POWERFLITE AUTOMATIC TRANSMISSION (CONTROLS)

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PLYMOUTH · DODGE · DE SOTO
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SESSION NO. 72
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Tech Sez:

PROPER ADJUSTMENT KEEPS POWERFLITE THE BEST TRANSMISSION IN ITS FIELD!

PowerFlite—finest automatic transmission in the field—has everybody singing its praises. That's because PowerFlite has more zip, is easier to operate, and automatically shifts smoother and quieter than any other transmission on the market.

The important point to remember about the performance of this new PowerFlite transmission is that it depends upon the proper adjustment of the control linkage. And that's where you come in! This reference book explains what to look for when making a road test, and how to adjust the control linkage. You'll find that once the linkage is correctly adjusted, there will be very little need for readjusting the controls.
Here’s how the information is organized:

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENERAL</td>
<td>4</td>
</tr>
<tr>
<td>DRIVING INSTRUCTIONS</td>
<td>7</td>
</tr>
<tr>
<td>MAINTENANCE</td>
<td>11</td>
</tr>
<tr>
<td>CHECKING OIL LEVEL</td>
<td>11</td>
</tr>
<tr>
<td>DRAINING AND REFILLING</td>
<td>14</td>
</tr>
<tr>
<td>ROAD TESTING</td>
<td>16</td>
</tr>
<tr>
<td>CONTROL LINKAGE</td>
<td>18</td>
</tr>
<tr>
<td>ADJUSTING THE GEARSHIFT LINKAGE</td>
<td>19</td>
</tr>
<tr>
<td>ADJUSTING THE THROTTLE LINKAGE</td>
<td>24</td>
</tr>
<tr>
<td>ADJUSTING THE ACCELERATOR PEDAL</td>
<td>25</td>
</tr>
<tr>
<td>ADJUSTING THROTTLE PRESSURE</td>
<td>26</td>
</tr>
<tr>
<td>TESTING THE KICKDOWN BAND</td>
<td>31</td>
</tr>
<tr>
<td>ADJUSTING THE KICKDOWN BAND</td>
<td>32</td>
</tr>
<tr>
<td>ADJUSTING THE REVERSE BAND</td>
<td>33</td>
</tr>
<tr>
<td>FINAL ROAD TEST</td>
<td>34</td>
</tr>
</tbody>
</table>

**REMEMBER...**

**PROPER ADJUSTMENT OF THE CONTROL LINKAGE IS THE MOST IMPORTANT POINT!!**
GENERAL

The new PowerFlite automatic transmission is used in Dodge, De Soto, and Chrysler models. Road-testing all three cars is performed in the same manner. Also, the checking and adjusting procedures are basically alike for all three models. There are, however, slight variations in some clearances and shift speeds, and in maintenance procedures. Those differences will be spelled out for your convenient reference as those points are covered later.

In general, it will be easier all around if you think of the PowerFlite transmission as just about the same unit on the Dodge, De Soto and Chrysler models. One similarity you will quickly spot is that the PowerFlite-equipped cars have no clutch pedal nor do they have a conventional clutch. In short, this new transmission is fully automatic!
On all models, the PowerFlite automatic transmission consists of a torque converter, a multiple-disc-type clutch and a planetary gear system. This combination provides two forward speeds, and reverse. The entire unit operates hydraulically to handle all necessary shifting completely automatically.

Just about all driving is done in the “D” or Drive range. The transmission automatically upshifts from the starting ratio to direct drive when the proper speed is reached.

There is a Low range for use in mountain driving. In that range the transmission doesn’t upshift. It’s just a 1.72-to-1 gear ratio for hard pulling, or engine braking when going down long, steep hills.
The PowerFlite transmission has its own oil system. Two oil pumps and a series of valves direct the oil to the right transmission units at the proper time.

This oil system does two jobs. First, it provides oil pressure to operate the internal units in response to a combination of car speeds and throttle openings. Second, it lubricates the transmission parts.
DRIVING INSTRUCTIONS

Before getting too deeply into the nature of the hydraulic or mechanical features of the PowerFlite unit, it will be helpful to review some of the general driving aspects involved. For instance . . . all normal forward starts are made in Drive range. That combines a 2.6-to-1 torque converter ratio with a 1.72-to-1 gear ratio for fast acceleration.

As the car picks up speed, the transmission smoothly shifts into direct drive at the proper time. This is a fully automatic shift. It is made under power without any effort by the driver.

And, when the car is cruising in direct drive—at speeds below approximately 45 miles an hour—instant acceleration is available to the driver for quick, safe passing.
All that the driver has to do is press the accelerator to the floorboard. That kickdown action causes the transmission to downshift, bringing the 1.72-to-1 gear ratio back into operation.

Starting the car isn’t particularly different from the way it had been done. The owner of a PowerFlite-equipped car first puts the selector lever in Neutral. He then depresses the accelerator pedal slightly and starts the engine. As a safety precaution, the starting motor is wired through a neutral switch on the transmission so the engine can’t be started unless the selector lever’s in Neutral.

The driver then puts the selector lever in Drive position. As soon as he presses down on the accelerator, he’s on his way. On a Chrysler, for example, the upshift will take place anywhere from a speed of 15 to 75 mph . . . depending on how the accelerator is depressed. If accelerator pressure is light, the upshift will occur at 15 to 20 mph.
But, if accelerator pressure is heavy, such as you have at wide-open throttle, the upshift would then take place somewhere from 60 to 75 mph. The upshift periods for De Soto and Dodge are given in a table under the Road Testing section of this book.

That selector lever movement, incidentally, is controlled by a slotted steel collar, called a "gate." This "gate" is attached to the lower end of the steering column.

The lower slot in the gate on Chrysler and De Soto models provides stops for the Low and Reverse positions. The upper slot provides stops for the Neutral and Drive positions.
This arrangement lets you shift into \textit{Neutral} and \textit{Drive} by just moving the lever up or down to the end of its travel. By lifting the lever \textit{toward} the steering wheel, the gate is passed and you get into the \textit{Reverse} and \textit{Low} slot, as you wish. As a result, you have quick selection of Low and Reverse for rocking the car, should it get stuck in the mud or sand.
In other words, you can shift into Low or Reverse without having to go through a forward gear, or Neutral. What's more, you'll find you can select any gear without having to watch the pointer. That's why the PowerFlite transmission is so much simpler to operate.

NOTE: The slots in the "gate" used on Dodge cars are just the reverse of those on Chrysler and De Soto—that is, the lower slot provides stops for Neutral and Drive, while the upper slot provides stops for Low and Reverse. The operation of the selector lever at the steering wheel, however, is the same on all models.

MAINTENANCE

CHECKING OIL LEVEL

You always begin your checking of the PowerFlite unit in the same place. That holds true whether the car comes in for its period inspection, because an owner reports an unusual condition, or because it needs adjustment before delivery to a customer. In any of those cases, you begin by checking the fluid level.

To do that, you apply the hand brake. Then, put the selector lever in Neutral. Start the car and let the engine idle until it reaches normal operating temperature.
Next, shift the selector lever through all four ranges. Put it back to Neutral—and, while the engine idles—pull out the oil level indicator. Wipe off the indicator, insert it again and then recheck the level. That gives you the true reading. You see . . . the turbulence of the oil while shifting through all ranges may make the level appear higher than it actually is. You’ll find that indicator in the oil filler tube behind the right bank of cylinders on just about all models.

**NOTE:** On the Dodge convertible and sport coupe models, the oil level indicator and filler tube are located under the toeboard on the right-hand side. Just lift the front floor mat and remove the access hole cover from the toeboard.

If the fluid level happens to be low, you should add enough automatic transmission fluid—Type “A”—through the filler tube to bring it up to “full.” Pour fluid slowly, and use a funnel, since the filler tube is of a fairly small diameter. Be careful not to let any dirt fall into the transmission by way of the filler tube.
NOTE: Do not add fluid when the engine is not running, because the oil which drains out of the torque converter will raise the oil level in the transmission. Naturally, the oil level in the transmission will reach the same level in the filler tube, so if you add oil at that time, the transmission will be too full, and the oil is apt to overflow the tube.

CAUTION: Never use any fluid but automatic transmission fluid Type “A.” That’s because this fluid contains additives especially designed for automatic transmission use. For one thing, Type “A” fluid doesn’t foam up. Foaming causes a drop in pressure that interferes with valve action and torque converter action. In addition, this fluid maintains its viscosity at high operating temperatures. Also, it helps the transmission parts to work together quietly, and smoothly.

Remember to check fluid level every 1,000 miles. And at 20,000 miles, you should drain and refill the PowerFlite unit with fresh automatic transmission fluid Type “A.”
DRAINING AND REFILLING

To drain the transmission and torque converter, follow these steps:

1. Remove the transmission oil pan drain plug. Allow transmission to drain.

2. Remove the flywheel access plate from the bottom of the housing. Rotate the torque converter until the converter oil plug is accessible. Remove the plug and drain the fluid from the torque converter.

3. Check the gaskets on the transmission and torque converter drain plugs. Install new gaskets, if necessary. Install both plugs and tighten. Use a torque wrench and tighten the oil pan drain plug 20 to 25 foot-pounds. Tighten the torque converter drain plug 45 to 50 foot-pounds.

4. Install the access plate on the housing and tighten the bolts.

To refill the transmission and torque converter, follow these five steps:

1. Apply the parking brake.

2. Fill the transmission through the oil pan filler tube with automatic transmission fluid Type “A” to FULL mark on the oil level indicator (about 5 quarts). The filler tube is reached through the engine compartment, and is located just to the rear of the right bank of cylinders on all models except the
Dodge Convertible Coupe and the Sport Coupe. On these models, the filler tube is reached through an access hole in the floor of the front compartment.

3. Run the engine at idle speed in Neutral (N) for about two minutes. Then add enough fluid *while the engine is idling* to bring the fluid level to FULL mark on oil level indicator.

4. Allow the engine to run until it reaches normal operating temperature.

5. Shift the selector lever through all ranges and recheck the fluid level. Add fluid to bring level to FULL mark on the oil level indicator.

**CAUTION:** Make sure the oil level indicator properly seats in the filler tube to prevent dirt from entering the transmission. 

**NOTE:** Total capacity of the PowerFlite transmission and torque converter is 13 quarts for Chrysler and De Soto. The capacity of Dodge models is 11 quarts. During a normal oil change, the refill would be 12 and 10 quarts, respectively.
ROAD TESTING

After checking fluid level, you should take the car out and road-test the operation of the PowerFlite transmission. If the car is new, one that you’re getting ready for delivery, avoid any tests at high speeds or wide-open throttle position. Otherwise, follow the step-by-step procedure given below:

1. Move the selector lever through all positions. Check the lever pointer to see that it agrees with the gate and transmission detents.

2. With selector lever in Neutral (N), start the engine.

3. Move the selector lever to Reverse (R), back the car, and observe the speed and smoothness of shift.

CAUTION: Do not give the engine wide-open throttle in reverse.

4. Connect an electric tachometer to the engine. Move the selector to Drive (D), checking speed and smoothness of engagement. Apply both hand and foot brakes and check for band slippage at wide-open throttle.

CAUTION: Do not hold at wide-open throttle for more than a few seconds! At wide-open throttle, the tachometer should read between 1450 and 1550 rpm. A reading in excess of 1550 rpm could be due to a slipping kickdown band.

5. Accelerate the car at very light throttle. On De Soto and Chrysler 8-cylinder models, the transmission should upshift at 15 to 20 mph. For other models refer to the chart on the following page, which also includes the shift periods at other road-test speeds.
POWERFLITE AUTOMATIC TRANSMISSION
SHIFT PATTERN SUMMARY

<table>
<thead>
<tr>
<th></th>
<th>UPSHIFT LIGHT THROTTLE</th>
<th>UPSHIFT HEAVY THROTTLE</th>
<th>DOWNSHIFT LIGHT THROTTLE</th>
<th>DOWNSHIFT HEAVY THROTTLE</th>
<th>KICKDOWN LIMIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>DODGE 6</td>
<td>13-18 mph</td>
<td>48-61 mph</td>
<td>9-11 mph</td>
<td>9-14 mph</td>
<td>33-46 mph</td>
</tr>
<tr>
<td>DODGE 8</td>
<td>14-19 mph</td>
<td>58-71 mph</td>
<td>9-11 mph</td>
<td>9-14 mph</td>
<td>43-57 mph</td>
</tr>
<tr>
<td>DE SOTO 6</td>
<td>13-18 mph</td>
<td>49-63 mph</td>
<td>9-11 mph</td>
<td>9-14 mph</td>
<td>35-48 mph</td>
</tr>
<tr>
<td>DE SOTO 8</td>
<td>15-20 mph</td>
<td>59-72 mph</td>
<td>10-12 mph</td>
<td>10-14 mph</td>
<td>44-58 mph</td>
</tr>
<tr>
<td>CHRYSLER 6</td>
<td>13-18 mph</td>
<td>49-63 mph</td>
<td>9-11 mph</td>
<td>9-14 mph</td>
<td>35-48 mph</td>
</tr>
<tr>
<td>CHRYSLER 8</td>
<td>15-20 mph</td>
<td>60-75 mph</td>
<td>10-12 mph</td>
<td>10-14 mph</td>
<td>45-60 mph</td>
</tr>
</tbody>
</table>

What you’re after is a PowerFlite unit that provides a smooth upshift and downshift at the speeds as outlined in the chart above. You also want instant response to throttle movement, without the engine racing. If a shift is jerky, or if the engine flares up, you’ll know that adjustments should be made.

Another thing to remember is that the PowerFlite transmission may need some adjustments like any other new unit. Some parts need to go through a normal wearing-in process during the break-in period.
Suppose that your road test shows the shifting to be rough and somewhat jerky. Usually, that symptom points to linkage out of adjustment. Before going into the linkage adjustments, it will be helpful for you to understand just what the linkages are, and what they do.

CONTROL LINKAGE

As you'll recall, the transmission is operated by hydraulic pressure through a series of valves. One valve, the manual control valve, is operated by the gearshift linkage running from the bottom of the steering column to the transmission. This manual control valve directs the flow of oil from the pumps to the proper units in the transmission for forward or reverse movement of the car. Actually . . . that manual control valve is a selector valve.

Now, of course there's linkage from the accelerator pedal up to the carburetor throttle lever.
In addition... there's linkage from the carburetor throttle lever back to the transmission. This linkage connects to a throttle control lever on the transmission and operates a throttle valve in the transmission. That throttle valve routes oil to the transmission units to control their action in relation to the carburetor throttle opening.

As you can see, a smooth transmission shift has to depend upon proper adjustment of the linkage between the accelerator pedal and transmission. So... getting back to a case of a rough or jerky shift, here are the linkage adjustments that have to be checked.

**ADJUSTING THE GEARSHIFT LINKAGE.** To check the linkage on a PowerFlite unit, the first thing you do is disconnect the rear gearshift control rod at the bellcrank mounted on the inside of the frame side rail.
Following that . . . move the manual control lever on the transmission to **Neutral**. That's the second detent position from the rear of the car.

Now, the upper or long lever of the bellcrank should be at a 40° to 45° angle from vertical, and toward the rear of the car. You see . . . if this angle isn't right, you won't get proper travel of the manual control valve when you shift to the different selector lever positions.

Now . . . if you don’t find the bellcrank at that 40° to 45° angle, chances are the pointer wouldn't line up with the letters on the indicator dial at the steering wheel. In a case like this, you’d have to disconnect the front gearshift control rod and swivel at the bellcrank.
Next, you'd have to hold the bellcrank upper level at 40° to 45°, and adjust the swivel on the rear gearshift control rod as required to get a free fit in the bellcrank lower lever. Then, install the swivel retaining clip.

After that . . . have someone hold the selector lever so the pointer is in neutral position. That means exactly in the center of the letter "N." Then, adjust the front gearshift rod swivel to the proper position for a free fit to the upper lever of the bellcrank, and re-install the rod. You'll have to do this very carefully, because the slightest movement of the linkage will move the pointer off the neutral position and affect the travel of the manual control valve.

Your next important check is the clearance of the gearshift tube lever at the gate. That clearance is critical because it limits the travel of the manual control valve. If it is wrong, you'll have trouble getting into the different selector lever positions.
To check the lever travel, put the selector lever in the neutral position so the pointer is in the center of the letter "N" on the dial. With the selector at that point, there should be .015" to .017" clearance between the neutral stop land on the gearshift tube lever gate and the edge of the gearshift tube lever.

At the same time . . . see that there is .015" to .030" clearance between the gate and the wide flat-face part of the lever.
If you don’t get that clearance, you can adjust it on a Chrysler or De Soto model by loosening the three attaching screws at the gear-shift tube lever gate. Then move the gate to get the right clearance, and tighten the screws. The screw holes are enlarged so you can make this adjustment.

On the Dodge models, and on some Chrysler and De Soto models, the gate is mounted on the upper side of the steering gear jacket tube and is secured to it by a clamp. In this case, you’d have to loosen the gate clamp bolt just enough to slide the gate into the desired position. Clearances on the Dodge are the same as those specified for Chrysler and De Soto cars: .015” to .017” between edge of the lever and neutral stop land, and .015” to .030” between the face of the lever and gate.
When you've finished making this adjustment, operate the selector lever through all indicator positions. Check the pointer positions on the dial to see that the pointer comes to rest exactly in the center of each letter. If the linkage doesn't operate properly, or if the pointer doesn't indicate correctly, don't try to force the linkage to make it conform. If you do, you might bend the linkage, and you'll never get it right. Instead, you'd better to retrace your checking and adjustment steps and see what you might have omitted as you recheck the linkage.

Be sure the linkage is free to move without interference. You can easily feel a bind in the linkage if there is one. Look for an oil line interference, a bell housing interference, or stiff ball joints if the linkage seems to work a bit too stiffly.

An improper adjustment of the gearshift linkage will show up as an improper response to selector lever positions. It may result in the car's moving backward when the selector's in Neutral, or it may result in no forward movement when placed in the Drive position.

Other symptoms pointing to improper gearshift adjustment are: no upshift; a high downshift speed; kickdown at part throttle; or failure of the starting motor to engage when the gearshift lever is in Neutral position. Any of these conditions appearing during your road test will tell you the gearshift linkage is the place to check.

**ADJUSTING THE THROTTLE LINKAGE.** Improper adjustment of the transmission throttle linkage and incorrect throttle pressure are reflected in many ways. For instance, slippage of the kickdown band—upshift at low speeds—upshift at higher speeds—no kickdown at all—harsh or jerky shift from Neutral to Drive—all point to this throttle checking point.
WHEN IN DOUBT
CHECK THE THROTTLE
LINKAGE!

Besides those conditions, a jerky upshift, a jerky downshift, or the accelerator pedal sticking at closed throttle also point to improper adjustment of throttle linkage and pressure.

ADJUSTING THE ACCELERATOR PEDAL. First point to check is the accelerator pedal travel. If it is set too high, it will cramp the driver's foot. If it is set too low, it won't operate the kickdown, and won't provide enough travel for wide-open throttle operation.

Checking it is a simple matter. When the accelerator pedal is pressed to the floor for wide-open throttle position, the underside of the pedal should touch the floor mat, but should not compress the mat.
Now . . . if you have to adjust the linkage to get proper accelerator pedal travel, you adjust the carburetor throttle rod by turning the ball joint on the accelerator-shaft-to-carburetor rod. Then, work the linkage to see that it's free from binding.

In addition, check to see that the opening of the kickdown valve in the transmission can be felt just before wide-open throttle position.

**ADJUSTING THROTTLE PRESSURE.** To check throttle pressure, apply the hand brake first. Then, with an electric tachometer hooked up to the engine, put the selector lever in Neutral, and adjust the engine idle. Turn the idle adjusting screw on the carburetor to give 475 to 500 rpm. Then, shut off the ignition.
Now, remove the throttle oil pressure take-off plug located between the reverse and kickdown servos on the right side of the transmission. At that point, connect a 100-pound pressure gauge (Tool C-3292). Start the engine, shift the selector lever to Drive range, making sure that the hand brake is firmly set.

Disconnect the throttle linkage at the transmission throttle control lever and work that lever back and forth several times by hand. Pressure on the gauge should rise and fall as the lever is moved. That's an indication the throttle valve is working freely.

Position the throttle control lever so it's about 30° toward the front of the car, from a right angle to the center line of the transmission. In that position you should read 13 to 15 pounds on the gauge. This is mighty important because, if throttle pressure's too high, you'll get a "clunk" during a shift. If pressure's too low, the engine will race, or flare up as you accelerate from slow speed.
If you don't happen to get 13 to 15 pounds throttle pressure, here's how you go about adjusting for it. First, remove the 3/8" throttle valve adjusting screw plug. About a quart of fluid will drain out. Then, use the throttle pressure adjusting wrench (Tool C-3279) to set throttle pressure at 14 pounds.

Turn the screw counterclockwise to increase pressure . . . clockwise to decrease pressure. Reinstall the throttle valve adjusting screw plug and torque it from 20 to 25 foot-pounds. Add oil to replace the oil that drained out when you removed the plug.

Next thing to do is reconnect the throttle linkage to the throttle valve lever on the transmission. To check this throttle linkage adjustment, pull slightly on the underside of the accelerator pedal lever, from underneath the car, to get a foot pressure effect on the accelerator.
The throttle pressure should read 13 to 15 pounds and rise immediately when the accelerator pedal is depressed. If it doesn't, the engine may race and the shifts won't occur at the proper car speeds.

If you didn't get that sudden increase in pressure when you depressed the accelerator pedal, you'd have to adjust the transmission throttle linkage. To do this, disconnect the throttle control rod swivel from the lever.

Then, move the throttle valve lever as far forward as it will go. Next, slowly move the lever \textit{rearward}, until you notice a \textit{slight resistance} to travel. At that point—and with very slight additional lever travel—the throttle oil pressure should suddenly increase. So, hold the lever at that exact position where you felt the slight resistance to travel. Reconnect the rod and swivel.
If the swivel will not fit into the lever, loosen the lock screw and slide the swivel on the rod until it will fit. Push the throttle rod slightly forward to remove free play in the connections.

Then, holding the lever at the point where the pressure is just about to increase, tighten the lock screw.

To wind up that adjustment, recheck the throttle linkage adjustment by working the accelerator pedal lever with your hand. You should get 13 to 15 pounds pressure at idle, and an immediate increase in pressure when the pedal’s depressed.

Finally . . . remove the pressure gauge, reinstall the 1/8" take-off plug, and torque it 10 to 12 foot-pounds.
TESTING THE KICKDOWN BAND

The front, or kickdown band, is used to apply pressure on the direct clutch piston retainer assembly. That holds the front, or kickdown planetary gear set stationary up to the time the transmission upshifts, or when it kicks down.

The kickdown band is actuated mechanically by the hydraulically operated kickdown servo. It is connected to the servo by a rod, lever, and strut.

If the kickdown band is adjusted improperly, it may cause jerky kickdown action. Also, it may cause the car to move forward while in Neutral, may delay the shift from Neutral to Drive, and may cause excessively high engine speed on kickdowns. So, if your road test showed the engine speed was too high when starting off or accelerating, you’d be wise to check the kickdown band adjustment. To do this, hook up the tachometer, start the engine, and move the selector lever to Drive position.

Next, apply the hand and foot brakes. Increase engine speed and watch the tachometer. At wide-open throttle, the engine should reach a speed of between 1450 to 1550 rpm, but no higher. If the engine speed does go higher, it usually means a slipping kickdown band.
CAUTION: Don't hold that wide-open throttle for more than a few seconds or the transmission will overheat.

**ADJUSTING THE KICKDOWN BAND.** To adjust the kickdown band on Chrysler and De Soto cars, you first turn the ignition off and remove the accelerator pedal from the hinge section. Then, remove the floor mat and band adjusting hole cover.

Using the kickdown band adjusting tool (Tool C-3291), you loosen the adjusting screw lock nut. Check the fit of the adjusting screw by turning it with your fingers. It should turn freely, without binding in the threads. If the screw is tight in the threads, better put in a new one.

However, if that screw turns freely, you just tighten the kickdown band adjusting screw 60 to 72 inch-pounds torque.

Use the adjusting tool again to back the adjusting screw out exactly three turns, as indicated by the counter on the tool. Then, holding the adjusting screw stationary with the short handle, tighten the lock nut securely.
There is no access opening in the floor of Dodge cars through which to reach the kickdown band adjusting screw. Adjustment is made from underneath the car.

The adjusting procedure is the same as for Chrysler and De Soto. When tightening the adjusting screw, use an inch-pounds torque wrench (Tool C-3380), and tighten it to 60-70 inch-pounds. Then tighten the lock nut.

Keep in mind the importance of that kickdown band adjustment. If it’s too loose, the kickdown will be rough and jerky. On the other hand . . . if it’s too tight, the band lining might burn out.

**ADJUSTING THE REVERSE BAND**

If you notice that the engine tends to race when you back the car, it could mean that the reverse band needs adjusting. While that hardly ever happens, it’s an adjustment procedure you should know. The first step is to drain the oil and then remove the oil pan. Next, remove the reverse band adjusting screw lock nut and tighten the adjusting screw from 20 to 25 inch-pounds. Then back out the adjusting screw exactly 10 turns.
Now, holding the adjusting screw in that location, install the adjusting screw lock nut and torque it 30 to 35 foot-pounds. Use a new gasket and reinstall the transmission oil pan. Refill the unit with fresh automatic transmission fluid Type "A".

FINAL ROAD TEST

When you’ve completed the adjustments, take the car out and road-test it again. Follow the same procedure you did in your earlier test, and compare the performance. If the transmission operates smoothly, and the shifts occur at the proper speed periods, you’ve done a good job. If it doesn’t, you’ll have to recheck your work—particularly the control linkage adjustments. When once adjusted correctly, the PowerFlite transmission will give many thousands of miles of trouble-free performance.

REMEMBER THOSE CONTROL LINKAGE ADJUSTMENTS
USE THE NEW TECH QUESTIONNAIRE FOR SESSION NO. 72 WHEN RECORDING YOUR ANSWERS TO THESE TEN QUESTIONS

Checking fluid level while the engine idles at normal temperature is where you begin all PowerFlite transmission checks.

Automatic transmission fluid (Type “A”) is the only fluid recommended because it doesn’t foam, it keeps its viscosity at high operating temperatures.

Total oil capacity of the PowerFlite transmission on Chrysler and De Soto cars is 11 quarts.

The .015” to .017” clearance of the gearshift tube lever at the gate is important because it controls the position of the accelerator pedal.

Some symptoms of improper transmission throttle linkage and pressure adjustment are: upshift at low speeds, upshift at higher speeds, no kickdown, harsh or jerky shift from Neutral to Drive.

If accelerator pedal is set too high, it will cramp the driver’s foot. If it is set too low, it won’t operate the kickdown.

When setting throttle pressure, turn the throttle valve adjusting screw counterclockwise to increase pressure, clockwise to decrease pressure.

Proper throttle pressure is 13 to 15 psi when the selector lever is in Drive, engine idling at 475 to 500 rpm.

With the selector in Drive, hand and foot brakes applied, engine speed should reach 1450 to 1550 rpm at wide-open throttle, when the kickdown band is properly adjusted.

If the engine tends to race when you back the car, that usually means the reverse band needs adjustment.