# Installation Instructions
# Transpak
## for
# Ford C-6
## 1967-1991
Part No. 40228

Congratulations. You have just purchased the most complete and versatile transmission recalibration kit available. We feel that the installation instructions on the following pages are as complete and clear as possible. Installation of your Transpak is a job that can be handled by anyone with a minumum of mechanical experience. It is important to closely follow the instructions. Read each step and if you don't understand go back and read it again.

NOTE: The Transpak is not a cure-all for ailing transmissions. If your transmission is slipping or in poor general shape, the installation of a Transpak kit may worsen these conditions. However, on a good operating transmission in average condition the Transpak will provide the kind of transmission performance that you're looking for.

Before beginning, Check the parts list on Page 8 of these instructions to make sure you have all the necessary parts. Also check the tool list on Page 7. A minimum of tools are required.

## C-6
## INTRODUCTION

This kit can be installed in a few hours by carefully following directions. Read all instructions first to familiarize yourself with the parts and procedures. Work slowly and do not force any parts. Transmission components and valves are precision fit parts. Burrs and dirt are the number one enemies of an automatic transmission. Cleanliness is very important so a clean work area or bench is necessary. We suggest a clean work bench top from which oil can easily be cleaned or a large piece of cardboard.

This kit contains all parts necessary to obtain any of three levels of performance depending on intended use:

1. **Heavy Duty:** Towing, campers, motorhomes, police, taxi, etc.

2. **Street:** Dual purpose performance vehicles. Street and strip high-performance cars, on and off road desert vehicles and 4-wheelers.

3. **Competition:** Race cars only, not intended to be driven on the street. Trailered or towed race vehicles only.

Automatic transmissions operate at temperatures between 150°F and 250°F. It is suggested that the vehicle be allowed to cool for a few hours to avoid burns from hot oil and parts. The vehicle should be off the ground for ease of installation. Jack stands, wheel ramps, or a hoist will work fine. **Make sure the vehicle is firmly supported!!** Try to raise it 1-2 feet so you have plenty of room to work easily. Have a box or pan handy to put small parts in so they won't be lost.

## DISASSEMBLY

**STEP 1.** C-6's do not have drain plugs. You may want to install a B&M Pan Drain Plug Kit at this time, Part No. 80250. Drain the oil by removing the back oil pan bolts and work towards the front slowly. (Note: Some vehicles will require removal of the crossmember to remove the pan. Make sure you support the back of the transmission so you don't damage linkage or engine parts.) Do not remove the front two bolts yet. If the pan sticks to the gasket, insert a screwdriver between the pan and the case and pry the pan down slightly to break it loose. Now remove the two front bolts slowly. This will lower the pan to allow the rest of the fluid to drain. Lower the pan and set it aside. Put the pan bolts in your tray.

**STEP 2.** Manually operate the kickdown rod from the carburetor with the gas pedal depressed half way. (See Fig. 1) Note how it moves freely with no bind. Observe how the internal linkage engages the valve body. Some '75 models may have a slightly different oil filter than pictured.

**STEP 3.** Remove the eight valve body attaching bolts (See Fig. 2) and remove the valve body by pulling straight down. Put the valve body in the oil pan.

**STEP 4.** Adjust the front band. Loosen the outer jam nut with a 13/16" wrench. (See Fig. 1) Tighten the band adjusting screw to 120-in.lbs. and back off 1-1/2 turns. Hold the band adjusting screw in this position and tighten the jam nut securely. Now move to the bench and work on the valve body.

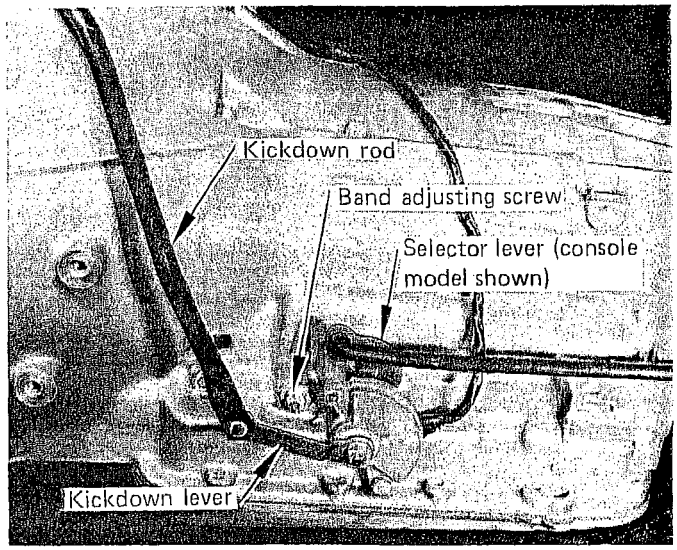
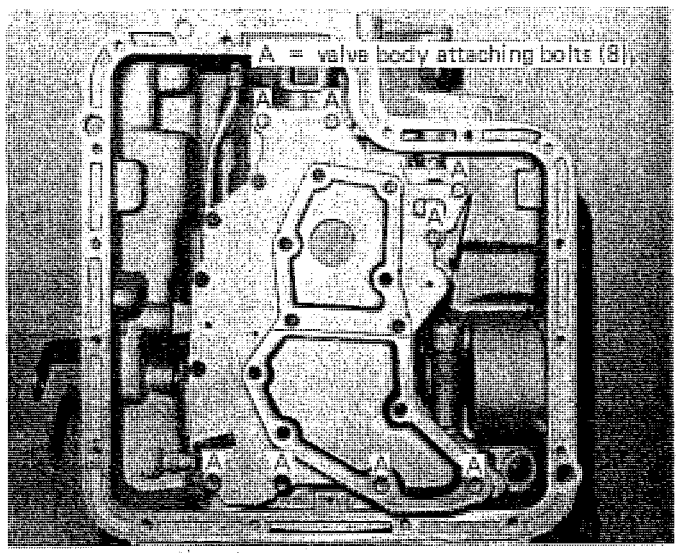



FIGURE 1




Some models may have slightly different oil filter than shown.

FIGURE 2

**STEP 5.** Lay the valve body on the bench with the filter side down. Remove the two upper bolts. (See Fig. 3) Note: One is short and one is long. Set them aside.

**STEP 6.** Turn the valve body over and remove the filter retaining bolts. (See Fig. 4) These are long bolts with one bolt being extra long. Remove filter and gasket.

**STEP 7.** Remove the remaining valve body bolts as shown in Figure 5. Note these are short bolts with one long bolt. The valve body consists of three parts. The thick aluminum housing with all the valves is called the **casting**, a thin aluminum plate called a **transfer plate** that the filter was attached to, and a thin steel plate called a **separator plate**.

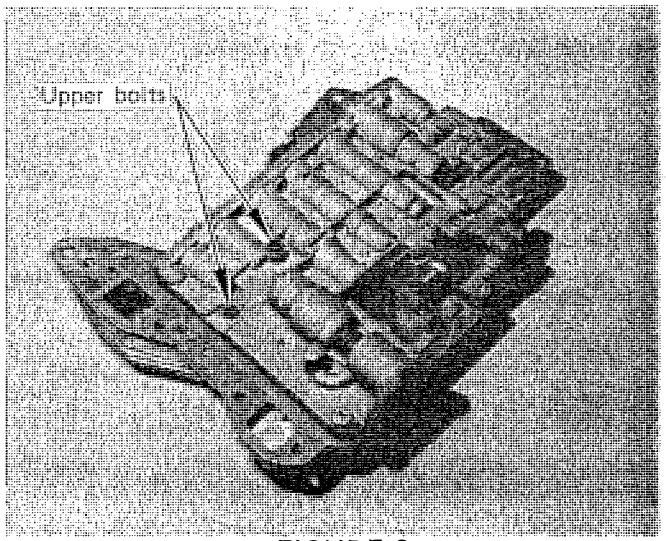



FIGURE 3

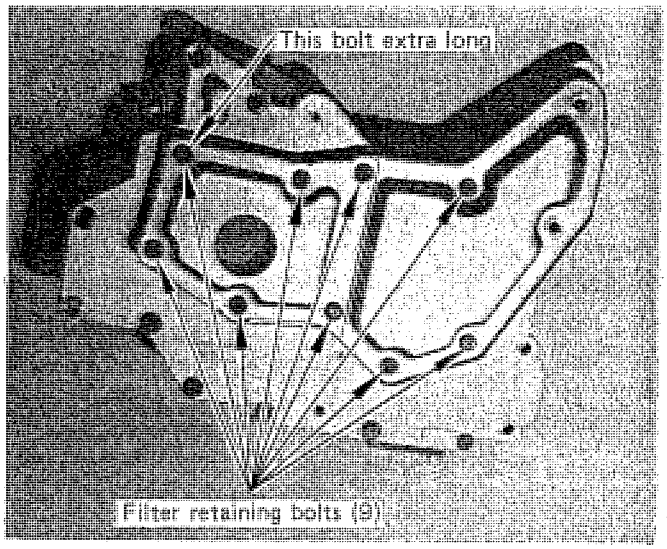



FIGURE 4

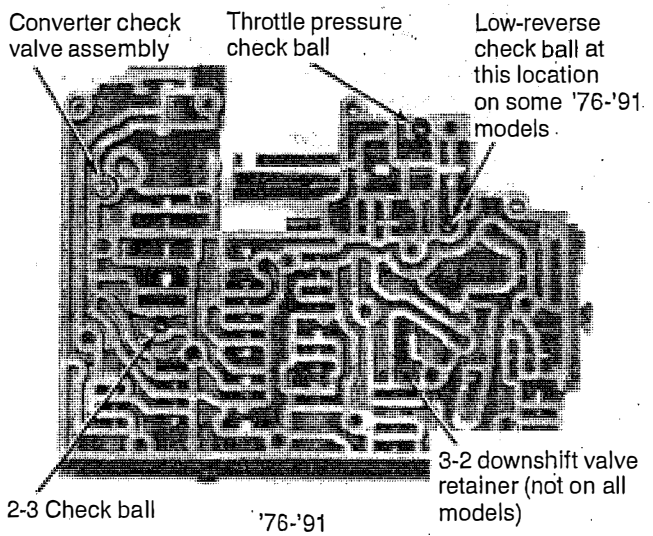



FIGURE 6A

**STEP 8.** Lift the **transfer plate** assembly up, turn it over and set it aside. Remove the converter check valve assembly.

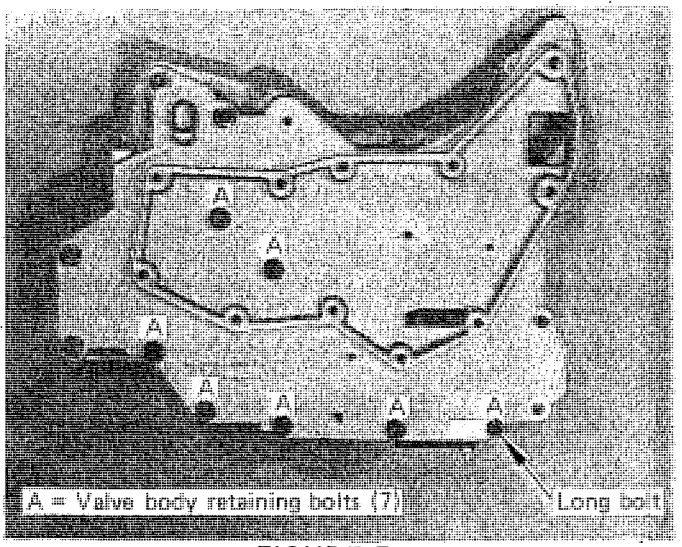



FIGURE 5

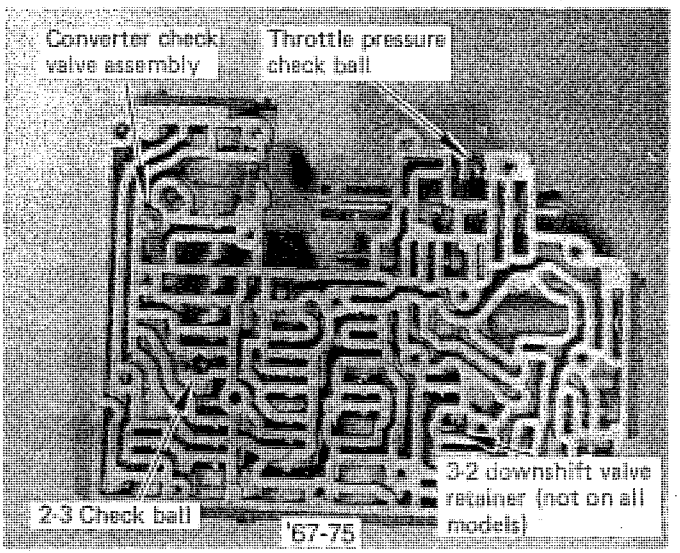



FIGURE 6

This is a small steel valve or ball with a fine pitch spring. (See Fig. 6) Set them aside so they won't be confused. (The check valve may be stuck to the **separator plate**). Remove the throttle pressure check ball assembly. (See Fig 6 or 6A) This ball uses a coarse pitch spring. Set it aside so it won't be confused. Remove the 2-3 check ball from its pocket. (See Fig. 6) Do not loose the 3-2 downshift valve retainer. Note: Some later models have a low-reverse check ball. (See Fig. 6A) remove and set aside.

**STEP 9.** Stand the **casting** on end so the pressure regulator assembly is facing up.

'66-'74' (See Fig. 7) Remove the two end plate bolts. Hold your thumb over the end plate as you remove the last bolt so the spring pressure does not allow parts to fly out. Slowly shift the end plate off and remove the booster valve assembly and the pressure regulator springs. Replace the outer spring with the blue spring supplied with the kit. Install the stock inner spring as removed. **Replace the booster assembly with the sleeve and valve supplied with the kit.** Make sure the valve is properly installed in the sleeve. Push

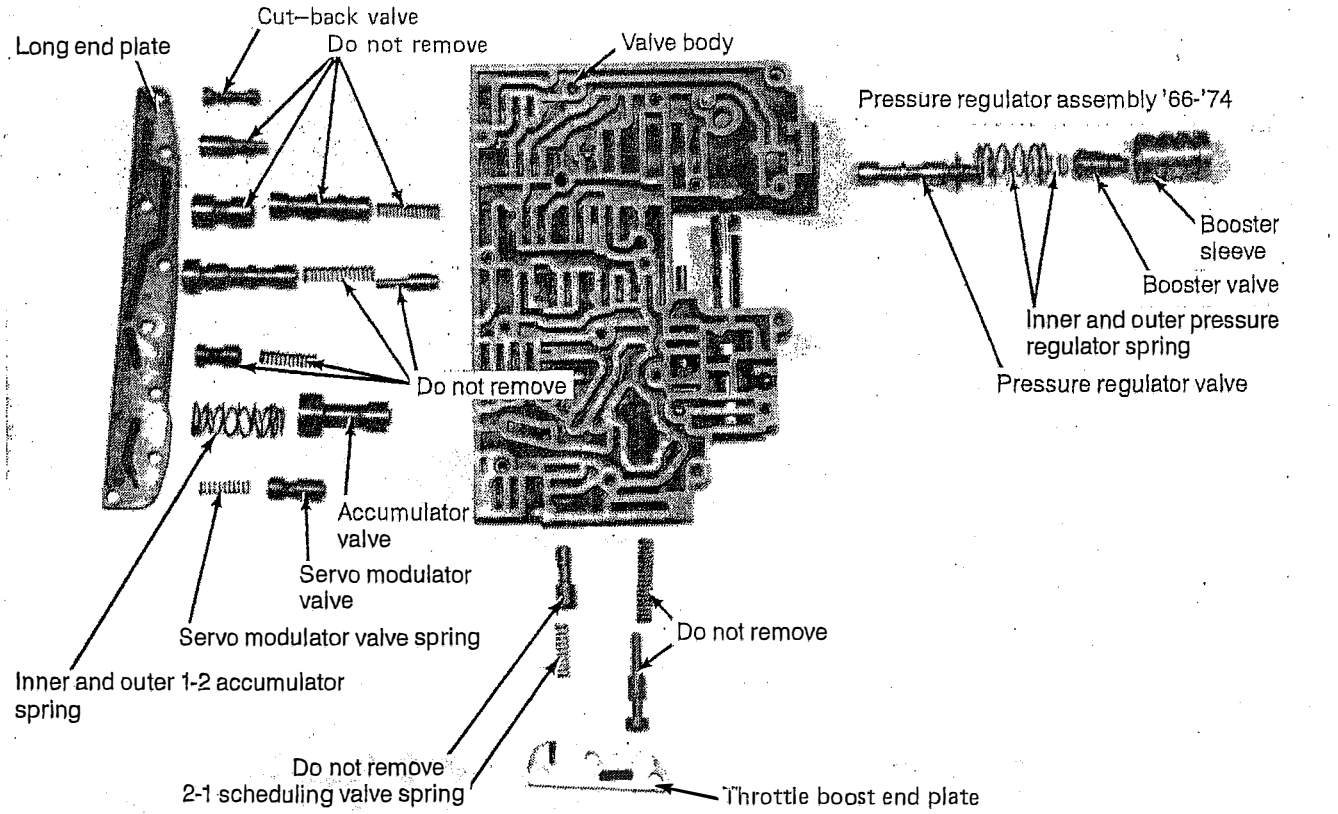



FIGURE 7

(See page 7 for Figure 7A)

the booster assembly down and hold it in place with your thumb. Slide the end plate into position and install the two hold-down bolts **finger tight.**

'75 and later: (See Fig. 7A, Page 7) Push in on the booster sleeve slightly and remove the retaining clip by prying it out carefully with a small screwdriver. Slowly remove the booster valve assembly and pressure regulator springs. Replace the outer spring with the orange spring supplied with the kit. Install the stock inner spring as removed. **Install the stock booster assembly as removed.** Make sure the valve is properly installed in the sleeve. Push the booster assembly down and hold it in place with your thumb. Snap the retaining slip into place. When properly installed, the clip will be below the surface of the **casting.**

STEP 10. Turn the **casting** so the throttle boost end plate is up. (See Fig. 7) Remove the two bolts that hold the end plate in place. Again, hold your thumb in place to prevent parts from springing out. Lift end plate off slowly to expose the 2-1 scheduling valve spring. Remove this spring and replace it with the **violet** spring supplied with the kit. Put the end plate back into position and hold it in place with your thumb. Install two hold down bolts **finger tight.**

STEP 11. Turn the **casting** so the long end plate faces up. (See Fig. 7) This end plate holds seven sets of valves in place. Remove eight bolts holding the end plate in place. Hold the end plate in place with your thumb while removing the last bolt. Slowly lift the end plate off to expose seven sets of valves and springs. If you hold the **casting** with the valves facing up, they won't come out and get mixed up. Remove one at a time as follows:

A. Intermediate Servo Modulator Valve – All Models. Remove the exposed spring and replace it with the special plug supplied with kit.

B. Accumulator Valve - **Street and Competition.** Remove the exposed springs (may be one or two springs) and replace with the large special plug supplied with the kit.

C. The following valves remain stock: 2-3 back-out valve, 2-3 shift valve, 1-2 shift valve, and line pressure coasting regulator valve.

D. Cut-back valve:

**Heavy Duty and Street:** No modifications are necessary for this application.

**Competition:** Remove cut-back valve and intall the ¼" steel ball supplied with the kit into the valve bore. **Install the valve as removed.**

No modified valve should be above the surface of the **casting.** If the two plugs are not below the surface of the **casting,** they will have to be ground down slightly.

**STEP 12.** Slide end plate into place, pushing each valve down into position as necessary. Install all end plate bolts into place and tighten **finger tight.**

**STEP 13.** Lay **casting** on bench with passages facing up. Install converter check valve assembly into place. (See Fig. 6) Install throttle pressure check ball assembly into place. Install 3-2 downshift valve retainer into place. Install low-reverse check ball (if equipped).

**Heavy Duty and Street:** Install 2-3 check ball into its pocket.

**Competition:** Do not install 2-3 check ball. Set **casting** aside.

**STEP 14.** Set **transfer plate** in front of you with the **separator plate** facing up. Note the position of the hold down plates. (See Fig. 8) Note the stud-type bolt on the large plate. Remove hold down plates and bolts. Remove **separator plate** from **transfer plate.** If there is a filter screen in the **separator plate,** discard it. Use the drill supplied and drill out the hole indicated. (See Fig. 8) Deburr the hole with a file, stone, or sandpaper.

**STEP 15.** Scrape any excess gasket material off both the **transfer plate** and **separator plate.** Wash both parts in solvent or gasoline.

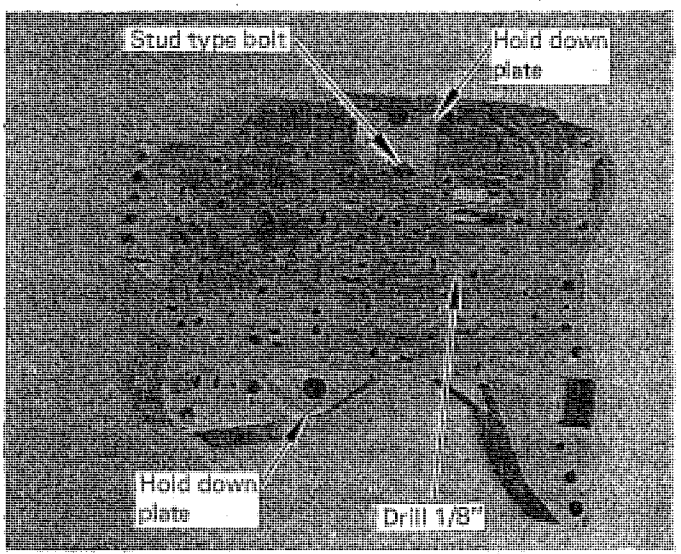



FIGURE 8

**STEP 16.** Install the **separator plate** into position on the **transfer plate.** Do not use a gasket between the two. Install the hold down plates into position and install three bolts finger tight. (See Fig. 8) Make sure stud bolt is in the correct location. Tighten bolts finger tight.

**STEP 17.** Install **separator plate - transfer plate** assembly on to **casting.** Make sure check valve assemblies are in position (See Fig. 6). Make sure throttle pressure check ball contacts separator plate. Hold the valve body halves together and install six short bolts and one long bolt in place. (See Fig. 5) Tighten bolts **finger tight.**

**STEP 18.** Tighten all valve body bolts 30 to 45-in.lbs. in this order: Three hold down plate bolts, seven valve body bolts and twelve end plate bolts.

**STEP 19.** Install new filter and gasket. (Note: Some C-6 transmissions are factory equipped with an extension tube as part of the filter. In these applications the B&M filter should not be used. The stock filter should be washed in solvent and reinstalled in the transmission.) Install eight long filter bolts and one extra-long filter bolt. (See Fig. 4) Align two large filter bolt holes with **casting** and tighten bolts to 30-45-in.lbs.

**STEP 20.** Turn valve body over and install one short and one long bolt in position (See Fig. 3), tighten 30 to 45-in.lbs. The valve body is now complete.

**STEP 21.** Install valve body onto transmission carefully. Align selector lever tab to manual valve slot and align kickdown lever to approximate position, then engage selector lever into manual valve while working kickdown lever slightly by hand to find its working position. (A spring action will be felt) You should be able to hold the valve body in place flat against the case without excessive force. The kickdown lever should move freely with no bind as it did before removal. (Reference Step 2) Install valve body bolts finger tight. The two long bolts go thru the filter. Again check for free operation of kickdown and shifter linkage. If everything is operating properly, tighten bolts 95-125 in. lbs. Failure to properly install valve body can result in damage to linkage, valve body, and/or case.

**STEP 22.** Clean pan and scrape any old gasket off the pan and case. Install pan and new gasket and tighten pan bolts 12 to 16-ft.lbs.

**STEP 23.** Check shifter adjustment: Make sure detents in shifter coincide with detents in transmission. Adjustment should be made in Drive. Loosen pinch bolt located on shift rod and align shifter and transmission in Drive position and tighten pinch bolt.

**STEP 24.** Check kickdown adjustment: Depress gas pedal and make sure you are getting full throttle. Adjust if necessary. Hold kickdown rod in full throttle position. There should be about 1/16" clearance between the adjustment screw and its stop.

**STEP 25.** Lower vehicle. Try to keep the rear wheels off the ground. Add four quarts of B&M Trick Shift or Type "F" ATF. Place shifter in neutral, start engine and check the fluid level. Add fluid until it is at the **add** mark. Shift transmission through all gear positions. If the rear wheels are off the ground, allow the transmission to shift through all gears. Check fluid level.

**STEP 26.** Road Test: Drive vehicle for 1-2 miles to warm up fluid. Check fluid level and add to full mark. **Do not overfill!!** This will cause foaming and over heating.

## TOOLS REQUIRED FOR C–6 TRANSPAK INSTALLATION

| | | | |
|---|---|---|---|
| 1 | Speed Handle or Ratchet – 3/8" drive | 1 | 3/8" 12–Point Socket – 3/8" drive |
| 1 | 1/2" Socket – 3/8" drive | 1 | Torque Wrench 0–250–in. lbs. |
| 1 | 3/8" Socket – 3/8" drive | 1 | 1/4" Drill Motor |
| 1 | 5/16" Socket – 3/8" drive | 1 | Small Screwdriver |
| 1 | 13/16" Wrench | 1 | Small File |

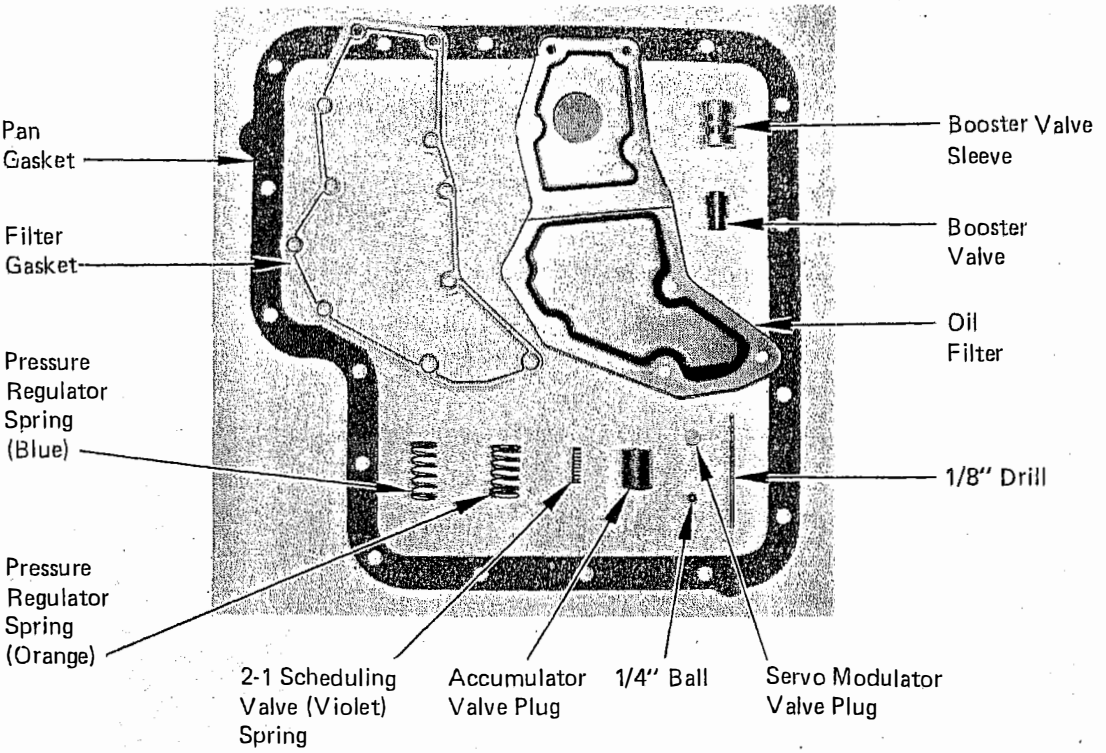
## TROUBLE SHOOTING GUIDE

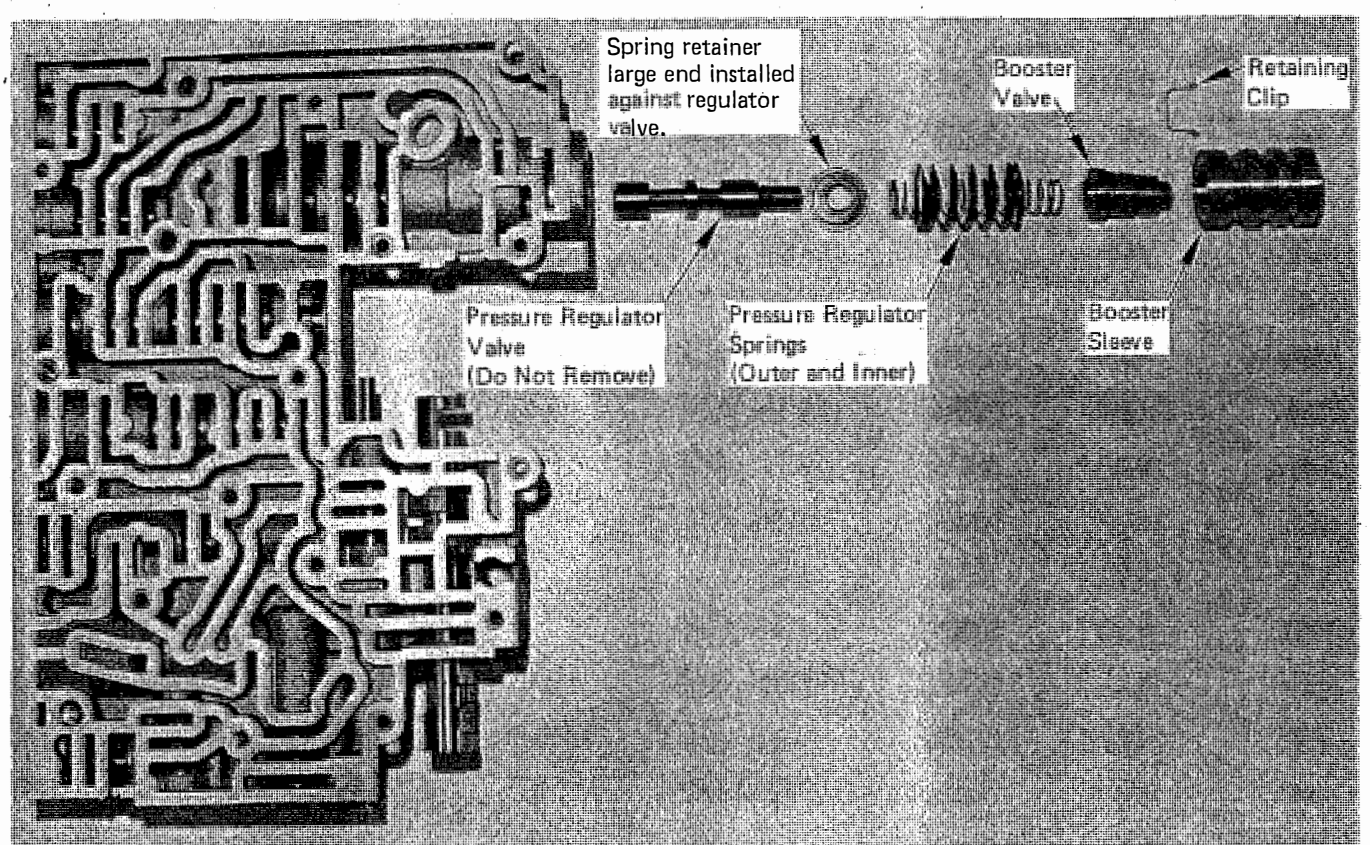
## FORD C–4 & C–6

| Malfunction | Probable Cause |
|---|---|
| Slips | Low fluid level |
| | Pressure regulator valve assembly improperly installed. |
| | Booster valve installed improperly |
| | Valve body or end plate bolts loose |
| Overheating or foaming at dipstick tube or breather | High fluid level |
| | Cooler plugged |
| | Cooler insufficient |
| Erratic shifting | Shifter misadjusted |
| | Kickdown rod misadjusted |
| | Low fluid level |
| | High fluid level |
| | Vacuum line cracked or leaking |
| | Valve body bolts loose |
| | End plate bolts loose |
| Late hard shifts | Vacuum line cracked or leaking |
| | Modulator damaged |
| | Kickdown linkage misadjusted |
| Will not shift | Valve bolts loose |
| | End plate bolts loose |
| One gear only | Shifter not engaged properly |
| Early soft shifts | Modulator rod missing or incorrect |

## C–6 TRANSPAK PARTS LIST

Inspect the contents of your Transpack kit carefully. If you are missing any of the parts shown below, do not proceed. Contact your B&M dealer.




For 1975 and later models.

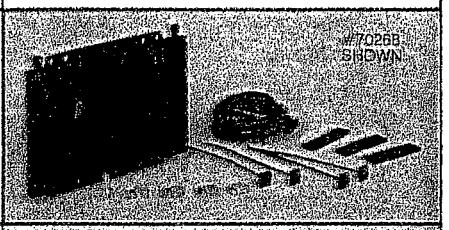
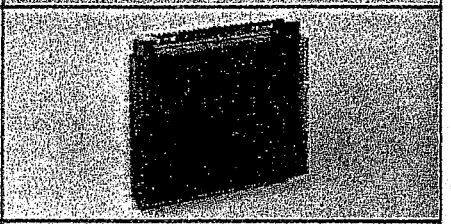
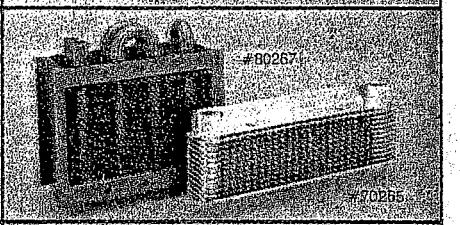
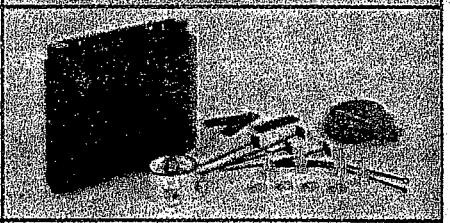
FIGURE 7A

# B&M Supercoolers - Engine and Transmission Oil Coolers

B&M now offers an exciting all new lineup of transmission and engine oil coolers utilizing a totally unique design. These new coolers are of 100% aluminum construction and use embossed plates sandwiched together to create one of the most efficient oil cooling devices available. Not only does this unique design provide for maximized cooling through more efficient heat dissipation but it also provides a much sturdier cooler which is practically impervious to flying rocks or other debris.

One of the big advantages of the highly efficient design of the B&M Supercooler is that it requires a smaller cooler (in over-all size) for a given size vehicle. B&M's coolers are, as are most other coolers, rated by overall gross vehicle weight (GVW). To determine your GVW, take the weight of the vehicle plus the weight of its total payload plus the weight of anything it might be towing and add all these numbers together. Then you should select a cooler size that is the next higher GVW rating above what you need. For example, if your vehicle's GVW is 17,500 pounds you would select a 19,000 GVW Supercooler.

When comparing B&M cooler ratings with competitive brands, keep in mind that, unlike many other cooler companies, B&M's ratings are not inflated. In the ever competitive world of transmission coolers some companies have resorted to inflated ratings in order to keep their selling price at a lower level. (The bigger the cooler, the higher the price.) Because B&M's ratings are on the conservative side you may find that you might have to pay a little more for the correct size B&M Supercooler but you can be assured that you are getting a cooler which is more than adequate for the application.

| TYPE | GVW RATING | SIZE | PART NO. | PICTORIAL REPRESENTATION |
|---|---|---|---|---|
| Automatic Transmission Oil Coolers w/ installation kit | 10,000<br>13,000<br>16,000<br>19,000<br>24,000 | 11 X 2¼ X ¾<br>11 X 4 X ¾<br>11 X 5¾ X ¾<br>11 X 7½ X ¾<br>11 X 6 X 1½ | 70253<br>70254<br>70255<br>70268<br>70264 |  |
| Racing Automatic Transmission Oil Cooler w/o installation kit | 28,000 | 11 X 8 X 1½<br>½ NPT | 70266 |  |
| Street Rod Automatic Transmission Oil Coolers w/o installation kit | 15,000<br>15,000 | 11 X 4½ X 1½*<br>8⅛ X 6 X 3⅛**<br>*½ NPT<br>**⅜ NPT | 70265*<br>80267<br>*Polished Aluminum |  |
| Engine Oil Cooler w/ installation kit | Fits all Chevrolet V-8 Engines | 11 X 8 X 1½ | 70270 |  |
| | Fits all other Domestic Engines | | 70271 | |
| Remote Transmission Filter | Suitable for all Automatic Transmissions | — | 80277 |  |

Note: B&M offers two different design transmission coolers for street rod applications. One is of the conventional tube and fin design and the other is B&M's unique embossed plate design. Both coolers will accomplish the same amount of cooling and both use threaded fittings. However due to the limited space available on most street rods, two different sizes are offered to provide maximum flexibility in mounting. Because custom lines and fittings are usually used in these applications, the B&M Street Rod Cooler is supplied without an installation kit as is the Racing Transmission Cooler **#70266.** All other kits include fittings, hose, and mounting hardware. Engine oil coolers also include necessary adapters.