

Installation Manual

1955-57 Ford Thunderbird

Compressor Bracket

DOCUMENT #6-147

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PROCEDURES, DURING INSTALLATION:

ALTERNATOR CONVERSION REQUIRED FOR THIS KIT

Typical GM one wire alternator (10SI) commonly found on GM Chevy Trucks

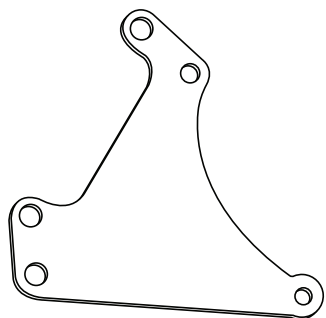
**YOU WILL NEED TO REMOVE SOME COMPONENTS PRIOR
TO INSTALLATION OF THIS NEW COMPRESSOR BRACKET.**

1. Remove fan shroud
2. Drain radiator
3. Remove upper radiator and lower radiator hose and radiator.
4. Loosen and remove the power steering belt , if equipped.
5. Remove fan, fan belt, and fan pulley.
6. Remove generator and generator bracket. Retain upper generator bracket to water pump brace for install.

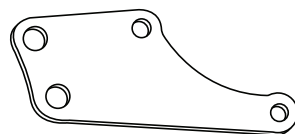
YOU CAN NOW BEGIN THE INSTALLATION...

THESE ARE THE PARTS YOU WILL FIND IN THE BAG KIT

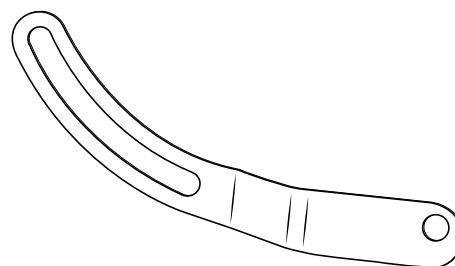
You will use all of these parts and hardware during the next series of installation steps.



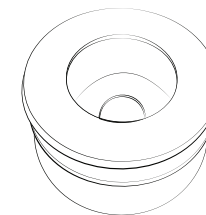
One Front Compressor Bracket
PN#0126-8



One Rear Compressor bracket
PN#0126-7



One Alternator Adjustment Bracket
PN#0126-6



One Alternator Pulley
PN#0126-5



Four 5/16 Lock Washers



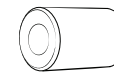
Two 3/8 Lock Washers



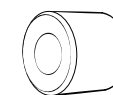
Five 3/8 Lock Nuts



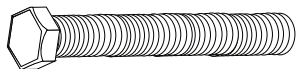
One 3/4 x 3/8 x 3/4 Spacer
#72



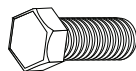
One 3/4 x 7/16 x 1 1/8 Spacer
#78



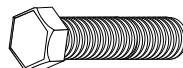
Two 7/8 x 13/32 x 5/8 Spacer
#86



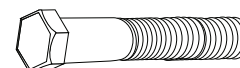
Two 3/8 - x 4 1/2" Bolt



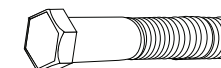
One 3/8 - x 3/4" Bolt



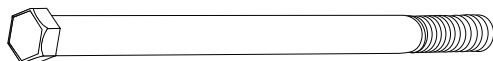
Four 3/8 - x 1 1/2" Bolt



One 5/16 - x 3 1/4" Bolt

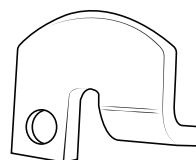


Two 5/16 - x 3" Bolt



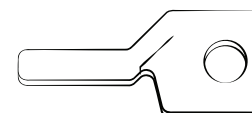
One 5/16 - x 6 1/2" Bolt

Version A

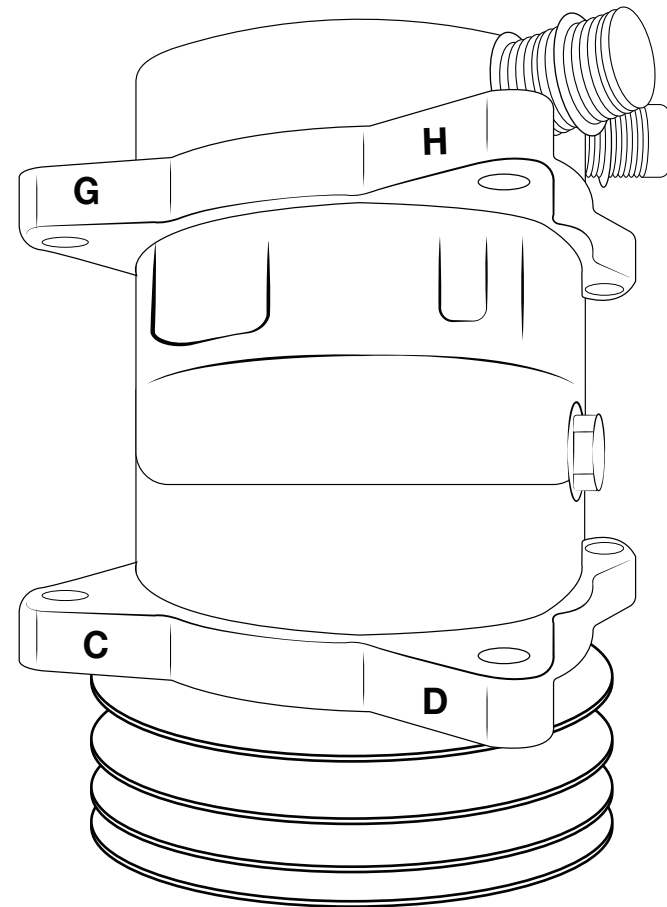
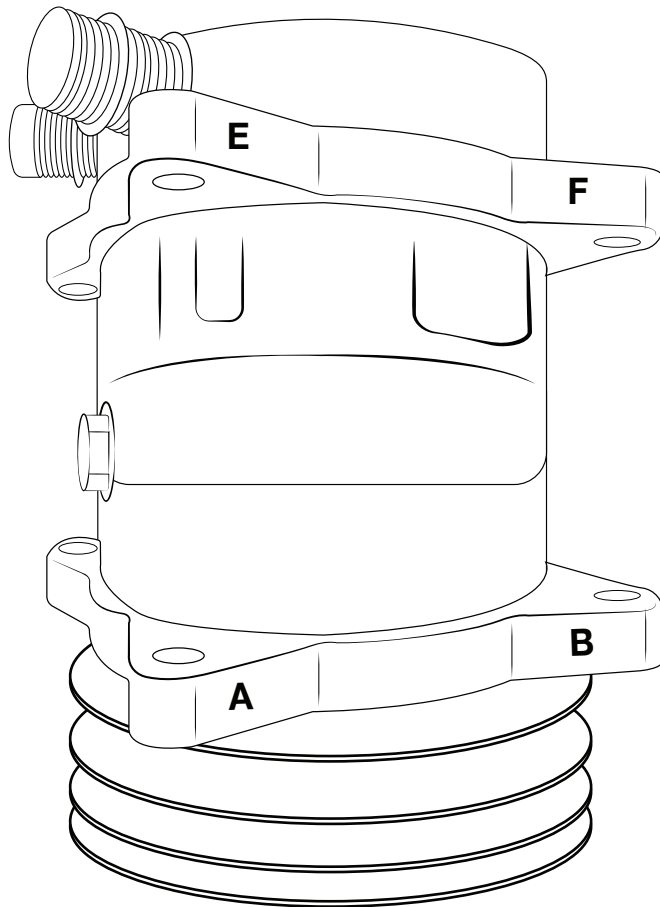


One Top Compressor Bracket
PN#0126-9

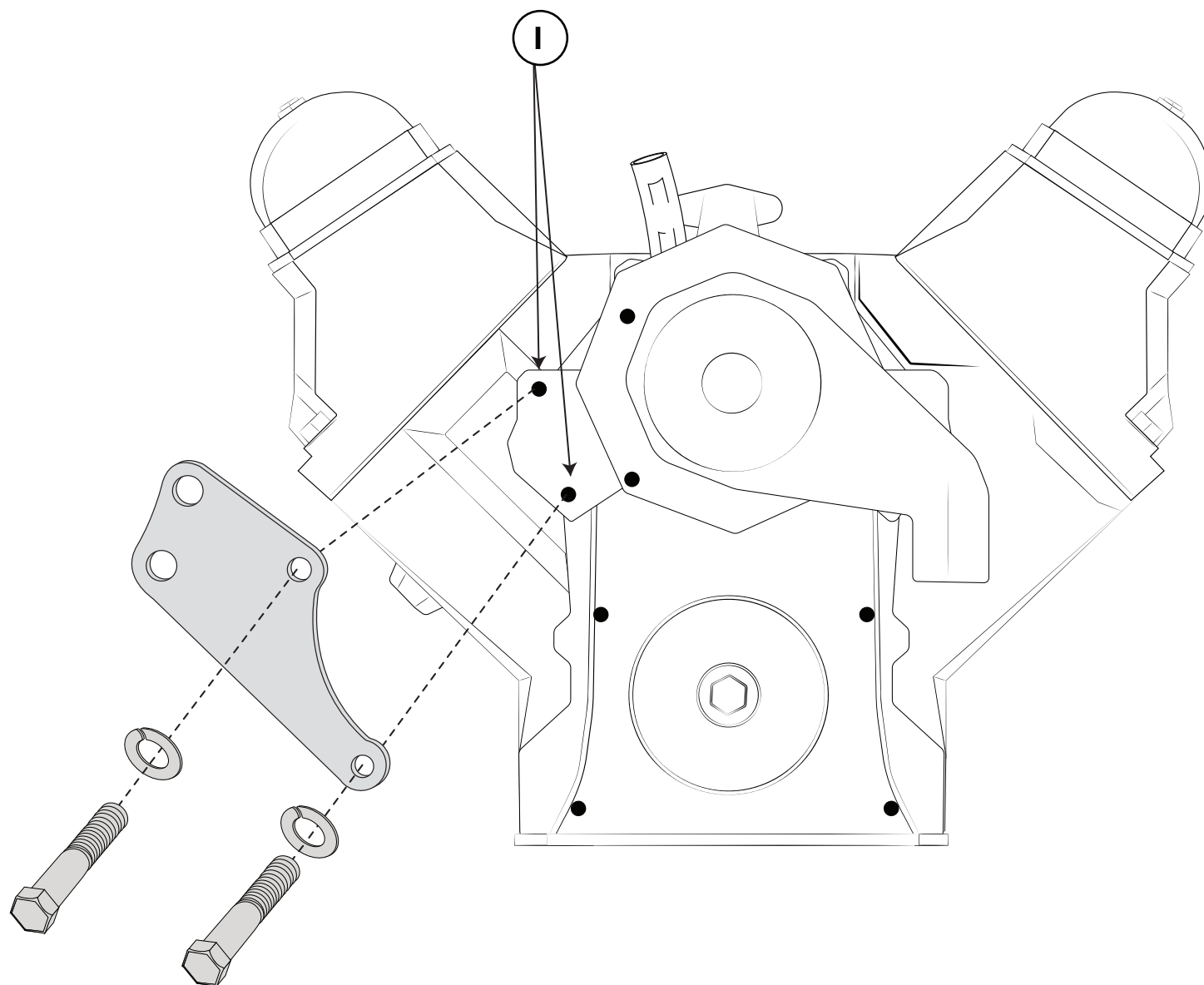
Version B



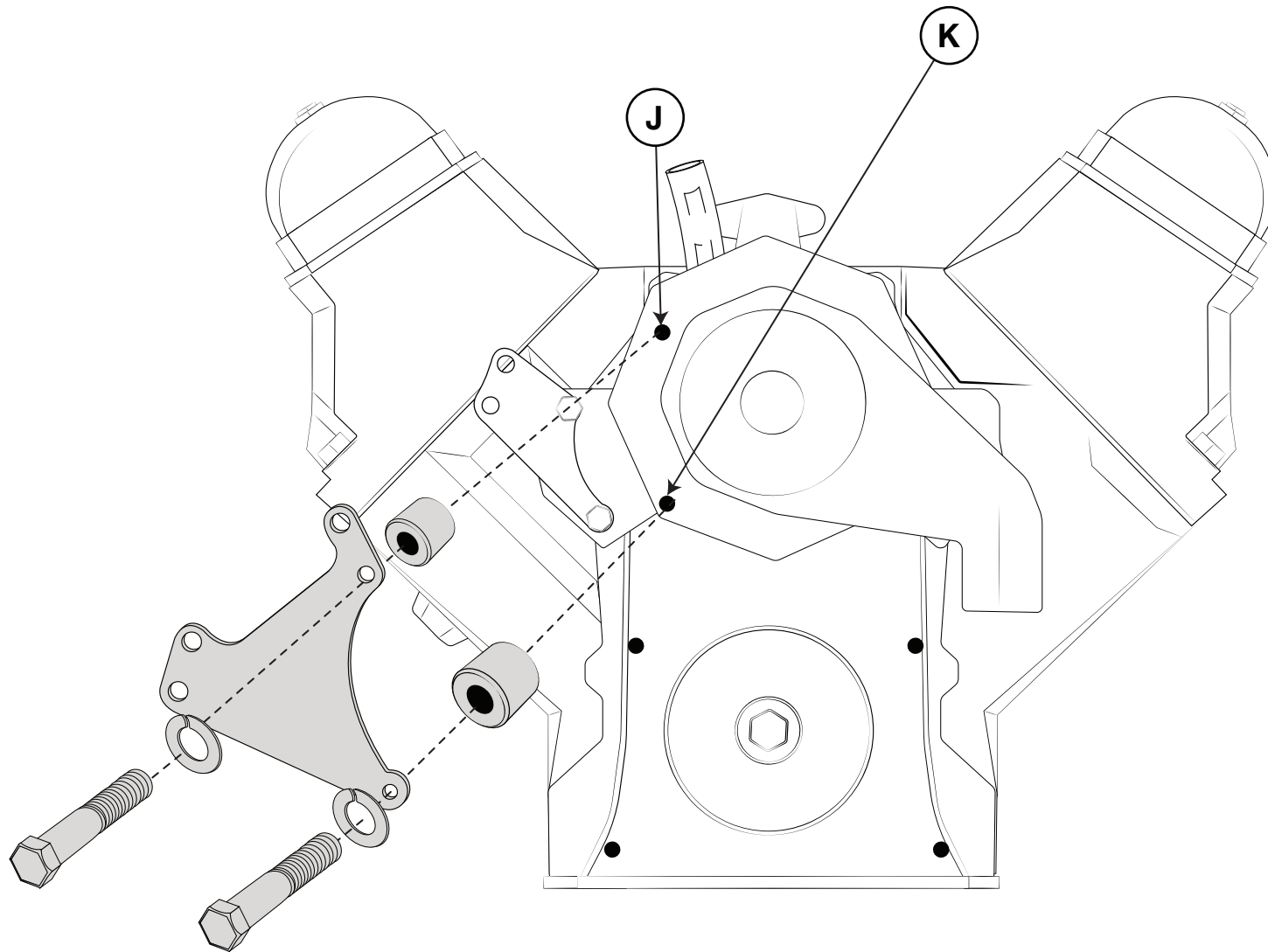
One Rear Upper
Compressor Brace
PN#0126-4



Your compressor has letters stamped into each ear to indicate which compressor ear is being used during the installation.



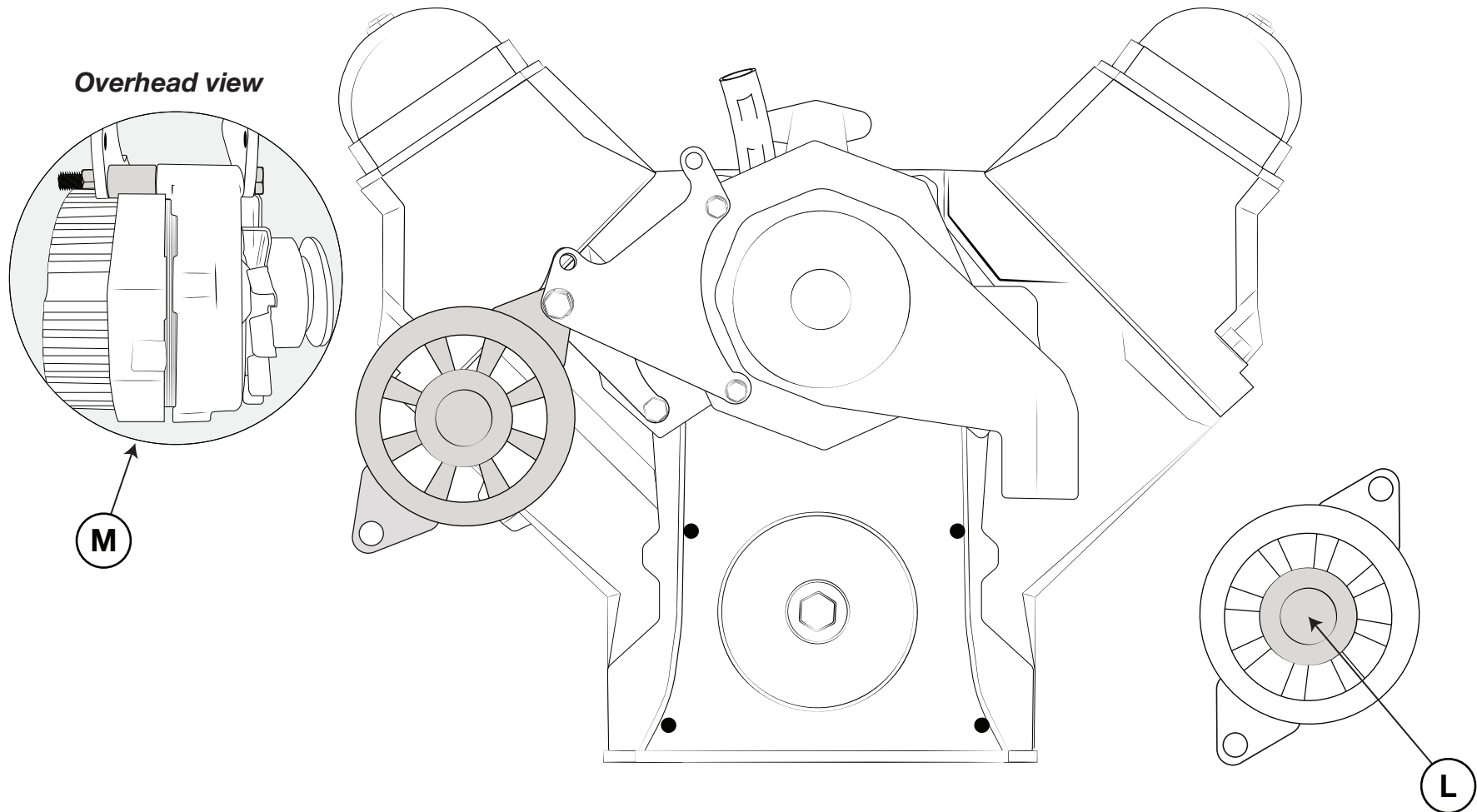
- (I) Remove existing bolts. Install Rear Compressor Bracket PN#0126-7 to engine timing cover.
Use (2) new (5/16 - x 3") bolts and (2) 5/16 Lock Washers supplied. Do not tighten bolts completely.



(J) Remove existing bolts. Install Front Compressor Bracket **PN#0126-8** to water pump brace at upper water pump position using new (1) (5/16 - x 6 1/2") bolt, #72 Spacer and (1) 5/16 Lock Washer supplied. Leave loose at this time.

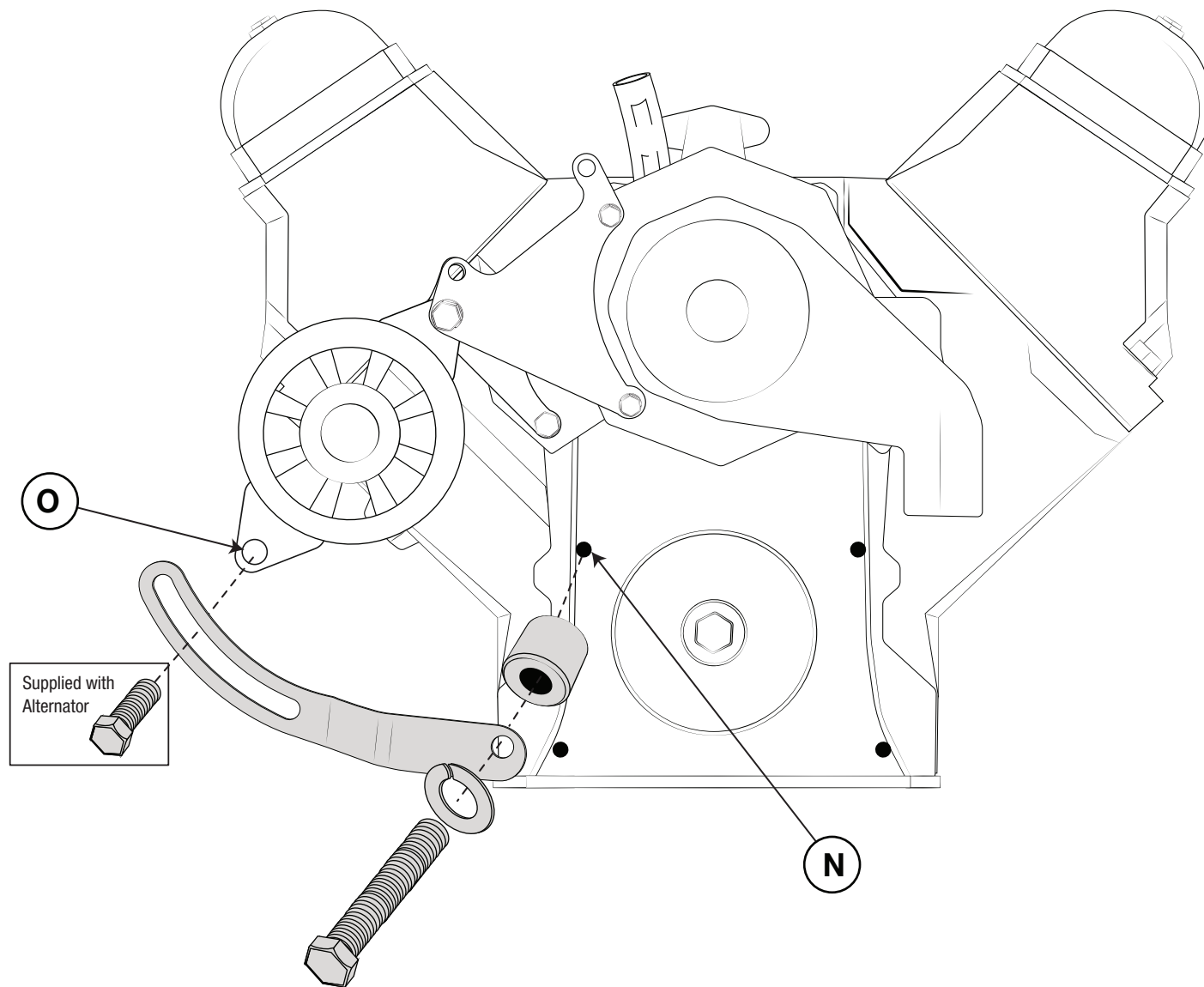
(K) Remove existing bolts. Using (1) 5/16 - x 3 1/4" Bolt, # 86 Spacer and (1) 5/16 lock washer attach Front Compressor Bracket **PN#0126-8** to lower left water pump position. Leave loose at this time.

Typical GM one wire alternator (10SI) commonly found on GM Chevy Trucks



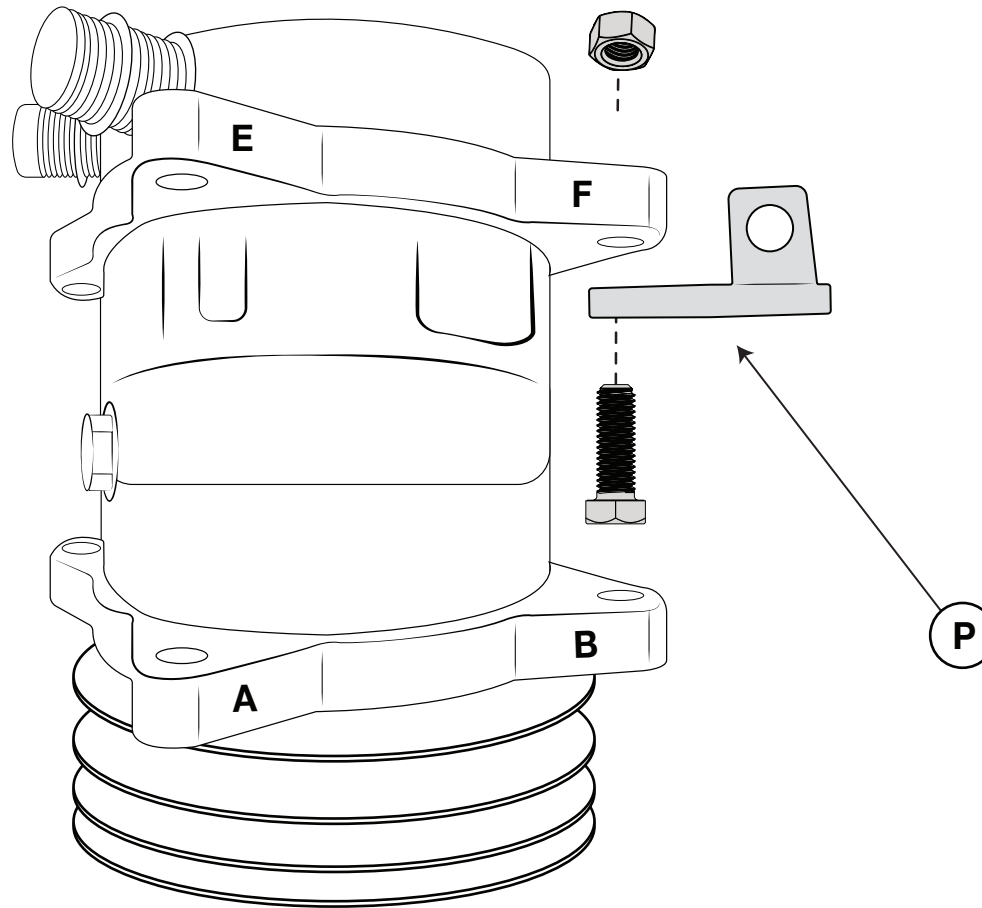
(L) Prior to installing alternator, Remove factory pulley and install NEW pulley PN#0126-5 with original hardware.

(M) Reference overhead view on how to attach Alternator. Attach Alternator to Compressor Bracket PN#0126-7 & PN#0126-8 using
(1) 3/8 - x 4 1/2" Bolt, #78 Spacer, and (1) Nylock nut.



(N) Install alternator adjustment bracket PN#0126-6. Use (1) 3/8 - x 4 1/2" Bolt, 3/8 lack washer (1) #86 spacer to top hole on timing cover.

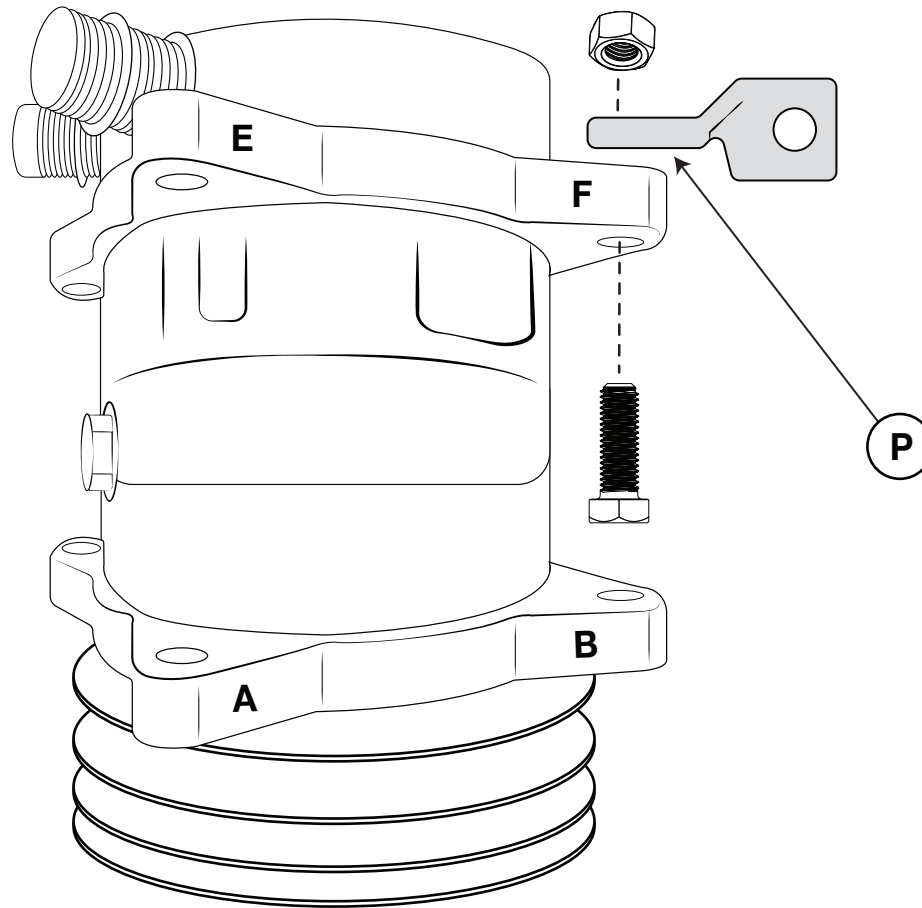
(O) On the adjustment end use original alternator bolt to attach to alternator.



We are going to attach a couple brackets to the compressor prior to mounting to the engine.

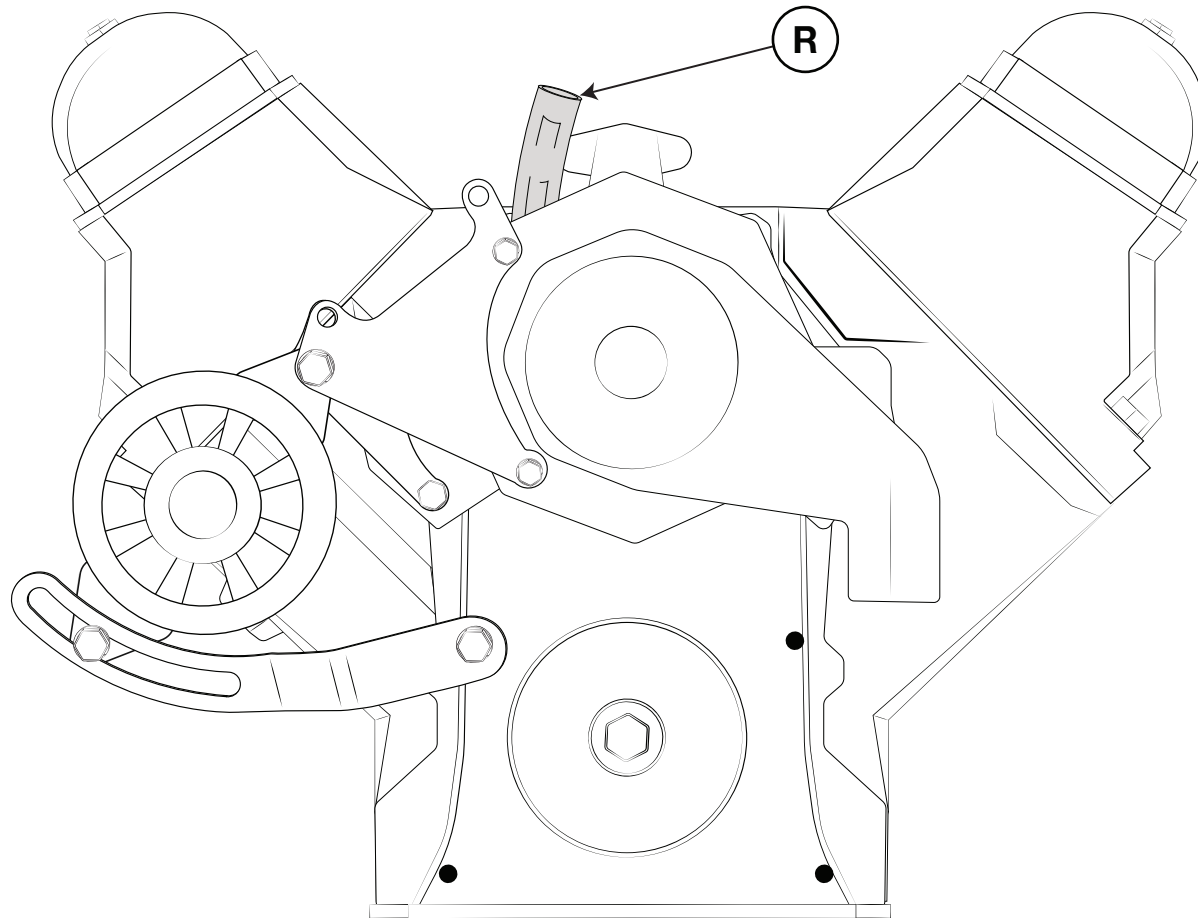
(P) Attach Top Compressor Bracket PN#0126-9 to compressor back/bottom compressor ear **(F)** with (1) 3/8 - x 1 1/2" Bolt and (1) 3/8 Lock Nut.

Leave loose at this time.

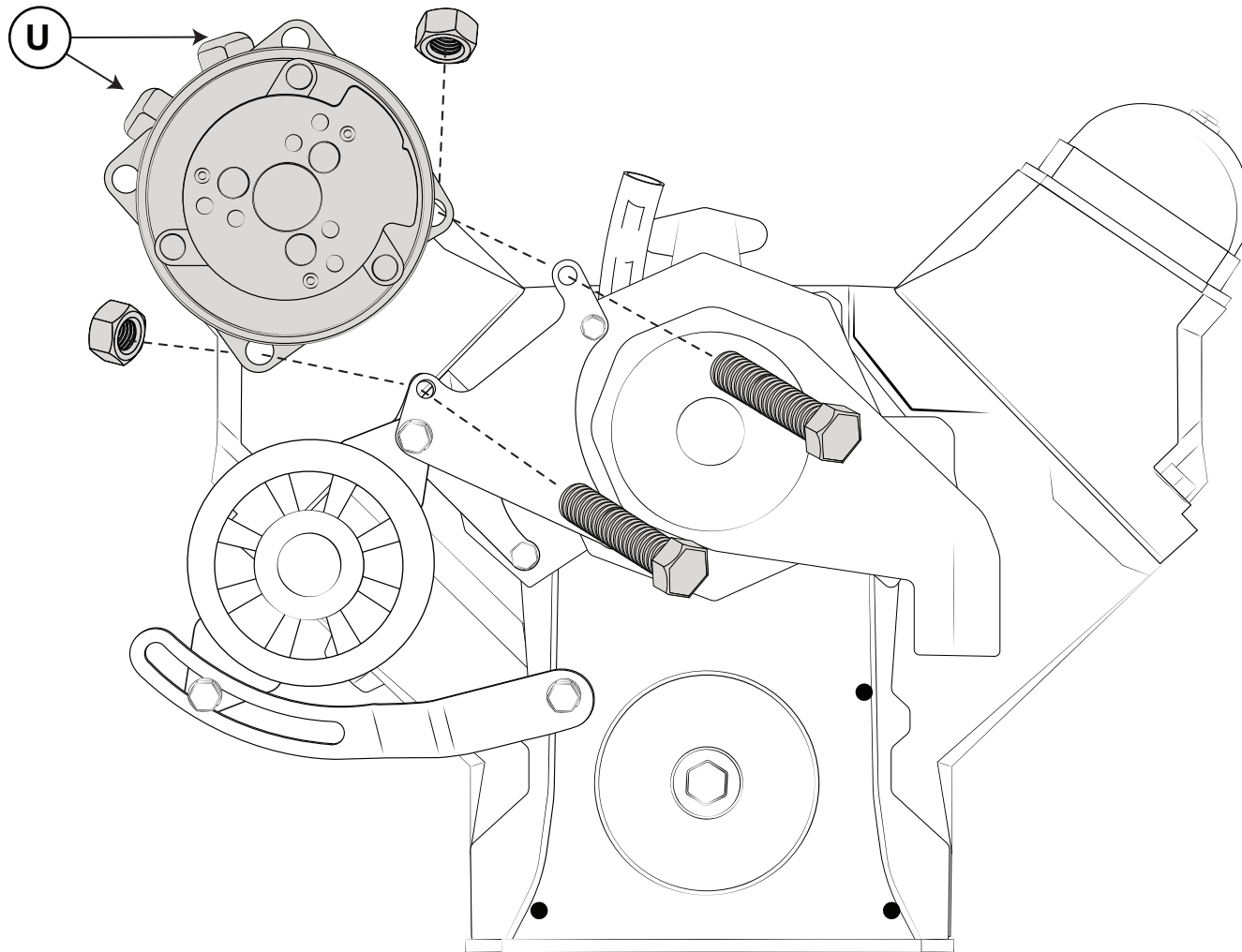


We are going to attach a couple brackets to the compressor prior to mounting to the engine.

(P) Attach Rear Upper Compressor Brace PN#0126-4 to compressor back/bottom compressor ear **(F)** with (1) 3/8 - x 1 1/2" Bolt and (1) 3/8 Lock Nut. Leave loose at this time.



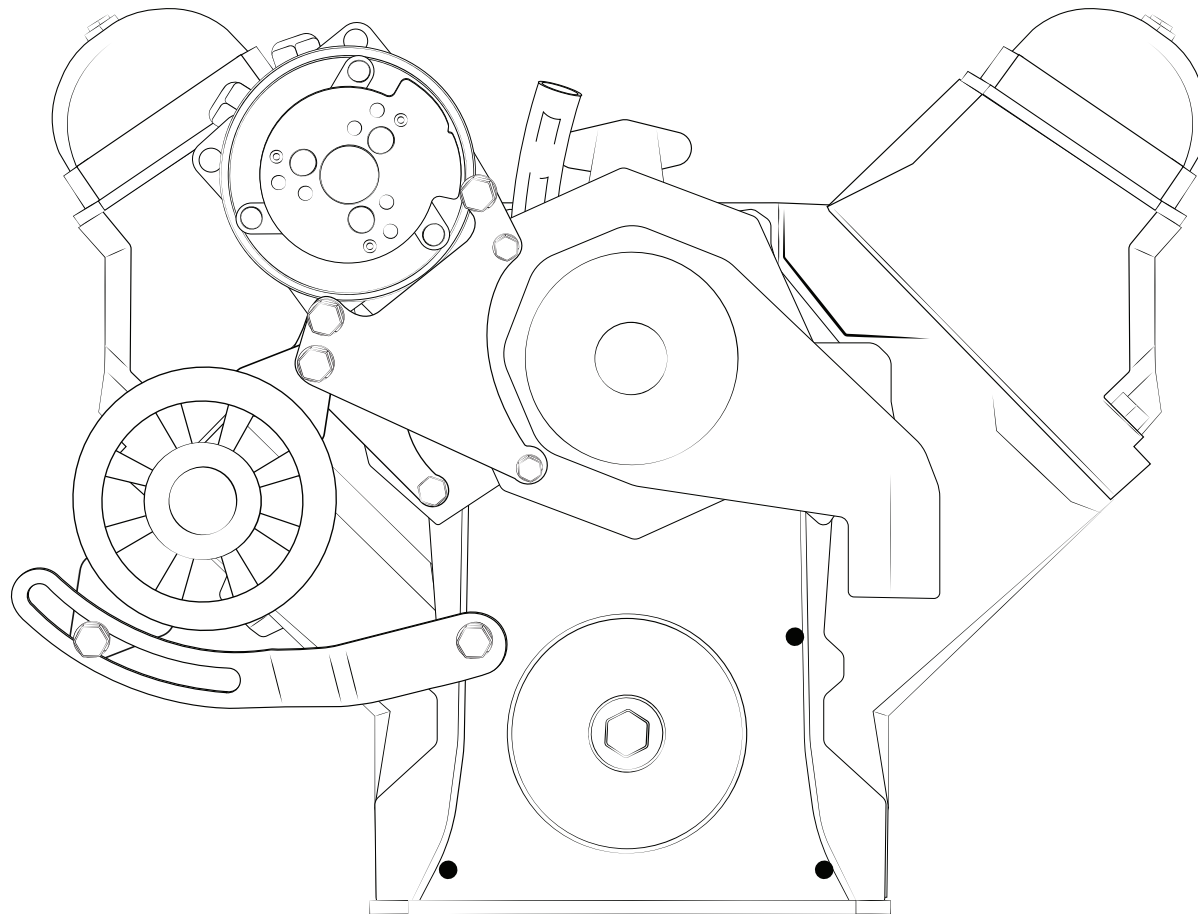
(R) Rotate water pump heater fitting to point towards the oil fill pipe.



(T) Attach compressor to bracket PN#0126-8 using (1) 3/8 - x 1 1/2" Bolt and (1) 3/8 Nylock Nuts to secure to compressor ear **(C)**.

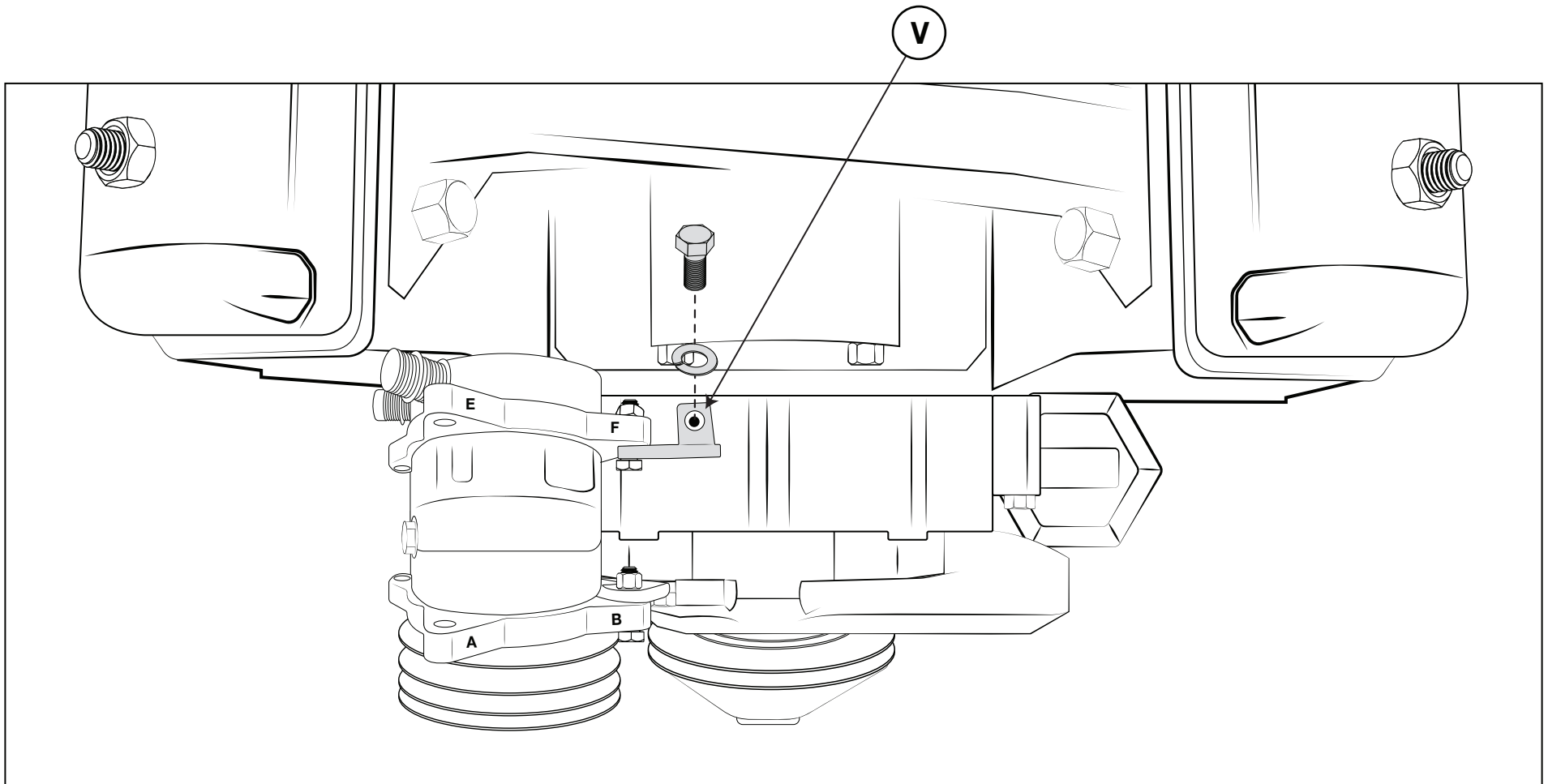
Leave Loose at this time. Use (1) 3/8 - x 1 1/2" Bolt and (1) 3/8 Nylock Nut to secure compressor ear **(G)**.

(U) Notice compressor **TOP** ports of the compressor will be angle towards the passenger side.



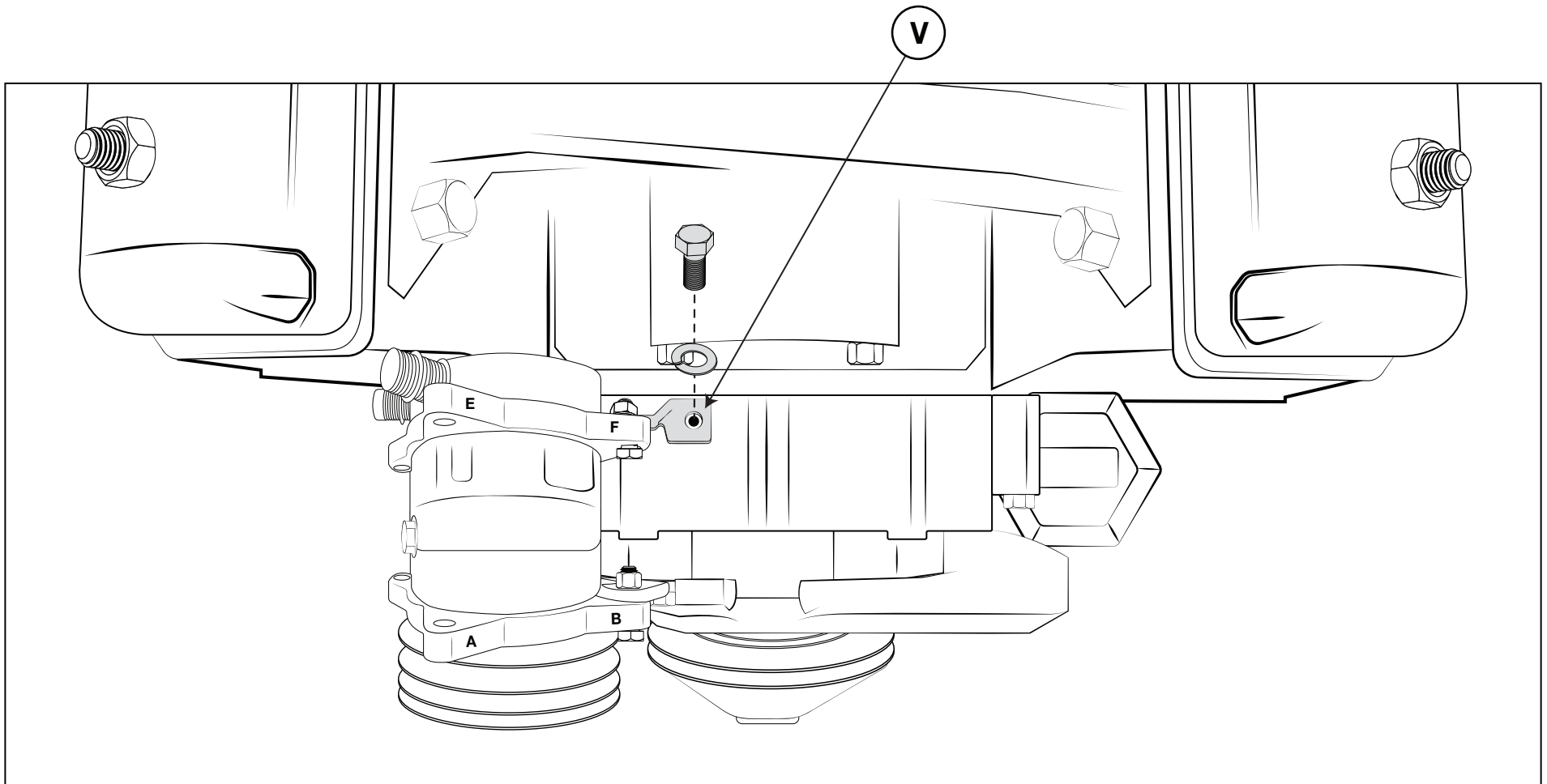
The installation of the compressor should look like as shown in the picture above. All bolts should be loose at this time.

We are going to move towards a top view for the last step.



(V) Once the compressor is mounted, the engine back/bottom bracket **PN#0126-9** will be used as a template on the timing cover. Using the Rear Upper Compressor Brace, drill timing cover using hole in bracket **PN#0126-9** to mark center of hole.

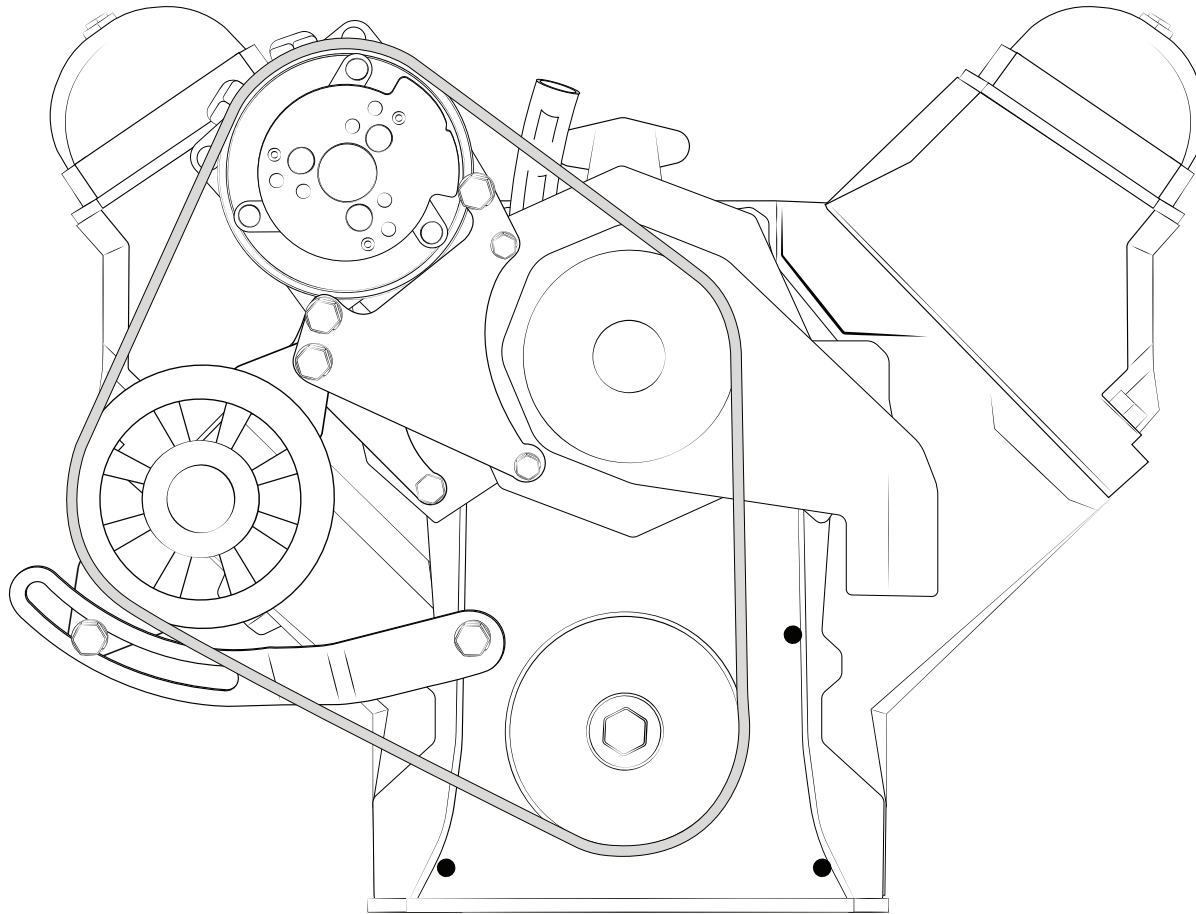
Drill a 3/4" deep hole using a 5/16" drill bit. Tap with 3/8"-16NC and install (1) (3/8" x 3/4") *bolt* and (1) 3/8 *Lock Washer* supplied. Tighten upper rear compressor brace **PN#0126-9** evenly.



(V) Once the compressor is mounted, the engine back/bottom bracket **PN#0126-4** will be used as a template on the timing cover. Using the Rear Upper Compressor Brace, drill timing cover using hole in bracket **PN#0126-4** to mark center of hole.

Drill a 3/4" deep hole using a 5/16" drill bit. Tap with 3/8"-16NC and install (1) (3/8" x 3/4") *bolt* and (1) 3/8 *Lock Washer* supplied. Tighten upper rear compressor brace **PN#0126-4** evenly.

At this time all your brackets should be attached and the compressor mounted. Tighten all bolts at this time.



Install A/C (alternator) belt Gate #9470, #9476 or similar belt loosely. Slide fan pulley into position. '57 pulley suggested due to 55-56 pulley design. Install and tighten fan and fan spacer. Tighten belt and secure alternator. Reinstall power steering belt, if equipped. Reinstall heater return hose. At this time tighten up all the bolts. Your installation is now complete.

New A/C System Preparation... A MUST READ!

Please read through these procedures before completing this new A/C system charging operation.

A licensed A/C technician should be utilized for these procedures to insure that your new system will perform at it's peak, and that your compressor will not be damaged.



- 1) Your radiator/cooling system is an integral part of your new system. Please insure that you have a 50/50 mix of distilled water and antifreeze. The heater coil **MUST** be purged (cycle heater control valve) to make sure no water, without antifreeze, is in the heater coil before you charge the A/C system.
- 2) Evacuate the system for 45 minutes (minimum).
- 3) **Your new compressor MUST be hand-turned 15-20 revolutions before and after charging with liquid. Failure to do this may cause the reed valves to become damaged** (this damage is NOT covered by your warranty).
- 4) Your new system requires 134a refrigerant. It will require 1.5 lbs (or 24 oz).
- 5) Your new compressor comes charged with oil - NO additional oil is needed.
- 6) Insure that the new belt is tight.
- 7) **DO NOT CHARGE SYSTEM WITH LIQUID REFRIGERANT!**

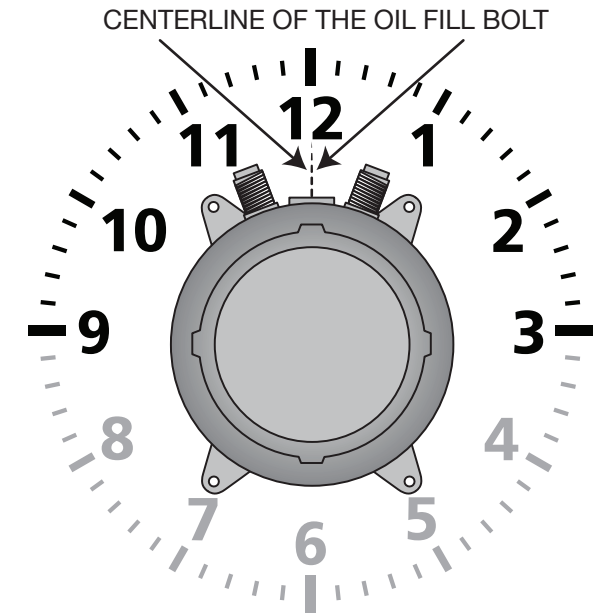
RECOMMENDED TEST CONDITIONS: (After system has been fully charged and tested for basic operation)

- Determine the temperature outside of the car
- Connect gauges or service equipment to high/low charging ports
- Place blower fan switch on medium
- Close all doors and windows on vehicle
- Place shop fan directly in front of condenser
- Run engine idle up to approx. 1500 rpm

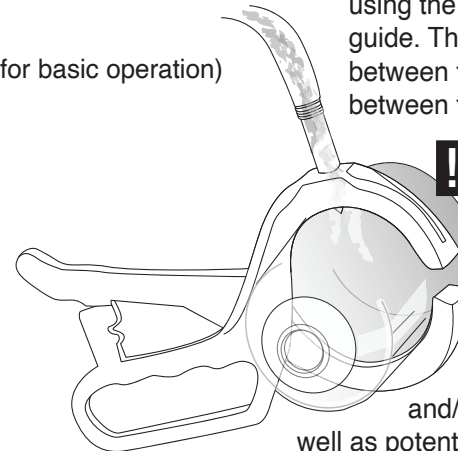
ACCEPTABLE OPERATING PRESSURE RANGES:

1. HIGH-SIDE PRESSURES (150-275 PSI)
2. LOW-SIDE PRESSURES (10-25 PSI in a steady state)

Readings above are based on an ambient temperature of 90° with an adequate airflow on condenser



CAUTION! When mounting your compressor and/or adjusting the belt use caution. Mount by using the centerline of the oil fill plug as your guide. The compressor can **ONLY** be mounted in between the 9 to 3 positions. **DO NOT** mount in between the 4 to 8 positions.



Do NOT tilt, shake or turn refrigerant can upside-down OR use a charging station to install refrigerant while the engine is running. Doing so will direct liquid refrigerant into the compressor piston chamber, causing damage to reed valves and/or pistons and/or other components, as well as potentially seizing the compressor. Allow a minimum of 30 minutes for liquid to "boil off." You must hand turn the compressor hub (not the pulley) a minimum of 15 complete revolutions prior to starting the engine with the clutch engaged.

and/or pistons and/or other components, as well as potentially seizing the compressor. Allow a minimum of 30 minutes for liquid to "boil off." You must hand turn the compressor hub (not the pulley) a minimum of 15 complete revolutions prior to starting the engine with the clutch engaged.

TROUBLESHOOTING GUIDE

TEST CONDITIONS USED TO DETERMINE SYSTEM OPERATION

(THESE TEST CONDITIONS WILL SIMULATE THE AFFECT OF DRIVING THE VEHICLE AND GIVE THE TECHNICIAN THE THREE CRITICAL READINGS THAT THEY WILL NEED TO DIAGNOSE ANY POTENTIAL PROBLEMS).

- B. CONNECT GAUGES OR SERVICE EQUIPMENT TO HIGH/LOW CHARGING PORTS.
- C. PLACE BLOWER FAN SWITCH ON MEDIUM.
- D. CLOSE ALL DOORS AND WINDOWS ON VEHICLE.
- E. PLACE SHOP FAN IN FRONT OF CONDENSER.
- F. RUN ENGINE IDLE UP TO 1500 RPM.

ACCEPTABLE OPERATING PRESSURE RANGES (R134A TYPE)

- 1. HIGH-SIDE PRESSURES (150-275 PSI) **Note- general rule of thumb is two times the ambient (daytime) temperature, plus 15-20%.*
- 2. LOW-SIDE PRESSURES (10-25 PSI in a steady state).

CHARGE AS FOLLOWS: R134A = 24 OZ.
NO ADDITIONAL OIL IS NECESSARY IN OUR NEW COMPRESSORS.

TYPICAL PROBLEMS ENCOUNTERED IN CHARGING SYSTEMS

NOISY COMPRESSOR. A noisy compressor is generally caused by charging a compressor with liquid or overcharging

- A. If the system is overcharged both gauges will read abnormally high readings. This is causing a feedback pressure on the compressor causing it to rattle or shake from the increased cylinder head pressures. System must be evacuated and re-charged to exact weight specifications.
- B. Heater control valve installation - Installing the heater control valve in the incorrect hose. Usually when this occurs the system will cool at idle then start to warm up when raising the RPM's of the motor. THE HEATER CONTROL IS A DIRECTIONAL VALVE; MAKE SURE THE WATER FLOW IS WITH THE DIRECTION OF THE ARROW. As the engine heats up that water transfers the heat to the coil, thus overpowering the a/c coil. A leaking or

faulty valve will have a more pronounced affect on the unit's cooling ability. Installing the valve improperly (such as having the flow reversed) will also allow water to flow through, thus inhibiting cooling. Check for heat transfer by disconnecting hoses from the system completely. By running down the road with the hoses looped backed through the motor, you eliminate the possibility of heat transfer to the unit.

- C. Evaporator freezing - Freezing can occur both externally and internally on an evaporator core. External freeze up occurs when the coil cannot effectively displace the condensation on the outside fins and the water forms ice (the evaporator core resembles a block of solid ice), it restricts the flow of air that can pass through it, which gives the illusion of the air not functioning. The common cause of external freezing is the setting of the thermostat and the presence of high humidity in the passenger compartment. All door and window seals should be checked in the event of constant freeze-up. A thermostat is provided with all units to control the cycling of the compressor.
- D. Internal freeze up occurs when there is too much moisture inside the system. The symptoms of internal freeze up often surface after extended highway driving. The volume of air stays constant, but the temperature of the air gradually rises. When this freezing occurs the low side pressure will drop, eventually going into a vacuum. At this point, the system should be checked by a professional who will evacuate the system and the drier will have to be changed.
- E. Inadequate airflow to condenser - The condenser works best in front of the radiator with a large supply of fresh air. Abnormally high pressures will result from improper airflow. Check the airflow requirements by placing a large capacity fan in front of the condenser and running cool water over the surface. If the pressures drop significantly, this will indicate the need for better airflow.
- F. Incorrect or inadequate condenser capacity - Incorrect condenser capacity will cause abnormally high head pressures. A quick test that can be performed is to run cool water over the condenser while the system is operating, if the pressures decrease significantly, it is likely a airflow or capacity problem.
- G. Expansion valve failure - An expansion valve failure is generally caused by dirt or debris entering the system during assembly. If an expansion valve fails it will be indicated by abnormal gauge readings. A valve that is blocked will be indicated by high side that is unusually high, while the low side will be unusually low or may even go into a vacuum. A valve that is stuck open will be indicated by both the high and low pressures rising to unusually high readings, seeming to move toward equal readings on the gauges.
- H. Restrictions in system - A restriction in the cooling system will cause abnormal readings on the gauges. A high-side restriction (between the compressor and the drier inlet) will be indicated by the discharge gauges reading excessively high. These simple tests can be performed by a local shop and can help determine the extent of the systems problem.

Trouble Shooting Your Classic Auto Air A/C System

PROBLEM: system is not cooling properly

ISSUE: cold at idle, warmer when raising engine RPM's

Make sure the Water Valve is positioned correctly

The water valve is a directional valve and should be installed with the arrow pointing towards the water pump, it should be connected to the heater hose that runs from the heater core to the water pump. If the water valve is connected to the incorrect hose it allows water to circulate through the system via the heater core over powering the cooling effect of the A/C coil, (normally the air conditioning is functioning properly).

Step 1: Check placement of the water valve, correct if needed. (In some cases changing the location of the water valve may not fix the above problem.) Continue to next step.

Step 2 If changing the location of the water valve does not rectify the issue, then possibly the water valve is permanently damaged and may need to be replaced. To check the integrity of the water valve completely remove the water hoses for the heater core and "loop" together. (This will remove the heater system completely from the possibilities) If the system now cools, replace the water valve

Verify Adequate Air Flow to Condenser

For an air conditioning system to function properly there has to be adequate airflow across the condenser. The function of the condenser is to dissipate heat, without proper airflow your system will not cool correctly in the cabin of your vehicle.

Step 1: connect gauges to a/c hoses. The pressures should be: with the ambient temp is 90, low side pressures should be between 10-25 psi, high side pressures should be between 150-275 psi

Step 2: IF the low side pressures are normal and the high side pressures are high then there might be an airflow issue, continue to next step.

To test air flow to Condenser do the following three tests:

1. Place a piece of paper on the condenser with the car in idle and see if paper is held in place.
2. With car in idle, attach gages, and place a large capacity fan in front of

the condenser. What happens to the pressures?

3. With car still in idle and gages attached, pour water down the front of the condenser. What happens to the pressures?

If the paper is held in place you are at least getting some air flow. If the high side decreases during test 2 & 3 then your condenser is not getting enough air which is causing your system to not cool properly. To correct this issue you will need a more powerful mechanical fan.

Step 3: Confirm correct Refrigerant charge in System

All of our systems should be charged with 24 oz or 1.5 lbs of R134A Refrigerant only. If overcharged you will need to evacuate the system and recharge with the correct amount.*

What measurements mean:

Low Temp and High Pressure seem to be equal...

You have a malfunctioning expansion valve that is stuck open.

High Side is extremely high and Low Side is extremely low (possibly into vacuum)...

There is a blockage in the system. Remove hoses and blow compressed air through in both directions. If pressures don't change its possible that your expansion valve is stuck closed and would have to be replaced.

*Compressor Concerns:

This is often misdiagnosed as a problem for the system not cooling properly. If you have a noisy compressor it is due to improper charging of refrigerant. An overcharged (more than 24 oz or 1.5 lbs R134A) compressor can cause rattling. If charged with pure liquid there is a high probability you have bent reed valves that are causing tapping sound.

SCAN QR code
with your mobile camera

Get the technical support you want the moment you need it, with no wait times. Simply **SCAN** the **QR code** and be directly taken to our support section to troubleshoot all things A/C.

