

This is the original Judson Instruction booklet that dates from 1956.

Later editions of these instructions contained more information added under the headings; "ENGINE ADJUSTMENTS", "DATA" and "ITEMS TO CHECK FOR LACK OF PERFORMANCE". This additional text information is reproduced in pages 7, 8 & 9.



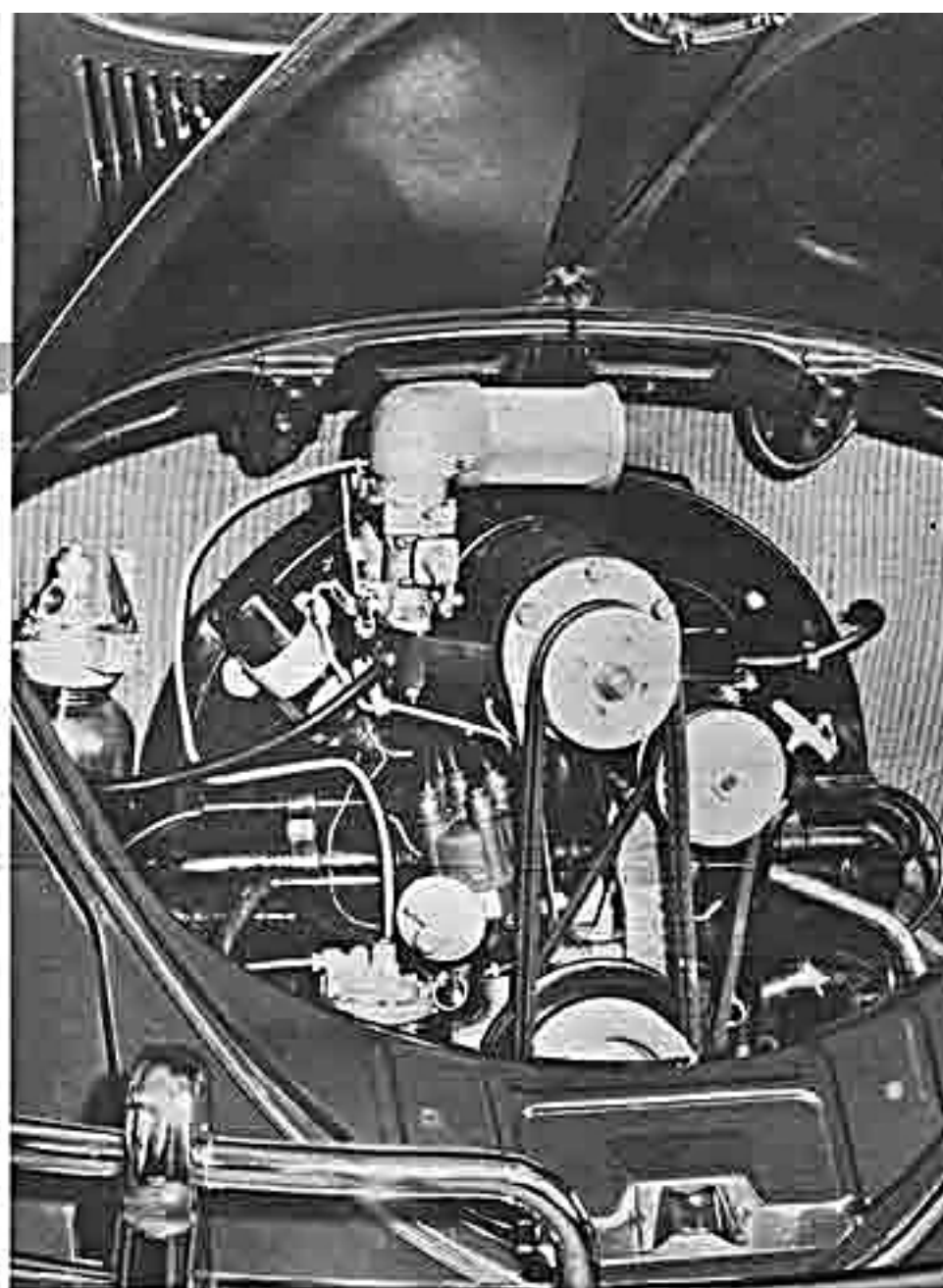
According to a recent survey nearly 90% of the Volkswagen owners interviewed expressed a wish for more engine power. Although all were pleased with their cars, some went so far as to say that driving on congested highways could be positively unsafe.

A Judson Supercharger will give your Volkswagen the extra power you want and need. It will not make a hot rod out of Dr. Porche's design of a family car but it will give you the additional performance required for American driving.

The Volkswagen engine is more than rugged enough to take low pressure supercharging without effecting its traditional economy and reliability. This additional horsepower is made available through increased torque and not increased r.p.m. A supercharger by allowing the engine to breathe more efficiently permits the engine to do nearly twice as much work with very little additional effort.

Practically all trans-continental trucks, busses, locomotives and airliners are supercharged. Those who say that a supercharger has a harmful effect on the engine are misinformed or are using as comparison high pressure supercharging as used on racing cars. Also of course, a few dealers will not recommend it as Volkswagen does not approve of their selling any accessories other than those manufactured by themselves.

A Judson Supercharger on your Volkswagen will increase the horsepower by nearly 50%. You will have the same power to weight ratio as the Ford and Chevrolet Six and can accelerate to 60 m.p.h. in 15 seconds instead of 30 seconds, to 50 m.p.h. in ten seconds. The lumbering pace up steep hills will be a thing of the past. It gives you the kind of performance you need to eliminate fatigue re-



sulting from driving an underpowered car. One of the first things you will notice about driving your supercharged Volkswagen is the feeling of assurance you get from the additional power at your command.

The Judson Supercharger is acknowledged by automotive engineers everywhere as the standard of quality and performance. It is bringing complete satisfaction to thousands of Volkswagen owners throughout the world with many installations having in excess of sixty thousand miles of hard usage on them.

The mildly stressed Volkswagen engine is a natural for this "bolt on" method of improving performance. Get all the power out of your Volkswagen. Power that you never realized was there, smooth, silent, surging power that is always available with a Judson Supercharged engine. Place your order today directly with the factory or through better Volkswagen dealers everywhere.

JUDSON RESEARCH AND MFG. CO.

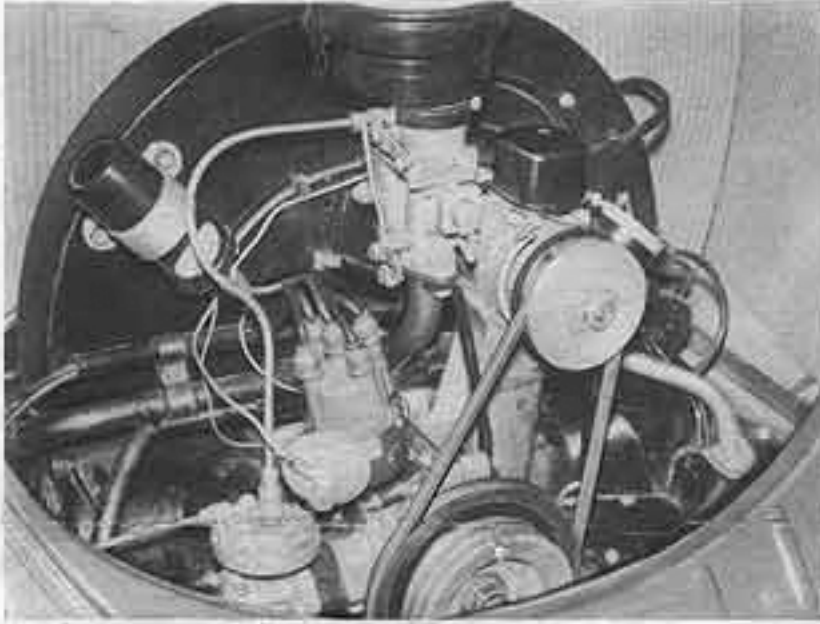
**CONSHOHOCKEN,
PENNSYLVANIA**

Join the thousands of Volkswagen owners who are getting improved performance and increased satisfaction from their cars by super-charging with Judson.

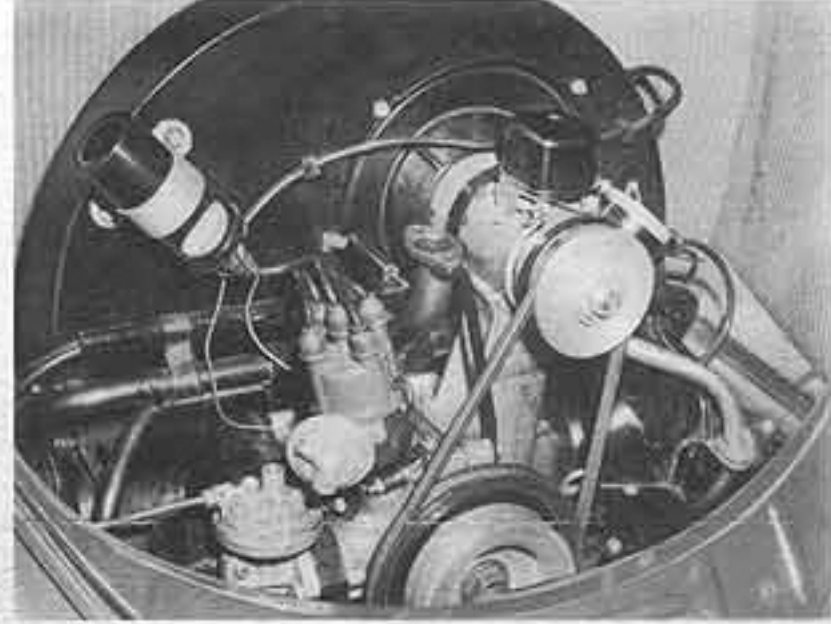
INSTALLATION PROCEDURE

Judson Model VW Supercharger

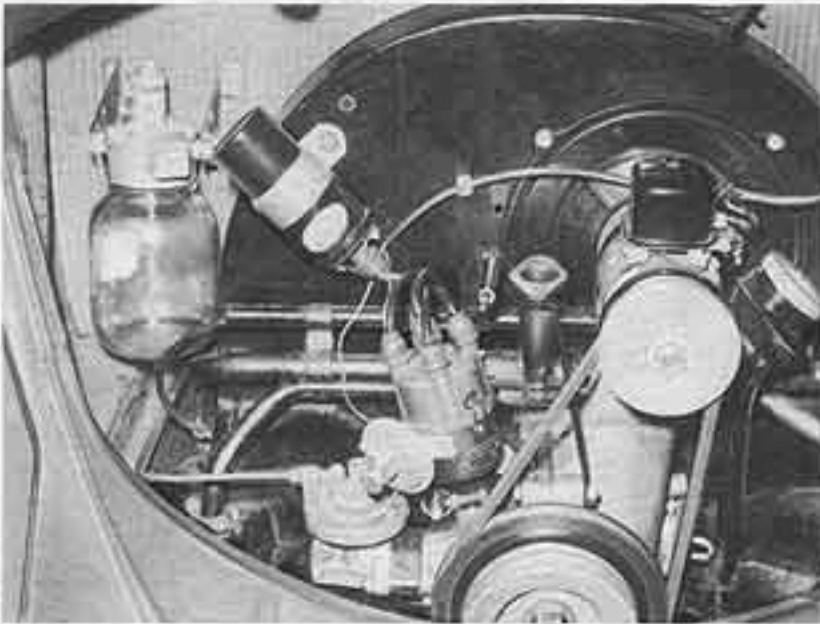
(Details furnished with supercharger)



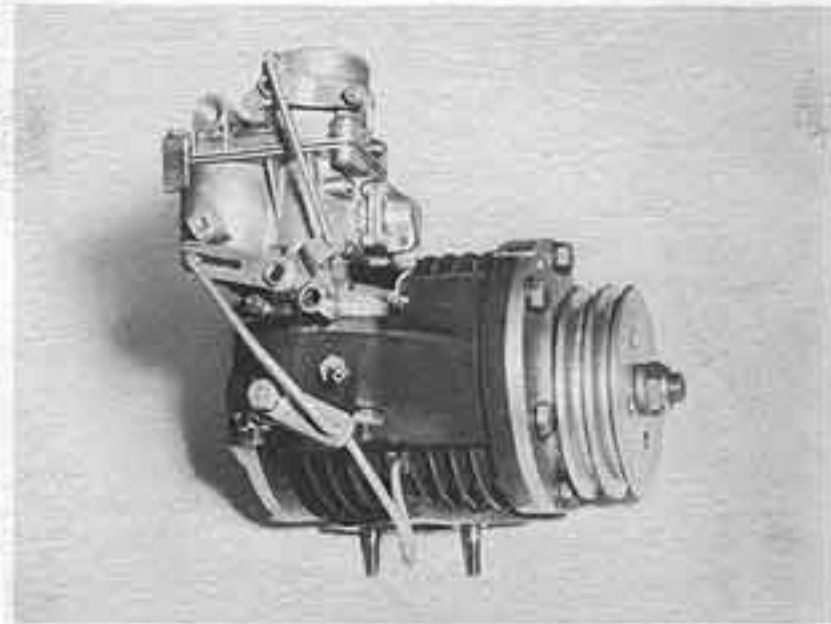
1. Mount pulley on end of crankshaft. Replace front pulley flange on generator.



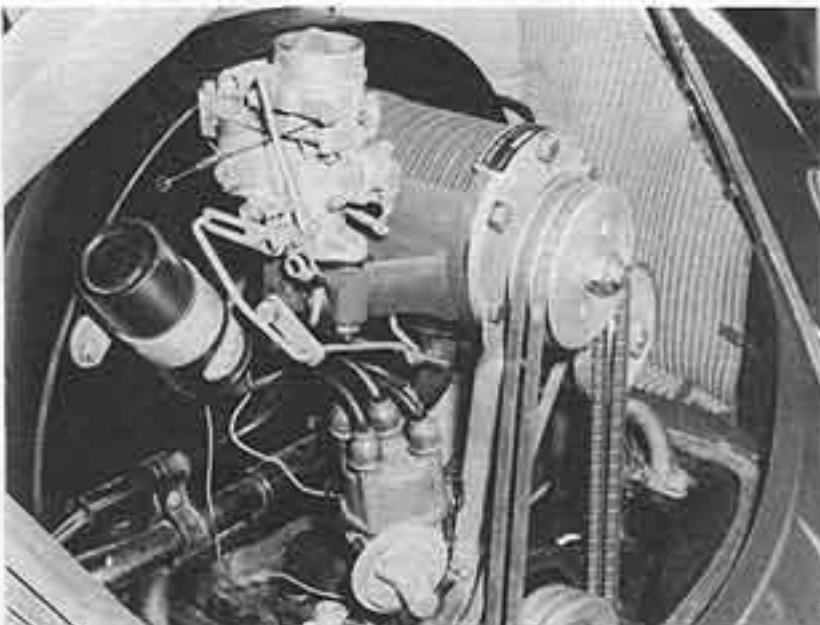
2. Remove air cleaner, fuel and vacuum line and carburetor from engine. See detailed instructions.



3. Mount lubricator on fire wall with screws furnished. Drill hole for choke control in shroud.



4. Replace studs and correction jet in carburetor and bolt to supercharger. Connect throttle linkage as shown.



5. Bolt supercharger to engine, install drive belts, connect throttle and choke control.



6. Install original fuel lines, connect oil line to supercharger, mount air cleaner. Installation is complete.

MODEL VW JUDSON SUPERCHARGER

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

INSTALLATION — DATA — SERVICE — PARTS LIST

Installation procedure for all models of the Volkswagen. Read installation procedure and information under "Data" over thoroughly before proceeding with the installation. Instructions are presented in a step by step sequence. Refer to corresponding photo number for illustration of each step. Do not remove seals from the supercharger until ready for mounting.

1. Remove large capscrew and washer from end of crankshaft. Remove any grease, paint or burrs in bore and face of Volkswagen pulley. Install supercharger drive pulley by placing lip on back of pulley in bore of original VW pulley. Make sure that the two pins protruding from the back of the Judson pulley are in the slots of the VW pulley. Replace capscrew and washer (in some cases it is necessary to flatten or remove some of the bow from the lockwasher). The lip on the back of the Judson pulley must be in the bore of the VW crankshaft pulley before tightening capscrew. Start engine and observe supercharger drive pulley. It must run true and there can be no wobble or eccentricity. If the pulley is not running true or concentric, the lip of the Judson pulley is not centered and in the bore of the Volkswagen pulley. Do not proceed with the installation until the drive pulley is mounted properly.

Remove the front pulley flange from the generator (see your VW manual). Replace with the pulley flange furnished with the installation. Check generator belt for tension and adjust if necessary using the pulley shims. It is not necessary to replace the front pulley flange of the generator on the 25 h.p. and 30 h.p. models.

2. Remove the air cleaner, fuel line, vacuum line and carburetor from the engine.

To increase the capacity of the fuel pump for the supercharged engine it is necessary to replace the diaphragm spring in the fuel pump with the replacement furnished. Remove the fuel pump from the engine by removing the two nuts from the studs, remove the six screws holding the top and diaphragm to the base, unhook the diaphragm from the actuating lever in the pump, remove the original spring and insert the replacement spring. Reassemble the fuel pump and install on the engine.

3. Mount the lubricator on the fire wall as shown in photo using the 4 self-tapping metal screws furnished with the installation. Drill $\frac{1}{8}$ " holes for the screws. Mount lubricator high enough so that the rear spark plug is accessible for removal and the fill spout readily accessible for refill.

Drill $\frac{1}{4}$ " or $\frac{5}{16}$ " hole through the shroud for the choke cable. Measure down 1" from the top of the shroud and $\frac{3}{4}$ " over from the edge of the coil strap. See photo. Drill hole completely through the shroud at slight angle towards the present choke hole. Remove the choke cable from original hole through shroud and insert in hole just drilled by reaching be-

hind shroud.

4. Remove both studs from the carburetor and replace with new studs furnished. Screw the end of the stud with the least number of threads into the carburetor tightly. Remove the air correction jet from the carburetor which is located in the center of the carburetor throat under the choke butterfly and replace with the new jet. Fasten vacuum advance line to carburetor. Mount carburetor on supercharger. Use thin gasket between carburetor and supercharger. Place small copper gasket washers on the studs before fastening with special locknuts (do not use lockwashers). Connect throttle linkage to carburetor as shown in photo. Carburetor throttle arm is fastened to the throttle shaft of the carburetor with the original nut.

5. Place supercharger on engine manifold using a thick gasket but do not fasten with nuts. It is necessary on some models to move the relay box sitting on top of the generator. Any additional clearance required at this point is slight and can be obtained by slotting the screw holes of the relay bracket. Place drive belts around both pulleys by tipping the supercharger on the manifold. Fasten supercharger tightly to manifold using lockwashers under regular nuts. Install slotted brace from under head of bolt on crankcase to supercharger as shown. This is done by dropping the brace down between the crankshaft pulley and the crankcase, slipping the long slotted end onto supercharger bolt and then pushing other end into position on loosened crankcase bolt. Tighten both bolts.

IMPORTANT: The drive belts must not be too tight or this will place an additional stress on the bearings in the supercharger. Belts should have at least $\frac{1}{2}$ " slack.

Connect throttle by placing original throttle rod through eye of the throttle lever on the supercharger. Bend the throttle tube coming through the shroud down slightly to line up with the throttle lever. Use the original clamp from the carburetor on end of throttle rod as shown, leaving approximately $\frac{1}{16}$ " clearance between clamp and rod.

Connect choke control by placing the original choke wire through the ferrule and bending up the end. Fasten choke extension to choke control of carburetor as shown. Cut off any excess wire protruding from the choke connection on the carburetor so that it will not scrape the lid of the engine compartment.

6. Install original fuel line and vacuum line to the carburetor bending as required. Connect the oil line from the lubricator to the supercharger. Mount the air cleaner on the carburetor. Fill lubricator with SAE No. 10 detergent motor oil. Do not start the engine unless the lubricator is connected and filled with oil. Additional hood clearance over the air cleaner can be obtained if necessary on all models by loosening the transmission mounting bolts and raising up the engine in the front with a jack thus lowering the carburetor.

ENGINE ADJUSTMENTS

VALVES: Valve clearance should be increased to .006" (.15 mm). Adjustment should be made when engine is cold. Increased valve clearance improves performance and prevents valves from burning.

TIMING: For best results the timing should be retarded five degrees (number one cylinder should fire when mark on the original crankshaft pulley is $\frac{1}{4}$ " to the right of the crankcase center line facing the engine).

INSTALLATION IS COMPLETE

Start the engine. (It will be difficult to start the engine as the gasoline has been drained from the carburetor. Use full choke and pump throttle.) As soon as the engine is running, adjust the lubricator. After engine is warm, set idle and mixture on carburetor.

NOTE: Wash air cleaner screen in gasoline every 3,000 to 5,000 miles.

IMPORTANT: The condition and quality of the spark plugs is extremely important on a supercharged engine. If plugs need replacing or if detonation or ping occurs, the spark plugs should be replaced with Champion L-10. Ignition wiring and coil should also be checked in the event of ignition failure.



CONVERTIBLE MODEL: It is necessary to remove a section of the air baffle located on the inside of the lid in order to mount the carburetor and air cleaner.

KARMANN-GHIA COUPE: On this model it is necessary to make a revision in the rear deck lid because of insufficient clearance in the engine compartment. A modification or scoop for the rear deck lid is included in the kit for the Ghia Coupe. Complete instructions and a template for mounting the modification is packed with the scoop.

TRANSPORTER: There is insufficient clearance in the engine compartment to mount an air cleaner unless the panel directly over the carburetor is modified. In order to mount the carburetor it is necessary to remove a 4" section of the reinforcing rib located on the underside of the panel directly over the carburetor.

LUBRICATOR ADJUSTMENT (correct lubrication is very important): To adjust the lubricator proceed as follows: Start the engine, remove the top of the lubricator by unscrewing the small cap on the very top. Here you will find a small knurled knob. This 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 six to eight seconds at idle.

This can be timed through the small window on the lubricator. Screw clockwise to decrease the amount of oil consumption. It is advisable to give the supercharger an excess of oil for the first half hour of operation (one drop every four seconds). 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 or two 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 are greased and sealed at the factory for life. Use any good grade of SAE No. 10 detergent motor oil or Marvel upper cylinder lubricant. Do not use any other type or brand of upper cylinder lubricant.

In freezing temperatures the number 10 HD motor oil in the lubricator should be replaced with number 5 HD. In altitudes of 4500' and over, the oil feed should be increased to one drop every four or five seconds. 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 will require re-adjustment after approximately two hundred miles or if you switch from Marvel Oil to Motor Oil. Oiler should be adjusted and left alone as any variance which will occur will be slight and is averaged out over the vacuum range of the engine.

FUEL: Premium grade or high octane gasoline is necessary for best performance on the supercharged engine.

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 decalomania for placing on the inside of a window 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 is characteristic of a vane type supercharger).

CARBURETION: Under no circumstances should the jets in the carburetor be revised other than the air correction jet that is furnished. If the mixture is lean it is either because of a faulty fuel pump or a leak in the manifold or one of its connections.

DRIVE BELT ADJUSTMENT: The tension of the supercharger drive belts should be examined after approximately one or two hundred miles and an adjustment made if required. Belt tension can be increased sufficiently by placing one additional thick gasket between the supercharger and the manifold. Belts should not be too tight or this will place an additional stress on the main bearings of the supercharger. In case of drive belt breakage the supercharger will cease functioning but the engine will continue to operate as a normally aspirated engine. The drive belts are a standard size and is the same size belt used on the 1952-1953 Chrysler and DeSoto. Your local Chrysler dealer can furnish these belts in matched pairs.

SUPERCHARGER 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. Higher 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 six to seven pounds. An additional manifold boost pressure can be obtained by removing the air cleaner from the installation. Even when you are 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 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.

GAUGE INSTALLATION: A supercharger gauge is available as an accessory for the Judson Supercharger. The gauge has readings in both inches of mercury for vacuum and pounds per square inch for pressure. Supercharger gauge installation consists of the following: gauge, length of neoprene hose and two fittings. Installation procedure on all VW models is as follows:

1. For dash mounting cut a 2" hole in the dash panel (left of speedometer).

2. Remove the pipe pressure plug located on the bottom front of the supercharger near the exhaust port and insert fitting with barbed tube connection.
3. Screw same type of fitting on back of gauge using union furnished.
4. Insert gauge in hole cut in dash panel and secure with clamp on back of gauge.
5. Connect hose from fitting on supercharger to fitting on back of gauge. Run hose into back of car (right rear corner), under both seats along center tube under mats and out through hole in cab for choke. **Caution:** Hose must be connected at both ends and a hole or cut in the hose will effect performance and supercharger life.

NOTE: If the air cleaner rubs on the inside of the engine lid from vibration causing noise, the cleaner is not mounted on the carburetor at the correct angle. The angle on the front of the cleaner should match the sloping angle of the lid.

WARRANTY: The Judson Supercharger is warranted to be free from defects in material or 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. Conshohocken, Pa. Factory approval must be obtained before returning supercharger or parts for replacement. All transportation charges on supercharger or parts must be borne by purchaser.



SERVICE DATA

JUDSON MODEL VW 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.

Disassemble the Supercharger in the Following Manner

1. Remove the supercharger from the engine and place on a clean bench. Remove the carburetor and throttle linkage 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 pulled out of 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.
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. 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.
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 prior to replacement.

CHECK SHEET FOR LACK OF PERFORMANCE

INSTALLATION: It is very important that the instructions be followed exactly in installing the supercharger on the engine. Mistakes usually made: drive belts too tight, the special lock-nuts are placed on the supercharger mounting studs instead of the carburetor studs, the support brace is mounted upside-down, the small copper washer gaskets are not placed on the carburetor studs, the replacement spring is not installed in the fuel pump and the hole for the choke is drilled incorrectly which allows the choke extension to catch on the side of the carburetor. Lockwashers are not required and should not be used on the carburetor studs as the nut furnished is a lock-nut. The copper gaskets must be placed on the carburetor studs under the nuts to prevent leakage at this connection.

ENGINE: Maximum performance after supercharging is a function of engine condition and tuning. Engine deficiencies often unnoticed before supercharging sometimes prevent 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 one of the following: a leak in the induction system, improper valve clearance or a faulty ignition system. Of these three a leak is the most common cause of poor performance. A leak in the induction system upsets the fuel/air ratio resulting in a lean mixture, a hot running engine, a poor idle, engine stalling, detonation, hard starting, a noisy supercharger and restricted top speed. All connections should be checked for leaks including where the intake manifold is bolted to the head. The manifold itself should be checked for a crack and to make sure that the intake manifold is not burned through where it joins the heat riser tube. A leak between the heat riser and intake manifold can be eliminated by blocking off the heat riser at the exhaust. If installation is equipped with a gauge, both connections should be checked as well as the hose.

An incorrect setting of the air regulator ring located on the back of the shroud will also cause a hot running engine by not allowing a sufficient volume of air to enter the shroud. In hot climates we suggest the removal of the regulator ring which is fastened to the shroud with two bolts.

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 effects performance considerably and causes detonation. See installation data for timing adjustment. Point and plug settings remain stock.

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 or making any other basic engine modifications on the supercharged engine.



PARTS LIST

MODEL VW JUDSON SUPERCHARGER

Mention specification number on name plate in ordering parts

Part No.	Description	Part No.	Description
VW-1	HOUSING	VW-20	MAIN GASKET
VW-4	ROTOR ASSEMBLY	VW-516	BOLT GASKET (2)
VW-5	FRONT COVER	VW-175	END PLUG
VW-2	REAR COVER	VW-11	SHAFT SPACER TUBE
VW-3	SUPERCHARGER PULLEY	VW-15	SUPPORT BRACKET
VW-9	CRANKSHAFT PULLEY	VW-16	THROTTLE ROD
VW-78	AIR CLEANER ASSEMBLY	VW-18	THROTTLE SUPPORT
VW-74	GENERATOR FLANGE	VW-17	CARBURETOR CONTROL ARM
VW-503	BEARING (2)	VW-32	OIL LINE
VW-421	SEAL (2) FRONT	VW-108	SHAFT NUT
VW-422	SEAL, REAR	VW-405	KEY
VW-152	REPLACEMENT SUPPORT	VW-150	MOUNTING STUD (2)
VW-156	SNAP RING	VW-238	CARBURETOR STUD (2)
VW-51	VANE (4)	VW-160	CARBURETOR JET
VW-210	DRIVE BELTS (2)	VW-176	FUEL PUMP SPRING
VW-75	LUBRICATOR	VW-186	SPRING
		VW-187	CHOKE WIRE

ALL FASTENINGS ARE STANDARD 3/8-16 and 5/16-18.

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



JUDSON RESEARCH AND MFG. CO.
CONSHOHOCKEN, PENNA.

ENGINE ADJUSTMENTS

The engine must be checked and set up as follows before starting the engine.

VALVE CLEARANCES. Valve clearances should be increased to .006" (.15mm). Adjustments should be made when engine is cold.

IGNITION POINT SETTING. Stock gap of .016 is recommended (50 to 53 degrees if set with cam dwell indicator).

IGNITION TIMING. The correct ignition timing will vary with the grade of fuel available in your area and the particular ignition distributor. The correct timing for the supercharged Volkswagen will vary between 2.5 degrees BTC to 10 degrees BTC. Try timing set at stock setting of 7.5 degrees BTC (When the mark on the pulley lines up with the crankcase centre line the ignition timing is set at 7.5 degrees BTC). If detonation is encountered with this setting retard the timing 5 degrees or ¼" to the right of the crankcase centre line facing engine. If performance is sluggish at stock setting of 7.5 degrees BTC, advance timing (to the left) until maximum performance is obtained without detonation or engine knock.

SPARK PLUGS. The condition and quality of the spark plugs is extremely important on a supercharged engine. If plugs need replacing or if ping occurs, the spark plugs should be replaced with Champion L-10 or L-7. Ignition wiring and coil should also be checked in the event of ignition failure. Spark plug gap remains stock at .025.

CARBURETTION. The size of the main jet in the carburettor should be checked to make sure that it is either 120. Or 122.5.

INSTALLATION IS COMPLETE

Start the engine. It will be difficult to start the engine as the gasoline has been drained from the carburettor. Use full choke and pump throttle. As soon as the engine is running adjust the lubricator. After engine is warm, set idle and mixture on carburettor.

CONVERTIBLE MODEL. It is necessary to remove a section of the air baffle located on the inside of the lid in order to mount the carburettor and air cleaner.

KARMANN GHIA COUPE. On this model it is necessary to make a revision in the rear deck lid because of insufficient clearance in the engine compartment. A modification or scoop for the rear deck lid is included in the kit for the Ghia Coupe. Complete instructions and a template for mounting the modification is packed with the scoop.

TRANSPORTER, TRUCK AND KOMBI. There is insufficient clearance in the engine compartment to mount an air cleaner unless the panel directly over the carburettor is modified. In order to mount the carburettor it is necessary to remove a 4" section of the reinforcing rib located on the underside of the panel directly over the carburettor.

DATA

LUBRICATOR ADJUSTMENT. 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 six 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 and lubricant should be warm while adjustments are being made. The adjustment should be checked after the first 100 miles. The oil from the automatic lubricator is to oil the bore of the supercharger housing and also acts as an upper cylinder lubricant. Use 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.

NOTE; The lubricator should be adjusted and left alone as any variance that will occur at idle will be slight under actual operation.

DRIVE BELT ADJUSTMENT. The tension of the supercharger drive belts should be examined after approximately 200 miles and an adjustment made if required. Belt tension can be increased sufficiently by placing one additional thick gasket between the supercharger and the manifold. Belts should have 1/2" to 3/4" slack.

AIR CLEANER SERVICE. The air cleaner should be removed from the carburettor and washed out in gasoline or kerosene every 3000 to 5000 miles.

FUEL. Premium grade or high octane gasoline is recommended for maximum performance 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 15 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 hour of operation. This noise is nothing to be concerned about and will disappear completely within the first 50 miles of hard driving. A clicking noise sometimes at idle or after backing off of the throttle after a hard run is a 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 belts are a standard size and can be purchased from any automotive jobber under Gates number 6267* as a matched set. Belts are of a premium quality and should last for at least 35000 miles.

WARRANTY. The Judson Supercharger is warranted to be free from defects in material and workmanship under normal use and service. In case 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.

* The original Gates belt was 8210 but these are no longer available.

ITEMS TO CHECK FOR LACK OF PERFORMANCE

INSTALLATION. It is very important that the instructions be followed exactly in installing the supercharger on the engine. Mistakes usually made; drive belts too tight, the special lock-nuts are placed on the supercharger mounting studs instead of the carburettor studs, the support brace is mounted upside-down, the small copper washer gaskets are not placed on the carburettor studs, the replacement spring is not installed in the fuel pump and the hole for the choke is drilled incorrectly which allows the choke extension to catch on the side of the carburettor. Lock washers are not required and should not be used on the carburettor studs as the nut furnished is a lock nut.

ENGINE. Maximum performance after supercharging is a function of engine condition and tuning. Engine deficiencies often unnoticed before supercharging sometimes prevent increased performance that can be expected from 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 one of the following: a leak in the induction system, improper valve clearance or a faulty ignition system. A leak in the induction system upsets the fuel/air ratio resulting in a lean mixture, a hot running engine, a poor idle, engine stalling, detonation, hard starting, a noisy supercharger and restricted top speed. All connections should be checked for leaks including where the intake manifold is bolted to the head. The manifold itself should be checked for a crack. A leak between the heat riser and intake manifold can be eliminated by blocking off the heat riser at the exhaust. If installation is equipped with a gauge, both connections should be checked as well as the hose.

An incorrect setting of the air regulator ring located on the back of the shroud will cause a hot running engine by not allowing a sufficient volume of air to enter the shroud. In hot climates we suggest the removal of the regulator ring which is fastened to the shroud with two bolts.

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 causes detonation. A leak in the vacuum advance diaphragm on the distributor will restrict the top speed of the Volkswagen above 50mph. A faulty or worn fuel pump, a dirty carburettor or a sticking carburettor float will also account for a hot running engine and restricted top speed.

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 or making any other basic engine modifications on the supercharged engine.