

Orifice plate with corner tapping

FT-101

Calculated for Liquid
Cooling water supply to E-101

Pipe & Orifice

Pipe bore D:	154.1 mm
Pipe material:	—
Pipe exp. coeff.:	0.00001265 1/°C
Orifice bore d:	92.5 mm
Orifice material:	—
Orifice exp. coeff.:	0.00001697 1/°C
Orifice edge thickness e:	0.77 – 3.08 mm
Plate thickness E:	max 7.71 mm

Operating Conditions

Medium:	Cooling water
Temperature:	25 °C
Pressure P1:	5.000 bar(a)
Differential pressure ΔP:	250 mbar
Density:	997 kg/m³
Viscosity:	0.89 mPa·s
Max flow:	111200 kg/h

Calculation Result

Reynolds number Re:	286867
Beta β:	0.6003
Flow coefficient α:	0.6512
Accuracy better than:	0.50%
Pressure loss ΔW:	157.023 mbar

Minimum Straight Pipe Lengths

Minimum Straight Pipe Lengths (ISO 5167)				
Fitting	Upstream		Downstream	
	0%	0.5%	0%	0.5%
Single 90° bend or two 90° bends in any plane ($S > 30D$)	6780.40 mm	3082.00 mm	1078.70 mm	539.35 mm
Two 90° bends in the same plane, S configuration ($30D \geq S > 10D$)	6780.40 mm	2773.80 mm	1078.70 mm	539.35 mm
Two 90° bends in the same plane, S configuration ($5D \leq S \leq 10D$)	6780.40 mm	3082.00 mm	1078.70 mm	539.35 mm
Two 90° bends in perpendicular planes ($30D \geq S \geq 5D$)	6780.40 mm	3082.00 mm	1078.70 mm	539.35 mm
Two 90° bends in perpendicular planes ($S < 5D$)	9246.00 mm	2773.80 mm	1078.70 mm	539.35 mm
Single 90° tee with or without extension, mitre 90° bend	5547.60 mm	2773.80 mm	1078.70 mm	539.35 mm
Single 45° bend or two 45° bends in the same plane, S config. ($S \geq 2D$)	6780.40 mm	2773.80 mm	1078.70 mm	539.35 mm
Concentric reducer $2D:D$ over a length of $1.5D$ to $3D$	1849.20 mm	924.60 mm	1078.70 mm	539.35 mm
Concentric expander $0.5D:D$ over a length of D to $2D$	4314.80 mm	2157.40 mm	1078.70 mm	539.35 mm
Full bore ball or gate valve fully open	2773.80 mm	1386.90 mm	1078.70 mm	539.35 mm
Abrupt symmetrical reduction	4623.00 mm	2311.50 mm	1078.70 mm	539.35 mm
Thermometer pocket or well (diameter $\leq 0.03D$)	770.50 mm	462.30 mm	1078.70 mm	539.35 mm

S is the separation between two bends measured from the downstream end of the curved portion of the upstream bend to the upstream end of the curved portion of the downstream bend.