

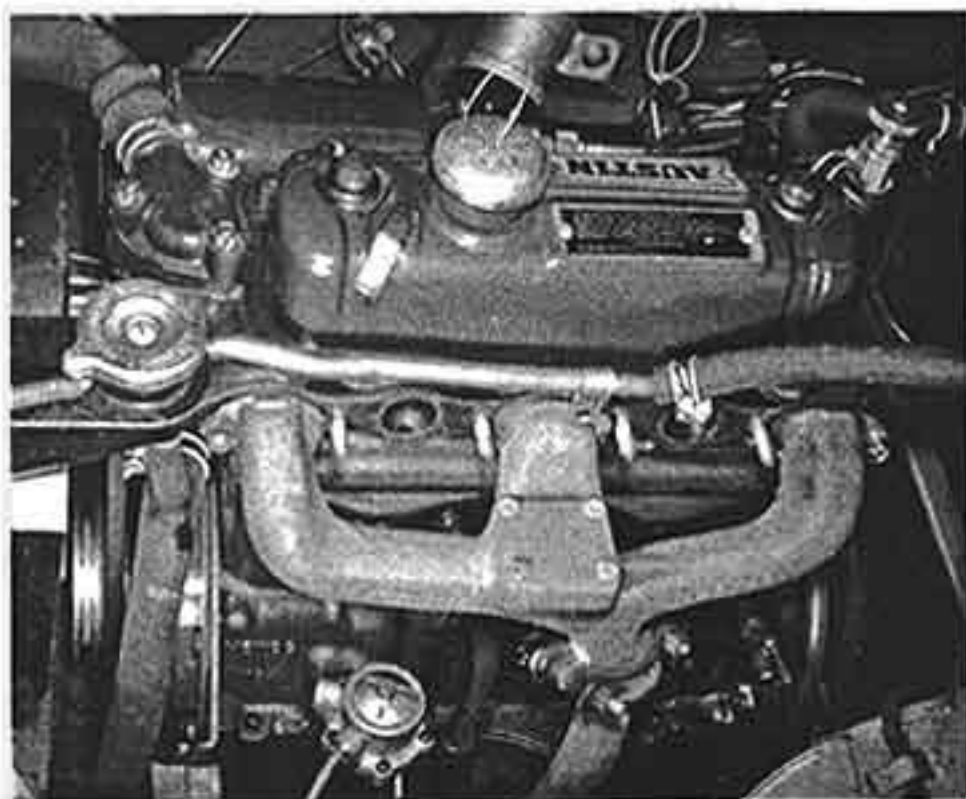
MODEL-SP JUDSON SUPERCHARGER

This data should be delivered to the purchaser upon completion of installation.

INSTALLATION INSTRUCTIONS — GENERAL DATA

INSTRUCTIONS ARE PRESENTED IN A STEP BY STEP SEQUENCE. FOLLOW INSTRUCTIONS CAREFULLY.

It is not necessary to remove engine hood to install supercharger.



— A —

1. Disconnect gas line, vacuum advance line, choke control and throttle control from carburetors. Remove carburetors, heat shield and intake manifold from engine. Replace original heat shield bolt that clamps breather tube to crankcase. Remove gas line completely by disconnecting from fuel pump.

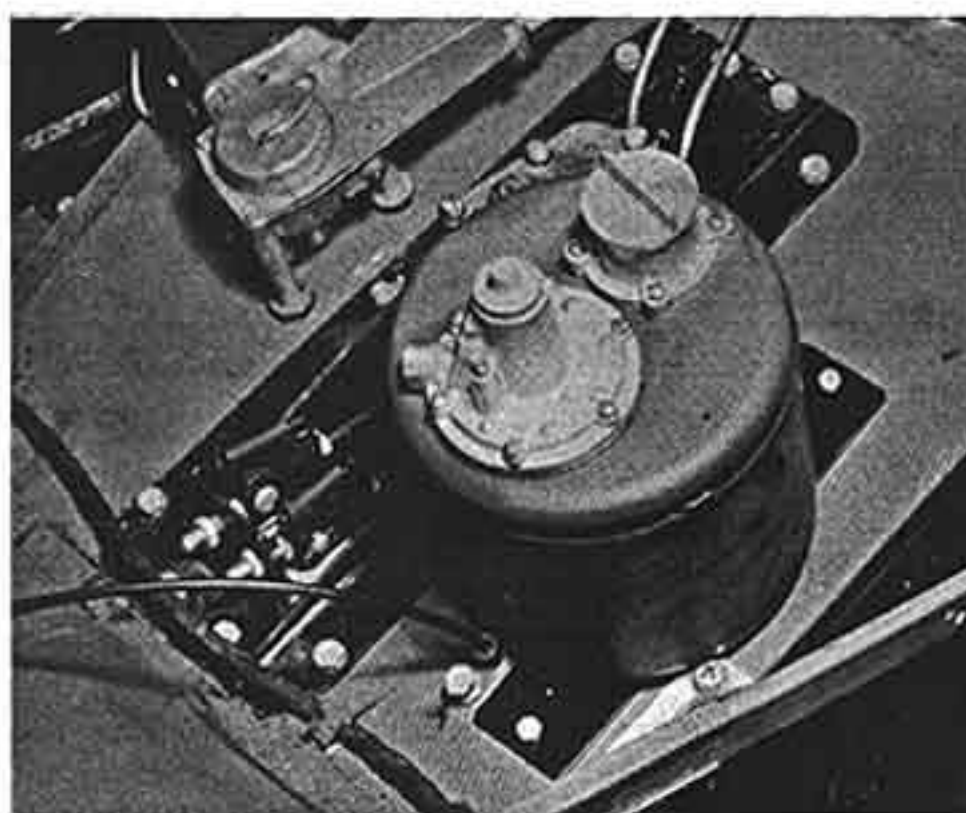
2. Remove radiator (4 bolts).

3. Unscrew bolt from end of crankshaft located in center of crankshaft pulley. To remove this bolt it is necessary to straighten the locking washer under the head of the bolt so that the bolt can turn. If bolt is too tight to remove by wrench, it can be broken loose by using a chisel on the side of the hex. Original crankshaft pulley is not removed from the engine.

4. Place aluminum crankshaft pulley furnished with supercharger kit on front of original pulley making sure that shoulder is inserted in bore of original pulley and rivets line up with holes in aluminum pulley. Replace original flat lockwasher and bolt on crankshaft. Re-bend one side of flat locking washer against bolt head and punch other side of washer into hole of aluminum pulley. This locks bolt on crankshaft.

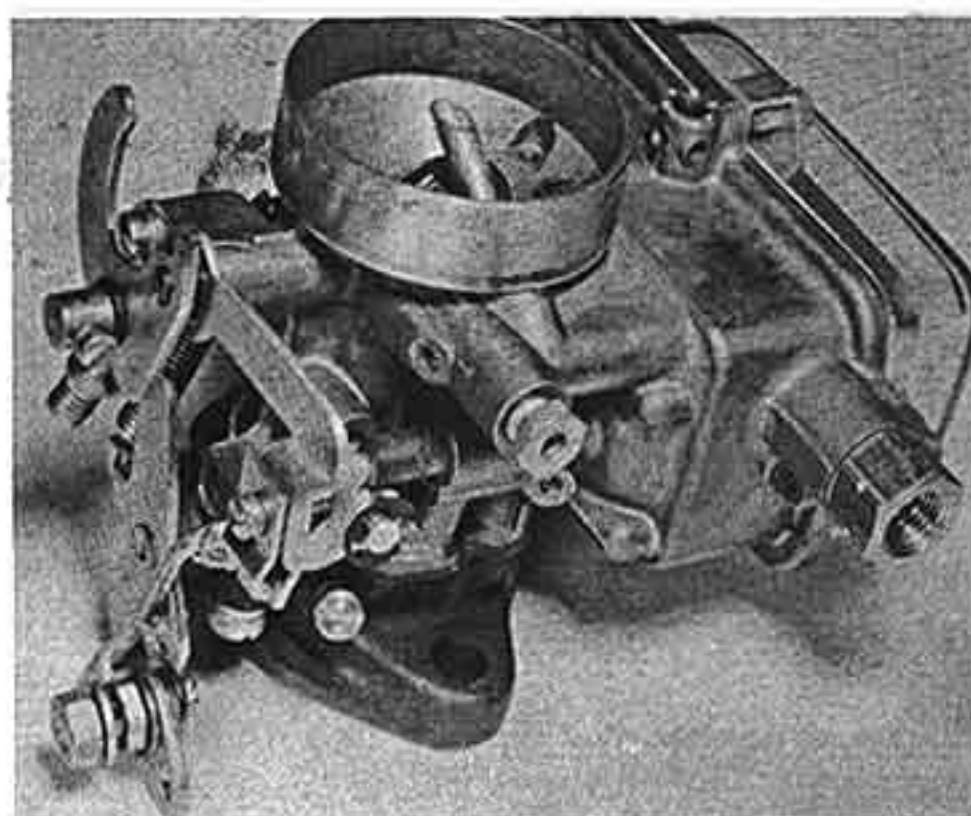
5. Replace radiator.

6. Connect curved end of new fuel line to fuel pump. Make sure that fuel line is pushed into body of fuel pump as far as possible and tighten connecting nut sufficiently to keep tube from slipping out of fitting. Pull line over against the fender.



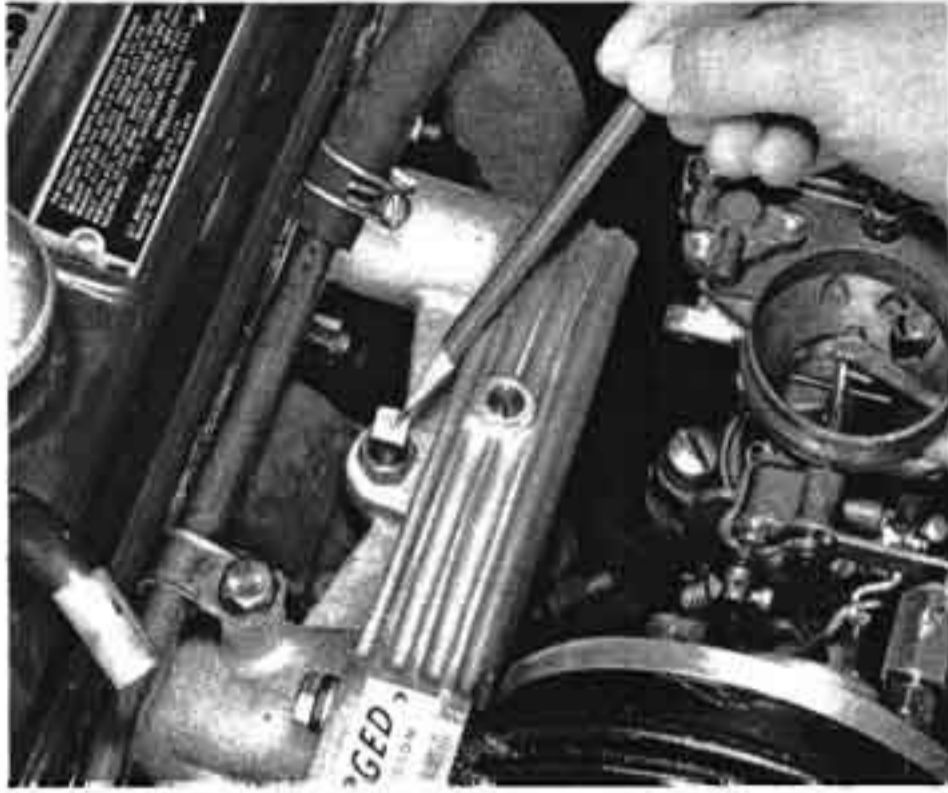
— B —

1. Place lubricator in position as shown in photo. Container should rest against throttle tube support and brake cylinder angle. Use mounting plate on bottom of lubricator as template and drill two $\frac{1}{8}$ " holes. Fasten lubricator with two self tapping screws furnished with kit.



— C —

1. Remove original throttle cable clamp from the SU carburetor throttle bar and insert in the throttle arm of the carburetor furnished with kit. Insert throttle cable clamp through inside hole as shown in photo. One washer goes between hex and throttle arm and two washers between throttle arm and cotter pin.

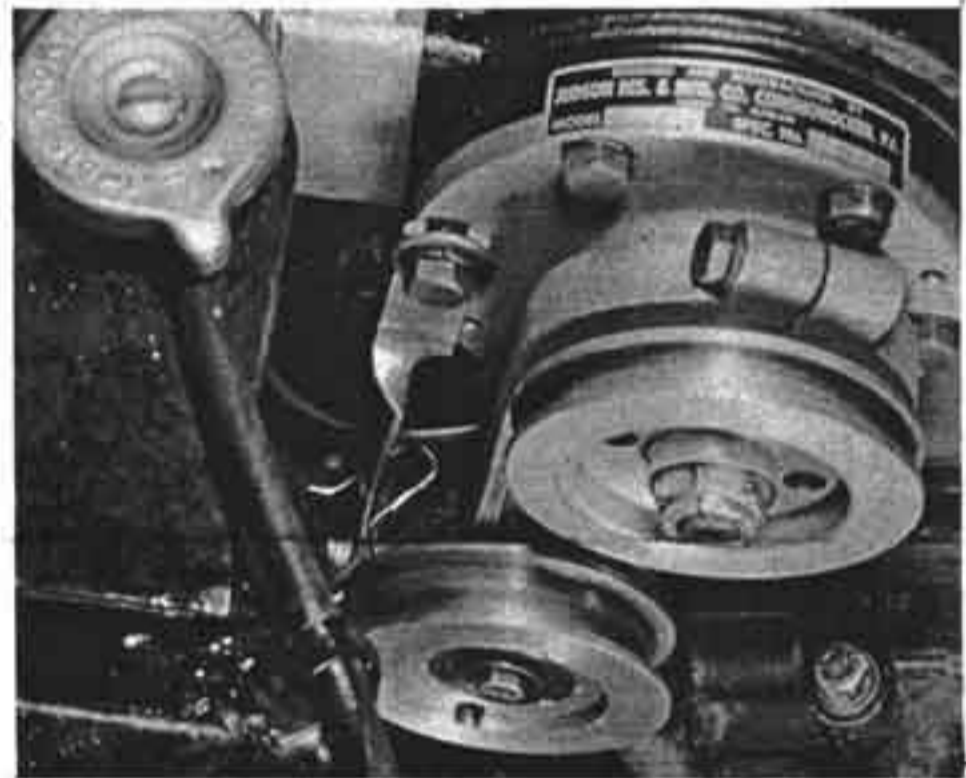


— D —

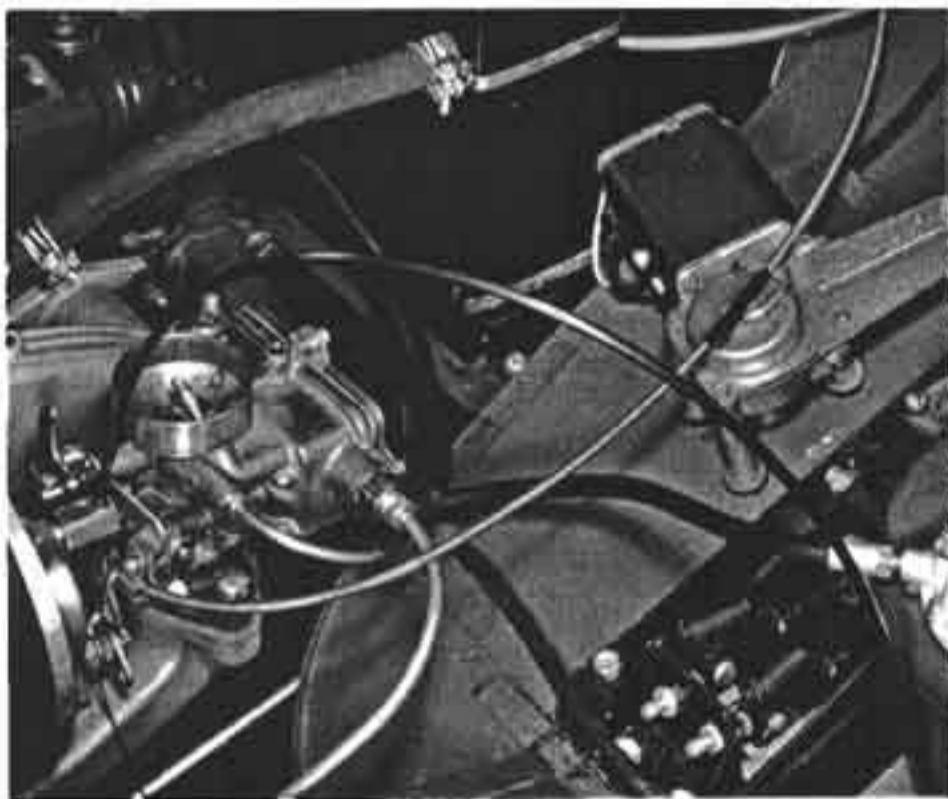
1. Fasten supercharger to engine using original nuts and washers that held manifold to engine. Make sure that center support bolt is backed off free of exhaust manifold plate before tightening nuts securely. Screw down center support bolt until resting on exhaust manifold with just enough tension to support supercharger but not enough to pry on manifold. Lock center support bolt in position with nut.
2. Fasten heater tube with one original clamp as shown in photo. Use original bolt and washer.

— E —

1. To install front support brace, remove nut and washer from upper stud on rubber engine mount. Place end of brace with hole on stud. Replace washer and nut firmly on engine support but do not tighten.
2. Remove loose bolt with washer from front of supercharger and place through slotted end of support brace.
3. Fasten front support securely by tightening nut on engine support stud and bolt on supercharger.
4. Re-position water hose by using wire clip around support brace and hose as shown in photo. This prevents belt from rubbing on hose.



— F —



1. Remove 5" from carburetor end of original vacuum advance line. This should be done by scoring tube with file and breaking (cutting with cutters will close hole). Insert original vacuum advance line into hose on end of extension furnished with kit. Original line should be inserted in hose as far as possible. Remove small tube

fitting from vacuum connection on carburetor, insert on copper line and connect to carburetor pushing tube into carburetor connection as far as possible.

2. Bend fuel line as shown in photo and connect to carburetor. Tighten fitting on carburetor and fuel pump.
3. Connect choke wire to carburetor making sure that the choke button is pushed in completely on the dash panel and that the choke butterfly on the carburetor is fully open. Choke sheath is clamped on carburetor as shown. Choke wire goes through brass fitting on carburetor and is clamped by screw. Friction tape should be wrapped around the choke sheath where it passes over the windshield wiper motor. This will insulate the choke control from the windshield wiper motor wire terminal.
4. Push throttle cable through extension bolt on rear of supercharger. Feed cable through original clamp that has been inserted on carburetor arm. Pull cable down making sure sheath is securely bottomed in fitting below lubricator and in extension bolt on back of supercharger. Before tightening clamp for throttle cable, bend cable assembly down flat against fender. Tighten clamp on carburetor. If cable is not bent down against fender before tightening clamp, the engine will speed up when hood is closed.
5. Connect oil line to lubricator and to the fitting on the intake manifold directly under the carburetor.

1. Drop idler bracket down by loosening clamping bolt until idler pulley rests on shock absorber.
2. Place belt over crankshaft pulley and pulley on supercharger. Pull idler pulley tightly against belt and tighten clamping bolt on idler bracket making sure that idler pulley is in line with the other two pulleys and that the idler bracket is not in contact with pulley on supercharger.
3. Bend fan blades forward slightly until there is 5/16" to 3/8" clearance between blades and supercharger belt.
4. Place air cleaner on carburetor and fasten original hose from valve cover to connection on air cleaner using original clamp. Secure air cleaner to carburetor by tightening clamp on bottom of air cleaner with screwdriver.



H — Refill radiator.

I — Fill the automatic lubricator with No. 10 HD (detergent) motor oil. The engine must not be started unless the lubricator is connected and filled with oil. The lubricator tank has a capacity of 1½ qts.

INSTALLATION IS COMPLETE

Fill float chamber of carburetor by pumping lever on side of fuel pump and start the engine. As soon as the engine is running adjust the lubricator as per instructions under lubrication. After engine is warm, set idle mixture on carburetor. The idle mixture adjustment on the carburetor is the slotted brass screw located on the side of the carburetor. Adjust back and forth until a smooth idle is obtained. The idle speed adjustment screw is spring loaded and located on the throttle arm of the carburetor. With pliers set idle speed at approximately 800 RPM.

ENGINE TUNE-UP DATA

VALVE CLEARANCE — The stock valve clearance is recommended. Check to make sure that both intake and exhaust valves have a clearance of .012.

HEAD BOLTS — Tightness of head bolts should be checked to 40 ft. lbs. starting from center bolts and working out.

SPARK PLUGS — Remove the spark plugs and examine for wear and corrosion. If spark plugs are not in good condition they should be replaced. Use Champion N-5 spark plug, gapped at .020 to .022. Tighten to 30 ft. lbs.

IGNITION POINT SETTING — Stock gap of .014 to .016 is recommended (54 to 57 degrees if set with cam dwell indicator).

IGNITION TIMING — The stock ignition timing setting of 5 degrees before top dead center is recommended. If additional retard is required because of available fuel or carbon deposits, it can be obtained with the knurled screw on the side of the distributor.

CARBURETOR — The carburetor furnished with the supercharger has fixed jets and has been specifically set up for the supercharged Sprite. It provides the correct fuel-air ratio throughout the entire speed range of the engine. The only adjustment provided for on this carburetor is for the idle mixture and idle speed.

DATA

LUBRICATOR ADJUSTMENT — (Lubrication is very important). To adjust the lubricator proceed as follows: Start the engine. The small knurled knob on the very top (under protecting cap) should be unscrewed a half-turn to get the oil flowing and then adjusted with your fingers until the lubricator is putting out approximately one drop of oil every four to five seconds at idle. This can be timed through the small window on the lubricator. Screw clockwise to decrease the amount of oil consumption. Oil consumption should run one quart of oil every 800 to 1,000 miles and the oil level should be checked occasionally so that you do not run out of lubricant. Engine and lubricator should be warm while adjustments are being made. The adjustment should be checked after the first one hundred miles. The oil from the automatic lubricator is to oil the bore of the supercharger housing and also acts as an upper cylinder lubricant. The two main rotor bearings of the supercharger are greased and sealed at the factory. **Use any good grade of SAE No. 10 detergent motor oil.** Do not use an upper cylinder lubricant as most top oils are primarily a cleaner and not a lubricant. Do not use a multiple viscosity oil. In making a long descent from high altitudes it is advisable to open the throttle occasionally to insure adequate lubrication because of the high vacuum. The lubricator should be adjusted and left alone as any variance that will occur at idle will be slight under actual operation and is averaged out over the vacuum range of the engine.

FUEL — Premium grade or high octane gasoline is recommended on the supercharged engine. Super premium fuels are not necessary.

BREAK-IN-PERIOD — No breaking-in-period is required for the Judson Supercharger. We do, however, recommend that the engine be run slowly or at idle for at least fifteen minutes before placing the engine or supercharger under load.

IDENTIFICATION DECAL — An identification decalcomania for placing on the inside of the windshield is included with the installation. See instructions for mounting on back of decal.

NOISE — The supercharger may sound noisy when it is first started or within the first half hour of operation. This noise is nothing to be concerned about and will disappear completely within the first 20 to 40 miles of hard driving. A slight clicking noise sometimes at idle or after backing off of the throttle after a hard run is characteristic of a vane type supercharger.

BELT REPLACEMENT — In case of drive belt breakage the supercharger will cease functioning but the engine will continue to operate. The drive belt is a standard size and can be purchased from any automotive jobber under Gates number 8209 or from your Chevrolet dealer and is the same belt as used on the Chevrolet 6 cylinder (1955-1956). w/H.D.

TEMPERATURE — Because the supercharger is scavenging the hot gasses from the cylinders, the Sprite engine has a tendency to operate colder when supercharged. In cold climates we recommend replacing the 164 degree water thermostat with a 180 degree water thermostat. This replacement water thermostat can be purchased at your local Chevrolet dealer as Water Thermostat No. 3133698, Type 108, 180 degrees.

As on the unsupercharged Sprite, a section of the radiator should be blocked off in freezing temperatures in order to raise the temperature of the engine compartment and the temperature of the charge entering the carburetor. A flat spot will be encountered on acceleration if the water temperature or the temperature of the air in the engine compartment is too low.

SUPERCHARGER PRESSURE — A supercharger gauge is available as an accessory for the Judson Supercharger. Gauge matches other instruments on Sprite dash panel and reads both manifold vacuum and pressure. The Judson Supercharger replaces the vacuum in the manifold with a pressure in proportion to the load placed on the engine. There is always a vacuum in the manifold when the engine is at idle or when the engine is not under load. The vacuum in the manifold is replaced with a pressure as the throttle is opened and the engine is placed under load. Highest boost pressures are obtained under full throttle operation when accelerating or going up an incline. Pressure will vary according to condition of engine, altitude, speed, humidity and engine load. Maximum manifold pressure, because of these conditions, will vary between 5 to 7 pounds. Even when the engine is not operating with a manifold pressure at idle or when there is no load on the engine, the efficiency of the engine has been increased due to the improvement in volumetric efficiency. There is a direct relationship between fuel consumption and manifold boost pressure as the horsepower available increases with the boost pressure. When you do not use the additional power afforded by the supercharger by pushing the engine, you do not pay for it through increased fuel consumption.

WARRANTY — The Judson Supercharger is warranted to be free from defects in material and workmanship under normal use and service. In case of failure of any part, within ninety (90) days from date of original purchase by user, due to defective material or workmanship, we will repair, replace the defective part or furnish a new supercharger free of charge, F.O.B. factory. Approval must be obtained before returning supercharger or parts to the factory for replacement. All transportation charges on supercharger or parts must be borne by purchaser.

ITEMS TO CHECK FOR LACK OF PERFORMANCE

INSTALLATION OF SUPERCHARGER — It is very important that the instructions be followed exactly in installing the supercharger on the engine. Mistakes usually made: throttle cable improperly adjusted not allowing throttle on carburetor to open or close completely. Sheath for throttle cable must be seated in extension bolt on back of supercharger and also seated in chassis fitting below lubricator. The throttle on the carburetor must be completely open when the accelerator pedal is fully depressed. Choke butterfly in throat of carburetor should be fully open when choke button on dash panel is pushed in completely. If center support bolt located on supercharger manifold is screwed in too far it will pry the manifold away from the side of the engine causing a leak resulting in a rough idle and poor performance. Support bolt should be just tight enough to support the weight of the supercharger.

ENGINE — Maximum performance after supercharging is a function of engine condition and tuning. Engine deficiencies often unnoticed before supercharging sometimes prevent the increased performance that can be expected from the supercharged engine. Because of this the supercharger will often be blamed for poor performance when such is not the case. If the installation has been made in accordance with the instructions and the performance is poor it is usually due to a leak in the induction system, improper valve clearance or a faulty ignition system. The ignition system on the supercharged engine should be in good condition and properly adjusted, incorrect timing and point setting as well as faulty plugs or ignition wiring affects performance considerably and contributes to poor performance. See installation data for timing, point and plug setting. If poor performance cannot be attributed to any of the above after a thorough checking it can be assumed that the trouble is of an internal mechanical nature and the engine itself should be checked by a competent mechanic. Best performance for dependability is obtained from the stock engine. We do not recommend increasing the compression ratio, the use of a special cam or making any other basic modifications on the supercharged engine.

The Judson Supercharger is fully covered by patents and patents pending.



JUDSON RESEARCH AND MFG. CO.
CONSHOHOCKEN, PA.

PARTS LIST

JUDSON MODEL SP SUPERCHARGER

Mention model and specification number on name plate in ordering parts

PART NO.	DESCRIPTION	PRICE	PART NO.	DESCRIPTION	PRICE
1401	Housing	52.80	1410	Main gaskets (2)	.48
1504	Rotor Assembly	43.20	1322	Carburetor Gasket	.24
1505	Front Cover	9.60	1411	Lubricator	18.00
1502	Rear Cover	9.60	1412	Belt	3.36
1403	Supercharger Pulley	7.68	1413	Carburetor	23.40
1404	Crankshaft Pulley	8.16	1414	Oil Line	1.20
1405	Intake Manifold	19.68	1541	Oil Line Fitting	.48
1406	Exhaust Manifold	21.12	1540	Oil Line Ferrule	.20
1407	Air Cleaner, complete	9.36	1415	Throttle Cable Bolt	.72
1408	Idler Bracket	11.38	1919	Carburetor Stud	.36
1409	Idler Pulley	5.04	1523	Shaft Washer	.12
1550	Bearing (3)...ea.	2.16	1416	Support Bolt	.48
1513	Front Seals (2)..ea.	.60	1417	Support Bracket	1.68
1501	Rear Seal	.60	1418	Manifold Bolt (set)	.96
1556	Shaft Snap Ring (2)..ea.	.30	1419	Gas Line w/fittings	1.20
1551	Vanes (4) ..set	12.00	1420	Vacuum Advance Line	.72
1517	End Plug	.48	1334	Throttle Spring	.48
1510	Shaft Nut	.72	1421	Pipe Hook	.12
1511	Shaft Spacer Tube	1.20	1342	Idler Clamp Bolt	.12
1545	Shaft Key	.12	1615	Idler Pulley Shaft	.12

All fastenings are standard 3/8—16 and 5/16—18

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