



Installation Instructions:

# Filler Vent Tube Reader

REV 0524a



## UNPACKING INSTRUCTIONS



Remove top latches from crate to release the lid.



The first layer of the crate will include:

- IP69 Keyboard
- Hardware kit
- 24VDC mechanical relay
- Instructions
- Air lines
- Sensor cabling



The second layer of the crate will include:

- 2 long (breakaway) sensor arms
- 1 short sensor arm
- 2 sensor arm clamps
- 1 custom antenna with rotating cylinder with two (2) 4mm 90-degree push-to-connect air fittings installed

## UNPACKING INSTRUCTIONS



The third layer in this section of the crate contains:

- The “Home” flag
- 1 Horizontal antenna mount
- 2 proximity sensors.



The bottom layer contains:

- 1 long vertical ring mount assembly
- 1 short vertical ring mount assembly
- 1 horizontal to vertical brace
- 1 break away sensor arm mounting bracket



Remove the package of air lines, sensor wiring, and screen protection packing.

Next remove the 4 screws that hold the cross brace that secures the unit.  
(Save the brace and screws to return with the crate).

**Note:** An \$800 charge will be applied for unreturned crates.

## PLACEMENT OF THE CONTROL BOX



Placement of the control box is important. The maximum distance is based on the antenna wire.

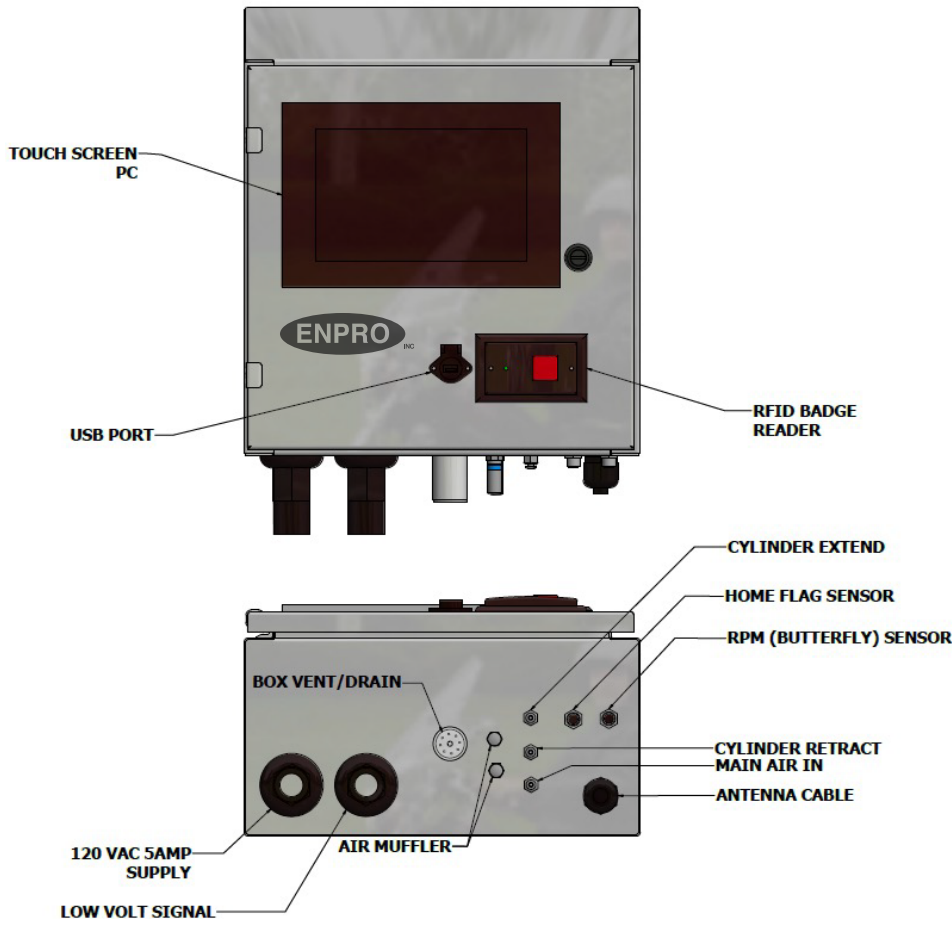
**Note: This is a tuned length of wire. You cannot make this wire longer or shorter.**

Excess length will get coiled in the control box.

The box needs to be mounted within 20' of the area that is between the infeed and the discharge, taking into account the path of up/down from the antenna location and up/down to box.

The enclosure should be mounted with the screen at about eye level. Care should be taken to protect the glass screen.

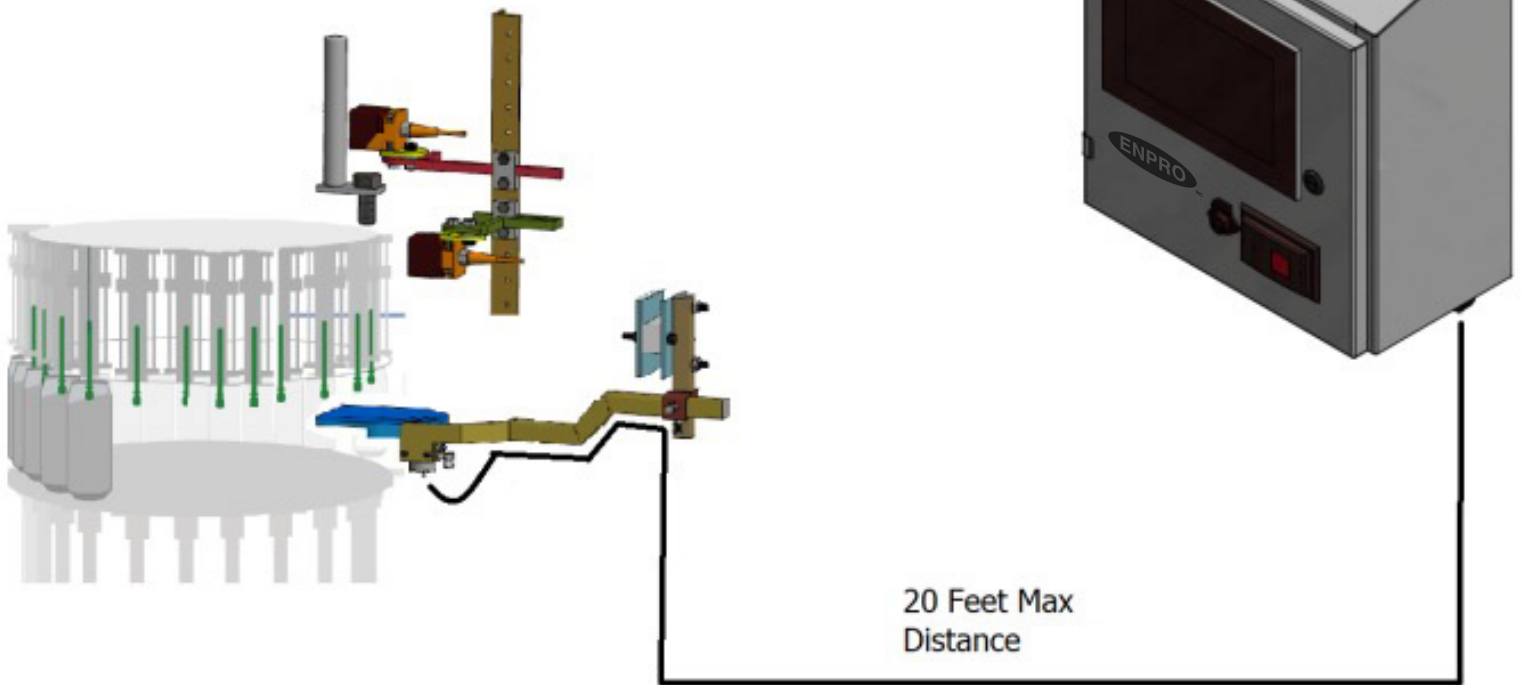
## PARTS OF THE CONTROL BOX



When mounting the box use the supplied rubberized washers on the inside of the box to maintain the IP rating of the enclosure.

## MAX DISTANCE FOR CONNECTIONS

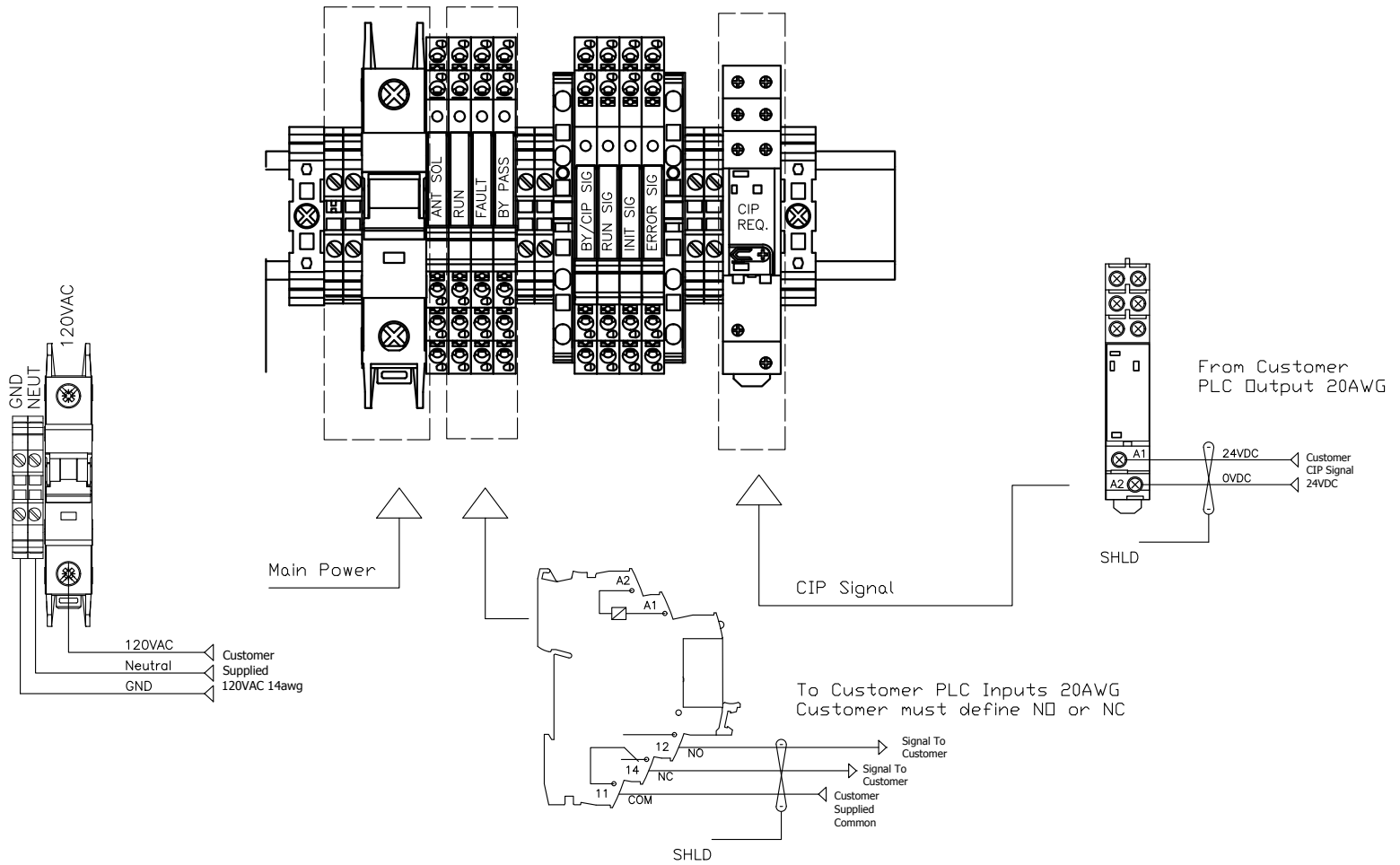
*Box should be mounted no more than 20' from filler including down/up*



From the filler to the control box:

- (2) 4mm airlines
- (2) M12 sensor cables  
*direction of sensor cables is important, the female side must face towards the filler*
- (1) Antenna cable

# CUSTOMER SUPPLIED CONNECTIONS

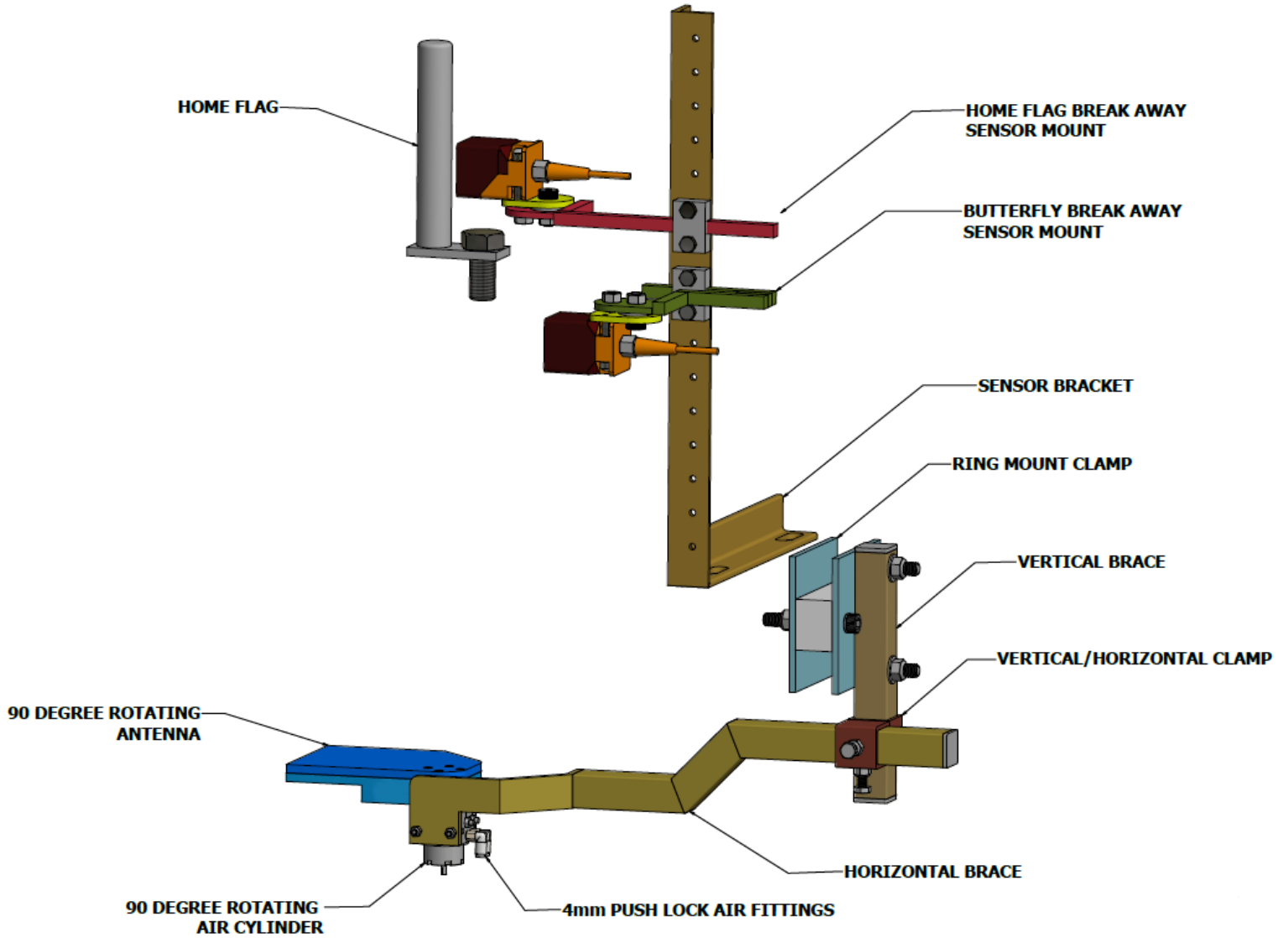


Electrical connections should be performed by qualified electrical personnel.

The main 1/4-inch air line will need to be reduced to 4mm just before the unit.

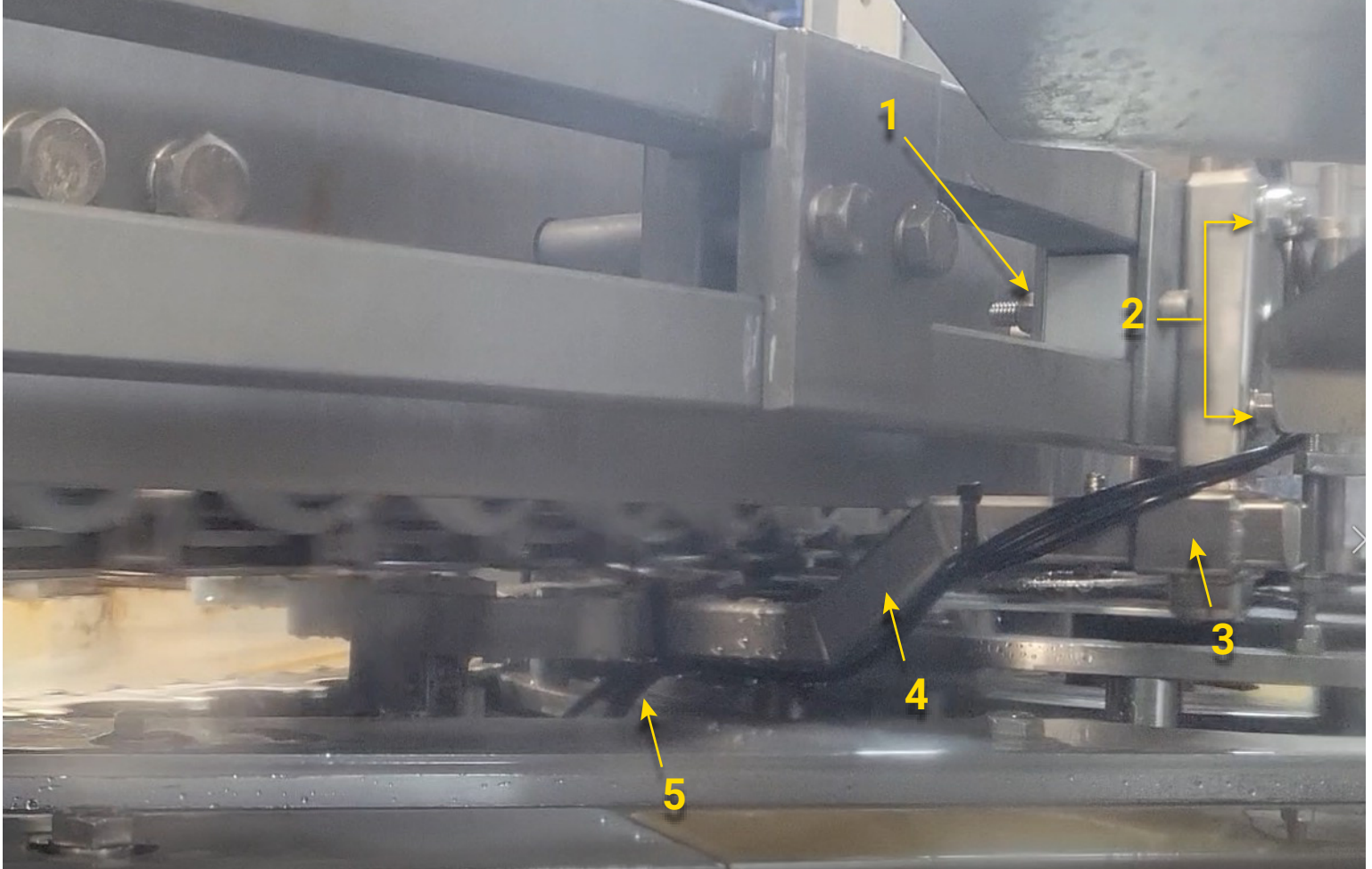
**WARNING:**  
**DO NOT POWER UP UNIT IF ANTENNA CABLE IS NOT CONNECTED**  
**This can damage the reader**

## PARTS OF THE ANTENNA



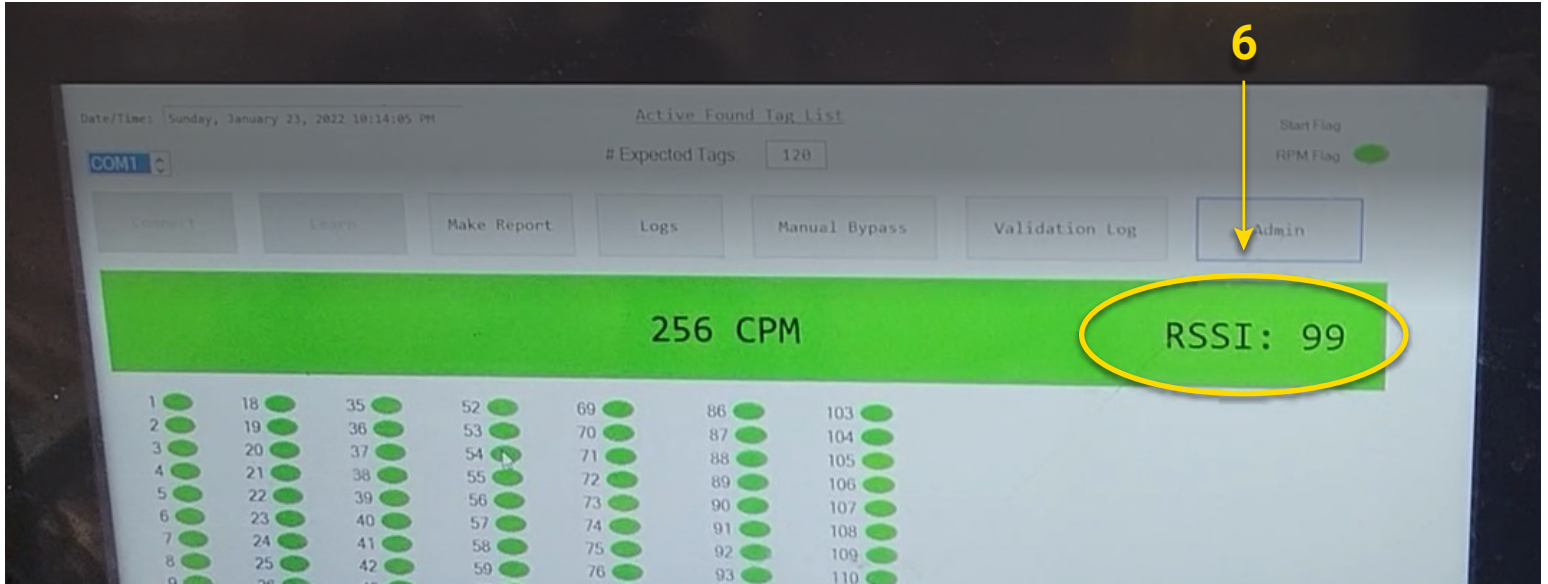


## TUNING THE ANTENNA TO THE MACHINE



1. Place the ring mount clamp in the "NO CAN AREA" of the machine and tighten the nuts
2. Mount the rotating cylinder to the horizontal brace. Slide the vertical/horizontal clamp onto the end of the horizontal piece and then slide in the vertical brace. Hand tighten the 1/4-20 screws to hold it in place.
3. Set the vertical height of the antenna to 1/4" – 1/2" from the bottom of the vent tube
4. Next adjust the in/out position. With the antenna extended, the antenna should go past the vent tube by 1 inch. Retighten the 1/4-20 screws snug.
5. Verify that the antenna can rotate with **NO OBSTRUCTIONS**.  
  
Put a 2" loop to allow the air lines and antenna wire to move freely. Put a cable tie at each bend of the horizontal brace.

## TUNING THE ANTENNA TO THE MACHINE



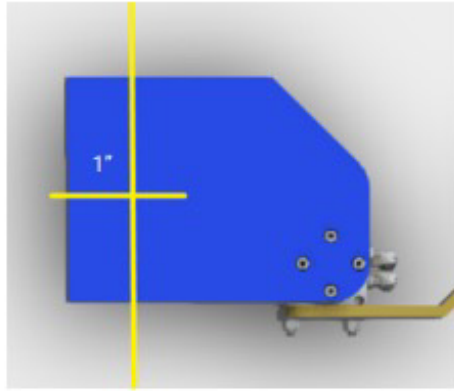
6. Fine tune the setup by bringing valve #1 directly over the center of the extended antenna. Next loosen the 1/4-20 screws to allow the horizontal brace to slide in and out. With the FVTR display you can see the RSSI value; slide in or out until you reach the highest number. Then tighten the 1/4-20 screws for the horizontal brace
7. Double check for no obstructions with the antenna and rotate by hand
8. Check for obstructions with CIP cap in place and antenna retracted. There should be about a 1/2" to 1" gap.
9. Once you have the location tuned you can take off the two quick release nuts and remove the arm assembly. Remove the rotating cylinder and antenna assembly and remove cable ties.
10. Weld the vertical/horizontal clamp to both the vertical brace and horizontal brace. Tack weld first to prevent warping. Remove 1/4 -20 screws and weld in holes.
11. Trim off excess length on the horizontal and vertical braces so they do not interfere with discharge lane. Weld caps on the ends to prevent water ingress.
12. Once complete and cool, remount antenna assembly and secure wire and tubing in the original location.

# ANTENNA

## Alignment

### Step 1

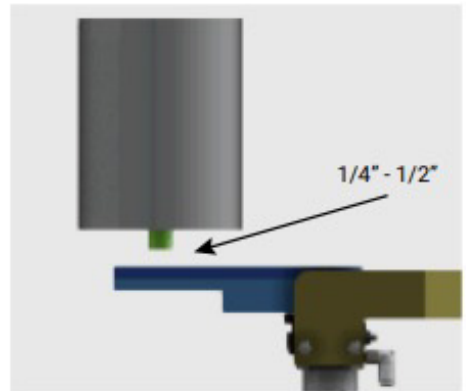
Center antenna 1 inch (from the front and from the center) of the vent tube.



Alignment Step 1

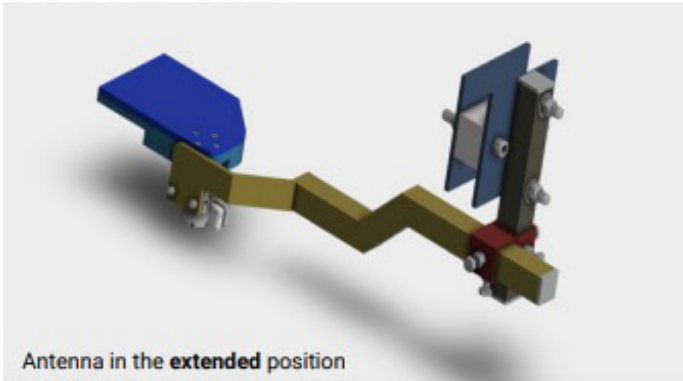
### Step 2

Position the antenna from 1/4 inch to 1/2 inch below the vent tube.

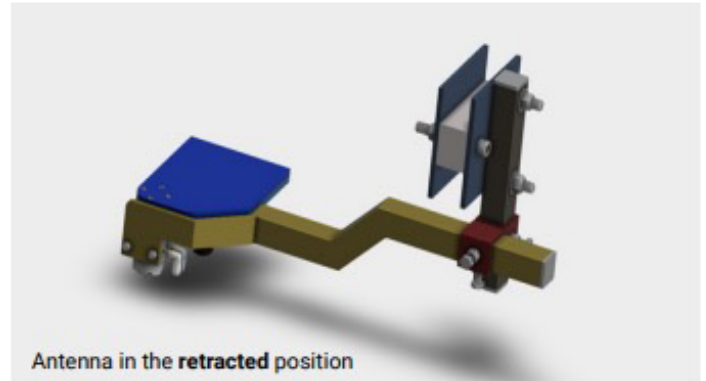


Alignment Step 2

## Antenna Positions



Antenna in the **extended** position



Antenna in the **retracted** position

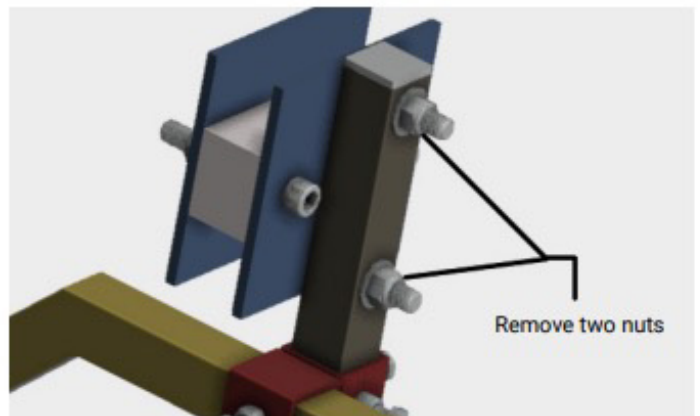
## Removing the Quick Release Antenna

### Step 1

Remove the 2 Nylock Flanged nuts

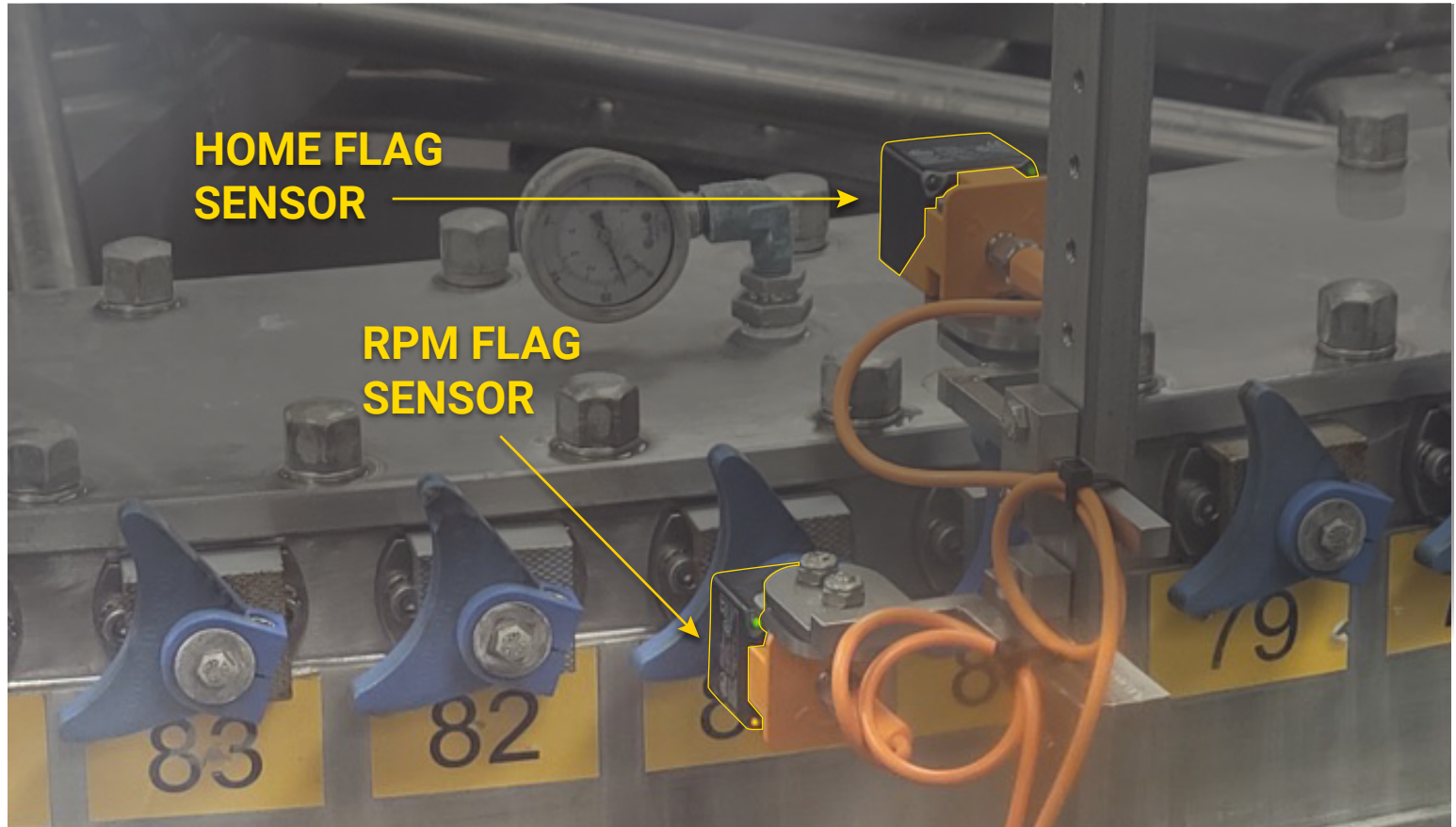
### Step 2

Slide the antenna assembly off of the two bolts



Quick Release Antenna Removal Step 1

## HOME FLAG AND RPM SENSOR POSITIONING



### Home Flag Position

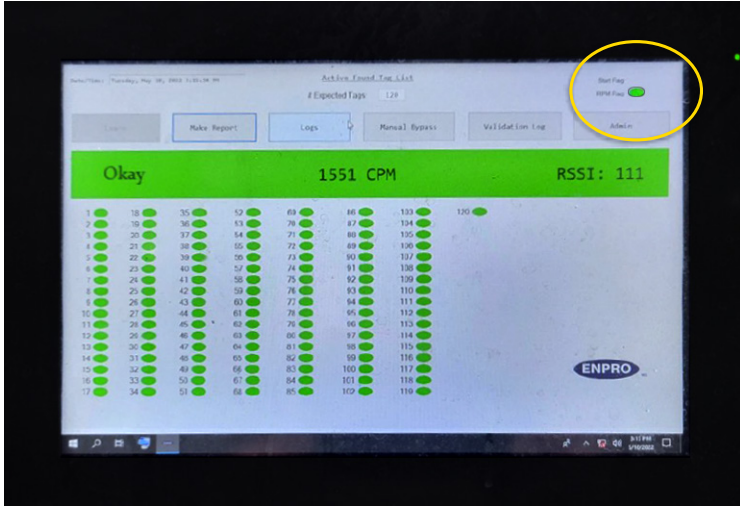
With the #1 valve directly over the antenna and centered, mount the sensor bracket and Home Flag so that the signal is made at this position. Check to make sure that the new Home Flag will not hit anything when the filler rotates.

Note: Ensure that no parts other than the Home Flag will trigger the Home Flag sensor.

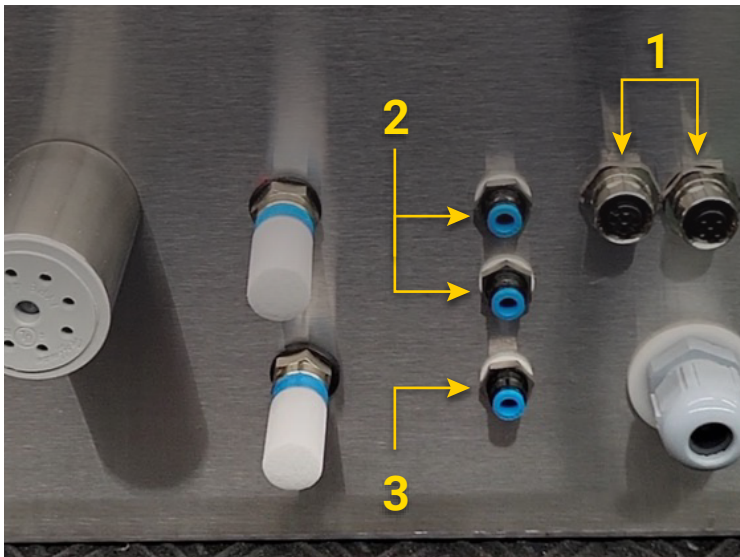
### RPM (Butterfly) Sensor Position

This sensor sits to the left of the home flag and senses the butterfly bolt. It is responsible for the counting sequence.

## VERIFYING HOME FLAG / RPM SENSORS



Place a metal object in front of the sensor and make sure the correct indicator lights up, if not swap the cables under the box.



Air to Rotating cylinder, Antenna should retract in CIP/JOG mode and extend in run mode. If this is reversed swap the air lines going to cylinder under box.

- 1. Sensors
- 2. Air to Rotating Cylinder
- 3. Main Air

## SETTING ROTATING CYLINDER PRESSURE



With air pressure supplied:

1. lift up on the blue knob
2. set pressure between 4-6 Bars.
3. Once set push the blue knob down to lock it into place.

## SUPPORT

After reviewing this information, if you have any questions or concerns please do not hesitate to contact Enpro.

Thank you for your business!

Grant Cook

630-632-0955

GCook@enproinc.com

[www.enproinc.com/venttube](http://www.enproinc.com/venttube)

