



# Vantage Strap-On Sensors



## Technical Brief

The Vantage strap-on style sensors are designed to operate in conjunction with the Speedrail mounting rails and chains. There are two styles of the strap on sensors.

V30L: Typically used on pipe sizes 4 inch and larger.

V30S: Typically used on pipe sizes 1 inch to 8 inch.

The material and specifications will be the same for both styles of sensors. The only difference between the V30L and the V30S sensors are the physical size. (See dimensions in the picture to the right)

### Material of Construction:

Housing:	Black Anodized Aluminum.
Shoe:	Ultem 1000 Plastic
Nipple:	Black Anodized Aluminum with 1/2 inch NPT thread.
Sensor Cable:	Triax with PVC coating (Belden 9222) 50 ft. standard, 1000 ft. maximum.

### Temperature:

Standard: -30° F to 150° F

High Temperature

(Option): -30° F to 300° F

### Operating Frequency:

1280 Khz or 640 Khz

### Hazardous Rating:

Class I, Div. I, Groups A-G except acetic atmospheres available (pending).

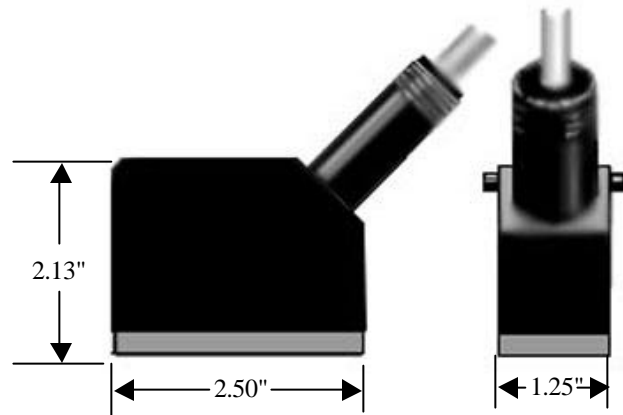
### Speedrail Mounting

The Speedrail mounting for the Vantage sensors was specifically designed to make installation of the sensors and rail system easy and simple for the installer. No extra tools are required for installation other than connecting the conduit to the sensors. The Speedrails will have a level on each rail to assist in locating the rails to the sides of the pipe.

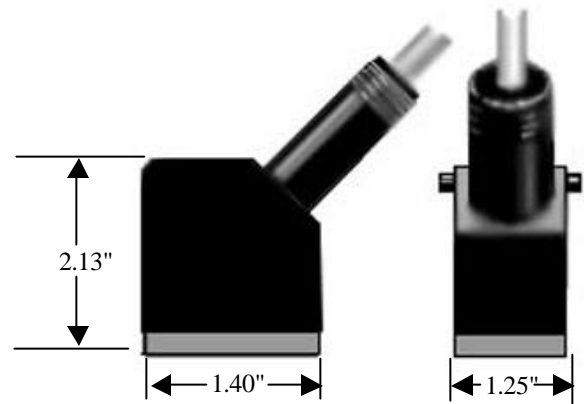
The VeeShot holder will have one rail with two mounting chains. The Zshot holders will have two rails and two chains per rail. The Zshot holders will also be supplied with a Zshot Locator to assist locating the sensor orientation of upstream vs. downstream sensor placement.

### Materials of Construction:

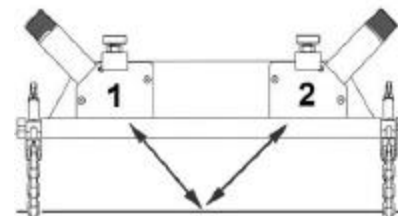
Rail:	Black Anodized Aluminum
Hardware:	304 Stainless Steel
Mounting Chain:	304 Stainless Steel



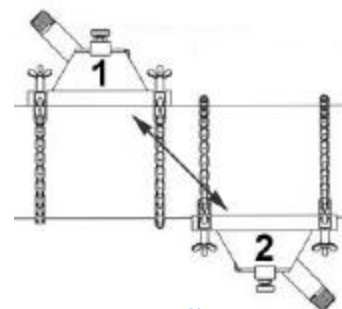
V30L Sensor



V30S Sensor



VeeShot



ZeeShot

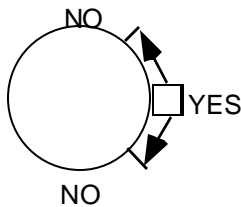
## Vantage Series 4000 Strap-On Sensor Installation

There are two styles of strap on sensors. One is referred to as Small Strap-On sensor (used on pipe sizes 1"-8"), the other is the Large Strap-On sensor (used on pipe sizes 4"-300"). The Vee Shot and the Zee Shot sensor rails will accommodate both the Small and Large sensors so the mounting configurations will be the same for either sensor. It is important to note, however, that the electronics unit will need to be programmed for the specific sensor used.

### Where do I place my sensors in relation to upstream and downstream conditions?

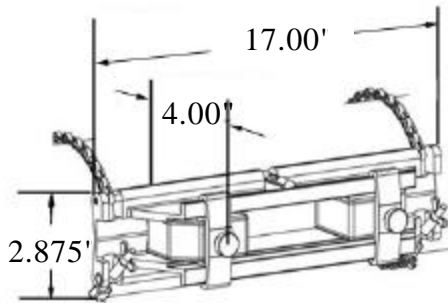
The ultrasonic transit time flow meter accuracies are based upon well developed velocity profiles. Upstream disturbances such as pumps or tees and elbows will effect the velocity profile. Below is a recommended straight runs to assure meter accuracies.

Device	Upstream from meter (in pipe diameters)	Downstream from meter (in pipe diameters)
Tees & elbows	10-15	2-3
Reducers	10	2-3
Increases	20	2-3
Valves (fully opened)	10-15	2-3
Valves (modulating)	20-25	2-3
Pumps	20-25	2-3



The sensor/sensor holders should always be placed on the sides of the pipe as shown on the left and never on the top or the bottom of the pipe.

### Vee Shot Rail Dimensions: One rail on side of pipe



### Zee Shot Rail Dimensions:

Two sensor rails, one on either side of pipe.

