



**Fumagalli** S.p.A

Milano - Roma - Italy

V A L V E S

Temperature and pressure rate

**Class 150/300/600/800/900/1500/2500 Temperature-pressure rate(Psig)-°F**

Materials	A105&A350-LF2							F5							F11						
	150	300	600	800	900	1500	2500	150	300	600	800	900	1500	2500	150	300	600	800	900	1500	2500
-20 to 100	285	740	1480	1975	2220	3705	6170	290	750	1500	2000	2250	3750	6250	290	750	1500	2000	2250	3750	6250
200	260	675	1350	1800	2025	3375	5625	260	745	1490	2000	2235	3725	6205	260	750	1500	1900	2250	3750	6250
300	230	655	1315	1750	1970	3280	5470	230	715	1430	1940	2150	3580	5965	230	720	1445	1795	2165	3610	6015
400	200	635	1270	1690	1900	3170	5280	200	705	1410	1880	2115	3530	5880	200	695	1385	1755	2080	3465	5775
500	170	600	1200	1595	1795	2995	4990	170	665	1330	1775	1995	3325	5540	170	665	1330	1710	1995	3325	5540
600	140	550	1095	1460	1640	2735	4560	140	605	1210	1615	1815	3025	5040	140	605	1210	1615	1815	3025	5040
650	125	535	1075	1430	1610	2685	4475	125	590	1175	1570	1765	2940	4905	125	590	1175	1570	1765	2940	4905
700	110	535	1065	1420	1600	2665	4440	110	570	1135	1515	1705	2840	4730	110	570	1135	1515	1705	2840	4730
750	95	505	1010	1345	1510	2520	4200	95	530	1055	1420	1585	2640	4400	95	530	1065	1420	1595	2660	4430
800	80	410	825	1100	1235	2060	3430	80	510	1015	1325	1525	2540	4230	80	510	1015	1355	1525	2540	4230
850	65	270	535	715	805	1340	2230	65	485	965	1170	1450	2415	4030	65	485	975	1300	1460	2435	4060
900	50	170	345	460	515	860	1430	50	370	740	940	1110	1850	3085	50	450	900	1200	1350	2245	3745
950								35	275	550	695	825	1370	2285	35	320	640	1005	9550	1595	2655
1000								20	200	400	510	595	995	1655	20	215	430	595	650	1080	1800
1050								145	290	375	430	720	1200		145	290	365	430	720	1200	
1100								100	200	275	300	495	830		95	190	225	290	480	800	
1150								60	125	185	185	310	515		60	125	140	185	310	515	
1200								35	70	120	105	170	285		40	75	95	115	190	315	
1250																					
1300																					

**Class 150/300/600/800/900/1500/2500 Temperature-pressure rate(Psig)-°F**

Materials	F22							F91							F304 F304H						
	150	300	600	800	900	1500	2500	150	300	600	800	900	1500	2500	150	300	600	800	900	1500	2500
-20 to 100	290	750	1500	2000	2250	3750	6250	290	750	1500	2000	2250	3750	6250	275	720	1440	1920	2160	3600	6000
200	260	750	1500	1910	2250	3750	6250	260	750	1500	2000	2250	3750	6250	230	600	1200	1600	1800	3000	5000
300	230	730	1455	1805	2185	3640	6070	230	730	1455	1940	2185	3640	6070	205	540	1080	1410	1620	2700	4500
400	200	705	1410	1730	2115	3530	5880	200	705	1410	1880	2115	3530	5880	190	495	995	1255	1490	2485	4140
500	170	665	1330	1705	1995	3325	5540	170	665	1330	1775	1995	3325	5540	170	465	930	1165	1395	2330	3880
600	140	605	1210	1615	1815	3025	5040	140	605	1210	1615	1815	3025	5040	140	435	875	1105	1310	2185	3640
650	125	590	1175	1570	1765	2940	4905	125	590	1175	1570	1765	2940	4905	125	430	860	1090	1290	2150	3580
700	110	570	1135	1515	1705	2840	4730	110	570	1135	1515	1705	2840	4730	110	425	850	1075	1275	2125	3540
750	95	530	1065	1420	1595	2660	4430	95	530	1065	1420	1595	2660	4430	950	415	830	1060	1245	2075	3460
800	80	510	1015	1355	1525	2540	4230	80	510	1015	1355	1525	2540	4230	80	405	805	1050	1210	2015	3360
850	65	485	975	1300	1460	2435	4060	65	485	975	1300	1460	2435	4060	65	395	790	1035	1190	1980	3300
900	50	450	900	1200	1350	2245	3745	50	450	900	1200	1350	2245	3745	50	390	780	1025	1165	1945	3240
950	35	375	755	1005	1130	1885	3145	35	385	775	1030	1160	1930	3220	35	380	765	1000	1145	1910	3180
1000	20	260	520	715	780	1305	2170	20	365	725	970	1090	1820	3030	20	320	640	860	965	1605	2675
1050		175	350	530	525	875	1455	20	360	720	960	1080	1800	3000		310	615	825	925	1545	2570
1100		110	220	300	330	550	915	20	300	605	805	905	1510	2515		255	515	685	770	1285	2145
1150		70	135	275	205	345	570	20	225	445	595	670	1115	1855		200	400	520	595	995	1655
1200		40	80	145	125	205	345	20	145	290	385	430	720	1200		155	310	415	465	770	1285
1250																115	225	295	340	565	945
1300																85	170	220	255	430	715



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Temperature and pressure rate

## Class 150/300/600/800/900/1500/2500 Temperature-pressure rate(Psig)- °F

Materials Class	F321 F321H							F316 F316H							F304L F316L						
	150	300	600	800	900	1500	2500	150	300	600	800	900	1500	2500	150	300	600	800	900	1500	2500
-20 to 100	275	720	1440	1920	2160	3600	6000	275	720	1440	1920	2160	3600	6000	230	600	1200	1600	1800	3000	5000
200	240	645	1290	1720	1935	3230	5380	235	620	1240	1655	1860	3095	5160	195	505	1015	1350	1520	2530	4220
300	230	595	1190	1585	1785	2975	4960	215	560	1120	1495	1680	2795	4660	175	455	910	1210	1360	2270	3780
400	200	550	1105	1470	1655	2760	4600	195	515	1025	1370	1540	2570	4280	160	415	825	1100	1240	2065	3440
500	170	515	975	1375	1545	2570	4285	170	480	955	1275	1435	2390	3980	145	380	765	1020	1145	1910	3180
600	140	485	955	1300	1460	2435	4060	140	450	900	1205	1355	2255	3760	140	360	720	960	1080	1800	3000
650	125	480	930	1275	1435	2390	3980	125	445	890	1185	1330	2220	3700	125	350	700	935	1050	1750	2920
700	110	465	915	1240	1395	2330	3880	110	430	870	1150	1305	2170	3620	110	345	685	915	1030	1715	2860
750	95	460	900	1220	1375	2290	3820	95	425	855	1130	1280	2135	3560	95	335	670	895	1010	1680	2800
800	80	450	895	1205	1355	2255	3760	80	420	845	1105	1265	2110	3520	80	330	660	875	985	1645	2740
850	65	445	885	1190	1340	2230	3720	65	415	835	1080	1255	2090	3480	65	320	645	860	965	1610	2680
900	50	440	775	1180	1325	2210	3680	50	385	830	1050	1245	2075	3460							
950	35	385	715	1030	1160	1930	3220	35	350	775	1030	1160	1930	3220							
1000	20	355	625	950	1070	1785	2970	20	345	700	970	1050	1750	2915							
1050	20	315	545	835	940	1565	2605		305	685	860	1030	1720	2865							
1100	20	270	475	725	815	1360	2265		235	610	735	915	1525	2545							
1150	20	235	370	630	710	1185	1970		185	475	550	710	1185	1970							
1200	20	185	280	495	555	925	1545		145	370	485	555	925	1545							
1250	20	140	220	375	420	705	1170		115	295	365	440	735	1230							
1300	20	110	170	295	330	550	915			235		350	585	970							

## Class 150/300/600/800/900/1500/2500 Temperature-pressure rate(Psig)- °F

Materials Class	F347 F347H							F44 F51 F53						
	150	300	600	800	900	1500	2500	150	300	600	800	900	1500	2500
-20 to 100	275	720	1400	1920	2160	3600	6000	290	750	1500	2000	2250	3750	6250
200	255	660	1320	1760	1980	3300	5500	260	720	1400	1920	2160	3600	6000
300	230	615	1230	1640	1845	3070	5120	230	665	1330	1773	1995	3325	5540
400	200	575	1145	1530	1720	2870	4780	200	615	1230	1640	1845	3070	5120
500	170	540	1080	1440	1620	2700	4500	170	575	1150	1537	1730	2880	4800
600	140	515	1025	1370	1540	2570	4280	140	555	1115	1485	1670	2785	4640
650	125	505	1010	1345	1510	2520	4200	125	550	1100	1467	1650	2750	4580
700	110	495	990	1320	1485	2470	4120	110	540	1085	1445	1625	2710	4520
750	95	490	985	1310	1475	2460	4100	95	530	1065	1418	1595	2660	4430
800	80	485	975	1300	1460	2435	4060							
850	65	450	970	1295	1455	2425	4040							
900	50	385	900	1200	1350	2245	3745							
950	35	365	775	1030	1160	1930	3220							
1000	20	360	720	940	1090	1820	3030							
1050	20	325	645	960	1080	1800	3000							
1100	20	275	550	860	965	1610	2685							
1150	20	170	345	735	825	1370	2285							
1200	20	125	245	460	515	855	1430							
1250	20	95	185	330	370	615	1030							
1300	20	70	110	250	280	465	770							

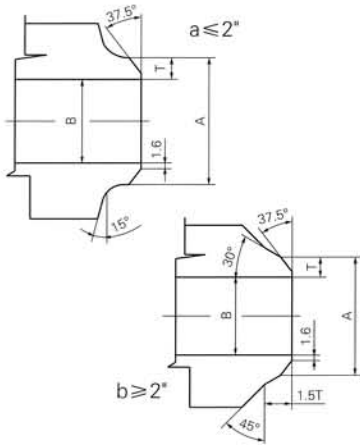


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Connection-end standars



**Butt-welded standard ASME B16.25**

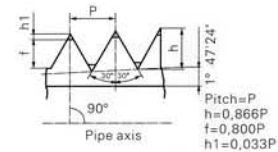
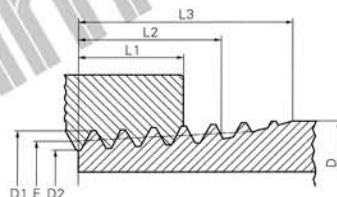
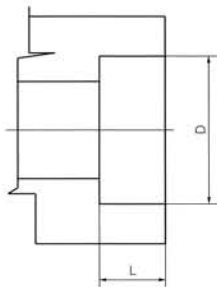
Unit:mm

Normal diameter	SCH.40			SCH.80			SCH.160			SCH.XXS		
	A	B	T	A	B	T	A	B	T	A	B	T
1/2	21.3	15.8	2.77	21.3	13.8	3.73	21.3	11.7	4.78	21.3	6.4	7.47
3/4	26.7	25.0	2.87	26.7	18.9	3.91	26.7	15.6	5.56	26.7	11.1	7.82
1	33.4	26.6	3.38	33.4	24.3	4.55	33.4	20.7	6.35	33.4	15.2	9.09
1 1/4	42.2	35.1	3.55	42.2	32.5	4.85	42.2	29.5	6.35	42.2	22.8	9.70
1 1/2	48.3	41.0	3.68	48.3	38.1	5.08	48.3	33.5	7.41	48.3	28.0	10.15
2	60.3	52.5	3.91	60.3	49.2	5.54	60.3	42.9	8.74	60.3	38.2	11.07
2 1/2	73.0	62.7	5.15	73.0	59.0	7.01	73.0	54.0	9.53	73.0	45.0	14.02
3	88.9	78.0	5.48	88.9	73.7	7.62	88.9	66.6	11.13	88.9	58.4	15.24
4	114.3	102.3	6.02	114.3	97.2	8.56	114.3	85.3	13.49	114.3	80.1	17.12

**Foreign socket welded standard JB-ANSI-JIS**

Unit:mm

Normal diameter	JB		ANSI		JIS	
	D	L	D	L	D	L
1/4	14.5	10.0	14.1	9.6	14.3	9.6
3/8	18.0	10.0	17.6	9.6	17.9	9.6
1/2	22.5	10.0	21.8	9.6	22.2	9.6
3/4	28.5	11.0	27.1	12.7	27.7	12.7
1	34.5	12.0	33.8	12.7	34.5	12.7
1 1/4	43.0	14	42.6	12.7	43.2	12.7
1 1/2	49.0	15	48.7	12.7	49.1	12.7
2	61.2	16	61.2	15.9	61.2	15.9



National pipe thread ASME B1.20.1

**Thread standard ASME B1.20.1**

Normal diameter	O.D.OF Pipe	Threads sep in.	Pitch of thread	O.D.AT Beginning of thread	Pitch dia.at beginning of ext.thread	Root dia.at beginning of ext.thread	Handtight engagement	Effective thread ext.length		Overall length ext.thread
								L1	L2	
1/8	inch	0.41	1.06	0.04	0.39	0.36	0.26	0.18	0.26	0.39
	mm	10.29	27	0.940	9.982	9.233	6.484	4.572	6.703	9.967
1/4	inch	0.54	0.71	0.06	0.52	0.48	0.43	0.20	0.40	0.59
	mm	13.72	18	1.412	13.259	12.126	10.998	5.080	10.206	15.103
3/8	inch	0.67	0.71	0.06	0.66	0.61	0.57	0.24	0.41	0.60
	mm	17.14	18	1.412	16.662	15.545	14.427	6.096	10.358	15.255
1/2	inch	0.84	0.55	0.07	0.82	0.76	0.70	0.32	0.53	0.78
	mm	21.34	14	1.814	20.726	19.263	17.805	8.128	13.556	19.850
3/4	inch	1.05	0.55	0.07	1.03	0.97	0.91	0.34	0.55	0.79
	mm	26.67	14	1.814	26.035	24.580	23.139	8.611	13.861	20.155
1	inch	1.31	0.452	0.09	1.28	1.21	1.14	0.40	0.68	0.98
	mm	33.40	11.1/2	2.210	32.588	30.825	29.058	10.160	17.343	25.006
1 1/4	inch	1.66	0.45	0.09	1.63	1.56	1.49	0.42	0.71	1.01
	mm	42.16	11.1/2	2.210	41.326	39.550	37.795	10.688	17.953	25.616
1 1/2	inch	1.90	0.45	0.09	1.87	1.80	1.73	0.42	0.72	1.03
	mm	48.26	11.1/2	2.210	47.396	45.621	43.866	10.668	18.377	26.040
2	inch	2.37	0.45	0.09	2.34	2.27	2.20	0.44	0.76	1.06
	mm	60.32	11.1/2	2.210	59.411	57.633	55.855	11.074	19.215	26.878



**Fumagalli** S.p.A

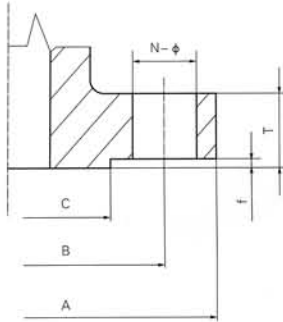
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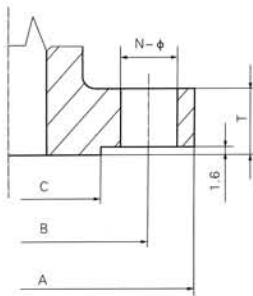
Flange dimensions

**DIN flange 2544-45-46**

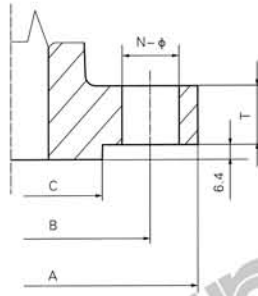
Unit:mm



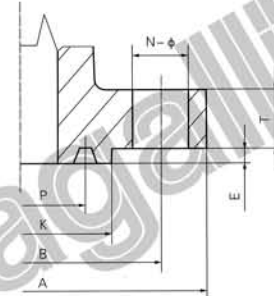
PN	DN	NPS	A	B	C	T	f	Bolt hole	
								N	φ
25 40	15	1/2	95	65	45	16	2	4	14
	20	3/4	105	75	58	18	2	4	14
	25	1	115	85	68	18	2	4	14
	32	1 1/4	140	100	78	18	2	4	18
	40	1/2	150	110	88	18	3	4	18
64	50	2	165	125	102	20	3	4	18
	15	1/2	105	75	45	20	2	4	14
	20	3/4	130	90	58	22	2	4	18
	25	1	140	100	65	24	2	4	18
	32	1 1/4	155	110	75	24	2	4	22
	40	1 1/2	170	125	88	26	3	4	22
	50	2	180	135	95	26	3	4	22



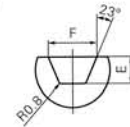
RF  
150~300Lb



RF  
600~2500Lb



RJ  
600~2500Lb



**ANSI B16.5 flange standard**

Unit:mm

Class	NPS	A	B	C	T	Bolt hole		Ring type joint				Ring No
						N	φ	K	P	F	E	
150	1/2	89	60.3	34.9	11.5	4	16	-	-	-	-	-
	3/4	98	69.8	42.9	13.0	4	16	-	-	-	-	-
	1	108	79.4	50.8	14.5	4	16	63.5	47.62	8.74	6.4	R15
	1 1/4	117	88.9	63.5	16.0	4	16	73.0	57.15	8.74	6.4	R17
	1 1/2	127	98.4	73.0	17.5	4	16	82.5	65.07	8.74	6.4	R19
300	2	152	120.6	92.1	19.5	4	20	102.0	82.55	8.74	6.4	R22
	1/2	95	66.7	34.9	14.5	4	16	51.0	34.14	7.14	5.6	R11
	3/4	117	82.5	42.9	16.0	4	20	63.5	42.88	8.74	6.4	R13
	1	124	88.9	50.8	17.5	4	20	70.0	50.80	8.74	6.4	R16
	1 1/4	133	98.4	63.5	19.5	4	20	79.5	60.32	8.74	6.4	R18
600	1 1/2	156	114.3	73.0	21.0	4	23	90.5	68.28	8.74	6.4	R20
	2	165	127.0	92.1	22.5	8	20	108.0	82.55	11.91	8.0	R23
	1/2	95	66.7	34.9	14.5	4	16	51.0	34.14	7.14	5.6	R11
	3/4	117	82.5	42.9	16.0	4	20	63.5	42.88	8.74	6.4	R13
	1	124	88.9	50.8	17.5	4	20	70.0	50.80	8.74	6.4	R16
900 1500	1 1/4	133	98.4	63.5	21.0	4	20	79.5	60.32	8.74	6.4	R18
	1 1/2	156	114.3	73.0	22.5	4	23	90.5	68.28	8.74	6.4	R20
	2	165	127.0	92.1	25.5	8	20	108.0	82.55	11.91	8.0	R23
	1/2	121	82.5	34.9	22.5	4	23	60.5	39.67	8.74	6.4	R12
	1	149	101.6	50.8	29.0	4	26	71.5	50.80	8.74	6.4	R16
2500	1 1/2	178	123.8	73.0	32.0	4	29	92.0	68.28	8.74	6.4	R20
	1/2	133	88.9	34.9	30.5	4	23	65.0	42.88	8.74	6.4	R13
	1	159	107.9	50.8	35.0	4	26	82.5	60.32	8.74	6.4	R18
	1 1/2	203	146	73.0	44.5	4	32	114.5	82.55	11.91	6.4	R23