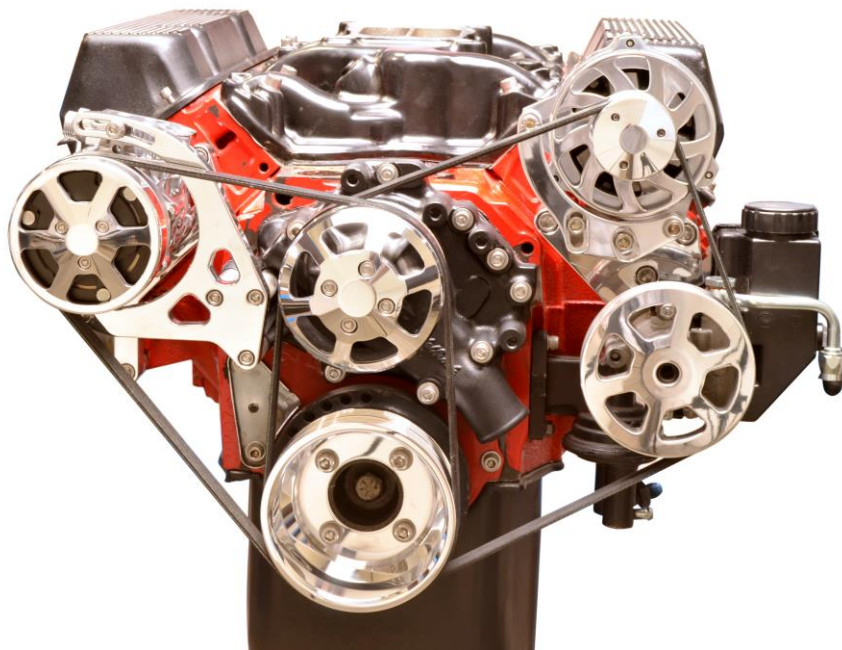




**S.drive**

## **Cleveland Ford (289-351C)**



## **INSTALLATION INSTRUCTIONS**

### **Before beginning the installation, please note:**

- Please read all of the instructions thoroughly before beginning the installation. If you do not feel that you have the mechanical aptitude to complete the job in a safe manner, Eddie Motorsports strongly recommends that you employ the services of a knowledgeable technician to perform the installation.
- Your car must be equipped with an electric cooling fan(s). The S.drive kit will not work with a mechanical fan.
- If you have not done so already, verify that the S.drive will fit in your vehicle. Dimensions are available on [www.eddiemotorsports.com](http://www.eddiemotorsports.com). There are no returns for kits that have been installed.
- The S.drive must be used in conjunction with a four hole damper
- To prevent galling of stainless steel fasteners, apply anti-seize compound to any threads not calling for other sealer. Fasteners that have seized will not be warranted.
- After an initial run-in period of the engine, it is the installer's responsibility to retighten all fasteners and check belt tension.

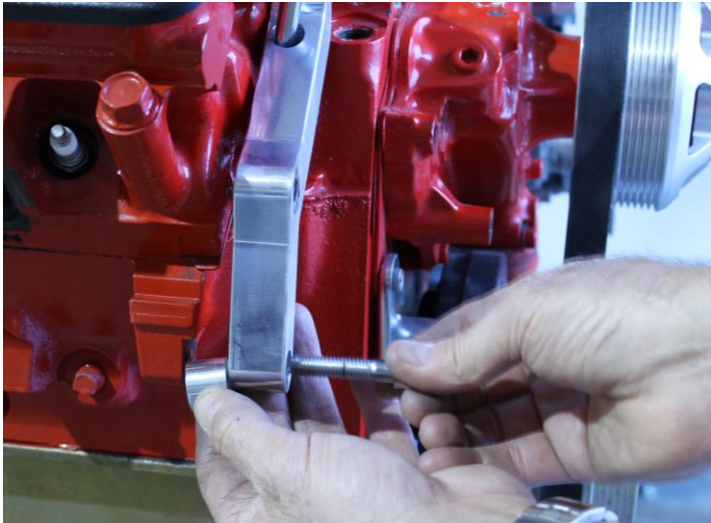
### **1) Engine Prep**

1. If the engine is in your car, disconnect the battery
2. Remove your existing accessories and brackets.
3. Before installing and fasteners into your block, clean all of the threads using a thread chaser. Do not use a tap.

## 2) Install the Rear Compressor Mount



1. If present, remove your dipstick and tube and slide it through the hole in the bracket.



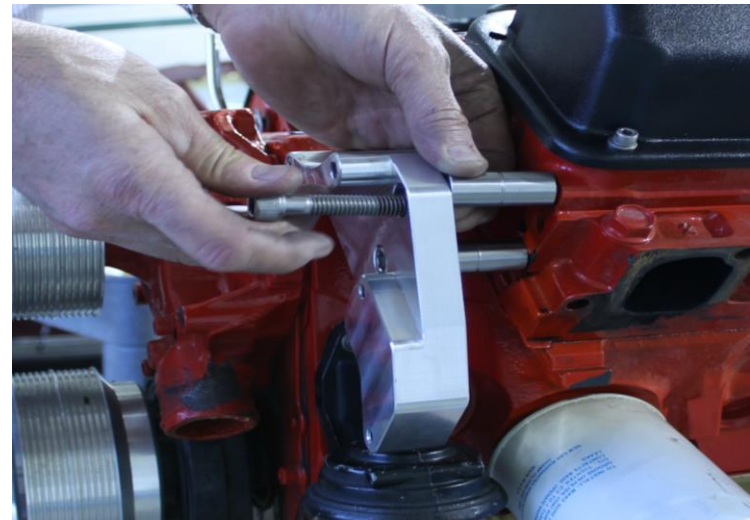
2. Using 1) 3/8-16 x 1-3/4" socket cap screw and 1) .670" long spacer, attach the bottom of the bracket to the block. Do not tighten at this point. Use 1) 7/16-14 X 1" socket cap screw to fasten the top of the bracket to the cylinder head. Tighten both bolts completely

## 3) Install the Crank & Water Pump Pulleys



1. Use 4) 3/8-24 X 1" socket cap screws and 4) beveled Bellville washers to attach the crank pulley. Make sure that it seats completely in the recess on the balancer. Coat all stainless steel fasteners liberally with anti-seize and tighten thoroughly.
2. Use 4) 5/16-24 X 1 1/2" socket cap screws to install the water pump pulley. Apply Loctite to the threads and tighten fully while using caution to prevent over tightening.

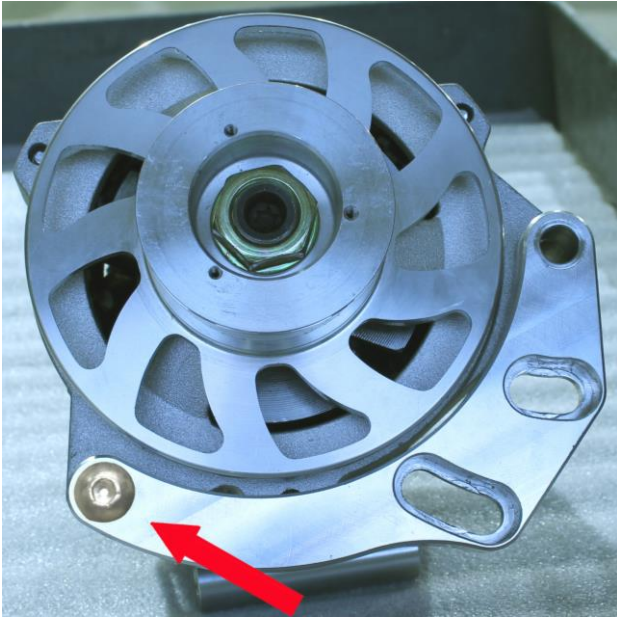
## 4) Install the Rear Alternator Bracket





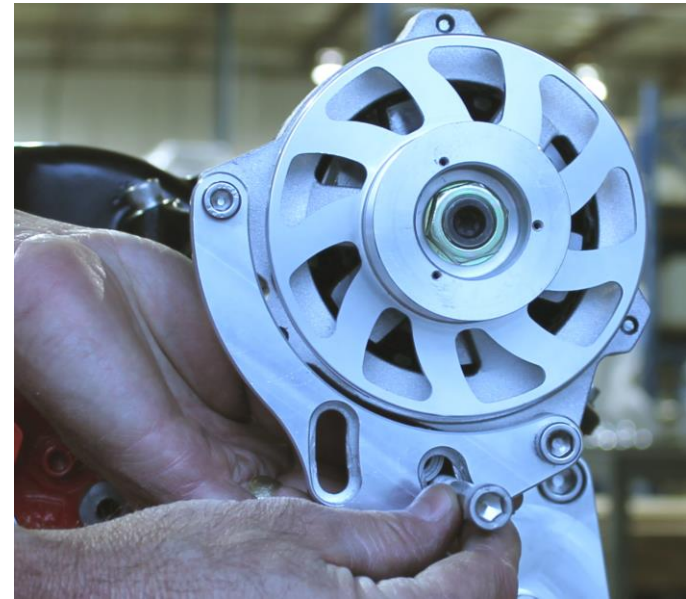
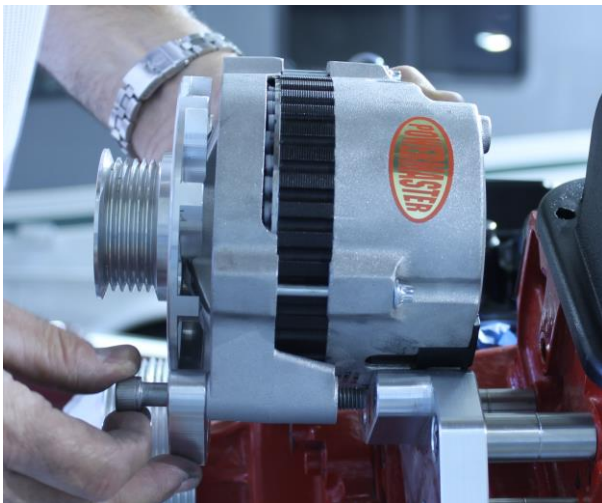
1. Using 4) 1-3/4" spacers between the bracket and the block, attach the bracket using 4) 7/16-14 X 2-1/2" socket caps screws. Coat all stainless steel fasteners liberally with anti-seize and tighten thoroughly.

## 5) Install the Alternator



1. Use 1) 8MM-1.25 30MM button head bolt to attach the alternator adjusting bracket to the alternator. Use anti-seize but don't tighten yet.

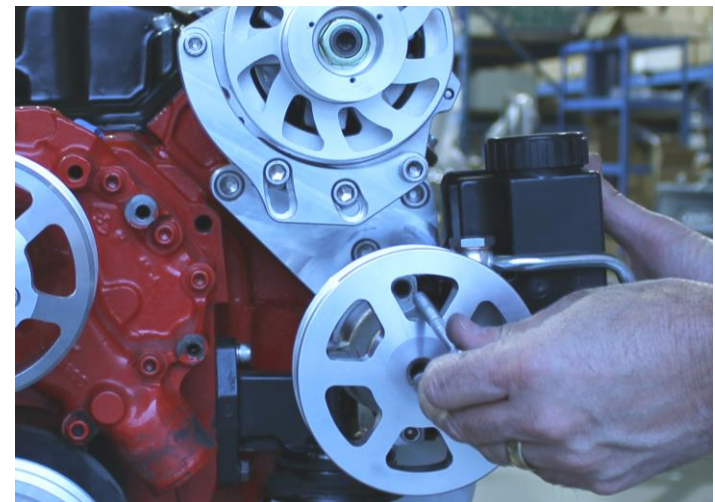
2. Using 1) 3/8-16 X 3-1/4" socket cap screw and 1) AN washer, attach the alternator to the rear bracket. Use anti-seize on the threads but do not fully tighten at this point.



2. Use 2) 2" spacers between the rear bracket and adjusting bracket, apply anti-seize and fasten with 2) 3/8-16 X 2-3/4" socket caps screws. Do not tighten yet.

**NOTE:** If your kit was purchased with a Fusioncoat or Anodized finish, you must run a separate ground wire from the alternator to the engine block or cylinder head. Use the threaded 8MM X 1.25 hole on the back of the alternator case to ground. Reference the Power Master installation instructions for additional wiring details.

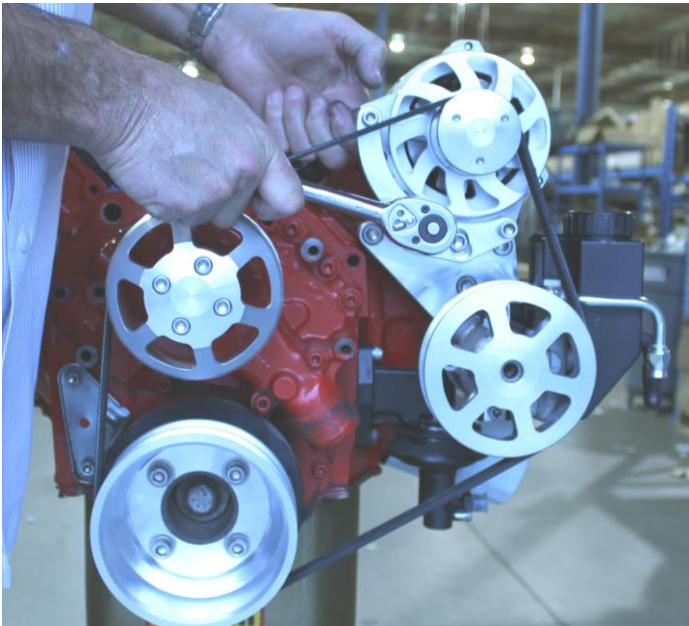
## 6) Install the Power Steering Pump



1. If you are using a power steering pump with an attached reservoir, install the hardline into the pump. Do not tighten as you will need to remove it once you have measured for your power steering line length.
2. Use 2) 5/16-18 X 3" socket caps screws and 5/16 lock washers to fasten the power steering pump to the bracket. Remember to apply anti-seize to the threads and tighten thoroughly.

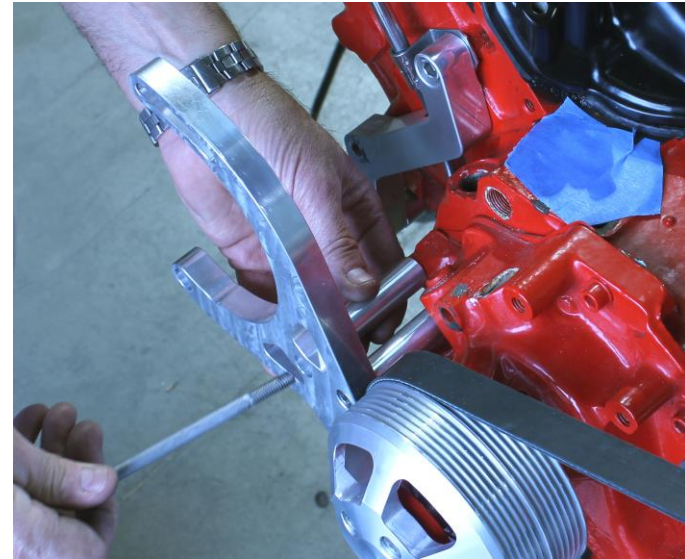
**WARNING!** Do not start the engine until all power steering hoses are permanently installed and the power steering system is filled with fluid. Running the pump dry will void the warranty. See the enclosed instructions for details on bleeding the power steering system.

## 7) Install the Alternator/Power Steering Belt



1. Install belt #K060478 around the water pump, crank, power steering and alternator pulleys.
2. Lift up on the alternator until the belt is properly tensioned. Be sure to fully tighten all of the previously installed bolts on the adjusting bracket.

## 8) Install the Air Conditioning Compressor

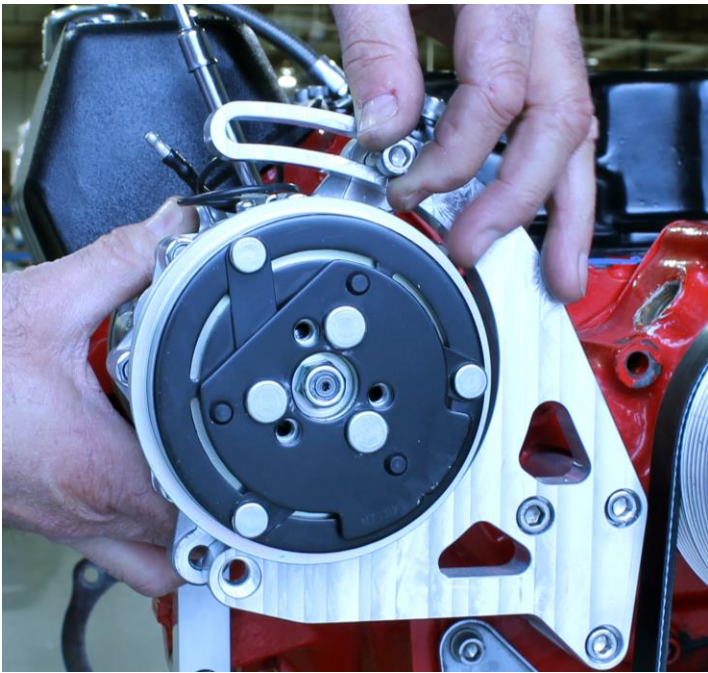


1. Coat the threads of 1) 5/16-18 X 4-3/4" socket cap screw with RTV sealer and insert into hole A on the air compressor bracket. Use 1) 2-5/8" spacer on the bolt, behind the bracket, and thread into the block.

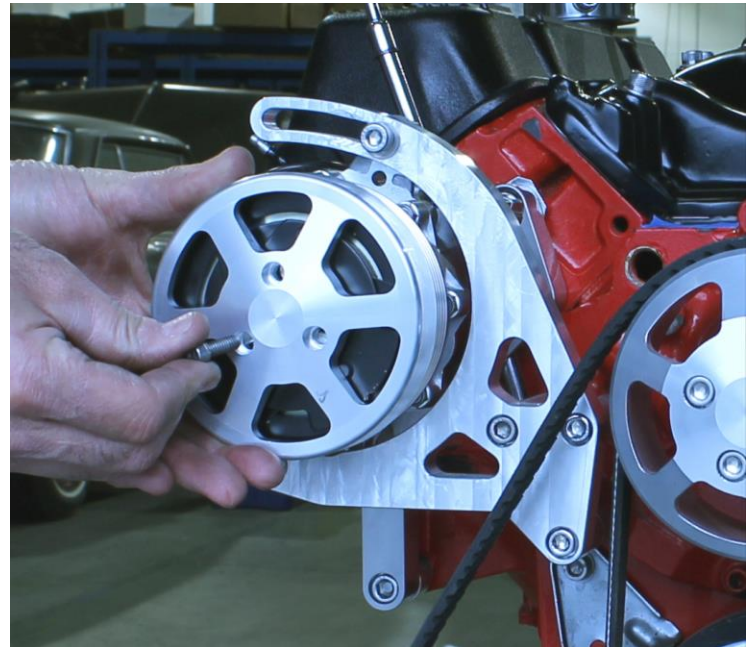
Repeat with 1) 5/16-18 X 4-1/2" socket cap screw and 1-1/2" spacer in hole B and 1) 5/16-18 X 4-1/2" socket cap screw and 2-5/8" spacer in hole C. Tighten equally and completely. Use caution so as not to over tighten.







2. Use 2) 8MM-1.25 X 30MM button head bolts to attach the compressor to the top and bottom of the mounting plate. Use anti-seize on the threads but do not fully tighten at this point.



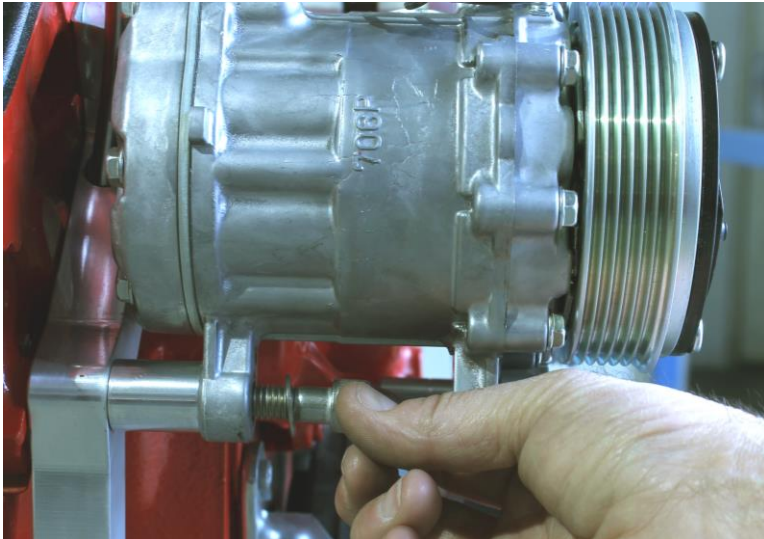
4. Apply Loctite to 3) 1/4-20 x 3/4" socket cap screws and use to install the air compressor cover onto the compressor. Tighten fully while using caution to prevent over torquing.

## 12) Install the Air Compressor Manifold

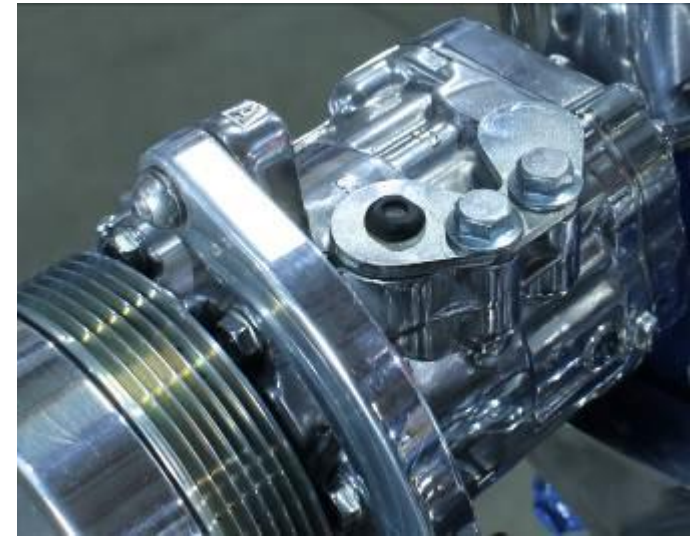
**WARNING! Do not perform this step until you are ready to install the AC lines and charge your system!**

1. Remove the plate from the top of the compressor body. The compressor is charged with Nitrogen to

insure lubrication of all components during transport. You may hear the gas escaping when you loosen the fasteners.



3. Use 1) 7/16-14 X 2-1/4" socket cap screw, 1) 7/16 washer and 1) 1" spacer to fasten the compressor to the rear bracket. Use anti-seize on the threads but do not fully tighten at this point.



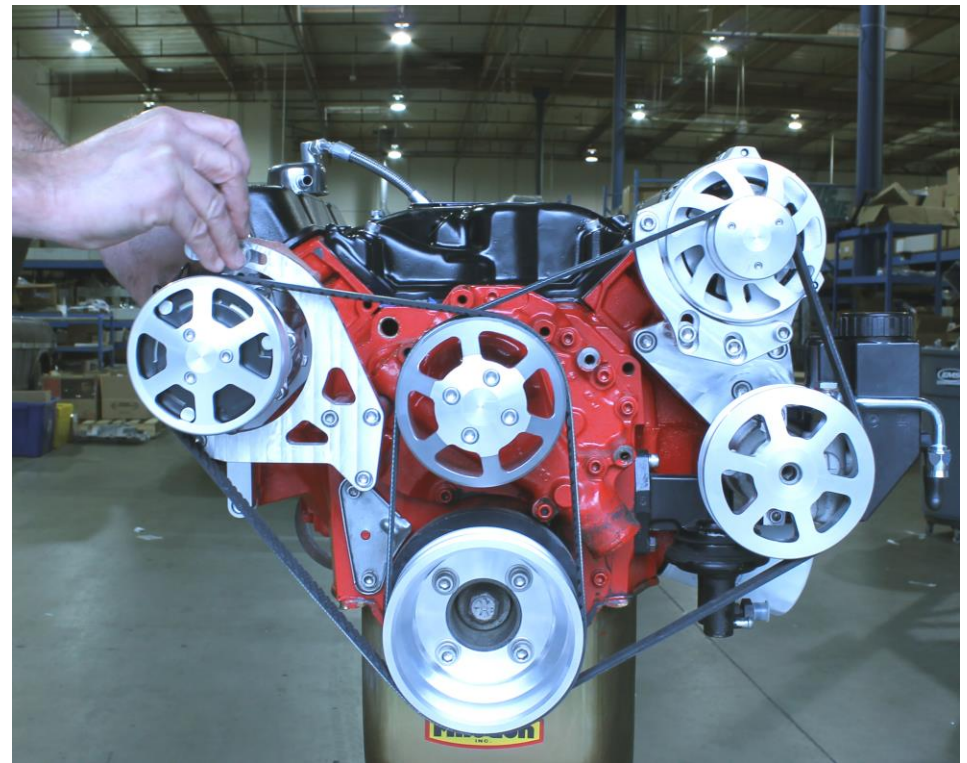




2. With the plate removed, you will see the two sealing o-rings. Leave these on the compressor and be careful not to damage them.



3. Install the compressor manifold using 2) M8 X 1.25 X 25mm socket cap screws. Apply anti-seize to the threads and tighten fully while using caution to prevent over tightening. **WARNING! Do not connect power to the AC clutch wire without first connecting hoses and fully charging your air conditioning system. Please follow all of the enclosed instructions for charging your system. Use of improper charging methods could cause serious damage to your compressor that will not be warrantied.**



4. Install belt #K0604311 around the water pump, crank, and air compressor pulleys.

5. Pull out on the air compressor until the belt is properly tensioned. Be sure to thoroughly tighten all of the previously installed bolts on the adjusting bracket.

### ***YOUR INSTALLATION IS COMPLETE!!***

PLEASE THOROUGHLY READ ALL OF THE INSTRUCTIONS FOR FILLING AND BLEEDING THE POWER STEERING SYSTEM AND FOR CHARGING THE AIR CONDITIONING ***BEFORE STARTING YOUR ENGINE.*** EDDIE MOTORSPORTS IS NOT RESPONSIBLE FOR CUSTOMER APPLICATIONS THAT ARE OUTSIDE THE NORMAL INTENDED USE OF OUR PRODUCTS, INCLUDING SPECIFIC MODEL AND YEAR APPLICATIONS, ENGINES EQUIPPED WITH SUPER CHARGERS, AND LATE MODEL EMISSIONS EQUIPPED VEHICLES.

**FOR ANY QUESTIONS PLEASE CALL: 888-813-1293**

## ***PLEASE READ!***

### **IMPORTANT INFORMATION ABOUT YOUR AC COMPRESSOR**

All charging procedures should be performed by a licensed and certified technician. Installer and technicians should read this sheet and all component instructions carefully before starting work. Please call if you have any technical questions before, during or after the installation. Our knowledgeable staff will be glad to assist you with any questions you have.

**WARNING:** Do not connect power to the AC clutch wire without first connecting hoses and charging the system. Serious damage to your compressor can occur and the warranty will be voided.

The Sanden A/C compressor supplied with your Eddie Motorsports S.drive kit is pre-filled with oil and Nitrogen charged from the factory to insure proper lubrication of the internals during storage and transport. Do not remove the block off plate on top of the compressor until you are ready to install the hoses and charge the system.

#### **Refrigerant**

The Sanden A/C compressor supplied with your Eddie Motorsports S.drive kit is compatible with 134a refrigerant which is commonly used in late model and aftermarket A/C systems. All part warranties are voided if any refrigerant other than R134a is used. If your car is equipped with its original A/C system and components, it will be necessary to convert your system to use 134a. Consult a reputable A/C system manufacturer for details on this conversion. We recommend the factory air experts at Classic Auto Air 877-342-5526

[www.classicautoair.com](http://www.classicautoair.com)

### **System Charging Tips & Warnings PLEASE READ CAREFULLY BEFORE CHARGING YOUR A/C!**

1. Please keep in mind that regardless of you or your technician's experience, the charging processes for your Sanden pump will vary greatly from stock OEM systems. Failure to follow these steps and proper charging procedures will result in an improper installation or damaged item and

#### **WILL VOID YOUR WARRANTY!**

2. **DO NOT ADD OIL!** All new Sanden compressors contain a full system charge of oil.

3. Before charging the system and putting power to the compressor, it is necessary to clear the oil from the compressor head. With the belt removed and the lines hooked up, manually turn the compressor clutch hub (not the pulley) a minimum of 10 complete revolutions to clear the oil.

4. **DO NOT CHARGE THE SYSTEM IN LIQUID FORM.** Unlike later model vehicles, doing so will direct liquid refrigerant into the compressor piston chamber, causing damage to the compressor reed valves and/or pistons, as well as potentially seizing the compressor. Doing so voids all warranty claims.

5. **USE A CHARGING STATION TO EVACUATE AND CHARGE YOUR SYSTEM-DO NOT TILT, SHAKE OR TURN REFRIGERANT CAN UPSIDE DOWN DURING THE CHARGING PROCESS WHILE THE ENGINE IS RUNNING!**

Evacuate the system for a minimum of 45 minutes before charging. Longer if possible. When using a charging station, meter the refrigerant into the system with the vehicle turned off. Then allow a minimum of 30 minutes for liquid to "boil off," or hand turn the compressor hub (not the pulley) a minimum of 10 complete revolutions to clear liquid refrigerant from the compressor piston chamber.

6. **DO NOT CHARGE THE SYSTEM THROUGH THE HIGH (DISCHARGE) SIDE OF THE SYSTEM!**

Refrigerant should be administered through the low (Suction) side of the system.

**Warranty** All compressors carry a 1-year limited warranty.

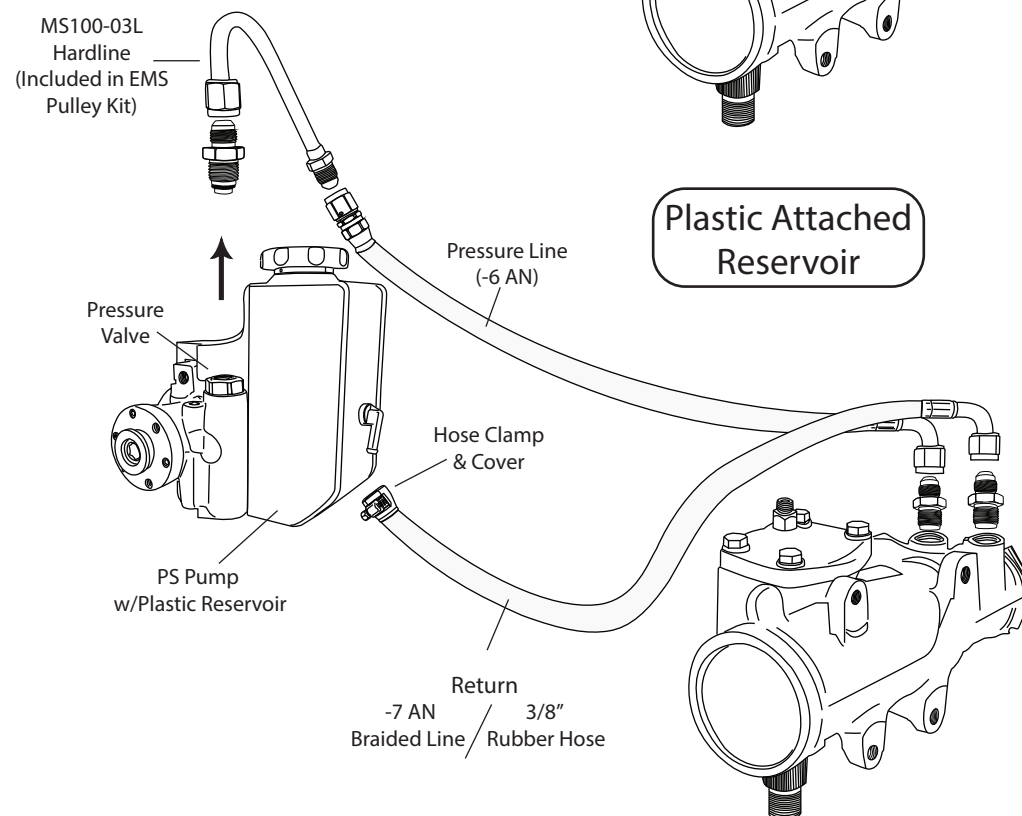
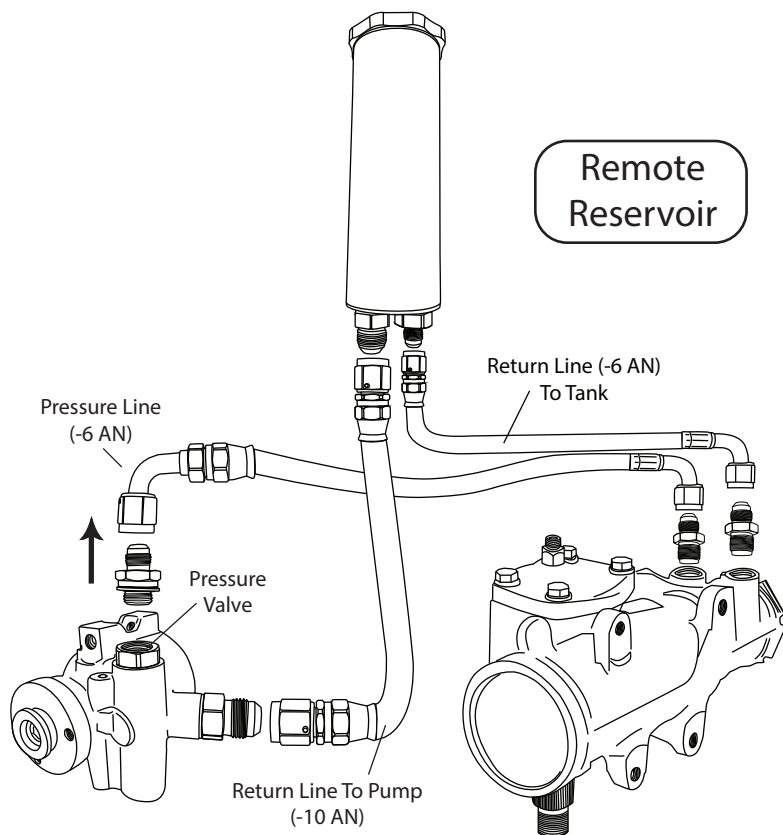
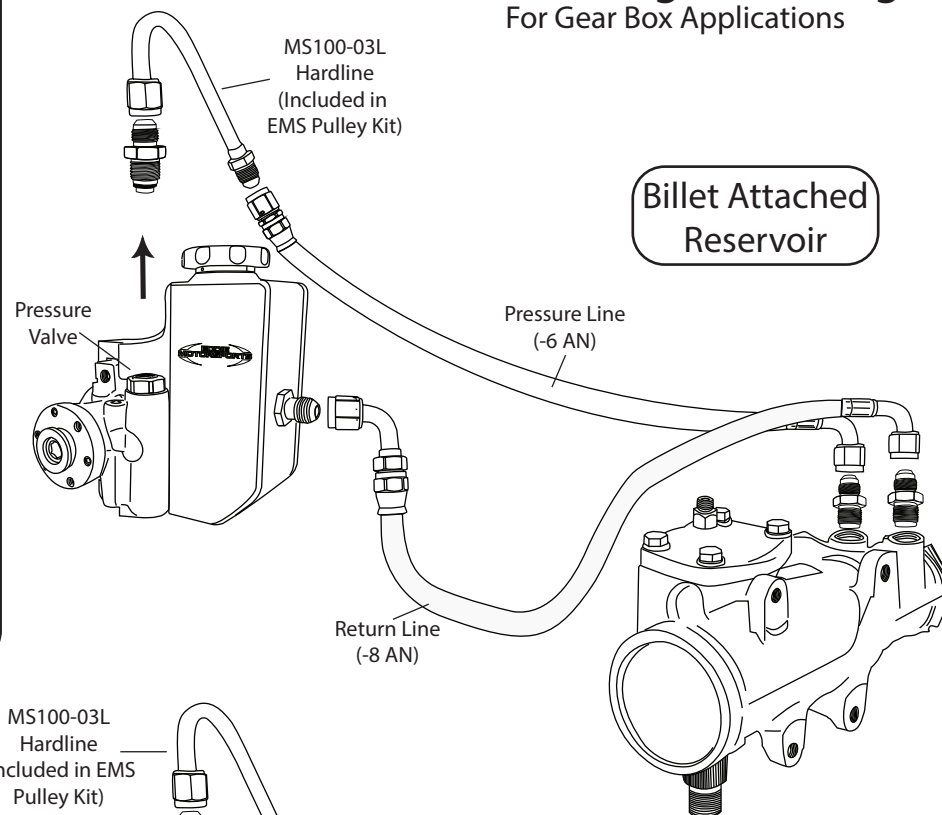
### **IMPORTANT INFORMATION ABOUT YOUR POWER STEERING PUMP**

Follow these procedures to ensure that the power steering system is filled and purged correctly.

1. Prior to starting the car, fill the pump reservoir with power steering fluid. Use fluid designed for use in power steering; brake or hydraulic fluid is not an acceptable substitute.
2. With your car in "park", the emergency brake engaged, and the engine running, SLOWLY turn the steering wheel all the way to the right and then all the way to the left.
3. With the help of a second person and using a long transmission funnel to insure that you are safely clear of moving parts, simultaneously pour power steering fluid into the reservoir while continuing to cycle the steering wheel. Do this until the reservoir is properly filled and the fluid level remains constant.
4. Fully tighten the cap on the reservoir.

- When using a **Remote Reservoir** make sure that the power steering reservoir is mounted so that the fittings in the bottom of the tank are higher than the power steering pump.
- **Billet Aluminum attached Steering Reservoirs** are not recommended for use in high usage or high performance applications or with Hydroboost systems. These reservoirs should be used in conjunction with a high quality power steering fluid cooler.
- Identify the pressure and return ports on your steering box, install the fittings, and connect the power steering lines.
- In most cases, the port on the gear box that is the tallest and farthest from the firewall is the high pressure line and the port closest to the firewall is the low pressure return line. Often, there are arrows cast into the valve body to show the fluid direction. But this is not always the case. **NOTE: It is the installer's responsibility to make sure that the hose connections are correct! CONNECTING LINES TO THE INCORRECT PORT CAN DAMAGE YOUR STEERING BOX OR RACK!**
- Hoses must not touch any other part of the vehicle. Steering system noise could be caused by the hose touching the frame, body, or engine.
- Make sure all hose connections are tight. Loose connections could leak and could allow air into the system. Do not over tighten O-ring fittings as the O-ring could be damaged.
- **Do not start your engine until the system is filled with fluid and fully bled.** Doing so may cause damage to the power steering pump components.
- For proper operation, read and follow the Eddie Motorsports power steering bleeding instructions THOROUGHLY AND COMPLETELY before beginning your installation.

## Power Steering Hose Diagram For Gear Box Applications



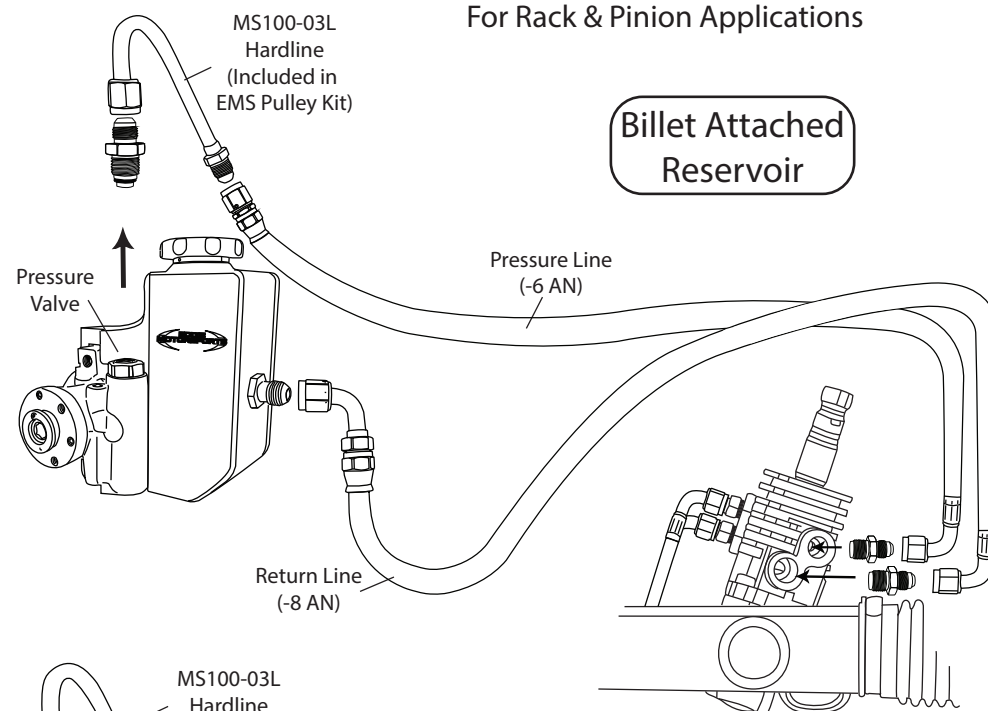


- When using a **Remote Reservoir** make sure that the power steering reservoir is mounted so that the fittings in the bottom of the tank are higher than the power steering pump.
- **Billet Aluminum attached Steering Reservoirs** are not recommended for use in high usage or high performance applications or with Hydroboost systems. These reservoirs should be used in conjunction with a high quality power steering fluid cooler.
- Identify the pressure and return ports on your rack and pinion, install the fittings, and connect the power steering lines.
- In most cases, the port on the rack and pinion that is higher/closer to the steering shaft is the return line and the port lower/closer to the rack is usually the pressure line. Often there is a "P" cast into the body of the rack that confirms the pressure port. But this is not always the case. **NOTE: It is the installer's responsibility to make sure that the hose connections are correct! CONNECTING LINES TO THE INCORRECT PORT CAN DAMAGE YOUR STEERING BOX OR RACK!**
- Hoses must not touch any other part of the vehicle. Steering system noise could be caused by the hose touching the frame, body, or engine.
- Make sure all hose connections are tight. Loose connections could leak and could allow air into the system. Do not over tighten O-ring fittings as the O-ring could be damaged.
- **Do not start your engine until the system is filled with fluid and fully bled.** Doing so may cause damage to the power steering pump components.
- For proper operation, read and follow the Eddie Motorsports power steering bleeding instructions THOROUGHLY AND COMPLETELY before beginning your installation.

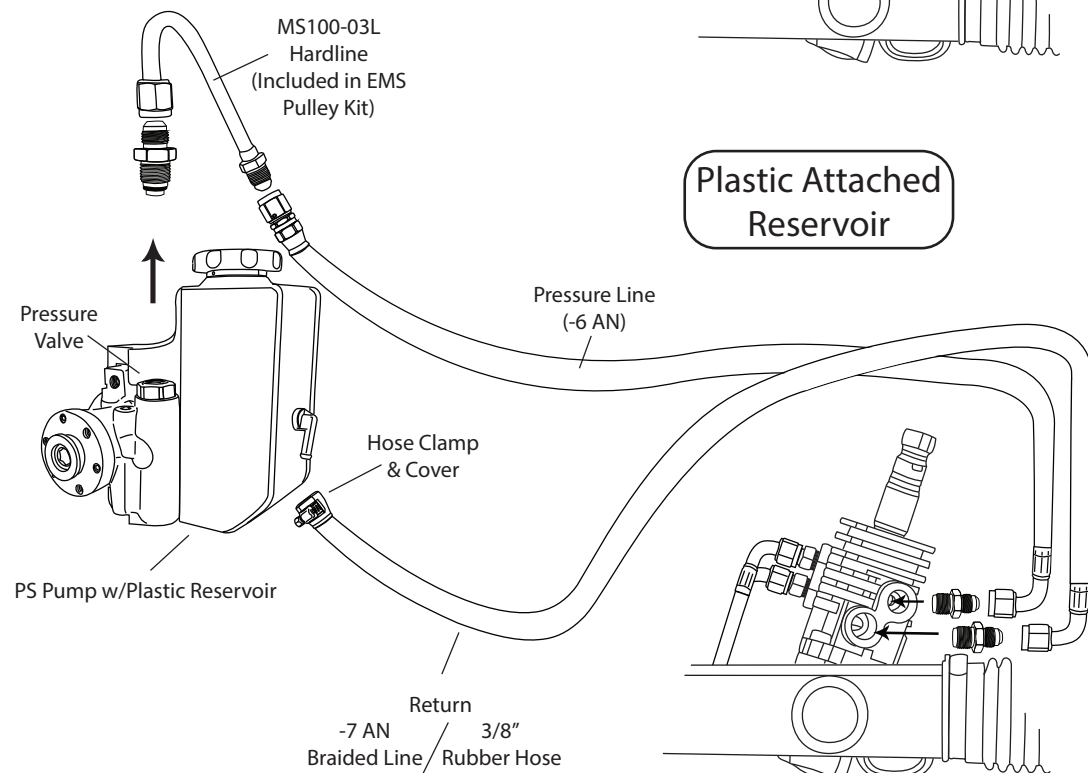
## Power Steering Hose Diagram

For Rack & Pinion Applications

### Billet Attached Reservoir



### Plastic Attached Reservoir



### Remote Reservoir

