

INSTALLING THE MUSTANG UNDERDASH SERIES 1965-68 Ford Mustang



DIVISION OF COLD AIR PRODUCTS INC.

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This unit is a combination heat/cool & defrost system. The kit is easy to install using basic mechanic tools and a 1-1/4" hole saw. The complete system provides a neat clean appearance with unsurpassed performance. To achieve maximum cooling efficiency, an air conditioner must remove heat from the air in a vehicle faster than it is added. We recommend tinting windows, insulating the roof, firewall, floorboards, seal all holes in the firewall and replacing old or damaged door and window seals. These are all important factors to reduce "added heat" and maximize the cooling efficiency of an A/C system.

For maximum cooling performance, a clutch style fan, straight six-blade fan with shroud or electric radiator fan is recommended. Note: Flex fans are not recommended.

CAUTION: When replacing the stock radiator fan blade with an electric fan assembly it will be necessary for the fan to engage when the A/C system is on, or add a second fan on the condenser dedicated to the A/C. The A/C head pressure will rise much faster than the engine temperature. Inadequate airflow will damage the A/C system (compressor failure, or ruptured hoses). The use of a fan pressure switch is recommended to allow the fan to engage according to A/C pressure.

PREPARATION FOR UNIT INSTALLATION

- 1) Read the instructions thoroughly before beginning.
- 2) Disconnect the negative battery terminal.
- 3) If installing a complete A/C system, remove grill, lower valance panel, hood latch, brace and horns.
- 8) Remove the A/C system from the box and spread parts out so they can be located as required.

UNIT INSTALLATION

- 1) Install expansion valve.

Note: The expansion valve included in this kit may have a 134-A label, it refers to the type of refrigerant used in the sensor tube and can be used with either R-12 or 134-A.

A) Lubricate a #8 o-ring with refrigerant oil, slide o-ring onto the lower fitting of the evaporator core, attach expansion valve and tighten the fitting using a 7/8" and 5/8" wrench (Photo 1). Refer to o-ring torque specifications (Diagram 2).

B) Gently bend the "pigtail" sensor that is attached to the expansion valve so that it is parallel and against the upper a/c (Suction) tube on the unit. Use the clip provided to secure the "pig-tail" to the suction tube between the firewall and the brass fitting (Photo 1).

C) Wrap the clip "pigtail" sensor with the black insulating tape provided (Photo 2).

Note: Sensor bulb and clip must be completely covered with the black insulating tape, if not, the refrigerant flow may become inconsistent resulting in poor cooling performance.



Photo 1 - Install Expansion Valve



Photo 2 - Wrap Sensor With Insulating Tape

- 2) Attach side mounting brackets to unit (Photo 3).
- 3) Attach rear support bracket to case bolt near blower motor at rear of unit (Photo 4).
- 4) Insert mounting bolts through side & top bracket and loosely attach unit to bottom of dash.
- 5) Bend or trim rear bracket as needed, attach to firewall or other solid place inside dash to support unit.

COMPRESSOR AND BRACKETS

- 1) Locate the compressor and the mounting bracket.
- 2) Before opening hardware bag, check bracket application to make sure it is the correct one for your engine. If bracket is not correct or you have any questions about mounting bracket contact Old Air Products Dealer before proceeding.
- 3) Install bracket and compressor on engine, refer to the instructions in the bracket hardware bag for installation.

NOTE: During installation the compressor may be mounted with fittings pointed to either side for easier hose routing.

DO NOT MOUNT COMPRESSOR UPSIDE DOWN.

NOTE: New compressors from Old Air Products are filled with oil for the complete system.

CONDENSER INSTALLATION

1965-66 Mustang - See Installation Instructions Page

1967-68 Mustang - See Installation Instructions Page

A/C HOSE INSTALLATION

CAUTIONS: Important Hose Installation Information:

- A) Use refrigerant oil to lubricate all o-rings on all hose fittings.
- B) Protective caps and plugs should not be removed until refrigerant hoses are ready to be connected.
- C) O-ring fittings should be tight but be careful not to over tighten and crush o-ring seal.
- D) **A bubble style crimper is required to crimp beadlock fittings.** We will crimp these at no charge, or most A/C shops or auto supply stores can also crimp the a/c hoses for a modest fee.

Refer to Diagrams #1 & #2 for the Following Steps 1-5.

Installation Tip: Assemble all A/C hoses with fittings and ferrules and test fit on vehicle. Leave some slack in hoses near compressor to allow for engine vibration or movement. Mark hoses & fittings before removing to make sure fittings are at correct position when crimping ferrules.

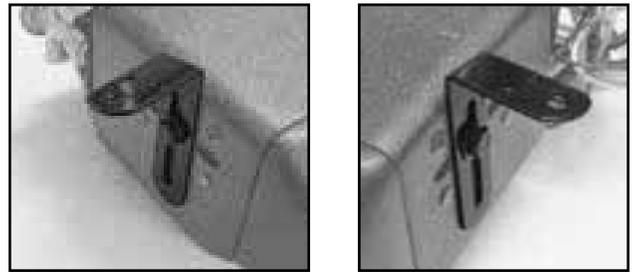


Photo 3 - Attach Mounting Brackets

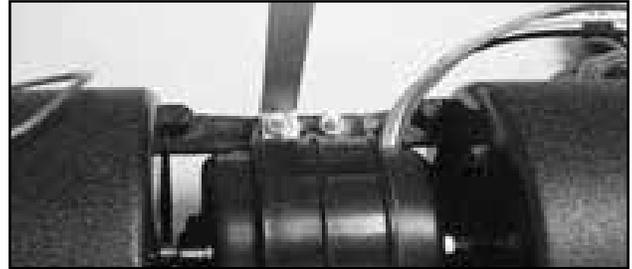


Photo 4 - Attach Rear Bracket



Photo 5 - Mount Unit to Dash

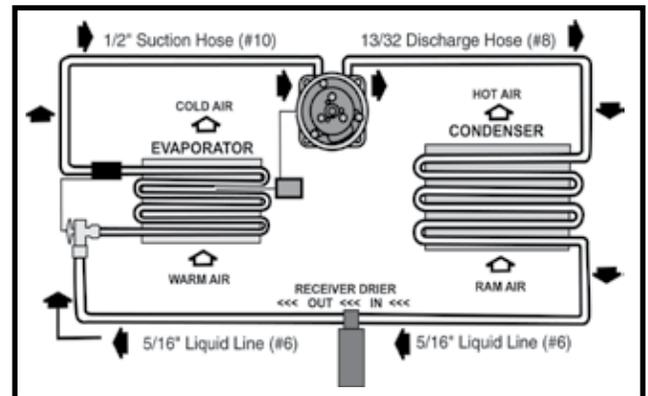


Diagram 1 - Refrigerant Flow Chart

1) Remove Factory "Knock Out" for A/C hoses located on the firewall between steering column and transmission tunnel.

3) Discharge or High Pressure Hose Installation -

- A) Insert #8 90° Condenser Outlet Fitting through grommet and connect to top fitting on condenser.
- B) Connect #8 Hose with 90° fitting to Discharge or smaller fitting on compressor and route hose to condenser inlet tube fitting installed in Step "A".
- C) Cut hose to desired length, insert hose into fitting (mark & crimp in step 6).

4) Suction or Low Pressure Hose Installation -

- A) Connect #10 Hose with 90° fitting to suction or largest fitting on compressor.
- B) Route hose from compressor, through firewall to evaporator.
- C) Cut to desired length, insert hose into fitting and connect to evaporator inlet fitting on rear of A/C unit (mark & crimp in step 6).

5) Liquid Line Installation -

- A) Connect #6 "S" tube to condenser inlet tube and route up along inner fender toward shock tower.
- B) Connect #6 Hose with 90° fitting to expansion valve on unit.
- C) Route hose from expansion valve, through firewall to "S" tube.
- C) Cut hose to desired length, insert hose into fitting and connect to "S" tube (mark & crimp in step 6).

6) Mark position of fittings & ferrules on hose to make sure they get crimped in the proper position (Photo 6).

7) Remove A/C hoses from vehicle, replace protective caps on drier, condenser & unit fittings.

8) Crimp fittings, **A bubble style crimper is required to crimp beadlock fittings.** Most A/C shops & some auto supply stores can crimp the a/c hoses for a modest fee. If you do not have anyone locally who can crimp the hoses send them to Old Air Products and we will crimp them at no charge. (return shipping charges will apply)

9) Reinstall hoses using lubricated o-ring seals, tighten all fittings (see torque specifications diagram 2).

DRAIN TUBE INSTALLATION

- 1) Connect condensation drain tubes to unit per drawing (Diagram 3). Cut tube lengths as needed.
- 2) Drill 5/8" hole to route drain hose through floor of vehicle.

#6 O-Ring (13/32")

#8 O-Ring (5/16")

#10 O-Ring (1/2")

Install lubricated "O"-ring here

Torque Specifications for O-ring Fittings

#6 FittingsLiquid Line11-13 Ft-Lbs
#8 FittingsDischarge Line11-20 Ft-Lbs
#10 FittingsSuction Line21-27 Ft-Lbs

CAUTION: To prevent damage to tubes, fittings and system components always use a backup wrench to tighten fittings. Failure to use backup wrench on fittings will twist and damage tubes or other system components. Overtightening fittings will crush and damage the o-ring seal.

Diagram 2 - O-ring Seal Specifications



Photo 6 - Mark Position of Fittings on Hose

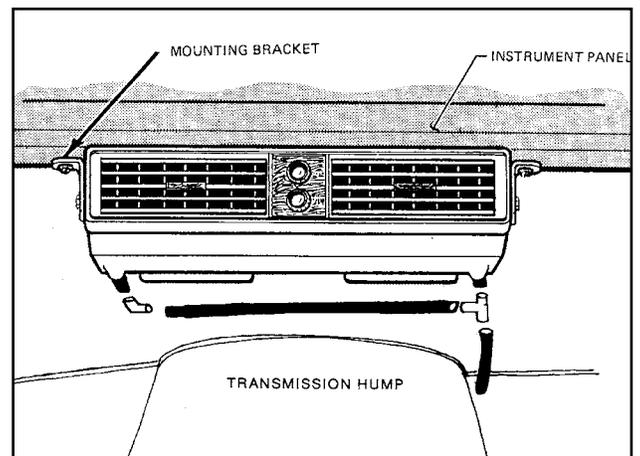


Diagram 3 - Attach Drain Tubes

ELECTRICAL CONNECTION

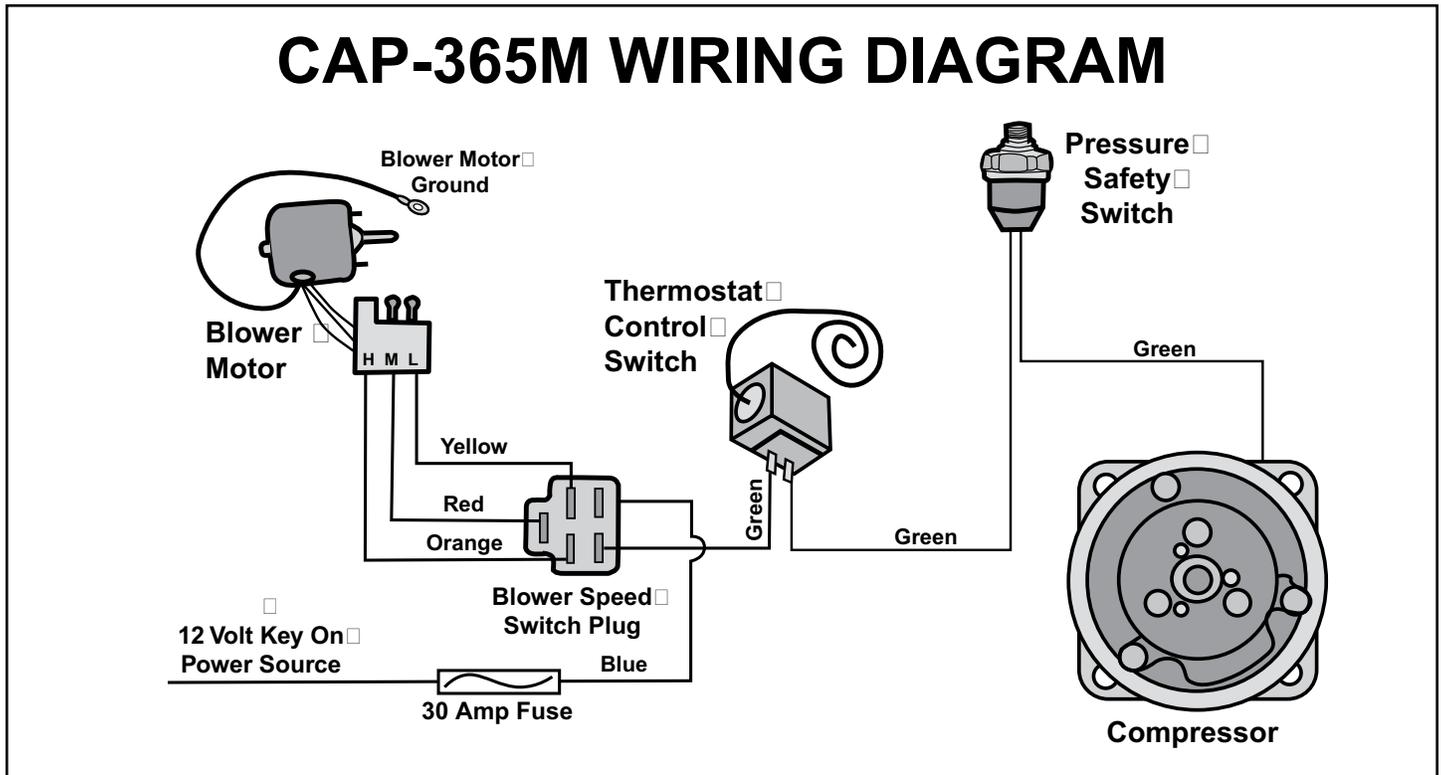
1) Connect Black wire from blower motor to Ground (-). Make sure to remove paint & clean metal surface for a good solid connection.
Important Note: A dirty or loose ground connection can cause intermittent operation and excessive amperage draw that can damage wire harness, switches and/or blower motor.

2) Connect Blue wire with fuse to a key on (+) power source.

3) Place electrical plug (rubber boot) on pressure safety switch.
CAUTION: Make sure the terminals of the switch are inserted into the connectors, not between the rubber boot and connectors.

4) Route Green wire from unit through firewall and connect to one wire on safety switch.

5) Connect the second wire from safety switch to the compressor clutch. It is recommended to wait until the system is ready for the refrigerant charge before making this final connection to prevent compressor damage.



COMPLETE INSTALLATION

1) Install wraparound hose clamps or pull-ties as necessary to secure all wires and hoses away from sharp edges, moving parts and exhaust manifold or headers to avoid damage to wiring and/or hoses.

2) Check firewall for leaks. All openings such as extra holes and missing or damaged grommets around steering column, brake pedal/booster or wire harness must be sealed to prevent outside air from entering the passenger compartment to maximize the A/C system performance.

FREON SERVICE

1) This system should be serviced/charged by a certified A/C technician and requires a minimal evacuation time of 45 minutes.

2) New compressors purchased with complete systems from Old Air Products contain the correct amount of refrigerant oil.

VARIABLES AFFECTING FREON CAPACITY

- a) Length of hoses, driver or passenger side compressor.
- b) Size of condenser.
- c) Compressor capacity.

3) **134-A Systems** will require 32 to 36 ounces. An exact

charge with 134-A is more critical for maximum performance than that of R-12. The exact charge will be relevant to the length of hose, compressor capacity, and size of condenser. We recommend adding a partial charge, and monitor temperature at vents while slowly adding remaining charge, while testing for point of maximum performance.

R-12 Systems will require 28 to 32 ounces of Freon. This is only a guide line, and the sight glass (under the dimple area) on top of the drier should be monitored. The exact charge will be relevant to the length of hose, compressor capacity, and size of condenser.

NOTE: When charging the system it will be necessary to put in about 12 to 18 ounces of refrigerant before the pressure safety switch will engage the compressor clutch. Charging and testing should be done with the doors shut, windows closed, convertible top up, fan on high blower, and an electric fan in front of radiator. If excessive high pressure exists adding an electric condenser fan is recommended if space permits.

NOTE: 134A requires 15 - 20% less refrigerant than R-12, which means the sight glass may not ever clear.

3) Leak test all A/C connections.

4) Place a copy of these installation instructions in glove box for future reference.

Thank You for choosing an Old Air Products A/C System for your Classic Mustang.

We appreciate letters of response and photos of your vehicles. We will be selecting customer vehicles to feature on our web site. If you would like to submit your car send an e-mail with pictures and information to sales@oldairproducts.com

Regards,
The Staff, Old Air Products



1965-66 MUSTANG CONDENSER INSTALLATION

- 1) Remove lower valance panel, grill, hood latch & center brace from vehicle.
- 2) Remove radiator & threaded mounting clips from core support.
- 3) Mount Condenser assembly - (Photo A1).
 - A) Place condenser in front of core support and insert threaded mounting studs into factory mounting holes.
 - B) Place radiator over threaded studs on engine side of core support and secure with nuts provided.
- 4) Drill hole for condenser outlet / discharge hose (Photo A2).
 - A) Hold 90° #8 at top condenser fitting and mark hole location on core support.
 - B) Drill 1-1/4" hole through core support and insert grommet.
- 5) Install Drier Inlet Tube. (Photo A3)
 - A) Hold #6 drier inlet tube to drier fitting and mark hole location on core support. *NOTE: A dimple is in the lower driver side of core support to mark factory location of hole, double check position before drilling, factory dimple is not consistent.*
 - B) Drill 1-1/4" hole at marked location.
 - C) Insert round grommet into hole.
 - D) Insert Drier Inlet tube through grommet and attach to drier outlet fitting.
- 6) Install Pressure Safety Switch (Photo A4).
 - A) Install Pressure Safety switch onto switch port located on the drier outlet tube.
- 7) Place caps on tubes and condenser fitting to prevent moisture from contaminating drier until A/C hoses are installed.

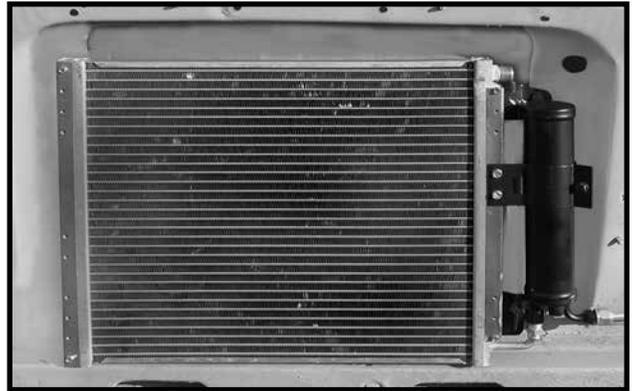


Photo A1 - Mount Condenser Assembly

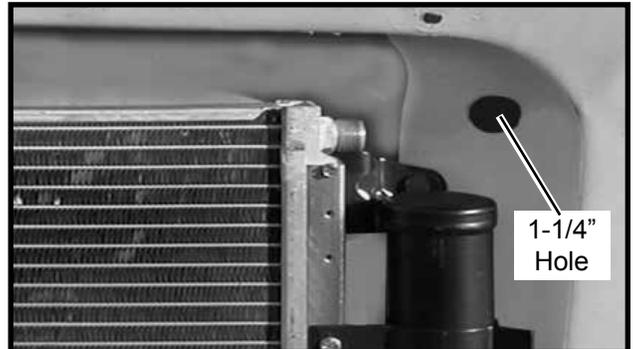


Photo A2 - Drill Hole for Discharge Hose.



Photo A3 - Drier Inlet Tube



Photo A4 - Pressure Safety Switch

1967-68 MUSTANG CONDENSER INSTALLATION

- 1) Open the "Knock Out" for the A/C lines located on the driver side of the core support. (Photo B1)
 - A. Using a 1-1/2" hole saw drill through the core support at dimples.
 - B. Knock out area between holes along perforation.
- 2) Attach condenser & drier assembly to core support using top OEM driver and passenger side factory mounting holes. (Photo B2) Secure top driver side bracket with 1/4-20 X 1" bolt & 14-20 nut. Secure passenger top bracket with #14 X 1" Sheet metal screw. Attach lower brackets with #10 X 1/2" self tapping screws.
- 3) Using a #8 o-ring seal, connect condenser Inlet tube to top fitting on condenser. (Photo B3)
- 4) Install Pressure Safety Switch (Photo B4):
 - a) Attach Brass Adapter to the Drier Outlet Tube using a Yellow O-ring Seal.
 - b) Attach inline pressure switch port to brass adapter with green #6 O-ring seal.
 - c) Attach pressure safety switch to switch port
- 5) Place caps on tubes to prevent excess moisture from being absorbed by dessicant in side receiver drier until A/C hoses are installed.

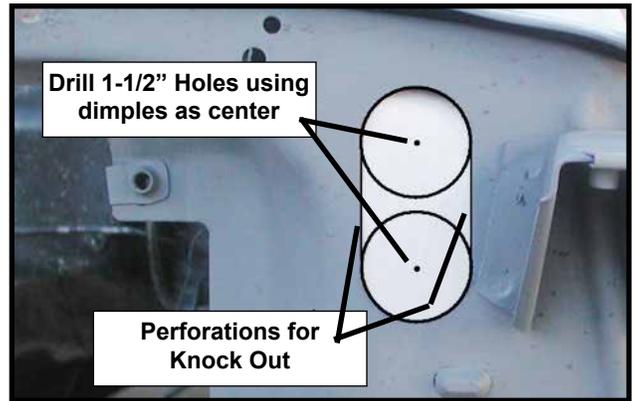


Photo B1 - Open Factory Knock Out Hole



Photo B2 - Mount Condenser Assembly



Photo B3 - Condenser Inlet Tube

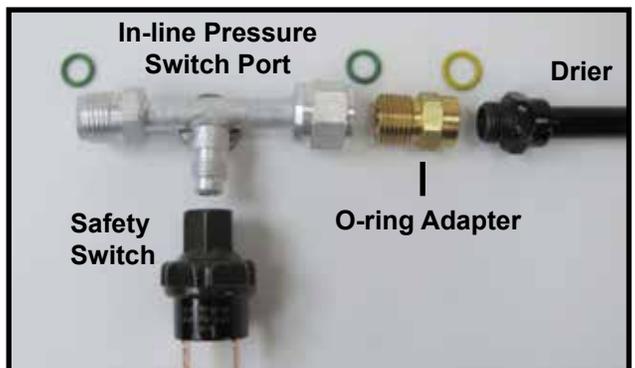


Photo B4 - Pressure Safety Switch

PARTS LIST

1965-68 Mustang Underdash Series

A/C Unit

IP-300M Series - Cool Only

Compressor

Sanden 508 or equivalent

Compressor Mounting Bracket

Bracket will vary by engine application

Condenser Kit

Will Vary by Application

A/C Hose Kit

Binary Safety Switch Kit

**Thank You for choosing an Old Air Products
A/C System for your Classic Mustang.**

We appreciate letters of response and photos of your vehicles. We will be selecting customer vehicles to feature on our web site. If you would like to submit your car send an e-mail with pictures and information to sales@oldairproducts.com

**Regards,
The Staff, Old Air Products**

