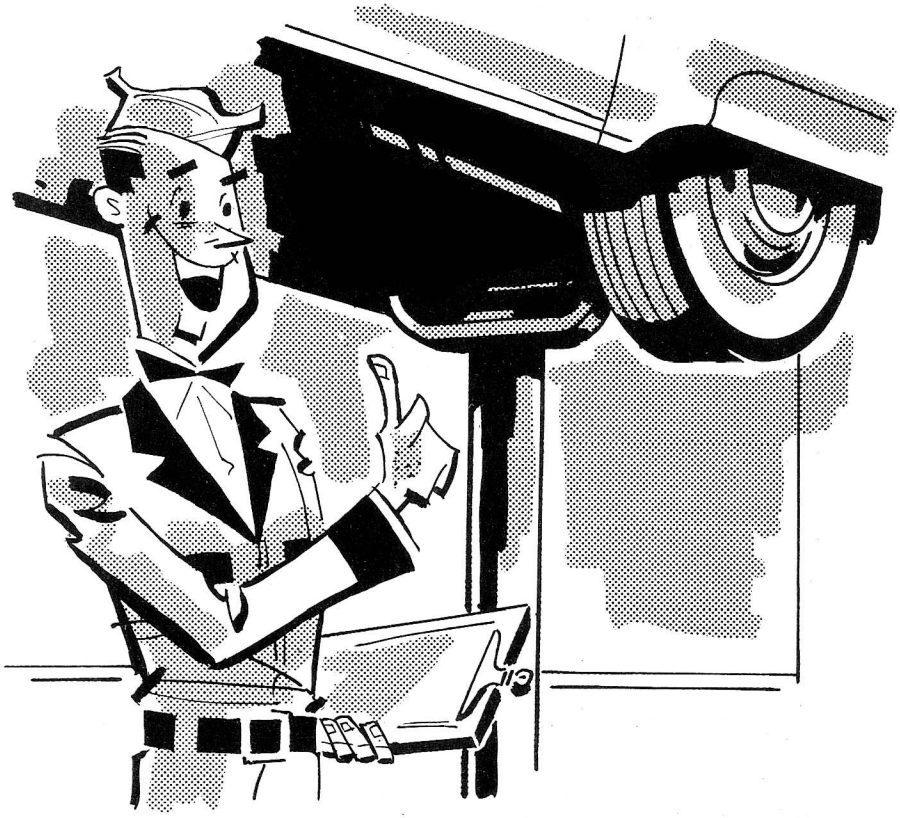
# POWERFLITE TRANSMISSION MAINTENANCE UPSHIFT PATTERN

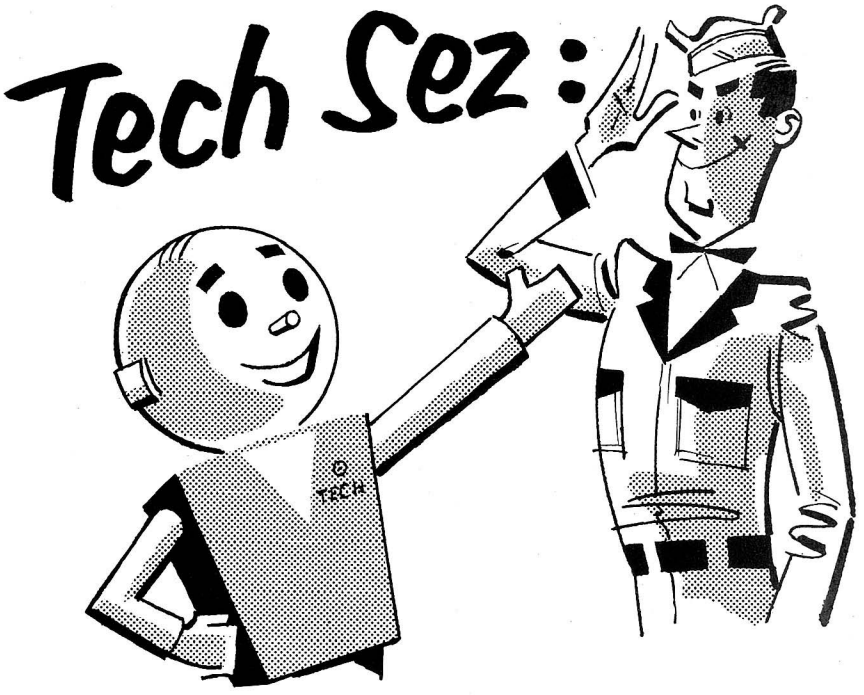


**SERVICE REFERENCE BOOK**

SESSION NO. **89**



*Prepared by*
CHRYSLER CORPORATION
PLYMOUTH · DODGE · DE SOTO
AND CHRYSLER DIVISIONS




# A LOT DEPENDS ON YOUR POWERFLITE SERVICE SKILL!

Owners of cars equipped with PowerFlite transmissions look to us for help in maintaining the smooth, effortless driving they enjoy. And now that a greater number of PowerFlite units are made available every day, all of us should gear up to provide the top-flight transmission service our owners have come to expect.

Any automatic transmission, of course, calls for some maintenance and adjustment occasionally to keep it performing properly. So, this reference book covers some basic service tips on upshift patterns that you'll find very handy.

Here's how this information is arranged for your ready reference:

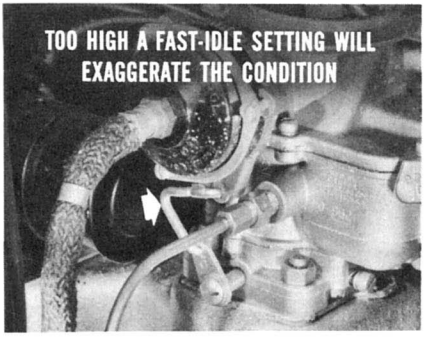
# SHIFTING FROM NEUTRAL TO REVERSE OR DRIVE

Suppose an owner reports that he notices a dull thump in the transmission when he moves the selector lever from Neutral to Reverse, and from Neutral to Drive. He might refer to the condition as a "clunk", or a "dull thud", and he'll usually say he notices it in the morning as he backs out of the garage.

Together with the condition, he might be apt to say the car tends to creep more at times than at others—when he's waiting for a light, for example. He may also mention that the condition isn't as noticeable after he's driven the car for a while.

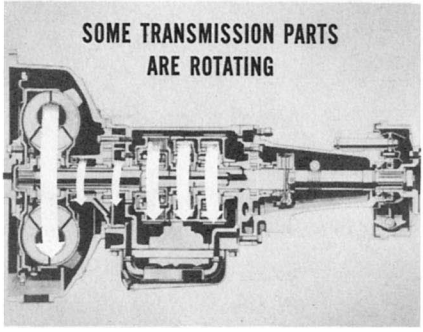
What he's talking about, specifically, is a "cold-operating condition", one that improves once the engine warms up. It's a condition that could be experienced by an owner of a 1955 Plymouth, Dodge, De Soto, Chrysler, or Imperial. So, the symptoms reported, the diagnosis and corrections outlined in this book, will apply to *all* Chrysler-built cars—plus Dodge *"Job-Rated"* trucks equipped with PowerFlite automatic transmissions.

Now, some noticeable sound, and a tendency to creep, is a normal condition. But an owner may be reporting a case where this condition is aggravated due to an improper adjustment.

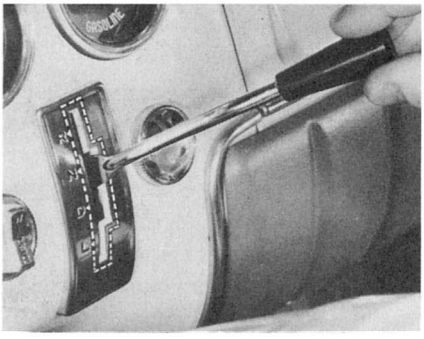



**Condition generally is not serious**—A case of this kind, remember, is rarely serious. It may simply be a matter of too high a fast-idle setting, for instance. That could cause both the sound and the creep to show up. As you probably know, a fast-idle setting too high will cause a lack of synchronization between the engine and transmission speeds when the car is cold.

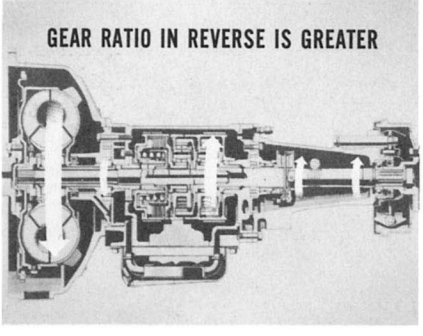
This is something you can, and probably should, explain to the owner. It will set his mind at ease and is something he should know. Tell him, too, that the engine automatically runs faster when it's cold. That's to keep it from stalling. Also, explain that when the transmission's in neutral and the engine is running, some of the transmission parts are rotating.

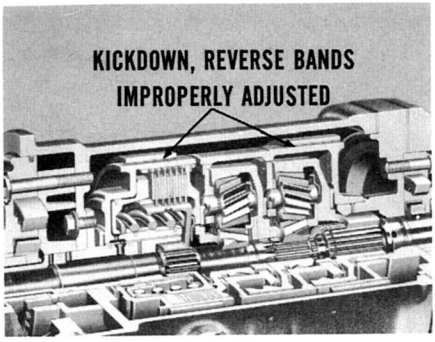



So, when the selector is moved from neutral to reverse —or to drive—the rotating transmission parts are suddenly stopped. That sudden stop is what the owner notices.



Since the gear ratio in reverse is greater than it is in the forward speeds, the condition is more noticeable when the selector's moved from neutral to reverse. As the engine warms up and drops to normal idle speed, the condition becomes less noticeable because the transmission parts don't turn as fast.



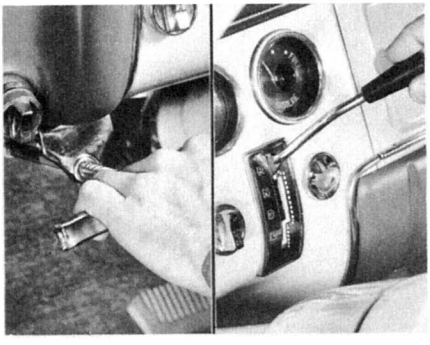



Besides a fast-idle setting being too fast, the kickdown or reverse bands might be improperly adjusted. They could be *grabbing* instead of engaging smoothly. So, you'll have to check these possible causes, also.

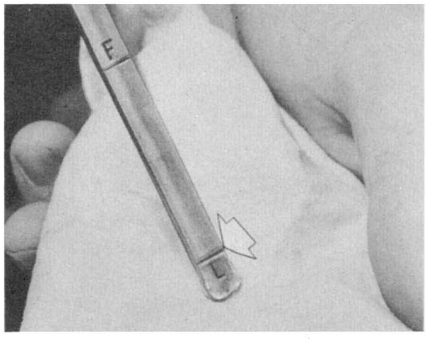
At any rate, the over-all condition is more of an annoyance than anything else. The transmission suffers no damage because fluid in the torque converter does a good job of absorbing the shock that occurs when the fast-turning parts are suddenly stopped.

# CORRECTING THE CONDITION

To correct a noticeable thump and creep tendency, begin by checking the fluid level in the transmission. This is usually checked every 1000 miles, but it's smart to start at that point whenever you're looking into any transmission condition.



But remember, you need to do more than see where the level registers on the indicator. Check the level thoroughly by going through these main steps. First, apply the parking brake. Then, start the engine. During engine idle, move the selector through all four positions, holding it a few seconds at each position. Bring the selector back to neutral.



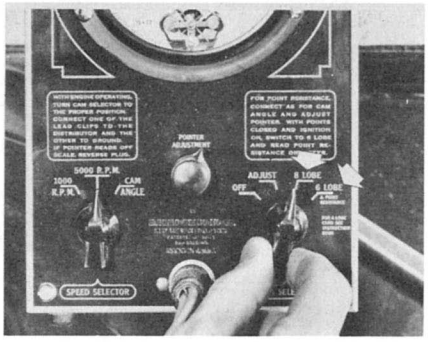

Now, with the engine idling, check the oil level indicator or "dip stick" if you prefer to call it by that name. If the transmission fluid is fairly cold, and the level is below the "low" mark, add enough fluid to bring it up to the "low" mark. You know, of course, that the fluid expands almost a full quart when it warms up. And that, by the way, takes about 10 miles of driving. So, bring the level up to "full" only when the fluid is warm and the level is below the "full" mark.

It would be wise to explain this to your owners so they would caution gas station attendants to check transmission fluid level while the engine idles. Knowing what the proper level should be, owners could guard against *overfilling* the unit. When the unit's too full, expansion may force the fluid out of the filler tube.

Now, once you're sure the transmission fluid level is right, you're ready to go ahead and check the engine normal-and-fast-idle settings.

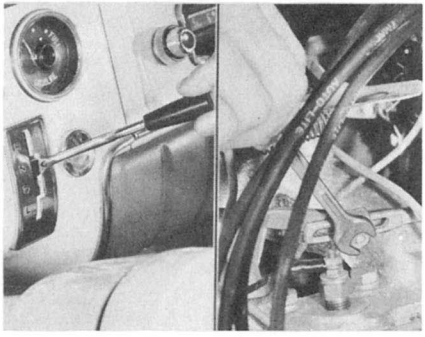
**Importance of Engine Idle Speed.** Engine idle speed is very important, not only to the proper performance of the engine, but to the performance of the transmission as well. If the idle speed's too slow, the engine will have a tendency to stall when stopping or shifting. Too slow an idle speed will also affect the transmission shift pattern. What's more, the engine will have a rough idle. If the idle speed is too fast, the transmission will be noisy when it shifts.

**Setting Engine Normal Idle Speed.** Always set engine idle speed with a tachometer. And be sure you set the tach properly *before* you use it! Some mechanics use a tach without checking the correct cam lobe setting. When you work on a 6-cylinder engine, set the tach for "6 Lobe." When you work on the 8-cylinder jobs, set the tach for "8 Lobe."



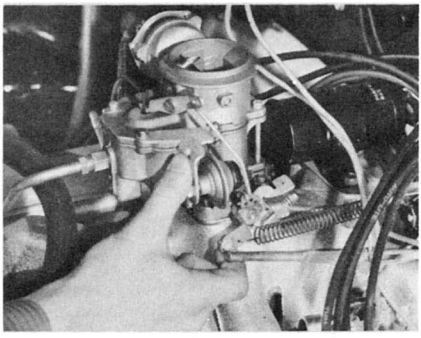

You'll get some wrong tachometer readings if you don't.

Connect the tachometer, put the selector in neutral, and start the engine. Let the engine warm up to normal operating temperature. Then, set the parking brake and loosen the throttle linkage. Adjust idle at 475 to 500 rpm. Then, reset the throttle linkage. Remember to reset this linkage every time you make a change in idle speed adjustment. When you have idle speed adjusted, turn off the ignition.

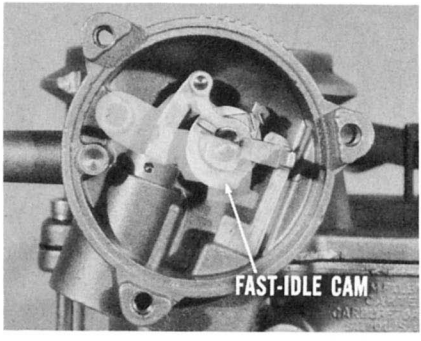


**Checking Fast-Idle (Engine Hot).** Fast-idle is as important to transmission operation as normal idle, so you'll want to check it carefully. There's a new way to do this when the engine's hot.

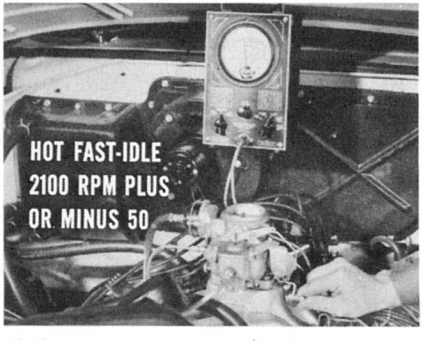
First, remove the carburetor air cleaner. Open the throttle valves by hand – and wide open. Then, let the valves come back to about half-throttle position.



Hold the choke valve closed, and slowly close the throttle valves. This will place the cam in its fast-idle position.

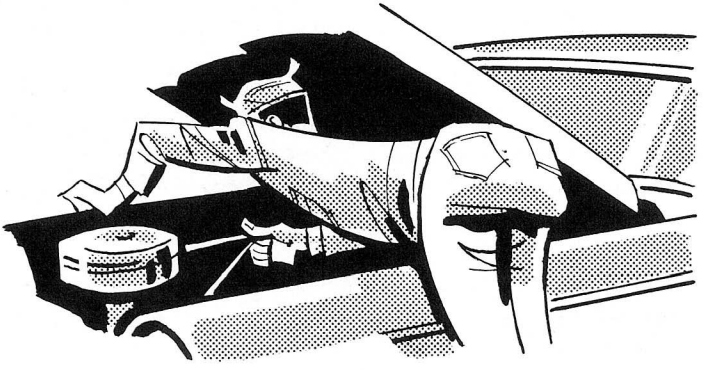



Now, without disturbing the throttle setting, open the choke slightly. Then, restart the engine, and open the choke completely. If you're checking the Plymouth V-8 engine, it should fast-idle at 2100 rpm, plus or minus 50, with the engine hot and the transmission in neutral. For fast-idle specifications on other models, please refer to the chart that follows.



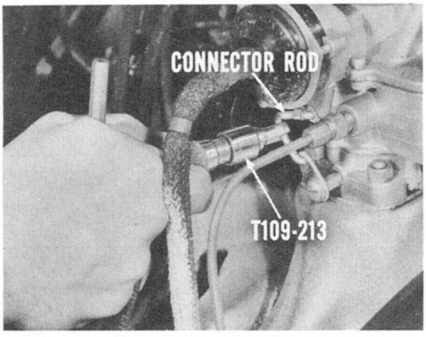
## CARBURETOR HOT FAST-IDLE SPEED CHART

| MODEL | RPM | PLUS OR MINUS RPM |
|---|---|---|
| PLYMOUTH | | |
| 6-Cylinder | 1700 | 50 |
| V-8 (157 hp.) | 1600-1700 | 50 |
| V-8 (167 hp.) | 2100 | 50 |
| V-8 (177 hp.—4-barrel) | 1425 | 50 |
| DODGE | | |
| 6-Cylinder | 1325 | 25 |
| V-8 (175 hp.) | 1225 | 25 |
| V-8 (183 hp.) | | |
| V-8 (193 hp.) | 1375 | 25 |
| DE SOTO | | |
| Firedome | 1750 | 50 |
| Fireflite | 1375 | 25 |
| CHRYSLER | | |
| Windsor | 1750 | 50 |
| New Yorker Deluxe | 1325 | 25 |
| IMPERIALS | 1325 | 25 |



If the car you're checking is running at a faster fast-idle than specified above, you'll have to bend the choke connector rod to get within specifications. To do this, turn off the ignition. Then, open the throttle valves until the cam falls off fast-idle position, which returns the carburetor to normal idle speed.

Use this bending tool (T 109-213) to bend the connector rod at its lower angle. Then, repeat the test and see if the fast-idle's been slowed down. (Of course, if the fast-idle turned out to be slower than that specified, you'd bend the connector rod in the *opposite* direction.)




Once you get the fast-idle around 2100 rpm, repeat the hot fast-idle check to be sure you're right. Then let the engine slow down to normal idle and then move the selector into reverse and into drive a few times. If you don't notice a condition that's objectionable, you've finished the correction.

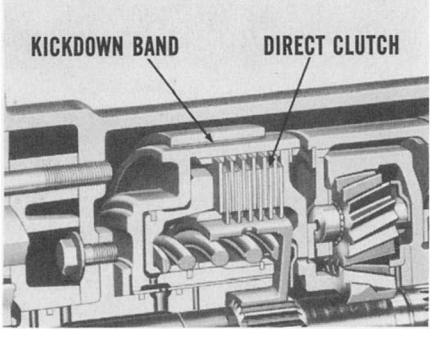
**Road Test.** However, you should always road-test the car and see if the normal upshift is okay while you're out on the road.

If you find that the normal upshift is smooth while road-testing the car, you'll know the band operation is okay. But, if the upshift turns out to be rough after making the idle speed adjustments, you'd have to check hydraulic pressures, the kickdown band adjustment, and the operation of the direct clutch.

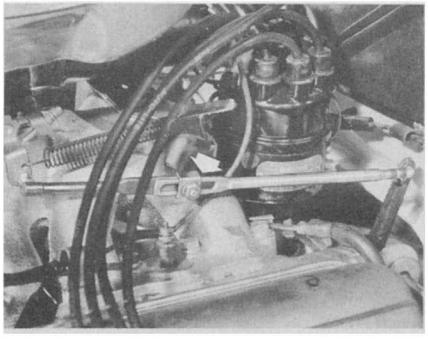
Since you'd normally check these points in any upshift condition, let's cover another common example and go into the how-you-do-it story at the same time.

# HARSH UPSHIFT DURING NORMAL DRIVING

If an owner talks about a "harsh upshift" during normal driving, most mechanics would think mainly in terms of a throttle linkage adjustment. That's a natural service step, as the correct throttle linkage is vitally important to the upshift pattern. Linkage adjustment is what keeps the upshift pattern in the range of 15 to 18 mph during *light throttle.* However, there are other possible causes of a harsh upshift. For example, there might be incorrect line pressure in the hydraulic system. And, throttle pressure could be too high or too low.

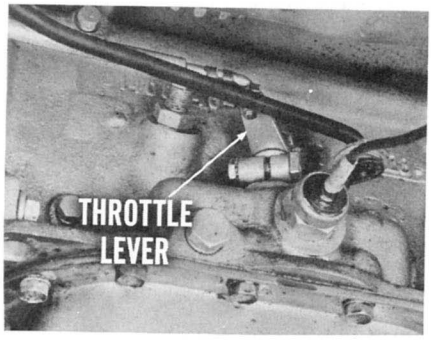



In addition, the kickdown band adjustment could be wrong, or the direct clutch action might not be smooth.

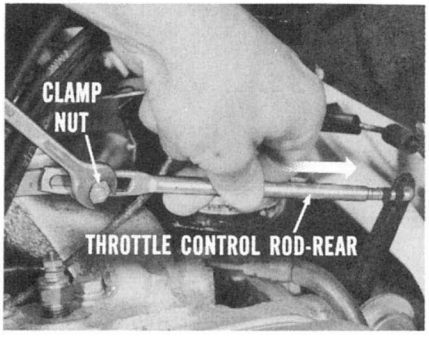


**Check Throttle Linkage First.** However, you'd still check the throttle linkage adjustment first. After all, it helps to control upshift speed. And, to do it right, you'd naturally check it when the engine's up to operating temperature.

So, once you're sure the engine's properly warmed up, look the linkage over. Look for bent parts and for possible interference. Move the transmission throttle lever. See if it returns freely to its stop. If it doesn't, correct the cause of the interference.




Make sure the engine is idling at 475 to 500 rpm, with the selector in neutral. Loosen the clamp nut on the throttle control rod. Slide the rear part of the rod rearwards to take up all the slack. Then, tighten the clamp nut. After adjusting the throttle linkage, road-test the car to see if it upshifts smoothly. If so, fine! If not, then you'll have to check the hydraulic pressures.

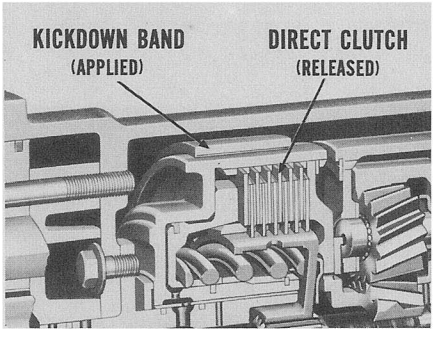



# HYDRAULIC OPERATION

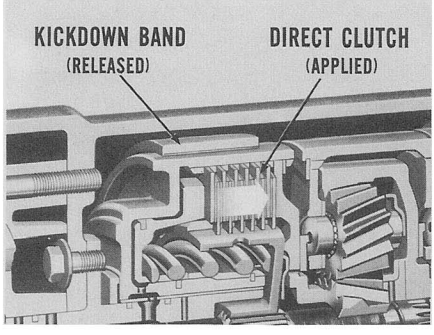
As all good mechanics know, checking hydraulic pressures is a *must*. The mechanics who not only know how to do it, but also go ahead and check the pressures, have little trouble diagnosing and servicing PowerFlite transmission conditions properly.

You check the line pressure first, because that's where the hydraulic system begins. If line pressure's wrong, throttle and governor pressures will also be off the beam.

Just as a reminder, suppose we review the action of hydraulic pressure on the valves inside the transmission. It's bound to impress everybody with the importance of linkage adjustment and proper pressures once all of us understand how parts and valves inside the PowerFlite unit are affected.

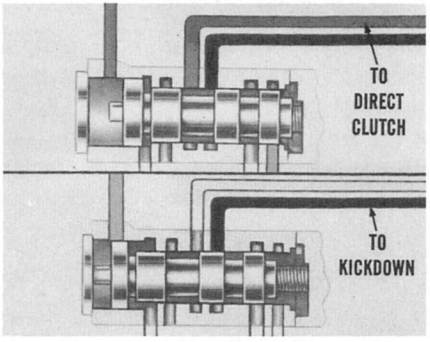



When the car starts moving with the transmission in *drive,* for example, you know that the kickdown band is *applied,* and the direct clutch is *released.* This provides the low gear ratio needed for acceleration from standstill. Now, once the car gets rolling, a lower gear ratio is needed for cruising operation. So a "shift" has to take place in the transmission to change from a breakaway to a cruising rear ratio.

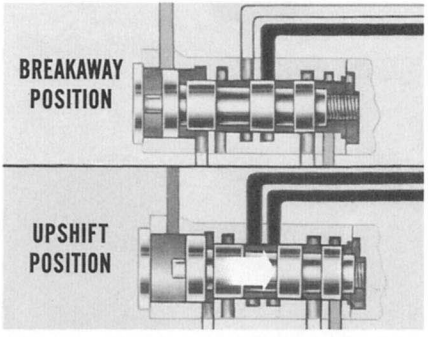



That shift changes the kickdown band from an *applied* to a *released* position. At the same time, the direct clutch goes from a *released* to an *applied* position. All of this action takes place hydraulically . . . by means of a *shift valve.* So, let's take a look at this important valve.

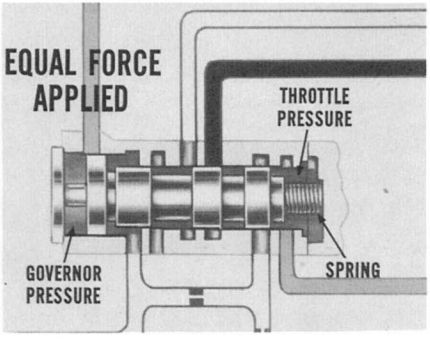
By applying hydraulic pressure to the ends, the shift valve can be shifted from one side of its chamber to the other. When the shift valve moves in its chamber, it opens up or closes off hydraulic passages, which allows pressure to apply or release the kickdown band and direct clutch.



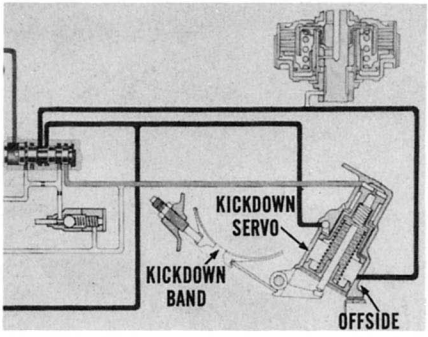

For example, to shift the transmission from breakaway to upshift position, the shift valve has to move from its breakaway position to the upshift position, which means it has to move to the other end of its chamber.



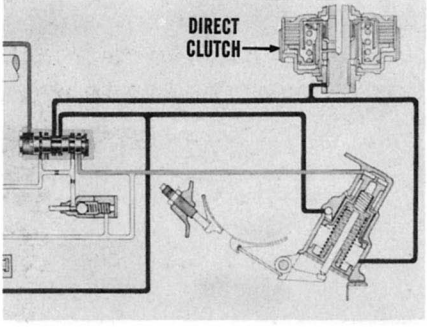

This movement is controlled by spring and throttle pressure at one end, and governor pressure at the other. *Equal force* is being applied to each end of the valve when it is in the breakaway position.



Now, governor pressure gets stronger as car speed increases. So, when car speed gets high enough, the force applied to the *governor* end of the shift valve gets stronger than the force applied at the throttle end.




When that takes place, naturally, the shift valve moves to the upshift position. This movement, in turn, opens a passage and allows line pressure to be applied to the *off* side of the kickdown servo, which releases the kickdown band.



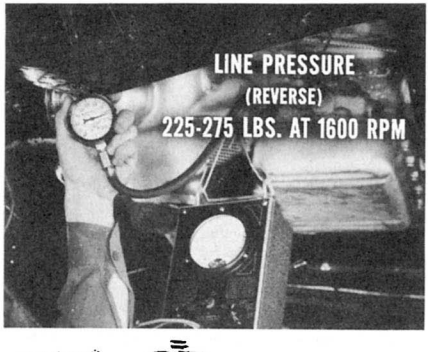

At the same time, line pressure goes to the direct clutch. This causes the direct clutch to be applied and completes the upshift. In short, the kickdown band is released, and the direct clutch is applied. You can easily see, then, why checking hydraulic pressures is an important service operation. If pressures aren't right, the operation inside the transmission won't take place smoothly.

Remember . . . throttle linkage controls throttle valve position which, in turn, controls throttle pressure. That's why it's a good thing to check it first. Once you're sure the linkage adjustment is right, you can go ahead and check the hydraulic pressure.

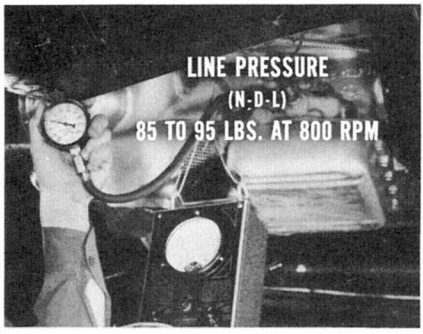
# CHECKING HYDRAULIC PRESSURES

**Line Pressure.** Start with line pressure, and always check it with the transmission in reverse. That's because in reverse you can check maximum pressure put out by the front pump. That lets you rule out any possible difficulty in pump operation.

So, install a 300-pound gauge (C-3293) in the line pressure take-off hole, on the forward left side of the transmission. Also bring the tachometer down where you can watch the readings.

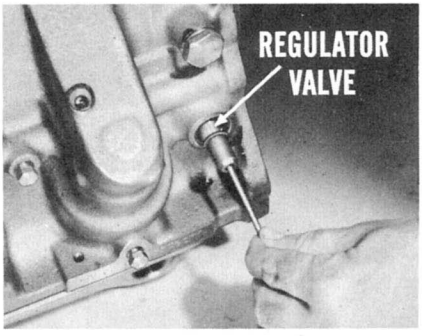



Start the engine and move the manual lever to reverse. Line pressure on all passenger car and Dodge truck models should be 225 to 275 lbs. at 1600 rpm, with the *rear wheels free to turn.*

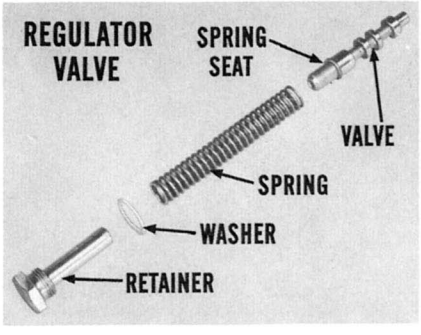



If you get that reading with the transmission in reverse, then see if line pressure is 85 to 95 lbs. in all other selector positions at 800 rpm. Again, this pressure is required on *all* models.

Now, if line pressures check out as specified, fine! You can go on to checking the other pressures. But, if line pressure turned out to be too low, you'd have to remove the regulator valve for inspection.



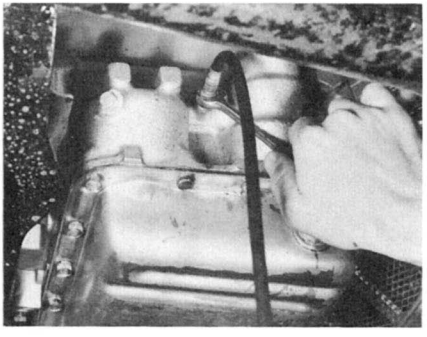

You can reach the regulator valve through a plug hole in the right side of the transmission. Remove it and take it to the bench for inspection.

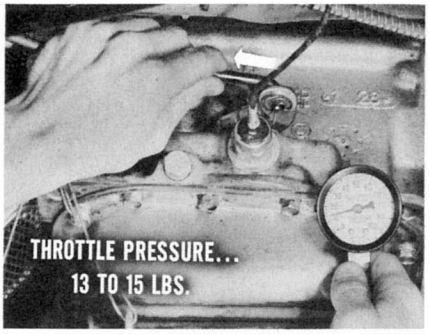



Check it first for sticking, due to dirt, or a small burr on the sliding surface. Check the spring for proper tension. Burrs, restrictions, dirt, a broken or weak valve spring . . . all can cause the regulator valve to stick.

Smooth off the burrs, if any are noticed, and replace the valve spring if it seems questionable. If the valve looks good, but doesn't move freely in the valve body, it may be due to uneven compression of the gasket between the body and transmission case. In a case of this kind, you'd have to remove the transmission from the car so you can remove the valve body and install a new gasket.

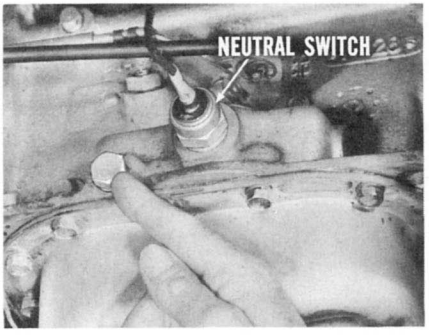
**Throttle Pressure.** Once you're sure line pressure is correct, you can go ahead and check throttle pressure. So, turn off the ignition and move the manual lever to neutral. Remove the throttle pressure take-off plug on the right side of the transmission and connect a 100-lb. (C-3292) gauge hose to the hole.



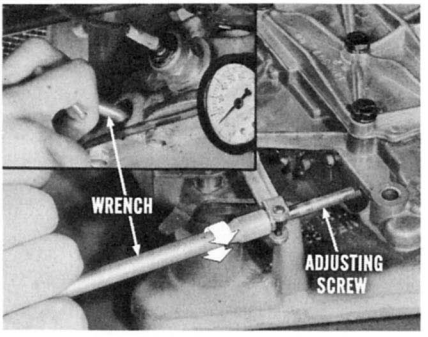



Start the engine. Since the engine is idling, and the manual lever is in neutral, the gauge won't show any pressure. But, when you move the manual lever one detent toward the front so the transmission is in *drive,* there should be a reading of *13 to 15 lbs.* on the gauge. This applies to *all* passenger car and Dodge truck models. Idle speed is 475-500 rpm for all passenger cars and 450-500 rpm for Dodge trucks.

If you don't get the proper reading right off, relax. Work the throttle linkage back and forth a few times to vary engine speed. Then, check throttle pressure again. If you still don't get the 13 to 15 lbs., you'll have to adjust the throttle valve. Remove the throttle valve adjusting screw plug on the left side of the transmission, just forward of the neutral starter switch. About a quart of fluid will drain out.

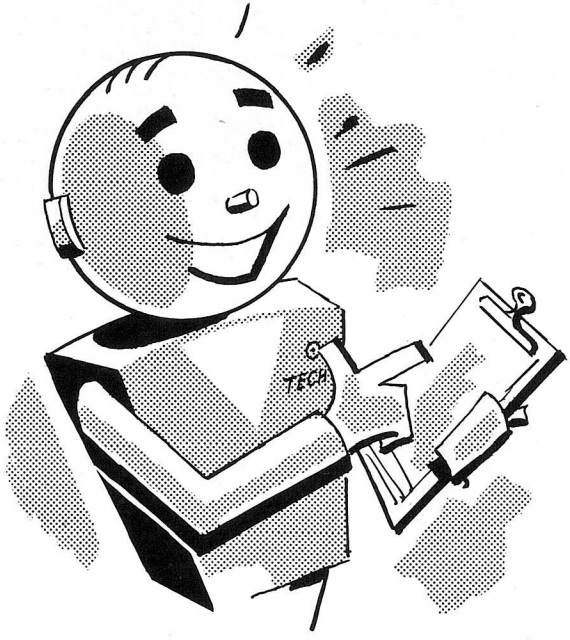


With the throttle valve adjusting screw wrench (C-3279A), engage the throttle valve lever adjusting screw through the hole. Adjust throttle pressure as you watch the gauge. A *counterclockwise* turn *increases* pressure. Clockwise *reduces* pressure. Shoot for exactly 14 pounds. After making the adjustment, shift the manual lever a couple of times between neutral and drive. Throttle pressure should return to 14 pounds when the lever is returned to *drive.*




Now, leave the manual lever in drive. Then, quickly open the throttle to wide-open position once or twice. There should be a momentary reading of about 80 pounds. If not, check the throttle valve for sticking.

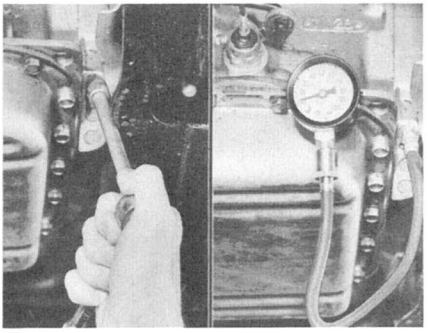
When you get throttle pressure adjusted properly, reinstall the throttle valve adjusting screw plug and torque to 20 to 25 foot-pounds. Add enough transmission fluid to bring the level up to its proper height.




Up to now you know that the line pressure is okay, and the throttle pressure is up to specifications. You also know that the linkage adjustment is right. This means the transmission will be shifting smoothly, provided the kickdown band is adjusted so it is releasing properly.

But, before checking into the kickdown band adjustment, you may as well check governor pressure as you're still set up to make pressure tests. If the governor valve is sticking—say due to dirt—so governor pressure is too high or too low, the entire shift pattern will be affected. The car might upshift too late, or too soon.

**Governor Pressure.** So, turn off the engine. Clean the area around the governor pressure take-off hole and remove the plug. Connect the 100-pound gauge (C-3292) to the hole and put the manual lever in drive. On Plymouth and Dodge V-8 engines, governor pressure should be 15 pounds at a speed of 13 to 16 mph. Governor pressures for 6-cylinder engines and other model cars are on the chart that follows.



## GOVERNOR PRESSURES

### Plymouth — Dodge

| Selector Lever Position | BRAKES | CAR SPEED | | GOVERNOR PRESSURE |
|---|---|---|---|---|
| | | 6-CYL. | V-8's | |
| D | Off | 12-14 | 13-16 | 15 |
| D | Off | 19-23 | 22-26 | 45 |
| D | Off | 41-48 | 55-62 | 60 |

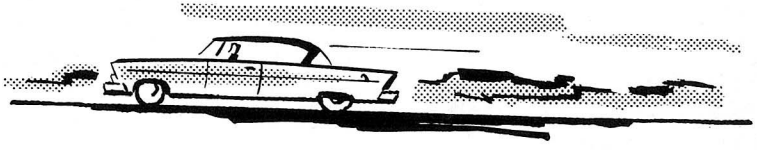
### De Soto — Chrysler — Imperial

| Selector Lever Position | BRAKES | CAR SPEED | GOVERNOR PRESSURE |
|---|---|---|---|
| D | Off | 14-17 | 15 |
| D | Off | 24-27 | 45 |
| D | Off | 58-65 | 60 |

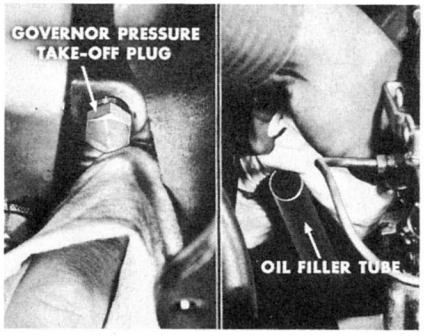
## Dodge Truck Models

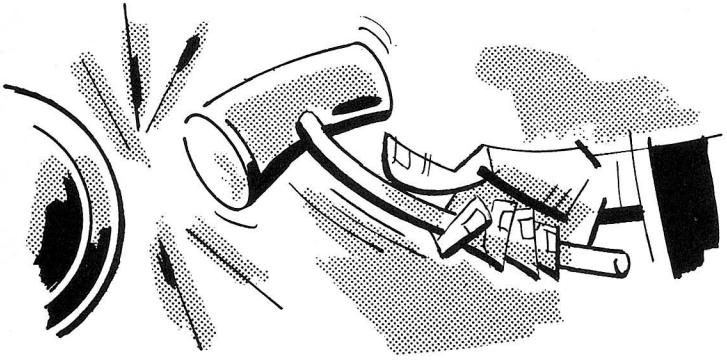
| Truck Model | Gearshift Selector | Brakes | Truck Speed Axle Ratio | MPH | Governor Pressure |
|---|---|---|---|---|---|
| ½-, ¾- and 1- | D | Off | 4.1:1 | 10-12 | 15 |
| Ton, 6-Cyl. | D | Off | 4.78:1 | 8-10 | 15 |
| (C governor) | D | Off | 4.89:1 | 8-10 | 15 |
| | D | Off | 4.1:1 | 18-21 | 45 |
| | D | Off | 4.78:1 | 16-18 | 45 |
| | D | Off | 4.89:1 | 15-17 | 45 |
| | D | Off | 4.1:1 | 34-42 | 60 |
| | D | Off | 4.78:1 | 29-36 | 60 |
| | D | Off | 4.89:1 | 28-35 | 60 |
| ½-, ¾- and 1- | D | Off | 4.1:1 | 11-13 | 15 |
| Ton, V-8 | D | Off | 4.78:1 | 9-11 | 15 |
| (A governor) | D | Off | 4.89:1 | 9-11 | 15 |
| | D | Off | 4.1:1 | 20-28 | 45 |
| | D | Off | 4.78:1 | 17-24 | 45 |
| | D | Off | 4.89:1 | 16-23 | 45 |
| | D | Off | 4.1:1 | 44-51 | 60 |
| | D | Off | 4.78:1 | 38-44 | 60 |
| | D | Off | 4.89:1 | 37-43 | 60 |

As you can see from the chart, you should get 45 pounds governor pressure on Plymouth and Dodge V-8 engines at a speed of 22 to 26 mph. If you do, governor pressures at higher speeds should be satisfactory.

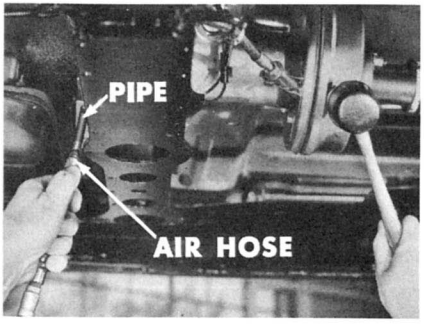


Now, if you don't get the governor pressures as specified, you'd ordinarily have to remove the rear extension housing to examine the governor parts, and perhaps the rear pump parts, also. But you can often save time by using an "air-pressure" shortcut. So, cover the oil filler tube with a cloth to avoid a hot oil shower bath, since you're going to blow air through the transmission.



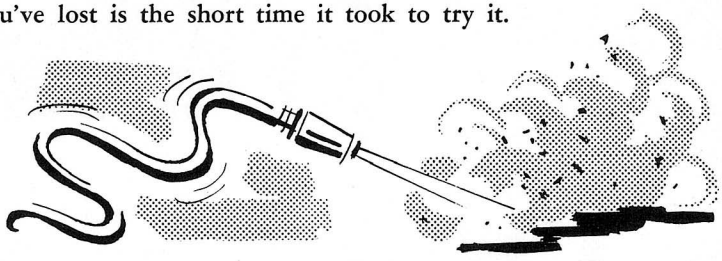



Next . . . screw a piece of 1/8" pipe into the hole to help direct the air into the unit. As you apply short bursts of clean, filtered air into the pipe, use a rubber hammer to tap the parking drum lightly several times, just enough to jar the governor. Don't use anything but a *soft* hammer!



After using this "air-pressure" shortcut, check the governor pressure again and see if you shook loose whatever was causing the governor valve to stick. If your check shows that the compressed air freed up the governor valve, it's wise to road-test the car for several miles. Then you'll be sure that whatever the air blew out hasn't worked itself back into the governor valve.

While the compressed air treatment is no sure cure, it usually works in most cases and can save a lot of time. If it doesn't work, all you've lost is the short time it took to try it.



**Additional Pressure Data.** While it is seldom necessary to check direct clutch pressure or lubrication pressure, the following tables are given to complete the pressure data.

**DIRECT CLUTCH PRESSURE**

**All Passenger Car and Dodge Truck models**

| Gearshift Selector | Brakes | Engine rpm | Clutch Pressure |
|---|---|---|---|
| D | Off | Not less than 650 | 10 psi less than line pressure |

**LUBRICATION PRESSURE**

**All Passenger Car and Dodge Truck models**

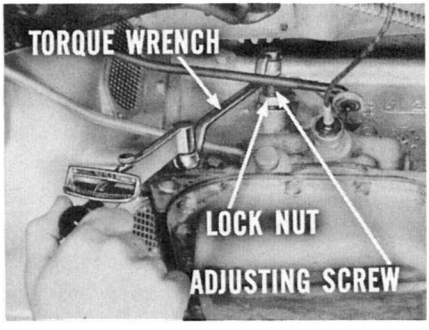
| Gearshift Selector | Brakes | Engine rpm | Lubrication Pressure |
|---|---|---|---|
| N | Off | 800 | 10-20 |

# ADJUSTING THE KICKDOWN AND REVERSE BANDS

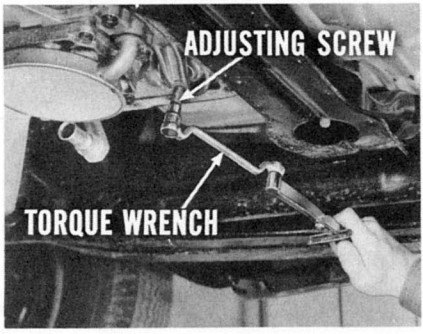
**Kickdown Band.** You may find it necessary to adjust the kickdown or reverse bands. If the bands are too tight, there may be a louder thump during cold operation when shifting from neutral to reverse, or to drive. If the kickdown band is too loose, the engine will appear to flare up in the breakaway range before the upshift takes place.

**Kickdown Band Adjustment.** You can adjust the kickdown band, incidentally, two ways: from the front compartment, through an access hole in the floor; or, from underneath the car. If done from underneath, you'll find it easier if you disconnect the throttle control rod at the throttle lever to give room for the wrench.

Loosen the adjusting screw lock nut and back it off about four turns. Next, use an inch-pound torque wrench (C-3380) to tighten the adjusting screw 60 to 72 inch-pounds. Chalk a reference mark on the adjusting screw and transmission case. Then, back off the adjusting screw exactly three turns. Finally, hold the adjusting screw stationary and tighten the lock nut securely.



**Reverse Band Adjustment.** To adjust the reverse band, raise the car on the hoist and drain the transmission oil. Disconnect the oil filler tube, and remove the oil pan next. Then, remove the reverse band adjusting screw lock nut. Tighten the adjusting screw 20 to 25 inch-pounds. Chalk a reference mark on the case and adjusting screw so you can back off the screw *exactly 10 turns.* Holding the screw, install the lock nut and tighten it 30 to 35 *foot*-pounds. Reinstall the oil pan and connect the filler tube. Refill the transmission to its proper level with automatic transmission fluid, type "A".



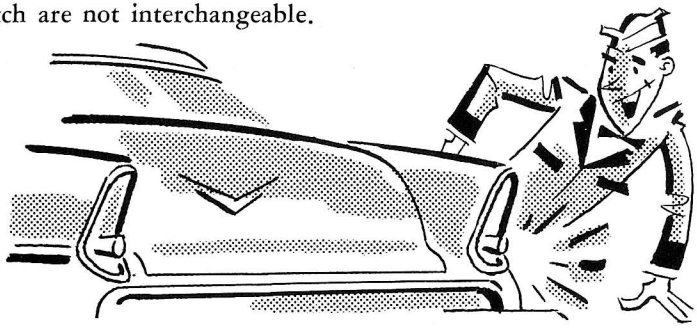

# NON-INTERCHANGEABLE SERVICE PARTS

Certain 1955 transmission parts and assemblies cannot be installed in PowerFlite units used on previous models due to slight design changes. Some of these are described below.

**Valve Body Assembly.** The 1955 valve body assembly, for instance, no longer has a round steel pin on the end of one of the manual lever arms. This is the pin that engaged a groove in the manual valve and operated the valve. Instead, the arm has been redesigned to operate the valve directly. A positive stop has been added to the throttle cam mechanism to simplify linkage adjustment. Also, in place of a lock nut on the inner end of the throttle valve operating lever adjusting screw, a new self-locking adjusting screw is used.

**Back-Up Light Switch.** 1955 PowerFlite transmissions now use a hydraulic back-up light switch instead of a mechanically operated switch. It is located at a tapped hole in the wall of the reverse servo housing on the *right* side of the transmission. The neutral switch is located in the *left* side of the transmission, in the spot formerly occupied by the back-up switch.

Because of these changes the valve body assembly, and the back-up switch are not interchangeable.



**Transmission Input Shaft.** The 1955 version of this shaft uses a steel sleeve pressed into the bore of the torque converter reaction shaft to direct oil to the direct clutch. This was formerly accomplished by means of three oil seal rings on the '53 and '54 PowerFlite models. A bronze bushing, pressed into the reaction shaft, also helps pilot the 1955 input shaft. The reaction shaft flange has been made thicker for greater strength.

Due to these changes, both 1955 shafts must be installed in earlier model transmissions when replacement of either original equipment shaft is necessary. They cannot be replaced individually.

**Torque Converter Outlet Valve Assembly.** On 1955 transmissions this new valve in the torque converter circuit prevents slippage due to low oil pressure caused by cavitation in the converter under severe load conditions. It is located in the forward end of the oil passage in the left side.

You can install this valve in 1954 cars as long as you insert the *ball end first* so the oil supply from the converter won't be cut off completely.

# MAKE SURE YOUR PRESSURE GAUGES ARE ACCURATE!

Since proper hydraulic pressures are vital for smooth, quiet-shifting PowerFlite performance, you'll want to handle your pressure gauges (C-3292 and C-3293) very carefully. Dropping or bumping these gauges may damage them enough to result in inaccurate pressure readings.

If you feel the gauges you're working with may be inaccurate, you can return them to the supplier, Miller Manufacturing Company, Detroit, Michigan, for checking and required repairs.

# SUMMARY

You can correct almost all PowerFlite conditions by making adjustments and taking pressure tests, without having to disassemble any part of the transmission. If linkage and band adjustments are made properly, and hydraulic pressures are within specifications, our owners will continue to enjoy smooth, trouble-free performance for thousands of satisfying miles.

# RECORD YOUR ANSWERS TO THESE QUESTIONS ON QUESTIONNAIRE NO. 89

| | | | |
|---|---|---|---|
| A slight noise heard during a shift from neutral to reverse or drive when the engine's cold is a normal condition. | RIGHT | 1 | WRONG |
| On a PowerFlite-equipped car, too high a fast-idle setting will make it tend to creep more than usual. | RIGHT | 2 | WRONG |
| When the transmission is in neutral and the engine is running, some of the transmission parts are also rotating. | RIGHT | 3 | WRONG |
| If kickdown or reverse bands are improperly adjusted, they can aggravate a noise when going from neutral to reverse or drive. | RIGHT | 4 | WRONG |
| Check transmission fluid level while the engine is idling. | RIGHT | 5 | WRONG |
| Transmission fluid expands almost a full quart when it warms up. | RIGHT | 6 | WRONG |
| If fast-idle is too fast, you can bend the connector rod at its lower angle to slow it down until it's within specifications. | RIGHT | 7 | WRONG |
| When servicing most transmission conditions, checking hydraulic pressure is a "must"! | RIGHT | 8 | WRONG |
| Always check line pressure first because if it's wrong, throttle and governor pressures will also be wrong. | RIGHT | 9 | WRONG |
| Throttle pressure should be 13 to 15 pounds when the engine idles and the transmission is in drive. | RIGHT | 10 | WRONG |

LITHO IN U.S.A.