

# KSI

**KSI** standard design has been developed by Pietro Fiorentini **to preheat upstream gas regulation sections**, in order to compensate **cooling due to Joule Thomson effect**. The standard design is based on a vertical BEU configuration with gas flowing through the tubes and heating medium on the shell side. Pietro Fiorentini gas heat exchangers (KSI) are suitable for natural gas, air, propane and other non-aggressive gases, and can be provided with hot, superheated water or steam as heating fluid, based on customer's needs. On demand, they can be equipped with pressure gauge and pressure switch, safety valve on tube or shell side and with air self-exhausting device.



Floating units



Gas processing



Gas compression / booster stations



Gas storage



Gas liquefaction



Gas reverse-flow



City gates



LNG marine transportation



Power generation



Heavy industries

Features	Values	
	Tube side	Shell side
Design pressure	<ul style="list-style-type: none"> <li>8.5 MPa 85 barg 1232 psig</li> <li>4.63 MPa 46.3 barg 671 psig</li> </ul>	0.6 Mpa 6 barg 87 psig
Design temperature	from -10 °C to +100 °C from +14 °F to +212 °F	from -10 °C to +100 °C from +14 °F to +212 °F
Corrosion allowance	0 mm 0 inches	1 mm 0.04 inches

REMARK: Different functional features and/or extended temperature ranges available on request. Stated temperature ranges are the maximum for which the equipment's full performance, including accuracy, are fulfilled. Standard product may have a narrower range.

**Table 1** Features

Part	Connection type
Gas nozzle	ASME B16.5 WNRF Class 600 (for 8.5 MPa   85 barg   1232 psig version) WNRF Class 300 (for 4.63 MPa   46.3 barg   671 psig version)
Water nozzle	PN 16 (EN1092-1)
Bonnet condensate drain	Screwed Rp (EN10226)
Relief valve (shell side top)	Flanged PN 16 (EN1092-1)
Gas pre-heating (pressure regulator pilot loop)	Double Rp 1/4 (EN10226)
Grounding	Copper

**Table 2** Connections

Weights and Dimensions (for other connections please contact your closest Pietro Fiorentini representative)

KSI type	Nozzle tube side		Drain	Nozzle shell side		Heating surface		Weight		Shell side volume		Tube side volume	
	DN	NPS		DN	NPS	m <sup>2</sup>	inches <sup>2</sup>	Kg	Lbs	L	US Gal	L	US Gal
0,5	DN 25	1"	Rp 1/2" (DN 15)	DN 40 DN50	1" 1/2 2"	0.52	800	86	190	4.5	1.2	13.5	3.6
	DN 40	1" 1/2"											
	DN 50	2"											
1	DN 40	1" 1/2"	Rp 1/2" (DN 15)	DN 50	2"	1.00	1542	260	573	10	2.6	21	5.5
	DN 50	2"											
	DN 65	2" 1/2"											
	DN 80	3"											
2	DN 50	2"	Rp 1/2" (DN 15)	DN 50	2"	2.28	3539	260	573	24	6.3	34	9.0
	DN 65	2" 1/2"											
	DN 80	3"											
	DN 100	4"											
3	DN 65	2" 1/2"	Rp 1/2" (DN 15)	DN 50 DN 65 DN 80	2" 2" 1/2 3"	4.35	6747	350	772	48	12.7	57	15.1
	DN 80	3"											
	DN 100	4"											
	DN 125	5"											
4	DN 150	6"	Rp 1/2" (DN 15)	DN 50 DN 80 DN 100	2" 3" 4"	6.75	10456	570	1257	68	18.0	84	22.2
	DN 80	3"											
	DN 100	4"											
	DN 125	5"											
	DN 150	6"											
5	DN 200	8"	Rp 1/2" (DN 15)	DN 80 DN 100	3" 4"	11.44	17734	850	1874	127	33.5	128	33.8
	DN 80	3"											
	DN 100	4"											
	DN 125	5"											
6	DN 150	6"	Rp 1" (DN 25)	DN 125	5"	21.36	33102	1800	3968	210	55.5	250	66.0
	DN 200	8"											
	DN 250	10"											
7	DN 200	8"	Rp 1" (DN 25)	DN 150	6"	31.9	49445	2500	5512	450	118.9	370	97.7
	DN 250	10"											
	DN 300	12"											

Table 3 Technical specifications

## Construction standards and Approvals

The KSI heat exchanger is certified according to European Directive 2014/68/EU (PED).

On request, the KSI can be supplied with additional certifications, such as ASME U-Stamp and ASME U2-Stamp, designed according to ASME Section VIII, Division 1.



PED-CE

ASME  
U-Stamp\*ASME  
U2-Stamp\*

ASME VIII div.1\*

\*on request

## KSI competitive advantages



Inspectable



Easy to repair (when necessary)



Tailored design possible