

PRESSURE RATINGS

TUBES, ELBOWS AND REDUCERS

Tubes and Pipes acc. to DIN EN 13480-3

Tubes and Pipes acc. to ASME B31.3

T-Pieces acc. to DIN EN 13480-3 and DIN 11865

Elbows acc. to DIN EN 13480-3

Concentric and Eccentric Reducers

acc. to DIN EN 13480-3 and DIN 11865



TUBES
ACC. TO DIN EN 13480-3



IMPERIAL

Outer Diameter				MAXIMUM WORKING PRESSURE							
Wall Thickness s				20°C	68°F	50°C	122°F	100°C	212°F	150°C	302°F
Inch	mm	Inch	mm	bar	psi	bar	psi	bar	psi	bar	psi
1/8	3,18	0.022	0,56	548	7948	529	7673	485	7034	439	6367
1/4	6,35	0.035	0,89	424	6150	409	5932	375	5439	339	4917
3/8	9,53	0.035	0,89	271	3931	262	3800	240	3481	217	3147
1/2	12,7	0.049	1,24	287	4163	276	4003	253	3669	229	3321
1/2	12,7	0.065	1,65	368	5337	355	5149	325	4714	294	4264
5/8	15,88	0.049	1,24	225	3263	217	3147	199	2886	180	2611
3/4	19,05	0.049	1,24	186	2698	179	2596	164	2379	148	2147
3/4	19,05	0.065	1,65	251	3640	243	3524	222	3220	201	2915
1	25,4	0.065	1,65	185	2683	178	2582	163	2364	148	2147
1 1/4	31,75	0.065	1,65	146	2118	141	2045	129	1871	117	1697
1 1/2	38,1	0.065	1,65	121	1755	116	1682	107	1552	96	1392
2	50,8	0.065	1,65	90	1305	86	1247	79	1146	72	1044
2 1/2	63,5	0.065	1,65	71	1030	69	1001	63	914	57	827
3	76,2	0.065	1,65	59	856	57	827	52	754	47	682
4	101,6	0.083	2,11	56	812	54	783	50	725	45	653
6	152,4	0.109	2,77	49	711	47	682	43	624	39	566

ISO

Outer Diameter				MAXIMUM WORKING PRESSURE							
Wall Thickness s				20°C	68°F	50°C	122°F	100°C	212°F	150°C	302°F
DN	mm	Inch	mm	bar	psi	bar	psi	bar	psi	bar	psi
8	13,50	0.063	1,60	344	4989	332	4815	304	4409	275	3989
10	17,20	0.063	1,60	264	3829	254	3684	233	3379	211	3060
15	21,30	0.063	1,60	209	3031	202	2930	185	2683	167	2422
20	26,90	0.063	1,60	163	2364	158	2292	144	2089	131	1900
25	33,70	0.079	2,00	168	2437	162	2350	148	2147	134	1944
32	42,40	0.079	2,00	132	1915	127	1842	117	1697	105	1523
40	48,30	0.079	2,00	115	1668	111	1610	102	1479	92	1334
50	60,30	0.079	2,00	91	1320	88	1276	81	1175	73	1059
65	76,10	0.079	2,00	72	1044	69	1001	63	914	57	827
80	88,90	0.091	2,30	71	1030	68	986	62	899	56	798
100	114,30	0.091	2,30	55	798	53	769	48	696	44	638
125	139,70	0.091	2,30	44	638	43	624	39	566	35	508
150	168,30	0.102	2,60	42	609	40	580	37	537	33	479
200	219,10	0.102	2,60	32	464	31	450	28	406	25	363

Note on the table logic: The order of the dimensions is orientated to the standard catalogues.
Calculation remarks: 1% Yield strength in accordance with DIN EN 10217-7 / Safty factor is 1,5

METRIC

Outer Diameter				MAXIMUM WORKING PRESSURE							
Wall Thickness s				20°C	68°F	50°C	122°F	100°C	212°F	150°C	302°F
DN	mm	Inch	mm	bar	psi	bar	psi	bar	psi	bar	psi
2	3	0.020	0,5	321	4656	310	4496	284	4119	257	3727
4	6	0.039	1	452	6556	436	6324	400	5802	362	5250
6	8	0.039	1	328	4757	317	4598	290	4206	263	3814
8	10	0.039	1	258	3742	248	3597	228	3307	206	2988
10	12	0.039	1	212	3075	204	2959	187	2712	169	2451
10	13	0.059	1,5	330	4786	318	4612	292	4235	264	3829
12	15	0.059	1,5	282	4090	272	3945	249	3611	226	3278
15	18	0.059	1,5	232	3365	223	3234	205	2973	185	2683
15	19	0.059	1,5	219	3176	211	3060	193	2799	175	2538
20	22	0.059	1,5	187	2712	180	2611	165	2161	149	2016
20	23	0.059	1,5	178	2582	172	2495	158	2292	143	2074
25	28	0.059	1,5	145	2103	140	2031	128	1856	116	1682
25	29	0.059	1,5	140	2031	135	1958	123	1784	112	1624
32	34	0.059	1,5	118	1711	114	1653	104	1508	94	1363
32	35	0.059	1,5	115	1668	111	1610	101	1465	92	1334
40	40	0.059	1,5	100	1450	96	1392	88	1276	80	1160
40	41	0.059	1,5	97	1407	94	1363	86	1247	78	1131
50	52	0.059	1,5	76	1102	73	1059	67	972	61	885
50	53	0.059	1,5	75	1088	72	1044	66	957	60	870
65	70	0.079	2	78	1131	75	1088	69	1001	63	914
80	85	0.079	2	64	928	62	899	57	827	51	740
100	104	0.079	2	52	754	50	725	46	653	42	609
125	129	0.079	2	42	609	40	580	37	537	33	479
150	154	0.079	2	35	508	34	493	31	450	28	406
200	204	0.079	2	26	377	25	363	23	334	21	305

Note on the table logic: The order of the dimensions is orientated to the standard catalogues.
Calculation remarks: 1% Yield strength in accordance with DIN EN 10217-7 / Safty factor is 1,5

TUBES
ACC. TO ASME B31.3

IMPERIAL

Outer Diameter				MAXIMUM WORKING PRESSURE							
Wall Thickness s				20°C	68°F	50°C	122°F	100°C	212°F	150°C	302°F
Inch	mm	Inch	mm	bar	psi	bar	psi	bar	psi	bar	psi
1/8	3,18	0.022	0,56	325	4716	325	4716	325	4716	306	4434
1/4	6,35	0.035	0,89	254	3678	254	3678	254	3678	238	3458
3/8	9,53	0.035	0,89	164	2378	164	2378	164	2378	154	2236
1/2	12,70	0.049	1,24	173	2508	173	2508	173	2508	163	2358
1/2	12,70	0.065	1,65	221	3203	221	3203	221	3203	208	3011
5/8	15,88	0.049	1,24	137	1981	137	1981	137	1981	128	1862
3/4	19,05	0.049	1,24	113	1637	113	1637	113	1637	106	1539
3/4	19,05	0.065	1,65	152	2207	152	2207	152	2207	143	2075
1	25,40	0.065	1,65	113	1631	113	1631	113	1631	106	1533
1 1/4	31,75	0.065	1,65	89	1293	89	1293	89	1293	84	1216
1 1/2	38,10	0.065	1,65	74	1069	74	1069	74	1069	69	1005
2	50,80	0.065	1,65	55	797	55	797	55	797	52	749
2 1/2	63,50	0.065	1,65	44	634	44	634	44	634	41	596
3	76,20	0.065	1,65	36	527	36	527	36	527	34	495
4	101,60	0.083	2,11	35	504	35	504	35	504	33	474
6	152,40	0.109	2,77	30	440	30	440	30	440	29	414

ISO

Outer Diameter				MAXIMUM WORKING PRESSURE							
Wall Thickness s				20°C	68°F	50°C	122°F	100°C	212°F	150°C	302°F
DN	mm	Inch	mm	bar	psi	bar	psi	bar	psi	bar	psi
8	13,50	0.063	1,60	207	2997	207	2997	207	2997	194	2817
10	17,20	0.063	1,60	159	2311	159	2311	159	2311	150	2173
15	21,30	0.063	1,60	127	1843	127	1843	127	1843	120	1733
20	26,90	0.063	1,60	100	1443	100	1443	100	1443	94	1357
25	33,70	0.079	2,00	102	1483	102	1483	102	1483	96	1394
32	42,40	0.079	2,00	81	1168	81	1168	81	1168	76	1098
40	48,30	0.079	2,00	70	1021	70	1021	70	1021	66	959
50	60,30	0.079	2,00	56	812	56	812	56	812	53	764
65	76,10	0.079	2,00	44	640	44	640	44	640	42	602
80	88,90	0.091	2,30	43	630	43	630	43	630	41	592
100	114,30	0.091	2,30	34	488	34	488	34	488	32	459
125	139,70	0.091	2,30	27	398	27	398	27	398	26	374
150	168,30	0.102	2,60	26	373	26	373	26	373	24	351
200	219,10	0.102	2,60	20	286	20	286	20	286	19	269

Note on the table logic: The order of the dimensions is orientated to the standard catalogues.
Calculation remarks: 1% Yield strength in accordance with DIN EN 10217-7 / Safty factor is 1,5

METRIC

Outer Diameter				MAXIMUM WORKING PRESSURE							
Wall Thickness s				20°C	68°F	50°C	122°F	100°C	212°F	150°C	302°F
DN	mm	Inch	mm	bar	psi	bar	psi	bar	psi	bar	psi
2	3,00	0.020	0,50	193	2802	193	2802	193	2802	182	2634
4	6,00	0.039	1,00	270	3915	270	3915	270	3915	254	3680
6	8,00	0.039	1,00	198	2865	198	2865	198	2865	186	2693
8	10,00	0.039	1,00	156	2259	156	2259	156	2259	146	2124
10	12,00	0.039	1,00	129	1865	129	1865	129	1865	121	1753
10	13,00	0.059	1,50	199	2880	199	2880	199	2880	187	2707
12	15,00	0.059	1,50	170	2470	170	2470	170	2470	160	2322
15	18,00	0.059	1,50	140	2036	140	2036	140	2036	132	1914
15	19,00	0.059	1,50	133	1923	133	1923	133	1923	125	1808
20	22,00	0.059	1,50	114	1648	114	1648	114	1648	107	1549
20	23,00	0.059	1,50	109	1573	109	1573	109	1573	102	1479
25	28,00	0.059	1,50	88	1281	88	1281	88	1281	83	1205
25	29,00	0.059	1,50	85	1235	85	1235	85	1235	80	1161
32	34,00	0.059	1,50	72	1048	72	1048	72	1048	68	985
32	35,00	0.059	1,50	70	1017	70	1017	70	1017	66	956
40	40,00	0.059	1,50	61	887	61	887	61	887	57	833
40	41,00	0.059	1,50	60	864	60	864	60	864	56	813
50	52,00	0.059	1,50	47	678	47	678	47	678	44	637
50	53,00	0.059	1,50	46	665	46	665	46	665	43	625
65	70,00	0.079	2,00	48	697	48	697	48	697	45	656
80	85,00	0.079	2,00	39	572	39	572	39	572	37	538
100	104,00	0.079	2,00	32	466	32	466	32	466	30	438
125	129,00	0.079	2,00	26	375	26	375	26	375	24	352
150	154,00	0.079	2,00	22	313	22	313	22	313	20	294
200	204,00	0.079	2,00	16	236	16	236	16	236	15	222

Note on the table logic: The order of the dimensions is orientated to the standard catalogues.
Calculation remarks: 1% Yield strength in accordance with DIN EN 10217-7 / Safty factor is 1,5

PIPES
ACC. TO DIN EN 13480-3

SCHEDULE 5S (ASTM A 312M)

Outer Diameter				Wall Thickness s								MAXIMUM WORKING PRESSURE							
				38°C	100°F	93°C	200°F	149°C	300°F	204°C	400°F								
NPS	mm	Inch	mm	bar	psi	bar	psi	bar	psi	bar	psi								
1/2	21,34	0.065	1,65	213	3089	205	1877	188	2727	170	2466								
3/4	26,67	0.065	1,65	169	2451	163	1490	149	2161	135	1958								
1	33,40	0.065	1,65	133	1929	129	1182	118	1711	107	1552								
1 1/4	42,16	0.065	1,65	105	1523	101	931	93	1349	84	1218								
1 1/2	48,26	0.065	1,65	91	1320	88	812	81	1175	73	1059								
2	60,33	0.065	1,65	72	1044	69	644	64	928	58	841								
2 1/2	73,03	0.083	2,11	76	1102	74	682	68	986	61	885								
3	88,90	0.083	2,11	63	914	60	560	55	798	50	725								
3 1/2	101,60	0.083	2,11	55	798	53	489	48	696	44	638								
4	114,30	0.083	2,11	48	696	47	435	43	624	39	566								
5	141,30	0.109	2,77	51	740	49	460	45	653	41	595								
6	168,28	0.109	2,77	43	624	41	386	38	551	34	493								
8	219,08	0.109	2,77	33	479	32	296	29	421	26	377								
10	273,05	0.134	3,40	32	464	31	292	28	406	26	377								
12	323,85	0.156	3,96	32	464	31	286	28	406	25	363								
14	355,60	0.156	3,96	29	421	28	260	25	363	23	334								
16	406,40	0.165	4,19	27	392	26	241	24	348	21	305								
18	457,20	0.165	4,19	24	348	23	215	21	305	19	276								
20	508,00	0.188	4,78	24	348	23	219	21	305	19	276								
22	558,80	0.188	4,78	22	319	21	200	19	276	17	247								
24	609,60	0.218	5,54	23	334	21	212	19	276	17	247								
30	762,00	0.250	6,35	21	305	21	194	19	276	17	247								

Note on the table logic: The order of the dimensions is orientated to the standard catalogues.
Calculation remarks: 1% Yield strength in accordance with DIN EN 10217-7 / Safty factor is 1,5

a) The dimensions in [mm] were used as a baseline for calculating the maximum permissible operating pressure; the specifications in NPS and [inch] are provided for informational purposes only.
b) NPS = nominal pipe size

SCHEDULE 10S (ASTM A 312M)

Outer Diameter				Wall Thickness s								MAXIMUM WORKING PRESSURE							
				38°C	100°F	93°C	200°F	149°C	300°F	204°C	400°F								
NPS	mm	Inch	mm	bar	psi	bar	psi	bar	psi	bar	psi								
1/8	10,29	0.049	1,24	338	4902	326	4728	299	4337	271	3931								
1/4	13,72	0.065	1,65	341	4946	329	4772	302	4380	273	3960								
3/8	17,15	0.065	1,65	268	3887	259	3756	237	3437	215	3118								
1/2	21,34	0.083	2,11	278	4032	268	3887	246	3568	222	3220								
3/4	26,67	0.083	2,11	219	3176	211	3060	194	2814	175	2538								
1	33,40	0.109	2,77	231	3350	223	3234	204	2959	185	2683								
1 1/4	42,16	0.109	2,77	181	2625	174	2524	160	2321	144	2089								
1 1/2	48,26	0.109	2,77	157	2277	151	2190	139	2016	125	1813								
2	60,33	0.109	2,77	123	1784	119	1726	109	1581	99	1436								
2 1/2	73,03	0.109	3,05	112	1624	108	1566	99	1436	90	1305								
3	88,90	0.120	3,05	91	1320	88	1276	81	1175	73	1059								
3 1/2	101,60	0.120	3,05	80	1160	77	1117	71	1030	64	928								
4	114,30	0.120	3,05	71	1030	68	986	62	899	56	812								
5	141,30	0.134	3,40	63	914	61	885	56	812	51	740								
6	168,28	0.134	3,40	53	769	51	740	47	682	42	609								
8	219,08	0.148	3,76	45	653	43	624	40	580	36	522								
10	273,05	0.165	4,19	40	580	39	566	35	508	32	464								
12	323,85	0.180	4,57	37	537	35	508	32	464	29	421								
14 ^{c)}	355,60	0.188	4,78	35	508	34	493	31	450	28	406								
16 ^{c)}	406,40	0.188	4,78	31	450	29	421	27	392	24	348								
18 ^{c)}	457,20	0.188	4,78	27	392	26	377	24	348	22	319								
20 ^{c)}	508,00	0.218	5,54	28	406	27	392	25	363	22	319								
22 ^{c)}	558,80	0.218	5,54	26	377	25	363	23	334	20	290								
24	609,60	0.250	6,35	27	392	26	377	24	348	21	305								
30	762,00	0.312	7,92	27	392	26	377	24	348	21	305								

Note on the table logic: The order of the dimensions is orientated to the standard catalogues.
Calculation remarks: 1% Yield strength in accordance with DIN EN 10217-7 / Safty factor is 1,5

a) The dimensions in [mm] were used as a baseline for calculating the maximum permissible operating pressure; the specifications in NPS and [inch] are provided for informational purposes only.
b) NPS = nominal pipe size
c) Nominal wall thickness for these dimensions does not comply with ANSI B36.10–1979 American National Standard for Welded and Seamless Wrought Steel Pipe.

PIPES
ACC. TO ASME B31.3

SCHEDULE 5S (ASTM A 312M)

Outer Diameter				MAXIMUM WORKING PRESSURE							
Wall Thickness s				38°C	100°F	93°C	200°F	149°C	300°F	204°C	400°F
NPS	mm	Inch	mm	bar	psi	bar	psi	bar	psi	bar	psi
1/2	21,34	0.065	1,65	129	1874	129	1874	129	1874	121	1761
3/4	26,67	0.065	1,65	103	1488	103	1488	103	1488	97	1399
1	33,40	0.065	1,65	81	1181	81	1181	81	1181	77	1110
1 1/4	42,16	0.065	1,65	64	931	64	931	64	931	60	875
1 1/2	48,26	0.065	1,65	56	812	56	812	56	812	53	763
2	60,33	0.065	1,65	44	643	44	643	44	643	42	604
2 1/2	73,03	0.083	2,11	47	681	47	681	47	681	44	640
3	88,90	0.083	2,11	39	559	39	559	39	559	36	525
3 1/2	101,60	0.083	2,11	34	488	34	488	34	488	32	459
4	114,30	0.083	2,11	30	434	30	434	30	434	28	408
5	141,30	0.109	2,77	32	459	32	459	32	459	30	431
6	168,28	0.109	2,77	27	385	27	385	27	385	25	362
8	219,08	0.109	2,77	20	296	20	296	20	296	19	278
10	273,05	0.134	3,40	20	291	20	291	20	291	19	273
12	323,85	0.156	3,96	20	286	20	286	20	286	19	269
14	355,60	0.156	3,96	18	260	18	260	18	260	17	245
16	406,40	0.165	4,19	17	241	17	241	17	241	16	226
18	457,20	0.165	4,19	15	214	15	214	15	214	14	201
20	508,00	0.188	4,78	15	220	15	220	15	220	14	206
22	558,80	0.188	4,78	14	200	14	200	14	200	13	188
24	609,60	0.218	5,54	15	212	15	212	15	212	14	199
30	762,00	0.250	6,35	13	194	13	194	13	194	13	183

Note on the table logic: The order of the dimensions is orientated to the standard catalogues.
Calculation remarks: 1% Yield strength in accordance with DIN EN 10217-7 / Safty factor is 1,5

a) The dimensions in [mm] were used as a baseline for calculating the maximum permissible operating pressure;
the specifications in NPS and [inch] are provided for informational purposes only.

b) NPS = nominal pipe size

SCHEDULE 10S (ASTM A 312M)

Outer Diameter				MAXIMUM WORKING PRESSURE							
Wall Thickness s				38°C	100°F	93°C	200°F	149°C	300°F	204°C	400°F
NPS	mm	Inch	mm	bar	psi	bar	psi	bar	psi	bar	psi
1/8	10,29	0.049	1,24	203	2951	203	2951	203	2951	191	2774
1/4	13,72	0.065	1,65	205	2975	205	2975	205	2975	193	2797
3/8	17,15	0.065	1,65	162	2352	162	2352	162	2352	153	2212
1/2	21,34	0.083	2,11	168	2434	168	2434	168	2434	158	2288
3/4	26,67	0.083	2,11	133	1927	133	1927	133	1927	125	1812
1	33,40	0.109	2,77	140	2032	140	2032	140	2032	132	1910
1 1/4	42,16	0.109	2,77	110	1594	110	1594	110	1594	103	1498
1 1/2	48,26	0.109	2,77	96	1386	96	1386	96	1386	90	1303
2	60,33	0.109	2,77	75	1094	75	1094	75	1094	71	1028
2 1/2	73,03	0.109	3,05	69	994	69	994	69	994	64	935
3	88,90	0.120	3,05	56	814	56	814	56	814	53	765
3 1/2	101,60	0.120	3,05	49	711	49	711	49	711	46	668
4	114,30	0.120	3,05	44	631	44	631	44	631	41	593
5	141,30	0.134	3,40	39	565	39	565	39	565	37	531
6	168,28	0.134	3,40	33	474	33	474	33	474	31	446
8	219,08	0.148	3,76	28	403	28	403	28	403	26	379
10	273,05	0.165	4,19	25	359	25	359	25	359	23	337
12	323,85	0.180	4,57	23	330	23	330	23	330	21	310
14 ^{c)}	355,60	0.188	4,78	22	315	22	315	22	315	20	296
16 ^{c)}	406,40	0.188	4,78	19	275	19	275	19	275	18	259
18 ^{c)}	457,20	0.188	4,78	17	244	17	244	17	244	16	230
20 ^{c)}	508,00	0.218	5,54	18	255	18	255	18	255	17	240
22 ^{c)}	558,80	0.218	5,54	16	232	16	232	16	232	15	218
24	609,60	0.250	6,35	17	244	17	244	17	244	16	229
30	762,00	0.312	7,92	17	243	17	243	17	243	16	228

Note on the table logic: The order of the dimensions is orientated to the standard catalogues.
Calculation remarks: 1% Yield strength in accordance with DIN EN 10217-7 / Safty factor is 1,5

a) The dimensions in [mm] were used as a baseline for calculating the maximum permissible operating pressure;
the specifications in NPS and [inch] are provided for informational purposes only.

b) NPS = nominal pipe size

c) Nominal wall thickness for these dimensions does not comply with ANSI B36.10–1979 American National Standard
for Welded and Seamless Wrought Steel Pipe.

T-PIECES
ACC. TO DIN EN 13480-3 AND DIN 11865



IMPERIAL

MAXIMUM WORKING PRESSURE

Outer Diameter		Wall Thickness s1		Wall Thickness s2		20°C	68°F	50°C	212°F	150°C	302°F
Inch		Inch	mm	Inch	mm	bar	psi	bar	psi	bar	psi
1/4	x 1/4	0.035	0,89	0.035	0,89	218	3161	193	2799	175	2538
3/8	x 1/4	0.035	0,89	0.035	0,89	151	2190	134	1943	121	1754
3/8	x 3/8	0.035	0,89	0.035	0,89	124	1798	109	1580	99	1435
1/2	x 1/4	0.049	1,24	0.035	0,89	157	2277	139	2016	126	1827
1/2	x 3/8	0.049	1,24	0.035	0,89	142	2059	126	1827	114	1653
1/2	x 1/2	0.049	1,24	0.049	1,24	122	1769	108	1566	97	1406
1/2	x 1/4	0.065	1,65	0.035	0,89	236	3422	209	3031	189	2741
1/2	x 3/8	0.065	1,65	0.035	0,89	188	2726	166	2407	150	2175
1/2	x 1/2	0.065	1,65	0.065	1,65	214	3103	189	2741	171	2480
3/4	x 1/4	0.049	1,24	0.035	0,89	112	1624	99	1435	90	1305
3/4	x 3/8	0.049	1,24	0.035	0,89	97	1406	86	1247	78	1131
3/4	x 1/2	0.049	1,24	0.049	1,24	94	1363	84	1218	75	1087
3/4	x 3/4	0.049	1,24	0.049	1,24	77	1116	68	986	62	899
3/4	x 1/4	0.065	1,65	0.035	0,89	153	2219	135	1958	122	1769
3/4	x 3/8	0.065	1,65	0.035	0,89	125	1812	110	1595	100	1450
3/4	x 1/2	0.065	1,65	0.065	1,65	143	2074	126	1827	114	1653
3/4	x 3/4	0.065	1,65	0.065	1,65	115	1667	102	1479	92	1334
1	x 1/4	0.065	1,65	0.035	0,89	110	1595	97	1406	88	1276
1	x 3/8	0.065	1,65	0.035	0,89	88	1276	78	1131	70	1015
1	x 1/2	0.065	1,65	0.049	1,24	104	1508	92	1334	83	1203
1	x 1/2	0.065	1,65	0.065	1,65	114	1653	101	1464	91	1319
1	x 3/4	0.065	1,65	0.049	1,24	86	1247	77	1116	69	1000
1	x 3/4	0.065	1,65	0.065	1,65	94	1363	83	1203	75	1087
1	x 1	0.065	1,65	0.065	1,65	83	1203	73	1058	66	957
1 1/2	x 1/4	0.065	1,65	0.035	0,89	77	1116	68	986	62	899
1 1/2	x 1/2	0.065	1,65	0.049	1,24	75	1087	66	957	60	870
1 1/2	x 1/2	0.065	1,65	0.065	1,65	79	1145	70	1015	63	913
1 1/2	x 3/8	0.065	1,65	0.035	0,89	66	957	58	841	53	768
1 1/2	x 3/4	0.065	1,65	0.049	1,24	63	913	56	812	51	739
1 1/2	x 3/4	0.065	1,65	0.065	1,65	69	1000	61	884	55	797
1 1/2	x 1	0.065	1,65	0.065	1,65	61	884	54	783	48	696
1 1/2	x 1 1/2	0.065	1,65	0.065	1,65	50	725	44	638	40	580
2	x 1/4	0.065	1,65	0.035	0,89	67	971	59	855	54	783
2	x 3/8	0.065	1,65	0.035	0,89	57	826	50	725	45	652
2	x 1/2	0.065	1,65	0.049	1,24	54	783	48	696	43	623
2	x 1/2	0.065	1,65	0.065	1,65	57	826	50	725	45	652
2	x 3/4	0.065	1,65	0.049	1,24	49	710	43	623	39	565
2	x 3/4	0.065	1,65	0.065	1,65	52	754	46	667	41	594
2	x 1	0.065	1,65	0.065	1,65	49	710	43	623	39	565
2	x 1 1/2	0.065	1,65	0.065	1,65	39	565	34	493	31	449
2	x 2	0.065	1,65	0.065	1,65	33	478	29	420	26	377

Note on the table logic: The order of the dimensions is orientated to the standard catalogues.
Calculation remarks: 1% Yield strength in accordance with DIN EN 10217-7 / Safty factor is 1,5

IMPERIAL

MAXIMUM WORKING PRESSURE

Outer Diameter		Wall Thickness s1		Wall Thickness s2		20°C	68°F	50°C	212°F	150°C	302°F
Inch		Inch	mm	Inch	mm	bar	psi	bar	psi	bar	psi
2 1/2	x 1/4	0.065	1,65	0.035	0,89	53	768	47	681	43	623
2 1/2	x 3/8	0.065	1,65	0.035	0,89	45	652	39	565	36	522
2 1/2	x 1/2	0.065	1,65	0.049	1,24	47	681	42	609	38	551
2 1/2	x 1/2	0.065	1,65	0.065	1,65	48	696	43	623	39	565
2 1/2	x 3/4	0.065	1,65	0.065	1,65	44	638	39	565	35	507
2 1/2	x 1	0.065	1,65	0.065	1,65	40	580	35	507	32	464
2 1/2	x 1 1/2	0.065	1,65	0.065	1,65	33	478	29	420	26	377
2 1/2	x 2	0.065	1,65	0.065	1,65	28	406	24	348	22	319
2 1/2	x 2 1/2	0.065	1,65	0.065	1,65	24	348	21	304	19	275
3	x 1/4	0.065	1,65	0.035	0,89	14	203	12	174	11	159
3	x 3/8	0.065	1,65	0.035	0,89	44	638	39	565	35	507
3	x 1/2	0.065	1,65	0.049	1,24	38	551	33	478	30	435
3	x 1/2	0.065	1,65	0.065	1,65	38	551	33	478	30	435
3	x 3/4	0.065	1,65	0.065	1,65	35	507	31	449	28	406
3	x 1	0.065	1,65	0.065	1,65	35	507	31	449	28	406
3	x 1 1/2	0.065	1,65	0.065	1,65	28	406	25	362	23	333
3	x 2	0.065	1,65	0.065	1,65	23	333	20	290	18	261
3	x 2 1/2	0.065	1,65	0.065	1,65	21	304	19	275	17	246
3	x 3	0.065	1,65	0.065	1,65	19	275	16	232	15	217
4	x 1/2	0.065	2,11	0.049	1,24	42	609	37	536	34	493
4	x 1/2	0.083	2,11	0.065	1,65	42	609	37	536	34	493
4	x 3/4	0.083	2,11	0.065	1,65	35	507	31	449	28	406
4	x 1	0.083	2,11	0.065	1,65	31	449	28	406	25	362
4	x 1 1/2	0.083	2,11	0.065	1,65	27	391	24	348	22	319
4	x 2	0.083	2,11	0.065	1,65	23	333	21	304	19	275
4	x 2 1/2	0.083	2,11	0.065	1,65	22	319	19	275	17	246
4	x 3	0.083	2,11	0.065	1,65	19	275	17	246	15	217
4	x 4	0.083	2,11	0.083	2,11	21	304	18	261	16	232
6	x 1/2	0.083	2,77	0.065	1,65	37	536	32	464	29	420
6	x 3/4	0.109	2,77	0.065	1,65	36	522	32	464	29	420
6	x 1	0.109	2,77	0.065	1,65	30	435	27	391	24	348
6	x 1 1/2	0.109	2,77	0.065	1,65	27	391	24	348	22	319
6	x 2	0.1091	2,77	0.065	1,65	20	290	17	246	16	232
6	x 2 1/2	0.109	2,77	0.065	1,65	19	275	16	232	15	217
6	x 3	0.109	2,77	0.065	1,65	20	290	18	261	16	232
6	x 4	0.109	2,77	0.065	2,11	18	261	15	217	14	203
6	x 6	0.109	2,77	0.083	2,77	15	217	13	188	12	174

Note on the table logic: The order of the dimensions is orientated to the standard catalogues.
Calculation remarks: 1% Yield strength in accordance with DIN EN 10217-7 / Safty factor is 1,5

T-PIECES
ACC. TO DIN EN 13480-3 AND DIN 11865

ISO							MAXIMUM WORKING PRESSURE					
Outer Diameter			Wall Thickness s1		Wall Thickness s2		20°C	68°F	50°C	212°F	150°C	302°F
DN			Inch	mm	Inch	mm	bar	psi	bar	psi	bar	psi
8	x	8	0.063	1,60	0.063	1,60	213	3089	188	2726	170	2465
10	x	8	0.063	1,60	0.063	1,60	146	2117	129	1870	117	1696
10	x	10	0.063	1,60	0.063	1,60	125	1812	110	1595	100	1450
15	x	8	0.063	1,60	0.063	1,60	82	1189	73	1058	66	957
15	x	10	0.063	1,60	0.063	1,60	76	1102	67	971	60	870
15	x	15	0.063	1,60	0.063	1,60	66	957	58	841	52	754
20	x	8	0.063	1,60	0.063	1,60	65	942	60	870	54	783
20	x	10	0.063	1,60	0.063	1,60	64	928	56	812	51	739
20	x	15	0.063	1,60	0.063	1,60	56	812	49	710	45	652
20	x	20	0.063	1,60	0.063	1,60	51	739	45	652	41	594
25	x	10	0.079	2,00	0.063	1,60	63	913	56	812	50	725
25	x	15	0.079	2,00	0.063	1,60	60	870	53	768	48	696
25	x	20	0.079	2,00	0.063	1,60	55	797	49	710	40	580
25	x	25	0.079	2,00	0.079	2,00	50	725	44	638	40	580
32	x	15	0.079	2,00	0.063	1,60	48	696	43	623	39	565
32	x	20	0.079	2,00	0.063	1,60	45	652	40	580	36	522
32	x	25	0.079	2,00	0.079	2,00	42	609	37	536	34	493
32	x	32	0.079	2,00	0.079	2,00	37	536	33	478	30	435
40	x	15	0.079	2,00	0.063	1,60	43	623	38	551	35	507
40	x	20	0.079	2,00	0.063	1,60	37	536	33	478	29	420
40	x	25	0.079	2,00	0.079	2,00	38	551	34	493	30	435
40	x	32	0.079	2,00	0.079	2,00	33	478	29	420	27	391
40	x	40	0.079	2,00	0.079	2,00	30	435	27	391	24	348
50	x	20	0.079	2,00	0.063	1,60	26	377	23	333	20	290
50	x	25	0.079	2,00	0.079	2,00	31	449	28	406	25	362
50	x	32	0.079	2,00	0.079	2,00	29	420	25	362	23	333
50	x	40	0.079	2,00	0.079	2,00	27	391	23	333	21	304
50	x	50	0.079	2,00	0.079	2,00	23	333	20	290	18	261
65	x	25	0.079	2,00	0.079	2,00	28	406	24	348	22	319
65	x	32	0.079	2,00	0.079	2,00	22	319	20	290	18	261
65	x	40	0.079	2,00	0.079	2,00	22	319	20	290	18	261
65	x	50	0.079	2,00	0.079	2,00	18	261	16	232	15	217
65	x	65	0.079	2,00	0.079	2,00	16	232	14	203	12	174
80	x	32	0.091	2,30	0.079	2,00	25	362	22	319	20	290
80	x	40	0.091	2,30	0.079	2,00	25	362	22	319	20	290
80	x	50	0.091	2,30	0.079	2,00	21	304	18	261	16	232
80	x	65	0.091	2,30	0.079	2,00	18	261	16	232	14	203
80	x	80	0.091	2,30	0.091	2,30	17	246	15	217	13	188
100	x	50	0.091	2,30	0.079	2,00	17	246	15	217	14	203
100	x	65	0.091	2,30	0.079	2,00	14	203	12	174	11	159
100	x	80	0.091	2,30	0.091	2,30	13	188	11	159	10	145
100	x	100	0.091	2,30	0.091	2,30	12	174	10	145	9	130

Note on the table logic: The order of the dimensions is orientated to the standard catalogues.
Calculation remarks: 1% Yield strength in accordance with DIN EN 10217-7 / Safty factor is 1,5

T-PIECES
ACC. TO DIN EN 13480-3 AND DIN 11865

METRIC					MAXIMUM WORKING PRESSURE							
Outer Diameter			Wall Thickness s1	Wall Thickness s2	20°C	68°F	50°C	212°F	150°C	302°F		
DN			mm	mm	bar	psi	bar	psi	bar	psi		
4	x	4	1,00	1,00	273	3959	242	3509	219	3176		
6	x	4	1,00	1,00	223	3234	197	2857	179	2596		
6	x	6	1,00	1,00	187	2712	166	2407	150	2175		
8	x	6	1,00	1,00	147	2132	130	1885	117	1696		
8	x	8	1,00	1,00	125	1812	111	1609	100	1450		
10	x	6	1,00	1,00	126	1827	112	1624	101	1464		
10	x	8	1,00	1,00	119	1725	106	1537	95	1377		
10	x	10	1,00	1,00	102	1479	90	1305	81	1174		
10	x	6	1,50	1,00	194	2813	171	2480	155	2248		
10	x	8	1,50	1,00	170	2465	150	2175	136	1972		
10	x	10	1,50	1,5	183	2654	162	2349	146	2117		
15	x	6	1,50	1,00	146	2117	129	1870	117	1696		
15	x	8	1,50	1,00	133	1929	115	1667	106	1537		
15	x	10	1,50	1,00	121	1754	108	1566	97	1406		
15 (18 mm)	x	15 (18 mm)	1,50	1,50	110	1595	98	1421	88	1276		
15	x	10	1,50	1,50	131	1899	116	1682	105	1522		
15	x	10	1,50	1,00	126	1827	100	1450	101	1464		
15	x	10	1,50	1,50	127	1841	112	1624	102	1479		
15 (19 mm)	x	15 (19 mm)	1,50	1,50	103	1493	91	1319	82	1189		
20	x	10	1,50	1,00	69	1000	61	884	55	797		
20	x	10	1,50	1,50	70	1015	62	899	56	812		
20	x	15	1,50	1,50	61	884	50	725	49	710		
20	x	15	1,50	1,50	62	899	55	797	49	710		
20	x	20	1,50	1,50	54	783	47	681	43	623		
25	x	10	1,50	1,00	57	826	50	725	45	652		
25	x	15	1,50	1,50	56	812	49	710	45	652		
25	x	20	1,50	1,50	49	710	43	623	39	565		
25	x	25	1,50	1,50	42	609	37	536	34	493		
25	x	10	1,50	1,50	60	870	53	768	48	696		
25	x	15	1,50	1,50	49	710	44	638	39	565		
25	x	20	1,50	1,50	47	681	41	594	37	536		
25	x	25	1,50	1,50	40	580	35	507	32	464		
32	x	15	1,50	1,50	45	652	40	580	36	522		
32	x	20	1,50	1,50	39	565	33	478	31	449		
32	x	25	1,50	1,50	37	536	32	464	29	420		
32	x	32	1,50	1,50	32	464	28	406	25	362		

Note on the table logic: The order of the dimensions is orientated to the standard catalogues.
Calculation remarks: 1% Yield strength in accordance with DIN EN 10217-7 / Safty factor is 1,5

METRIC					MAXIMUM WORKING PRESSURE							
Outer Diameter			Wall Thickness s1	Wall Thickness s2	20°C	68°F	50°C	212°F	150°C	302°F		
DN			mm	mm	bar	psi	bar	psi	bar	psi		
40	x	20	1,50	1,50	34	493	30	435	27	391		
40	x	25	1,50	1,50	32	464	28	406	26	377		
40	x	32	1,50	1,50	26	377	23	333	21	304		
40	x	40	1,50	1,50	24	348	22	319	19	275		
50	x	25	1,50	1,50	18	261	16	232	14	203		
50	x	32	1,50	1,50	22	319	20	290	18	261		
50	x	40	1,50	1,50	21	304	18	261	16	232		
50	x	50	1,50	1,50	18	261	16	232	14	203		
65	x	32	2,00	1,50	26	377	23	333	21	304		
65	x	40	2,00	1,50	25	362	22	319	20	290		
65	x	50	2,00	1,50	21	304	19	275	17	246		
65	x	65	2,00	2,00	19	275	16	232	15	217		
80	x	40	2,00	1,50	20	290	17	246	16	232		
80	x	50	2,00	1,50	18	261	16	232	14	203		
80	x	65	2,00	2,00	17	246	15	217	13	188		
80	x	80	2,00	2,00	14	203	13	188	11	159		
100	x	50	2,00	1,50	16	232	14	203	13	188		
100	x	65	2,00	2,00	13	188	12	174	10	145		
100	x	80	2,00	2,00	12	174	10	145	9	130		
100	x	100	2,00	2,00	12	174	10	145	9	130		
150	x	100	2,00	2,00	8	116	6	87	6	87		
150	x	150	2,00	2,00	8	116	5	72	5	72		

Note on the table logic: The order of the dimensions is orientated to the standard catalogues.
Calculation remarks: 1% Yield strength in accordance with DIN EN 10217-7 / Safty factor is 1,5

T-PIECES
ACC. TO DIN EN 13480-3 AND DIN 11865

JIS G 3459 / IMPERIAL

						MAXIMUM WORKING PRESSURE					
Outer Diameter		Wall Thickness s1		Wall Thickness s2		20°C	68°F	50°C	212°F	150°C	302°F
Inch		Schedule	mm	Schedule	mm	bar	psi	bar	psi	bar	psi
15A x 15A		5S	1,65	5S	1,65	95	1377	84	1218	76	1102
20A x 15A		5S	1,65	5S	1,65	82	1189	72	1044	65	942
20A x 20A		5S	1,65	5S	1,65	70	1015	62	899	56	812
25A x 15A		5S	1,65	5S	1,65	72	1044	64	928	58	841
25A x 20A		5S	1,65	5S	1,65	62	899	55	797	49	710
25A x 25A		5S	1,65	5S	1,65	53	768	47	681	42	609
32A x 15A		5S	1,65	5S	1,65	58	841	51	739	46	667
32A x 20A		5S	1,65	5S	1,65	53	768	47	681	42	609
32A x 25A		5S	1,65	5S	1,65	47	681	41	594	37	536
32A x 32A		5S	1,65	5S	1,65	40	580	36	522	32	464
40A x 15A		5S	1,65	5S	1,65	48	696	42	609	38	551
40A x 20A		5S	1,65	5S	1,65	45	652	40	580	36	522
40A x 25A		5S	1,65	5S	1,65	43	623	35	507	34	493
40A x 32A		5S	1,65	5S	1,65	37	536	32	464	29	420
40A x 40A		5S	1,65	5S	1,65	35	507	31	449	28	406
50A x 15A		5S	1,65	5S	1,65	41	594	36	522	33	478
50A x 20A		5S	1,65	5S	1,65	41	594	36	522	33	478
50A x 25A		5S	1,65	5S	1,65	34	493	30	435	27	391
50A x 32A		5S	1,65	5S	1,65	32	464	29	420	26	377
50A x 40A		5S	1,65	5S	1,65	32	464	28	406	25	362
50A x 50A		5S	1,65	5S	1,65	29	420	26	377	23	333
65A x 15A		5S	2,10	5S	1,65	43	623	38	551	35	507
65A x 20A		5S	2,10	5S	1,65	39	565	35	507	31	449
65A x 25A		5S	2,10	5S	1,65	39	565	35	507	31	449
65A x 32A		5S	2,10	5S	1,65	32	464	25	362	25	362
65A x 40A		5S	2,10	5S	1,65	32	464	28	406	25	362
65A x 50A		5S	2,10	5S	1,65	28	406	25	362	22	319
65A x 65A		5S	2,10	5S	2,1	26	377	23	333	21	304
80A x 15A		5S	2,10	5S	1,65	25	362	35	507	33	478
80A x 20A		5S	2,10	5S	1,65	36	522	32	464	29	420
80A x 25A		5S	2,10	5S	1,65	32	464	28	406	25	362
80A x 32A		5S	2,10	5S	1,65	28	406	25	362	22	319
80A x 40A		5S	2,10	5S	1,65	28	406	25	362	22	319
80A x 50A		5S	2,10	5S	1,65	24	348	21	304	19	275
80A x 65A		5S	2,10	5S	2,10	22	319	19	275	17	246
80A x 80A		5S	2,10	5S	2,10	20	290	18	261	16	232
100A x 15A		5S	2,10	5S	1,65	32	464	28	406	26	377
100A x 20A		5S	2,10	5S	1,65	32	464	28	406	26	377
100A x 25A		5S	2,10	5S	1,65	29	420	25	362	23	333
100A x 32A		5S	2,10	5S	1,65	23	333	21	304	19	275
100A x 40A		5S	2,10	5S	1,65	23	333	21	304	19	275
100A x 50A		5S	2,10	5S	1,65	20	290	18	261	16	232
100A x 65A		5S	2,10	5S	2,10	18	261	16	232	14	203
100A x 80A		5S	2,10	5S	2,10	16	232	14	203	13	188
100A x 100A		5S	2,10	5S	2,10	15	217	13	188	12	174
125A x 15A		5S	2,80	5S	1,65	33	478	29	420	26	377
125A x 20A		5S	2,80	5S	1,65	33	478	29	420	26	377
125A x 25A		5S	2,80	5S	1,65	33	478	29	420	26	377
125A x 32A		5S	2,80	5S	1,65	27	391	24	348	21	304
125A x 40A		5S	2,80	5S	1,65	27	391	24	348	21	304

Note on the table logic: The order of the dimensions is orientated to the standard catalogues.
Calculation remarks: 1% Yield strength in accordance with DIN EN 10217-7 / Safty factor is 1,5

JIS G 3459 / IMPERIAL

						MAXIMUM WORKING PRESSURE					
Outer Diameter		Wall Thickness s1		Wall Thickness s2		20°C	68°F	50°C	212°F	150°C	302°F
Inch		Schedule	mm	Schedule	mm	bar	psi	bar	psi	bar	psi
125A x 50A		5S	2,80	5S	1,65	25	362	22	319	20	290
125A x 65A		5S	2,80	5S	2,10	23	333	20	290	18	261
125A x 80A		5S	2,80	5S	2,10	21	304	18	261	16	232
125A x 100A		5S	2,80	5S	2,10	17	246	15	217	13	188
125A x 125A		5S	2,80	5S	2,10	17	246	15	217	13	188
150A x 15A		5S	2,80	5S	1,65	34	493	30	435	27	391
150A x 20A		5S	2,80	5S	1,65	27	391	24	348	22	319
150A x 25A		5S	2,80	5S	1,65	27	391	24	348	22	319
150A x 32A		5S	2,80	5S	1,65	22	319	19	275	17	246
150A x 40A		5S	2,80	5S	1,65	22	319	19	275	17	246
150A x 50A		5S	2,80	5S	1,65	19	275	17	246	15	217
150A x 65A		5S	2,80	5S	2,10	18	261	16	232	15	217
150A x 80A		5S	2,80	5S	2,10	18	261	16	232	15	217
150A x 100A		5S	2,80	5S	2,10	15	217	13	188	12	174
150A x 125A		5S	2,80	5S	2,10	15	217	13	188	12	174
150A x 150A		5S	2,80	5S	2,10	14	203	12	174	11	159
200A x 15A		10S	4,00	5S	1,65	26	377	23	333	21	304
200A x 25A		10S	4,00	5S	1,65	20	290	18	261	16	232
200A x 32A		10S	4,00	5S	1,65	20	290	18	261	16	232
200A x 40A		10S	4,00	5S	1,65	20	290	18	261	16	232
200A x 50A		10S	4,00	5S	1,65	16	232	14	203	12	174
200A x 65A		10S	4,00	5S	2,10	14	203	13	188	11	159
200A x 80A		10S	4,00	5S	2,10	14	203	13	188	11	159
200A x 100A		10S	4,00	5S	2,10	12	174	11	159	10	145
200A x 125A		10S	4,00	5S	2,10	12	174	10	145	9	130
200A x 150A		10S	4,00	5S	2,10	9	130	8	116	7	101
200A x 200A		10S	4,00	10S	4,00	9	130	8	116	7	101
250A x 25A		10S	4,00	5S	1,65	25	362	22	319	20	290
250A x 32A		10S	4,00	5S	1,65	20	290	18	261	16	232
250A x 40A		10S	4,00	5S	1,65	20	290	17	246	16	232
250A x 50A		10S	4,00	5S	1,65	20	290	17	246	16	232
250A x 65A		10S	4,00	5S	2,10	15	217	13	188	12	174
250A x 80A		10S	4,00	5S	2,10	15	217	13	188	12	174
250A x 100A		10S	4,00	5S	2,10	12	174	10	145	9	130
250A x 125A		10S	4,00	5S	2,10	12	174	10	145	9	130
250A x 150A		10S	4,00	5S	2,10	10	145	9	130	8	116
250A x 200A		10S	4,00	10S	4,00	9	130	8	116	7	101
250A x 250A		10S	4,00	10S	4,00	9	130	8	116	7	101
300A x 25A		10S	4,50	10S	1,65	21	304	19	275	17	246
300A x 32A		10S	4,50	10S	1,65	21	304	19	275	17	246
300A x 40A		10S	4,50	10S	1,65	20	290	18	261	16	232
300A x 50A		10S	4,50	10S	1,65	20	290	18	261	16	232
300A x 65A		10S	4,50	10S	2,10	19	275	17	246	15	217
300A x 80A		10S	4,50	10S	2,10	15	217	13	188	12	174
300A x 100A		10S	4,50	10S	2,10	12	174	10	145	9	130
300A x 150A		10S	4,50	10S	2,10	12	174	10	145	9	130
300A x 200A		10S	4,50	10S	4,00	9	130	8	116	7	101
300A x 250A		10S	4,50	10S	4,00	9	130	8	116	7	101
300A x 300A		10S	4,50	10S	4,50	8	116	7	101	7	101

Note on the table logic: The order of the dimensions is orientated to the standard catalogues.
Calculation remarks: 1% Yield strength in accordance with DIN EN 10217-7 / Safty factor is 1,5

T-PIECES
ACC. TO DIN EN 13480-3 AND DIN 11865

JIS G 3459 / IMPERIAL

				MAXIMUM WORKING PRESSURE					
Outer Diameter		Wall Thickness s1	Wall Thickness s2	20°C	68°F	50°C	212°F	150°C	302°F
Inch		mm	mm	bar	psi	bar	psi	bar	psi
15A	x 1/4	1,65	0,89	121	1754	107	1551	97	1406
15A	x 3/8	1,65	0,89	112	1624	99	1435	89	1290
15A	x 1/2	1,65	1,24	115	1667	103	1493	93	1348
15A	x 3/4	1,65	1,65	100	1450	89	1290	80	1160
1	x 15A	1,65	1,65	84	1218	75	1087	67	971
20A	x 3/4	1,65	0,89	95	1377	85	1232	77	1116
20A	x 3/8	1,65	0,89	84	1218	75	1087	67	971
20A	x 1/2	1,65	1,24	92	1334	81	1174	74	1073
20A	x 3/4	1,65	1,65	91	1319	80	1160	73	1058
20A	x 1	1,65	1,65	78	1131	69	1000	62	899
25A	x 1/4	1,65	0,89	83	1203	74	1073	67	971
25A	x 3/8	1,65	0,89	73	1058	65	942	58	841
25A	x 1/2	1,65	1,24	76	1102	67	971	61	884
25A	x 3/4	1,65	1,65	72	1044	64	928	58	841
25A	x 1	1,65	1,65	66	957	58	841	53	768
32A	x 1/4	1,65	0,89	78	1131	69	1000	62	899
32A	x 3/8	1,65	0,89	66	957	59	855	53	768
32A	x 32A x 1/2	1,65	1,24	63	913	56	812	51	739
32A	x 3/4	1,65	1,65	62	899	55	797	49	710
32A	x 32A x 1	1,65	1,65	53	768	47	681	42	609
40A	x 1/4	1,65	0,89	68	986	60	870	54	783
40A	x 1/2	1,65	1,24	54	783	48	696	43	623
40A	x 3/4	1,65	1,65	53	768	46	667	42	609
40A	x 1	1,65	1,65	50	725	44	638	40	580
50A	x 1/4	1,65	0,89	54	783	48	696	43	623
50A	x 1/2	1,65	1,24	47	681	41	594	37	536
50A	x 3/4	1,65	1,65	45	652	40	580	36	522
50A	x 1	1,65	1,65	41	594	37	536	33	478
65A	x 1/4	2,10	0,89	51	739	45	652	41	594
65A	x 1/2	2,10	1,24	47	681	42	609	38	551
65A	x 3/4	2,10	1,65	49	710	43	623	39	565
65A	x 1	2,10	1,65	43	623	38	551	35	507
80A	x 1/4	2,10	0,89	44	638	39	565	35	507
80A	x 1/2	2,10	1,24	48	696	42	609	38	551
80A	x 3/4	2,10	1,65	41	594	36	522	33	478
80A	x 1	2,10	1,65	40	580	36	522	32	464
100A	x 1/4	2,80	0,89	32	464	28	406	26	377
100A	x 1/2	2,80	1,24	37	536	33	478	29	420
100A	x 3/4	2,80	1,65	32	464	28	406	25	362
100A	x 1	2,80	1,65	32	464	28	406	25	362
125A	x 1/4	2,80	0,89	47	681	42	609	38	551
125A	x 1/2	2,80	1,24	35	507	31	449	28	406
125A	x 3/4	2,80	1,65	40	580	36	522	32	464
125A	x 1	2,80	1,65	34	493	30	435	27	391
150A	x 1/4	2,80	1,24	30	435	26	377	24	348
150A	x 3/4	2,80	1,65	34	493	30	435	27	391
150A	x 1	2,80	1,65	27	391	24	348	22	319
200A	x 1/2	4,00	1,24	22	319	19	275	18	261
200A	x 3/4	4,00	1,65	26	377	23	333	21	304
200A	x 1	4,00	1,65	26	377	23	333	21	304

Note on the table logic: The order of the dimensions is orientated to the standard catalogues.

Calculation remarks: 1% Yield strength in accordance with DIN EN 10217-7 / Safty factor is 1,5

ELBOWS 45°, 88°, 90°, 92°
ACC. TO DIN EN 13480-3



IMPERIAL / DIN 11865 LINE C

Outer Diameter				Wall Thickness s						MAXIMUM WORKING PRESSURE						
				20°C		68°F		100°C		212°F		150°C		302°F		
Inch	mm	Inch	mm	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	
1/4	6,35	0.035	0,89	292	4235	258	3742	235	3408							
3/8	9,53	0.035	0,89	185	2683	163	2364	149	2161							
1/2	12,70	0.049	1,24	189	2741	167	2422	152	2205							
1/2	12,70	0.065	1,65	254	3684	223	3234	204	2959							
3/4	19,05	0.049	1,24	129	1871	114	1653	104	1508							
3/4	19,05	0.065	1,65	183	2654	162	2350	147	2132							
1	25,40	0.065	1,65	136	1973	120	1740	109	1581							
1 1/2	38,10	0.065	1,65	89	1291	79	1146	71	1030							
2	50,80	0.065	1,65	66	957	58	841	53	769							
2 1/2	63,50	0.065	1,65	53	769	46	667	42	609							
3	76,20	0.065	1,65	44	638	38	551	35	508							
4	101,60	0.083	2,11	42	609	36	522	33	479							
6	152,40	0.109	2,77	36	522	32	464	29	421							

ISO / DIN 11865 LINE B

Outer Diameter			Wall Thickness s			20°C		68°F		100°C		212°F		150°C		302°F	
DN	mm	mm	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	
8	13,50	1,60	258	3742	228	3307	208	3017									
10	17,20	1,60	197	2857	174	2524	158	2292									
15	21,30	1,60	160	2321	141	2045	128	1857									
20	26,90	1,60	115	1668	101	1465	92	1334									
25	33,70	2,00	121	1755	107	1552	97	1407									
32	42,40	2,00	95	1378	84	1218	76	1102									
40	48,30	2,00	85	1233	75	1088	69	1001									
50	60,30	2,00	70	1015	62	899	56	812									
65	76,10	2,00	55	798	48	696	44	638									
80	88,90	2,30	54	783	48	696	44	638									
100	114,30	2,30	42	609	37	537	34	493									
150	168,30	2,60	32	464	28	406	26	377									
150*1	168,30	2,60	31	450	27	392	25	363									

Note on the table logic: The order of the dimensions is orientated to the standard catalogues.
Calculation remarks: 1% Yield strength in accordance with DIN EN 10217-7 / Safty factor is 1,5

ELBOWS 45°, 88°, 90°, 92°
ACC. TO DIN EN 13480-3

METRIC / DIN 11865 LINE A

Outer Diameter			Wall Thickness s		20°C	68°F	100°C	212°F	150°C	302°F
DN	mm	mm	bar	psi	bar	psi	bar	psi	bar	psi
4	6,00	1,00	306	4438	270	3916	246	3568		
6	8,00	1,00	234	3394	207	3002	188	2727		
6*	8,00	1,00	223	3234	197	2857	179	2596		
8	10,00	1,00	182	2640	161	2335	146	2118		
8*	10,00	1,00	179	2596	158	2292	144	2089		
10	12,00	1,00	149	2161	132	1915	120	1740		
10	13,00	1,50	241	3495	213	3089	194	2814		
15	18,00	1,50	169	2451	149	2161	136	1973		
15	19,00	1,50	162	2350	143	2074	130	1886		
20	23,00	1,50	133	1929	118	1711	107	1552		
25	28,00	1,50	104	1508	92	1334	84	1218		
25	29,00	1,50	105	1523	93	1349	84	1218		
32	35,00	1,50	87	1262	77	1117	70	1015		
40	41,00	1,50	75	1088	66	957	60	870		
50	53,00	1,50	58	841	51	740	46	667		
65	70,00	2,00	57	827	51	740	46	667		
80	85,00	2,00	45	653	40	580	36	522		
100	104,00	2,00	34	493	30	435	27	392		
150	154,00	2,00	26	377	23	334	21	305		



ELBOW 180°
ACC. TO DIN EN 13480-3

IMPERIAL

Outer Diameter		Wall Thickness s		20°C		68°F		100°C		212°F		150°C		302°F	
Inch	mm	Inch	mm	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi
1/4	6,35	0.035	0,89	270	3916	239	3466	217	3147						
3/8	9,53	0.035	0,89	178	2582	157	2277	143	2074						
1/2	12,70	0.065	1,65	259	3757	229	3321	208	3017						
3/4	19,05	0.065	1,65	172	2495	152	2205	138	2002						
1	25,40	0.065	1,65	136	1973	120	1740	109	1581						
1 1/2	38,10	0.065	1,65	89	1291	79	1146	71	1030						
2	50,80	0.065	1,65	66	957	58	841	53	769						
2 1/2	63,50	0.065	1,65	53	769	46	667	42	609						
3	76,20	0.065	1,65	44	638	38	551	35	508						
4	101,60	0.083	2,11	42	609	37	537	33	479						
6	152,40	0.109	2,77	36	522	32	464	29	421						

Note on the table logic: The order of the dimensions is orientated to the standard catalogues.
Calculation remarks: 1% Yield strength in accordance with DIN EN 10217-7 / Safty factor is 1,5

CONCENTRIC REDUCERS
ACC. TO DIN EN 13480-3



IMPERIAL					MAXIMUM WORKING PRESSURE					
Outer Diameter		s1 Wall Thickness		s2 Wall Thickness	20°C	68°F	100°C	212°F	150°C	302°F
Inch	Inch	mm	Inch	mm	bar	psi	bar	psi	bar	psi
3/8" x 1/4"	0.035	0,89	0.035	0,89	271	3933	240	3479	218	3164
1/2" x 1/4"*	0.049	1,24	0.035	0,89	287	4162	254	3681	231	3348
1/2" x 1/4"	0.065	1,65	0.035	0,89	394	5717	349	5057	317	4599
1/2" x 3/8"*	0.049	1,24	0.035	0,89	271	3933	240	3479	218	3164
1/2" x 3/8"	0.065	1,65	0.035	0,89	275	3987	243	3527	221	3208
3/4" x 1/4"*	0.049	1,24	0.035	0,89	166	2409	147	2131	134	1938
3/4" x 3/8"*	0.049	1,24	0.035	0,89	186	2698	165	2387	150	2171
3/4" x 3/8"	0.065	1,65	0.035	0,89	252	3659	223	3236	203	2943
3/4" x 1/2"*	0.049	1,24	0.049	1,24	186	2698	165	2387	150	2171
3/4" x 1/2" *	0.065	1,65	0.049	1,24	264	3826	233	3383	212	3077
3/4" x 1/2"	0.065	1,65	0.065	1,65	252	3659	223	3236	203	2943
1" x 1/2"*	0.065	1,65	0.049	1,24	194	2812	172	2487	156	2262
1" x 1/2"	0.065	1,65	0.065	1,65	186	2694	164	2382	149	2167
1" x 3/4"*	0.065	1,65	0.049	1,24	186	2698	165	2387	150	2171
1" x 3/4"	0.065	1,65	0.065	1,65	186	2694	164	2382	149	2167
1 1/2" x 1/2"*	0.065	1,65	0.049	1,24	125	1816	111	1606	101	1461
1 1/2" x 3/4"*	0.065	1,65	0.049	1,24	127	1835	112	1623	102	1476
1 1/2" x 3/4"	0.065	1,65	0.065	1,65	122	1764	108	1560	98	1419
1 1/2" x 1"	0.065	1,65	0.065	1,65	122	1764	108	1560	98	1419
2" x 1"	0.065	1,65	0.065	1,65	88	1276	78	1129	71	1027
2" x 1 1/2"	0.065	1,65	0.065	1,65	90	1309	80	1158	73	1053
2 1/2" x 1"	0.065	1,65	0.065	1,65	73	1053	64	931	58	847
2 1/2" x 1 1/2"	0.065	1,65	0.065	1,65	70	1013	62	896	56	815
2 1/2" x 2"	0.065	1,65	0.065	1,65	72	1038	63	918	58	835
3" x 1 1/2"	0.065	1,65	0.065	1,65	58	836	51	739	46	673
3" x 2"	0.065	1,65	0.065	1,65	58	840	51	743	47	676
3" x 2 1/2"	0.065	1,65	0.065	1,65	60	865	53	765	48	696
4" x 2"	0.083	2,11	0.065	1,65	55	800	49	707	44	643
4" x 2 1/2"	0.083	2,11	0.065	1,65	55	803	49	710	45	646
4" x 3"	0.083	2,11	0.065	1,65	56	811	49	718	45	653
6" x 3"	0.109	2,77	0.065	1,65	48	693	42	613	38	558
6" x 4"	0.109	2,77	0.083	2,11	48	697	43	616	39	561

Note on the table logic: The order of the dimensions is orientated to the standard catalogues.
Calculation remarks: 1% Yield strength in accordance with DIN EN 10217-7 / Safty factor is 1,5

ISO / DIN 11865 LINE B			MAXIMUM WORKING PRESSURE					
Outer Diameter	s1 Wall Thickness	s2 Wall Thickness	20°C	68°F	100°C	212°F	150°C	302°F
DN	mm	mm	bar	psi	bar	psi	bar	psi
10 x 8	1,60	1,60	274	3981	243	3521	221	3202
15 x 8	1,60	1,60	215	3121	190	2761	173	2511
15 x 10	1,60	1,60	218	3162	193	2796	175	2543
20 x 8	1,60	1,60	159	2299	140	2033	128	1849
20 x 10	1,60	1,60	170	2466	150	2181	137	1984
20 x 15	1,60	1,60	170	2466	150	2181	137	1984
25 x 15	2,00	1,60	172	2497	152	2208	138	2009
25 x 20	2,00	1,60	170	2466	150	2181	137	1984
32 x 15	2,00	1,60	132	1919	117	1697	106	1544
32 x 20	2,00	1,60	134	1950	119	1725	108	1569
32 x 25	2,00	2,00	136	1975	120	1747	110	1589
40 x 15	2,00	1,60	116	1676	102	1482	93	1348
40 x 20	2,00	1,60	119	1724	105	1525	96	1387
40 x 25	2,00	2,00	119	1724	105	1525	96	1387
40 x 32	2,00	2,00	119	1724	105	1525	96	1387
50 x 20	2,00	1,60	91	1315	80	1163	73	1058
50 x 25	2,00	2,00	94	1370	84	1212	76	1102
50 x 32	2,00	2,00	94	1363	83	1205	76	1096
50 x 40	2,00	2,00	94	1370	84	1212	76	1102
65 x 25	2,00	2,00	71	1027	63	908	57	826
65 x 40	2,00	2,00	74	1079	66	954	60	868
65 x 50	2,00	2,00	74	1079	66	954	60	868
80 x 50	2,30	2,00	73	1063	65	940	59	855
80 x 65	2,30	2,00	73	1063	65	940	59	855
100 x 65	2,30	2,00	57	822	50	727	46	661
100 x 80	2,30	2,00	56	816	50	722	45	657
150 x 100	2,60	2,30	42	612	37	541	34	492

Note on the table logic: The order of the dimensions is orientated to the standard catalogues.
Calculation remarks: 1% Yield strength in accordance with DIN EN 10217-7 / Safty factor is 1,5

CONCENTRIC REDUCERS
ACC. TO DIN EN 13480-3

METRIC			MAXIMUM WORKING PRESSURE					
Outer Diameter	s1 Wall Thickness	s2 Wall Thickness	20°C	68°F	100°C	212°F	150°C	302°F
DN	mm	mm	bar	psi	bar	psi	bar	psi
6 x 4	1,00	1,00	329	4768	291	4217	264	3836
8 x 4	1,00	1,00	258	3743	228	3310	208	3011
8 x 6	1,00	1,00	258	3743	228	3310	208	3011
10 x 6	1,50	1,00	311	4504	275	3983	250	3623
10 x 8	1,50	1,00	258	3743	228	3310	208	3011
15 x 8	1,50	1,00	234	3399	207	3007	189	2735
15 x 10	1,50	1,50	237	3443	210	3045	191	2769
20 x 10	1,50	1,50	193	2805	171	2481	156	2256
20 x 15	1,50	1,50	193	2805	171	2481	156	2256
25 x 15	1,50	1,50	150	2178	133	1927	121	1752
25 x 20	1,50	1,50	151	2196	134	1942	122	1766
32 x 15	1,50	1,50	124	1804	110	1595	100	1451
32 x 20	1,50	1,50	123	1781	109	1575	99	1432
32 x 25	1,50	1,50	124	1804	110	1595	100	1451
40 x 20	1,50	1,50	106	1530	93	1354	85	1231
40 x 25	1,50	1,50	105	1528	93	1352	85	1230
40 x 32	1,50	1,50	106	1530	93	1354	85	1231
50 x 25	1,50	1,50	81	1175	72	1039	65	945
50 x 32	1,50	1,50	80	1167	71	1032	65	939
50 x 40	1,50	1,50	81	1175	72	1039	65	945
65 x 40	2,00	1,50	83	1208	74	1068	67	972
65 x 50	2,00	1,50	78	1131	69	1001	63	910
80 x 50	2,00	1,50	68	990	60	875	55	796
80 x 65	2,00	2,00	68	990	60	875	55	796
100 x 65	2,00	2,00	56	806	49	713	45	648
100 x 80	2,00	2,00	55	800	49	708	44	644
150 x 80	2,00	2,00	36	520	32	460	29	418
150 x 100	2,00	2,00	37	541	33	478	30	435

Note on the table logic: The order of the dimensions is orientated to the standard catalogues,
Calculation remarks: 1% Yield strength in accordance with DIN EN 10217-7 / Safty factor is 1,5

ECCENTRIC REDUCERS
ACC. TO DIN EN 13480-3



IMPERIAL / DIN 11865 LINE C					MAXIMUM WORKING PRESSURE					
Outer Diameter	s1 Wall Thickness		s2 Wall Thickness		20°C	68°F	100°C	212°F	150°C	302°F
Inch	Inch	mm	Inch	mm	bar	psi	bar	psi	bar	psi
1/2" x 1/4"	0.065	1,65	0.035	0,89	394	5717	349	5057	317	4599
1/2" x 3/8"	0.065	1,65	0.035	0,89	279	4042	246	3575	224	3251
3/4" x 3/8"	0.065	1,65	0.035	0,89	239	3465	211	3065	192	2788
3/4" x 1/2"	0.065	1,65	0.065	1,65	235	3408	208	3014	189	2742
1" x 1/2"	0.065	1,65	0.065	1,65	179	2595	158	2295	144	2088
1" x 3/4"	0.065	1,65	0.065	1,65	173	2507	153	2217	139	2017
1 1/2" x 1/2"	0.065	1,65	0.065	1,24	109	1586	97	1402	88	1276
1 1/2" x 3/4"	0.065	1,65	0.065	1,65	114	1654	101	1463	92	1330
1 1/2" x 1"	0.065	1,65	0.065	1,65	114	1654	101	1463	92	1330
2" x 1"	0.065	1,65	0.065	1,65	80	1156	71	1023	64	930
2" x 1 1/2"	0.065	1,65	0.065	1,65	84	1213	74	1073	67	976
2 1/2" x 1"	0.065	1,65	0.065	1,65	70	1010	62	894	56	813
2 1/2" x 1 1/2"	0.065	1,65	0.065	1,65	63	919	56	813	51	740
2 1/2" x 2"	0.065	1,65	0.065	1,65	66	957	58	847	53	770
3" x 1 1/2"	0.065	1,65	0.065	1,65	52	760	46	672	42	611
3" x 2"	0.065	1,65	0.065	1,65	53	763	47	675	42	614
3" x 2 1/2"	0.065	1,65	0.065	1,65	56	813	50	719	45	654
4" x 2"	0.083	2,11	0.065	1,65	50	727	44	643	40	584
4" x 2 1/2"	0.083	2,11	0.065	1,65	50	730	44	645	40	587
4" x 3"	0.083	2,11	0.065	1,65	51	742	45	656	41	597
6" x 3"	0.109	2,77	0.065	1,65	44	632	39	559	35	508
6" x 4"	0.109	2,77	0.083	2,11	44	633	39	560	35	510

Note on the table logic: The order of the dimensions is orientated to the standard catalogues.
Calculation remarks: 1% Yield strength in accordance with DIN EN 10217-7 / Safty factor is 1,5

ECCENTRIC REDUCERS
ACC. TO DIN EN 13480-3

ISO / DIN 11865 LINE B

			MAXIMUM WORKING PRESSURE					
Outer Diameter	s1 Wall Thickness	s2 Wall Thickness	20°C	68°F	100°C	212°F	150°C	302°F
DN	mm	mm	bar	psi	bar	psi	bar	psi
10 x 8	1,60	1,60	272	3945	241	3489	219	3173
15 x 8	1,60	1,60	218	3162	193	2796	175	2543
15 x 10	1,60	1,60	218	3162	193	2796	175	2543
20 x 8	1,60	1,60	153	2220	135	1963	123	1785
20 x 10	1,60	1,60	160	2320	141	2051	129	1866
20 x 15	1,60	1,60	170	2466	150	2181	137	1984
25 x 15	2,00	1,60	173	2514	153	2224	139	2022
25 x 20	2,00	1,60	170	2466	150	2181	137	1984
32 x 15	2,00	1,60	131	1902	116	1683	106	1530
32 x 20	2,00	1,60	136	1975	120	1747	110	1589
32 x 25	2,00	2,00	136	1975	120	1747	110	1589
40 x 15	2,00	1,60	109	1587	97	1404	88	1277
40 x 20	2,00	1,60	112	1624	99	1437	90	1307
40 x 25	2,00	2,00	117	1693	103	1497	94	1362
40 x 32	2,00	2,00	119	1724	105	1525	96	1387
50 x 20	2,00	1,60	81	1180	72	1043	65	949
50 x 25	2,00	2,00	91	1324	81	1171	73	1065
50 x 32	2,00	2,00	93	1346	82	1191	75	1083
50 x 40	2,00	2,00	94	1370	84	1212	76	1102
65 x 25	2,00	2,00	64	932	57	824	52	750
65 x 40	2,00	2,00	69	999	61	884	55	804
65 x 50	2,00	2,00	74	1079	66	954	60	868
80 x 50	2,30	2,00	68	984	60	871	55	792
80 x 65	2,30	2,00	73	1063	65	940	59	855
100 x 65	2,30	2,00	53	774	47	685	43	623
100 x 80	2,30	2,30	55	797	49	705	44	641
150 x 100	2,60	2,30	42	612	37	541	34	492

Note on the table logic: The order of the dimensions is orientated to the standard catalogues.
Calculation remarks: 1% Yield strength in accordance with DIN EN 10217-7 / Safty factor is 1,5n accordance with DIN EN 10217-7
- safty factor is 1,5

METRIC / DIN 11865 LINE A

			MAXIMUM WORKING PRESSURE					
Outer Diameter	s1 Wall Thickness	s2 Wall Thickness	20°C	68°F	100°C	212°F	150°C	302°F
DN	mm	mm	bar	psi	bar	psi	bar	psi
8 x 6	1,00	1,00	258	3743	228	3310	208	3011
10 x 6	1,50	1,00	329	4768	291	4217	264	3836
10 x 8	1,50	1,00	258	3743	228	3310	208	3011
15 x 8	1,50	1,00	237	3443	210	3045	191	2769
15 x 10	1,50	1,50	237	3443	210	3045	191	2769
20 x 10	1,50	1,50	182	2646	161	2340	147	2128
20 x 15	1,50	1,50	193	2805	171	2481	156	2256
25 x 15	1,50	1,50	151	2196	134	1942	122	1766
25 x 20	1,50	1,50	151	2196	134	1942	122	1766
32 x 15	1,50	1,50	123	1778	108	1572	99	1430
32 x 20	1,50	1,50	124	1804	110	1595	100	1451
32 x 25	1,50	1,50	124	1804	110	1595	100	1451
40 x 20	1,50	1,50	99	1440	88	1274	80	1158
40 x 25	1,50	1,50	103	1498	91	1325	83	1205
40 x 32	1,50	1,50	106	1530	93	1354	85	1231
50 x 25	1,50	1,50	78	1125	69	995	62	905
50 x 32	1,50	1,50	79	1149	70	1017	64	925
50 x 40	1,50	1,50	81	1175	72	1039	65	945
65 x 40	2,00	1,50	77	1119	68	990	62	900
65 x 50	2,00	1,50	78	1131	69	1001	63	910
80 x 50	2,00	1,50	63	917	56	811	51	738
80 x 65	2,00	2,00	68	990	60	875	55	796
100 x 65	2,00	2,00	52	758	46	670	42	610
100 x 80	2,00	2,00	54	781	48	691	43	628
150 x 80	2,00	2,00	33	475	29	421	26	382
150 x 100	2,00	2,00	36	528	32	467	29	424

Note on the table logic: The order of the dimensions is orientated to the standard catalogues.
Calculation remarks: 1% Yield strength in accordance with DIN EN 10217-7 / Safty factor is 1,5n accordance with DIN EN 10217-7
- safty factor is 1,5

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