

# DIRECTIONS

FOR INSTALLATION  
AND USE OF

## Prest-O-Starter



COPYRIGHTED BY  
THE PREST-O-LITE CO.  
INDIANAPOLIS, INDIANA



## DIRECTIONS

FOR INSTALLATION AND USE OF

# Prest-O-Starter

IN UNPACKING THE PREST-O-STARTER OUTFIT, CHECK THE CONTENTS OF THE CARTON WITH THE LIST OF CONTENTS SHOWN ON THE LABEL, CAREFULLY EXAMINING ALL PARTS AND ASSURING YOURSELF THAT THE PARTS SHIPPED TALLY WITH THOSE LISTED.

The first step in installing this device should be the selection of a handy position on the dashboard of cars which are provided with dashboard room or on the toeboard of cars which have limited dash room.

When you have selected the place to install the pump (P), you should then cut a circular hole  $2\frac{7}{8}$  inches in diameter to admit the threaded head of the pump (H). Then the screw retaining ring (PR) can be taken up tight so as to hold the pump in position and this retaining ring can be fastened with the screw furnished, to keep it from working loose.

Occasionally use a few drops of good, light machine oil on the piston rods of the pump.

Remove priming cups from engine and seat in their openings the steel injector nipples furnished with the outfit. Be careful to note the small opening in the bottom of this injector and mark the hex end so you can determine which way the jet of gas will go when the injector is seated.



The injectors should be seated in such a manner that the jet of gas will not be directed at the spark plug which is operated from coil and battery but away from it, and in such a way that the gas will come in contact with the cylinder wall and be carried around its circumference by the force of the jet to the spark plug. It is necessary to see that too much acetylene gas is not pocketed around the spark plug which will give the initial spark, as a rich mixture of acetylene gas cannot be fired.

Note sketches of three conditions in various positions and types of engine cylinders. The small arrows show how the gas should be directed in cylinders where these conditions exist. **THE SUCCESS OF THE STARTER** depends almost entirely on the direction of this jet of gas in the cylinder. In a large majority of trials when engine fails to start on spark after injecting the acetylene gas, the failure is due to an over rich mixture pocketing around the plug.

If you find that the injector nipples furnished with your outfit are too long—that they interfere with any of the moving parts inside the engine when fully seated—or so short that the small end from which the gas jet is directed does not reach down in the clear of the metal, thus preventing the jet of gas from being directed to whatever point you desire; or if the hex end of the nipple is too short to allow wrench room, you should not try to use them in your engine but rather return them to The Prest-O-Lite Company, giving dimensions of your engine, and we will immediately send you proper nipples. These nipples may be exchanged at the Home Office of **THE PREST-O-LITE COMPANY** at Indianapolis or any of the branches of The

Prest-O-Lite Company, a list of which are shown on the inside back cover.

If, after the installation of the Starter is completed, the engine fails to work properly, you will be able to get results by altering the direction of the gas jet, keeping in mind that too much gas around the spark plug makes too rich a mixture and will not fire properly; while on the other hand, too little gas will leave the mixture too rare to be fired by the electric spark. A little experimenting on this adjustment will bring results and when once you get the adjustment right, it will stay right.

If the design of your engine provides no priming cup openings in your cylinder, or if the priming cup openings on your engine are in the side of the cylinder below the highest point reached by the piston in its up-stroke, you will be unable to use our regular injector nipple and we have perfected for engines of this type a special spark plug, which is made in  $\frac{7}{8}$  A. L. A. M.,  $\frac{1}{2}$  inch standard, and metric thread. These can be used in place of the regular spark plugs on your machine and are so designed as to introduce the jet of acetylene gas into your cylinder. No special fittings are required for the use of these spark plugs. You simply take out the old plugs and install the special spark plugs. These plugs may be had in any size from any of the branches of **THE PREST-O-LITE COMPANY** or dealers in automobile accessories.

After you have properly seated the injector nipples attach to them the brass check valves which are a part of the outfit, being sure to hold the injector nipple firmly with a wrench to avoid changing its position.



When you have the injectors seated and the check valves attached, connect the  $\frac{1}{4}$  inch tubing (which will be our main gas supply line D), in the center of the pump with the  $\frac{1}{4}$  inch union.

Care should be taken in fastening the brass tubing (D), which connects the automatic reducing valve (AV) to the pump connection (C) so that vibration will not cause wear and start leaks in the fittings.

The by-pass valve (BP) is designed to provide a means of putting gas into the inlet manifold in extremely cold weather to assist in keeping the engine moving until the carburetor begins to deliver gas. It is installed by cutting into the gas feed line in a convenient place near the pump and putting in the T fitting. Attached to the by-pass valve, you will find two tubes, one stamped at its base with the letter "M" (meaning manifold) and the other being unstamped. A short piece of the  $\frac{1}{4}$  inch soft brass tubing is then connected with the tube of the by-pass valve, not stamped, to the T, and the other outlet of the by-pass valve (stamped with the letter "M") is connected by tubing to the  $\frac{1}{4}$  inch compression union furnished to the intake manifold above the carburetor.

The brass tubing (D) should be bent around in the direction of your gas tank or the line which you will run to bring the gas from the tank to the Starter. The other end of this tubing should be attached to the short piece of  $\frac{1}{4}$  inch brass tubing attached to the automatic reducing valve (AV). Then connect, by means of the lengths of  $\frac{1}{8}$  inch soft brass tubing furnished with the outfit, the outlet check valves on the bottom of the pump, one with each check valve on injector nipple. Care should be taken in making these

connections to see that the unions are drawn up tightly and that the unions, before putting them into position, are free from dust or dirt, which prevents the making of an absolutely gas-tight joint.

If you are going to use your Prest-O-Lite tank to operate both the Starter and lights, you should detach your light union and attach to the tank in its stead the three-way union (E), attaching to one side of this three-way union the automatic reducing valve, (AV). In making these connections, be sure that the ground surfaces of the union on the tank and the automatic reducing valve are perfectly clean and free from grit or dust. Draw unions up tightly to insure against any leak taking place here, as the full pressure of the tank will be held continuously in this union.

Now, to the third connection of the three-way union, attach your regular lighting union to the valve (G) to take care of the lights on your car.

Aside from the regular line to your headlights, you should now have a complete gas line leading from the tank through the automatic reducing valve (AV) to the center connection (C) on the bottom of the pump and a gas line leading from the short connections on the bottom of the pump (B), one to the check valve (A) of each cylinder on the engine.

**IMPORTANT.** So far as the gas connections are concerned your Starter is now complete, except that you must **THOROUGHLY TEST OUT THE OUTFIT WITH A HEAVY SOAP-SUDS FOR LEAKS.** Be sure that the shut-off valve (G) in the line leading to your lights is closed. Turn on the tank about one turn of the needle valve



and then with the soapsuds go over **EACH CONNECTION ON YOUR ENTIRE OUTFIT AND BE SURE THAT YOU HAVE NO GAS LEAKS**, taking up the union nuts where fittings are provided or using wire where you have hose connections to make the line tight. **A SMALL LEAK IN THIS GAS LINE WOULD VERY SOON EMPTY YOUR TANK.** After having turned on the gas tank, **BE SURE THAT YOUR PACKING NUT (SN) ON THE NEEDLE VALVE OF THE TANK VALVE (F) IS TIGHT.** If this packing nut were allowed to remain loose, a leak might occur.

The system as now installed is ready for use and the only point left for successful operation, is the proper ignition of the gas which we are now ready to inject into the cylinder.

If your car is provided with the ignition system known as the "double system," that is, using eight spark plugs, one set of which is connected with a four-cylinder coil or single cylinder vibrating coil with the distributor, or if your ignition apparatus consists of high tension magneto using a coil and battery for starting, you obtain your ignition for starting exactly the same as you would if you were trying to start the engine on its gasoline gas in the way which is known as "starting on compression."

If, however, your ignition system consists only of high tension magneto and no means are at hand to put a spark into the cylinder, the use of the **PREST-O-STARTER** will supply in the cylinder a ready charge of gas, which one quick throw of the crank will ignite, starting the engine for you instead of the usual means of "spinning" the engine in order

to draw gas from the carburetor before starting, as is the usual practice.

Cars which are provided only with magneto can of course, be equipped with a double system of ignition using timer and coils at additional expense if wanted, thus making the engine self-starting.

Having the gas equipment installed satisfactorily, and understanding the ignition problem, you are ready to start. After turning on your gas and throwing the switch at off position, take one or two strokes of the pump (two or three strokes **MAY** be necessary in starting up a new outfit in order to get all the air out of the line), which will inject the gas into the cylinders. Now, with throttle partly open and spark control lever in retard position, throw on the battery switch and the vibrator or the button will fire the charge of gas and start the motor.

If, however, the engine did not stop on contact you can advance your spark control lever to the point where you can get a contact, snapping it back instantly when you do as the motor may back-fire, in which case if you bring your spark lever back quickly enough, you will catch the next cylinder and reverse the engine to its proper direction of rotation.

After the outfit has been once started, you will find in most cases that one or two strokes of the pump will be sufficient to start the motor, except in extremely cold weather, when two or three strokes may be necessary to supply a proper mixture of gas, the number of strokes necessary depending on the size of the motor.

The gas tank need not be shut off or interfered with after having once been turned on, providing you have no leaks in the gas line, as the automatic reducing



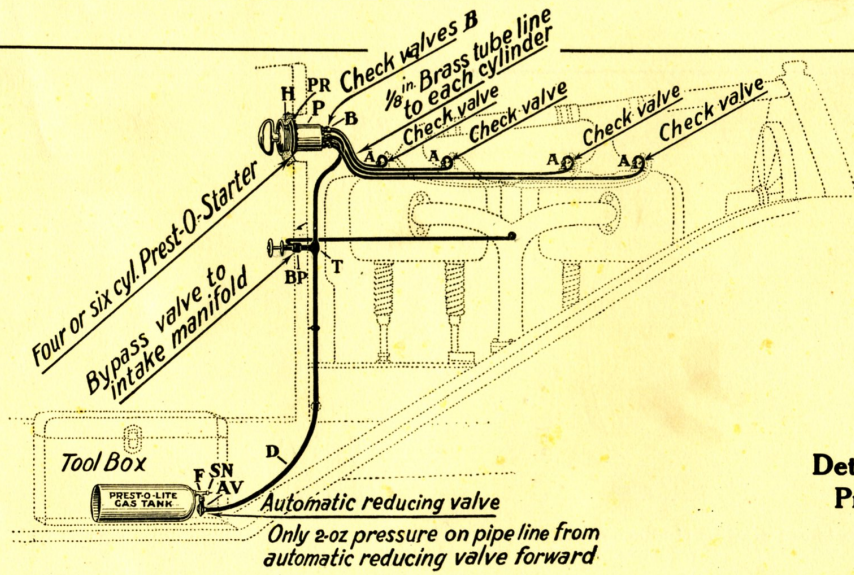
valve holds the pressure in the gas line to about two ounces, regardless of the pressure in the tank. However, if you should have a leak in the gas line, it would be well when through using the car to shut off the tank, as a very small leak will rob the tank of a considerable volume of gas and any leak, however small, should be repaired immediately. When the tank has become empty and you are about to disconnect it to attach a full tank, always shut off the needle-valve (F) to the tank.



### KEY TO DRAWINGS

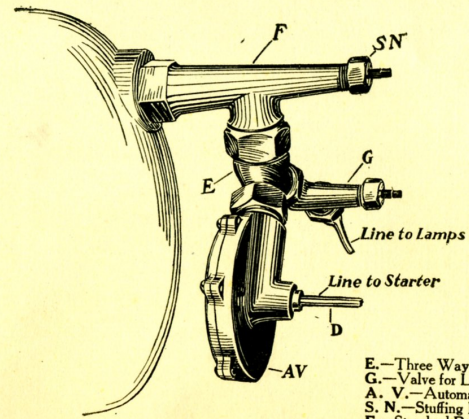
On Pages 11, 12 and 13

- A. Check Valves on Injector Nipples.
- B. Check Valves on Pump.
- P. Pump.
- AV. Automatic Reducing Valve.
- PR. Pump Retaining Ring.
- C. Inlet Connection on Pump.
- D. Gas Supply Line.
- E. Three-way Union.
- F. Tank Valve.
- G. Valve for Lights.
- H. Threaded Head of Pump.
- BP. By-pass Valve.
- T. "T" Connection.
- SN. Stuffing Nut.



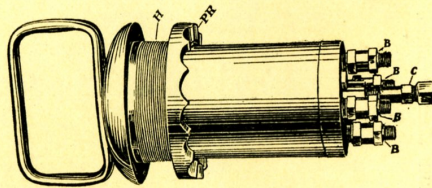
**Detail Drawing of  
Prest-O-Starter  
Installation**



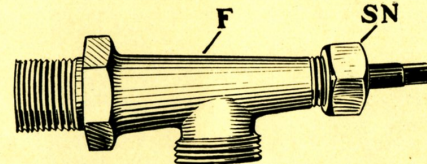


- E.—Three Way Union
- G.—Valve for Lights
- A. V.—Automatic Reducing Valve
- S. N.—Stuffing Nut
- F.—Standard Regulating Valve

Enlarged drawing of attachments necessary where Prest-O-Starter is used in connection with regular Prest-O-Lite tank—one tank serving both purposes



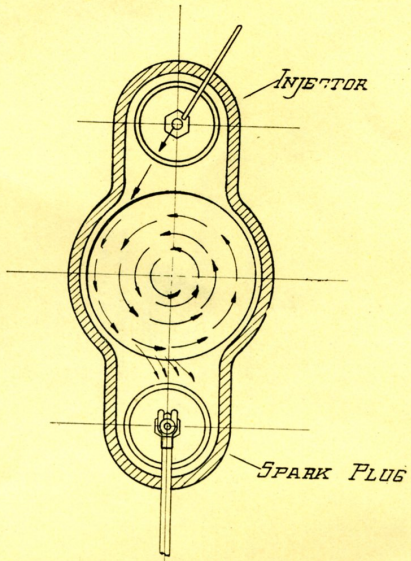
Enlarged Drawings of P



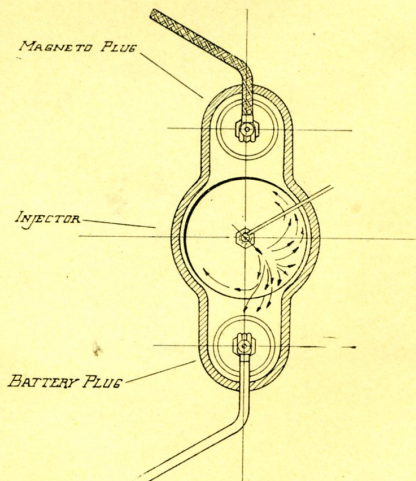
F.—Standard Regulating Valve attached to all Prest-O-Lite—A. B. & E. tanks



SECTIONAL DIAGRAMS OF STANDARD "T"  
HEAD MOTORS.

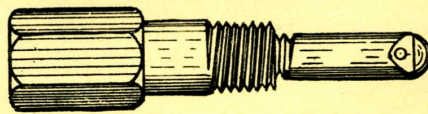
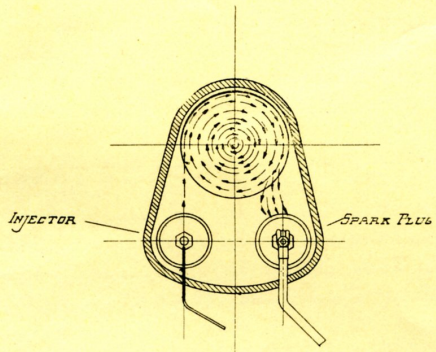


With Single Ignition.



With Double Ignition.

SECTIONAL DIAGRAM OF STANDARD "L"  
HEAD MOTOR.



INJECTOR



## PRICES PREST-O-STARTER

Prest-O-Starter Complete for four cylinders .....	\$20.00
Prest-O-Starter Complete for six cylinders .....	25.00

### PRICES OF PREST-O-LITE TANKS.

A. Tank (70 cu. ft.).....	\$35.00
B. Tank (40 cu. ft.).....	25.00
E. Tank (30 cu. ft.).....	18.00
Motor Cycle Tank (10 cu. ft.)....	10.00

Note.—Price of Prest-O-Starter does not include tank. If regular Prest-O-Lite Tank used for lighting is to be used for starting also, it will be necessary to order three-way union (E) and valve for lights (G); the charge for which will be \$1.50 extra.

Note.—There are a few types of motors where it is necessary to go in at the Spark Plug opening, in which case there will be an additional charge made for special spark plugs at the rate of \$1.50 each, these taking the place of injector nipples.

These spark plugs are especially built for The Prest-O-Lite Company to serve the purpose of SPARK PLUGS as well as means for injecting gas into the cylinder. They are made with imported porcelains and heavy metal parts and are first-class in every respect.



The use of the PREST-O-STARTER, owing to the introduction of acetylene gas into the cylinders of the engine, will cause the disintegration of carbon deposits. This action is due to the fact that part of the solvent, acetone, is carried out of the gas tank with the gas; the acetone dissolving the gummy residue of the oil and freeing the soot and dust which is known as carbon. After the starting device has been used a short time, part of this loose carbon, which does not find its way out through the exhaust valves, will foul spark plugs and in other ways bring itself into evidence.

It is, therefore, recommended that before installing the PREST-O-STARTER on an old engine which has been in use for some time, that the carbon deposits in the engine be removed, after which the use of the PREST-O-STARTER will keep the engine clean. This removal of carbon deposits may be accomplished in the old style way of scraping it out, or very quickly and thoroughly by the use of PREST-O-CARBON REMOVER.





# The Prest-O-Lite Co.

General Offices and Factory  
Indianapolis, Indiana

---

Cable Address: "PRESTOLITE"  
New York, San Francisco, Indianapolis  
Western Union Code

---

## BRANCH OFFICES

ATLANTA, 221 Peachtree St.	LOS ANGELES, 314 W. Ninth St.
BALTIMORE, 116 W. Mt. Royal Ave.	MILWAUKEE, 18-20 Martin St.
BOSTON, 607 Boylston St.	MINNEAPOLIS, 109 S. Tenth St.
BUFFALO, 961 Main St.	NEW YORK, 2104 Broadway.
CHICAGO (2), 2613 S. Mich. Ave. 509 Rush St.	OMAHA, 1919 W. Farnam St.
CINCINNATI, 118 E. Ninth St.	PHILADELPHIA, 1418 Race St.
CLEVELAND, 2032 Euclid Ave.	PITTSBURG, 3580 Grant Blvd.
DALLAS, 2021 Main St.	PROVIDENCE, 54 Aborn St.
DETROIT, 872 Woodward Ave.	ST. LOUIS, 3685 Olive St.
INDIANAPOLIS, 402 N. Capitol Ave.	ST. PAUL, 161 West Sixth St.
JACKSONVILLE, 810 Laura St.	SAN FRANCISCO, 58 Van Ness Ave.
KANSAS CITY, 1728 Grand Ave.	SEATTLE, 738 Fidalgo St.

---

## CHARGING PLANTS

ATLANTA	LONG ISLAND CITY
CLEVELAND	LOS ANGELES
DALLAS	MINNESOTA TRANS- FER
F. CAMBRIDGE	OAKLAND
HAWTHORNE, ILL.	OMAHA
INDIANAPOLIS	SEATTLE
WAVERLY, N. J.	

---

## ISLAND POSSESSIONS

HAWAIIAN ISLANDS—  
Honolulu.....Acetylene Light & Agency Co.  
PHILIPPINE ISLANDS—  
Manila.....Philippine Acetylene Co.  
PORTO RICO—San Juan.

---

## FOREIGN AGENCIES

CANADA—  
Toronto, Ontario...Commercial Acetylene Co.  
Vancouver, B. C.....Compressed Gas Co., Ltd.  
MEXICO—City of Mexico.  
ENGLAND—  
London.....Acetylene Illuminating Co.  
GERMANY—  
Berlin..... "Autogen."  
JAPAN. AUSTRALIA.