

## Wyatt-Badger Lo-Loss® Flow Tubes Cast Iron Primary Elements



### FEATURES:

- **Lowest Pressure Loss**
- **Short Laying Length**
- **Economical Design**
- **Best Documented Flow Tube on the Market**

### Description

The cast iron Wyatt-Badger Lo-Loss® meter is a differential producing flow tube that maintains its accuracy over a wide range of flow rates. The hydraulic shape of the PMT Lo-Loss® meter incurs a lower permanent pressure loss than any other differential producing flow device. The PMT can be provided with either 125 or 250 PSIG flanges.

### Application

The cast iron PMT series of Lo-Loss® meters is designed to accurately and reliably measure the flow rates of water, wastewater, sludge, clean fluids, and gases in full pipe conditions. The PMT series of meters is ideally suited to applications where permanent pressure loss must be kept to a minimum, such as in gravity-fed systems, or where a savings due to lower pumping costs can be realized. The Model PMT-C is designed for rate-of-flow control applications, while the PMT-S incorporates a rugged design for cleaning the pressure taps for solids-bearing fluids.

### Flow Measurement Accuracy

For pipe Reynolds numbers greater than 100 000 and a normalized piping configuration, the Wyatt-Badger PMT Lo-Loss® meter provides a flow measurement accuracy of  $\pm 0.25\%$  with independent flow calibration and  $\pm 1.00\%$  without flow calibration.

Lo-Loss® is a registered trademark of Wyatt Engineering.

# Technical Specifications

## Accuracy

Within the specified pipe Reynolds number range and a normalized piping configuration, the Lo-Loss® flow meter provides flow measurement uncertainties of:

- ± 1.00% for standard meters and
- ± 0.25% for flow calibrated meters.

## Pressure Loss

The permanent pressure loss of the Lo-Loss®, expressed as a percentage of the differential pressure, is the lowest of any differential producing primary element.

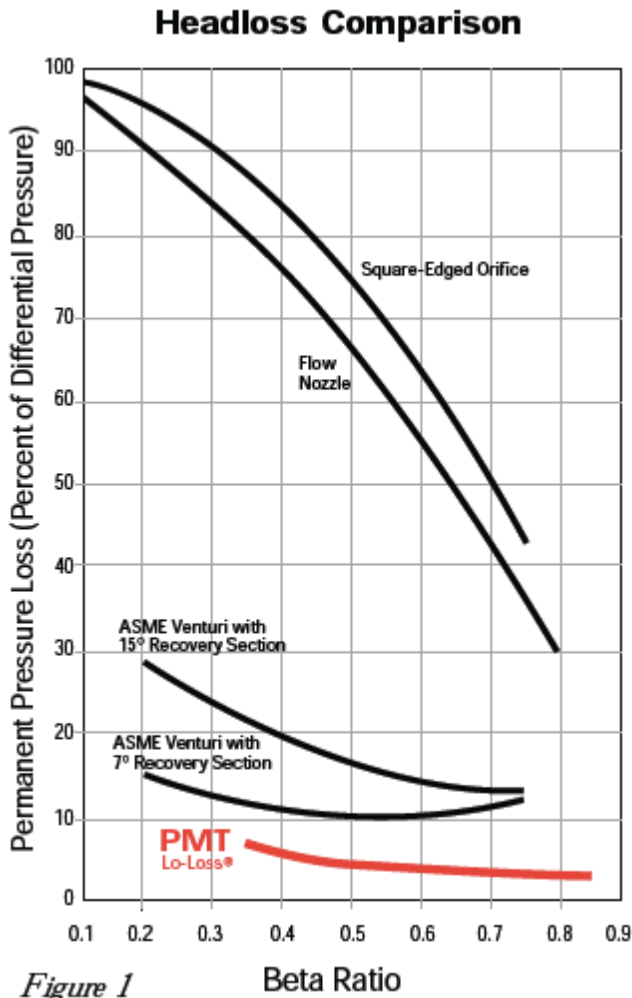


Figure 1

## Beta Ratio

Wyatt Engineering can furnish the Lo-Loss® meter with a wide range of diameter ratios (d/D). By custom designing a Lo-Loss® meter for your application's flow conditions, Wyatt-Badger can provide an accurate and reliable primary element with the low permanent pressure loss.

## Temperature Range

The fabricated series of Lo-Loss® meters can operate over the fluid temperature range of -20 °F to +450 °F (-30 °C to +175 °C).

## Pressure Range/End Connections

Flanged end connections, per ANSI B16.1 for 125 PSIG and 250 PSIG service, are available. Various other end connections are also available, including: Mechanical joint flanges, per AWWA C110 and C111, and plain-end designs.

## Piping Requirements

Designed for full-pipe flow, Lo-Loss® flow meters can be mounted horizontally, vertically, or on an angle. Refer to Wyatt Engineering Technical Manual for the Lo-Loss® Meter for recommended upstream piping..

## Energy Considerations

Figure 1 compares the permanent pressure loss of the insert Lo-Loss® design with that of other primary flow elements. Figure 2 illustrates the reduced pumping costs that are realized when using a Lo-Loss® Meter in a typical example. The pressure recovery of the Wyatt-Badger Lo-Loss® Meter means reduced pumping costs. High beta ratio Lo-Loss® Meters will recover up to 97.5% of the differential pressure produced. This is two to four times better than typical classical venturi devices, as well as most modified venturi meters.

Using venturi tubes instead of orifice plates can yield significant savings and using the Lo-Loss® meter instead of venturi tubes can realize further savings. For over 50 years, engineers have given their clients the benefits of efficiency and accuracy by doing just that.

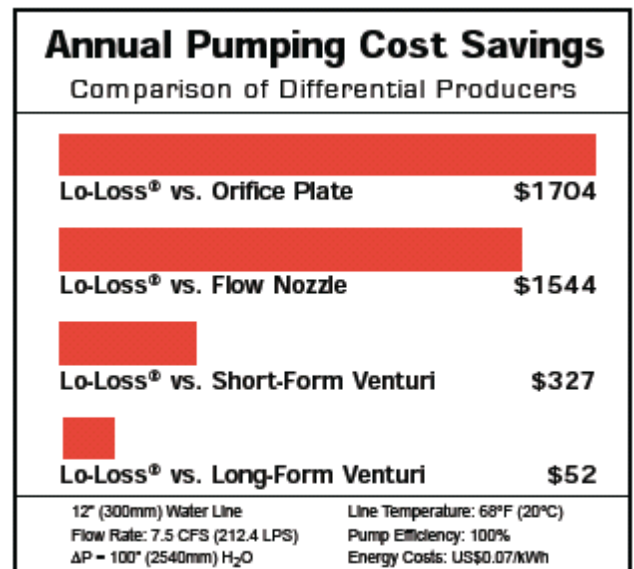


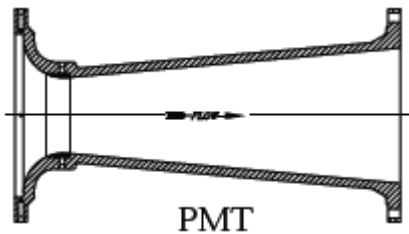
Figure 2



# Available Options

The cast iron Lo-Loss® is designed to measure the flow of gases, water, wastewater, sludge, and slurry flows in full pipes. The iron Lo-Loss® design is furnished in four models, depending on the application.

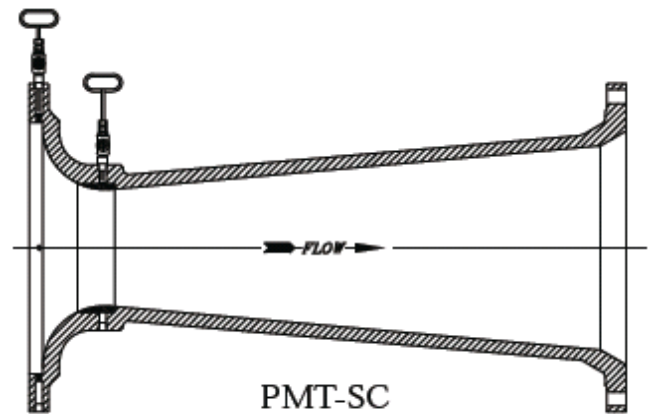
**Model PMT** is a flanged cast iron Lo-Loss® meter designed for liquid and gas flow measurement. Available throat materials are bronze and stainless steel. All valves, except butterfly valves, may be direct-coupled downstream for control purposes without loss of accuracy. The Lo-Loss® can be supplied with flanges, mechanical joints, or plain ends. Typical throat materials are bronze and stainless steel.



**Model PMT-C** is a flanged cast iron primary element designed to utilize a direct-coupled butterfly valve in a rate-of-flow controller for liquid or gas service. The direct-coupling of the butterfly valve will not affect the discharge coefficient of the primary element. The meter outlet can be modified to accommodate a valve one or more line sizes smaller than the main piping run.

**Model PMT-S** is a flanged primary element designed for wastewater, sludge, slurry, or other fluids with suspended solids. Manual vent cleaners are provided as standard; automatic vent cleaners or a sealed diaphragm system are available as options. An inspection port and water purge systems, either continuous or timed, are also available.

**Model PMT-SC** is a rate-of-flow controller designed for use in applications where the line fluid contains suspended solids. The primary element is provided with vent cleaners or a purge system and will accept a butterfly valve bolted directly to the downstream flange. This allows the PMT-SC to be used in many applications where other standard venturi or flow tubes cannot be used.



*Consult your local representative or Wyatt Engineering for information on other materials of construction.*

