

# Flow Nozzle

Model : SFN



**SeoJin Instech Co., Ltd.**

[www.seojin.biz](http://www.seojin.biz)

## Introduction

The flow nozzles, more costly than other orifice due to their structure, are suitable for determining the flow rates of fluids flowing at high temperature and high pressure. Under the same measuring conditions, a flow nozzle has a higher mechanical strength, can permit the flow of more than 60 percent greater volume of a fluid, and can measure the flow rates of fluids containing solid particles less disturbed, than an orifice having the same bore. In addition, they are suited for high speed flowing fluids. We can supply not only single flow nozzles, but also flow nozzles having welded short pipes on both their upstream and downstream sides.



## Specifications

### NOZZLE MOUNTING TYPES

Flange Type  
Weld-in Type  
Holding Ring Type

### FLOW CALCULATION STANDARDS

JIS Z8762, ISO 5167, ASME MFC-3M, ISA 1932

### PRESSURE TAPS

1D and 1/2D Tap, Throat Tap

### NOMINAL PIPE SIZE AVAILABLE

100mm to 500mm (4 to 20 inches)

### B LIMIT

$0.25 < B < 0.8$   
(low-beta) long-radius nozzle  $0.2 \leq B \leq 0.5$   
(high-beta) long-radius nozzle  $0.25 \leq B \leq 0.8$   
B : Ratio of throat to pipe diameter= $d/D0$   
(d: Throat diameter)

### NOZZLE MATERIALS

A182-F11, F22  
A182 F304L  
A182 F316L



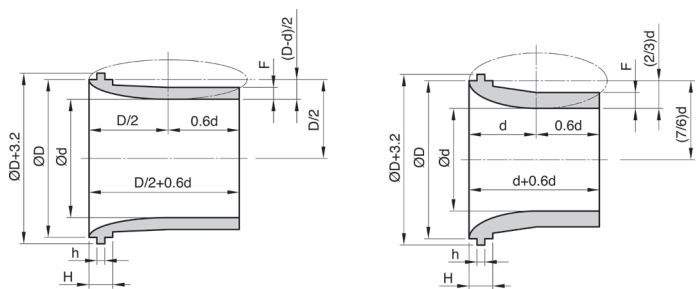
## Features

Rounded inlet not subject to wear or damage, extending product life.  
Better sweep-through effect for debris and liquids, eliminates damming effect.  
Direct welding into line, eliminating potential of leaking gaskets.  
No moving parts, simple configuration, maintenance-free.

## Standard

### ISO 5167

Seojin will offer all flow nozzle types in full compliance with ISO-5167 standard. There are two types of long radius nozzle : high ratio nozzles and low ratio nozzles. For  $\beta$ -Values between 0.25 and 0.5, either design may be used. And ISA-1932 Nozzle, Venturi-Nozzle.



$3 \leq H \leq 0.15D$

$3 \leq F$

[A] High Ratio  $0.25 \leq \beta \leq 0.8$

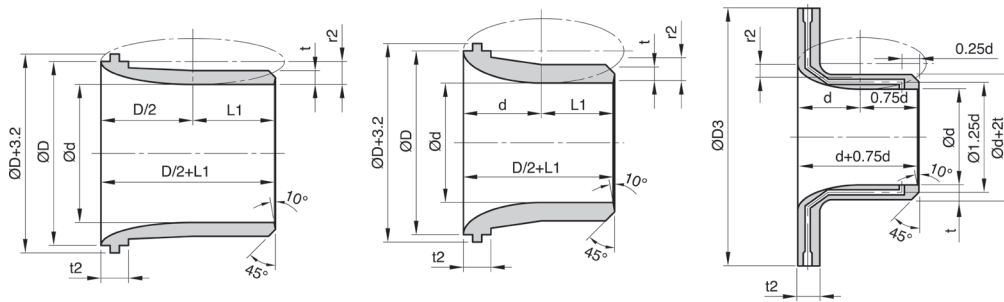
$3 \leq H \leq 0.15D$

$3 \leq F$

[B] Low Ratio  $0.2 \leq \beta \leq 0.5$

## ASME MFC-3M

Seojin will offer all flow nozzle types in full accordance with ASME MFC-3M for all types that are shown below and also ASME PTC 6 for Throat Tap. There are 3 types of long radius style ASME flow nozzles covered by this standard.



$0.5 \leq \beta \leq 0.8$   
 $L1 \leq 0.6d$  or  $\leq D/3$   
 $r2 = (D-d)/2$   
 $2t \leq D-(d+6mm)$   
 $3mm \leq t2 \leq 0.15D$   
 [A] High  $\beta$  Nozzle

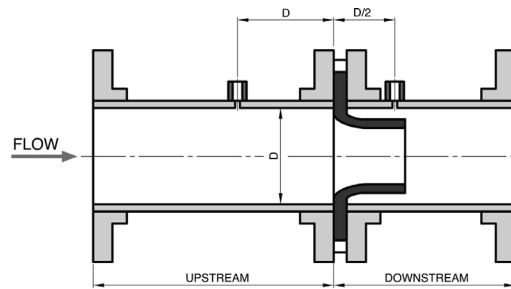
$0.2 \leq \beta < 0.5$   
 $0.6d \leq L1 \leq 0.75d$   
 $0.63d \leq r2 \leq 0.67d$   
 $3mm \leq t \leq 12mm$   
 $3mm \leq t2 \leq 0.15D$   
 [B] Low  $\beta$  Nozzle

$0.25 \leq \beta < 0.5$   
 $0.63d \leq r2 \leq 0.67d$   
 $t = 0.25d$   
 $t2 = 38mm$   
 [C] Low  $\beta$  Nozzle,  
 with Throat Tap

## ELEMENT TYPES

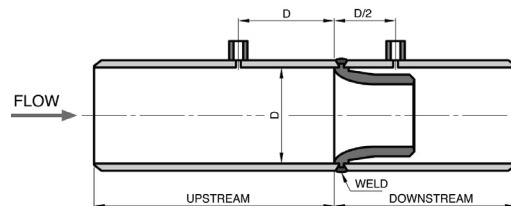
### Flanged Type

This type is mounted between two piping flanges. It is designed in accordance with ISO 5167 and ASME specifications.



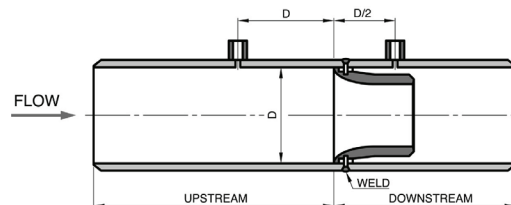
### Weld-in Type

This is used where flanges are not applicable, such as high temperature and high pressure applications. Unless otherwise specified, Seojin will offer this type as standard.



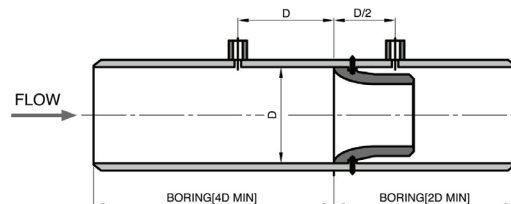
### Holding Ring Type

For this type, the ring, pins and the pipe are made of compatible materials therefore, filler metal (welding rod) is not needed in welding operation.



### Knock-Pin Type

Filler metal is not required for this type as well, however, holes need to be bored for the pins to install.



## Ordering Information

### ■ FLOW NOZZLE

SFN -	A	1	A	1	A	1	A	1	A
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**OPTION**  
A = Inspection Pot  
B = None

**BOSS SIZE**  
1 = 1/2" S.W  
2 = 3/4" S.W  
3 = etc.

**HOLDING RING MATERIAL**  
A = A182 F304L  
B = A182 F316L  
C = etc.

**PIPE MATERIAL**  
1 = A106 Gr.B  
2 = A335 P11  
3 = A335 P22  
4 = etc.

**NOZZEL MATERIAL**  
A = A182 F304L  
B = A182 F316L  
C = etc.

**END CON'N**  
1 = Flanged  
2 = Weld On

**TAP TYPE**  
A = Radius Tap  
B = Throat Tap

**LINE SIZE**  
1 = 15A (1/2")  
2 = 20A (3/4")  
3 = 25A (1")  
4 = 32A (1-1/2")  
5 = 50A (2")  
6 = 65A (2-1/2")  
7 = 80A (3")  
8 = 100A (4")  
9 = 125A (5")  
10 = 150A (6")  
11 = 200A (8")  
12 = etc.

**ELEMENT TYPE**  
A = Weld in Type  
B = Holding Ring Type  
C = Flanged Type

■ When placing an order, selected ordering number should be indicated on the purchase order sheet.

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■ Specifications subject to change without notice