



THM 700-R4 "UPDATE HANDBOOK"

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UPGRADE ENHANCEMENTS

There are several great improvements that were made in the 4L60-E and 4L65-E family, that will retrofit back into your 700-R4 transmission and will greatly enhance the durability and reliability of your 700-R4 unit. These we refer to as "Upgrade Enhancements".

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INTRODUCTION THM 700-R4 (4L60) UPDATE HANDBOOK

*Updated
January, 2004*

The 1987 through 1993 THM 700-R4 transmissions were produced with many engineering design changes. These changes have affected nearly every part used in the 700-R4. This "Update Handbook" will explain each change, the reason for the change, the parts that are affected by the change and any parts interchangeability concerns created by the change. 1993 was the last year the 700-R4 transmission was produced and this manual will cover all changes up through and including the 1993 changes.

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The information and part numbers contained in this booklet have been carefully compiled from industry sources known for their reliability, but ATSG does not guarantee its accuracy.

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Technical Service Information

1982 CHANGE:

CHANGE: Beginning on May 3, 1982, a new forward sprag clutch entered production, replacing the forward roller clutch on all THM 700-R4 transmissions.

REASON: Greatly increase durability.

PARTS AFFECTED:

- (1) ROLLER CLUTCH ASSEMBLY - Changed to a Sprag type freewheel with 26 elements, as shown in Figure 1, for greatly increased durability.
- (2) OUTER RACE - Lube hole positions changed and the inside diameter changed, as shown in Figure 2.
- (3) INNER RACE - Pressed on flange added, as shown in Figure 3.
- (4) OVERRUN CLUTCH HUB - Raised area added to each of the tangs on the hub, as shown in Figure 4.
- (5) INPUT SUN GEAR - Shoulder on sun gear was reduced in height, which also reduced the overall height, as shown in Figure 5.

INTERCHANGEABILITY:

None of the parts listed above will interchange with one another because of the difference in the dimensions, however, when the sprag type parts are used as an assembly they will retro-fit back on all models of the THM 700-R4 transmission.

Do not mix any roller clutch design parts with sprag clutch design parts.

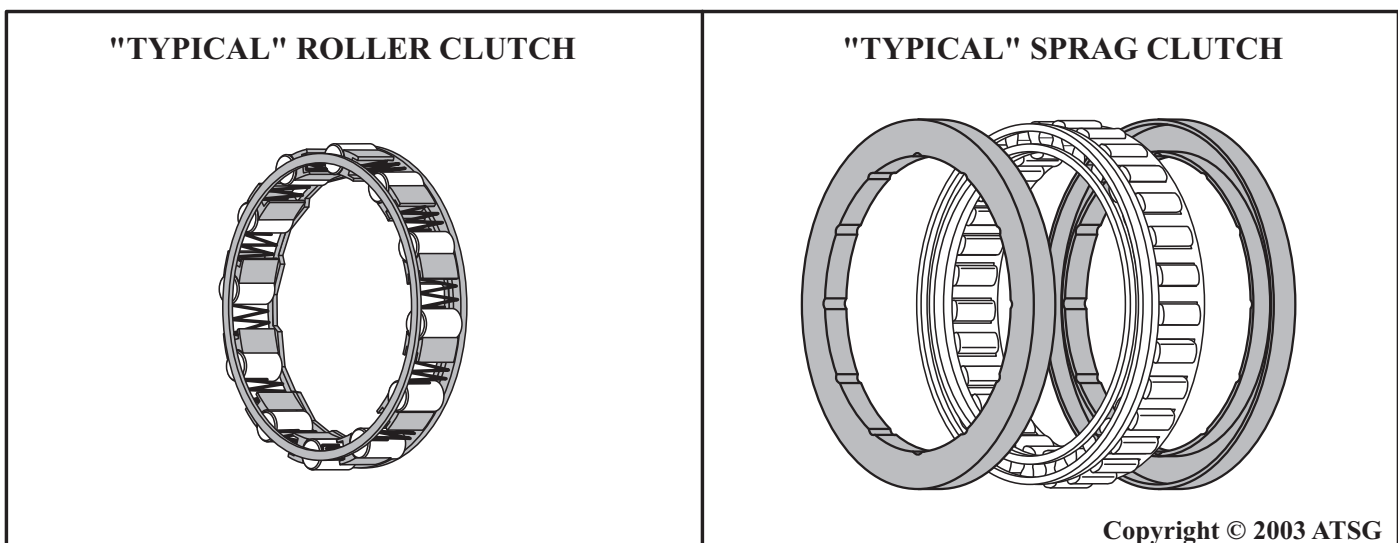


Figure 1

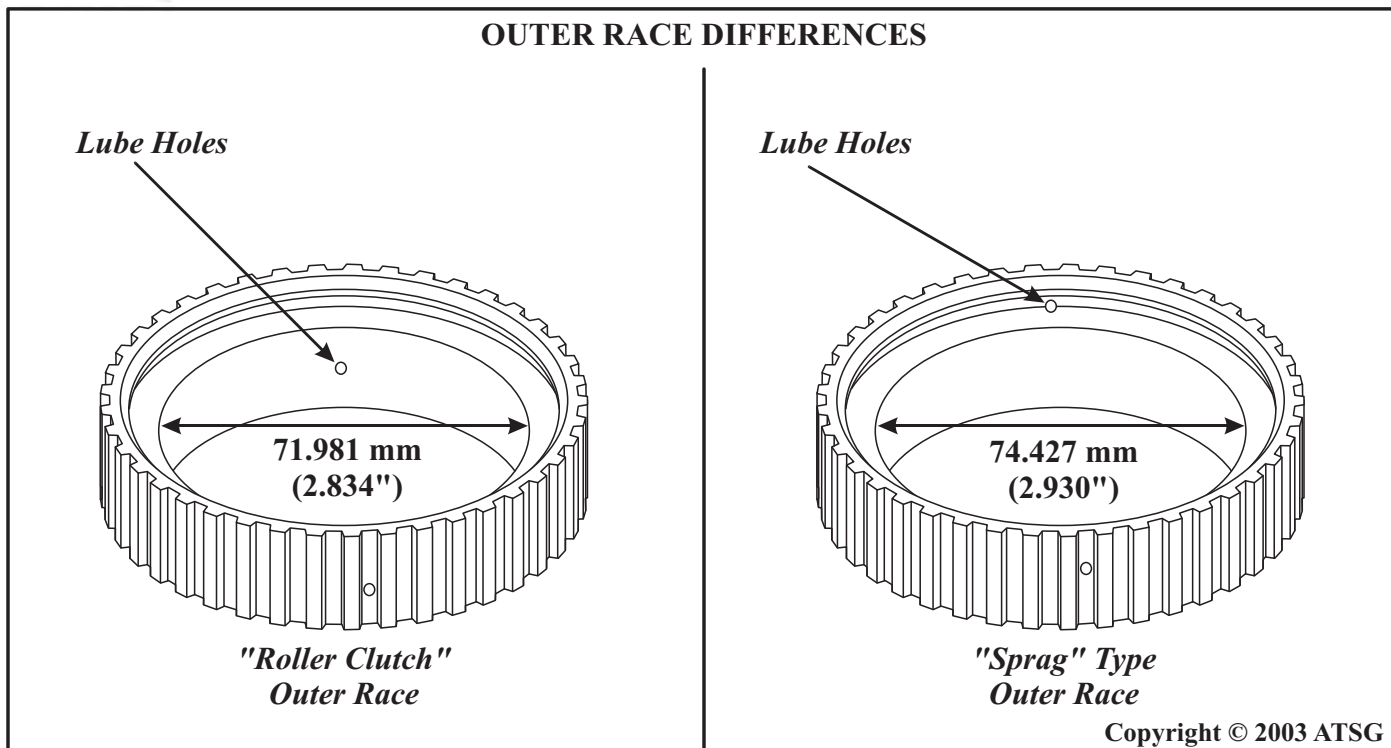


Figure 2

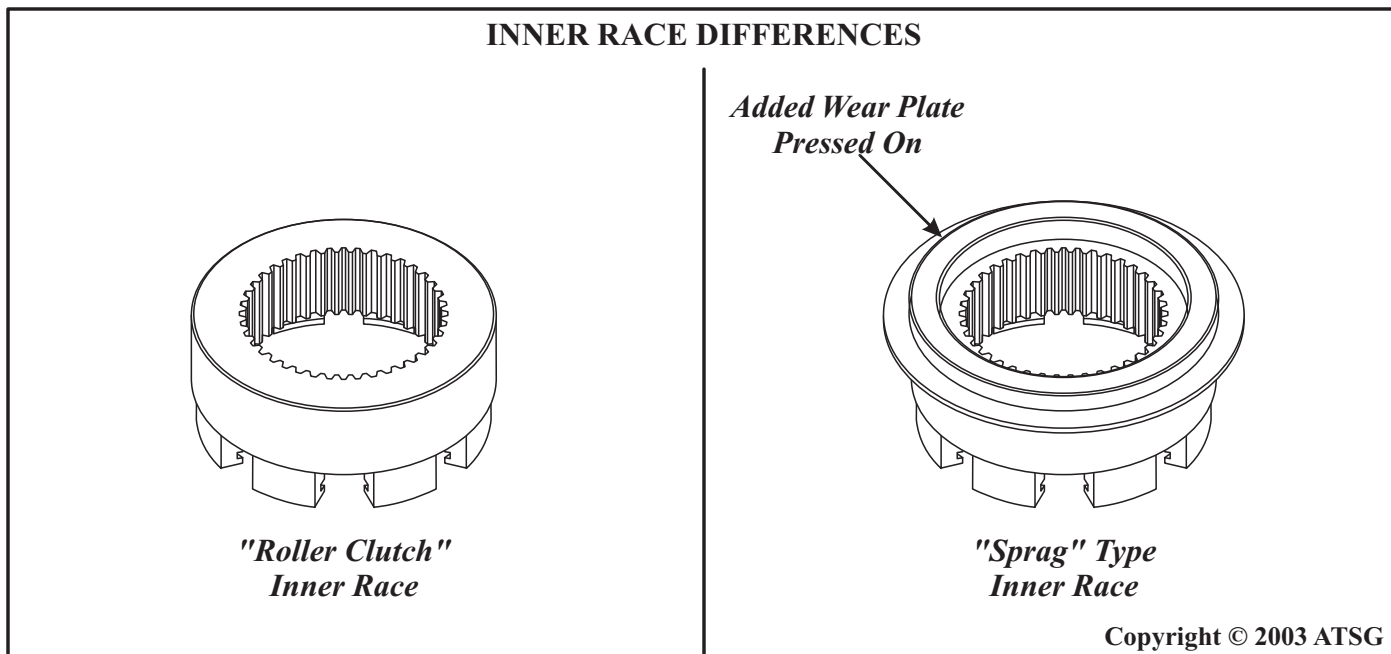
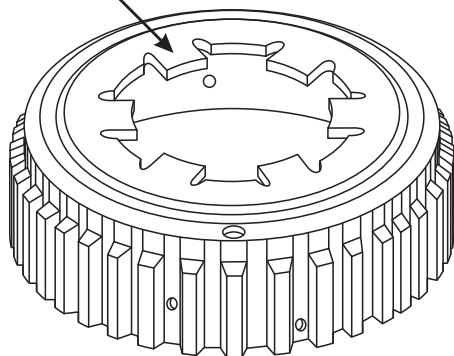


Figure 3

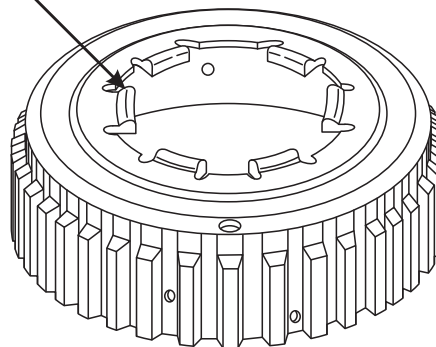
OVERRUN CLUTCH HUB DIFFERENCES

Tangs Were Flat



**"Roller Clutch"
Overrun Clutch Hub**

*Raised Area
On Tangs*



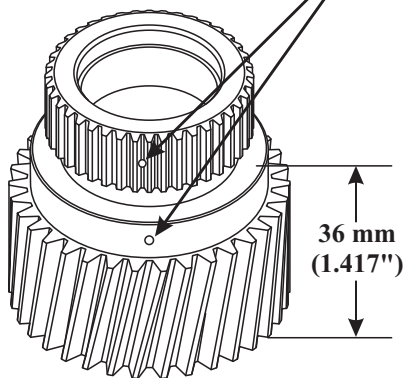
**"Sprag" Type
Overrun Clutch Hub**

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Figure 4

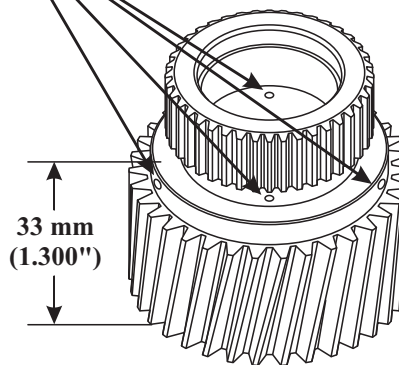
SUN GEAR DIFFERENCES

Lube Holes



**"Roller Clutch"
Input Sun Gear**

Lube Holes



**"Sprag" Type
Input Sun Gear**

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Figure 5



Technical Service Information

1984 CHANGE:

CHANGE: Beginning on January 15, (Julian Date 015) 1984, all THM 700-R4 transmissions were built with a new input housing assembly, as shown in Figure 6. Start of production for 1985, all input housings were also built with an added air bleed cup plug, as shown in Figure 6.

REASON: Increased durability for 3-4 clutches.

PARTS AFFECTED:

(1) INPUT HOUSING ASSEMBLY - The previous design input housing had a check ball seat drilled into the housing. A check ball was installed into this hole and the opening was then staked to retain the ball, as shown in Figure 6.

The new design **1985** input housing has a check ball retainer assembly which is pressed into the housing, as shown in Figure 6, **and** an added air bleed orifice cup plug.

INTERCHANGEABILITY:

The new design input housing with the ball capsule assembly and the air bleed orifice cup plug can be used on all past models.

Do not use either of the previous design input housings.

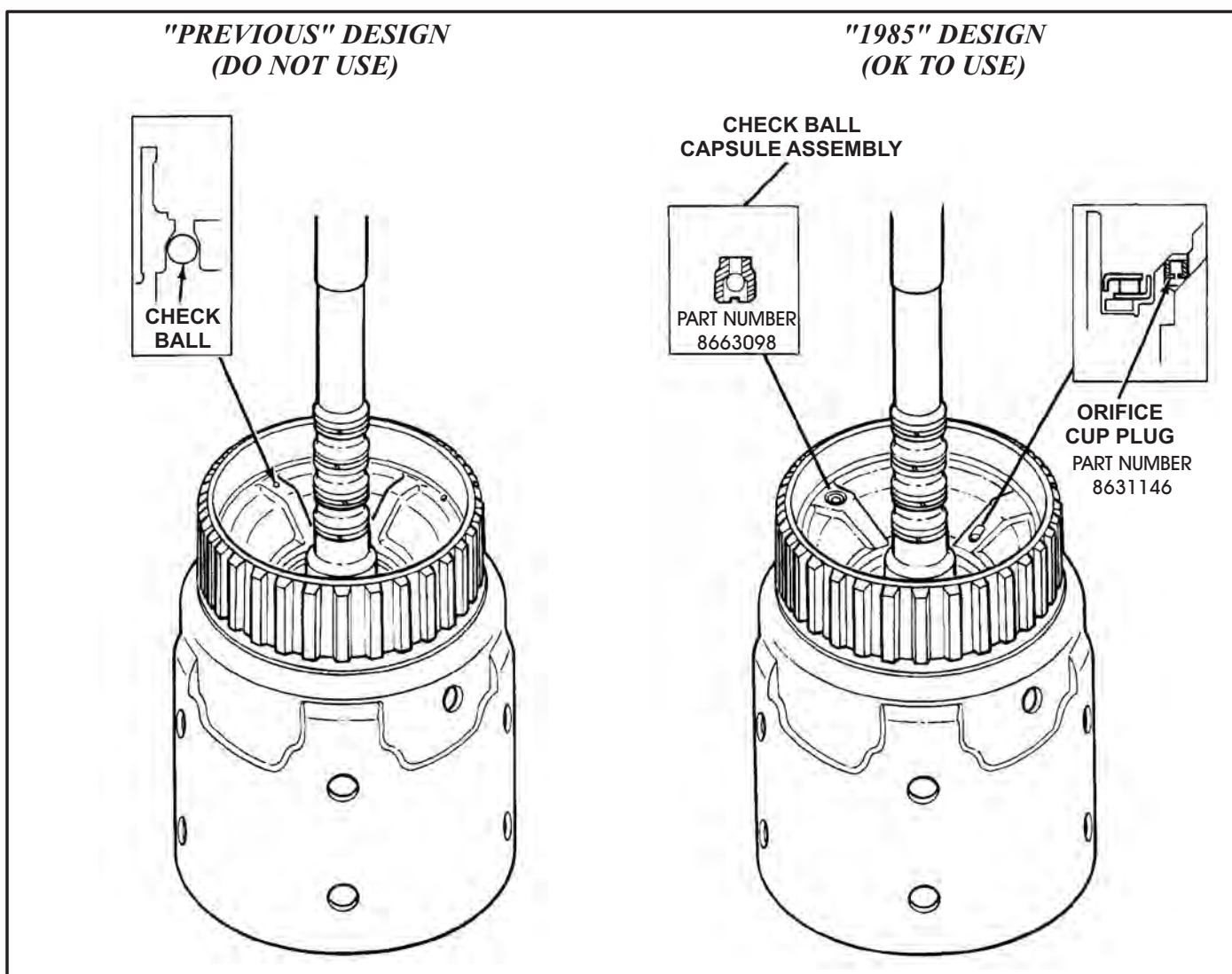


Figure 6

1984 CHANGE:

CHANGE: Beginning late in the 1984 model year, Hydra-Matic introduced new design turbine shafts that were larger in diameter, as shown in Figure 8.

REASON: To help prevent turbine shaft breakage through the seal area and increase durability

PARTS AFFECTED:

- (1) **TURBINE SHAFT** - Increased diameter between the sealing rings, increased diameter of the bushing journal area where it rides in the pump cover, and increased spline diameter for the 298mm converter only, as shown in Figure 8.
- (2) **OIL PUMP COVER** - Increased diameter of the bushing journal area in the stator shaft, to accommodate the increased diameter of the new turbine shaft, as shown in Figure 7.
- (3) **TORQUE CONVERTER** - Increased spline diameter (298mm only) in the converter turbine, to accommodate the new turbine shaft.

INTERCHANGEABILITY:

- (1) On the 298mm converter, you will not be able to install the early torque converter onto the late larger diameter turbine shaft, as it will not fit.
- (2) On the 298mm converter, if the late torque converter is installed on the early smaller diameter turbine shaft (It Will Fit), the vehicle will not move because of spline diameters.
- (3) On the 298mm converter, you will not be able to install the early smaller bushing diameter pump cover over the larger diameter turbine shaft, as it will not fit.
- (4) On the 298mm converter, if the late larger diameter pump cover is installed onto the early smaller diameter turbine shaft (It Will Fit), the result will be severe converter drain back.

SERVICE INFORMATION:

In an effort to keep the cost of repairing the transmission to a minimum, another service turbine shaft and input housing was produced to service the 1982 through 1984 models using the original pump cover and torque converter, as shown in Figure 8. The 3rd design turbine shaft is a larger diameter only in the area between the sealing rings where it would crack or break, as shown in Figure 8.

As you can see there are potentially six different design turbine shafts for the THM 700-R4 transmission, and parts compatibility is the key. Use extra care when selecting replacement parts for this area.

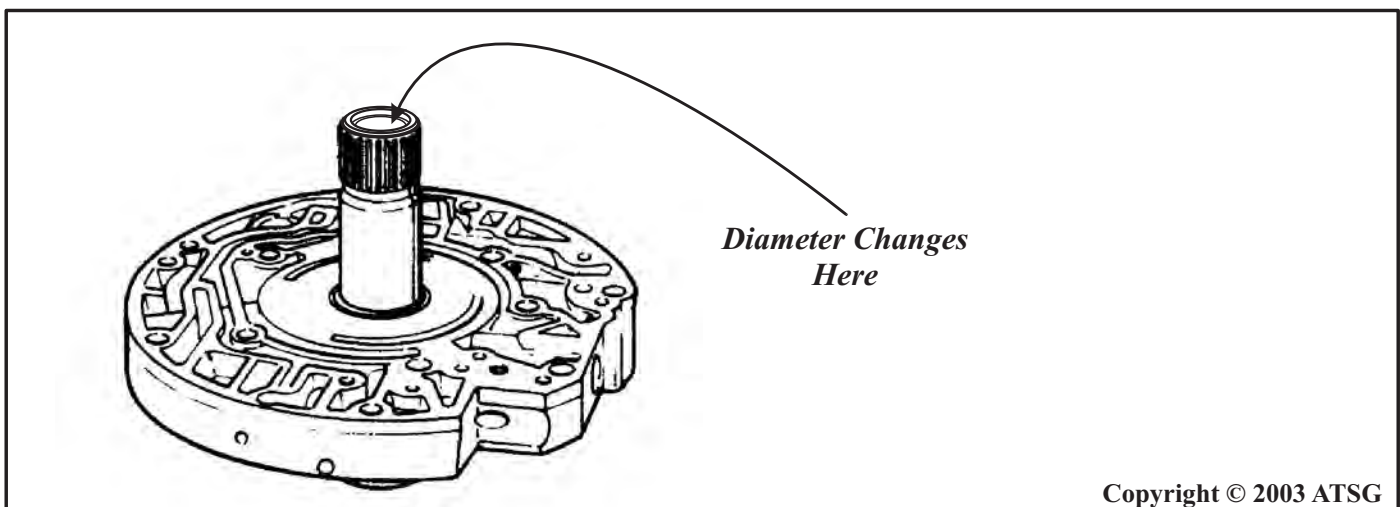


Figure 7

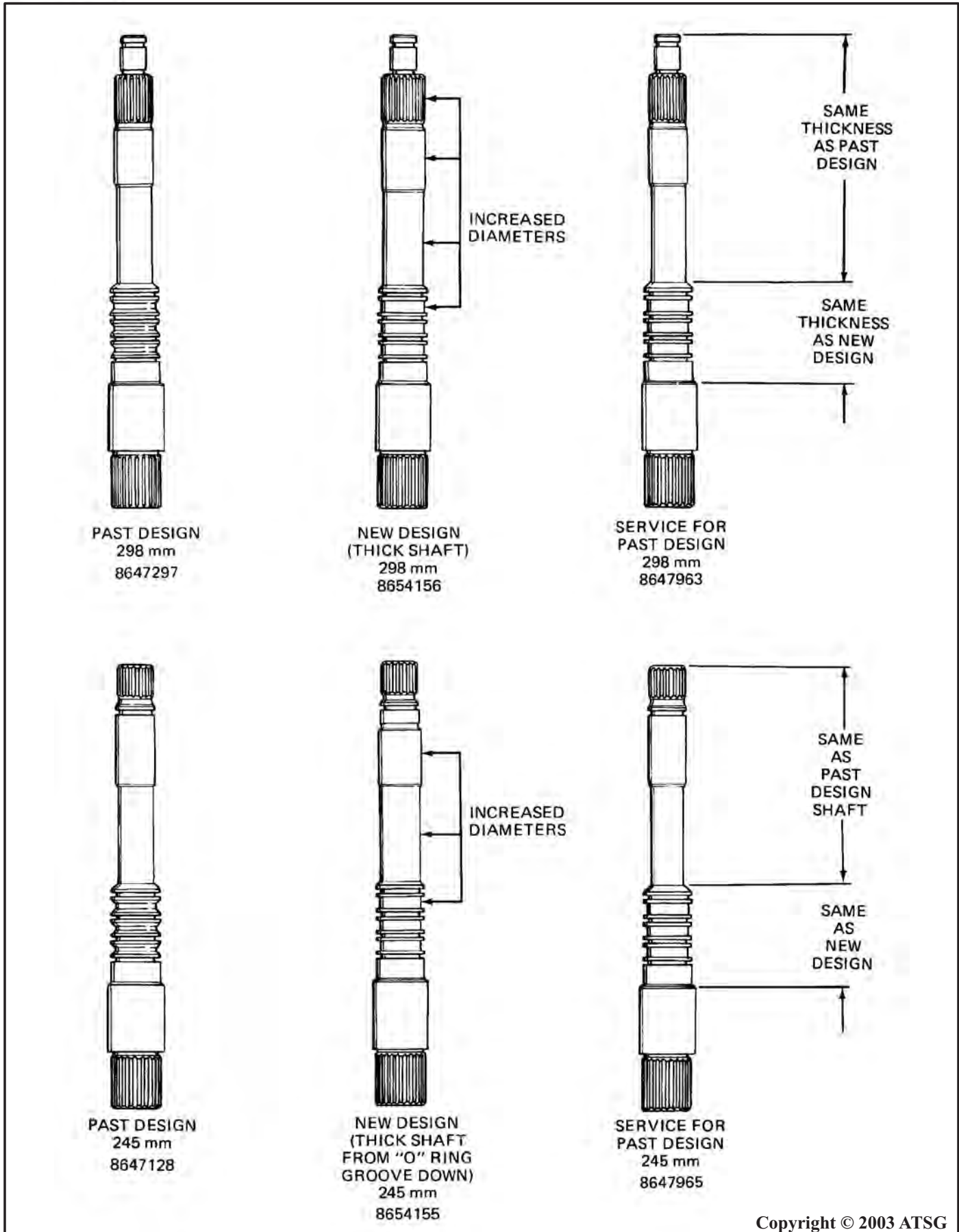


Figure 8



Technical Service Information

1984 CHANGE:

CHANGE: Beginning on January 9, 1984 all THM 700-R4 transmissions were built with a new Reaction Internal Ring Gear, with no dimensional changes, as shown in Figure 9.

REASON: To prevent ring gear breakage and increase durability

PARTS AFFECTED:

- (1) **REAR INTERNAL RING GEAR** - Manufactured with an improved process to eliminate air bubbles from forming inside and prevent ring gear breakage. Since the improved ring gear is dimensionally the same as the previous, identification marks were added. The new ring gear has broached lines on three parking lugs and are equally spaced around the ring gear, as shown in Figure 9.

INTERCHANGEABILITY:

The new rear internal ring gear will back service all previous models of the THM 700-R4 transmission and is highly recommended to use only the ring gear with markings as shown in Figure 9.

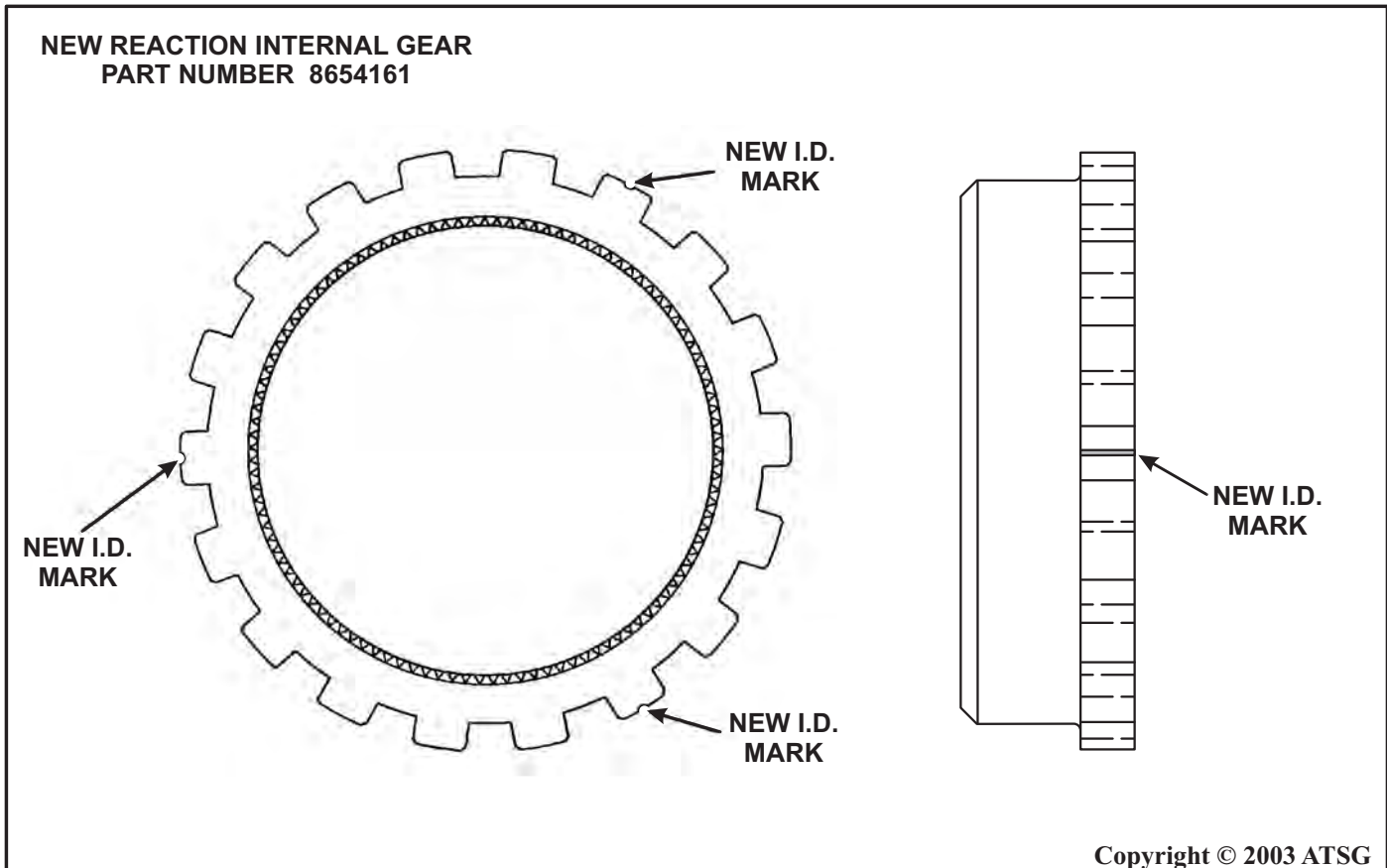


Figure 9



Technical Service Information

1984 CHANGE:

CHANGE: Beginning on June 28, (Julian Date 180) 1984, all THM 700-R4 transmissions were built with a new Pump Body and Pump Cover Assembly with an added oil dam in both components, as shown in Figure 10.

REASON: To reduce oil pump fluid leaks.

PARTS AFFECTED:

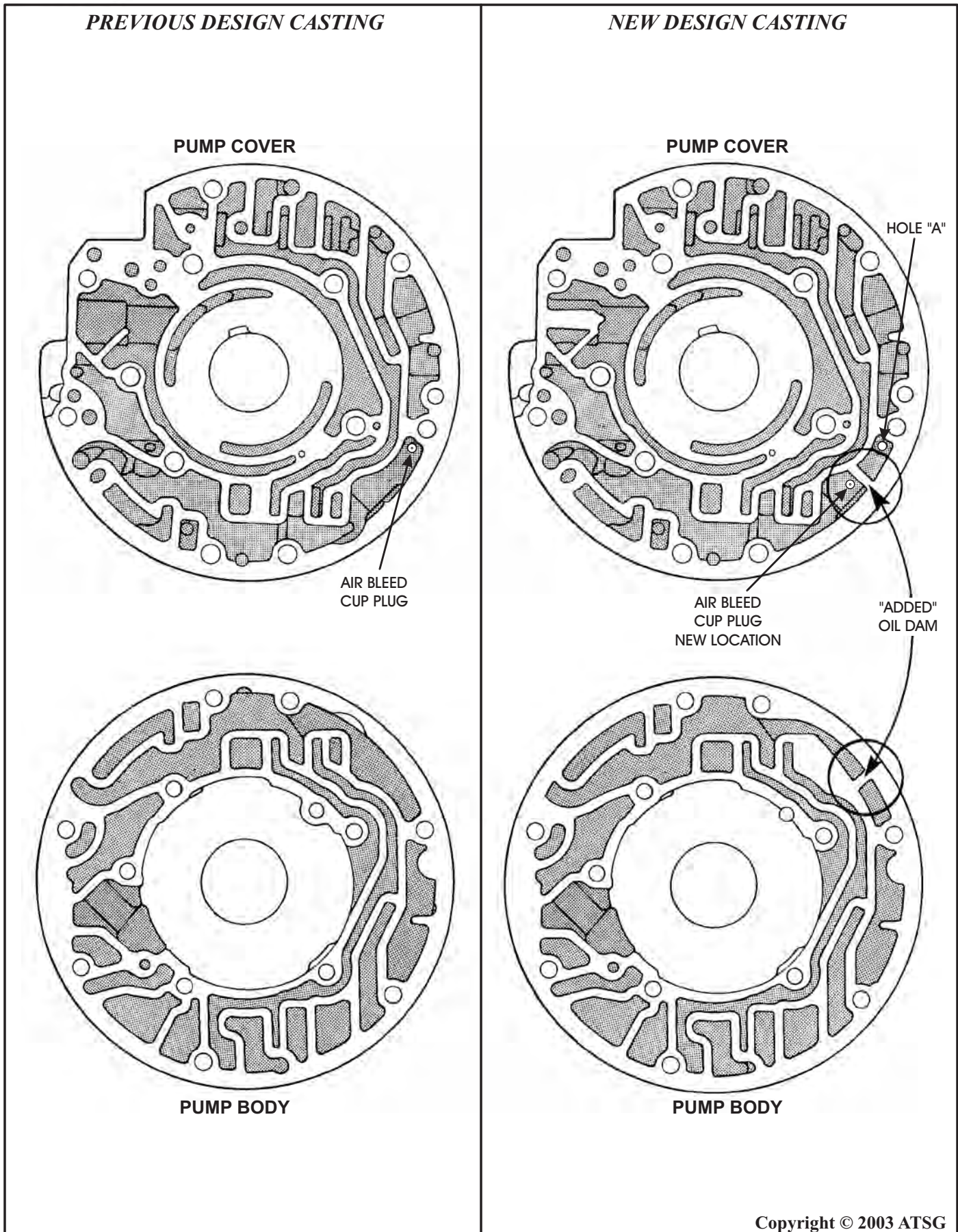
- (1) OIL PUMP BODY - Oil dam added to the pump body casting in the line pressure passage, as shown in Figure 10, to prevent the passage from "spreading" and creating fluid leakage. Refer to Figure 10 for the casting changes and Figure 11 for reference casting number locations.
- (2) OIL PUMP COVER - Oil dam added to the pump cover casting in the line pressure passage, as shown in Figure 10, to prevent the passage from "spreading" and creating fluid leakage. This change required the air bleed cup plug to be moved inside of the added dam in the line pressure passage, as shown in Figure 10. Unfortunately, they continued to drill the hole in the pump cover in the location of the previous air bleed cup plug. Refer to Figure 10 for the casting changes and Figure 11 for reference casting number locations.

INTERCHANGEABILITY:

- (1) OIL PUMP BODY - The new design oil pump body (With Oil Dam) can be used with the previous design pump cover, but you may still have a fluid leakage concern.
- (2) OIL PUMP COVER - The new design oil pump cover (With Oil Dam) **cannot** be used with the previous design oil pump body, unless modifications are made to the cover. Severe loss of line pressure will be the result if you do.

SERVICE INFORMATION: (*Modification of Pump Cover*)

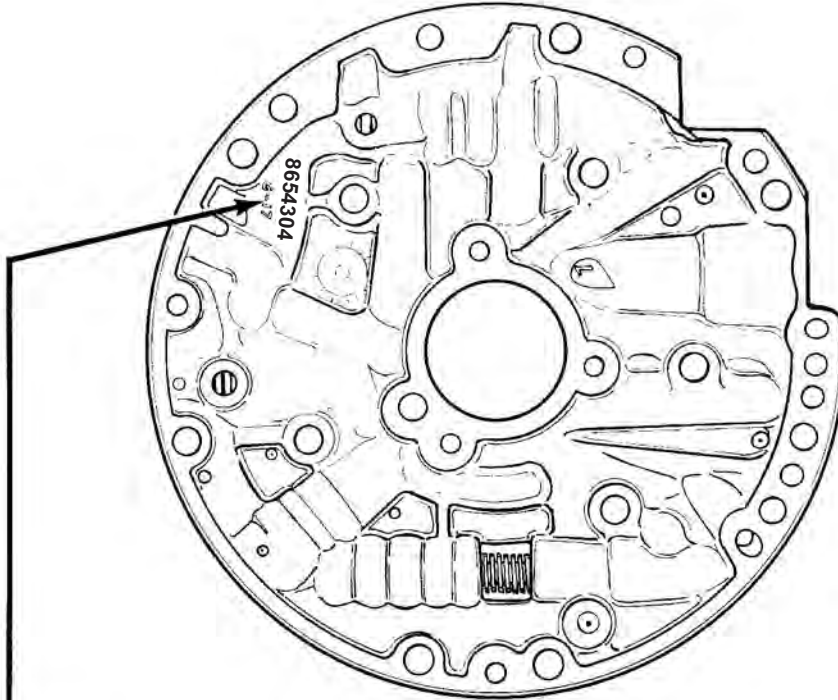
To use the new design oil pump cover (With Oil Dam), you **must** plug the hole that they continued to drill in the location of the previous air bleed cup plug. Plug the hole marked "A" in Figure 10 to prevent a loss of line pressure that goes over the dam in the cover, because of the lack of the matching dam in the previous pump body. However, if you are experiencing oil pump leakage, you should use the "Dam Type" body and cover.



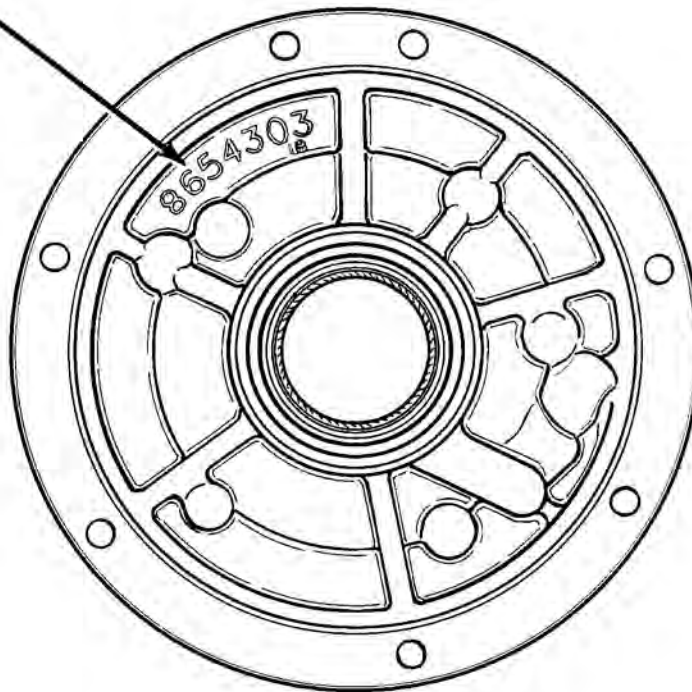
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Figure 10

OIL PUMP COVER
CASTING NO. 8654304



LOCATIONS OF CASTING
IDENTIFICATION NUMBERS



OIL PUMP BODY
CASTING NO. 8654303

Figure 11

1985 CHANGE:

CHANGE: Beginning on March 4, 1985, all THM 700-R4 transmissions were built with a new oil pump assembly that uses inner and outer slide springs, as shown in Figure 12.

REASON: Lowers the wide open throttle 3-4 upshift.

PARTS AFFECTED:

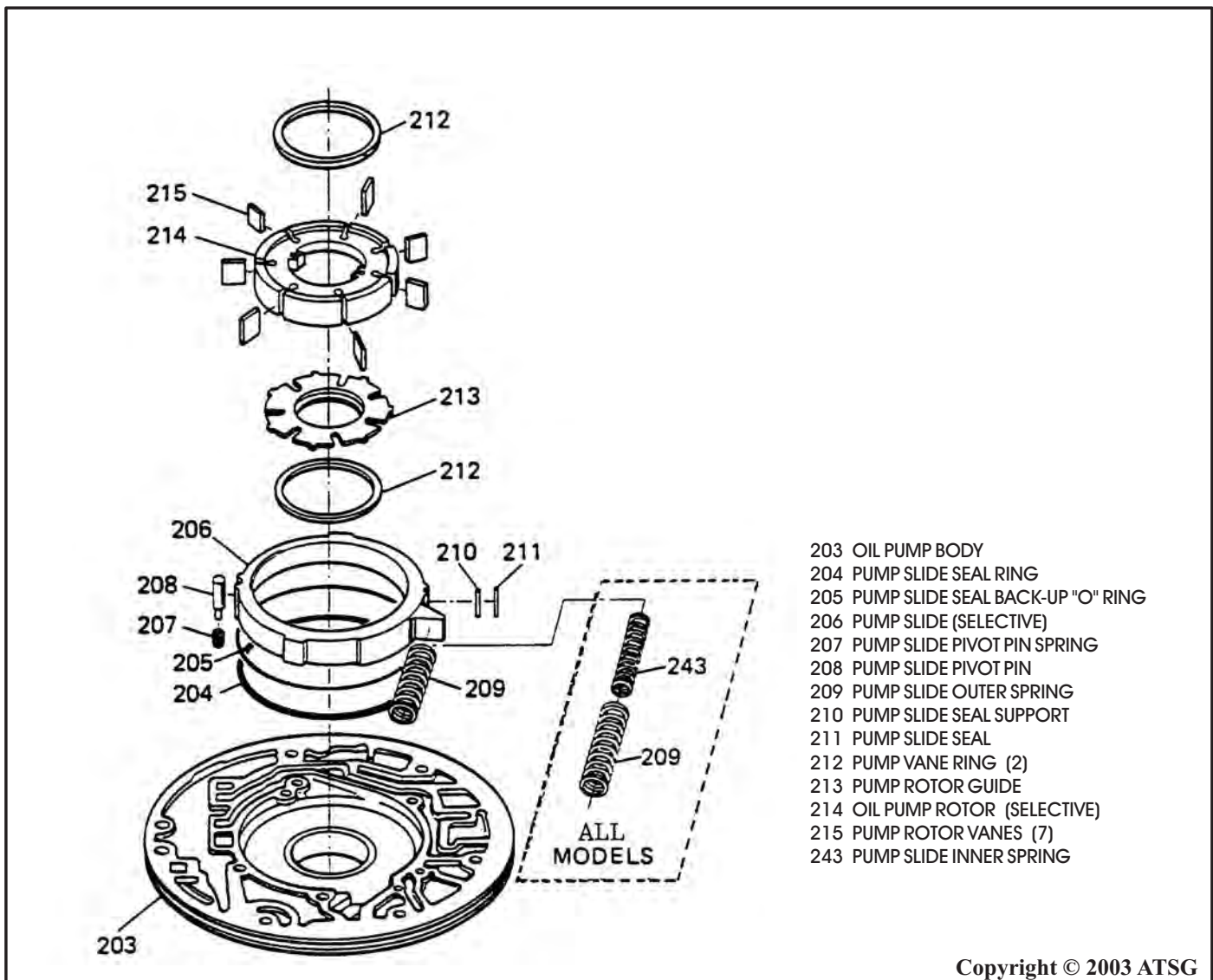
- (1) OIL PUMP ASSEMBLY - Now uses an inner slide spring and an outer slide spring, as shown in Figure 12.

INTERCHANGEABILITY:

Will back service all previous models and is highly recommended.

SERVICE INFORMATION:

Inner Pump Slide Spring	8639562
Outer Pump Slide Spring	8639563



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Figure 12



Technical Service Information

1985 CHANGE:

CHANGE: Beginning at the start of production for 1985 models, all THM 700-R4 transmissions were built with a new design Reaction Carrier that has added "Bat Wing" thrust washers on each side of the pinion gears, as shown in Figure 13. Some models also have an added oil deflector pressed onto the carrier and modified pinion pins, as shown in Figure 13.

REASON: Improved wear of the pinion gear thrust washers, and improved lubrication to the pinion gear needle bearings, creating much improved durability.

PARTS AFFECTED:

- (1) REACTION CARRIER - Were built with stationary "Bat Wing" thrust washers in place of the previous bronze thrust washers, as shown in Figure 13. The reaction carrier was also modified to allow extra lube oil into the pinion needle bearings, by adding an oil deflector which is pressed onto the carrier, as shown in Figure 13. Oil trapped by the added deflector, is forced through a new lube passage in each of the pinion pins. A steel ball was also installed on the back side of each pinion pin to seal off any possible loss of lube, as shown in Figure 13.
- (2) REACTION RING GEAR SUPPORT - Machining process modified to accommodate the added oil deflector on the reaction carrier, as shown in Figure 14.

INTERCHANGEABILITY:

- (1) The new reaction carrier with the oil deflector, will back service all previous models of the THM 700-R4 transmission, but you *must* use the new ring gear support.
- (2) The new design ring gear support can be used *with* previous model 700-R4 transmissions.

SERVICE INFORMATION:

Reaction Carrier Assembly (With Oil Deflector)	8654200
Reaction Ring Gear Support (2nd Design)	8654197

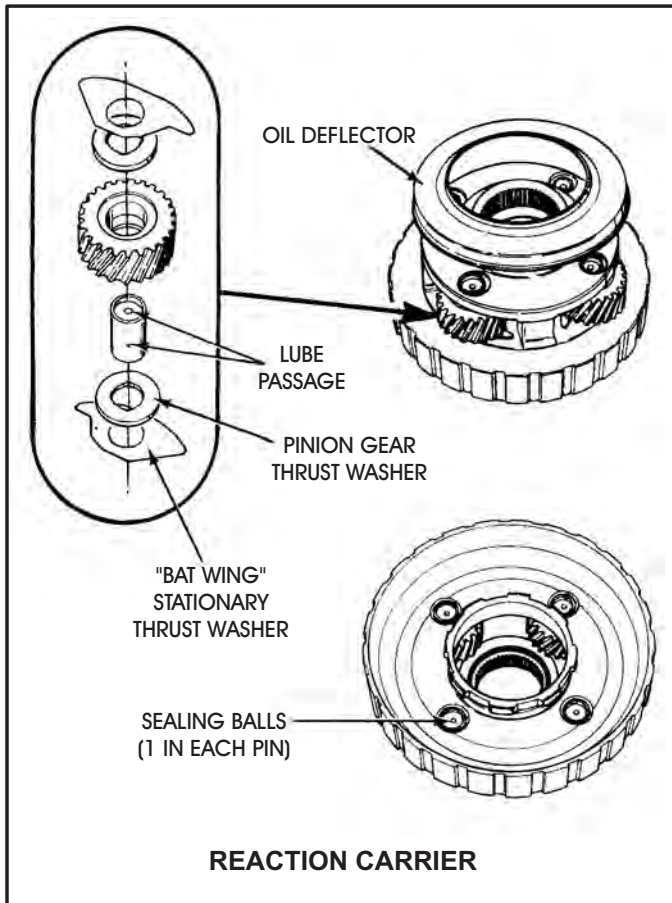


Figure 13

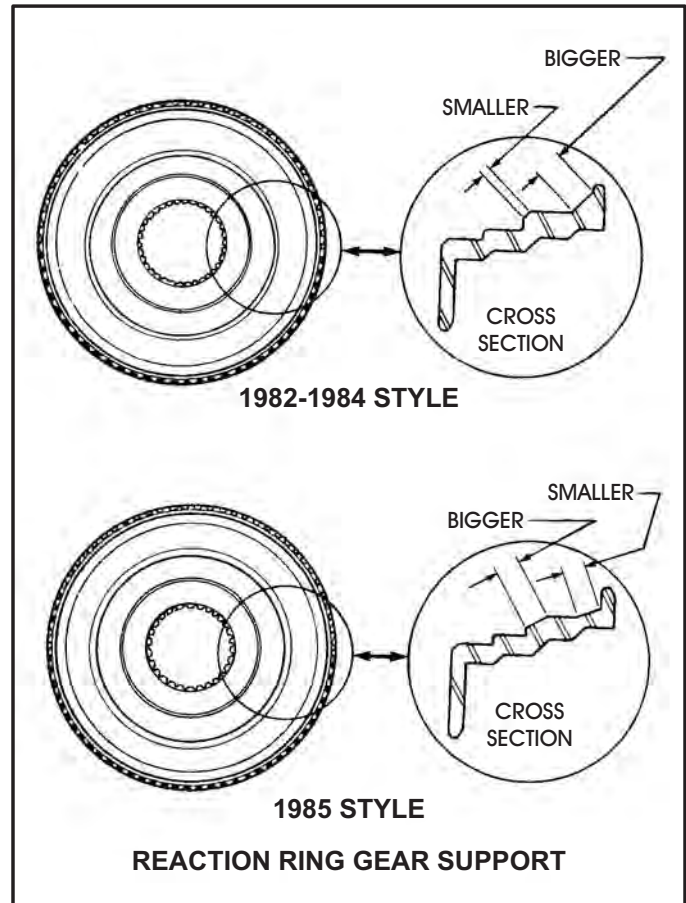


Figure 14



Technical Service Information

1985 CHANGE:

CHANGE: Beginning at the start of production for 1985 models, all THM 700-R4 transmissions were built with a new design Input Carrier that has added "Bat Wing" thrust washers on each side of the pinion gears, as shown in Figure 15.

REASON: Improved wear of the pinion gear thrust washers, creating much improved durability.

PARTS AFFECTED:

- (1) INPUT CARRIER - Were built with stationary "Bat Wing" thrust washers in place of the previous bronze thrust washers, as shown in Figure 15.

INTERCHANGEABILITY:

The new Input Carrier, will back service all previous models of the 700-R4 transmission, and is highly recommended.

SERVICE INFORMATION:

Input Carrier Assembly (2nd Design) 8654329

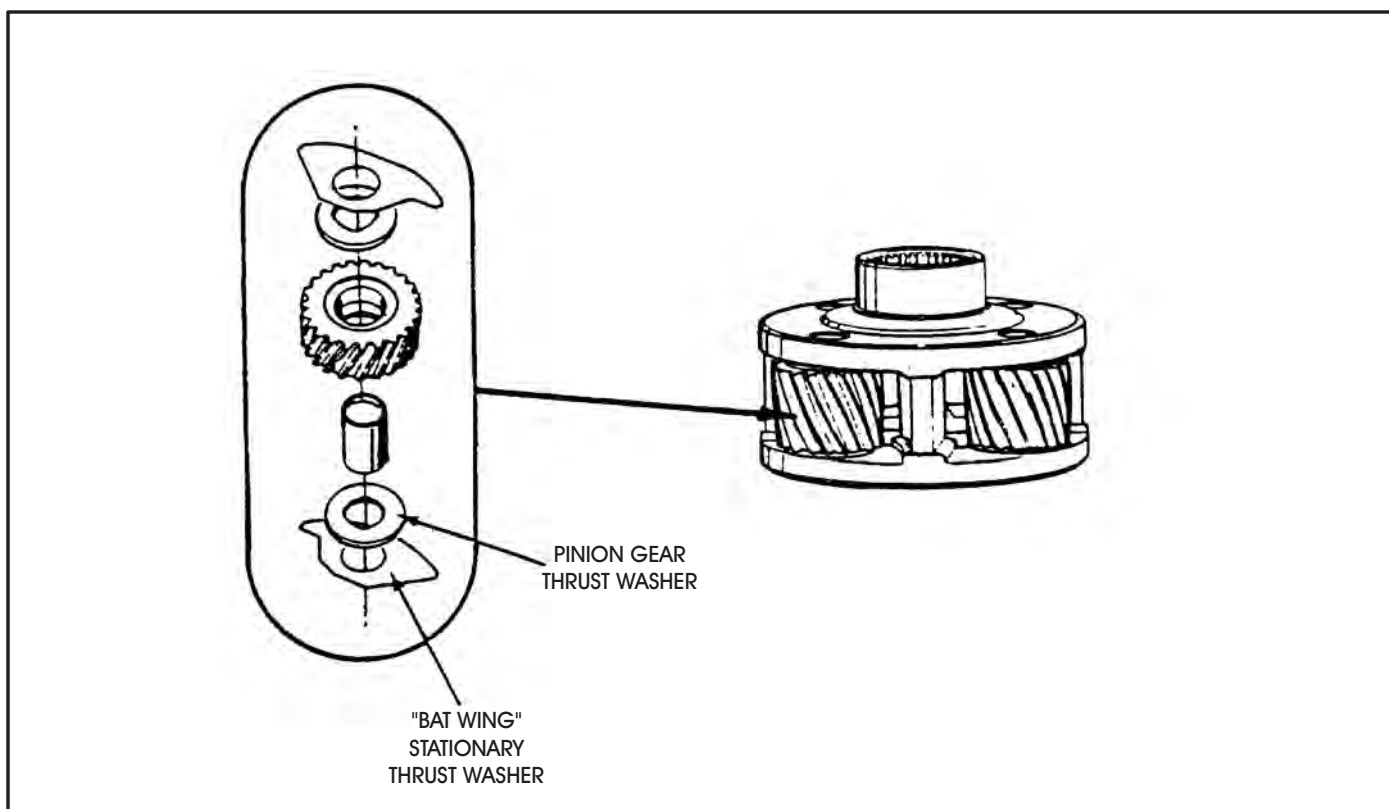


Figure 15

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INFORMATION ONLY:

EXTERNAL 3RD CLUTCH SWITCH:

Some transmissions used with four cylinder engines may have a third clutch switch installed in the third clutch pressure tap on the side of the transmission case, as shown in Figure 16. The purpose of this switch is to cycle off the air conditioner compressor, during a forced downshift. The switch is normally open (N.O.) and closes at 42 psi.

EXTERNAL 4TH CLUTCH SWITCHES (California Only):

Some transmissions used with California 4WD trucks, may have a 4th clutch switch installed in the external 4th pressure tap on the side of the transmission case, as shown in Figure 17. The purpose of this switch is to control EGR bleed in 4th gear and they are only used in 1984 model vehicles. Some of these switches are normally open, and some are normally closed, depending on the vehicle model. Refer to Figure 17 for both switches.

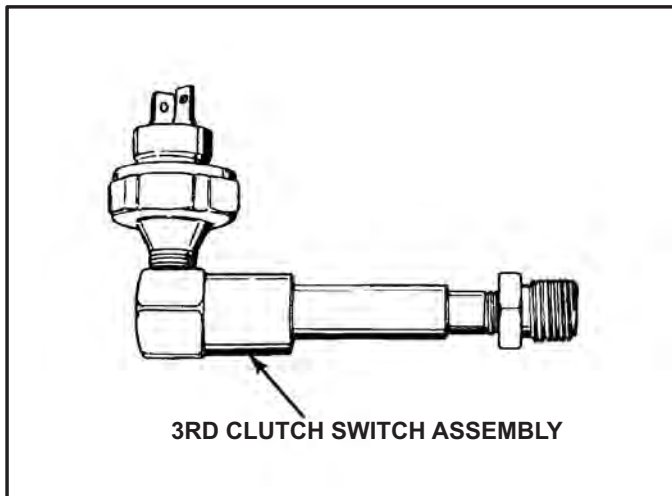


Figure 16

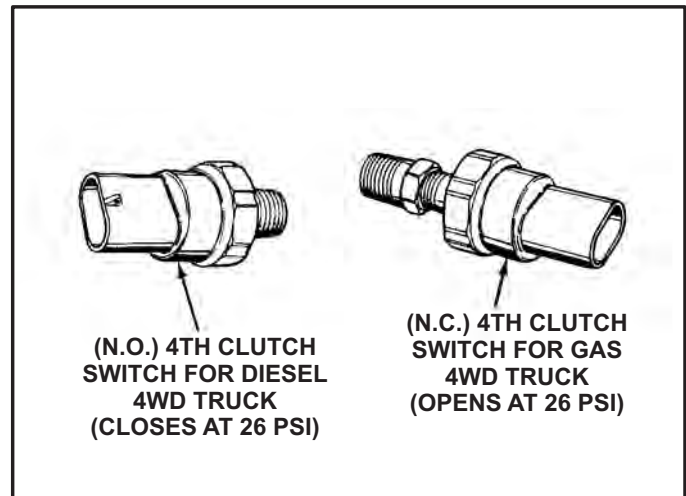


Figure 17

SERVICE INFORMATION:

3rd Clutch Switch, External (N.O.)	14036254
4th Clutch Switch, External (N.O.)(Calif. Only)	15599014
4th Clutch Switch, External (N.C.)(Calif. Only)	15598409



Technical Service Information

1986 CHANGE:

CHANGE: Beginning on June 19, (Julian Date 170) 1986, all THM 700-R4 transmissions were built with a new design Low Roller Clutch assembly with .150" longer rollers which also required a new design cage, as shown in Figure 18.

REASON: Increased torque carrying capacity.

PARTS AFFECTED:

- (1) **LOW ROLLER CLUTCH ASSEMBLY** - The rollers increased in length by .150", which would also change the cage, as shown in Figure 18.
- (2) **LOW ROLLER CLUTCH SUPPORT ASSEMBLY** - Increased length of the support and cam assembly, to accommodate the new design longer low roller clutch, as shown in Figure 18.

INTERCHANGEABILITY:

The individual components listed above will not interchange with previous design level parts. However, when the new design roller clutch and support assembly will retro-fit back on all previous models, and is highly recommended, but **must** be installed as a complete service package assembly.

The low roller clutch inner race did not change.

SERVICE INFORMATION:

General Motors has a service kit available, to update to the new design low roller clutch under part number 8663094.

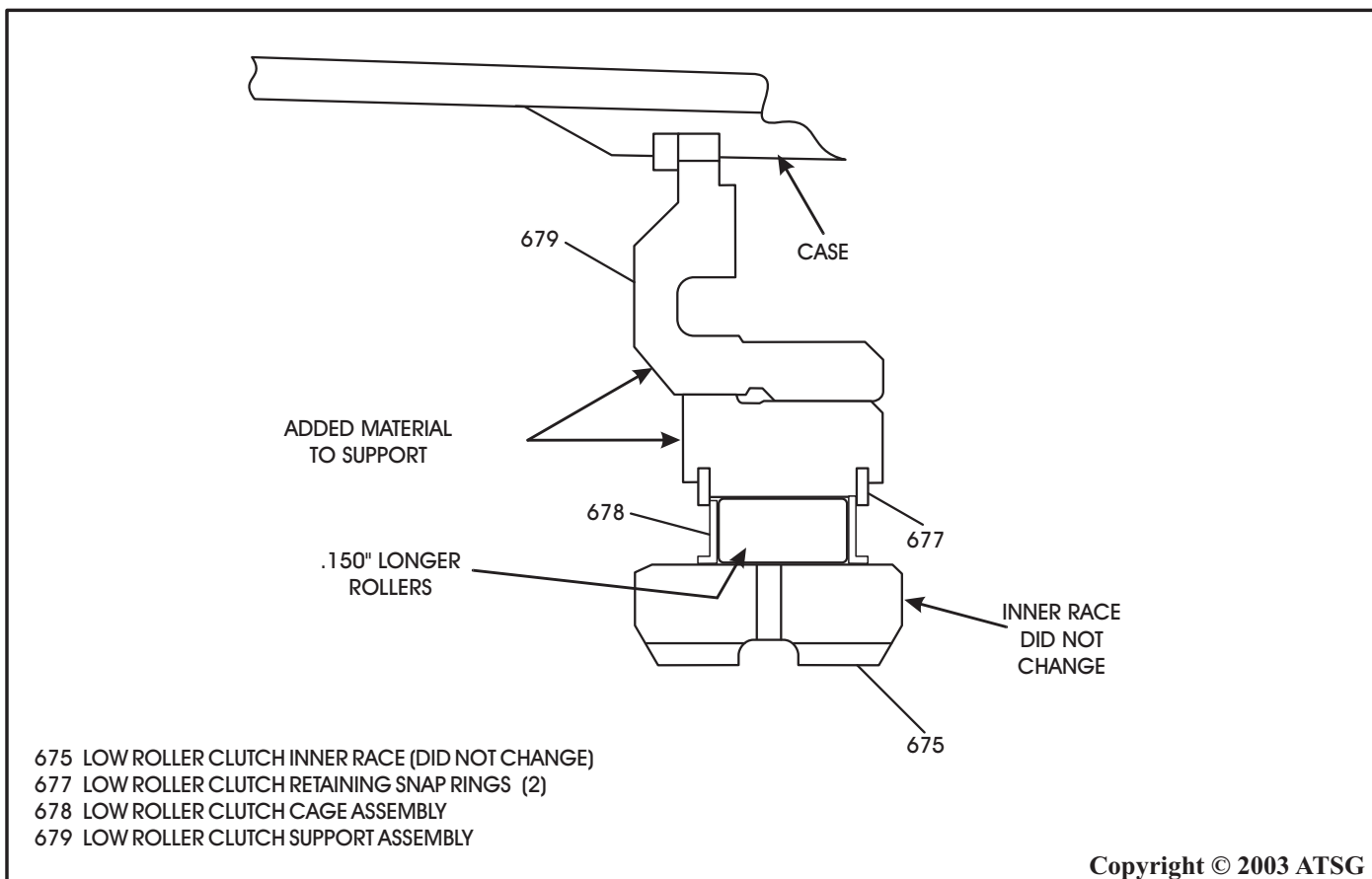


Figure 18

1986 CHANGE:

CHANGE: Beginning on June 18, (Julian Date 169) 1986, all THM 700-R4 transmissions were built with a new design 1-2, 3-4, and forward clutch accumulator pistons that use a soft synthetic rubber seal instead of the previous teflon material. There is also a new clearance step for the spring, as shown in Figure 19.

REASON: Improved sealing capability in accumulator bores.

PARTS AFFECTED:

- (1) ACCUMULATOR PISTON SEALS - They are now manufactured from a soft synthetic rubber material, instead of the previous Teflon material, as shown in Figure 19.
- (2) ACCUMULATOR PISTONS - The 1-2, 3-4, and forward accumulator pistons now have a revised shape seal groove to accommodate the new design accumulator seals and a different machining process for the accumulator springs, as shown in Figure 19.
- (3) 1-2 ACCUMULATOR SPRING - "Some Models" now require a conical shaped accumulator spring, to eliminate coil bind, and large end of the spring goes toward the piston, as shown in Figure 19.

INTERCHANGEABILITY:

The new design rubber accumulator piston seals *cannot* be used on the previous design piston that uses the Teflon seal.

The new design accumulator pistons with rubber seals can be used to back service all previous models of the THM 700-R4 transmissions.

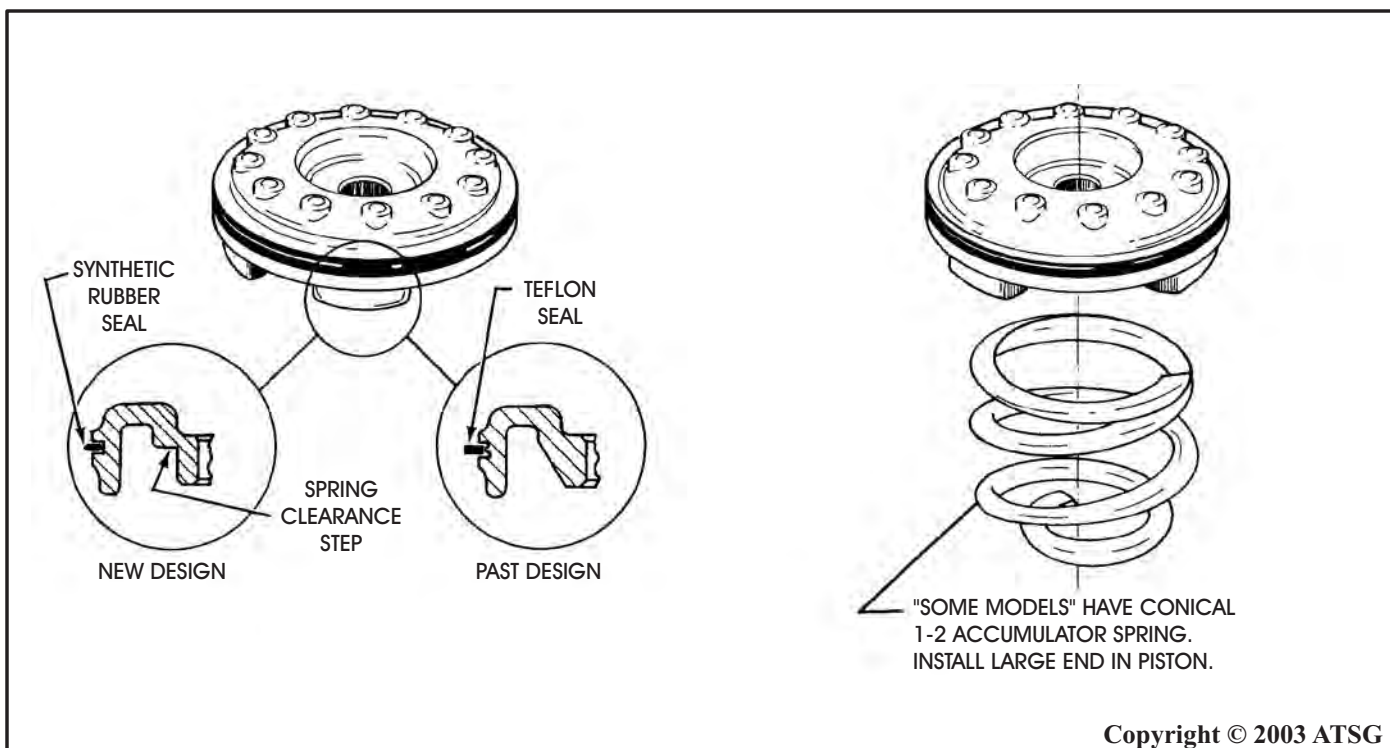


Figure 19

1987 CHANGE:

CHANGE: Beginning on July 17, 1986 for *some* 1987 models, Hydra-Matic introduced an electronic speed sensor, which is used by the ECM to provide anti-skid braking. The speed sensor and speed sensor rotor replace the speedometer driven gear adaptor and the speedometer drive gear, as shown in Figure 20. Used in 1987 model "C" Trucks with 4.3L, 5.0L, 5.7L, (Gas) and 6.2L Diesel engines.

REASON: Extremely accurate speed sensor signal for anti-skid braking.

PARTS AFFECTED:

- (1) **SPEED SENSOR** - The added Speed Sensor replaces the speedometer driven gear adaptor and the speedometer drive gear, as shown in Figure 20.
- (2) **OUTPUT SHAFT** - Has an added groove to remove and install the added speed sensor rotor, using a special puller (See Figure 20).
- (3) **TRANSMISSION CASE** - Orifice cup plug added in the governor bore which now provides lubrication to the extension housing bushing, when the speed sensor rotor is used. Refer to Figure 21. This lube was normally provided by the spinning speedometer driven gear teeth tossing oil to the bushing. When the speedo gear is replaced with a speed sensor rotor, the forced lube from the orifice cup plug is required (See Figure 21).

INTERCHANGEABILITY:

The new speed sensor *cannot* be used in previous models.

The new case with the orifice cup plug can be used on regular speedo, 1987 model ~~only~~.

SERVICE INFORMATION:

Speed Sensor Rotor (All Models)	8663090
Speed Sensor	8654750

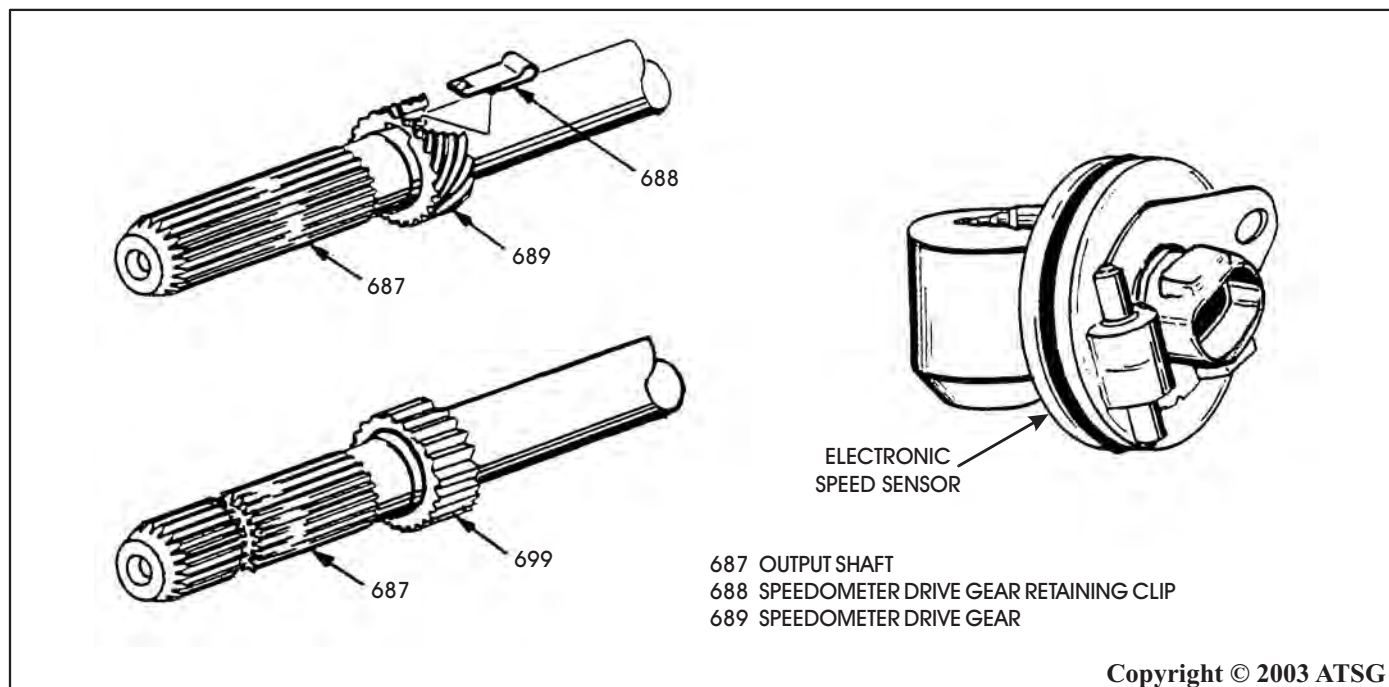


Figure 20

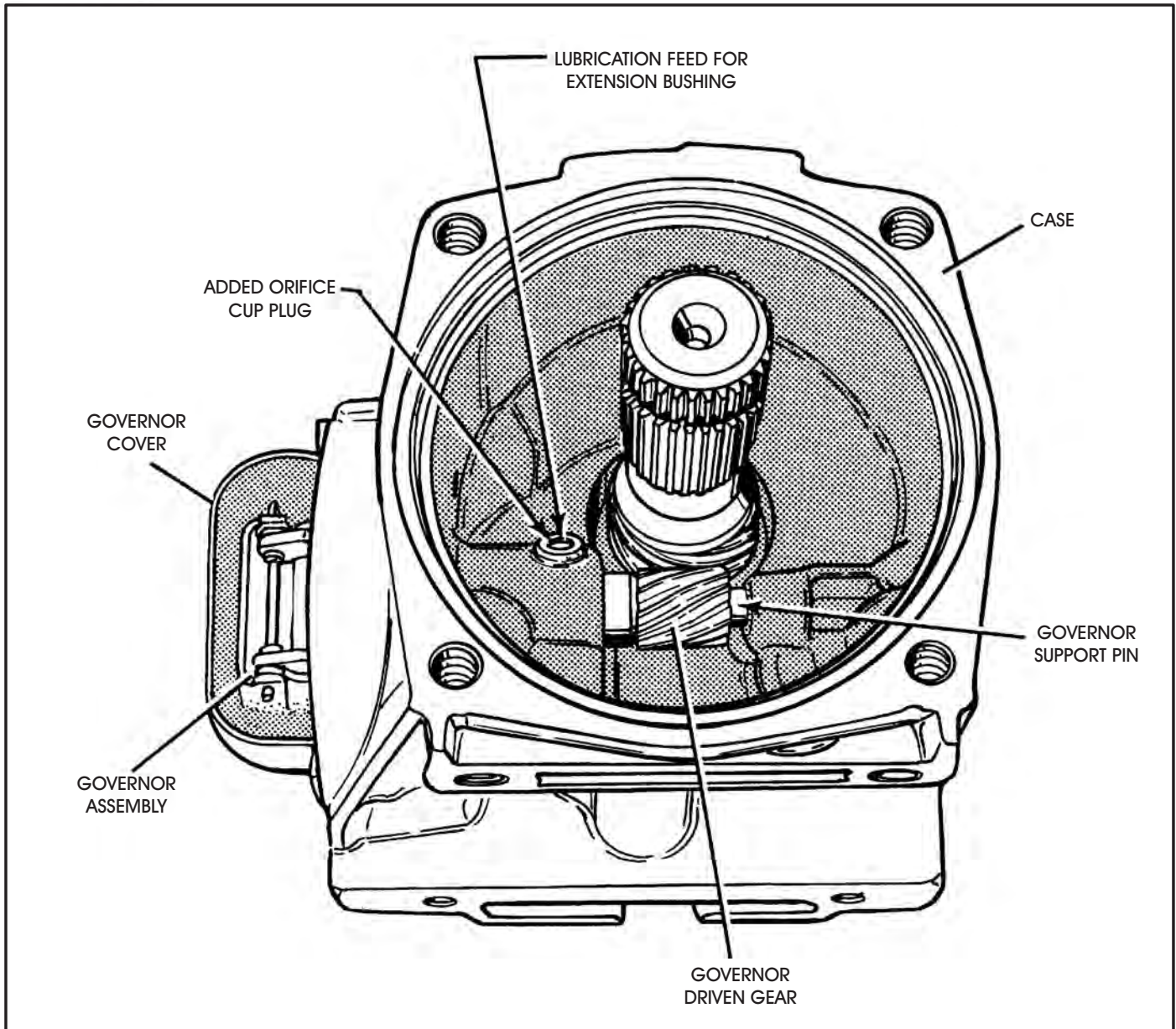


Figure 21



Technical Service Information

1987 CHANGE:

CHANGE: Beginning on July 17, (Julian Date 198) 1986, all 1987 THM 700-R4 transmissions were built with a new overrun clutch hub with more lube holes drilled, as shown in Figure 22.

REASON: Much improved overrun clutch plate lubrication.

PARTS AFFECTED:

- (1) **OVERRUN CLUTCH HUB** - Now has twelve lube holes drilled in the circumference of the hub instead of the previous three, plus three angular holes for a total of 15 holes, as shown in Figure 22.

INTERCHANGEABILITY:

Will back service all previous models and is highly recommended.

SERVICE INFORMATION:

The new design Overrun Clutch Hub will come as part of the new design 28 element forward sprag assembly, shown beginning on Page 24, and the new sprag assembly is available under OEM part number 8657928.

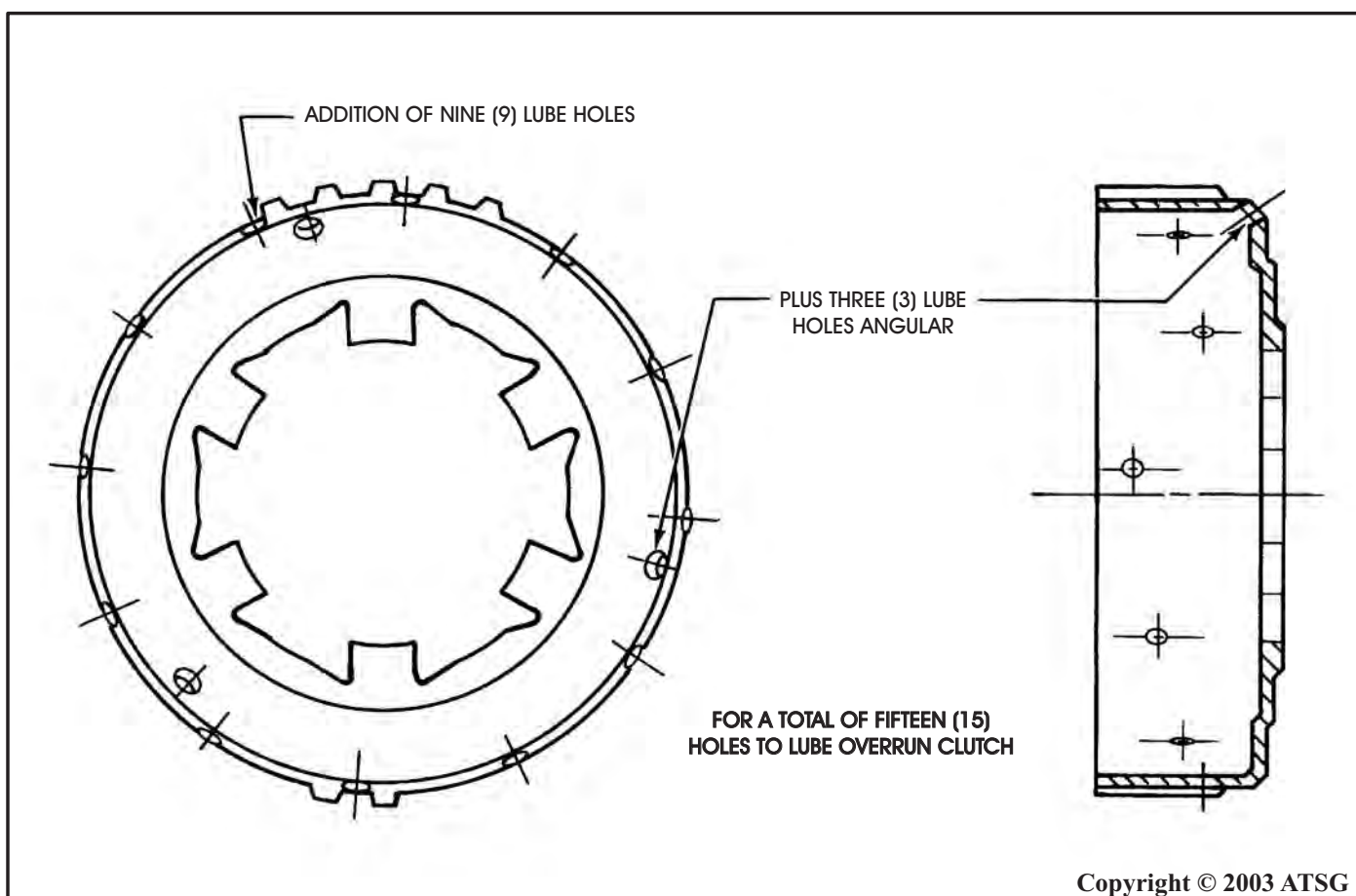


Figure 22



Technical Service Information

1987 CHANGE:

CHANGE: Beginning on July 17, (Julian Date 198) 1986, all 1987 THM 700-R4 transmissions were built with a new Forward Sprag Assembly with increased sprag elements (See Figure 23).

REASON: Vastly improved torque carrying capacity for improved durability.

PARTS AFFECTED:

- (1) FORWARD SPRAG ASSEMBLY - Increased diameter and addition of two sprag elements for a total of 28, instead of the previous 26 (See Figure 23).
- (2) FORWARD SPRAG OUTER RACE - Has larger inside diameter to accommodate the 28 element sprag assembly (See Figure 23).
- (3) FORWARD SPRAG INNER RACE - Has larger outside diameter to accommodate the 28 element sprag assembly, and an increase in the diameter of the wear plate that is pressed onto the inner race (See Figure 23).
- (4) FORWARD SPRAG END BEARINGS - Now has solid steel end bearings instead of the previous stamped steel end bearings (See Figure 23).
- (5) FORWARD SPRAG WEAR PLATE - Eliminated in the 28 element version to make room for the new design solid steel end bearings (See Figure 23).
- (6) INPUT CARRIER THRUST WASHER - Eliminated in the 28 element version as the increased diameter of the wear plate now supports the outer race (See Figure 23).

INTERCHANGEABILITY:

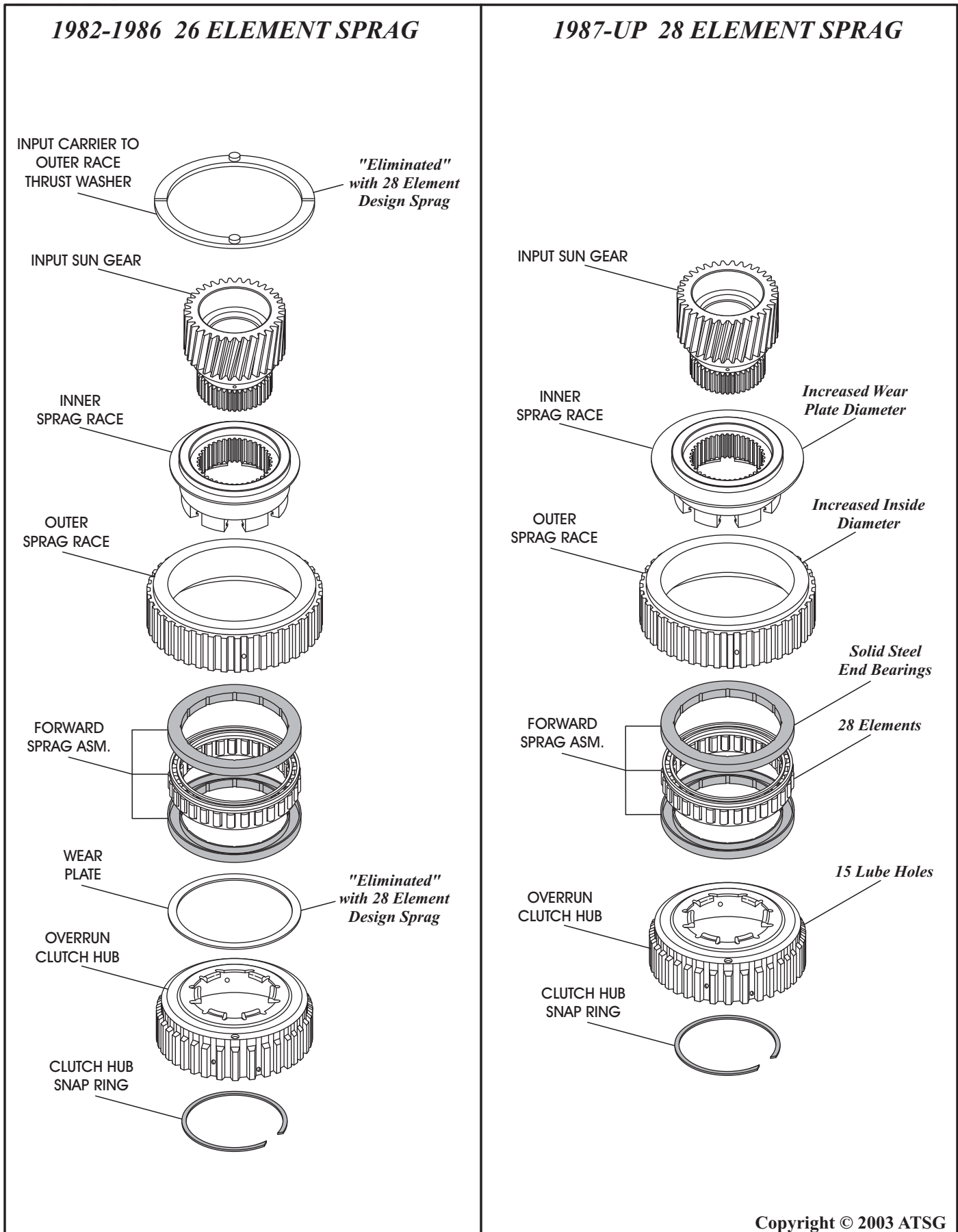
The individual components listed above **are not** interchangeable with previous design levels. The new design 28 element Forward Sprag Assembly is highly recommended, and will back service all previous models by replacing the "**Entire Assembly**" as a service package.

Special Note:

The Input Carrier to Outer Sprag Race thrust washer and Wear Plate **are not** required with the new design 28 element Forward Sprag Assembly. Use of the Input Carrier thrust washer with the new design sprag will create a mis-build, as correct front end play cannot be obtained (See Figure 23).

SERVICE INFORMATION:

The new design 28 element Forward Sprag Assembly includes the updated Overrun Clutch Hub shown in Figure 22, and is available under OEM part number 8657928.



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Figure 23



Technical Service Information

1987 CHANGE: FORWARD CLUTCH APPLY PACKAGE

CHANGE: Beginning on July 17, (Julian Date 198) 1986, *some* 1987 model THM 700-R4 transmissions were built with an "Added" Auxiliary Valve Body. By October 6, (Julian Date 279) all 1987 model THM 700-R4 transmissions were built with the added Auxiliary Valve Body, as shown in Figure 24.

REASON: Smoother 2-1 Manual downshift and smoother garage shifts to Drive.

PARTS AFFECTED:

- (1) **AUXILIARY VALVE BODY** - Added as per dates listed above and performs the following:
 - (a) The Low Overrun Valve in the auxiliary valve body provides a smooth 2-1 Manual downshift. It also regulates the pressure applied to the Low/Reverse clutch to a lower pressure (See Figure 24).
 - (b) The Abuse Valve in the auxiliary valve body, shown in Figure 24, protects the forward clutch during rock cycles. Rock cycles are defined as rapidly shifting the transmission back and forth between Reverse and Drive when the vehicle is stuck in mud, sand, snow or ice. At any throttle position higher than idle, the Abuse Valve opens to by-pass the new forward clutch feed orifice cup plug located in the auxiliary valve body. This results in a quicker forward clutch apply time. A quicker apply produces less heat and increases clutch durability.
 - (c) A Forward Clutch Accumulator Piston and Spring are incorporated in the new auxiliary valve body, as shown in Figure 24, and provides smoother garage shifts to Drive.
- (2) **TRANSMISSION CASE** - Total of four changes and they are as follows:
 - (a) The case has a "Rib" added to the worm track area at the rear, in the low/reverse passage, as shown in Figure 25.
 - (b) The case has a cast, pipe window, added in the front center, as shown in Figure 25, to allow an added forward clutch feed pipe to be inserted into the forward clutch feed hole in the oil pump cover (See Figure 25).
 - (c) The forward clutch feed hole in the case face of the pump bore is no longer drilled, as shown in Figure 26.
 - (d) Orifice cup plug added to the governor pressure passage in rear of case to lubricate the extension housing bushing, as shown in Figure 27.
- (3) **VALVE BODY CHECK BALL LOCATIONS** - Check ball number 5 located in the "Bathtub" in the main valve body has been eliminated, as shown in Figure 28. Check ball number 12 has been added to the new auxiliary valve body, as shown in Figure 28.
- (4) **VALVE BODY SPACER PLATE** - Several holes were added to the spacer plate to accommodate the added auxiliary valve body, and there is now a "Two" letter identification code stamped into all 1987 and later spacer plates, as shown in Figure 29.

For 1987-1988 Spacer Plate Identification, See Figure 30.
For 1989 Spacer Plate Identification, See Figure 31.
For 1990 Spacer Plate Identification, See Figure 32.
For 1991 Spacer Plate Identification, See Figure 33.
For 1992 Spacer Plate Identification, See Figure 34.
For 1993 Spacer Plate Identification, See Figure 35.

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Continued On Page 27



Technical Service Information

PARTS AFFECTED (Cont'd):

- (5) VALVE BODY SPACER PLATE GASKETS - Added holes in both the valve body gasket and the case gasket, to accommodate the added auxiliary valve body.
- (6) FORWARD CLUTCH FEED PIPE - Added to feed forward clutch feed oil to the oil pump assembly, as shown in Figure 24, to feed the forward clutch pack.
- (7) OIL PUMPCOVER ASSEMBLY - The forward clutch feed hole (244) in the outside diameter of the pump cover, next to the oil filter bore becomes larger, drilled at a different angle, and is no longer plugged (See Figure 36). The forward clutch feed pipe now goes in this bore.
- (8) OIL PUMP ASSEMBLY - Now has "Ten" pump vanes instead of the previous "Seven" vanes, as shown in Figure 36. Elimination of cup plug (244) on models that used the auxiliary valve body, as this is where the forward clutch feed pipe enters the pump. The cup plug *must* be in place on models not using the auxiliary valve body (See Figure 36).
- (9) TURBINE SHAFT AND INPUT HOUSING - There are several related changes associated with the input housing and are as follows:
 - (a) The forward clutch feed orifice, in the form of a 3mm hole drilled in the turbine shaft is removed. The hole is now drilled to 6mm, as shown in Figure 37, and the orifice for the forward clutch is now in the form of an orifice cup plug in the auxiliary valve body.
 - (b) The turbine shaft seals are now solid Teflon, instead of the previous scarf-cut seals. The solid turbine shaft seals require an installation and resizing tool, as shown in Figure 37, and is available under part number T-1574.
 - (c) The Input Housing has a smaller diameter where the backing plate splines into the input housing, and is illustrated in Figure 38. The new design forward backing plate also has a smaller pilot diameter to accommodate the changes in the input housing, as shown in Figure 38.
 - (d) All models are now built with a forward clutch pack that has five lined plates, as shown in Figure 39. The new design lined and steel plates have a revised thickness, and the forward clutch backing plate is now selective, as shown in Figure 40. We have also listed the OEM Part Numbers for the selective Forward Clutch Backing Plates in Figure 40.
- (10) BOTTOM OIL PAN - The bottom oil pan is now 1mm (.040") deeper, to allow clearance for the added auxiliary valve body, and the magnet is now square. For identification of the deeper oil pan, one indentation where the new square magnet goes has shorter legs, as shown in Figure 41.

INTERCHANGEABILITY:

- (1) *"Do Not"* install the number 5 check ball in the main valve body on any 1987 and later model THM 700-R4 transmission, that uses the Auxiliary Valve Body (See Figure 28).
- (2) The 1987 case can be used on 1982-1986 models, but you *Must* do the following:
 - (a) Remove the added RIB in the low/reverse case passage with a die grinder (See Figure 25).
 - (b) Drill the forward clutch feed passage in the face of the pump bore, using a 21/64" drill bit. Refer to Figure 26.

Continued On Page 28

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Technical Service Information

INTERCHANGEABILITY (Cont'd):

- (3) The 1982-1986 case cannot be used in any 1987 and later model THM 700-R4 transmissions, that uses the Auxiliary Valve Body.
- (4) Spacer plates **"Will Not"** interchange with previous models. Spacer plates **"Will Not"** even interchange between the 1987 to 1993 models. Please use the charts provided in Figures 30 through 35, for identification and model usage.
- (5) The 1987 and later model Pump Cover can be used in 1982-1986 models, if the forward clutch feed hole (244) is plugged (See Figure 36).
The 1982-1986 Pump Cover should not be used on any 1987 and later models, as the reverse clutch feed hole between the sealing ring grooves is smaller. This hole size change will be covered later, in the reverse input housing changes.
- (6) **"Always"** check the turbine shaft in the input housing assembly using a flashlight, as shown in Figure 37, for an orifice in the forward clutch feed passage.
 - (a) Using a 1987 or later input housing **without** this orifice in 1982-1986 models, will result in a very harsh garage shift into drive (See Figure 37)
 - (b) Using a 1982-1986 input housing **with** this orifice in 1987 and later models, will result in a soft, slow apply of the forward clutch, and greatly reduce forward clutch durability.
- (7) The forward clutch friction and steel plates are a different thickness in all 1987 and later models, and the forward clutch backing plate is now selective, as shown in Figure 39 and 40. When building an 82-86 unit, do not mix 87 style clutch plates with the 82-86 clutch plates without checking the forward clutch clearance (See Figure 40).
- (8) The deeper bottom oil pan can be used on any 1982-1986 model THM 700-R4 transmission. The previous model oil pan **cannot** be used on any model that uses the auxiliary valve body, due to insufficient clearance (See Figure 41).

SPECIAL NOTES:

The Auxiliary Valve Body was not on all models at the start of 1987 production. In fact, it was not on **all** models until October 6, 1986 (Julian Date 279). Because of the many part changes associated with the introduction of the Auxiliary Valve Body, you should remove the oil pan and inspect for the auxiliary valve body, prior to doing any service work.

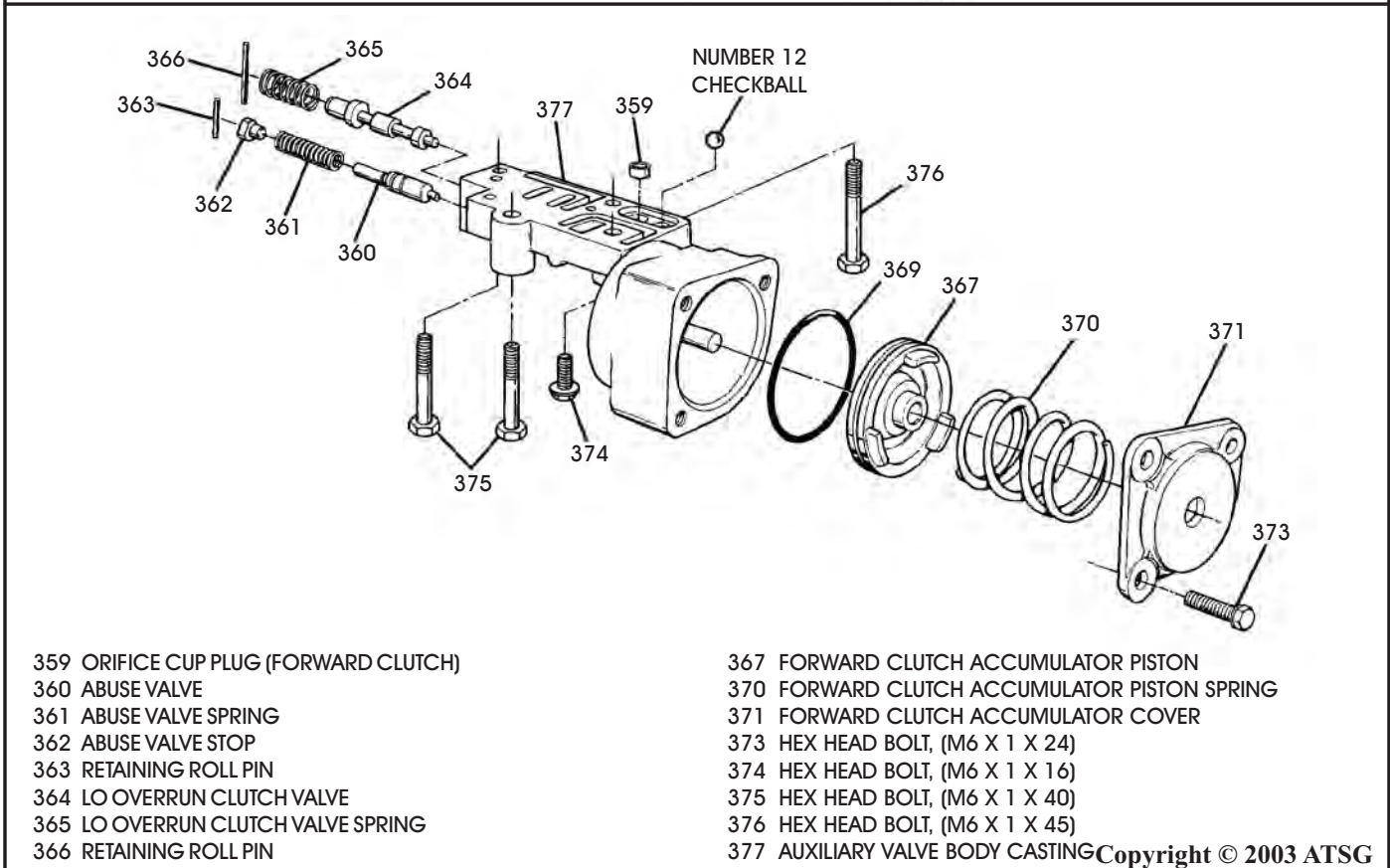
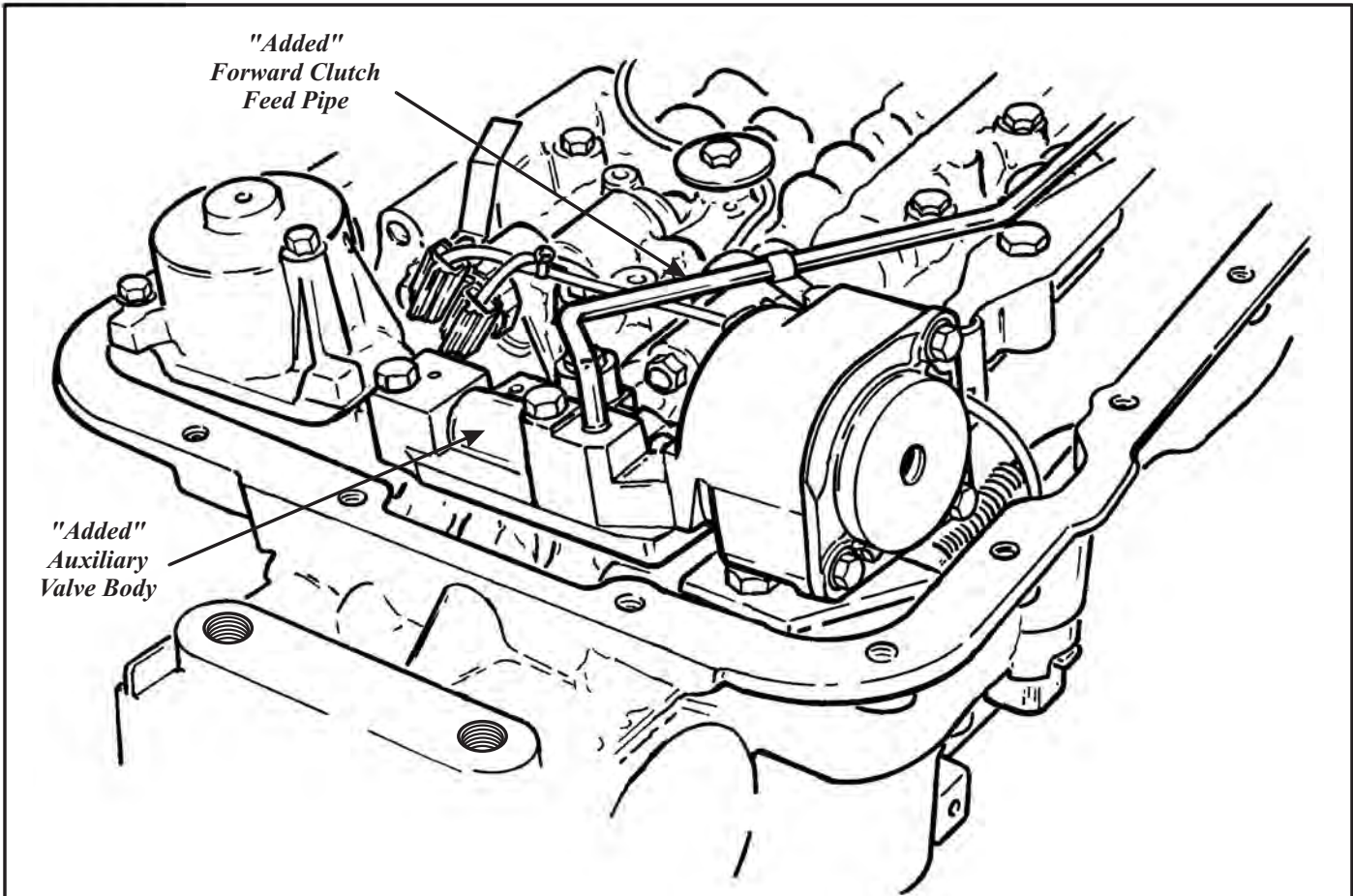


Figure 24

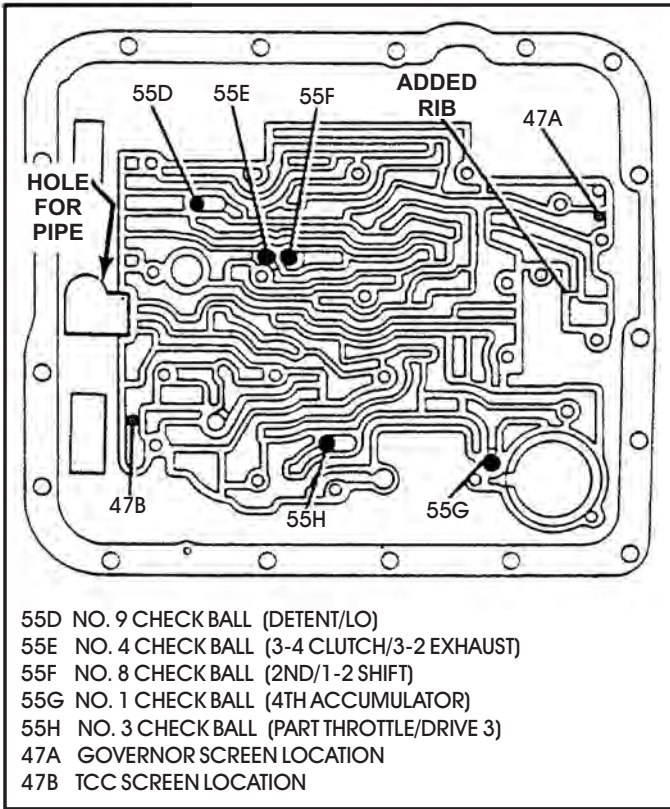


Figure 25

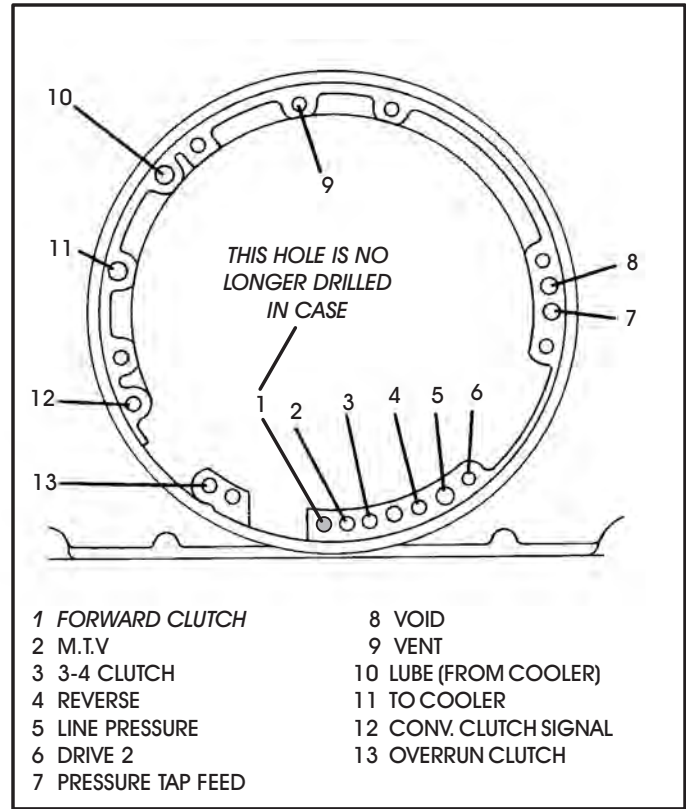


Figure 26

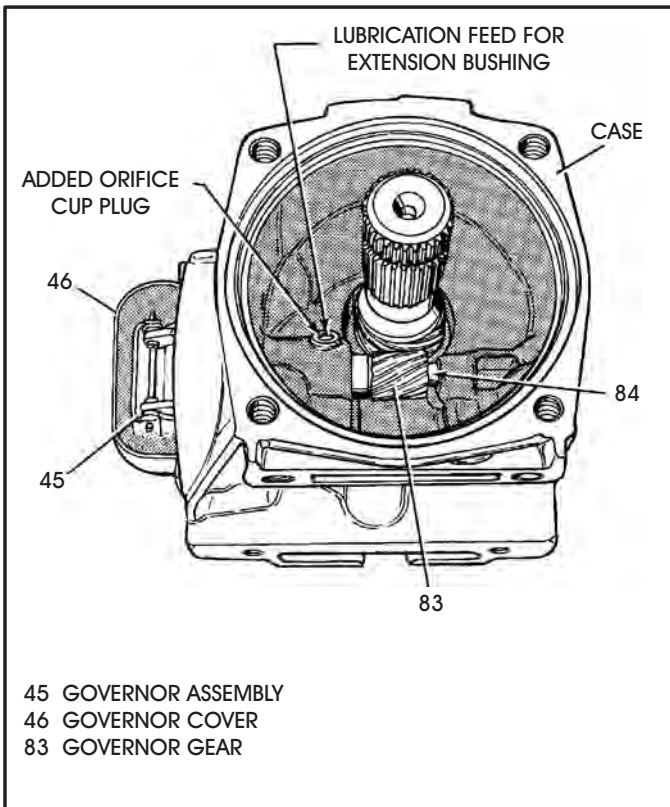


Figure 27

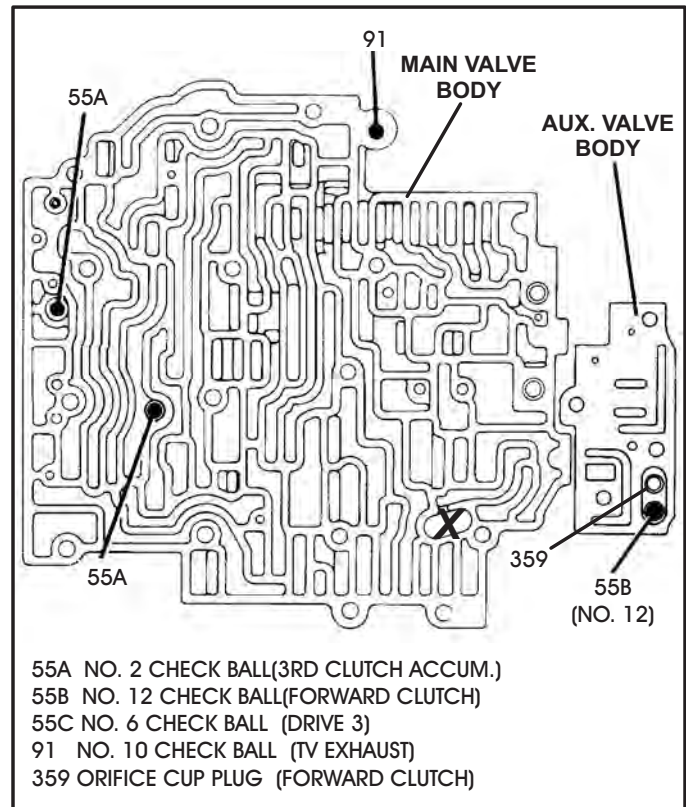


Figure 28

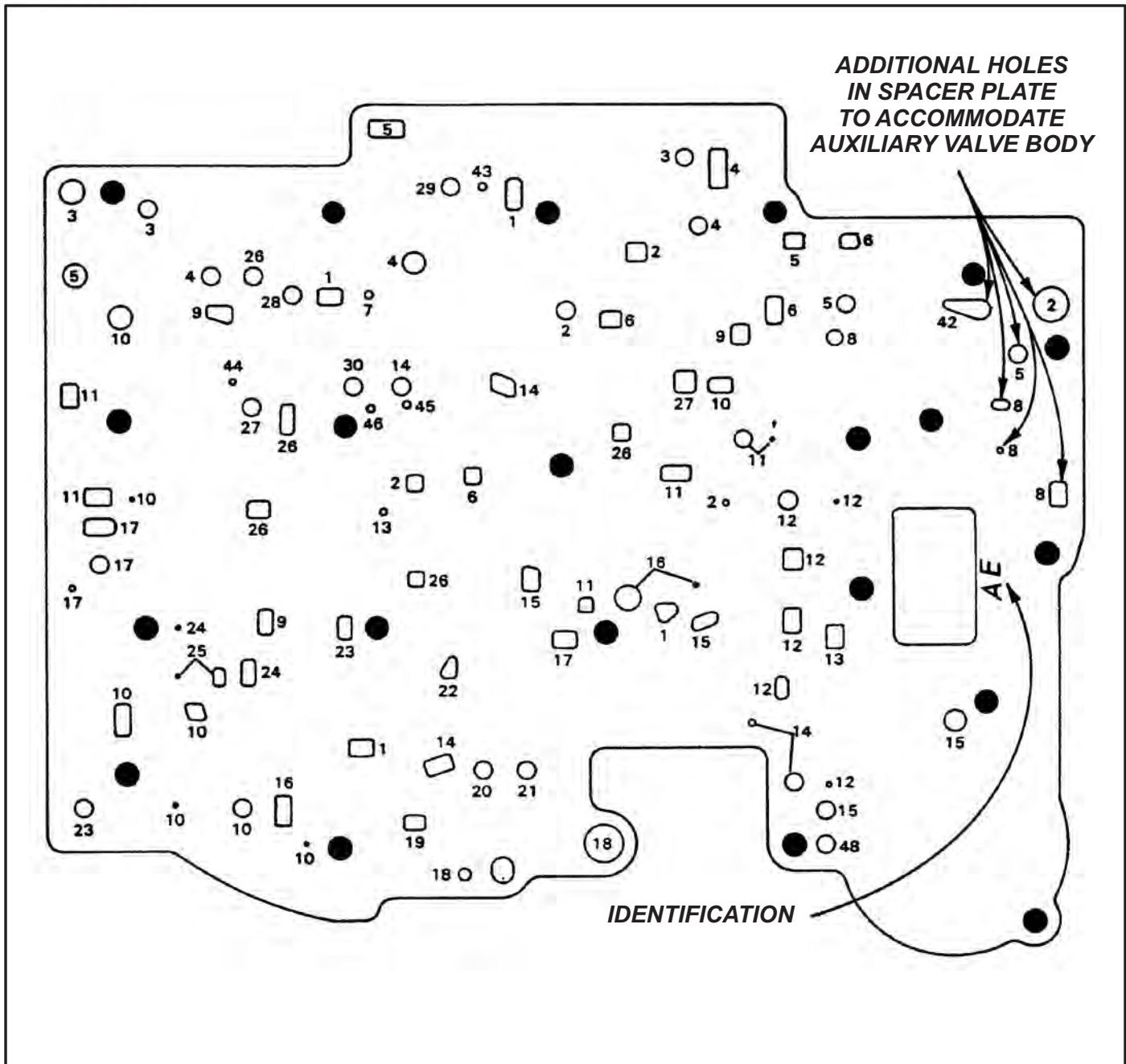


Figure 29



Technical Service Information

1987 THM 700-R4 SPACER PLATE CHART						
PART NO.	8663589	8667064	8663595	8663587	8663763	8663593
I.D. CODE	AF	AP	AM	AD	AN	AK
FITS THESE MODELS	MUM TJM TKM MDM MKM MLM	MHM TNM TRM	MWM TUM TXM MZM MPM	FAM MMM MAM MRM MXM MFM	TSM	YFM
PART NO.	8663592	8663585	8667703	8663590	8663764	8667525
I.D. CODE	AJ	AB	AZ	AG	AO	AU
FITS THESE MODELS	YLM	YTM	YWM	YKM	YPM	YNM
PART NO.	8663584	8667061	8663591	8663588	8667063	8663594
I.D. CODE	AA	AS	AH	AE	AT	AL
FITS THESE MODELS	YZM YMM	YSM	PAM PBM PCM YAM	PRM MTM MCM	TAM TBM YXM	YDM
1988 THM 700-R4 SPACER PLATE CHART						
PART NO.	8667353	8667354	8667355	8667356	8667357	8667358
I.D. CODE	BH	BE	BD	BF	BM	BA
FITS THESE MODELS	PAM PBM PCM MHM TNM	MCM PRM MTM	FAM MAM MFM FMM MRM MXM	MDM MKM MLM TJM TKM	MPM MWM TUM TXM MZM	YZM
PART NO.	8667359	8667360	8667363	8667364	8667475	8667700
I.D. CODE	BL	BG	BT	BB	BU	BX
FITS THESE MODELS	YDM	YKM	YXM TAM TBM	YTM	YNM	YMM
PART NO.	8667367	8667704	8667825			
I.D. CODE	BO	BZ	BS			
FITS THESE MODELS	YPM	YWM	THM TLM			

Figure 30



Technical Service Information

1989 THM 700-R4 SPACER PLATE CHART

PART NO. I.D. CODE	8673053 BC	8673136 BN	8673137 BP	8673825 BS	8673139 BV	8673135 BW
FITS THESE MODELS	HBM HHM	MCM PRM	MDM MKM MLM TJM TKM	THM TLM	MPM MWM MZM TUM TXM	FMM MAM MFM MRM MXM
PART NO. I.D. CODE	8673138 BY	8673165 CB	8673160 CC	8673164 CD	8673166 CG	8673163 CH
FITS THESE MODELS	MHM PAM PBM PCM TNM	FKM	YDM	YTM	YXM	YPM
PART NO. I.D. CODE	8673238 CK	8673206 CL	8673352 CM	8673353 CO	8673499 CW	8673500 CX
FITS THESE MODELS	YNM	HDM	FXM	YZM	HCM	HFM

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Figure 31



Technical Service Information

1990 THM 700-R4 SPACER PLATE CHART						
PART NO. I.D. CODE	8673053 BC	8673136 BN	8673137 BP	8673825 BS	8673139 BV	8673135 BW
FITS THESE MODELS	HBM HHM	MCM PRM	MDM MKM MLM TJM TKM	THM TLM	MPM MWM MZM TUM TXM	FMM MAM MFM MRM MXM
PART NO. I.D. CODE	8673164 CD	8673238 CK	8673206 CL	8673352 CM	8673401 CN	8673441 CS
FITS THESE MODELS	BAM	BPM	HDM	FUM	MSM	FBM
PART NO. I.D. CODE	8673509 CT	8673510 CU	8673511 CV	8673499 CW	8673500 CX	8673645 CZ
FITS THESE MODELS	YDM	FTM	FZM	HCM	HLM	HJM
PART NO. I.D. CODE	8673633 DA	8673440 DB				
FITS THESE MODELS	LAM LBM LCM LDM LFM	DBM				

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Figure 32



Technical Service Information

1991 THM 700-R4 SPACER PLATE CHART						
PART NO. I.D. CODE	8673053 BC	8673825 BS	8673137 BW	8673165 CB	8673238 CK	8673352 CM
FITS THESE MODELS	HBM	SHM TLM	MJM MNM WAM	FYM	BJM	FUM
PART NO. I.D. CODE	8673401 CN	8673441 CS	8673509 CT	8673510 CU	8673551 CV	8673499 CW
FITS THESE MODELS	MSM	FBM	YHM	FTM	FZM	HCM
PART NO. I.D. CODE	8673500 CX	8673655 DC	8673653 DD	8673654 DG	8676590 DH	8676591 DJ
FITS THESE MODELS	HLM	CCM CFM KLM WBM	CAM CBM KMM	SAM	DAM	BCM
PART NO. I.D. CODE	8677426 DK	8677719 DM	8677720 DN	8677704 DO	8678207 DP	8678042 DS
FITS THESE MODELS	DBM	HDM	HJM	SFM	2DDM (92 Model)	BCM BHM
PART NO. I.D. CODE	8677426 DT	8677719 DU	8677720 DV	8677704 EA	8678207 EB	
FITS THESE MODELS	LHM	LAM LBM LCM LDM LFM	AAM	CNM CYM KWM RCM RDM	AMM APM	

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Figure 33



Technical Service Information

1992 THM 700-R4 SPACER PLATE CHART						
PART NO.	8673053	8673825	8673165	8673238	8673441	8673510
I.D. CODE	BC	BS	CB	CK	CS	CU
FITS THESE MODELS	HBM	SHM TLM	FUM	BFM	FBM	FTM
PART NO.	8673511	8673500	8673655	8673653	8673654	8676590
I.D. CODE	CV	CX	DC	DD	DG	DH
FITS THESE MODELS	FZM	HLM	CCM CFM KHM WBM	CAM CBM KMM MJM MNM WAM	SAM	ACM
PART NO.	8676591	8679435	8677719	8677720	8677704	8678207
I.D. CODE	DJ	DL	DM	DN	DO	DP
FITS THESE MODELS	BCM	TWM	HDM	HJM	SFM	DDM
PART NO.	8678042	8678328	8678567	8679298	8679492	8680144
I.D. CODE	DS	DT	DU	DV	DY	EA
FITS THESE MODELS	BBM BHM	LHM	LBM LCM LDM LFM	AAM	TAM TBM	CJM CHM KJM WCM
PART NO.	8680678	8680677	8680502	8680503	8680770	8680828
I.D. CODE	EC	ED	EE	EG	EH	EJ
FITS THESE MODELS	YAM YCM	YDM	BAM	BWM	ADM AKM	MMM MSM
PART NO.	8681061					
I.D. CODE	EK					
FITS THESE MODELS	CPM					

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Figure 34



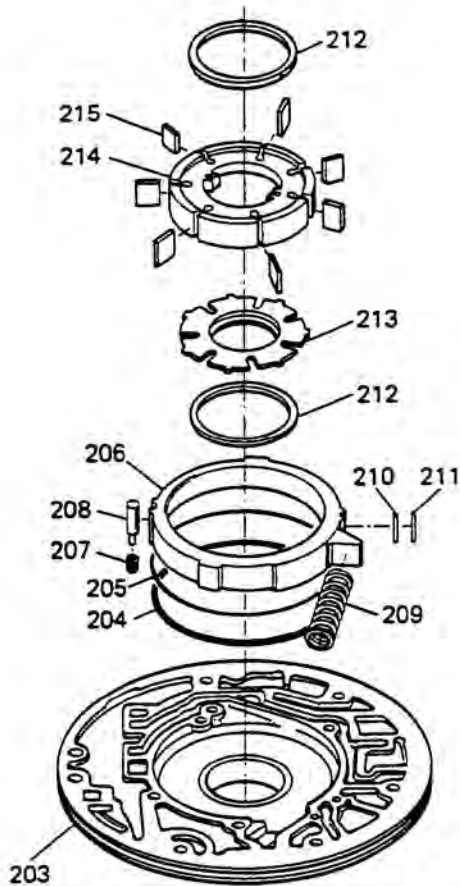
Technical Service Information

1993 THM 700-R4 SPACER PLATE CHART						
PART NO. I.D. CODE	8681262 EP	8681263 ES	8681264 ET	8681265 EU	8681266 EV	8681267 EW
FITS THESE MODELS	AAM	BWM	ADM AFM	FAM FDM	HBM	HDM
PART NO. I.D. CODE	8681268 EX	8681269 EY	8681270 EZ			
FITS THESE MODELS	FFM	FMM	HJM			
PART NO. I.D. CODE	8681271 GA	8681272 GB	8681273 GC	8681274 GD	8681275 GE	8681276 GG
FITS THESE MODELS	HLM	CCM CFM KLM WBM	CAM CBM KMM	SAM	DAM	BCM
PART NO. I.D. CODE	8681277 GH	8681278 GJ	8681280 GL	8681285 GS	8681289 GW	8681259 GX
FITS THESE MODELS	BFM	SAM	CPM	LHM	SFM	BRM
PART NO. I.D. CODE	8684466 HA					
FITS THESE MODELS	ASM					

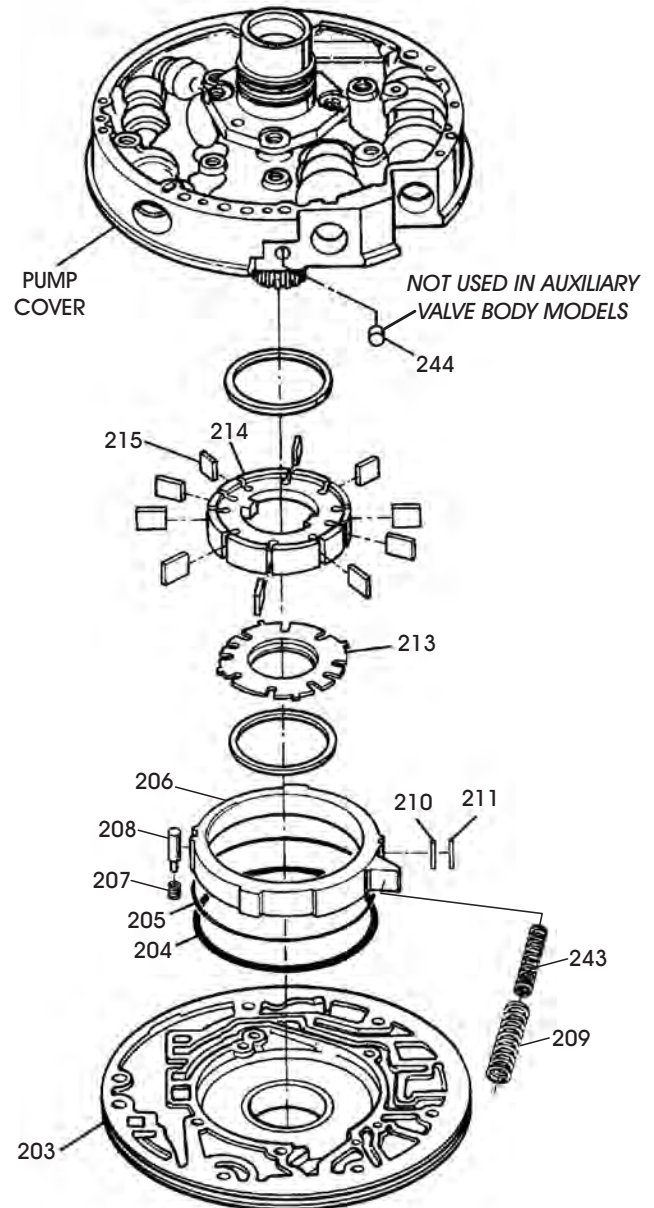
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Figure 35

PREVIOUS DESIGN SEVEN VANE PUMP



NEW DESIGN TEN VANE PUMP



- 203 OIL PUMP BODY
- 204 PUMP SLIDE SEAL RING
- 205 PUMP SLIDE SEAL BACK-UP "O" RING
- 206 PUMP SLIDE (SELECTIVE)
- 207 PUMP SLIDE PIVOT PIN SPRING
- 208 PUMP SLIDE PIVOT PIN
- 209 PUMP SLIDE OUTER SPRING
- 210 PUMP SLIDE SEAL SUPPORT
- 211 PUMP SLIDE SEAL
- 212 PUMP VANE RING (2)
- 213 PUMP ROTOR GUIDE
- 214 OIL PUMP ROTOR (SELECTIVE)
- 215 PUMP ROTOR VANES
- 243 PUMP SLIDE INNER SPRING
- 244 CUP PLUG (NOT USED IN AUX. VALVE BODY MODELS)

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Figure 36

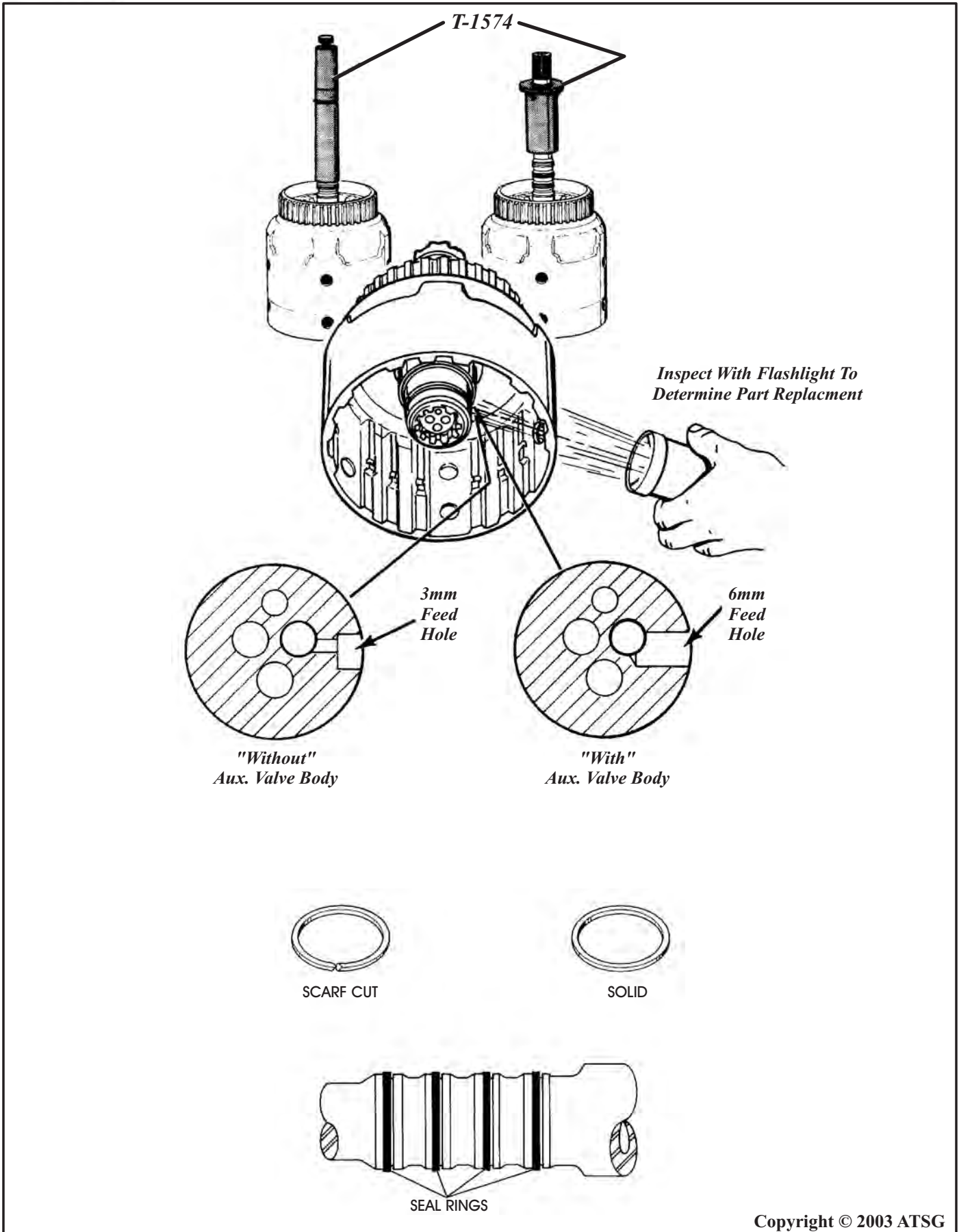


Figure 37

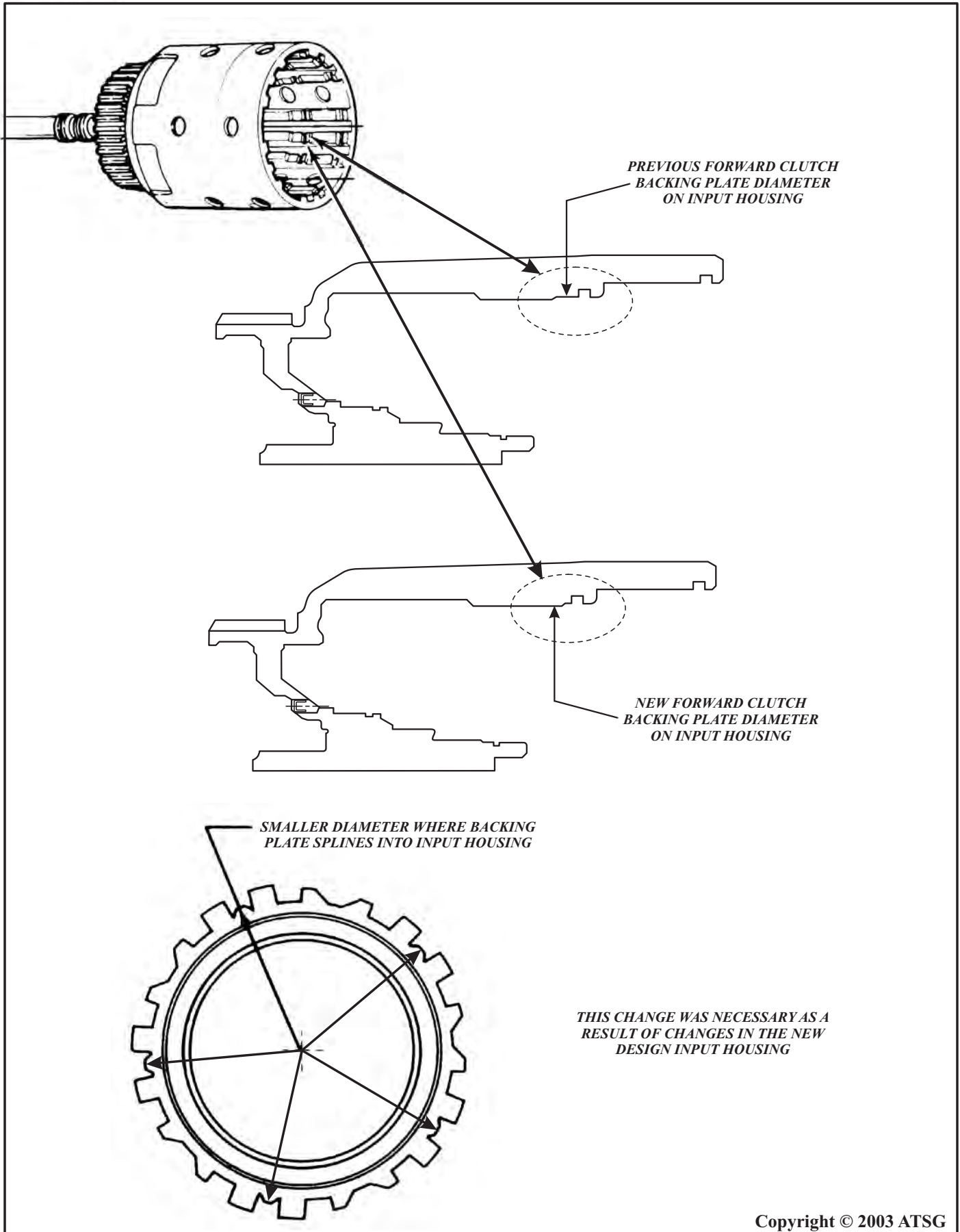


Figure 38

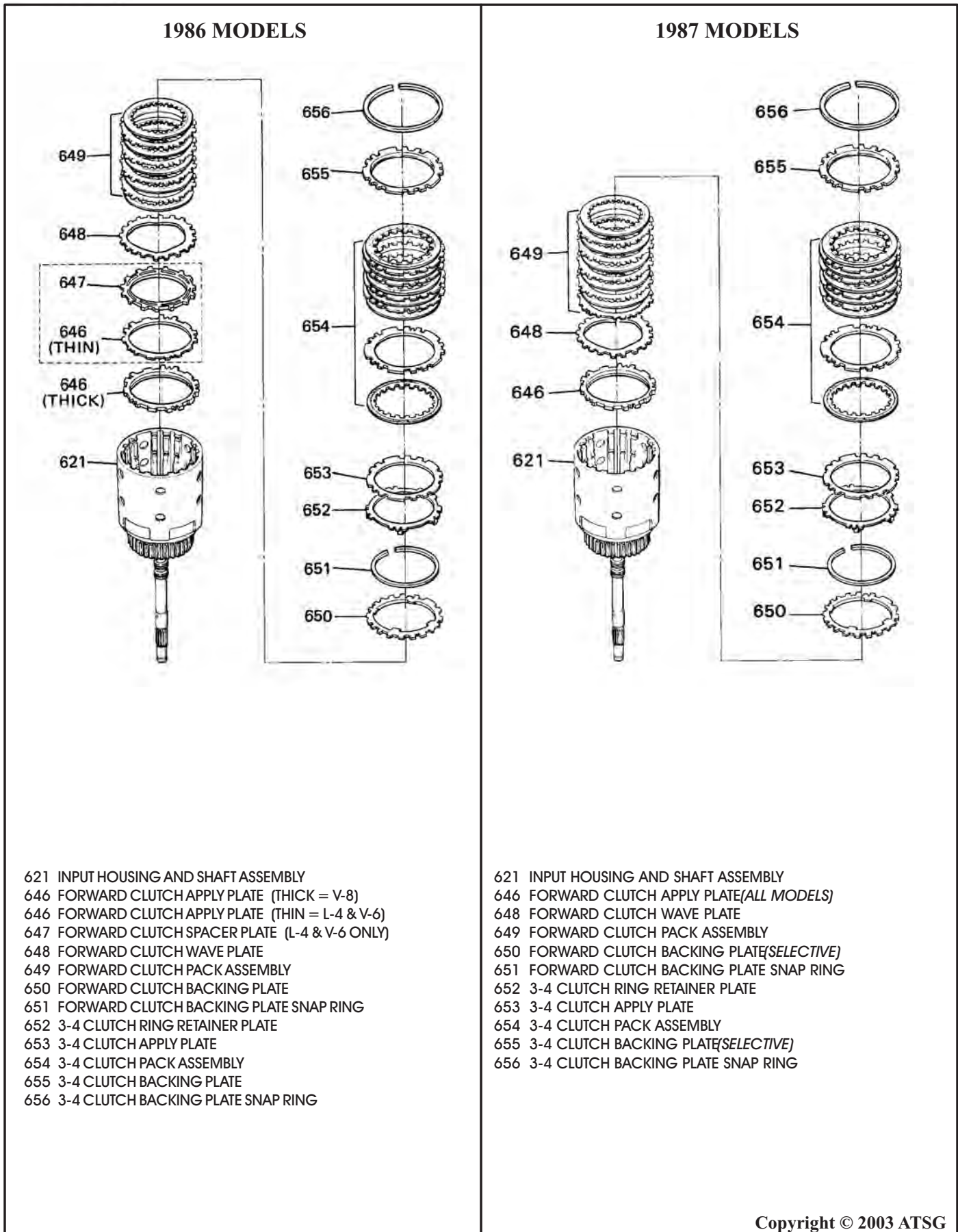


Figure 39

FORWARD CLUTCH INFORMATION CHART

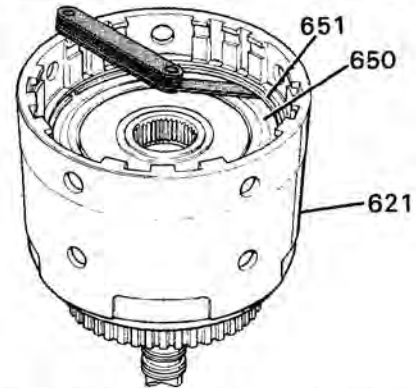
PLATE TYPE	THICK- NESS	QUANTITY REQUIRED
		ALL MODELS
FLAT STEEL CLUTCH PLATE	2.29mm (.090")	5
COMPOSITION FACED CLUTCH PLATES	1.78mm (.070")	5
APPLY PLATE	6.44mm (.251")	1
WAVED STEEL CLUTCH PLATE	2.03mm (.079")	1
BACKING PLATE	SELEC- TIVE	1

FORWARD CLUTCH BACKING PLATE SELECTION

ALL MODELS

BACKING PLATE TRAVEL = .76mm - 1.55mm (.030" - .060")

PLATE THICKNESS	IDENTIFICATION
6.97mm - 7.07mm (.274" - .278")	STAMPED "A" OR "1"
6.38mm - 6.48mm (.250" - .255")	STAMPED "B" OR "2"
5.79mm - 5.89mm (.227" - .232")	STAMPED "C" OR "3"
5.20mm - 5.30mm (.205" - .208")	STAMPED "D" OR "4"
4.61mm - 4.71mm (.180" - .185")	STAMPED "E" OR "5"



621 HOUSING & SHAFT ASSEMBLY, INPUT
 650 PLATE, FORWARD CLUTCH BACKING
 651 RING, FORWARD CLUTCH BACKING PLATE RETAINER

BACKING PLATE PART NUMBERS

<i>Forward Clutch Backing Plate (.274" - .278")</i>	8667667
<i>Forward Clutch Backing Plate (.250" - .255")</i>	8667668
<i>Forward Clutch Backing Plate (.227" - .232")</i>	8667669
<i>Forward Clutch Backing Plate (.205" - .208")</i>	8667670
<i>Forward Clutch Backing Plate (.180" - .185")</i>	8667671

Figure 40

"NEW" DESIGN OIL PAN (1mm DEEPER)

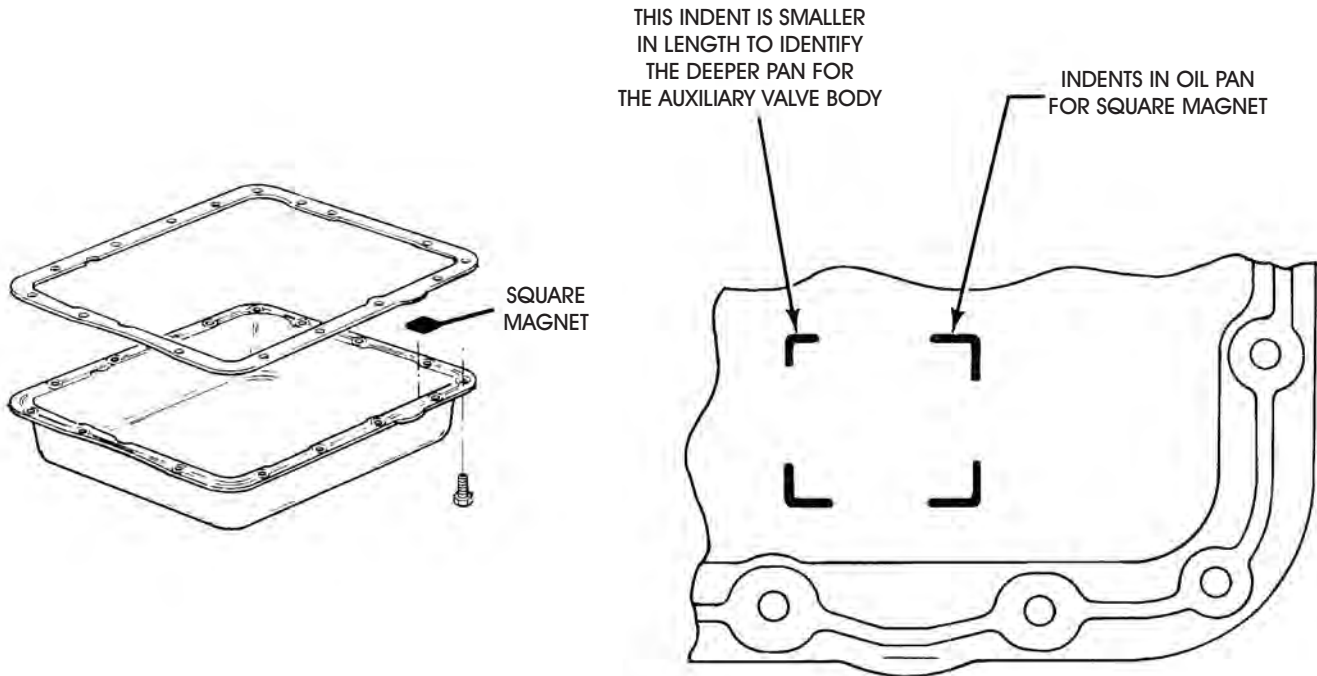


Figure 41



Technical Service Information

1987 CHANGE:

CHANGE: Beginning on January 5, (Julian Date 005) 1987, there were changes to the 2-4 servo apply pin that eliminated the two seal rings, and the seal ring grooves in the pin (See Figure 42).

REASON: Eliminates the potential for seal damage during assembly.

PARTS AFFECTED:

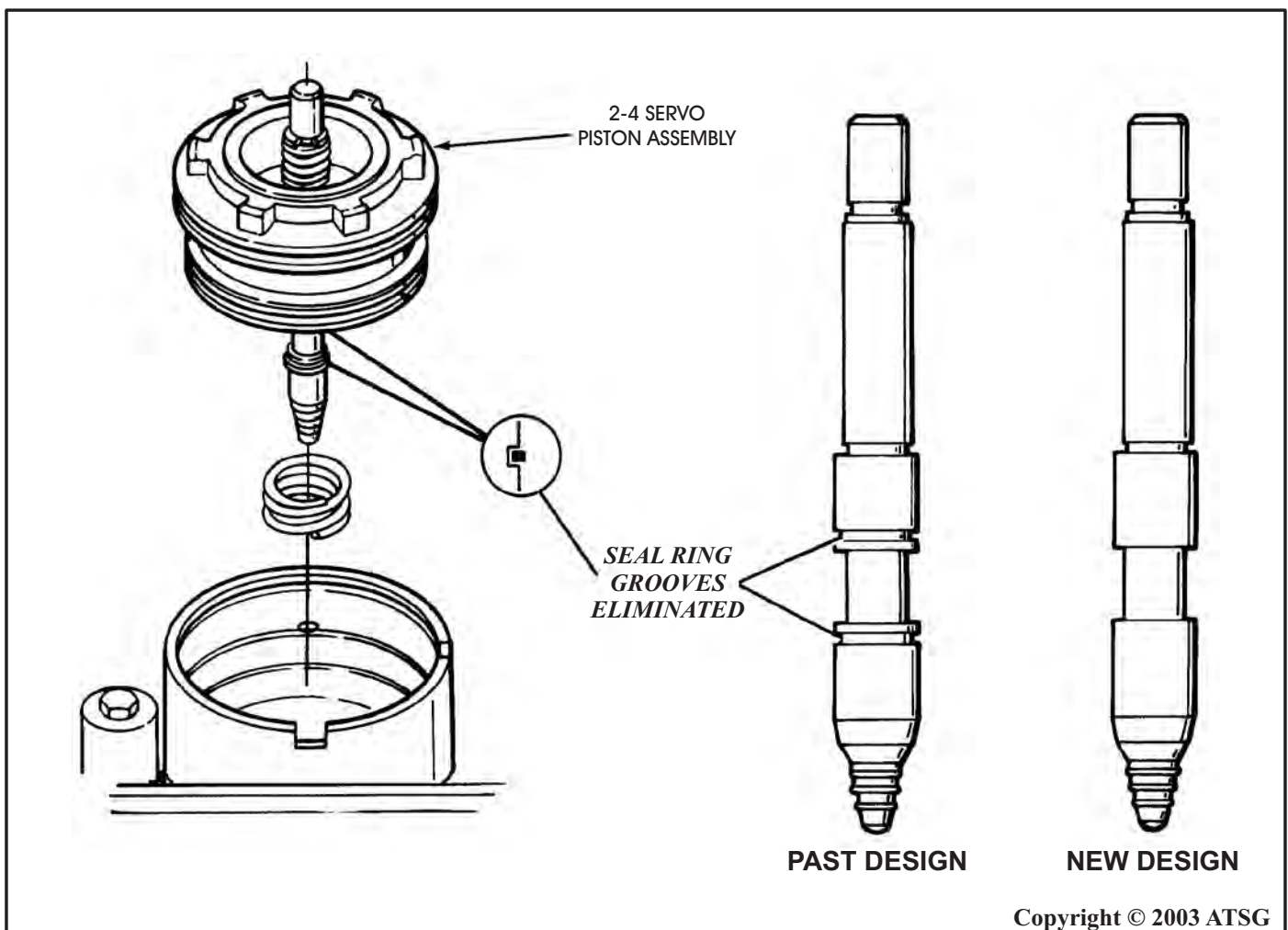
- (1) 2-4 SERVO PIN - Seal grooves eliminated in the servo apply pin, as shown in Figure 42. Testing has shown that any potential leakage in this area with the new servo pin will not affect transmission performance or durability.

INTERCHANGEABILITY:

The new servo apply pin can be used on all previous model 1982-1986 model 700-R4 units. If a previous design servo apply pin is used on any model, the seal rings *must* be installed.

SERVICE INFORMATION:

Servo Apply Pin, 2 Ring I.D, 66.37-66.67mm (2.610" - 2.620")	8667571
Servo Apply Pin, 3 Ring I.D, 66.74-66.04mm (2.670" - 2.680")	8667572
Servo Apply Pin, Wde Band I.D, 69.11-69.41mm (2.720" - 2.730")	8667573



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Figure 42

1987 CHANGE: "REVERSE APPLY PACKAGE"

CHANGE: Beginning on February 9, (Julian Date 040) 1987, there was a double orificed ball capsule added to the Low/Reverse passage in rear of case, as shown in Figure 43. This capsule was part of a Reverse apply package that was implemented at the same time.

REASON: Provides a double orifice for low/reverse clutch pack for a smoother reverse engagement.

PARTS AFFECTED:

- (1) ORIFICED CHECKBALL CAPSULE - Added to the low/reverse passage at the rear of the case in the location shown in Figure 43, which allows for both a controlled apply and a rapid release of the Low/Reverse clutch.

INTERCHANGEABILITY:

This Double Orifice Checkball Capsule is part of a reverse apply package involving other components and design changes for 1987 through 1993 models with Auxiliary Valve Body. This Double Orificed Checkball Capsule *cannot* be used in previous models.

SERVICE INFORMATION:

Double Orifice Checkball Capsule 8663890

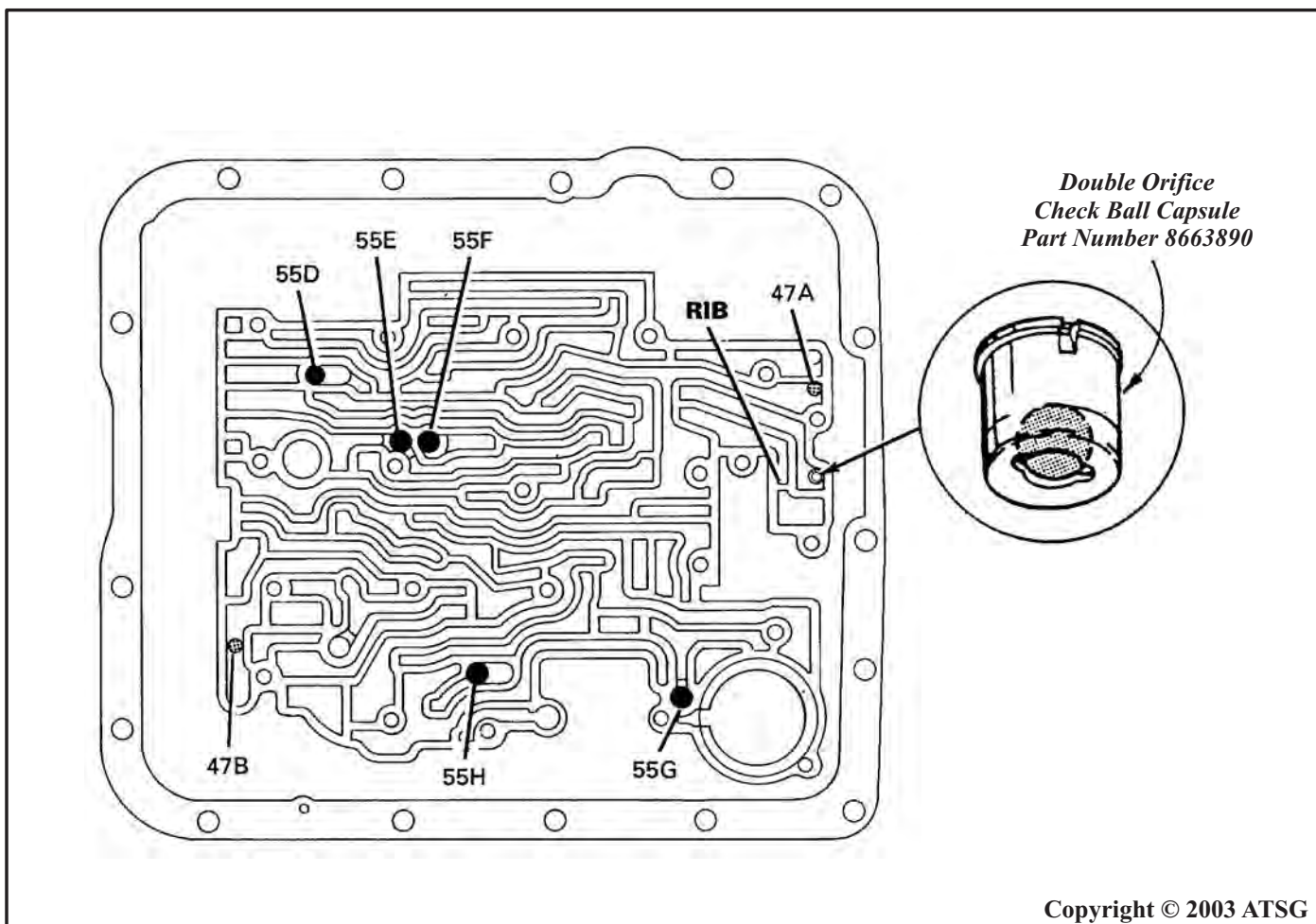


Figure 43



Technical Service Information

1987 CHANGE: "REVERSE APPLY PACKAGE"

CHANGE: Beginning on February 9, (Julian Date 040) 1987, a reverse apply package was implemented that changed the Reverse Input Housing and the Low/Reverse Clutch Pack.

REASON: Softens the apply feel when the selector lever is placed into Reverse, which results in a smoother reverse engagement.

PARTS AFFECTED:

- (1) REVERSE INPUT HOUSING - Several changes occurred here and are as follows:
 - (a) The Reverse Input Housing has a revised (larger) inside dimension to accommodate the new larger aluminum reverse piston, as shown in Figure 44.
 - (b) The feed hole on the inside diameter of hub in the housing is reduced to .095" diameter, as shown in Figure 44. Previous design has a .151" X .197" rectangular hole.
 - (c) The air bleed "Ball Capsule" is eliminated from the reverse input housing and replaced with a .095" orifice hole in the new aluminum piston, as shown in Figure 44.
 - (d) The reverse input piston changes from stamped steel to cast aluminum (See Figure 44).
 - (e) The reverse input piston lip seals revised to accommodate the new larger aluminum piston as shown in Figure 44.
 - (f) The "Wave" plate is replaced by a cone shaped "Bellville" plate. The "Bellville" plate must be installed with the inside diameter against the steel plate, as shown in Figure 44.
 - (g) The thickness of the friction plates change from the previous .080" thick, to the new .070" thickness, as shown in Figure 44, and the reverse input clutch backing plate is now selective, also shown in Figure 44.
- (2) OIL PUMP COVER - The reverse input feed hole between the sealing ring grooves has been enlarged to .215", where the previous was .095", as shown in Figure 44.
- (3) INPUT HOUSING - The profile of the input housing was changed where it mates with the reverse input clutch plates, as shown in Figure 44. This change provides improved lube to the reverse clutch plates, and also requires a revised dimension checkball capsule in the input housing, as shown in Figure 44.
- (4) LOW/REVERSE CLUTCH PACK - Has an added "Wave" plate to help cushion the apply, and an added "Selective" plate to set clutch clearance, as shown in Figure 45. All models now use 5 frictions, 4 steels, 1 "Selective", and 1 "Wave" plate.
To Choose The Proper "Selective" Low/Reverse Clutch Plate, See Figure 47 and 48.
- (5) LOW/REVERSE CLUTCH PISTON - Now has shorter apply skirt to accommodate the addition of the "Selective" and "Wave" plates, as shown in Figure 46.
- (6) ORIFICED CHECKBALL CAPSULE - Added to the low/reverse passage at the rear of the case in the location shown in Figure 43, which allows for both a controlled apply and a rapid release of the Low/Reverse clutch.

Continued On Page 47



Technical Service Information

INTERCHANGEABILITY:

- (1) The new design Reverse Input Housing **"Will Not"** back service previous models without extensive modifications and is **Not Recommended**. **None** of the internal components will interchange with previous design level parts.
- (2) The new design Oil Pump Cover will back service all previous models **but you must** also use the 1987-1992 reverse input housing. Also ensure that you install the cup plug for the added forward clutch feed pipe.
- (3) The new design Low/Reverse Clutch Pack will back service all previous models, as long as the complete assembly is installed, including the new design low/reverse piston. The double orifice checkball capsule **cannot** be used on previous models.

SERVICE INFORMATION:

Double Orifice Checkball Capsule	8663890
Low/Reverse Clutch Selective Plate (I.D. None)	8667592
Low/Reverse Clutch Selective Plate (Stamped "4")	8667593
Low/Reverse Clutch Selective Plate (Stamped "5")	8667594
Reverse Input Clutch Selective Backing Plate (Stamped "5")	8663075
Reverse Input Clutch Selective Backing Plate (Stamped "6")	8663076
Reverse Input Clutch Selective Backing Plate (Stamped "7")	8663077
Reverse Input Clutch Selective Backing Plate (Stamped "8")	8663078
Reverse Input Clutch Selective "Bellville" Plate	8663074
Reverse Input Clutch Aluminum Piston (.095" Orifice)	8663071

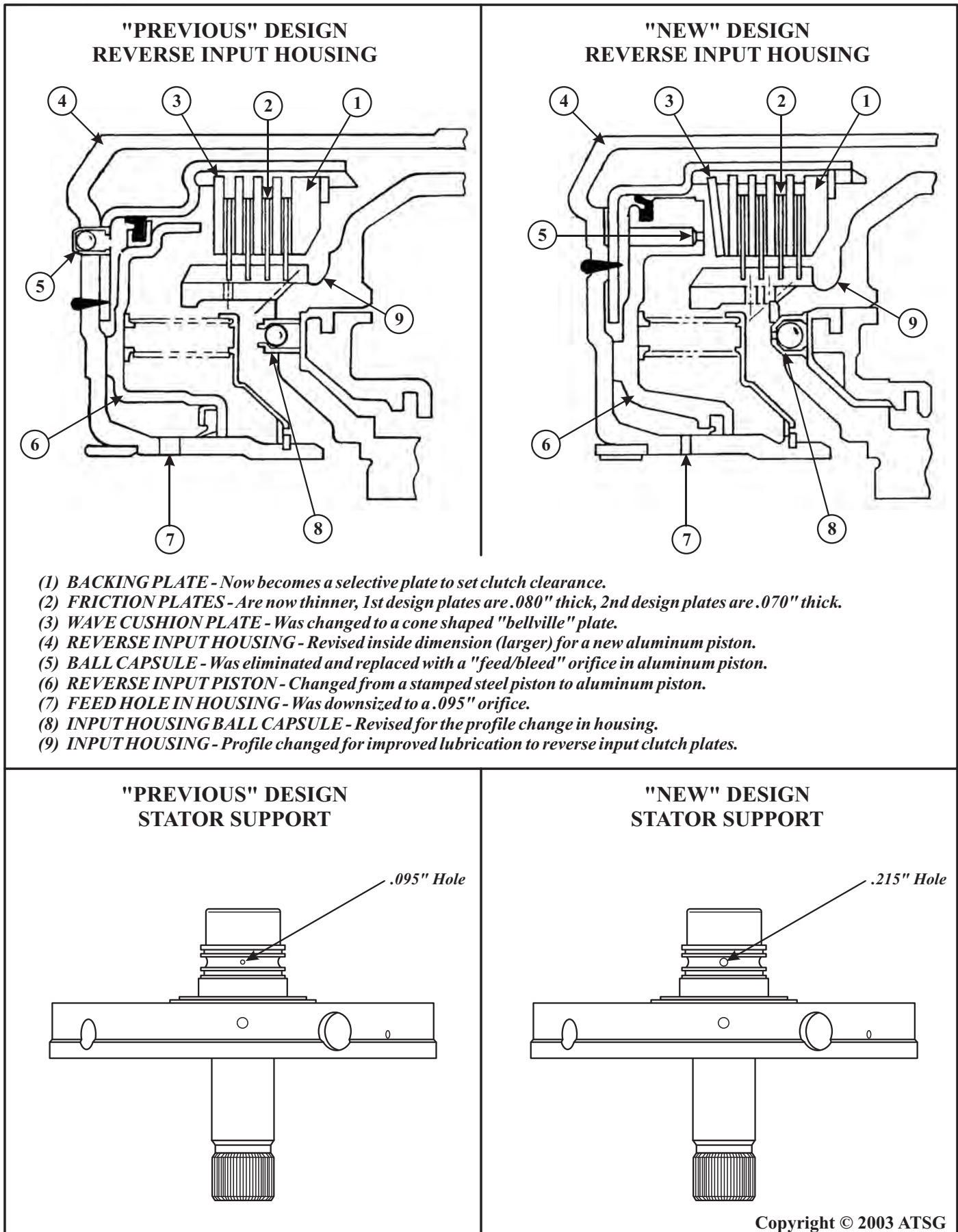


Figure 44

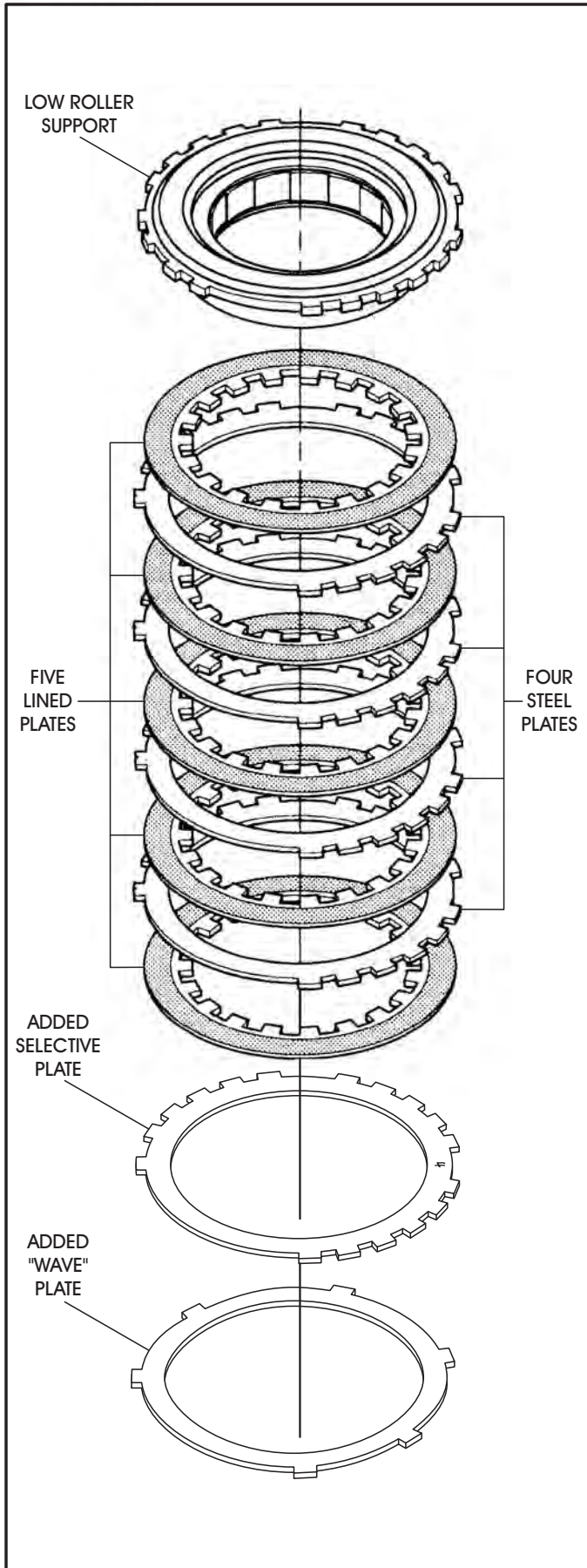


Figure 45

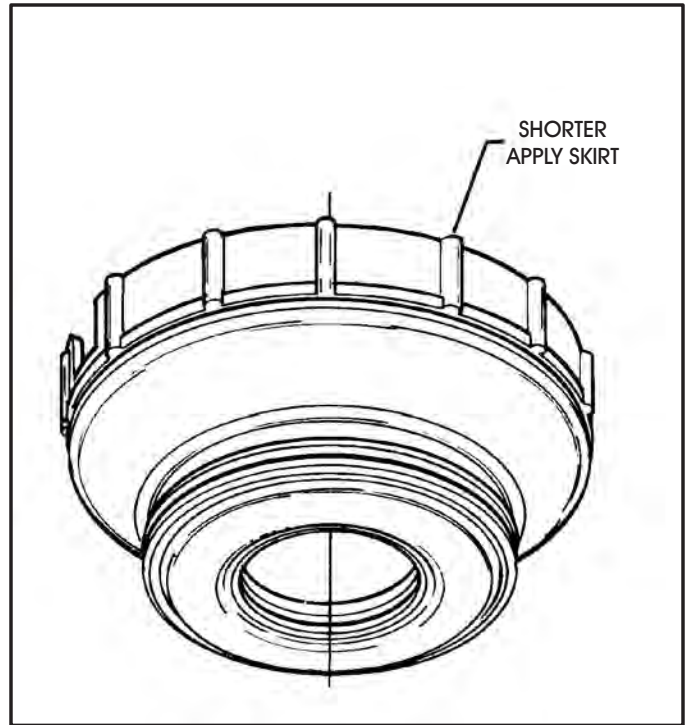


Figure 46

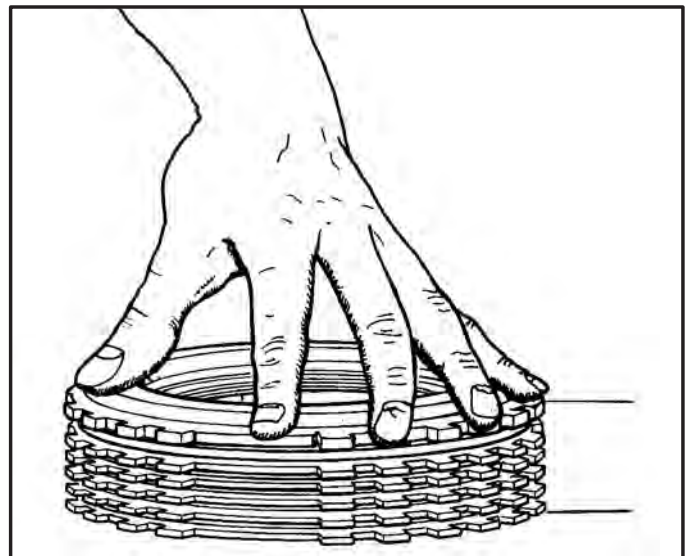
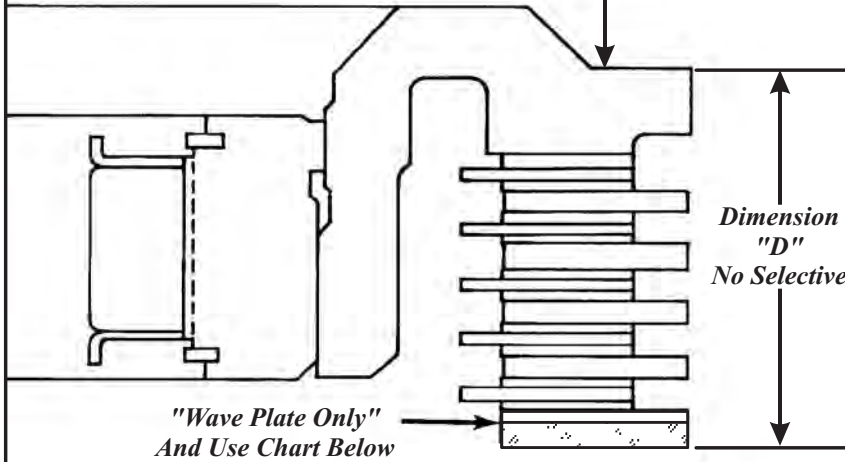


Figure 47

MEASURE TO DETERMINE PROPER "SELECTIVE" PLATE

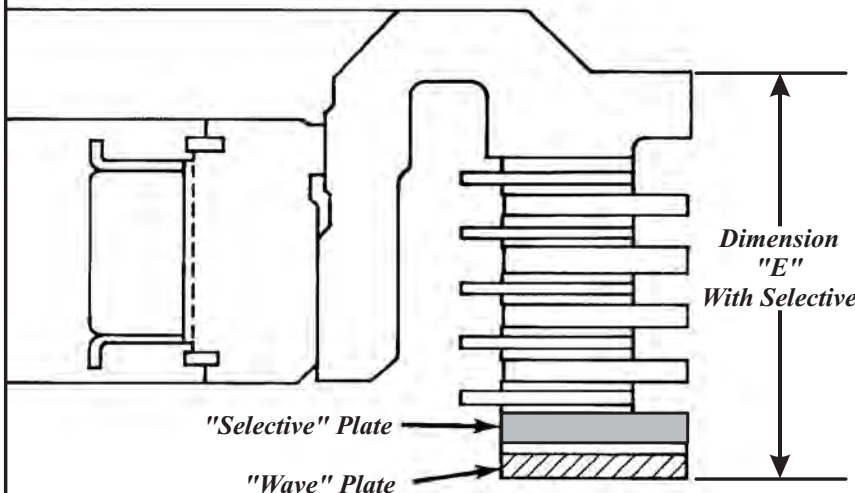
1. Apply a light (5 lbs), evenly distributed load to the center support, without the "selective" plate in place as shown below.
2. Measure Dimension "D" as shown below and use the selective plate chart to choose the proper "selective" Low/Reverse plate.
3. With the selective plate installed, the overall height at Dimension "E" should be as follows:
30.51 to 31.40mm (1.201" to 1.236").

*Apply Equal Pressure
(5 Pds) On This Diameter
As Shown In Figure 42*



IF GAGE DIMENSION "D" IS		USE THIS SELECTIVE PLATE		
<i>From</i>	<i>To</i>	<i>Identification</i>	<i>Plate Thickness</i>	
28.844mm (1.136")	29.554mm (1.164")	NONE	1.671mm (.066")	1.842mm (.073")
28.129mm (1.107")	28.844mm (1.136")	4	2.386mm (.094")	2.557mm (.101")
27.414mm (1.079")	28.129mm (1.107")	5	3.101mm (.122")	3.272mm (.129")

"VERIFY" MEASUREMENT FOR PROPER SELECTIVE PLATE



*WITH THE SELECTIVE
PLATE INSTALLED THE
OVERALL HEIGHT AT
DIMENSION "E" SHOULD BE:
30.51 TO 31.40mm
(1.201" to 1.236")*

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Figure 48

THM 700-R4 PREMATURE REVERSE INPUT CLUTCH FAILURE 1987-1993 MODELS WITH ALUMINUM PISTON

COMPLAINT: Premature failure of the Reverse Input Clutches on 1987-Up models with the aluminum reverse input clutch piston, as shown in Figure 49.

CAUSE: The cause may be, too large of an orifice in the new design "Feed-Bleed" system in the new design aluminum piston, as shown in Figure 49.

CORRECTION: Install an orifice cup plug that has a .062" orifice and is available from "Teckpak" in packages of 10, under their part number 77761C. This orifice cup plug should be installed into the back side of the piston, as shown in Figure 49. We recommend doing this procedure on all overhauls.

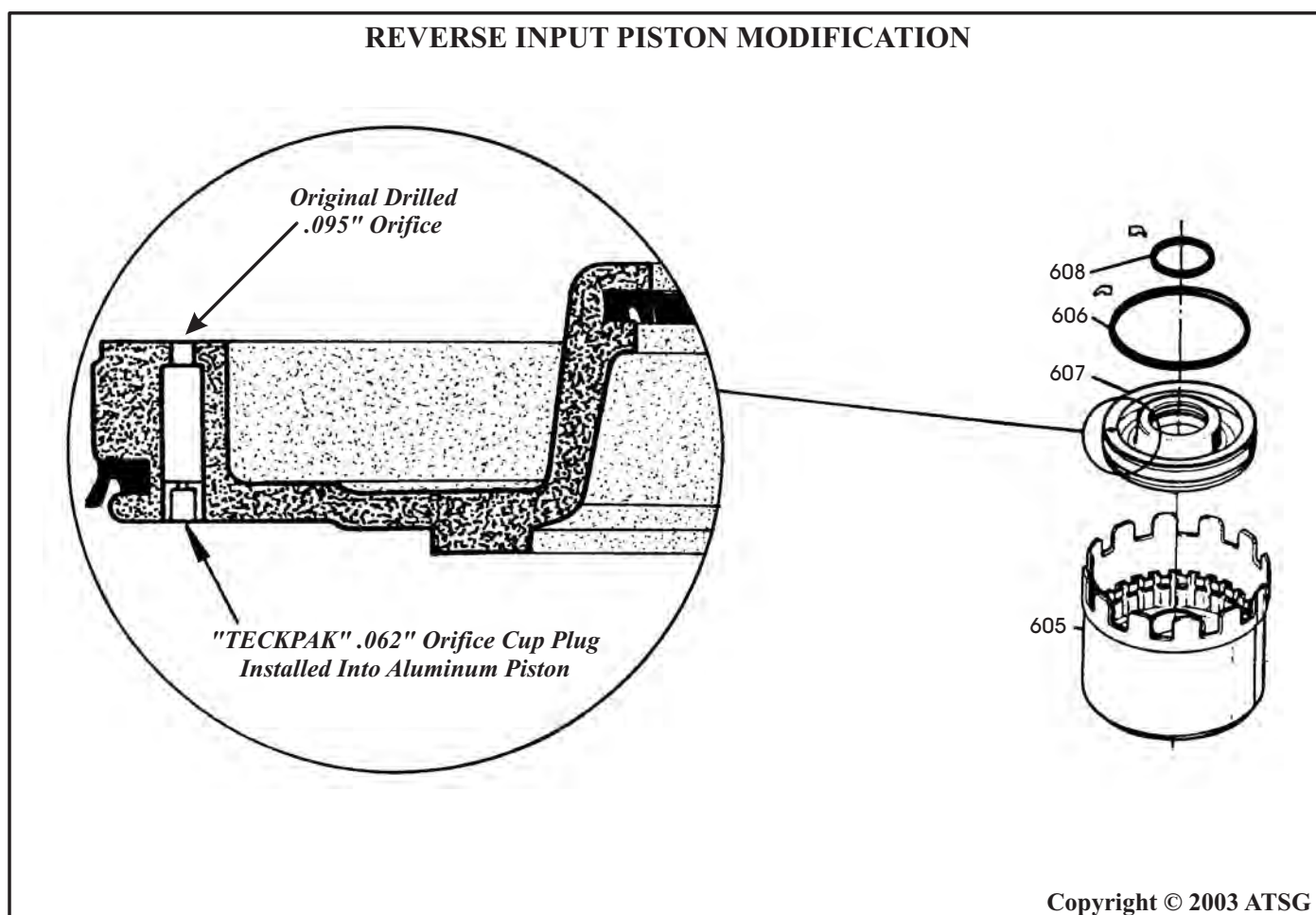


Figure 49



Technical Service Information

1987 CHANGE:

CHANGE: Beginning on February 9, (Julian Date 040) 1987, there was a new 3-4 clutch apply package implemented that included the addition of a "Stepped" 3-4 clutch apply plate, in all models, as shown in Figure 50.

REASON: The "Stepped" Apply Plate distributes the clutch apply force more evenly across the clutch plate face to improve the 3-4 clutch apply feel.

PARTS AFFECTED:

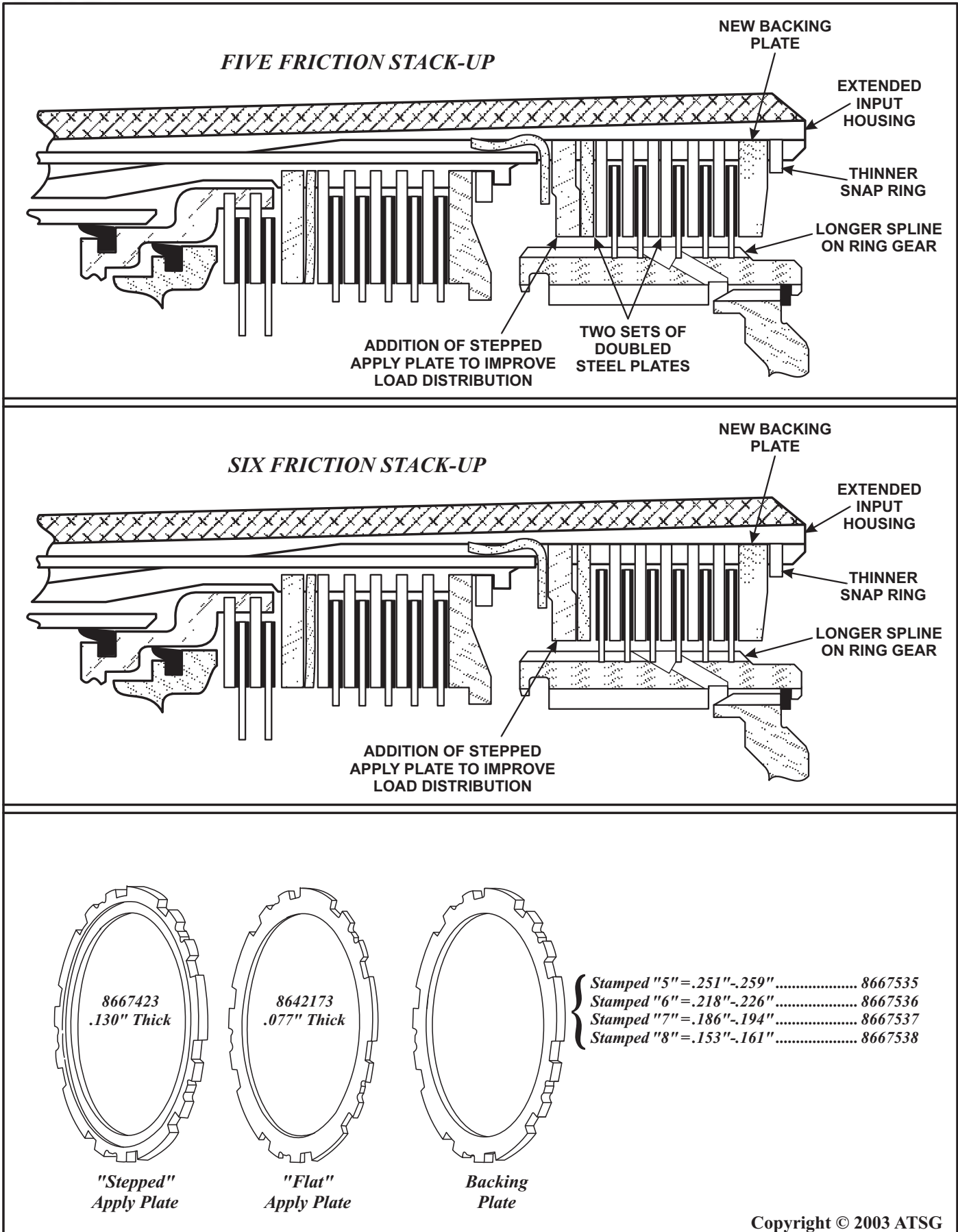
- (1) 3-4 CLUTCH STEPPED APPLY PLATE - Added in both the 5 plate and 6 plate 3-4 clutch stack-ups, as shown in Figure 50.
- (2) INPUT HOUSING ASSEMBLY - Increased in length to help accommodate the added stepped apply plate in the 3-4 clutch pack, as shown in Figure 50.
- (3) 3-4 BACKING PLATE SNAP RING - Backing plate snap ring is now thinner to help accommodate the added stepped apply plate, as shown in Figure 50.
- (4) 3-4 CLUTCH BACKING PLATE - There are now four new thickness backing plates to ensure proper 3-4 clutch clearance which should be .060" to .070". We have provided you with the new dimensions and part numbers for the backing plates in Figure 50.
- (5) INPUT INTERNAL RING GEAR - Now has longer splines to accommodate the extended length of the new input housing and the addition of the stepped apply plate.

INTERCHANGEABILITY:

None of the parts listed above will interchange with previous design level parts, however, when used as a service package it will back service previous models.

SERVICE INFORMATION:

3-4 "Stepped" Apply Plate (1 Required)	8667423
3-4 Steel Plate, WithWide Tabs (1 Required)	8642173
3-4 Steel Plate, WithoutWide Tabs (5 or 7 Required)	8663633
3-4 Friction Plates, (5 or 6 Required)	8654145
3-4 Backing Plate (Selective Stamped "5")	8667535
3-4 Backing Plate (Selective Stamped "6")	8667536
3-4 Backing Plate (Selective Stamped "7")	8667537
3-4 Backing Plate (Selective Stamped "8")	8667538
3-4 Clutch Backing Plate Snap Ring (Thinner)	8663636
Input Internal Ring Gear (Longer Splines)	8663639



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Figure 50

1987 CHANGE:

CHANGE: Beginning on June 28, (Julian Date 179) 1987, there was a new internal temperature switch that went into production on some models, as shown in Figure 51.

REASON: The new Temperature Switch mounts on the valve body and is submerged in transmission fluid in the oil pan, as shown in Figure 51. The temp switch supplies an alternate ground path for the TCC solenoid and applies the converter clutch when sump temperatures reach 125-135C (259-275F) and the transmission is in 4th gear.

PARTS AFFECTED:

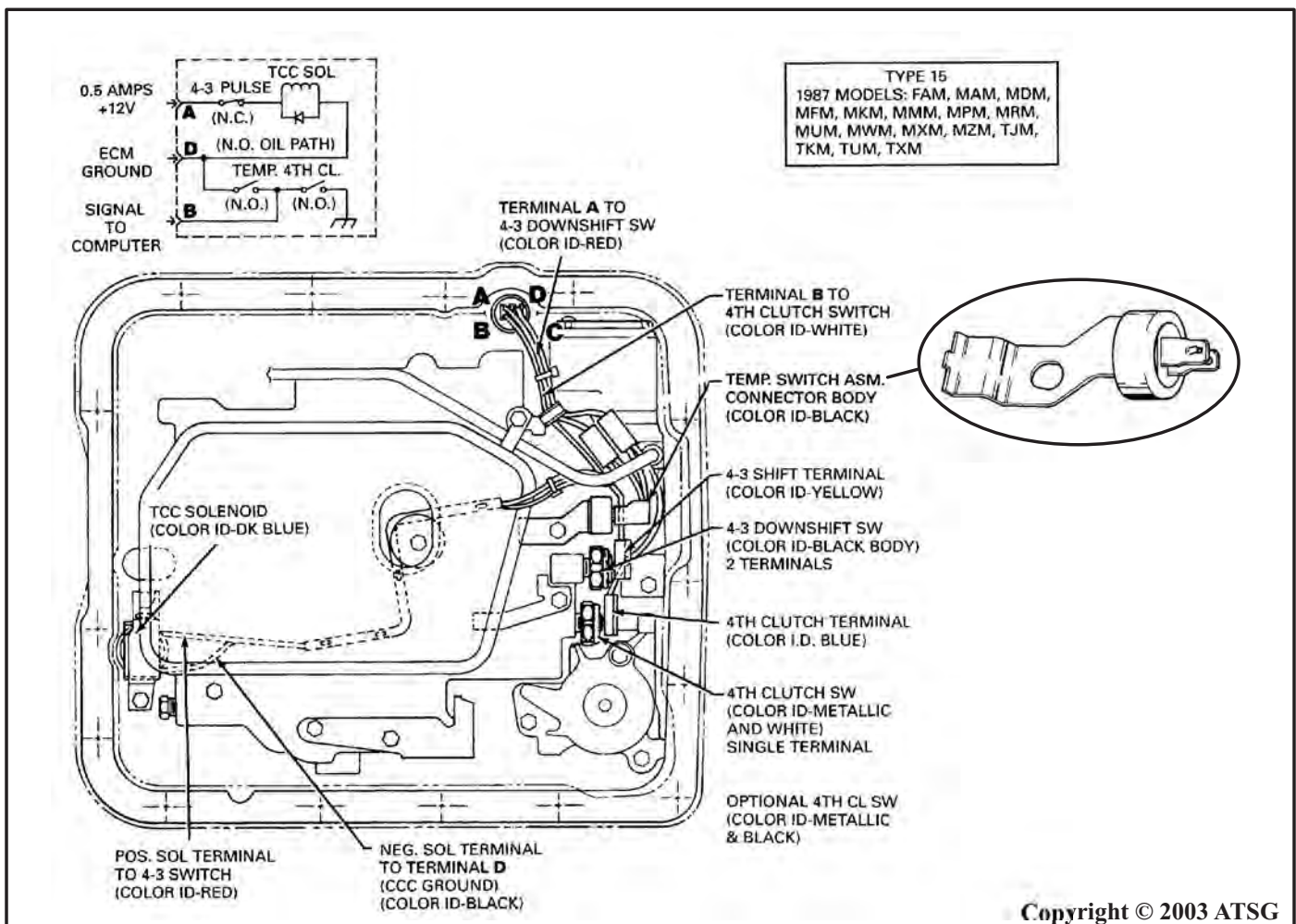
- (1) TEMPERATURE SWITCH - Added on the date shown above and mounts on the valve body, as shown in Figure 51.
- (2) INTERNAL WIRING HARNESS - A new Type-15 solenoid and wiring harness assembly was need to accommodate the new temperature switch. The Type-15 wiring harness can be identified by a dark blue insulator and number 4415 cast into the top of insulator.

INTERCHANGEABILITY:

Cannot be used on any previous models and affects only the models listed in Figure 51.

SERVICE INFORMATION:

Temperature Switch	8654421
Type-15 Solenoid/Internal Wiring Harness	8654415



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Figure 51



Technical Service Information

1987 CHANGE:

CHANGE: Beginning on July 6, (Julian Date 187) 1987, there was a new oil filter and oil filter seal that went into production on all models of the THM 700-R4, as shown in Figure 52.

REASON: Decreases the potential for noise created by air suction through the seal or filter neck.

PARTS AFFECTED:

- (1) OIL FILTER - The new design filter is wider, has a felt media type element in place of the previous screen, and is bottom suction instead of top suction, as shown in Figure 52.
- (2) OIL FILTER SEAL - The new design seal is two rubber lips molded to a steel sleeve and the seal is glued onto the filter neck, as shown in Figure 52.

INTERCHANGEABILITY:

The new oil filter and filter seal can be used on any 1982-1987 THM 700-R4 transmission. The oil filter retaining clip on previous models is not need with the new filter and should be discarded.

SERVICE INFORMATION:

Service Package, Oil Filter and Seal, Pan Gasket 8657926

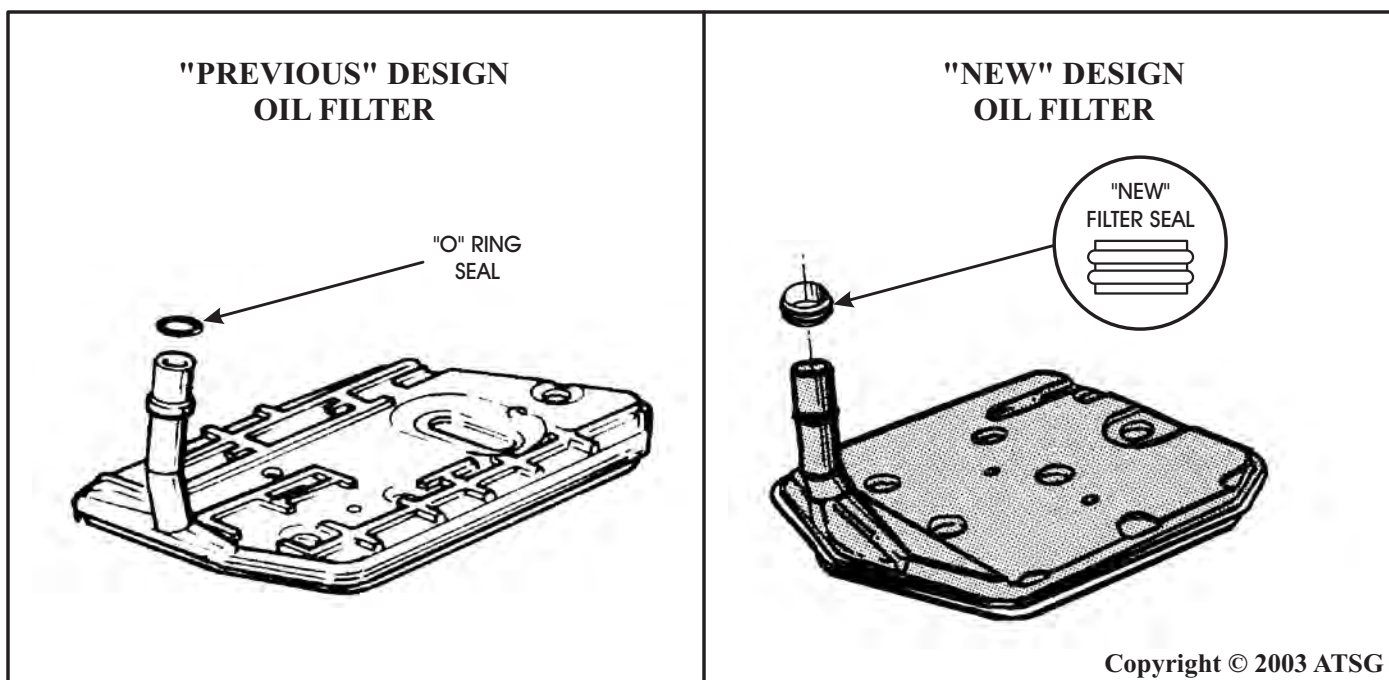


Figure 52



Technical Service Information

1988 CHANGE:

CHANGE: Beginning on July 23, (Julian Date 204) 1988, there was a new design valve body assembly with a revised 1-2 shift valve line-up, and a revised 3-4 throttle valve, as shown in Figure 53.

REASON: Improved consistency for the 1-2 and 3-4 upshifts, and allows engine braking at a higher vehicle speed during a Manual 2-1 downshift.

PARTS AFFECTED:

- (1) 1-2 SHIFT VALVE LINE-UP - The 1-2 shift valve line-up changes from 4 valves and two sleeves, to two valves and one sleeve. The Lo Range Downshift Valve (321), Lo Range Control Sleeve (320), and the 1-2 Lo Range Upshift Valve (353), have been eliminated from the 1988 and later model valve bodies, as shown in Figure 53.
- (2) 3-4 THROTTLE VALVE - The 3-4 throttle valve and sleeve now have revised diameters, as shown in Figure 53.
- (3) SPACER PLATE AND GASKETS - Spacer plate and both gaskets have been revised to accommodate the changes in the 1-2 shift valve line-up, and also changes over the case bathtub where the number 9 checkball was eliminated, as shown in Figure 54.
- (4) NUMBER 9 CHECKBALL - The number 9 checkball located in the bathtub in the case location shown in Figure 54, has been eliminated.

Special Note: *Installing the Number 9 Checkball into a 1988 or later model "WILL" burn the low/reverse clutches in a very short period of time.*

INTERCHANGEABILITY:

- (1) The 1988 valve body assembly **cannot** be used on any previous THM 700-R4 models.
- (2) The spacer plate and gaskets are unique to 1988 models and **will not** back service any previous models of the THM 700-R4. Refer to Pages 32 thru 37 for spacer plate identification for all models.
- (3) **Do Not** install the number 9 checkball in any 1988 or later model.

SERVICE INFORMATION:

Refer to Pages 32 through 37 for spacer plate identification and part numbers for 1987-1993 models of the THM 700-R4 transmissions.

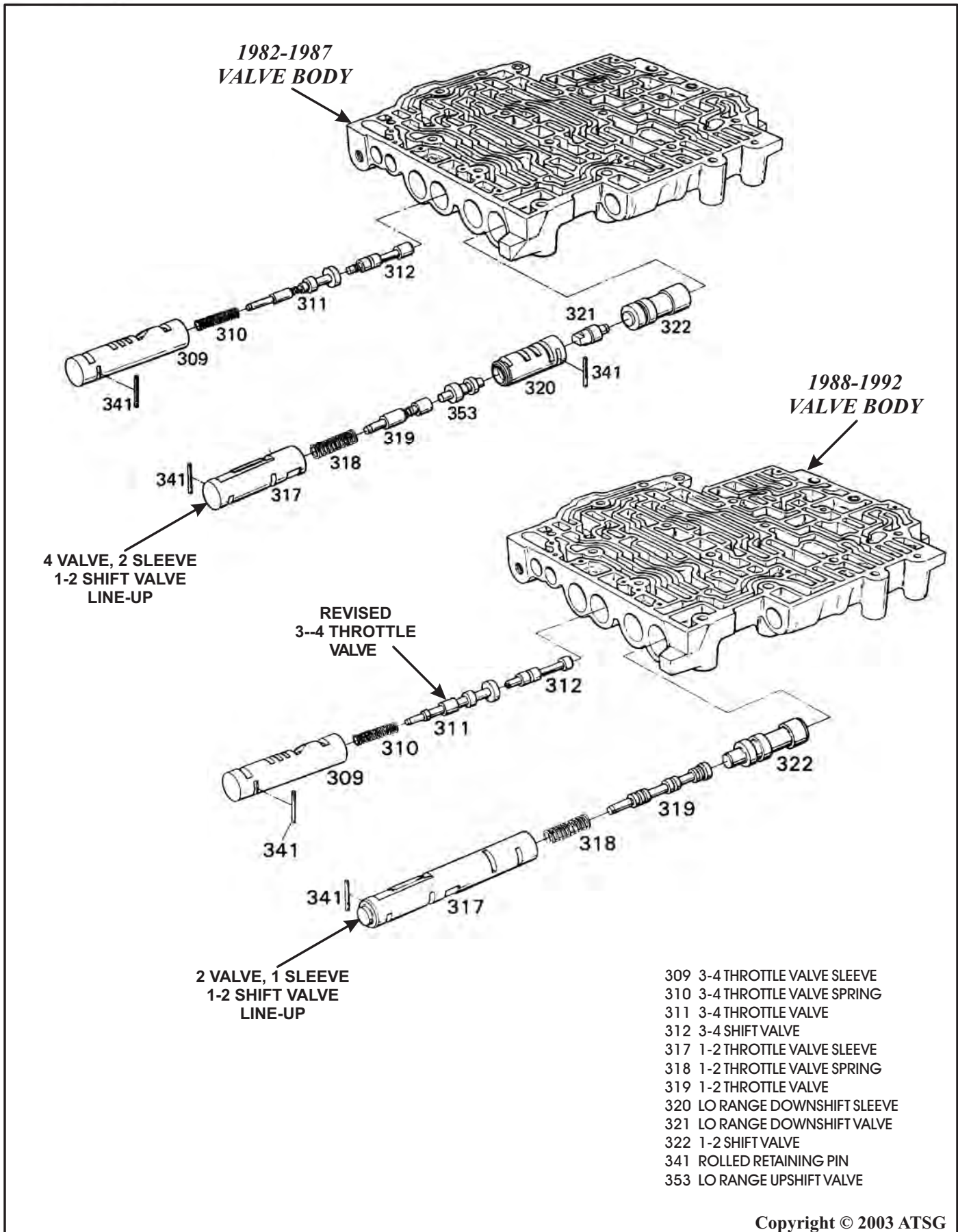
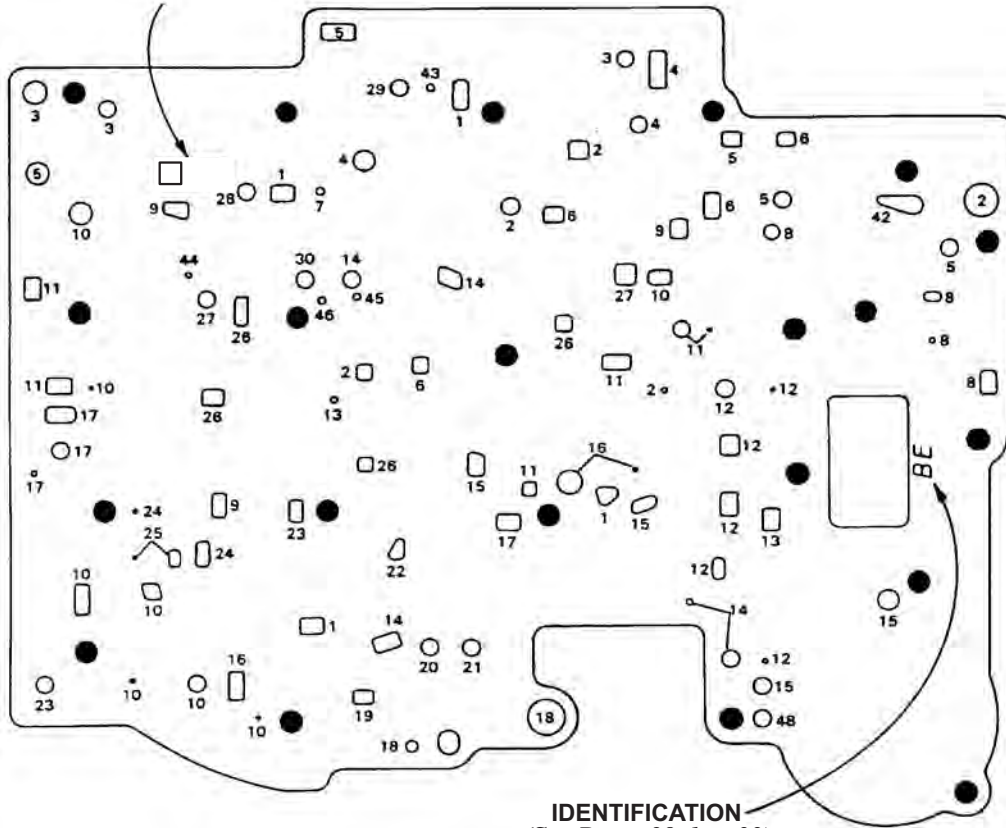


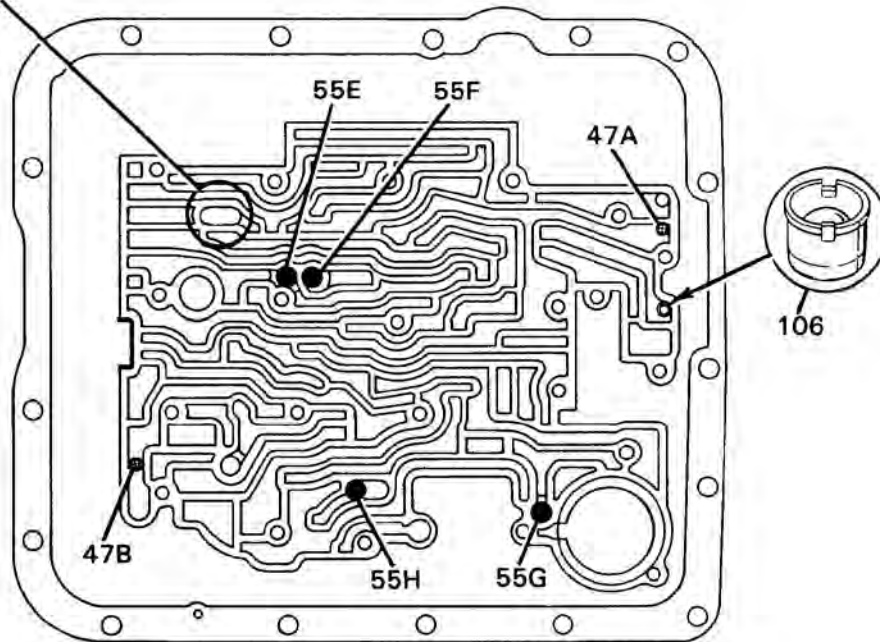
Figure 53

SMALL SQUARE HOLE HERE
INSTEAD OF 2 ROUND HOLES



IDENTIFICATION
(See Pages 28 thru 33)

NUMBER 9 CHECKBALL (DETENT/LO)
HAS BEEN ELIMINATED ON 1988-UP MODELS



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Figure 54



Technical Service Information

1988 CHANGE:

CHANGE: Beginning on July 23, (Julian Date 204) 1988, there were five 3-4 clutch boost springs added between the backing plate and the apply plate in the 3-4 clutch pack, as shown in Figure 55. These "load release" springs were added only on the following models, YDM, TMM, YWM, and YZM for the 1988 model year. Beginning in 1989 they were implemented on all models.

REASON: Quickens the release of the 3-4 clutch on forced downshifts for increased durability.

PARTS AFFECTED:

- (1) **LOAD RELEASE SPRINGS** - Added on YDM, YMM, YWM, YZM models only, between the backing plate and the apply plate, as shown in Figure 55. They are located in five equally spaced places around the 3-4 clutch pack, as shown in Figure 57.
- (2) **3-4 CLUTCH STEEL PLATES** - The wide tabs on the 3-4 clutch steel plates were modified to make room for the added load release springs, as shown in Figure 56. However, there is still "One" flat steel plate with the wide tabs required, and is called the flat apply plate. The flat apply plate goes on top of the "Stepped" apply plate, as shown in Figure 56.

INTERCHANGEABILITY:

Cannot be used on any previous THM 700-R4 models, nor on any 1988 models, other than the models listed above.

SERVICE INFORMATION:

3-4 Load Release Springs (5 Required)	8667424
3-4 Clutch "Flat" Apply Plate	8642173
3-4 Clutch "Stepped" Apply Plate	8667423

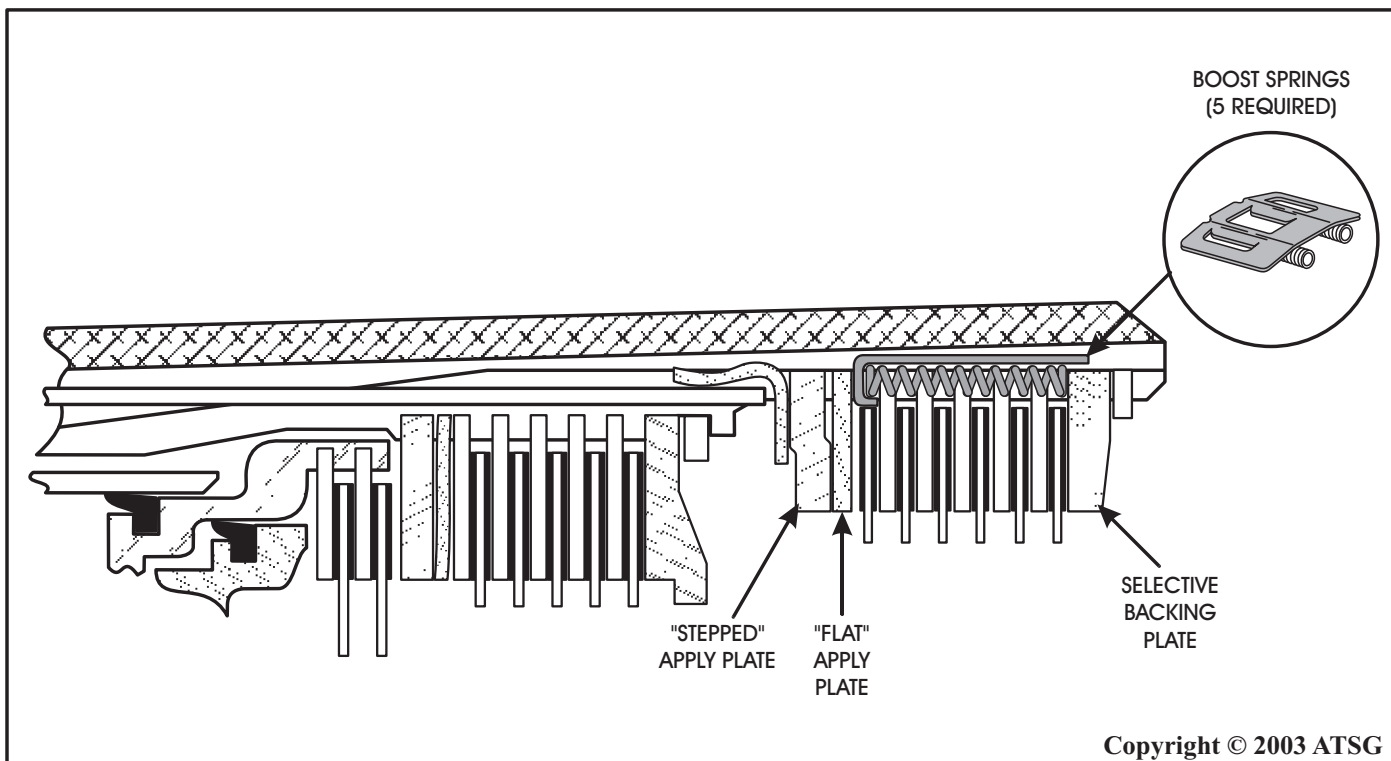


Figure 55

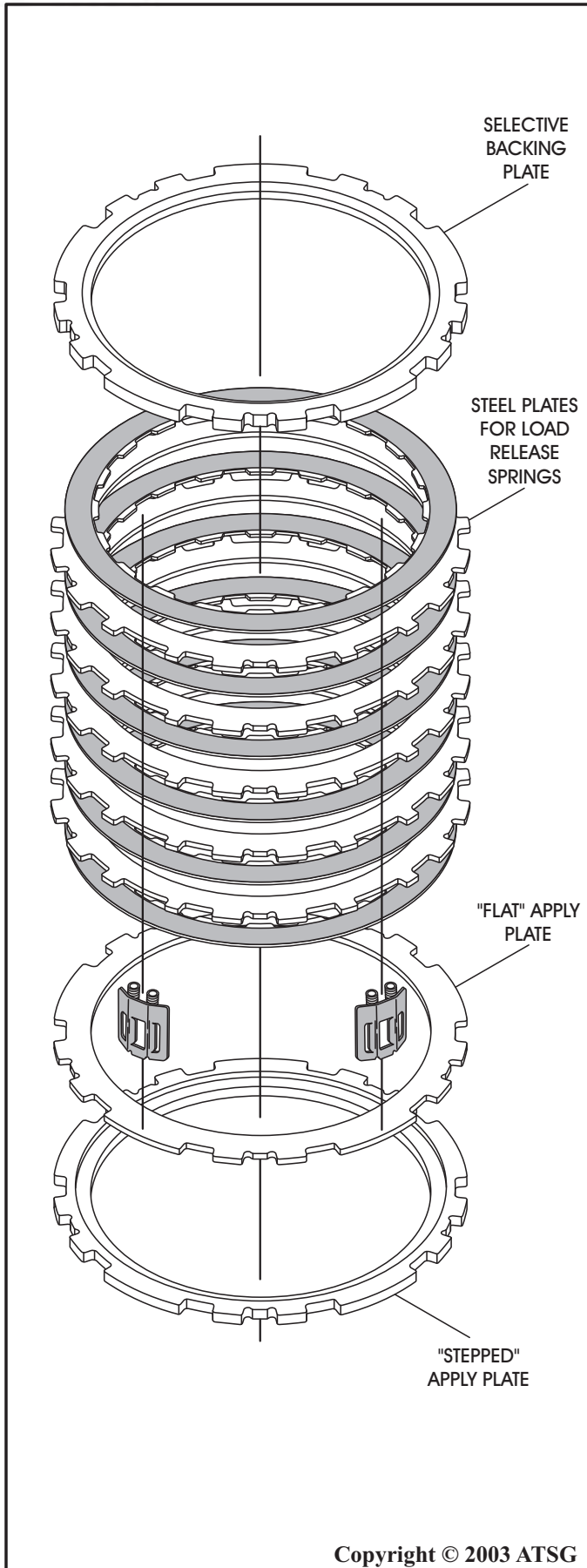


Figure 56

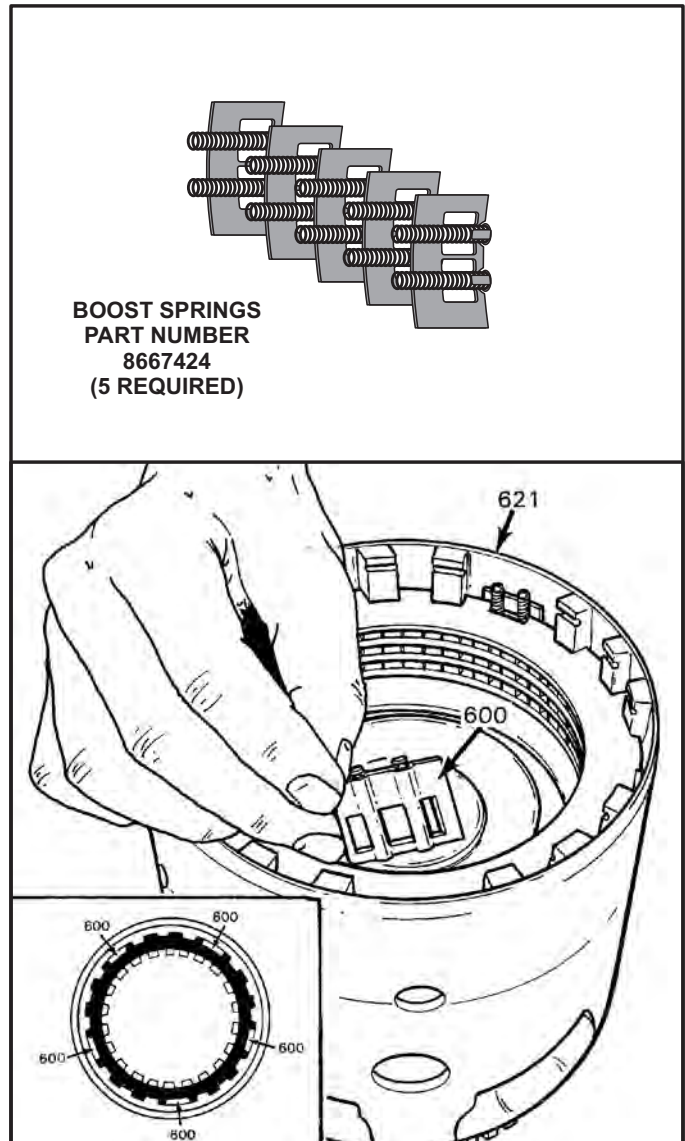


Figure 57



Technical Service Information

1988 CHANGE:

CHANGE: Beginning on February 9, (Julian Date 040) 1988, the transmission case hub, at the low and reverse piston area changed, as shown in Figure 58.

REASON: Eliminates the possibility of cutting the low/reverse inner seal during assembly.

PARTS AFFECTED:

- (1) TRANSMISSION CASE - The slot located in the case hub at the low/reverse clutch piston no longer extends through the hub, as shown in Figure 58. When servicing 1987 and previous model transmissions, it was possible to remove the snap ring with a screwdriver through the slot. With the new design case change, the snap ring *must* be removed with snap ring pliers.

INTERCHANGEABILITY:

The new design case can be used to back service any previous models.

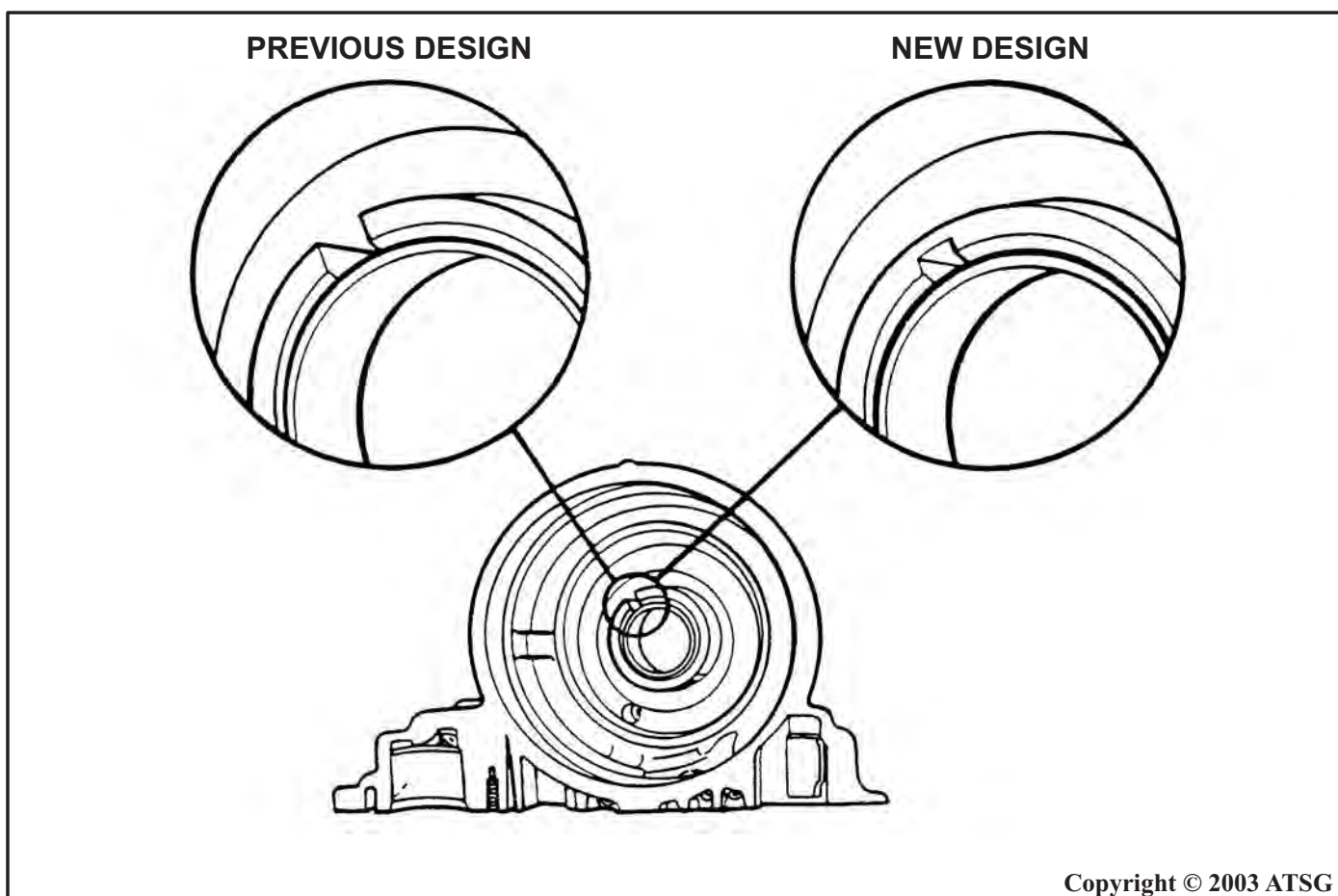


Figure 58

1988 CHANGE:

CHANGE: Beginning on May 10, (Julian Date 130) 1988, the 4-3 pulse switch located on the valve body was eliminated, which created a new Type-18 internal wiring harness, as shown in Figure 59. The new Type-18 internal wiring harness was implemented on only the models listed in Figure 59 and replaces the previous Type-15. Refer to Page 54 for illustration of the Type-15 internal wiring harness and the location of the switch that was eliminated.

REASON: The function of the 4-3 pulse switch, to momentarily release the converter clutch during a 4-3 downshift, was programmed into the ECM for the 1988 model year.

PARTS AFFECTED:

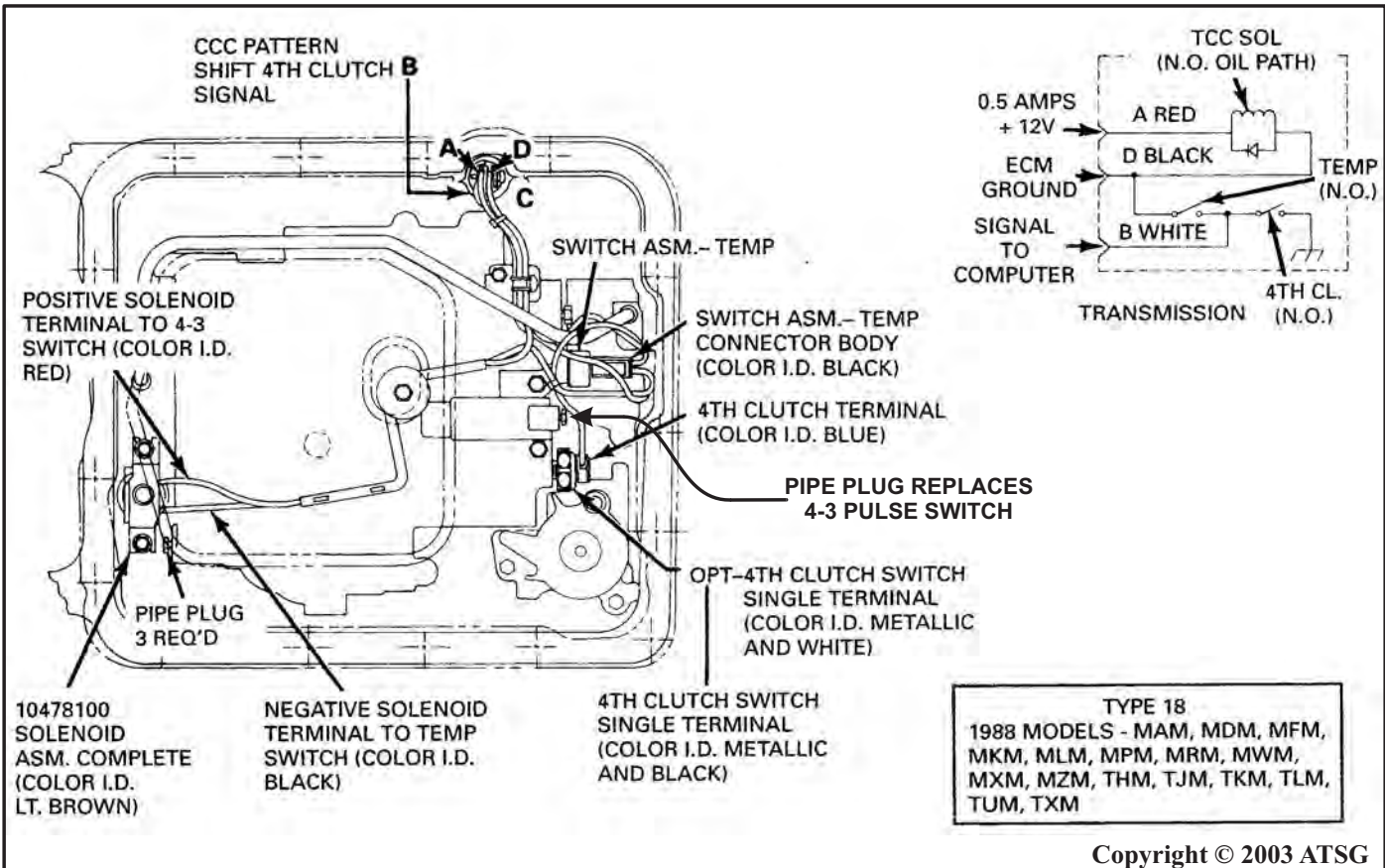
- (1) VALVE BODY - The 4-3 pulse switch was eliminated, and replaced with a pipe plug, as shown in Figure 59.
- (2) INTERNAL WIRING HARNESS - Now becomes a Type-18 internal wiring harness with the wires required for the 4-3 pulse switch eliminated, as shown in Figure 59. The new Type-18 internal wiring harness can be identified by the solenoid insulator color, which is Lt. Brown and has 8100 cast into the solenoid insulator (See Figure 59).

INTERCHANGEABILITY:

Do not use the Type-18 internal harness assembly on any previous models, as the ECM for these units is not programmed to take over the 4-3 pulse switch responsibilities.

SERVICE INFORMATION:

Solenoid and Internal Wiring Harness Assembly (Type-18) 10478100



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Figure 59



Technical Service Information

1988 CHANGE:

CHANGE: Beginning on July 6, (Julian Date 187) 1988, the governor driven gear was produced with a higher fiberglass content that will resist "Applecoreing", as shown in Figure 60.

REASON: To help eliminate "Applecoreing" of the governor driven gear

PARTS AFFECTED:

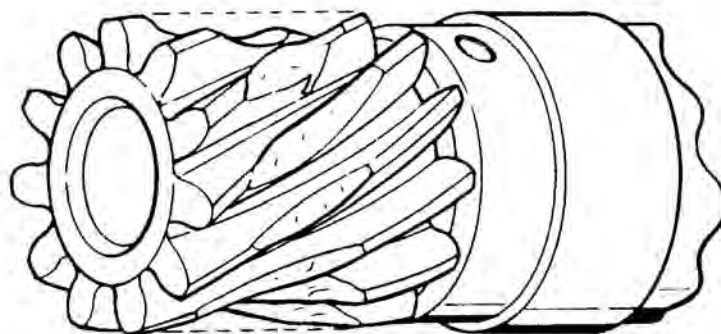
- (1) GOVERNOR DRIVEN GEAR - Produced with a higher fiberglass content and the new gear is green in color, instead of the previous blue color.

INTERCHANGEABILITY:

The new design green governor driven gear can be used in all previous models, and is highly recommended if replacement becomes necessary.

SERVICE INFORMATION:

Governor Driven Gear (Green) 8663995



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Figure 60



Technical Service Information

1989 CHANGE:

CHANGE: Beginning on November 15, (Julian Date 319) 1989, a new valve body assembly went into production on *all* models of the THM 700-R4 transmission, with the Torque Converter Clutch (TCC) bore eliminated, as shown in Figure 61. The converter clutch throttle valve was used on some previous models with Non-ECM controlled TCC apply.

REASON: Beginning with the 1989 production, all models became ECM controlled TCC apply.

PARTS AFFECTED:

- (1) VALVE BODY ASSEMBLY - The TCC bore was eliminated and in place of the TCC bore, a notch in the worm track channeling now allows 2nd clutch oil into the TCC signal circuit. The notch is shown inside the circle in Figure 61.

INTERCHANGEABILITY:

The new design valve body assembly *cannot* be used on previous models that were not ECM controlled TCC apply.

SERVICE INFORMATION:

According to General Motors, service valve body assemblies containing the converter clutch throttle valve and sleeve will continue to be available through your local G.M. dealer network.

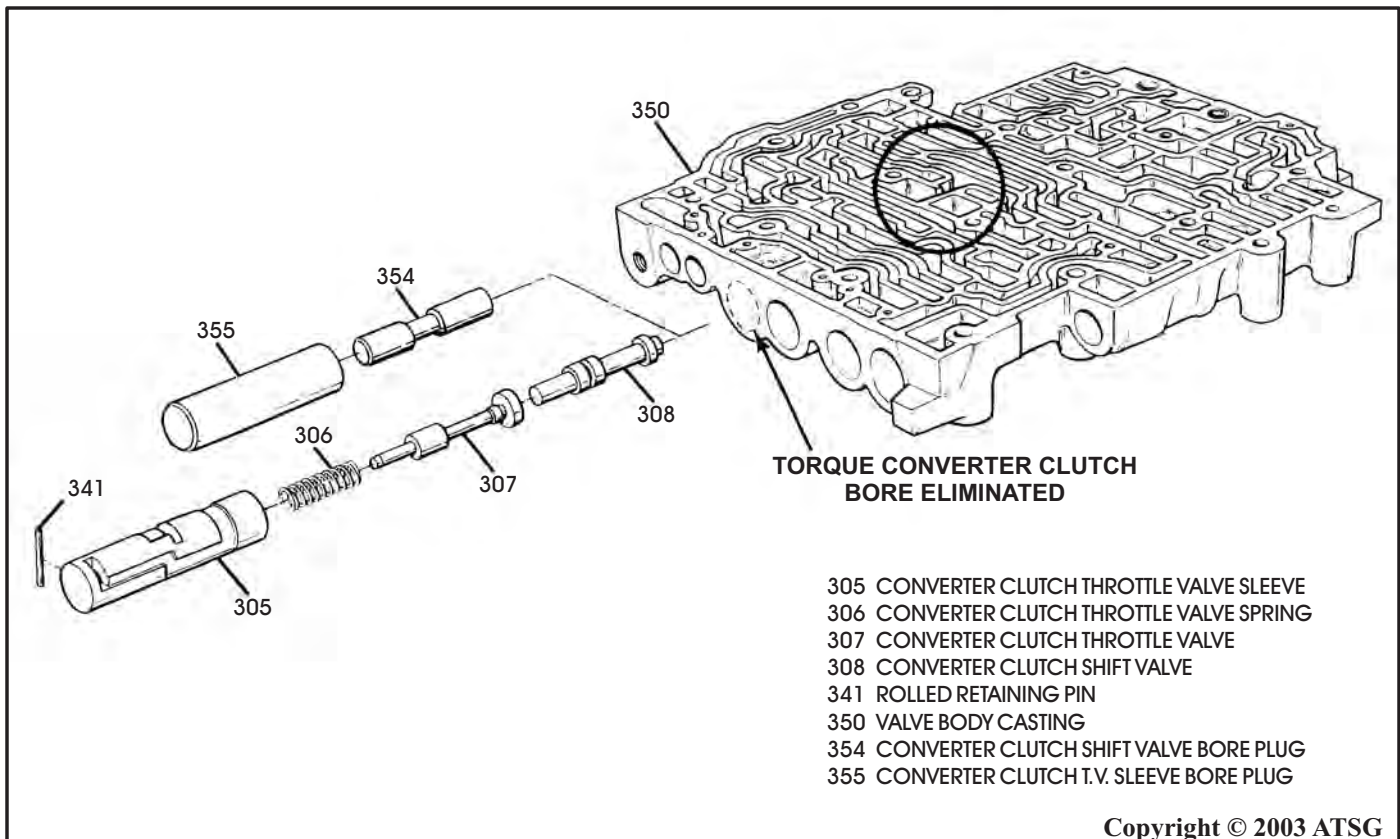


Figure 61



Technical Service Information

1989 CHANGE:

CHANGE: Beginning on February 28, (Julian Date 059) 1989, new clutch piston *short* lip seals for the 3-4 Clutch, Forward Clutch, Overrun Clutch and Reverse Input Clutch went into production on *all* models of the THM 700-R4 transmission. Our experience has been that the short lip seals create durability concerns. Our recommendation is, "*Always*" use the *Long lip seals*. General Motors went back to the long lip seals during 4L60-E production in 1994.

REASON: More cost effective and ease of assembly.

PARTS AFFECTED:

- (1) INNER AND OUTER LIP SEALS - Changed to short lip seals on both inner and outer seals. This affected the 3-4 Clutch, Forward Clutch, Overrun Clutch and Reverse Input Clutch, as shown in Figure 62.

INTERCHANGEABILITY:

Our experience at ATSG has been that the short lip seals created durability concerns. Our recommendation is, "Always" use the Long lip seals. General Motors went back to the long lip seals during 4L60-E production in 1994.

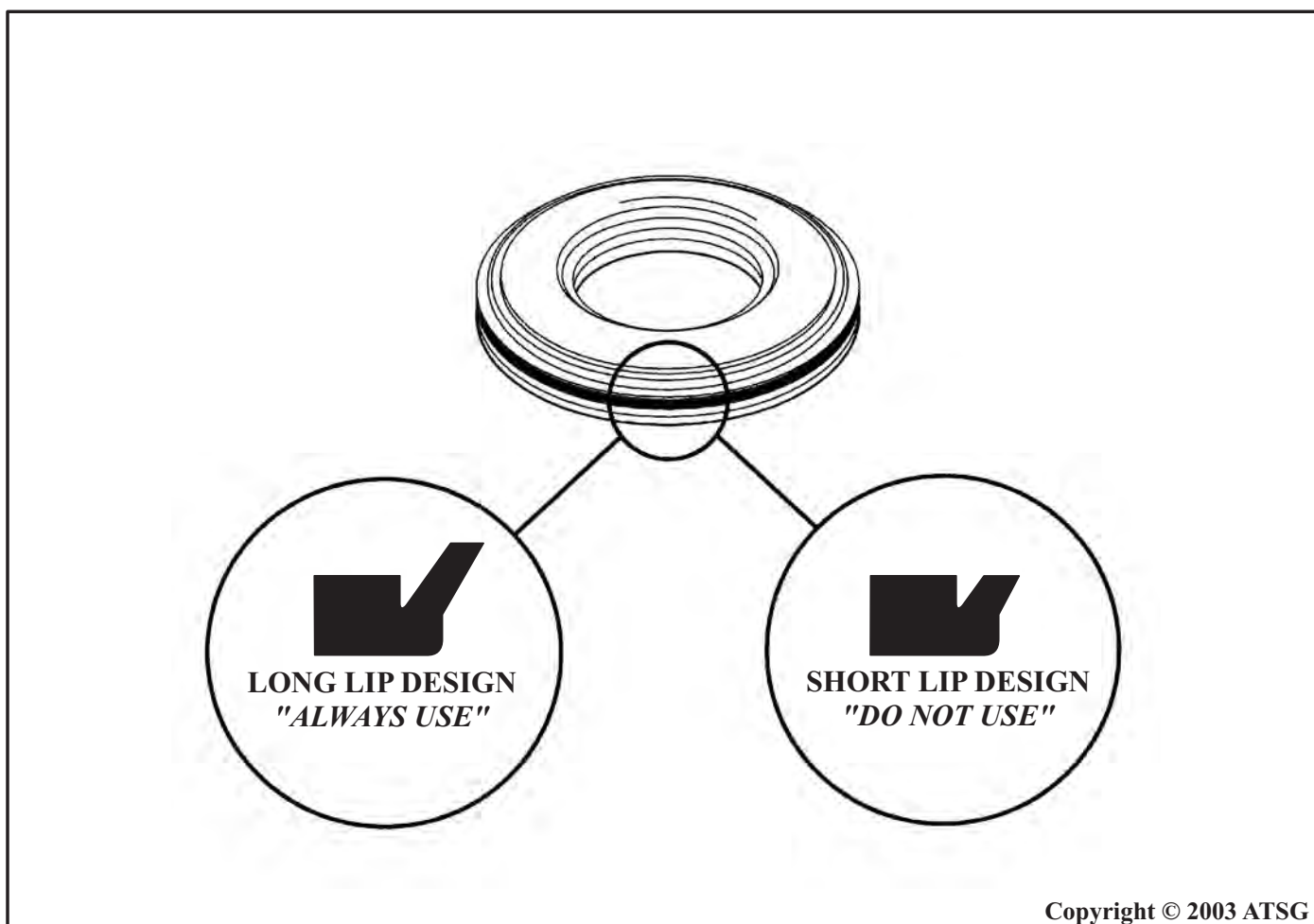


Figure 62

1990 CHANGE:

CHANGE: Beginning on July 23, (Julian Date 204) 1990, a new design Low/Reverse Clutch Support went into production on all THM 700-R4 transmissions, as shown in Figure 63. This change also created two new dimension selective plates for the low/reverse clutch pack.

REASON: Two less selective plates which makes it more cost effective.

PARTS AFFECTED:

- (1) **LOW/REVERSE CLUTCH SUPPORT** - Dimensional change which made it thicker in the area shown in Figure 63. There is no other means of identification except checking the measurement in the affected area. The new dimension and previous dimension are shown in Figure 63.
- (2) **LOW/REVERSE CLUTCH SELECTIVE PLATES** - Two new dimension selective plates were necessary to accommodate the change in the support, and are as follows:
 Low/Reverse Clutch Selective Plate, Stamped "8", is 1.168-1.314mm (.046"-.052") thick.
 Low/Reverse Clutch Selective Plate, Stamped "9", is 2.198-2.344mm (.087"-.092") thick.
 Refer to Figure 64.

INTERCHANGEABILITY:

The new design thicker low/reverse clutch support and the new selective plates, when used as a service package, can be used to service units built from February 9, 1987, (Julian Date 040) through 1993 models.

The new design selective plates *cannot* be used with previous design level clutch support.

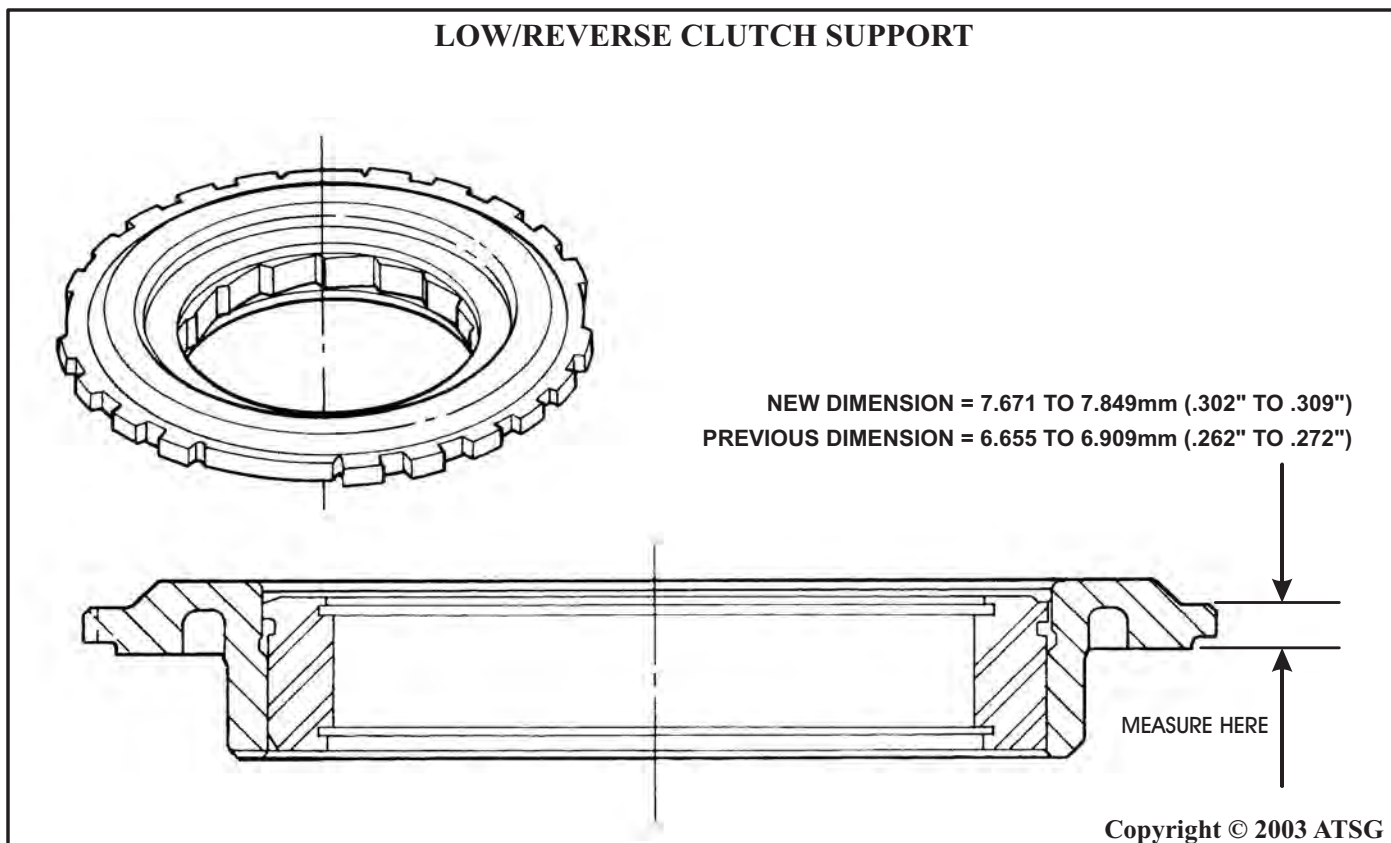
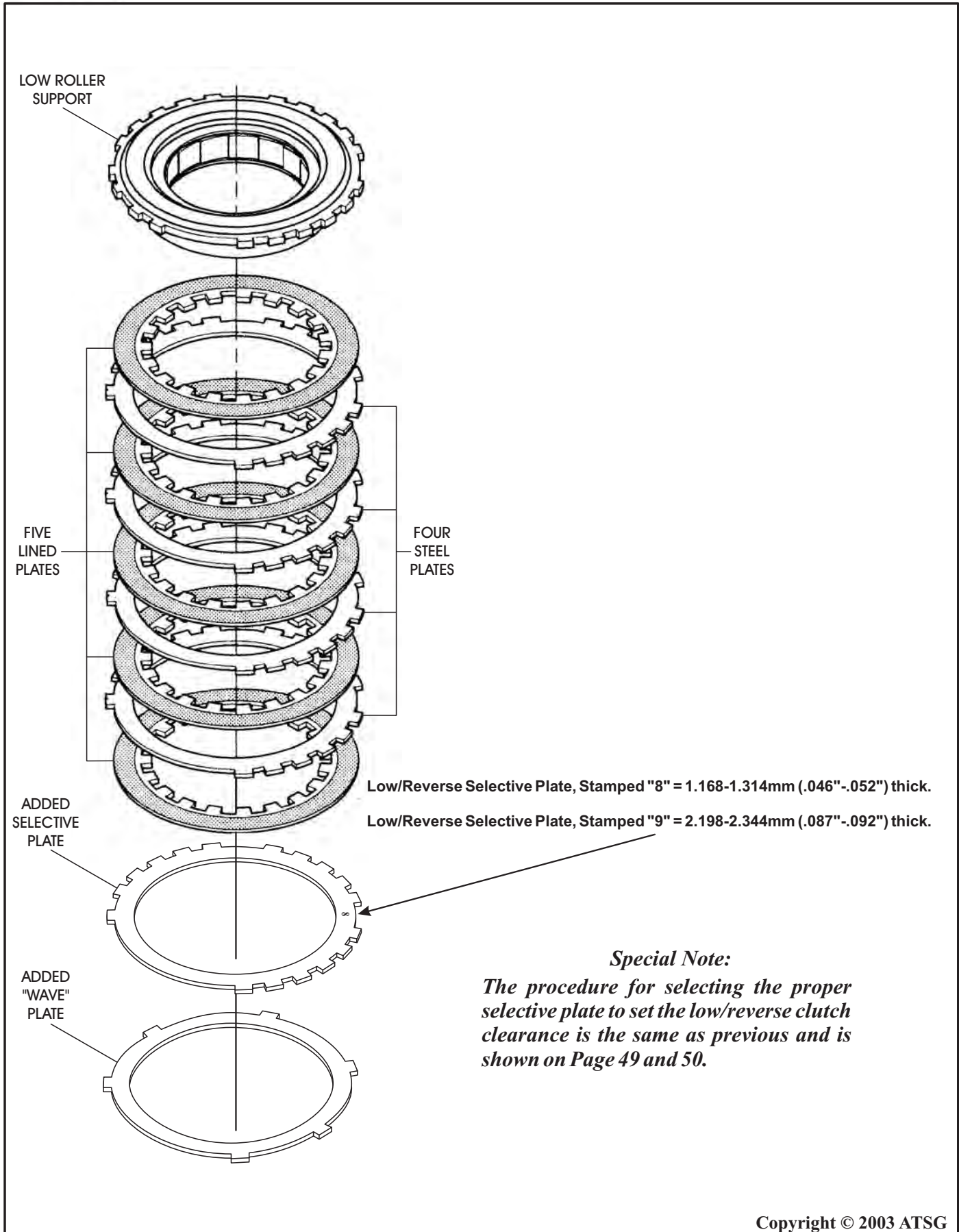


Figure 63



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Figure 64



Technical Service Information

1990 CHANGE:

CHANGE: Beginning on September 8, (Julian Date 251) 1990, there was a new design 2-4 band went into production that has an added lube window, as shown in Figure 65. Also notice the modifications to the apply anchor, and the locating tabs.

REASON: Increased lubrication for the 2-4 band, increased durability, and easier assembly

PARTS AFFECTED:

- (1) 2-4 BAND ASSEMBLY - Changes to the 2-4 Band include modification of the apply and anchor brackets, locating tabs, and the addition of a lube window, as shown in Figure 65.

INTERCHANGEABILITY:

The new design band is interchangeable with the previous band and can be used to service all models 1982 through 1993.

SERVICE INFORMATION:

2-4 Band Assembly (New Design) 8673175

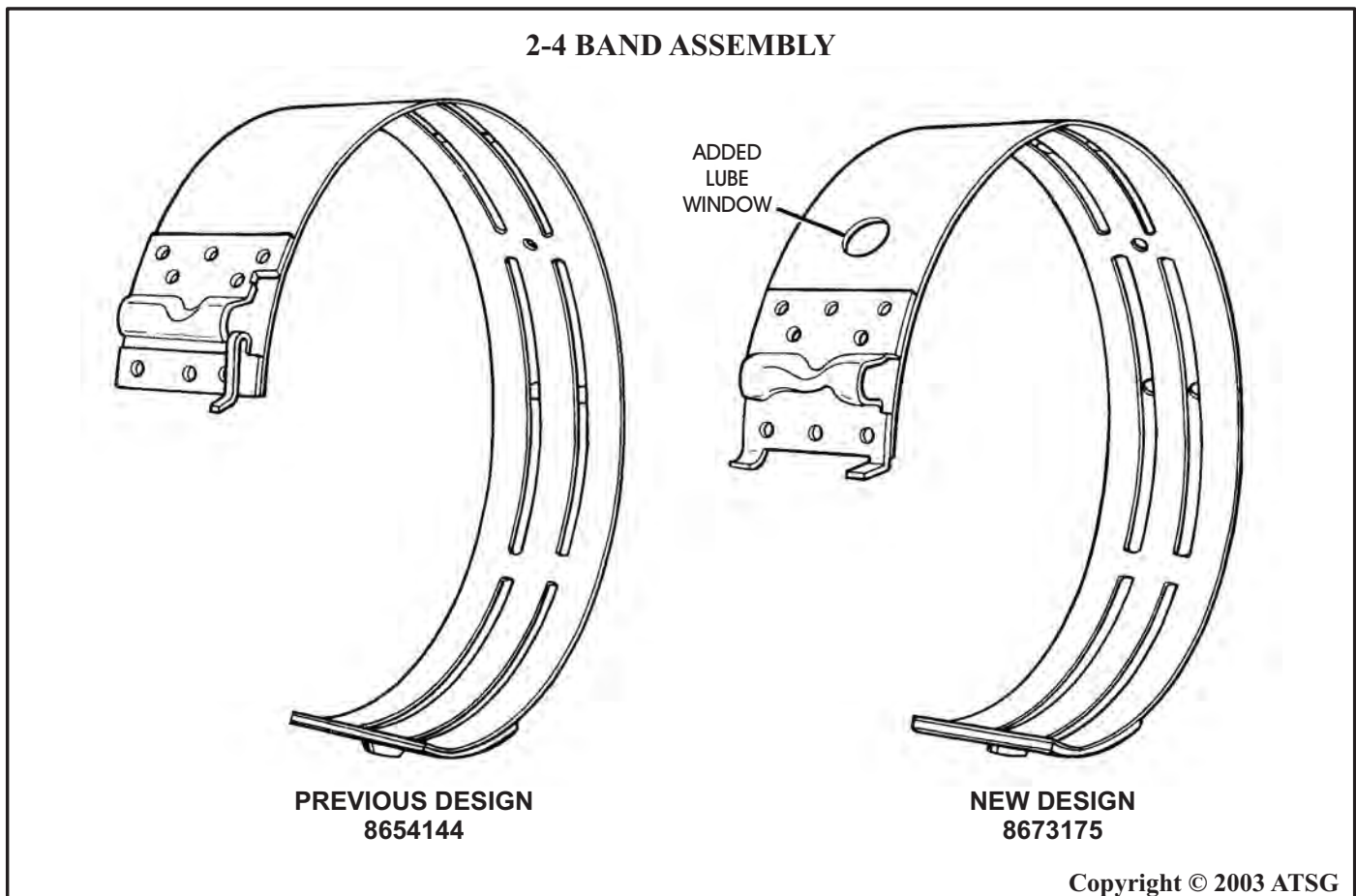


Figure 65



Technical Service Information

1991 CHANGE:

CHANGE: Beginning at start of production for 1991 models, new design 3-4 friction plates containing a "High Energy" friction material with increased heat capacity were implemented for *limited* applications, as shown in Figure 66. The 1991 models that received the new "High Energy" clutch plates were 1AMM, 1APM, 1CNM, 1CYM, 1FYM, 1KWM, 1LHM, 1RCM, RDM and 1YHM.

REASON: Reduce slippage and increased 3-4 clutch durability.

PARTS AFFECTED:

- (1) 3-4 FRICTION PLATES - Manufactured with a high energy friction material to reduce slippage and thus increase 3-4 clutch durability (See Figure 66).

INTERCHANGEABILITY:

Do not use the new "High Energy" clutch material in any transmission that is not specifically calibrated to use it. If the new material is used in an incorrect application, shift quality will suffer and transmission damage can occur very quickly. The 1991 models that did not receive the new material were 1AKM, 1DBM, 1CHM, 1CJM, 1FUM, 1KRM, 1RAM, 1WCM, and 1YDM. Careful inspection will also be needed during overhaul as the new clutch material looks as if it is burnt black, when in fact that is its normal color.

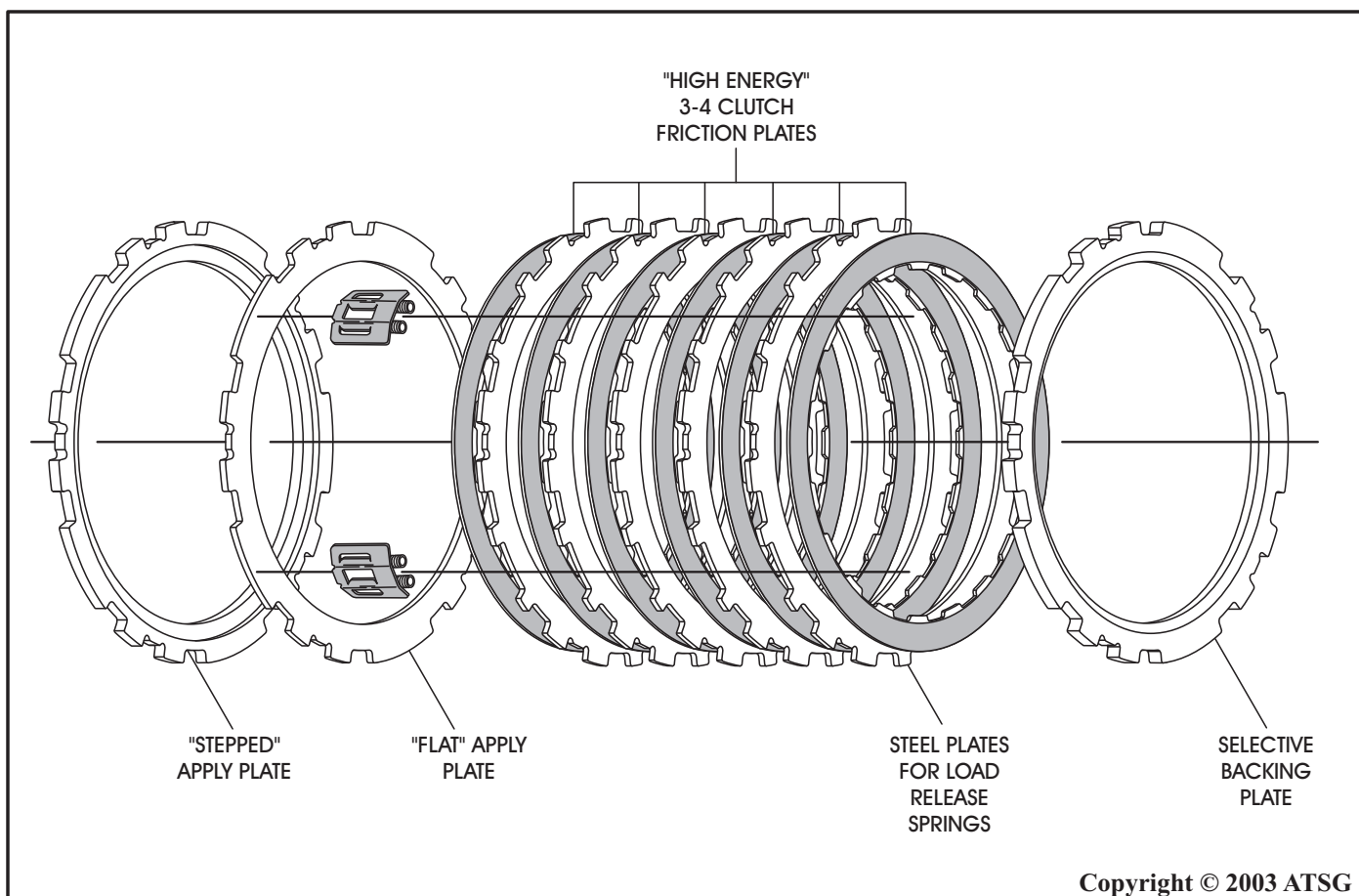


Figure 66



Technical Service Information

1991 CHANGE:

CHANGE: Beginning on January 28, (Julian Date 028) 1991, all 1991 model 700-R4 transmissions were built with new design output shafts that has a relocated lube hole, and a new input housing to output shaft seal, as shown in Figure 67 and 68.

REASON: Improved lube flow to small Torrington bearing between sprag and input housing.

PARTS AFFECTED:

- (1) **OUTPUT SHAFTS** - Front lube hole relocated to the chamfered section of output shafts so as to direct lube oil directly at the small Torrington bearing located between the sprag race and the input housing, as shown in Figure 68.
- (2) **INPUT HOUSING LUBE SEAL** - Now manufactured out of a soft rubber, instead of the previous design hard plastic seal, as shown in Figure 67. The new soft rubber lube seal has much improved sealing capabilities.

INTERCHANGEABILITY:

The new design lube seal will back service all models of the THM 700-R4 transmission and is highly recommended for all models.

SERVICE INFORMATION:

Lube Seal (New Design) 8677268

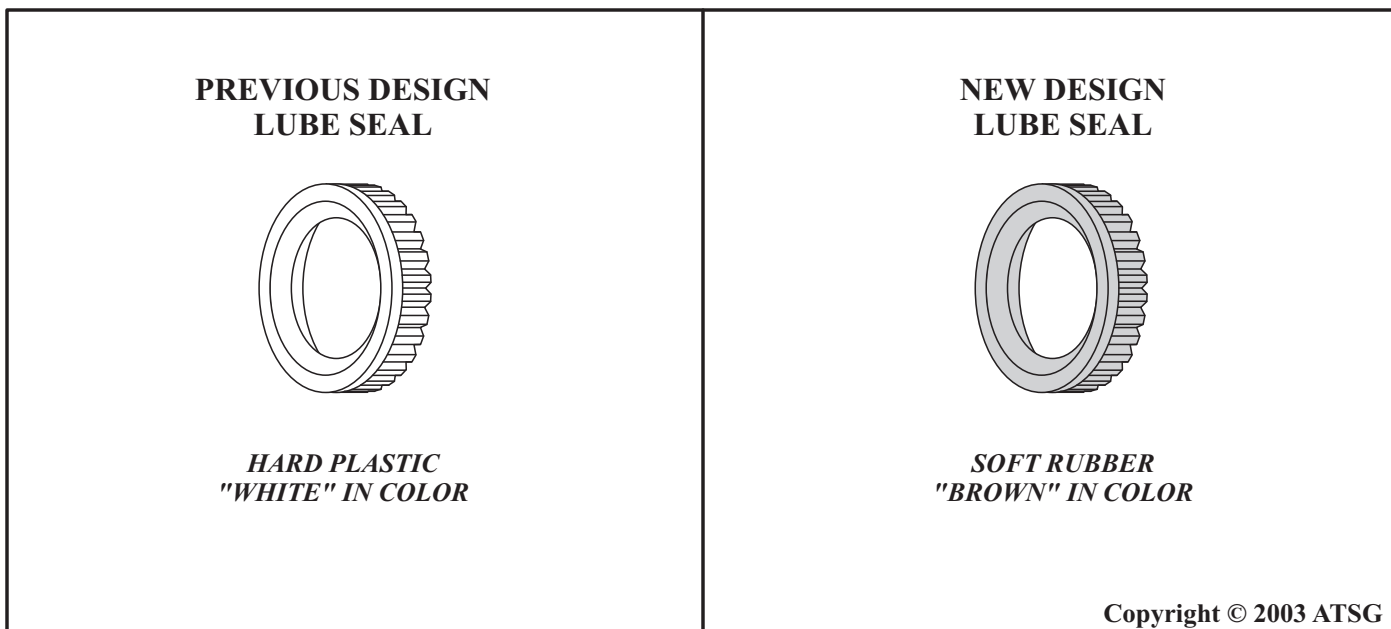


Figure 67

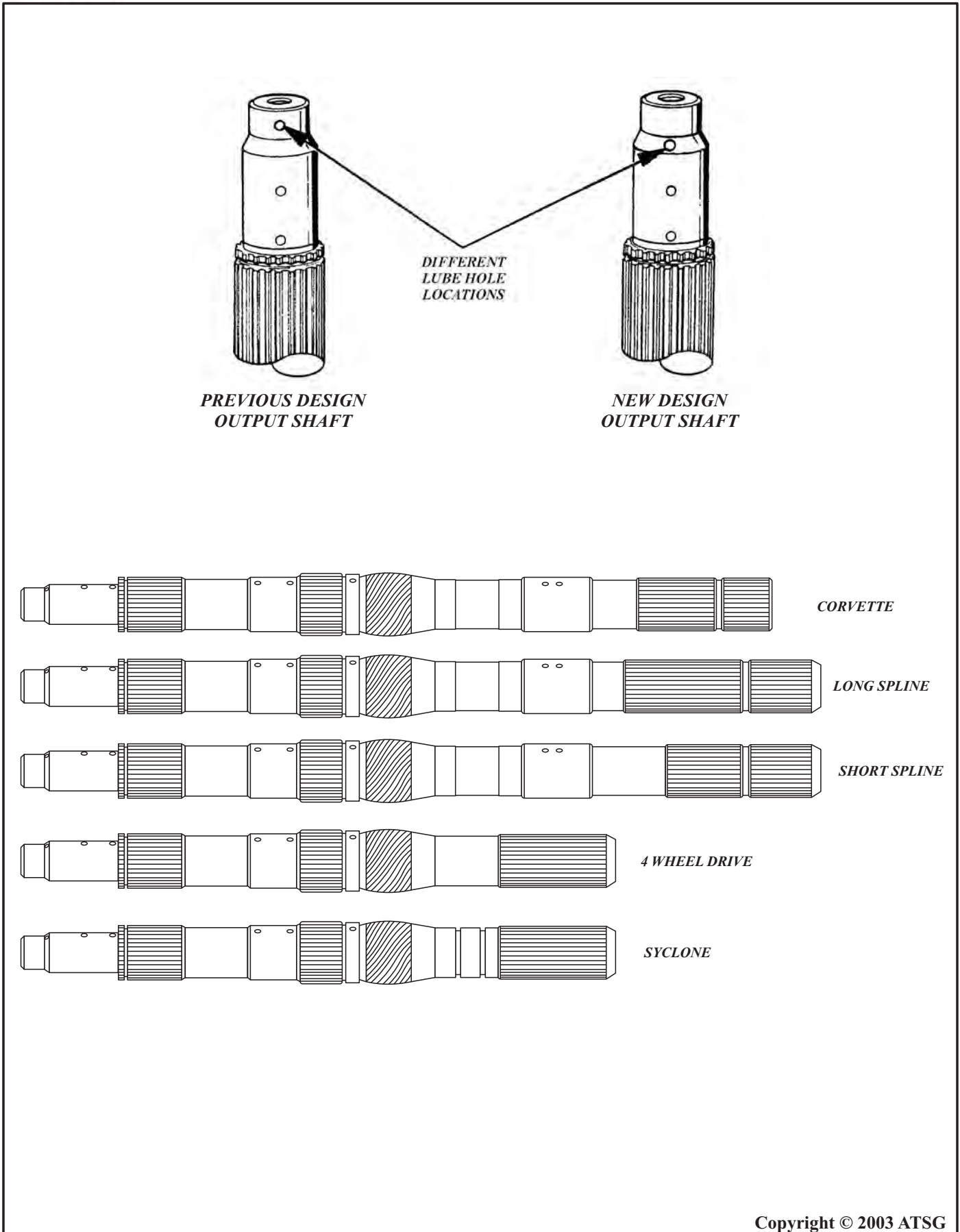


Figure 68



Technical Service Information

1993 CHANGE:

CHANGE: Beginning at the start of production for 1993 models, *some* 700-R4 transmissions were built with a new calibration that *eliminates* the 3-4 accumulator spring in the case and *inverts* the 1-2 accumulator spring and piston in the 1-2 accumulator housing, as shown in Figure 70.

REASON: Improved shift feel on some models.

PARTS AFFECTED:

- (1) 3-4 ACCUMULATOR SPRING - Eliminated on all 5.0L cars, all 5.7L "D" cars, and all 5.7L "B" cars *except* 5.7L police car, as shown in Figure 70.
- (2) 1-2 ACCUMULATOR SPRING AND PISTON - Inverted on all 5.0L cars, all 5.7L "D" cars, and all 5.7L "B" cars *except* 5.7L police car, as shown in Figure 70.

INTERCHANGEABILITY:

Use the accumulator spring chart in Figure 70 to keep these calibrations separated.

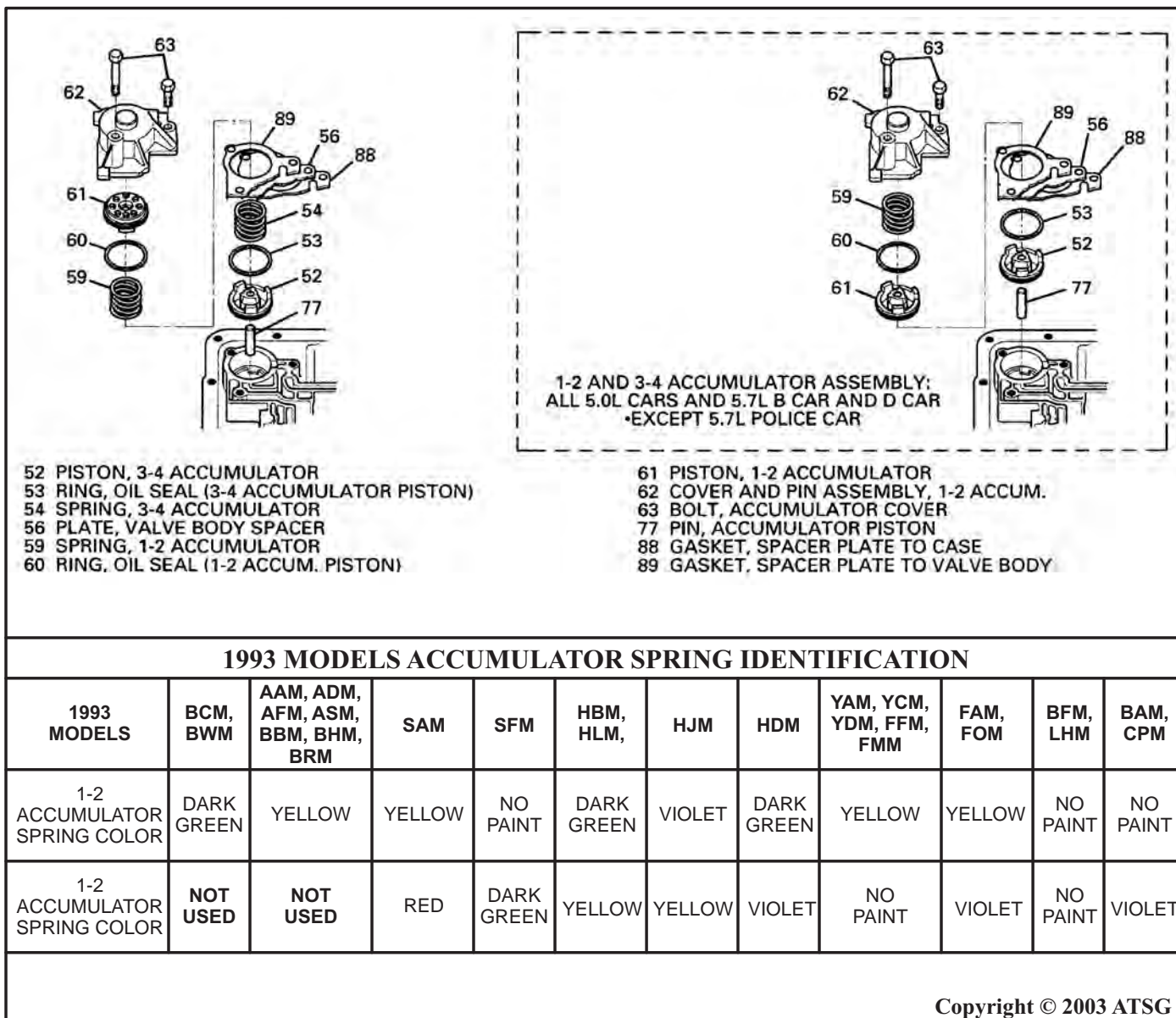


Figure 70



Technical Service Information

1993 CHANGE:

CHANGE: Beginning at the start of production for 1993 models, all 700-R4 transmissions were built with a new reverse input housing with a large square feed hole, instead of the previous .095" round feed hole, as shown in Figure 71.

REASON: To make a "*Common*" Reverse Input Housing for both the 700-R4 transmission and the 4L60-E transmission that was also introduced in 1993.

PARTS AFFECTED:

- (1) REVERSE INPUT HOUSING - Feed hole has been enlarged from .095" round hole, to a large square hole, and this is the *only* means of identification, as they both require the aluminum piston, as shown in Figure 71.
- (2) VALVE BODY CASTING - Changed with the addition of the number 11 checkball in the location shown in Figure 72. (*Not In The Bathtub*) This checkball was added to orifice feed oil to the reverse input clutch.
- (3) VALVE BODY SPACER PLATE - .095" orifice for the new number 11 checkball added in the location shown in Figure 74, which is now the orifice for feed oil to the reverse input clutch. Refer to Page 37 for identification and part numbers of 1993 spacer plates.
- (4) VALVE BODY GASKETS - Both valve body gaskets now have a "Tear-drop" hole at the new checkball and orifice location in the spacer plate, instead of the previous round hole, as shown in Figure 73.
- (5) PUMP COVER SEAL RINGS - Will now be solid Teflon seals for use with the new reverse input housing with the large square feed hole, and does require a new installation and resizing tool (See Figure 75).

INTERCHANGEABILITY:

- (1) REVERSE INPUT HOUSING - 1993 Reverse Input Housing *cannot* be used on any 1987-1992 model transmissions, but *can* be used to service any 1982-1986 model units. Previous model Reverse Input Housings *cannot* be used on any 1993 models.
- (2) VALVE BODY CASTING - The 1993 valve body can be used on previous models from 1988-1992, as long as the number 11 checkball *is not* installed in the new pocket. Previous model valve bodies *cannot* be used on any 1993 models, as there is no dam to retain the new number 11 checkball in the proper position.
- (3) VALVE BODY SPACER PLATE - Will not interchange. Refer to Pages 36 and 37 for the identification and part numbers for 1992-1993 spacer plates.
- (4) VALVE BODY GASKETS - The new gaskets can be used on 1988-1992 models. The previous valve body gaskets *cannot* be used on any 1993 models, as they will block the reverse input feed orifice in the spacer plate.

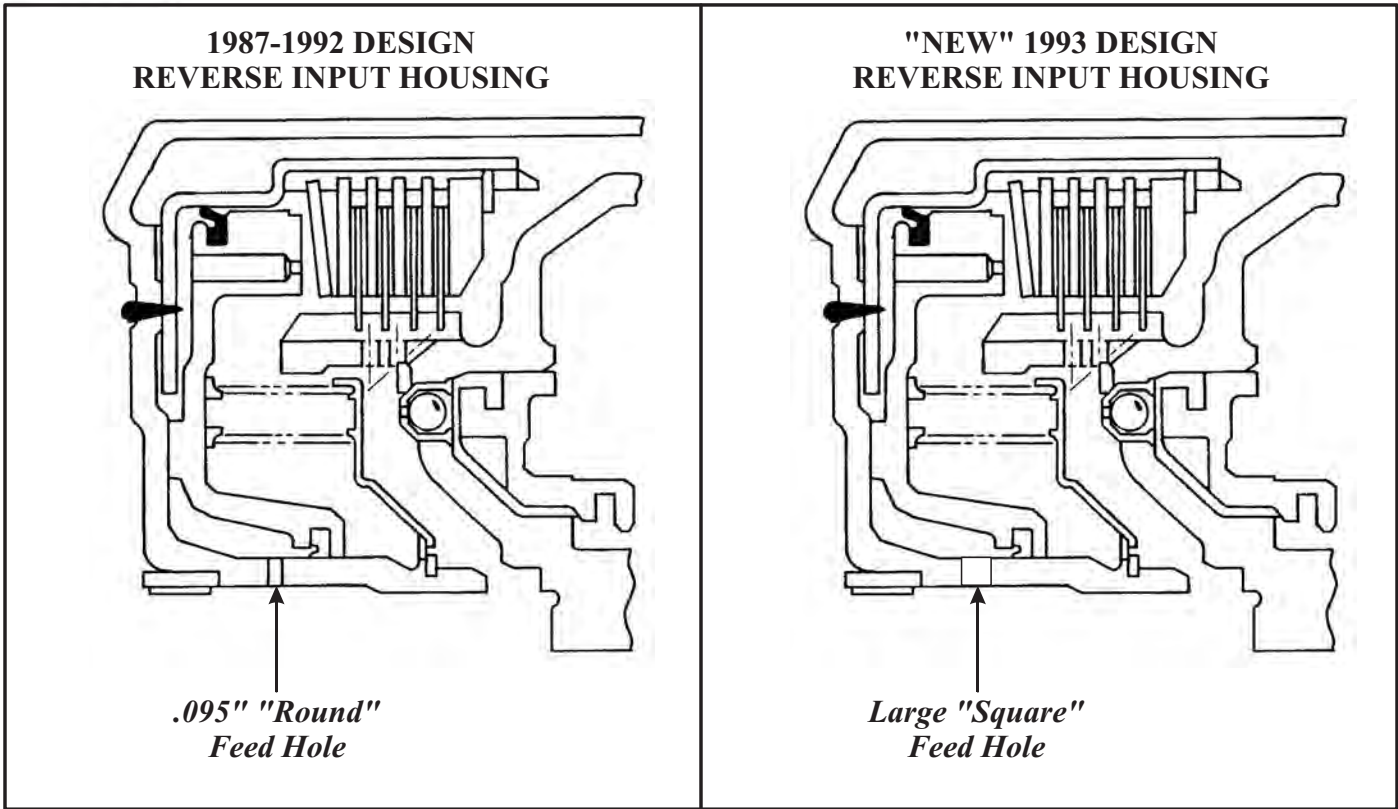


Figure 71

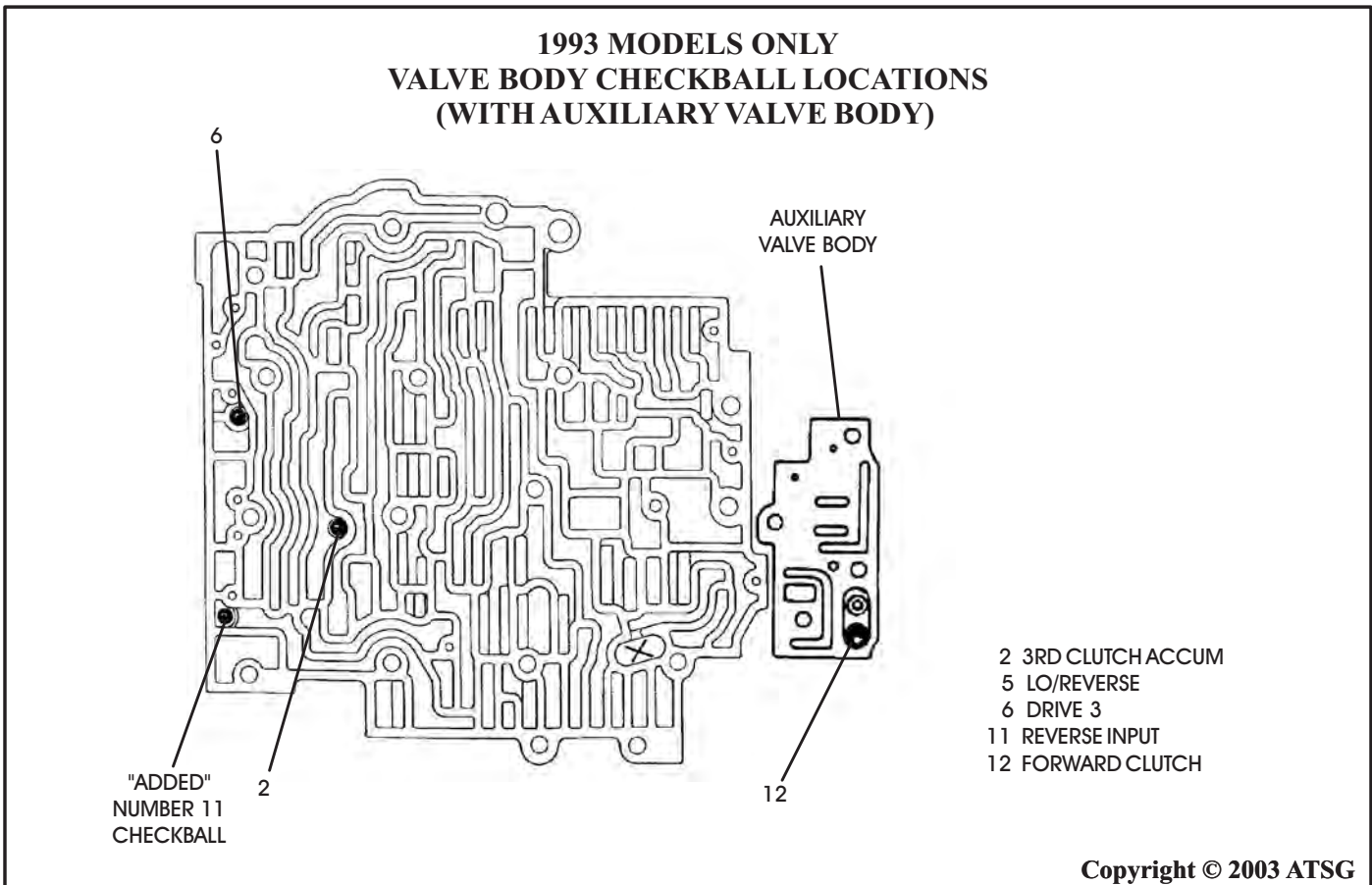


Figure 72

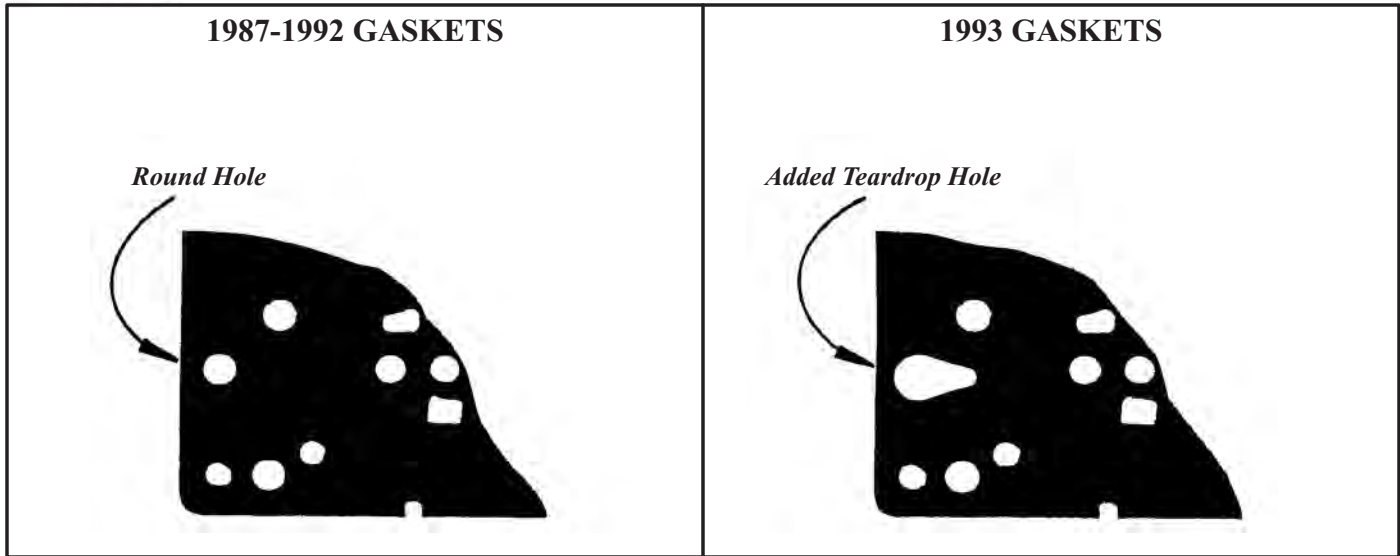


Figure 73

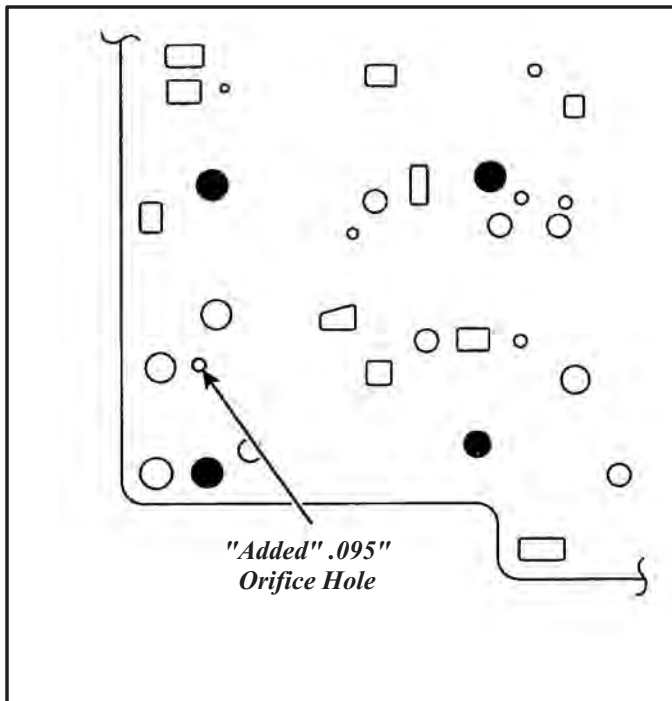


Figure 74

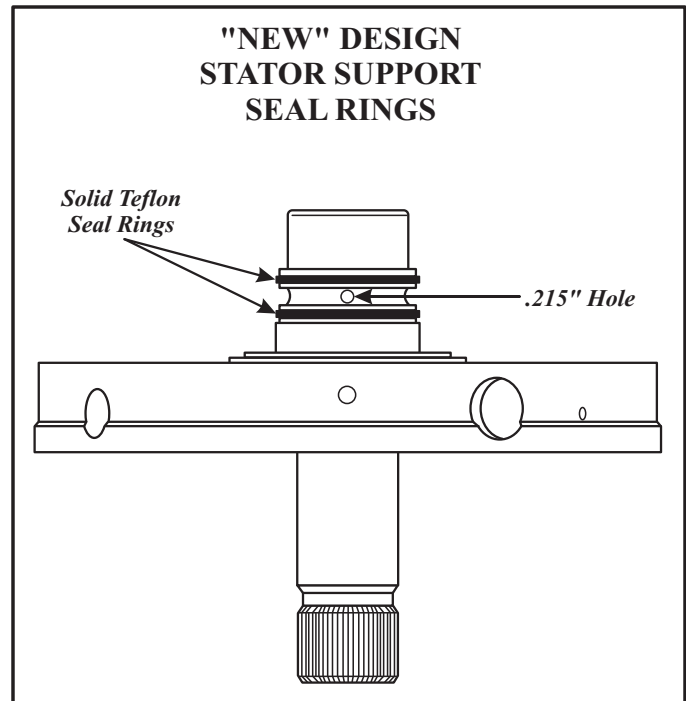


Figure 75



Technical Service Information

1993 CHANGE:

CHANGE: Beginning at the start of production for 1993 models, all 700-R4 transmissions were built with a new Pressure Regulator Valve with "Flats" on the third land, as shown in Figure 76.

REASON: To improve line pressure stability at lower RPM and eliminate buzzing noise.

PARTS AFFECTED:

- (1) PRESSURE REGULATOR VALVE - Now has "Flats" ground on the third land of the valve, as shown in Figure 76.

INTERCHANGEABILITY:

The new design pressure regulator valve with the flats can be used on all 1982-1993 models.

SERVICE INFORMATION:

Pressure Regulator Valve (New Design) 8684048

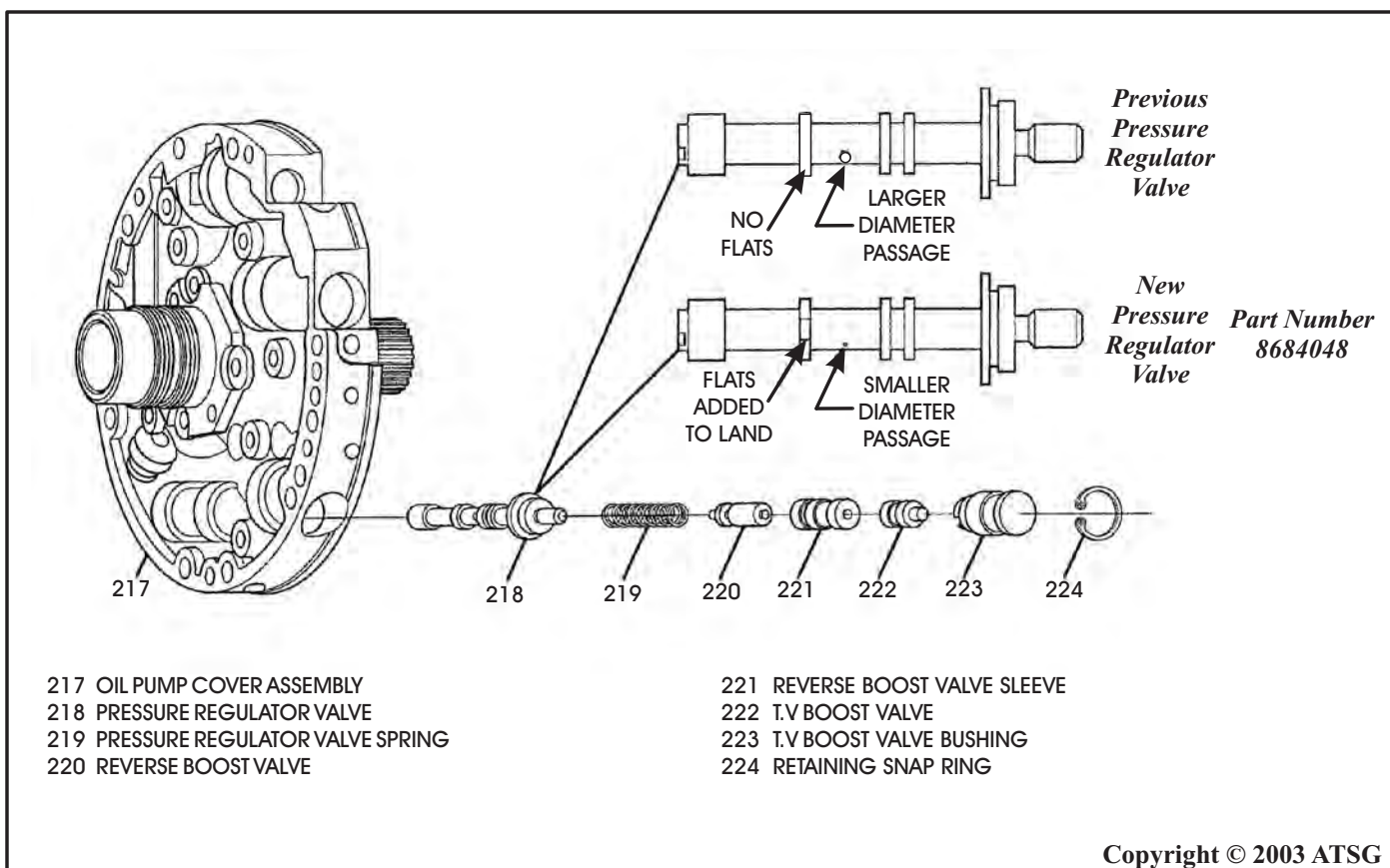


Figure 76



Technical Service Information

1993 CHANGE:

CHANGE: Beginning on January 5, 1993 (Julian Date 005), all THM 700-R4 transmissions were built with a redesigned 3-4 clutch assembly. The 3-4 clutch steel plates were made thicker to dissipate more heat out of the 3-4 clutch pack, as shown in Figure 77.

REASON: Improved 3-4 clutch durability and reliability.

PARTS AFFECTED:

- (1) 3-4 CLUTCH APPLY RING - The legs on the apply ring were made shorter to accommodate the thicker 3-4 clutch steel plates. The new design 3-4 clutch apply ring is identified with the number "7" stamped on one of the legs, as shown in Figure 78.
- (2) 3-4 CLUTCH RETAINER RING - Eliminated, as shown in Figure 79.
- (3) 3-4 CLUTCH STEPPED APPLY PLATE - Eliminated, as shown in Figure 79.
- (4) 3-4 CLUTCH FLAT APPLY PLATE - Eliminated, as shown in Figure 79.
- (5) 3-4 CLUTCH "NEW" APPLY PLATE - There is now a new design apply plate to replace the three pieces above that were eliminated, as shown in Figure 79. This change was also necessary to accommodate the thicker 3-4 clutch steel plates.
- (6) 3-4 CLUTCH STEEL PLATE - Now manufactured .030" thicker. New steel plates are .106" thick and the previous steel plates are .076" thick, as shown in Figure 80.
- (7) 3-4 CLUTCH BACKING PLATE - Manufactured thinner to accommodate the thicker steel plates. Refer to Figure 80 for the new part numbers, dimensions and identification of the three new selective backing plates.

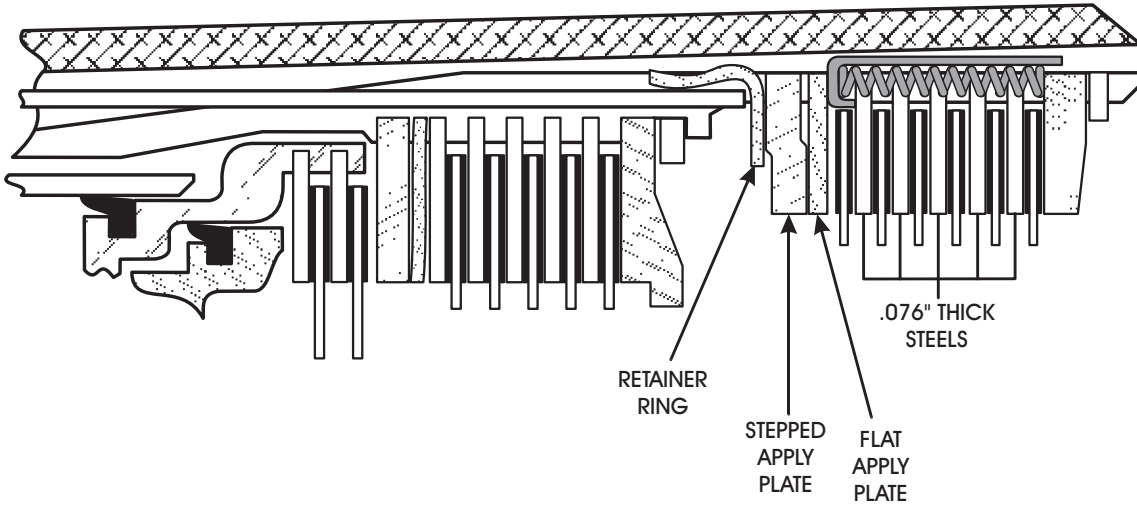
INTERCHANGEABILITY:

- (1) None of the parts listed above will interchange with any of the previous design parts in the 3-4 clutch pack.
- (2) The new 3-4 clutch pack will back service all previous models, but **must** be replaced as a service package. Service package part numbers are listed below in "Service Information". There are two different service package part numbers because the friction plates are included in the service packages, and the friction plates are calibration sensitive on different models.

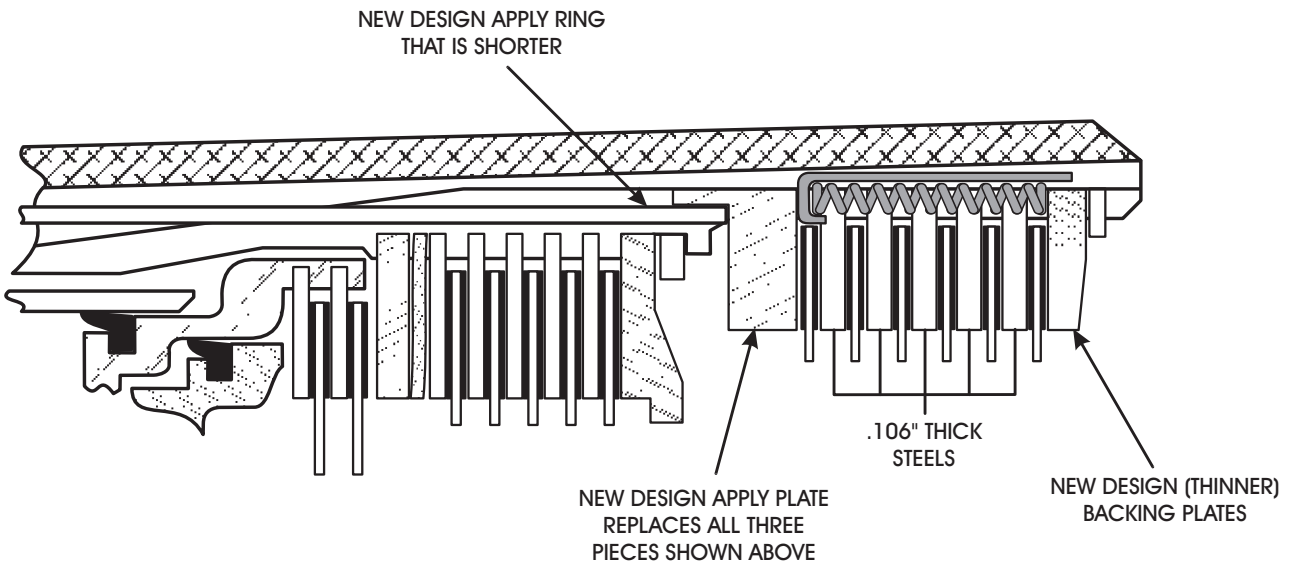
SERVICE INFORMATION:

3-4 Clutch Apply Ring (Shorter Legs)	8685043
3-4 Clutch Apply Plate (New Design)	8685044
3-4 Clutch Steel Plates (.106" Thick)	8685045
3-4 Clutch Backing Plate (.227", Stamped "A")	8685046
3-4 Clutch Backing Plate (.192", Stamped "B")	8685047
3-4 Clutch Backing Plate (.157", Stamped "C")	8685048
3-4 Clutch Service Package (1982-1986)	
Includes parts listed above plus friction plates	8690924
3-4 Clutch Service Package (1987-1993)	
Includes parts listed above plus friction plates	8690923

1987-1992 3-4 CLUTCH STACK



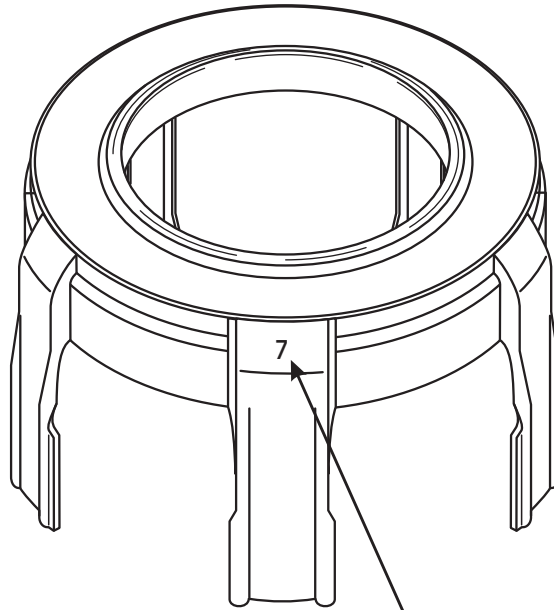
1993 DESIGN 3-4 CLUTCH STACK



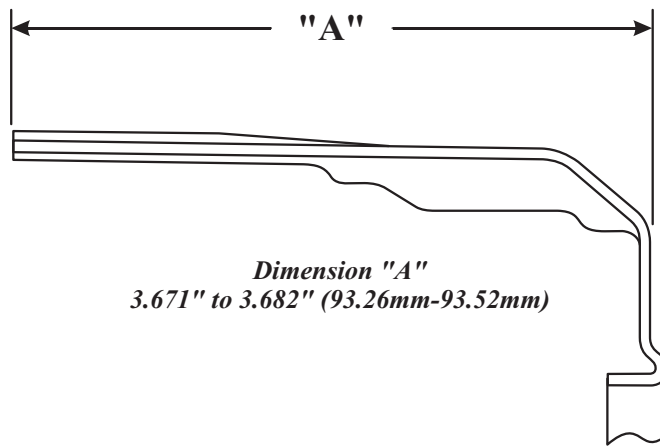
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Figure 77

NEW DESIGN 3-4 CLUTCH APPLY RING



Identification, Stamped "7"

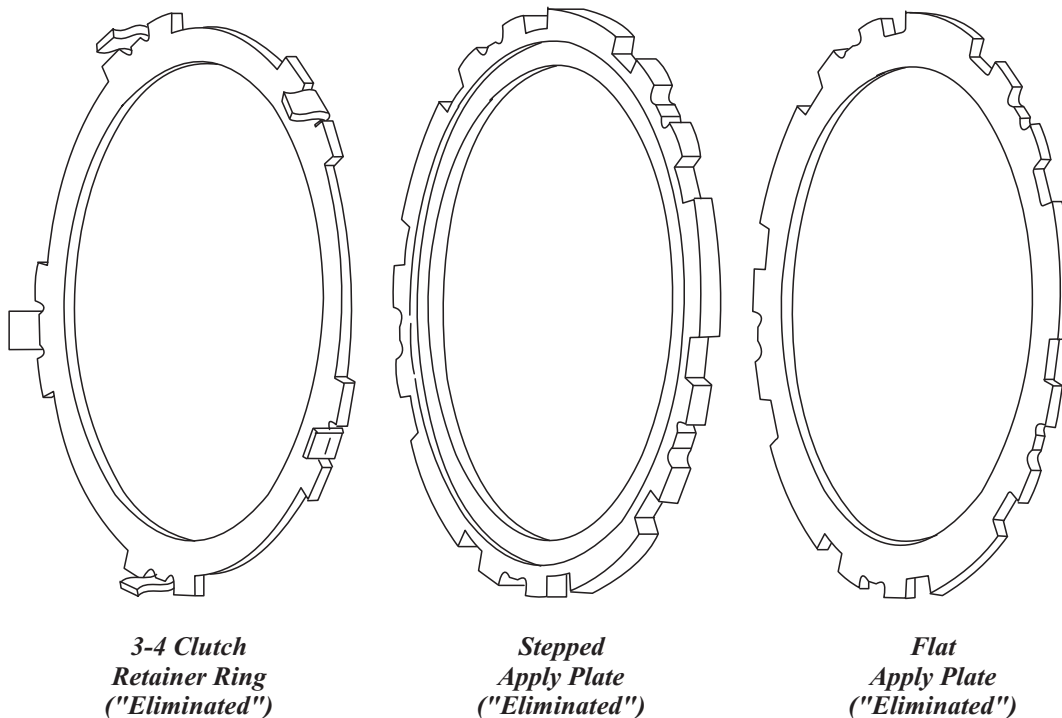


Dimension "A"
3.671" to 3.682" (93.26mm-93.52mm)

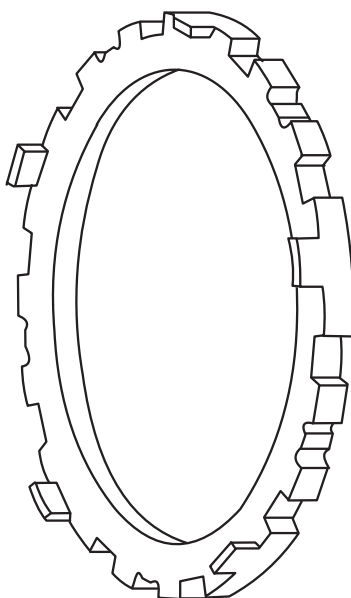
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Figure 78

PREVIOUS DESIGN



NEW DESIGN APPLY PLATE REPLACES 3 PIECES SHOWN ABOVE



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Figure 79

THM 700-R4 3-4 CLUTCH SIX FRICTION STACK-UP (NEW DESIGN)

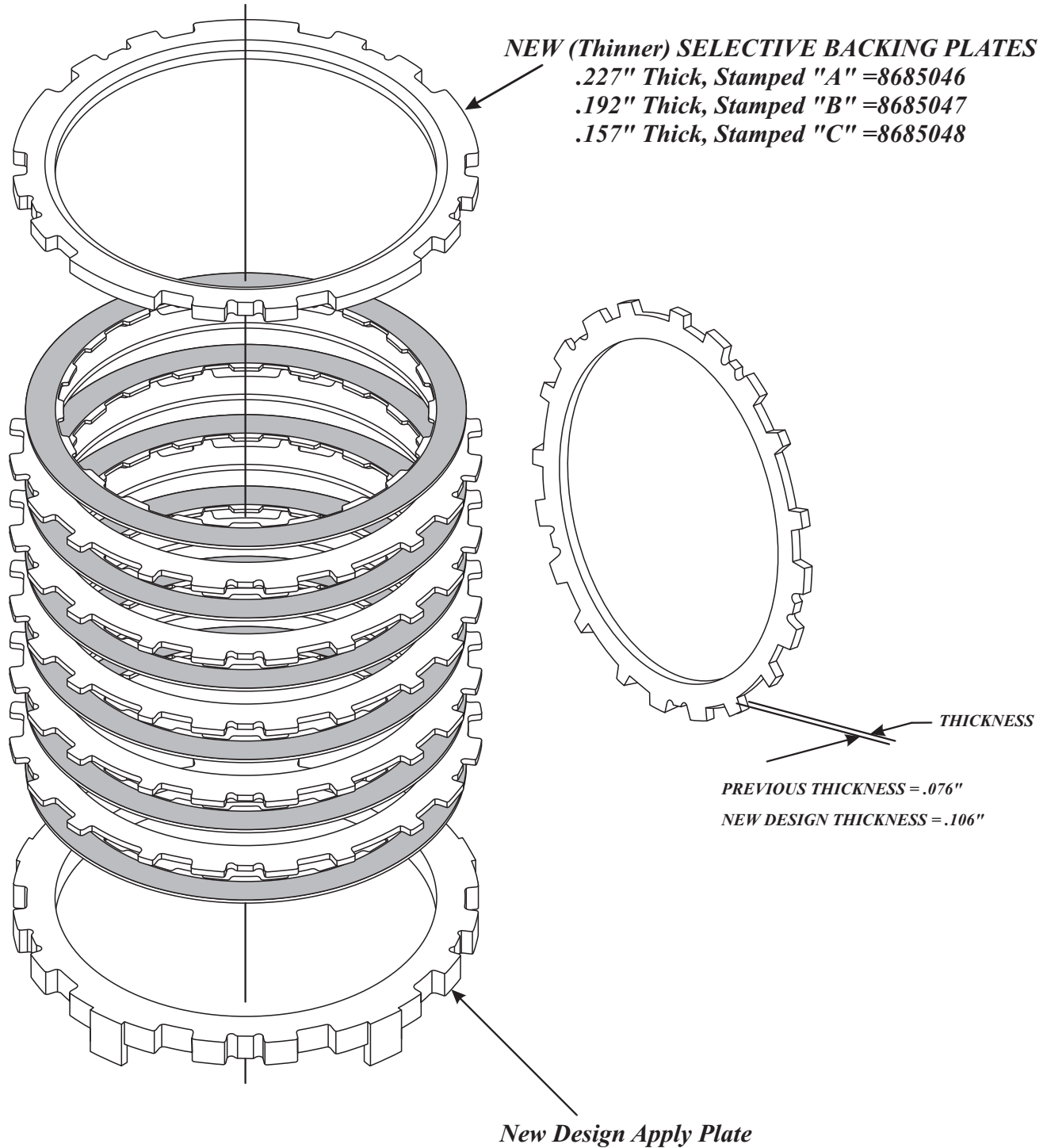


Figure 80

UPGRADE ENHANCEMENTS

This concludes the major changes that have occurred on the THM 700-R4 transmission, as it was no longer manufactured after model year 1993.

However, there are several great improvements that were made in the 4L60-E and 4L65-E family, that will retro-fit back into your THM 700-R4 transmission and will greatly enhance the durability and reliability of your 700-R4 unit. The changes that follow are highly recommended for any 700-R4 transmission that you build, and they begin on Page 84.

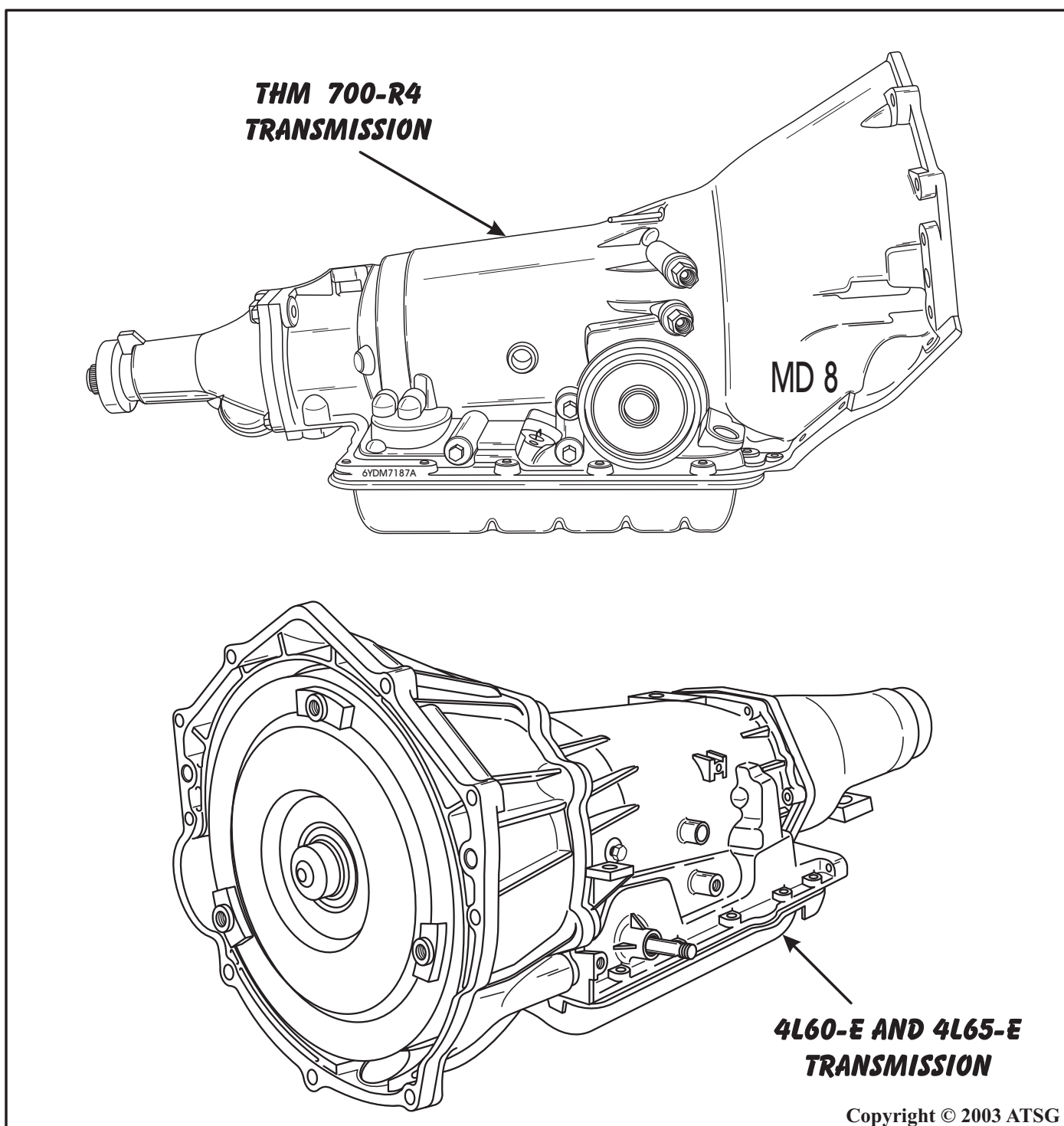


Figure 81



Technical Service Information

UPGRADE ENHANCEMENT

THM 4L60-E STAMPED STEEL, MOULDED RUBBER, FORWARD AND OVERRUN PISTONS ADDED FOR 1997

CHANGE: Beginning at the start of production for 1997 models, all THM 4L60-E transmissions will be built with stamped steel, moulded rubber seals for both forward and overrun clutch pistons, as shown in Figure 82. The 3-4 clutch stamped steel piston was introduced in 1993.

REASON: Cost savings and increased durability.

PARTS AFFECTED:

- (1) FORWARD CLUTCH PISTON - Now manufactured of stamped steel with moulded rubber inner and outer seals, for increased durability against cracking (See Figure 82).
- (2) OVERRUN CLUTCH PISTON - Now manufactured of stamped steel with moulded rubber inner and outer seals, for increased durability and cost savings (See Figure 82).
- (3) FORWARD/OVERRUN CLUTCH PISTON RETURN SPRING - Modified to accommodate the new stamped steel with moulded rubber seals, and is *mandatory* when replacing the aluminum pistons with the stamped steel pistons.
- (4) 3-4 CLUTCH PISTON - Now manufactured of stamped steel with moulded rubber inner and outer seals, for increased durability and cost savings (See Figure 82).

INTERCHANGEABILITY:

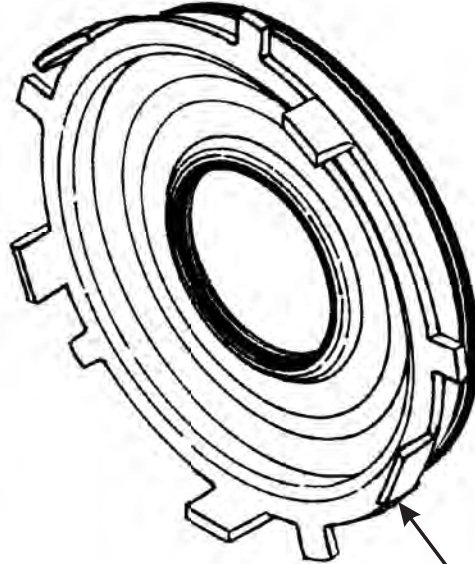
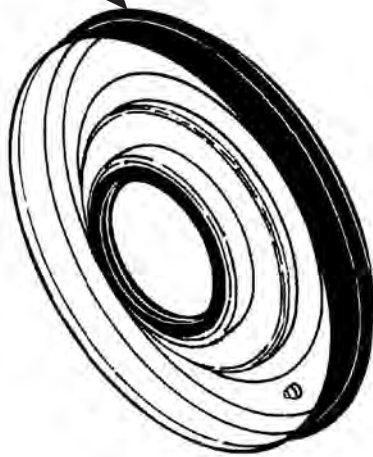
All of the pistons listed above, the Forward Clutch Piston, the Overrun Clutch Piston, the new Return Spring Assembly and the 3-4 Clutch Piston will retro-fit back on all previous models, *including the THM 700-R4 transmission.*

SERVICE INFORMATION:

Forward Clutch Piston (Stamped Steel, Moulded Rubber)	24205272
Overrun Clutch Piston (Stamped Steel, Moulded Rubber)	24205273
Forward/Overrun Clutch Piston Return Spring Assembly	24206085
3-4 Clutch Piston (Stamped Steel, Moulded Rubber)	24200290

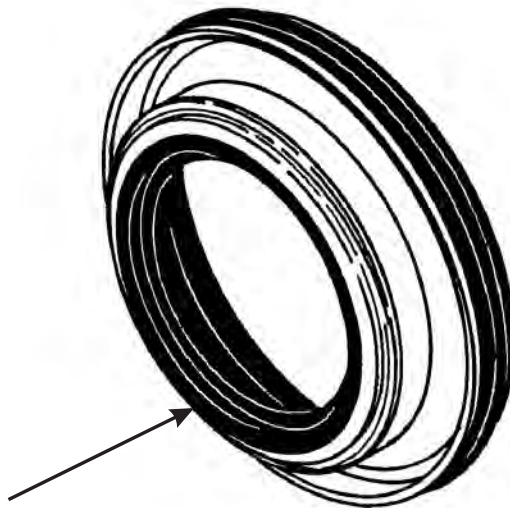
**ALL PISTONS IN THE INPUT HOUSING ARE NOW
STAMPED STEEL, WITH MOULDED RUBBER SEALS
*THESE PISTONS WILL ALL RETRO-FIT
INTO THE 700-R4 TRANSMISSION***

**OVERRUN CLUTCH PISTON
PART NO. 24205273**



**FORWARD CLUTCH PISTON
PART NO. 24205272**

**3-4 CLUTCH PISTON
PART NO. 24200290**



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Figure 82



Technical Service Information

UPGRADE ENHANCEMENT

THM 4L60-E/4L65-E NEW SUN SHELL AND THRUST BEARING

CHANGE: Beginning at the start of production for model year 2001, General Motors introduced a new transmission designated THM 4L60-EHD with many engineering changes. Currently this unit is found in all 2001 Cadillac Escalade and any vehicle with 6.0L engine or larger, that was previously equipped with the THM 4L60-E transmission. One of the changes includes a new design sun gear shell and thrust bearing to replace the previous design washer, as shown in Figures 83 and 84.

REASON: Increased durability and reliability.

PARTS AFFECTED:

- (1) SUN GEAR SHELL - The holes in the sun shell for the previous thrust washer have been eliminated, as shown in Figures 83 and 84, to accommodate the new thrust bearing.
- (2) REACTION CARRIER SHAFT - Modified on the rear surface to accommodate the added thrust bearing, as shown in Figures 85 and 86.
- (3) THRUST BEARING - Added for increased durability as shown in Figures 85 and 86.

INTERCHANGEABILITY:

Will Not interchange with any previous design parts, but *Will* retro-fit back on any previous model 4L60-E transmission, *when used as a service package.*

SPECIAL NOTE; Will also retro-fit back on the THM 700-R4 transmission, when used as a service package. All three pieces "Must" be used.

SERVICE INFORMATION:

Sun Gear Shell (New Design)	24217145
Reaction Carrier Shaft (New Design)	24217157
Sun Shell Thrust Bearing (New Design)	24217328

***THESE PARTS WILL RETRO-FIT INTO
THE 700-R4 TRANSMISSION WHEN
ALL THREE ARE USED AS A
SERVICE PACKAGE***

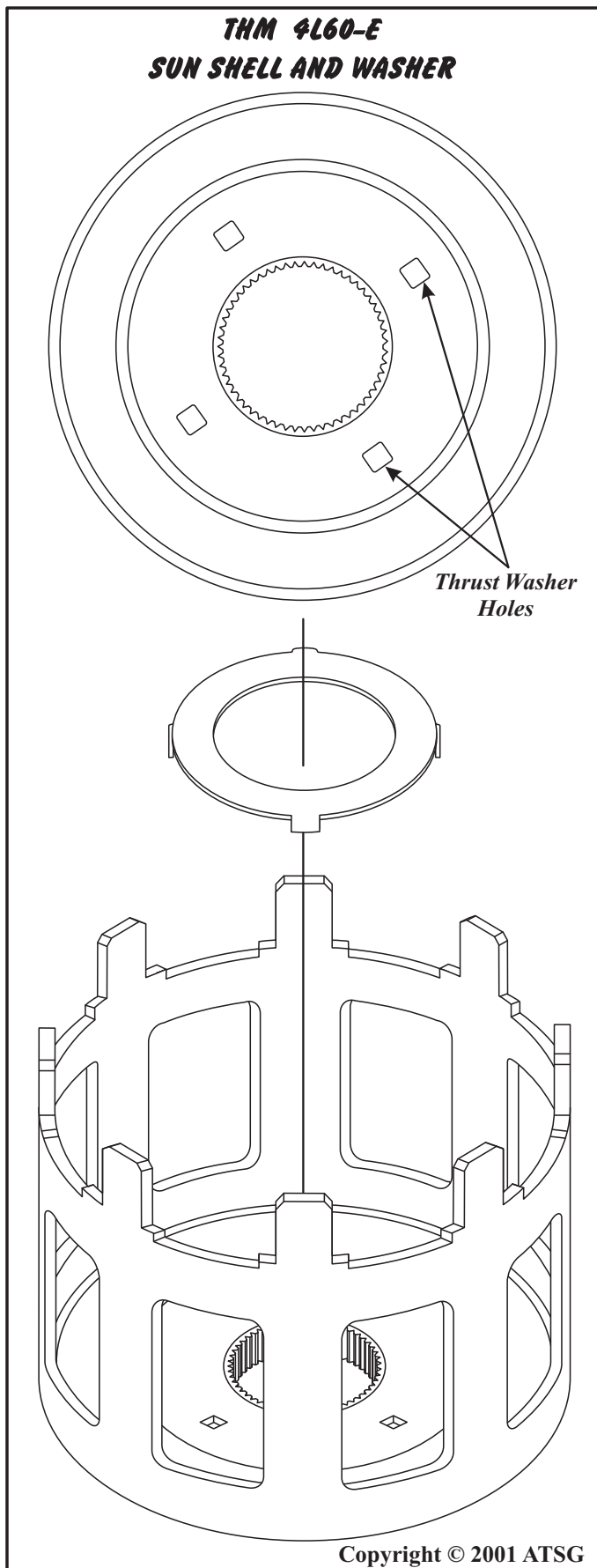


Figure 83

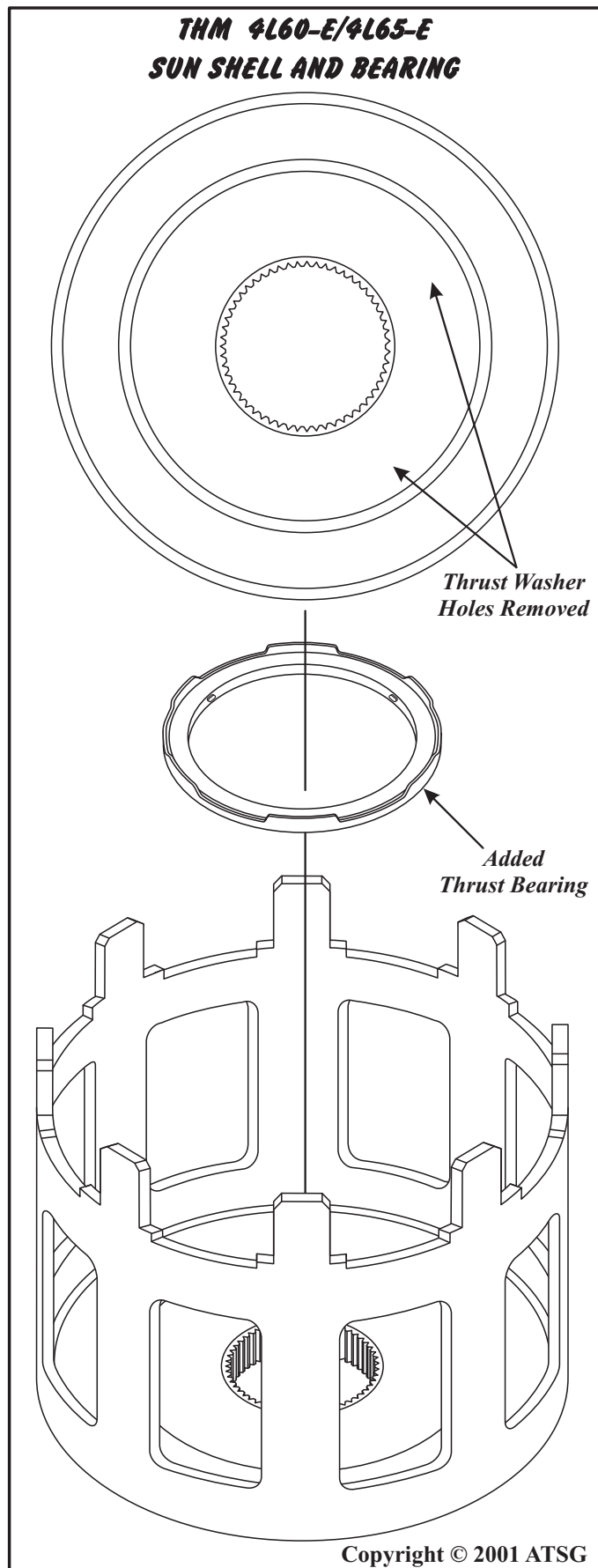


Figure 84

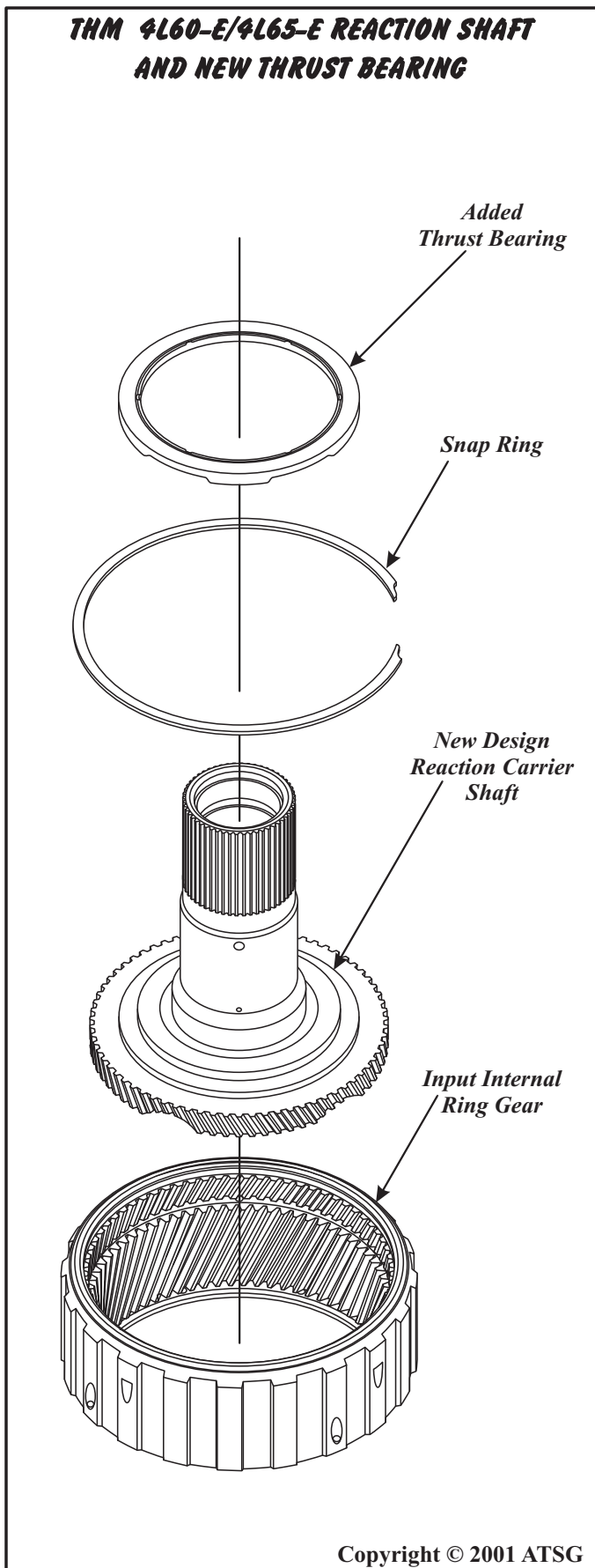


Figure 85

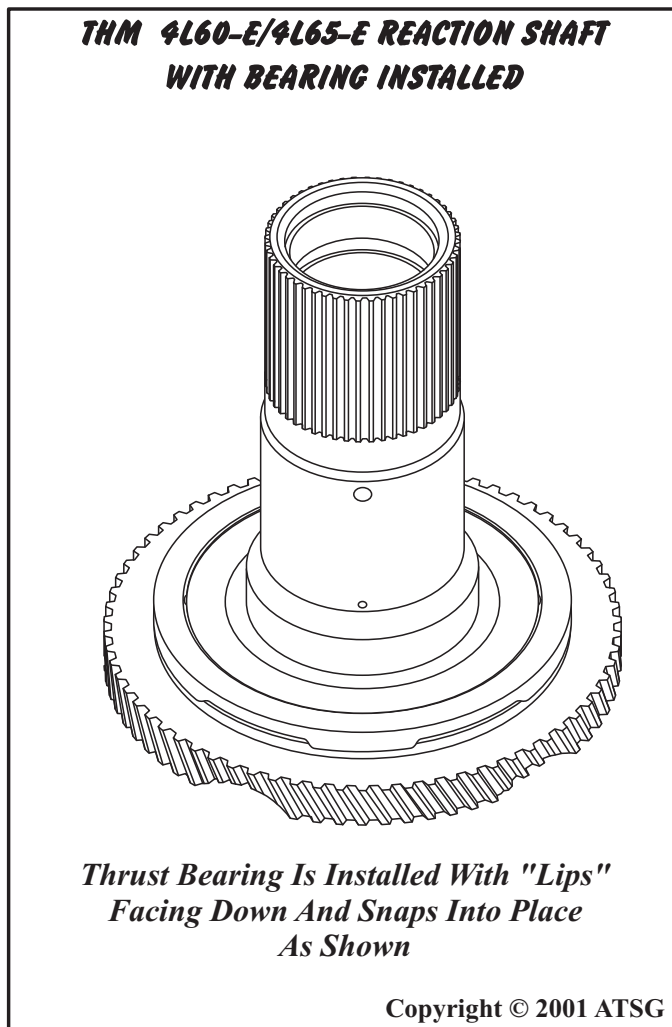


Figure 86



Technical Service Information

UPGRADE ENHANCEMENT

THM 4L65-E (M32) SEVEN CLUTCH 3-4 PACK

CHANGE: Beginning at the start of production for model year 2001, General Motors introduced a new transmission designated THM 4L65-E (M32) with many engineering changes. Currently this unit is found in all 2001 Cadillac Escalade and any vehicle with 6.0L engine or larger, that was previously equipped with the THM 4L60-E transmission. One of the changes includes adding a 7th lined plate to the 3-4 clutch pack, as shown in Figure 87, with no dimensional changes to the input housing. There is a "Kitted" Service Package available from OEM under part number 24220129, as shown in Figure 88.

REASON: New generation of higher horsepower engines and increased durability and reliability.

PARTS AFFECTED:

- (1) 3-4 CLUTCH APPLY PLATE - Required dimensional changes to accommodate the added friction and steel plate. The new design level is .218" thick and the previous design level thickness is .224", as shown in Figure 89.
- (2) 3-4 CLUTCH BACKING PLATE - Required dimensional changes to accommodate the added friction and steel plate, and to achieve the proper 3-4 clutch clearance. There are four new thickness backing plates and one of the previous backing plates, to ensure proper 3-4 clutch clearance, as shown in Figure 90.
- (3) 3-4 CLUTCH FRICTION PLATE - Required dimensional changes to accommodate the added friction and steel plate. The new design level friction plate is .065" thick and the previous design level thickness is .082", as shown in Figure 91.
- (4) 3-4 CLUTCH STEEL PLATE - Required dimensional changes to accommodate the added friction and steel plate. The new design level steel plate is .097" thick and the previous design level thickness is .106", as shown in Figure 91.

INTERCHANGEABILITY:

All of the new design parts listed above *will retro-fit back* to 1993 models, when used as a service package.

SPECIAL NOTE; Will also retro-fit back on the THM 700-R4 transmission, when used as a service package. All of the pieces "Must" be used.

SERVICE INFORMATION:

3-4 Clutch Plates, "Kitted" (New Design)	24220129
3-4 Clutch Backing Plate (.144" Thick)	24217450
3-4 Clutch Backing Plate (.165" Thick)	24217453
3-4 Clutch Backing Plate (.194" Thick)	24212460
3-4 Clutch Backing Plate (.219" Thick)	24217516
3-4 Clutch Backing Plate (.241" Thick)	24217517

**THESE PARTS WILL RETRO-FIT INTO
THE 700-R4 TRANSMISSION WHEN
ALL OF THE PARTS ARE USED AS A
SERVICE PACKAGE**

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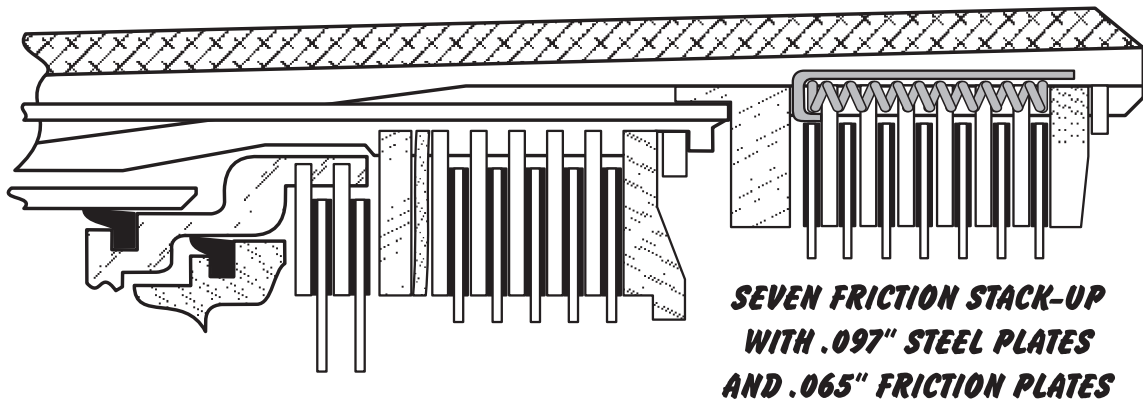
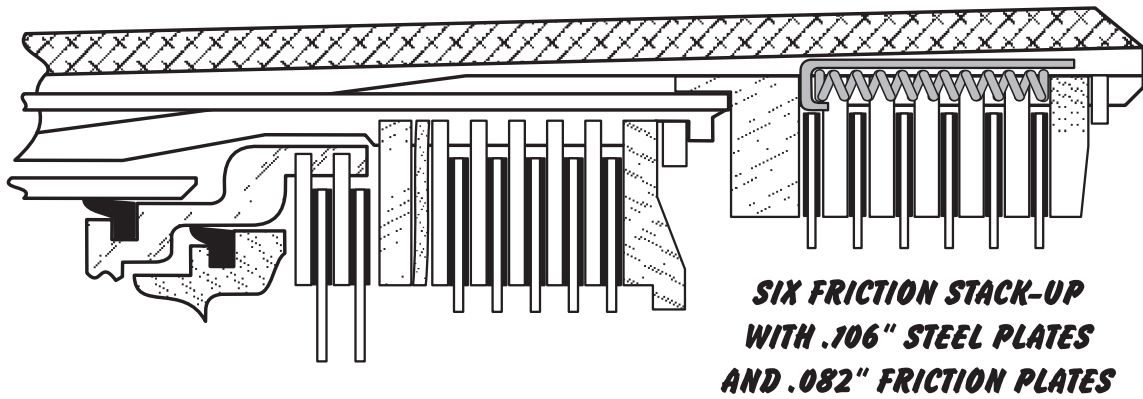
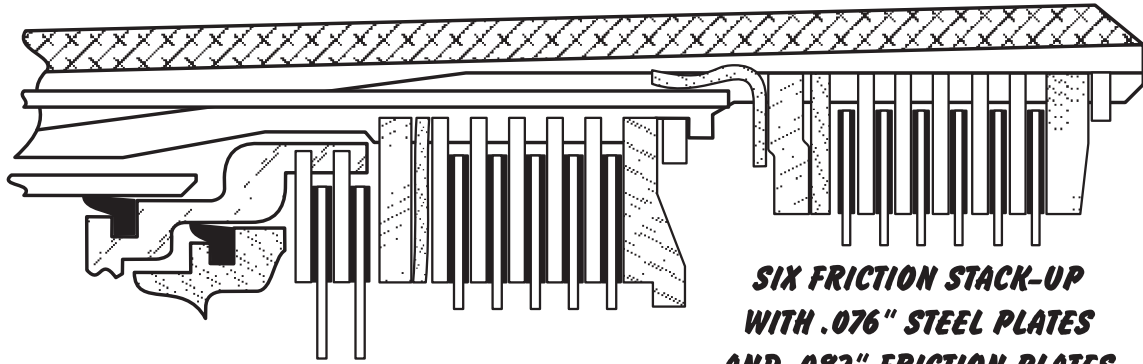
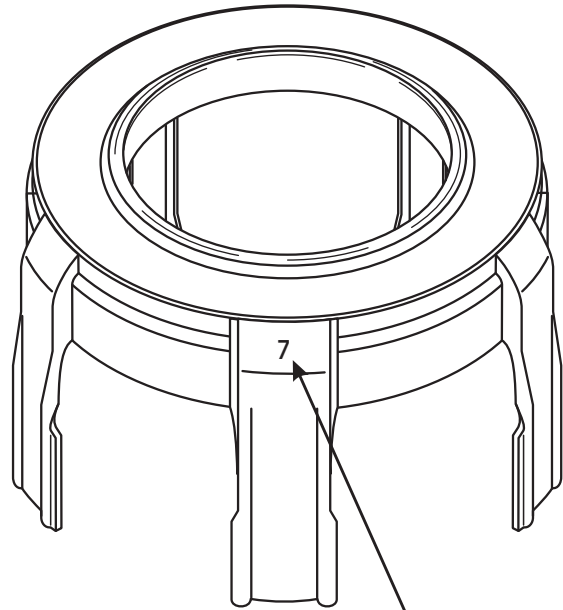
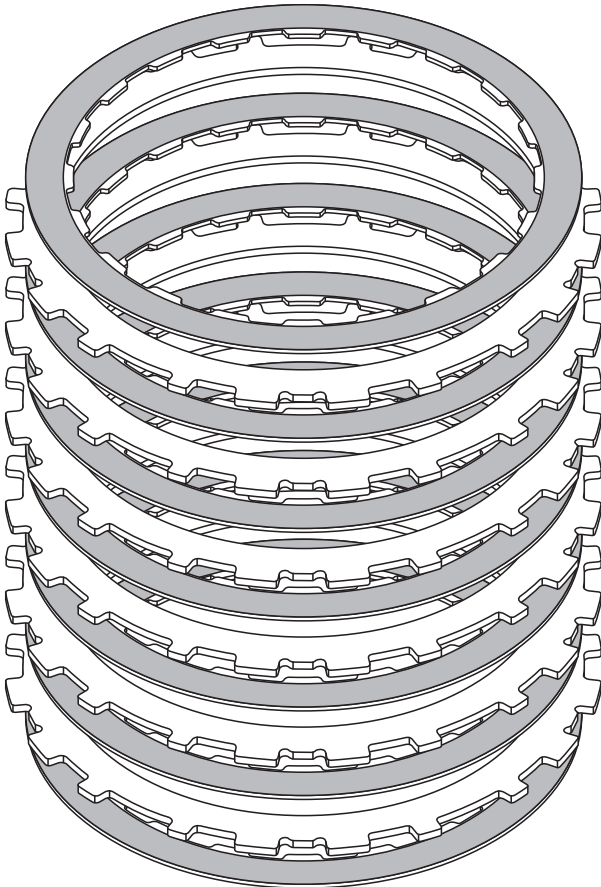
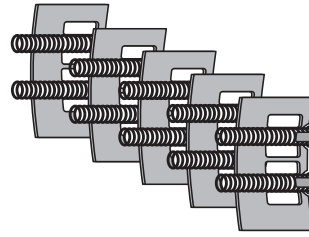


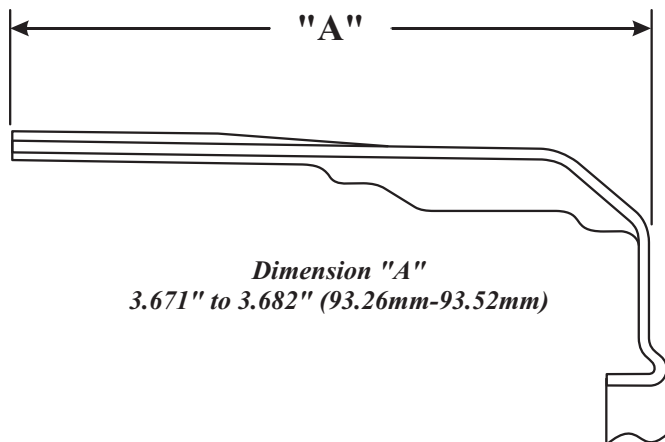
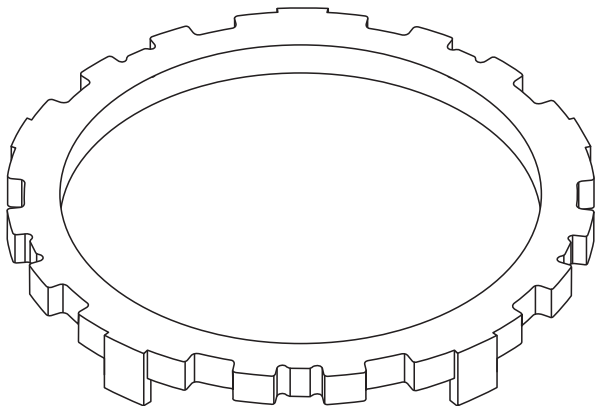
Figure 87

**CONTENTS OF SERVICE PACKAGE
PART NUMBER 24220129**

- 7 .065" Thick High Energy Friction Plates
- 6 .097" Thick Steel Plates
- 1 .218" Thick 3-4 Apply Plate
- 1 3-4 Apply Ring (Same As Previous, Stamped "7")
- 5 3-4 Load Release Springs (Same As Previous)



Identification, Stamped "7"

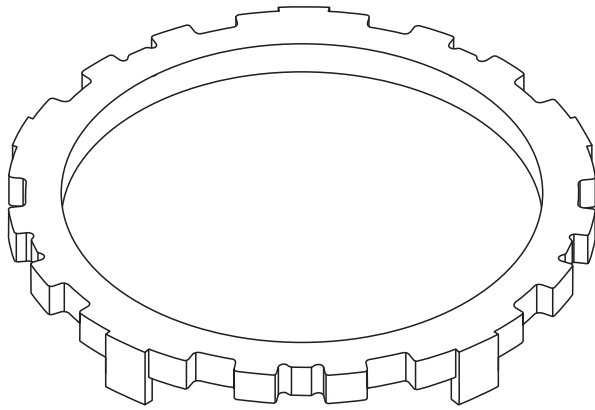


Dimension "A"
3.671" to 3.682" (93.26mm-93.52mm)

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Figure 88

3-4 CLUTCH APPLY PLATE

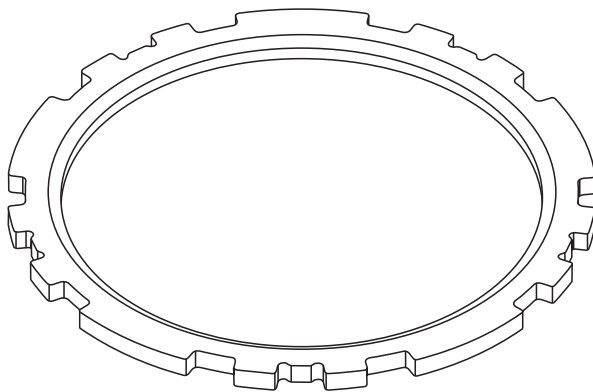


Thickness For Six Friction Plates = .224"
Thickness For Seven Friction Plates = .218"

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Figure 89

NEW 3-4 CLUTCH BACKING PLATES

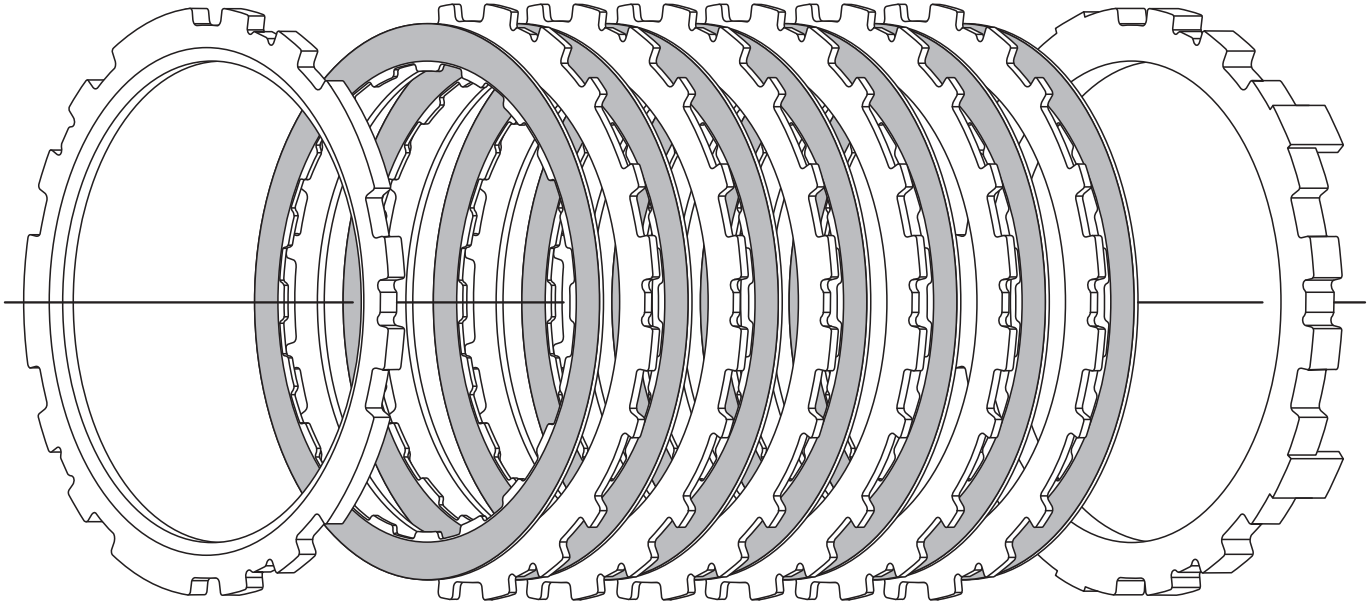


24217450 = .144" Thick (New)
24217453 = .165" Thick (New)
24212460 = .194" Thick (Same As Previous)
24217516 = .219" Thick (New)
24217517 = .241" Thick (New)

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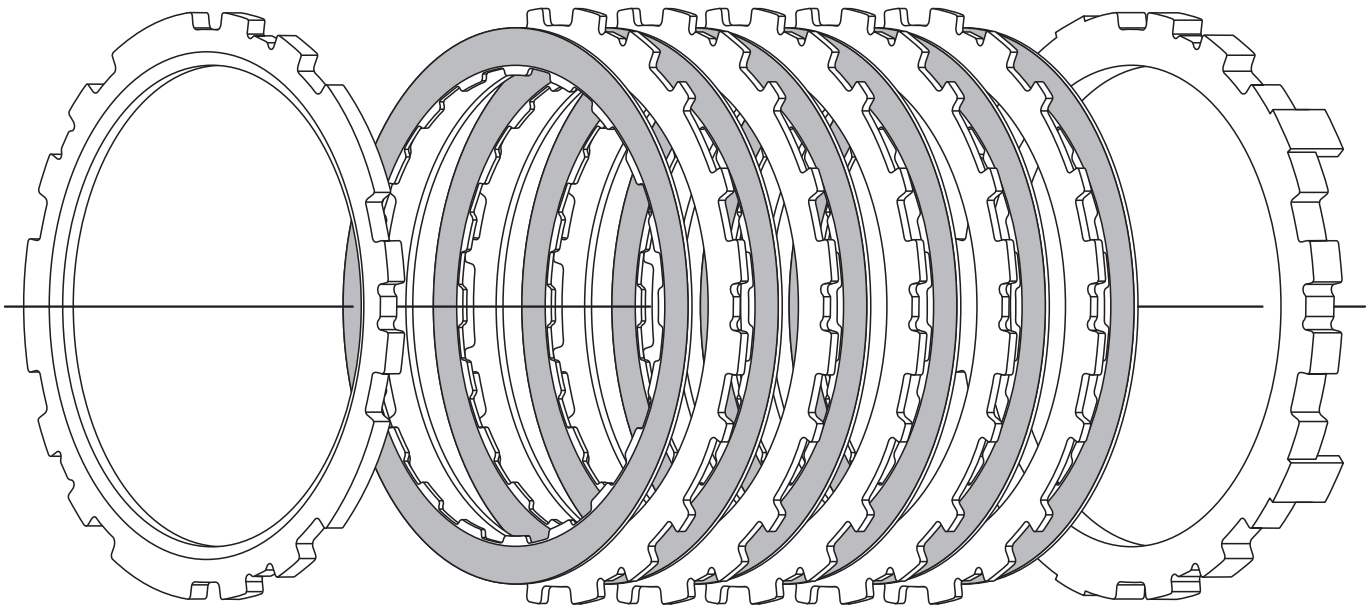
Figure 90

**THM 4L65-E (M32) 3-4 CLUTCH
SEVEN FRICTION STACK-UP**



*Friction Plates = .065" Thick, 7 Required
Steel Plates = .097" Thick, 6 Required*

**THM 4L60-E (M30) 3-4 CLUTCH
SIX FRICTION STACK-UP**



*Friction Plates = .082" Thick, 6 Required
Steel Plates = .106" Thick, 5 Required*

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Figure 91

LOAD RELEASE OR BOOST SPRINGS EXPLAINED

These spring assemblies were first installed by engineering because they thought the 3-4 clutch was burning because they were not releasing fast enough, and there is some truth to that statement. But, on the early models, the springs would hold the backing plate above the snap ring groove, as shown in Figure 92.

This meant that you would have to push the backing plate down against the spring pressure, with considerable force and preload the springs, to install the backing plate snap ring, as shown in Figure 93.

This additional spring force from the load release springs had to be overcome by 3-4 clutch pressure for the 3-4 clutch to apply properly. In high mileage early units the load release springs did more harm, in our opinion, than they did good, so we advised to remove them.

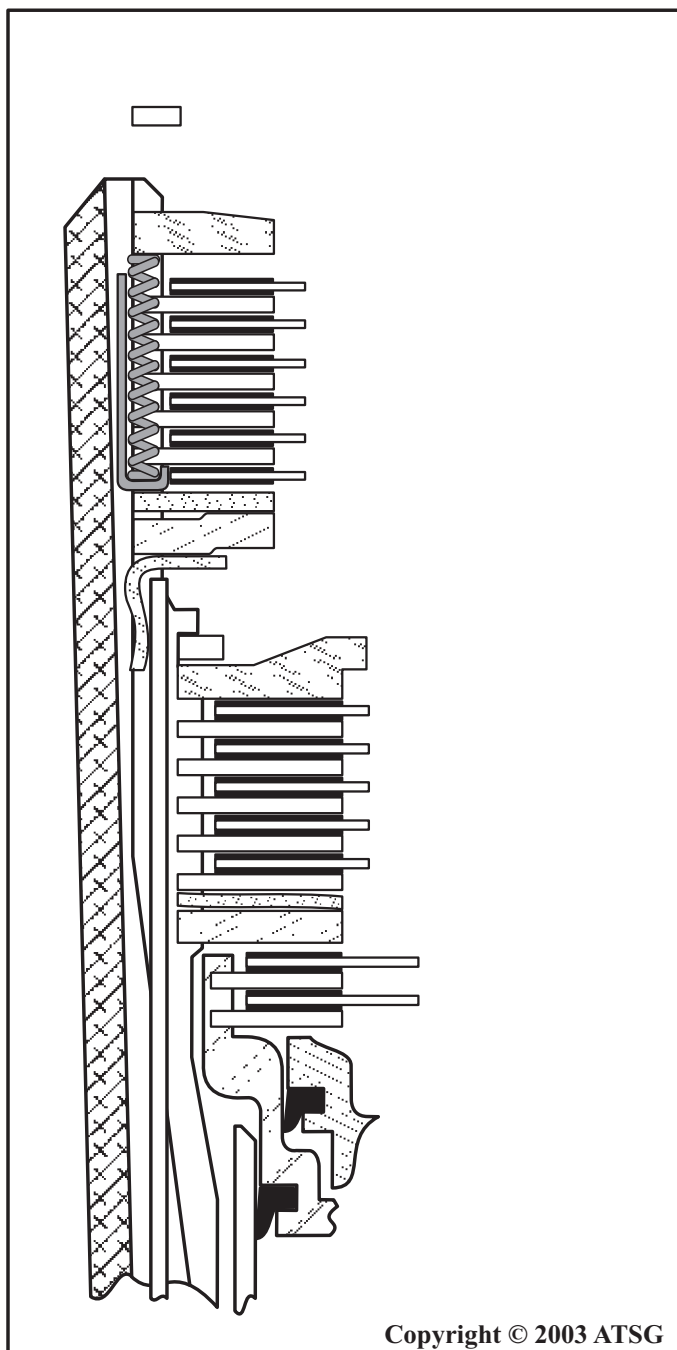


Figure 92

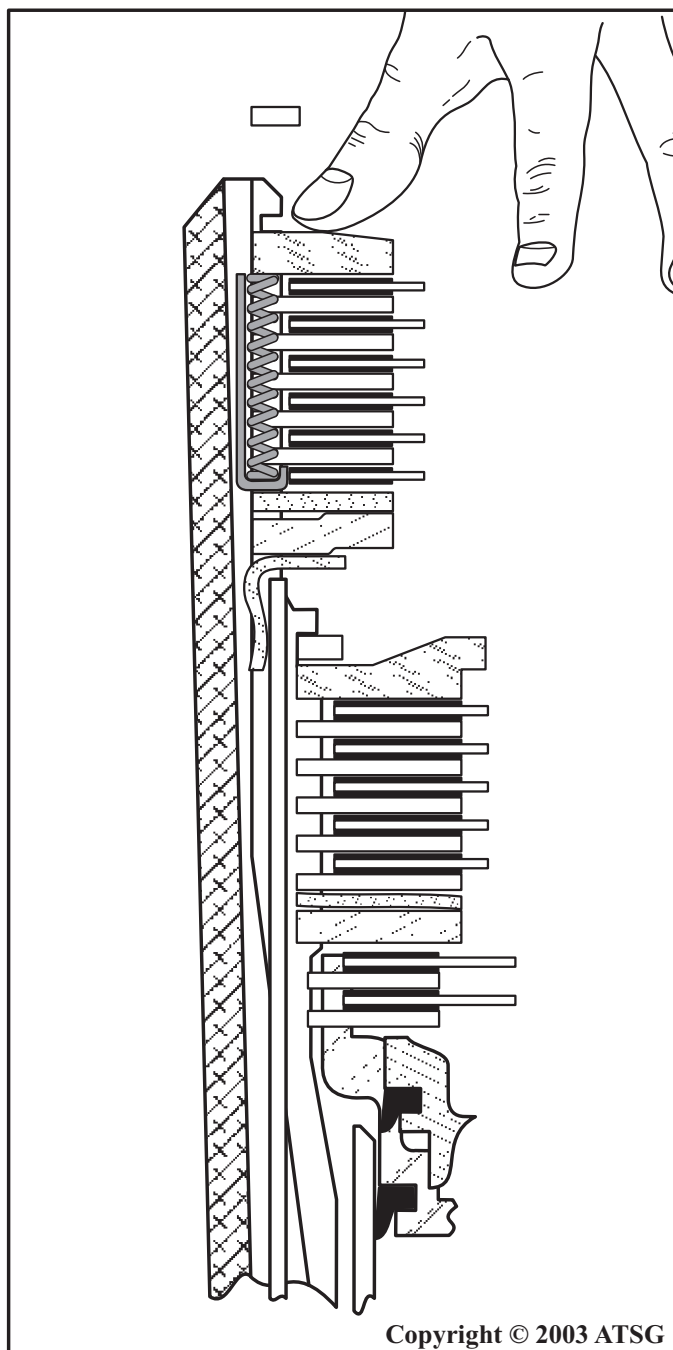


Figure 93

LOAD RELEASE OR BOOST SPRINGS EXPLAINED

Once they changed over to the one piece apply plate, the new design 3-4 clutch apply ring with shorter legs, the thinner backing plate and the thinner snap ring, to make room for the thicker steel plates, there was more room created between the backing plate snap ring groove and the top of the 3-4 apply ring legs.

With the distance between these two points increased there was no longer any "preload" on the backing plate once it was installed into the housing, as shown in Figures 94 and 95.

With the additional spring force gone, the load release springs should be reinstalled, as they now do more good than harm.

With the .106" steel plate package, or the seven friction plate package, "Reinstall the Spring Assemblies".

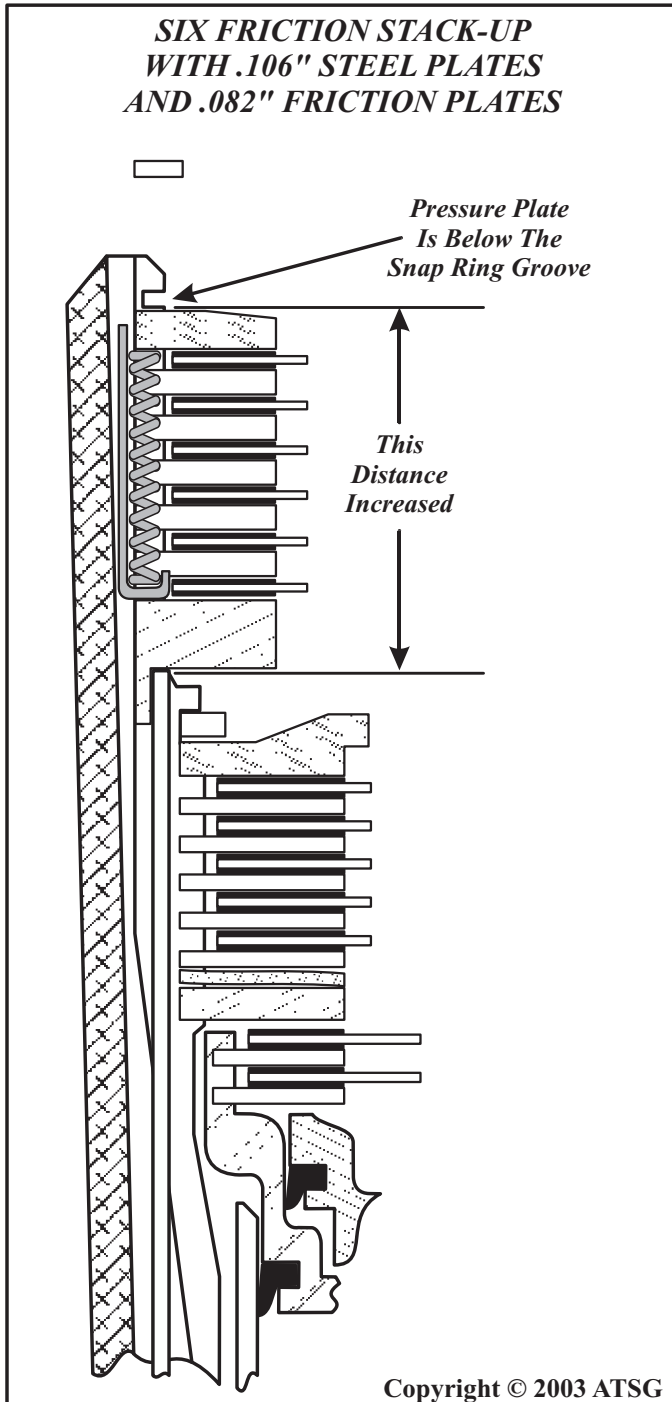


Figure 94

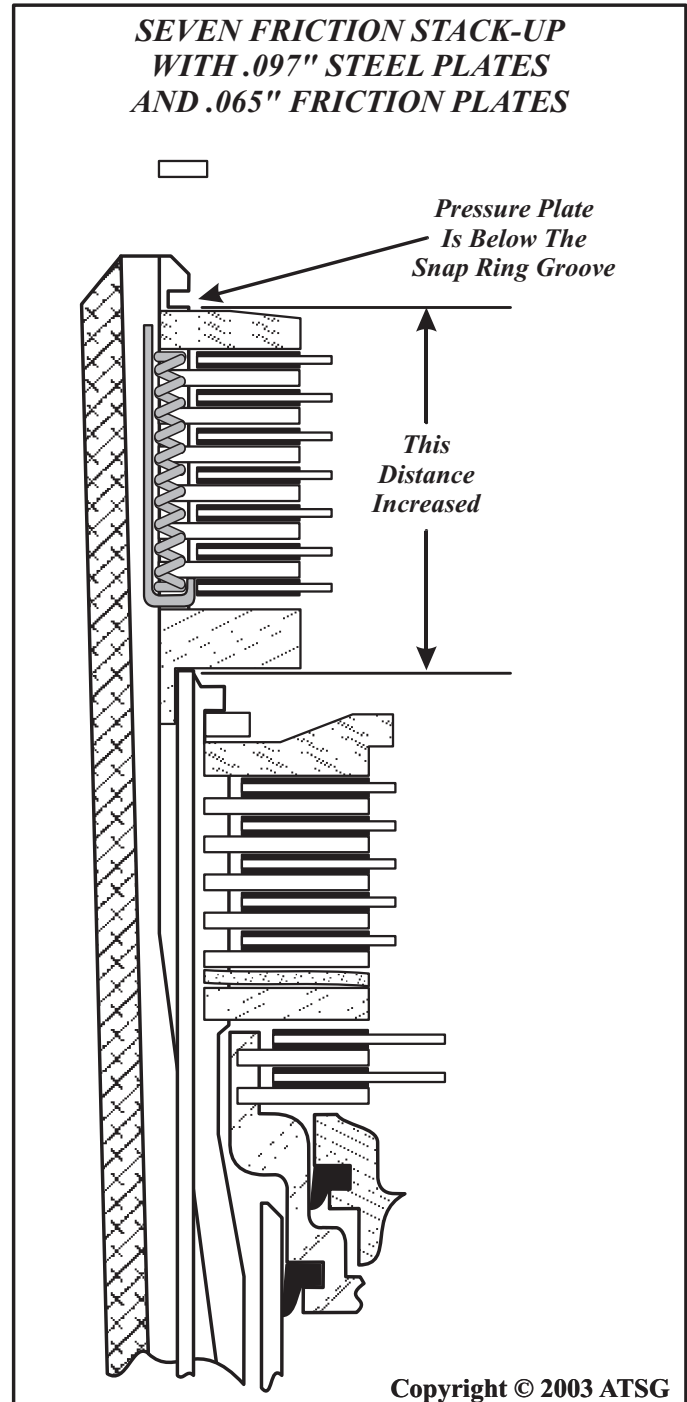


Figure 95



Technical Service Information

UPGRADE ENHANCEMENT

THM 4L65-E 5 PINION FRONT AND REAR PLANETARY CARRIERS

CHANGE: Beginning at the start of production for model year 2001, General Motors introduced a new transmission designated THM 4L65-E with many engineering changes. Currently this unit is found in all 2001 Cadillac Escalade and any vehicle with 6.0L engine or larger, that was previously equipped with the THM 4L60-E transmission. One of the changes includes adding a 5 pinion reaction(rear) planetary carrier and a 5 pinion input (front) planetary carrier, as shown in Figures 96 and 97, with no dimensional changes to the related parts.

REASON: Increased durability and reliability.

PARTS AFFECTED:

- (1) REACTION (*Rear*) PLANETARY CARRIER - Now equipped with 5 planetary pinion gears, as shown in Figure 96.
- (2) INPUT (*Front*) PLANETARY CARRIER - Now equipped with 5 planetary pinion gears, as shown in Figure 97.

INTERCHANGEABILITY:

Both Input and Reaction 5 pinion planetary carriers can be used in any previous model 4L60-E transmission for increased durability.

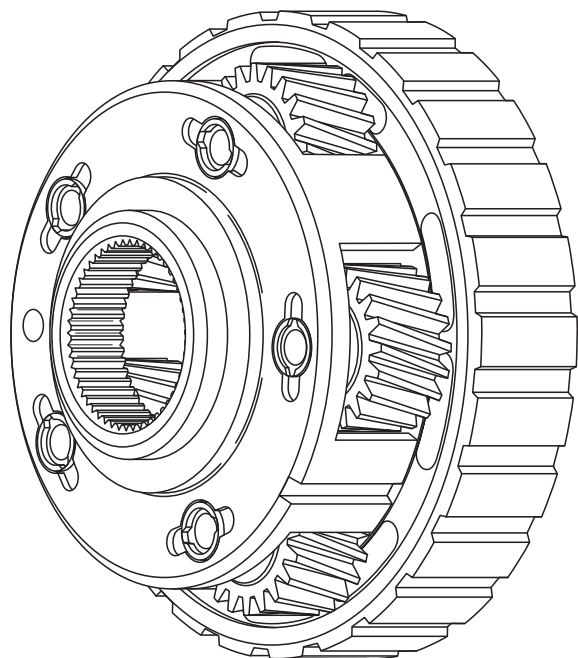
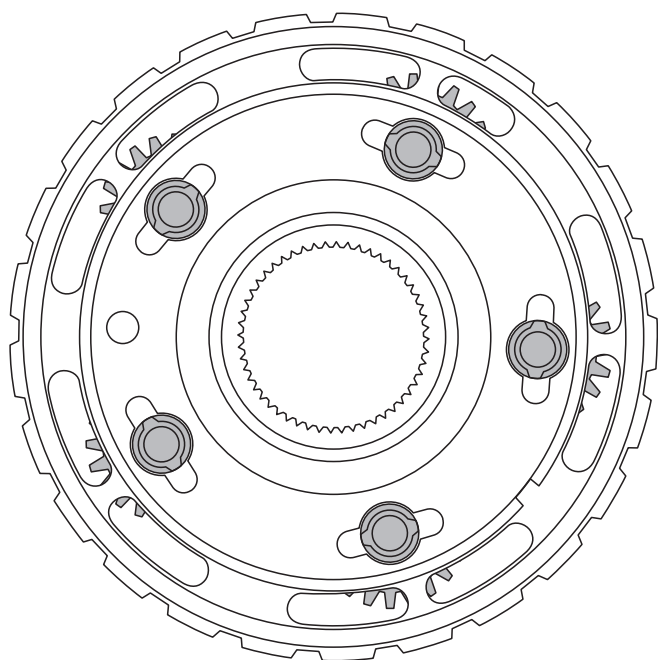
SPECIAL NOTE; Will also retro-fit back on the THM 700-R4 transmission, when used as a service package. All three pieces "Must" be used.

SERVICE INFORMATION:

Input Planetary Carrier Assembly, 5 Pinion	24218063
Reaction Planetary Carrier Assembly, 5 Pinion	24218069

***THESE PARTS WILL RETRO-FIT INTO
THE 700-R4 TRANSMISSION WITH
NO OTHER CHANGES***

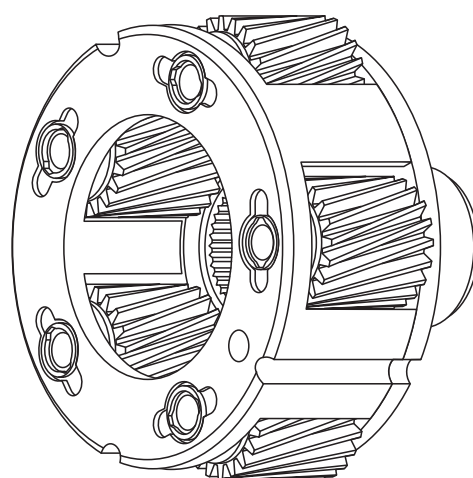
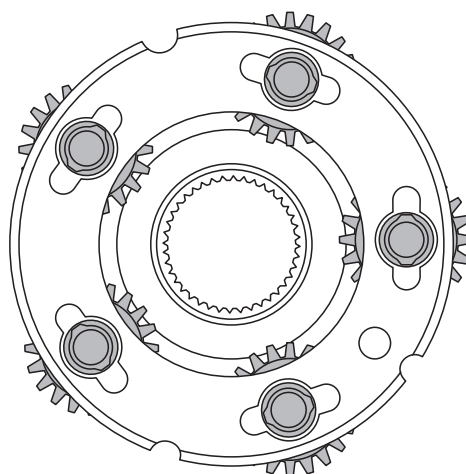
**THM 4L65-E
5 PINION REAR CARRIER**



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Figure 96

**THM 4L65-E
5 PINION FRONT CARRIER**



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Figure 97



Technical Service Information

THM 700-R4 (4L60) 1982-1993 MODEL IDENTIFICATION AND WIRING TYPE IDENTIFICATION

The THM 700-R4 transmission wiring harness and TCC Solenoid assembly can be easily identified, by "Wiring Type", using one of two different methods as shown below.

Method Number One:

The *color* of the plastic insulator on the TCC Solenoid can be used to identify the "Wiring Type", using the chart found below.

Method Number Two:

The last four numbers of the OEM part number are also cast into the plastic insulator, as shown in the chart below. This number can also be used to identify the "Wiring Type" used in the vehicle.

1982 through 1993 model identification, and wiring type by transmission model, can be found on Pages 99 through 111. Wiring Schematics for North American wiring types shown in the chart below, can be found on Pages 112 through 120.

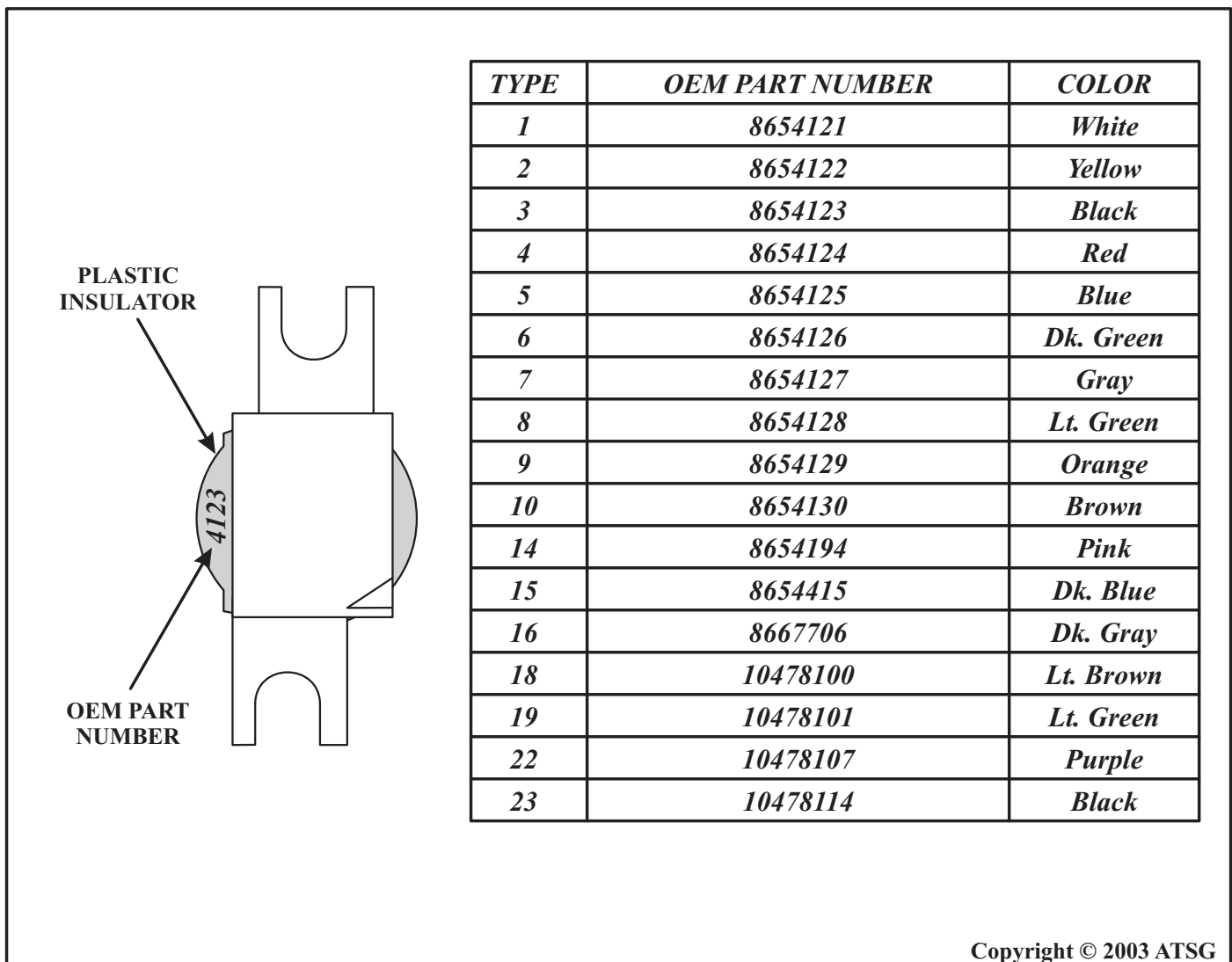


Figure 98



Technical Service Information

THM 700-R4 (4L60) 1982 MODEL IDENTIFICATION

MODEL	ENGINE AND VEHICLE TYPE	WIRING TYPE
9MB	4.1L "C"-TRUCK (Nationwide)	2
9MC	4.1L "C"-TRUCK (Federal)	1
9MD	5.0L & 5.7L "C"-TRUCK (Fed & Alt)	1
9ME	5.0L & 5.7L "C"-TRUCK (Calif)	2
9MH	6.2L Diesel "C"-TRUCK	3
9M2	4.1L "K"-TRUCK	2
9M4	5.0L & 5.7L "K"-TRUCK (Calif)	2
9M5	5.7L "K"-TRUCK	1
9M6	6.2L Diesel "K"-TRUCK	2
9M7	5.7L "C"-TRUCK (H.D.)	1
9TC	4.1L "K"-TRUCK	2
9TE	5.0L & 5.7L "C"-TRUCK (Calif)	2
9TH	5.0L & 5.7L "K"-TRUCK (Calif)	2
9TJ	5.0L & 5.7L "C"-TRUCK (Fed & Alt)	1
9TK	5.7L "K"-TRUCK	1
9TN	6.2L Diesel "C"-TRUCK	3
9TP	6.2L Diesel "K"-TRUCK	2
9TW	4.1L "C"-TRUCK (Nationwide)	2
9T5	5.7L "C"-TRUCK (H.D.)	1
9T6	4.1L "C"-TRUCK (Federal)	1
9YA	5.7L CORVETTE	4
9YK	5.0L "B"-CAR	4
9YL	4.1L "B"-CAR	4
9Y3	5.0L "B"-CAR	4
9Y4	4.1L "B"-CAR	4
9Y6	5.7L CORVETTE	4



Technical Service Information

THM 700-R4 (4L60) 1983 MODEL IDENTIFICATION

MODEL	ENGINE AND VEHICLE TYPE	WIRING TYPE
3MB	4.1L "C"-TRUCK (Calif)	5
3MC	4.1L "C"-TRUCK (Fed & Alt)	1
3MD	5.0L "C"-TRUCK (Fed & Alt)	1
3ME	5.0L & 5.7L "C"-TRUCK (Calif)	5
3MH	6.2L Diesel "C"-TRUCK	3
3MJ	4.1L "K"-TRUCK/"G"-VANS	1
3MK	5.0L "C"-TRUCK (Fed & Alt)	1
3ML	2.8L "S"-TRUCK (Fed & Alt)	8
3MS	2.8L "T"-TRUCK (Calif)	6
3MW	5.7L "K"-TRUCK (Calif)	5
3PQ	2.5L "F" CAR	9
3TC	4.1L "K"-TRUCK (Federal)	1
3TE	5.0L & 5.7L "C"-TRUCK (Calif)	3
3TH	5.7L "K"-TRUCK (H.D.)	2
3TK	5.0L & 5.7L "K"-TRUCK (Fed & Alt)	1
3TL	6.2L Diesel "C"-TRUCK/"G"-VANS (H.D.)	3
3TP	6.2L Diesel "K"-TRUCK	2
3TS	6.2L Diesel "K"-TRUCK (H.D.)	2
3TZ	6.2L Diesel "K"-TRUCK (H.D.)	2
3T2	2.0L "S"-TRUCK (Fed & Alt)	7
3T7	2.8L "T"-TRUCK (Fed & Alt)	8
3T8	6.2L Diesel "K"-TRUCK	2
3VA	2.0L "S"-TRUCK (Fed & Alt)	7
3VJ	6.2L Diesel "C"-TRUCK	3
3VH	5.7L "C"-TRUCK (H.D.)	2
3VN	4.1L "C"-TRUCK/"G"-VANS (Calif)	5
3YF	2.8L "F"-CAR	9
3YG	5.0L "F"-CAR	4
3YH	2.8L "F"-CAR (High Output)	9
3YK	5.0L "B"-CAR (Wagon)	4
3YN	5.7L "B"-CAR (Police)	4
3YP	5.0L "F"-CAR	4
3Y9	5.7L CORVETTE	4



Technical Service Information

THM 700-R4 (4L60) 1984 MODEL IDENTIFICATION

MODEL	ENGINE AND VEHICLE TYPE	WIRING TYPE
4MB	4.1L "C"-TRUCK (Calif)	5
4MC	4.1L "C"-TRUCK (Fed & Alt)	1
4MD	5.0L "C"-TRUCK (Fed & Alt)	1
4ME	5.0L & 5.7L "C"-TRUCK/"G"-VAN (Calif)	4
4MG	6.2L Diesel "C"-TRUCK (Calif)	10
4MH	6.2L Diesel "C"-TRUCK	3
4MJ	4.1L "C"-TRUCK/"G"-VANS (Fed & Alt)	1
4MK	5.0L & 5.7L "C"-TRUCK/"G"-VANS (Fed & Alt)	1
4ML	2.8L "S"-TRUCK (Fed & Alt)	8
4MP	2.8L "S"-TRUCK (Calif)	6
4MR	5.0L "C"-TRUCK (Canada)	2
4MS	2.8L "T"-TRUCK (Calif)	6
4MW	5.7L "K"-TRUCK (Calif)	10
4PQ	2.8L "F" CAR	6
4TC	4.1L "K"-TRUCK (Federal)	1
4TD	5.0L "K"-TRUCK (Canada)	2
4TE	5.0L & 5.7L "C"-TRUCK (Calif)	4
4TG	5.0L "C"-TRUCK (Canada)	2
4TH	5.7L "K"-TRUCK (H.D.)	2
4TK	5.0L & 5.7L "K"-TRUCK (Fed & Alt)	1
4TL	6.2L Diesel "C"-TRUCK/"G"-VANS (H.D.)	3
4TM	6.2L Diesel "K"-TRUCK (Calif)	10
4TZ	6.2L Diesel "K"-TRUCK (H.D.)	2
4T7	2.8L "T"-TRUCK (Fed & Alt)	8
4T8	6.2L Diesel "K"-TRUCK	2
4VA	2.0L "S"-TRUCK (Fed & Alt)	8
4VE	6.2L Diesel "G"-VANS (Calif)	10
4VH	5.0L "C"-TRUCK/"G"-VANS (H.D.)	2
4VJ	6.2L Diesel "C"-TRUCK/"G"-VANS	3
4VN	4.1L "C"-TRUCK/"G"-VANS (Calif)	5
4VX	6.2L Diesel "C"-TRUCK	10
4YA	5.7L CORVETTE	4
4YF	2.8L "F"-CAR	9
4YG	5.0L "F"-CAR	4
4YH	2.8L "F"-CAR (High Output)	9
4YK	5.0L "B"-CAR (Wagon)	2
4YN	5.7L "B"-CAR (Police)	4
4YP	5.0L "F"-CAR	4
4YW	5.7L CORVETTE (TBI)	4
4Y6	5.0L "B"-CAR (Canada)	3
4Y7	2.8L "F"-CAR (Canada)	3
4Y8	5.0L "F"-CAR (Canada)	3
4Y9	5.7L CORVETTE (TBI)	4

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Technical Service Information

THM 700-R4 (4L60)

1985 MODEL IDENTIFICATION		WIRING
MODEL	ENGINE AND VEHICLE TYPE	TYPE
5MD	5.0L "C"-TRUCK (Fed & Alt)	1
5ME	5.0L & 5.7L "C"-TRUCK/"G"-VAN (Calif)	4
5MG	6.2L Diesel "C"-TRUCK (Calif)	10
5MH	6.2L Diesel "C"-TRUCK	3
5MK	5.0L & 5.7L "C"-TRUCK/"G"-VANS (Fed & Alt)	1
5ML	2.8L "S"-TRUCK (Calif)	8
5MM	4.3L "C"-TRUCK (Calif)	4
5MP	2.8L "S"-TRUCK (Calif)	6
5MR	5.0L "C"-TRUCK (Canada)	2
5MS	2.8L "T"-TRUCK (Calif)	6
5MT	2.5L "T"-TRUCK	14
5MW	5.7L "K"-TRUCK (Calif)	10
5MX	5.7L "C"-TRUCK	2
5PR	2.5L "S"-TRUCK	14
5PQ	2.8L "F" CAR	6
5TE	5.0L & 5.7L "C"-TRUCK (Calif)	4
5TD	5.0L "K"-TRUCK (Canada)	2
5TG	5.0L "C"-TRUCK (Canada)	2
5TH	5.7L "K"-TRUCK (H.D.)	2
5TK	5.0L & 5.7L "K"-TRUCK (Fed & Alt)	1
5TL	6.2L Diesel "C"-TRUCK/"G"-VANS (H.D.)	3
5TM	6.2L Diesel "K"-TRUCK (Calif)	10
5TS	5.7L "B"-CAR, (Canada, Police)	3
5TW	4.3L "K"-TRUCK (Calif)	10
5TZ	6.2L Diesel "K"-TRUCK (H.D.)	2
5T7	2.8L "T"-TRUCK (Fed & Alt)	8
5T8	6.2L Diesel "K"-TRUCK	10
5VC	2.5L "M"-VAN	14
5VE	6.2L Diesel "G"-VANS (Calif)	10
5VF	4.3L "C"-TRUCK/"G"-VANS	2
5VG	4.3L "C"-TRUCK/"G"-VANS (Calif)	4
5VH	5.0L "C"-TRUCK/"G"-VANS (H.D.)	2
5VJ	6.2L Diesel "C"-TRUCK/"G"-VANS	3
5VK	4.3L "M"-VANS	2
5VL	4.3L "M"-VANS (Calif)	4
5VZ	4.3L "K"-TRUCK	2
5YA	5.7L CORVETTE (Export)	9
5YC	5.7L CORVETTE	9
5YK	5.0L "B"-CAR (Wagon)	4
5YN	5.7L "B"-CAR (Police)	4
5YP	5.0L "F"-CAR	4
5YT	4.3L "B"-CAR	4
5YX	2.8L "F"-CAR (MPFI)	9
5YZ	5.0L "F"-CAR (MPFI)	9
5Y6	5.0L "B"-CAR (Canada)	3
4Y8	5.0L "F"-CAR (Canada)	3



Technical Service Information

THM 700-R4 (4L60) 1986 MODEL IDENTIFICATION

MODEL	ENGINE AND VEHICLE TYPE	WIRING TYPE
6FAM	4.3L "M"-VAN (Calif)	4
6MAM	4.3L "C"-TRUCK/"G"-VAN (Calif)	4
6MCM	2.5L "M"-VAN (ECM)	14
6MDM	5.0L & 5.7L "C"-TRUCK (Fed & Alt)	1
6MFM	4.3L "C"-TRUCK/"G"-VAN	2
6MHM	6.2L Diesel "C"-TRUCK	3
6MKM	5.0L & 5.7L "C"-TRUCK/"G"-VAN (Fed & Alt)	1
6MMM	4.3L "C"-TRUCK (Calif)	4
6MNM	2.8L "T"-TRUCK (Fed & Alt)	8
6MPM	5.0L & 5.7L "C"-TRUCK/"G"-VAN (Calif)	6
6MRM	4.3L "K"-TRUCK	2
6MTM	2.5L "T"-TRUCK (ECM)	14
6MWM	5.7L "K"-TRUCK (Calif)	10
6MXM	4.3L "C"-TRUCK	2
6PLM	2.8L "F"-CAR (ECM)	6
6PRM	2.5L "S"-TRUCK (ECM)	14
6TAM	2.8L "T"-TRUCK (Calif)	6
6TBM	2.8L "S"-TRUCK (Calif)	6
6TCM	5.0L "C"-TRUCK (Canada)	2
6TDM	5.0L & 5.7L "K"-TRUCK (Canada)	2
6TFM	5.0L "C"-TRUCK (Canada)	2
6TJM	5.0L & 5.7L "C"-TRUCK (Calif)	4
6TKM	5.0L & 5.7L "K"-TRUCK (Fed & Alt)	1
6TNM	6.2L Diesel "C"-TRUCK/"G"-VAN	3
6TRM	6.2L Diesel "K"-TRUCK	2
6TSM	5.7L "B"-CAR (Canada, Police)	3
6TWM	4.3L "K"-TRUCK (Calif)	10
6YAM	5.7L CORVETTE (Export)	9
6YCM	5.7L CORVETTE (MPFI)	6
6YDM	5.7L CORVETTE (MPFI)	9
6YFM	5.0L "F"-CAR (Canada)	3
6YKM	5.0L "B"-CAR (Wagon)	4
6YLM	5.0L "B"-CAR (Canada)	3
6YNM	5.7L "B"-CAR (Police)	4
6YPM	5.0L "F"-CAR (ECM)	4
6YRM	5.0L "F"-CAR (MPFI)	9
6YSM	5.0L "F"-CAR (MPFI)	6
6YTM	4.3L "B"-CAR (ECM)	4
6YWM	5.0L "F"-CAR (MPFI)	6
6YXM	2.8L "F"-CAR (MPFI)	9
6YZM	5.0L "F"-CAR (MPFI)	9



Technical Service Information

THM 700-R4 (4L60) 1987 MODEL IDENTIFICATION

MODEL	ENGINE AND VEHICLE TYPE	WIRING TYPE
7FAM	4.3L "M"-VAN	15
7MAM	4.3L "R"-TRUCK/"G"-VAN	15
7MCM	2.5L "M"-VAN	6
7MDM	5.0L "C"-TRUCK	15
7MFM	4.3L "C"-TRUCK/"G"-VAN	15
7MHM	6.2L Diesel "R"-TRUCK	3
7MKM	5.0L "C"-TRUCK/"G"-VAN	15
7MLM	5.0L "C"-TRUCK	15
7MMM	4.3L "R"-TRUCK	15
7MPM	5.7L "C"-TRUCK/"G"-VAN	15
7MRM	4.3L "K"-TRUCK/"V"-TRUCK	15
7MTM	2.5L "T"-TRUCK	6
7MUM	5.0L "R"-TRUCK	15
7MWM	5.7L "R"-TRUCK	15
7MXM	4.3L "C"-TRUCK	15
7MZM	5.7L "C"-TRUCK	15
7PAM	6.2L Diesel "C"-TRUCK	10
7PBM	6.2L Diesel "C"-TRUCK	10
7PCM	6.2L Diesel "K"-TRUCK	10
7PRM	2.5L "S"-TRUCK	6
7TAM	2.8L "T"-TRUCK	6
7TBM	2.8L "S"-TRUCK	6
7TJM	5.0L "R"-TRUCK/"G"-VAN	15
7TKM	5.0L "K"-TRUCK/"V"-TRUCK	15
7TNM	6.2L Diesel "R"-TRUCK/"G"-VAN	3
7TRM	6.2L Diesel "K"-TRUCK/"V"-TRUCK	3
7TSM	5.7L "B"-CAR (Canada, Police)	3
7TUM	5.7L "R"-TRUCK/"G"-VAN	15
7TXM	5.7L "K"-TRUCK/"V"-TRUCK	15
7YAM	5.7L CORVETTE (Export)	9
7YDM	5.7L CORVETTE	9
7YFM	5.0L "F"-CAR (Canada)	3
7YKM	5.0L "B"-CAR (Wagon)	4
7YLM	5.0L "B"-CAR (Canada)	3
7YMM	5.7L "F"-CAR	9
7YNM	5.7L "B"-CAR (Police)	4
7YPM	5.0L "F"-CAR	4
7YSM	5.0L "F"-CAR (Export)	9
7YTM	4.3L "B"-CAR	4
7YWM	5.0L "F"-CAR (IROC)	9
7YXM	2.8L "F"-CAR	9
7YZM	5.0L "F"-CAR	9



Technical Service Information

THM 700-R4 (4L60) 1988 MODEL IDENTIFICATION

MODEL	ENGINE AND VEHICLE TYPE	WIRING TYPE
8FAM	4.3L "M"-VAN	15
8FMM	4.3L "M"-VAN	15
8MAM	4.3L "G"-VAN	15
8MCM	2.5L "M"-VAN	6
8MDM	5.0L "C"-TRUCK	15
8MFM	4.3L "C"-TRUCK/"G"-VAN	15
8MHM	6.2L Diesel "R"-TRUCK	10
8MKM	5.0L "C"-TRUCK/"G"-VAN	15
8MLM	5.0L "C"-TRUCK	15
8MPM	5.7L "C"-TRUCK/"G"-VAN	15
8MRM	4.3L "K"-TRUCK	15
8MTM	2.5L "T"-TRUCK	6
8MWM	5.7L "R"-TRUCK	15
8MXM	4.3L "C"-TRUCK	15
8MZM	5.7L "C"-TRUCK	15
8PAM	6.2L Diesel "C"-TRUCK	10
8PBM	6.2L Diesel "C"-TRUCK	10
8PCM	6.2L Diesel "K"-TRUCK	10
8PRM	2.5L "S"-TRUCK	6
8TAM	2.8L "T"-TRUCK	6
8TBM	2.8L "S"-TRUCK	6
8THM	4.3L "S"-TRUCK	18
8TJM	5.0L "G"-VAN	15
8TKM	5.0L "K"-TRUCK	15
8TLM	4.3L "T"-TRUCK	18
8TNM	6.2L Diesel "R"-TRUCK/"G"-VAN	10
8TUM	5.7L "R"-TRUCK/"G"-VAN	15
8TXM	5.7L "K"-TRUCK/"V"-TRUCK	15
8YDM	5.7L CORVETTE	9
8YKM	5.0L "B"-CAR	4
8YMM	5.7L "F"-CAR	9
8YNM	5.7L "B"-CAR (Police)	4
8YPM	5.0L "F"-CAR	16
8YTM	4.3L "B"-CAR	4
8YWM	5.0L "F"-CAR (IROC)	9
8YXM	2.8L "F"-CAR	9
8YZM	5.0L "F"-CAR	9



Technical Service Information

THM 700-R4 (4L60) 1989 MODEL IDENTIFICATION

MODEL	ENGINE AND VEHICLE TYPE	WIRING TYPE
9FKM	5.7L "F"-CAR	9
9FMM	4.3L "M"-VAN	18
9FXM	5.7L "F"-CAR	9
9MAM	4.3L "G"-VAN	18
9MCM	2.5L "M"-VAN	6
9MDM	5.0L "C"-TRUCK	18
9MFM	4.3L "C"-TRUCK	18
9MHM	6.2L Diesel "R"-TRUCK	19
9MKM	5.0L "C"-TRUCK	18
9MLM	5.0L "C"-TRUCK	18
9MPM	5.7L "C"-TRUCK	18
9MRM	4.3L "K"-TRUCK	18
9MWM	5.7L "R"-TRUCK	18
9MXM	4.3L "C"-TRUCK	18
9MZM	5.7L "C"-TRUCK	18
9PAM	6.2L Diesel "C"-TRUCK	19
9PBM	6.2L Diesel "C"-TRUCK	19
9PCM	6.2L Diesel "K"-TRUCK	19
9PRM	2.5L "S"-TRUCK	6
9THM	4.3L "S"-TRUCK	18
9TJM	5.0L "G"-VAN	18
9TKM	5.0L "K"-TRUCK	18
9TLM	4.3L "T"-TRUCK	18
9TNM	6.2L Diesel "R"-TRUCK/"G"-VAN	19
9TUM	5.7L "R"-TRUCK/"G"-VAN	18
9TXM	5.7L "K"-TRUCK/"V"-TRUCK	18
9YDM	5.7L CORVETTE	9
9YNM	5.7L "B"-CAR (Police)	18
9YPM	5.0L "F"-CAR	18
9YTM	4.3L "B"-CAR	4
9YXM	2.8L "F"-CAR	9
9YZM	5.0L "F"-CAR	9



Technical Service Information

THM 700-R4 (4L60) 1990 MODEL IDENTIFICATION

MODEL	ENGINE AND VEHICLE TYPE	WIRING TYPE
0BAM	4.3L "B"-CAR	4
0BPM	5.7L "B"-CAR (Police)	18
0CAM	4.3L "C"-TRUCK (TBI)	18
0CBM	4.3L "C"-TRUCK (TBI)	18
0CCM	5.0L "C"-TRUCK (TBI)	18
0CFM	5.0L "C"-TRUCK (TBI)	18
0CHM	5.7L "C"-TRUCK (TBI)	18
0CJM	5.7L "C"-TRUCK (TBI)	18
0DBM	5.7L "D"-CAR (Cadillac)	18
0FBM	3.1L "F"-CAR	18
0FTM	5.0L "F"-CAR	18
0FUM	5.7L "F"-CAR	9
0FZM	5.0L "F"-CAR	18
0KAM	4.3L "K"-TRUCK (TBI)	18
0KBM	5.0L "K"-TRUCK/"V"-TRUCK	18
0KCM	5.7L "V"-TRUCK	18
0LAM	6.2L Diesel "R"-TRUCK	19
0LBM	6.2L Diesel "C"-TRUCK	19
0LCM	6.2L Diesel "R"-TRUCK/"G"-VAN.....	19
0LDM	6.2L Diesel "C"-TRUCK	19
0LFM	6.2L Diesel "K"-TRUCK	19
0MBM	2.5L "M"-VAN	6
0MJM	4.3L "M"-VAN	18
0MNM	4.3L "L"-VAN (TBI)	18
0MSM	4.3L "M"-VAN (High Output)	18
0RAM	5.7L "C"-TRUCK (TBI)	18
0SAM	2.5L "S"-TRUCK (TBI)	6
0SHM	4.3L "S"-TRUCK (TBI)	18
0TLM	4.3L "T"-TRUCK (TBI)	18
0WAM	4.3L "G"-VAN (TBI)	18
0WBM	5.0L "G"-VAN (TBI)	18
0WCM	5.7L "R"-TRUCK/"G"-VAN	18
0YDM	5.7L CORVETTE	18



Technical Service Information

THM 700-R4 (4L60) 1991 MODEL IDENTIFICATION

MODEL	ENGINE AND VEHICLE TYPE	WIRING TYPE
1AAM	5.7L "D"-CAR	18
1AMM	5.7L "D"-CAR	18
1APM	5.7L "D"-CAR	18
1BBM	5.0L "B"-CAR & GM300	18
1BCM	5.0L "B"-CAR & WAGON	18
1BHM	5.0L "B"-CAR (Sport)	18
1BJM	5.7L "B"-CAR (Police)	18
1CAM	4.3L "C"-TRUCK	18
1CBM	4.3L "C"-TRUCK	18
1CCM	5.0L "C"-TRUCK	18
1CFM	5.0L "C"-TRUCK	18
1CNM	5.7L "C"-TRUCK	18
1CYM	5.7L "C"-TRUCK	18
1DAM	5.7L "D"-CAR	18
1FBM	3.1L "F"-CAR	18
1FTM	5.0L "F"-CAR	18
1FYM	5.7L "F"-CAR	9
1FZM	5.0L "F"-CAR	18
1HBM	5.0L HOLDEN (Export)	22
1HCM	3.8L HOLDEN (Export)	22
1HDM	3.8L HOLDEN (Export)	22
1HJM	5.0L HOLDEN (Export)	22
1HLM	5.0L HOLDEN (Export)	22
1KLM	5.0L "K"-TRUCK	18
1KMM	4.3L "K"-TRUCK	18
1KWM	5.7L "K"-TRUCK/"V"-TRUCK	18
1LAM	6.2L Diesel "R"-TRUCK	19
1LBM	6.2L Diesel "C"-TRUCK	19
1LCM	6.2L Diesel "R"-TRUCK/"G"-VAN.....	19
1LDM	6.2L Diesel "C"-TRUCK	19
1LFM	6.2L Diesel "K"-TRUCK/"V"-TRUCK	19
1LHM	4.3L "S-15" SYCLONE TRUCK (Turbo)	4
1MJM	4.3L "M"-VAN	18
1MNM	4.3L "L"-VAN (AWD)	18
1MSM	4.3L "M"-VAN (High Output)	18
1RCM	5.7L "R"-TRUCK	18
1RDM	5.7L "R"-TRUCK/"G"-VAN	18
1SAM	2.5L "S"-TRUCK	19
1SFM	3.1L "S"-TRUCK (Mexico)	18
1SHM	4.3L "S"-TRUCK	18
1TLM	4.3L "T"-TRUCK	18
1WAM	4.3L "G"-VAN	18
1WBM	5.0L "R"-TRUCK/"G"-VAN	18
1YBM	5.7L CORVETTE	18



Technical Service Information

THM 700-R4 (4L60) 1992 MODEL IDENTIFICATION

MODEL	ENGINE AND VEHICLE TYPE	WIRING TYPE
2AAM	5.7L "D"-CAR	18
2ACM	5.7L "D"-CAR	18
2ADM	5.7L "D"-CAR	18
2AKM	5.7L "D"-CAR (Trailer Towing)	18
2BAM	4.3L "B"-CAR	18
2BBM	5.0L "B"-CAR & GM300	18
2BCM	5.0L "B"-CAR & WAGON	18
2BHM	5.0L "B"-CAR (Sport)	18
2BWM	5.0L "B"-CAR & WAGON	18
2CAM	4.3L "C"-TRUCK	18
2CBM	4.3L "C"-TRUCK	18
2CCM	5.0L "C"-TRUCK	18
2CFM	5.0L "C"-TRUCK	18
2CHM	5.7L "C"-TRUCK	18
2CJM	5.7L "C"-TRUCK	18
2CPM	5.7L "C"-TRUCK (Mexico)	18
2DDM	5.7L "B"-CAR (Buick)	18
2FBM	3.1L "F"-CAR	18
2FTM	5.0L "F"-CAR	18
2FUM	5.7L "F"-CAR	9
2FZM	5.0L "F"-CAR	18
2HBM	5.0L HOLDEN (Export)	22
2HDM	3.8L HOLDEN (Export)	22
2HJM	5.0L HOLDEN (Export)	22
2HLM	5.0L HOLDEN (Export)	22
2KHM	5.0L "K"-TRUCK	18
2KJM	5.7L "K"-TRUCK/"V"-TRUCK	18
2KMM	4.3L "K"-TRUCK	18
2LBM	6.2L Diesel "C"-TRUCK	19
2LCM	6.2L Diesel "R"-TRUCK/"G"-VAN.....	19
2LDM	6.2L Diesel "C"-TRUCK	19
2LFM	6.2L Diesel "K"-TRUCK/"V"-TRUCK	19
2LHM	4.3L "S-15" SYCLONE TRUCK (Turbo)	4
2MJM	4.3L "M"-VAN	18
2MMM	4.3L "M"-VAN	18
2MNM	4.3L "L"-VAN (AWD)	18
2MSM	4.3L "M"-VAN (High Output)	18
2SAM	2.5L "S"-TRUCK	19
2SFM	3.1L "S"-TRUCK (Mexico)	18
2SHM	4.3L "S"-TRUCK	18
2TAM	4.3L "T"-TRUCK (H.D.)	18
2TBM	4.3L "T"-TRUCK (H.D.)	18
2TLM	4.3L "T"-TRUCK	18
2TWM	4.3L "T"-TRUCK (Export)	18

1992 Models Continued on Next Page

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Technical Service Information

THM 700-R4 (4L60) 1992 MODEL IDENTIFICATION

MODEL	ENGINE AND VEHICLE TYPE	WIRING TYPE
<i>2WAM</i>	<i>4.3L "G"-VAN</i>	<i>18</i>
<i>2WBM</i>	<i>5.0L "R"-TRUCK/"G"-VAN</i>	<i>18</i>
<i>2WCM</i>	<i>5.7L "R"-TRUCK/"G"-VAN</i>	<i>18</i>
<i>2YAM</i>	<i>5.7L CORVETTE (Export)</i>	<i>23</i>
<i>2YCM</i>	<i>5.7L CORVETTE</i>	<i>23</i>
<i>2YDM</i>	<i>5.7L CORVETTE</i>	<i>23</i>



Technical Service Information

THM 700-R4 (4L60) 1993 MODEL IDENTIFICATION

MODEL	ENGINE AND VEHICLE TYPE	WIRING TYPE
3AAM	5.7L "D"-CAR	18
3ADM	5.7L "D"-CAR	18
3AFM	5.7L "D"-CAR (3.08 Axle)	18
3ASM	5.7L "D"-CAR (Trailer Towing)	18
3BAM	4.3L "B"-CAR	18
3BBM	5.0L "B"-CAR	18
3BCM	5.0L "B"-CAR & WAGON	18
3BFM	5.7L "B"-CAR (Police)	18
3BHM	5.0L "B"-CAR (Sport)	18
3BRM	5.7L "B"-CAR (Buick)	18
3BWM	5.0L "B"-CAR & WAGON	18
3CPM	5.7L "C"-TRUCK (Mexico)	18
3FAM	3.4L "F"-CAR (Export)	18
3FDM	3.4L "F"-CAR	18
3FFM	5.7L "F"-CAR (2.73 Axle)	23
3FMM	5.7L "F"-CAR (3.23 Axle)	23
3HBM	5.0L HOLDEN (Export)	22
3HDM	3.8L HOLDEN (Export)	22
3HJM	5.0L HOLDEN (Export)	22
3HLM	5.0L HOLDEN (Export)	22
3LHM	4.3L "S" TYPHOON TRUCK (Turbo)	4
3SAM	2.5L "S"-TRUCK	19
3SFM	3.1L "S"-TRUCK (Mexico)	18
3YAM	5.7L CORVETTE (Export)	23
3YCM	5.7L CORVETTE	23
3YDM	5.7L CORVETTE	23

**1993 WAS THE LAST YEAR FOR
700-R4 TRANSMISSION PRODUCTION
ALL OTHER MODELS FOR 1993 WERE
EQUIPPED WITH THE 4L60-E TRANSMISSION**

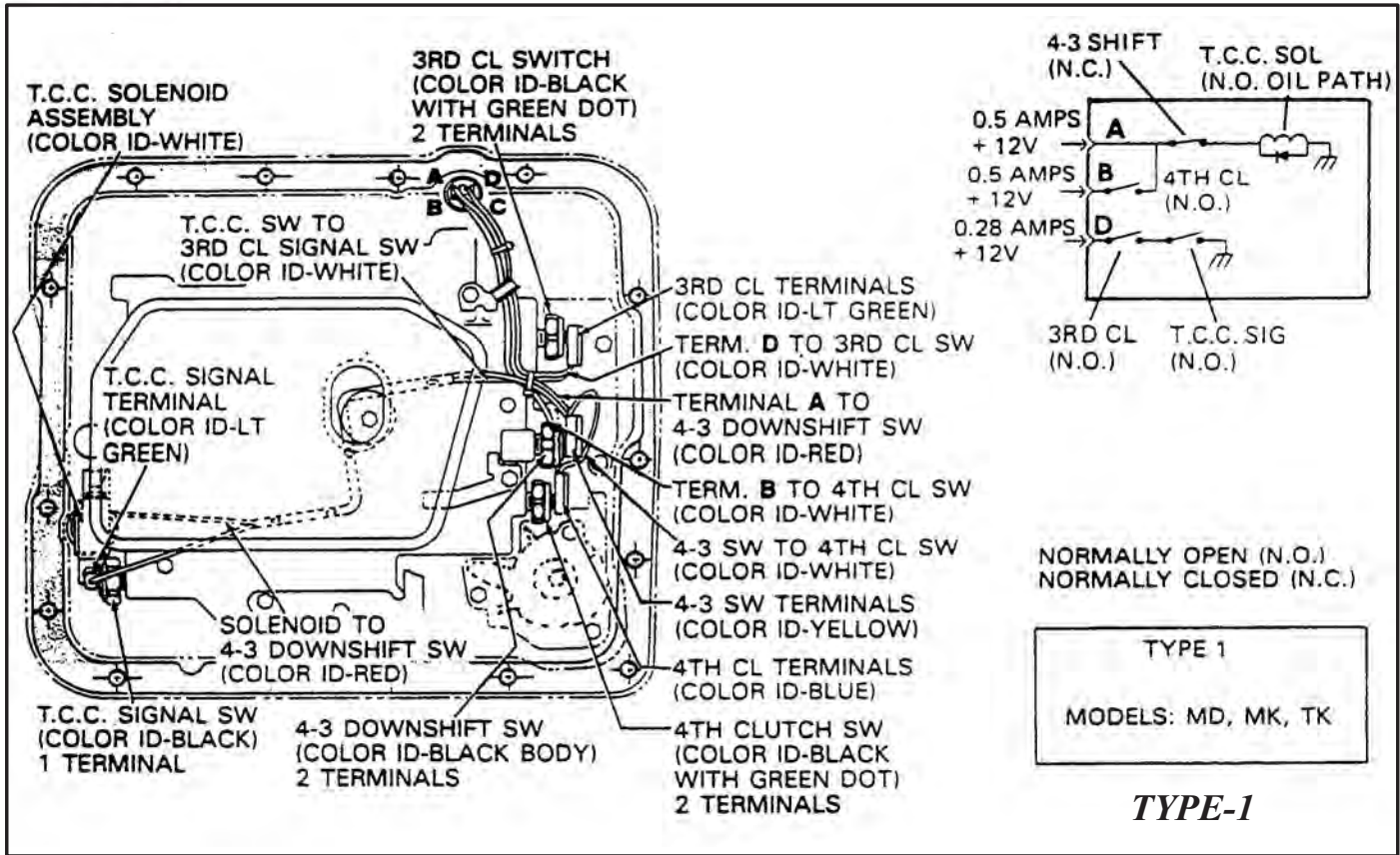


Figure 99

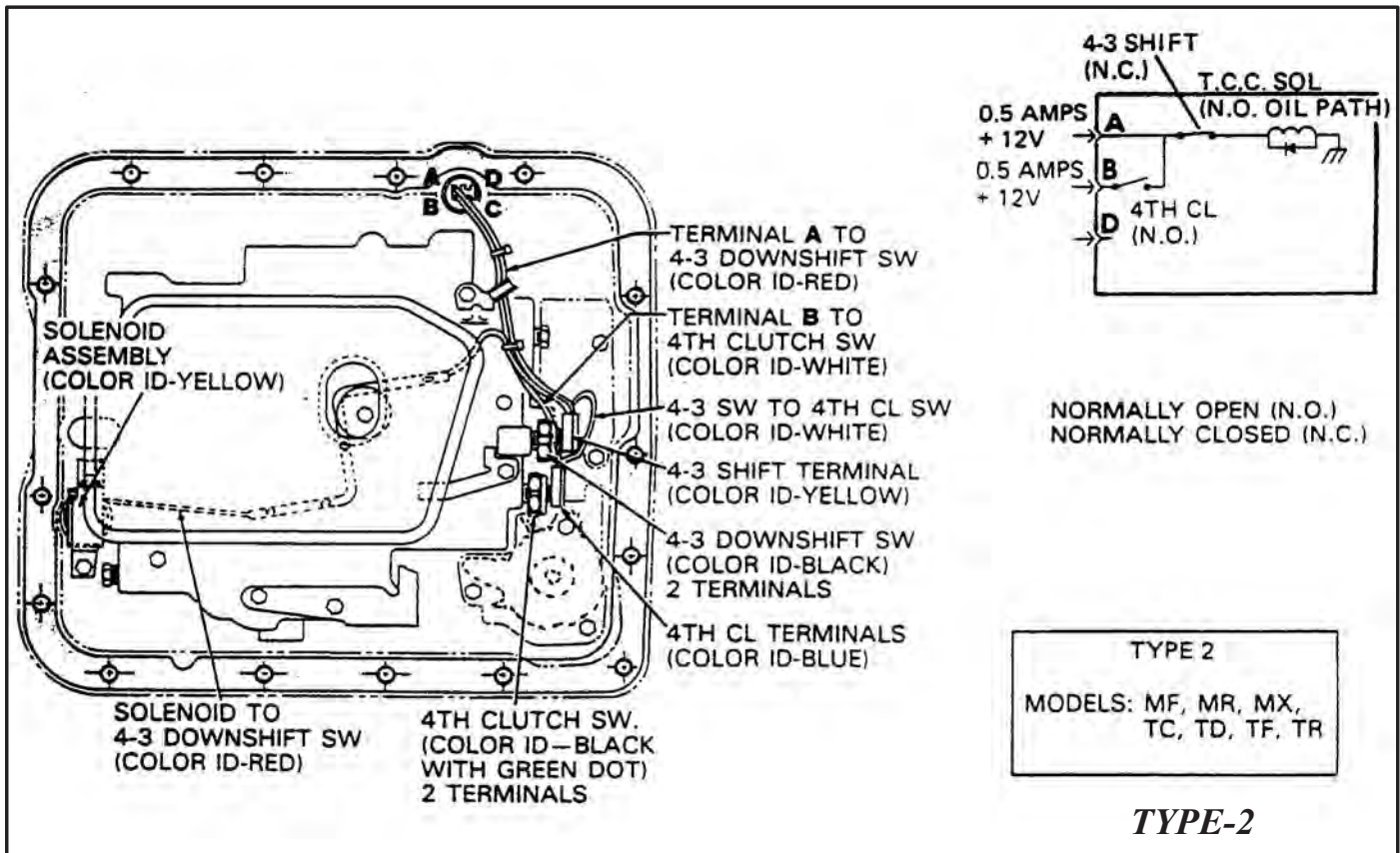


Figure 100

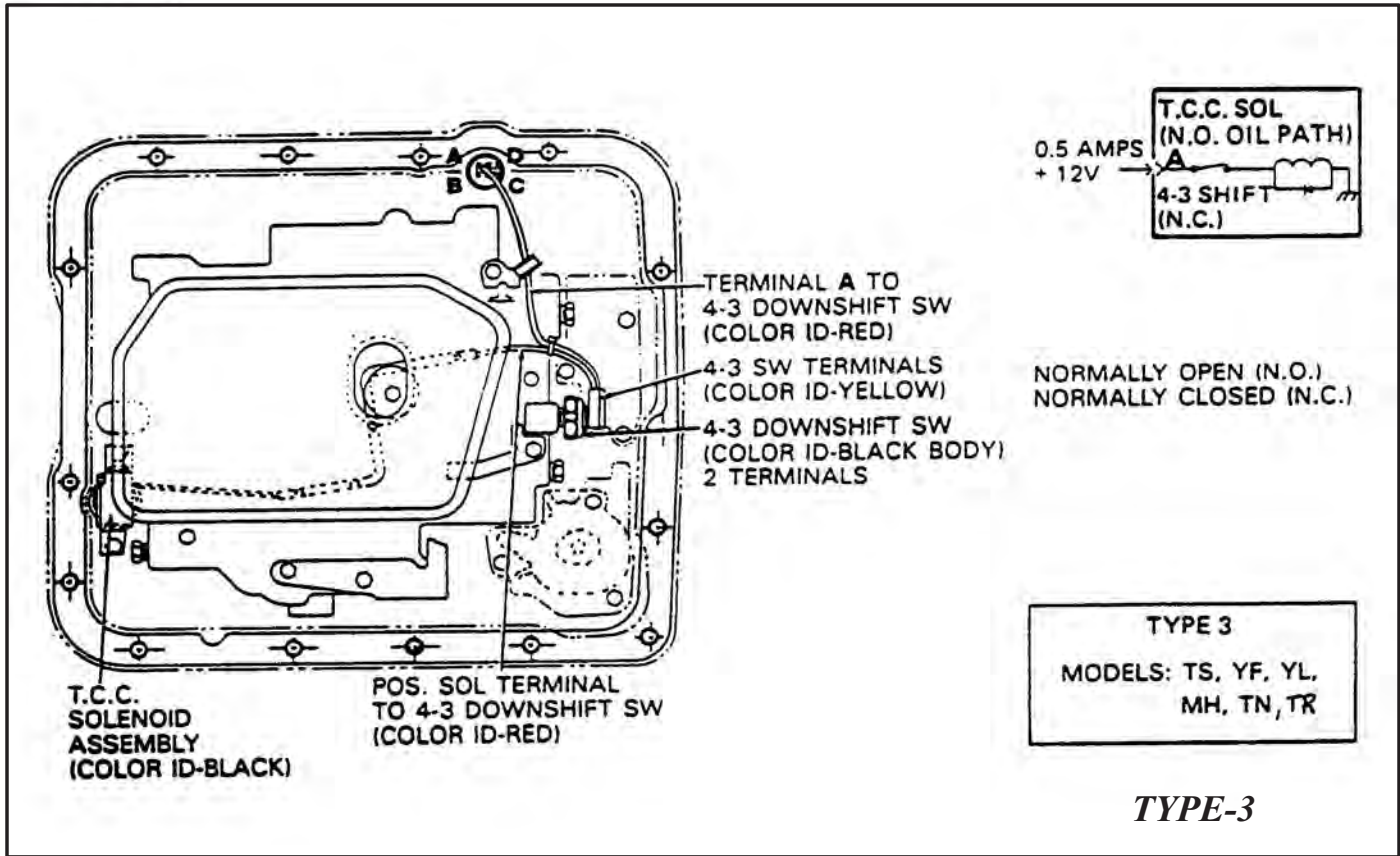


Figure 101

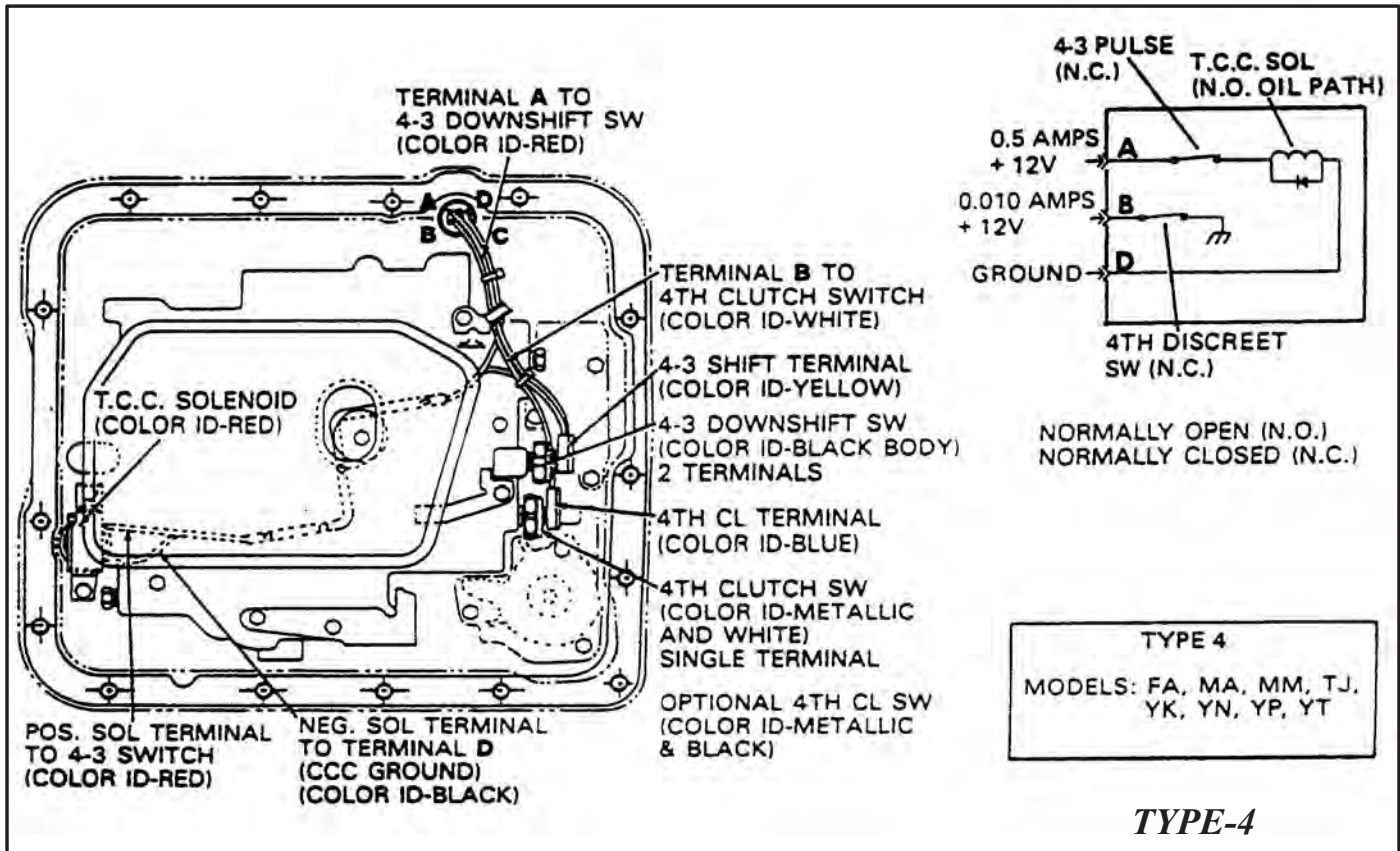


Figure 102

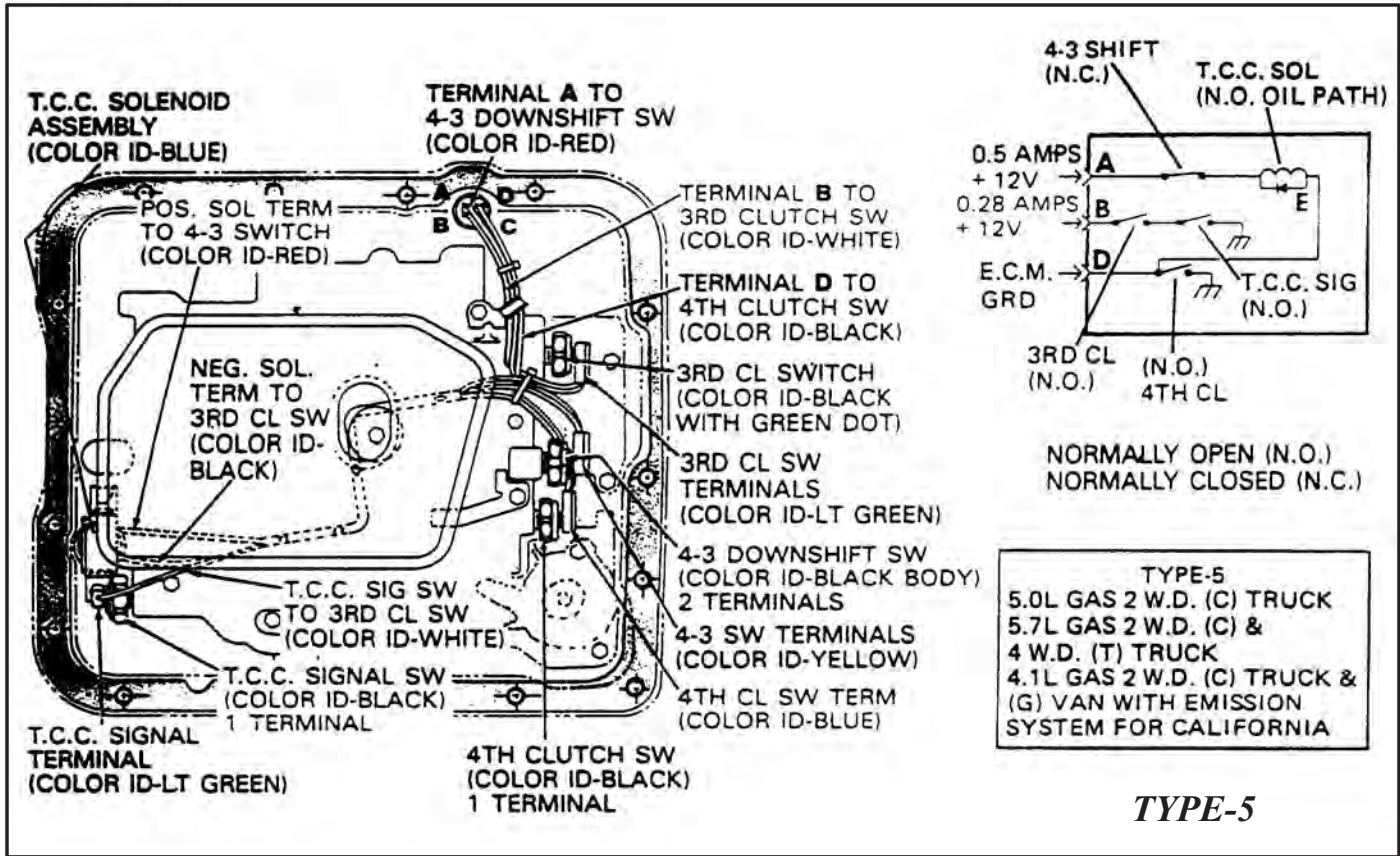


Figure 103

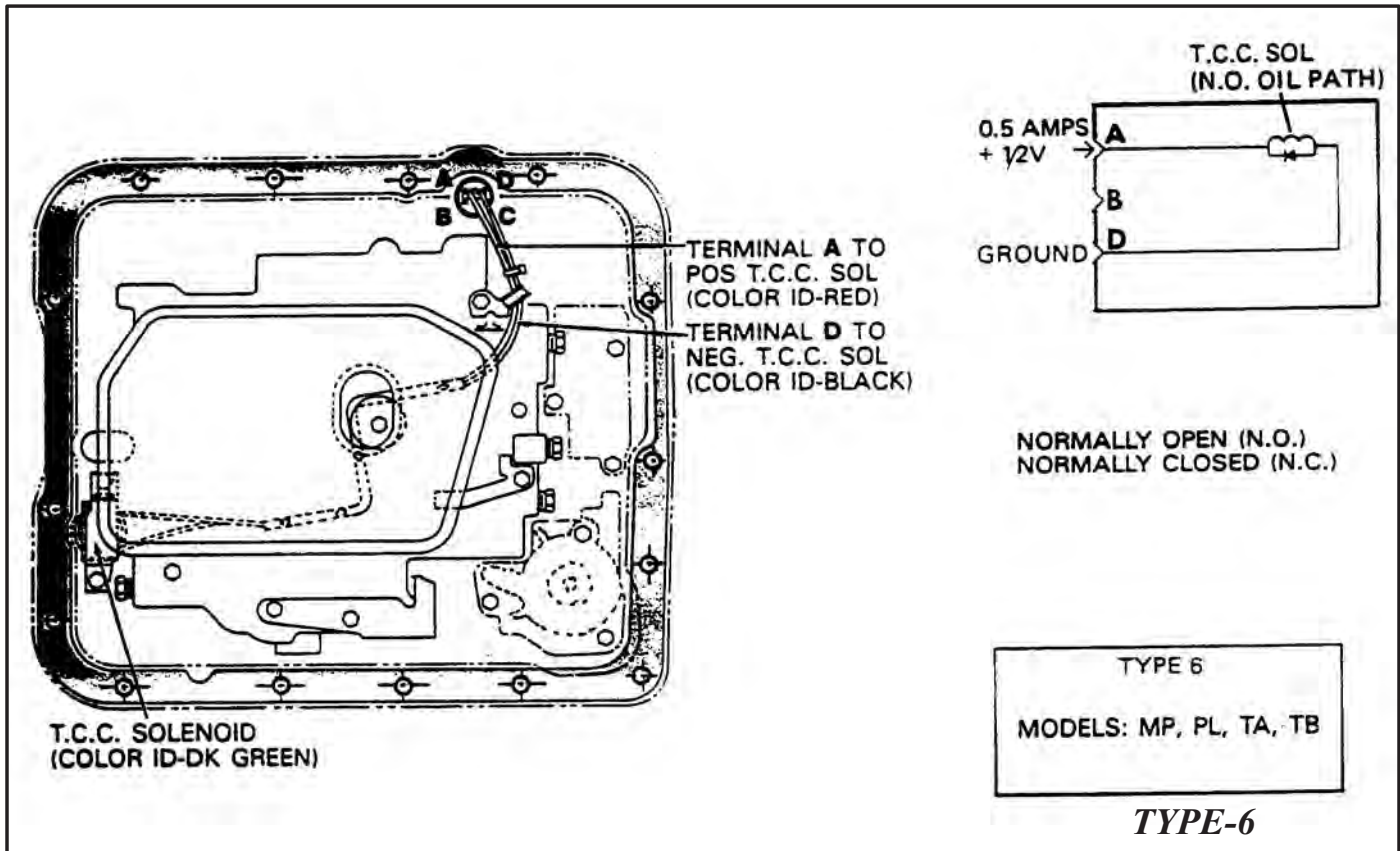


Figure 104

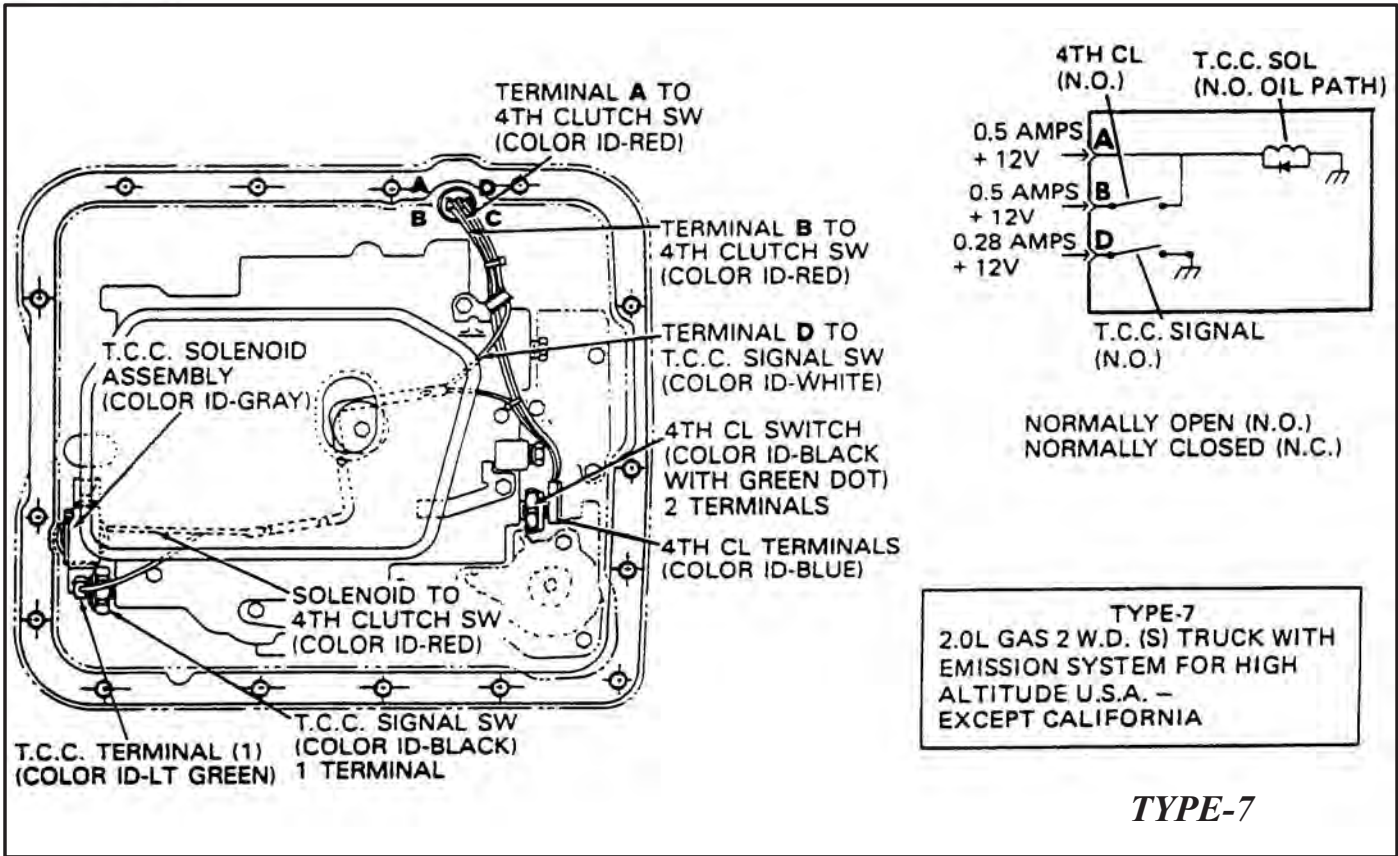


Figure 105

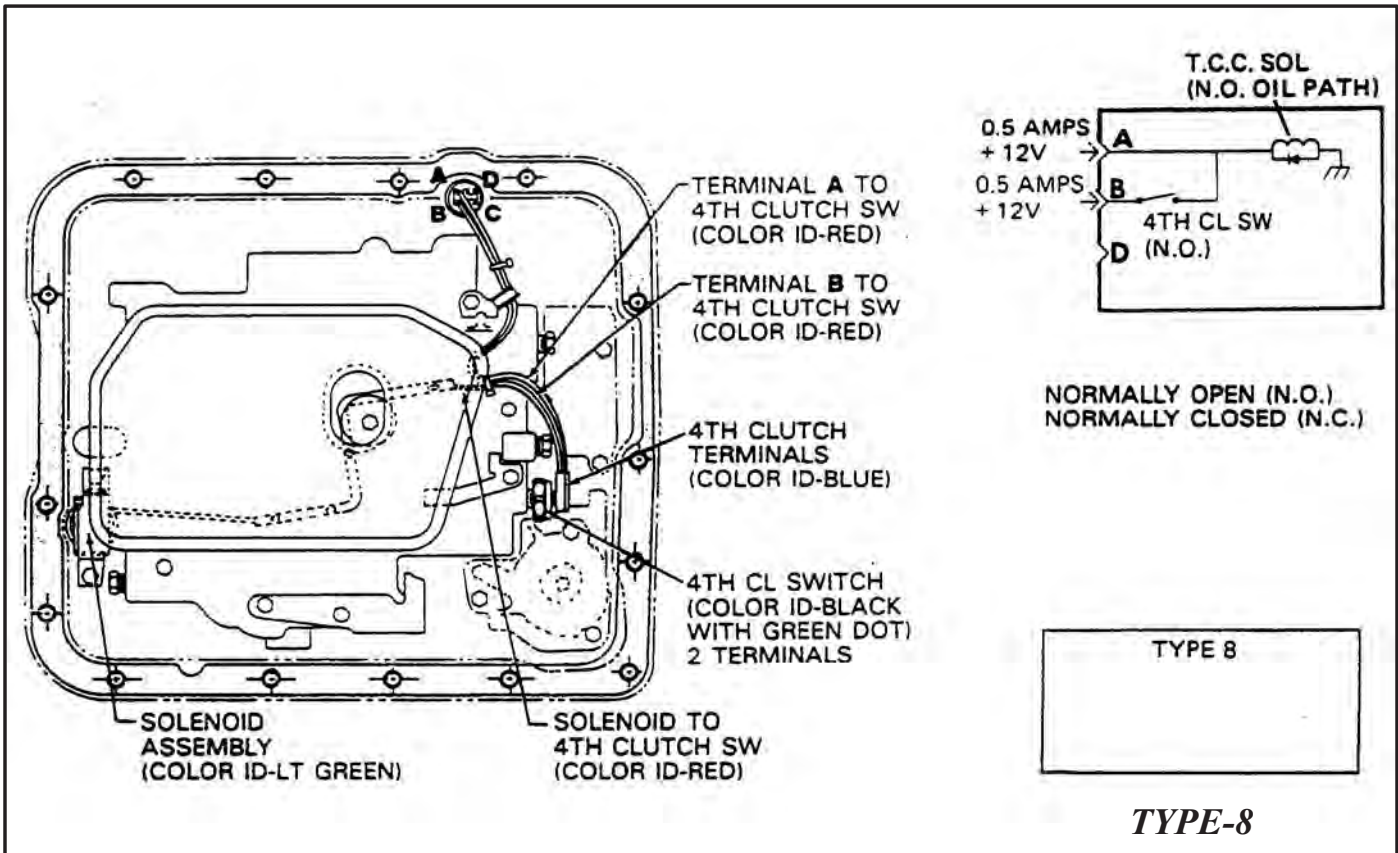


Figure 106

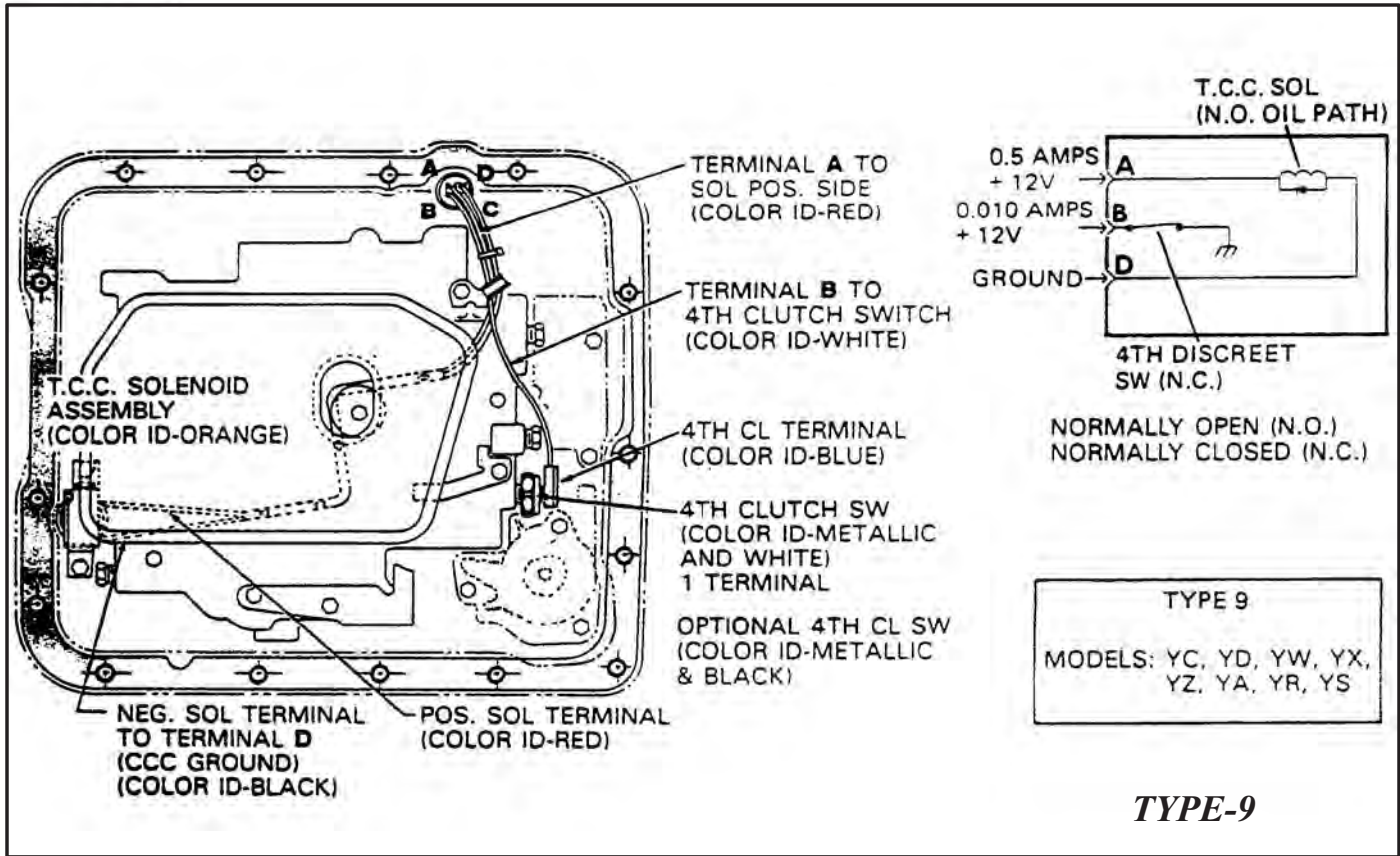


Figure 107

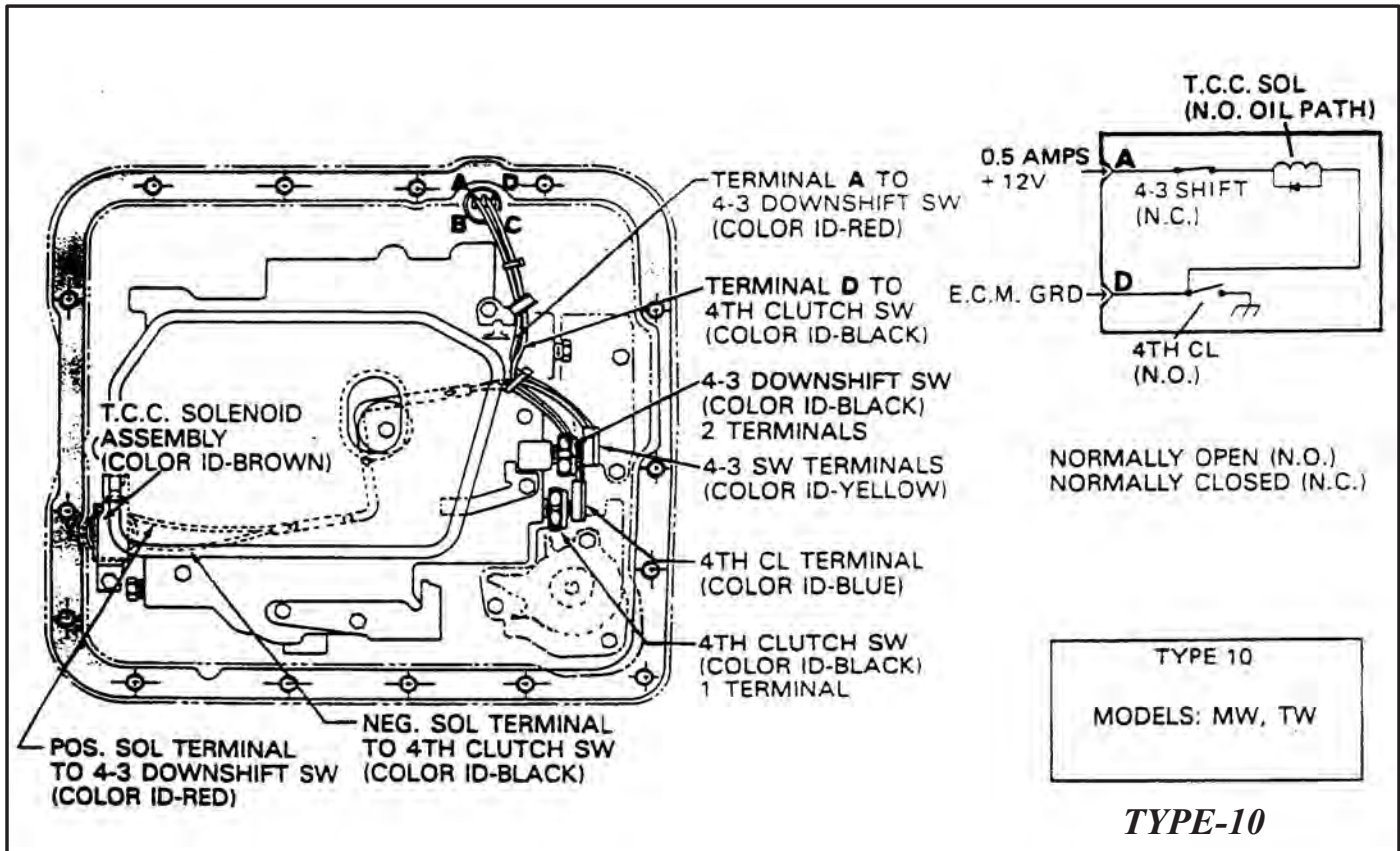


Figure 108

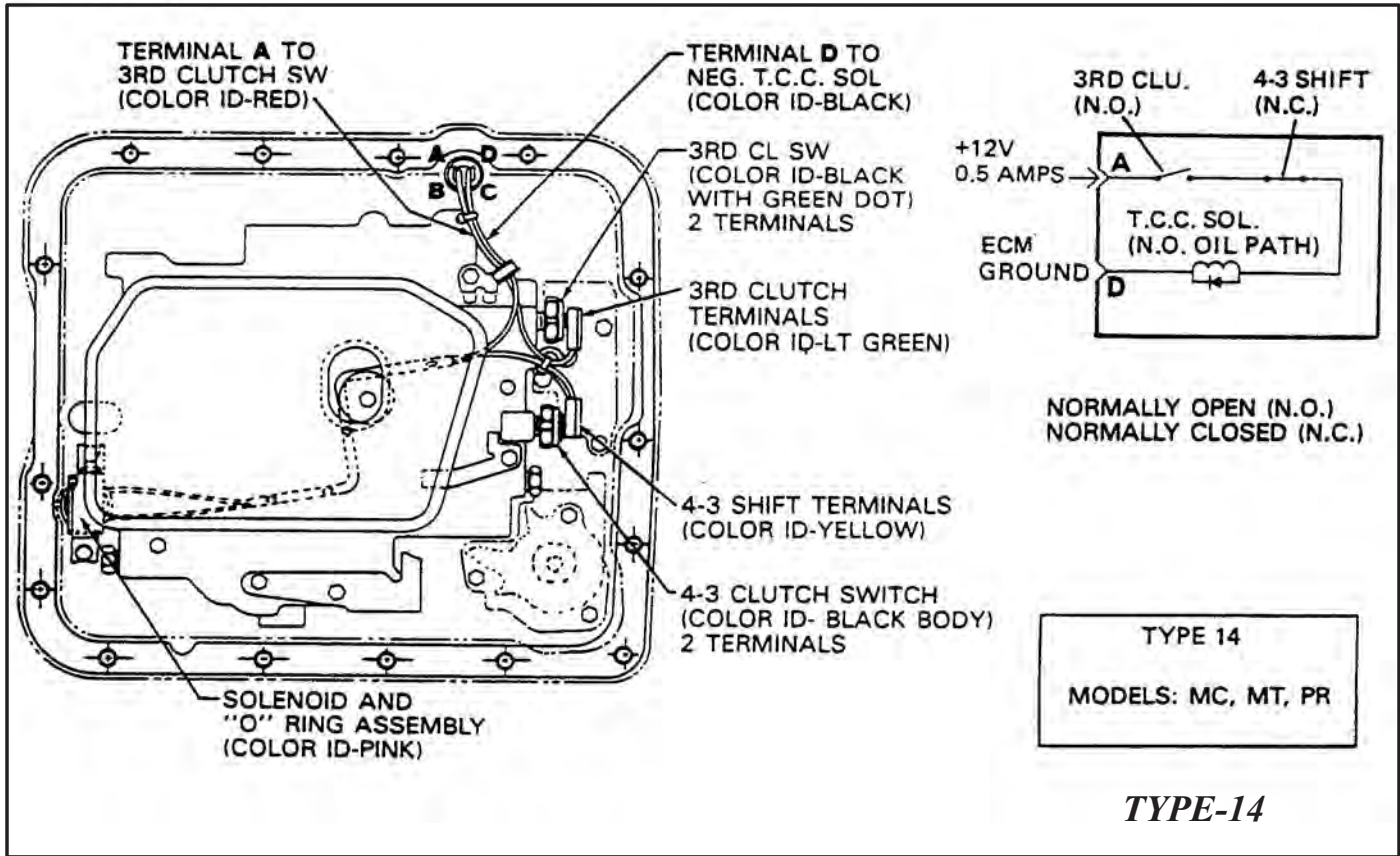


Figure 109

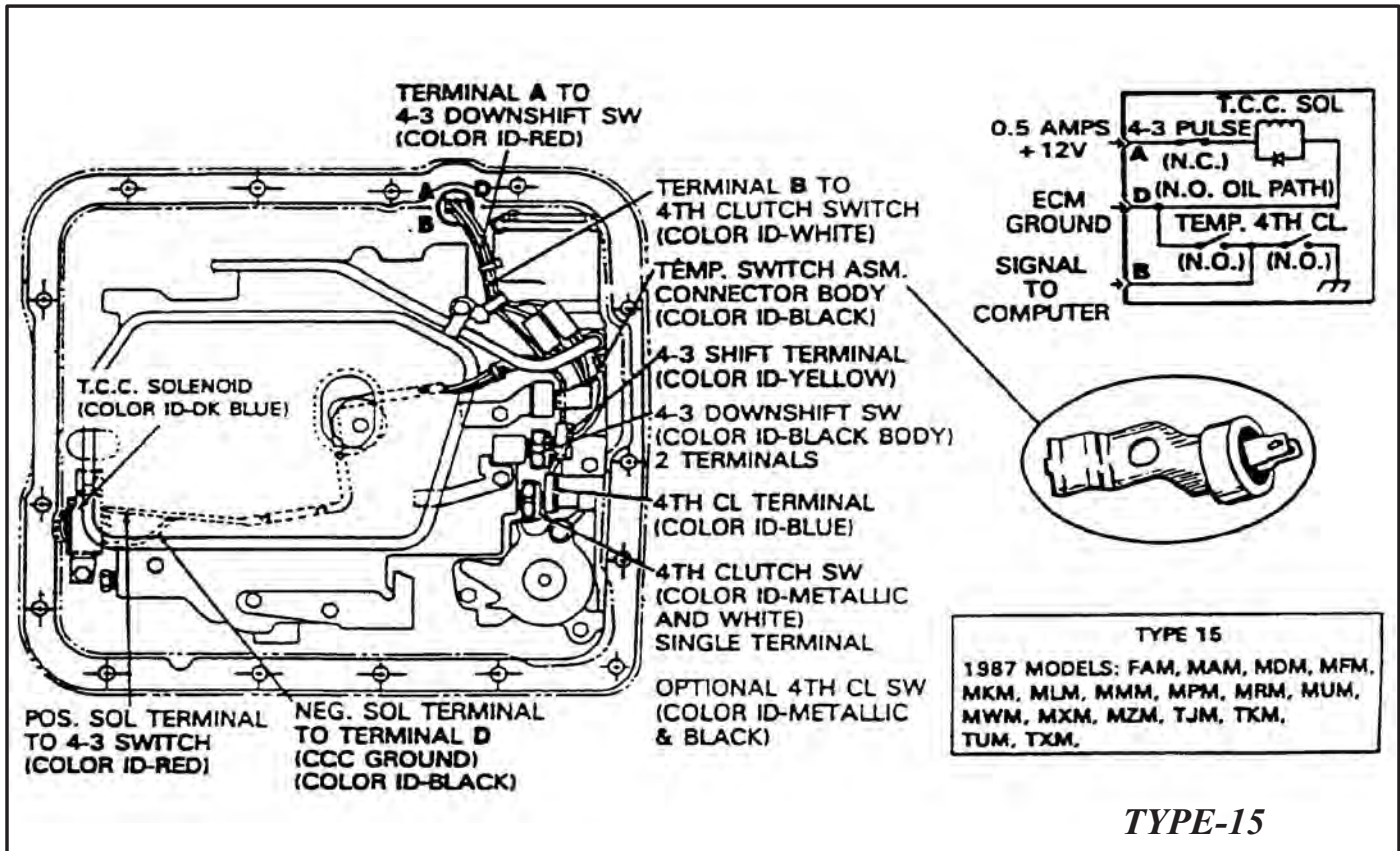
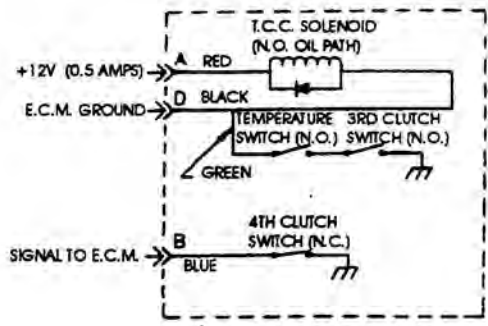
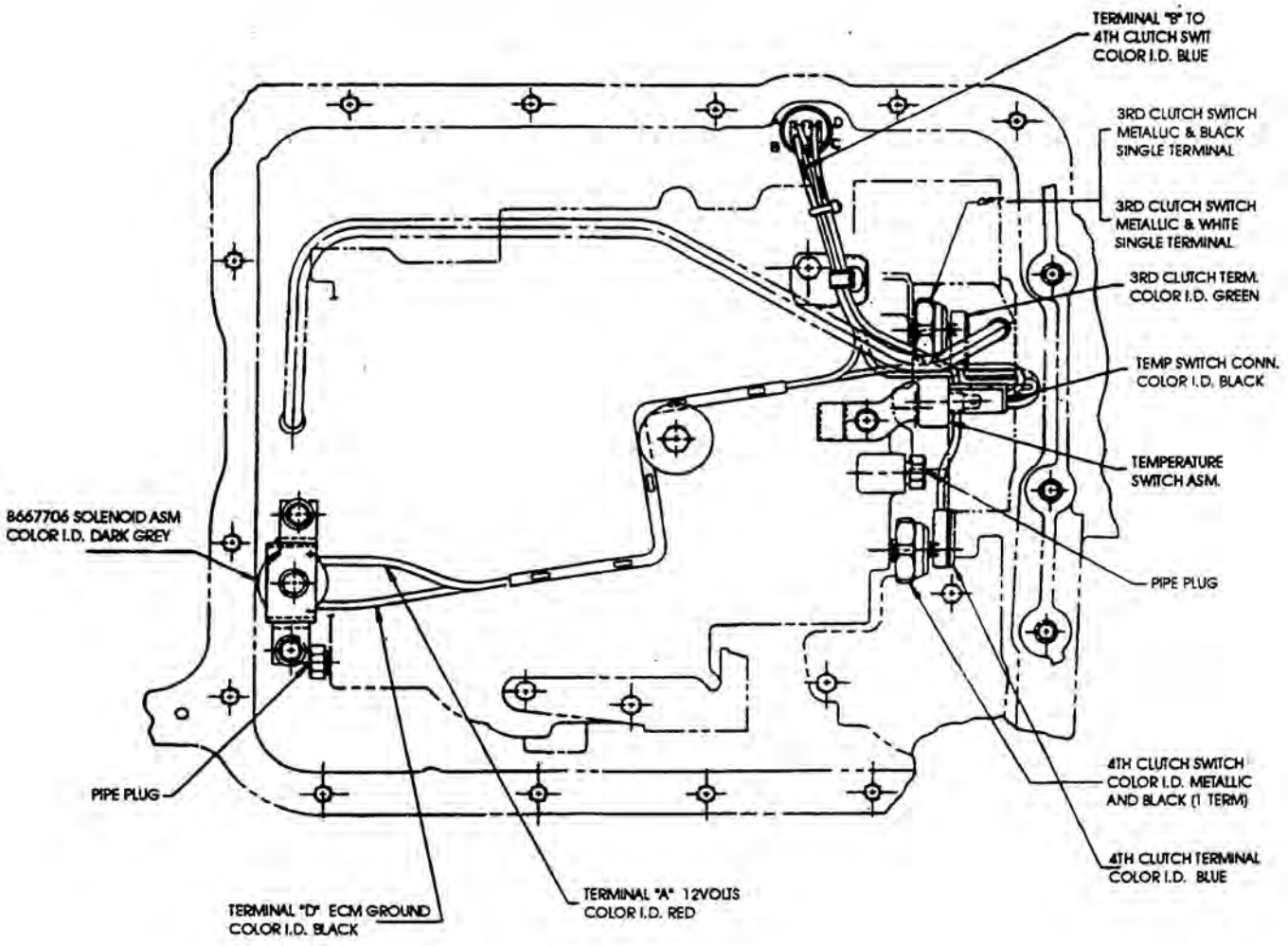


Figure 110



TYPE-16



TYPE-16

Figure 111

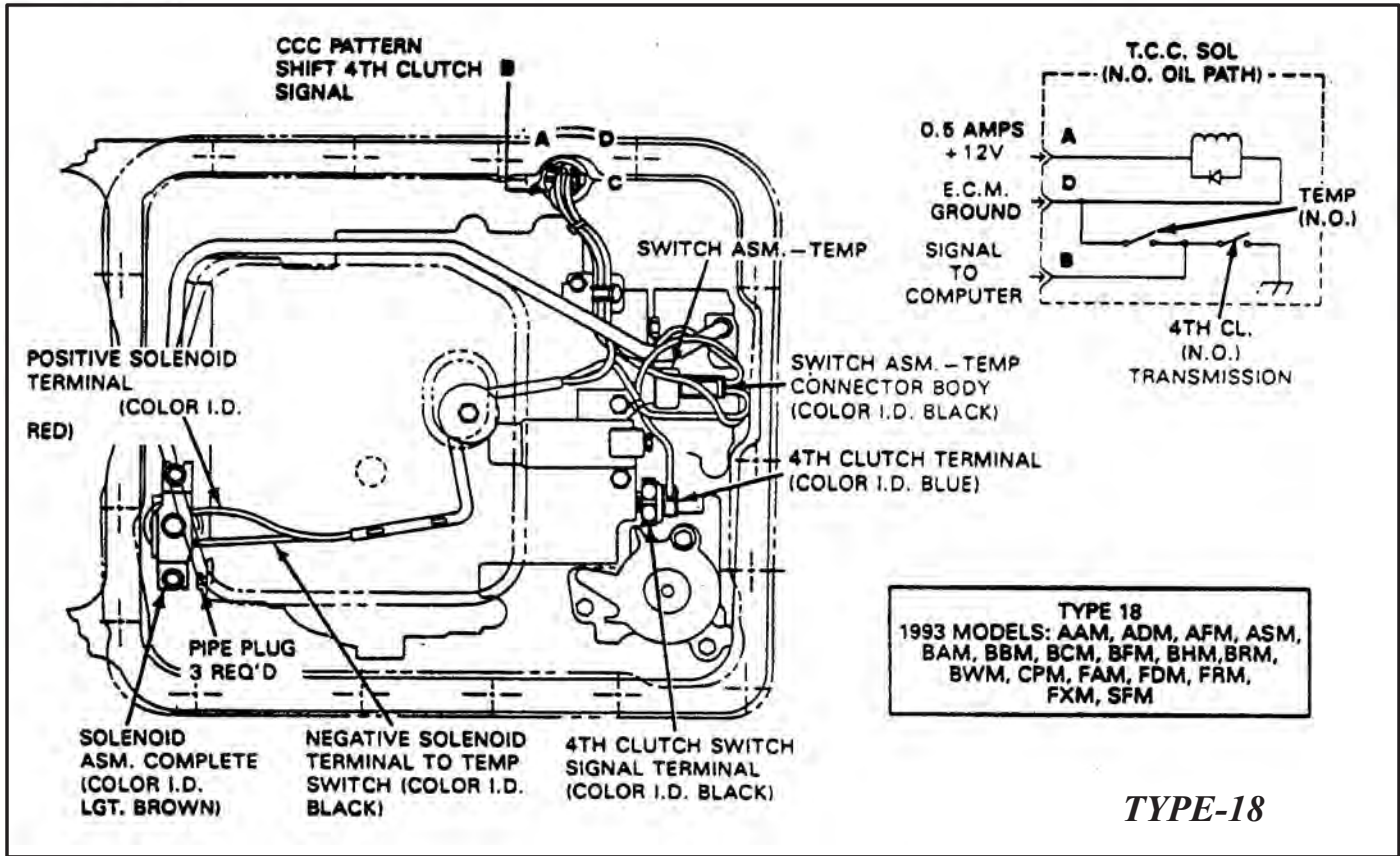


Figure 112

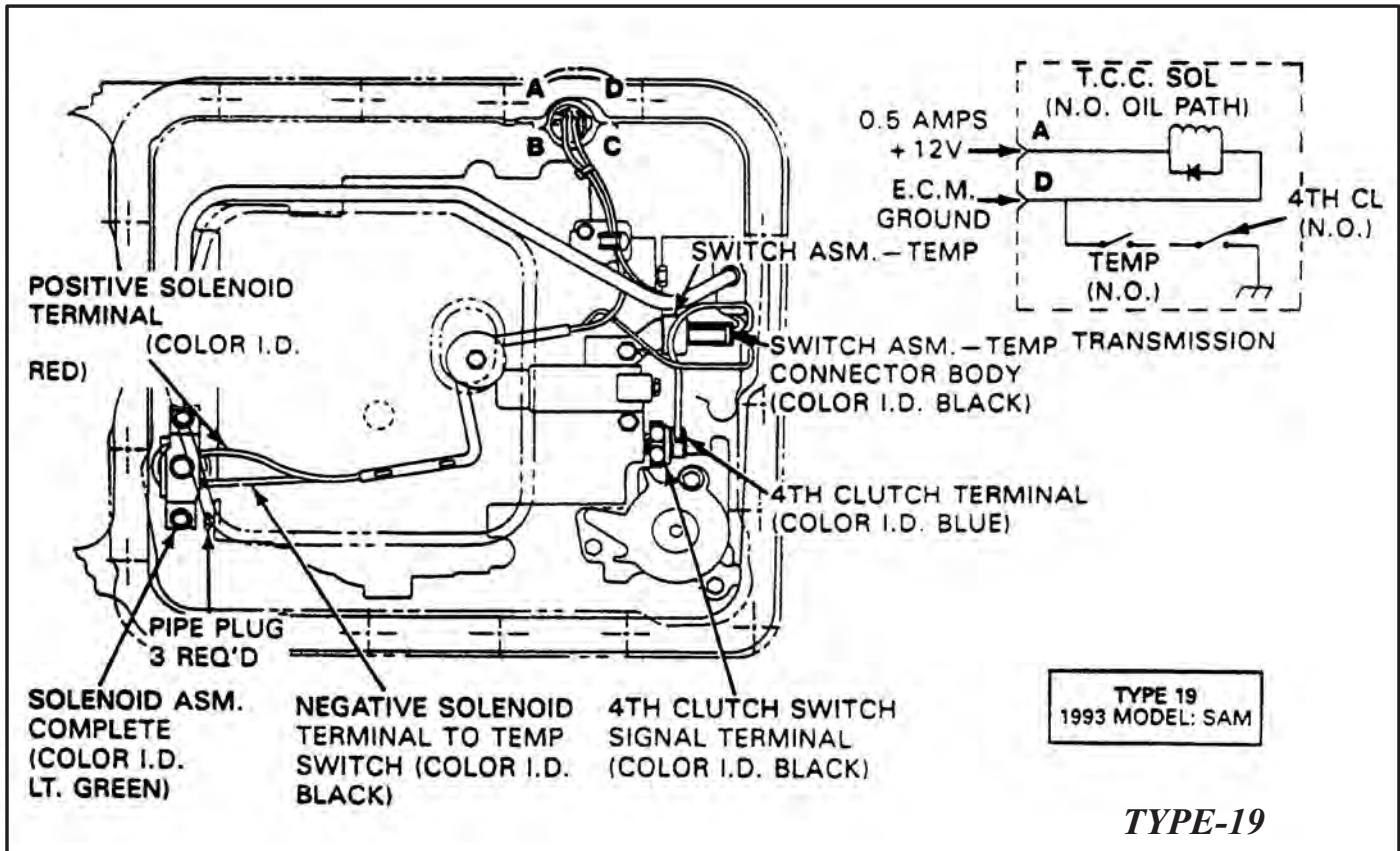


Figure 113

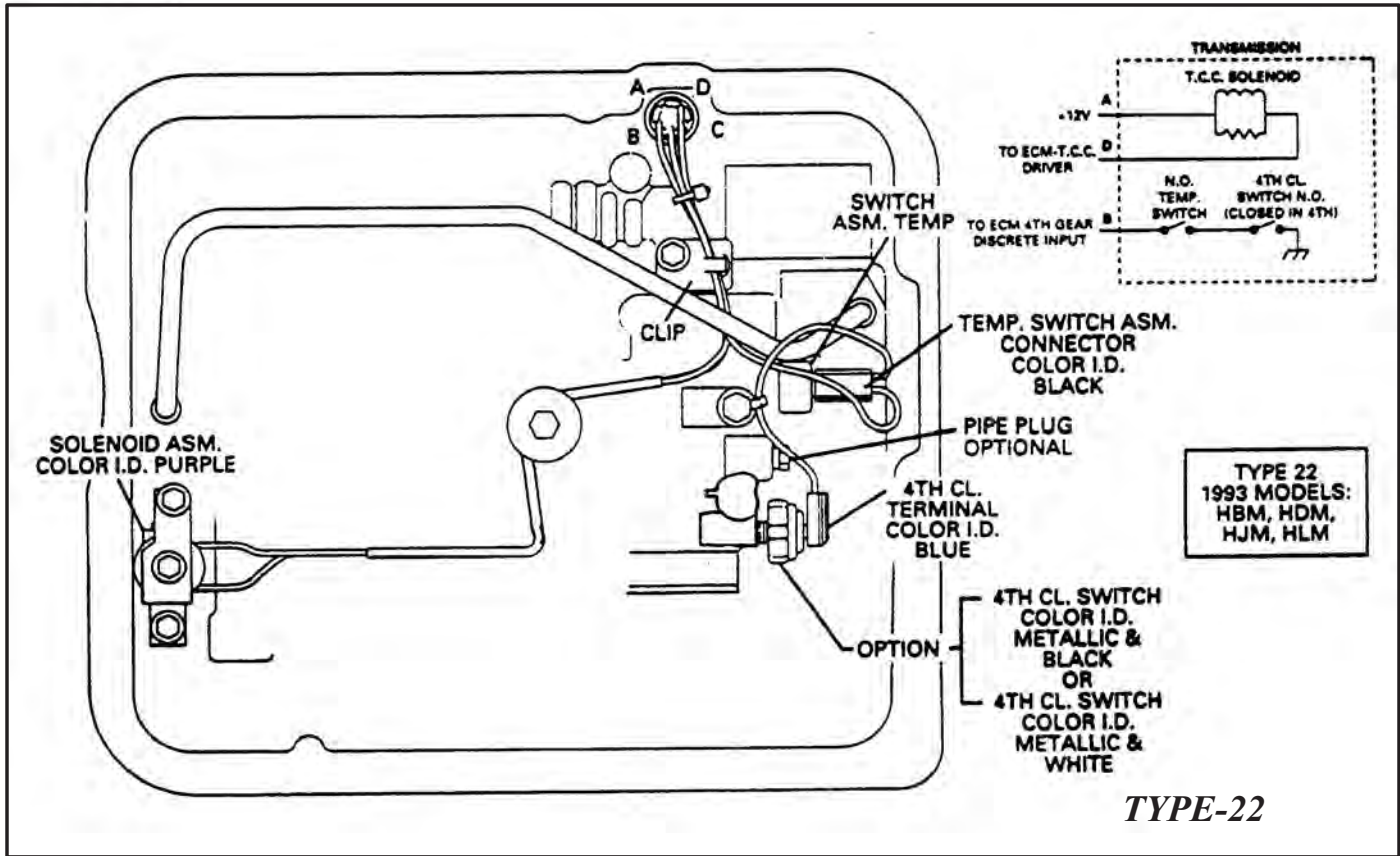


Figure 114

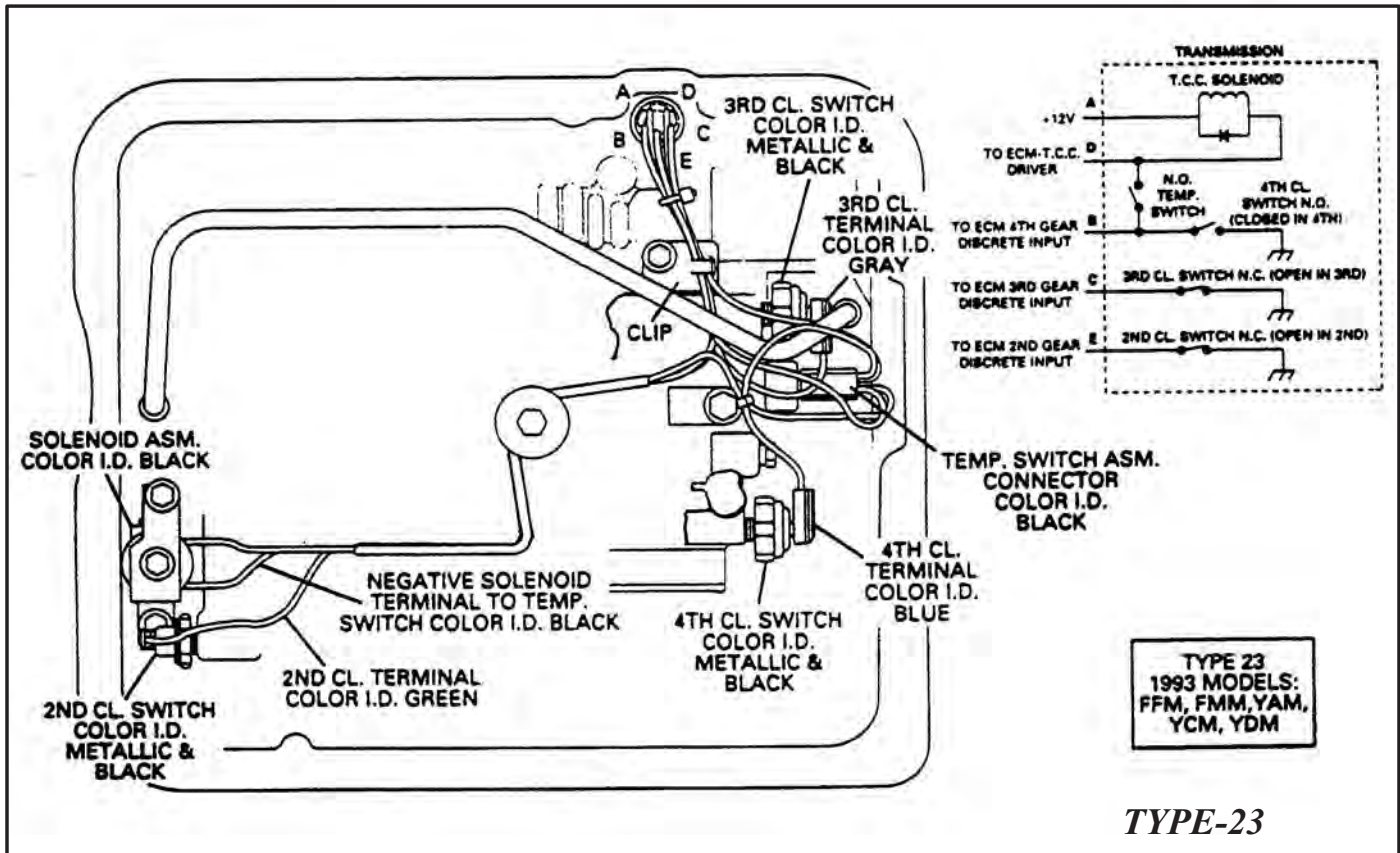


Figure 115