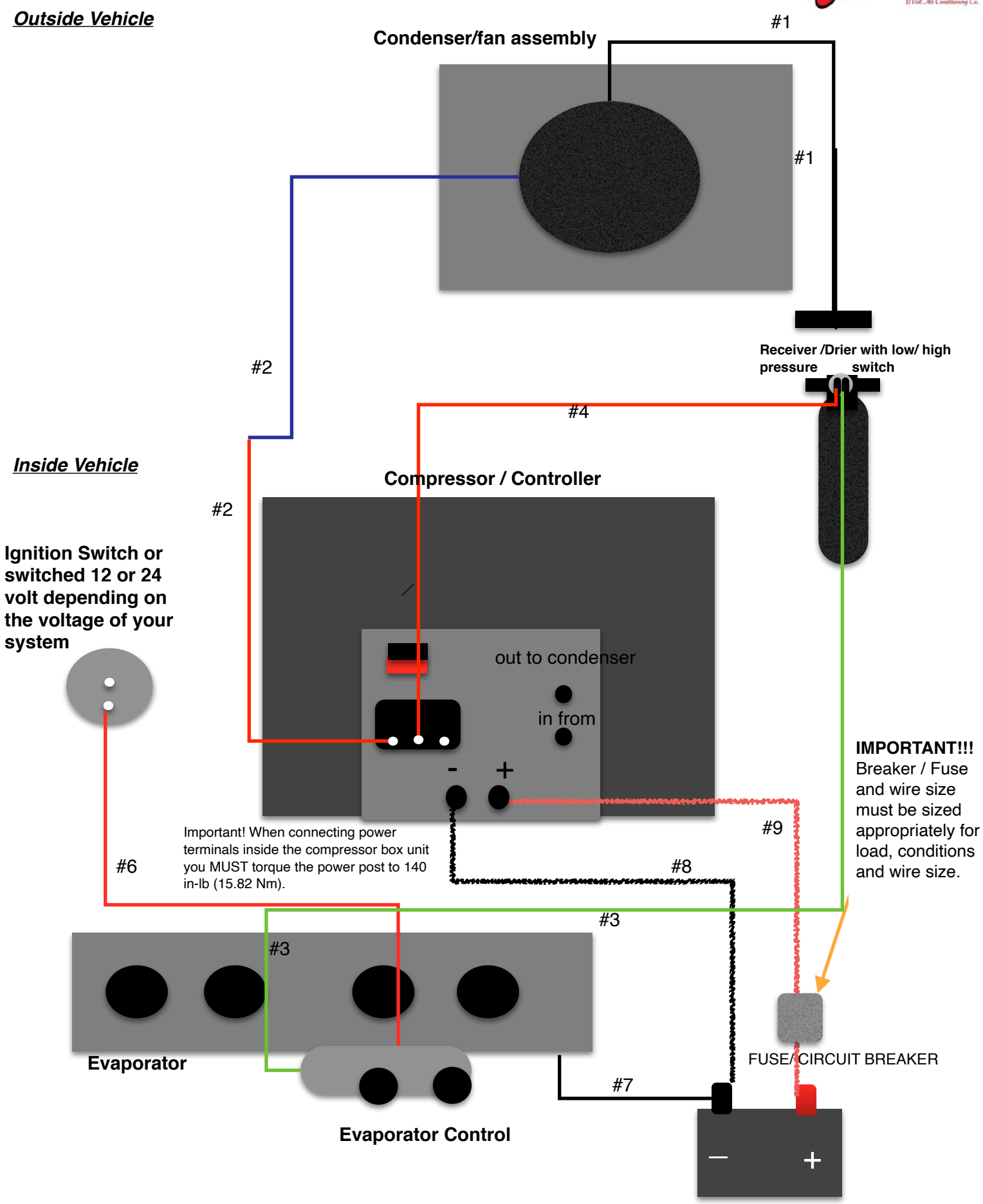
VES Installation Sheet



Wire #	
#1	**condenser fan negative -**
#2	**condenser fan positive +**
#3	**compressor turn on from evaporator control to pressure switch on receiver dryer**
#4	**from pressure switch to compressor controller**
#5	
#6	**evaporator power to ignition (switched power)**
#7	**ground evaporator chassis to automotive ground negative -**
#8	**Compressor negative - battery. Torque on compressor box power post to 140 in-lb (15.82 Nm)**
#9	**Compressor positive + to battery positive + . Torque on compressor box power post to 140 in-lb (15.82 Nm).**

Online you will find numerous wire size calculators, here is one that we recommend:
http://circuitwizard.bluesea.com

DO NOT UNDERSIZE OR FORGET TO FUSE THE POWER WIRES, SERIOUS INJURY, DEATH OR FIRE CAN RESULT. MAKE SURE ALL CONNECTIONS ARE VERY SECURE AND TIGHT.
*THIS WIRE MUST BE FUSED AT BATTERY.

Breaker / Fuse and wire size must be sized appropriately for load, conditions and wire size.

VES 12L 70 amp hour
VES 24L 50 amp hour
VES 48L 30 amp hour

When connecting power terminals inside the compressor box unit you MUST torque the power post to 140 in-lb (15.82 Nm).

Evacuate and charge with R134a to 1.95 lbs
MAKE SURE THE TECHNICIAN DOES NOT ADD ANY OIL CHARGE TO THE SYSTEM. If the unit is evacuated and recharged a equal amount of what was lost can be put back in using only PVE OIL. PAG oil or lines that have PAG oil in them will ruin the compressor and void your warranty.

DO NOT LIFT UNIT BY COVER AND DO NOT OPERATE UNIT WITOUT ALL LINES AND COVER IN PLACE. THE COMPRESSOR IS PRE-FILLED WITH PVE COMPRESSOR OIL. TAKE CAUTION WHEN REMOVING CAPS.

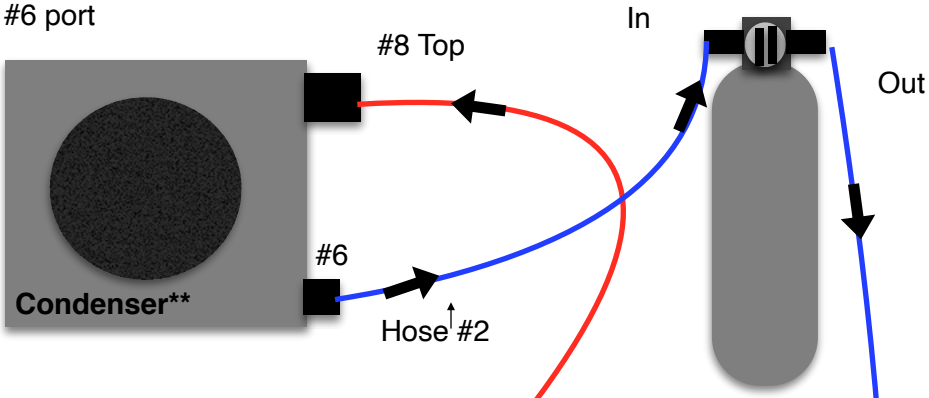
VES Installation Diagram (Refrigerant Lines)

Outside Vehicle

When mounting outside condenser the larger #8 port must be a ***minimum* of 15 degrees ***higher*** than the smaller #6 port

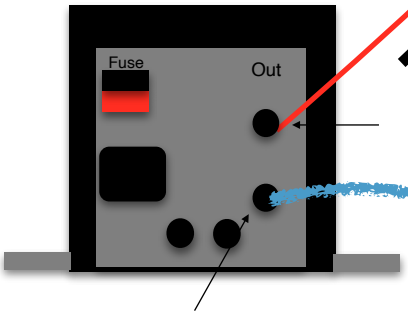
Receiver / Drver

Look for letters “IN” on top of receiver



Hose #1

Inside Vehicle



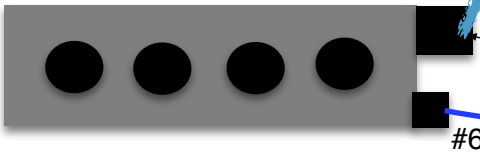
#8

Hose #3

#10

Hose #4

Under Dash Evaporator



#10 Top Port

#10 to #8 Fitting

#6
Bottom Port

VES Hose Order Sheet

Hose #1:

#8 13/32" I.D. , 29/32" O.D. HOSE (HIGH PRESSURE HOSE)

- **FROM DISCHARGE FITTING ON COMPRESSOR TO TOP FITTING ON CONDENSER**

ENDS REQUIRED: 90 DEGREE QTY. STRAIGHT QTY.

Hose #2

#6 5/16" I.D. , 3/4" O.D. HOSE (LIQUID LINE)

- **FROM LOWER CONDENSER FITTING TO RECEIVER DRIER**

ENDS REQUIRED: 90 DEGREE QTY. STRAIGHT QTY.

Hose #3

#6 5/16" I.D. , 3/4" O.D. HOSE (LIQUID LINE)

- **FROM RECEIVER DRIER TO EXPANSION VALVE ON EVAPORATOR**

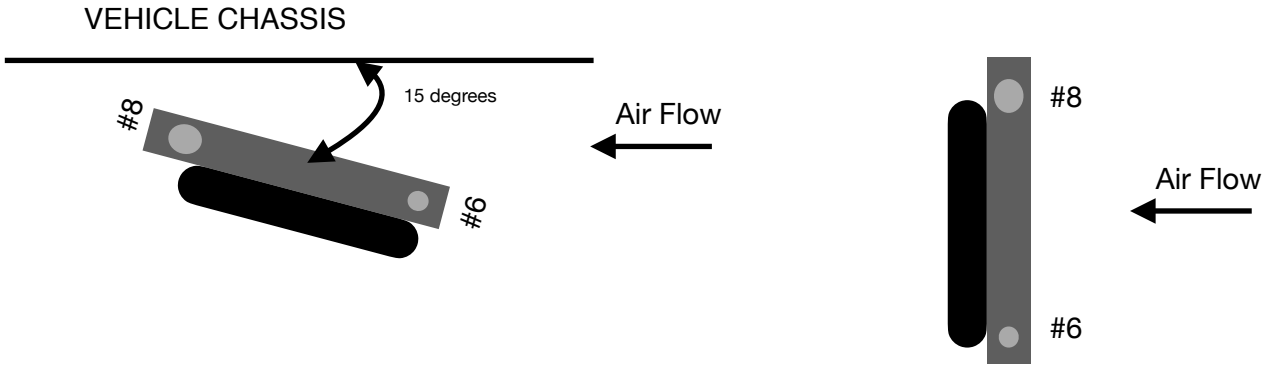
ENDS REQUIRED: 90 DEGREE QTY. STRAIGHT QTY.

Hose #4

#10 1/2" I.D. , 1" O.D. HOSE (SUCTION HOSE)

- **FROM EVAPORATOR TO SUCTION PORT ON THE COMPRESSOR**

ENDS REQUIRED: 90 DEGREE QTY. STRAIGHT QTY.

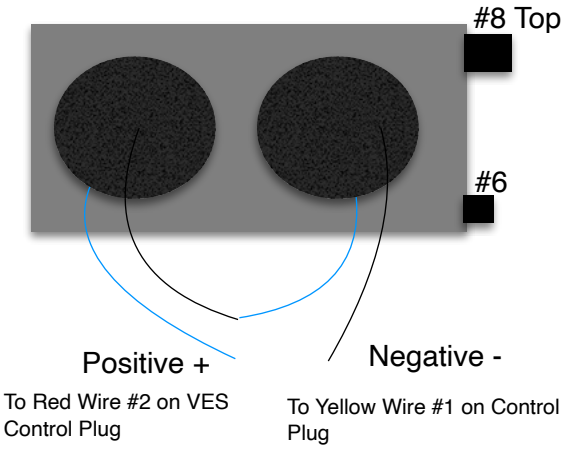


Looking at the end of the condenser, the small port should always be lower than the large port.

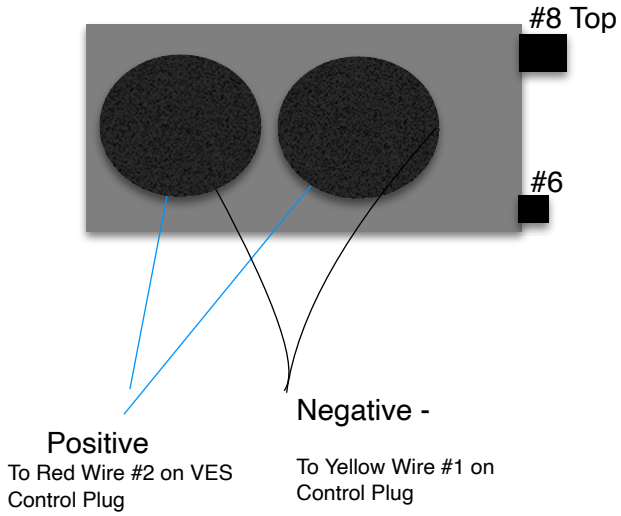
The rotation does not matter as long as there is at least 15 degrees of rotation from the horizontal plane. Condensers can be roof mounted. The refrigerant enters the condenser with the Large port and out the small port. If the large port is lower than the small it will cause the oil to not return to the compressor and back up inside the condenser.

***** PLEASE NOTE WHEN EVACUATING AND CHARGING THE SYSTEM. DO NOT EVER ADD ANY PAG OIL INTO THE SYSTEM, THIS OIL IS CONDUCTIVE AND WILL CAUSE THE COMPRESSOR TO FAIL. BE SURE TO FLUSH LINES AND MAKE SURE THE REFRIGERANT YOU BUY IS R134A AND DOES NOT HAVE A OIL CHARGE!!! THE UNIT SHIPS WITH PVE OIL INSIDE THE COMPRESSOR.

Series: This is a option to make fans run slower and quieter when in cooler climates



Parallel: This is a option to make fans run faster in warmer climates.



STANDARD BARRIER A/C HOSE IDENTIFICATION

#6 5/16" I.D. , 3/4" O.D. HOSE (LIQUID LINE)

- **FROM LOWER CONDENSER FITTING TO RECEIVER DRIER**
- **FROM RECEIVER DRIER TO EXPANSION VALVE ON EVAPORATOR**

#8 13/32" I.D. , 29/32" O.D. HOSE (HIGH PRESSURE HOSE)

- **FROM DISCHARGE FITTING ON COMPRESSOR TO TOP FITTING ON CONDENSER**

#10 1/2" I.D. , 1" O.D. HOSE (SUCTION HOSE)

- **FROM EVAPORATOR TO SUCTION PORT ON THE COMPRESSOR**

Explanation of Reduced Barrier Fittings:

Reduced barrier fittings have the same inner diameter as standard barrier fittings, but the outer diameter is smaller.
In other words the thickness of reduced barrier hose has a reduced outer diameter compared to standard barrier hose.
If you need reduced barrier fittings choose the fitting part numbers with a SR (Steel) or RB (Aluminum) as the prefix.

Reduced Barrier Hose:

The reduced barrier hose is a thinner wall construction that offers improved flexibility and reduced weight without sacrificing permeation resistance and burst strength. The hose is constructed with a single braid of polyester reinforcement. This hose is designed to exceed both SAE J2064 and OEM manufacturer requirements.
Please contact us for price and availability of reduced barrier hose.

Reduced Barrier is available but lead times could be a little longer

We can make custom hose lengths for you. Please fill out the hose sheet above and email or call us with the lengths and the ends you would require. Pricing varies.