



Installation Manual

SwitchSpeed™ Controller:

Congratulations!

Thank you for purchasing the revolutionary SwitchSpeed™ Controller by AccuAir.

This air suspension controller manages up to 4 Air Springs as an intelligent switchbox with user-adjustable control of valve speed. The AccuAir SwitchSpeed™ also manages your Air Compressor(s) to keep onboard air at an ideal pressure for your application (If Optional Electronic Tank Pressure Sensor is connected).

To maximize functionality, the AccuAir SwitchSpeed™ allows you to select from three distinct valve speeds:

- 1.) **Full Speed.**
- 2.) **Medium Speed (Adjustable).**
- 3.) **Precision Speed (Adjustable).**

The exact settings for each of these speeds is User Adjustable (see page 10 in your Operation Manual).



WARNING: Extended valve pulsing *MAY* reduce the life of your valves.

At AccuAir, we pride ourselves on thorough customer service, quality products, and a better driving experience through technologically superior design. Please visit our website or call us toll free to let us know if there is any way that we can help improve your AccuAir experience.

(877) AIR-DOWN
247-3 6 9 6

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Terms & Conditions:

AccuAir Control Systems, L.L.C. is hereby referred to as **ACCUAIR**. The Purchaser, end-user, or installer is hereby referred to as **CUSTOMER**.

Warranty

ACCUAIR will repair or replace any failed components for the life of the vehicle given that the components were installed and operated as intended by **ACCUAIR**. Upon the return of a failed component(s), **ACCUAIR** will determine the cause of failure. If it is due to improper installation, or misuse of the system, a repair charge will be assessed and the customer will be contacted before work is performed or replacement parts are shipped. If the failure is due to faulty parts, then **ACCUAIR** will repair or replace the failed components at their own discretion and in a timely manner.

Repairs and Returns

A Return Merchandise Authorization Number (RMA) is required for ALL shipments to AccuAir Control Systems. This number should be written in large letters on the shipping box. Call AccuAir to receive an RMA number and send items to:

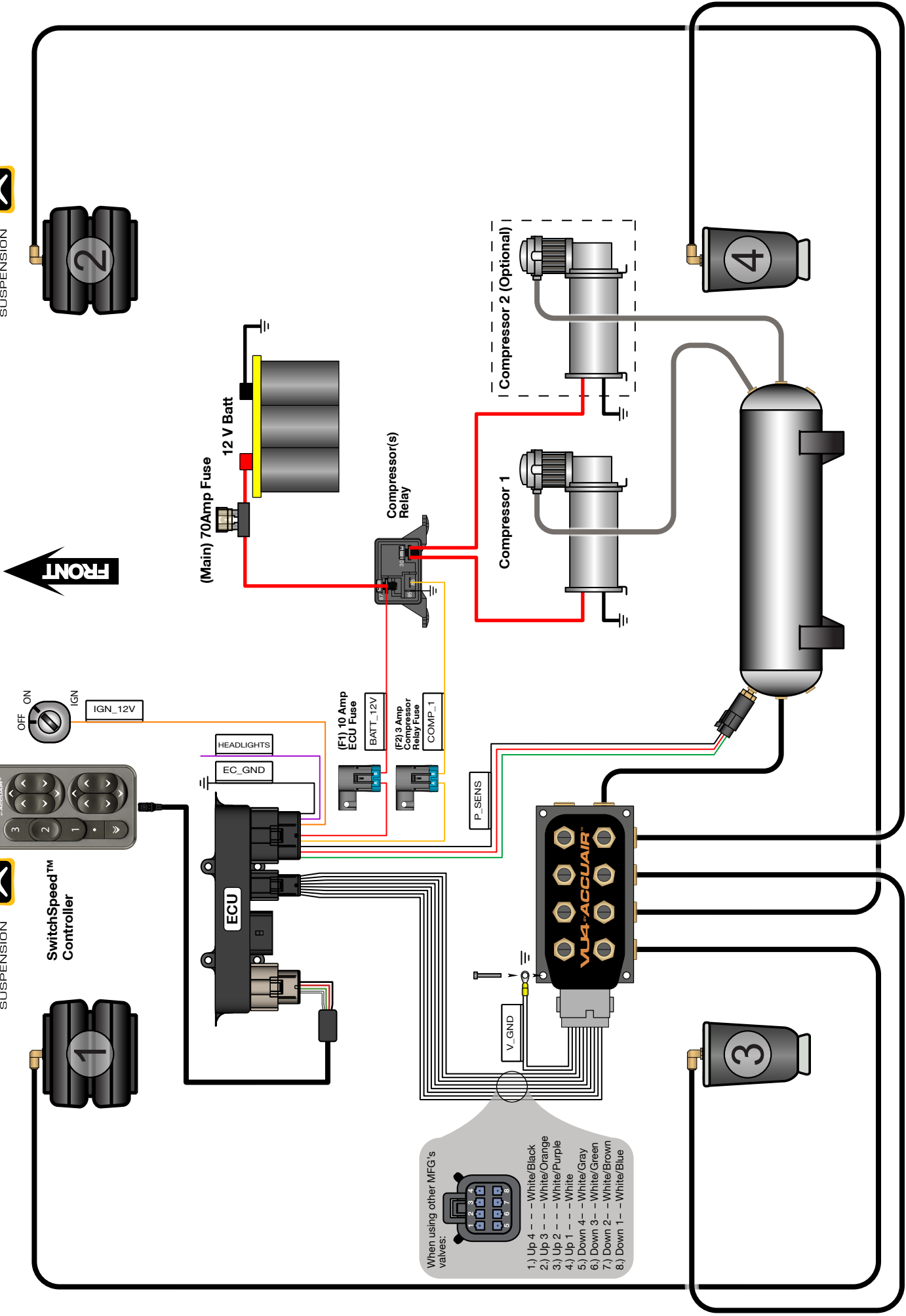
AccuAir Control Systems, L.L.C.
Attn: Service Department/RMA # _____
1241 Johnson Ave. #355
San Luis Obispo, Ca, 93401
USA

Legal Disclaimer

- ACCUAIR's** products must be installed by a qualified professional installation facility as recommended by **ACCUAIR**.
- System operation and installation is at the **CUSTOMER's** own risk. **ACCUAIR** accepts no liability for damage of property or persons caused by its products, components, accessories, installation instructions or otherwise.
- ACCUAIR** accepts no responsibility for systems, products or components provided by other manufacturers for use with or around the **ACCUAIR** system. For components other than **ACCUAIR's**, follow the manufacturer's instructions for installation and operation.



WARNING: No part of the vehicle should be able to contact the ground when all air is out of the air springs.



When using other MFG's valves:

1) Up 4	--	White/Black
2) Up 3	--	White/Orange
3) Up 2	--	White/Purple
4) Up 1	--	White
5) Down 4	--	White/Gray
6) Down 3	--	White/Green
7) Down 2	--	White/Brown
8) Down 1	--	White/Blue

Installation Overview:

After your Air Springs and Suspension Components have been installed, you can begin installing the AccuAir components in the following order:

- 1.) Install VU4 (Valve Unit)
- 2.) Install ECU (Electronic Control Unit)
- 3.) Install SwitchSpeedTM Controller
- 4.) Install Tank Pressure Sensor (Optional)
- 5.) Install Air Compressor(s)
- 6.) Install Wiring Harnesses
- 7.) Test Wiring and Mechanical Components



WARNING: Make sure to disconnect the vehicle battery ground terminal throughout the wiring process.

VU4 (Valve Unit) Mounting:

Valve Mounting Considerations

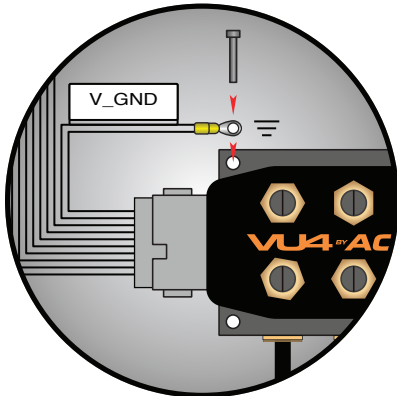
- These valves are 100% weather-proof and can be mounted under vehicle.
- You will need to mount the ECU near the valves, so make sure that there is enough space for both items.



Step-by-Step

- 1.) Find a flat location to mount the VU4. This should allow enough room for the airlines to be inserted without too much bending.
- 2.) Transfer hole pattern from the **VU4 Mounting Template** on page 14.
- 3.) Drill holes with a 3/16" drill bit and bolt the VU4 down with the included #10-24 Allen head cap-screws.
- 4.) Place the ground eyelet from the VU4 wiring harness under one of the cap-screws and make sure that this screw has good contact to chassis ground. (Remove paint or coatings to expose bare metal)
- 5.) You may use this same location to place the ECU ground, so do not tighten yet.

Ground Eyelet Installation



Wire Color Description

When using other MFG's valves:



- 1.) Up 4 — — — — White/Black
- 2.) Up 3 — — — — White/Orange
- 3.) Up 2 — — — — White/Purple
- 4.) Up 1 — — — — White
- 5.) Down 4 — — — — White/Gray
- 6.) Down 3 — — — — White/Green
- 7.) Down 2 — — — — White/Brown
- 8.) Down 1 — — — — White/Blue



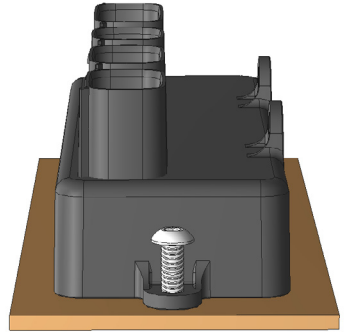
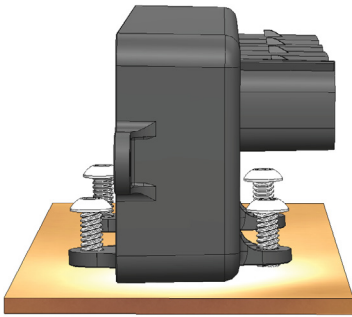
ECU Mounting:

ECU Mounting Considerations

- The ECU is 100% weather-proof and can be mounted under vehicle next to the valves.
- The ECU can be mounted upright or on its back as seen below. (If back mounted, back tabs must be removed)
- The following diagrams illustrate both “Standard” and “Optional” mounting configurations.

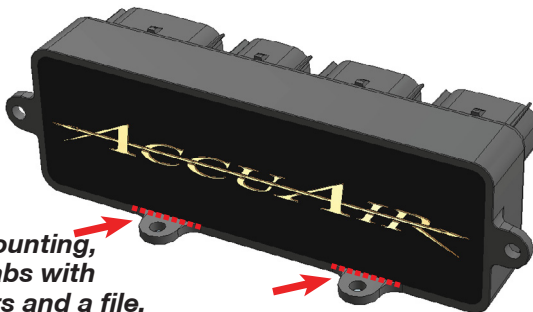
Bottom Mounting (Standard):
See ECU Mounting Template on page 16.

Back Mounting (Optional):
See ECU Mounting Template on page 18.



Step-by-Step

- 1.) Find a flat location near the VU4 (Valve Unit) to mount the ECU.
- 2.) Plug-In the Valve Harness while finding the mounting position to make sure that it reaches.
- 3.) Transfer hole pattern from the ***ECU Mounting Template*** on pages 16 & 18.
- 4.) Drill holes with a 3/16” drill bit and bolt the ECU down with the included #10-32 Allen head cap-screws.



***For optional mounting,
remove back tabs with
diagonal cutters and a file.***

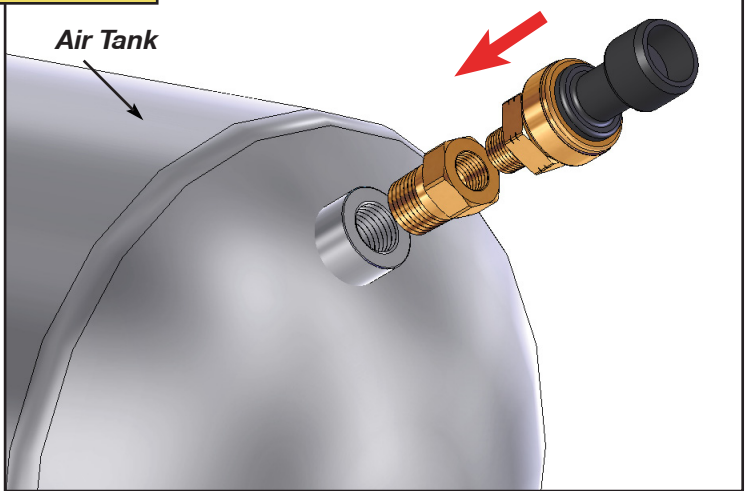


Pressure Sensor Mounting:

Tank Pressure Sensor Mounting Considerations

- Mount the Pressure Sensor vertically with the threads aiming downward to avoid moisture build up in the sensor.
- Mount the Sensor close to the ECU to connect the pre-terminated sensor harness that is part of the Main ECU Harness.

Example 1:
Pressure Sensor Mounting.
(In the top of the tank)



WARNING: Optional compressor control require use of an AccuAir Pressure Sensor. System cannot be connected to any other brand of Pressure Sensor or Pressure Switch.

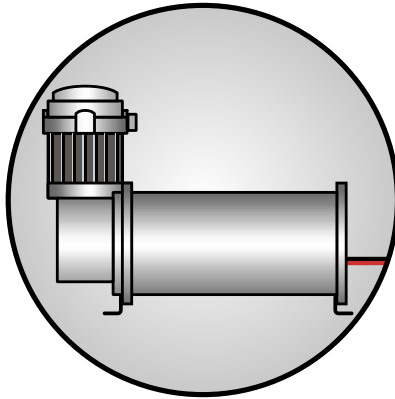
Step-By-Step

- 1.) Coat the threads of the Sensor and any threaded fitting or adapter used in the air supply system with a thread sealer to help prevent air leaks. We recommend a liquid thread sealer for best results but Teflon tape will work also. We strongly recommend an Anaerobic Thread Sealer such as **Loctite's (P/N: 565)**
- 2.) After tightening the sensor wipe off the excess thread sealer.

Installing & Wiring Air Compressor(s):

Air Compressor(s) Mounting Considerations

- There should be a fuse in between the Compressor(s) and the battery.
- The Compressor(s) get very **HOT** during operation. Make sure to leave space between items that are susceptible to heat. (Wires, Nylon-Air Line, etc.)



Step-By-Step

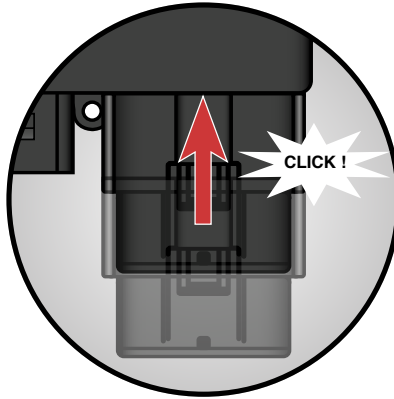
- 1.) Find a location for the Compressor(s) to be mounted with good air circulation.
- 2.) Transfer the hole pattern of the Compressor using the Air Compressor as your template.
- 3.) Drill holes and bolt the Air Compressor(s) down.
- 4.) Install the Power Wire to the vehicle battery (12v+) with an inline fuse (30amps per Compressor) that is included with your Compressor(s) near the vehicle battery (12v+).
- 5.) Install the Compressor Relay inline with the Compressor's power line.
- 6.) Install the Ground Wire to vehicle/chassis ground. (Make sure to remove any rust or paint to ensure a thorough ground)



Install Wiring Harnesses:

Wiring Harness Installation Considerations

- The plugs that connect to the ECU will only fit in the desired orientation. Do not force the connectors into the wrong mating connector.
- Make sure to press all connectors on firmly until an audible “click” sound can be heard from the lock.
- Route all wiring away from exhaust or other hi-temp areas.
- Use Rubber Grommets for areas where sharp metal could eventually wear through the wire insulation.



**See System Diagram
on pages 4-5.**

Step-By-Step

•ECU Main Harness

- 1.) First connect the Main Harness at the ECU then route each section to each component on the vehicle.
- 2.) Route the SwitchSpeed™ harness (Mini USB Cable) to the inside of the vehicle and leave until later in installation. Route the single purple wire labeled “HEADLIGHTS” to a 12V source in the vehicle Headlight Switch. Check the manufacturer’s specs for a 12V Headlight source inside the vehicle (You can also use a 12V wire from the closest marker light instead of running it to the Headlight Switch inside the vehicle.). This will allow the SwitchSpeed™ Controller’s backlighting to dim automatically when the headlights are on.
- 3.) Route the single orange wire labeled “IGN_12V” to an ignition source.
- 4.) Route the 3-wire Tank Pressure Sensor sub harness (green, red, and black wires) labeled “P_SENS” to the sensor.
- 5.) Route the single yellow wire labeled “COMP_1” with a 3 Amp fuse to trigger the Compressor Relay(s).
- 6.) Route the single red wire labeled “BATT_12V” with a 10 Amp fuse to the vehicle battery.
- 7.) Mount the single black wire labeled “EC_GND” with the VU4 ground.

SwitchSpeed™ Controller Mounting:

SwitchSpeed™ Controller Mounting

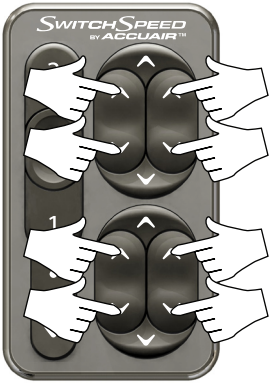
- Choose a mounting location that will allow the driver to operate and view the SwitchSpeed™ Controller from the driver's seat. Once your target mounting position has been found, use the template to drill mounting holes.

NOTE: See Mounting Template on page 20.



Testing Wiring & Mechanical Components:

Now your system components are installed, plumbed, and wired (Mechanical Air Suspension Components, Compressor(s), Tank(s), Tank Pressure Sensor, Valves, Air Line, ECU, and SwitchSpeed™ Controller), it is time to test the system.



To Begin Testing The System:

Turn the vehicle Ignition ON, or start the vehicle.

(You will need to be charging your electrical system either by running the vehicle or by using a high amperage battery charger).

As you consume air pressure by raising the vehicle, the Air Compressor(s) will automatically turn ON when necessary.

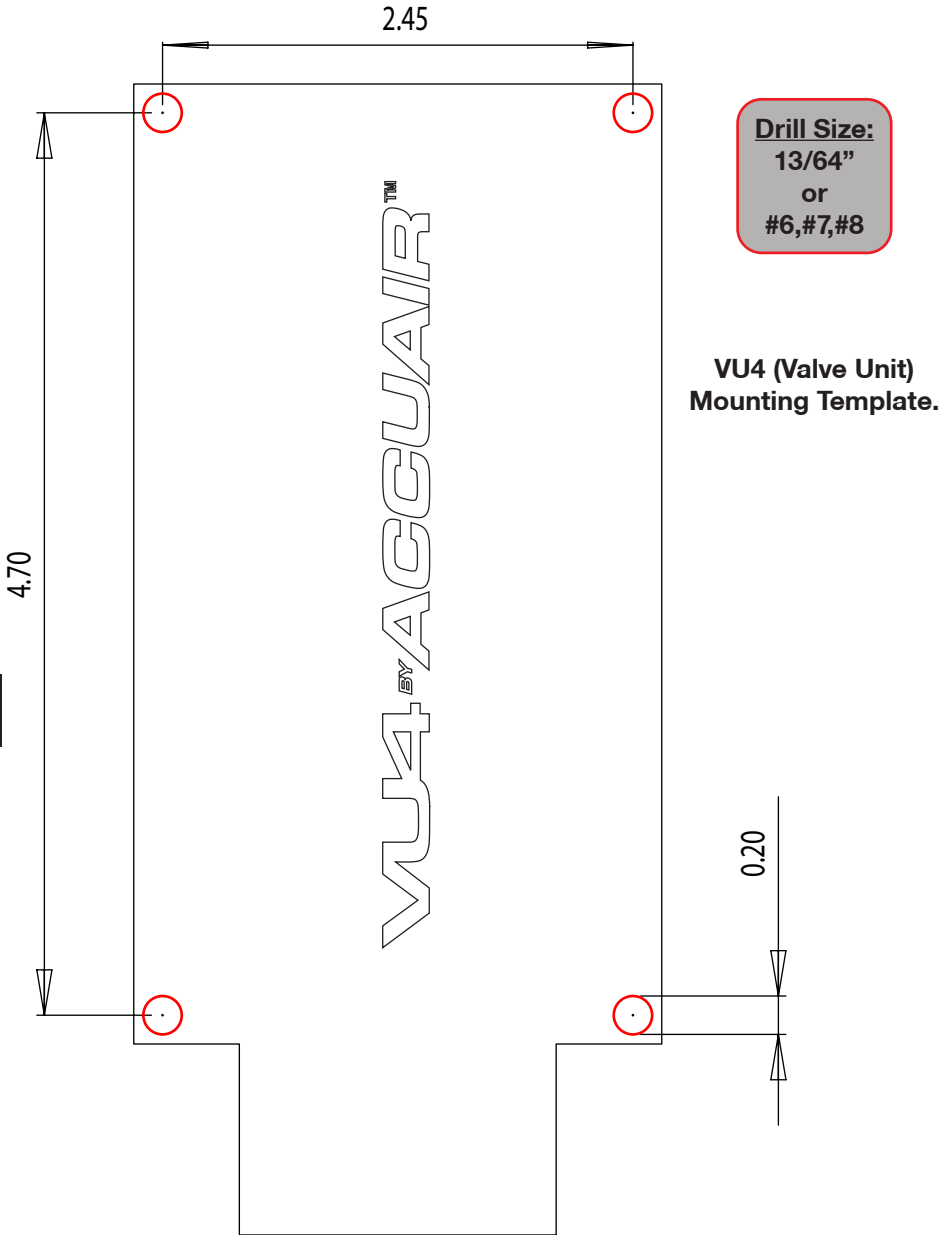
This is a good time to do some mechanical system checking:

Look for mechanical interference throughout the range of travel for the Air Springs and all moving suspension components.

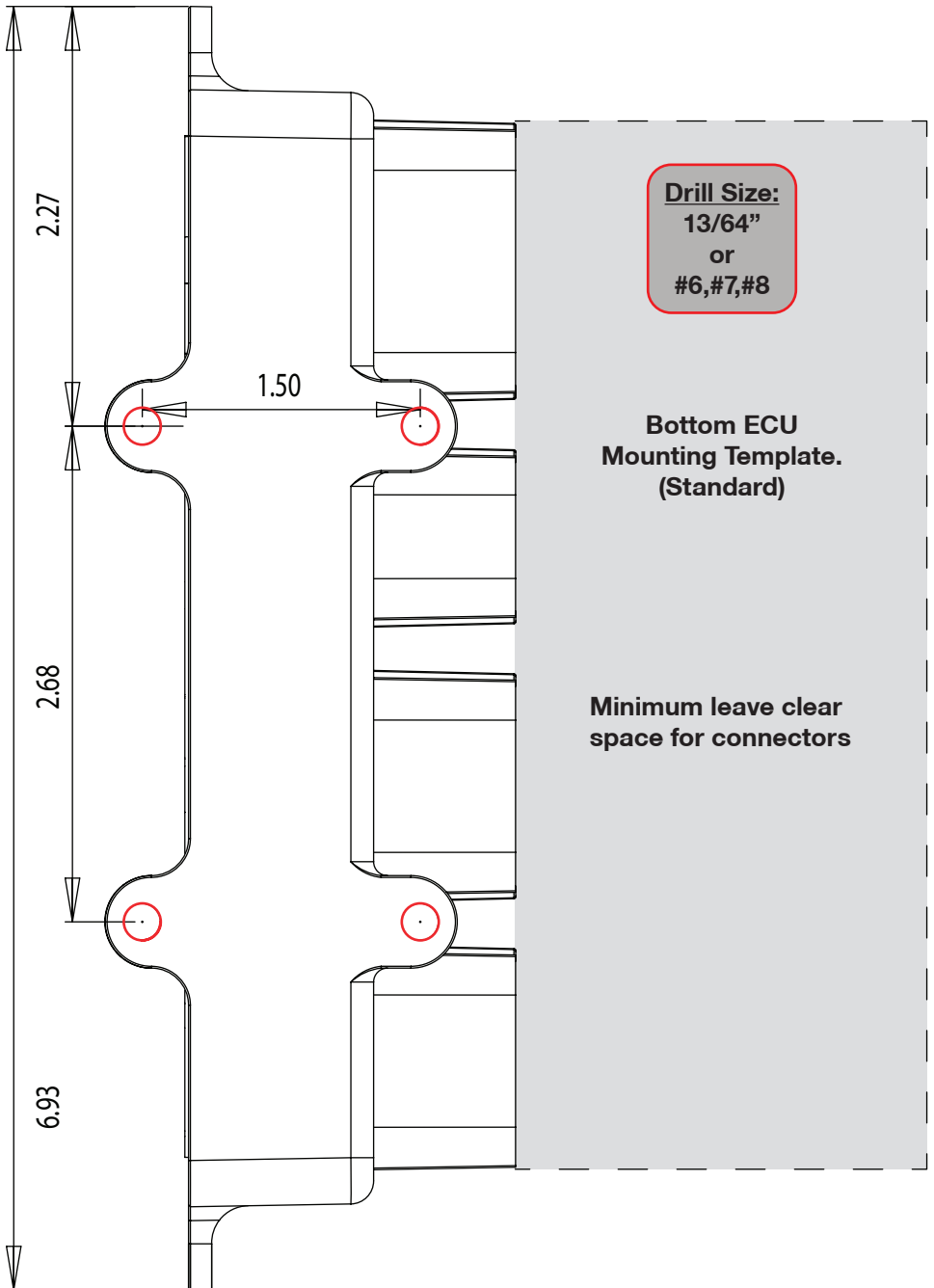
Test for air leaks at all fittings and pipe threaded joints using a soapy spray bottle. To fix any air leaks first lower the Air Springs, then turn the Ignition OFF and depressurize the Air Storage Tank(s).



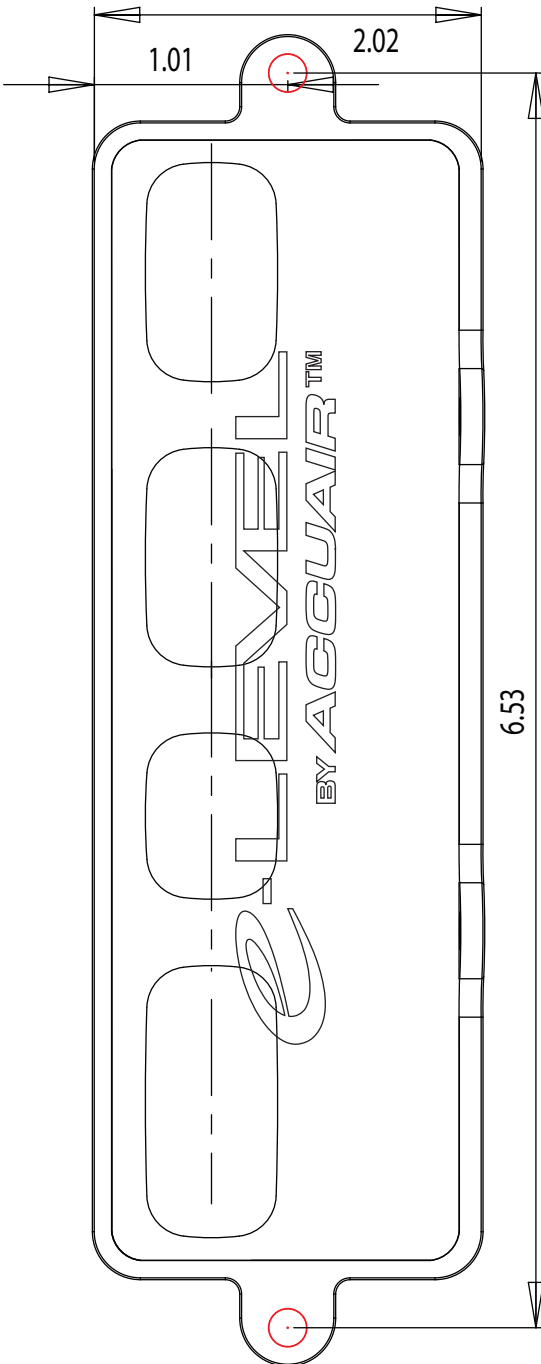
Mounting Templates:







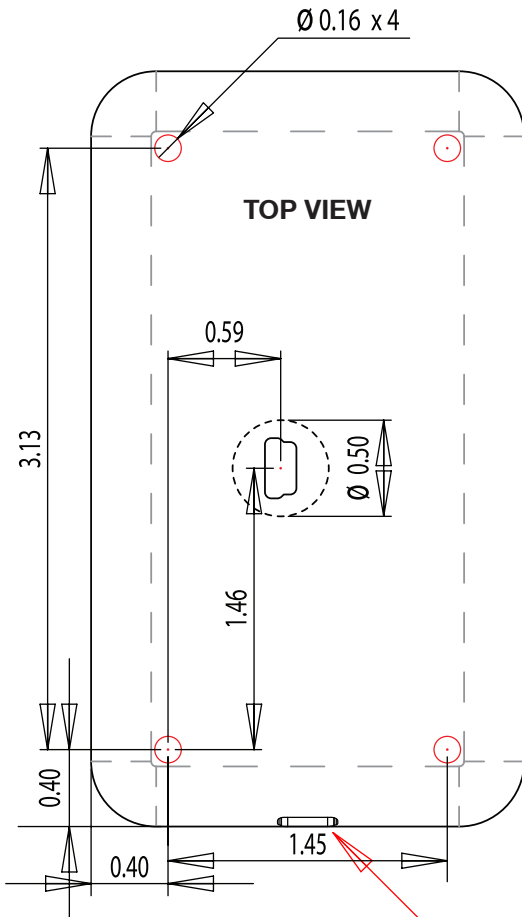




Drill Size:
13/64"
or
#6,#7,#8

**Rear ECU
Mounting Template.
(Optional)**





Drill Size:
5/32"

SwitchSpeed™
Mounting Template.

Bottom Side with
USB Connector