Steam Injector (Stainless Steel) — Fig. 651

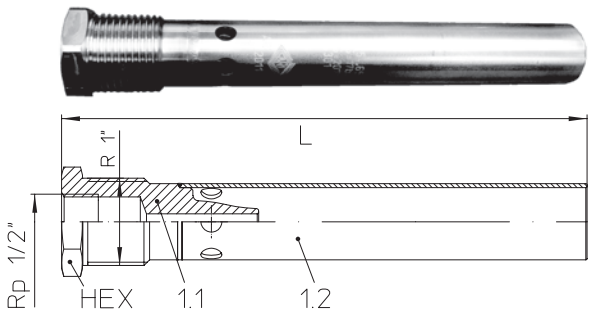


Fig.651....2 with internal thread (Rp 1/2) and external thread (R 1)

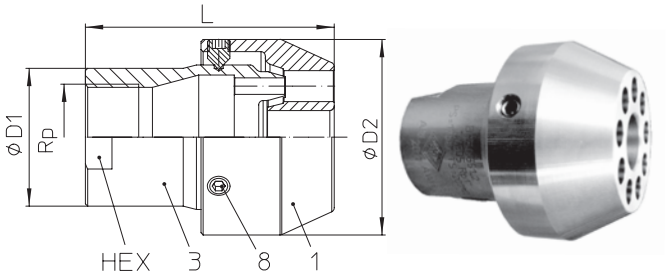
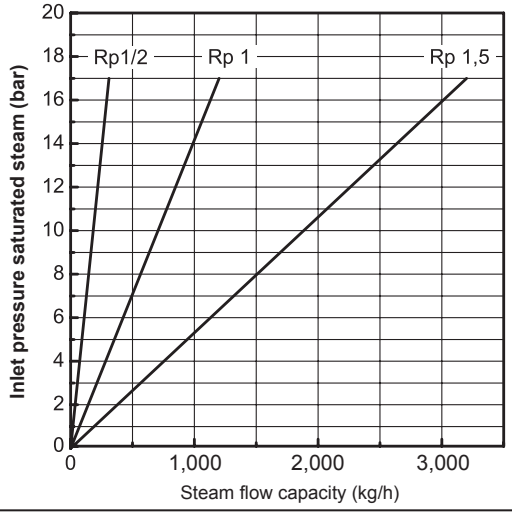


Fig.651....2 with internal thread (Rp 1 - Rp 1 1/2)

- Steam injector without moving parts
- Direct condensation of steam for heating water
- The released heat of condensation of the vapor is transferred directly to the water
- Installation position horizontally

Capacity Chart



Types of Connection

Internal thread 2	Rp 1/2 and external thread R1 (acc. to DIN EN10226-1)
	Rp 1 up to 1 1/2 (acc. to DIN EN10226-1)
Butt weld ends 4	acc. to DIN EN 12627

Operating Limits

Fig. 54.651	**PN25 - 1.4301 / 1.4305**
Operating Pressure PS (bar-g)	17
Operating Temperature TS (°C)	207

Dimensions and Weights		**Types of connection**				
		Internal thread			**Butt weld ends**	
Nominal diameter	**(mm) (in)**	**DN15 Rp 1/2“**	**DN25 Rp 1“**	**DN40 Rp 1 1/2“**	**DN25 1“**	**DN40 1 1/2“**
L	**(mm)**	200	87	112	87	112
External thread R	**(in)**	1“	--	--	--	--
ØD1	**(mm)**	29	48	62	35	50
ØD2	**(mm)**	--	74	88	74	62
HEX	**(mm)**	36	41	55	--	--
Weight approx.	**(kg)**	0.4	1	2	1	2

Steam consumption calculations

$$\dot{m}_s = \frac{\dot{Q}}{h_g - (T\ C_p)}$$

Where:

$\dot{m}_s$ = Mean steam flowrate (kg/s)

$\dot{Q}$ = Mean heat transfer rate kW (kJ/s)

h_g = Specific enthalpy of steam (taken at the pressure supplying the control valve) (kJ/kg)

T = Final temperature of the water (°C)

C_p = Specific heat capacity of water (kJ/kg°C)

Mass of steam to be injected

The mass of steam to be injected can be determined by

$$m_s = \frac{m\,(h_2 - h_1)}{h_g - h_2}$$

Where:

m_s = The mass of steam to be injected (kg)

m = Initial mass of water in the tank (kg)

h_2 = The heat in the water at the final temperature (kJ/kg)

h_1 = The heat in the water at the initial temperature (kJ/kg)

h_g = The total enthalpy of the steam upstream of the control valve (kJ/kg)

Material

Pos.	**Description**	**Fig. 54.651....2 (1/2“)**	**Fig. 54.651....2 (1“ - 1 1/2“)**	**Fig. 54.651....4 (1“ - 1 1/2“)**
1	Head, (cpl.)	(X5CrNi18-10, 1.4301)	X8CrNiS18-9, 1.4305	
1.1	Head	X5CrNi18-10, 1.4301	--	
1.2	Pipe	X5CrNi18-10, 1.4301	--	
3	Nozzle	--	X8CrNiS18-9, 1.4305	X5CrNi18-10, 1.4301
8	Grub screw	--	A2	

*last updated 10/16