

FMINJ

Forbes Marshall Steam Injectors

Description:

Forbes Marshall Steam Injector is used to raise the temperature of water using steam. High velocity steam flows through the nozzles which creates inflow of surrounding water and during this process the steam & water mixes uniformly giving a uniform temperature in the tank.

Sizes and Pipe connections:

DN15, 25 & 40

Size	End Connections	Product Name
DN15	BSPT/NPT	FMINJ61
DN25/DN40	Butt Weld Ends	FMINJ63
DN25/DN40	BSPT/NPT	FMINJ61

FM Steam Injectors offer:

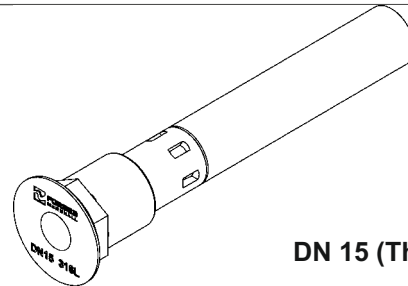
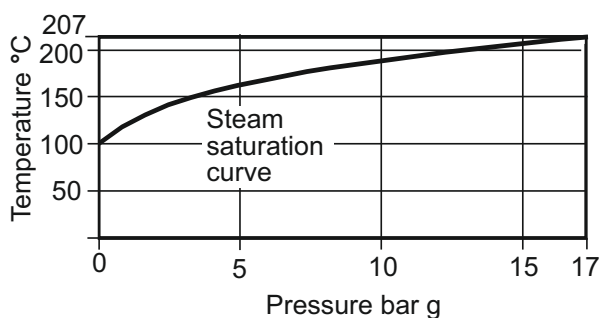
- Construction ASTM A351 CF3M
- Very compact and reliable design
- Easy to use for applications like boiler feed tank pressurised deaerators, general tank water heating
- Ensures efficient heating process.

Limiting Conditions:

Body design rating	PN25
Minimum operating pressure	0.5 bar g
Maximum saturated steam condition	17 bar g @ 207 deg C
Maximum to be heated Liquid Temperature	90 deg C

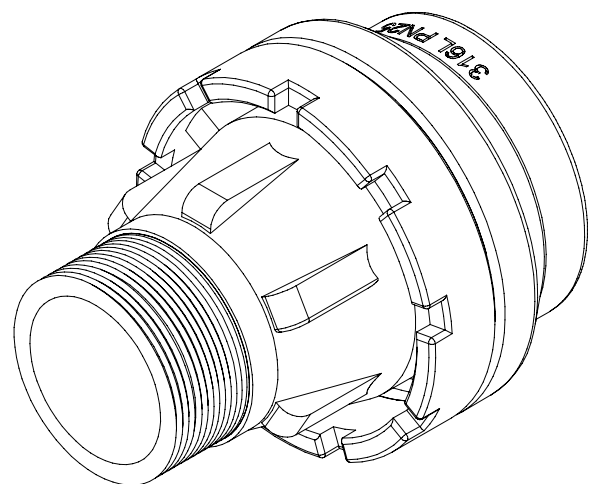
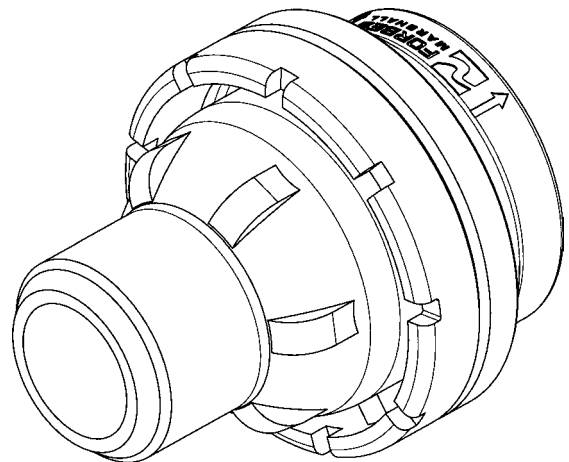
Material: Austenitic stainless steel ASTM A351 CF3M

Pressure/Temperature limits:



DN 15 (Threaded Ends)

DN 25/40 (Butt weld Ends)



DN 25/40 (Threaded Ends)

Safety information and maintenance

Refer the User Manual supplied with this product for more details.

Installation note:

Forbes Marshall Steam Injectors are installed at the bottom of the tank on the pipeline which is inside or outside the tank. Anchoring must be done for steam supply pipework to prevent vibration & stress in the tank. Suitable thread locking compound should be used on all threaded joints.

Steam injector size & pipe line size should be same for single steam injector eg DN25 pipe.

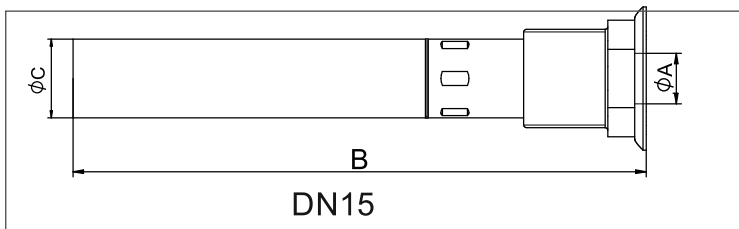
For multiple Injectors refer below table

No. of Injectors	Size	Min. Pipe Size
2	DN15	20
2	DN25	40
2	DN40	65
3	DN40	80

Minimum distance between injector and tank side/bottom should be 150mm. For multiple installation the distance between injectors should be equal.

Dimensions/Weights (approximate) in mm

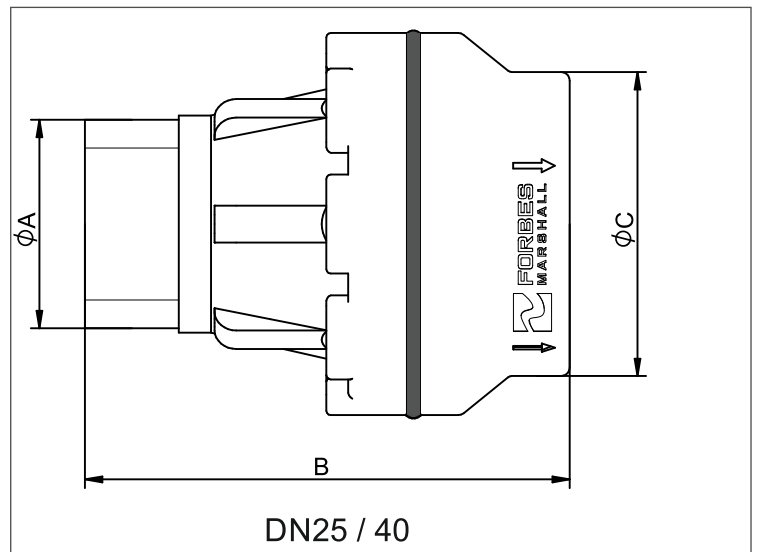
A	B	C	Weight (Kg)
DN15	204	28	0.54
DN25	84	71	0.85
DN40	112	88	1.7



Capacity - Selecting a Steam Injector

Following table gives maximum steam flow rate through each steam injector for various pressures.

Injector type	DN15	DN 25	DN 40
System pressure bar g	Saturated steam capacity(kg/hr)		
0.5	11	75	222
1	20	135	400
2	48	175	580
3	66	280	805
4	84	350	970
5	102	410	1125
6	120	500	1295
7	138	580	1445
8	156	640	1620
9	174	700	1820
10	192	765	1950
11	210	830	2250
12	228	900	2370
13	246	975	2595
14	264	1045	2710
15	282	1095	2815
16	300	1170	3065
17	318	1225	3200



www.forbesmarshall.com

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Codel International

Krohne Marshall

Forbes Vyncke

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CIN No: U28996PN1985PTC037806

DOC# FMSS/0824/TIS-FMINJ/R2