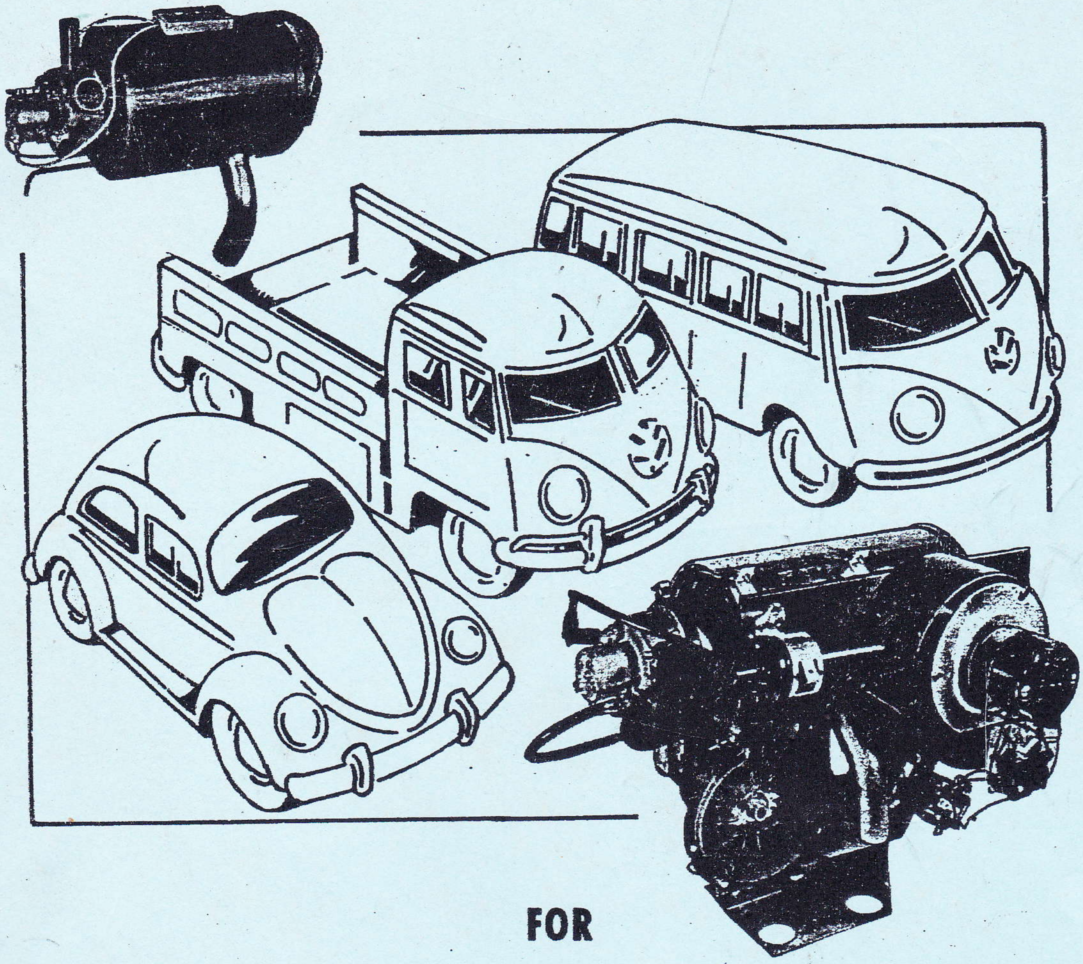
SERVICE MANUAL

South Wind GASOLINE HEATER



FOR

VOLKSWAGEN VEHICLES

Symbol of SW Excellence

South Wind
DIVISION
STEWART-WARNER CORPORATION
1514 Drover Street • Indianapolis 7, Indiana

FORM NO. 05-1163

South Wind

SERVICE MANUAL AND PARTS CATALOG

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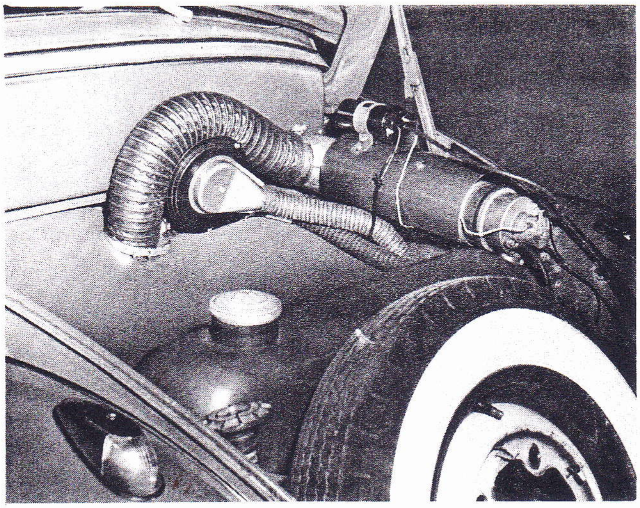

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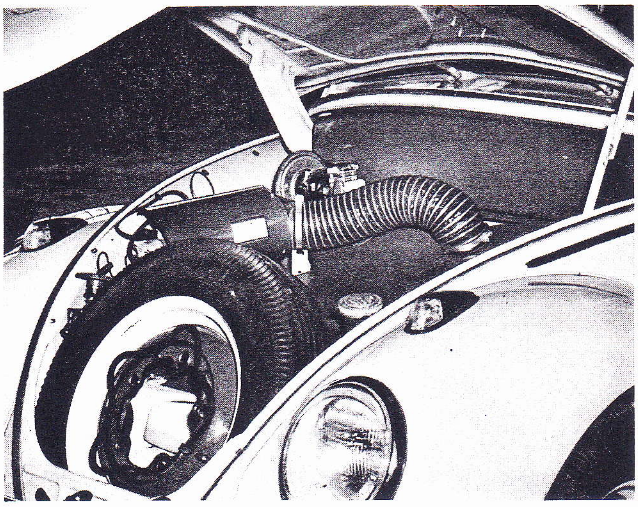

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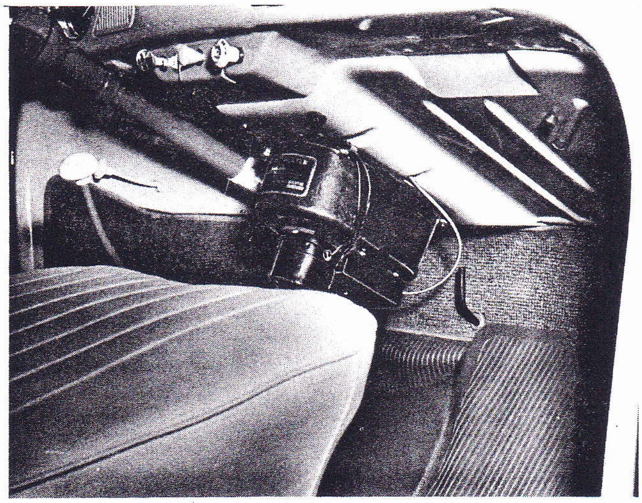

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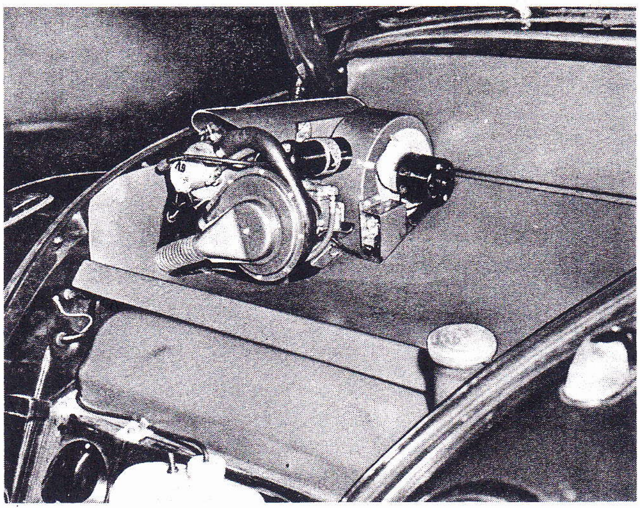

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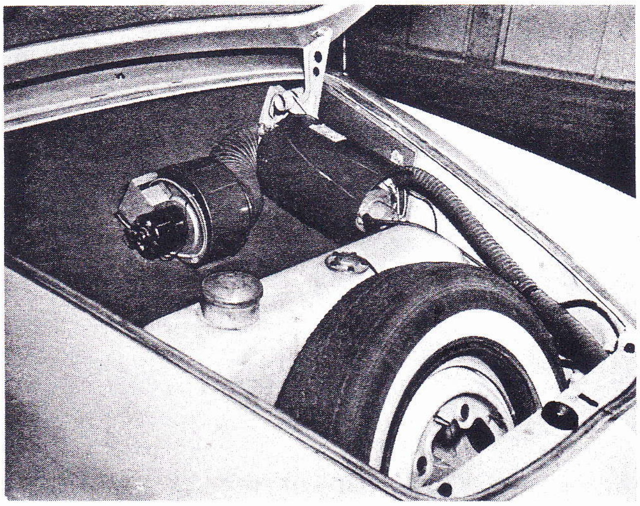

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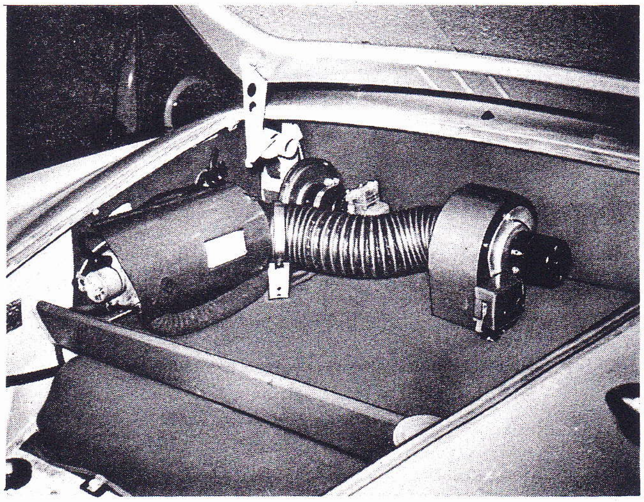

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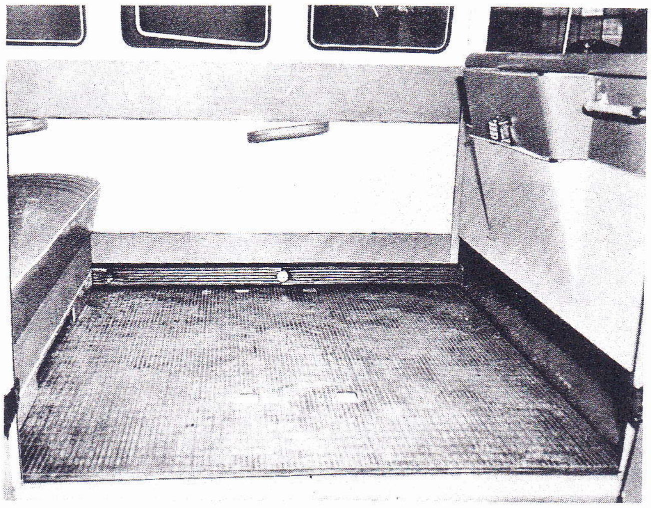

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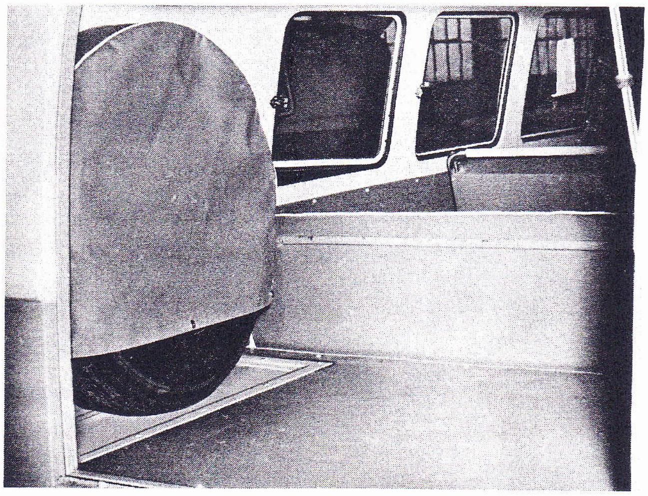

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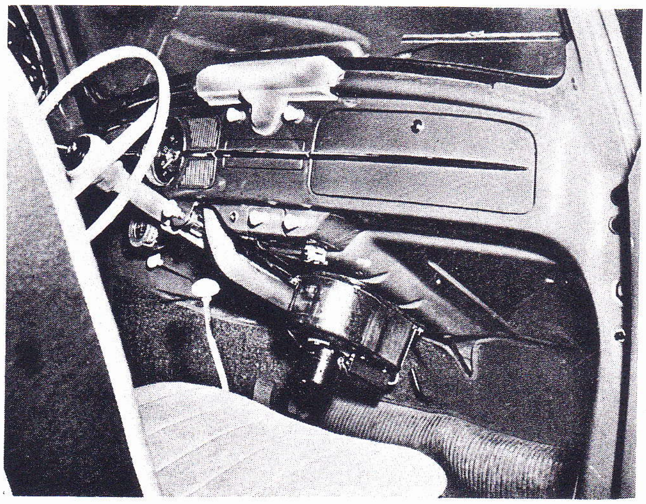

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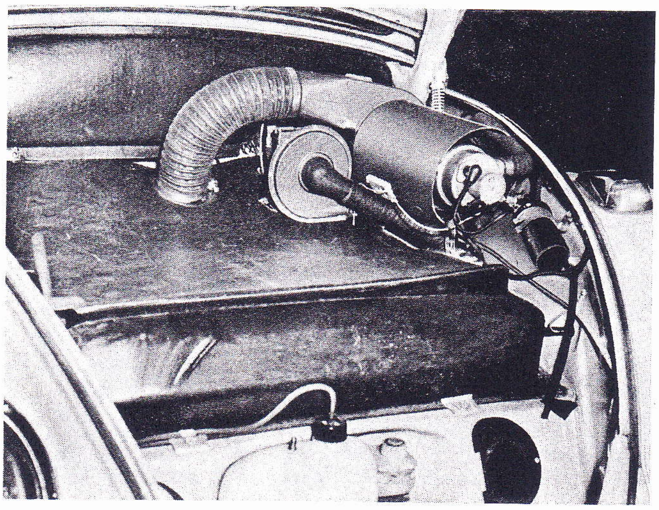

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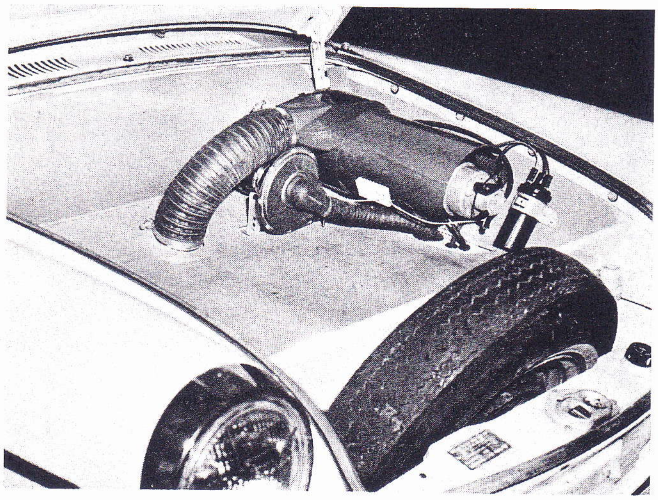

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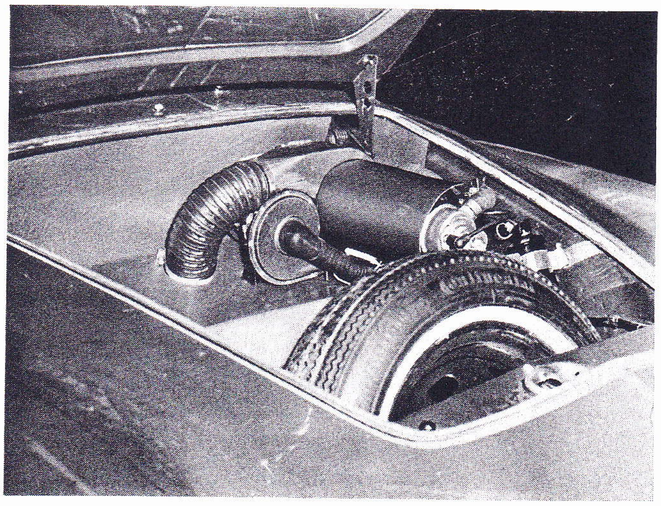

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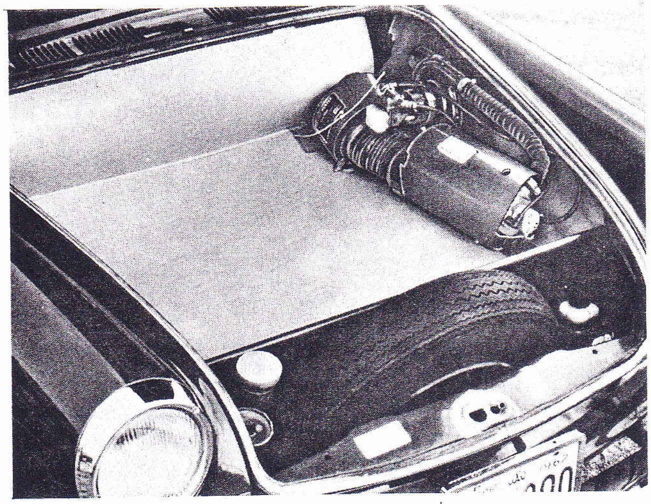
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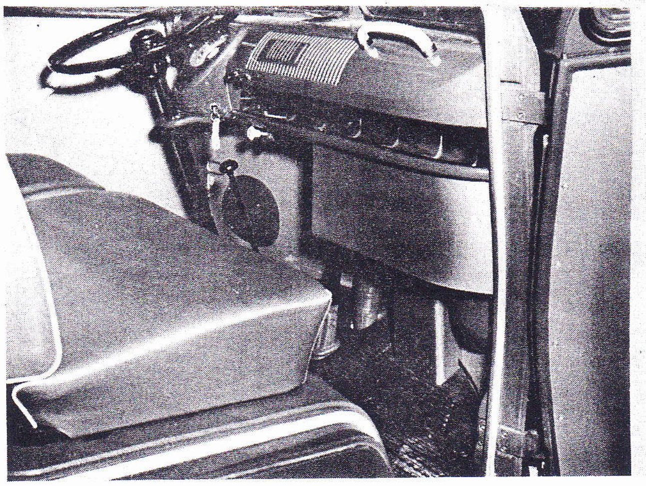
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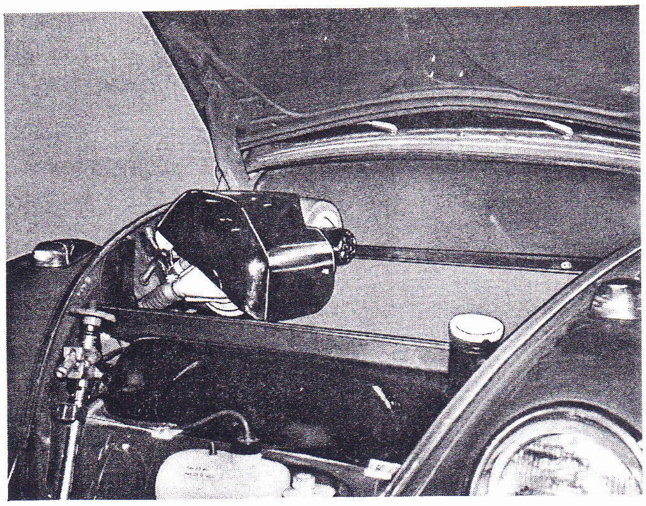
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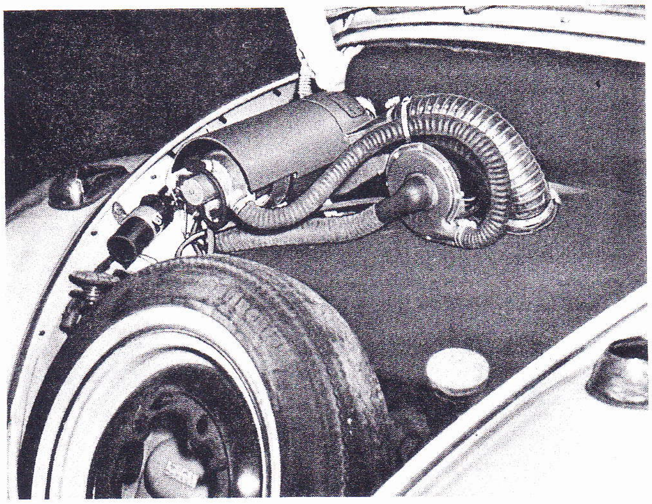
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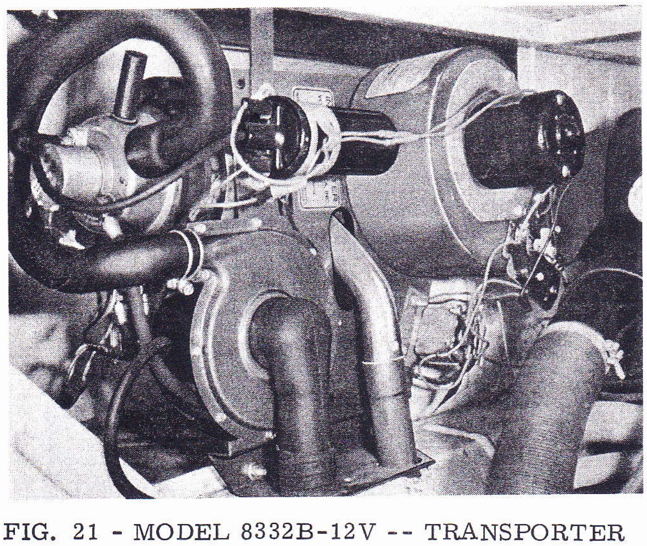
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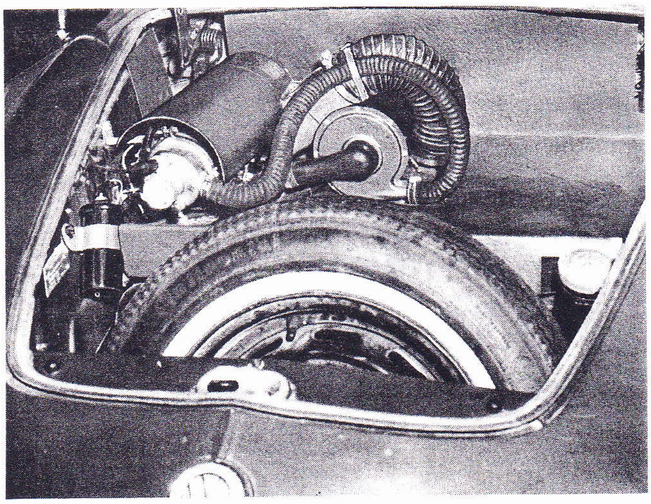
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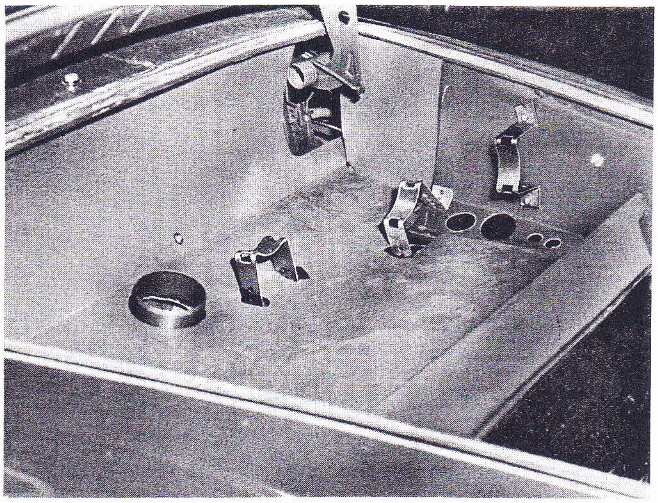

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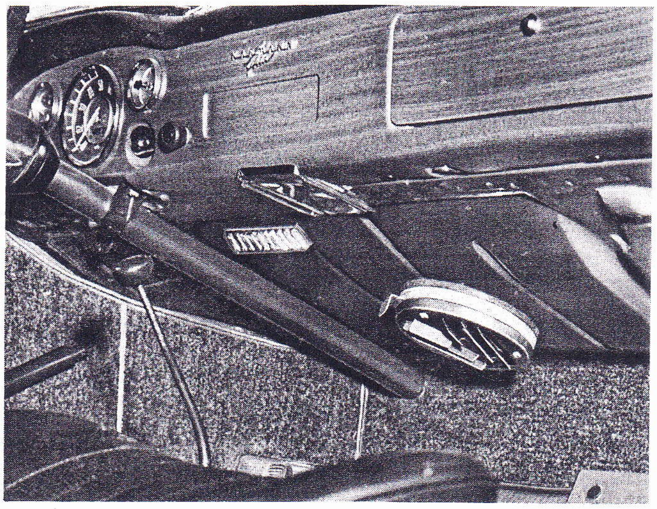

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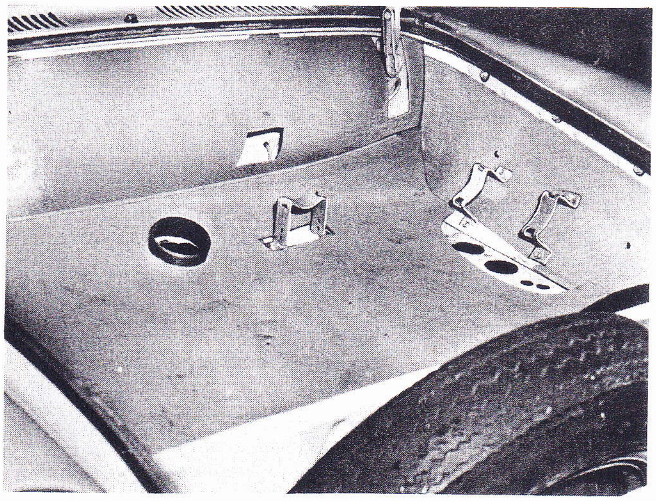

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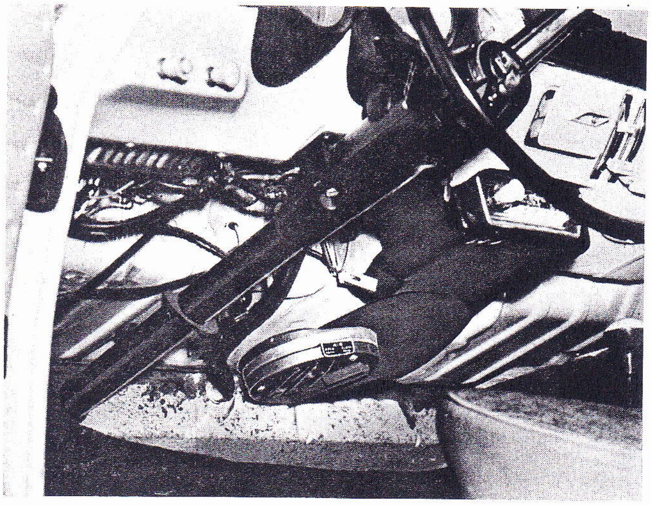

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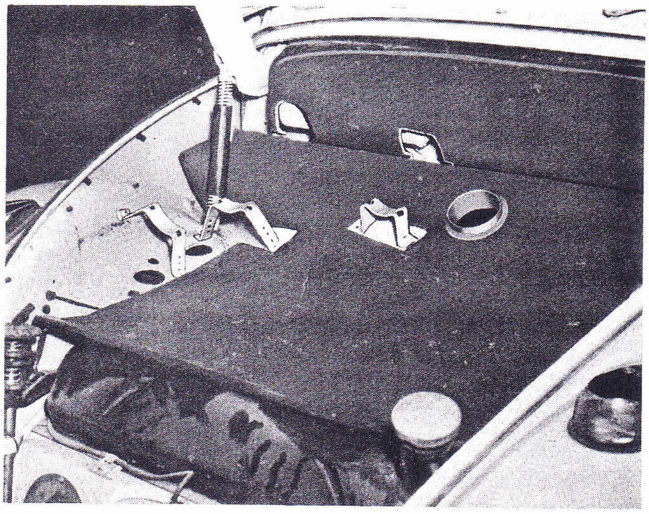

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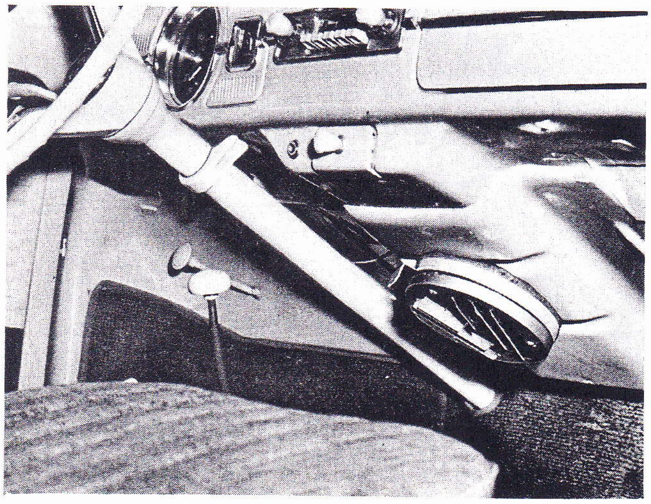

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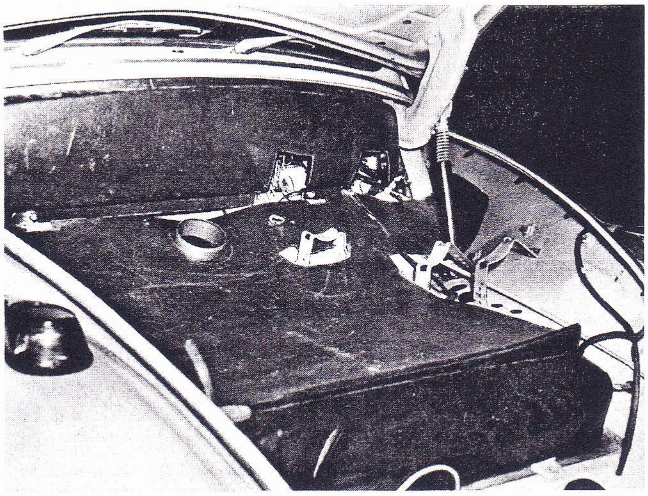

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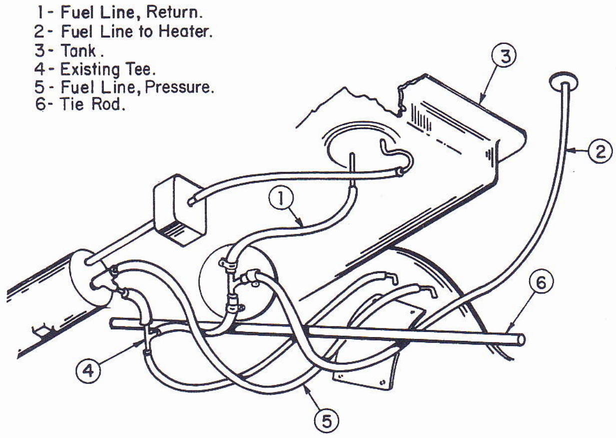

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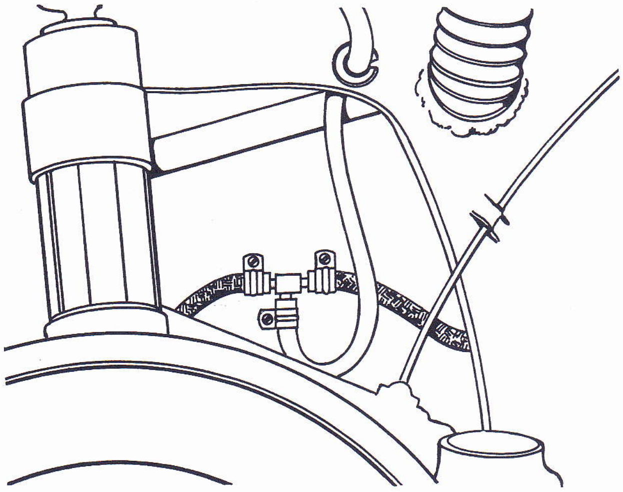

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SEDAN & KARMANN GHIA

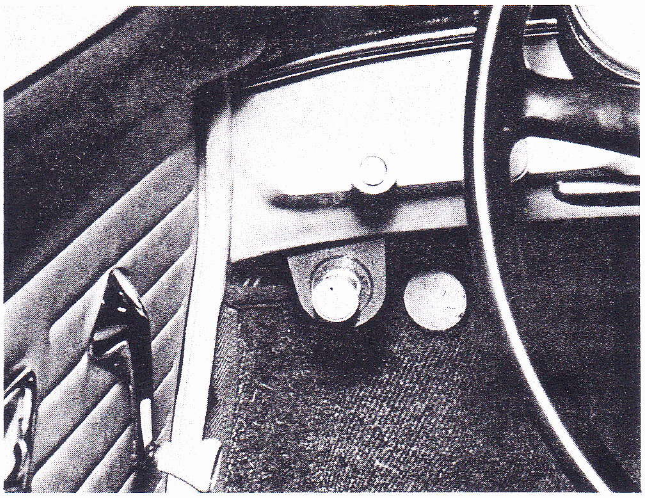


FIG. 33 - SWITCH

SECTION I

GENERAL DESCRIPTION

Principles of operation are the same for all heaters. A fuel pump delivers fuel (gasoline only) to a burner assembly in which it is mixed with air supplied by a combustion air blower. This mixture is ignited by a spark plug which obtains its high voltage through a system employing a coil and set of points in much the same manner as that in a car's ignition system. The ignited mixture creates hot gases which circulate through the passages of a heat exchanger and heat the exchanger walls before passing out the heater exhaust. (See Fig. 34) The heat from the exchanger is then absorbed by fresh air which is forced across the exchanger by a separate ventilating air blower. This hot fresh air is then ducted into the car.

A thermostat is provided to interrupt fuel and ignition, thereby stopping combustion within the heater at a given temperature determined by the thermostat setting which is controlled by the user in response to his heating requirements.

A safety device known as an overheat switch is provided for the purpose of interrupting heater operation in the event the heater exchanger temperature becomes higher than a predetermined safe maximum. Additional safety controls such as a flame detector switch and a fuel safety valve are used with heaters bearing the approval of Underwriter's Laboratories.

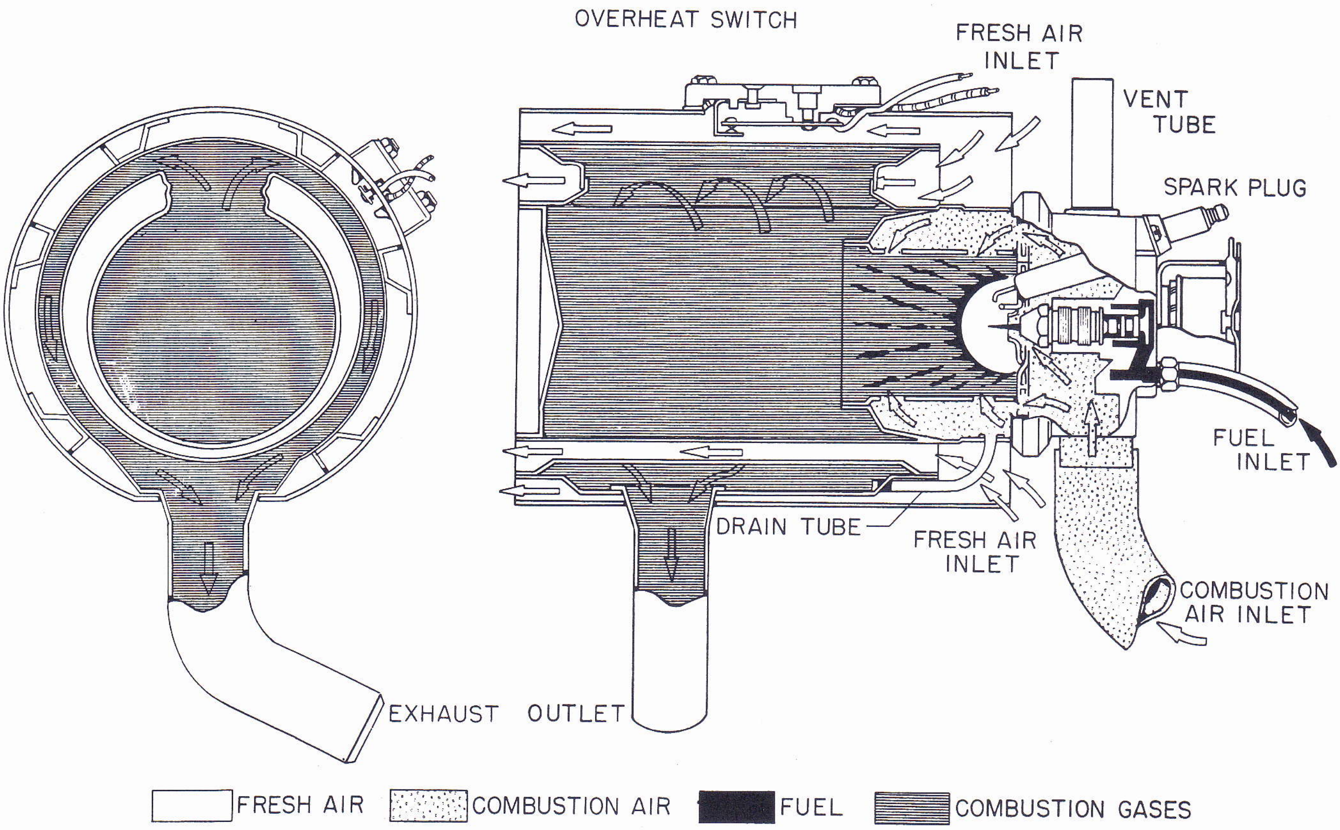


FIGURE 34 -- FLOW SYSTEM

SECTION II

HEATER COMPONENTS

1. Heat Exchanger and Burner Assembly

All exchanger and burner assemblies (Fig. 34) are functionally the same; the difference lies in physical characteristics governed by the application.

The heat exchanger is of all-welded stainless steel construction and is designed for maximum heat transfer.

The burner assembly (Fig. 34) which is secured to the exchanger by a clamp, consists of a casting into which is assembled a solenoid-operated on-off fuel valve, fuel nozzle, solenoid coil, mixer assembly, spark plug, and other components necessary for efficient burner operation.

The spring-loaded fuel valve is controlled by the solenoid coil which, in turn, is controlled by the heater switch, thermostat, and overheat switch depending upon the circumstances. (See wiring diagrams.) When the heater switch is on and the thermostat is calling for heat, the fuel solenoid coil is energized through the thermostat and overheat switch, and the resultant magnetic field lifts the spring-loaded valve from the valve seat. This allows fuel to flow to the nozzle which introduces fuel into the mixer assembly in a fixed conical spray.

Air to mix with the fuel is delivered by the combustion air blower which will be discussed later. In order to enter the mixer, the combustion air must pass through the louver plate of the mixer and then through the small holes in the side of the mixer. The louvers and holes are of a predetermined size to admit the correct quantity of air and should not be altered without specific instructions.

The fuel-air mixture is ignited by a spark plug having a gap of .085. The plug has only one electrode and the ground electrode is welded to the mixer assembly.

2. Combustion Air Blower Assembly

The combustion air blower (Figs. 35 and 81) provides the correct amount of air to mix with the fuel to maintain a balanced fuel-air ratio. A 1-1/4 inch diameter duct is used to deliver combustion air to the burner assembly.

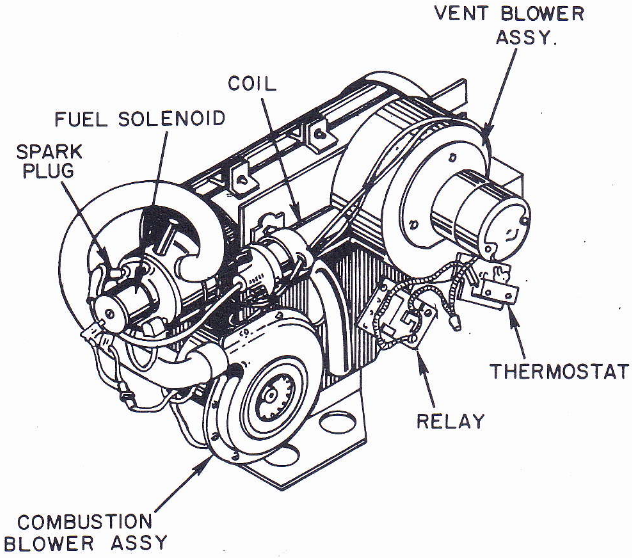


FIG. 35-SKETCH OF TRANSPORTER HEATER".

3. Ventilating Air Blower Assembly

The ventilating air blower (Figs. 9 and 15) is required for the purpose of supplying air across the heat exchanger to remove heat resulting from combustion within the exchanger. This heated air is then delivered to the space to be heated.

4. Heater Fuel Pump

Each heater is equipped with a fuel pump which is driven by the combustion air motor. This is accomplished by a coupling network consisting of a metal connector on the extended shafts of the motor and pump with a rubber coupling between the connectors. The fuel pump, which is designed to deliver fuel at a pressure of 10 to 13 PSI, is a spring-loaded diaphragm type with fixed internal pressure regulation. (See Figure 36A). The fuel pump has a built-in bypass that passes excessive fuel back to the vehicle fuel system. The main spring of the fuel pump acts as a positive arm that has a pressure potential of 20-25 psig. A spring loaded ball located in the bypass is adjusted so that the fuel pump outlet pressure has a setting of 10-13 psig. All excess fuel (fuel not needed for combustion) and all vapors created by the systems or put into the fuel system are also passed through the bypass. This assures that the burner receives raw fuel for efficient combustion. Adjustment in the field is not recommended.

5. Ignition Coil, Breaker Points and Cam

These components, in combination with the spark plug described in Para. 1, result in an ignition system very similar to that used in an automobile. The coil resembles a standard automotive coil and supplies the high voltage required for the spark plug. The breaker points assembly consists of a set of points and a condenser installed on a base assembly (Fig. 81). The assembly is installed on the fuel pump housing. A two-lobed cam which is threaded (left-hand threads) on the extended shaft of the fuel pump rotates with the shaft and actuates the points thereby producing the necessary interruption of current flow in the primary winding of the ignition coil. The breaker points gap is .018.

6. Thermostat

The thermostat contains a bimetal coil which is affected by temperature changes and which controls a microswitch through a cam and adjustable linkage. (See Fig. 36B). The thermostat, acting in response to the temperature of the air passing across the bimetal coil, cycles the fuel and ignition circuits "on" and "off" as required. The cycling temperature (70°F - 190°F) is dependent upon the positioning of the thermostat control linkage which is controlled by a Bowden cable manipulated by the user. The thermostat does not cycle the two blowers; they

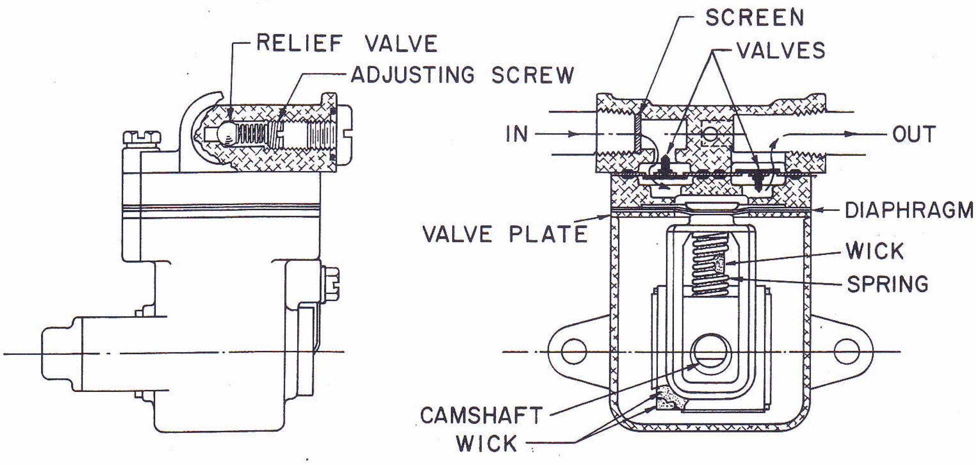


FIGURE 36A - HEATER FUEL PUMP SECTIONAL VIEW.

operate as long as the heater switch is on (See wiring diagrams.)

7. Overheat Switch

The overheat switch is connected electrically in series with the fuel solenoid coil (See wiring diagrams) and will cycle the fuel if the air temperature at the location of the overheat switch is higher than a predetermined safe maximum. The switch (Fig. 34) contains a bimetal blade which will have enough

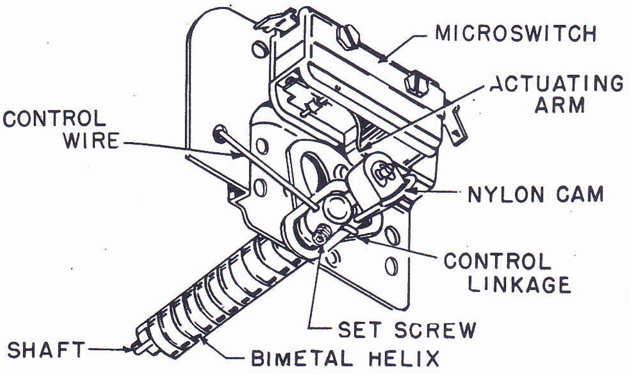


FIG. 36B - HEATER THERMOSTAT

deflection at a given temperature to open a set of contacts thereby breaking the circuit to the fuel solenoid coil. As the air cools due to loss of combustion, the switch will automatically reset and the heater will cycle on the overheat switch until the cause of malfunction is corrected.

8. Heater Relay

The relay (Fig. 35) is used only on transporter type heaters for the purpose of eleminating excessive voltage drop in the hot lead of the heater by providing a means of connecting to a power point nearer the heater. Therefore, the heater switch in this instance is used only to energize the coil of the relay and close the relay contacts to complete the circuit to the heater. (See wiring diagrams, Figs. 43, 44 & 45.)

9. Flame Detector Switch & Fuel Safety Valve

The flame detector switch and fuel safety valve (Figs. 37 & 38) are used with Model 8334 which is approved by Underwriters' Laboratories. These two parts prevent fuel from entering the burner if an ignition failure occurs.

The safety valve consists of a solenoid and a casting which houses a spring-loaded diaphragm. The solenoid is controlled by the flame detector switch which consists of a tube and bracket assembly into which is assembled a quartz rod, a microswitch, and a leaf spring which is installed between the tip of the rod and the button of the switch. The flame detector switch is installed so that the tube with the quartz rod is inserted into the flame inside the exchanger. When the tube of the flame detector switch is cold, the tube is contracted and forces the rod against the spring which, in turn, depresses the microswitch button which opens the switch so no current flows to the safety valve solenoid. When hot, the tube expands and the quartz rod, which is not affected by temperature, is forced by the spring to

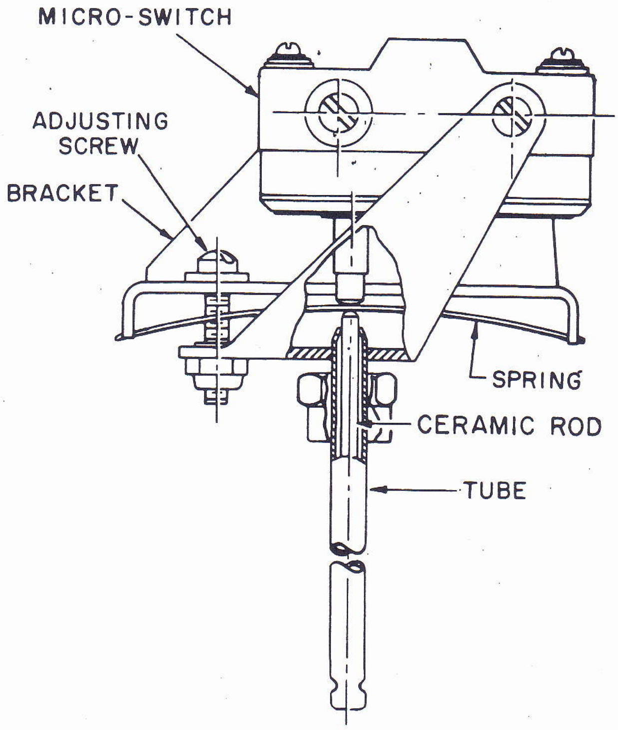


FIG. 37 FLAME DETECTOR SWITCH

follow the tube. This action releases the switch button, the switch closes, and the circuit is completed to the solenoid of the safety valve.

The initial supply of fuel for starting is supplied by the safety valve which accumulates fuel in a reservoir section during previous operation of the heater. The spring-loaded diaphragm forces the fuel

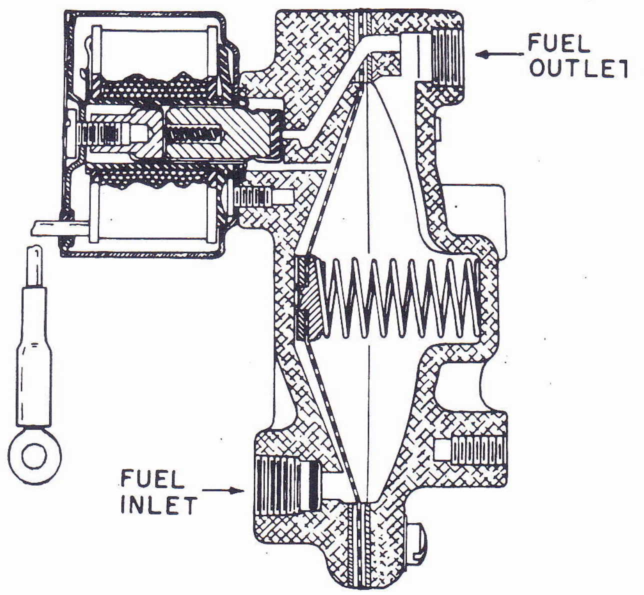


FIG. 38 - SECTIONAL VIEW OF FUEL SAFETY VALVE

out of the valve housing and into the burner. If the heater fails to ignite, only the fuel in the reservoir section enters the burner because the flame detector switch did not transfer to energize the solenoid of the safety valve.

When a flame detector switch and safety valve are used with a heater, a safety valve reset switch is also included. After first installing a heater, or perhaps after maintenance, it is necessary to depress the spring-loaded reset switch (with heater switch on) and release it approximately 10 seconds after the heater ignites. This is required for priming the safety valve. The valve is self-priming during normal operation.

SECTION III

SERVICE AND REPAIR

This section consists of a Trouble Shooting Chart and other information to assist the service man in locating the cause of malfunction in a defective heating system. Basically, three things are required for correct heater operation. These are: FUEL, AIR, and IGNITION. The most obvious causes of malfunction should be investigated before disassembling major assemblies. Before conceding that the heater is defective, make certain the customer understands how to operate the heater. Then operate the heater to determine if the complaint is justified before proceeding with inspection.

TROUBLE SHOOTING CHART

POSSIBLE CAUSE \ COMPLAINT	Heater Inoperative; Combustion Air Blower Air	Heater Inoperative; Combustion Air Blower Operates	Heater Operates; No Warm Air Delivered	Popping or Backfiring When Heater Cycles	Excessive Exhaust Smoke	Gasoline and/or Exhaust Odors in Car	Intermittent Operation; Heat too Low
Burned out fuse	X						
Loose or defective wiring	X	X		X	X	X	X
Incorrect wiring	X	X	X	X	X	X	X
Low voltage		X		X	X	X	
Kinked or restricted fuel lines		X		X			X
Defective fuel pump		X		X	X		X
Broken pump coupling		X		X			X
Defective pump check valves		X		X			X
Air lock in fuel line		X					X
Open fuel solenoid coil		X					
Fuel valve sticking on seat		X					
Clogged nozzle		X					X
Defective overheat switch		X					X
Defective thermostat		X					X
Leaking fuel valve				X	X		
Incorrect spray from nozzle		X		X			
High fuel pressure					X	X	
Incorrect fuel nozzle					X	X	
Leaking fuel lines						X	X
Leak at coil cup						X	
Leak between nozzle and casting				X			
Leaking heat exchanger						X	
Loose burner clamp					X	X	
Slow combustion air motor				X	X	X	
Combustion air motor not grounded	X			X	X	X	
Damaged or disconnected combustion air duct		X		X	X	X	
Restricted exhaust		X		X	X	X	
Pitted breaker points		X		X			
Poor condenser solder joint		X		X			
Worn points cam		X		X			
Incorrect points gap		X		X			
Damaged spark plug		X		X			
Incorrect spark gap		X		X			
Defective ignition coil		X		X			
Open flame detector switch		X					
Open safety valve coil		X					
Defective relay	X			X	X	X	
Defective control switch	X			X			
Incorrect control cable installation							X
Damaged or restricted air duct			X				X
Ventilating air motor defective			X				X
Incorrect installation		X	X			X	X
Incorrect customer operation						X	X
Leak at vehicle tank or engine						X	

1. Heat Exchanger and Burner Assembly

The heat exchanger should last for several years. However, if a complaint of exhaust fumes arises and inspection of the exchanger reveals leakage, it should be replaced. Leaks will be indicated by a deposit of red, yellow, and orange deposits surrounding the leak or a hole caused by a "burn-through".

The burner assembly is not a service part and should be repaired by replacing the defective parts only. If the burner assembly is removed for service, a thorough inspection prior to disassembly can sometimes reveal the cause of malfunction. The nozzle and inside of the mixer will normally be coated with a medium layer of black carbon, and the nozzle should have a small gray opening at the orifice. The outer end of the mixer will usually be burned to a gray or reddish color and some scaling or loose particles may be present. These should not be considered as defects. Indications of improper operation are uneven build-up of black, sooty carbon or an excessively burned or eroded spot on the mixer All air holes in the mixer must be open to allow entry of combustion air to mix with the fuel. Also check for evidence of fuel leakage around the fuel inlet fitting and between the solenoid coil cup and burner casting. In a complaint of popping or back-firing, check the fuel valve for leakage by applying fuel (under pressure) to the burner with the solenoid coil de-energized. If the valve does not seat properly on the valve seat because of dirt or other foreign matter or a missing valve spring, fuel will enter the burner at all times regardless of thermostat setting. This condition is usually indicated by excessive black smoke from the exhaust when the heater is first turned on with gradual clearing of the smoke as the heater continues to operate. However, when the heater cycles off and then on again, a pop or backfire can and usually does occur. In this instance, Part No. 736009, Burner Service Kit, which contains gaskets, valve, valve seat, and other parts assembled in the burner casting, should be used after disassembly of the burner.

A leak between the nozzle and burner casting can also result in improper combustion and occasional popping. First determine if a leak is present at this point by holding your thumb over the nozzle orifice with the solenoid coil energized and fuel applied to the burner under pressure. If a leak is present, check to see if the nozzle is tight. If it is tight, remove it and check the nozzle seating surface of the burner casting for scoring or uneveness. If the surface is damaged, the burner casting should be replaced.

The fuel solenoid coil seldom fails. The coil can be checked by holding a screwdriver blade near the coil cover screw while energizing and de-energizing the coil. A good coil will attract the blade when the coil is energized. A magnetized screwdriver should not be used for this test. Another quick method of checking is by listening for a click as the coil is energized. The click is the valve being attracted to the bottom of the coil cup.

Many fuel nozzles are replaced in a routine manner when the real difficulty lies elsewhere. The nozzle should emit an even conical-shaped spray and should not be directed to one side. The nozzle may be checked by supplying fuel under pressure to the burner with the solenoid coil energized and the spark plug cable and combustion air duct disconnected. It may be necessary to supply a separate length of fuel line in order to prevent fuel from being sprayed on the car or the test can be conducted at a bench. A slight dribbling of fuel may be noted when the solenoid coil is de-energized. This is permissible; however, continuous flow indicates a leaking valve which should be corrected. Never attempt to remove the screen in the nozzle nor clean the nozzle orifice with a sharp instrument. The best method of cleaning the face of the nozzle is by rubbing your thumb over the face while fuel is being emitted under pressure.

The spark plug is another item which is replaced quite often without cause. The plug housing protruding into the mixer will normally be coated with a medium layer of carbon. As previously explained, the ground electrode is welded to the mixer. Therefore, adjustment of the .085 gap is made by moving only the ground with the spark plug electrode located in the center of the plug housing. It is very important that the ground electrode be positioned correctly with respect to the nozzle orifice and Service Tool No. ST-890330 should be used. The ground electrode should lie flat against the shoulder of the gauge (Fig. 39). Incorrect gap or location of the ground electrode can be the cause of delayed ignition, non-ignition, or can result in formation of carbon across the gap. Therefore, proper adjustment is extremely important. Replacement of the plug should be required only when it is broken or the electrode is burned excessively. Before reinstalling the burner assembly, check for an arc at the gap. During the test, the fuel solenoid leads should be disconnected, the burner assembly grounded, the heater switch on, and the thermostat on high. Spark Plug Kit, Part No. 736008, contains the plug and gasket and is used for service.

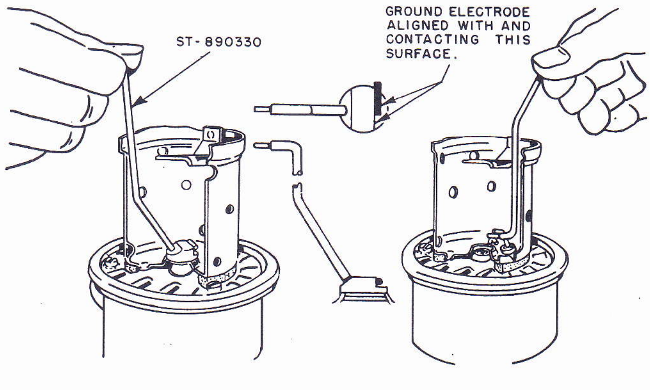


FIG. 39 - CHECK PLUG ALIGNMENT AND GAP

2. Combustion Air Blower Assembly

Combustion air is taken from outside the vehicle. Therefore, in an instance of excessive exhaust smoke with insufficient combustion air suspected, inspect all combustion air ducts for restrictions caused by kinking, obstructions, or damage. Motor speed should be approximately 4000 RPM. Check to see that the motor is grounded and that sufficient voltage is available at the motor. Minimum voltage at the motor should be approximately 5.5 volts for 6-volt systems and 11.0 volts for 12-volt systems. If voltage is lower than this and heater is unsatisfactory, check all wiring connections, vehicle battery, vehicle charging circuit, and heater relay as outlined in Paragraph 8 of this section.

3. Ventilating Air Blower Assembly

A complaint of insufficient or no heat with the heater operating can be due to a defective ventilating air motor, wiring, or restricted or loose duct.

4. Fuel Pump

Fuel pump pressure should be 5.5 to 9.5 PSI with the heater operating. A slight rise in pressure will be noted when the heater cycles off. Since the fuel pump is driven by the combustion air motor, make sure the motor is operating during a pressure check. If the coupling or one of the metal connectors which serve as the coupling network between the shafts of the pump and motor is broken. Part No. 735405, Pump Coupling, should be used for service. The package contains two connectors, a coupling and two flat washers. It is very important that the washers be installed behind the connectors to prevent the connectors from overriding the threads on the shafts. If there is no pressure or pressure is intermittent, it is very possible that the pump check valves are defective. The valves are installed in a brass plate beneath the pump top casting and are serviced by Part No. 735736, Fuel Pump Valve Kit, containing the valves installed in the plate and four gaskets. If the pump is defective for other reasons, it should be replaced. When installing new check valves, refer to Fig. so that the valves will be installed correctly with respect to fuel flow as indicated on the pump casting marked "IN" and "OUT". The flap of the check valve should be down on the inlet side and up on the outlet side.

Whenever the top casting of the pump is removed for pump service, always make certain that the pump shaft is on the down portion of the stroke before reinstalling the top casting. This is an added precaution against high fuel pump pressure. A fuel pump with excessive pressure or binding shaft can sometimes be corrected by removing the top casting of the pump to expose the diaphragm, pressing down vigorously with the thumb (with the pump shaft on the down portion of the stroke), and reassembling without rotating pump shaft.

The pump shaft must rotate freely as a binding pump will overload the combustion air motor and cause excessive exhaust smoke due to lack of combustion air. A pump that binds, particularly in only one part of the rotation, usually indicates an improperly seated diaphragm.

5. Ignition Coil, Breaker Points, and Cam

The ignition coil resembles a standard automotive coil; however, if replacement is required, only the recommended service part should be used.

The breaker points are serviced by replacing the entire base assembly which includes the points and condenser. The adjustment of .018 is obtained by an adjusting screw which has the stationary contact on the end. When the proper gap is reached, solder the adjusting screw in place making certain that it is secure and that the condenser lead is also soldered. Do not use acid core solder since the acid will cause corrosion. Use rosin core solder only. If the adjusting screw is not soldered or a cold solder joint exists at the condenser and screw, backfiring will usually occur because of intermittent spark.

The two lobed cam has left hand threads and should be replaced if wear is noted. When adjusting points, rotate the cam so that a lobe of the cam raises the movable contact arm and adjust for .018 gap. Then rotate the cam to the other lobe and check for a gap of .012 to .021. With .018 on one lobe, .012 to .021 is permissible on the other lobe.

The coil, points, and cam can be functionally checked as follows. Remove the spark plug cable from the heater spark plug and insert a standard automotive plug gapped to approximately .085. Disconnect the fuel solenoid lead to prevent fuel from entering the burner, ground the automotive plug, turn the heater switch on, and place the thermostat on high heat. If all ignition parts are good, a steady spark will be noted. No spark indicates trouble in the coil, points, cam, wiring, or thermostat.

6. Thermostat

The thermostat will very seldom require service, and it is serviced by replacing the entire thermostat rather than just the defective part because of possible inaccuracy of field adjustment.

Most complaints traced to the thermostat are the result of improper control cable installation at the thermostat linkage. With the heater control knob pushed all the way in, the thermostat linkage should travel to its full counter-clockwise position. With the heater control out as far as it will go, the linkage should have full clockwise travel. This results in use of the full 70-190 degree temperature range. A set screw secures the control cable to the linkage.

To determine if the thermostat is defective proceed as follows. With heater switch on and heater control pulled out to its extreme position, connect a test light between the cold terminal of thermostat and ground. If the test light glows, the thermostat switch is closed which indicates that the thermostat is completing the circuit as it should. If the light does not glow and wiring connections are good, the thermostat should be replaced. If a shorted thermostat is suspected, depress the metal actuating arm of the thermostat with the test light as above and heater switch on. If the light continues to glow, the thermostat is shorted and should be replaced.

7. Overheat Switch

The over heat switch should have continuity through it during normal heater operation. If a defective overheat switch is suspected, it can be checked out with an ohmeter, buzzer, or test light after referring to the wiring diagram. A defective overheat switch should be replaced and no field adjustment is recommended.

8. Heater Relay

With the heater switch on, power should be present at the "switch", "battery", and "load" terminals of the relay. This can be determined by placing a test light between ground and the terminal to be checked. Power should be present at the "battery" terminal at all times since this is connected to the hot terminal of the voltage regulator. If the test light fails to glow when placed on the "switch" terminal, the heater switch or related switch, wiring is defective. If the light glows when placed on the "battery" and "switch" terminals but does not glow on the "load" terminal, either the fuse or relay is defective and should be replaced.

If the light glows when placed on the "load" terminal but is dim, it indicates excessive voltage drop across the relay contacts or poor fuse contact. The voltage drop between the "battery" terminal and "load" terminal should not exceed .2 volt with the heater operating. Check for good wiring and fuse connections. If voltage drop is still excessive, replace ie relay.

9. Flame Detector Switch and Fuel Safety Valve

As previously explained, the flame detector switch and safety valve are safety controls used with the Model 8334 for the purpose of preventing fuel flow to the burner in the event the heater does not start. If the heater does not continue to operate after starting it is possible that the microswitch of the flame detector switch is defective or the switch is out of adjustment. The switch can be checked for continuity with an ohmeter, buzzer, or a test light. Loosen the two screws holding the microswitch in place so that the button of the switch is released. Then check for continuity with an ohmeter or buzzer. If a test light is used, turn the heater switch on and check to see if the light glows when placed between ground and each of the terminals. If the light does not glow on both terminals, the switch is defective and the entire flame detector switch assembly should be replaced. If adjustment only is required, loosen the adjusting screw (with the microswitch free in the bracket) until the switch clicks. Next turn the adjusting screw in until the switch clicks again; then turn the screw in an additional 3/4 of a turn. Hold the microswitch firmly in place and then tighten the two mounting screws. This adjustment should be made with the switch at room temperature.

If the quartz rod is broken, it should be replaced since it is the controlling part of the safety feature. The quartz rod is a service item.

The fuel safety valve can be checked the same as any solenoid operated valve for electrical continuity of the solenoid coil and fuel flow through the valve.

10. Service Tools

Three service tools are available at nominal cost to aid in servicing South Wind Heaters.

Part No. ST-890330, Spark Plug Gage, (Fig. 40) is necessary for heater service and is used not only for obtaining the correct gap of .085 but also for locating the ground electrode in the proper relationship to the fuel nozzle orifice.

Part No. ST-890322, Fuel Pressure Gage, (0-30 PSI) Fig. 41) and Part No. ST-890325, Test Light, (Fig. 42) are also available.

11. Wiring Diagram

The following wiring diagrams represent all heaters discussed in this manual and are reproduced in a manner to simplify tracing of wires and connections.

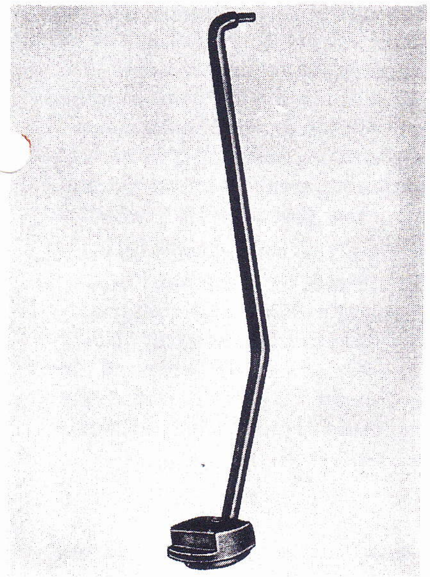


FIG. 40 - SPARK PLUG GAGE
SW PART NO. - ST-890330
VW PART NO. - ZVW 257-855

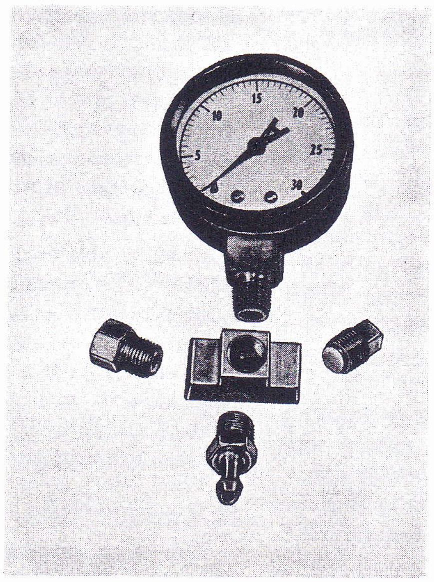


FIG. 41 - FUEL PRESSURE GAGE
SW PART NO. - ST- 890322
VW PART NO. - ZVW 257-853

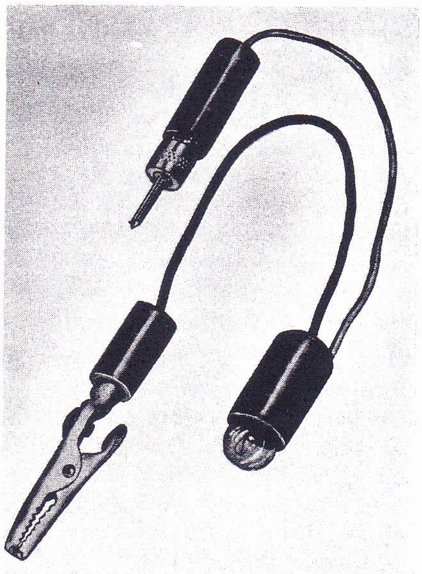


FIG. 42 - TEST LIGHT
SW PART NO. ST-890325
VW PART NO. - ZVW 257-854

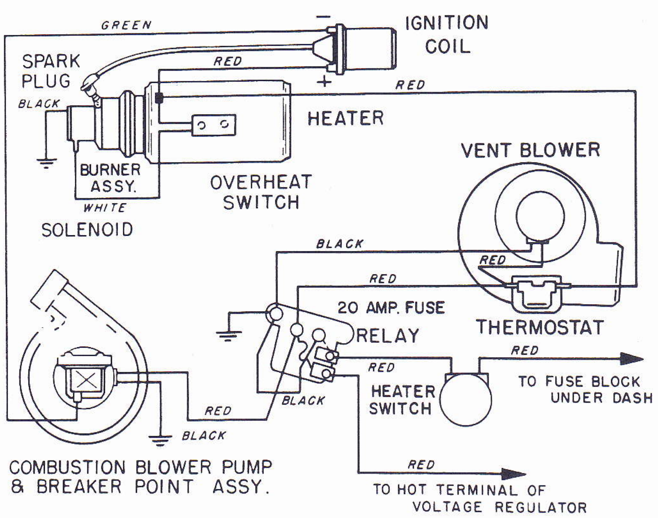


FIG. - 43 - TYPE 2 EXCEPT FOR 8334 & 8335

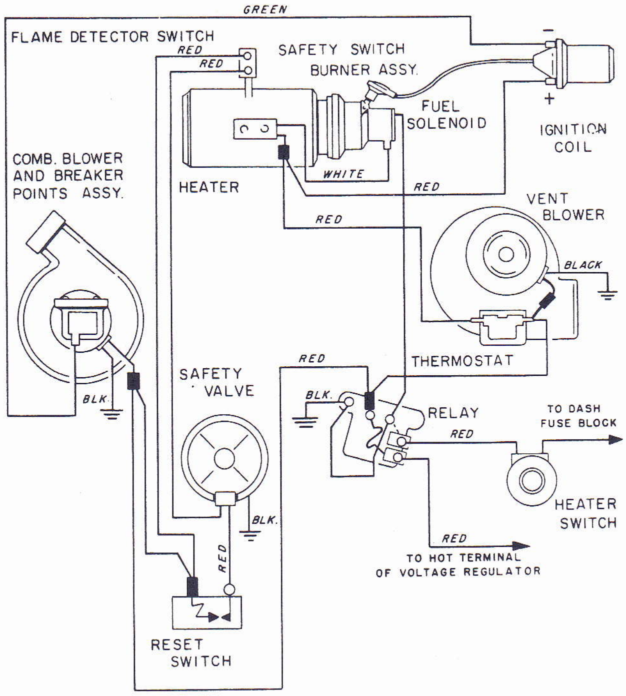
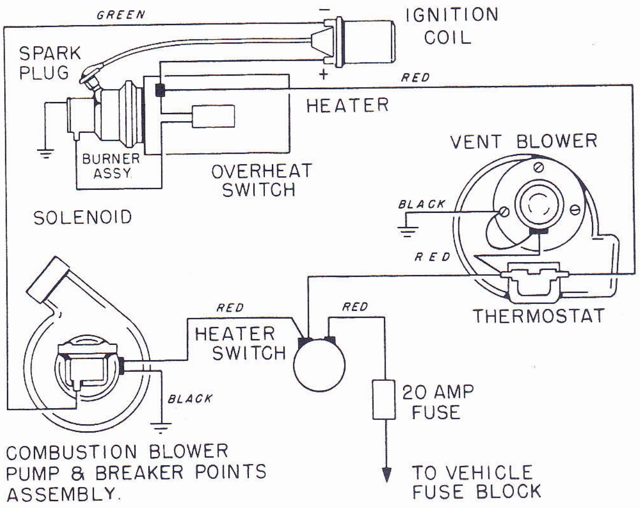


FIGURE 44 - KIT MODEL 8334



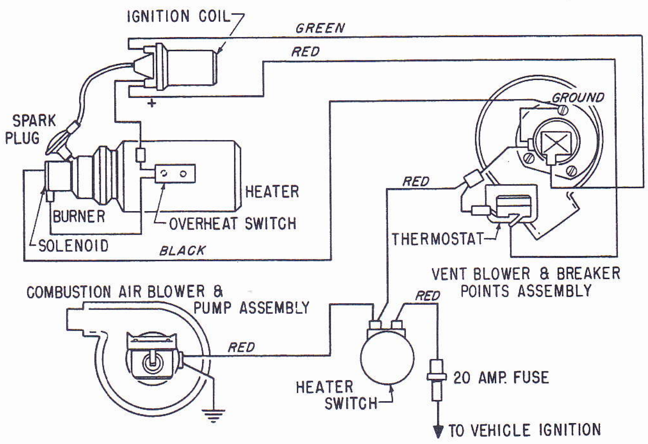


FIGURE 45 - Types 1 & 3 - and MODEL 8335

SECTION IV

PARTS CATALOG

This section contains listing of all parts, assemblies, and service tools used with heaters described in this manual. The parts list shows all parts whether they are service parts or not. Therefore, it is important that the "Remarks" column of the parts list be consulted before ordering the part since another part may be used for service. The reason for this is to minimize, as much as possible, the inventory of service parts. Some parts listed are assemblies which are not service parts and, therefore, should be serviced by replacing the defective part only. An example is the 736190-1 Burner Assembly which is serviced by replacing only the defective part of the burner assembly. Some items are also contained in kits and the "Remarks" column will indicate which kit is to be used. An example is 735062 Spark Plug, available only in 736008 Kit which contains the spark plug and gasket. In summary, only the parts which have a price indicated on the Service Parts List are available as service parts.

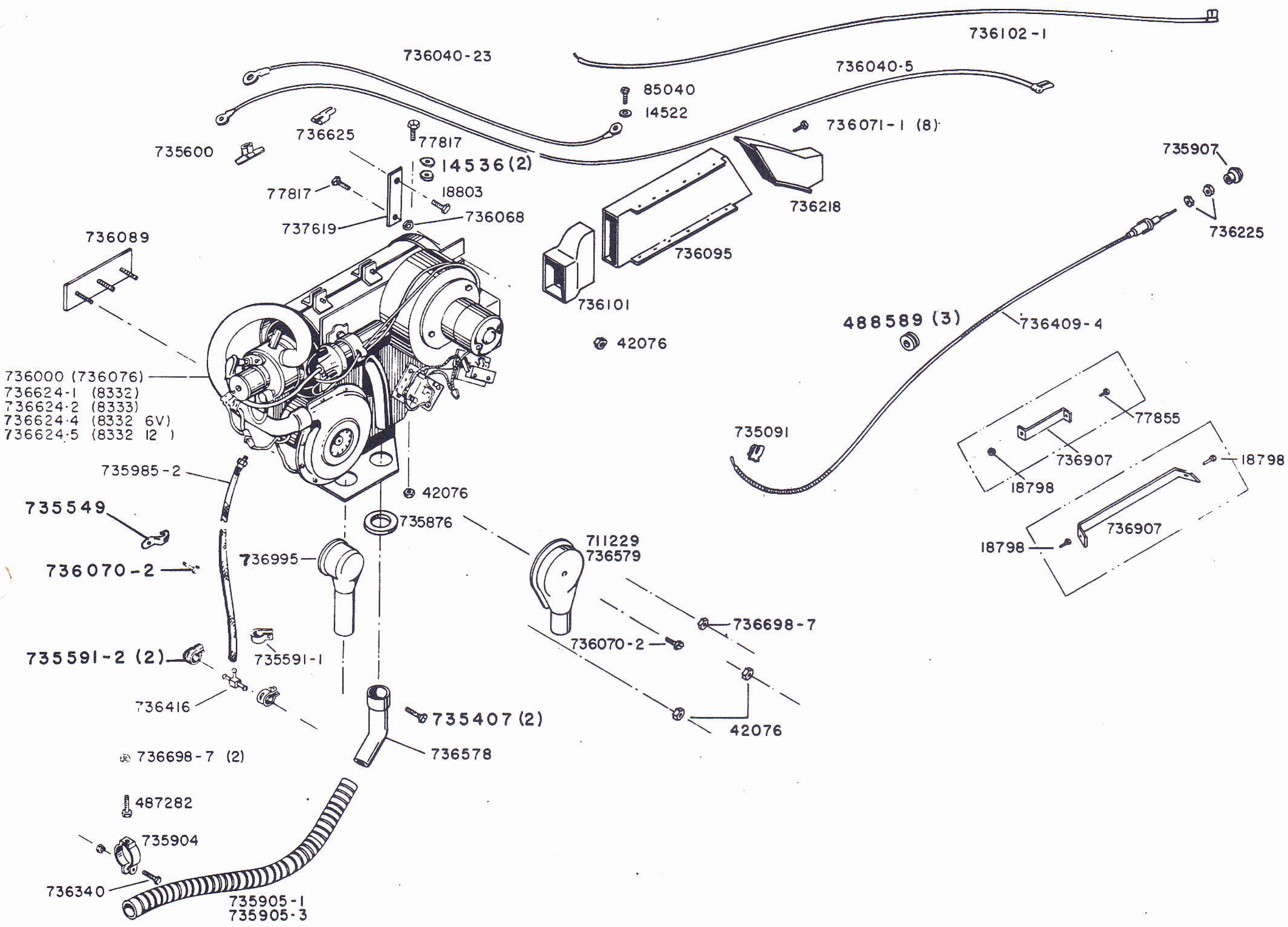


FIGURE 46 - KIT MODEL 736076, 8332, 8332-6V, 8332-12, 8333

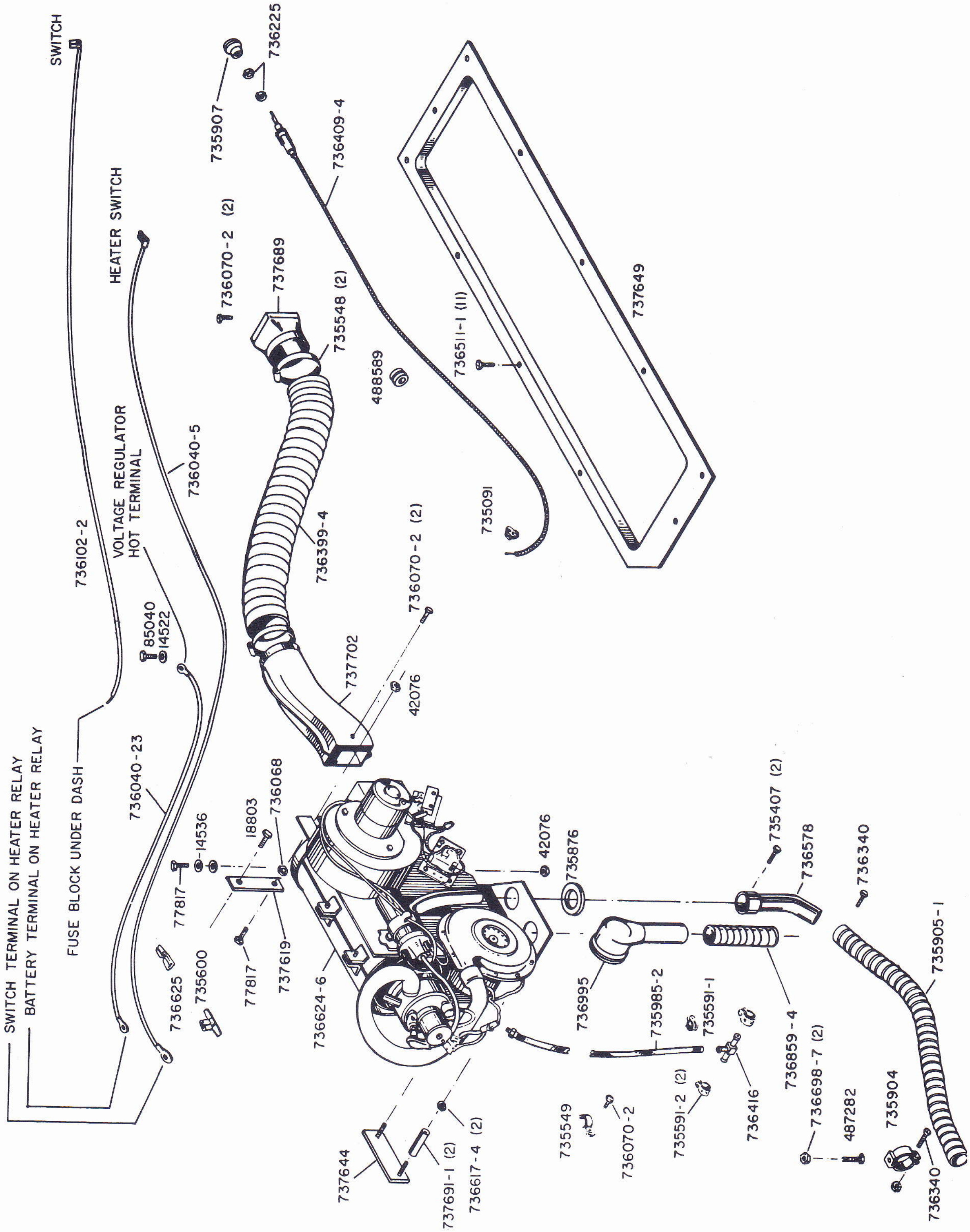


FIGURE 47 - KIT MODEL 8332B-12V

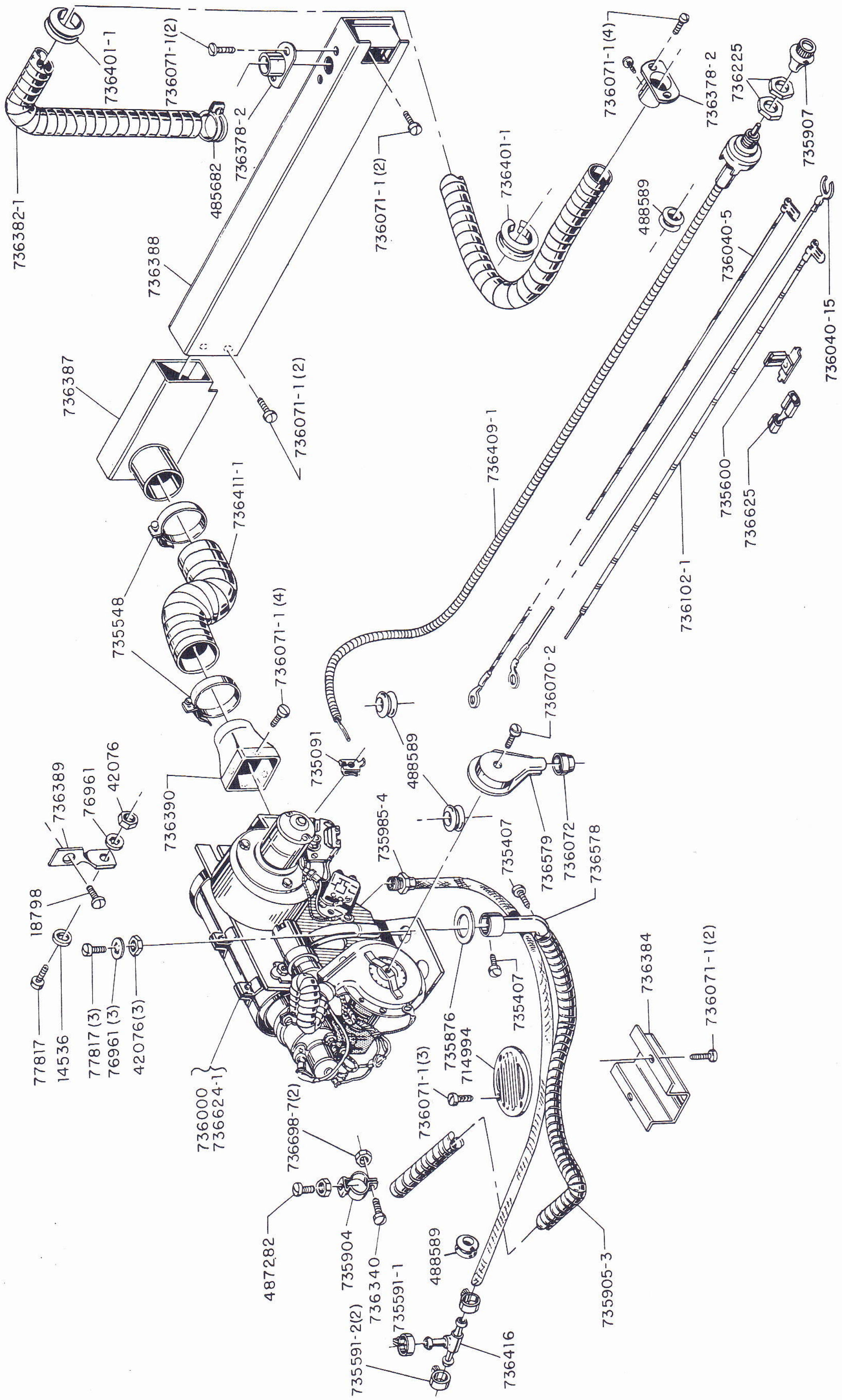


FIGURE 48 - KIT MODEL 8330

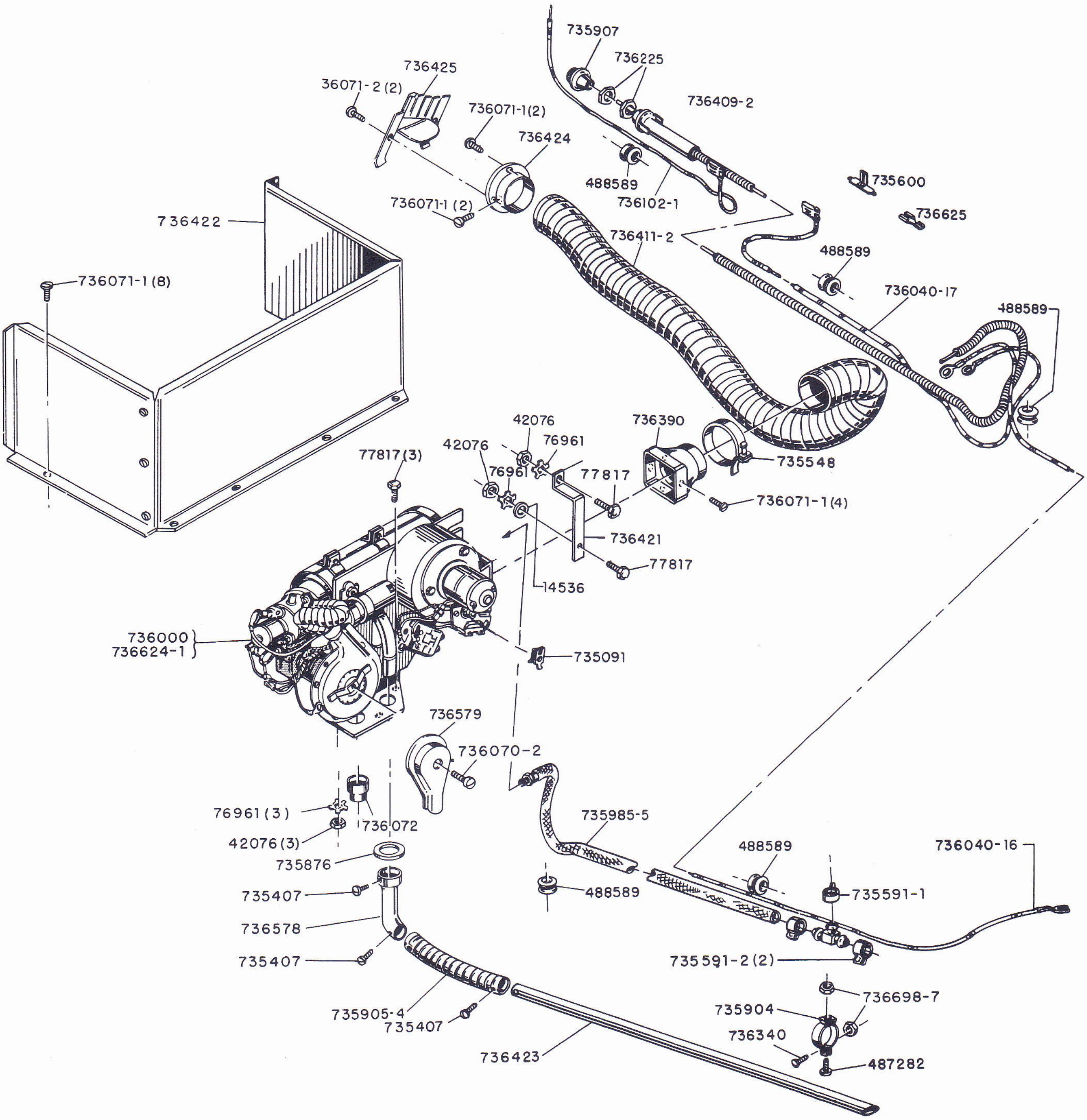


FIGURE 49 - KIT MODEL 8331

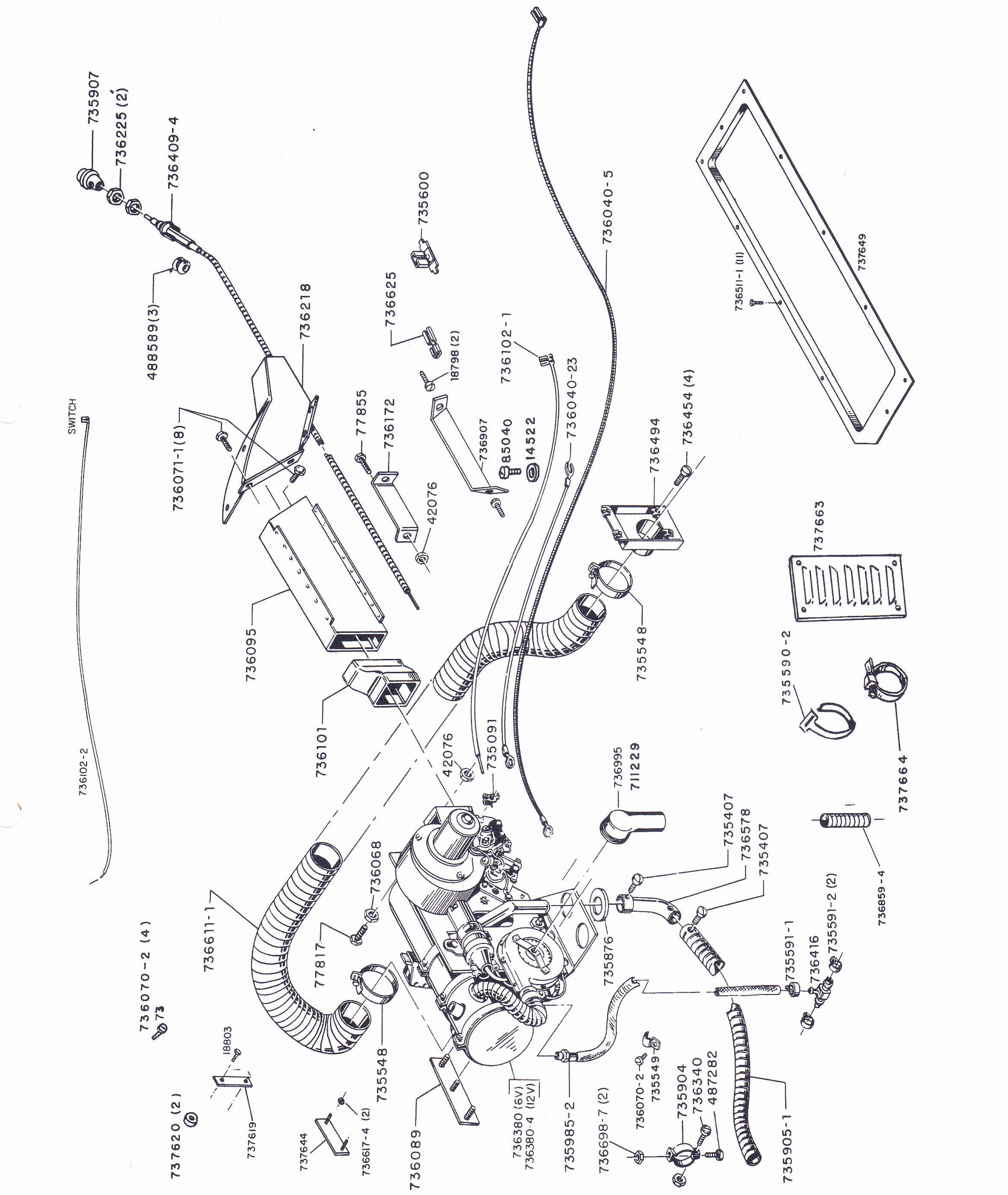


FIGURE 50 - KIT MODEL 8334, 8334-12V and 737618-737665 Kits

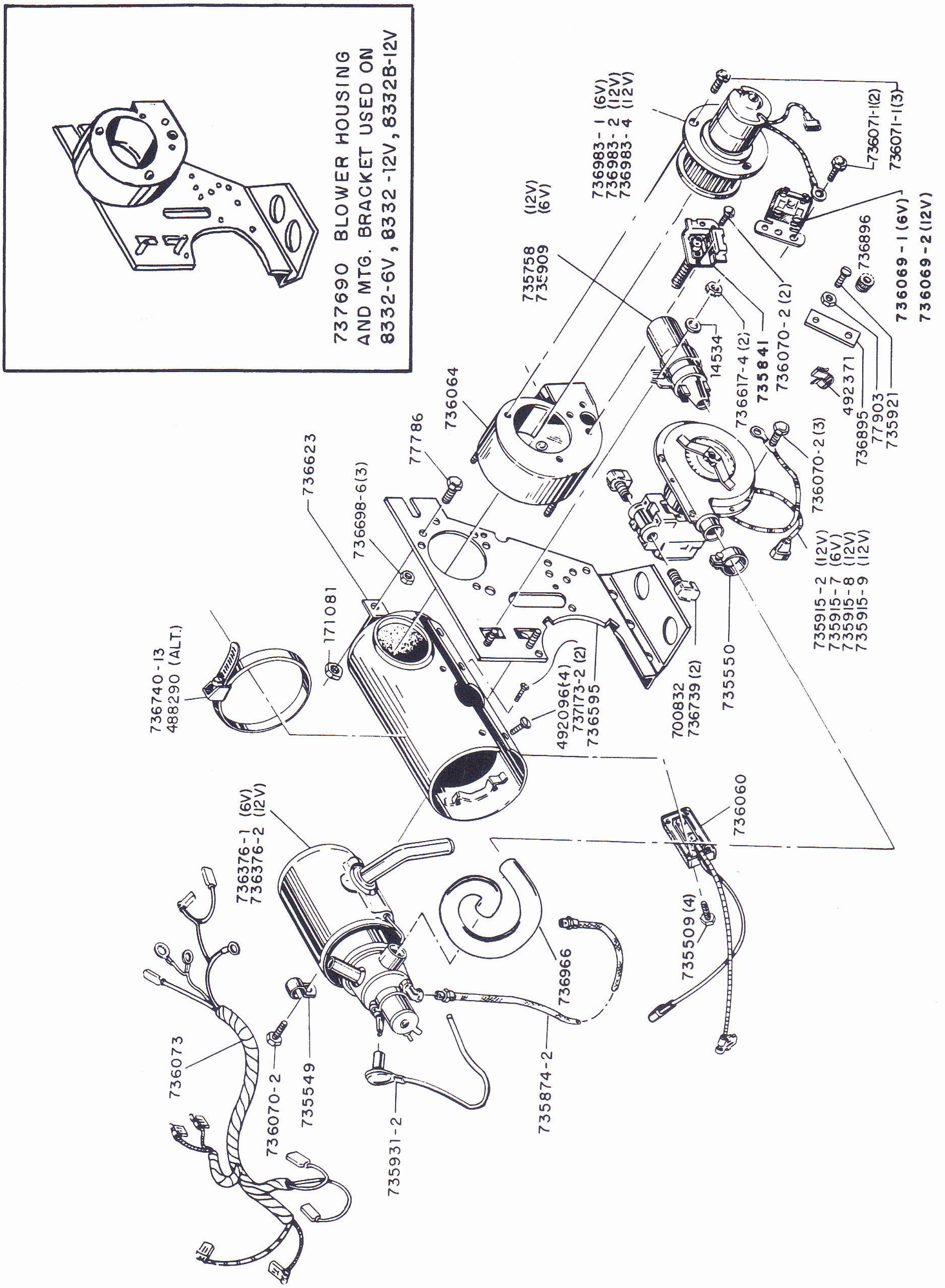


FIGURE 51 - HEATER AND BRACKET ASSEMBLY 736624-1, -2, -4, -5 & -6
USED ON KIT MODELS 8330, 8331, 8332, 8332-6V, 8332-12, and 8332-B12V

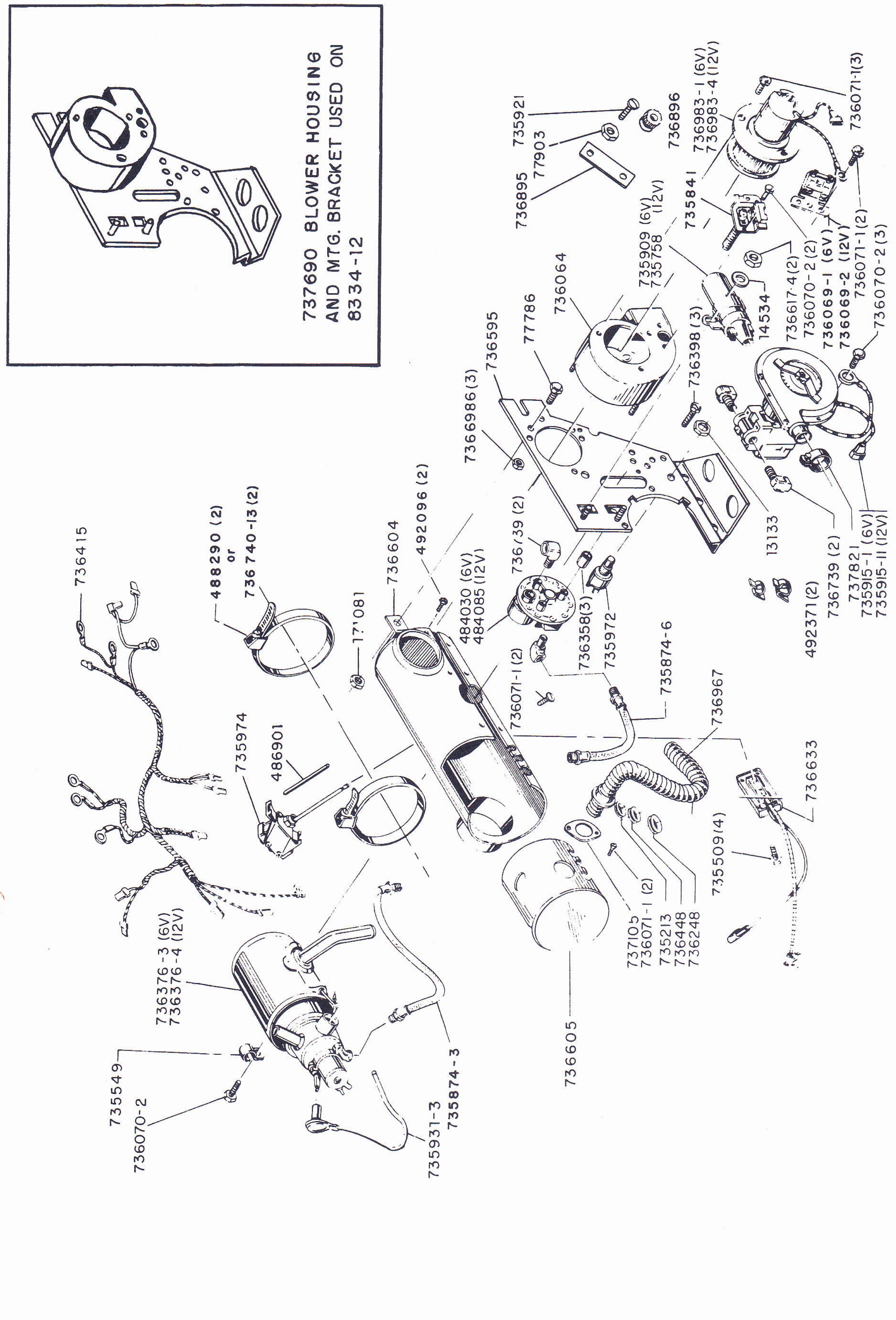


FIGURE 52 - HEATER AND BRACKET ASSEMBLY 736380 and 736380-4
USED ON KIT MODEL 8334 and 8334-12V

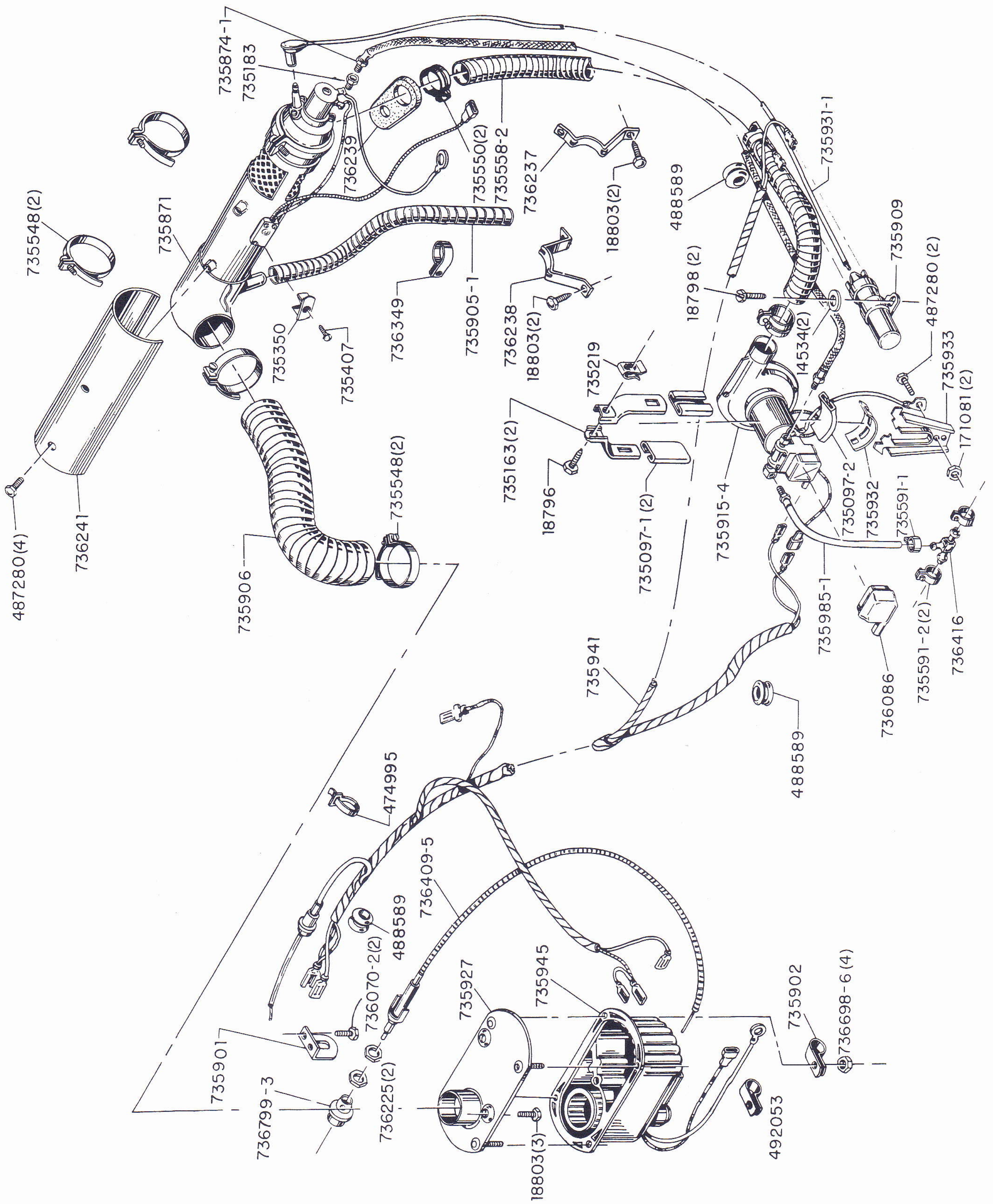


FIGURE 53 - KIT MODEL 736900

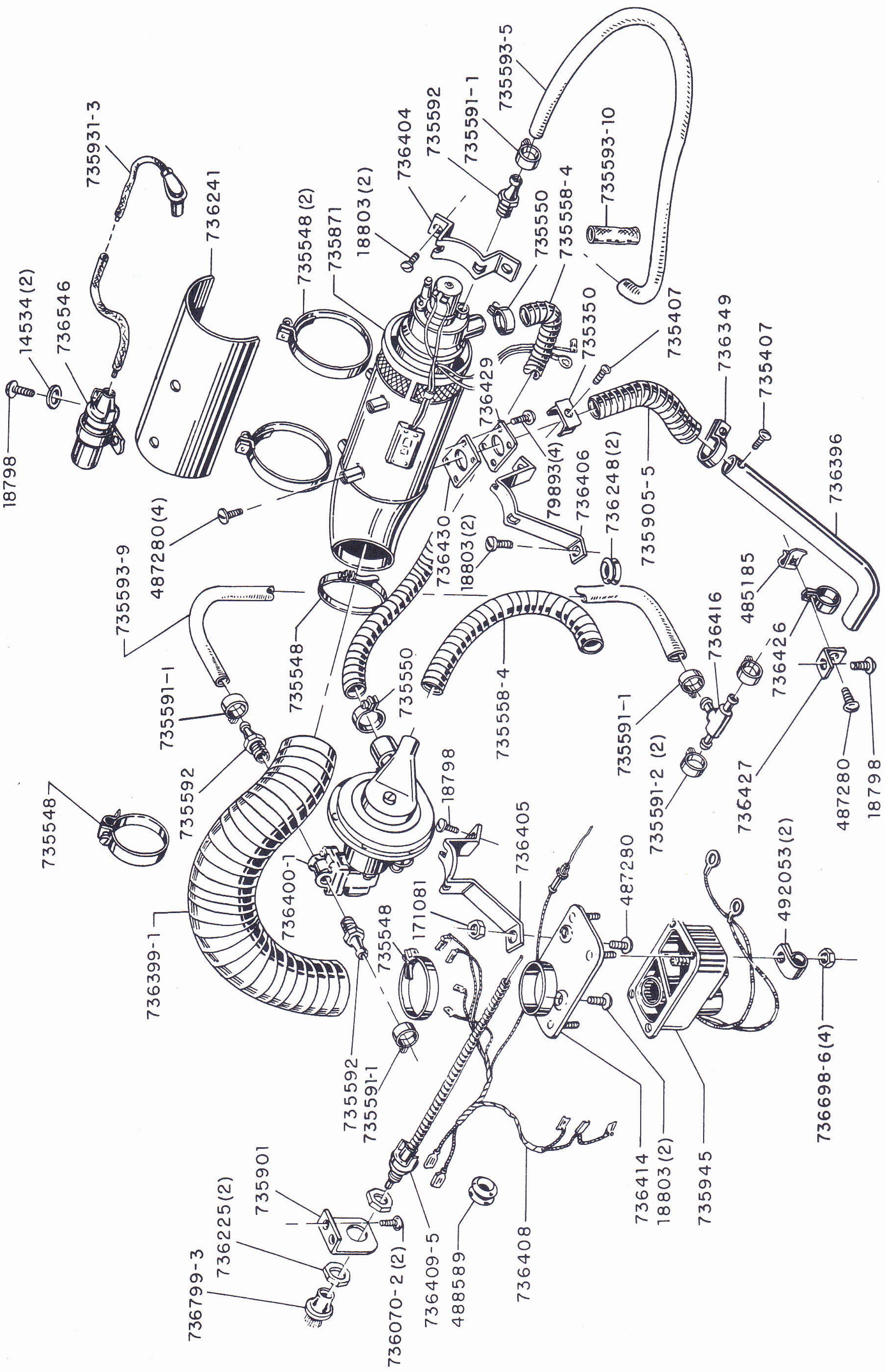


FIGURE 54 - KIT MODEL 8341

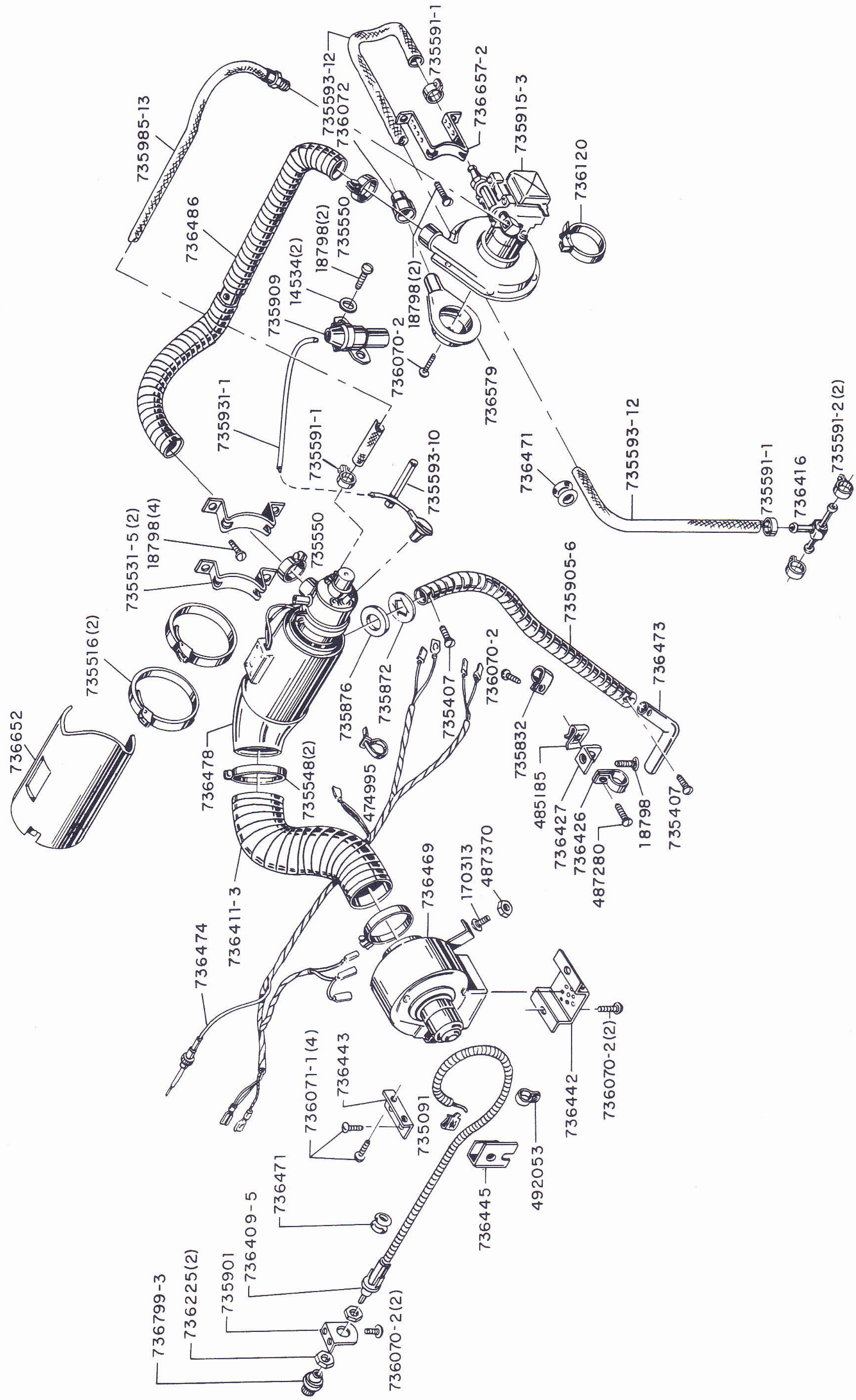


FIGURE 55 - KIT MODEL 8342

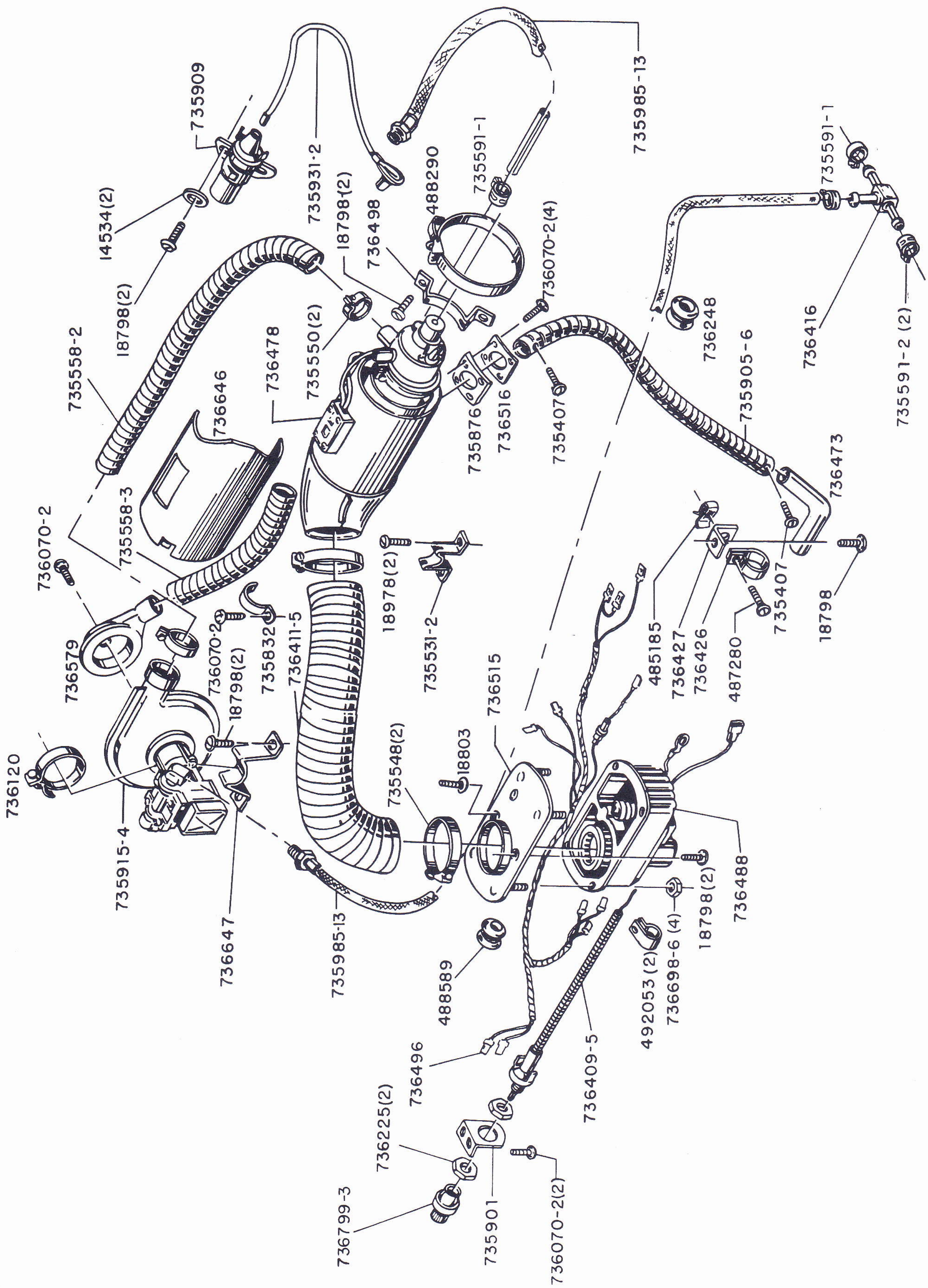


FIGURE 56 - KIT MODEL 8343

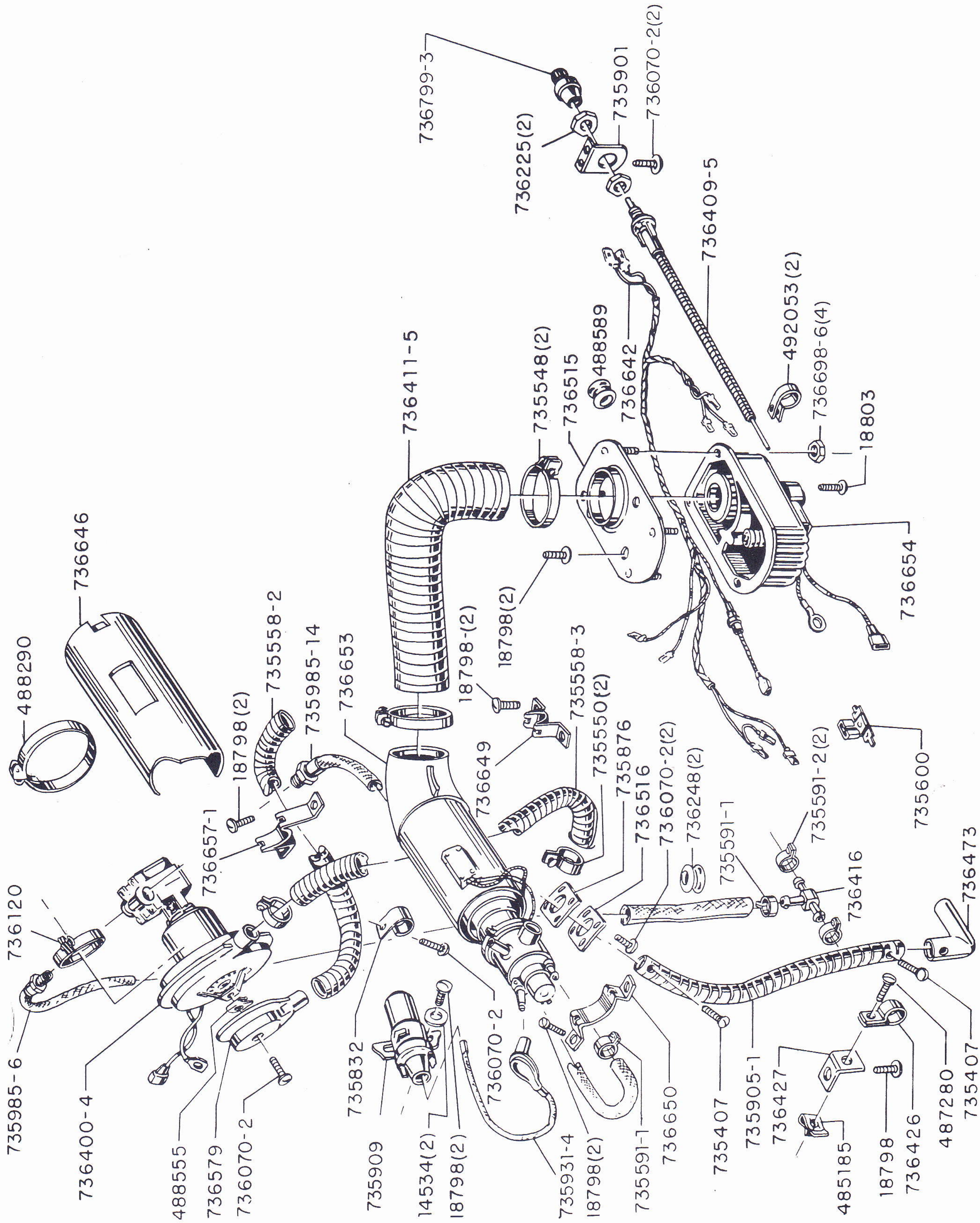


FIGURE 57 - KIT MODEL 8345

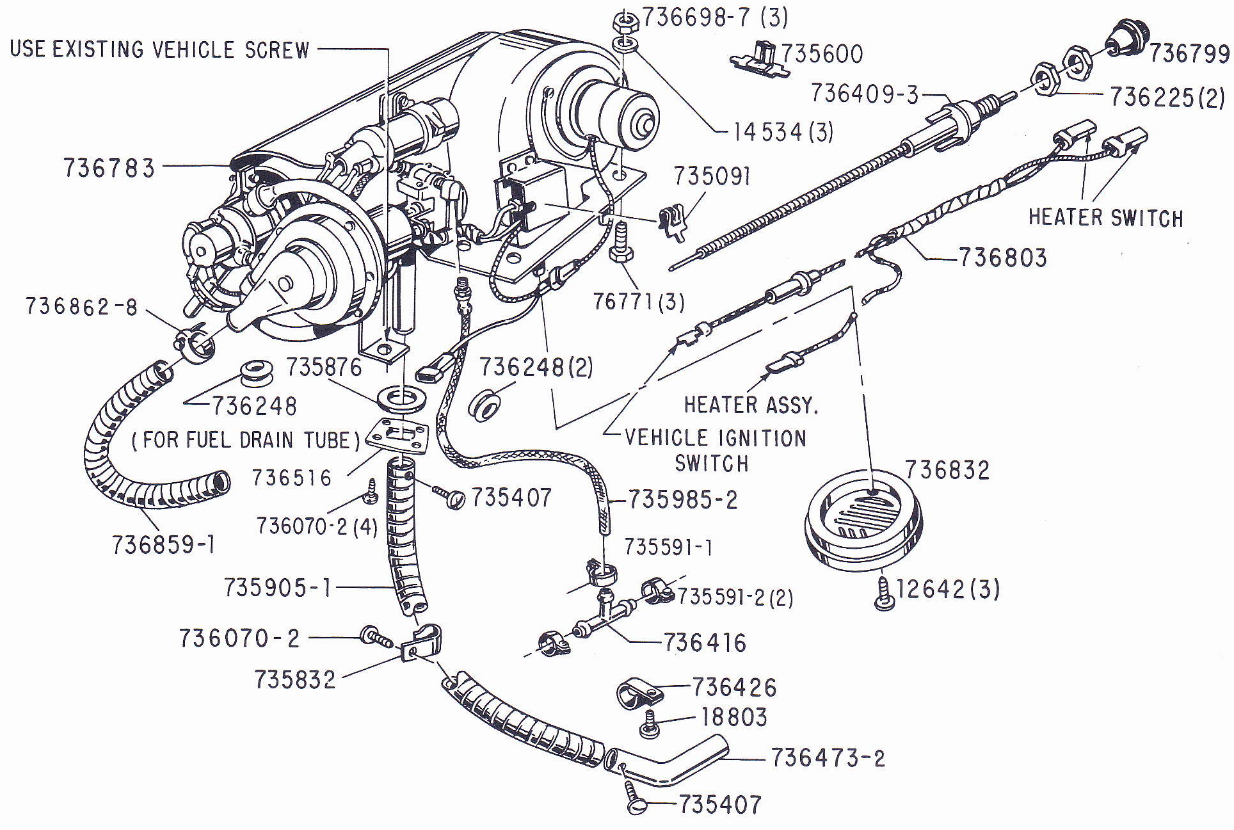


FIGURE 58 - KIT MODEL 8345-B

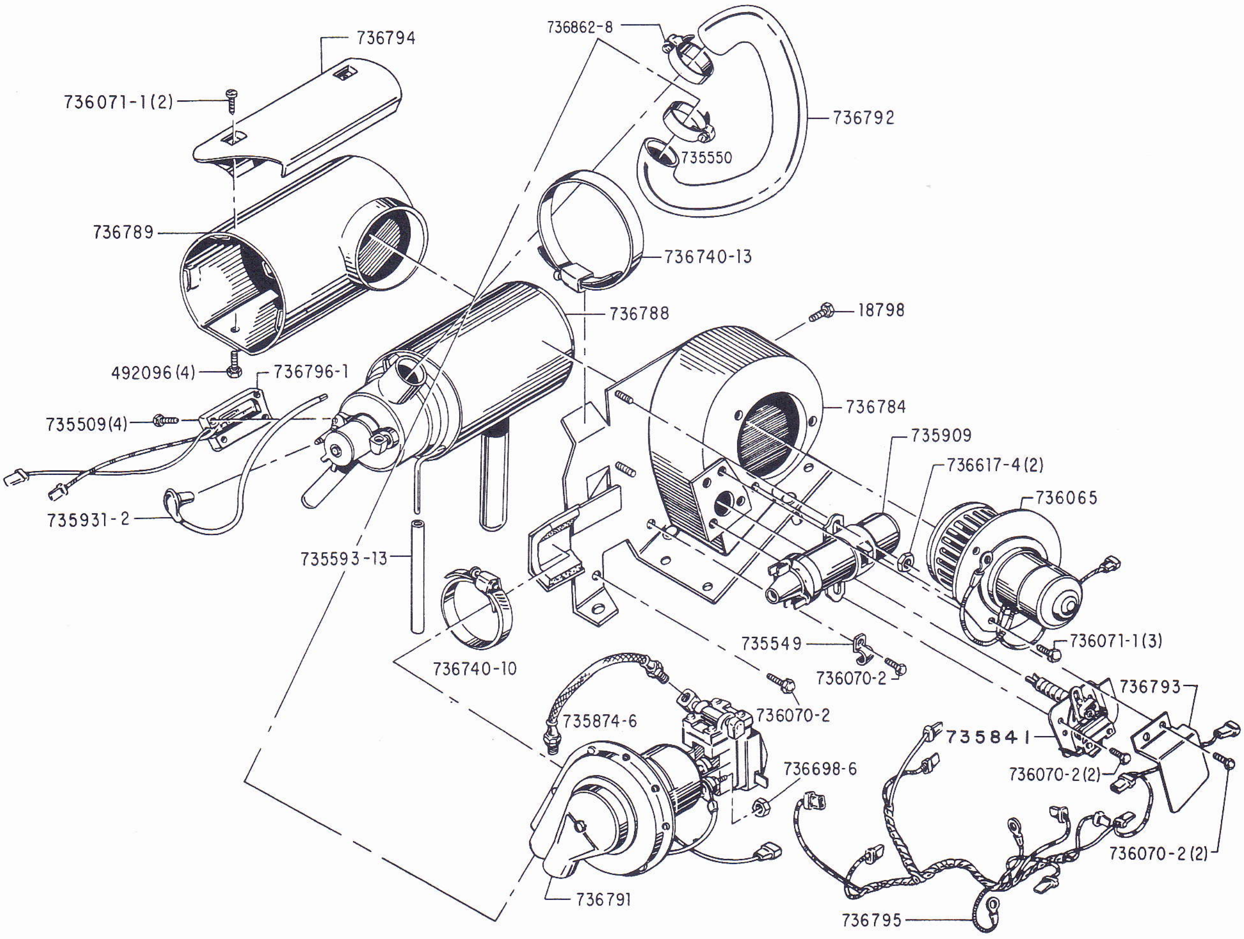


FIGURE 59 - HEATER ASSEMBLY 736783 USED ON KIT 8345-B

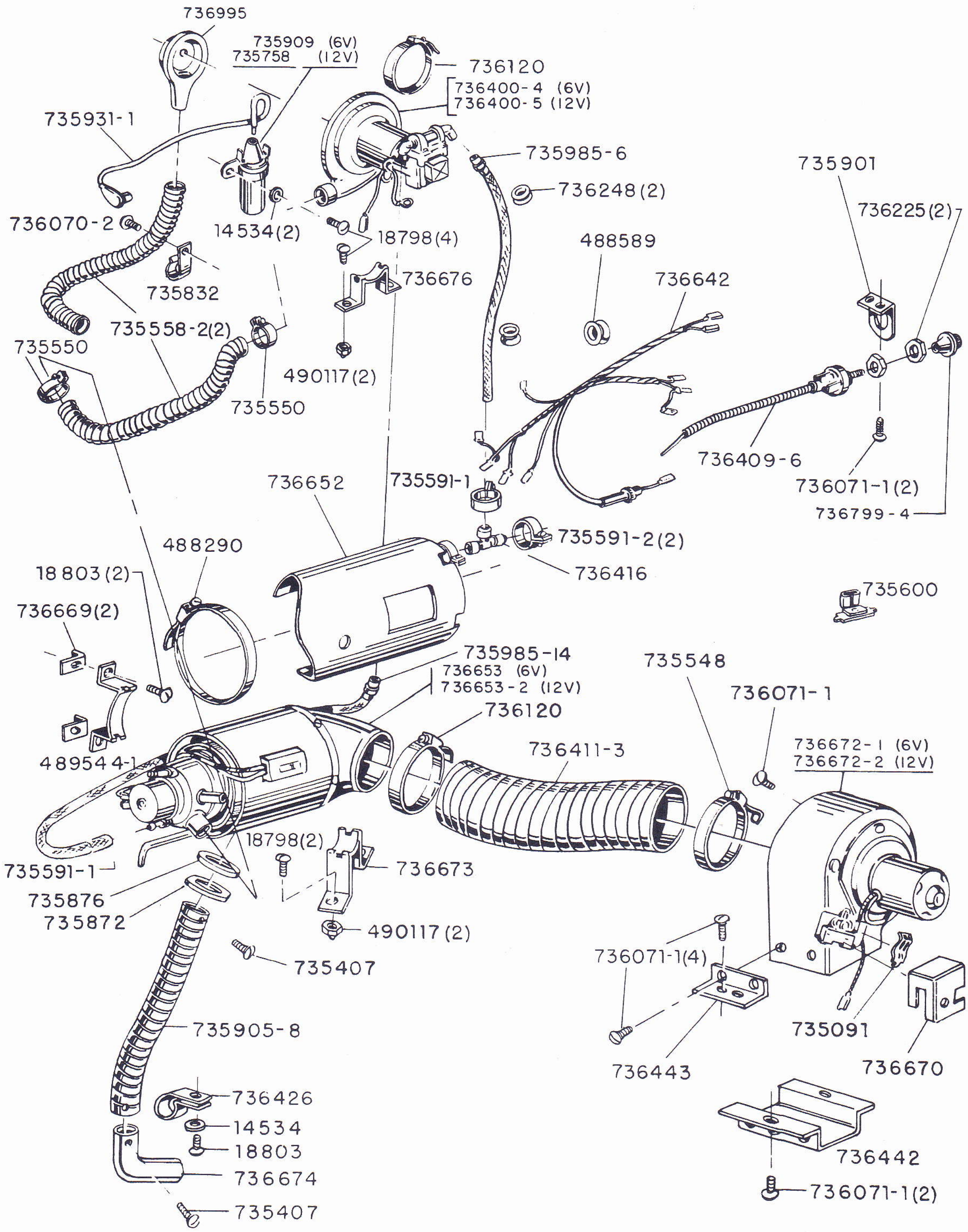


FIGURE 60 - KIT MODEL 8346 and 8346-12

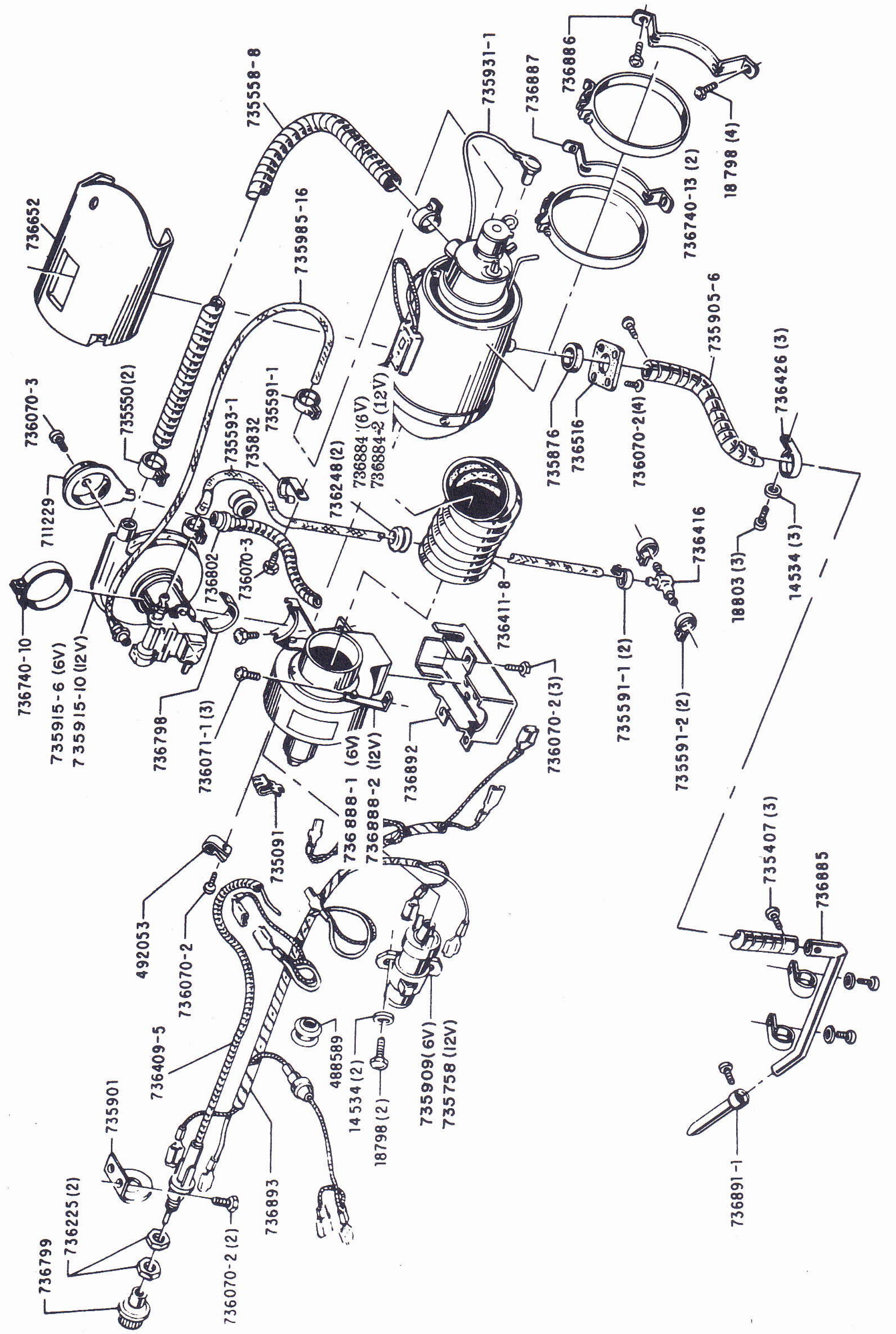


FIGURE 61 - KIT MODEL 8347 and 8347-12

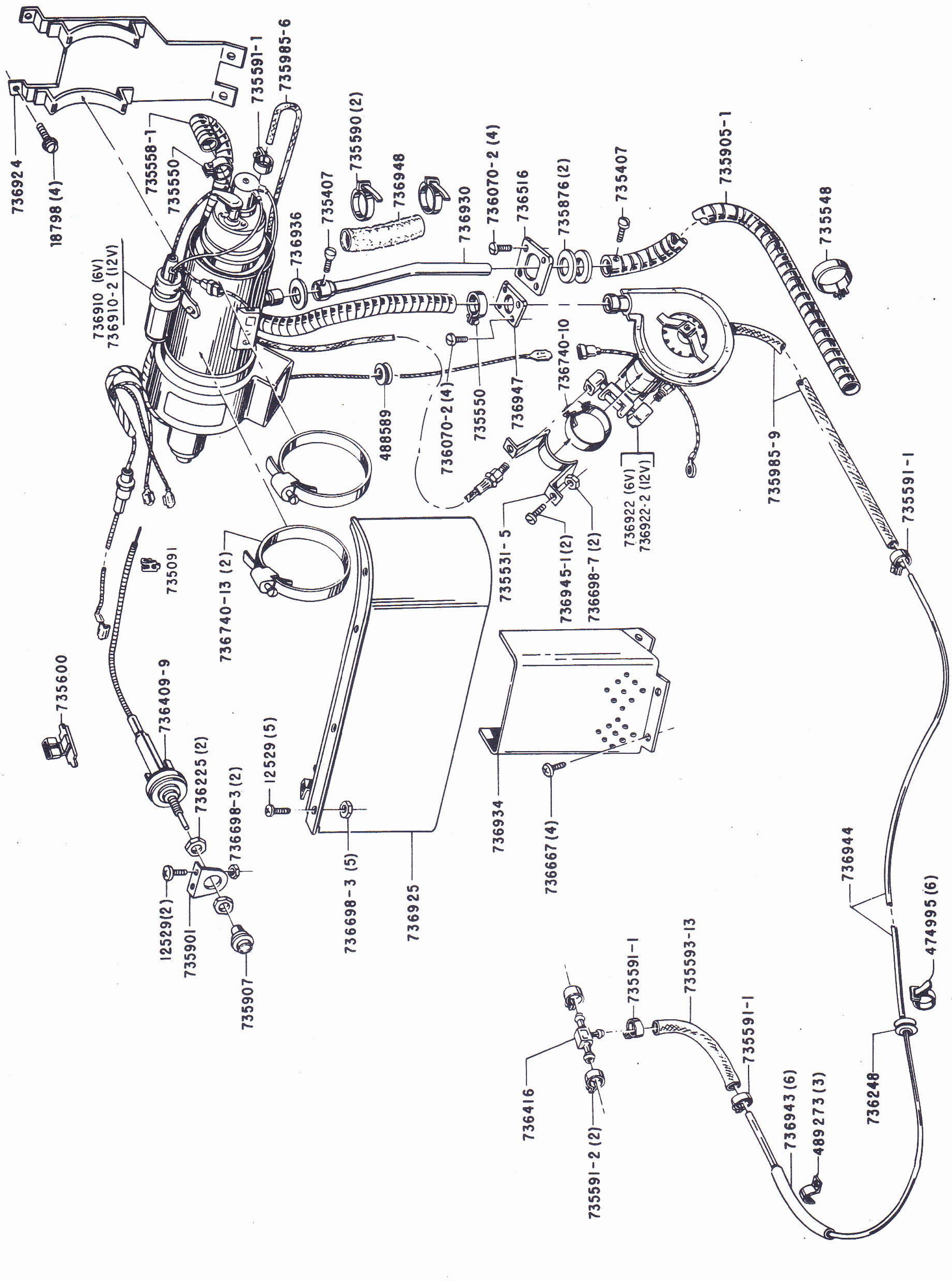


FIGURE 62 - KIT MODEL 8335 and 8335-12

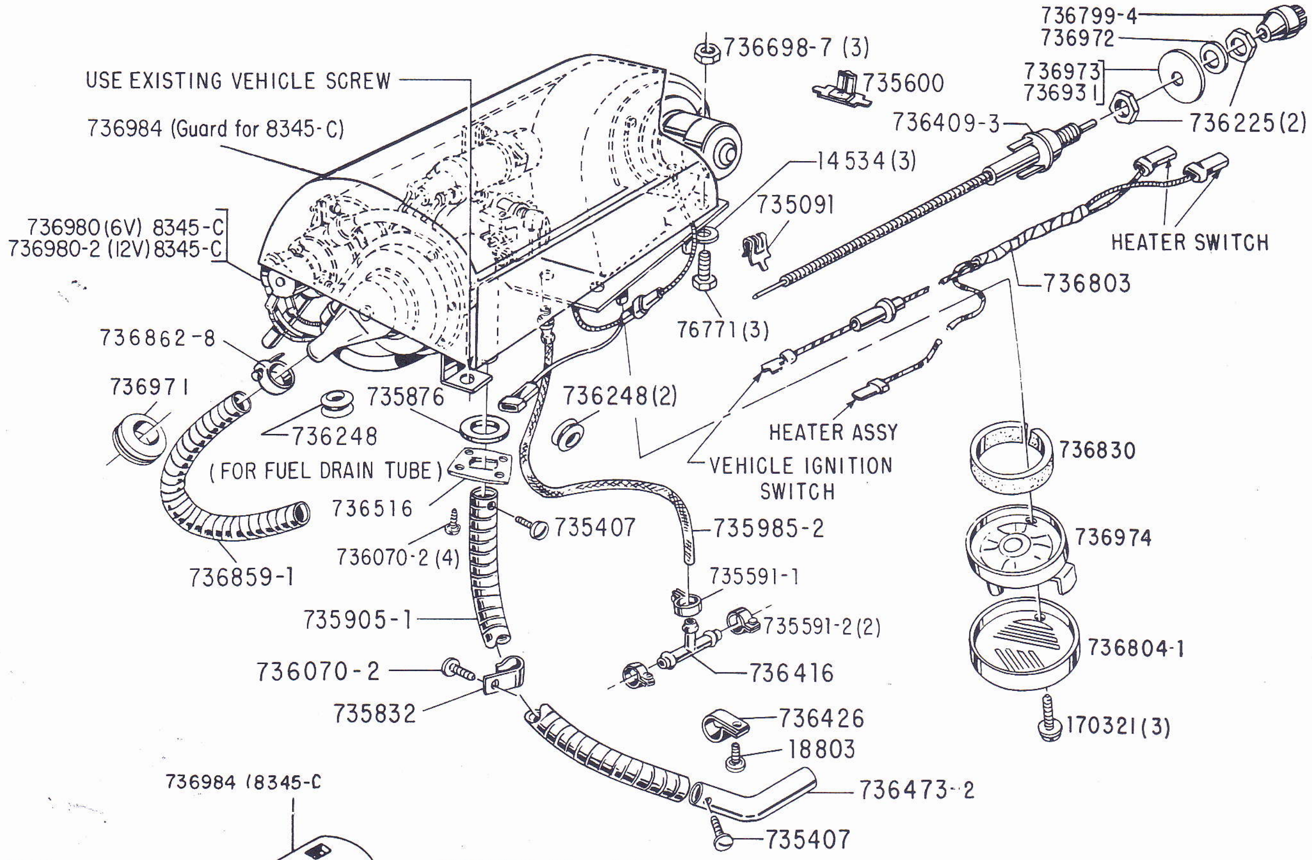


FIGURE 63 - KIT MODELS 8345-C and 8345-C12

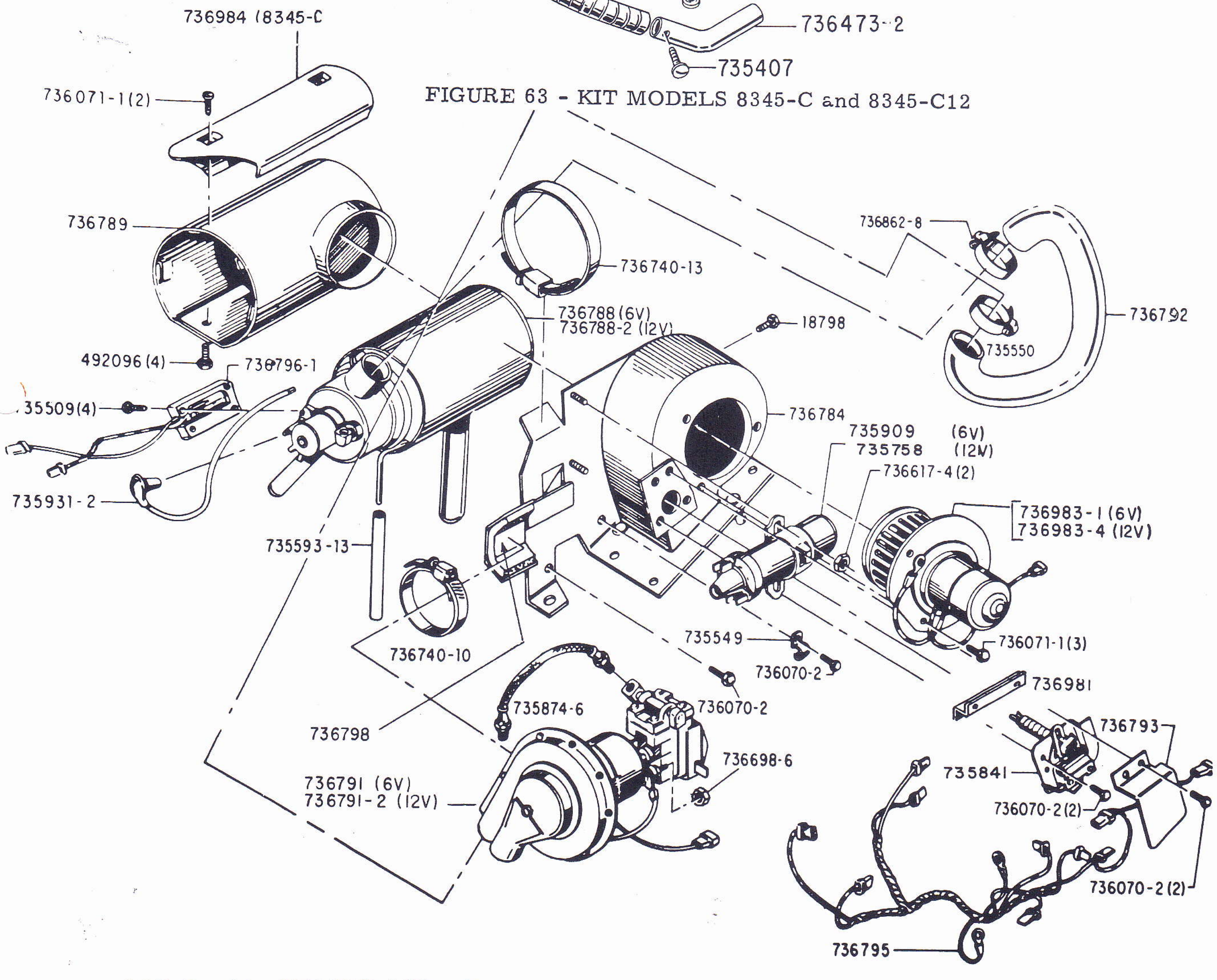


FIGURE 64 - HEATER ASSEMBLY 736980 and 736980-2 Used On 8345-C & 8345-C12

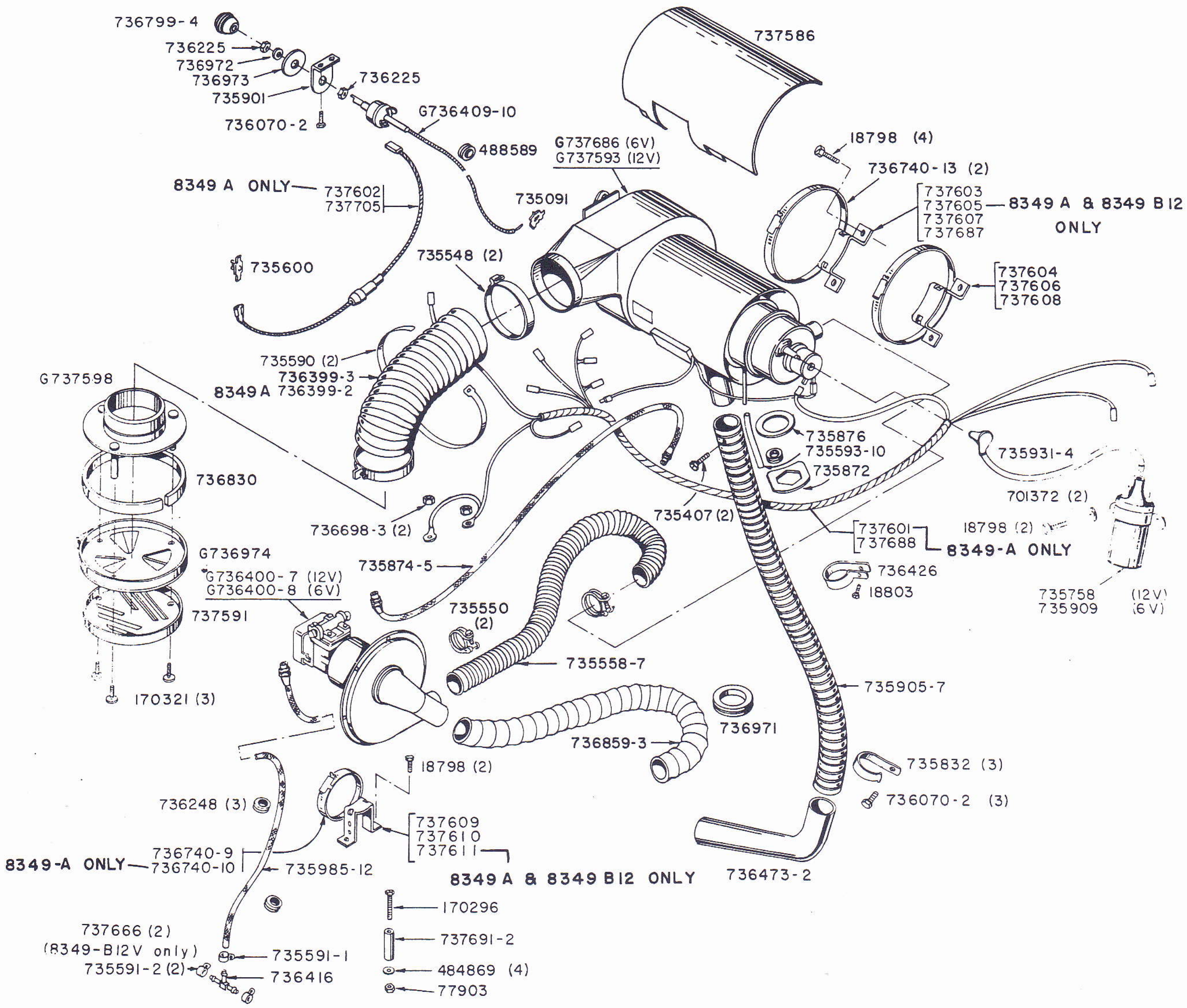
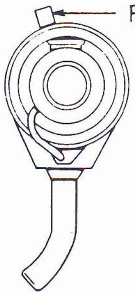


FIGURE 65 - KIT MODELS 8349-A, 8349-B6V, and 8349-B12V



FLAME DETECTOR BUSHING ADDED TO HEAT EXCHANGER CHANGES ASSEMBLY NO. FROM 736048 TO 736375

HEATER KIT MODEL	*HEAT EXCHANGER & BURNER ASSY.	HEAT EXCHANGER	* BURNER ASSEMBLY
**736076, 8330, 8331, 8332	736047-1	736048	736190-1
*** 8330, 8331, 8332 (6V)	736376-1	736048	736190-5
8332 (12V), 8333	736376-2	736048	736190-6
8334 (6V)	736376-3	736375	736190-5
8334 (12V)	736376-4	736375	736190-6

* Reference Only. ** Using 736000 Heater. *** Using 736624-1 Heater.

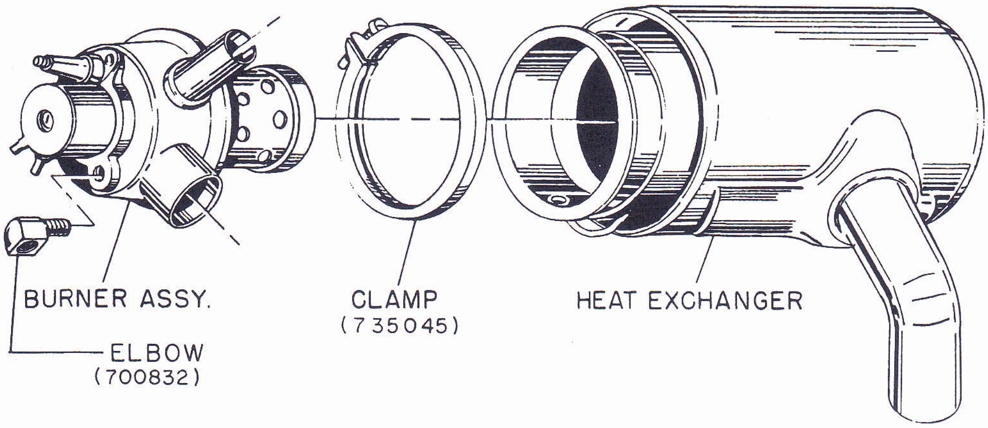
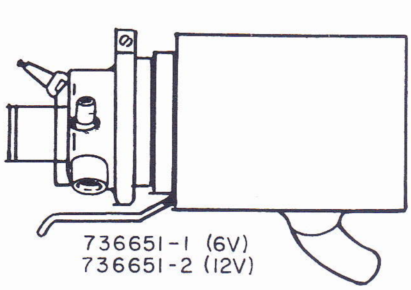
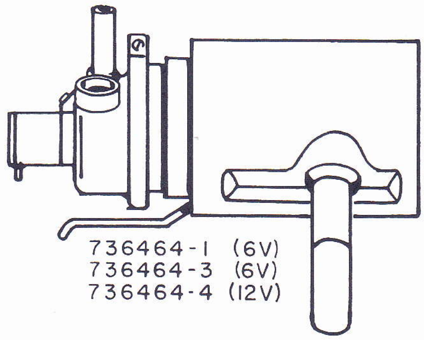
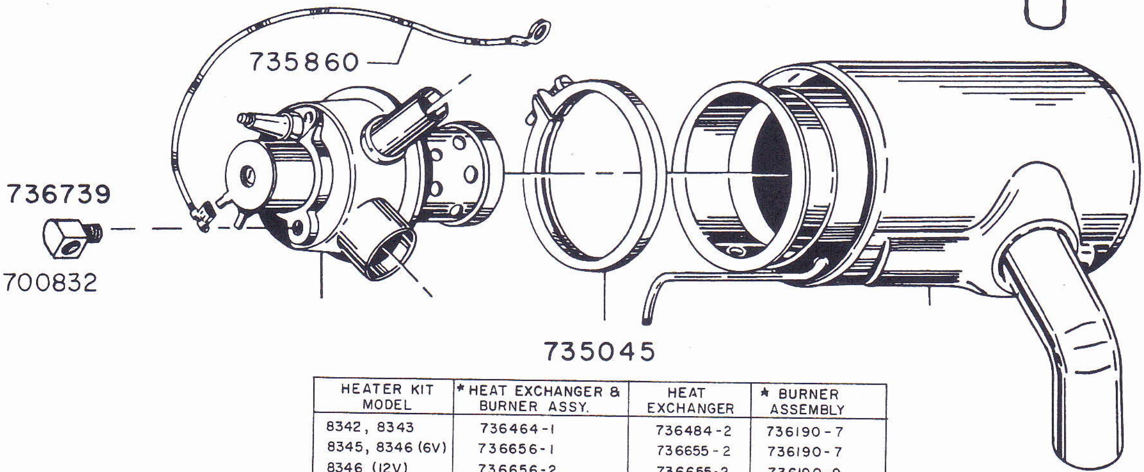


FIGURE - HEAT EXCHANGER & BURNER ASSEMBLY USED ON KIT MODELS 736076-8330-8331-8332-8333-8334







HEATER KIT MODEL	* HEAT EXCHANGER & BURNER ASSY.	HEAT EXCHANGER	* BURNER ASSEMBLY
8342, 8343	736464-1	736484-2	736190-7
8345, 8346 (6V)	736656-1	736655-2	736190-7
8346 (12V)	736656-2	736655-2	736190-9
8347 (6V)	736464-3	736484-2	736190-10
8347 (12V)	736464-4	736484-2	736190-15

* Reference Only.

FIGURE - HEAT EXCHANGER & BURNER ASSEMBLY USED ON KIT MODELS 8342-8343-8345-8346

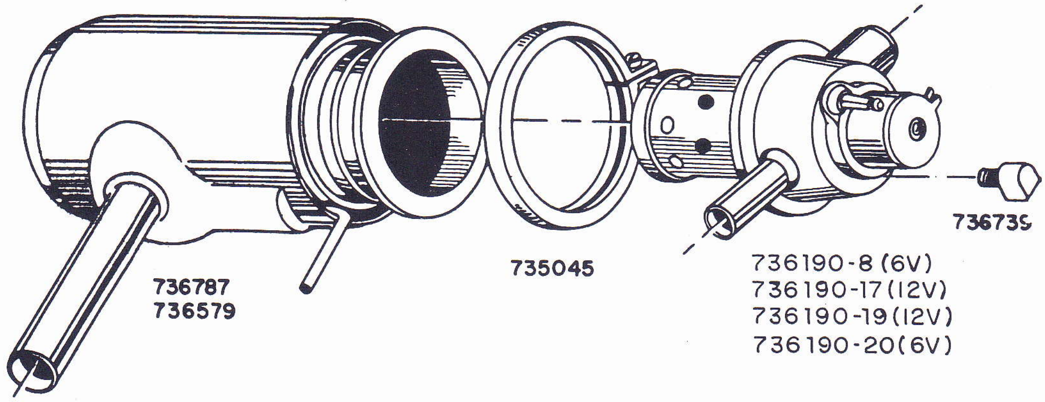


FIGURE 68 - HEAT EXCHANGER & BURNER ASSEMBLY 736788, 736788-2, 737584 and 737685 USED ON KIT MODEL 8345-B, 8345C, 8345C12, 8349-A, 8349-B6V, 8349-B12V

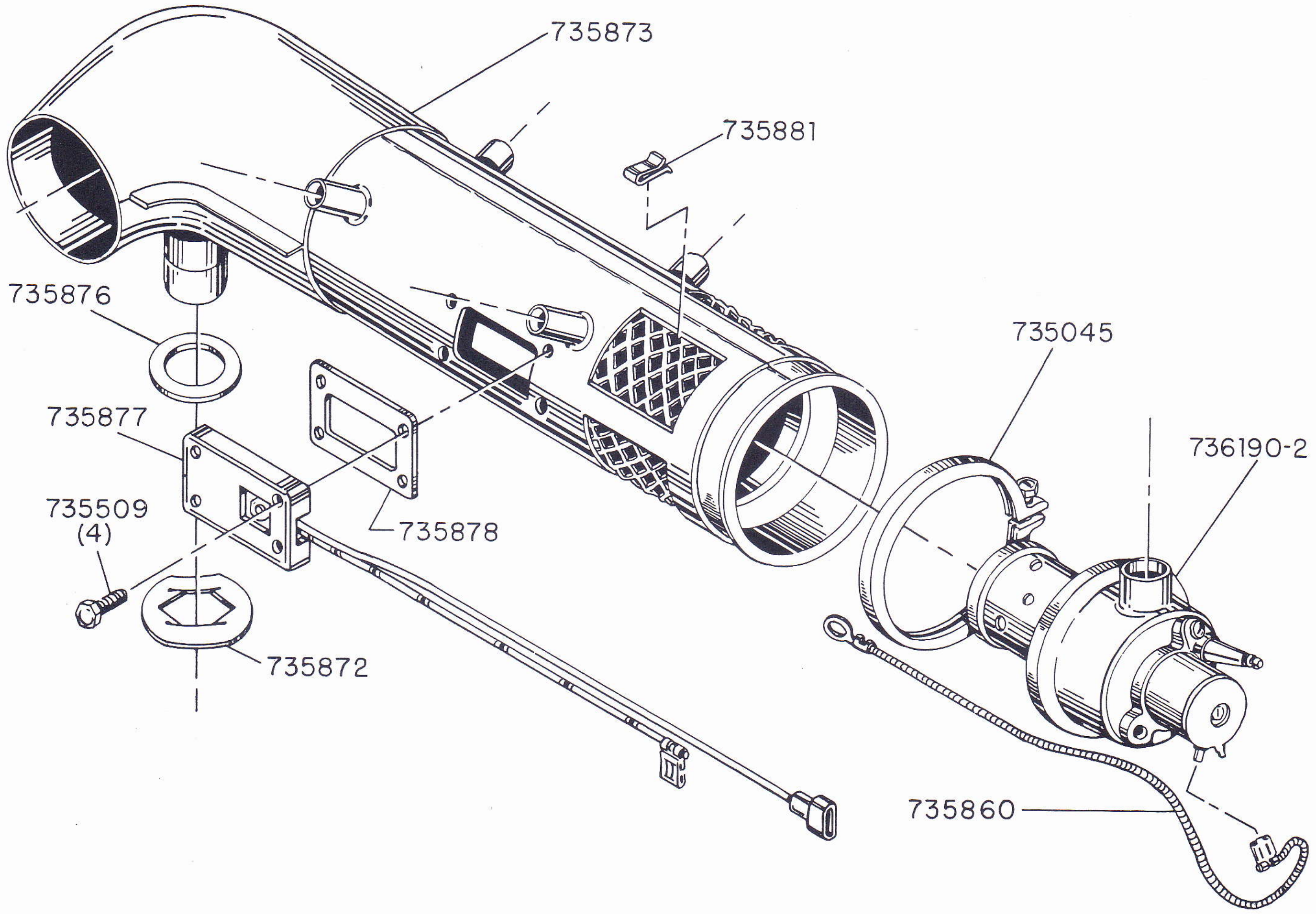


FIGURE 69 - HEATER ASSEMBLY FOR KIT MODELS 735900 & 8341

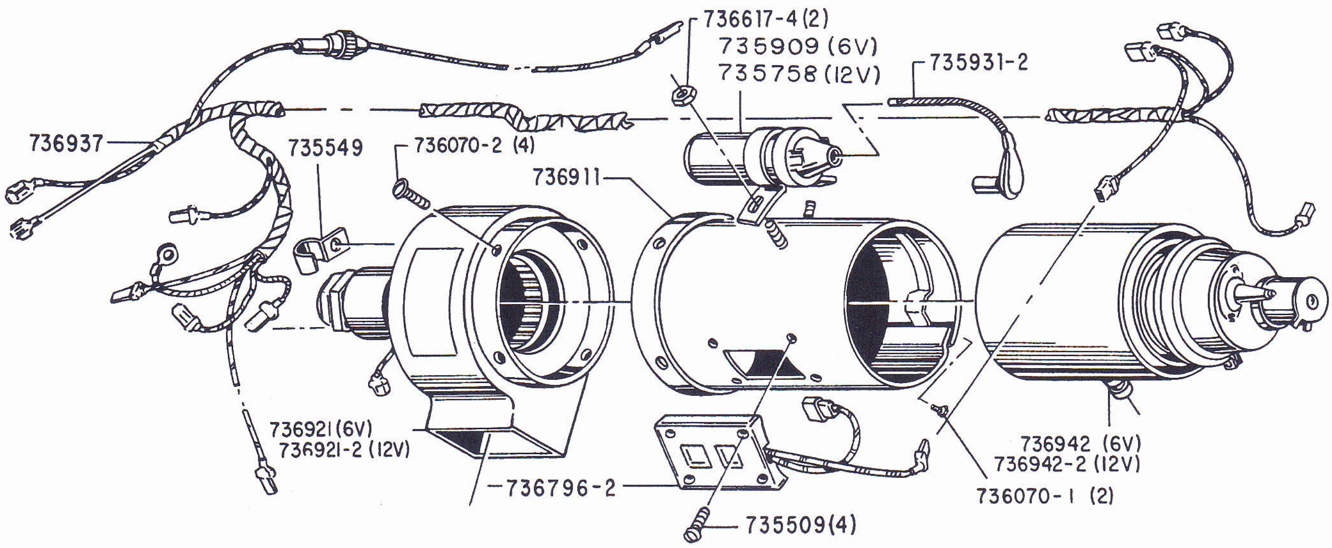


FIGURE 70 - HEATER ASSEMBLY 736910 (6V) & 736910-2 (12V)
(MODELS 8335 & 8335-12)

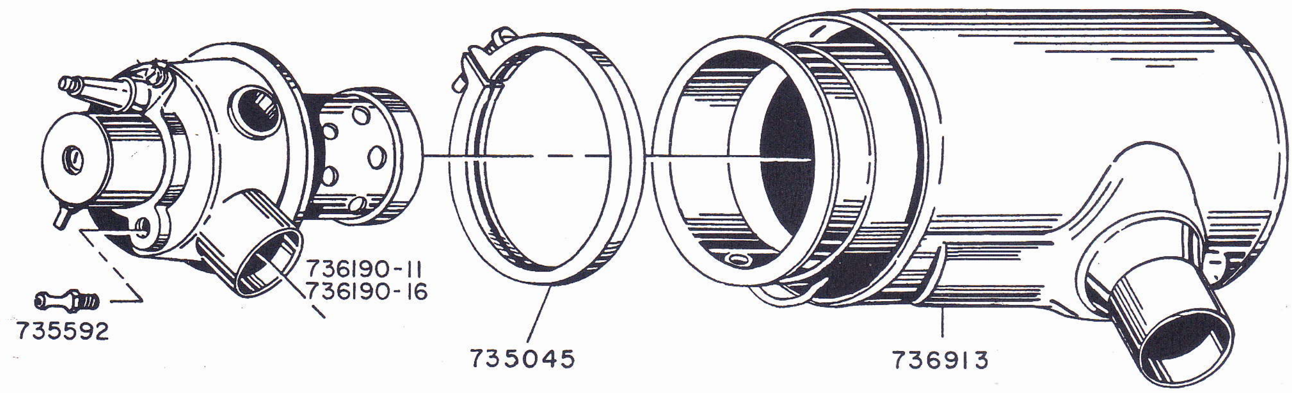


FIGURE 71 - HEAT EXCHANGER & BURNER ASSEMBLY 736942 (6V) & 736942 (12V)
USED ON MODELS 8335 and 8335-12

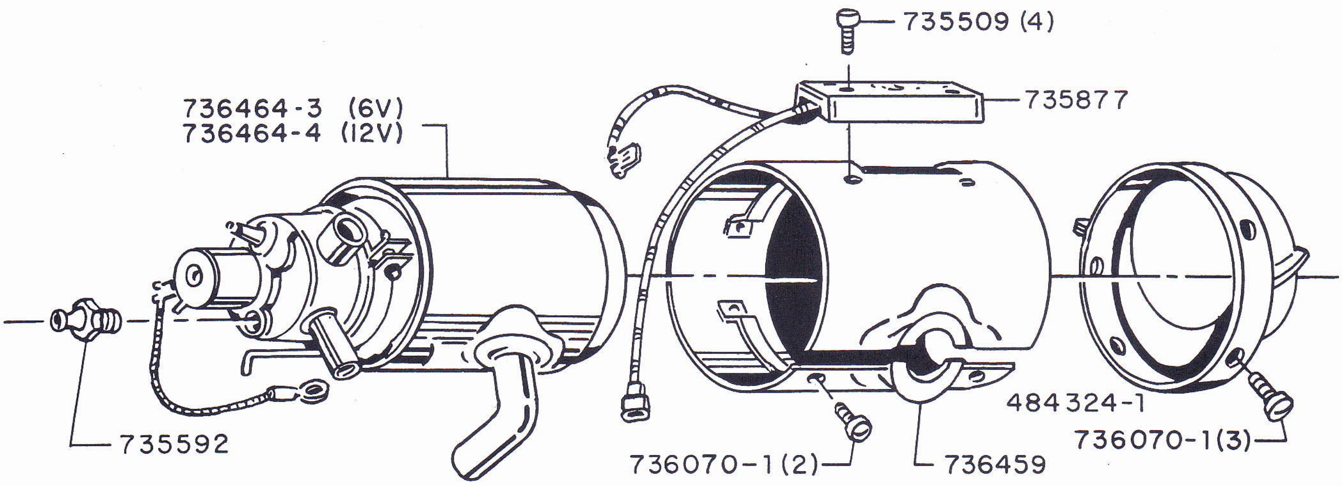


FIGURE 72 - MODEL 8347 HEATER ASSEMBLY 736884 (6V) & 736884-2 (12V)

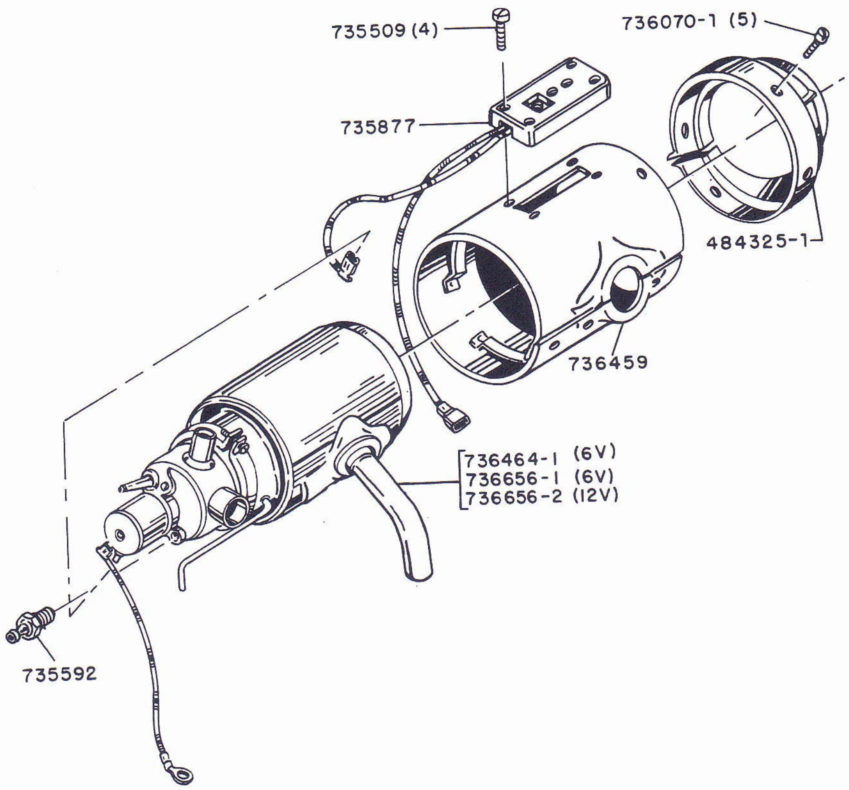


FIGURE 73 - HEATER ASSEMBLY FOR KIT MODELS 8342-8343 (736478)
8345-8346 (736653)

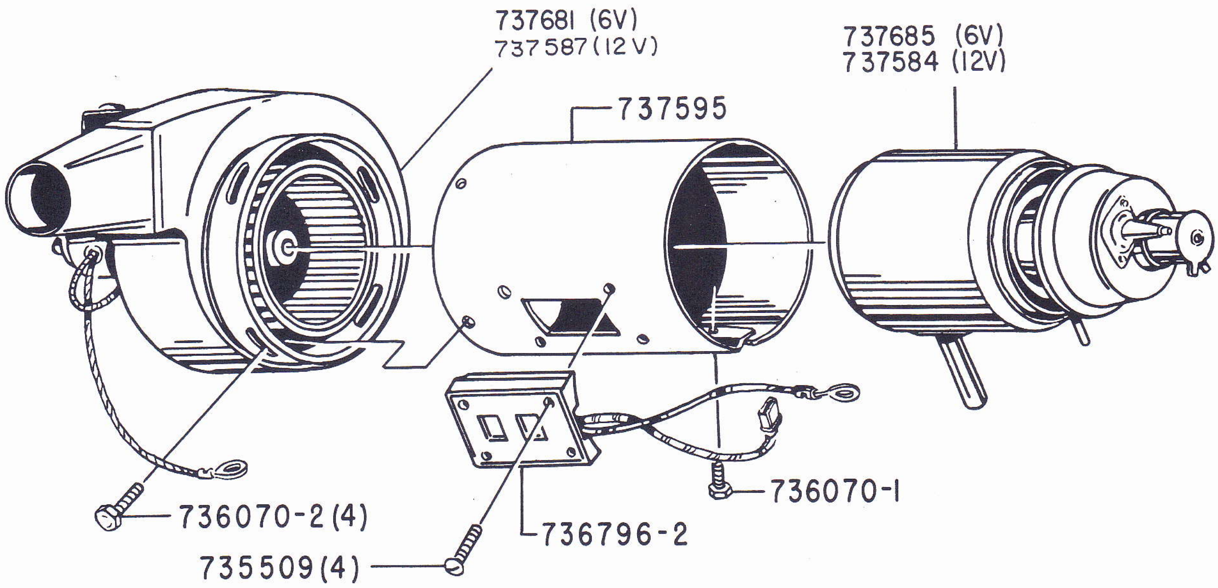


FIGURE 74 - HEATER ASSEMBLY 737593, 737686 USED ON 8349 A & B

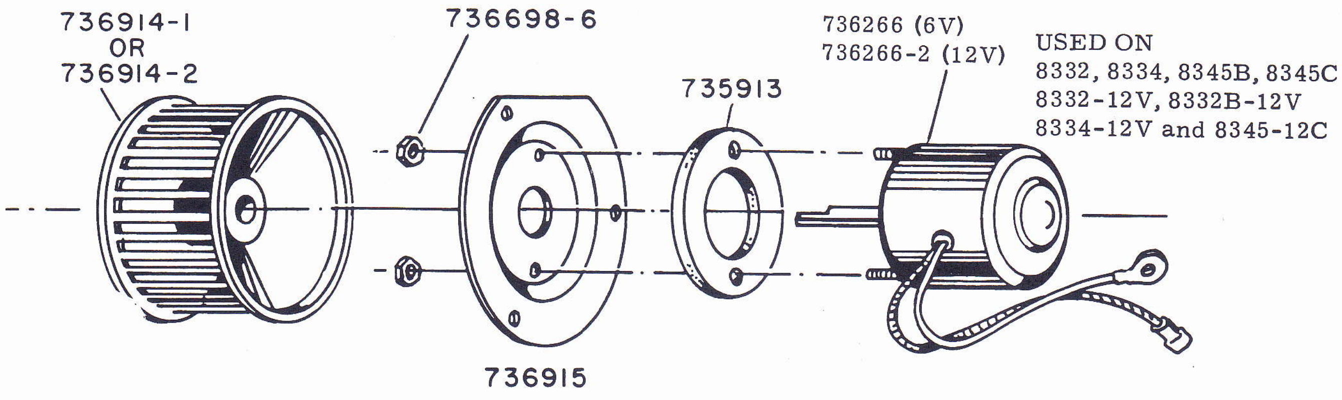


FIGURE 75 - VENTILATING AIR BLOWER & MOUNTING PLATE ASSEMBLY
736065, 736983-1, -2, -3, -4

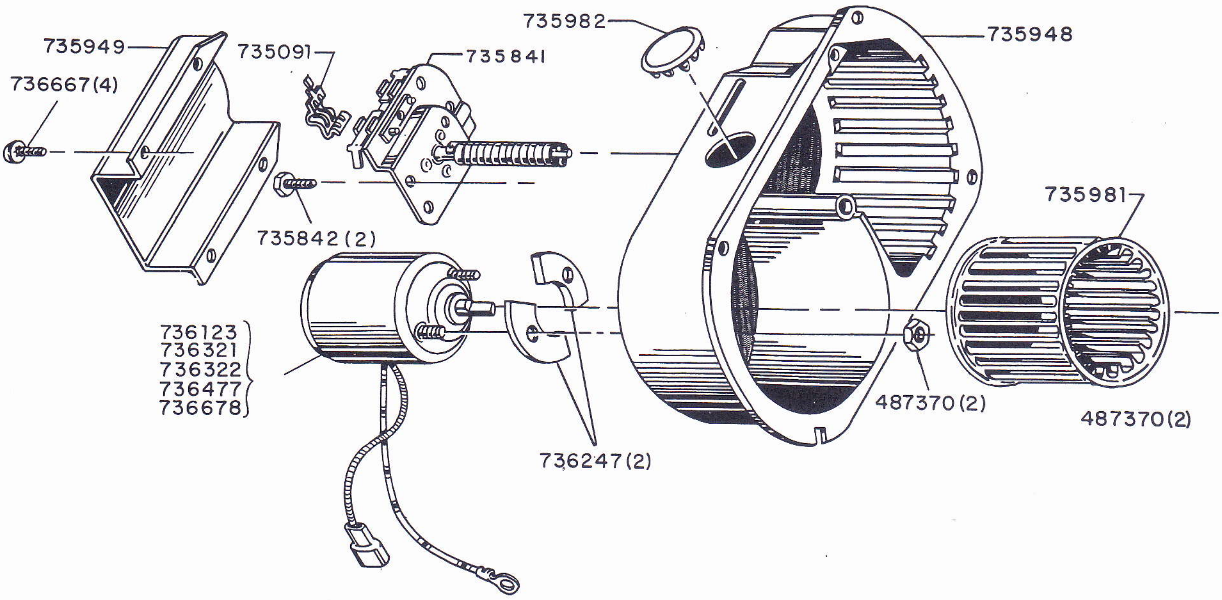


FIGURE 76 - VENT AIR BLOWER ASSEMBLY 735945, 736488 and 736654
USED ON KIT MODELS 735900, 8341, 8343, 8345

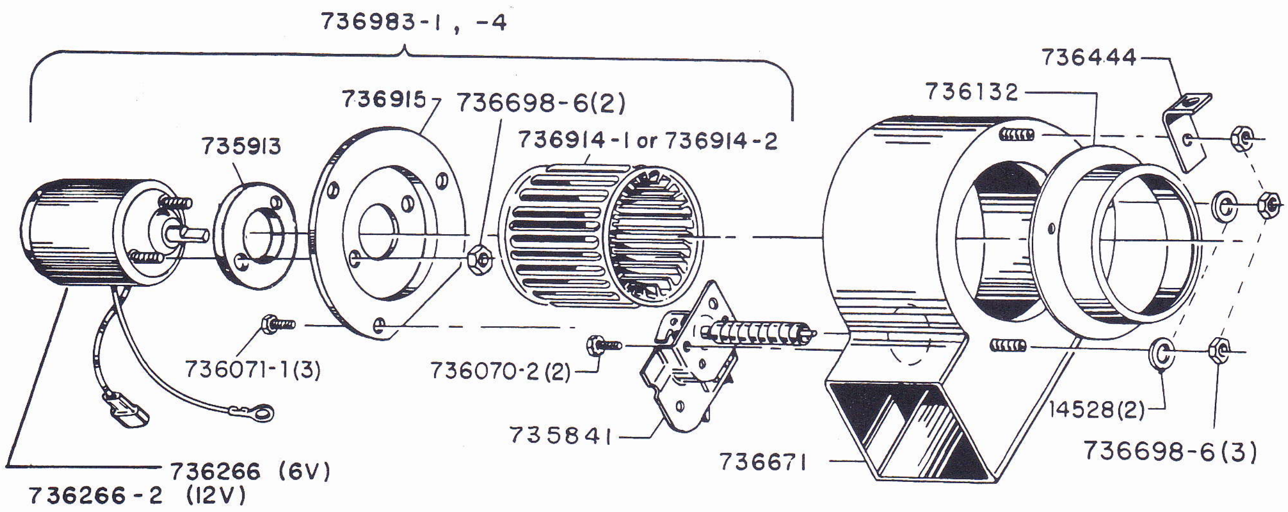


FIGURE 77 - VENTILATING AIR BLOWER ASSEMBLY 736469-736672
USED ON KIT MODEL 8342

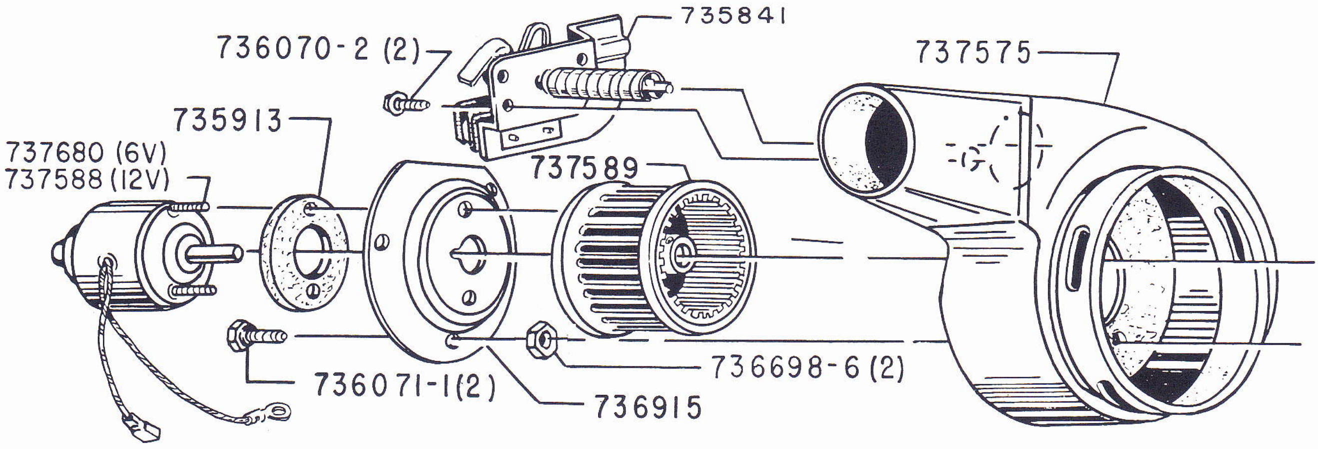


FIGURE 78 - VENTILATING BLOWER ASSEMBLY 737587-737681 AND SUBASSEMBLY 737585-737682 MODEL 8349 SERIES

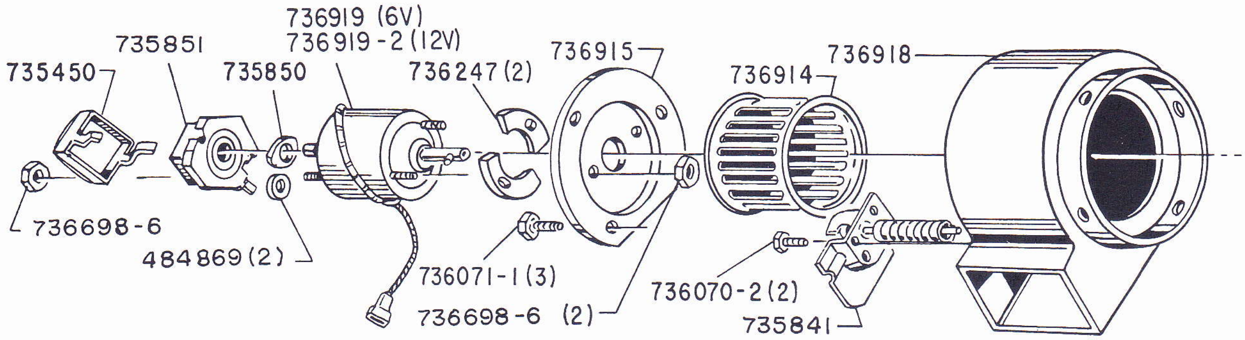


FIGURE 79 - VENTILATING BLOWER 736921 MODEL 8335 & 8335-12

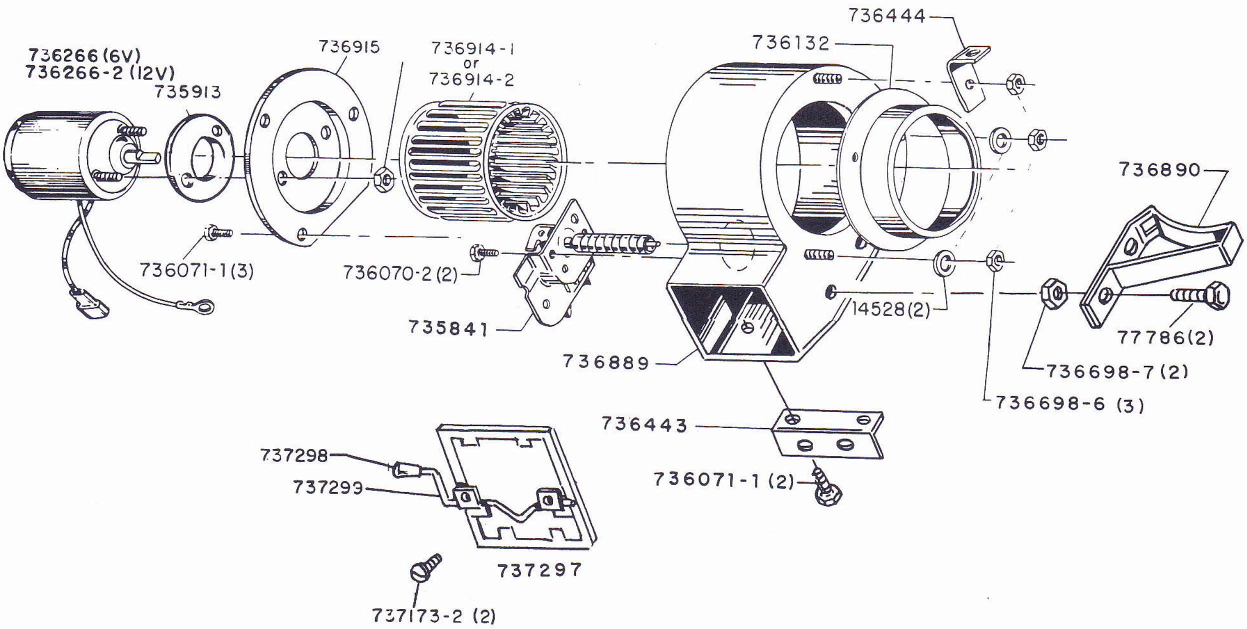


FIGURE 80 - VENTILATING BLOWER 736888-1 & 736888-2 USED ON MODEL 8347 & 8347-12

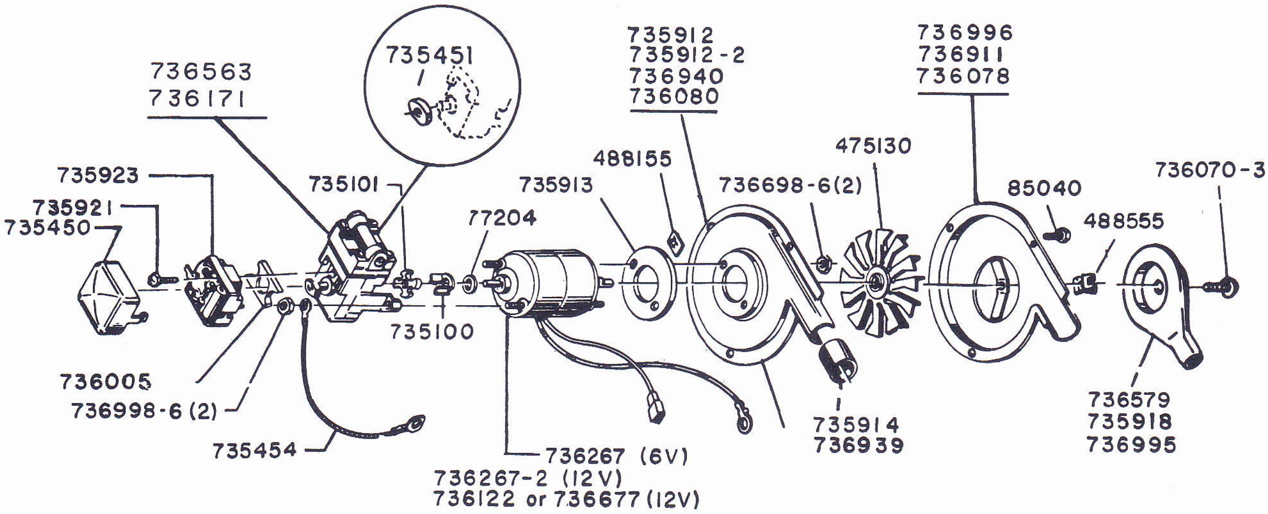


FIGURE 81 - COMBUSTION AIR BLOWER ASSEMBLY

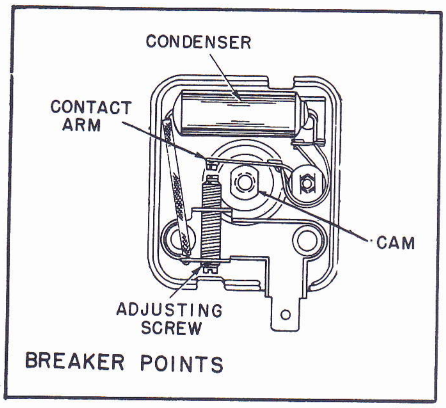


FIGURE 82 - BREAKER POINTS ASSEMBLY 735923

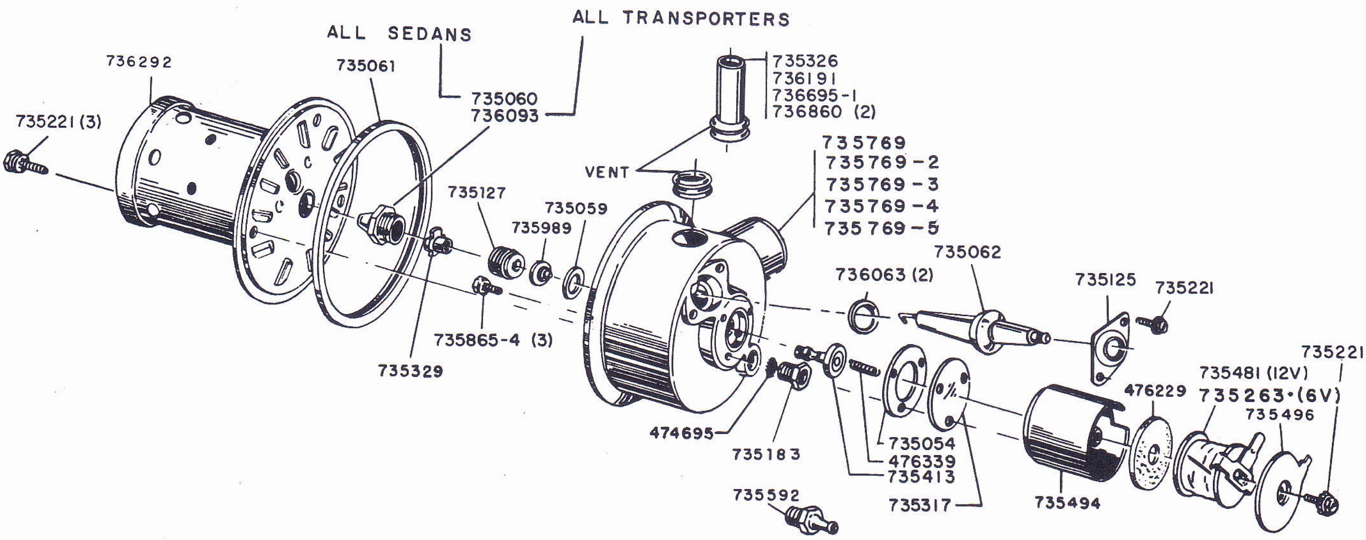


FIGURE 83 - BURNER ASSEMBLY

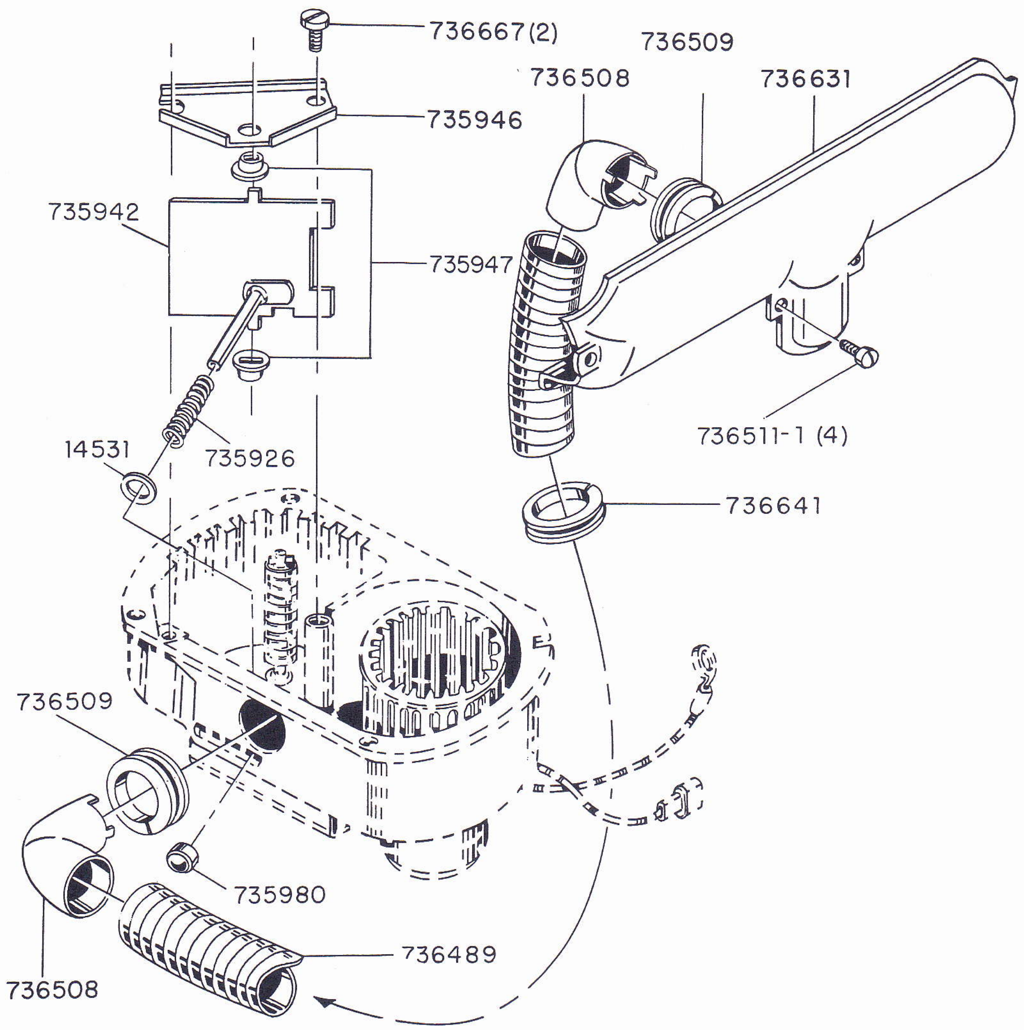


FIGURE 84 - DEFROSTER KIT (Part No. 736470)

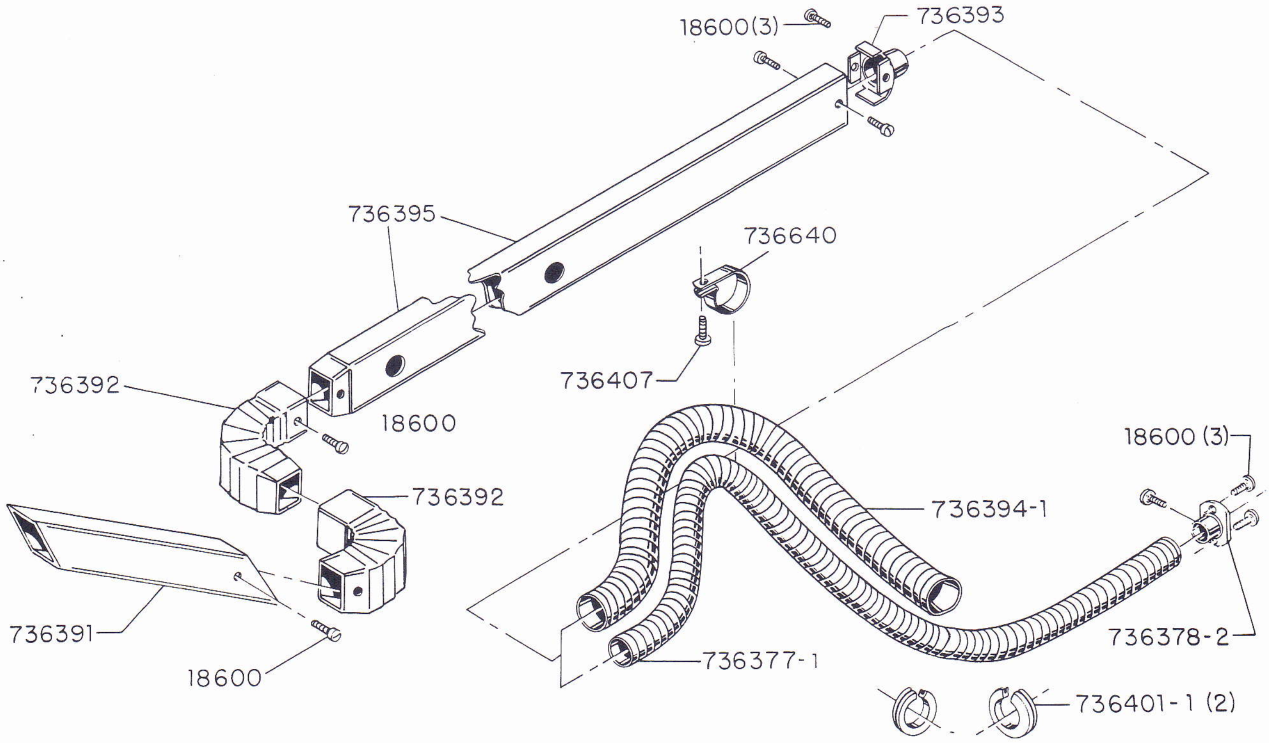


FIGURE 85 - AIR DISTRIBUTION ACCESSORY KIT (Pt. No. 736410)

APPLICATION CODE

Code	Kit Model	Code	Kit Model	Code	Kit Model
a	736076	i	736900	q	8332-B (12V)
b					
b	8330	j	8341	r	8335-6V & 8335-12V
c	8331	k	8342	s	8345-C (6V & 12 V)
d	8332	l	8343	t	8347-6V & 8347-12V
e	8330	m	8345	u	8349-A (12V)
f	8331	n	8345-B (6V)	v	8349-B (6V)
g	8332-6V & 8332-12V	o	8346-6V & 8346-12V	w	8349-B (12V)
h	8334-6V & 8334-12V	p	8333		

VW PART NO.	S-W PART NO.	DESCRIPTION	MODEL USED ON	REMARKS
VW 257 857	12529	Screw, No. 8-32 x 3/8	r	....
257 501	12642	Screw, No. 10-32 x 3/8	n	....
257 503	13133	Nut, 7/16 - 20 jam	h	....
	14522	Washer, No. 6 flat	h	....
	14526	Washer ------------------...	o r t u v w	....
504	14528	Washer, No. 10 flat	k m o t	....
505	14531	Washer, Flat	r	....
506	14534	Washer, No. 14 flat	efghijklmnopqst	....
507	14536	Washer, 5/16 flat	bcefghq	....
508	18600	Screw, No. 10 x 3/8	oq	....
509	18796	Screw, No. 10 x 1	i	....
510	18798	Screw, No. 14 x 3/8............	bcghijklmnorstuvw	....
511	18803	Screw, No. 14 x 5/8............	ijlmnoqstuvw	....
512	42076	Nut, 5/16 - 18	abcdefghpq	....
513	45569	Nut, No. 10-32	ad	....
514	76713	Screw, No. 10-32 x 7/8.........	ad	....
515	76771	Screw, 1/4 - 20 x 3/4	ns	....
516	76961	Washer, 5/16 lock	bcef	....
517	77786	Screw, 1/4 - 20 x 1/2	efghpt	....
518	77817	Screw, 5/16 - 18 x 7/8.........	abcdefghpq	....
519	77855	Screw, 5/16 - 18 x 1/2	adghp	....
520	77903	Nut, No. 8-32..................	abcdefghpqw	....
523	85040	Screw, No. 6 x 1/4	au	....
	170296	Screw, No. 8-32 x 1-3/4 SPHS ..	w	....
524	170313	Screw, No. 10-32 x 1/2	k	....
903	170321	Screw, No. 10-32 x 1 pan hd.....	nsvw	....
526	171081	Nut, 1/4 - 20 Keps	hijps	....
527	474695	Screen, Inlet	ALL	Also in 736009 Kit ..
528	474995	Strap	ikr	....
529	475130	Wheel, combustion blower	ALL	....
530	476229	Washer.........................	ALL	....
531	476339	Spring, Valve..................	ALL	....
532	477096	Washer	ALL	....
533	484030	Valve, Fuel safety	h	....
901	484085	Valve, Fuel safety..............	h	....
534	484324-1	Adapter, Air Outlet ..	t	....
535	484325-1	Adapter, 45° air outlet	klmo	....
858	484869	Washer, Flat	rvw	....
536	485185	Nut, 1/4-20 speed	jklm	....
537	485682	Clamp, air duct	be	....
538	486901	Rod, Quartz	h	Also part of 735974 .
539	487280	Screw, 1/4 - 20 x 1/2	ijklms	....
540	487282	Screw, 1/4 - 20 x 5/8	abcdefghp	....
542	488155	Nut, No. 6 speed	ALL	....
543	488290	Clamp	abcdefghlmop	....

VW PART NO.	S-W PART NO.	DESCRIPTION	MODEL USED ON	REMARKS
ZVW 544	488555	Nut, No. 8 speed	ALL	....
545	488589	Grommet	ALL	....
859	489273	Clamp	r	....
547	489544-1	Bracket	o	....
548	490117	Nut, 1/4 - 20 acorn	ovw	....
549	492053	Clamp	ijklm	....
550	492096	Screw, No. 8 x 3/8	efghnp	....
551	492371	Clip, Cable	efghp	....
552	700832	Elbow, 90° Fuel	ALL	Used for 736739. ...
904	701372	Washer, .250 I.D., .625 O.D. ..	uvw	....
553	711229	Adapter, combustion air inlet ...	all except ght	....
554	714994	Louver, air inlet	be	....
555	735045	Clamp, Burner	ALL	....
	735054	Gasket, Coil Cup..............	ALL	Use 736009 Kit.....
	735059	Gasket, Valve Seat	ALL	Use 736009 Kit.....
556	735060	Nozzle, Fuel..................	ijklmnorstuw	....
557	735061	Gasket, Burner	ALL	Also in 736008 Kit ..
	735062	Spark Plug	ALL	Use 736008 Kit ....
558	735063	Washer, Spark Plug	ALL	Also in 736008 Kit .
559	735091	Clamp, Control Cable	ALL	....
	735094	Clamp, Combustion air duct	abcd	Use 735550 ....
560	735097-1	Pad, Motor mounting	i	....
561	735097-2	Pad, Motor mounting	i	....
	735100	Connector, Fuel pump	ALL	Use 735405 Kit ....
	735101	Coupling, Fuel pump	ALL	Use 735405 Kit ....
562	735125	Retainer, Spark plug	ALL	....
563	735127	Retainer, Valve seat	ALL	....
564	735163	Clamp, Motor	i	....
565	735183	Connector, Fuel	abcdi	....
566	735213	Grommet	h	....
567	735219	Nut, No. 10 speed	abcdi	....
568	735221	Screw, No. 8-32 x 3/8	ALL	....
569	735263	Coil, Fuel solenoid (6V)	ALL 6-volt	Used for 735986. ...
	735317	Disc, Sealing	ALL	Use 736009 Kit ....
570	735326	Tube, Vent	efghklmop	....
	735329	Spacer	ALL	Use 736009 Kit ....
571	735350	Clamp, exhaust	adij	....
572	735405	Kit, Pump coupling	ALL	....
573	735407	Screw, No. 10 x 5/8	ALL	....
	735413	Valve, Fuel	ALL	Use 736009 Kit ....
574	735450	Cover, Breaker points	ALL	....
575	735451	Cam, Breaker points	ALL	Also part of pump ..
	735454	Wire Assembly	efghijklmop	Make from bulk....
576	735481	Coil, Fuel solenoid (12-volt)	pt	....
577	735494	Cup, Solenoid Coil	ALL	....
578	735496	Cover, Solenoid Coil	ALL	....
579	735509	Screw, No. 6 x 3/4	ALL	....
580	735516	Clamp	k	....
581	735531-2	Bracket	l	....
582	735531-5	Bracket	kr	....
583	735548	Clamp......................	bcfghijklmorsuvw	....
584	735549	Clamp......................	abcdefghnpqrst	....
585	735550	Clamp, combustion air duct	ALL	....
860	735558-1	Duct, combustion air(1-1/4)x 27"	r	....
586	735558-2	Duct, combustion air(1-1/4)x 18"	ilmop	Use for 735558-8 ..
587	735558-3	Duct, combustion air (1-1/4)x 21"	lm	....
588	735558-4	Duct, combustion air(1-1/4)x 23"	js	....
905	735558-7	Duct, combustion air(1-1/4)x 31"	r	....
	735558-8	Duct, combustion air(1-1/4)x 16"	abcdefgopt	Use 735558-2 .....
861	735590	Clamp......................	rvw	....
589	735591-1	Clamp, Fuel line	ALL	Supersedes 735591.
590	735591-2	Clamp, Fuel line	ALL	For VW fuel line ..

VW PART NO.		S-W PART NO.	DESCRIPTION	MODEL USED ON	REMARKS
ZVW	591	735592	Connector, Fuel (push-on)	jklmostr	....
	592	735593-1	Fuel Line (36 inch)	t	....
		735593-5	Fuel Line (40-inch)............	js	Use 735593-9 .....
	593	735593-9	Fuel Line (48-inch).	js	Use for 735593-5, -12
	594	735593-10	Fuel Line (4-inch).............	jkuvw	Used as drain. ....
		735593-12	Fuel Line (44-inch)............	k	Use 735593-9......
	595	735593-13	Fuel Line (5-1/2 inch)	nrs	....
	596	735600	Connector, 3-way wiring........	abcdefghmnopqrsuvw	....
	598	735736	Kit, Fuel pump valve	all except pqs	....
	599	735758	Coil, Ignition (12V)............	All 12V	....
	600	735769	Base, Burner	all except norstuw	....
	601	735769-2	Base, Burner	ns	....
	602	735769-3	Base, Burner	t	....
	862	735769-4	Base, Burner	r	....
	906	735769-5	Base, Burner	uw	....
	604	735832	Clamp, Duct support	klmno stuvw	....
	605	735841	Thermostat....................	ALL	....
	606	735842	Screw, No. 8-18 x 1/2	ijmo	....
	863	735850	Cam - Breaker Points...........	r	....
	864	735851	Breaker Points.................	r	(alt 735433) ....
		735860	Wire Assembly	ijklmot	Make from bulk ...
		735871	Heater Assembly	ij	Ref. only see Fig. 54
	607	735872	Retainer Exhaust gasket	ijko uvw	....
	608	735873	Exchanger, Heat	ij	....
	609	735874-1	Fuel Line (22-inch)............	i	....
	610	735874-2	Fuel Line (12-inch)............	abcdefgnpq	Used for 735874-6 .
	611	735874-3	Fuel Line (18-inch)............	h	....
	907	735874-5	Fuel Line	uw	....
		735874-6	Fuel Line (9-inch).............	hus	Use 735874-2 ....
	612	735876	Gasket, Exhaust	ALL	....
	613	735877	Switch, Overheat	kjklmot	....
	614	735878	Gasket, Overheat switch	ij	....
	615	735881	Clip, Wiring	ij	....
	617	735901	Bracket, Switch mounting	ijklmo rtuvw	....
	618	735902	Clamp, Cable support..........	i	....
	619	735904	Clamp, Exhaust	abcdefghp	....
	620	735905-1	Tube, Exhaust flex. (21-inch) ...	dghimnpqrs	Used for 735905-6, -8
	621	735905-3	Tube, Exhaust flex. (30-inch) ...	a	....
	622	735905-4	Tube, Exhaust flex. (10-inch) ...	cf	Used for 735905-5.
		735905-5	Tube, Exhaust flex. (6-inch)	j	.... Use 735905-4.
		735905-6	Tube, Exhaust flex. (19-inch)....	kl	Use 735905-1.....
	908	735905-7	Tube, Exhaust flex. (46-inch)....	uvw	....
		735905-8	Tube, Exhaust flex. (22-inch) ...	o	Use 735905-1 ....
	623	735906	Duct, Hot air (3-1/2 I. D. -21 lg.)	i	....
	624	735907	Knob, switch	abcdefghp qr	736799 can be used.
	625	735909	Coil, Ignition (6-volt)..........	all 6v except t	....
	626	735911	Housing, comb. blower half	efghijklmnop	....
	627	735912	Housing, comb. blower half	efghijklmopt	....
	628	735912-2	Housing, comb. blower half	n	....
	629	735913	Spacer, Motor.................	all except r	....
	630	735914	Collar	all except r	....
		735915-1	Blower, combustion air	efh	ref. only see Fig. 81
		735915-2	Blower, combustion air	p	ref. only see Fig. 81
		735915-3	Blower, combustion air	k	ref. only see Fig. 81
		735915-4	Blower, combustion air	il	ref. only see Fig. 81
		735915-7	Blower, combustion air	g	ref. only see Fig. 81
		735915-9	Blower, combustion air	qq	ref. only see Fig. 81
	632	735918	Shield, combustion air inlet	i	....
	633	735921	Screw, No. 8-32 x 5/8.........	ALL	....
	634	735923	Breaker Points Assembly	ALL	....
	635	735926	Spring, actuator	r	....
	636	735927	Plate, Vent Blower mounting	i	....

VW PART NO.		S-W PART NO.	DESCRIPTION	MODEL USED ON	REMARKS
ZVW	637	735931-1	Cable, Ignition (22-inch)	ikot	....
	638	735931-2	Cable, Ignition (10-inch)	abcdefglnpqrs	....
	639	735931-3	Cable, Ignition (15-inch)	hj	....
	640	735931-4	Cable, Ignition (12-inch)	m uvw	....
	641	735932	Saddle, combustion blower	i	....
	642	735933	Bracket, combustion blower	i	....
	643	735941	Harness, Wiring	i	....
	644	735942	Damper Assembly	r	....
		735945	Blower, Ventilating air	ij	ref. only see Fig. 76
	645	735946	Bracket, damper mounting	r	....
	646	735947	Bushing, pivot	r	....
	647	735948	Housing, ventilating blower	ijlm	....
	648	735949	Guard, Thermostat............	ijlm	....
	649	735972	Switch, Safety valve reset	h	....
	650	735974	Switch, flame detector	h	....
	652	735980	Cap, damper control	r	....
	653	735981	Wheel, ventilating blower	ijlm	....
	654	735982	Plug, Housing	ijlm	....
	655	735985-1	Fuel Line (14-inch).............	i	....
	656	735985-2	Fuel Line (39-inch)	adghnpqs	....
	657	735985-4	Fuel Line (103-inch)...........	be	....
	658	735985-5	Fuel Line (140-inch)...........	cf	....
	659	735985-6	Fuel Line (44-inch).............	mo r	....
		735985-9	Fuel Line (10-inch).............	r	Use 735985-1.....
	909	735985-12	Fuel Line (56-inch).............	uvw	....
		735985-13	Fuel Line (36-inch).............	kl	Use 735985-2 ....
		735985-14	Fuel Line (33-inch).............	mo	Use 735985-2 ....
		735985-15	Fuel Line (72-inch)	t	Use 735985-4 ....
		735986	Coil, Fuel solenoid (6V)	All 6-volt	Use 735263 ......
		735989	Seat, Valve	ALL	Use 736009 Kit ...
		736000	Heater and Bracket Assembly ...	abcd	ref. only see Fig. 16
	661	736005	Gasket and Breaker Points	ALL	....
	662	736008	Kit, Spark Plug	ALL	....
	663	736009	Kit, Burner Service	ALL	....
		736040-5	Wire Assembly (130-inch).......	abcdeghpq	Make from bulk ..
		736040-13	Wire Assembly (12-inch)........	abcd	Make from bulk ..
		736040-15	Wire Assembly (156-inch).	be	Make from bulk ..
		736040-16	Wire Assembly (135-inch).......	cf	Make from bulk ..
		736040-17	Wire Assembly (68-1/2 inch)	cf	Make from bulk ..
		736040-23	Wire Assembly (52-inch)........	adghpq	Make from bulk ..
		736047-1	Exchanger and Burner Assembly.	abcd	....
	664	736048	Exchanger, Heat	abcdefgp	....
		736059	Tube, Exhaust	acf	Use 736578 ......
	665	736052	Cover and Spacer Assembly	abcd	....
	666	736055	Cover and Spacer Assembly	ab cd	....
	667	736060	Switch, overheat	abcdefgoqrstuw	....
	668	736062	Bracket, Heater mounting	abcd	....
	669	736064	Housing, Ventilating Blower.....	abcdefgh k p	....
		736065	Blower, Ventilating Air.........	abcdefgh kno	ref. only see fig. 75
	670	736066	Wheel, Ventilating Blower	abcdefgh knop	Can use 736914-1.
	671	736067	Plate, Vent. Blower Mounting ...	abcdefgh knop	....
	672	736068	Spacer	adghp	....
	673	736069-1	Relay (6-volt).................	abcdefgh	....
	674	736069-2	Relay (12-volt)................	p	....
	675	736070-1	Screw, No. 8 x 1/4	gklmoqrstuvw	....
	676	736070-2	Screw, No. 8 x 3/8	ALL	....
	677	736070-3	Screw, No. 8 x 1/2	ALL	....
	678	736071-1	Screw, No. 10 x 3/8	abcdefgh knopqrstv	....
	679	736071-2	Screw, No. 10 x 1/2	cf	....
	680	736071-3	Screw, No. 10 x 5/8	abcd	....
	681	736072	Grommet, Inlet	abcdefghkp	....
	682	736073	Harness, Wiring	abcdefgpq	....

VW PART NO.		S-W PART NO.	DESCRIPTION	MODEL USED ON	REMARKS
ZVW		736075-1	Blower, Combustion Air	abcd	ref. only see fig. 81
	683	736078	Housing, Comb. Blower Half	abcd	....
	684	736080	Housing, Comb. Blower Half	abcd	....
	685	736086	Cap, Breaker Points	i	....
	686	736089	Bolt and Plate Assembly	adghp	....
	688	736093	Nozzle, Fuel	abcdefghp	....
	689	736095	Duct, Ventilating Air	adghp	....
	690	736101	Adapter, Duct to Blower	adghp	....
		736102-1	Wire Assembly (58-inch)........	abcdefghp	Make from bulk . .
		736102-2	Wire Assembly	q	Make from bulk . .
	691	736120	Clamp	klmo	....
	692	736122	Motor, Combustion Air	p	.. Use 736677 ...
	693	736123	Motor, Ventilating Air..........	p	.. Use 736678 ...
	694	736132	Adapter, Blower Inlet	k o t	....
	865	736171	Pump, Fuel (12V)	r	....
		736190-1	Burner Assembly	abcd	ref. only see fig. 66-67
		736190-2	Burner Assembly	ij	ref. only see fig. 66-67
		736190-5	Burner Assembly	efgh	ref. only see fig. 66-67
		736190-6	Burner Assembly	ph	ref. only see fig. 66-67
		736190-7	Burner Assembly	klmo	ref. only see fig. 66-67
		736190-8	Burner Assembly	ns	ref. only see fig. 66-67
		736190-9	Burner Assembly	t	ref. only see fig. 66-67
		736190-10	Burner Assembly	r	ref. only see fig. 66-67
		736190-11	Burner Assembly	t	ref. only see fig. 66-67
		736190-15	Burner Assembly	t	ref. only see fig. 66-67
		736190-16	Burner Assembly	r	ref. only see Fig. 66-67
		736190-17	Burner Assembly	t	ref. only see fig. 66-67
		736190-19	Burner Assembly	uw	ref. only see fig. 66-67
		736190-20	Burner Assembly	v	ref. only see fig. 66-67
	696	736191	Vent	abcdij	....
	697	736201	Gasket, Exhaust	ad	....
	698	736202	Retainer, Exhaust Gasket	ad	....
		736209	Tube, Exhaust	a	Use 736578 ......
		736213	Thermostat....................	abcd	Use 735841 ......
	699	736218	Distribution Chamber	adghp	....
	700	736220	Plate	adg	....
	701	736225	Nut, 7/16 - 28 jam	ALL	....
	702	736237	Bracket, Heater mounting	i	....
	703	736238	Bracket, Heater mounting	i	....
	704	736239	Seal, Combustion Air...........	i	....
	705	736241	Shield, Heater	ij	....
	706	736247	Spacer, Motor	ALL	....
	707	736248	Grommet	hijlmnorstuvw	....
	708	736266	Motor, Ventilating Air (6V)	ALL	....
	898	736266-2	Motor, Ventilating Air (12V).....	ALL	....
	709	736267	Motor, Combustion Air (6V).....	ALL	....
	899	736267-2	Motor, Combustion Air (12V)....	ALL	....
	711	736292	Mixer Assembly	ALL	....
	712	736340	Screw, 1/4 - 20 x 1-1/2	abcdefghpq	....
		736344	Blower, Ventilating Air.........	p	....
	713	736349	Clamp, Exhaust Support	ij	....
	714	736358	Spacer	h	....
	715	736375	Exchanger, Heat	h	....
		736376-1	Exchanger, and Burner Assy. ...	efg	....
		736376-2	Exchanger, and Burner Assy. ...	pq	....
		736376-3	Exchanger, and Burner Assy. ...	h	....
		736376-4	Exchanger, and Burner Assy. ...	h	....
	716	736377-1	Duct, Hot Air (1-3/4 I.D. -52 lg.)	q	....
	717	736378-2	Adapter, Duct	beoq	....
		736380	Heater and Bracket Assembly . . .	h	....
	718	736382-1	Duct, Hot air (1-3/4 I.D. -61 lg.)	be	....
	719	736384	Shield, Air Inlet	be	....
	720	736387	Duct, Hot Air	be	....

VW PART NO.		S-W PART NO.	DESCRIPTION	MODEL USED ON	REMARKS
ZVW	721	736388	Duct, Hot Air	be	....
	722	736389	Bracket, Heater support	be	....
	723	736390	Adapter, Duct to Blower	bcef	....
	729	736396	Tube, Exhaust	j	....
	730	736398	Screw, No. 10-32 x 3/4	h	....
	731	736399-1	Duct, Hot air (3-1/2 I.D., 27 lg.)	j	....
	910	736399-2	Duct, Hot air	u	....
	934	736399-3	Duct, Hot air	vw	....
	935	736399-4	Duct, Hot air	q	....
		736400-1	Blower, Combustion Air	j	ref. only see fig. 81
		736400-4	Blower, Combustion Air	nw	ref. only see fig. 81
		736400-7	Blower, Combustion Air (12V)....	w	ref. only see fig. 81
		736400-8	Blower, Combustion Air (6V).....	v	ref. only see fig. 81
	732	736401-1	Grommet	beq	....
	733	736404	Bracket, Heater mounting	j	....
	734	736405	Bracket, Combustion Blower	j	....
	735	736406	Bracket, Heater mounting	j	....
	736	736408	Harness, Wiring	j	....
	737	736409-1	Switch and Control Cable (96-3/4")	be	....
	738	736409-2	Switch and Control Cable (74")...	cf	....
	739	736409-3	Switch and Control Cable (18")...	ns	....
	740	736409-4	Switch and Control Cable (130")..	adghp	....
	741	736409-5	Switch and Control Cable (30")...	ijklm	....
	742	736409-6	Switch and Control Cable (15-3/16")	o	....
	866	736409-9	Switch and Control Cable 25"....	r	....
	932	736409-10	Switch and Control Cable........	uvw	....
	743	736411-1	Duct, Hot Air (4 I.D., 12 long) ..	be	....
	744	736411-2	Duct, Hot Air (4 I.D., 50 long) ..	cf	....
		736411-3	Duct, Hot Air (4 I.D., 18 long) ..	ko	Use 736411-5 ....
	745	736411-5	Duct, Hot Air (4 I.D., 20 long) ..	lm	Use for 736411-3 ..
	747	736414	Plate, Vent Blower Mounting	j	....
	748	736415	Harness, Wiring	h	....
	749	736416	Tee, Fuel	ALL	....
	750	736421	Bracket, Heater Support	cf	....
	751	736422	Guard, Heater	cf	....
	752	736423	Tube, Exhaust extension........	cf	....
	753	736424	Adapter, Ventilating Air	cf	....
	754	736425	Louver and Baffle Assembly	cf	....
	755	736426	Clamp, Exhaust Support.........	jklmo stuvw	....
	756	736427	Bracket, Exhaust	jklm	....
	757	736428	Fuel Pump	n	.... Use 736563
	758	736429	Retainer, Exhaust Gasket	js	....
	759	736430	Gasket, Exhaust	js	....
	760	736442	Distributor, Air	ko	....
	761	736443	Bracket, Blower Support	kot	....
	762	736444	Bracket, Blower Support	kot	....
	763	736445	Guard, Thermostat	k	....
	764	736448	Grommet - wiring.............	h	....
	765	736454	Screw, No. 8 x 3/8	h	....
	766	736459	Housing, Heater	klmot	....
		736464-1	Exchanger and Burner Assembly.	kl	....
		736464-3	Exchanger and Burner Assembly.	t	....
		736464-4	Exchanger and Burner Assembly.	t	....
		736469	Blower, Ventilating Air	k	....
	767	736471	Grommet	k	....
	768	736473	Tube, Exhaust extension	klm	....
	769	736473-2	Tube, Exhaust extension	nstuv	Similar to 736473 .
	770	736474	Harness, Wiring	k	....
		736478	Heater Assembly	kl	....
	771	736484	Exchanger, Heat	kl	736484-2 can be used
	772	736484-2	Exchanger, Heat	kl	736484 can be used
	773	736486	Duct, Combustion Air	k	....
		736488	Blower, Ventilating Air	l	ref. only see fig. 76
	775	736494	Box, Air Intake	h	....
	776	736496	Harness, Wiring	l	Similar to 736642

VW PART NO.	S-W PART NO.	DESCRIPTION	MODEL USED ON	REMARKS
ZVW 777	736498	Bracket, Heater Mounting	l	
780	736511-1	Screw, No. 10 x 3/8	q	
781	736515	Plate, Vent Blower Mounting	lm	
782	736516	Retainer, Exhaust Gasket	lmnrst	
	736546	Coil, Ignition	j	Use 735909
783	736563	Fuel Pump Assembly	efghijklmop	
784	736578	Extension, Exhaust	bcdefghpq	
	736579	Adapter, Combustion Air Inlet	All except i	Use 711229
785	736595	Bracket, Heater	efghp	
	736598	Thermostat	efghijklmnopqrst	Use 735841
	736598-3	Thermostat	ouvw	Use 735841
786	736604	Housing, Heater	h	
787	736605	Cover, Burner	h	
788	736606	Duct, Combustion Air	h	
789	736611-1	Duct, Air Intake (4 I.D., 92 lg.)	h	
790	736617-4	Nut, Lock	efghnpqrs	
792	736623	Housing, Heater	efgpq	
	736624-1	Heater and Bracket Assembly	ef	ref. only see fig. 49
	736624-2	Heater and Bracket Assembly	p	ref. only see fig. 46
793	736625	Terminal, Female	bcdefghpq	
796	736633	Switch, Overheat	h	
799	736642	Harness, Wiring	mo	Similar to 736496.
800	736646	Shroud, Heater	lm	
801	736647	Bracket, Blower	l	
802	736649	Bracket, Heater	m	
803	736650	Bracket, Heater	m	
804	736652	Shroud, Heater	kot	
	736653	Heater Assembly	mo	ref. only see fig. 57&60
	736654	Blower, Ventilating Air	m	ref. only see fig. 57
805	736655	Exchanger, Heat	mo	736655-2 can be used
806	736655-2	Exchanger, Heat	mo	736655 can be used
	736656-1	Exchanger and Burner Assy (6v)	mo	
	736656-2	Exchanger and Burner Assy (12v)	o	
807	736657-1	Bracket, Blower	m	
808	736657-2	Bracket, Blower	k	
	736665	Screw, No. 8 x 3/8 truss hd type "A"	ns	
809	736667	Screw, No. 8-18 x 1/2	ijlmr	
810	736669	Spacer, Heater Bracket	o	
811	736670	Guard, Thermostat	o	
812	736671	Housing, Ventilating Blower	o	
	736672	Blower, Ventilating Air	o	ref. only see fig. 60
813	736673	Bracket, Heater	o	
814	736674	Elbow, Exhaust	o	
815	736676	Bracket, Blower	o	
816	736677	Motor, Combustion Air	p	Alternate is 736122
817	736678	Motor, Ventilating Air	p	Alternate is 736123
819	736695-1	Vent - burner	nts	
867	736698-3	Nut, No. 8-32 hex	ruvw	
820	736698-6	Nut, No. 10-32 self-locking	ALL	
821	736698-7	Nut, 1/4-20	ALL	
	736739	Elbow, 90° Fuel	gh qs uvw	Use 700832
	736740-1	Clamp	v	
936	736740-9	Clamp	w	
822	736740-10	Clamp	nrstu	
823	736740-13	Clamp	ghqrstuvw	
	736783	Heater and Bracket Assy	n	ref. only see fig. 58
824	736784	Bracket, Heater	ns	
825	736787	Exchanger, Heat	ns	
	736788	Exchanger and Burner Assy	ns	ref. only see fig. 64
826	736789	Housing, Heater	ns	
	736791	Blower, Combustion Air	ns	ref. only see fig. 64
827	736792	Duct, Combustion Air	ns	
828	736793	Guard, Thermostat	n	