Auburn 1925-30

Motor Tune-Up

If trouble is experienced in obtaining proper motor performance, follow the instructions given in this section closely.

The information contained in the notes is important and should be closely observed

Tune-Up Operation

1. Clean and adjust distributor and spark plug points
2. Check timing chain for slack; adjust if necessary.
   Note: Chain adjustment operation is necessary for only those models that have manual timing chain adjustments. If timing chain is loose proper results cannot be obtained when timing the motor.
3. Synchronize distributor points.
   Note: The above operation is necessary only on those models having distributors with two sets of breaker contacts.
4. Check the ignition timing; adjust if necessary.
5. Adjust the valve tappets and free up valves.
6. Clean gas line strainers and screens; also, check gas lines for loose fittings.
7. Check fan and generator belt; adjust if necessary.
8. Tighten water pump nut, this operation is only necessary when packing gland is leaking.
9. Adjust carburetor; clean if necessary.
   Note. All Duplex models of Schebler carburetors should be dismantled and cleaned every 15,000 miles of service. If this practice is not followed, plugging of the passage in the main jet may occur as the result of sediment around the base of the needle seat
   See adjustment precautions under carburetor adjustment.
10. Road test car.
    Note: The ignition should never be advanced beyond a point where a spark knock occurs except under full load conditions.

Timing Precautions

The most critical points to watch in a motor tune-up for all Auburn models are the setting and synchronizing of the ignition timing and valve tappet adjustment.

In synchronizing the ignition, the work should be exact. If a contact point setting is given for a range say of from .018" to .022" the breaker contacts should be set exactly within this range and for best service should be adjusted to the high clearance. This will allow for considerable wear on the breaker arm friction block before the setting reaches the lower limit clearance. Also, when synchronizing the contact points each set of points should be checked from all four lobes of the cam and if a variation exists the error should be averaged and the points set accordingly.

It will be found that the ignition setting will vary slightly with different kinds of fuel. For example, the ignition timing when non-detonating fuels are used should be advanced slightly over the timing setting when white gasoline is used. These timing adjustments should be determined by road test.

Adjust the valve tappets with the motor running at idling speed, set the tappet clearance so that the feeler gauge will just pass through freely with motor hot. This method of adjusting tappets should be used on all motors where an accurate tappet adjustment is necessary. It eliminates any possibility of clearance errors due to inaccurately machined cam heels or errors in judgment on the part of the mechanic by not having the cam in the proper position for adjustment.

Sluggish Motor

Ignition Governor. On models equipped with ignition spark governors, the governor should be inspected to see that the weights work freely and do not stick in the retarded position. Any tendency to sticking will cause sluggish motor action.

High Tension Cable.—Under the electrical strains developed by the high voltages in high speed, high compression motors, a considerable loss of the secondary current to the spark plugs is sometimes caused by leakage through the high tension wiring even though the insulation seems to be in good condition. Check closely for cracks in the insulation due to corona action and any tendency to softness or bloating of the rubber. This is important and the wiring should be changed if any trouble is experienced

Muffler Collapse.—Sluggishness, poor mileage and heating on models not equipped with muffler by-pass are sometimes caused by the inner partition of the muffler collapsing due to backfiring of the motor.

Spark Plug Gap Setting.—In hilly localities, better motor performance can sometimes be obtained by setting the spark plug gaps at .022". If this setting is used readjust the breaker points to approximately .003" less than the spark plug setting.

Low Gasoline Mileage

Fuel Pump.—On models equipped with fuel pump check for porous diaphragm. A small hole will be found in the side of the body of the fuel pump just below the diaphragm. If the diaphragm should become porous or leaky the gasoline passes through the diaphragm and out to the ground through the hole in the fuel pump body. Correct with new diaphragm

Heat Manifold Control.—On the late models check the heat manifold control (Fig. 1) to see that

it is properly adjusted and works freely. If it sticks, poor mileage and motor performance will be the result.

Fig. 1

Showing heat manifold control in open position used on late Auburn cars. The control should be checked from time to time to see that it does not stick, and works freely. If this valve sticks it will affect the efficient operation of the carburetor

Vacuum Booster. On model 6-80 and 6-85 cars equipped with vacuum booster, better mileage and motor performance can be obtained by replacing the vacuum booster with regular fitting Auburn part No. J-1-227 obtainable at any Auburn service station.

Carburetor Adjustment. Poor gasoline mileage and motor performance may be the result of improper or faulty carburetor adjustment, especially on those cars equipped with Schebler carburetors. Before attempting a carburetor adjustment read the special precautions in carburetor adjustment section.

Motor Misfiring

Ignition Lock.—Motor missing or cutting out may be caused by a small metal chip getting into the armored housing of the Electro-lock close to the distributor assembly at the motor. This trouble is generally the result of rough handling of the distributor when removing it for repairs and appears when the car is in motion on the road. To check, grasp the cable housing with one hand and move it to different positions while the motor is idling on the service floor. If the motor cuts out or misses when the cable housing is disturbed, repair or replace with new cable.

Spark Plugs.—In cases of motor missing, spark plugs should be checked closely. Very often spark plugs will stand up under bench pressure tests but will break down in the motor due to cracks in the porcelain opening up under the influence of heat.

Motor Noise

Fuel Pump.—A noise similar to a loose valve tappet may be caused by a defective contact of the fuel pump actuating lever arm against the camshaft or a weak diaphragm spring. To correct if caused by pump lever arm, either dress with file or replace the arm. If caused by weak spring, replace.

Oil Pump Check Valve.—A slight knock similar to a loose valve tapper may be caused by the oil pump check valve. To check, grasp the oil line to the oil gauge under the dash with the hand. This will deaden the noise if the trouble is in the check valve.

If replacing the check valve spring and plunger does not relieve the trouble, drill 3/32" hole in plunger.

Muffler Noise.—Peculiar noises at high speeds may be due to resistance in the exhaust line caused by the collapsing of the inner lining of the muffler. This condition is generally the result of backfiring of the motor.

Valve Spring Whip.—A clattering noise at high motor speeds may be caused by what is known as valve spring whip. If the trouble is not caused by weak or defective springs, it can be corrected by inserting washers at the top of the spring.

Fan Belt Slipping.—A peculiar whistling noise may be caused by fan belt slipping at speeds from about 38 to 45 miles per hour (see motor vibration).

Manifold Warping. On models 120 and 125 a hissing noise, similar to a blown exhaust gasket when the car is driven at from 45 to 50 miles per hour may be caused by the intake manifold warping and pulling away from the center bank of four cylinders. This condition is caused by the cold air from the radiator striking the hot exhaust manifold and only occurs when the car is traveling at high speed along the road and cannot be detected when the car is tested on the service floor.

To correct the trouble use two gaskets instead of one on the offending ports.

Motor Vibration

Fan Belt Slipping. A very bad vibration of the motor at car speeds of from 38 to 45 miles per hour may be caused by slipping of the fan belt. The vibration is set up as the result of whipping of the loose belt.

OIL PRESSURE

Model and Year	Min	Max
6-63-1925	5 lbs	40 lbs
6-43-1925	5 lbs.	30 lbs
8-63-1925	5 lbs.	40 lbs
8-88-1925	10 lbs	30 lbs
4-44-1926	10 lbs	40 lbs
6-66-1926	5 lbs	40 lbs
8-88-1926	20 lbs.	30 lbs.
6-66-1927	5 lbs	40 lbs
8-77-1927	5 lbs	40 lbs.
8-88-1927	20 lbs	30 lbs
6-79-1928	40 to 60 lbs	at 40 M.P.H.
115-1928	25 lbs	at 35 M.P.H.
6-80-1929	30 to 60 lbs	at 40 M.P.H.
8-90-1929	25 lbs	at 30 M.P.H.
120-1929	25 lbs	at 30 M.P.H.
125-1930	15 lbs	50 lbs
8-95-1930	15 lbs	40 lbs
6-85-1930	15 lbs	40 lbs

IGNITION TIMING

Models 6-63-1925, 6-43-1925, 8-63-1925, 8-88-1925-26-27, 4-44-1926, 6-66-1926-27, 8-77-1927.—The spark is timed to fire at top dead center of the compression stroke with the spark in fully retarded position.

On the earlier engines the opening in flywheel housing used for timing purposes is on the top face of the housing. On the later series, this hole is on the bottom front face of the flywheel housing. No. 1 dead center mark on the flywheel should be opposite the center line of the opening. In setting the flywheel, be sure that No. 1 cylinder is on the compression stroke. This can be determined by checking to see that both valves are closed on No. 1 cylinder.

If, for any reason, it should be found necessary to advance or retard the ignition on this setting, all that is necessary is to loosen the clamp screw on the advance arm and rotate the distributor in the desired direction.

In no case should the ignition be advanced beyond a point where a spark knock is heard except under full load conditions.

On 8 cylinder models using an 8 lobe cam, two sets of contact points in series are used. Adjust one set of points to a clearance of .019" and the other set to .022". The ignition timing is set by the pair of points last to break.

Ignition Timing Table

The following table contains complete ignition timing specifications. See timing precautions under Motor Tune-Up above.

Year	Model	Cam Pt. Clear	Ignition Timing: Fly-Wheel Travel	Ignition Timing: Point Travel	Ignition Timing: Dead Center Position	Spark Lever Position	Plug Gap	Firing Order
1925	6-63	.025"	T D C	T D C	T D C	Ret	.030"	1-5-3-6-2-4
1925	6-66	.020"	T D C	T D C	T D C	Ret	.030"	1-5-3-6-2-4
1925	8-63	.018"	T D C	T D C	T D C	Ret	.025"	1-6-2-5-8-3-7-4
1925	8-88	*.018-.022"	T D C	T D C	T D C	Ret	.025"	1-6-2-5-8-3-7-4
1926	4-44	.020"	T D C	T D C	T D C	Ret	.030"	1-3-4-2
1926	6-66	.025"	T D C	T D C	T D C	Ret	.025"	1-5-3-6-2-4
1926	8-88	*.018-.022"	T D C	T D C	T D C	Ret	.025"	1-6-2-5-8-3-7-4
1927	6-66	.018-.022"	T D C	T D C	T D C	Ret	.025"	1-5-3-6-2-4
1927	8-77	*.018-.022"	T D C	T D C	T D C	Ret	.025"	1-6-2-5-8-3-7-4
1927	8-88	†.018-.022"	T D C	T D C	T D C	Ret	.025"	1-6-2-5-8-3-7-4
1928	6-76	.020"	T D C	T D C	T D C	Adv	.025"	1-5-3-6-2-4
1928	8-88	†.018-.022"	T D C	T D C	T D C	Ret	‡.025"	1-6-2-5-8-3-7-4
1928	115	†.018-.022"	6°	.012"	B T C	Adv	‡.025"	1-6-2-5-8-3-7-4
1929	6-80	.018-.022"	10°		B T C	Adv	.025"	1-5-3-6-2-4
1929	8-90	*.018-.022"	6°	.012"	B T C	Adv	‡.025"	1-6-2-5-8-3-7-4
1929	120	*.018-.022"	6°	.012"	B T C	Adv	‡.025"	1-6-2-5-8-3-7-4
1930	125	.018-.022"	7½°		B T C	Adv	‡.030"	1-6-2-5-8-3-7-4
1930	8-95	.018-.022"	7½°		B T C	Adv	‡.030"	1-6-2-5-8-3-7-4
1930	6-85	.018-.022"	5°		B T C	Adv	‡.030"	1-5-3-6-2-4

B T C—Before top center. T D C—Top dead center.

*This type of distributor has two sets of contact points which are operated simultaneously by a combined steel cam with 8 lobes.

†This type of distributor uses a 4 lobe cam, with two sets of contact points connected in parallel. (See Ignition Timing—Two set contact breaker arm on 8 cylinder distributor with 4 lobe cam.)

‡In most engines [illegible] fully broken in, better [illegible] performance can be obtained by setting the spark plug gaps at .025". If this setting is used, readjust the breaker points to approximately .002" less than [illegible] plug setting.

Model 6-76-1928.—To time the spark to the motor the flywheel must be set so that No. 1 cylinder is at T.D.C. on the firing stroke. The opening in flywheel housing used for timing purposes, is on the bottom front face of the housing. No. 1 dead center mark on the flywheel should be opposite the center line of this opening. With the spark lever in full advance position, the contact points should just begin to break.

A small amount of variation can be taken up by loosening the clamp on the advance arm and then turning the distributor head. If there is not enough clearance between the cables and the cable-tubes, it will be necessary to remove the distributor and readjust the driving coupling on the end of the shaft.

To advance or retard the spark rotate the distributor in the desired direction.

The ignition should never be advanced beyond a point where a spark knock occurs except under full load conditions.

Model 6-80-1929.—To time the spark to the motor, the flywheel must be set on No. 1 cylinder is 10° ahead of top dead center on firing stroke; that is, turn crank clockwise until mark on flywheel lacks 3 teeth of reaching top center position. In this position the spark lever on the steering column should be set at full advance. The distributor should then be set so that the contact points are just breaking for No. 1 cylinder. A small amount of variation can be taken up by loosening the clamp on advance arm and then turning distributor ahead. If there is not enough clearance between the cables and cable-tubes, it will be necessary to remove the distributor and readjust the driving coupling on the end of the shaft.

To advance or retard the ignition rotate the distributor housing in the desired direction.

The ignition should not be advanced beyond a point where a spark knock is heard except under full load conditions.

The opening in flywheel housing used for timing purposes is on bottom front face of housing. No. 1 dead center mark on flywheel should be opposite center line of this opening.

Models 115-1928, 8-90 and 120-1929.—To time the spark to the motor, the flywheel must be set so No. 1 cylinder is 6° ahead of top dead center on the firing stroke; that is, turn crank clockwise until mark on flywheel lacks two teeth of reaching top center position. In this position, the spark lever on steering column should be set at full advance. The distributor should then be set so the contact points are just breaking for No. 1 cylinder. A small amount of variation can be taken up by loosening the clamp on advance arm and then turning distributor ahead. If not enough clearance between cables and cable tubes, remove the distributor and readjust the driving coupling on the end of shaft.

To advance or retard the ignition rotate the distributor in the desired direction.

The ignition should not be advanced beyond a point where a spark knock occurs except under full load condition.

The opening in flywheel housing used for timing purposes, is on bottom front face of housing. No. 1 dead center mark on flywheel should be opposite the center line of this opening.

Auburn Model 125 and 8-95 1930.—Crank the motor until No. 1 piston is entering compression stroke. Continue cranking until the flywheel is 7½° or approximately 2½ ring gear teeth before top center. At this point the breaker contacts should just start to open with spark lever fully advanced.

If it should be desired to set ignition timing by top dead center marks the contact points should just start to open with advance lever in one-half advance position on the quadrant with No. 1 piston at top dead center. Final check and adjustment should be made by road testing the car. See table for contact point setting.

On 8 cylinder models using an 8 lobe cam, two sets of contact points in series are used. Adjust one set of points to a clearance of .019" and the other set to .022". The ignition should be set by the last pair of points to break.

Auburn Model 6-85 1930.—Crank the motor until the piston in No. 1 cylinder is entering compression stroke; continue cranking until the flywheel is 5° or approximately 1.3 ring gear teeth before top dead center. At this point the breaker contacts should just start to open with spark lever fully advanced.

If it should be desired to set ignition timing by top dead center marks the contact points should just start to open with advance lever in one-half advance position on the quadrant with No. 1 piston at top dead center. Final check and adjustment should be made by road testing the car. See table for contact point setting.

To synchronize breaker arm on 8 cylinder distributors with 4 lobe cam.—One set of contact points is stationary and the other set is movable. The stationary set is adjusted first and synchronizing is completed by adjustment to the movable set of points. To set contact opening of arm (A), Fig. 2, turn distributor shaft in its direction of rotation which is clockwise viewed from top until rubbing block of breaker arm (A), is on lobe of cam. Loosen screw (B), and turn screw (C) to get contact opening which should be from .018" to .024" and preferably .022". Tighten screw (B).

Again turn the shaft until rubbing block of breaker arm (D), is on lobe of cam. Loosen screw (E), turn screw (F) until points open between .018" and .024" and preferably .022". Tighten screw (E).

Put synchronizing tool over cam, locking it with the slide pushed through showing the arrow that points in the direction the shaft rotates as viewed from top.

Turn shaft clockwise (looking from top) until breaker arm (A) breaks contact. Note marking on (M) side of synchronizing tool that is in line with point (X) which is the edge of slot in distributor base rim. Continue to turn shaft until the same marking on (N) side of tool is in line with point (X). Loosen screws (G) and (H) and turn screw (I) until arm (D) breaks contact. Check this by rotating shaft again. Tighten screws (G) and (H). Also check contact opening of breaker arm (D), and if it was set before at .022", it should still be within the limits. If outside of these limits, reset the point opening and synchronize arms again. Do not make any adjustments to arm (A), but confine the adjustments to arm (D) to complete the synchronizing.

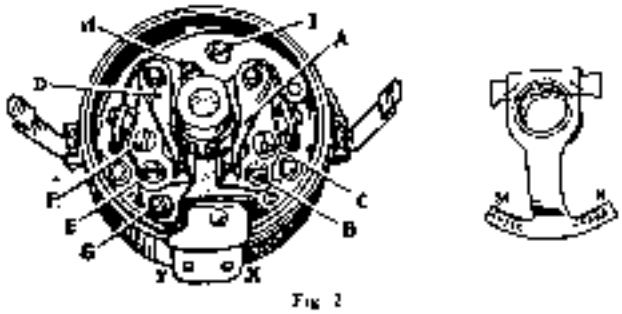


Fig. 2

Two types of 8 cylinder distributors were used on Auburn cars. The first type has an 8 lobe cam with two sets of contact points in series opening simultaneously. The second or latest type (Fig. 2) has a 4 lobe cam with two sets of contact points in parallel.

The graduations on the tool represent engine degrees and the breaker arm must not be out of synchronism more than two engine degrees.

The eye cannot detect the moment the points open, and to get an accurate synchronizing adjustment, an ammeter should be connected in the ignition circuit at the distributor terminal. If on the car, make sure ignition switch is "on." The instant the ammeter needle drops back to zero, the points open.

VALVE TIMING

Model 663-1925.—Set the exhaust valve tappet clearance for No. 1 cylinder at .000". Crank the engine until the exhaust valve just closes. At this point the flywheel mark "I-O-E-C-1-6" should be under the indicator at the top of the flywheel housing.

Model 6-43-1925.—Set the exhaust valve tappet clearance for No. 1 cylinder at .007". Crank the engine until the exhaust valve just closes. At this point, the flywheel mark "T.D.C." should be ⅛" past the indicator mark at the top of the flywheel housing.

Model 8-63-1925, 8-77-1927, 8-88-1925-26-27-28, 6-76-1928.—Set the intake valve tappet clearance for No. 1 cylinder at .010". Crank the engine until the intake valve just starts to open. At this point, the flywheel mark "T-C 1&8" should be under the indicator in the peek hole in the flywheel housing.

Note: This clearance should be reset after timing operation is complete. (See table for VALVE CLEARANCE.)

Valve Timing Table

The following table contains complete valve timing specifications. Valve tappet adjustments for all late models are critical and should be made with engine idling. See timing precautions above.

Year	Model	Tappet Adjustment: For Timing Int.	For Timing Exh.	Running Int.	Running Exh.	Valve Timing: Fly-Wheel Travel	Piston Travel	Int. Valve	Exh. Valve
1925	6-43	.006"	.006"	.004"H	.006"H	[illegible]"A		Open	Close
1925	6-43		.007"	.004"H	.006"H	[illegible]"A			Close
1925	8-63	.010"		.008"H	.004"H	D.C.		Open	
1925	8-88	.010"		.008"H	.004"H	D.C.		Open	
1926	4-44	.008"		.004"H	.006"H	D.C.		Open	
1926	6-66	.010"		.006"H	.008"H	D.C.		Open	
1926	8-88	.010"		.006"H	.008"H	D.C.		Open	
1927	6-66 Lyc	.010"		.006"H	.008"H	D.C.		Open	
1927	6-66 Cont		.007"	.004"H	.006"H	1"A			Close
1927	8-77	.010"		.006"H	.008"H	D.C.		Open	
1927	8-88	.010"		.006"H	.008"H	D.C.		Open	
1928	6-76	.010"		.006"H	.008"H	D.C.		Open	
1928	8-88	.010"		.006"H	.008"H	D.C.		Open	
1928	115	.010"		.008"H	.008"H	D.C.		Open	
1929	6-80	.010"		.006"H	.006"H	D.C.		Open	
1929	8-90	.010"		.006"H	.008"H	D.C.		Open	
1929	120	.010"		.008"H	.008"H	D.C.		Open	
1930	125	.010"		.006"H	.008"H	[illegible]		Open	
1930	8-95	.010"		.006"H	.008"H	[illegible]		Open	
1930	6-85	.010"		.006"H	.008"H	[illegible]		Open	

A—After top center. B—Before top center. D.C.—Top dead center.
H—Hot setting. [illegible]
*[illegible] of flywheel travel is approximately [illegible] on Model 125 and 1.30 ring gear teeth on Models 8-95 and 6-85.

Model 6-66.—(Continental motor).—Set the take valve tappet clearance for No. 1 cylinder at .010". Crank the engine until the intake valve just starts to open. At this point the flywheel mark "T.C.-1&6" should be under the indicator at the top of the flywheel housing.

Note: The valve tappet clearance should be reset after the timing operation is complete. (See table for VALVE CLEARANCE.)

Model 6-66.—(Lycoming motor).—Set the in- exhaust valve tappet clearance for No. 1 cylinder at .007". Crank the engine until the exhaust valve just closes. At this point, the flywheel mark "1-EX-C" should be under the indicator at the top of the flywheel housing.

Model 4-44-1926.—Set the intake valve tappet clearance for No. 1 cylinder at .008". Crank the engine until the intake valve just starts to open. At this point, the pistons for No. 1 cylinder should be at T.D.C.

Note: The valve tappet clearance should be reset, after the timing operation is complete (see table VALVE CLEARANCE).

Models 115 1928, 8-90 1929, 120 1929.—Set the intake valve tappet clearance for No. 1 cylinder at .010". Crank the motor until No. 1 piston is at T.D.C. as indicated either by flywheel or piston travel. With the piston in this position, the intake valve for No. 1 cylinder should just start to open.

After the timing operation is complete, reset the valve tappets to the proper running clearance. See table for Timing Clearances.

Model 6-80 1929.—Set the intake valve tappet clearance for No. 1 cylinder to .010". Crank the motor until the piston in No. 1 cylinder is at T.D.C. flywheel travel. At this position, the intake valve should just begin to open.

After the timing operation is complete, the valve tappets should be reset to the correct running clearance. See timing information in timing table.

Auburn Models 125, 8-95 and 6-85 1930.—Set intake valve for No. 1 cylinder to .010" clearance. Crank motor until piston in No. 1 cylinder is at top dead center exhaust stroke. At this point the intake valve should just start to open. The keyway in the front end of the crankshaft, where starting crank engages, will be on top of shaft and straight up and down when No. 1 piston is at top dead center.

CHAIN ADJUSTMENT

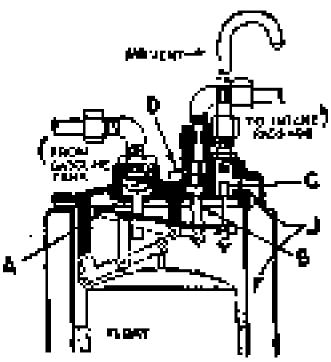
Model 6-43-1925, 6-66-1926-27, 115-1928, 120-1929, 125-1930.—Chain sag is adjusted by manual take-up. To tighten the chain, loosen the generator bolts slightly and swing the generator away from the engine until the chain begins to hum, then loosen just enough to stop the hum.

GAS LINE SCREENS

All models of Auburn equipped with vacuum tank feed have two strainer screens in the gas line; one is located in the head of the vacuum tank as shown at (A, Fig. 3) and the other is located at the carburetor.

Fig. 3

Upper half of vacuum tank showing position of gas line screen. To remove disconnect the feed line from the gasoline tank and screw out the hexagon bushing.



To clean the gas line screen (A, Fig. 3) at the vacuum tank, disconnect the gas lines from the gasoline supply tank and remove the elbow and bushings together with the gasoline strainers. Clean with air and gasoline.

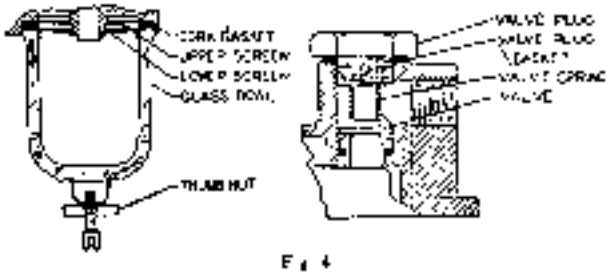


Fig. 4

Cross section view of fuel pump glass bowl and pump valve. Note the two strainer screens and position of cork gasket at the top of the glass bowl.

The valve disc is held on passage by a spring which in turn is held in place by the valve plug. If valve plug is removed to clean valve plug screen is in good condition valve plug is replaced.

All models equipped with fuel pump feed have strainer screens in the top of the gasoline bowl at the fuel pump (Fig. 4) and at the carburetor.

To clean the fuel pump screens, remove the glass bowl and clean the screen assembly. Make certain that the cork gasket is in good condition and properly seated when reassembling the bowl into position. If the gasket is damaged, replace with a new one.

On Schebler Model S carburetor, having a brass bowl, the strainer screen can be removed for cleaning by first disconnecting the gasoline line and unscrewing the hexagon nut screw (B, Fig. 5). Remove the gauze and clean thoroughly by washing in gasoline and blowing through it with compressed air. Clean the inside of the strainer body thoroughly and reassemble, making sure the gaskets are in place, and that the hexagon nut and gasoline line are properly tightened and do not leak.

Fig. 5

Showing gasoline connection for three types of Schebler Model S carburetors.

To remove the strainer screen on Schebler carburetors equipped with die cast or stamped bowl, disconnect the gas line and remove the hexagon bushing (C, Fig. 5).

FUEL PUMP

Repairs Made Without Dismantling Pump.—In the event of no fuel in the carburetor, the system should be checked for leaks or split seams in the gas line, or the gas line becoming kinked or flattened by the automobile body resting upon it. Occasionally, due to the fact that the gasoline line extends to the bottom of the gas tank, a little sediment is drawn from the bottom of the tank, blocking off the flow of fuel.

Other troubles which may be corrected without disturbing the fuel pump installation are: Loose pipe fittings at the gasoline tank and the pump.

Loose glass bowl, which should be tightened by the retaining nut, making sure that the cork gasket lies flat on its seat and is not broken.

Dirty Screen.—To correct this trouble remove the glass bowl and clean the screen assembly. Make certain that the cork gasket is in good condition and properly seated when reassembling the bowl into position. If the gasket is damaged replace with a new one.

Loose Valve Plugs.—Tighten the valve plugs securely. If necessary replace the valve plug gaskets.

Leaks at the Diaphragm.—Tighten the cover screws evenly and securely. Shellac should be applied to the edge of the diaphragm, either under the diaphragm on the surface which comes in contact with the fuel pump body or on the outside of the body at the point where the diaphragm protrudes. Sometimes there appears to be a leak at the diaphragm, whereas the leak actually exists at the pipe fitting and has run down the pump body to the diaphragm flange, appearing to originate there.

Carbureter Specifications

FLOAT LEVEL

Schebler Carburetors

In making repairs to a Schebler carburetor, it is very important when reassembling to be sure that you have the proper float level. Holding the float, which is assembled to the float lever, you can easily bend it up or down in order to set the float at the proper distance to obtain correct float level. The float lever measurement should be taken at the point between the top of the float and the carburetor body as shown in Fig. 5A.

Model S-1½", Die Cast.—Adjust the float 3/4" to 5/32" measuring between the float and carburetor body when float valve is seated.

Model S-1½", Duplex.—Float level 25/64" to 27/64" measuring between the float and carburetor body when the float valve is seated.

Model S-1", Stamped Bowl.—Float level 1/8" to 5/32" measuring between the float and carburetor body when float valve is seated.

Model S-1"-1¼"-1½", Brass Bowl.—Float level with float in bowl, 5/32" from top of bowl resting on top of float when float valve is seated.

Model U-1" and 1¼"—When repairing a Schebler model U carburetor a correct float level adjustment can be obtained by bending the float lever up or down.

With the float assembly in lower half of body, hold body upside-down with float lever resting on floor valve so that it is seated. Measure from flange on lower half of body to top of float. This should measure 2" on the 1" carburetor and 1 15/16" on

the 1½" carburetor. Be sure to remove the bowl gasket before taking this measure.

On all new Model U Schebler carburetors, used on Auburn, set the float level so that the float lever arm is parallel with the flange of the carburetor body when needle valve is in the closed position.

Stromberg Carburetors

Model 002.—The float valve controls the fuel level in the customary way, the carburetor being designed to operate under a standing level of 1" below the machined top of the float chamber.

On most of the model Q series carburetor, there is a float chamber plug in the side of the float chamber, when this is removed, the fuel should stand exactly even with the bottom of the hole when engine is not running.

When the engine begins to draw fuel from the float chamber, the level goes down slightly, about 3/32".

The float level may be adjusted by screwing float needle valve up or down in the sleeve which engages the float levers, screwing the needle down will lower the level and also decrease the amount that the float needle can raise before the float strikes on its bottom, while screwing the needle upward in the sleeve will raise the level and give the float needle more travel.

It is usually the case that with the level properly adjusted, the float needle will have a motion up and down of 3/64".

Model K-1.—The proper float level with engine not running is one inch from the top surface of float chamber. Should the level be more than 1/16" higher or lower the float needle should be readjusted. Remove valve cap (Fig. 16) and upper end of float needle stem will be seen. If level is too high, loosen lock nut, hold needle sleeve from turning by putting small wrench on flat sides and screw needle down, clockwise, one turn, which should lower level about three thirty-seconds of an inch, if too low, a full turn of needle upward will raise level same distance.

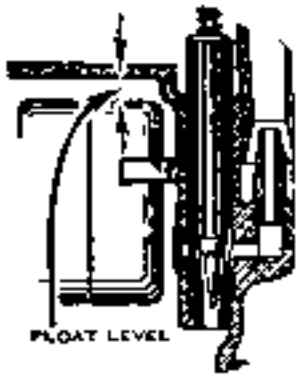


Fig. 5A

Viewing point at which float level should be measured on Schebler Model S carburetors. The quickest method for checking the float level of Schebler carburetors is to see that the float lever arm stands parallel with the milled flange of the carburetor body.

CARBURETOR SPECIFICATION DIAGNOSIS

Schebler Carburetor Specifications include only those parts that are most likely to be at fault if a correct carburetor adjustment cannot be obtained.

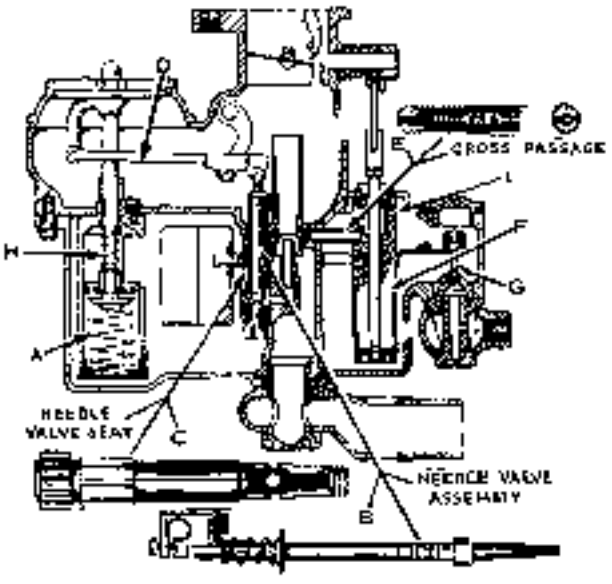


Fig. 6

Cross section of Schebler Model S carburetor showing (A) lower air valve spring (B) needle valve assembly. The size number of the needle valve is indicated by the number of rings machined on the body of the needle as shown (C) needle valve seat. Due to the high amount of wear on this part it rarely needs changing (D) needle valve lift lever (E) metering or cross passage. The size of this part is stamped on the side of the body as shown (F) accelerating pump assembly (G) float needle valve assembly (H) upper air valve spring.

Schebler "S" Carburetors

Each set of Schebler specifications is given for a given size motor. To determine the specifications for any particular model of Auburn, first find the size of the motor in the table of Motor Specifications in the carburetor adjustment section and then refer to the Carburetor Specifications listed below for that size motor.

Engine Size 3⅛" x 4¼"

DESCRIPTION OF PART	Part No. or Size
Air Valve Spring—(A, Fig. 6)	48 U
Needle Valve complete—(B, Fig. 6)	No. 1
Accelerating Pump Cross Passage—(E, Fig. 6)	No. 54
Accelerating Pump Cylinder—(F, Fig. 6)	No. 36

Engine Size 3⅛" x 4½"

DESCRIPTION OF PART	Part No. or Size
Air Valve Spring—(A, Fig. 6)	48 U
Needle Valve complete—(B, Fig. 6)	No. 5
Accelerating Pump Cross Passage—(E, Fig. 6)	No. 54
Accelerating Pump Cylinder—(F, Fig. 6)	No. 36

Engine Size 3¾" x 4¾"

DESCRIPTION OF PART	Part No. or Size
Air Valve Spring—(A, Fig. 6)	48 U
Needle Valve complete—(B, Fig. 6)	No. 5
Accelerating Pump Cross Passage—(E, Fig. 6)	No. 52
Accelerating Pump Cylinder—(F, Fig. 6)	No. 36

Engine Size 3¼" x 4½"

DESCRIPTION OF PART	Part No. or Size
Air Valve Spring—(A, Fig. 6)	48 U
Needle Valve complete—(B, Fig. 6)	No. 5
Accelerating Pump Cross Passage—(E, Fig. 6)	No. 54
Accelerating Pump Cylinder—(F, Fig. 6)	No. 36

Engine Size 2¾" x 4¾"

DESCRIPTION OF PART	Part No. or Size
Air Valve Spring—(A, Fig. 6)	48 G
Needle Valve complete—(B, Fig. 6)	No. 1
Accelerating Pump Cross Passage—(D, Fig. 6)	No. 54
Accelerating Pump Cylinder—(F, Fig. 6)	No. 36

Stromberg Carburetors

Stromberg Carburetor Specifications are given for each model of carburetor. To determine the specifications for any particular model of Auburn equipped with Stromberg, first find the model of carburetor in the table of Motor Specifications in the Carburetor Adjustment section and then refer to the specifications below for that model of Stromberg carburetor.

Model OO-2. The following table contains specification data for Stromberg Model OO-2 carburetors used on late model Auburn cars.

OO-2 MODEL NAME	OO-2 1¼"
*Large Venturi	31/32"
*Main Discharge Jet	A 28 B 20
*Well Bleeder	43 Fixed
*High Speed Bleeder	70
*Accelerating Nozzle	55
*Gasoline Reducer	54
*Idling Discharge Hole	2-56 lower 1-56 top
*High Speed Needle Seat	60
*Float Needle Seat	140"
Small Venturi Tube	15/32"
Idle Needle Seat	56
Idle Tube Feed Hole	72
Idle Tube Bleeder Holes	2-58
*Idle Air Reducer	60
*Thermostat Reducer	45
Main Dis. Jet (Hole in Neck)	1 60
Main Dis. Jet (Side Holes)	2-60 1 wall
Main Dis. Jet (Bottom Hole)	1 60
Outside Diameter Air Horn	2 19/32"
Inside Diameter Air Horn	2¼"
Flange Centers	3 1/16"x1 47/64"
Flange Drill	11/32"

*Variable Specification

Model R.—The following table contains carburetor specification data for Stromberg Model R carburetors used on the early models of Auburn.

MODEL R NAME	R-1 1"
*Large Venturi	59"
*Main Discharge Jet	50–20
*Accelerating Well Bleeder	65
*High Speed Bleeder	70
*Idling Discharge Jet	56–66
*H. S. Needle Seat	53
*Float Needle Seat	.113"
Small Venturi	7/16"
Idle Tube Bleed Holes	2 65
Idle Tube Nozzle	63
Main Dis. Jet (Holes in Top)	1 54
Main Dis. Jet (Holes in Neck)	2-55
Main Dis. Jet (Holes in Side)	64–60–58
Main Dis. Jet (Filler Holes)	6-54
Main Dis. Jet (Idle Feed Holes)	4-60
Flex. Tube (Fits Inside Horn)	1½"
Flex. Tube (Fits Outside Horn)	1¼"
Flange Centers	2¾"
Size Drill	11/32"

*Variable Specification

Carburetor Adjustment

MOTOR SPECIFICATIONS

The following table lists the model and year of car, engine specifications, make, model and size of carburetor.

Car and year	Model	Engine make and model	Qty.	Bore and stroke	Carb. model and size
AUBURN					SCHEBLER
1924-25	B-65	Lyc	6	3½"x4½"	G-1¼"
1925-26	B-88	Lyc	8	3½"x4½"	G-1¼"
1925	C-66	Lyc	6	3½"x4½"	G-1¼"
1925-27	C-66	Lyc	6	3½"x4½"	G-1¼"
1926	6-66	Lyc	6	3½"x4½"	G-1¼"
1927-28	6-77	Lyc 6T	6	3½"x4½"	G-1¼"
1927-28	8-88	Lyc 8 165E	8	3½"x4½"	G-1¼"
1927-28	6-70	Lyc 7 70	6	3½"x4½"	G-1¼"
1928	6-50	Lyc	6	3½"x4½"	G-1¼"
1928	6-58	Lyc	6	3½"x4½"	G-1¼" Dpls.
1928	115	Lyc	8	3½"x4½"	G-1¼" Dpls
1928	88	Lyc GB	8	3½"x4½"	G-1¼" Dpls
1928	6-80	Lyc	6	3½"x4½"	G-1¼"
1928	115	Lyc 8 MD	8	3½"x4½"	G-1¼" Dpls
1929	6-80	Lyc WS	6	3½"x4½"	G-1¼ x 24-1¼"
1929	6-85	Lyc GS	6	3½"x4½"	G-1¼" Dpls
1929	125	Lyc 8MU	8	3½"x4½"	G-1¼" Dpls
1929	125	Lyc 8MDA	8	3½"x4½"	L.A. St. 1¼"
1929	6-95	Lyc GR	6	3½"x4½"	L.W-21 1¼"
1929	6 85	Lyc WR	6	3½"x4½"	G-1¼"
					STROMBERG
1926-27	6-44	Cont 7-U	6	3½"x4½"	30-1
1926	8-85	Lyc GS	8	3½"x4½"	00-2
1928	115	Lyc MD	8	3½"x4½"	00-2

ADJUSTMENT PRECAUTIONS

The adjustment information for carburetors used on Auburn automobiles from 1925 to 1930 inclusive is given by carburetor model rather than by car model. If it is desired to know what make and model of carburetor was used on any particular car model, refer to the motor specification table above.

On the late model cars gasoline mileage and engine performance are dependent more than ever before upon a correct carburetor adjustment; therefore, it is suggested that the information found under adjustment precautions be closely observed.

Manifold Effect on Carburetor Adjustment.—It is important when making a carburetor adjustment that from 10 to 15 seconds time be allowed after each movement of the adjusting screw for fuel that has accumulated in the manifold to pass into the motor. Especially is this true when making a range adjustment on Schebler Model U carburetors. Take for example, an adjustment from a rich to a lean mixture; the tendency is for the fuel to pile up on the walls and in the corners of the manifold so that unless sufficient time is allowed for this fuel accumulation to pass into the motor, an accurate adjustment can not be obtained. Insufficient time allowance is generally indicated by the motor performance gradually improving and then the motor suddenly dying during the adjustment operation.

Adjustment for Gasoline Mileage.—The best adjustment for gasoline economy is obtained by leaning the mixture down until the motor runs rough and then richening it up just to the point of where the motor runs smoothly. This is espe-

cially true of the idle and range adjustments and should be done with care for best results. When adjusting the carburetor from a lean to a richer condition, it will be found that due to the flexibility of adjustment there is a wide range between the point where the motor smooths out from a lean mixture to a point of where the adjustment is too rich. Richening of the mixture beyond the point of smooth motor operation adds nothing to the performance of the car and lowers the gasoline mileage.

Effect of Leaky Bowl on Adjustment. On all Model U Schebler carburetors, a correct adjustment cannot be obtained unless the gasoline bowl is absolutely tight against the body flange. If the bowl has been removed for any reason, a new bowl gasket should be used and checked for leaks.

Idle Adjustment on Early Models 8-88 and 115. —On some of the early model 8-88 and 115 cars equipped with Schebler Model S carburetors, no stop was provided on the idle adjustment so that caution should be exercised not to screw the adjustment out of gear. By turning the idle adjustment screw more than 30 or 40 notches either to the right or left, there is danger that the vertical gear will drop away from the adjusting screw gear which would necessitate dismantling the carburetor.

This trouble can be checked by depressing the air valve and holding a small light in such a position that the gears can be seen through the air valve opening while turning the adjusting screw either to the right or the left.

Air Valve Flutter.—Fluttering of the air valve may be caused by a weak air valve or dash pot spring (A Fig. 6). A weakened spring will also make a correct adjustment difficult, with a tendency to a rich mixture at speeds above idling.

Acceleration.—If the motor seems to run rich after acceleration at the average driving speed (20 to 30 miles per hour) for a distance, it is due to too much gasoline being supplied from the accelerating pump.

Deceleration.—A decelerating device is used on Schebler Model S-1½" carburetors. If the motor refuses to return to the low idle on cars equipped with this type carburetor there is probably dirt in the device and the device should be taken out and thoroughly washed in clean gasoline.

The decelerating device increases the idling speed temporarily after the throttle has been returned to the idling position from a part or wide open throttle. In other words, if you drive along, say at five miles per hour, kick open the throttle and accelerate to ten or fifteen miles per hour, or to any speed, then let the foot accelerator back to idle, the idling speed will be increased considerably for about ten seconds, when the decelerating device will close off, allowing the motor to idle at the normal speed.

SCHEBLER "S" BRASS BOWL

Control Hook-up. When using the loose lever (N, Fig. 7) the control tubing (R) is fastened in clamp (S) with screw (M) on side of body just below the air funnel. Fasten the control wire (E) in the binding post (O) on loose lever (N) with the throttle closed allowing 1/16" play between the loose lever (N) and the boss it strikes against on lever (P)

When using the lever (F), the control tubing (R) is fastened in the clamp (S) with screw (M) on the bowl. Extend the control wire (E) through the slot in lever (F) with the dash control pushed in; cut off the wire ½" above the top of lever (F). Slip the ball on the wire (E), allowing 1/16" play between the ball and lever; then bend the wire so the ball cannot slip off. Try the lever, which should work freely and not bind on the wire. Any binding will cause the lever (P) to stick which will cut down the gasoline mileage and upset the idle.

Starting.—Open the hand throttle one-half way. Pull out the dash control plunger all the way, re-

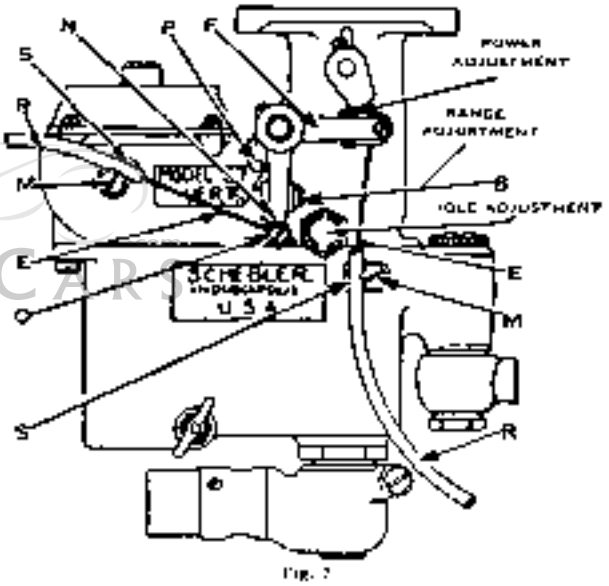


FIG. 7

Schebler Model S brass bowl type of carburetor showing location of adjustment screws. Float valve seat is not a removable part.

lease spark, step on the starter. As soon as the engine starts, push the plunger in about half way and continue to push it in gradually as the engine warms up, until the plunger is entirely in.

NOTE—Never attempt to make any adjustments on carburetor until motor is hot.

Idle Adjustment. Turn the idle adjusting knurl (Fig. 7) to the right for a lean mixture, and to the left for a rich mixture. To check the idle adjustment, warm up the motor thoroughly and by this we mean to have a hot motor. Then close the throttle, retard the spark all the way if car has manual spark control and then adjust idle stop screw so that motor will not idle less than five miles per hour on the road. After you have the

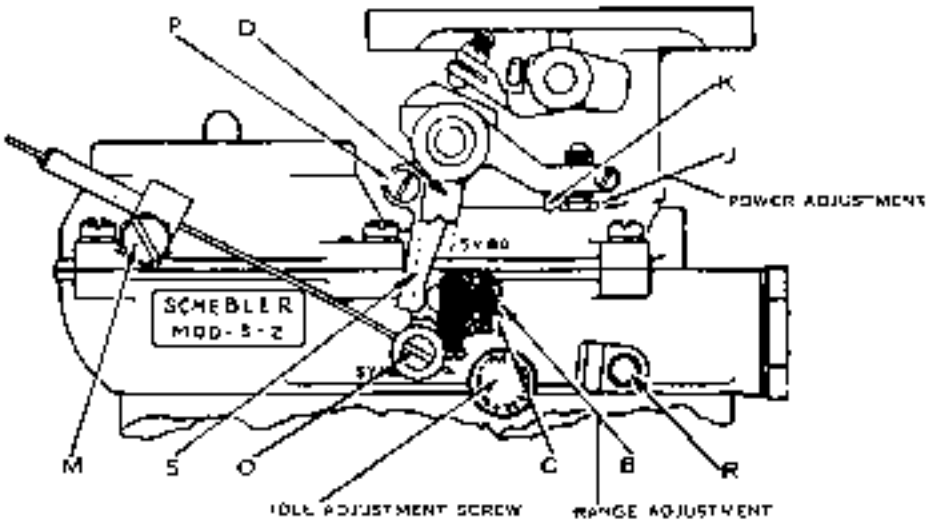


Fig. 8

Schebler Model S with die cast bowl showing the three adjustments.

On regular type carburetors (not a fishing from cast bowl) the float valve seat is not a removable part but is machined in the main bowl casting.

On die cast bowl type the float valve and seat are furnished as a separate assembly.

proper idle engine speed then proceed to check the idle adjustment as follows: Turn the idle adjusting screw to the right (clockwise) turning slowly, watching the motor fan at the same time and continue to turn in this direction, which is the lean direction, until the fan falters or in other words is not turning with a smooth, constant motion. Just as soon as the fan falters stop turning the idle adjustment to the right (lean) and from this point turn the idle adjustment back to the left or rich direction exactly 6 clicks for summer driving and 8 to 9 clicks for winter driving, clicks can be felt while turning the idle adjusting knurl. This will give you an accurate setting on the idle adjustment providing you follow out all of these instructions just as we have outlined them.

Range Adjustment.—This adjustment is only effective in the driving range at speeds from twenty to forty miles per hour and does not effect acceleration or hill climbing with wide open throttle.

The adjustment is made by turning the range adjusting screw (B) to the left for a lean mixture and to the right for a rich mixture in the driving range.

To obtain the factory setting, screw the range adjusting screw (B) in or out so the head is flush with the bushing. If the range adjustment is changed it is necessary to readjust the idle mixture.

Power Adjustment.—This adjustment as shipped from the factory ordinarily need not be changed. This adjustment is not sensitive to one turn in either direction and is only effective for the wide open throttle running. In changing this adjustment try it on a hill after each change for best results. In extreme cases it may be necessary to furnish a leaner or richer mixture for wide open throttle position. The adjusting cam tappet screw is turned to the left (counter-clockwise) to give a richer mixture and turned to the right (clockwise) to give a leaner mixture.

With throttle wide open adjust the cam tappet screw until there is about 1/4 to 5/32 of an inch space between the dash control lever (P) and the end of the range screw (B).

SCHEBLER "S" DIE CAST BOWL

Installation.—The dash control tubing should be fastened securely under the clamp and screw assembly (M, Fig. 8) and the dash control wire should be fastened in the binding post (O) so that there is about 1/32" play between the lug on the loose lever (D) and the screw (P) when the throttle is closed and when slotted end of range screw (B) is flush with knurl bushing (C). After tightening screw in binding post (O), straighten out the control wire so that the loose lever (D) does not hold the dash control lever (S) and cause it to stick open. Operate the dash control several times to check this point.

Another standard dash control hook-up may be made by removing the screw (P) and swinging the loose lever (D) up to a horizontal position, and then replace the screw. There should be at least 1/32" between the lug on the loose lever (D) and this screw, when the range screw (B) is flush with the knurl ferrule (C). The dash control tubing should then be fastened under a clamp and screw assembly at the lug (R). This dash control hook-up should be tested several times as explained above.

Starting and Warming Up. Turn on ignition switch, step on starting switch button and pull out dash control to extreme position. After motor fires, immediately push dash control about half way back or to the position where the motor will operate satisfactorily. After motor warms up, push dash control back gradually. Do not use dash control any longer than is necessary.

To Start a Hot Motor Do Not Use Dash Control

If trouble is had in starting a hot motor because it is loaded with gasoline, open the hand throttle all the way while cranking with starter until the motor fires, and then close off with the hand throttle just enough to keep the motor from racing until it is cleared out and runs smoothly.

Idle Adjustment. Turn the idle adjusting knurl (Fig. 8) to the right for a lean mixture, and to the left for a rich mixture. To check the idle adjust-

ment, warm up the motor thoroughly and by this we mean to have a hot motor. Then close the throttle, retard the spark all the way if car has manual spark control and then adjust idle stop screw so that motor will not idle less than five miles per hour on the road. After you have the proper idle engine speed then proceed to check the idle adjustment as follows. Turn the idle adjusting screw to the right (clockwise) turning slowly, watching the motor fan at the same time and continue to turn in this direction, which is the lean direction, until the fan falters or in other words is not turning with a smooth, constant motion. Just as soon as the fan falters stop turning the idle adjustment to the right (lean) and from this point turn the idle adjustment back to the left or rich direction exactly 6 clicks for summer driving and 8 to 9 clicks for winter driving, clicks can be felt while turning the idle adjusting knurl. This will give you an accurate setting on the idle adjustment providing you follow out all of these instructions just as we have outlined them.

Range Adjustment.—This adjustment is only effective in the driving range at speeds from twenty to forty miles per hour and does not effect acceleration or hill climbing with wide open throttle.

The adjustment is made by turning the range adjusting screw (B) to the left for a lean mixture and to the right for a rich mixture in the driving range.

This adjustment as shipped from the factory will usually be found to be best, unless a lean or rich-ened mixture is necessary at speeds from twenty to forty miles per hour.

To obtain the factory setting, screw the range adjusting screw (B) in or out so the head is flush with the bushing (C). If the range adjustment is changed it is necessary to readjust the idle mixture.

Power Adjustment.—Extensive research indicates that the carburetor will give the best mixture for maximum power on the hills or at high speeds when the power screw (J) is flush with the pin (K) in high altitude, however, more power may be obtained by leaning up on the power mixture—turning (J) to the left (counter-clockwise) 3 to 5 turns.

Accelerating Pump Adjustment.—You will note a small lever on accelerating pump which governs the amount of accelerating gas. This lever should be in the raised position for winter, giving a larger amount of extra gas for acceleration. In the summer this lever should be pushed down because in summer you do not need as much gas for quick acceleration.

SCHEBLER "S" STAMPED BOWL

Control Hook-up, Starting and Adjusting.—When using the loose lever (N, Fig. 9) the control tubing (R) is fastened in clamp (S) with screw (M) and the clip (T) on side of body just below the air funnel. Fasten the control wire (E) in the binding post (O) on loose lever (N) with the throttle closed, allowing 1/16 inch play between the loose lever (N) and the boss (U), it strikes against on lever (P).

When using loose lever (F) the control tubing (R) is pushed through clamp nut (V) until flush and clamped by tightening nut (Z). The control wire (E) is extended through the binding post (O). Tighten the screw on the binding post, being sure that the control on the dash is pushed down and that there is about 1/16 inch play between the loose lever (F) and the lug (U) on the dash control lever (P).

Starting.—Open the throttle one-half way. Pull out the dash control plunger, retard spark, step on the starter. As soon as the engine starts, push the plunger in half way and push in gradually as the engine warms up, until the plunger is entirely in.

Idle Adjustment.—Turn the idle adjusting knurl (A, Fig. 9) to the right for a lean mixture, and to the left for a rich mixture. To check the idle adjustment, warm up the motor thoroughly and by this we mean to have a hot motor. Then close the throttle, retard the spark all the way if car has manual spark control and then adjust idle stop screw so that motor will not idle less than five miles per hour on the road. After you have the proper idle engine speed then proceed to check the idle adjustment as follows: Turn the idle adjusting screw (A) to the right (clockwise) turning slowly, watching the motor fan at the same time and continue to turn in this direction, which is the lean direction, until the fan falters or in other words is not turning with a smooth, constant motion. Just as soon as the fan falters stop turning the idle adjustment (A) to the right (lean) and from this point turn the idle adjustment back to the left or rich direction exactly 6 clicks for summer driving and 8 to 9 clicks for winter driving, clicks can be felt while turning the idle adjusting knurl (A). This will give you an accurate setting on the idle adjustment providing you follow out all of these instructions just as we have outlined them.

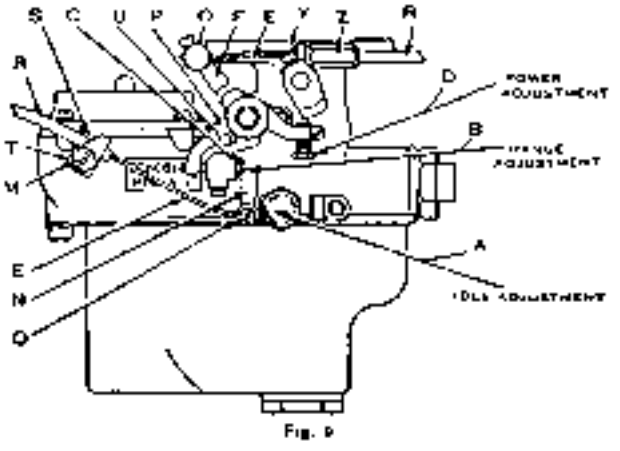


Fig. 9

Schebler Model S stamped bowl showing the three adjustments. On regular type carburetor (those having brass cap over) the float valve seat is not a removable part but is machined in the main bowl casting.

On the new bowl types float valve and seat are furnished as a separate assembly.

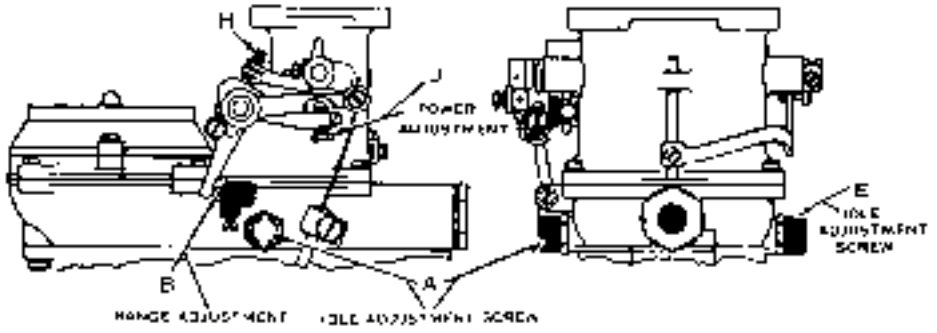


Fig 10

Schebler Model S Duplex showing two idle and one power adjustment.

The throttle opening and idle adjustment next to the motor controls cylinders numbers 3, 4, 5, 6. The outside throttle opening and idle adjustment controls cylinders numbers 1, 2, 7, 8

Range Adjustment.—See range adjustment for Schebler model S brass bowl, page 10

Power Adjustment.—See power adjustment for Schebler model S, page 10

SCHEBLER "S" DUPLEX

Starting and Warming Up.—Push dash control out to extreme position, turn on ignition switch, release clutch, open hand throttle about one-half way and step on starting switch button. After motor fires, immediately move dash control about half way back or to the position where the car will operate satisfactorily. As motor warms up move dash control further back gradually. Do not use dash control any longer than is necessary. When motor is hot do not use dash control. If trouble is had in starting a hot motor, open the hand throttle half way.

Idle Adjustment.—The duplex carburetor has two idle adjustments (A, Fig. 10) and (E). Before making any carburetor adjustments warm up the motor to average driving temperature. Both adjustments (A) and (E) turn in the same direction for rich and lean. Turning these adjustments to the right (clockwise) makes the mixture leaner and to the left (counter-clockwise) makes the mixture richer.

The duplex carburetor has two throttle openings into the manifold and the throttle opening and idle adjustment next to the motor always control the four center cylinders, numbers 3, 4, 5, 6. The throttle opening and idle adjustment of carburetor which is on the outside next to the hood of the car always governs the two front and two back cylinders, numbers 1, 2, 7, 8.

To adjust the inside idle adjustment next to the motor, disconnect spark plug wires numbers 1, 2, 7, 8 and ground them some place on the motor head. This leaves the four center cylinders numbers 3, 4, 5, 6 operating, which are governed by inside idle adjustment. Run idling adjustment screw (H) in a little way in order to get a slightly faster idle speed which is necessary when checking four cylinders at a time. Retard spark and depress the air valve of the carburetor 1/32 inch to 1/16 inch. If the adjustment is lean on the four center cylinders, numbers 3, 4, 5, 6, the motor will die immediately, if adjustment is too rich motor will speed up. When adjustment is just right, you should be able to depress the air valve 1/32 to 1/16 of an inch and the motor should continue to turn over 2 or 3 revolutions and then start to quit.

To adjust the outside idle adjustment, put the spark plug wires back on numbers 1, 2, 7, 8 plugs and remove wires from numbers 3, 4, 5, 6 and ground them, you are then ready to check the outside idle adjustment by depressing the air valve the same as described above.

After checking the two idle adjustments individually, connect up all spark plug wires so all 8 cylinders will fire and then make a double check by depressing the air valve of the carburetor the same as you did when checking 4 cylinders at a time. Before making your final check with all 8 cylinders firing, check the engine idle speed, setting the idle stop screw (H) so that engine will idle 5 to 6 miles per hour on the road. In making the final check by depressing air valve if you find the job a little rich or lean with all 8 cylinders hooked-up, turn both idle adjustments in the same direction, rich or lean to correct this, turning each one only two or three clicks at a time, and then re-check by depressing air valve of carburetor.

Range Adjustment.—This adjustment is only effective in the driving range at speeds from twenty to forty miles per hour and does not affect acceleration or hill climbing with wide open throttle.

The adjustment is made by turning the range adjusting screw (B, Fig. 10) to the left for a lean mixture and to the right for a rich mixture in the driving range.

This adjustment as shipped from the factory will usually be found to be best, unless a lean or richened mixture is necessary at speeds from twenty to forty miles per hour.

To obtain the factory setting, screw the range adjusting screw (B) in or out so the head is flush with bushing. If the range adjustment is changed it is necessary to readjust the idle mixture.

Power Adjustment. The carburetor will give the best mixture for speed and maximum power on the hills when the bottom of the head of power screw (J, Fig. 10) is setting so that it measures 7/32 inch to the arm that holds screw (J). On the later Duplex carburetors there is a small pin located at the side of screw (J) and the original factory setting is to have the bottom of the head on screw (J) flush with the bottom of the pin. In high altitudes more power can be obtained by leaning up on the power mixture—turning screw (J) to the left (counter-clockwise) 3 to 5 complete turns. Turning screw (J) to the right richens the power mixture.

SCHEBLER MODEL U

Control Hook-Up.—The control hook-up should be made between the dash control tube clamp screw and clip (G, Fig. 12) and the dash control lever (D). The Dash Control should be so adjusted that when the button on the dash is pulled out in the "start" position the lever (D) is down as far as it will go. With the dash control in the "run" position adjust the clamp screw (E) on the wire on lever (D) so that the button sticks out on the dash about ⅜" to be sure that lever (D) is as high as it will go. On the 1½" (Type U) be sure to thread control wire through the eye in choke wire (F) before running wire into dash control lever (D).

Starting and Warming Up.– Pull dash control to the full out or start position, open the throttle about half way, retard spark, turn on ignition switch and step on starting motor switch button. In very cold weather hold dash control out until the motor fires then move in the control a very short distance to keep the motor firing. In warm weather pull the control out just enough to start the motor. The last part of the dash control motion in the out or start position supplies a very rich starting mixture and should be used for as limited a time as possible.

When warming up after the motor is firing, the control can be put where best operation is obtained, gradually pushing the control to the run or down position.

When the motor is hot do not use the dash control.

If trouble is encountered starting a hot motor do not use the dash control but open the hand throttle half way and without using dash control step on starter.

Important.—Never attempt to make carburetor adjustments until the motor is hot. If you have a temperature gauge on the dash, it should read around 170 degrees before attempting to check the carburetor adjustments. All other units, such as valves, compression, setting of plug gaps, distributor timing, setting of distributor points and brakes, should be checked according to factory specifications and be sure they are O. K.

Idling Adjustment.—The motor should be thoroughly warmed up before adjusting the idle (A, Fig. 12). The spark and throttle should be fully retarded. Turning the end of lever (A) up leans the mixture and turning it down richens the mixture. The markings "R" and "L" on the body also show the rich and lean directions.

The correct idle adjustment should be obtained when pointer is approximately in the center of the range of adjustment between "R" and "L." Allow the motor to idle about one minute and if it rolls from being rich turn the adjustment lean one click at a time until the motor runs steadily. If the motor runs rough from being lean turn the adjustment rich one click at a time until the motor steadies. In warm weather keep the idle adjustment slightly on the lean side. In cold weather set idle rich just under the rolling point.

To change the idle speed adjustment move the idle stop screw (C) in or out to obtain the correct speed. Screwing (C) in will speed up the motor and vice versa. It may be necessary to change the idle adjustment (A) if the idle speed is changed very much. The correct speed is 5 M.P.H. in high gear on level road.

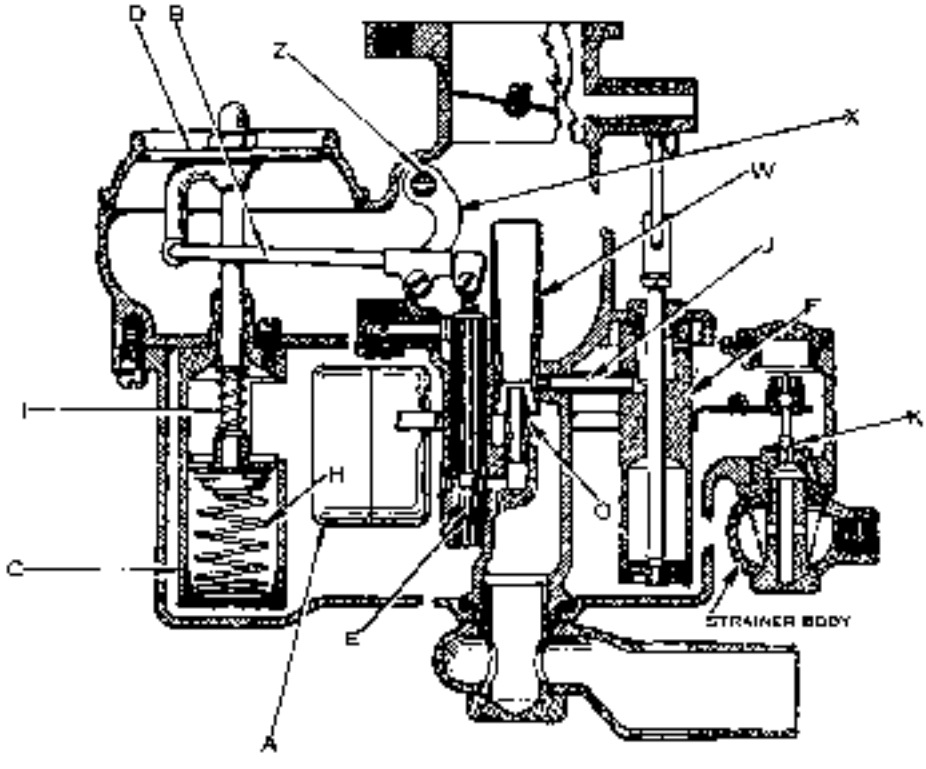


FIG. 11

Cross section view of Schebler Model U carburetor showing (A) float (B) needle valve lift lever (C) dash pot assembly (D) air valve (E) needle valve (F) accelerating pump assembly (H) lower air valve spring (I) upper air valve spring (J) metering or cross passage (K) float needle valve assembly (O) main gasoline nozzle (W) venturi (X) fulcrum lever arm (Z) fulcrum lever arm shaft

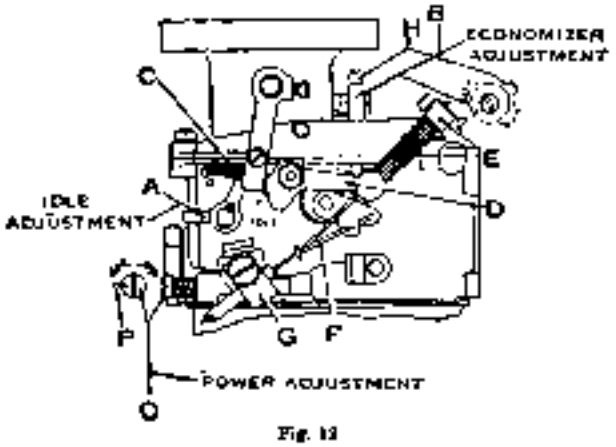


Fig. 12

Schebler Model U showing (A) idle adjustment (C) idle speed adjustment (D) economy adjustment (O) power adjustment.

Economy Adjustment.— The factory setting of the economy adjustment (B, Fig. 12) is shown with the arrow mark on the adjustment in line with the arrow mark on the body. To lean the mixture turn the adjustment in the lean direction or counter-clockwise and to richen the mixture turn the adjustment in the rich direction or clockwise.

To accurately check the economy adjustment, warm the motor up thoroughly. Next, retard spark all the way if motor has manual control on spark. Next, with car standing still speed the motor up to a speed corresponding to approximately 30 miles an hour road speed. Do this with the throttle control on the wheel so you can maintain the speed while checking the economy adjustment. With the motor turning over at this speed loosen the lock screw (H) and turn the economy screw (B) out (counter-clockwise) until the motor falters or begins to surge and slow down and at this point, then turn the adjusting screw (B) in (clockwise) until you just get away from the surging point and motor is hitting on all cylinders. This will give you an accurate setting on the economy adjustment. Be careful not to turn screw (B) in too far because if you do you will have a rich setting on economy, but turn it in just enough to get away from the surging of the motor.

After checking this adjustment accurately, hold the economy adjusting screw (B) so it will not move and turn the collar so that the arrow on the collar is in line with the arrow on the body and then lock the collar by tightening set screw (H).

Note: Changing economy adjustment does not affect idle adjustment in any way.

Power Adjustment.—The wide open throttle adjustment can be richened by turning power adjustment screw (O, Fig. 12) in (clockwise) and can be made leaner by turning it out (counter-clockwise).

This adjustment should generally be used only for high altitude conditions, or when special fuels are used. The factory setting for this adjustment is when the head of screw (O) is flush with end of pin (P) at the side of the screw and the punch mark on (O) pointing to pin (P).

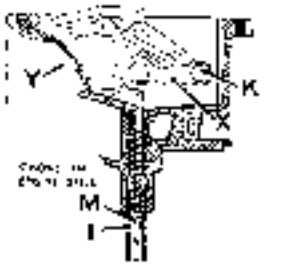


Fig. 14

Cross section of air valve and control levers Model U Schebler carburetor (K) air valve lift lever fulcrum (M) needle valve (X) air valve lift lever (Y) air valve.

This adjustment affects the economy adjustment (B) and if any change is made in power adjustment (O), the economy adjustment (B) will have to be reset as explained above by setting just above the surging point of the motor. If power adjustment (O) is richened say one-fourth turn, then lean (B) economy adjustment one-fourth turn, or if (O) is leaned one-fourth turn, then richen (B) one-fourth turn.

Remember that the power or wide open throttle adjustment is correct when it leaves the factory except for special cases as mentioned above. Also remember that it is very important to reset the Economy Adjustment (B), if any change is made in Adjustment (O).

The Power Adjustment is not used on the 1" size.

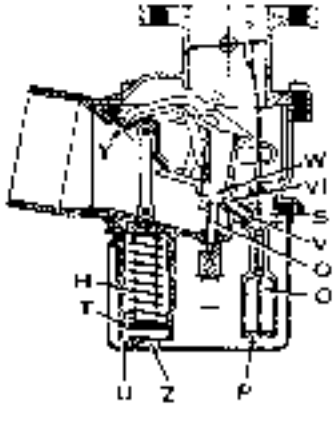


Fig. 13

Cross section of Model U Schebler carburetor showing (H) air valve spring (O) main gasoline nozzle (P) accelerating pump piston (Q) accelerating pump assembly (T) air valve piston (U) dash pot relief valve (V) cross passage to venturi (W) cross passage metering hole (W) venturi (Y) air valve (Z) dash pot cylinder relief valve spring.

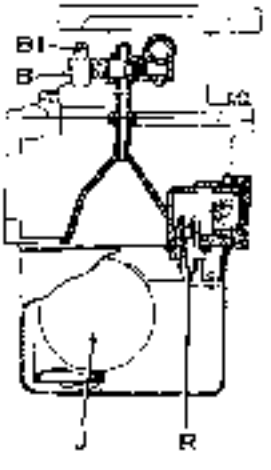


Fig. 15

Cross section of Schebler Model U carburetor showing float valve assembly and economy adjustment (BI economy adjustment screw (Re) economy adjustment lock (J) float (R) float needle valve assembly.

STROMBERG MODEL R

This carburetor is of the Plain Tube type so-called because, having no air valves or metering