

**SPECIAL  
STROMBERG CARBURETOR  
EQUIPMENT**

**WITH HOT SPOT FOR  
FORDS**

**INSTRUCTIONS FOR INSTALLATION AND ADJUSTMENT**

THE SPECIAL  
STROMBERG CARBURETOR  
WITH HOT SPOT MANIFOLD  
*for* FORDS

\$15.75 *Complete*

MANUFACTURED BY

STROMBERG MOTOR DEVICES COMPANY

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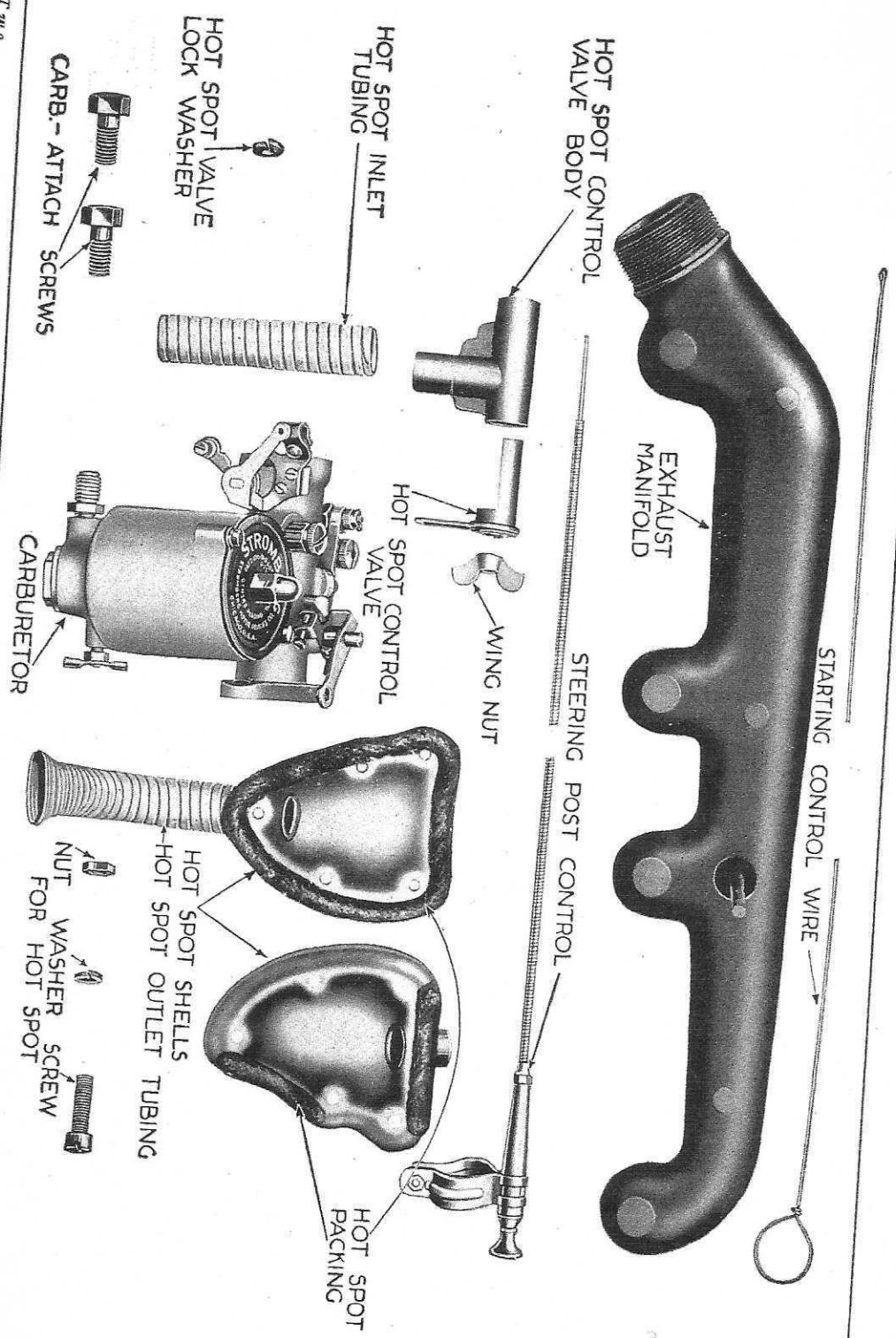
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**P**RESENT DAY motor gasolines can only be utilized efficiently by the combination of a good carburetor and the proper application of exhaust heat to the mixture. This new Stromberg Equipment for Fords for the first time makes it possible to obtain, on Ford cars, improvements in Power, Flexibility, and Fuel Economy, heretofore found only in the newest models of cars of much higher price.

## INSTALLATION AND ADJUSTMENT OF STROMBERG MODEL O-F CARBURETOR AND EQUIPMENT FOR FORD CARS

The Stromberg Model O-F carburetor equipment for Fords consists of the following material: (Note illustrations on opposite page.)

**CARBURETOR**—with gasket and two attaching cap screws.

**STEERING POST CONTROL**—for choking carburetor air inlet in starting and warming up engine.

**HOT SPOT EXHAUST JACKET**—in two shells, with packing and five attaching screws.

**INLET AND OUTLET** tubing connections for Hot Spot Jacket.

**HOT SPOT CONTROL VALVE.**

**STANDARD FORD EXHAUST MANIFOLD**—with stud and opening to receive the Hot Spot Jacket connection.

**Note:** The Hot Air Stove with tube that is on the car is used in connection with the STROMBERG carburetor.

### DIRECTIONS FOR INSTALLATION:

Time will be saved by performing the various operations in order as follows:

1. To remove the Old Carburetor, shut off gasoline valve cock under gasoline tank under seat. Disconnect the gasoline line union at carburetor; remove the hot air stove from ex-

haust manifold and carburetor after loosening rear clamp on exhaust; disconnect the throttle rod from throttle lever. The carburetor can now be removed, along with the Intake and Exhaust Manifolds.

2. Unscrew the large union nut at the rear of the exhaust manifold (if a wrench which fits this is not available, a Stillson or pipe wrench will be found most convenient); loosen the nuts and remove the brackets which hold the manifold in place. In removing the manifolds be careful not to lose the gaskets between manifolds and cylinder block, as these will be needed when the manifolds are replaced.

3. Fit the Hot Spot Jacket to the Intake Manifold. This jacket is in two shells; lay the manifold, with old carburetor removed, on a flat surface with the flange of the engine connection downward. Place the inside shell of the hot spot jacket, the one with the tubing attached, on the bottom side of the manifold at the bend near the carburetor flange. Then fit on the other shell, being careful that asbestos packing is in its proper place in the grooves; the short pieces of packing have been purposely made to extend beyond their grooves, so that they will jam down tight in the corners where they meet the packing of the other shell. Before tightening up the screws, slide the jacket around the elbow one way or the other until the position of best fit is obtained; then draw up screws as tightly as possible.

4. Attach carburetor to its flange on the intake manifold, being careful that the gasket is in place between. Be sure to draw the cap screws or bolts up very tight.

**Note:**—Change of carburetor when car is not equipped with starter. On the carburetor as furnished, the mixture regulator tube holder has a small stop projection, which is inoperative, on cars equipped with starters, allowing complete closing of choke valve with steering column control. When the carburetor is to be attached on a car not equipped with starter, this projection (marked Choke Bracket Stop Arm on illustration, Page 6) should be bent out to engage the choke lever. The choke valve can then be closed entirely by pulling on wire which leads to front of radiator.

5. Place the new exhaust manifold furnished with the equipment on the engine and hold temporarily in place by drawing up two of the clamps in a vertical position, so that they will not interfere with a later attachment of the intake manifold. It will be found easier to first shellac the gaskets in place on the manifold, or if shellac is not available to stick them in place on the manifold with grease. Tighten up nut holding exhaust pipe to muffler to rear end of the exhaust manifold.

6. Clamp Steering Post Control in place on steering post about 8 inches below spark and throttle lever quadrants. Insert the tubing and wire in the opening between footboard and dash, and bring it around back of engine to carburetor, being careful not to make any sharp bends. Lay intake manifold and carburetor approximately in position, with carburetor out on hood sill where it can be easily reached, and slide end of control wire and tubing through choke tube holder, and the wire through the choke wire connector on choke lever. The end of the tube should come flush with the bottom of the choke tube holder and should be securely clamped there. With the knob on the steering post control all the way down, hold the choke valve lever all the way down and tighten the screw holding the control wire in the lever: it may be necessary to hold the choke wire connector with pliers to keep it from turning when you tighten up the screw clamping the wire. Try working controls to see

that steering post control (if self-starter is fitted) closes choke valve all the way and permits it to open smoothly and without sticking.

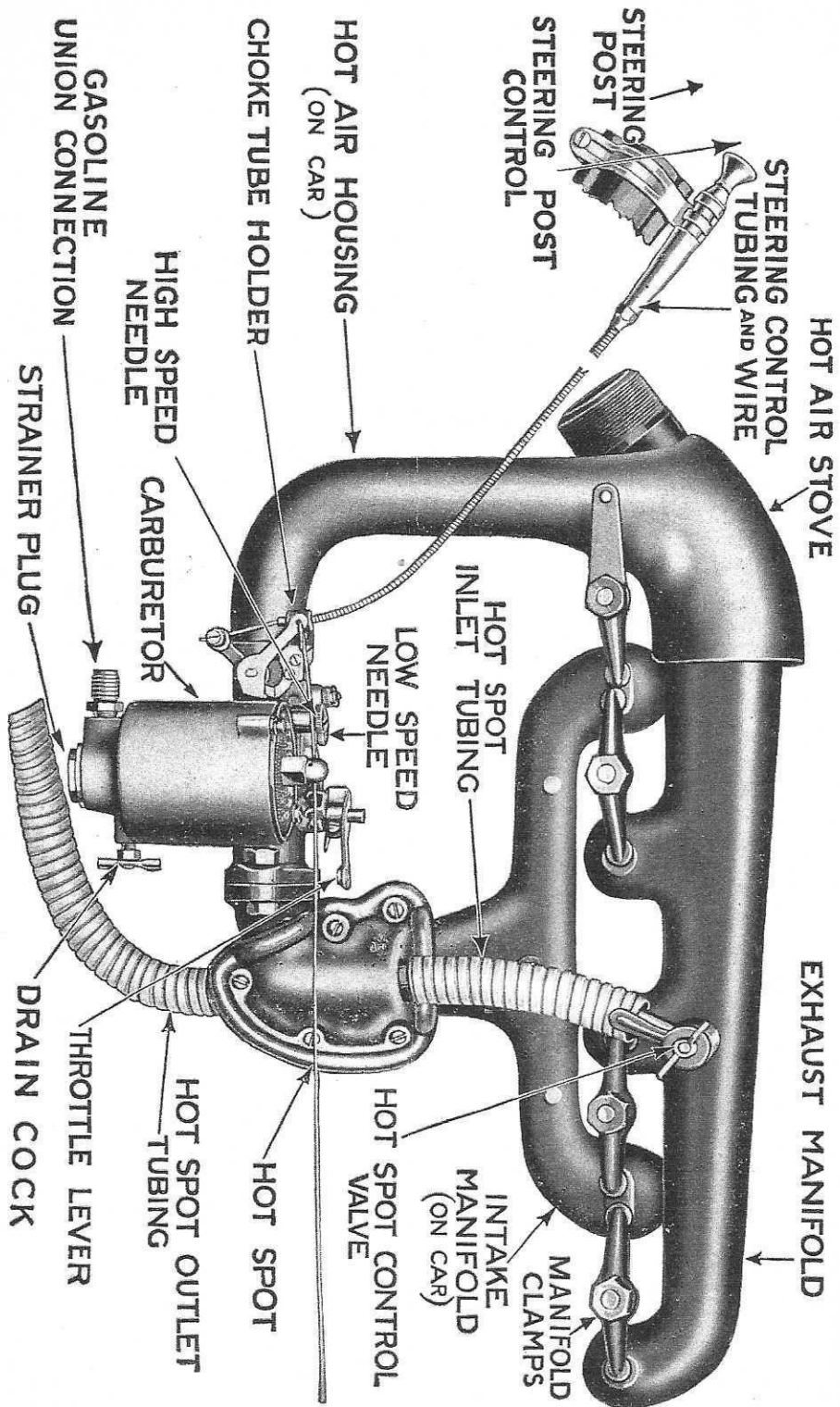
7. With control tube connected, place intake manifold with carburetor in position, making sure that gaskets at the cylinder ports are properly located, and tighten down all the clamps but the rear one. The outlet tube hanging down from the hot spot should extend down through the hole in the underpan. Be careful that float bowl of carburetor does not jam against frame sill; file away frame to give necessary clearance at this point.

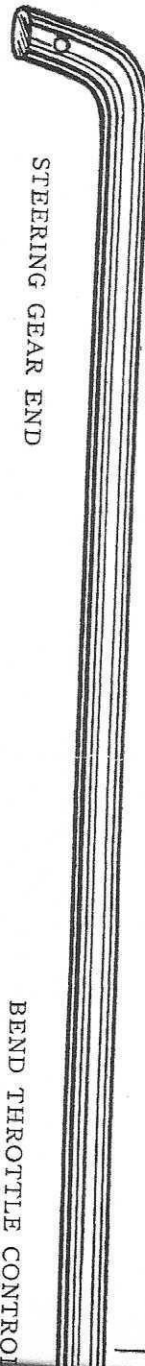
8. Fit the Hot Spot Control Valve, with its short length of flexible tubing, over stud and into opening on the exhaust manifold. Also fit the lower end of flexible tubing over the upper opening of the hot spot jacket. Control Valve arm should be down in line with tubing to give full opening for the exhaust gas. Hold it in position by securely tightening the wing nut.

9. Connect gasoline line to the gasoline union nipple on the carburetor. Turn on valve cock under the gasoline tank and observe that the connection does not leak. Connect throttle rod to the throttle lever on the carburetor, first bending throttle rod approximately to shape shown across top of pages 6 and 7. Fasten control rod with cotter pins. Work throttle lever on steering wheel quadrant all the way up and down to make sure that the throttle on the carburetor opens and closes all the way.

10. Pass the starting control wire through the radiator, in position similar to the original control wire, and connect it to the upper arm of the priming lever, making sure that it will permit the choke valve to stand wide open.

11. Replace the original hot air stove. The lower end of the hot air tube will fit in the air inlet opening of the carburetor. Tighten fourth, or rear, clamp on exhaust manifold over hot air stove.





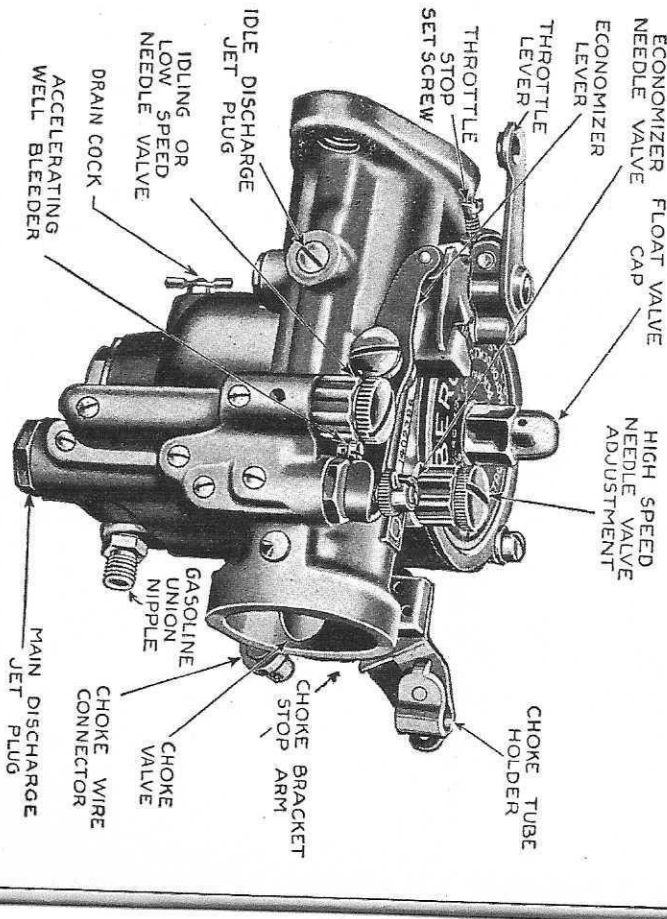
## TO START MOTOR:

The carburetor, when removed from the package, should have the adjustments approximately correct. If these have been disturbed, a fair adjustment for starting may be obtained as follows:

Screw the idling jet adjustment inward, or clockwise, till it seats, then unscrew it one (1) turn; screw the high speed adjustment downward clockwise, till it seats, then unscrew it two and one-half ( $2\frac{1}{2}$ ) turns.

For Hand Cranking, pull down the throttle lever about  $\frac{3}{4}$  inches from the top of the quadrant. Retard spark lever to usual position for starting, and pull up steering post control knob as far as it will go. Then, if engine is very cold, hold starting valve shut by pulling the wire out as far as it will go, with the left hand, and crank the engine. This starting valve cuts off nearly the entire air supply to the carburetor and thereby gives a very rich mixture.

After engine starts, release starting wire and gradually move the steering post control down until the engine is firing evenly. As the engine warms up the control knob should be pushed down until it is at





## ROD TO THIS EXACT SHAPE

CARBURETOR END



the lowest possible position, which leaves valve in air horn of carburetor wide open.

If engine is moderately warm, or high grade fuel (above 64° B Midwest gasoline or 56° B Pacific Coast gasoline) is being used, engine will probably start readily without pulling wire, or using choke. Always be careful not to hold choke valve closed more than necessary and thus overload the engine with gasoline. If this should occur, shut off the switch, lower the steering post control knob, open the throttle wide, and with starting valve wide open, crank the engine several times, which will pass fresh air into the cylinders; after which close the throttle and turn on the switch, when engine should start readily.

For Starting With an Electric Starter, open the throttle a little way, retard spark lever to usual position for starting, step on starter, and as engine begins to turn over, pull up the steering column control knob till engine takes hold, then gradually return steering post control knob downward as the operation of the engine will permit. If weather is cold, the control should be pulled up all the way, for an instant only, then slightly open; if engine does not start immediately, open throttle a little further, step on starter again and pull up control all the way again for a second or so. Do not crank engine continuously with control all the way shut.

## FINAL CORRECT ADJUSTMENT

After engine is thoroughly warm, move steering post control down all the way so that the choke valve is wide open and adjust as follows:

Gradually close the throttle, with spark retarded about half way, until engine slows down to a low idling speed. At this time the throttle lever stop screw should be touching the throttle stop. If the engine does not hit evenly, screw the low speed adjustment in for a richer mixture, or out for leaner mixture, until the adjustment is obtained where the engine runs best. If the throttle does not close far enough and the engine runs too fast, at the lowest speed, unscrew the throttle stop screw till the desired engine speed is reached. If the engine runs too slow, so that it is in danger of stalling, screw the throttle stop screw inward a little bit to give a larger minimum throttle opening.

For high speed adjustment, open throttle lever on the quadrant about one inch and advance spark to the regular running position. Then screw the high speed adjustment inward or clockwise until engine slows down perceptibly from too lean a mixture, then unscrew adjustment, counter-clockwise, until the maximum engine speed for that throttle position is reached, then go back one or two notches that is, the adjustment should be such as to cut down the engine speed a little—a slight but



perceptible amount—at part throttle. At wide open throttle the economizer device will change the mixture to give full power. Such an adjustment will be the best adjustment for level road running, for hill pulling, and for high speed.

### SUGGESTIONS

It is obvious that the fuel consumption must be somewhat in proportion to the power required to roll the car. The gasoline mileage will always be lower on rough roads, in snowy weather, or in hilly country, than with favorable road conditions.

For the same reason the careful driver will see that there is no drag in the rear wheel brake bands, or planetary transmission bands, to retard the free motion of the car. This can be noted by observing how easily the car rolls in neutral.

A considerable amount of gasoline may be wasted by allowing the engine to run idle for long periods. After the user has once learned to manipulate the controls for starting, there should be no occasion for allowing the engine to stand idling for fear of hard starting.

In extremely hot weather, or very warm climates, removal of the hot air stove may give increased power and keep the engine from overheating. When "casing head" gasoline, or fuel with low initial boiling point is used, some warm weather trouble may be avoided by removal of the hot air stove. If after the hot air stove has been removed the mixture is too hot, the hot spot heat can be cut off by turning the regulating valve handle upward, but this should not be done until the removal of the hot air stove has been tried.

In cold weather the hot spot can be warmed up, and a condition of normal operation reached more quickly by driving the first quarter to one-half mile with the spark well retarded; this will heat up the exhaust and throw more heat to the hot spot.

After a long period of use, carbon soot may collect in the inside of the hot spot jacket to such an extent as to cut down the heating effect. Under such conditions the obvious remedy is to remove the hot spot shell and clean the carbon off the intake manifold, and also from the inlet and outlet flexible tubing; a light coating of carbon on the shells is not harmful, but improves the efficiency.

If the engine will run a little while and then stop, or will run steadily at low speeds but not at higher speeds, the trouble may be due to gasoline not reaching the carburetor. Removal of the round topped needle valve cap nut on top of the float chamber will show the upper end of the float needle valve: if this is down as far as it can go, this is a sign that the carburetor is full of gasoline, but if it is up, or nearly up as far as it can go, this is an indication that the carburetor is partly empty and is not receiving the normal supply of gasoline from the tank. This trouble is usually due to an accumulation of dirt in the gasoline line.

Unscrewing the strainer plug will permit removal of strainer underneath float chamber which should be cleaned once or twice every six months. Opening the drain cock located at bottom of float chamber on side toward front of car will flush out any water which may have collected in bottom of float chamber.

For best economy in fuel, the spark lever should be well advanced at medium and high speeds. It will be found that the engine will pull better at low speeds under heavy load if the spark is somewhat retarded from the best level road driving position.

### SUGGESTIONS FOR COLD WEATHER STARTING

In very cold weather the oil in the transmission may become so stiff that it is impossible to turn the engine over fast

enough to get compression and ignition, even though the gears are in neutral. The difficulty may be overcome by use of some of the following methods:

In very cold weather, when stopping engine, pull the steering post control knob up all the way for an instant before throwing off the switch. This will leave the engine cylinders primed with a rich mixture charge at the time of next starting.

After the engine is stopped, leave the hand brake lever forward in the high gear position, which will squeeze the oil out from between the clutch plates; when ready to start again, pull the lever back into neutral. This will reduce the tendency of the plates to drag when starting is cold. Light oil should be used in the engine and transmission during the colder months.

If motor is too stiff to turn over fast enough to start, with the gear lever in neutral, jack or block up one rear wheel; with hand lever in high gear position, this will decrease drag from the cold oil in the transmission.

As a final resort, fill the engine water jacket and radiator with hot water; in a few minutes the heat will extend back to the transmission and loosen up the oil. Pouring hot water on the intake manifold may also help the starting.

## IGNITION TROUBLES

Many engine faults which the inexperienced driver is apt to ascribe to the carburetor are in reality due to defects in ignition. In cases of failure to start or of engine missing, it is well to throw the switch on the battery and notice whether the vibrators of each cylinder in turn buzz. If they do not, the trouble is, of course, due to some fault in the electrical circuit.

Failure to start, or engine running very poorly, may be due to an accumulation of oil or water in the commutator.

Irregular operation of the engine at all speeds above 15 to 18 miles per hour, and inability to make high speed, are usually due to a worn or pitted commutator.

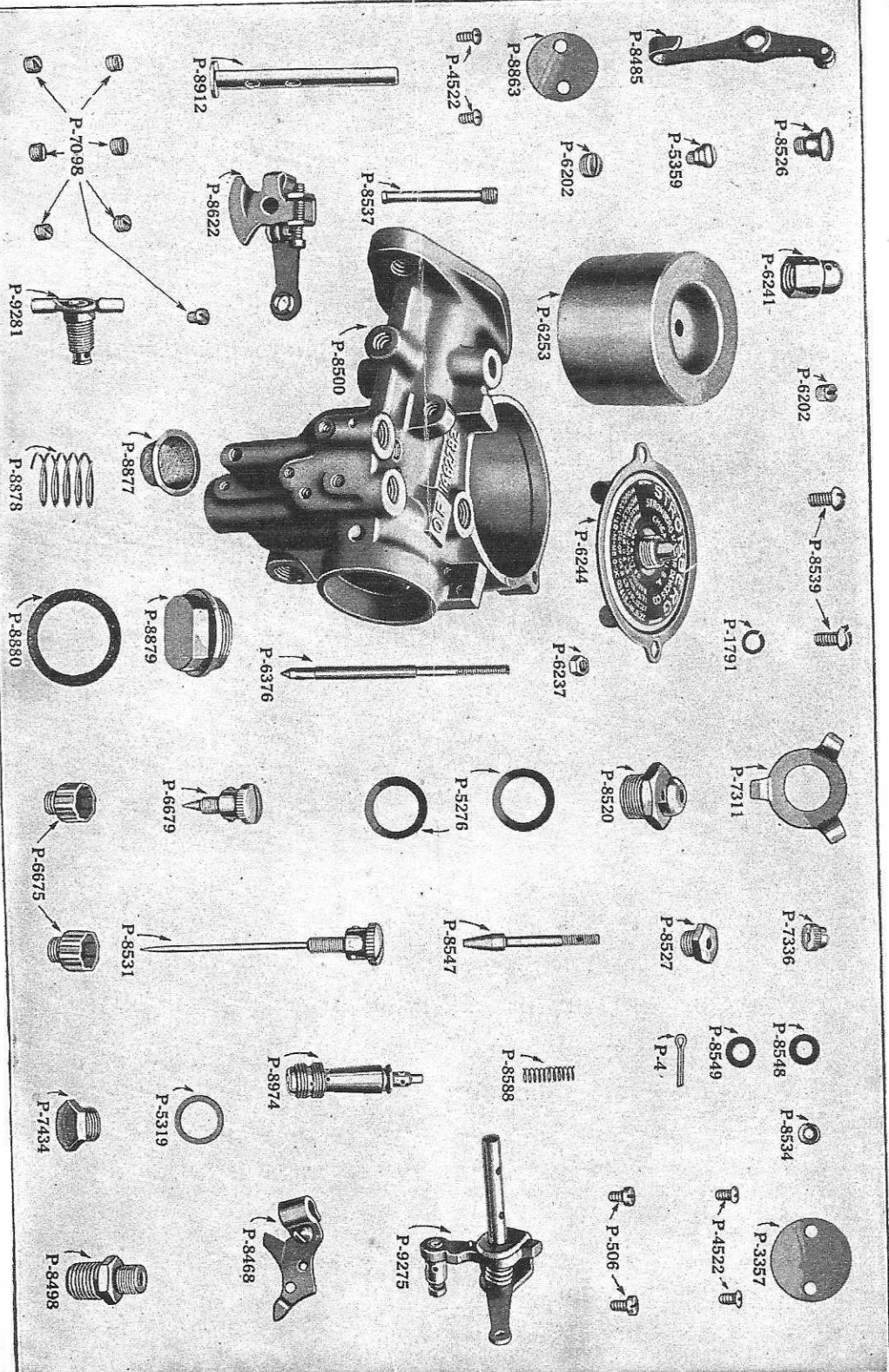
If engine misses irregularly or "jerks" under a heavy pull, the trouble may be due to a cracked or sooted spark plug. Set throttle so that engine will idle fairly fast and short circuit the spark plugs one after the other with a screwdriver. The plug which, when short circuited, causes the engine to lose the least speed, will probably be the offending one.

When the engine idles irregularly, or will idle a while and then stop, the trouble may be due to defective magnets in the fly-wheel magneto, or to endwise play in the crankshaft bearings, permitting the action of the fly-wheel magneto to vary.

For other points on ignition see regular Ford instruction booklet.

## OTHER POINTS ESSENTIAL FOR BEST OPERATION OF MOTOR

1. All cylinders should have full and equal compression. This can be ascertained by noting the resistance given by each cylinder, when cranking slowly with ignition switch off.
2. The spark plugs must be clean, and of the type originally furnished with the car (which we have found to be extremely satisfactory) the gap should be .028 of an inch or about the thickness of a worn dime.
3. Commutator must be clean and show a smooth track all around. Vibrator points should also be clean and have proper adjustment.





# PRICE LIST OF PARTS USED ON O-F ¾ FORD CARBURETOR

NAME	Pc. No.	Price	NAME	Pc. No.	Price
Carburetor with Complete Equipment.....		\$15.75	Needle Valve Adjustment .....	6675	\$0.25
Carburetor (only).....	9275	15.00	Strainer .....	8877	.10
Choke Levers with Stem (Complete).....	2369	.05	Strainer Spring .....	8878	.18
Choke Wire Clamp Screw.....	3357	.25	Strainer Plug .....	8879	.55
Choke Valve .....	3357	.25	Throttle Lever with Screws (Complete).....	8880	.05
Choke Valve Screws (each).....	4422	.05	Throttle Lever with Screws (Complete).....	8882	.75
Choke Tube Holder with Screw.....	8468	.05	Throttle Lever Clamp Screw.....	8884	.05
Choke Tube Clamp Screw.....	2866	.05	Throttle Stop Set Screw.....	8506	.05
Choke Tube Holder Attaching Screws (each).....	506	.25	Throttle Valve Stem with Washer (Complete).....	8738	.05
Drum Cock .....	9281	.05	Throttle Valve Screws (each).....	8912	.25
Economizer Channel Plug.....	7098	.25	Throttle Valve .....	8863	.05
Economizer Lever (Complete).....	8485	.25	Union Nipple .....	4622	.05
Economizer Lever Fulcrum Screw.....	8526	.10	Well Air Bleeder.....	4498	.38
Economizer Needle Channel Plug.....	7098	.25	Well Air Bleeder Channel Plug.....	5359	.20
Economizer Needle Valve Adjusting Nut.....	8527	.05	Carburetor Attaching Cap Screws (each).....	2974	.06
Economizer Needle Valve .....	7336	.05	Exhaust Manifold with Hot Spot Control Valve.....	8542	2.50
Economizer Needle Valve Bushing.....	8527	.10	Exhaust Manifold Valve .....	8542	2.50
Economizer Needle Valve Spring.....	8528	.10	Hot Spot Control Valve .....	8477	.15
Float Chamber Cover with Levers.....	8533	1.10	Hot Spot Control Valve Body .....	8475	.10
Float Chamber Cover Screws (each).....	8534	1.15	Hot Spot Control Valve Connecting Rod.....	8533	.10
Float Chamber Cover Washer.....	8539	.05	Hot Spot Valve Lock Washer.....	8157	.05
Float Needle Valve .....	1791	.30	Hot Spot Control Valve Wing Nut.....	8538	.05
Float Needle Valve Lock Nut.....	6376	.30	Flange Gasket.....	6626	.10
Float Needle Valve Seat .....	6276	.05	Hot Spot with Outlet Tube (Complete).....	8624	3.50
Float Needle Valve .....	8520	.30	Hot Spot Shell (inlet side).....	8620	1.00
Float Needle Valve .....	7311	.30	Hot Spot Packing.....	8621	1.00
High Speed Needle Valve (Complete).....	7098	.75	Hot Spot Clamping Nuts (each).....	8619	.15
Idle Needle Channel Plug.....	6679	.06	Hot Spot Washers.....	2290	.05
Idle Needle Channel Plug (Complete).....	7098	.06	Hot Spot Clamping Nuts (each).....	1791	.05
Idle Tube Channel Plug.....	6202	.06	Hot Spot Outlet Tubing.....	8540	.35
Idle Tube with Nozzle (Complete).....	7098	.06	Hot Spot Outlet Tubing Attaching Pin.....	8496	.05
Idle Tube Gasket .....	8537	.40	Hot Spot Inlet Tubing.....	8541	.15
Idle Tube Gasket .....	8549	.40	Starting Control Wire.....	5564	.10
Idle Tube Gasket .....	6202	.06	Starting Post Control (Complete).....	8730	2.25
Idle Tube Gasket .....	8500	.06	Steering Post Control Clamps.....	8728&8729	.05
Main Discharge Jet Tip Gasket (Lead).....	8974	.40	Steering Post Control Clamps Screw Nut.....	8854	.05
Main Discharge Jet Gasket (Ribre).....	8534	.05	Steering Post Control Clamp Screw Nut.....	9136	.05
Main Discharge Jet Plug Gasket.....	8538	.05	Steering Post Control Rod with Knob and Wire.....	8735	.75
Main Discharge Jet Plug.....	5319	.05	Steering Post Control Wire .....	2245	.10
Main Discharge Jet Plug.....	7434	.05	Steering Post Control Base .....	8731	.50
Main Gas Channel Plug.....	7098	.27	Steering Post Control Lock Plunger.....	8899	.05
Needle Valve Cap.....	6241	.06	Steering Post Control Plunger Locking Wire.....	8109	.75
		.20	Staple (For supporting Control Tube).....	8707	.05