

# Venturi tube

## Model : F700

Spec. sheet no. FD07-01

### Description

The venturi tube is characterized by its tapered inlet and diverging outlet. This design greatly reduces head loss to the system when compared to an orifice plate, in fact, the venturi can handle 25 ~ 50 % more flow, than an orifice for comparable larger line size and lower head loss. The venturi is well suited for dirty fluids. There are no places for dirt to build up in the tube. Traditionally, the venturi tube has been used on low pressure gas flow, water and waste applications. Venturi tubes are generally constructed with the system of pressure taps which project radially into the pipe and feed into a common chamber known as a pirometer ring. This multiple tap arrangement provides an average pressure reading over the entire circumference of the element. As a result, the need for a long pipe runs is eliminated. A general rule is that a venturi tube requires only half the upstream and downstream runs of an orifice plate. The discharge coefficient of the venturi is constant and predictable to  $\pm 1\%$  for pipe reynolds numbers greater than 100,000.

Venturi elements are not as reliable at lower reynolds numbers (Figure 10). The venturi tube is a relatively high cost device. However, low pumping costs and reduced piping requirements can make it cost effective.



### Specification

#### Venturi type

- Fabricated flange type
- Fabricated weld-on type
- Machined flange type
- Machined weld on type

#### Flow calculation standards

ISO 5167-4

#### Flange ratings

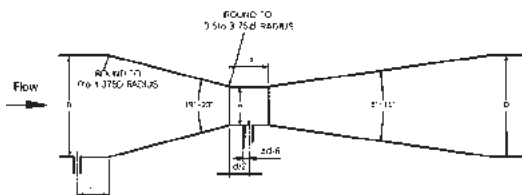
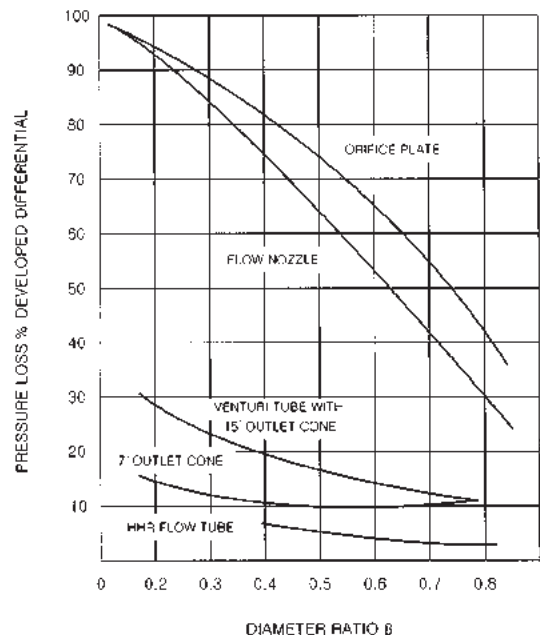
JIS 10, 16, 20, 30, 40 and 63K  
ANSI class 150, 300, 600 and 900 Lb

#### Nominal pipe sizes available

50 ~ 1,200 mm  
2" ~ 48"

#### Material

Carbon steel  
304SS, 316SS and 316L SS



The Critical Dimension of the Classical Venturi Tube

**1. Base model****F700** Venturi tube**2. Type**

**FF** Fabricated flanged  
**FW** Fabricated weld-on  
**MF** Machined flanged  
**MW** Machined weld-on

**3. Line size**

JIS	mm	ANSI	inch	DIN	mm
<b>J015</b>	15A	<b>A001</b>	½B	<b>D015</b>	15A
<b>J020</b>	20A	<b>A002</b>	¾B	<b>D020</b>	20A
<b>J025</b>	25A	<b>A003</b>	1B	<b>D025</b>	25A
<b>J040</b>	40A	<b>A004</b>	1½B	<b>D040</b>	40A
<b>J050</b>	50A	<b>A005</b>	2B	<b>D050</b>	50A
<b>J065</b>	65A	<b>A006</b>	2½B	<b>D065</b>	65A
<b>J080</b>	80A	<b>A007</b>	3B	<b>D080</b>	80A
<b>J100</b>	100A	<b>A008</b>	4B	<b>D100</b>	100A
<b>J125</b>	125A	<b>A009</b>	5B	<b>D125</b>	125A
<b>J150</b>	150A	<b>A010</b>	6B	<b>D150</b>	150A
<b>J200</b>	200A	<b>A011</b>	8B	<b>D200</b>	200A
<b>J250</b>	250A	<b>A012</b>	10B	<b>D250</b>	250A
<b>J300</b>	300A	<b>A013</b>	12B	<b>D300</b>	300A
<b>J350</b>	350A	<b>A014</b>	14B	<b>D350</b>	350A
<b>J400</b>	400A	<b>A015</b>	16B	<b>D400</b>	400A
<b>J450</b>	450A	<b>A016</b>	18B	<b>D450</b>	450A
<b>J500</b>	500A	<b>A017</b>	20B	<b>D500</b>	500A
<b>J600</b>	600A	<b>A018</b>	24B	<b>D600</b>	600A
<b>J700</b>	700A	<b>A019</b>	28B	<b>D700</b>	700A
<b>J800</b>	800A	<b>A020</b>	32B	<b>D800</b>	800A
<b>J000</b>	1,000A	<b>A021</b>	40B	<b>D000</b>	1,000A
<b>XXXX</b>	Other				

**4. Body material**

**C** Carbon steel  
**4** 304SS  
**5** 316SS  
**6** 316L SS  
**O** Other

**5. Flange rating**

JIS	ANSI	DIN
<b>J010</b> JIS 10K	<b>A010</b> ANSI 150 Lb	<b>P010</b> PN 10
<b>J016</b> JIS 16K	<b>A020</b> ANSI 300 Lb	<b>P016</b> PN 16
<b>J020</b> JIS 20K	<b>A030</b> ANSI 600 Lb	<b>P025</b> PN 25
<b>J030</b> JIS 30K	<b>A040</b> ANSI 900 Lb	<b>P040</b> PN 40
<b>J040</b> JIS 40K	<b>A050</b> ANSI 1,500 Lb	
<b>J063</b> JIS 63K	<b>A060</b> ANSI 2,500 Lb	
<b>XXXX</b> Other		

**6. Flange material**

**A** A105  
**S** A182 F304  
**O** Other  
**N** None

**7. Boss material**

**CS** A105  
**S4** A182 F304  
**OH** Other  
**NO** None

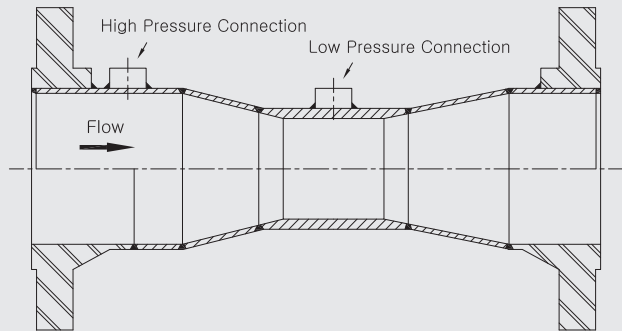
**8. Option**

**O** Other  
**N** None

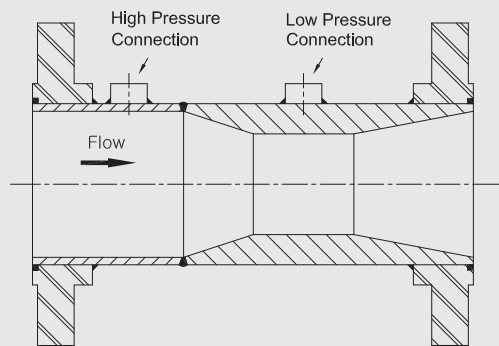
1	2	3	4	5	6	7	8	Sample ordering code
<b>F700</b>	<b>FF</b>	<b>A016</b>	<b>4</b>	<b>A020</b>	<b>S</b>	<b>S4</b>	<b>N</b>	

## Dimension

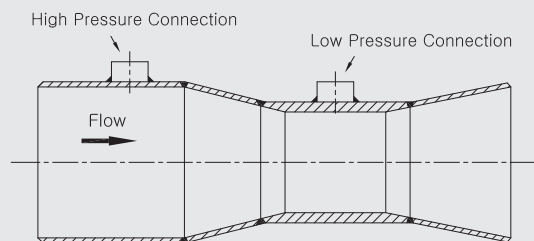
Fabricated flange type  
Available in size 6" and larger  
**Model : F700-FF**



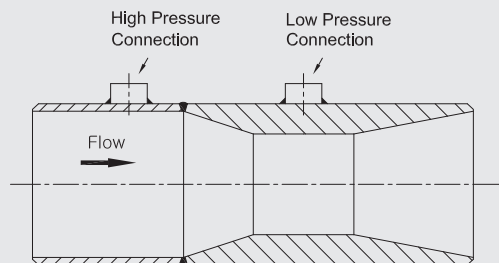
Machined flange type  
Available in size 6" and smaller  
**Model : F700-MF**



Fabricated weld-on type  
Available in size 6" and larger  
**Model : F700-FW**



Machined weld-on type  
**Model : F700-MW**



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