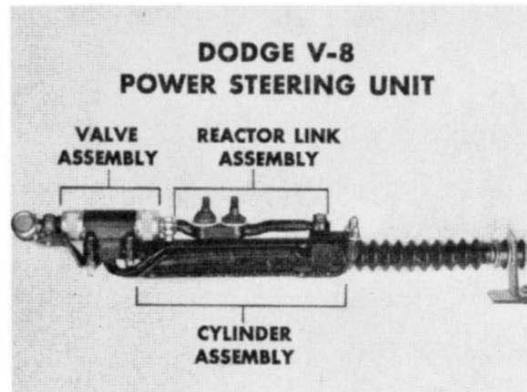


However, the front wheels will return more slowly on cars equipped with this type of power steering than on cars not equipped with power steering.

DODGE V-8 POWER STEERING UNIT

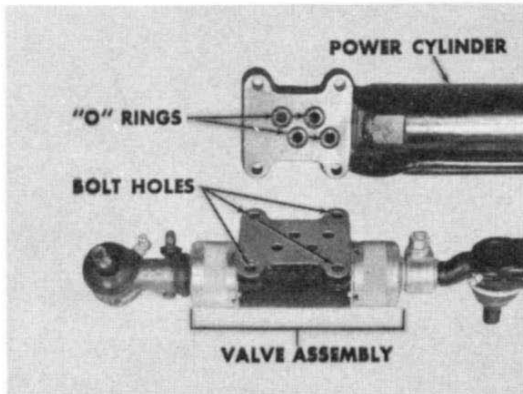
The principle of operation of the power steering assembly used on the Dodge V-8 is the same as the unit used on the Plymouth and the Dodge 6. The main difference between the two units is that the Dodge V-8 unit is a three-piece unit, whereas the Plymouth and Dodge 6 unit is a one-piece unit.

The Dodge V-8 power steering unit is a three-piece unit consisting of the Cylinder Assembly, the Control Valve Assembly, and the Reactor Link Assembly.

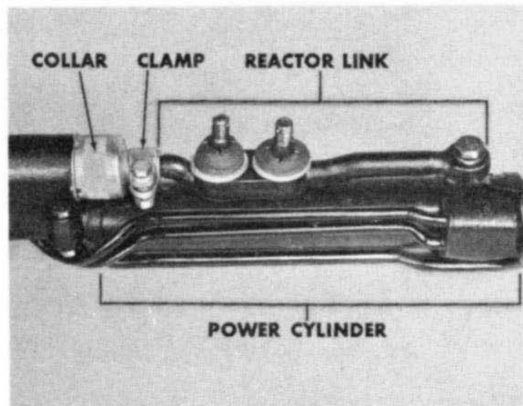


PLYMOUTH & DODGE 6
1 PIECE
DODGE V-8
3 PIECES



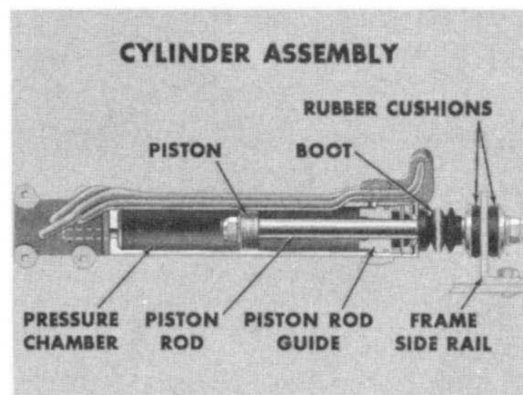


The valve assembly is fastened to a flanged area on the left end of the power cylinder by four bolts and nuts. The mating surfaces between these two units are sealed at the oil passages with "O" rings.



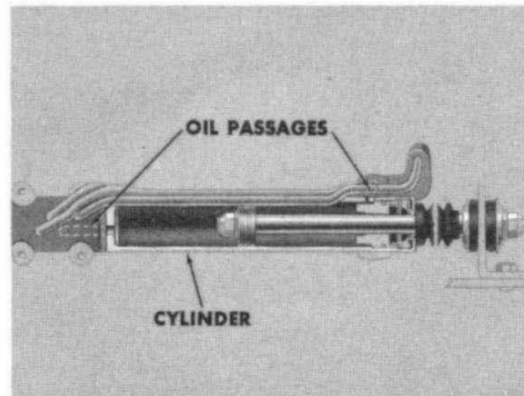
The reactor link fits into the collar on the right end of the valve body and is secured by a clamp. The other end of the link is bolted to the right end of the power cylinder assembly.

The cylinder assembly contains the pressure chamber, the piston, piston rod and guide. A lip-type seal is used in the rod guide to seal the pressure chamber against oil leakage.

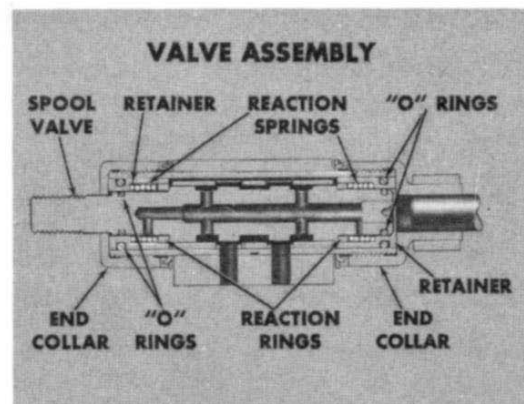


The piston rod is fastened by a nut and rubber insulators to a bracket on the frame right side rail, and is covered by a rubber boot to protect it from dirt and mud.

Two oil passages open into the cylinder, one on each side of the piston, to lead the oil to and from the valve assembly.

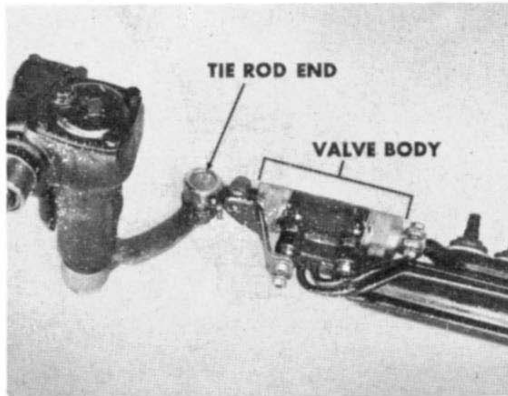


The valve assembly is the control mechanism of the power steering unit. It consists of a valve body with two removable end collars, a spool valve, two reaction springs, two reaction rings, and two retainers. "O" rings are used to prevent leakage.



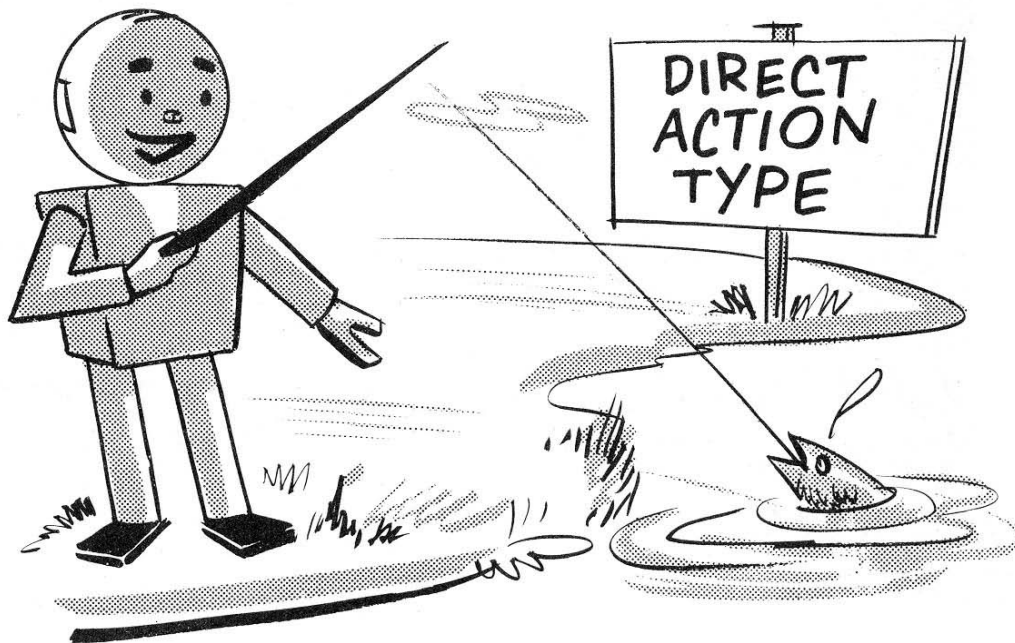
The reaction rings fit closely over the smaller diameter of the spool valve at its outer ends. The retainers, in turn, fit over the reaction rings and form chambers for oil and for the light reaction springs which act to center the spool valve in the body.

Rubber "O" rings form the pressure seal between the spool valve and the retainers, and between the retainers and the valve body. The retainers are held in position by the end collars which thread onto the body.



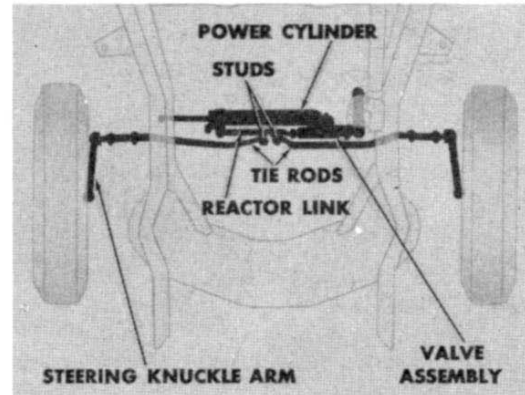
The left end of the spool valve extends through the end collar of the valve body, and is threaded to receive the tie rod end. The steering gear arm connects directly to the tie rod end.

When the steering gear is in the neutral position, the reaction springs keep the spool valve centered, and there is no pressure build-up in the power cylinder. When the steering wheel is turned, the steering arm moves the spool valve in the valve body, increasing the opening of the passages in the valve body to and from the power cylinder. Because the steering arm is directly connected to the spool valve and maintains constant control of the spool valve action, it is called a *direct-action* spool valve.



The reactor link assembly is mounted on the valve body and power cylinder.

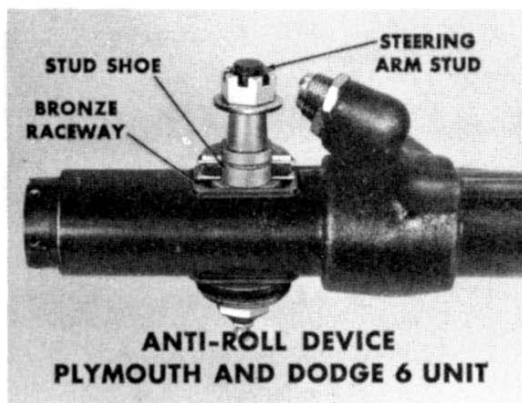
The link has two ball studs to which the tie rods are attached. When the power cylinder moves on the piston rod, force is transmitted through the link studs to the tie rods, to the steering knuckle arms and steering knuckles, turning the front wheels.



ANTI-ROLL DEVICES

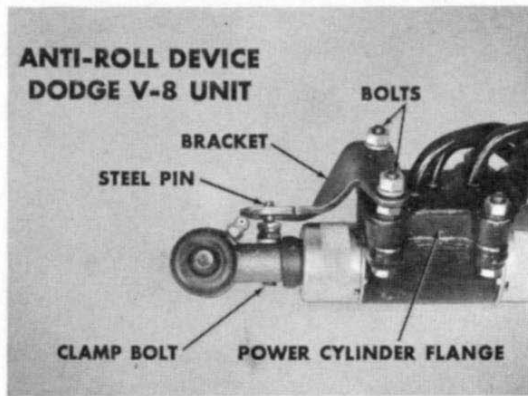
In both types of power steering units there is a tendency for the cylinder to roll or turn around the piston rod and also for the spool valve to turn freely inside the valve body. If the unit were allowed to roll, a stress would be placed on the steering linkage and power unit, causing hard steering. To prevent rolling of the cylinder and spool valve, an anti-roll device is used on both units.

Plymouth and Dodge 6 Unit—Rolling of the cylinder is prevented in this unit by two bronze raceways that are pressed into the valve body.



The steering arm stud and stud shoes are permitted to slide back and forth in these raceways to move the spool valve, but the cylinder is prevented from rolling in relation to the piston rod which is attached to the car frame.

Dodge V-8 Unit—The anti-roll device for the Dodge V-8 unit consists of two parts. The first part is a steel pin that extends

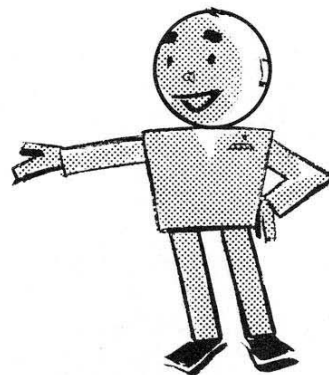


from the tie rod end clamp bolt. The second part is a steel bracket that is fastened to the power cylinder flange by two of the bolts that hold the valve assembly to the cylinder assembly.

The pin on the steering arm clamp bolt fits into a slot in the anti-roll bracket. The slot allows the spool valve to move back and forth but prevents any rolling or turning of the cylinder and spool valve in relation to each other. The cylinder is prevented from rolling in relation to the fixed piston and rod by the steering gear arm which is attached to the special tie rod end.



NOW LET'S TALK ABOUT FIXIN'!



MAINTENANCE

LUBRICATION. Proper lubrication of the steering gear linkage and front suspension is important for any car, but is especially important on cars equipped with power steering.

Every one thousand miles, remove the filler plug and check the steering gear lubricant. Add fluid gear oil, SAE 90, if the level is below the filler plug hole.

CAUTION: Do not use a pressure gun for this job or you're apt to force the oil into the steering column.

OIL LEVEL. Oil level in the power system should be checked every one thousand miles or thirty days. To check the oil level, first wipe the cover clean so no foreign matter will get into the reservoir. Then remove the cover and check the oil level. The level should be up to the level mark on the reservoir.

CAUTION: Do not disturb the filter element. It is not necessary to change this unit.



CHANGING THE OIL. Unless the atmospheric temperatures are consistently lower than ten degrees below zero, changing of the oil is not required. However, if the temperature *is* consistently below ten degrees below zero, drain the oil and put in SAE 5-W engine oil. When the oil is changed you will have to bleed the system of air.

DRAINING THE SYSTEM—First wipe the fitting of the two-diameter pressure hose at the cylinder clean, and disconnect the hose

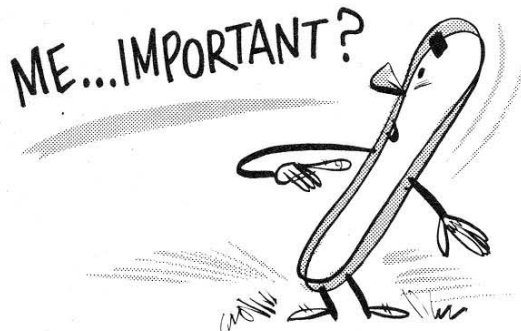


at the cylinder. Insert the hose into the funnel of the container being used to drain engine oil. Then, with the engine running, turn the wheels from extreme left to extreme right. Keep turning the wheels until air begins to sputter out of the hose, indicating that all of the

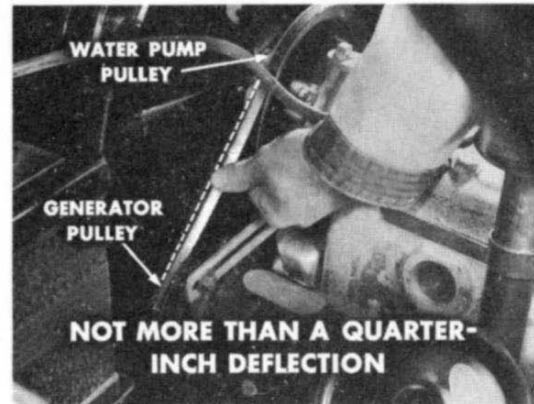
oil has been forced out. Then stop the engine and re-connect the pressure hose to the cylinder. Add oil to fill the reservoir to the level mark.

BLEEDING THE SYSTEM—Bleed the system with the engine running. Turn the front wheels from extreme left to extreme right until no more air bubbles appear in the oil in the reservoir. Again add oil to fill to level mark, and install the cover.

FAN BELT ADJUSTMENT. Since the fan belt also drives the power steering oil pump through the generator, it should be checked frequently and adjusted whenever necessary to prevent noise and slippage. The belt should be checked on new cars, and again at the one-thousand-mile inspection.

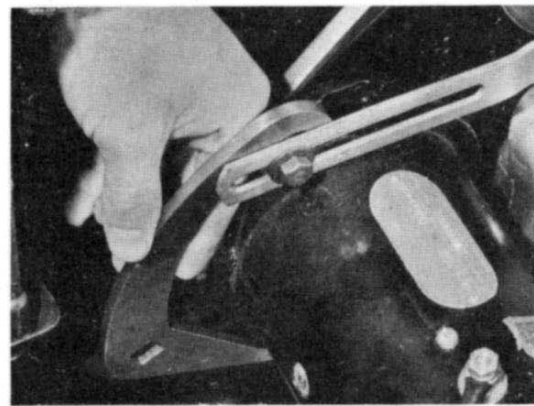


To adjust the fan belt tension, first loosen the adjusting bracket bolt and pivot the generator outward to take up the slack. Press your thumb on the belt, midway between the generator and the water pump pulleys. The belt should deflect not more than $\frac{1}{4}$ inch. Then tighten the adjusting bracket bolt.

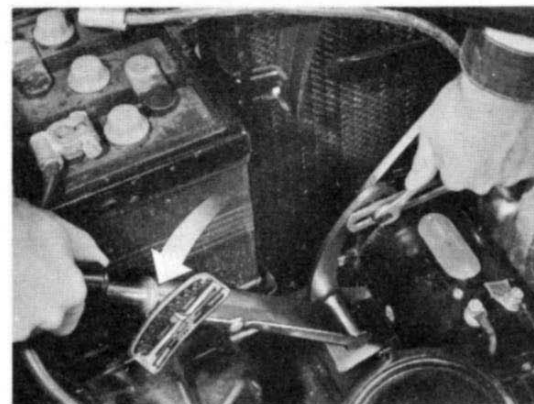


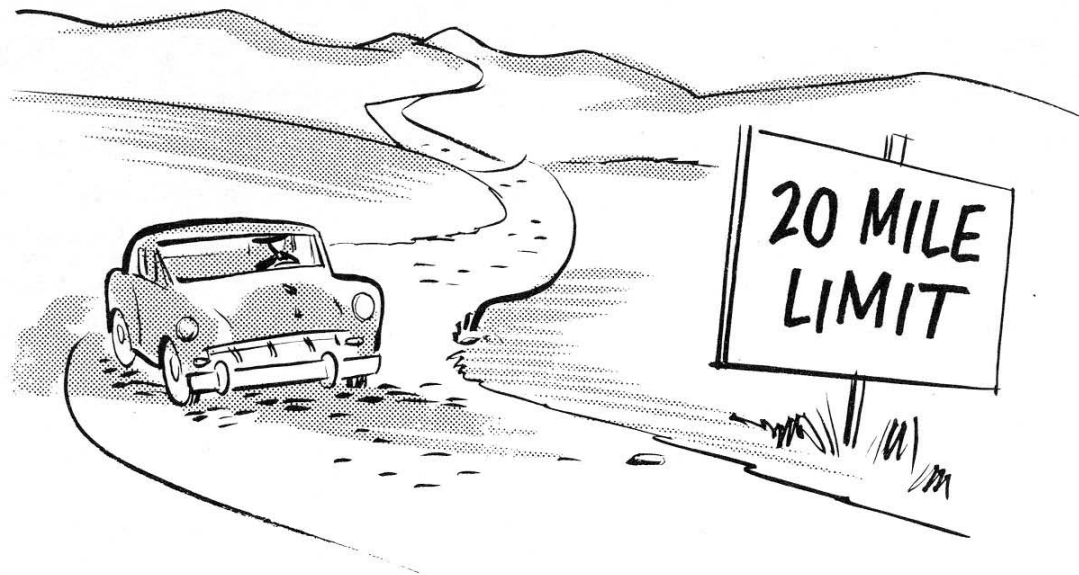
ADJUSTING FAN BELT USING SPECIAL TOOL (C-3379). A special tool (C-3379) has been designed to make tightening of the fan belt easier and more accurate. This tool is manufactured by Miller Manufacturing Company, Detroit, Michigan.

To use tool (C-3379), hook it over the adjusting lug on the top of the generator. The other end will bear against the outside diameter of the generator. The lower end of the tool has a square hole to receive the drive shaft of a torque wrench.



First, loosen the generator adjusting bracket bolt and pull out on the torque wrench until the indicator points to fifteen foot-pounds. Then tighten the bolt. This gives you a very accurate adjustment of the fan belt.





TEST-DRIVING CAR TO CHECK STEERING. When you test-drive a car to check the power steering, drive at speeds of fifteen to twenty miles per hour, making several turns in each direction during the test.

When a turn is completed and pressure on the steering wheel is released, the front wheels should return to the straight-ahead position, with very little effort by the driver.

If the front wheels fail to recover as they should from a turn, and the steering linkage is free and properly adjusted, you may have misalignment of the power cylinder, or improper adjustment of the spool valve.

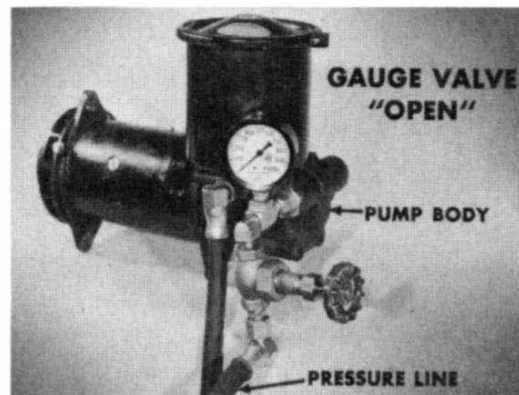
NOTE: No adjustment of the spool valve is provided for the Dodge V-8 unit.

CHECKING STEERING EFFORT. A report of stiff steering can be quickly checked by measuring the pull required at the steering wheel. Do this by attaching a spring scale (C-690) to the spoke, near the wheel rim.

Start the engine and idle it at 450-500 rpm. With the front wheels on a dry, smooth concrete floor or smooth steel plates, turn the steering wheel one full turn in each direction from center by pulling the spring scale. If a pull of more than 10 pounds is required to turn the steering wheel in either direction, hard steering is indicated. The possible causes given in the Diagnosis Chart should be checked in the order given to locate the source of the stiffness.

CHECKING PUMP PRESSURE. When checking a report of lack of proper assist on turns, the pump pressure should be checked to determine whether the difficulty is in the pump or the power cylinder. The procedure for this check is as follows:

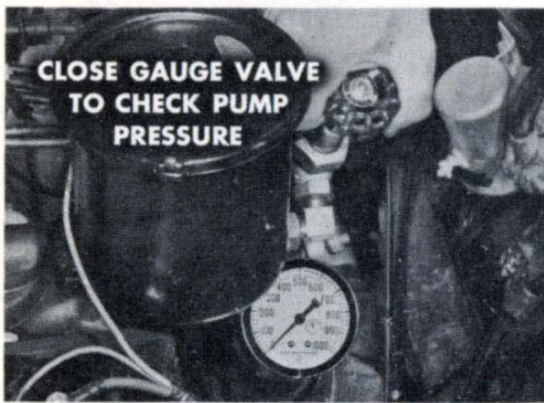
With the engine turned off, connect Pressure Gauge C-3102 in the pressure line. Do this by removing the pressure line from the adapter at the pump body and screwing the gauge on the adapter. Then, connect the pressure line to the gauge. Be sure all connections are tight, but not forced. Turn the gauge valve to the "open" position. Start the engine and allow it to idle for several minutes to permit the oil to reach operating temperature.



With the gauge valve open, turn the steering wheel one full turn in either direction. Read the pressure shown on the gauge while the wheels are moving.

CAUTION: Do not hold the steering wheel in the extreme turn position for an extended period as this may cause damage to the hydraulic system.

If the pressure reading is greater than 500 psi, (300 psi for the Dodge V-8 unit), the pump and power cylinder are working satisfactorily. It is unnecessary to continue the pressure check of the system further. However, if the pressure reading is *less* than 500 psi (300 psi for the Dodge V-8 unit), continue the checking procedure.

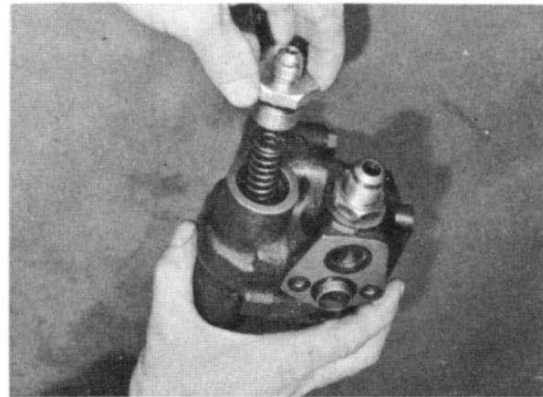


Close the gauge valve and read the pressure developed by the pump, then open the valve.

Caution: Do not leave the valve closed for more than three or four seconds as this may damage the pump.

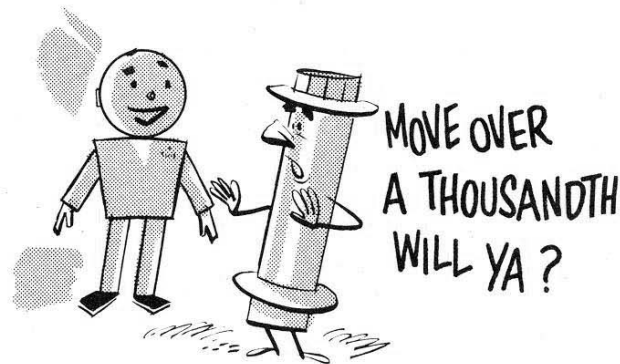


If the pump pressure increases to over 500 psi (300 psi for the Dodge V-8 unit), the pump is delivering sufficient pressure and the trouble is in the power cylinder. If the pressure reading does not increase to the required pressure, remove the relief and flow control valves and valve springs. Inspect the valves for dirt and for score marks on the valves and in the pump bores. Use new springs when installing the valves. If this does not correct the low pressure, the pump must be removed and repaired. If the pressure reading ever exceeds 900 psi, replace the relief and flow control valves and springs.



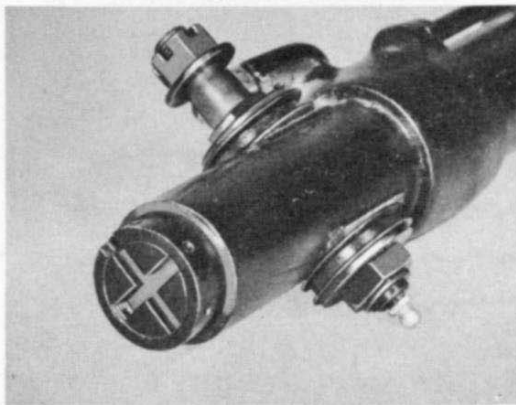
CHECKING THE POWER CYLINDER. If it is determined that the difficulty is in the power cylinder, certain adjustments can be made to the type unit used on Plymouth, and on the Dodge Six.

The attaching nut which holds the steering arm to the stud should be tightened to 55-65 foot-pounds torque. This will hold the steering arm stud properly in the valve assembly, and still permit the stud to move a few thousandths of an inch sideways on the cylinder to operate the valve.



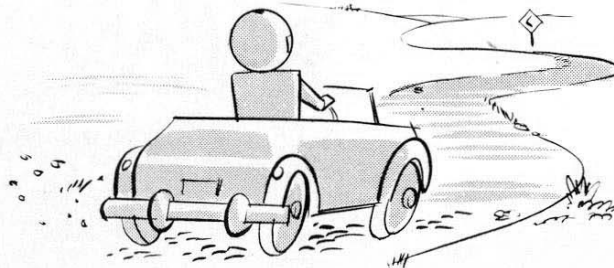
If the steering arm and stud are drawn down too tightly on the valve body section of the power cylinder, the steering effort will increase and the wheels will not return to the straight-ahead position after a turn. If such is the case it may be necessary to remove the arm from the stud and remove one or two of the thin washers on the stud, between the arm and the rubber cushion. This will remove the crush from the valve body.

Provisions for adjusting the power cylinder spool valve are incorporated in this type unit. When it has been determined that the spool valve is not properly located it is possible in most cases to relocate it by adjusting the plug in the left end of the



power cylinder. The plug can be turned in or out, as required, $1/6$ of a turn at a time. In no case should the plug be adjusted more than $1/2$ turn to correct the adjustment. After each adjustment, the car should be tested on the road to determine the results of the adjustment on the steering action.

NOTE: The inner plug is staked in at the time of assembly and should not be adjusted in the field.



STEERING GEAR ALIGNMENT AND ADJUSTMENT CHECK. Misalignment of the steering column or improper adjustment of the steering gear can cause a bind in the gear that will not allow the power steering system to operate properly, may cause hard steering and prevent wheel recovery after turns.

Correct the column misalignment by adjusting the brackets at the instrument panel and at the frame bracket.

Adjust the steering gear worm shaft bearings and cross shaft backlash to the minimum limits; that is, a $\frac{3}{8}$ -pound pull on the steering wheel for the worm shaft bearing adjustment, and a one-pound pull for the cross shaft backlash adjustment.



DIAGNOSIS CHART

The following diagnosis chart has been drawn up to assist you in locating and adjusting conditions that may develop in the power steering system.

SERVICE DIAGNOSIS

CONDITION: HARD STEERING IN BOTH DIRECTIONS

Possible Cause:

1. Leak in hydraulic system.
2. Pump belt slipping or broken.
3. Oil level low.
4. Steering gear and linkage not lubricated.
5. Tire pressure too low.
6. Steering arm and stud binding on power cylinder (Plymouth and Dodge 6 unit only).
7. Anti-roll pin and bracket binding (Dodge V-8 unit).
8. Bend in power cylinder piston rod.
9. Low pump pressure.
 - a) Relief and flow control valve unit stuck.

Remedy:

- Correct leak, fill reservoir to proper level.
- Tighten, if still slips install new belt, tighten.
- Check for leak, fill reservoir to proper level.
- Lubricate properly.
- Inflate to proper pressure.
- Adjust to 55-65 ft.-lbs. torque
- Align pin in bracket.
- Replace piston and rod.
- Remove and clean.

Possible Cause:

- b) Flow control valve spring weak or broken.
 - c) Pressure relief valve spring weak or broken.
 - d) Rotors not turning.
 - e) Rotors worn.
 - f) Pump body or cover worn.
10. Loss of pressure in power cylinder.
- a) Internal oil leak past piston.
 - b) Internal leak past valve.
11. Insufficient oil flow in system.
- a) Flow control valve sticking.
12. Bind in steering column.
13. Improper front-end alignment.
14. Valve in power cylinder sticking.

Remedy:

- Replace spring.
- Replace pressure relief and flow control valve unit.
- Replace generator pump coupling. Inspect drive coupling flanges for wear. Replace if necessary.
- Replace both rotors.
- Replace body or cover.
- Replace piston rings.
- Replace valve "O" rings.
- Remove valve and clean or replace.
- Align steering column.
- Align front end.
- Remove valve and inspect for cause of sticking. Replace if necessary.

CONDITION: HARD STEERING IN ONE DIRECTION ONLY

Possible Cause:

1. Tire pressure too low.
2. Bend in power cylinder piston rod.
3. Bind in steering column or gear.
4. Improper front-end alignment.
5. Valve in power cylinder maladjusted or sticking (Plymouth and Dodge 6 unit only).
6. Spool valve sticking (Dodge V-8 unit).

Remedy:

- Inflate to proper pressure.
- Replace piston rod assembly and rod guide and seals.
- Align steering column and adjust steering gear.
- Align front end.
- Clean and adjust.
- Free up or replace.

CONDITION: SMALLER TURNING RADIUS IN ONE DIRECTION

Possible Cause:

1. Wheel stops not adjusted properly.

Remedy:

- Adjust wheel stops.

CONDITION: HYDRAULIC OIL LEAKS

Possible Cause:

1. At hose fittings.

Remedy:

- Replace hose adapters and gaskets.

Possible Cause:

2. At pump body.
3. Around piston rod on power link.

Remedy:

Remove pump, disassemble and replace seals and gaskets.
Replace seals if guide and rod are not damaged.

CONDITION: LUMPY FEELING DURING TURN

Possible Cause:

1. Belt slipping.

Remedy:

Tighten fan belt to specifications.

CONDITION: VEHICLE WANDERS

Possible Cause:

1. Tire pressure uneven.
2. Steering arm and stud binding on power cylinder (Plymouth and Dodge 6 unit only).
3. Valve in power cylinder maladjusted or sticking (Plymouth and Dodge 6 unit only).

Remedy:

Inflate to proper pressure.
Adjust to 55-65 ft.-lbs. torque
Clean or replace.

CONDITION: POOR RECOVERY ON TURNS

Possible Cause:

1. Tire pressure too low.

Remedy:

Inflate to proper pressure.

Possible Cause:

2. Steering arm and stud binding on power cylinder (Plymouth and Dodge 6 unit only).
3. Bind in steering column or gear.
4. Bind in steering knuckles.
5. Bend in power cylinder piston rod.
6. Improper front-end alignment.
7. Valve in power cylinder maladjusted or sticking.
8. Anti-roll pin and bracket binding (Dodge V-8 unit).

Remedy:

Adjust to 55-65 ft.-lbs. torque

Align steering column, and adjust gear.

Free up or replace kingpin and bushings.

Replace piston rod.

Align front end.

Free up and adjust (Plymouth and Dodge 6 unit).

Align pin in bracket.

CONDITION: NOISE

Possible Cause:

1. Pump belt tension incorrect.
2. Low oil level.
3. Bushings worn in pump body or cover.

Remedy:

Adjust belt tension.

Check for leaks, fill reservoir to proper level.

Replace pump body or cover.

Possible Cause:

4. Dirt and sludge in pump.
5. Steering arm stud loose (Plymouth and Dodge 6 unit only).
6. Steering arm stud loose in valve body (Plymouth and Dodge 6 unit).
7. Reactor link loose (Dodge V-8 unit).
8. Steering gear arm adapter to spool valve loose or worn (Dodge V-8 unit).
9. Tie rod clamps tightened in wrong position.
10. Steering gear arm nut loose.
11. Frame bracket insulator retainers striking frame bracket.
12. Position of reactor link clamp interfering with left tie rod (Dodge V-8 unit).

Remedy:

Disassemble pump and clean. Drain system and refill with clean oil.

Tighten nut on steering arm stud. Check steering operation.

Replace stud shoe races.

Tighten clamp and mounting screw.

Inspect threads for wear—tighten or replace as needed.

Loosen clamps and retighten with bolts in a horizontal position at bottom of tie rods.

Tighten to proper torque.

Loosen piston rod nut, and reposition retainers. Retighten nut.

Rotate clamp to provide clearance.

**USE THE NEW TECH QUESTIONNAIRE
FOR SESSION NO. 71
WHEN RECORDING YOUR ANSWERS
TO THESE TEN QUESTIONS**

- | | | | |
|---|-----------------------|----|-----------------------|
| The power steering unit used on the Plymouth and Dodge 6 is a two-piece unit. | <input type="radio"/> | 1 | <input type="radio"/> |
| | RIGHT | | WRONG |
| On the Dodge V-8 power unit the piston, rather than the cylinder, moves. | <input type="radio"/> | 2 | <input type="radio"/> |
| | RIGHT | | WRONG |
| On a left turn, the steering arm stud slides the spool valve to the <i>right</i> . | <input type="radio"/> | 3 | <input type="radio"/> |
| | RIGHT | | WRONG |
| In the neutral position, equal oil pressure is being exerted on each side of the piston, and the cylinder remains stationary. | <input type="radio"/> | 4 | <input type="radio"/> |
| | RIGHT | | WRONG |
| The filter element in the reservoir of the power steering unit should be replaced whenever the oil is changed. | <input type="radio"/> | 5 | <input type="radio"/> |
| | RIGHT | | WRONG |
| The pressure hose used on the power steering unit is a special two-diameter hose. | <input type="radio"/> | 6 | <input type="radio"/> |
| | RIGHT | | WRONG |
| The hydraulic system of the power steering unit contains five pints of SAE-10 engine oil. | <input type="radio"/> | 7 | <input type="radio"/> |
| | RIGHT | | WRONG |
| The steering gear oil level should be checked every one thousand miles. | <input type="radio"/> | 8 | <input type="radio"/> |
| | RIGHT | | WRONG |
| The fan belt should deflect not more than a half an inch between the generator and fan pulleys. | <input type="radio"/> | 9 | <input type="radio"/> |
| | RIGHT | | WRONG |
| The front wheels of Dodge and Plymouth cars equipped with power steering are faster to return to straight-ahead position than those of cars not equipped with power steering. | <input type="radio"/> | 10 | <input type="radio"/> |
| | RIGHT | | WRONG |

LITHO IN U. S. A.