



# NEW STRATO-STREAK ENGINE RELEASED

## 285 HORSEPOWER STRATO-STREAK V-8 ENGINE

During the last few months requests from both dealers and individuals have indicated that an engine of "extra" horsepower should be made available for those who wish to race professionally or those who vie with each other in having a "hot" performing car. Such an engine is now available as a factory installed option on all 1956 Pontiac models except those with Air Conditioning.

This engine is sure to thrill power enthusiasts for, as a result of its special provisions, horsepower is raised to 285 h.p. at 5100 rpm, and maximum torque reaches a new high of 330 lb. ft. at 3600 rpm. This power is the result of improved thermal and volumetric efficiency attributable to use of two four-barrel carburetors, increased compression ratio of 10.0:1, and new valve timing (Fig. 1) which permits both intake and exhaust valves to remain open longer to facilitate engine breathing. Other engine components have been modified to meet these special operating requirements.

Following are some details of major differences between the 285 horsepower Strato-Streak and the regular Strato-Streak engine.

### CAMSHAFT

As mentioned above and as indicated in the illustration, Fig. 1, a new camshaft is used which gives greater valve "overlap" and facilitates engine breathing. This camshaft can be identified by the absence of lettering on the front end of the shaft.

### AIR CLEANER

In order to provide silencing and air cleaning, a special air cleaner is provided with a Delta-wing shaped sheet metal air manifold which fits over the two 4-Jet carburetors and includes air cleaning elements, one on each side of the engine.

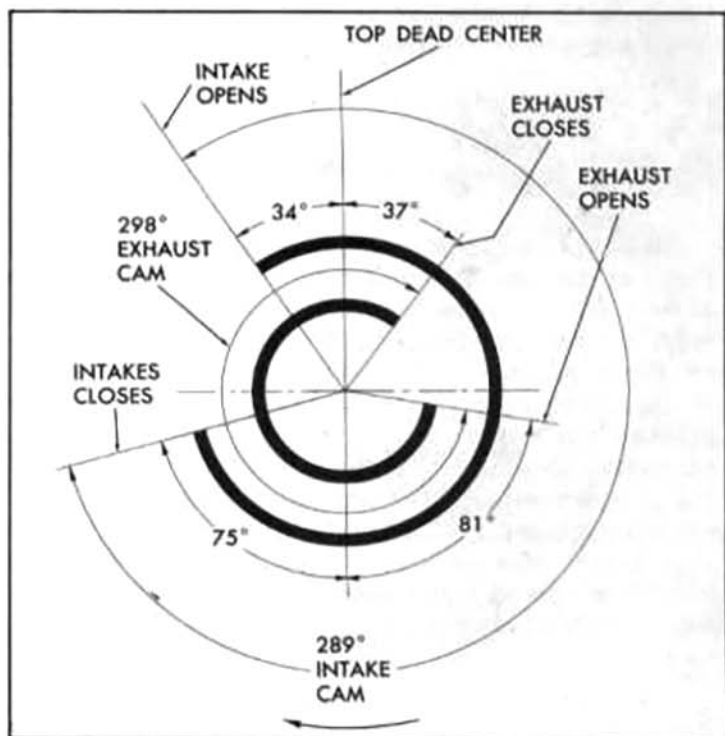


Fig. 1 Valve Timing Diagram

### CARBURETORS

Two 4-Jet Rochester carburetors are used on a special intake manifold to provide fuel-air distribution to the cylinders. These carburetors appear to be the same as the regular 4-Jet Rochester but they are specially calibrated to match the requirements of the 285 horsepower Strato-Streak engine. The carburetors are connected by a rod which is adjustable to synchronize the angularity of the throttle valves. The idle speed and idle mixture adjustment procedures are given later in this issue.

### FUEL PUMP

A new fuel pump with larger valves in the fuel chamber is used to ensure an adequate fuel flow at high speeds.

**CYLINDER HEAD AND VALVE TRAIN**

Cylinder heads are machined to give a compression ratio of 10.0:1. With the reduction of the volume of the combustion chamber the valve head is moved closer to the top of the cylinder block. In order to make it possible to use the same push rods, rocker arms and special tools for valve train adjustments, the valve stems are 3/32" longer than those on the regular engine. Valve springs have been redesigned and have higher tension (see specifications). Inner and outer valve springs are designed so that interference between the springs may be experienced during assembly. In such a case, they must be forced together. No intake valve spring shields are used. New hydraulic valve lifters are used which minimize the tendency to "pump-up" at high rpm. The new lifters incorporate a spring loaded check ball and a new check ball retainer. A separate story in this issue gives valve lifter identification information.

**ELECTRICAL EQUIPMENT (SEE SPECIFICATIONS)**

Specifications on the electrical equipment are given at the end of this article. The distributor has a dual set of contacts and has centrifugal advance only. Vacuum advance is not provided. The dual breaker points provide longer dwell for increased voltage at the spark plugs. The special ignition coil gives greater secondary output because of the increased secondary to primary turns ratio. The resistor in the primary side of the ignition system has a lower resistance value. A 3.5" pulley is used on the generator rather than the standard 2.875" pulley to reduce generator rpm at high speeds. AC type 44 spark plugs will be furnished as original equipment.

Distributor adjustment should be performed as covered in the electrical section of the 1955 Shop Manual using the specifications given in this article. When checking dwell angle check and adjust one breaker at a time. The second set should be blocked open with a small piece of fibre. Adjust each set to  $29 \pm 1$  degree. Dwell angle with both breakers operating must be  $34 \pm 1$  degree. If total dwell is not correct after adjustment, readjust individual breakers to meet the required specifications.

**MISCELLANEOUS**

Many other parts have been changed to accommodate the new engine. Among these are fuel pipes, rocker arm balls, crankcase ventilating system, push rod cover, right hand rocker arm cover, generator mounting fittings and many other related parts. For specific parts information refer to master parts catalogue change notices.

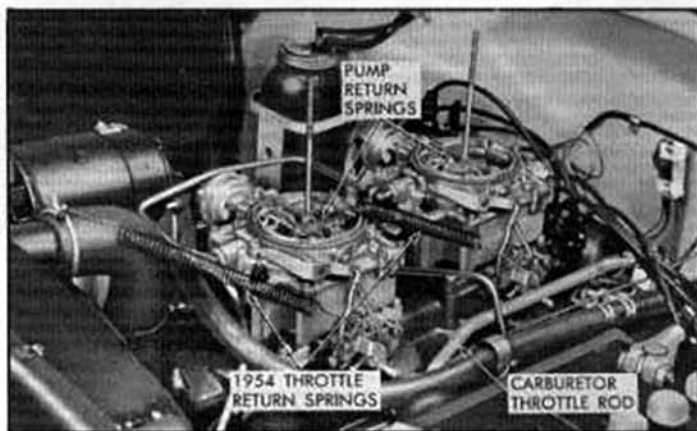


Fig. 2 Springs Installed on Chokes and Throttles

**ROCHESTER DUAL 4-JET IDLE SPEED AND MIXTURE ADJUSTMENT**

1. Turn idle mixture screws in finger tight and then open 2 turns on each carburetor.
2. Hold choke valves fully open. (This can be done by meshing a pump return spring over top edge of choke valve and dividing wall of air horn as shown in Fig. 2.)
3. Remove cotter pin and anti-rattle spring and disconnect carburetor throttle rod from throttle lever on front carburetor.
4. Remove cotter pin and anti-rattle spring and disconnect throttle interconnecting rod from throttle lever on rear carburetor.
5. Remove throttle interconnecting rod. Spacer washers between rod and throttle levers may be left in position.
6. Check pins in throttle levers for tightness. If loose, tighten securely.
7. Back off idle speed adjusting screws until throttle valves are fully closed. Throttles can be held closed with springs to facilitate operation. (1954 throttle return springs are satisfactory, see Fig. 2.)
8. Turn idle speed adjusting screws in on both carburetors until they just touch fast idle cams. CAUTION: It is important that idle screws are contacting cam equally and from this point on in adjustment, screws are turned equally to maintain balance between the two carburetors.
9. Adjust trunnion on end of throttle interconnecting rod so that rod can be installed over pins on carburetor throttle levers freely without changing throttle lever position. Install interconnecting rod over pins on throttle levers as shown in Fig. 3.

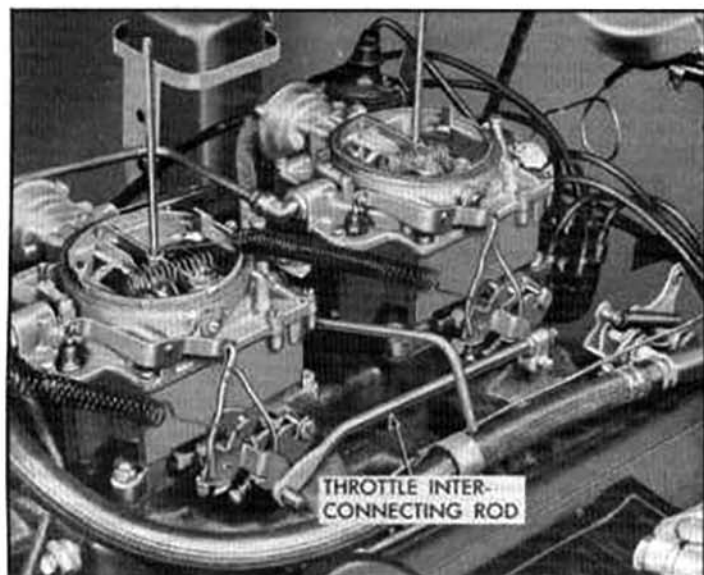


Fig. 3 Throttle Interconnecting Rod Installed

(Be sure spacer washers are still in position between rod and throttle levers.)

- Turn each idle speed adjusting screw in one and one quarter (1 1/4) turns to give approximate idle adjustment. Throttle interconnecting rod should still be free. If it is not, start with step 4 and repeat operation.

- Remove springs holding throttle valves closed.
- Install anti-rattle spring and cotter pin at rear end of throttle interconnecting rod.
- Install carburetor throttle rod, anti-rattle spring and cotter pin on throttle lever of front carburetor. Check rods to see that trunnions on rear of both rods are positioned so that flats on front ends of rods are parallel with throttle lever. Failure to do so may result in a linkage bind.
- Remove springs holding choke valves open. Start engine and allow to warm up thoroughly. Install tachometer.
- With engine thoroughly warmed up and fast idle cam fully released idle speed should be 650 rpm.
- If further adjustment is necessary to obtain 650 rpm, turn both idle speed screws equally to get final adjustment.
- Set idle mixture screws for best quality and highest engine idle. It should not be necessary to have screws more than 1/4 turn apart on final adjustment.
- Recheck idle speed and readjust to 650 rpm if necessary.

### GENERAL SPECIFICATIONS — 285 HORSEPOWER STRATO-STREAK V-8 ENGINE

Maximum BHP @ Engine RPM . . . . .	285 @ 5100
Maximum Torque - Lb. Ft. @ RPM . . . . .	330 @ 3600
Engine Type & Number of Cylinders . . . . .	90° V-8
Valve Arrangement . . . . .	In Head
Bore and Stroke . . . . .	3.94 x 3.25
Displacement - Cubic Inches . . . . .	316.6
Compression Ratio . . . . .	10.0:1
Fuel Required . . . . .	97 Research
Valve Lifters - Type . . . . .	Hydraulic

#### Valve Timing: (Fig. 1)

Intake Opens - °BTC . . . . .	34°
Intake Closes - °ABC . . . . .	75°
Exhaust Opens - °BBC . . . . .	81°
Exhaust Closes - °ATC . . . . .	37°

#### Intake Valve:

Over-all Length . . . . .	5.34"
Lift . . . . .	.409 Max.
Outer Spring Press. & Length - Valve Closed . . . . .	59 @ 1.53
Valve Open . . . . .	128 @ 1.13
Inner Spring Press. & Length - Valve Closed . . . . .	33 @ 1.48
Valve Open . . . . .	95 @ 1.08



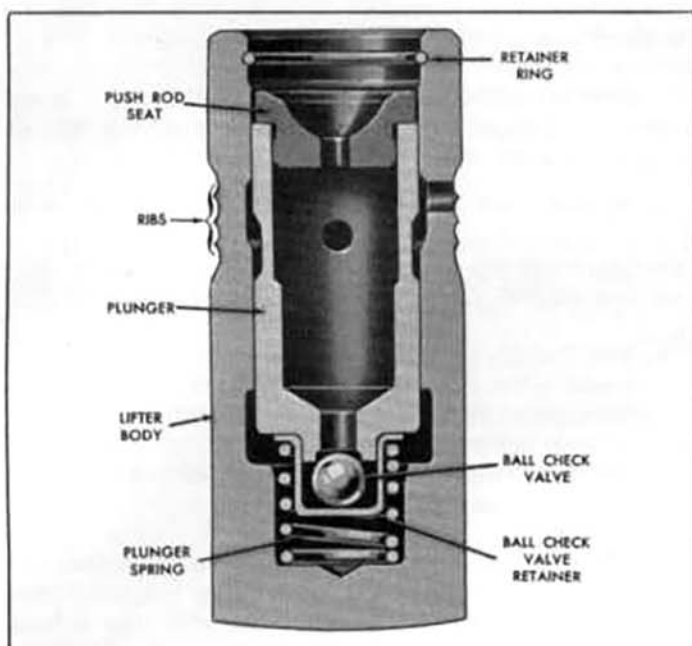


Fig. 4 Regular Production Valve Lifter

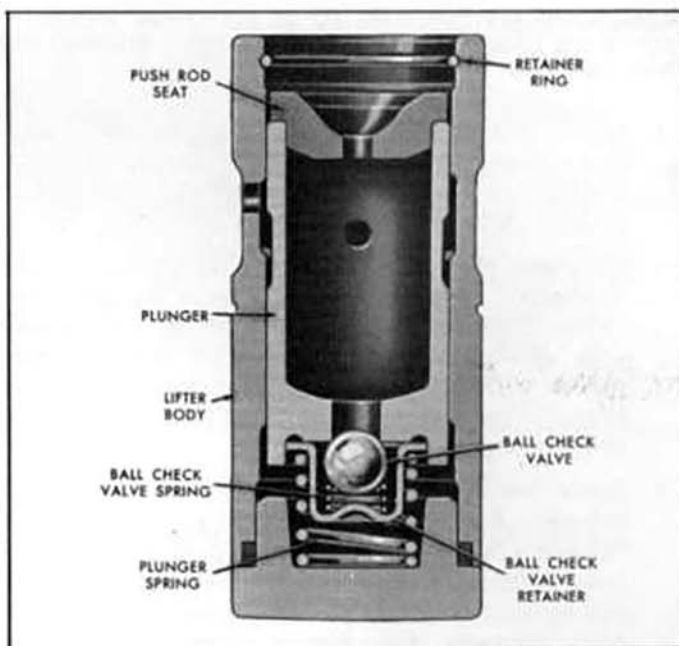


Fig. 6 285 Horsepower Engine Valve Lifter

**ENGINE HYDRAULIC VALVE LIFTER IDENTIFICATION**

The introduction of the 285 horsepower Strato-Flight V-8 engine brings to three the number of different valve lifters now being used in production. These three types are illustrated in Figs. 4, 5 and 6. Figs. 4 and 5 illustrate the valve lifters used interchangeably in regular production. Externally they differ in appearance (note ribs on lifter body shown in Fig. 4 and radial groove on lifter body in Fig. 5), however; internally they are similar. The lifter used in the 285 horsepower engine is similar externally to the

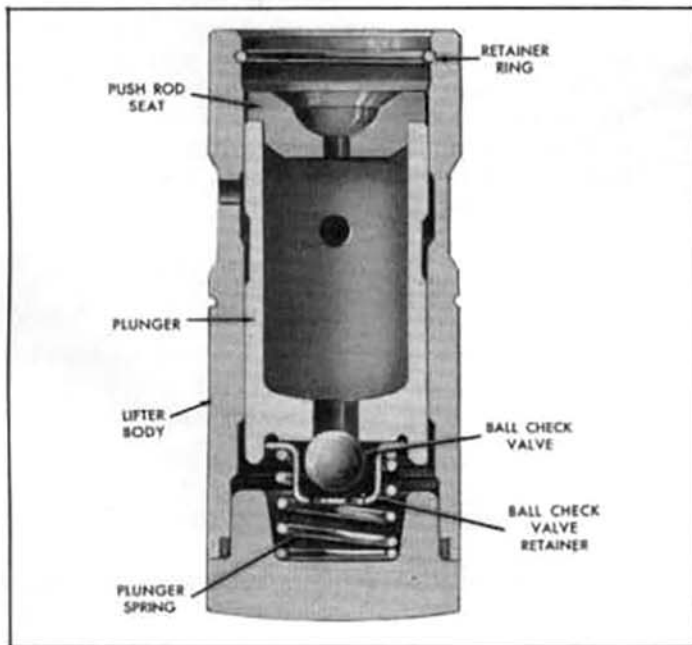


Fig. 5 Regular Production Valve Lifter

standard production lifter shown in Fig. 5. It can be identified from the standard lifter by the letter "A" stamped on the lifter body and by the fact that the area that contacts the cam has a lubrited (blackened) finish. Internally, as shown in the illustration, the new lifter has a spring under the ball check valve and a redesigned ball check valve retainer.

It is extremely important that the regular production valve lifters are not used in the 285 horsepower engine.

**ADDITIONAL INFORMATION ON LUCITE LACQUER**

The following supersedes the information given in News Flashes 55-29, 55-31 and the December Service Craftsman News on the new type gloss finish now identified as Lucite Lacquer.

The purpose of this article is to cover identification and to give the refinishing instructions which must be followed when using Lucite Lacquers. Information governing the use of standard line lacquers on cars originally finished in Lucite Lacquers is also covered.

**LUCITE LACQUER IDENTIFICATION**

Pontiac Color Symbol	Stock No.	Code No.	Name
S	2284 L	882-59891	Sandalwood Tan Metallic
T	2883 L	886-59892	Sun Beige