

# Model 1216F

## TECHNICAL DATA SHEET



### Description

Type	Safety and Relief valve
Connections	Threaded BSP / NPT
Rating	PN-40
Material	Stainless steel 316 L
Temperature range	-10 to +350°C
Cryogenic service until	-196°C

### Requirements

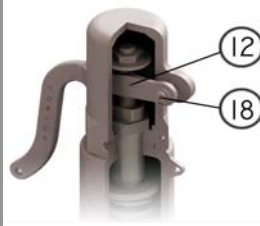
Calculation	EN-4126-1 / 7
Design	EN-12516-1, EN-4126-1 / 7 DIN 259 and ANSI B2.1
Materials	EN
Inspection	EN-4126-1 / 7

### Construction and materials

Item	Description	Material	
		Standard	Cryogenic
1	Nozzle	SA 351 CF-3M	SA 351 CF-3M
2	Body	SA 351 CF-3M	SA 351 CF-3M
4	Cap	SA 351 CF 8	SA 351 CF 8
5	Disc	316 L SS	316 L SS
6	Guide	SA 351 CF-3M	SA 351 CF-3M
7	Push Road	316 L SS	316 L SS
8	Spring Button	303 SS	303 SS
9	Ajusting Screw	303 SS	303 SS
10	Tensor Nut	303 SS	303 SS
11	Spring	303 SS	17 / 7PH
12	Lever	SA 351 CF 8	SA 351 CF 8
17	Release nut	306 L SS	306 L SS
18	Lever axis	303 SS	303 SS
19	Packing lever axis	303 SS	303 SS
20	Gasket	PTFE	PCTFE
21	Gasket	PTFE	PCTFE
22	Gasket	Viton	PCTFE
28	Soft seat	Viton / PTFE	Metal

○ Recommended spare parts

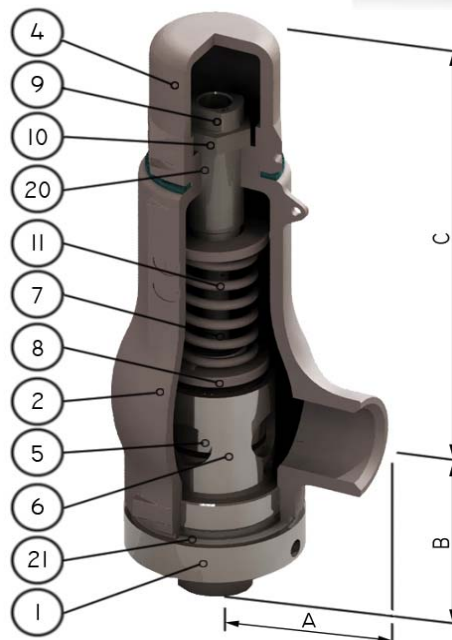
Palanca manual  
Lifting device



Palanca estanca  
Sealed packing lever



T. Prueba  
Test gag



Obturator o-ring  
Disc o-ring



### Technical information

Applications	Steam, gases, vapours and liquids
Min. Set pressure	0,2 barg
Overpressure	10%
Blowdown	Gases 10%, liquids 20%
Tolerance Set pressure	± 3%
Discharge coefficients	k= 0,55 for gases k= 0,48 for liquids

### Dimensions

Inlet	Outlet	Orifice	Area (mm <sup>2</sup> )	A (mm)	B (mm)	C (mm)	Weight (kg)
1/2"	3/4"	13	133	45	57	155	2,2
1/2"	1"	13	133	45	57	155	2,2
3/4"	1"	14	154	45	57	155	2,2
1"	1"	16	201	45	60	155	2,2
1"	1 1/4"	16	201	45	61	155	2,3
1"	2"	22	380	62	87	234	4,5
1 1/4"	1 1/4"	18	254	45	62	155	2,4
1 1/2"	2"	28	616	62	89	234	4,6
2"	2"	32	804	62	93	234	5,1



# Model 1216HP

## TECHNICAL DATA SHEET



### Description

Type	Safety and Relief valve
Connections	Threaded BSP / NPT
Rating	PN-250&400
Material	Stainless steel 316 L
Temperature range	-10 to +350°C
Cryogenic service until	-196°C

### Requirements

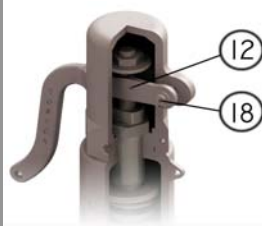
Calculation	EN-4126-1 / 7
Design	EN-12516-1, EN-4126-1 / 7 DIN 259 and ANSI B2.1
Materials	EN
Inspection	EN-4126-1 / 7

### Construction and materials

Item	Description	Material	
		Standard	Cryogenic
1	Nozzle	SA 351 CF-3M	SA 351 CF-3M
2	Body	SA 351 CF-3M	SA 351 CF-3M
4	Cap	SA 351 CF 8	SA 351 CF 8
5	Disc	316 L SS+ Stellite	
6	Guide	SA 351 CF-3M	SA 351 CF-3M
7	Push Road	316 L SS	316 L SS
8	Spring Button	303 SS	303 SS
9	Ajusting Screw	303 SS	303 SS
10	Tensor Nut	303 SS	303 SS
11	Spring	303 SS	17 / 7PH
12	Lever	SA 351 CF 8	SA 351 CF 8
17	Release nut	306 L SS	306 L SS
18	Lever axis	303 SS	303 SS
19	Packing lever axis	303 SS	303 SS
20	Gasket	PTFE	PCTFE
21	Gasket	PTFE	PCTFE
22	Gasket	Viton	PCTFE
28			

○ Recommended spare parts

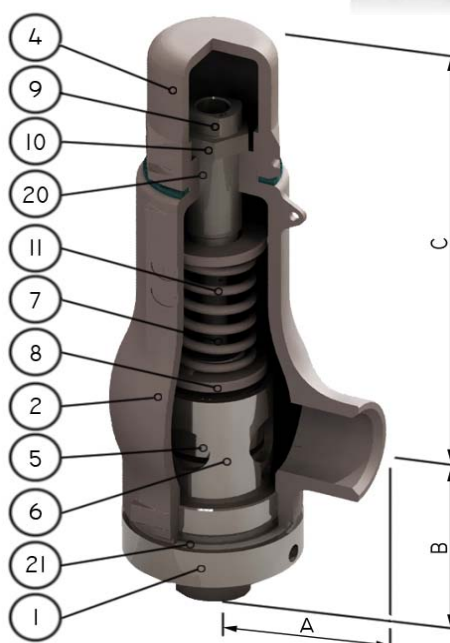
Palanca manual  
Lifting device



Palanca estanca  
Sealed packing lever



T. Prueba  
Test gag



### Technical information

Applications	Steam, gases, vapours and liquids
Min. Set pressure	0,2 barg
Overpressure	10%
Blowdown	Gases 10%, liquids 20%
Tolerance Set pressure	± 3%
Discharge coefficients	k= 0,5 for gases k= 0,4 for liquids

### Dimensions

Inlet	Outlet	Orifice	Area (mm <sup>2</sup> )	A (mm)	B (mm)	C (mm)	Weight (kg)
<b>PN250</b>	<b>PN160</b>						
1/2"	3/4"	9	64	45	57	155	3
3/4"	3/4"	9	64	45	57	155	3
1"	1"	9	64	45	57	155	3
<b>PN400</b>	<b>PN160</b>						
1/2"	3/4"	6	28	45	57	155	3
3/4"	3/4"	6	28	45	57	155	3
1"	1"	6	28	45	57	155	3



# Serie1216F

Capacity AIR / Caudal de aire



Set pressure Presión manometro (barg)	BSP / NPT								
	1/2" x 3/4"	1/2" x 1"	3/4" x 1"	1" x 1"	1" x 1 1/4"	1" x 2"	1 1/4"x1 1/4"	1 1/2" x 2"	2" x 2"
	Orifice / Orificio (mm)								
	13	13	14	16	16	22	18	28	32
	Area (mm <sup>2</sup> )								
	133	133	154	201	201	380	254	616	804
0,5	97	97	112	147	147	277	186	449	586
1	131	131	152	198	198	375	251	607	793
1,5	165	165	191	250	250	472	316	765	999
2	199	199	231	301	301	570	381	923	1.205
2,5	233	233	270	353	353	667	447	1.081	1.412
3	267	267	310	404	404	765	512	1.239	1.618
3,5	301	301	349	456	456	862	577	1.397	1.824
4	335	335	389	508	508	960	642	1.555	2.030
4,5	369	369	428	559	559	1.057	708	1.712	2.237
5	403	403	468	611	611	1.155	773	1.870	2.443
5,5	437	437	507	662	662	1.252	838	2.028	2.649
6	471	471	547	714	714	1.350	904	2.186	2.856
6,5	505	505	586	765	765	1.447	969	2.344	3.062
7	539	539	626	817	817	1.545	1.034	2.502	3.268
7,5	573	573	665	869	869	1.642	1.099	2.660	3.475
8	607	607	705	920	920	1.740	1.165	2.818	3.681
8,5	642	642	744	972	972	1.837	1.230	2.976	3.887
9	676	676	784	1.023	1.023	1.935	1.295	3.134	4.093
9,5	710	710	823	1.075	1.075	2.032	1.360	3.292	4.300
10	744	744	862	1.127	1.127	2.130	1.426	3.450	4.506
11	812	812	941	1.230	1.230	2.325	1.556	3.766	4.919
12	880	880	1.020	1.333	1.333	2.520	1.687	4.082	5.331
13	948	948	1.099	1.436	1.436	2.715	1.817	4.398	5.744
14	1.016	1.016	1.178	1.539	1.539	2.910	1.948	4.714	6.157
15	1.084	1.084	1.257	1.642	1.642	3.105	2.079	5.029	6.569
16	1.152	1.152	1.336	1.745	1.745	3.300	2.209	5.345	6.982
17	1.220	1.220	1.415	1.849	1.849	3.495	2.340	5.661	7.394
18	1.288	1.288	1.494	1.952	1.952	3.690	2.470	5.977	7.807
19	1.357	1.357	1.573	2.055	2.055	3.885	2.601	6.293	8.220
20	1.425	1.425	1.652	2.158	2.158	4.080	2.731	6.609	8.632
21	1.493	1.493	1.731	2.261	2.261	4.275	2.862	6.925	9.045
22	1.561	1.561	1.810	2.364	2.364	4.470	2.992	7.241	9.457
23	1.629	1.629	1.889	2.468	2.468	4.665	3.123	7.557	9.870
24	1.697	1.697	1.968	2.571	2.571	4.860	3.253	7.873	10.283
25	1.765	1.765	2.047	2.674	2.674	5.055	3.384	8.189	10.695
26	1.833	1.833	2.126	2.777	2.777	5.250	3.515	8.504	11.108
27	1.901	1.901	2.205	2.880	2.880	5.445	3.645	8.820	11.520
28	1.969	1.969	2.284	2.983	2.983	5.640	3.776	9.136	11.933
29	2.038	2.038	2.363	3.086	3.086	5.835	3.906	9.452	12.346
30	2.106	2.106	2.442	3.190	3.190	6.030	4.037	9.768	12.758
31	2.174	2.174	2.521	3.293	3.293	6.225	4.167	10.084	13.171
32	2.242	2.242	2.600	3.396	3.396	6.420	4.298	10.400	13.584
33	2.310	2.310	2.679	3.499	3.499	6.615	4.428	10.716	13.996
34	2.378	2.378	2.758	3.602	3.602	6.810	4.559	11.032	14.409
35	2.446	2.446	2.837	3.705	3.705	7.005	4.690	11.348	14.821
36	2.514	2.514	2.916	3.808	3.808	7.200	4.820	11.664	15.234
37	2.582	2.582	2.995	3.912	3.912	7.395	4.951	11.979	15.647
38	2.650	2.650	3.074	4.015	4.015	7.590	5.081	12.295	16.059
39	2.718	2.718	3.153	4.118	4.118	7.786	5.212	12.611	16.472
40									

Flow capacity / Caudal de aire (kg/h)

Overpressure / Sobrepresión 10%

Temperature / Temperatura 20° C

Calculation according / Calculos según ISO EN 4126-1 / API 520

# Serie1216F

Capacity saturated steam/ Caudal vapor saturada



Set pressure Presión manometro (barg)	BSP / NPT								
	1/2" x 3/4"	1/2" x 1"	3/4" x 1"	1" x 1"	1" x 1 1/4"	1" x 2"	1 1/4"x1 1/4"	1 1/2" x 2"	2" x 2"
	Orifice / Orificio (mm)								
	13	13	14	16	16	22	18	28	32
	Area (mm <sup>2</sup> )								
	133	133	154	201	201	380	254	616	804
0,5	60	60	69	91	91	172	115	278	363
1	81	81	94	123	123	232	155	376	491
1,5	102	102	118	155	155	292	196	473	618
2	123	123	143	187	187	353	236	571	746
2,5	144	144	167	218	218	413	276	669	874
3	165	165	192	250	250	473	317	767	1.002
3,5	186	186	216	282	282	534	357	865	1.129
4	207	207	241	314	314	594	398	962	1.257
4,5	229	229	265	346	346	655	438	1.060	1.385
5	250	250	290	378	378	715	479	1.158	1.512
5,5	271	271	314	410	410	775	519	1.256	1.640
6	292	292	338	442	442	836	559	1.354	1.768
6,5	313	313	363	474	474	896	600	1.451	1.896
7	334	334	387	506	506	956	640	1.549	2.023
7,5	355	355	412	538	538	1.017	681	1.647	2.151
8	376	376	436	570	570	1.077	721	1.745	2.279
8,5	397	397	461	602	602	1.137	761	1.843	2.407
9	418	418	485	634	634	1.198	802	1.940	2.534
9,5	439	439	510	666	666	1.258	842	2.038	2.662
10	460	460	534	697	697	1.319	883	2.136	2.790
11	503	503	583	761	761	1.439	964	2.331	3.045
12	545	545	632	825	825	1.560	1.044	2.527	3.301
13	587	587	681	889	889	1.681	1.125	2.723	3.556
14	629	629	730	953	953	1.802	1.206	2.918	3.812
15	671	671	778	1.017	1.017	1.922	1.287	3.114	4.067
16	713	713	827	1.081	1.081	2.043	1.368	3.309	4.322
17	756	756	876	1.144	1.144	2.164	1.448	3.505	4.578
18	798	798	925	1.208	1.208	2.285	1.529	3.701	4.833
19	840	840	974	1.272	1.272	2.405	1.610	3.896	5.089
20	882	882	1.023	1.336	1.336	2.526	1.691	4.092	5.344
21	924	924	1.072	1.400	1.400	2.647	1.772	4.287	5.600
22	966	966	1.121	1.464	1.464	2.767	1.853	4.483	5.855
23	1.008	1.008	1.170	1.528	1.528	2.888	1.933	4.678	6.111
24	1.051	1.051	1.218	1.592	1.592	3.009	2.014	4.874	6.366
25	1.093	1.093	1.267	1.655	1.655	3.130	2.095	5.070	6.621
26	1.135	1.135	1.316	1.719	1.719	3.250	2.176	5.265	6.877
27	1.177	1.177	1.365	1.783	1.783	3.371	2.257	5.461	7.132
28	1.219	1.219	1.414	1.847	1.847	3.492	2.338	5.656	7.388
29	1.261	1.261	1.463	1.911	1.911	3.613	2.418	5.852	7.643
30	1.304	1.304	1.512	1.975	1.975	3.733	2.499	6.047	7.899
31	1.346	1.346	1.561	2.039	2.039	3.854	2.580	6.243	8.154
32	1.388	1.388	1.610	2.102	2.102	3.975	2.661	6.439	8.410
33	1.430	1.430	1.659	2.166	2.166	4.096	2.742	6.634	8.665
34	1.472	1.472	1.707	2.230	2.230	4.216	2.823	6.830	8.921
35	1.514	1.514	1.756	2.294	2.294	4.337	2.903	7.025	9.176
36	1.557	1.557	1.805	2.358	2.358	4.458	2.984	7.221	9.431
37	1.599	1.599	1.854	2.422	2.422	4.579	3.065	7.416	9.687
38	1.641	1.641	1.903	2.486	2.486	4.699	3.146	7.612	9.942
39	1.683	1.683	1.952	2.549	2.549	4.820	3.227	7.808	10.198
40									

Flow capacity / Caudal (kg/h)

Overpressure / Sobrepresión 10%

Temperature / Temperatura 20° C

Calculation according / Calculos según ISO EN 4126-1 / API 520

# Serie1216F

Capacity water / Caudal de agua



Set pressure Presión manometro (barg)	BSP / NPT								
	1/2" x 3/4"	1/2" x 1"	3/4" x 1"	1" x 1"	1" x 1 1/4"	1" x 2"	1 1/4"x1 1/4"	1 1/2" x 2"	2" x 2"
	Orifice / Orificio (mm)								
	13	13	14	16	16	22	18	28	32
	Area (mm <sup>2</sup> )								
	133	133	154	201	201	380	254	616	804
0,5	2.406	2.406	2.790	3.644	3.644	6.890	4.612	11.160	14.576
1	3.402	3.402	3.946	5.154	5.154	9.743	6.522	15.783	20.614
1,5	4.167	4.167	4.832	6.312	6.312	11.933	7.988	19.330	25.247
2	4.811	4.811	5.580	7.288	7.288	13.779	9.224	22.320	29.153
2,5	5.379	5.379	6.239	8.148	8.148	15.406	10.313	24.955	32.594
3	5.893	5.893	6.834	8.926	8.926	16.876	11.297	27.336	35.705
3,5	6.365	6.365	7.382	9.641	9.641	18.228	12.202	29.527	38.566
4	6.804	6.804	7.891	10.307	10.307	19.487	13.045	31.565	41.228
4,5	7.217	7.217	8.370	10.932	10.932	20.669	13.836	33.480	43.729
5	7.607	7.607	8.823	11.524	11.524	21.787	14.585	35.291	46.095
5,5	7.979	7.979	9.253	12.086	12.086	22.850	15.296	37.014	48.344
6	8.334	8.334	9.665	12.624	12.624	23.866	15.977	38.660	50.494
6,5	8.674	8.674	10.060	13.139	13.139	24.841	16.629	40.238	52.556
7	9.001	9.001	10.439	13.635	13.635	25.779	17.257	41.757	54.540
7,5	9.317	9.317	10.806	14.114	14.114	26.683	17.862	43.223	56.454
8	9.623	9.623	11.160	14.576	14.576	27.559	18.448	44.640	58.306
8,5	9.919	9.919	11.504	15.025	15.025	28.407	19.016	46.014	60.100
9	10.206	10.206	11.837	15.461	15.461	29.230	19.567	47.348	61.842
9,5	10.486	10.486	12.161	15.884	15.884	30.031	20.104	48.646	63.537
10	10.759	10.759	12.477	16.297	16.297	30.811	20.626	49.909	65.188
11	11.284	11.284	13.086	17.092	17.092	32.315	21.633	52.345	68.369
12	11.785	11.785	13.668	17.852	17.852	33.752	22.594	54.673	71.410
13	12.267	12.267	14.226	18.581	18.581	35.130	23.517	56.905	74.325
14	12.730	12.730	14.763	19.283	19.283	36.456	24.405	59.054	77.131
15	13.176	13.176	15.282	19.960	19.960	37.736	25.261	61.126	79.838
16	13.609	13.609	15.783	20.614	20.614	38.974	26.090	63.131	82.457
17	14.027	14.027	16.268	21.249	21.249	40.173	26.893	65.074	84.994
18	14.434	14.434	16.740	21.865	21.865	41.338	27.672	66.960	87.458
19	14.830	14.830	17.199	22.464	22.464	42.471	28.431	68.795	89.855
20	15.215	15.215	17.646	23.047	23.047	43.574	29.169	70.582	92.189
21	15.591	15.591	18.081	23.616	23.616	44.650	29.890	72.325	94.466
22	15.957	15.957	18.507	24.172	24.172	45.701	30.593	74.027	96.689
23	16.316	16.316	18.923	24.716	24.716	46.728	31.281	75.691	98.862
24	16.667	16.667	19.330	25.247	25.247	47.733	31.953	77.319	100.988
25	17.011	17.011	19.728	25.768	25.768	48.717	32.612	78.914	103.071
26	17.348	17.348	20.119	26.278	26.278	49.682	33.258	80.476	105.112
27	17.678	17.678	20.502	26.779	26.779	50.628	33.892	82.009	107.114
28	18.002	18.002	20.879	27.270	27.270	51.557	34.514	83.514	109.080
29	18.321	18.321	21.248	27.753	27.753	52.470	35.124	84.993	111.011
30	18.634	18.634	21.611	28.227	28.227	53.367	35.725	86.445	112.908
31	18.942	18.942	21.969	28.694	28.694	54.249	36.315	87.874	114.775
32	19.245	19.245	22.320	29.153	29.153	55.117	36.897	89.281	116.611
33	19.544	19.544	22.666	29.605	29.605	55.972	37.469	90.665	118.419
34	19.838	19.838	23.007	30.050	30.050	56.813	38.032	92.028	120.200
35	20.127	20.127	23.343	30.489	30.489	57.643	38.587	93.372	121.955
36	20.413	20.413	23.674	30.921	30.921	58.460	39.135	94.696	123.685
37	20.694	20.694	24.001	31.348	31.348	59.267	39.674	96.002	125.391
38	20.972	20.972	24.323	31.769	31.769	60.062	40.207	97.291	127.074
39	21.246	21.246	24.641	32.184	32.184	60.848	40.733	98.563	128.735
40									

Flow capacity / Caudal (kg/h)

Overpressure / Sobrepresión 10%

Temperature / Temperatura 20° C

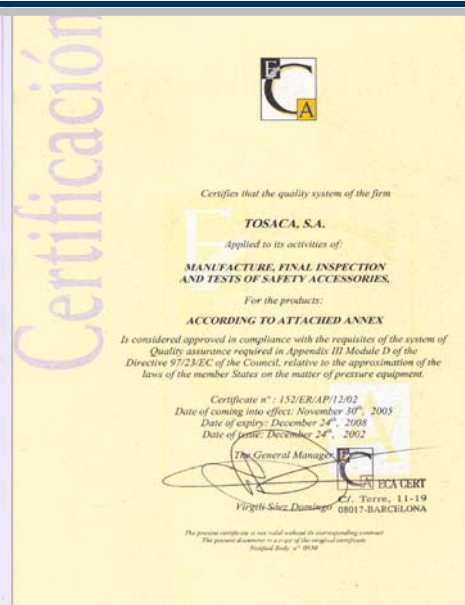
Calculation according / Calculos según ISO EN 4126-1 / API 520



## ISO

## EN

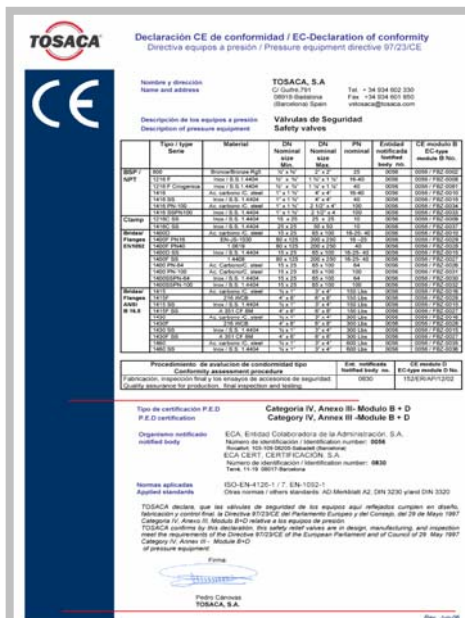
## EN English



## EN

## EN ATEX

## AQUILES



**ATEX**

**ATEX**

**ATEX**



### Lifting device



Manual lifting device.  
Steam service must have  
lifting device.

### Test gag



To test pressure of the installation.  
After testing test gag must be  
removed.  
Test gag is possible for safety  
transport of the valve.

### Lift indicator



Proximity switch and valve position  
indicator.  
Inductive prox 3-wire switching type  
Supply voltage 20 to 264 VAC,  
50/60 Hz.  
Enclosure ratings IEC 144 IP67  
Option Eex / ATEX

### Packing lever



Manual lifting device.  
This system to ensure that the fluid  
does not escape to the atmosphere.

### Nozzle ring/Blowdown ring



To help the control flow capacity.  
Adjustable blowdown

### Specials spring



Carbon steel	120° C
Chrome Vanadium	219° C
S.S. AISI.302	260° C
Inconel X-750	500° C

### Bellows



To protect:  
Constant back pressure  
Variable back pressure  
Material: S.S. AISI-316Ti  
Max. Back pressure 40%

### Trim in hastelloy



Nozzle and disc: Hastelloy C 276  
(Nickel-molybdenum-tungsten alloy)  
Excellent general corrosion resistance  
Rest of valve: S.S. AISI-316L  
Bursting disc

### Stellite in the seat



In PN-63, PN-100  
600#, 900# and 1500#

### Heating Jacket



Areas of application are system  
to be protected from media  
which are viscous and have  
tendency to crystallise.  
Material: S.S. AISI-316L