

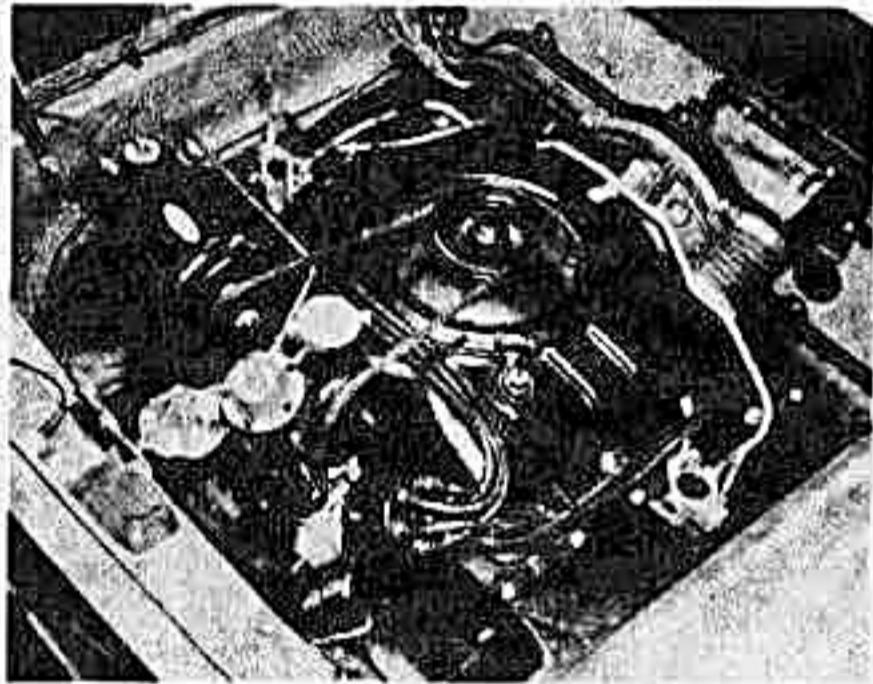
# MODEL - CO JUDSON SUPERCHARGER

FOR INSTALLATION ON CHEVROLET CORVAIR

## INSTALLATION INSTRUCTIONS - GENERAL DATA

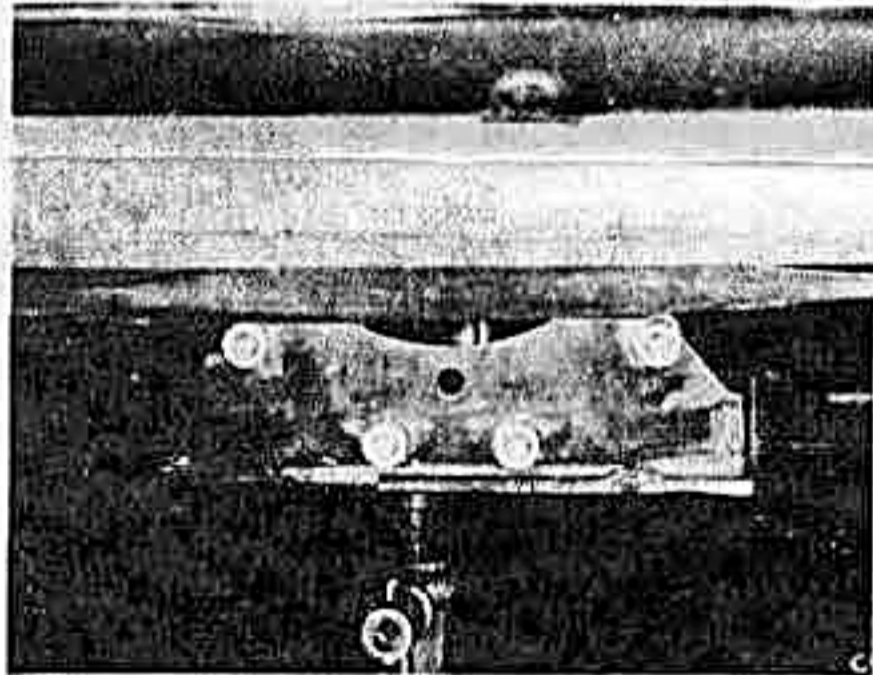
INSTRUCTIONS ARE PRESENTED IN A STEP BY STEP SEQUENCE FOLLOW INSTRUCTIONS CAREFULLY

1. Remove spare tire and bracket from engine compartment. Move spare tire to trunk of car and install upside down in recess area by pressing into place. No hold down is required. If tire is unused it may be necessary to deflate slightly in order to fit into recess.
2. Vacuum advance diaphragm on distributor should face towards rear of car as shown in photo to clear belts. The diaphragm points to the right or towards the fender on some models assembled in 1961. If the vacuum advance diaphragm does not point towards the rear of car as shown in the photo, the distributor should be repositioned as follows: (it is not necessary to remove the distributor). Note position and sequence of the six wires going into the top of the distributor cap, move each wire one terminal counter clockwise from its original location. Loosen distributor clamp bolt and rotate distributor body 60 degrees clockwise. This restores the wires to their original relationship to the engine. Adjust ignition timing with timing light to factory recommended setting (4 degrees BTDC or 13 degrees BTDC depending on model).



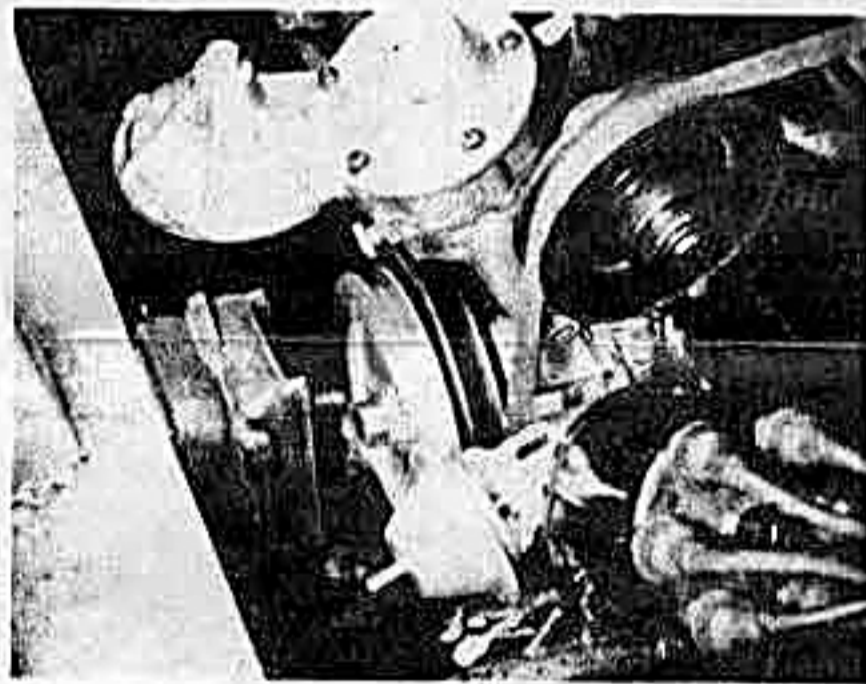
— A —

1. Remove following parts from engine: Air cleaners, carburetors including throttle rod (do not remove carburetor studs from manifolds), fiber manifold gaskets, fuel lines (leave extension and brass tee connection on fuel pump) vacuum advance line, right hand air cleaner bracket, vertical rod only from left hand air cleaner bracket, ignition coil, choke bracket from fire wall and oil filter.
2. Force flap on right hand heat duct closed (under distributor). This can be done by using a hammer handle. Flap should be left open approximately  $\frac{1}{4}$ " in extremely cold climates.



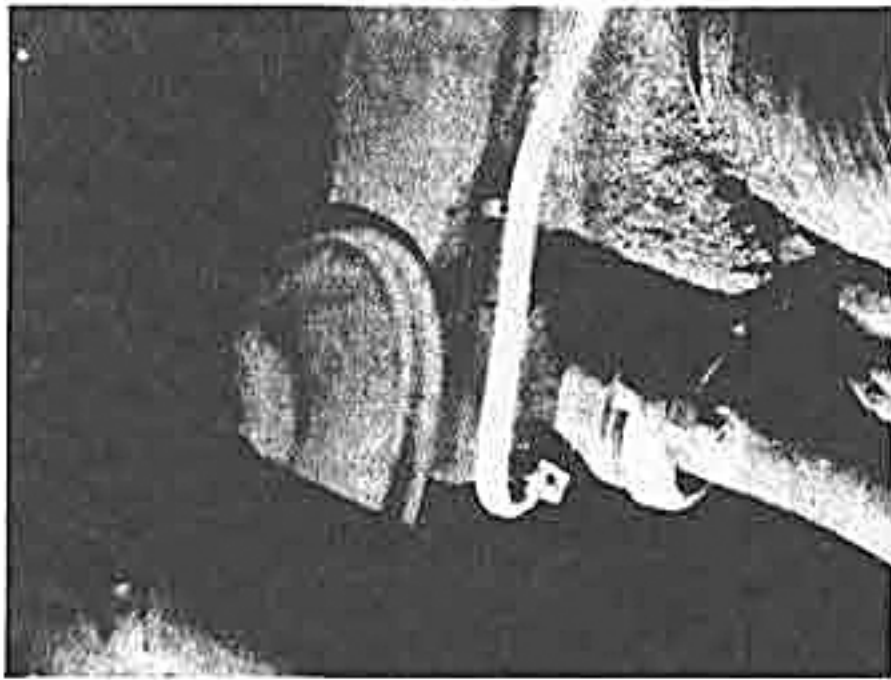
— B —

1. Remove nickel plated grille from under rear of car. Remove strip holding rear air seal. Remove rear engine mount cover.
2. Place a jack under engine using a board between the jack and engine to take load off the rear engine mount. Remove the rear engine mount. This is done by removing the four hex nuts from engine studs and one bolt and nut from frame lug at rubber mounting.



— C —

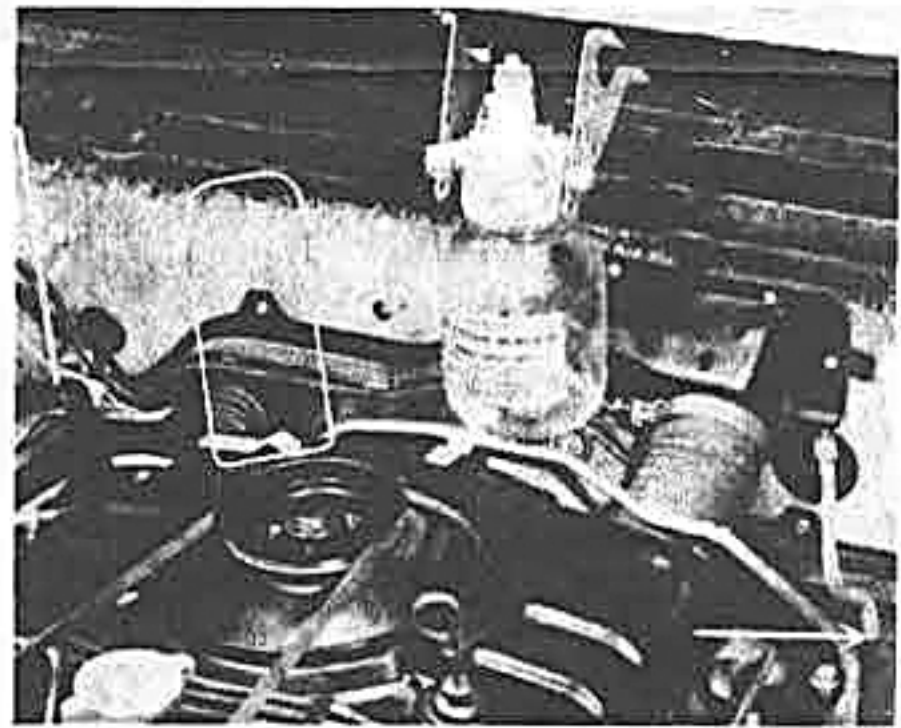
1. Remove center bolt from crankshaft. Do not remove crankshaft pulley. Remove two  $\frac{5}{16}$ " bolts from crankshaft pulley. Place aluminum pulley furnished with supercharger kit on end of crankshaft making sure that the drive pins are inserted in the bolt holes of the original pulley and that the boss on the aluminum pulley is centered in the original crankshaft pulley. Secure pulley using new  $\frac{1}{2}$ " bolt with flat washer and lock washer furnished.
2. Place  $\frac{1}{4}$ " spacers over four engine mounting studs as shown in previous photo and replace engine mount. Replace engine mount cover, air seal and grille. Remove jack.



1. Jack up car and remove right rear wheel. Drill cast iron exhaust manifold header with quarter inch drill and then half inch drill where shown in photo. **NOTE:** This hole must be drilled so that the special bolt head will clear the stud boss on the header. Insert special hollow self-tapping bolt furnished in automatic choke kit.

— E —

1. Drill  $\frac{1}{2}$ " hole in engine shroud for choke heater tube as shown in photo. Drill 1" back and in line with  $\frac{1}{4}$ " sheet metal screw.
2. The hose connections on the balance tube running between the right and left intake manifolds must be secured to prevent leakage and blow-off. This is important. Four small hose clamps are furnished for this purpose.
3. Insert new  $\frac{1}{4}$ " threaded rod into left hand air cleaner bracket. Measure 5" from this rod to the right (parallel with the fire wall) and drill a  $\frac{1}{8}$ " hole in fan shroud (see photo under H). Fasten formed bracket to shroud with self-tapping screw using second hole from bend of bracket. Place wire form in groove of bracket before tightening and insertion of other screw.
4. Mount automatic lubricator in center of engine compartment as shown. Use bracket as template and drill four  $\frac{1}{8}$ " holes for self tapping screws furnished.



— F —

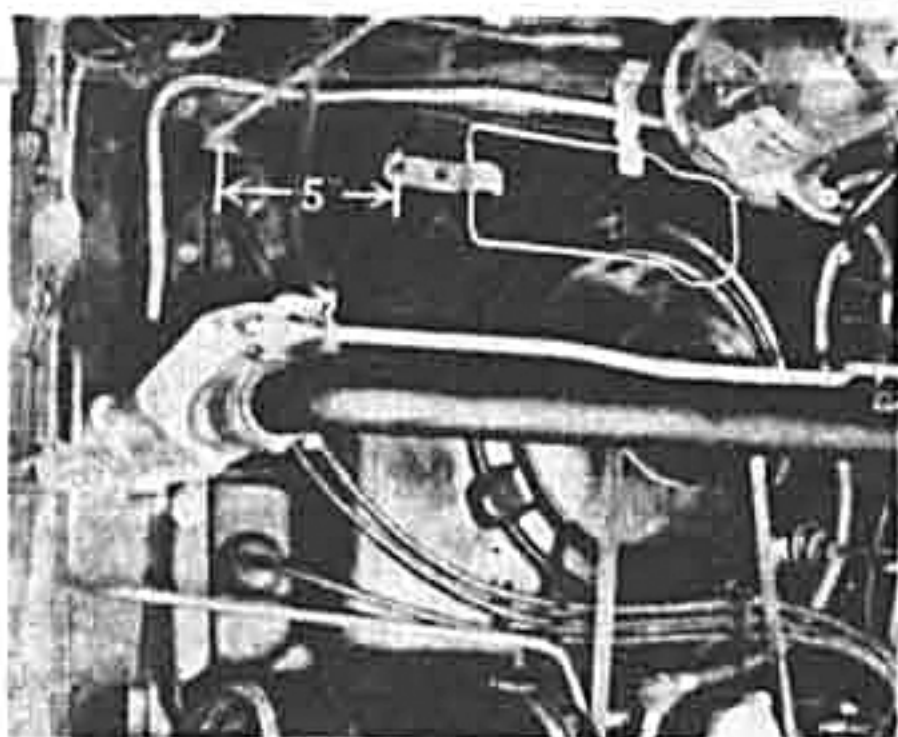
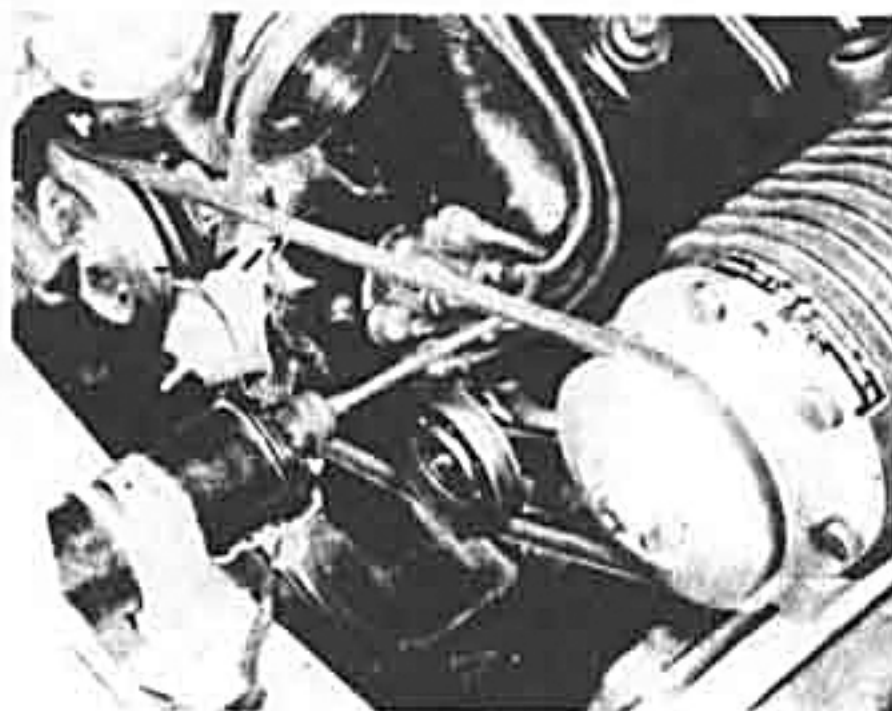
1. Place new gasket on both engine manifolds. Remove protective seals from supercharger.

2. Place supercharger on studs of right hand manifold. Place washer over both studs and screw on original nuts **finger tight only**.
3. Place support bracket over studs protruding from front of supercharger and ignition coil stud protruding from engine. Insert 5 16" x  $\frac{1}{4}$ " bolt in remaining hole using flat washer and lock washer. **Do not tighten.**
4. Place idler bracket on left hand stud of supercharger manifold. Place flat washers and nuts loosely on three studs.
5. Lift up front of supercharger slightly to remove weight and tighten two nuts fastening rear of supercharger to engine manifold. Tighten stud nuts and bolt fastening support bracket.
6. Place brass ferrule on copper choke tube so that it rests on flattened end of tube. Insert asbestos covering over choke tube and drop through  $\frac{1}{2}$ " hole previously drilled in shroud. Bend bottom end of tube to go into bolt previously inserted in exhaust manifold header as shown in Step D. Purpose of ferrule is to center copper tube in manifold bolt and seal cover. Bend other end of tube to fit into automatic choke on carburetor as shown in photo. Do not kink copper choke tube. Connect choke tube to carburetor using copper ferrule and nut furnished.
7. Replace right rear wheel and remove jack

1. Place belt over crankshaft pulley. Install belt on supercharger pulley by putting car in high gear and pushing forward so that the belt is wrapped on pulley (if automatic transmission, use starter to wrap belt on pulley).

2. Loosen nut holding idler bracket to front support and pull idler up so that groove of the idler pulley runs on inside of belt as shown. Push idler down with slight pressure and tighten stud nut clamping idler bracket. Belt should not be extremely tight, there should be some slack.

3. Mount ignition coil as shown in photo. Drill two  $\frac{1}{8}$ " holes for self-tapping screws furnished. Use small flat washers under head of screws. Connect wires from coil to distributor making sure that all wires are free from belt and idler pulley.



— H —

1. Flatten oil filter case slightly on side  $1\frac{1}{2}$ " up from bottom to provide additional clearance between crankshaft pulley and oil filter case. Replace oil filter using new fibre gasket furnished under head of bolt with flattened side of case towards pulley.

2. Install manifold adaptor as shown on original studs using flat washers and original nuts.

3. Remove  $1\frac{1}{2}$ " from both ends of throttle cross tube (this will remove original carburetor throttle levers).

4. Fasten original throttle tube bearing support from left hand carburetor to manifold adaptor as shown using original screws.

5. Connect throttle rod from accelerator pedal to cross tube using original clip and spring. Clip must be on throttle tube at left end to prevent rod from coming out of supports.

6. Connect vacuum advance line from distributor to carburetor using copper tube and hose provided in kit.

7. Slip  $1\frac{1}{4}$ " hose over tubular extensions on supercharger and manifold adaptor. Place two hose clamps loosely on each hose. Insert manifold cross-over tube in hoses so that one tube is flush against the other and tighten clamps securely. (Place tube in supercharger connection first.)

8. Plug left side of fuel pump tee connection with slotted plug furnished. Insert fuel line in right side of fitting. Fuel line goes between engine fan belt and shroud under ignition wires. Tee fitting will have to be re-positioned so that fan belt will clear fuel line.

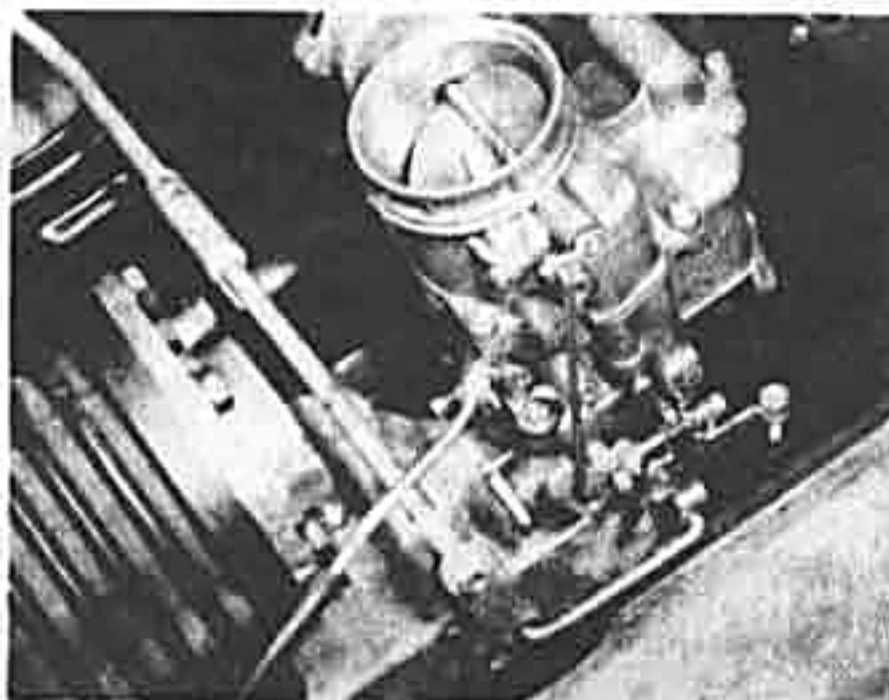
— I —

1. Slip throttle extension furnished with kit over tube as shown in photo. Insert but do not tighten set screws. Attach throttle tube supports to stud on side of supercharger using  $5/16$ " nut and lock washer.

2. Place link between throttle lever and carburetor as shown using clips from original carburetor set-up to hold in position.

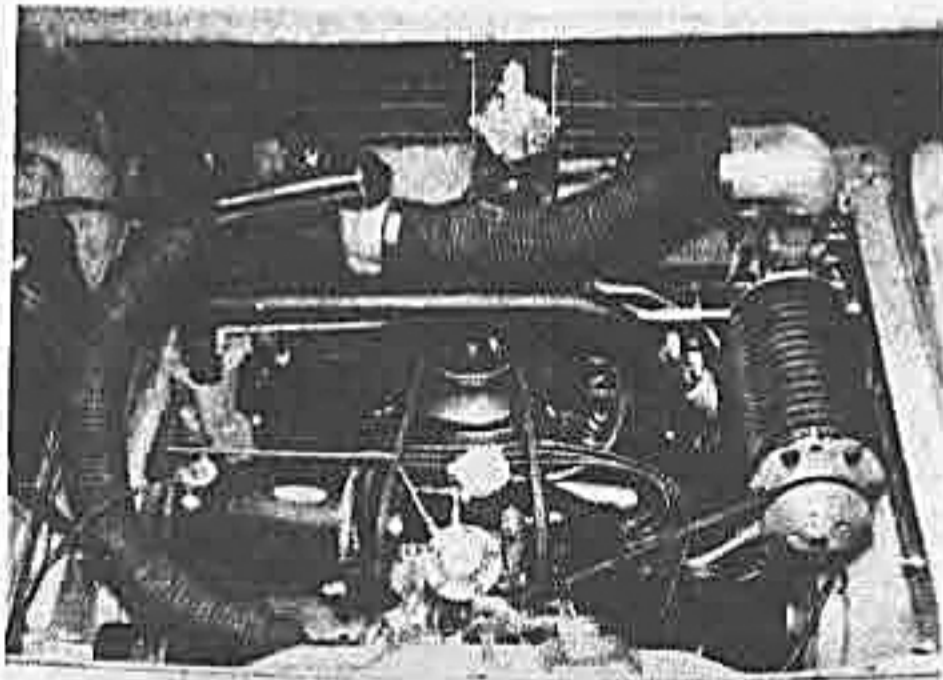
3. Pull throttle lever on left side slightly back before tightening two set screws on throttle extension. This removes slack from throttle linkage. Check the throttle movement on the carburetor. Throttle must be completely open when the accelerator pedal is fully depressed and fully closed when there is no pressure on the accelerator pedal.

4. Connect oil line from lubricator to fitting on side of supercharger.



## DATA

— J —



1. Assemble air cleaner hose on aluminum adaptor and carburetor horn using hose clamps.
2. Install air cleaners. Turn one original air cleaner upside down on rod as shown. Connect adaptor to air cleaners using original sponge rubber gaskets between cleaners and adaptor. Snap wire clamp over air cleaners. Secure air cleaner with original wing nut on threaded rod. Clamp air horn to carburetor.
3. Insert intake heater hose on upper air cleaner as shown. Push other end down between engine and into heat vent on left side. Pre-heated air for the carburetor eliminates flat spots, engine roll and loading on the supercharged Corvair.
4. 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 has a capacity of one quart.

### INSTALLATION IS COMPLETE

Start the engine. It will be difficult to start the engine as there is no gasoline in the float chamber of the carburetor. As soon as the engine is running adjust the lubricator to put out one drop of oil every four seconds at idle as per the information under lubricator adjustment. When engine has reached normal operating temperature and the automatic choke has opened, set idle speed and idle mixture on carburetor. The supercharged engine has a fast idle when cold and until the automatic choke opens.

## DATA

**VALVE CLEARANCE** — Valve clearance should be stock. Clearance differs on the two engines used in the Corvair. We strongly recommend that valve clearance be checked and adjusted as improper valve clearance affects performance considerably.

**SPARK PLUGS** — The stock AC spark plug is recommended. Set spark plug gap to .023 - .028 and torque spark plugs to 20-25 ft/lbs. Plugs must be in good condition.

**IGNITION POINT SETTING** — .014 to .016 (33 to 35 degrees if set with cam dwell indicator).

**IGNITION TIMING** — Adjust timing to factory recommended settings. If detonation is encountered at cruising speed or when the engine is placed under full load, the ignition timing should be retarded 3 degrees from stock.

**CARBURETOR** — The carburetor furnished with the supercharger has fixed jets and has been specifically set-up for the supercharged Corvair.

**LUBRICATOR ADJUSTMENT** — 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 or 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 1000 miles and the oil level should be checked occasionally so that you do not run out of lubricant. Engine or lubricator should be warm while adjustments are being made. The adjustment should be checked after the first 100 miles.

**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.

**AIR CLEANERS** — When air cleaners require replacement, use Fram CA-169PL-2.

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

**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 50 miles of driving. A slight clicking noise at idle or after backing off of the throttle after a hard run is characteristic of a vane type supercharger.

**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 the purchaser.

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

## PARTS LIST

# JUDSON MODEL CO SUPERCHARGER

**Mention model and specification number on name plate in ordering parts.**

PART No.	DESCRIPTION	PRICE	PART No.	DESCRIPTION	PRICE
1901	Housing -	93.60	3213	Cross-Over Hose	.60
1304	Rotor Assembly	58.20	3214	Support Spacers	.20
1505	Front Cover	9.60	1511	Shaft Spacer Tube	1.20
1502	Rear Cover	9.60	1517	End Plug -	.48
3201	Cross-Over Tube	5.80	3227	Carburetor	28.50
3202	Supercharger Pulley	6.20	3215	Carburetor Gasket	.24
3203	Crankshaft Pulley -	8.40	1911	Supercharger Gasket	1.02
3204	Supercharger Manifold	36.50	3216	Manifold Gasket	.30
3205	Manifold Tube Adaptor	5.60	1510	Shaft Nut -	.72
3206	Idler Bracket	1.80	1545	Key for Shaft -	.12
3207	Idler Pulley, complete	3.80	1541	Oil Line Fitting (2) each -	.48
1575	Lubricator -	12.00	1540	Oil Line Ferrule (2) each	.24
3208	Air Cleaner Two -	3.60	3217	Air Cleaner Duct	3.40
3209	Carburetor Air Horn -	3.90	3218	Heat Duct	3.60
3210	Oil Line -	1.20	3219	Throttle Rod Assembly	4.20
3211	Mounting Support -	4.80	3220	Throttle Lever	.60
1318	Vanes (4) . . . set -	18.00	1621	Manifold Bolts (7) . . . set	1.20
3228	Drive Belt	2.20	3222	Choke Tube	3.80
1550	Bearings (2) . . . . each -	2.16	3223	Support Studs	.30
1513	Front Seals (2) . . . each -	.60	3224	Air Cleaner Clamp -	1.20
1501	Rear Seal -	.60	3225	Air Cleaner Rod	.60
1553	Snap Ring (3) . . . each -	.50	3226	Crankshaft Bolt	.30
3212	Gas Line -	3.80	3229	Carburetor Studs	.20

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

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**JUDSON RESEARCH AND MFG. CO.**  
**CONSHOHOCKEN, PENNA.**

# JUDSON

RESEARCH AND MFG. CO.  
CONSHOHOCKEN, PENNA.



TELEPHONE TAYLOR 8 3011  
CABLE JUDCO

## SERVICE BULLETIN

1963 - 1964 Corvair

Do not leave the crankcase ventilator hose connected to the cross-over tube between the two manifolds. Remove the original crankcase ventilator hose assembly with the valve and discard. Plug the connection at the cross-over tube to prevent leakage.

Connect hose from the vent on top of the shroud to the pipe nipple on the side of our carburetor air horn as described in J-3 of installation instructions.

On the 1964 model only, it is necessary to replace the crankshaft pulley now on the engine with the same crankshaft pulley as used on the 1961 - 1962 - 1963 models. This is Corvair pulley No. 3814340 which is sold by your local Chevrolet dealer. The original crankshaft pulley on the 1964 model should be removed with a puller or pried off. Do not use the threaded holes for jack screws as the seal at the end of the shaft will be damaged. (Dealer Note - Use same procedure in replacing crankshaft pulley as is used in replacing this pulley for the air conditioner.)

The air cleaner arrangement on the 1964 model is different than that used on the 1961, 1962 and 1963 models making it necessary to discard the original air cleaner set-up and install an independant air cleaner directly on the carburetor.

## SERVICE DATA

### JUDSON MODEL CO SUPERCHARGER

Very Important: In reassembling the supercharger, make sure that the end covers are assembled to the main housing in exactly the same relationship as when removed. Make a note of their position on the housing before removing.

Dissassemble the supercharger in the following manner:

1. Remove the supercharger from the engine and place on a clean bench. Remove the carburetor and manifold from the supercharger.
2. Remove the six bolts holding on the rear cover.
3. Use two 5/16" USS bolts and screw into the tapped holes in the rear cover. These act as jack screws to remove the rear cover and bearing from the shaft. Jack screws should be tightened slowly and the same amount on both sides of the cover so that the bearing and cover will be pulled off the shaft straight.
4. After the rear cover has been removed the vanes can be removed from the rotor.  
**IMPORTANT:** Before removing the vanes take special notice of the slots in the vanes. Vanes must be replaced in the same manner or supercharger will not function. Slots in vanes face to the center toward the shaft.
5. To remove the rotor assembly, remove the six bolts holding on the front cover and the front cover can be removed from the housing with the complete rotor assembly.
6. To remove the front cover from the shaft: remove the nut from the shaft and then the pulley. Remove idler bracket from front cover. Rotor shaft can then be forced out of the front bearing using an arbor press.
7. To remove the bearing and seals from the front cover; remove the snap ring, drive out the bearing from the inside, drive out seals in same manner. Take notice of the relative position of the two seals so that they can be replaced correctly, this is important.
8. In replacing the end cover on the shaft, seals should be carefully worked over the spacer on the shaft to prevent damage.
9. To remove the bearing from the rear cover; push out cap from inside of housing, remove the snap ring from the housing, push out bearing from inside of cover. In reassembling, the cover cap is forced into the groove by striking in the center. Edge of cover should be coated with Permatex or sealer prior to replacement.