



# Installation Instructions

## TH700-R4 (4L60) Transkit

Part No. 70232 1982 thru 1986

Part No. 70233 1987 thru 1993  
non-electronic models

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Congratulations! You have just purchased the most versatile re-building kit available for the TH700 (4L60) transmission. The **B&M TH700 (4L60) Transkit** contains special parts and instructions to upgrade your stock TH700 (4L60) transmission to the same specifications used by **B&M** for building High Performance Street Strip TH700's.

For transmission assembly and disassembly procedures we recommend you consult the appropriate GM service manual for your particular model year transmission. The only parts that differ from the standard assembly and disassembly are the valve body and accumulators (covered in the 70235 instructions) and the 3-4 clutch and the drain plug (covered in these instructions).

The TH700 (4L60) is a METRIC dimensioned transmission so you will need metric sockets and wrenches, in addition some of the overhaul procedures REQUIRE SPECIAL TOOLS for proper assembly and disassembly of the transmission.

**IMPORTANT:** We suggest that you take the time to completely read through the instructions and check the parts list before beginning disassembly.

You will need approximately 5 Qts

ATF for the transmission and 6 Qts for the converter

### 3-4 CLUTCH INSTALLATION

The **B&M** 3-4 clutch pack uses the maximum number of standard thickness plates (6 friction and 5 steel) possible (see **Figure 1**). If the unit you are working on had 5 friction and 4 steel plates you will have to replace the 3-4 apply ring (see **Figure 3**) with **G.M. part number 8642374** This part number has been discontinued by GM, but is available from Transtar Industries, Cleveland, OH, as P/N **D61975** Call 1-800-321-8830 for the location and number of their nearest location. This apply ring will accommodate the 6 friction and 5 steel plate package. The 6 friction plate package apply ring is 3.71" long compared to 3.88" for the (5 friction plate package).

In some cases there is room to install a seventh friction plate in the clutch. See the section "Additional Clutch Plate" on the next page.

A new 3-4 clutch apply plate is supplied with this kit. The new apply plate replaces both the apply plate and the 3-4 clutch retainer. **Figure 4** shows the old and new parts.

The selective 3-4 clutch backing plate is not included as part of this kit. If the existing backing plate does not

produce the required clutch pack clearance you will have to obtain the correct backing plate from a G.M. parts dealer. We have included a thin (.094") 3-4 clutch backing plate retaining ring that can be used in pre-1988 units in place of the thicker (0.125") ring to extend a particular backing plate's adjustment range.

Installation of **B&M's 3-4 CLUTCH PACK** is similar to installing a stock 3-4 clutch pack. We recommend that you consult the appropriate transmission service manual for information regarding special tools, assembly procedures, bolt torques, service and diagnosis, etc. for items not covered here. The following instructions assume the input housing is assembled up to the point where the 3-4 clutch pack is to be installed.

### INSTALLATION (See Figure 3)

**STEP 1.** Make sure the correct (3.71") 3-4 clutch apply ring (#100) is installed in input housing, then install the following:

1. A new 3-4 clutch apply plate (#102).

**NOTE:** This apply plate does not require the use of the original 3-4 clutch apply ring retainer.

2. **B&M** supplied 3-4 clutch plates (#103), starting with composition faced plate first and alternate with

steel plates (**EXCEPTION:** '87-'93 install 15 tooth steel first).

**IMPORTANT:** Index the five (5) wide slots on the steel plates with the wide slots in the input housing. The wide slots are clearance for the 3-4 clutch boost springs (#106) that will be installed after checking the clutch pack clearance.

3. Install original 3-4 clutch backing plate (#104) and thin (0.094 in.) retaining ring (#105) supplied with kit ('82-'86 only). The original backing plate may be too thick in which case you will have to use a thinner backing plate. Install the 3-4 clutch backing plate with chamfer side up.

**CLUTCH CLEARANCE CHECK**

**STEP 2. 3-4 CLUTCH CLEARANCE**

**WARNING:** Do not omit this step, optimum 3-4 clutch operation and durability depends on proper clutch pack end clearance setting.

1. Check the end clearance between the 3-4 clutch backing plate (#104) and the first composition faced plate (#103) with a feeler gage. Check the clearance all the way around between the plates to insure that the gap is uniform (plates are parallel). If the gap is not uniform all around, recheck the installation of the individual 3-4 clutch parts to determine cause.
2. Select the proper backing plate (#104) thickness from the chart (**Figure 2**) to obtain the correct clutch clearance. You can use the thick (0.125 in.) or thin (0.094") 3-4 Backing plate retaining ring (#105) in combination with selective backing plates for additional clearance adjustment range ('82-'86 models only).

**IMPORTANT:** The 3-4 clutch pack end clearance has a direct effect on 2-3 shift feel. For high perform-

ance applications the best 2-3 shift feel and 3-4 clutch pack life is obtained when the 3-4 clutch clearance is set as close to the low side of the chart tolerance as possible.

**CAUTION:** DO NOT set the 3-4 clutch pack end clearance below the minimum dimension specified.

**ADDITIONAL CLUTCH PLATE**

If you need additional clutch capacity in the 3-4 clutch, it is possible to add a seventh friction plate to the clutch in many case. As normally assembled, there is a steel plate between the 3-4 clutch apply plate and the first friction plate. In many cases the stack up of the clutch allows room for an additional friction plate to be installed between the apply plate and the steel plate with the use of a thin backing plate. The correct clutch clearance must be maintained with the extra plate.

**3-4 CLUTCH FINAL ASSEMBLY**

**STEP 3.** Once the correct 3-4 clutch clearance has been determined the 3-4 clutch boost springs can be installed.

1. Remove 3-4 clutch Retaining ring (#105) and Backing plate (#104).
2. Install the five (5) 3-4 clutch boost spring assemblies (#106) as shown in (**Figure 2**). Install the boost spring assemblies so the captured end of the springs face the clutch backing plate. **IMPORTANT:** The 3-4 clutch boost springs are designed for use ONLY with the (3.71") long 3-4 clutch apply ring. The boost springs can be used in five (5) friction plate clutch packs **BUT** you must install two (2) extra steel plates in the clutch pack to prevent the boost springs from becoming coil bound (solid) as the clutch pack wears.
3. Install the 3-4 clutch backing plate

(#104) then compress 3-4 clutch boost springs and install 3-4 clutch retaining ring (#105).

**BEFORE OPERATING VEHICLE**

Once the transmission is installed in the vehicle it is important to verify that the transmission's hydraulic system is functioning properly to prevent premature component failure. At **B&M**, every transmission we build is thoroughly tested on a commercial transmission test stand to verify proper operation and correct oil pressures. We realize that a test machine is not available to most people using this kit however, we strongly recommend checking for correct oil pressures. Checking the oil pressures **BEFORE** driving the vehicle should be considered cheap insurance when compared against the cost of rebuilding the transmission a second time because a minor problem was not detected. Oil pressure tap locations, appropriate pressure charts and trouble shooting guides are provided in most service manuals. You will need a 0-300 PSI gage to check the pressures. Make sure the T.V. cable is properly connected and adjusted before checking oil pressures or operating the vehicle.

**DRAIN PLUG INSTALLATION**

Locate mounting position inside pan for B&M Drain Plug. Make sure to avoid locating plug where it could interfere with internal transmission parts, i.e. valve body, filter, servo, etc.

Drill 1/2" diameter hole in position determined. Remove all burrs around hole and clean pan to avoid contamination of transmission fluid. Install Drain Plug as shown in figure. Tighten nut to 25 lb.ft. maximum. Use wrench on bolt head to prevent rotating entire assembly. (**Figure 5**)

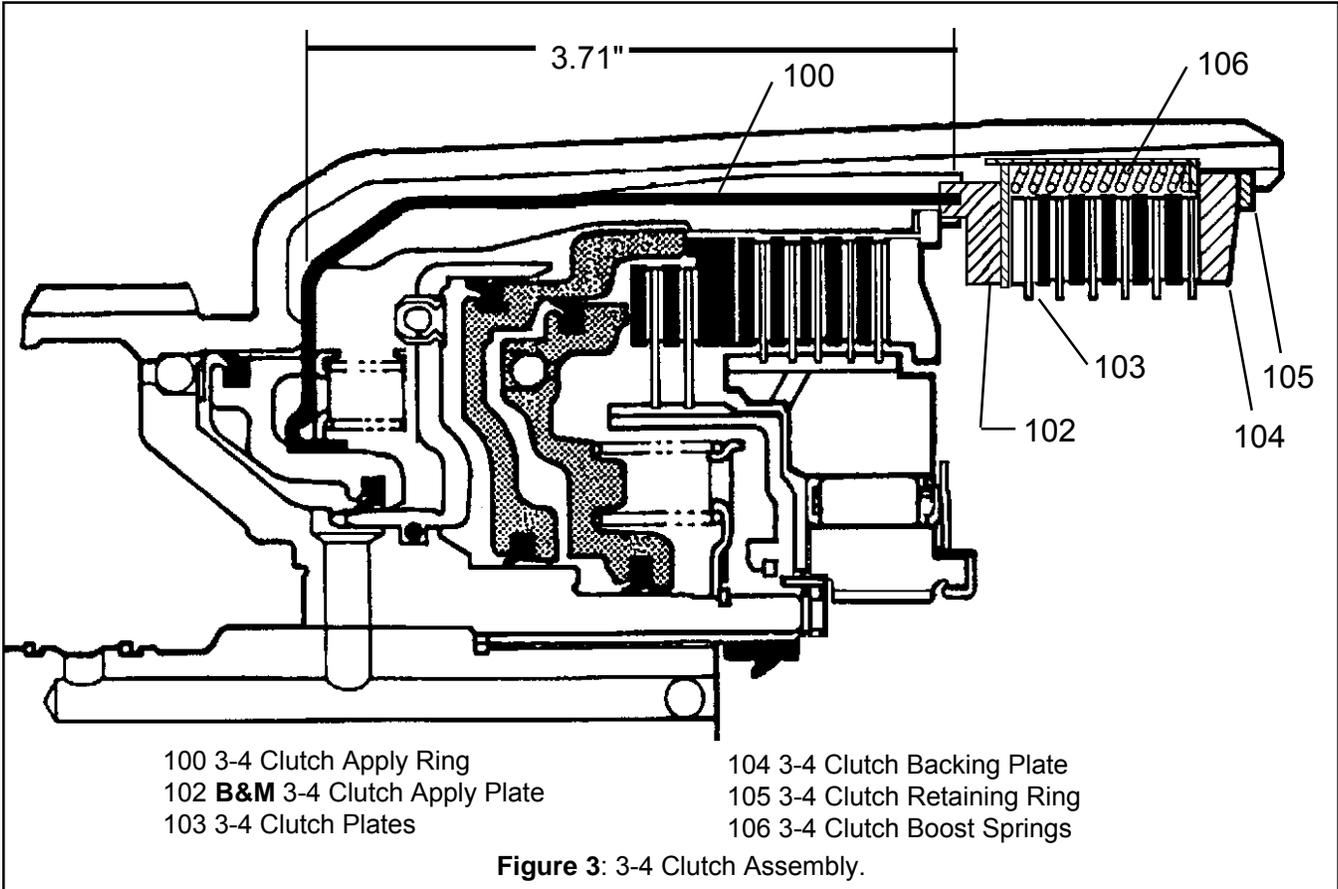
PLATE TYPE	THICKNESS	QUANTITY REQUIRED
FLAT STEEL CLUTCH PLATE	1.97mm (.078")	5
COMPOSITION FACED CLUTCH PLATE	2.03mm (.079")	6

**Figure 1: 3-4 Clutch Information Chart.**

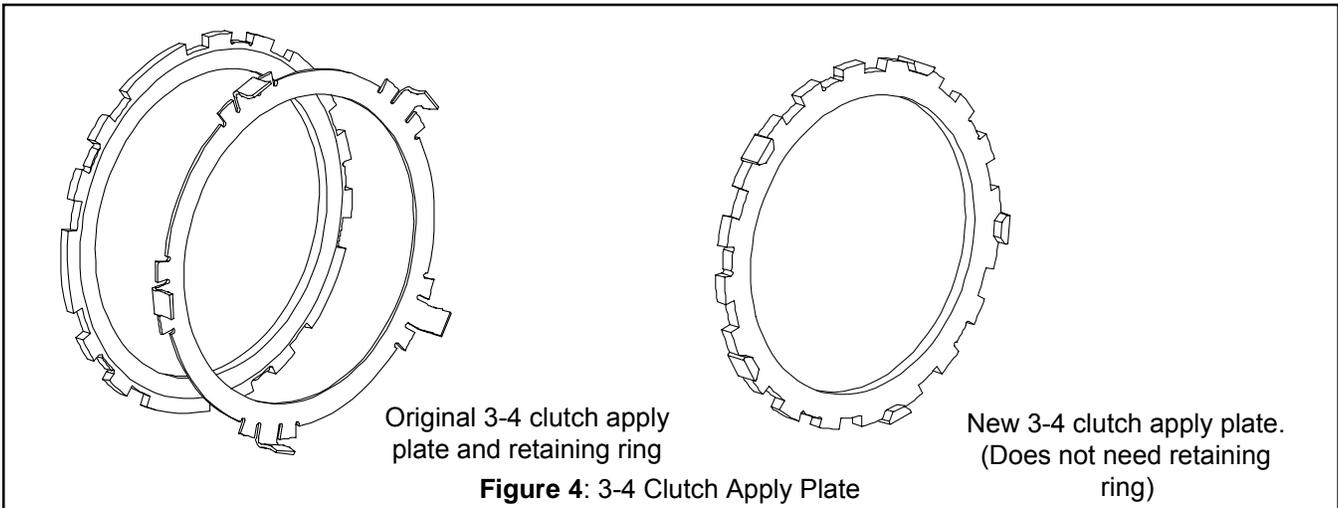
PLATE THICKNESS	PART NO.	ID NO.
7.125mm (.281")	8642621	1
6.125mm (.241")	8642622	2
5.125mm (.202")	8642623	3
4.125mm (.162")	8642624	4

USE BACKING PLATE WHICH GIVES A CLUTCH PACK CLEARANCE OF 1.00mm-2.50mm (.039"-.098")

**Figure 2: 3-4 Clutch Backing Plate Selection.**



**Figure 3: 3-4 Clutch Assembly.**

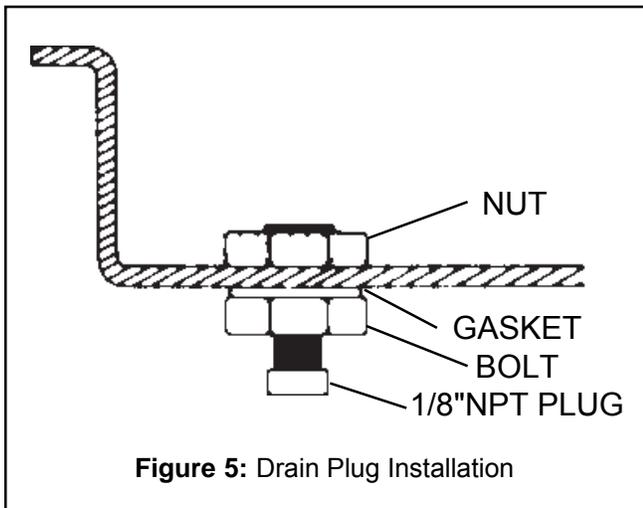


**Figure 4: 3-4 Clutch Apply Plate**

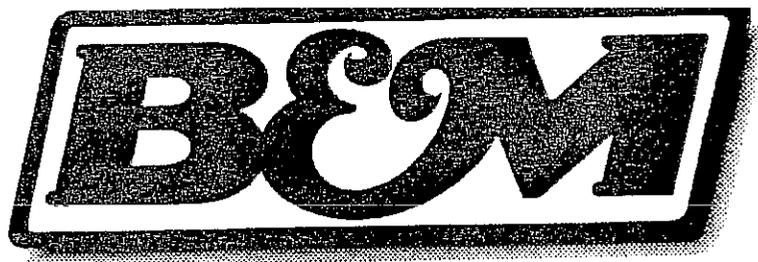
# Parts List

Description	Qty
<b>70232 SKIN PACK CARD</b>	1
PLATE, FRICTION REV INPUT CL .078"	4
PLATE, STEEL REV INPUT CL .078"	3
PLATE, FRICTION OVERRUN CL .078"	2
PLATE, STEEL OVERRUN CL .092"	2
PLATE, FRICTION FWD CL .070" SM	5
PLATE, STEEL FWD CL .090"	4
PLATE, FRICTION 3-4 CL .080" SM	6
PLATE, STEEL 3-4 CL .078" 20T	5
PLATE, FRICTION LO REV CL .088" SM	5
PLATE, STEEL LO REV CL .070"	4
BAND, 2-4	1
PLATE, 3-4 CLUTCH APPLY	1
RING, RETAINING 3-4 CL (.094")	1
<b>BAG ASSY 70232 TRANSKIT</b>	1
SPRING, TH700 PRESSURE REG (BLUE)	1
RING, RETAINING PRESSURE REG	1
ROD, BLOCKER LINE BIAS	1
SPACER 5/16"ID X 3/8"LG RED	1
SPACER 5/16"ID X 5/8"LG YELLOW	1
SPACER 5/16"ID X 3/4"LG BLUE	2
DRILL, .094 (3/32")	1
DRILL, .125 (1/8")	1
SPRING, 3-4 CLUTCH BOOST	5
BUSHING, FRONT PUMP	1
BUSHING, EXTENSION HOUSING	1
DRAIN PLUG	1
NUT, HEX JAM 1/2"-20	1
PLUG, 1/8" NPT STEEL	1
GASKET, DRAIN PLUG	1
<b>70232 MISCELLANEOUS</b>	
OVERHAUL SEAL AND GASKET KIT	1
FILTER, TRANSMISSION OIL	1
INSTRUCTIONS, 70235 TRANSPAK	1

Description	Qty
<b>70233 SKIN PACK CARD</b>	1
PLATE, FRICTION REV INPUT CL .068"	4
PLATE, STEEL REV INPUT CL .078"	4
PLATE, FRICTION OVERRUN CL .078"	2
PLATE, STEEL OVERRUN CL .092"	2
PLATE, FRICTION FWD CL .070" SM	5
PLATE, STEEL FWD CL .090"	5
PLATE, FRICTION 3-4 CL .080" SM	7
PLATE, STEEL 3-4 CL .078" 20 TOOTH	5
PLATE, STEEL 3-4 CL .078" 15 TOOTH	1
PLATE, FRICTION LO REV CL .088" SM	5
PLATE, STEEL LO REV CL .070"	4
BAND, 2-4	1
PLATE, 3-4 CLUTCH APPLY	1
<b>BAG ASSY 70233 TRANSKIT</b>	1
SPRING, TH700 PRESSURE REG (BLUE)	1
RING, RETAINING PRESSURE REG	1
ROD, BLOCKER LINE BIAS	1
SPACER 5/16"ID X 3/8"LG RED	1
SPACER 5/16"ID X 5/8"LG YELLOW	1
SPACER 5/16"ID X 3/4"LG BLUE	2
DRILL, .094 (3/32")	1
DRILL, .125 (1/8")	1
SPRING, 3-4 CLUTCH BOOST	5
BUSHING, FRONT PUMP	1
BUSHING, EXTENSION HOUSING	1
DRAIN PLUG,	1
NUT, HEX JAM 1/2"-20	1
PLUG, 1/8" NPT STEEL	1
GASKET, DRAIN PLUG	1
<b>70233 MISCELLANEOUS</b>	
OVERHAUL SEAL AND GASKET KIT	1
FILTER, TRANSMISSION OIL	1
INSTRUCTIONS, 70235 TRANSPAK	1



**Figure 5:** Drain Plug Installation

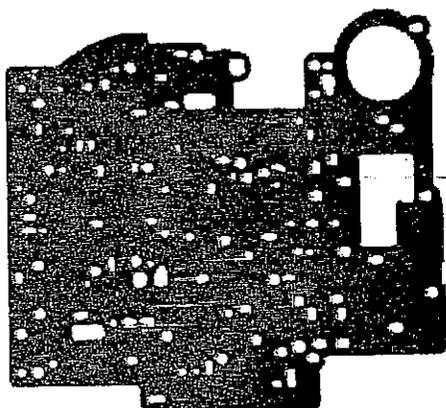


# ***B&M TechBulletin***

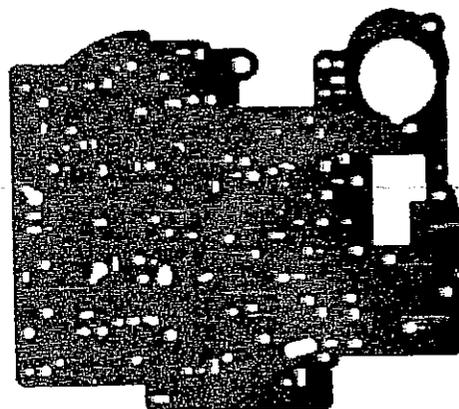
## ***TH-700R4 (4L60) Valve Body Gaskets***

The TH-700R4 transmissions must use the correct valve body gaskets or transmission failure will occur. There are two sets of gaskets for this transmission. The early gaskets fit '82 - '86 transmissions and the late gaskets fit '87 - '93 non electronic transmissions. Often times the late transmissions are identified by the auxiliary valve body, however many early '87 transmissions did not have an auxiliary valve body, but they still use the late valve body gaskets. Compare the supplied gaskets to the old gaskets you removed during transmission disassembly. Also check gaskets against separator plate to make sure none of the holes in the separator plate are blocked or covered. If there are any holes covered you may be using the wrong gaskets. Installing the early gaskets on the late transmission will result in transmission failure!

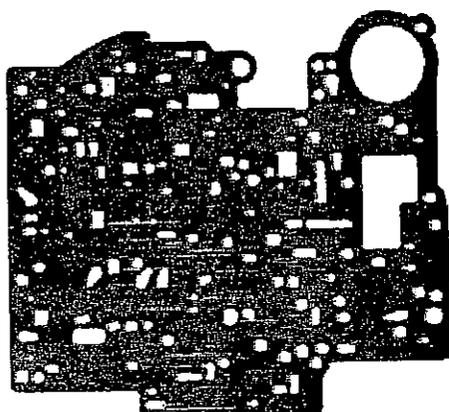
1982-'86 upper gasket



1982-'86 lower gasket



1987-'93 upper gasket



1987-'93 lower gasket

