Service Department

Technical Service Bulletin

Plymouth
CHRYSLER
IMPERIAL

Of Interest ☐ General Manager ☐ Sales Manager ☐ Service Manager ☐ Parts Manager ☐ Service Technicians

No. 21-07-73C

MAJOR CHANGES AFFECTING FIELD SERVICE **1966** THROUGH **1973**

The information included in this Bulletin will update you on all major changes affecting the **1966** through **1973** TorqueFlite Transmission.

It is also a quick reference guide for any interchangeability that was taken during the above model years.

We suggest you refer to this Booklet whenever you encounter a transmission failure.

P-3095C

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TRANSMISSION

Torque-Flite Front Pump Seal Leaks

MODELS:
All 1968 and and 1969 So Equipped

Our studies indicate that twenty-six percent of transmission front pump oil seal leak claims are for cars with less than 100 miles.

Tests of transmissions in cars conducted at the assembly plant revealed no front pump seal leaks to this date. Therefore, we believe front pump seals are being replaced unnecessarily on undelivered cars or those accumulating less than 100 miles.

In view of our tests and experience, the following facts should be recognized and observed:

1. An oil film or droplets, formed at the lower front end of the transmission case (in the area of the inspection plate) on cars with very low mileage, may actually be residual oil accumulated in the process of testing and assembly.

2. It is likely that early pump leaks due to an overfill condition. Overfilling is critical and 3/4 inch over the dipstick "full" mark may result in oil being forced out of the vent at operating temperatures.

In instances of suspected early pump leaks, the inspection plate should be removed from the inside and outside of the front of the transmission case; must be thoroughly cleaned by wiping or using mineral spirits and air pressure to remove all accumulated oil and dirt. The torque converter drain plug should be tightened to 110 inch-pounds, and then oil level should be checked and adjusted, if necessary. The vehicle should then be operated for thirty minutes and then carefully inspected for leaks. If a leak actually exists, only then should appropriate steps be taken to correct.

The following Warranty Service Claims Policy is in effect:

Policy: Effective immediately, Warranty Service Claims for torque-flite pump seal replacement will not be approved unless the replaced seal is returned with the claim.

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Beginning December 1, 1969, prior authorization for replacement of torque converters on 1970 models will no longer be necessary. All replaced torque converters must be properly tagged and returned to:

Chrysler Motors Corporation
Warranty Material Center
11111 French Road
Detroit, Michigan 48234

TRANSMISSION

Torque Converter Test Procedures

Returned torque converters will be 100% tested. The claim for any torque converter that meets factory specifications will be denied. Torque converters will not be returned unless so specified on the W.R.O. and claim tag. Requested converters will be returned to the dealer at dealer expense. A converter from one vehicle may not be used in another vehicle unless it is re-balanced.

The proper procedure for testing a torque converter in the field is as follows:

TORQUE CONVERTER VISUAL CHECK

MODELS:
All 1970 Vehicles So Equipped

1. Damaged hub and finish
2. Damaged cup.
3. Damaged ring gear.
4. Damaged drive lugs.
5. Damaged drain plug.
6. Defective weld.
7. Balance weight off or loose.

STALL TEST

Warning: During test let no one stand in front of vehicle.

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The stall test consists of determining the engine speed obtained at full throttle in Drive position. This test checks the torque converter stator clutch operation and holding ability of the transmission clutches. The transmission oil level should be checked and the engine brought to normal operating temperature before stall operation.

Both the parking and service brakes must be fully applied and front wheels blocked while making this test.

Do not hold the throttle open any longer than is necessary to obtain maximum engine speed reading, and never longer than five seconds at a time.

If more than one stall test check is required, operate the engine at approximately 1,000 rpm in Neutral for 20 seconds to cool the transmission fluid between runs. If engine speed exceeds the maximum limits shown, release the accelerator immediately since transmission clutch slippage is indicated.

STALL SPEED ABOVE SPECIFICATION

If stall speeds exceeds the maximum specified in chart by more than 200 rpm, transmission clutch slippage is indicated.

STALL SPEEDS BELOW SPECIFICATION

Low stall speeds with a properly tuned engine indicates torque converter stator clutch problems. A road test will be necessary to identify the exact problem.

If stall speeds are 250-350 rpm below specification and the vehicle operates properly at highway speeds, but has poor through-gear acceleration, the stator overrunning clutch is slipping.

If stall speed and acceleration are normal, but abnormally high throttle opening is required to maintain highway speeds, the stator clutch has seized.

NOISE

A whining or siren-like noise due to fluid flow is normal during stall operation with some converters; however, load metallic noises from loose parts or interference within the assembly indicates a defective torque converter. To confirm that the noise originates within the converter, operate the vehicle at light throttle in "Drive" and "Neutral" on a hoist and listen under the transmission bell housing.

STALL SPEED SPECIFICATION CHART

Engine Model CID	Transmission Type	*Engine Speed (RPM)
198	A-904-G	1550-1850
225	A-904-G	1750-2050
225	A-727-RG	1350-1650
318	A-904-LA	2000-2300
318	A-727-A	1650-1950
340-4BBL	A-727-A	2150-2450
383-2BBL	A-727-B	1800-2100
383-4BBL	A-727-B	2300-2650
440-4BBL	A-727-B	2000-2350
426-2-4BBL	A-727-B	2500-2850

*Valves are at Sea Level Pressure.

IN-CAR TORQUE CONVERTER LEAK TEST

1. Make up a test strip as shown in Figure 1, from a piece of 5-1/2 x 1-1/2 x 1/32 steel.

2. Fluid leakage at or around the converter area may originate from an engine oil leak. This area shouls be examined closely. Transmission fluid contains red dye, therefore, can be distinguished from engine oil.

3. When leakage is determined to originate from the transmission, check the fluid level and torque (110 inch-pounds) on the converter drain plug. High oil level can result in oil leakage out of the vent opening located at the top of the front pump housing.

4. If the leak still persists, position the vehicle on a hoist with the front lower than the rear and remove converter housing dust shield, this will allow any accumulated fluid in the converter housing to drain out. Wipe the bottom inside of converter housing as dry as possible. A solvent spray followed by compressed air drying is preferable.

5. Before any tests are made, operate vehicle to be sure transmission is at normal operating temperature.

6. Fasten test strip securely to lower converter housing bolt hole (Figure 1).

7. Install tachometer and run engine at 2500 rpm for two minutes.

8. Stop engine and carefully remove test strip for inspection.

9. Observe test strip. If dry, there is no obvious converter leak. A path of fluid across the top of the test strip indicates a torque converter leak. Fluid under the test strip is coming from elsewhere within the converter housing.

10. If a leak is observed, remove the transmission and torque converter assembly from the vehicle for further investigations and tests. The fluid should be drained from the transmission and converter. The converter should be removed from the vehicle with the transmission.

TORQUE CONVERTER LEAK TEST - CONVERTER REMOVED

If fluid leakage has occurred in the bell housing area, the torque converter can be leak checked after removal from the transmission as follows:

1. Drain all oil from the converter. If flushing is required, flush before checking for leakage.

2. Reinstall drain plug, tighten to 110 inch-pounds.

3. Install Tool No. C-4102 and tighten.

4. Apply a maximum of 100 psi air pressure to the converter.

5. Submerge the converter in a tank of water and observe the hub, ring gear, and seam welds for bubbles. Five to ten minutes may be required for bubbles to develop from small leaks.

If no bubbles are observed, it can be assumed that the welds are not leaking. If leakage occurs, properly tag the converter "LEAKAGE" and replace the converter.

TORQUE CONVERTER FLUSHING

A torque converter should **not** be replaced because of a severe transmission failure, but must be properly flushed and re-used.

HAND FLUSHING

1. Remove drain plug and completely drain torque converter. Install drain plug finger tight.

2. Place torque converter in a horizontal (hub up) position and pour two quarts of new, clean solvent or kerosene into the converter through the converter hub.

3. Turn and shake converter so as to swirl solvent or kerosene through the internal parts. Install an input shaft and reaction shaft into the converter and rotate the turbine and stator to dislodqe foreiqn material with Tool No. C-3963.

4. Place converter in its normal operating position with the drain plug at the lowest point. Remove the drain plug and drain solvent. Rotate stator and turbine and shake converter while draining to prevent foreign material from settling.

5. Repeat flushing operation at least once, or as many times as required until solvent or kerosene drained out is clean.

6. After flushing, shake and rotate converter several times with drain plug out to remove any residual solvent and foreign material- Flush any remainiq solvent from converter with two quarts of new transmission oil. Tighten drain plug to 110 inch-pounds.

MACHINE FLUSHING

Machine cleaning is recommended, using the type which rotates the converter while pumping cleaning fluid through it. The machine automatically adds timed blasts of compressed air to the cleaning fluid as it enters the converter providing more through cleaning then the hand flushing operation.

FLUSHING OIL COOLER LINES AND OIL COOLER

1. Place a length of hose over the end of the most rearward (lube) oil cooler tube. Insert hose into empty container and cover with rags.

2- Apply compressed air to the "oil to cooler" tube in a very short, sharp blast.

3. Pump transmission oil, approximately 1/2 pint of A.Q.-A.T.F., Suffix A (or Dexron), into the "oil to cooler" tube.

4. Repeat item (2). Remove hose.

TORQUE CONVERTER OVERRUNNING CLUTCH CHECK

Proper operation of the torque converter overrunning clutch insures cool running temperatures and economy of operation. If the stator should at any time "freeze" or lock to the reaction shaft hub, preventing operation of the overrunning clutch, decreased efficiency, poor economy and excessive oil temperatures at high speed will result. Excessive heat in turn may cause the torque converter hub seal to harden and fail. Should this seal require replacement because of

excessive heat the torque converter stator should be cheeked for free wheeling, to prevent "repeat" seal failure. Operation of the torque converter overrunning clutch can be checked as follows using the tools shown in Figure 4 made from an old reaction shaft and strip of 1/4 x 1/32 x 10 steel.

1. Insert the modified reaction shaft into the torque converter, Figures 2 and 3).
2. Insert the "L" shaped end of the test tool through the reaction shaft and into one of the four rectangular oil passages into the rear face of the stator. These are located near the opening in the rear of the converter, between the reaction shaft hub and rear thrust washer, (Figures 2 and 3).
3. Hold the test tube stationary and rotate the reaction shaft. It should move freely in a clockwise direction. Counterclockwise, it should move the test tool in the stator along with it.

TURBINE TEST

Insert input shaft into torque converter and rotate it in both directions. Turbine should rotate freely, (Figure 5).

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Dexron type fluids are the successors of the Type A Suffix A automatic transmission fluid.

Color change in this fluids is not an indication of failure. While these fluids have superior life and performance, their additive chemistry is different than that used in the Chrysler factory-fill and Parts Division Suffix A fluids.

Early darkening of the fluid and loss of red color is similar to the action found in detergent engine oils. Fluid life can no longer be judged by its color.

When fluids of this type are used, it is essential that the drain interval specified in the Service and Owner's Manual be followed.

POLICY: Information Only

TRANSMISSION

Dexron Type Transmission Fluid

MODELS:
All 1968 and 1969

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TRANSMISSION

Front Pump Seal Leak

MODELS:
All 1970 A727 So Equipped

If you encounter a condition of a front pump seal leak on an automatic transmission, it may be caused by the torque converter having had improperly de-burred impeller front pump drive slots. This leaves sharp edges or burrs on the edges of the slots, resulting in cutting the front pump seal I. D. lip during assembly of the torque converter to the transmission.

If a transmission is removed from the front pump area, inspect the torque converter impeller hub for any sharp edges or burrs that may result in cutting the front pump seal lip during the installation of the torque converter to the transmission.

If sharp edges or burrs are present, perform the following before torque converter installation:

1. Using emery cloth, remove any such sharp edges or burrs that may be found. Polishing must be confined to the slot area. Avoid polishing the bushing and seal area.

2. Due care must be taken to prevent grit or foreign particles from entering the torque converter and contaminating the hydraulic circuit.

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Failure of 727 transmission kickdown bands and front clutches may have been caused by reaction shaft seal ring wear. Heavy ring wear results in internal leakage, system pressure loss, friction element slippage, and eventual failure. During this process, the filter can become clogged with friction material which further accelerates the failure.

The parts affected which should be inspected in a failure of this type, are the front clutch retainer, reaction shaft support assembly, the reaction shaft seal rings, and the transmission oil filter. Worn seal rings show distress and scuffing on their outer diameter, and possibly on one side surface. This is accompanied by scuffing of the bands adjacent to the rings on the reaction shaft support, and scuffing of the seal ring bore diameter forward on the bushing in the front clutch retainer.

If there is any question as to the condition of these parts, they should be replaced with the appropriate service package listed below:

Engine CID A-727 Applications	Package No.
225 & 318 (Police and Taxi)	3420 095
440 Hi-Performance	3420 096
426 Hemi 440-6BBL	3420 097
340-4BBL, 383-2BBL, 383-4BBL, 440 Std.	3420 098

Note: These packages are good from model year 1967 through model year 1970.

These packages consist of all newly designed parts, namely, a long bushing design front clutch retainer and reaction shaft support assembly, reaction shaft seal rings, front clutch piston seals, front clutch snap ring, and rear clutch piston retainer.

POLICY: Information Only

TRANSMISSION

A-727 Friction Material Failure

MODELS: All 1967 Through 1970 Models Equipped with A-727 Transmission

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MISCELLANEOUS
TRANSMISSION

Oil Cooler
Tube Clearance

Some early production Barracudas may have inadequate clearance between the cooler line tube and floor pan near the tube fitting at the rear of the transmission case. This condition could cause transmission failure due to the tube wearing through collapsing or the tube fitting breaking.

This area should be inspected if there are complaints of interference noises or oil leakage. If interference is evident then the floor pan should be dented away from the tube to provide a minimum of .5 inch clearance.

MODELS:
All 1970
Barracudas

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TRANSMISSION

Delayed or Erratic Shift Pattern - A-727

MODELS:
All 1970 Automatic Transmission

If you encounter a condition of delayed or erratic shift pattern at low mileage, it may be due to severe rear side wear of the governor support "hooked joint" rear seal ring, (P/N 1942109). This wear has been found to cause a delayed 1-2 upshift after shifting from Reverse to Drive. In many cases, after the upshift is obtained, the shift pattern may be completely normal until the vehicle is shifted to Reverse again or shut down.

Seal ring wear is not always readily apparent if the seal ring is inspected in the installed position in the groove because the outside diameter of the ring may show no distress. If this ring (removed from the groove) shows high wear on the rear side, both the seal ring and the governor support (P/N 2538634) should be replaced.

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TRANSMISSION

Automatic Transmission Cooler Tube

A condition of cooler tube failures caused by the tube wearing in the bracket which attaches to the starter motor mounting stud has been reported. The tube wears through causing rapid loss of transmission oil because the oil cooler system is pressurized by the transmission oil pump. This leakage results in low level and subsequent transmission failure.

It is recommended that the tubes be inspected during new car preparation to make certain the tubes are tightly secured in the bracket.

The tube should also be inspected if there is any indication of oil leakage or transmission malfunction in older model cars. A short section of tubing can be replaced at the bracket if the tube shows severe wear. Again, it is important that the tube be tightly secured in the bracket.

MODELS:
All 1970 and Prior Models Equipped with Automatic Transmission

A new type of bracket has been incorporated on all 1971 model vehicles to eliminate this problem.

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TRANSMISSION

Valve Body
High Pressure
Relief Ball

Early in the 1971 model year the high relief ball (3/8" diameter) in the transmission valve body was changed from a "dull finish" to a "bright finish" to improve its seating ability. At the same time the number 3 check ball (11/32" diameter) was changed from a bright finish to a dull copper finish to prevent it from being interchanged with the high pressure relief ball.

Model Year	High Pressure Relief Ball	#3 Ball Check
Late 1968 to Early 1971	3/8" Diameter Dull Gray Finish P/N 147500	11/32" Diameter Bright Finish P/N 152147
After Early 1971	3/8" Diameter Bright Finish P/N 0147500	11/32" Diameter Dull Finish P/N 3515398

MODELS:
All 1968 Through 1971 Models Equipped with A-904 or A-727 Transmissions

The balls must be assembled as shown in the picture and chart. (No high pressure relief ball was used prior to 1968)

Interchanging the balls will cause excessive leakage in the front clutch circuit at the number 3 check ball, and may cause high pressure relief ball not to seat properly.

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PART I

TRANSMISSION

Engine Flare-Up on 3-2 Kickdown

MODELS:
All with A-727 and A-904A Transmissions

You may encounter a A-727 or A-904 "LA" transmission in which the part throttle kickdown feature exhibits engine speed flare-up and a bump during a part throttle 3-2 kickdown in the 35 to 45 mph speed range. This condition may be due to a faulty (low load) primary shuttle valve spring (PIN 35150471, especially if all other shifts are normal. This low load condition cannot be determined by usual inspection of the spring.

Therefore, if the transmission exhibits the condition of engine speed flare-up during part throttle 3-2 kickdown, but all other upshifts and downshifts are normal, replace the primary shuttle valve spring, P/N 3515047. (Shown on Page 21-103 of the 1971 Service Manual).

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PART I I

TRANSMISSION

Closed Throttle Downshift When Cold

MODELS:
All with A-727 and A-904A Transmissions

If you encounter a condition of no 3-1 closed throttle downshift when cold (transmission stays in direct gear when vehicle is stopped), it may be caused by the valve body "1-2 Governor Plug" sticking in the upshift position. This problem will not damage the transmission, but may cause the customer to complain of either poor performance (transmission stays in direct gear), or jerky operation (transmission downshifts) when accelerating from a stop.

If there is a complaint of no 3-1 closed throttle downshift when cold, proceed as follows:

1. Inspect the valve body "1-2 shift valve" and "1-2 governor plug" and their bores for nicks, burrs, and or dirt.

2. If no defects are found, the "1-2 governor plug" should be replaced with a new service part, (P/N 3515948), which is slightly reduced in diameter (.0004"). This slight reduction will allow the plug to be free in its bore at low temperature.

3. If this does not correct the problem, check for a sticking governor valve in the governor body assembly on the output shaft.

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PART III

TRANSMISSIO

No Wide Open Throttle 3-2 Kickdown

MODELS: All Automatics 340 & 426 CID Engines

All vehicles with either the 426 CID Engine or the 340 may have been built with an incorrect transmission throttle control lever (.130" long). This lever causes reduced throttle valve travel, and thus possibly no wide open throttle 3-2 kickdown.

If you encounter the above mentioned condition, it may be corrected by the following procedure:

1. Remove throttle control lever and check center distance between the two larger holes. If it is not 1.81" (113/16") replace with correct lever (P/N 2536270).

2. Re-set throttle linkage as per adjustment procedure outlined under "Transmission Throttle Linkage Adjustment 8-Cylinder Model With Three-Section Throttle Rod" on page 21-85 of the Chassis Service Manual.

Listed below are the correct and incorrect lever assemblies:

	Correct Lever Assembly	Incorrect Lever Assembly
Part Number	2536270	2536276
Length: Center distance between the larger dia. holes	1.81" 1 13/16"	1.94" 1 15/16"

Car assembly plants reported the following effective points at which only OK parts were on-line for installation:

	Car Plant	V. I. N.	Date
	Windsor	RM23 H1R 216214	3-2-71
	Los Angeles	RM23 H1E 142548	3-26-71
	St. Louis	RH23 GIG 183876	3-1-71
	Lynch Road	WH23 G1A 156400	2-2-71
Line 1	Hamtramck	LL29 G1B 300169	2-25-71
Line 2	Hamtramck	JS23 NIB 309268	2-25-71

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If you encounter a delayed light throttle on a 1971 A904-LA transmission with a 318 CID engine, it may be caused by low front clutch pressure resulting from leakage past the front clutch inner seal lip P/N 1942396. This condition may be apparent when lift foot 2-3 upshifts are made or the transmission is cold. The following procedure will aid in diagnosing and correcting the condition:

1. Check transmission throttle linkage for freedom or operation and adjustment per Service Manual. Correct if required.

2. If Step 1. does not correct the delayed 2-3 upshift condition, install line pressure and front servo release pressure gages, and warm up transmission to normal operating temperature (150 - 200 F.).

   Accelerate at light throttle. Normally the 2-3 upshift should occur in the 20-30 mph range, and front servo release pressure should rise to approximately 60-75 psi. (Within 3 psi of line pressure). If front servo release pressure rises to only 17-25 psi and stays at this level until approximately 40 mph, excessive leakage in the front clutch is indicated, causing delayed completion of the 2-3 upshift.

3. Remove and dis-assemble transmission. Inspect the front clutch inner and outer seals.

   (a) If the outer seal is broken, replace. All other affected parts should be inspected and replaced, if necessary.

   (b) If neither the inner seal nor the outer seal show any obvious defects, the problem may be caused by the inner seal not expanding properly against the piston bore, allowing leakage.

   To correct this condition, replace the front clutch retainer and both the inner and outer seals with new parts which incorporate a "short lip" seal design. The same piston can be re-used. See chart on Page 2.

TRANSMISSION

Delayed **2-3** Upshift A904-LA Automatic

MODELS:
All 318 CID Engines

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Parts	Service Pkg. Number
Front Clutch Retainer) Front Clutch Inner Seal) Front Clutch Outer Seal)	3621476

Inspect all other affected parts and replace, if necessary. Reassemble transmission.

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TRANSMISSION

Revised Transmission and Torque Converter

MODELS:
A11 "**A**" Bodies Equipped with 198 CID Engine

Windsor Assembly will build a number of 1972 six cylinder 198 CID engine vehicles with a 10 3/4 inch torque converter. This converter requires a special sleeve for the crankshaft (due to a smaller converter front cover cup), and a special A-904 transmission with a different input shaft.

Following is the list of parts used to service the converter:

Part Name	Part No.
Transmission Assy.	3515827
Input Shaft	3515599
Torque Converter	2204403
Crankshaft Bushing	3515608

The 1972 Parts Catalog will show the above listed parts.

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TRANSMISSION

Erratic, Delayed, or No Shifts into Direct or Reverse

MODELS:
All 1971 Equipped with A-727 Trans.

If you encounter erratic, delayed, or no shifts into Direct Drive (2-3 shift) or Reverse, it may be caused by a severly worn front clutch outer "short lip" seal. (P/N 3410225) The following procedure will aid in diagnosing and correcting this condition:

Check line pressure and front servo release pressure (transmission in direct gear), and rear servo apply pressure (transmission in reverse), as per Service Manual "Hydraulic Control Pressure Tests," Section 21, Page 88. If the line pressure is within specification, but both front servo release and rear servo apply pressures are low, there is excessive leakage in the front clutch circuit.

2. Remove and disassemble the transmission to inspect the front clutch assembly.

3. Check the front clutch inner and outer seals for cuts or breaks. Severe wear can be checked by comparing the seals to the attached drawing or new seals.

4. Install new seals if inspection reveals the removed seals are defective.

5. Replace the front clutch retainer if the outer seal shows excessive wear. Excessive wear indicates the seal was rubbing against a rough surface which may cause a repeat failure.

6. Inspect all other affected parts. Replace if necessary per Service Manual instructions.

7. Reassemble transmission.

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TRANSMISSION

Front Pump Vent Leak

MODELS:
All 1969 and Prior Models Equipped With A-727 Trans

Chrysler Parts has recently superseded the A-727 Front Pump Housing P/N 2538793 with P/N 3410965 which has a plastic vent. In order to prevent a possible oil leak at the vent when servicing 1969 and prior transmissions with pump housing P/N 3410965, make a flat sheet metal baffle to cover the drain hole in the reaction shaft support (see drawing on page 55). The sheet metal baffle is held in place by the adjacent reaction shaft support screw.

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SERVICE DIAGNOSIS AND TESTS

INDEX

DIAGNOSIS—GENERAL

Automatic transmission malfunctions may be caused by four general conditions: poor engine performance, improper adjustments, hydraulic malfunctions, and mechanical malfunctions. Diagnosis of these problems should always begin by checking the easily accessible variables: fluid level and condition, manual linkage adjustment, and throttle linkage adjustment. Then perform a road test to determine whether the, problem has been corrected or that more diagnosis is necessary. If the problem exists after the preliminary tests and corrections are completed, hydraulic pressure tests should be performed.

Fluid Level and Condition

Before removing the dipstick, wipe all dirt off of the protective cap and top of the filler tube.

Since the torque converter fills more slowly in the "P" Park position, place the selector lever in "N" Neutral to be sure that the fluid level check is accurate. The engine should be running at idle speed. The fluid should be at normal operating temperature (approximately 175° F.). The fluid level is correct if it is between the "Full" and "Add One Pint" marks on the dipstick.

Low fluid level can cause a variety of conditions because it allows the pump to take in air along with the fluid. As in any hydraulic system, air bubbles make the fluid spongy, therefore, pressures will be low and build up slowly.

Improper filling can also raise the fluid level too high. When the transmission has too much fluid, the gears churn up foam and cause the same conditions which occur with a low fluid level.

In either case, the air bubbles can cause overheating, fluid oxidation and varnish which can interfere with normal valve, clutch and servo operation. Foaming can also result in fluid escaping from the transmission vent where it may be mistaken for a leak.

Along with fluid level, it is important to check the condition of the fluid. When the fluid smells burned, and is contaminated with metal or friction material particles, a complete transmission overhaul is needed. Be sure to examine the fluid on the dipstick closely. If there is any doubt about its condition, drain out a sample for a double check.

After the fluid has been checked, seat the dipstick fully to seal out water and dirt.

Manual Linkage

Normal operation of the neutral safety switch provides a quick check to confirm proper manual linkage adjustment.

Move the selector lever slowly upward until it clicks into the "P" Park notch in the selector gate. If the starter will operate the "P" position is correct.

After checking "P" position move the selector slowly toward "N" Neutral position until the lever drops at the end of the "N" stop in the selector gate. If the starter will also operate at this point the manual linkage is properly adjusted. If adjustment is required, refer to "Gearshift Linkage Adjustment" in "Maintenance and Adjustments", Transmission section of the service manual.

Throttle Linkage

The throttle rod adjustment is very important to proper transmission operation. This adjustment positions a valve which controls shift speed, shift quality and part throttle down shift sensitivity. If the setting is too short, early shifts and slippage between shifts may occur. If the setting is too long, shifts may be delayed and part throttle down shifts may be very sensitive.

In fact, this adjustment is so critical that the use of a throttle lever holding spring is necessary to remove slack in the linkage during adjustment. Refer to "Throttle Rod Adjustment" in "Maintenance and Adjustments", Transmission section of the service manual.

Road Test

Prior to performing a road test, be certain that the fluid level and condition, and control linkage adjustments have been checked and approved.

During the road test the transmission should be operated in each position to check for slipping and any variation in shifting. Note whether the shifts are harsh or spongy and check the speeds where the upshifts and downshifts occur. Approximate shift speeds for the various modes of operation are shown in the "Automatic Shift Speeds and Governor Pressure" chart.

Observe closely for slipping or engine speed flare-up. Slipping or flare-up in any gear usually indicates clutch, band or overrunning clutch problems. If the condition is far advanced, an overhaul will probably be necessary to restore normal operation.

In most cases, the clutch or band that is slipping can be determined by noting the transmission operation in all selector positions and by comparing which internal units are applied in those positions. The "Clutch and Band Application Chart" provides a basis for road test analysis.

Technical Service Bulletin

Of Interest ☐ General Manager ☐ Sales Manager ☐ Service Manager ☐ Parts Manager ☐ Service Technicians

TRANSMISSION

Front Pump Vent Leak

MODELS:
All 1969 and Prior Models Equipped With A-727 Trans

Chrysler Parts has recently superseded the A-727 Front Pump Housing P/N 2538793 with P/N 3410965 which has a plastic vent. In order to prevent a possible oil leak at the vent when servicing 1969 and prior transmissions with pump housing P/N 3410965, make a flat sheet metal baffle to cover the drain hole in the reaction shaft support (see drawing on page 55). The sheet metal baffle is held in place by the adjacent reaction shaft support screw.

CHRYSLER MOTORS with PRIDE

1973 PASSENGER CAR
AUTOMATIC SHIFT SPEEDS AND GOVERNOR PRESSURE CHART
(APPROXIMATE MILES PER HOUR)

MODEL	VL	RW	BJ	PDC	PDC	PDC	Y
Engine Cu. In.	198 225	318	340	360	400-2	400-4 & 440 Hi. Perf.	440
Axle Ratio	2.76	2.71	3.23	2.71	2.76	3.23	3.23
Tire Size	6.95x14	E78x14	F70x14	F78x15	G78x15	G78x15	L84x15
Throttle Minimum							
1-2 Upshift	9-16	9-16	8-15	9-16	9-16	8-15	8-16
2-3 Upshift	16-25	16-25	15-23	17-25	15-25	15-23	16-25
3-1 Downshift	9-13	8-12	7-10	8-11	9-12	8-13	8-11
Throttle Wide Open							
1-2 Upshift	31-43	35-48	33-44	37-51	37-51	36-47	33-46
2-3 Upshift	65-75	72-89	62-71	77-89	76-88	62-77	68-80
Kickdown Limit							
3-2 WOT Downshift	62-72	70-79	60-68	73-83	73-83	60-72	66-75
3-2 Part Throttle Downshift	47-57	26-52	26-46	27-54	28-54	27-50	25-45
3-1 WOT Downshift	28-33	27-37	28-35	28-38	28-38	28-38	25-34
Governor Pressure*							
15 psi	20-22	2022	17-18	20-22	21-22	16-19	18-20
40 psi	38-43	44-50	40-45	46-50	46-50	42-46	41-46
60 psi	57-62	6671	56-61	68-73	68-73	59-63	6065

*Governor pressure should be from zero to 1.5 psi at stand still or downshift may not occur.

NOTE: Figures given are typical for other models. Changes in tire size or axle ratio will cause shift points to occur at corresponding higher or lower vehicle speeds.

NOTE: Shift points must not be used as a method to check throttle linkage adjustment.

1973 MODELS B100-200-300
AUTOMATIC SHIFT SPEEDS, AND GOVERNOR PRESSURE CHART
(APPROXIMATE MILES PER HOUR)

ENGINE	225			318			360	
Model	B100	B200	B300	B100	B200	B300	B200	8300
Axle Ratio	3.55	3.55	4.10	3.20	3.20	4.10	3.20	4.10
Tire Size.	E78x14	G78x15	8.00x16.5	E78x14	G78x15	8.00x16.5	G78x15	8.00x16.5
Throttle Closed								
1-2 Upshift	8-10	9-11	8-10	8-10	9-11	7-9	9-11	7-9
2-3 Upshift	11-14	12-15	10-13	11-14	12-15	10-12	12-15	10-12
3-1 Downshift	7-10	7-11	6-10	7-10	7-11	6-9	7-11	6-9
Throttle Wide Open								
1-2 Upshift	27-32	28-34	25-30	32-39	34-42	27-33	34-42	27-33
2-3 Upshift	52-58	56-62	49-54	63-70	67-75	53-59	67-75	53-59
Kickdown Range								
3-2 Downshift	50-56	53-60	47-53	60-68	64-72	51-57	64-72	51-57
3-1 Downshift	23-26	24-28	21-24	24-31	25-33	20-26	25-33	20-26
Governor Pressure*								
15 PSI	15-17	17-19	15-17	16-18	17-19	14-15	17-19	14-15
50 PSI	38-42	41-45	36-39	46 51	49-54	39-43	49-54	39-43
75 PSI	53-57	56-61	50-54	64-69	68-73	54-58	68-73	54-58

*Governor pressure should be from zero to 1.5 psi at stand-still or downshift may not occur.

NOTE: Figures given are typical for other models. Changes in tire size or axle ratio will cause shift points to occur at corresponding higher or lower vehicle speeds.

1973 MODELS D & W
AUTOMATIC SHIFT SPEEDS, AND GOVERNOR PRESSURE CHART
(APPROXIMATE MILES PER HOUR)

MODELS	Typical - See Note Below					
Engine Cu. In.	225		318/360		4001440	
Axle Ratio	4.10:1	4.56:1	4.10:1	4.56:1	3.54:1	4.10:1
Tire Size	8.75x16.5	8.75x16.5	8.00x16.5	8.00x16.5	8.00x16.5	8.00x16.5
Throttle Closed						
1-2 Upshift	8-10	7-9	8-10	7-9	9-12	8-10
2-3 Upshift	11-13	10-13	11-13	10-13	13-16	11-13
3-1 Downshift*	7-9	6-8	7-9	6-8	8-11	7-9
Throttle Wide Open						
1-2 Upshift	23-31	20-28	23-31	20-28	26-36	23-31
2-3 Upshift	49-56	44-50	49-56	44-50	56-64	49-56
Kickdown Range						
3-2 Downshift	42-51	38-45	42-51	38-45	48-58	42-51
3-1 Downshift	20-23	18-20	20-23	18-20	23-26	20-23
Governor Pressure						
15 psi	15-18	13-15	15-18	13-15	17-19	15-18
50 psi	36-39	32-35	36-39	32-35	41-45	36-39
75 psi	50-54	45-49	50-54	45-49	57-62	50-54

NOTE: Figures given are for D200 and D300 models and are typical for other models. Changes in tire size or axle ratio will cause shift points to occur at corresponding higher or lower vehicle speeds.

*Governor pressure should be from zero to 1.5 psi at stand-still or downshift may not occur.

1973 MOTOR HOME
AUTOMATIC SHIFT SPEEDS AND GOVERNOR PRESSURE CHART
(APPROXIMATE MILES PER HOUR)

Axle Ratio	4.10	4.56	4.88
Tire Size	8.75x16.5	7.50x16	7.50x16
Throttle Minimum			
1-2 Upshift	7-12	6-11	5-10
2-3 Upshift	14-21	13-19	12-18
Wide Open Throttle			
1-2 Upshift	31-37	27-33	25-31
2-3 Upshift	60-67	53-59	50-55
Kickdown Limit			
3-2 Downshift	58-65	51-57	48-54
3-1 Downshift	22-30	20-26	19-25
Closed Throttle			
3-1 Downshift	7-10	6-9	6-8

*Governor pressure should be from zero to 1.5 psi at stand still or downshift may not occur.

NOTE: Figures fiven are typical for other models. Changes in tire size or axle ratio will cause shift points to occur at corresponding higher or lower vehicle speeds.

NOTE: Shift points must not be used as a method to check throttle linkage adjustment.

HYDRAULIC PRESSURE TESTS

Pressure testing is a very important step in the diagnostic procedure. These tests usually reveal the cause of most transmission problems.

Before performing pressure tests, be certain that fluid level and condition, and control linkage adjustments have been checked and approved. Fluid must be at operating temperature (150 to 200 degrees F.).

Install an engine tachometer, raise vehicle on hoist which allows rear wheels to turn, and position tachometer so it can be rear under the vehicle.

Disconnect throttle rod and shift rod from transmission levers so they can be controlled under the vehicle.

Attach 100 psi gauges (C-3292) to ports required for test being conducted. A 300 psi gauge (C-3293) is required for "reverse" pressure test at rear servo.

Test port locations are shown in (Figs. 1 and 2).

Test One (Selector in "1")

(1) Attach gauges to "line" and "rear servo" ports.

(2) Operate engine at 1000 rpm for test.

(3) Move selector lever on transmission all the way forward ("1" position).

(4) Rear pressures on both gauges as throttle lever on transmission is moved from full forward position to full rearward position.

(5) Line pressure should read 54 to 60 psi with throttle lever forward and gradually increase, as lever is moved rearward, to 90 to 96 psi.

(6) Rear servo pressure should read the same as line pressure within 3 psi.

(7) This tests pump output, pressure regulation, and condition of rear clutch and rear servo hydraulic circuits.

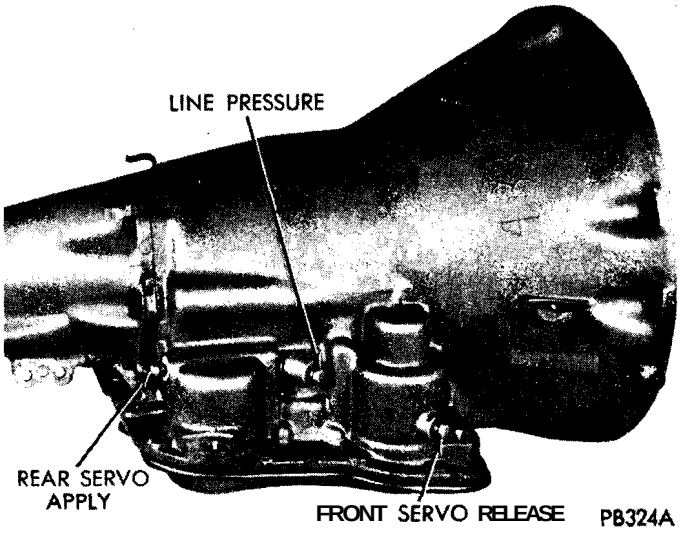


Fig. 1 – **Pressure** Test Locations (Right Side of Case)

Test Two Test (Selector in "2")

(1) Attach gauge to "line pressure" port and "tee" into rear cooler line fitting to read "lubrication" pressure.

(2) Operate engine at 1000 rpm for test.

(3) Move selector lever on transmission one "detent" rearward from full forward position. This is selector "2" position.

(4) Read pressures on both gauges as throttle lever on transmission is moved from full forward position to full rearward position.

(5) Line pressure should read 54 to 60 psi with throttle lever forward and gradually increase, as lever is moved rearward, to 90 to 96 psi.

(6) Lubrication pressure should be 5 to 15 psi with lever forward and 10 to 30 psi with lever rearward.

(7) This tests pump output, pressure regulation, and condition of rear clutch and lubrication hydraulic circuits.

Test Three (Selector in "D")

(1) Attach gauges to "line" and "front servo release" ports.

(2) Operate engine at 1000 rpm for test.

(3) Move selector lever on transmission two "detents" rearward from full forward position. This is selector "D" position.

(4) Read pressures on both gauges as throttle lever on transmission is moved from full forward position to full rearward position.

(5) Line pressure should read 54 to 60 psi with throttle lever forward and gradually increase, as lever is moved rearward, to 90 to 96 psi.

(6) Front servo release is pressurized only in direct drive and should be same as line pressure within **3** psi,, up to downshift point.

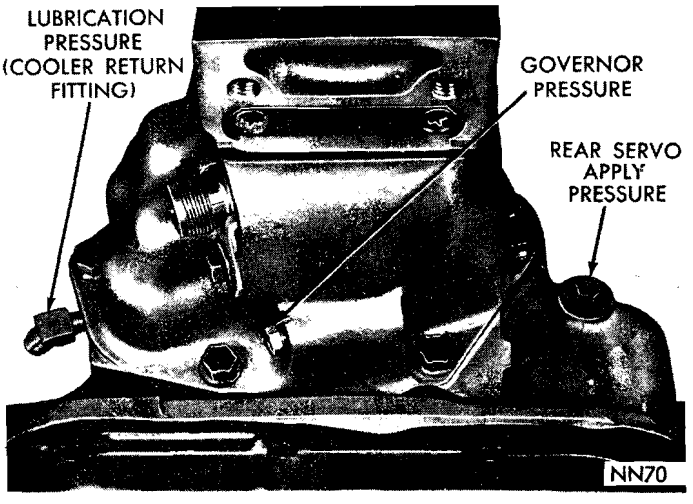


Fig. 2 – Pressure Test Locations (Rear End of Case)

(7) This tests pump output, pressure regulation, and condition of rear clutch and front clutch hydraulic circuits.

Test Four (Selector in Reverse)

(1) Attach 300 psi gauge to "rear servo apply" port.

(2) Operate engine at 1600 rpm for test.

(3) Move selector lever on transmission four "detents" rearward from full forward position. This is selector "R" position.

(4) Rear servo pressure should rear 230 to 260 psi.

(5) This tests pump output, pressure regulation, and condition of front clutch and rear servo hydraulic circuits.

(6) Move selector lever on transmission to "D" position to check that rear servo pressure drops to zero.

(7) This tests for leakage into rear servo, due to case porosity, which can cause reverse band bum out.

Test Result Indications

(1) If proper line pressure, minimum to maximum, is found in any one test, the pump and pressure regulator are working properly.

(2) Low pressure in "D, 1 and 2" but correct pressure in "R" indicates rear clutch circuit leakage.

(3) Low pressure in "D and R" but correct pressure in "1" indicates front clutch circuit leakage.

(4) Low pressure in "R and 1" but correct pressure in "2" indicates rear servo circuit leakage.

(5) Low line pressure in all positions indicates a defective pump, a clogged filter or a stuck pressure regulator valve.

Governor Pressure

Test only if transmission shifts at wrong vehicle speeds when throttle rod is correctly adjusted.

(1) Connect a 0-100 psi pressure gauge, to governor pressure take-off point, located at lower left side of extension near the mounting flange (Fig. 2).

(2) Operate transmission in third gear to read pressures and compare speeds shown in chart.

If governor pressures are incorrect at the given vehicle speeds, the governor valve and/or weights are probably sticking. The governor pressure should respond smoothly to changes in mph and should return to 0 to 1-1/2 psi when vehicle is stopped. High pressure at stand still (above 2 psi) will prevent the transmission from downshifting.

Throttle Pressure

No gauge port is provided for the throttle pressure. Incorrect throttle pressure should only be suspected if part throttle up-shift speeds are either delayed or occur too early in relation to vehicle speeds. Engine runaway on either up shifts or down shifts can also be an indicator of incorrect (low) throttle pressure setting.

CAUTION: In no case should throttle pressure be adjusted until the transmission throttle linkage adjustment has been verified to be correct.

1973 PASSENGER CAR TORQUEFLITE TRANSMISSIONS TORQUEFLITE TRANSMISSION APPLICATION AND STALL SPEED

TRANSMISSION ASSEMBLY NO.*	ENGINE CU. IN.	TRANSMISSION TYPE	CONVERTER DIAMETER	STALL R.P.M.	APPLICATION
3681061	198	A-904	10-3/4"	1625-1925	Any Models
3681061	225	A-904	10-3/4"	1800-2100	Equipped with
3681063	318	A-904-LA	10-314"	2125-2425	These Engines
3681051	225	A-727	11-3/4"	1400-1700	Police & Taxi
3681053	318	A-727	11-3/4"	1725-2025	Police & Taxi
3681052	340-4	A-727	10-3/4"	2200-2500	(VLBJRW)
3681053	360-2	A-727	10-3/4"	2300-2600	(PDC)
3681054	400-2	A-727	11-3/4"	1875-2175	(BJRWPDC)
3681055	400-4	A-727	10-3/4"	2400-2700	Hi-Perf. (BJRWPDC)
3681056	440-4	A-727	11-3/4"	1975-2275	(PDCY)
3681057	440-4	A-727	10-3/4"	2600-2900	Hi-Perf. (RW)
3681057	440-4	A-727	11-3/4"	2100-2400	Hi-Perf. (PDC)

"Part numbers subject to change during model year.

Number is found on left side of transmission oil pan flange.

1973 MODELS B-100-200-300 LOADFLITE TRANSMISSION APPLICATION AND STALL SPEEED

'TRANSMISSION ASSEMBLY NO.*	ENGINE CU. IN.	TRANSMISSION TYPE	CONVERTER DIAMETER	STALL R.P.M.	APPLICATION
3681051	225	A-727	11-3/4"	1450-1650	B1, B2, B3
3641904	318	A-727	11-3/4"	1750-1950	B1, B2, B3
3640414	360	A-727	11-3/4"	1850-2050	B1, B2, B3

*Subject to change during model year.

1973 MODELS D & W 100-200-300 LOADFLITE TRANSMISSION APPLICATION AND STALL SPEED

TRANSMISSION ASSEMBLY NO.*	ENGINE CU. IN.	EXTENSION TYPE	CONVERTER DIAMETER	STALL R.P.M.	APPLICATION
3640082	225	Short	11-3/4"	1450-1650	D2, 3, W1, 2, 3
3640817	318	Short	11-3/4"	1750-1950	D2, 3, W1, 2, 3
3640817	360	Short	11-3/4"	1850-2050	D2, 3, W1, 2, 3
3641905	318	Long	11-3/4"	1750-1950	D1, 2
3640809	360	Long	11-3/4"	1850-2050	D1, 2
3640081	225	Long	11-3/4"	1450-1650	D1, 2
3640810	400	Long	11-3/4"	1875-2175	D1, 2
3640818	400	Short	11-3/4"	1875-2175	D2, 3
3732534	440	Long	11-3/4"	1975-2275	D1, 2
3732536	440	Short	11-3/4"	1975-2275	D2, 3

*Part numbers subject to change during model year

Number is found on left side of transmission oil pan flange.

CONVERTER STALL TEST

WARNING: During test let no one stand in front of vehicle.

The stall test consists of determing the engine speed obtained at full throttle in D position. This test checks the torque converter stator clutch operation, and the holding ability of the transmission clutches. The transmission oil level should be checked and the engine brought to normal operating temperature before stall operation. **Both the parking and service brakes must be fully applied and front wheels blocked while making this test.**

Do not hold the throttle open any longer than is necessary to obtain a maximum engine speed reading, **and never longer than five seconds at a time.** If more than one stall check is required, operate the engine at approximately 1,000 rpm in neutral for 20 seconds to cool the transmission fluid between runs. If engine speed exceeds the maximum limits shown, release the accelerator immediately since transmission clutch slippage is indicated.

Stall Speed Above Specification

If stall speed exceeds the maximum specified in chart by more than 200 rpm, transmission clutch slippage is indicated. Follow the transmission oil pressure and air pressure checks outlined in this section to determine the cause of slippage.

Stall Speed Below Specification

Low stall speeds **with a properly tuned engine** indicate torque converter stator clutch problems. **A** road test will be necessary to identify the exact problem.

If stall speeds are 250-350 rpm below specification, and the vehicle operates properly at highway speeds, but has poor through-gear acceleration, the stator overrunning clutch is slipping.

If stall speed and acceleration are normal, but abnormally high throttle opening is required to maintain highway speeds, the stator clutch has seized.

Both of these stator defects require replacement of the torque converter.

Noise

A whining or siren-like noise due to fluid flow is normal during stall operation with some converters; however, loud metallic noises from loose parts or interference within the assembly indicate a defective torque converter. To confirm that the noise originates within the converter, operate the vehicle at light throttle in D and N on a hoist and listen under the transmission bell housing.

CLUTCH AND SERVO AIR PRESSURE TESTS

A "NO DRIVE" condition might exist even with correct fluid pressure, because of inoperative clutches or bands. The inoperative units, clutches, bands and servos can be located through a series of tests by substituting air pressure for fluid pressure (Fig. **3).**

The front and rear clutches, kickdown servo, and low-reverse servo may be tested by applying air pressure to their respective passages after the valve body assembly has been removed. To make air pressure tests, proceed as follows:

CAUTION: Compressed air supply must be free of all dirt or moisture. Use a pressure of **30** to 100 psi.

Front Clutch

Apply air pressure to front clutch "apply" passage and listen for a dull "thud" which indicates that front clutch is operating. Hold air pressure on for a few seconds and inspect system for excessive oil leaks.

Rear Clutch

Apply air pressure to rear clutch "apply" passage and listen for a dull "thud" which indicates that rear clutch is operating. Also, inspect for excessive oil leaks. If a dull "thud" cannot be heard in the clutches, place finger tips on clutch housing and again apply air pressure. Movement of piston can be felt as **the** clutch is applied.

Kickdown Servo (Front)

Direct air pressure into front servo "apply" passage. Operation of servo is indicated by a tightening of front band. Spring tension on servo piston should release the band.

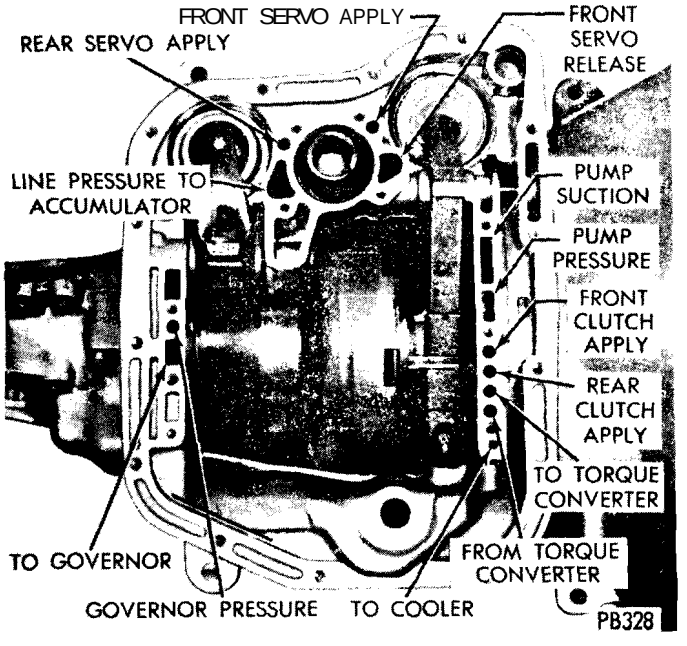


Fig. **3** – Air Pressure Tests

Low and Reverse Servo (Rear)

Direct air pressure into rear servo "apply" passage. Operation of servo is indicated by a tightening of rear band. Spring tension on servo piston should release the band.

If clutches and servos operate properly, no up-shift or erratic shift conditions indicate that malfunctions exist in the valve body.

FLUID LEAKAGE—TRANSMISSION CONVERTER HOUSING AREA

(1) Check for Source of Leakage.

Since fluid leakage at or around the converter area may originate from an engine oil leak, the area should be examined closely. Factory fill fluid is dyed red and, therefore, can be distinguished from engine oil.

(2) Prior to removing the transmission, perform the following checks:

When leakage is determined to originate from the transmission, check fluid level and torque converter drain plug torque prior to removal of the transmission and torque converter.

High oil level can result in oil leakage out the vent located at the top of the front pump housing. If the fluid level is high, adjust to proper level.

Oil leakage can also occur at the torque converter drain plug. Torque the drain plug to 110 inch-pounds.

After performing these two operations, re-check for leakage. If a leak persists, perform the following operation on the vehicle to determine whether it is the converter or transmission that is leaking.

Leakage Test Probe

(1) Remove converter housing dust shield.

(2) Position vehicle with front lower than back so that accumulated fluid in converter housing will drain out. Wipe bottom inside of converter housing as dry as possible. A solvent spray followed by compressed air drying is preferable.

(3) Fabricate and fasten test probe (Fig. 4) securely to convenient dust shield bolt hole. Make certain converter is cleared by test probe. Tool must be clean and dry.

(4) Run engine at approximately 2500 rpm with iransmission in neutral, for about 2 minutes. Transmission must be at operating temperature.

(5) Stop engine and carefully remove tool.

(6) If upper surface of test probe is dry, there is no converter leak. **A** path of fluid across probe indicates a converter leak. Oil leaking under the probe is coming from the transmission converter area (Fig. 5).

(7) Remove transmission and torque converter assembly from vehicle for further investigation. The

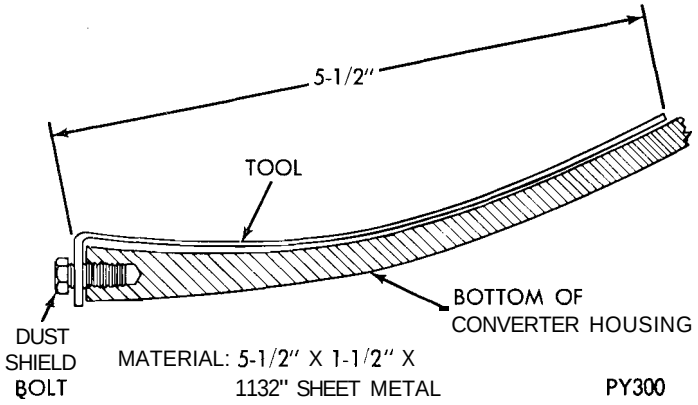


Fig. 4 – Leak Locating Test Probe Tool

fluid should be drained from the transmission and converter. Re-install converter drain plug and oil pan (with new gasket) at specified torque.

Possible sources of transmission converter area fluid leakage shown in (Fig. 5) are:

(1) Converter Hub Seal.
(a) Seal lip cut, check converter hub finish.
(b) Bushing moved and/or worn.
(c) Oil return hole in front pump housing plugged or omitted.
id) Seal worn out (high mileage cars).

(2) Fluid leakage at the outside diameter from pump housing "O" ring seal.

(3) Fluid leakage at the front pump to case bolts.

(4) Fluid leakage due to case or front pump housing porosity.

(5) Oil leakage out the vent.

(6) Kickdown lever shaft access plug.

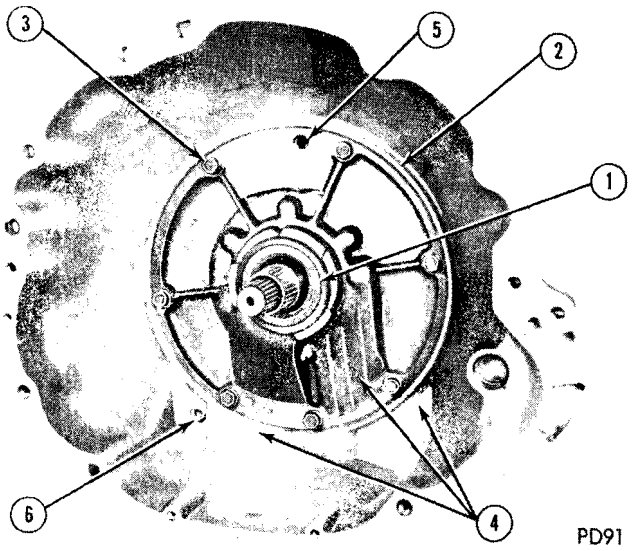


Fig. 5 – Transmission Converter Area

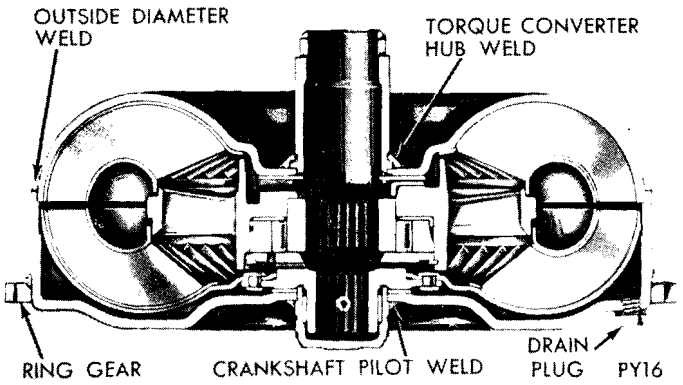


Fig. 6 – Torque Converter Cross Section

Converter Leakage (Fig. 6)

Possible sources of converter leakage are

(a) Torque converter weld leaks at the outside diameter (peripheral) weld.
(b) Front pump hub weld.
(c) Crankshaft pilot weld.
(d) Fluid leakage from the converter drain plug. These leaks appear at the outside diameter of the converter on the engine side.

Air Pressure Test of Transmission

Fabricate equipment needed for test as shown in (Figs. 7, 8 and 9).

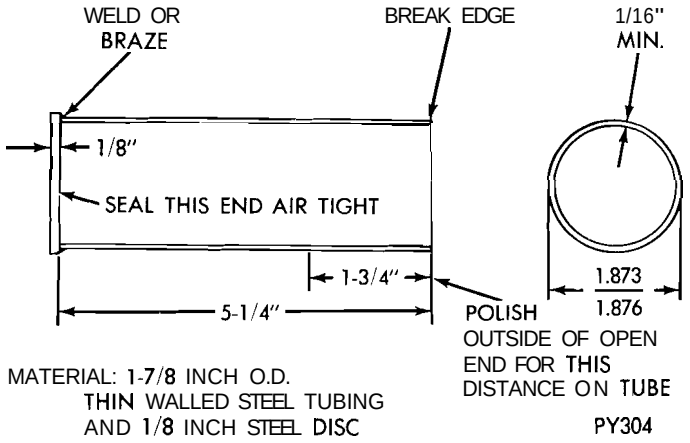


Fig. 7 – **A-727** Converter **Hub** Seal Cup

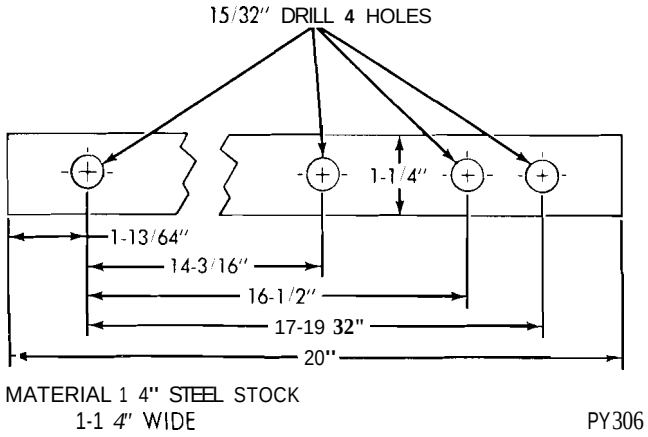


Fig. 8 – Hub Seal Cup Retaining Strap

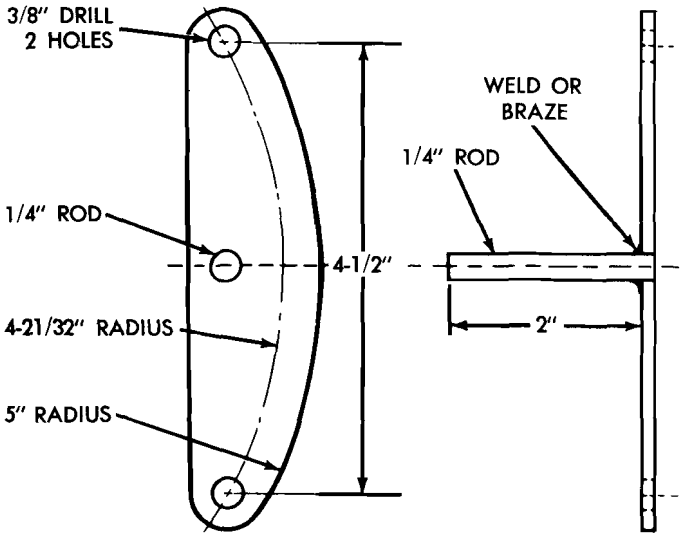


Fig. 9 – A-727 Vent Plug Retainer

The transmission should be prepared for pressure test as follows after removal of the torque converter:

(1) Install filler tube bore plug, propeller shaft yoke (tie in with cord or wire), flared tube fitting cap (on front cooler line fitting), and pipe nipple (in case at rear cooler line fitting) (Fig. 10 and 11).

(2) Remove necessary front pump housing bolts, and vent shield. Install vent plug (rubber stopper), and vent plug retainer preferably using longer bolts than those removed.

(3) With rotary motion, install converter hub seal cup over input shaft, and through the converter hub seal until the cup bottoms against the pump rotor lugs. Secure with cup retainer strap (Fig. 8), using converter housing to engine block retaining bolts.

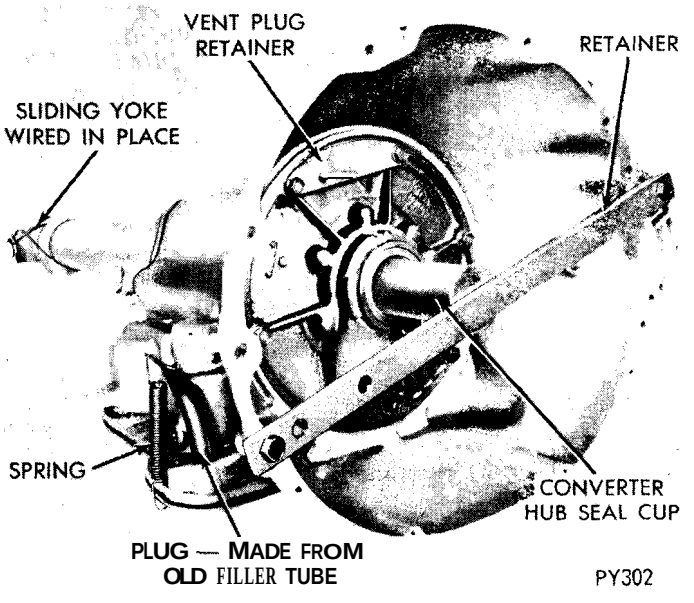


Fig. 10 – Transmission Prepared for Test

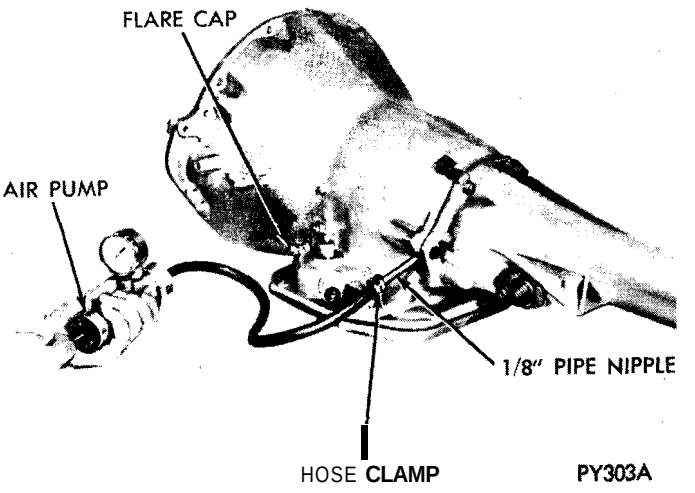


Fig. 11 – Pressurizing Transmission

(4) Attach and clamp hose from nozzle of Tool C-4080 to pipe nipple, which is in the rear cooler line fitting position in case (Fig. 11).

(5) Pressurize the transmission using Tool C-4080 until the pressure gauge reads 8 psi. Position transmission so that pump housing and case front may be covered with soapy solution or water. Leaks are sometimes caused by porosity in the case or pump housing.

CAUTION: Do not, under any circumstances, pressurize a transmission to more than 10 psi.

If a leak source is located, that part and all associated seals and gaskets should be replaced with new parts.

Torque Converter Pressure Test

If fluid leakage has occurred in the bell housing area, the torque converter can be leak checked as follows after removal from the transmission:

(1) Drain all oil from the converter. If flushing is required, flush before checking for leakage.

(2) Install tool C-4102 and tighten.

(3) Apply a maximum of 100 psi air pressure to the converter.

(4) Submerge the converter in a tank of water and observe the hub, ring gear, and seam welds for bubbles. Five to ten minutes may be required for bubbles to develop from small leaks.

If no bubbles are observed, it can be assumed that the welds are not leaking. If leakage occurs, the converter should be replaced.

DIAGNOSIS GUIDE – FLUID LEAKS

VISUALLY INSPECT FOR SOURCE OF LEAK. IF THE SOURCE OF LEAK CANNOT BE READILY DETERMINED, CLEAN THE EXTERIOR OF THE TRANSMISSION. CHECK TRANSMISSION FLUID LEVEL. CORRECT IF NECESSARY.

THE FOLLOWING LEAKS MAY BE CORRECTED WITHOUT REMOVING THE TRANSMISSION:

MANUAL LEVER SHAFT OIL SEAL
FILLER TUBE 'O' RING
PRESSURE GAUGE PLUG
NEUTRAL START SWITCH
PAN GASKET
OIL COOLER FITTINGS
EXTENSION HOUSING TO CASE GASKET
EXTENSION HOUSING TO CASE BOLTS
EXTENSION HOUSING YOKE SEAL
SPEEDOMETER ADAPTER 'O' RING
FRONT BAND ADJUSTING SCREW

THE FOLLOWING LEAKS REQUIRE REMOVAL OF THE TRANSMISSION AND TORQUE CONVERTER FOR CORRECTION.

TRANSMISSION FLUID LEAKING FROM THE LOWER EDGE OF THE CONVERTER HOUSING; CAUSED BY FRONT PUMP SEAL, PUMP TO CASE SEAL, OR TORQUE CONVERTER WELD.

CRACKED OR POROUS TRANSMISSION CASE.

DIAGNOSIS GUIDE – ABNORMAL NOISE

INSPECT AND CORRECT THE TRANSMISSION FLUID LEVEL
ROAD TEST TO VERIFY THAT AN ABNORMAL NOISE EXISTS, IDENTIFY THE TYPE OF NOISE, DRIVING RANGES, AND CONDITIONS WHEN THE NOISE OCCURS.

GEAR NOISE OR GRINDING

REMOVE THE TRANSMISSION AND CONVERTER ASSEMBLY, DISASSEMBLE, CLEAN AND INSPECT ALL PARTS, CLEAN THE VALVE BODY INSTALL ALL NEW SEALS, RINGS, AND GASKETS, REPLACE WORN OR DEFECTIVE PARTS.

WHINE OR BUZZ NOISE

LISTEN TO TRANSMISSION AND CONVERTER FOR SOURCE OF NOISE.

KNOCK, CLICK, OR SCRAPE NOISE

REMOVE TORQUE CONVERTER* AND INSPECT FOR LOOSE OR CRACKED CONVERTER DRIVE PLATE; INSPECT FOR CONTACT OF THE STARTER DRIVE WITH THE STARTER RING GEAR.

TRANSMISSION HAS BUZZ OR WHINE

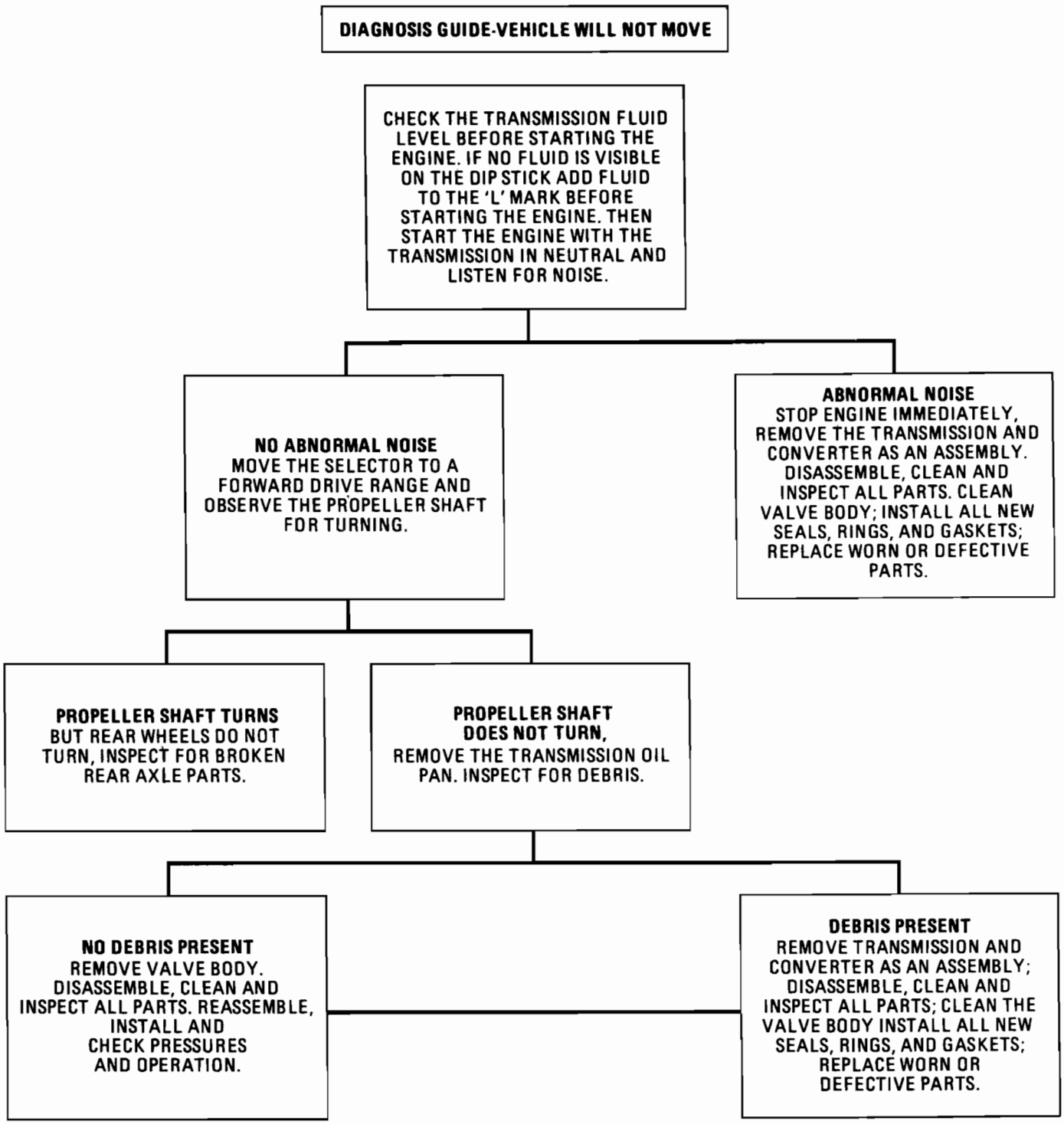
REMOVE THE TRANSMISSION PAN, INSPECT FOR DEBRIS INDICATING WORN OR FAILED PARTS.

NO DEBRIS PRESENT
REMOVE VALVE BODY, DISASSEMBLE, CLEAN AND INSPECT PARTS. REASSEMBLE, INSTALL, CHECK OPERATION AND PRESSURES

REPLACE TORQUE CONVERTER

CONVERTER HAS LOUD BUZZ OR WHINE

DEBRIS PRESENT
REMOVE TRANSMISSION AND CONVERTER AS AN ASSEMBLY; DISASSEMBLE. CLEAN AND INSPECT ALL PARTS, CLEAN THE VALVE BODY INSTALL ALL NEW SEALS, RINGS AND GASKETS; REPLACE WORN OR DEFECTIVE PARTS.


DIAGNOSIS GUIDE-VEHICLE WILL NOT MOVE
CHECK THE TRANSMISSION FLUID LEVEL BEFORE STARTING THE ENGINE. IF NO FLUID IS VISIBLE ON THE DIP STICK ADD FLUID TO THE 'L' MARK BEFORE STARTING THE ENGINE. THEN START THE ENGINE WITH THE TRANSMISSION IN NEUTRAL AND LISTEN FOR NOISE.
NO ABNORMAL NOISE
MOVE THE SELECTOR TO A FORWARD DRIVE RANGE AND OBSERVE THE PROPELLER SHAFT FOR TURNING.
ABNORMAL NOISE
STOP ENGINE IMMEDIATELY, REMOVE THE TRANSMISSION AND CONVERTER AS AN ASSEMBLY. DISASSEMBLE, CLEAN AND INSPECT ALL PARTS. CLEAN VALVE BODY; INSTALL ALL NEW SEALS, RINGS, AND GASKETS; REPLACE WORN OR DEFECTIVE PARTS.
PROPELLER SHAFT TURNS
BUT REAR WHEELS DO NOT TURN, INSPECT FOR BROKEN REAR AXLE PARTS.
PROPELLER SHAFT DOES NOT TURN,
REMOVE THE TRANSMISSION OIL PAN. INSPECT FOR DEBRIS.
NO DEBRIS PRESENT
REMOVE VALVE BODY. DISASSEMBLE, CLEAN AND INSPECT ALL PARTS. REASSEMBLE, INSTALL AND CHECK PRESSURES AND OPERATION.
DEBRIS PRESENT
REMOVE TRANSMISSION AND CONVERTER AS AN ASSEMBLY; DISASSEMBLE, CLEAN AND INSPECT ALL PARTS; CLEAN THE VALVE BODY INSTALL ALL NEW SEALS, RINGS, AND GASKETS; REPLACE WORN OR DEFECTIVE PARTS.

DIAGNOSIS CHART—GENERAL

CONDITION	POSSIBLE CAUSE	1 Engine idle speed too high	2 Hydraulic pressures too low	3 Low-reverse band out of adjustment.	4 Valve body malfunction or leakage	5 Low-reverse servo, band or linkage malfunction.	6 Low fluid level.	7 Incorrect gearshift control linkage adjustment.	8 Oil filter clogged	9 Faulty oil pump	10 Worn or broken input shaft seal rings.	11 Aerated fluid	12 Engine idle speed too low.	13 Incorrect throttle linkage adjustment.	14 Kickdown band out of adjustment	15 Overrunning clutch not holding.	16 Output shaft bearing and/or bushing damaged.	17 Governor support seal rings broken or worn.	18 Worn or broken reaction shaft support seal rings.	19 Governor malfunction.	20 Kickdown servo band or linkage malfunction.	21 Worn or faulty front clutch.	22 High fluid level.	23 Breather clogged	24 Hydraulic pressure too high.	25 Kickdown band adjustment too tight.	26 Faulty cooling system.	27 Insufficient clutch plate clearance.	28 Worn or faulty rear clutch.	29 Rear clutch dragging.	30 Planetary gear sets broken or seized.	31 Overrunning clutch worn, broken or seized.	32 Overrunning clutch inner race damaged.
HARSH ENGAGEMENT FROM NEUTRAL TO D OR R		X			X																				X				X			
DELAYED ENGAGEMENT FROM NEUTRAL TO D OR R			X		X	X	X	X	X	X	X	X	X						X			X							X			
RUNAWAY UPSHIFT			X		X		X		X			X		X					X		X	X							X			
NO UPSHIFT			X		X		X	X						X				X	X	X	X	X										
3-2 KICKDOWN RUNAWAY			X		X		X					X		X	X				X		X	X										
NO KICKDOWN OR NORMAL DOWNSHIFT					X									X						X	X												
SHIFTS ERRATIC			X		X		X	X	X	X		X		X				X	X	X	X	X										
SLIPS IN FORWARD DRIVE POSITIONS			X		X		X	X	X	X	X	X		X		X													X			X	
SLIPS IN REVERSE ONLY			X	X	X	X	X	X		X		X							X			X										
SLIPS IN ALL POSITIONS			X		X		X		X	X	X	X																				
NO DRIVE IN ANY POSITION			X		X		X		X	X																					X		
NO DRIVE IN FORWARD DRIVE POSITIONS			X		X		X				X					X													X		X	X	
NO DRIVE IN REVERSE			X	X	X	X		X											X			X							X		X		
DRIVES IN NEUTRAL					X			X																				X	X	X			
DRAGS OR LOCKS				X																						X					X	X	
GRATING, SCRAPING GROWLING NOISE				X											X		X														X	X	
BUZZING NOISE					X		X					X																					X
HARD TO FILL, OIL BLOWS OUT FILLER TUBE									X			X											X	X									
TRANSMISSION OVERHEATS		X	X				X	X		X																X		X	X				
HARSH UPSHIFT			X											X	X										X								
DELAYED UPSHIFT														X	X			X	X	X	X	X											

Major Changes Affecting Field Service 1966 thru 1973

CONTENTS

1966 MODEL YEAR

The following are the transmission assemblies built for the 1966 model year and the major changes incorporated compared with the preceeding 1965 models.

1966 Model Part Number	Supersedes 1965 Model	Engine Cu. In.	Type Trans.	Other Information
2538385	2466120	170	904	Standard
2538386	2466119	225	904	Standard
2538338	2466123	273	904-A	Small Body
2538339	2466122	273	904-A	Medium Body
2538340	2466144	273	904-A	High Performance
2538364	2466145	273	904-A	Export
2538331	2466152	225-318	727	Police-Taxi
2538333	2466166	318	727	Standard
2538334	2466147	383	727	Standard
2538335	2466148	383	727	High Performance
2538380	-------	440	727	Standard
2538363	2466149	440	727	Imperial
2538332	-------	440	727	High Performance
2538389	2466164	426	727	Street Hemi
2514487	2512742	318	727	Compact Truck
2514483	2512740	225-318	727	Compact Truck
2514480	2512739	225-318	727	Standard Truck
2516162	-------	383	727	Standard Truck
2516165	-------	383	727	Compact Truck

1966 MODEL YEAR

I. REAR PUMP ELIMINATION A-904 & A-727

The case, rear pump, valve body assembly, output shaft, extension, park lock assembly, etc., were changed to eliminate the rear pump and only gears, clutches and front pumps may be inter-changed with prior models.

Due to rear pump elimination, it was necessary to feed line pressure to the governor area at all times in forward drive ranges. (With the rear pump, the line pressure feed to governor came from rear pump and diminished to zero when vehicle motion stopped.) The constant line pressure feed to the new system resulted in some unusual complaints at times.

One complaint was of a buzzing sound coming from the governor while the vehicle was stopped so that the governor valve was rotated to a position of 5 to 7 o'clock. The valve would overtravel under certain conditions, causing erratic leakage internally and the buzzing sound. The most simple method of correction and/or prevention is to insure that one extra "E" clip is put on governor shaft, making two "E" clips on one end, thus shortening the effective length of the shaft.

Another complaint was of no automatic 3-1 downshift when the vehicle has been warmed up. This was due to normal internal leakage being unable to vent itself sufficiently from the inner area of governor body, thus reacting on the weights and creating a false governor pressure. This can be cured by drilling a vent hole (1/4") in the side of governor body perpendicular to the governor shaft and output shaft axis.

II. OUTPUT SHAFT SLIDING YOKE A-727

On 1965 models, and some early production 1966 models, there was a grooved neoprene seal on the output shaft near the front of the sliding yoke. The yoke splines were lubricated with multi-mileage lubricant and there was a vent hole in the rear of the yoke to vent air pressure inside the yoke as it moved back and forth on the output shaft splines.

Early in production of 1966 models, the grooved seal was eliminated. The splines are now lubricated with transmission fluid, and there is no longer a hole in the rear of the yoke. The pocket at the rear of the yoke is vented back into the transmission through an omitted tooth on the yoke spline.

1966 MODEL YEAR

When working on a 1966 A-727 Torqueflite, be sure to note whether there is a vent hole in the yoke. If there is a vent, use a grooved seal on the output shaft and lube splines with multi-mileage lubricant. Failure to use the seal will result in loss of transmission fluid through the vent hole. If the yoke is not vented, the seal should be omitted to allow transmission fluid to lubricate the spline.

1967 MODEL YEAR

The following are the transmission assemblies built for the 1967 model year and the major changes incorporated compared with the preceeding 1966 models.

1967 Model Part No.	Supercedes 1966 Model	Engine Cu. In.	Type Trans.	Other Information
2801532	2538385	170	904	Standard
2801533	2538386	225	904	Standard
2801546	-------	225	904-A	Export
2801534	2538338	273	904-A	Small Body
2801535	2538339	273	904-A	Medium Body
2801536	2538340	273	904-A	High Performance
2283460	2538364	273	904-A	Export
2801539	2538331	225	727	Police & Taxi
2801540	2538380	440	727	Standard
2801541	2538332	440	727	High Performance
2801542	2538333	318	727	Standard
2801543	2538334	383	727	Standard
2801544	2538389	426	727	Street Hemi
2829401	2516162	383	727	Standard Truck
2829314	2514480	225-318	727	Standard Truck
2829404	2516165	383	727	Compact Truck
2829317	2514483	170-225-318	727	Compact Truck

1967 MODEL YEAR

I. MANUAL LOW AND REVERSE SERVO A-904 & A-727

A cushion feature was added to the reverse servo piston to cushion harsh neutral to reverse engagements. This change was incorporated on all transmission models.

(A) The piston was redesigned
(B) The return spring was changed
(C) Added:
  (a) Cushion plug
  (b) Cushion spring
  (c) Retainer ring
(D) Machining changes were made in the case servo bore

CAUTION: Use of cushion piston assembly in prior model years can result in mis-adjustment of reverse bands and subsequent failures. Other model interchange combinations should provide functional transmissions.

II. A-904 SIX CYLINDER PART THROTTLE 3-2 KICKDOWN

This change consists of an added cover and throttle pressure plug to the valve body assembly and a modified steel plate.

The throttle pressure plug contacts the end of the 2-3 shift valve to provide a 3-2 downshift in relation to throttle opening and vehicle speed.

The part throttle cover and throttle pressure plug are not to be used on any eight cylinder transmission.

III. MODIFICATIONS TO THE A-727 FOR 440 CU. IN. ENGINE USE

The input shaft O.D. and reaction shaft I.D. were increased .050" for strength. The number of spline teeth were changed so that converters and input shafts cannot be mixed. However the old input shaft will go into the new reaction shaft with plenty of leakage room to spare.

A high performance input shaft of higher strength material was introduced and it is identified by a groove and yellow paint on the front spline.

Four pinion carriers are used in high performance applications;

note proper thrust washer must be used with three or four pinion carriers. Some power trains are built using four pinion front carriers and three pinion rear carriers.

Some models now use only one kickdown return spring and use a different accumulator spring. Consult the parts list for the proper build up.

Front clutches were modified to provide shift quality more closely matched to each engine. Some clutches use the molded material, others use the waffle pattern paper including the (3) disc, 318 engine. Return springs may be 6, 8, 10 or 12 in combinations with the discs to obtain the proper clutch capacity and shift timing. Consult the parts books.

The output shafts are induction hardened in two different patterns. The high strength version is identified by a darker heat treat color and a yellow rear spline. (Also note that the lube hole between the sun gear journals is drilled from both sides as part of a lube package.)

1968 MODEL YEAR

The following are the transmission assemblies built for the 1968 model year and the major changes incorporated compared with the preceeding 1967 models.

1968 Model Part Number	Supercedes 1967 Model	Engine Cu. In.	Type Trans.	Other Information
2892026 *	2538385	170	904	Standard
2892027 *	2538386	225	904	Standard
2892050 *	-------	225	904	Export
2892028 *	2538339	273	904-A	Standard
2892029 *	-------	318	904-1	Standard
2801539	2801539	318	727	Police & Taxi
2801540	2801540	440	727	Standard
2801541	2801541	440	727	High Performance
2801542	2801542	318	727	Standard
2801543	2801543	383	727	Standard
2801544	2801544	426	727	Street Hemi
2892031	-------	383	727	High Performance
2892032	-------	340	727	High Performance
2892043	-------	225	727	Police & Taxi
2829401	2829401	383	727	Standard Truck
2829314	2829314	225-318	727	Standard Truck
2832426	-------	170-225	727	Standard Truck
2829404	2829404	383	727	Compact Truck
2829317	2829317	170-225-318	727	Compact Truck
2832424	-------	170-225	727	Compact Truck

* See additional part numbers under sintered plate change.

1968 MODEL YEAR

I. A-904 TRANSMISSION MODIFICATIONS FOR 318 ENGINE USAGE

The input shaft was increased in diameter and the cross holes for rear clutch apply circuit were eliminated by design changes to strengthen the shaft.

This input shaft will not interchange with the prior model torque converter.

The reaction shaft I.D. was increased to accomodate the larger input shaft and the support design was changed.

The front clutch retainer and bushing were modified slightly to accept the new reaction shaft support.

The rear clutch retainer was modified to accept the new input shaft and redesigned hydraulic passages.

The output shaft front spline was increased in size and front annulus gear support modified to accept four pinion carriers. The #4 thrust washer was changed in accordance with front carriers and front annulus support changes.

The #5 and #6 thrust washers used in the carrier areas where reduced in thickness and lead tin overlay was added. These washers cannot be mixed with the older style since the gear train end play will be affected.

The front clutch springs were modified slightly to further improve shift quality and timing. Note that four different springs are possible to use including prior models. Use these springs as the parts lists direct; never substitute a higher load spring in place of the original required.

Black - 103#
Green - 150#
Orange - 175# (Replaces Red)
Red - 200# (Obsolete 1968)

II. SINTERED IRON PRESSURE PLATES A-904 TRANSMISSIONS

The change consisted of modifying the front and rear clutch assemblies to accept a common, thick, sintered iron pressure plate.

1968 MODEL YEAR

Phase I - Front Clutch (No. 1 - 1968 Model)

Front Clutch Piston	-Decreased flange thickness and modified the stiffening ribs.
Front Clutch Pressure Plate	-Released thick plate for use in four plate clutches.
Front Clutch Retainer (3 Plate)	-Change snap ring groove location.
Rear Clutch Retainers	-Lengthen front hub & change outside front face and rear hub O.D. (Prior to rear clutch change).

Phase II - Rear Clutch (Running Change W/New Assy. Nos.)

Rear Clutch Piston	-Decreased overall length.
Rear Clutch Retainers	-Increase the distance from the snap ring to the piston and Bellville spring seats.
Front Annulus Gear Support	-Increased overall and spline lengths.
Front Annulus Gear	-Decreased width of shoulder stop.

NOTE: Change Phase II required new transmission assembly numbers.

Phase II (New)	Phase I (Old)
2892068	2892026
2892069	2892027
2892070	2892050
2892071	2892028
2892072	2892029

904 CAUTION: Interchange of front or rear clutch assemblies or component parts from the 1967 or 1968 model years, Phase I or Phase II, can result in part interference or improper part engagements. Clutch or components parts should be serviced in conjuction with the proper transmission assembly numbers.

1968 MODEL YEAR

III. ADDED LUBE PACKAGE FOR EXTENDED REAR CLUTCH ENDURANCE UNDER ADVERSE CONDITIONS

A-727 - A second 1/8" hole was added between the sun gear journals in the output shaft. Four 5/64" holes were added to the front portion of the sun gear. Twelve 5/64" holes were added to the front annulus gear to feed lube oil more directly into the rear clutch pack.

A-904 - An oil dam was added to the front annulus gear support to force lube oil thru the existing lube holes and into the rear clutch pack area.

IV. CHANGE TO "ONE-HOLE" FILTER IN PRODUCTION - 1968 -A-904 & A-727

The "one-hole" filter can be used on all transmissions WITHOUT a rear pump. (1966 on).

Any transmission with a rear pump MUST have a two hole filter to allow oil to get into rear pump.

1969 MODEL YEAR

The following are the transmission assemblies built for the 1969 model year and the major changes incorporated compared with the preceeding 1968 models.

1969 Model Part Number	Supercedes 1968 Model	Engine Cu. In.	Type Trans.	Other Information
2892076	2892068	170	904	Standard
2892077	2892069	225	904	Standard
2892078	2892070	225	904	Export
2892079	2892071	273	904-A	Standard
2892080	2892072	318	904-1	Standard
2892086	2892043	225	727	Police & Taxi
2892087	2801539	318	727	Police & Taxi
2892088	2801542	318	727	Standard
2892089	2892032	340	727	High Performance
2892090	2801543	383	727	Standard
2892091	2892031	383	727	High Performance
2892092	2801540	440	727	Standard
2892093	2801541	440	727	High Performance
2892094	2801544	426	727	Street Hemi
2953688	2832426	225	727	Standard Truck
2914760	2829314	318	727	Standard Truck
2953689	2829401	383	727	Standard Truck
2953738	2829317	318	727	Compact Truck
2914754	-------	225	727	Super Compact
2914755	-------	318	727	Super Compact
2914756	-------	383	727	Super Compact

1969 MODEL YEAR

I. COMBINATION NEUTRAL START & BACK-UP LIGHT SWITCH A-904 & A-727

Electrical switching at the transmission has been simplified by combining the neutral start switch and the backup light switch in one unit. The neutral start switch functions basically the same as before. Extra switch contacts plus a telescoping metal core in the start switch plunger provide backup light switching.

The backup switch core tip remains flush with the end of the neutral switch plunger when the start switch operating cam is in any forward drive position. When the cam is moved to reverse, a low point in the cam surface aligns with the backup switch core so it can extend. As the core moves outward, its switch contacts close to turn on the backup lights.

Old and new components (manual lever and switch) are not interchangable with the prior models.

II. PRESSURE RELIEF VALVE - A-904 & A-727

Late production 1968 models and 1969 or later models have a ball check pressure relief valve to prevent excessive pressures (above 300 PSI) when the transmission is operated in reverse at low temperatures.

The ball has a dull, matte finish so you will not get it mixed with other check balls. The spring is color coded red to prevent mixing it with other springs in the valve body.

III. VIN PAD - A-904 & A-727

A vehicle identification pad was added to the side of case to comply with government regulations requiring the car serial number to be stamped on all major components. Chrysler Vehicle Security Department in consultation with the National Automobile Theft Burear request that the identification number not be tampered with and that an "R" be stamped on the identification pad to indicate rebuild. It is suggested that this be stamped at 90 degrees as"R DH23G8D100001".

IV. FILL TUBE HOLD DOWN BOLT

The fill tube hold down bolt hole was removed after a design change in the 1968 fill tubes which eliminated the bottom bolt on tube.

Old tubes can be used with the new cases provided care is taken in positioning the tube height properly.

1969 MODEL YEAR

V. A-904 8 CYLINDER 1-2 MINIMUM THROTTLE & LIFT FOOT SHIFT QUALITY PACKAGE

The package consists of a new shuttle valve spring and a modified throttle valve.

The new spring has a lower load which permits the servo release and apply circuits to be vented at closed throttle to reduce servo apply pressure during a lift foot shift. The modified throttle valve works in conjunction with the spring by increasing the dwell angle to insure zero throttle pressure at closed throttle.

The spring CANNOT be used in 6 cylinder units and is color coded orange to differentiate it from standard.

1970 MODEL YEAR

The following are the transmission assemblies built for the 1970 model year and the major changes incorporated compared with the preceeding 1969 models.

1970 Model Part Number	Supercedes 1969 Model	Engine Cu. In.	Type Trans.	Other Information
3410636	2892077	225	904	Standard
3410635	2892078	225	904	Export.
3410637	2892080	318	904-1	Standard
2892086	2892086	225	727	Police-Taxi
3410767	2892087	318	727	Police-Taxi
3410768	2892088	318	727	Standard
3410769	2892089	340	727	High Performance
3410667	2892090	383	727	Standard
3410668	2892091	383	727	High Performance
3410669	2892092	440	727	Standard
3410670	2892093	440	727	High Performance
3410671	2892094	426	727	Street Hemi
3410672	-------	440	727	6 BBL H.P.
2953688	2953688	225	727	Standard Truck
2914760	2914760	318	727	Standard Truck
2961919	2953689	383	727	Standard Truck
2953738	2953738	318	727	Compact Truck
2914754	2914754	225	727	Super Compact
2914755	2914755	318	727	Super Compact
2961918	2914756	383	727	Super Compact
2961920	-------	413	727	Compact Truck

1970 MODEL YEAR

I. CONTROL LINKAGE BOSS A-904 & A-727

A shift control linkage boss was added to the left side of the case for use in the new "E" body cars.

This boss will be on all cases and will therefore not be used on most models. The new cases will be used to service for prior years back thru 1966.

II. ADD 440 - 6 BBL. ENGINE MODEL (A-727)

A version of the hemi-transmission was added to handle the torque and horsepower of the new engine.

The hemi type transmission includes an extra wide front clutch retainer, a wider, slotted kickdown band, and five front clutch discs of high coefficient red material.

The rear clutch pack retainer, front pump housing, and front pump baffle have been relieved to enable assembly of the larger front clutch retainer into the transmission.

ADD 413 TRUCK ENGINE(A-727)

A version of the A-727 as used in a 440 engine application has been assigned. This compact truck is built-up handle extra torque and endurance of the large truck engine.

III. VALVE BODY - A-904 & A-727

The 1-2 shift valve governor plug was modified to give reduced overlap to vent areas. This new plug part number 3410886 will reduce delay time on manual 1-2 WOT upshift.

This plug can be applied to all prior transmissions. (Some 1967 models may have to have the "H" orifice removed also.)

1971 MODEL YEAR

The following are the transmission assemblies built for the 1971 model year and the major changes incorporated compared with the preceeding 1970 models.

1971 Model Part Number	Supercedes 1970 Model	Engine Cu. In.	Type Trans.	Other Information
3515803	-------	1.6/1.8 liter	904	Simca
3515804	3410636	198-225	904	Standard
3515805	3410635	170-225	904	Export
3515806 *	3410637	318	904-1	Standard
3515809	3410764	426	727	Super-stock
3515811	2892086	225	727	Police-Taxi
3515812	3410767	318	727	Police-Taxi
3515813	3410769	340	727	Hi-performance
3515814	-------	360	727	Standard
3515815	3410667	383	727	Standard
3515816	3410668	383	727	Hi-performance
3515817	3410669	440	727	Standard
3515818	3410670	440	727	Hi-performance
3515819	3410671	426	727	Street Hemi
3515820	3410672	440	727	6 BBL. H.P.
3515839	-------	340	727	Trans. A.M.
3496067	2953688	225	727	Std. Truck
3496068	2914760	318	727	Std. Truck
3496069	2961919	383	727	Std. Truck
3496066	2953738	318	727	Medium Truck
3496070	2961920	413	727	Medium Truck
3496063	2914754	225	727	Short Truck
3496064	2914755	318	727	Short Truck
3496065	2961918	383	727	Short Truck

* See Damper Weight Change A-904-1, page 19 for additional part number change.

1971 MODEL YEAR

ADD 360 ENGINE MODEL (727)

Basically a 383-2 BBL version with the "A" engine case.

ADD 1.6/1.8 LITER SIMCA MODEL (904)

A. Similar to old 170 version with a high rpm governor, 2.5 ratio K.D. lever, and 1.8 liter case.

B. Input shaft shortened for Simca only.

C. K.D. strut made symetrical with slots in both ends; may be used in all models A-904.

D. Outer governor weight made of aluminum, not steel, for Simca only.

SHIFT QUALITY IMPROVEMENT & PART THROTTLE 3-2 KICKDOWN (A-904, A-904-1, A-727)

This change consists of the following parts and assemblies being modified:

A. Case - A-904-1, A-727 - not interchangeable due to revised circuitry.
A-904 - carryover from 1970.

B. K.D. Servo - A-904-1, most A-727 - not interchangeable due to different diameters.
A-904, some A-727 (max. perf., large truck) - carryover from 1970.

C. Accum. piston (reduced radii) may be used in all prior models.

D. Front clutch retainer - not interchangeable due to snap ring groove relocation. (and seal groove shape on A-727)

E. Governor weight assemblies - not interchangeable due to new shift valve diameters and shift patterns.

F. Valve body assemblies - not interchangeable due to new shift valve diameters and different governors.

NOTES:

1. A-904 valve body appears same as 1970 Model but is not.

2. Manual valve lever and cover plates not interchangeable.

3. 1971 models must have pan-head screws for clearance reasons.

4. Limit valve body assembly provides the 3-2 part throttle kick-down feature on A-904-1 and A-727, and is not to be used on prior models.

5. Steel separator and aluminum transfer plates are not interchangeable for A-904-1 or A-727; A904 is, and can service prior equivalent models.

Miscellaneous parts such as springs, kickdown levers, snap rings, friction material, etc. are varied from model to model; consult the parts book for proper usage in any given transmission by part number.

SHOULDER-DESIGN OUTPUT BEARING A-904, A-904-1

This change involves the output shaft, bearing, and snap rings, and eliminates any possibility of misassembly of the front bearing snap ring.

IMPROVED VENT-BAFFLE DESIGN A-727

This change allows for more overfill before oil can be pushed out the vent; it is also used with the hemi-type front clutch retainer without modification.

SHORT FRONT CLUTCH LIP SEALS (A-727)

This change consists of shortening the inner and outer lip seal lengths in front clutch to improve endurance life during cold weather operation.

All 727 front clutch assemblies should be serviced with the new short lip seals.

LONG BUSHING FRONT CLUTCH A-727

A longer bushing was introduced into the 727 front clutch retainer which necessitated changing the clutch retainers, the reaction shaft support, the cast iron seal rings, the rear clutch piston retainer, and the transmission assembly numbers.

Part No.	Supercedes	Engine Cu. In.	Type Trans.	Other Info.
3515809	3515809	426	727	Super-stock
3515841	3515811	225	727	Police-Taxi
3515842	3515812	318	727	Police-Taxi
3515843	3515813	340	727	Hi-performance
3515844	3515814	360	727	Standard
3515845	3515815	383	727	Standard
3515846	3515816	383	727	Hi-performance
3515847	3515817	440	727	Standard
3515848	3515818	440	727	Hi-performance
3515849	3515819	426	727	Street hemi
3515850	3515820	440	727	6 BBL H.P.
3515851	3515839	340	727	Trans. A.M.
3496937	3496067	225	727	Std. Truck
3496938	3496068	318-360	727	Std. Truck
3496939	3496069	383	727	Std. Truck
3496936	3496066	318	727	Med. Truck
3496940	3496070	413	727	Med. Truck
3496941	3496063	225	727	Short Truck
3496942	3496064	318-360	727	Short Truck
3496935	3496065	383	727	Short Truck

DAMPER WEIGHT A-904-1 318 IN^3 B BODY

Engine and Drive Train vibrations in 318 IN^3 engine "B" Body cars required the addition of a damper weight to rear of the extension. This was accomplished by adding two bosses and three tapped holes to the rear of the extension, to which a tuned damper weight is attached. This required an extension part number change from 2466880 to 3515394 and a transmission assembly part number change from 3515806 to 3515852.

REVERSE DRUM TO RACE I.D. - O.D. FIT 727 & 904

To reduce the runout between the race O.D. and reverse drum I.D., the fit between the two parts was changed from a pitch diameter to an I.D.-O.D. fit. Any transmission which exhibits over running clutch problems, prior to 1972 model year, should have the drum and race replaced with:

904 - Service Pkg. P/N 3621488

727 - Drum P/N 3515451
Race P/N 3515450

1971 MODEL YEAR
RUNNING CHANGES

OUTPUT SHAFT SUPPORT TO CASE INTERFERENCE FIT A-727 A-904

The output shaft support size was decreased to allow slip fit into case. This eliminates the need to heat case or freeze support to effect assembly of the two parts. Parts are interchangeable.

HIGH PRESSURE RELIEF BALL - VALVE BODY - ALL MODELS

Early in the 1971 model year, the high pressure relief ball (3/8 diameter) in the valve body was changed from a "dull finish" to a "bright finish" to improve its seating ability. At the same time the number 3 check ball (11/32 diameter) was changed from a bright finish to a dull copper finish to prevent it from being interchanged with the high pressure relief ball.

Interchanging the balls will cause excessive internal leakage in valve body which will cause early failures.

1972 MODEL YEAR

Following is a list showing the 1971 transmission assemblies and the comparable 1972 assemblies. Also listed are the major modifications for 1972.

1972 Assy. No.	1971 Assy. No.	Engine Cu. In.	Type Trans.	Other Information
3515874	3515803	1.6/1.8 Liter	A-904	Simca
3515871	3515804	198-225	A-904	Standard
3515872	3515805	170-225	A-904	Export
3515873	3515852	318	A-904-1	Standard
3515809	3515809	426	A-727	Super-stock
3515841	3515841	225	A-727	Police-Taxi & Lg. Truck
3515843	3515843	340	A-727	Hi-performance
3515844	3515844	360	A-727	Standard (& Police, Taxi 318)
3515845	3515845	400	A-727	Standard
3515846	3515846	400	A-727	Hi-performance
3515847	3515847	440	A-727	Standard
3515848	3515848	440	A-727	Hi-performance
3515849	3515849	426	A-727	Street Hemi
3515850	3515850	440	A-727	6 BBL. Hi-performance
3496937	3496937	225	A-727	Std. Trk, timing hole
3496938	3496938	318-360	A-727	Std. Trk.
3633554 *	3496939	400	A-727	H. D. Truck
3496936	3496936	318-360	A-727	Med. Truck
3496940	3496940	413	A-727	Med. Truck
3496941	3496941	225	A-727	Short Truck
3496942	3496942	318-360	A-727	'Short Truck
3496935	3496935	400	A-727	Short Truck
3633552 *	-------	225	A-727	H. D. Truck
3633553 *	-------	318-360	A-727	H. D. Truck
3497016	3497016	318-360	A-727	Std. Trk., timing hole

* See Heavy Duty Truck Extension change for additional part number changes. (Page 26)

1972 MODEL YEAR

904 SHORT LIP FRONT CLUTCH SEALS

This change consists of shortening the inner and outer lip seal lengths to improve endurance life during cold weather operation.

Changes to the clutch retainer do not permit using the old seals with new retainers or vice versa.

904 REAR CLUTCH SPACER ELIMINATION

This change eliminates the spacer ring by piloting the Belleville Spring on the piston hub. Changes to the retainer will not permit using new retainers with old pistons. However, new pistons can be used with old retainers in service providing the spacer is retained.

727 REAR CLUTCH NYLON SPACER

The welded steel spacer was replaced with an injection molded nylon part. Both spacers are interchangeable.

904 DEEP GROOVE OUTPUT SHAFT

The output shaft bearing snap ring groove was changed to accept a new snap ring which insures bearing retention under adverse loading conditions. The old snap ring must not be used with new shafts.

400 IN^3 ENGINE

A 400 IN^3 engine replaced the 1971 383 IN^3 engine starting in 1972. The transmissions released for the 383 IN^3 engine are retained for the 400 IN^3 engine.

AMERICAN MOTORS & INTERNATIONAL HARVESTER

Starting in 1972 American Motors and International Harvester are using Chrysler built transmissions. These units are basically Chrysler transmissions with different bell housings and minor spring changes, etc. to tailor the transmission capacity and shift quality to the AM & IH engine-vehicle combinations. (See page 24)

1972 MODEL YEAR
RUNNING CHANGES

727 EXTENSION BOOT SEAL

The 727 transmissions will have a revised extension boot seal as a running change. This seal incorporates a staked-in boot where prior seals had the boot molded in. New seal is a direct replacement for the old seal.

727 REVISED FRONT PUMP DRAIN BACK THRU REACTION SHAFT SUPPORT

The 727 reaction shaft support was revised in the area of the drain back hole. Previously drain back oil was dumped through a drilled hole which was aimed rearward into the lip of front clutch retainer. The support was revised to provide a cast recess which allows oil to be dumped downward toward pan.

This change was made due to the possibility of drain back oil being picked up by lip of front clutch retainer, and forced out of vent. *Any* transmission which exhibits confirmed vent leak should be checked for presence of new style reaction shaft support (1972 or before)

A service fix has been established to correct this condition and consists of fabricating a thin sheet metal baffle to cover horizontal drilled drain back hole and thus deflect the oil down toward pan.

HYDRODYNAMIC (HELICAL) CONVERTER HUB SEALS 727 & 940

This seal has a molded lip with Helical vanes which act to "pump" small amounts of leakage back into the transmission. This change was a running 1972 change in both 727 and 904 transmissions. These seals are interchangeable with old parts.

1972 MODEL YEAR
RUNNING CHANGES

VENT BAFFLE (ALL 904)

Baffles were added to front pump and reaction shaft support. They are approximately 3/4" below vent hole in front pump. This change makes the vent less likely to leak with overfill or other conditions which cause large quantities of oil to be splashed into the vent area. Both pump assembly and reaction shaft support remain interchangeable.

IMPERIAL DAMPER WEIGHT 727

On some "C" Body cars, noise and vibrations occur on acceleration at 40 mph caused by resonant frequencies. Correction of this condition is part of a new "Super Quiet" package for Imperial.

This change requires a new extension with a casting change which provides a flat surface at the rear for two tapped holes to which a weight is attached at the car plant. A new extension, P/N 3681191, was released for use with Imperial. Transmission assembly, P/N 3515847, was changed to 3515868 for Imperial only (with damper weight).

HEAVY DUTY TRUCK EXTENSION

The heavy duty truck extension which was released for 1972 model year was modified by addition of more ribs, increased cross sections, and larger radii. This change necessitated transmission part number changes as follows:

New P/N	Supercedes	Engine Cu. In.	Type Trans.	Other Information
3640801	3633552	225	727	H.D. Truck
3640802	3633553	318-360	727	H.D. Truck
3640803	3633554	400	727	H.D. Truck

1973 MODEL YEAR

Following is a list of 1973 transmission assemblies and the comparable 1972 assemblies.

1973 Assy No.	1972 Assy No.	Engine Cu. In.	Type Trans.	Other. Information
3681066	3515874	1.6/1.8 Liter	A-904	Simca
3681061	3515871	198-225	A-904	Standard
3681062	3515872	225	A-904	Export
3681063	3515873	318	A-904-1	Standard
3681051	3515841	225	A-727	Police-Taxi-Truck
3681052	3515843	340	A-727	H.P.
3681053	3515844	360	A-727	Standard (Police-Taxi 318)
3681054	3515845	400	A-727	Standard
3681055	3515846	400	A-727	H.P.
3681056	3515868	440	A-727	Standard
3681057	3515848	440	A-727	H.P.
3640818	3496935	400	A-727	Truck - Short
3640826	3496936	318-360	A-727	Truck - Med.
3640083	3496937	225	A-727	Trk. Long w/timing hole
3640810	3640803	400	A-727	Truck Long H. D. Ext.
3640825	3496940	413-440	A-727	Truck Med.
3640414	3497016	318-360	A-727	Truck Long w/timing hole
3640082	3496941	225	A-727	Truck Short
3640817	3496942	318-360	A-727	Truck Short
3640081	3640801	225	A-727	Truck Long H. D. Ext.
3640809	3640802	318-360	A-727	Truck Long H.D. Ext.

AM 1973 Part No.	AM 1972 Part No.			
3219184	3213956	232	A-904	Standard
3219185	3215484	258	A-904	Standard
3219186	3213957	304	A-904-1	Standard
3219187	3217751	360 2 & 4 BBL 258-304 H.D.	A-727	Standard
3219188	3217752	401 4 BBL 360 H.D.	A-727	Standard
3219189	3217753	401 H.D.	A-727	Heavy Duty

IH 1973 Part No.	IH 1972 Part No.			
423976C92	423976C91	196	A-727	4 x 4
423977C92	423977C91	258	A-727	4 x 4
423978C92	423978C91	258	A-727	Short
423979C92	423979C91	304/345	A-727	4 x 4
423980C92	423980C91	304/345	A-727	Short
423981C92	423981C91	392	A-727	Short
426210C92	426210C91	392	A-727	Med.

1973 MODEL YEAR

REVISED THROTTLE & LINE PRESSURE ADJUSTING BRACKET - ALL MODELS

The line pressure adjusting bracket was extended to provide a location for a self locking throttle adjusting screw which allows automatic computerized throttle pressure adjustment. A boss was added to the valve body for a new tapped hole. A new interference fit allen drive throttle adjusting screw is required. The stop tab on the throttle lever is bent 180° to the old part. A cast relief is added to the transfer plate to allow recessing bracket.

OIL FILTER WITH INCREASED AREA - ALL

Oil filter area was increased by 50% to improve endurance life of the transmission.

PART THROTTLE KICKDOWN FOR TRUCK 727

Part throttle was released for Dodge Trucks. To accomplish this and provide satisfactory shift quality and endurance, most applications used corresponding passenger car transmission as a base. The exceptions are:

1. 4 Disc front clutch for all V-8's.
2. A special shift quality package for 6 cylinders.

    a. 2.5 Kickdown lever (Simca).
    b. 2.0# 1-2 Control valve spring (yellow).
    c. 2.8# Primary shuttle valve spring (yellow).
    d. .090 J_3 Orifice in limit body.

INTERNATIONAL HARVESTER

Will also have part throttle similar to Dodge Truck.

RELOCATED KICKDOWN ADJUSTING SCREW HOLE - 727 CASE

To improve kickdown band life by reducing the maximum unit band loading due to reaction torque, requires moving the kickdown adjusting screw hole .16 inch closer to the transmission centerline at the same angle. This will not affect case interchangeability.

FLEX - KICKDOWN BAND A-727

A new flexible riveted kickdown band was introduced as a cost reduction, and shift quality improvement.

1973 MODEL YEAR

EXTENSION BOOT SEAL A-904

The 904 extension boot seal was changed to the same type seal as the 727. The 904 change requires a new extension assembly due to larger O.D. **size on the seal. These parts are not interchangeable with prior years.**

NOTES