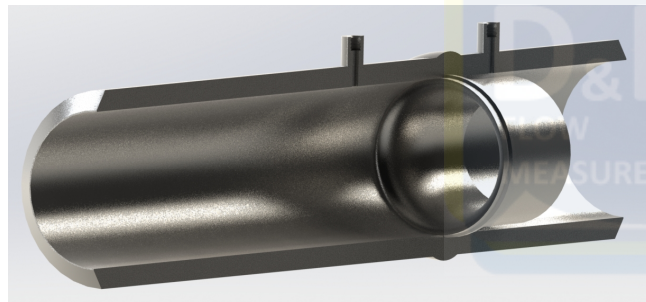
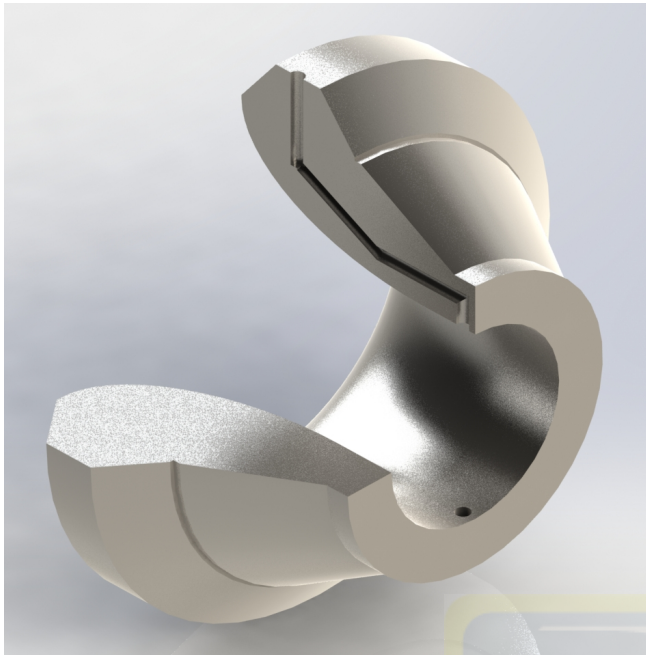


# FLOW NOZZLE



MODEL : DHIF-N300 SERIES

DAEHAN & DS INSTRUMENT CO.,LTD



## SPECIFICATIONS

- Construction Type
  - Weld in Type
  - Holding Ring Type
  - Flange Type
  - Throat Tap Type
  - Venturi Nozzle Type
- End Connection
  - Butt-Weld in Type
  - Flanged Type
- Flow calculation standards
  - ISO 5167-3 Nozzle Types : Long Radius Nozzle:
    - High Ratio :  $0.25 \leq \beta \leq 0.8$
    - Low Ratio :  $0.2 \leq \beta \leq 0.5$
  - ISA 1932 Nozzle, Venturi Nozzle.
  - ASME MFC-3M, ASME PTC-6 Nozzle Types:
    - High Ratio :  $0.25 \leq \beta \leq 0.8$
    - Low Ratio :  $0.2 \leq \beta \leq 0.5$
    - Low Ratio, With Throat Tap :  $0.25 \leq \beta \leq 0.5$
  - Pressure Taps : D & D/2Taps, Throat Taps.
- Nominal pipe sizes available
  - 25~900mm (1"~36")
- ACCURACY
  - Typically  $\pm 2\%$  un-Calibrated (Long Radius Type)
  - Typically  $\pm 2\%$  un-Calibrated (ISA 1932 Type)
  - Typically  $\pm 0.25\%$  Calibrated

## DESCRIPTION

Flow Nozzle are erosion-resistant, consistently accurate and virtually maintenance-free. They perform a wide variety of applications that include air, water, steam, gas, chemical substances and high temperature applications.

The rounded design provides a more effective sweep-through of particles in the flow stream, which extends product life by reducing wear and potential damage. Flow Nozzles are manufactured in strict accordance with ASME MFC-3M, ISO-5167 standards.

The flow nozzles, more costly than other orifice due to their structure, are suited 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 great volume of a fluid, and can measure the flow rates of fluids containing solid particles less disturbed than an orifice having the same bore.

Thus, they are suited, in addition, 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.

## SALIENT FEATURES & BENEFITS

- Widely used for High Pressure & High Temperature steam flow.
- Useful for flow measurement at high velocities.
- Rounded inlet not subject to wear or damage, extending product life.
- Better sweep-through effect for debris and liquids, eliminate damming effect.
- Lower susceptibility to erosion.
- Extended product life with no moving parts.

# FLOW NOZZLE

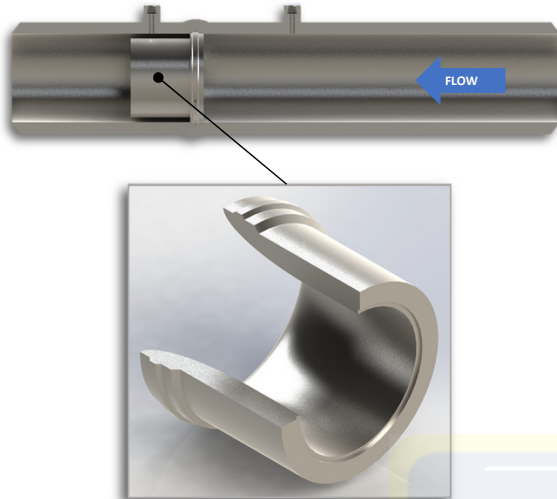


MODEL : DHIF-N300 SERIES

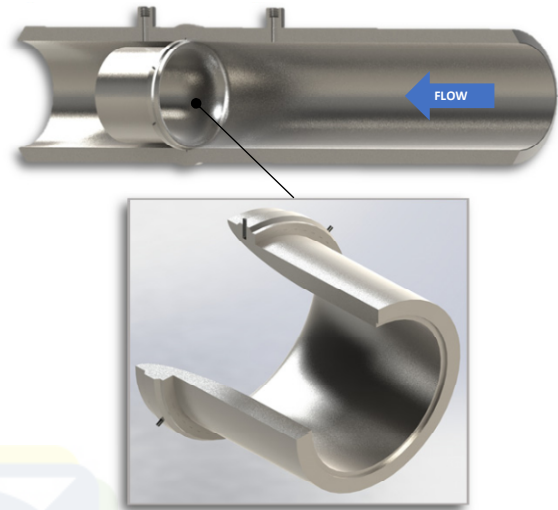
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## CONSTRUCTION TYPE

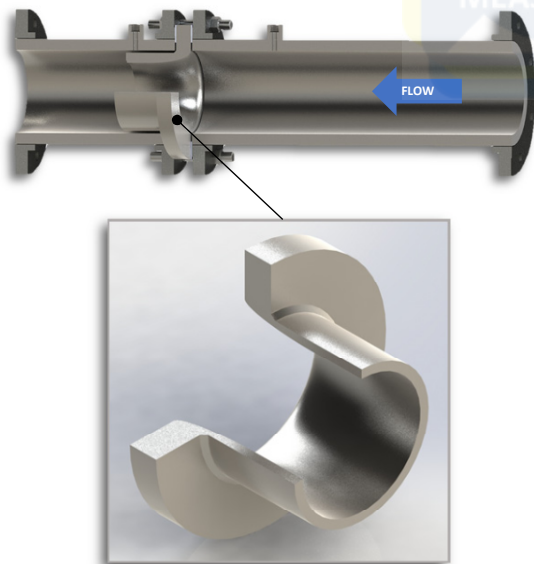
▶ Weld in Type  
(Model : DHIF-N310)



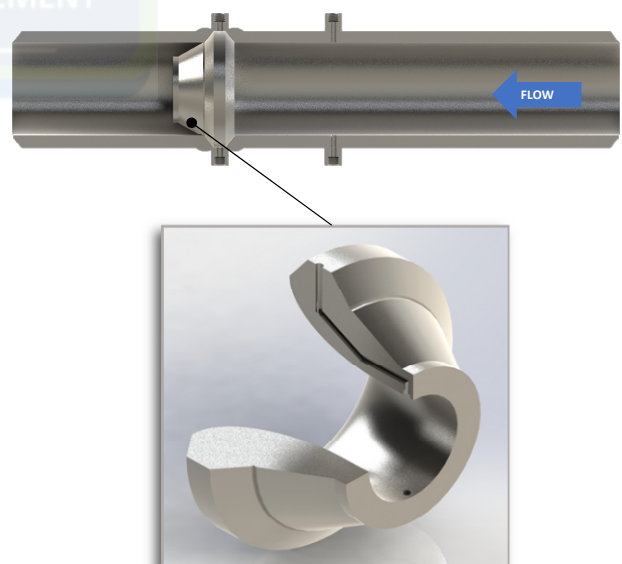
▶ Holding Ring Type  
(Model : DHIF-N320)



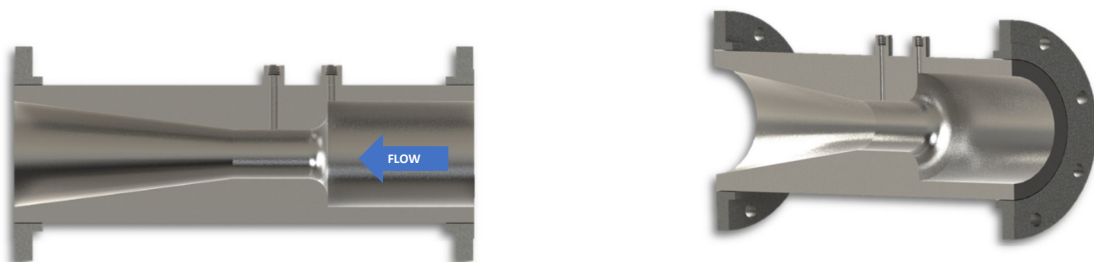
▶ Flange Type  
(Model : DHIF-N330)



▶ Throat Tap Type  
(Model : DHIF-N340)



▶ Venturi Nozzle Type  
(Model : DHIF-N350)



# FLOW NOZZLE



MODEL : DHIF-N300 SERIES

DAEHAN & DS INSTRUMENT CO.,LTD

## REQUIRED STRAIGHT LENGTHS FOR NOZZLE AND VENTURI NOZZLES

Upstream(Inlet) Side of the primary device													Downstream (outlet)side of the primary device			
Diameter ratio	Upstgream(inlet)side of the primary device											Thermometer pocket or well <sup>b</sup> of diameter between 0.03D and 0.13D		Fittings (Columns 2 to 8)		
	Single 90° bend <sup>a</sup>		Two or more 90° bends in the same plane		Two or more 90° bends in different planes		Reducer 2D to D over a length of 1.5D to 3D		Expander 0.5D to D over a length of D to 2D		Full bore ball or Gate Valve fully open					
	2		3		4		5		6		7		8		9	
	A <sup>b</sup>	B <sup>c</sup>	A <sup>b</sup>	B <sup>c</sup>	A <sup>b</sup>	B <sup>c</sup>	A <sup>b</sup>	B <sup>c</sup>	A <sup>b</sup>	B <sup>c</sup>	A <sup>b</sup>	B <sup>c</sup>	A <sup>b</sup>	B <sup>c</sup>	A <sup>b</sup>	B <sup>c</sup>
1																
-	10	6	14	7	34	17	5	e	16	8	12	6	20	10	4	2
0.2	10	6	14	7	34	17	5	e	16	8	12	6	20	10	4	2
0.25	10	6	16	8	34	17	5	e	16	8	12	6	20	10	5	2.5
0.3	12	6	16	8	36	18	5	e	16	8	12	6	20	10	5	2.5
0.35	14	7	18	9	36	18	5	e	16	8	12	6	20	10	6	3
0.4	14	7	18	9	38	19	5	e	17	9	12	6	20	10	6	3
0.45	14	7	20	10	40	20	6	5	18	9	12	6	20	10	6	3
0.5	16	8	22	11	44	22	8	5	20	10	14	7	20	10	6	3
0.55	18	9	26	1	48	24	9	5	22	11	14	7	20	10	7	3.5
0.6	22	11	32	16	54	27	11	6	25	13	16	8	20	10	7	3.5
0.65	28	14	36	18	62	31	14	7	30	15	20	10	20	10	7	3.5
0.7	36	18	42	21	70	35	22	11	38	19	24	12	20	10	8	4
0.75	46	23	50	25	80	40	30	15	54	27	30	15	20	10	8	4
0.8																

Note1 The minimum straight lengths required are the lengths between various fittings located upstream or downstream of the primary device and the primary device itself.  
 All straight lengths shall be measured from the upstream face of the primary device.

Note2 These lengths are not based on modern data.

- a. For some types of primary device not all values of β are permissible.
- b. The installation of thermometer pockets or wells will not alter the required minimum upstream straight lengths for the other fittings.
- c. Column A for each fitting gives lengths corresponding to "zero additional uncertainty" values
- d. Column B for each fitting gives lengths corresponding to "0.5% additional uncertainty" values
- e. The straight length in Column A gives zero additional uncertainty ; data are not available for shorter straight lengths which could be used to give the required straight lengths for Column B.

# FLOW NOZZLE



MODEL : DHIF-N300 SERIES

DAEHAN & DS INSTRUMENT CO.,LTD

## ORDERING INFORMATION

Main order	CODE		DESCRIPTION
1.Base Model	DHIF-N300 SERIES		Base Model
2.Type	N310		Weld in Type
	N320		Holding Ring Type
	N330		Flange Type
	N340		Throat Tap Type
	N350		Venturi Nozzle Type
3. Line Size	□□□ A		Pipe Size (mm)
4. Nozzle/Body/Flange Material	A		316SS(316L SS)
	B		304SS(304L SS)
	C		Carbon Steel
	D		A182-F11
	E		A182-F22
	F		A182-F91
	O		Option
5. Flange Rating	015		ANSI/ASME 150LB
	030		ANSI/ASME 300LB
	060		ANSI/ASME 600LB
	090		ANSI/ASME 900LB
	150		ANSI/ASME 1500LB
	250		ANSI/ASME 2500LB
	000		Option
6. Taps Type & Size	A		NPT 1/2
	B		SW 1/2
	C		NPT 3/4
	D		SW 3/4
7. Taps Q'ty	1		1 Pair
	2		2 Pair
	3		3 Pair
	4		4 Pair
8. Option	OP		Option