

# PONTIAC

## Service Craftsman News



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# STRATO-FLIGHT TRANSMISSION PARTS CHANGED

## STRATO-FLIGHT TRANSMISSION INFORMATION

### CONTROL VALVE ASSEMBLY

The original one piece coupling valve in the over-run clutch valve body has been replaced by two separate valves. These valves are the coupling valve and the coupling signal valve (Fig. 1). When in their operating position, the two valves have the same arrangement of lands as the original one piece valve.

The use of two separate valves improves the valve action with cold oil.

The governor boost valve has been modified and an orifice has been added in the passage which carries governor boost oil to the end of the coupling signal valve. These two changes reduce the possibility of the coupling and coupling signal valve oscillating and clicking at low speeds due to pulsations in pressure from the governor.

### OPTIONAL STRATO-FLIGHT FRONT OIL SEAL

A new flywheel rear housing oil seal is now available for service under part number 8616197. The new seal is completely interchangeable with the old seal and both seals will be serviced.

Regardless of which seal is being installed it has now been decided that the outer diameter should be

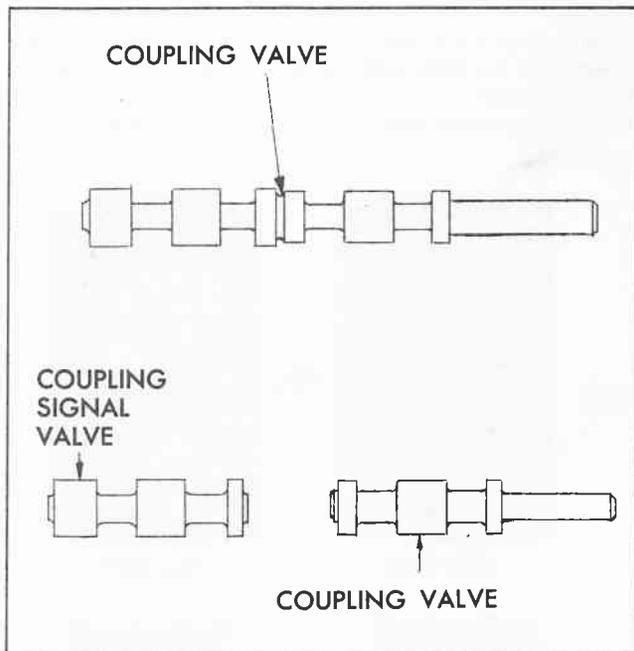


Fig. 1 First and Second Type Coupling Valves

**EDITOR'S NOTE:** Due to many requests this issue contains the specifications needed when using the Allen Uni-Tuner and Sun Tune-Up Tester for all 1956 Models including the 285 H.P. Strato-Streak Engine.

(Continued on next page)

coated with Permatex No. 3 or similar sealer before installation. It is very important, however, that the sealer be applied only to the metal portion of the seal. Do not allow sealer to get on the rubber lip which seals against the flywheel housing. This supersedes instructions found in Step 1 page 93 of the 1956 Hydra-Matic Manual.

After installing seal be sure to stake securely at four evenly spaced points.

### STRATO-FLIGHT SHIFT VALVE BODY

In a few very early production control valve assemblies governor boost pressure was exhausted through a hole in the spacer plate into the governor line (when the governor boost valve was closed). In later production governor boost pressure is exhausted directly to the outside through an external slot in the valve body (Fig. 2). The spacer plate used with this late type shift valve body has a slot near where the hole was located in the early plate.

When a new shift valve body is installed on an early assembly (all service parts are the late type), the spacer plate must also be replaced.

If a late type shift valve body is accidentally installed on an assembly with the early type spacer plate, governor pressure will be exhausted. As a result the transmission will not shift out of first speed.

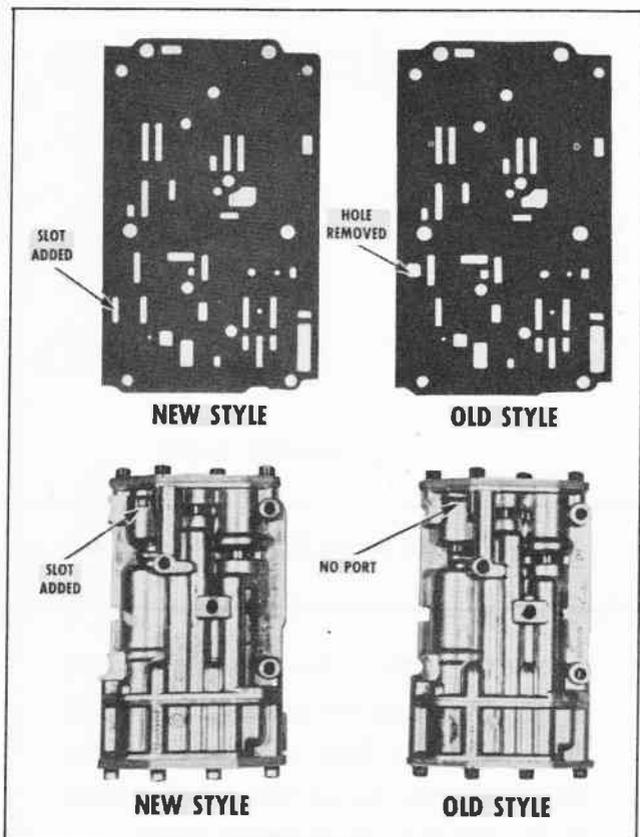


Fig. 2 Shift Valve Body and Spacer Identification

### REAR SPRAG OUTER RACE AND REAR CLUTCH CYLINDER AND BUSHING ASSEMBLY

In early production the rear sprag outer race was lubrited so that it would have a suitable bearing surface where it is piloted on the rear clutch cylinder and bushing assembly.

A pilot bushing has now been added on the clutch cylinder and bushing assembly (Fig. 3). With this bushing the lubriting of the rear sprag outer race is no longer necessary and has been eliminated.

The service rear sprag outer race will continue to have a lubrited surface so that it can be used with either type clutch cylinder and bushing assembly.

Along with the new unlubrited rear sprag outer race a bronze rear sprag outer race retainer will be used. The early type retainer must not be used with the new sprag outer race and will be discontinued when present stocks are exhausted. The bronze retainer can be used with both early and late outer races.

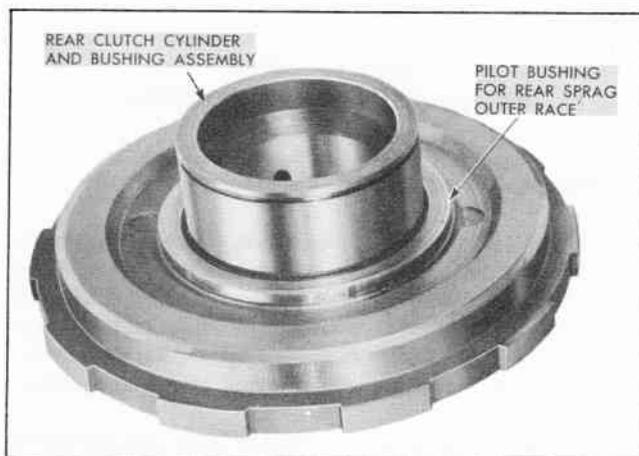


Fig. 3 Rear Clutch Cylinder and Bushing Assembly

### CORRECTION TO REAR SPRING USAGE CHART

In the December 1955 Service Craftsman News a complete chart was given on the rear springs used in all 1955 and 1956 models.

On this chart the rear spring service part number for 1956 Star Chief 4-Door Catalinas should be 522618. The color coding for this model as received from production should be light blue on the right hand side and purple on the left hand side. In other words, the same springs are used on the 4-door Catalina as on the 4-door sedan.

The incorrect part number was also listed in the Master Parts Catalog. This was changed in the revision issued April 1.

## INFORMATION ON SECONDARY IGNITION RESISTANCE

During the past few weeks a discussion has arisen on the effect of resistance type secondary wiring on the ignition circuit. This discussion has been brought about by the advertising claims of certain manufacturers who supply the "non-resistance" type wiring and who claim that this type wiring eliminates spark plug fouling and rough idle.

Following are some basic facts concerning this discussion which can be used to clarify the situation should it arise.

1. All automobile manufacturers use some type of secondary ignition resistance. These are commonly called suppression resistors and are found in a variety of locations in the secondary circuit - at the rotor, distributor cap, spark plugs, in the secondary cable (Pontiac) or in a combination of these places.
2. Most people realize that secondary suppression eliminates T.V. and Radio interference but it is not so commonly known that secondary suppression increases plug life because it reduces spark plug electrode erosion. Without secondary resistance more electrode metal is vaporized and plug life shortened.
3. The ignition voltage available to fire the spark plugs is not affected by suppressors. This is true because no current flows through the resistor until the plug fires and when there is no current flow there is no voltage drop. Therefore, the ability of the plug to fire is controlled only by the condition of the plug if other factors are normal.
4. An increase in duration of the spark which would be accomplished by elimination of suppression does not improve combustion. Engineering tests have shown that the lowest energy, shortest duration spark that can be produced across a correct plug gap is all that is normally needed to fire a cylinder.
5. Tests made on the same engines with and without suppression resistors indicate that performance and economy are not affected. Cars which are used in sub-zero starting tests are equipped with suppression resistors. The use of the suppressors does not affect the ease of starting.

### Conclusions:

Spark plug fouling is a problem which has been previously discussed in service bulletins. (see November 1955 Service Craftsman News, Page 161.) It should be remembered that plug fouling results from other out-of-line conditions and is, therefore,

an "effect" of these conditions. Replacement of secondary wiring to correct an "effect" without considering the source of the condition is faulty diagnosis.

If misfiring due to fouling of plugs exists, the replacement of correct heat range spark plugs and secondary wiring of any manufacture will temporarily correct the condition (as will the replacement or cleaning of the spark plugs alone) and if the source of the fouling is corrected or corrects itself at the same time, it may appear that the new parts have eliminated the trouble. The basic point remains, spark plug fouling is not caused by suppression type resistance and, therefore, cannot be corrected by changing the location of or eliminating this resistance. Under no circumstances should we deviate from standard production parts.

## STRATO-FLIGHT HEAVY DUTY OIL COOLER RELEASED

A heavy duty oil cooler for Strato-Flight transmissions has been released for production and service. The new unit has a greater cooling capacity than the standard cooler and is recommended for rural mail cars, police cars, taxis and for any other type operation which involves frequent shifting and above average operation in other than fourth gear. The use of the new cooler will prolong transmission life under these types of operation.

The symbol "T" will be used on the car order to indicate the heavy duty cooler. For dealer service installation order part number 8525249. The new cooler is identical in appearance with the standard cooler but will be identified by a yellow paint mark on the side. The suggested time allowance for dealer installation is .7 hour.

## CORRECTION OF SQUEAKS IN WINDSHIELD AREA

If a squeak is encountered in the windshield assembly caused by movement of the glass in the rubber channel the following corrective procedure should be followed:

Thoroughly seal the windshield rubber channel to the windshield glass. See Fisher Body Service News for detailed instructions for this sealing operation.

Lubricate the windshield rubber channel with a silicone lubricant where it contacts the reveal moldings.

It is suggested that the door weatherstrips and shroud hood ledge lacing and bumpers be lubricated with a silicone rubber lubricant whenever a rubber squeak is encountered in the front area of the body.

**ALLEN UNI-TUNER SPECIFICATIONS  
FOR 1956 PONTIACS**

Specification	All Except 285 H.P. Engine	285 H.P. Engine
Displacement . . . . .	316 cu. in.	316 cu. in.
Number of Cylinders . . . . .	V8	V8
Cranking Voltage Minimum . . . . .	9.0	9.0
Charge Voltage . . . . .	14.0	14.0
Minimum Hi-Tension Voltage . . . . .	30 hot 35 cold	38 hot 45 cold
Minimum Hi-Tension Current . . . . .	34 hot 40 cold	40 hot 50 cold
Initial Timing . . . . .	5° BTC @ 450 RPM	10° BTC @ 650 RPM
Manifold Vacuum In. Hg. at Idle . . . . .	15 - 19	11 - 13
Adv. Time Eng. Deg. at 2000 RPM ± 2° . . . . .	25°	12°
Cam Angle Dist. Deg. . . . .	26° - 33°	34° ± 1°*
Fuel Pump Pressure . . . . .	3 - 5 lbs.	3 - 5 lbs.

**SUN TUNE-UP TESTER SPECIFICATIONS  
FOR 1956 PONTIAC**

Specification	All Except 285 H.P. Engine	285 H.P. Engine
Distributor Model Number . . . . .	1110862	1110875
Cranking Voltage Minimum . . . . .	9.0	9.0
Distributor Resistance . . . . .	Black Bar	Black Bar
Dwell . . . . .	26° - 33°	34° ± 1°*
Dwell Variation Maximum . . . . .	3°	3°
Initial Timing . . . . .	5° BTDC	10° BTDC
Ignition Advance Engine Degrees at 2500 Engine RPM		
Total . . . . .	24° - 28°	12° - 15°
Centrifugal Only . . . . .	8° - 12°	12° - 15°
Secondary Resistance . . . . .	3 - 5	3.5 - 5
Output and Leakage . . . . .	Blue Band	Blue Band
Charging Voltage . . . . .	13.5 - 14.6	13.5 - 14.6
Idle Speed . . . . .	475	650

\*With both sets of breaker points operating

**SERVICE MANAGER—IMPORTANT**

This News contains important service information on Pontiac cars. Each subject should be cross-referenced in the space provided at the end of each section in the Shop Manual or its Supplement. **Be sure and cover every point with your entire organization.**

Each service man should sign in the space below after he has read and understands the information in this issue.
