



BARRAS REDONDAS, QUADRADAS E SEXTAVADAS

PESO POR METRO (KG/MT)

POLEGADA	MM	REDONDAS	SEXTAVADAS	QUADRADAS
1/8"	3,17	0,06	0,07	0,08
5/32"	3,97	0,10	0,11	0,12
3/16"	4,76	0,14	0,15	0,18
7/32"	5,55	0,19	0,21	0,24
1/4"	6,35	0,25	0,27	0,32
9/32"	7,14	0,31	0,35	0,40
5/16"	7,93	0,39	0,43	0,50
3/8"	9,53	0,56	0,62	0,72
7/16"	11,11	0,76	0,84	0,97
1/2"	12,70	0,99	1,10	1,27
9/16"	14,28	1,26	1,39	1,61
5/8"	15,87	1,55	1,71	1,99
11/16"	17,46	1,88	2,07	2,41
3/4"	19,05	2,24	2,47	2,87
13/16"	20,36	2,62	2,89	3,36
7/8"	22,22	3,04	3,36	3,90
15/16"	23,81	3,49	3,85	4,48
1"	25,40	3,97	4,39	5,01
1.1/16"	26,97	4,48	4,95	5,75
1.1/8"	28,57	5,03	5,55	6,45
1.3/16"	30,16	5,60	6,18	7,19
1.1/4"	31,75	6,21	6,85	7,96
1.5/16"	33,34	6,85	7,56	8,78
1.3/8"	34,92	7,51	8,29	9,63
1.7/16"	36,51	8,21	9,06	10,53
1.1/2"	38,10	8,94	9,87	11,47
1.9/16"	39,69	9,70	10,71	12,44
1.5/8"	41,27	10,49	11,58	13,45
1.3/4"	44,45	12,17	13,43	15,61
1.7/8"	47,62	13,97	15,42	17,91
2"	50,80	15,90	17,55	20,39
2.1/16"	52,39	16,91	18,66	21,68
2.1/8"	53,97	17,94	19,81	23,01
2.3/16"	55,56	19,02	20,99	24,39
2.1/4"	57,15	20,12	22,21	25,80
2.5/16"	58,73	21,25	23,45	27,25
2.3/8"	60,33	22,42	24,75	28,75
2.7/16"	61,91	23,61	26,06	30,28
2.1/2"	63,50	24,84	27,42	31,85
2.5/8"	66,68	27,39	30,23	35,12
2.3/4"	69,85	30,06	33,18	38,54
2.7/8"	73,03	32,85	36,27	42,13
3"	76,20	35,77	39,48	45,87
3.1/8"	79,30	38,74	42,76	49,68
3.1/4"	82,55	41,98	46,34	53,83

3.3/8"	85,73	45,27	49,98	58,06
3.1/2"	88,90	48,68	53,74	62,44
3.5/8"	92,08	52,23	57,66	66,98
3.3/4"	95,25	55,89	61,69	71,67
3.7/8"	98,43	59,68	65,88	76,54
4"	101,60	63,59	70,19	81,55
4.1/8"	104,78	67,63	74,66	86,73
4.1/4"	107,95	71,78	79,24	92,06
4.3/8"	111,13	76,08	83,98	97,56
4.1/2"	114,30	80,48	88,84	103,21
4.5/8"	117,48	85,02	93,85	109,03
4.3/4"	120,65	89,67	98,98	115,00
4.7/8"	123,83	94,46	104,27	121,14
5"	127,00	99,35	109,68	127,42
5.1/4"	133,36	109,55	120,94	140,50
5.1/2"	139,71	120,24	132,73	154,20
5.3/4"	146,06	131,41	145,07	168,53
6"	152,40	143,07	157,94	183,43
6.1/4"	158,76	155,26	171,39	199,12
6.1/2"	165,11	167,93	185,38	215,36
6.3/4"	171,46	181,09	199,91	232,25
7"	177,81	194,76	214,99	249,77
7.1/4"	184,16	208,92	230,62	267,93
7.1/2"	190,51	223,57	246,80	286,72
7.3/4"	196,85	238,70	263,50	306,12
8"	203,20	254,35	280,77	326,19

BARRA CHATA

PESO POR METRO (KG/MT)

POLEGADA	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"
	3,17	4,76	6,35	7,93	9,53	12,70	15,87	19,05	25,40
1/2"	0,32	0,48	0,64	0,80	0,96				
3/4"	0,48	0,72	0,96	1,19	1,43	1,91	2,39		
1"	0,64	0,95	1,27	1,59	1,91	2,55	3,18	3,82	
1.1/4"	0,79	1,19	1,59	1,99	2,39	3,18	3,98	4,78	6,37
1.1/2"	0,95	1,43	1,91	2,39	2,87	3,82	4,78	5,73	7,64
2"	1,27	1,91	2,55	3,18	3,82	5,10	6,37	7,64	10,19
2.1/2"	1,59	2,39	3,18	3,98	4,78	6,37	7,96	9,56	12,74
3"	1,91	2,86	3,82	4,77	5,74	7,64	9,55	11,47	15,29
3.1/2"	2,23	3,43	4,46	5,57	6,69	8,92	11,15	13,38	17,84
4"	2,54	3,82	5,10	6,36	7,65	10,19	12,74	15,29	20,39
5"	3,18	4,78	6,37	7,96	9,56	12,74	15,92	19,11	25,48
6"	3,82	5,73	7,64	9,55	11,47	15,29	19,11	22,93	30,58

CANTONEIRAS

PESO POR METRO (KG/MT)

POLEGADA	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"
	3,17	4,76	6,35	7,93	9,53	12,70
3/4"	0,87	1,21				
1"	1,20	1,71	2,15			
1.1/4"	1,54	1,21	2,81			
1.1/2"	1,87	2,71	3,48			
2"	2,53	3,71	4,82	5,85	6,83	8,99
2.1/2"	3,13	4,71	6,15	7,52	8,84	11,56
3"	3,77	5,71	7,48	9,18	10,84	14,13
4"	5,05	7,71	10,15	15,52	14,85	19,26



CHAPAS

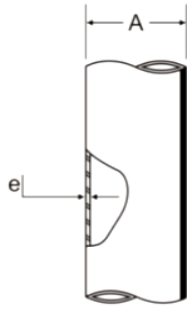
ESPESSURA		BITOLA Nº	PESO (KG/M²)
MM	POL		
0,30	1/80"	30	2,39
0,40	1/64"	28	3,19
0,50	3/160"	26	3,98
0,60	1/40"	24	4,78
0,80	1/32"	22	6,37
1,00	3/80"	20	7,97
1,20	3/64"	18	9,56
1,50	1/16"	16	11,95
2,00	5/64"	14	15,93
2,50	3/32"	13	19,91
2,75	7/64"	12	21,90
3,00	1/8"	11	23,90
3,50	9/64"	10	27,88
4,00	5/32"	9	31,86
4,53	11/64"	8	35,84
4,76	3/16"	7	37,91
5,00	13/64"	6	39,83
5,50	7/32"	5	43,81
6,00	15/64"	4	47,79
6,35	1/4"	3	50,58
7,93	5/16"		63,16
10,00	3/8"		76,65
12,70	1/2"		101,16
16,00	5/8"		127,44
19,00	3/4"		151,34
22,00	7/8"		175,24
25,40	1"		202,32



Conexões Tubulares Solda

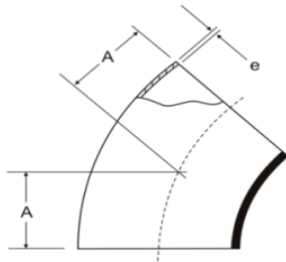
Tubos

Ø	A	e	P. máx à 20° C [Kgf/cm²]
1"	25,4	1,2	95,0
1½"	38,1	1,2	50,0
2"	50,8	1,2	30,0
2"	50,8	1,5	50,0
2½"	63,5	1,5	30,0
3"	76,2	1,5	18,0
3"	76,2	2,0	36,0
4"	101,6	2,0	18,0
5"	127,0	2,0	17,0
6"	152,4	2,0	16,0



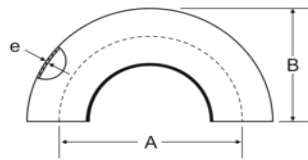
Curva 45° solda

Ø	A	e
1"	14,6	1,5
1½"	21,9	1,5
2"	29,2	1,5
2½"	36,5	1,5
3"	43,7	2,0
4"	58,3	2,0
5"	72,9	2,5
6"	87,5	2,0
8"	116,6	3,0



3 Curva 180° solda

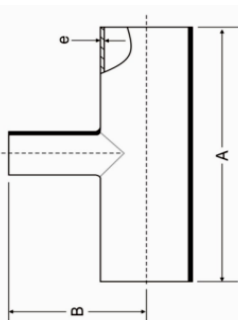
Ø	A	B	e
1"	76,2	50,8	1,5
1½"	114,4	76,2	1,5
2"	152,4	101,6	1,5
2½"	190,5	127,0	1,5
3"	228,6	152,4	2,0
4"	304,8	203,2	2,0
5"	381,0	254,0	2,5
6"	457,2	304,8	2,5



(medidas e mm)

Tê reto de redução solda

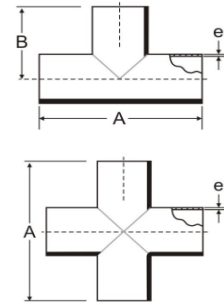
Ø	A	B	e
1½" x 1"	114,4	57,2	1,5
2" x 1"	152,4	76,2	1,5
2" x 1½"	152,4	76,2	1,5
2½" x 1"	154,0	77,0	1,5
2½" x 1½"	154,0	77,0	1,5
2½" x 2"	154,0	77,0	1,5
3" x 1½"	166,0	83,0	2,0
3" x 2"	166,0	83,0	2,0
3" x 2½"	166,0	83,0	2,0
4" x 2"	197,0	98,5	2,0
4" x 2½"	197,0	98,5	2,0
4" x 3"	197,0	95,5	2,0
6" x 4"	226,0	113,0	2,0



Outras bitolas sob. Consulta.

Tê reto solda / cruzeta solda

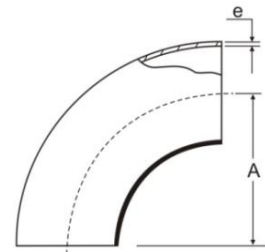
Ø	A	B	e
1"	96,0	48,0	1,5
1½"	114,4	57,2	1,5
2"	152,4	76,2	1,5
2½"	154,0	77,0	1,5
3"	166,0	83,0	2,0
4"	197,0	98,5	2,0
5"	211,4	105,7	2,5
6"	226,0	113,0	2,0
8"	241,4	120,7	3,0



Outras bitolas sob consulta.

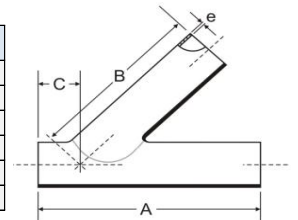
Curva 90° solda

Ø	A	e
1"	38,1	1,5
1½"	57,2	1,5
2"	76,2	1,5
2½"	95,3	1,5
3"	114,3	2,0
4"	152,4	2,0
5"	190,5	2,5
6"	228,6	2,0
8"	304,8	3,0



Tê 45° solda

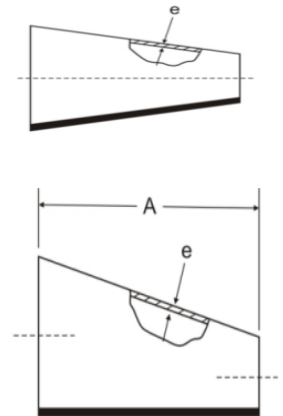
Ø	A	B	C	e
1"	152,4	127,0	25,8	2,0
1½"	187,3	157,1	30,4	2,0
2"	222,2	180,9	41,5	2,0
2½"	254,0	215,7	38,2	2,0
3"	273,0	225,2	47,8	2,0
4"	325,4	272,8	52,0	2,0



Fornecemos também com outro ângulo e na opção de redução

Redução cônica solda

Ø	A conc.	A exc.	e
1½" x 1"	44,0	39,0	2,0
2" x 1"	86,0	78,0	2,0
2" x 1½"	42,0	39,0	2,0
2½" x 1"	128,0	117,0	2,0
2½" x 1½"	84,0	78,0	2,0
2½" x 2"	42,0	39,0	2,0
3" x 1½"	126,0	117,0	2,0
3" x 2"	84,0	78,0	2,0
3" x 2½"	42,0	40,0	2,0
4" x 2"	167,0	157,0	2,0
4" x 2½"	125,0	118,0	2,0
4" x 3"	83,0	78,0	2,0
5" x 4"	83,0	78,0	2,0
6" x 4"	160,0	156,0	2,0
6" x 5"	83,0	78,0	2,0
8" x 6"	160,0	156,0	2,5



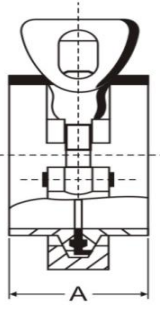
(medidas e mm)

Outras bitolas sob. Consulta.



União TC

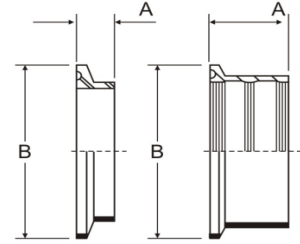
Ø	A		
	curta	longa	exp
1/2"	27,2	-	-
3/4"	27,2	-	-
1"	27,2	59,0	39,8
1 1/2"	27,2	59,0	45,8
2"	27,2	59,0	52,6
2 1/2"	27,2	59,0	59,0
3"	27,2	59,0	61,8
4"	33,6	59,0	-
5"	40,6	-	-
6"	45,7	59,0	-
8"	33,6	59,0	-



(medidas e mm)

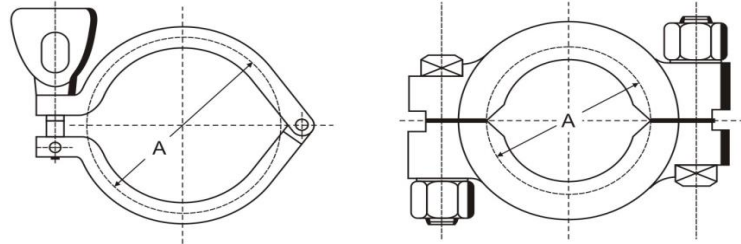
Niple solda TC / Niple expansão TC

Ø	A		B	exp
	curto	longo		
1/2"	12,7	-	25,4	-
3/4"	12,7	-	25,4	-
1"	12,7	21,5	50,0	-
1 1/2"	12,7	21,5	50,0	19
2"	12,7	21,5	64,0	22
2 1/2"	12,7	21,5	77,0	25,4
3"	12,7	21,5	91,0	28,6
4"	15,9	28,6	119,0	30
5"	19,2	28,6	150,0	-
6"	21,5	28,6	167,0	-
8"	22,1	28,6	220,6	-



Abraçadeira TC

Ø	A		Pressão de serviço[Kfg/cm²]	
	normal	alta	normal	alta pressão
	1/2" e 3/4"	37,0	28,0	40,0
1" e 1 1/2"	54,0	52,0	34,0	70,0
2"	67,0	66,0	28,0	70,0
2 1/2"	81,0	79,0	26,0	70,0
3"	81,0	79,0	22,0	70,0
4"	94,0	92,0	12,0	70,0
6"	122,0	120,0	8,0	20,0
6"	172,0	170,0		

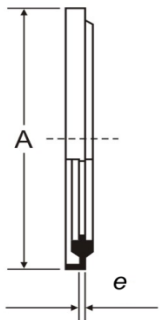


(medidas e mm)

As pressões acima referem-se à t=20°C.

anel de vedação TC

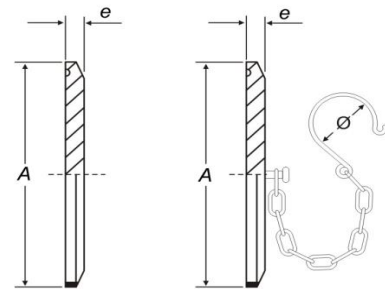
Ø	A	e
1/2"	34,0	1,8
3/4"	34,0	1,8
1"	52,0	1,8
1 1/2"	52,0	1,8
2"	66,0	1,8
2 1/2"	79,0	1,8
3"	93,0	1,8
4"	121,0	1,8
6"	169,0	1,8
8"	223,0	1,8



(medidas e mm)

Tampão TC

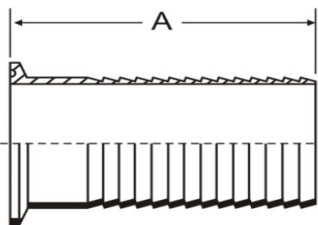
Ø	A	e
1"	50,0	6,3
1 1/2"	50,0	6,3
2"	64,0	6,3
2 1/2"	77,0	6,3
3"	91,0	6,3
4"	119,0	7,9
6"	167,0	7,9



(medidas e mm)

adaptador TC x mangueira

Ø	A
1"	72,7
1 1/2"	92,7
2"	92,7
2 1/2"	112,7
3"	112,7
4"	115,9
6"	135,9

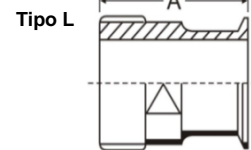
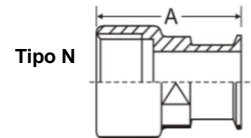


É fornecido também com redução

(medidas e mm)

Niple adaptador TC tipo L / tipo N

Ø	A		
	tipo L		tipo N
	BSP	NPT	BSP/NPT
1"	59,7	59,7	47,7
1 1/2"	64,7	61,7	52,7
2"	69,7	63,7	57,7
2 1/2"	74,7	71,7	71,7
3"	79,7	75,7	67,7
4"	90,9	80,9	75,9

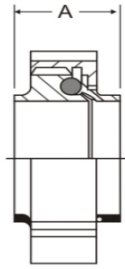


(medidas e mm)



União RJT

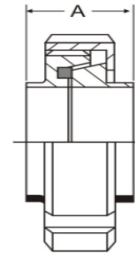
Ø	A	
	solda	exp.
1"	35,9	41,2
1½"	35,9	49,2
2"	35,9	53,2
2½"	35,9	65,2
3"	35,9	65,2
4"	35,9	-
5"	47,8	-
6"	47,8	-



(medidas e mm)

União DIN

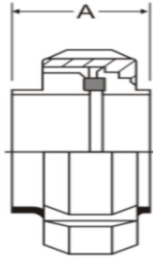
Ø	A
½"	34,0
¾"	34,0
1"	38,0
1½"	38,0
2"	39,0
2½"	40,0
3"	48,8
4"	49,5
5"	62,0
6"	69,5



(medidas e mm)

União SMS

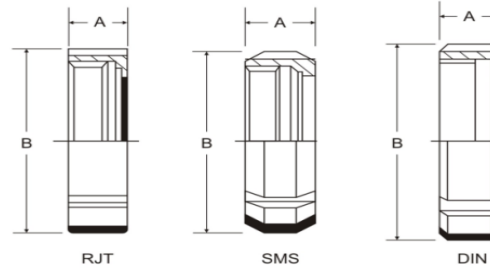
Ø	A	
	solda	exp
1½"	34,9	38,9
2"	34,9	44,9
2½"	34,9	46,9
1"	38,9	46,9
3"	38,9	66,9
4"	53,9	-



(medidas e mm)

Porca Circular

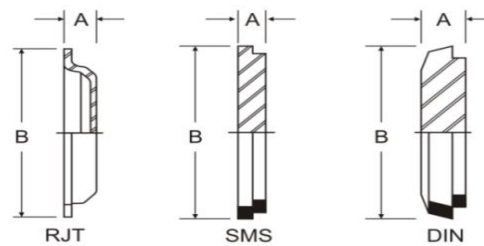
Ø	RJT		SMS		DIN	
	A	B	A	B	A	B
½"	-	-	-	-	18,0	38,0
¾"	-	-	-	-	18,0	44,0
1"	22,0	59,0	20,0	51,0	21,0	63,0
1½"	22,0	72,0	25,0	74,0	21,0	78,0
2"	22,0	86,0	26,0	84,0	22,0	92,0
2½"	22,0	98,0	30,0	100,0	25,0	112,0
3"	22,0	111,0	32,0	114,0	29,0	127,0
4"	22,0	136,0	45,0	154,0	31,0	148,0
5"	26,0	187,0	-	-	35,0	178,0
6"	26,0	225,0	-	-	40,0	210,0



Fornecemos também Porca Tampão e Porca Tampão com corrente

Tampão

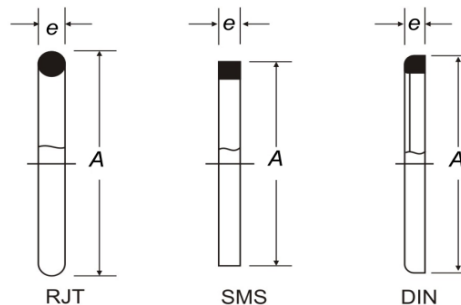
Ø	RJT		SMS		DIN	
	A	B	A	B	A	B
1"	10,0	42,0	7,5	35,5	10,0	44,0
1½"	10,0	54,0	8,0	55,0	10,0	56,0
2"	10,0	67,0	9,0	65,0	11,0	68,0
2½"	10,0	79,7	9,0	80,0	12,0	86,0
3"	10,0	92,6	11,0	93,0	12,0	100,0
4"	10,0	117,3	13,0	127,0	15,0	121,0
5"	10,0	143,0	-	-	17,0	156,0
6"	10,0	168,0	-	-	19,0	176,0



Fornecemos também tampão com corrente

Anéis de Vedação

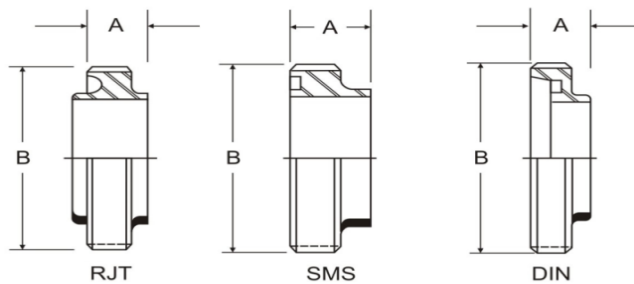
Ø	RJT		SMS		DIN	
	A	B	A	B	A	B
1"	6,6	33,2	5,5	32,0	5,0	40,0
1½"	6,6	45,9	5,5	48,0	5,0	52,0
2"	6,6	58,6	5,5	61,0	5,0	64,0
2½"	6,6	71,3	5,5	73,5	5,0	81,0
3"	6,6	84,0	5,5	86,0	5,0	95,0
4"	6,6	109,7	5,5	103,5	6,0	114,0
5"	6,6	142,0	-	-	7,0	142,0
6"	6,6	158,0	-	-	7,0	167,0





Macho Solda

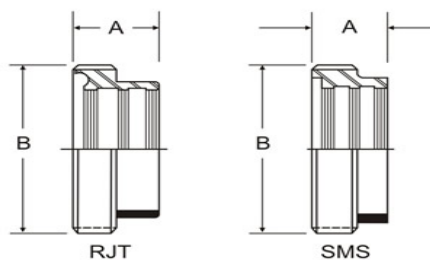
Ø	RJT		SMS		DIN	
	A	B	A	B	A	B
½"	-	-	-	-	21	28
¾"	-	-	-	-	21	34
1"	26,5	49,4	16	39,8	24	52
1½"	26,5	58,1	20	59,8	24	65
2"	26,5	72,4	20	69,8	24	78
2½"	26,5	85,1	24	84,8	27	95
3"	26,5	97,8	24	97,8	31	110
4"	26,5	123,2	35	131,2	31	130
5"	26,5	150	-	-	46	170
6"	26,5	175	-	-	50	190



Sob consulta

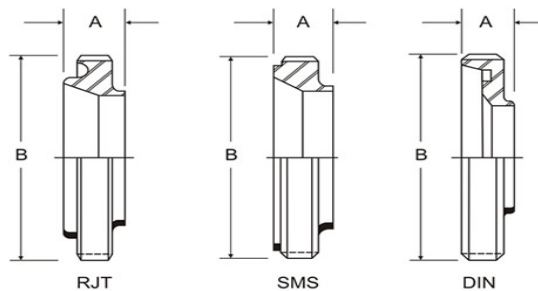
Macho Expansão

Ø	RJT		SMS	
	A	B	A	B
1"	20	45,4	20	39,8
1½"	24	58,1	23	59,8
2"	28	72,4	25	69,8
2½"	32	85,1	30	84,8
3"	32	97,8	35	97,8



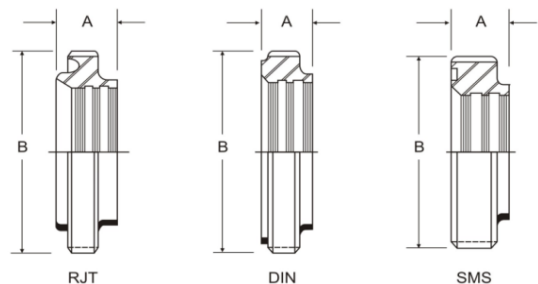
Macho de Redução Solda

Ø	RJT		SMS		DIN	
	A	B	A	B	A	B
1½" x 1"	26,5	58,1	20,0	60,1	24,0	65,0
2" x 1"	26,5	72,4	20,0	70,1	24,0	78,0
2" x 1½"	26,5	72,4	20,0	70,1	24,0	78,0
2½" x 1"	26,5	85,1	24,0	85,1	27,0	95,0
2½" x 1½"	26,5	85,1	24,0	85,1	27,0	95,0
2½" x 2"	26,5	85,1	24,0	85,1	27,0	95,0
3" x 1½"	26,5	97,8	24,0	98,1	31,0	110,0
3" x 2"	26,5	97,8	24,0	98,1	31,0	110,0
3" x 2½"	26,5	97,8	24,0	98,1	31,0	110,0
4" x 2"	26,5	123,2	24,0	131,3	31,0	130,0
4" x 2½"	26,5	123,2	24,0	131,3	31,0	130,0
4" x 3"	26,5	123,2	24,0	131,3	31,0	130,0
6" x 4"	26,5	175,0	-	-	45,0	190,0



Macho de Redução Expansão

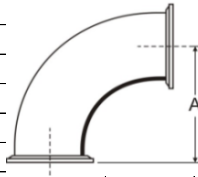
Ø	RJT		SMS		DIN	
	A	B	A	B	A	B
1½" x 1"	25,0	58,1	25,0	59,8	22,5	50,6
2" x 1"	26,0	72,4	26,5	69,8	26,0	64,1
2" x 1½"	28,5	72,4	28,0	69,8	22,5	64,1
2½" x 1"	25,5	85,1	30,0	84,8	23,5	77,6
2½" x 1½"	30,0	85,1	28,0	84,8	26,0	77,6
2½" x 2"	33,0	85,1	30,0	84,8	22,5	77,6
3" x 1½"	30,0	97,8	29,0	97,8	23,5	91,1
3" x 2"	34,0	97,8	31,0	97,8	26,0	91,1
3" x 2½"	36,0	97,8	35,0	97,8	22,5	91,1





Curva 90° 2TC

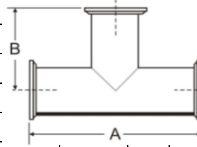
Ø	A
1"	50,8
1½"	69,9
2"	88,9
2½"	108,0
3"	127,0
4"	168,3
6"	244,5



(medidas e mm)

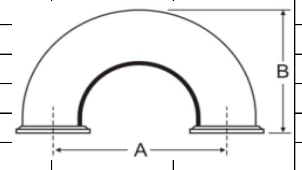
Tê reto 3TC

Ø	A	B
1"	121,4	60,7
1½"	139,8	69,9
2"	177,8	88,9
2½"	179,4	89,7
3"	191,4	95,7
4"	228,8	114,4
6"	257,8	128,9



Curva 180° 2TC

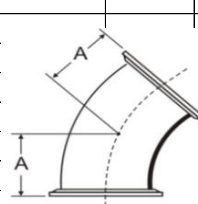
Ø	A	B
1"	76,2	63,5
1½"	114,4	88,9
2"	152,4	114,3
2½"	190,5	139,7
3"	228,6	165,1
4"	304,8	219,1
6"	457,2	320,7



(medida e mm)

Curva 45° 2TC

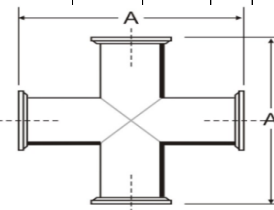
Ø	A
1"	27,3
1½"	34,6
2"	41,9
2½"	49,2
3"	56,4
4"	74,2
6"	103,4



(medidas e mm)

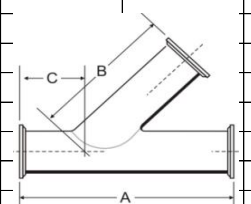
Cruzeta 4TC

Ø	A
1"	121,4
1½"	139,8
2"	177,8
2½"	179,4
3"	191,4
4"	228,8



Tê 45° 3TC

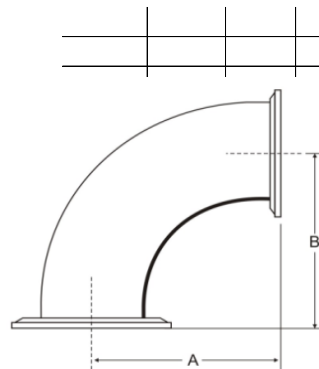
Ø	A	B	C
1"	177,8	139,7	38,5
1½"	212,7	169,8	43,1
2"	247,6	193,6	54,2
2½"	279,4	228,4	50,9
3"	298,4	237,9	60,5
4"	357,2	288,7	67,9



(medidas e mm)

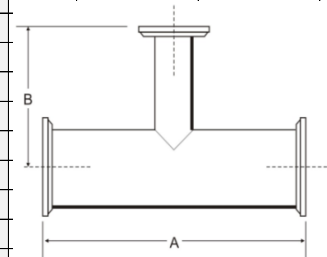
Curva de redução 90° 2TC

Ø	A	B
1½" x 1"	50,8	50,8
2" x 1"	50,8	50,8
2" x 1½"	69,9	69,9
2½" x 1"	50,8	50,8
2½" x 1½"	69,9	69,9
2½" x 2"	88,9	88,9
3" x 1½"	69,9	69,9
3" x 2"	88,9	88,9
3" x 2½"	108,0	108,0
4" x 2"	88,9	92,1
4" x 2½"	108,0	111,2
4" x 3"	127,0	130,2
6" x 4"	168,3	168,3



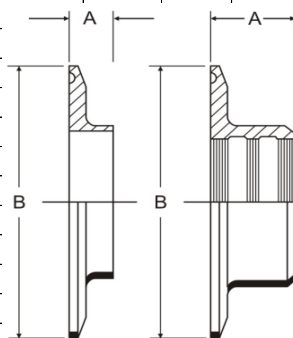
Tê redução 3TC

Ø	A	B
1½" x 1"	139,8	69,9
2" x 1"	177,8	88,9
2" x 1½"	177,8	88,9
2½" x 1"	179,4	89,7
2½" x 1½"	179,4	89,7
2½" x 2"	179,4	89,7
3" x 1½"	191,4	95,7
3" x 2"	191,4	95,7
3" x 1½"	191,4	95,7
4" x 2"	228,8	111,2
4" x 2½"	228,8	111,2
4" x 3"	228,8	112,2
6" x 4"	257,8	128,9



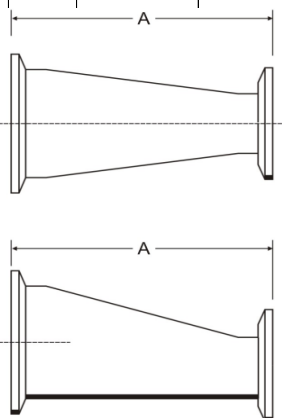
Niple de redução solda/expansão TC

Ø	A		B
	Solda	exp.	
1½" x 1"	12,7	19,0	50,0
2" x 1"	12,7	19,0	64,0
2" x 1½"	12,7	22,0	64,0
2½" x 1"	12,7	19,0	77,0
2½" x 1½"	12,7	22,0	77,0
2½" x 2"	12,7	25,4	77,0
3" x 1½"	12,7	22,0	91,0
3" x 2"	12,7	25,4	91,0
3" x 2½"	12,7	28,6	91,0
4" x 2"	12,7	25,4	119,0
4" x 2½"	12,7	28,6	119,0
4" x 3"	12,7	30,0	119,0
6" x 4"	15,9		167,0



Redução Cônica 2TC

Ø	A
1½" x 1"	64,4
2" x 1"	103,4
2" x 1½"	64,4
2½" x 1"	142,4
2½" x 1½"	103,4
2½" x 2"	64,4
3" x 1½"	142,4
3" x 2"	103,4
3" x 1½"	64,4
4" x 2"	184,6
4" x 2½"	145,6
4" x 3"	106,6
6" x 4"	187,8



(medidas e mm)

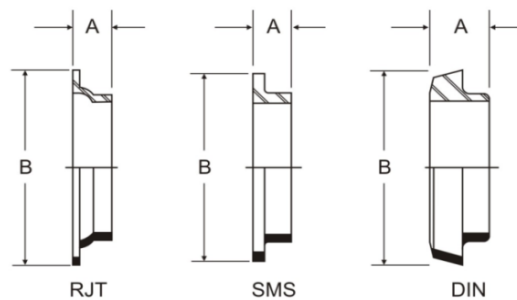
Outras bitolas sob consulta.



Niple Solda

(medidas e mm)

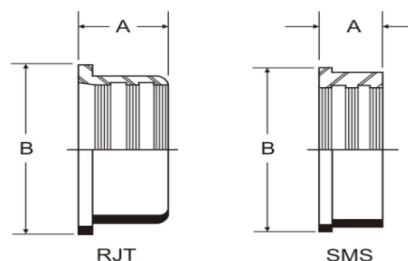
Ø	RJT		SMS		DIN	
	A	B	A	B	A	B
1/2"	-	-	-	-	17,0	22,5
3/4"	-	-	-	-	17,0	28,5
1"	13,0	42,0	13,0	35,3	20,0	44,0
1 1/2"	13,0	53,9	13,0	55,0	20,0	56,0
2"	13,0	67,6	13,0	65,0	21,0	68,5
2 1/2"	13,0	80,3	13,0	80,0	24,0	86,0
3"	13,0	93,0	13,0	93,0	24,0	121,0
4"	15,0	117,7	17,0	127,0	28,0	121,0
5"	20,0	145,0	-	-	28,0	150,0
6"	20,0	168,0	-	-	37,0	176,0



Sob consulta

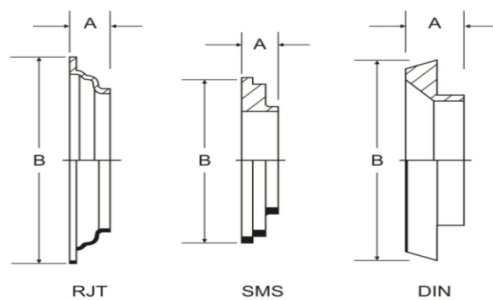
Niple Expansão

Ø	RJT		SMS	
	A	B	A	B
1"	20,0	41,3	17,0	35,5
1 1/2"	24,0	54,0	20,0	55,0
2"	28,0	66,7	20,0	65,0
2 1/2"	32,0	79,3	25,0	80,0
3"	32,0	92,0	30,0	93,0



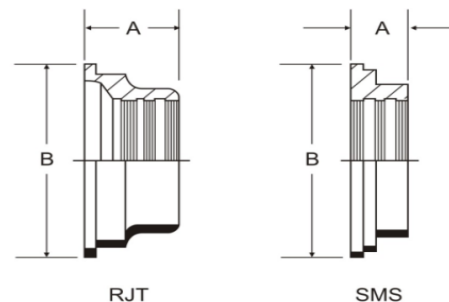
Niples Redução Solda

Ø	RJT		SMS		DIN	
	A	B	A	B	A	B
1 1/2" x 1"	13,0	53,9	13,0	55,0	20,0	56,0
2" x 1"	13,0	67,5	13,0	65,0	21,0	68,5
2" x 1 1/2"	13,0	67,5	13,0	65,0	21,0	68,5
2 1/2" x 1"	13,0	80,3	13,0	80,0	24,0	86,0
2 1/2" x 1 1/2"	13,0	80,3	13,0	80,0	24,0	86,0
2 1/2" x 2"	13,0	80,3	13,0	80,0	24,0	86,0
3" x 1 1/2"	13,0	93,0	13,0	93,0	24,0	100,0
3" x 2"	13,0	93,0	13,0	93,0	24,0	100,0
3" x 2 1/2"	13,0	93,0	13,0	93,0	24,0	100,0
4" x 2"	15,0	117,7	17,0	127,0	28,0	121,0
4" x 2 1/2"	15,0	117,7	17,0	127,0	28,0	121,0
4" x 3"	15,0	117,7	17,0	127,0	28,0	121,0
6" x 4"	20,0	168,0	-	-	-	-



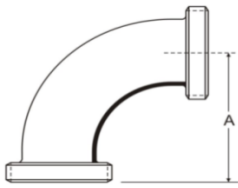
Niples de Redução Expansão

Ø	RJT		SMS	
	A	B	A	B
1 1/2" x 1"	24,0	54,0	17,0	55,0
2" x 1"	30,0	66,7	17,0	65,0
2" x 1 1/2"	30,0	66,7	20,0	65,0
2 1/2" x 1"	32,0	79,3	17,0	80,0
2 1/2" x 1 1/2"	32,0	79,3	20,0	80,0
2 1/2" x 2"	32,0	79,3	20,0	80,0
3" x 1 1/2"	35,0	92,0	20,0	93,0
3" x 2"	32,0	92,0	20,0	93,0
3" x 2 1/2"	32,0	92,0	15,0	93,0





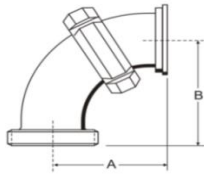
Curva 90° 2M



Ø	RJT	SMS	DIN
	A	A	A
1"	64,6	54,1	62,1
1½"	83,6	77,2	81,2
2"	103,0	96,2	100,2
2½"	122,3	119,2	122,3
3"	141,0	138,3	145,3
4"	179,0	187,4	183,4
6"	255,0	-	278,6

(medidas e mm)

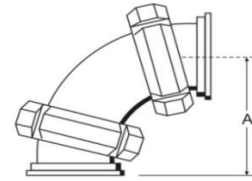
Curva 90° M-NP



Ø	RJT		SMS		DIN	
	A	B	A	B	A	B
1"	51,1	64,6	51,1	54,1	58,1	62,1
1½"	70,2	83,7	70,2	77,1	77,2	81,2
2"	89,2	102,7	89,2	96,2	97,2	100,2
2½"	108,3	122,0	108,3	119,3	119,3	122,3
3"	127,3	140,8	127,3	138,3	138,3	145,3
4"	167,4	178,9	169,4	187,4	180,4	183,4
6"	248,6	255,1	-	-	265,6	278,6

(medidas e mm)

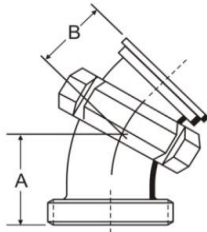
Curva 90° 2NP



Ø	RJT	SMS	DIN
	A	A	A
1"	51,1	51,1	58,1
1½"	70,2	70,2	77,2
2"	89,2	89,2	97,2
2½"	108,2	108,2	119,3
3"	127,3	127,3	138,3
4"	167,4	167,4	180,4
6"	248,6	-	265,6

(medidas e mm)

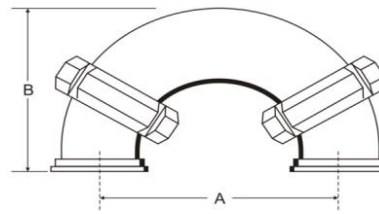
Curva 45° M-NP



Ø	RJT		SMS		DIN	
	A	B	A	B	A	B
1"	41,1	27,6	30,6	27,6	38,6	34,6
1½"	48,4	34,9	41,9	34,9	45,9	41,9
2"	55,7	42,2	49,2	42,2	53,2	50,2
2½"	63	49,5	60,5	49,5	63,5	60,5
3"	70,2	56,7	67,7	56,7	74,7	67,7
4"	84,8	73,3	93,3	75,3	89,3	86,3
6"	114	107,5	-	-	137	124,5

(medidas e mm)

Curva 180° 2NP

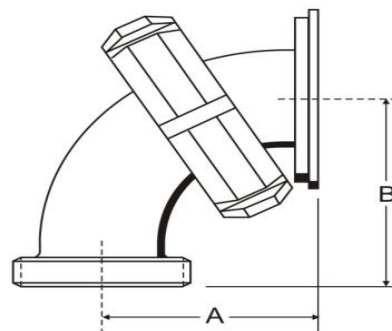


Ø	A	RJT	SMS	DIN
		B	B	B
1"	76,2	63,8	63,8	70,8
1½"	114,3	89,2	89,2	96,2
2"	152,4	114,6	152,4	122,6
2½"	190,5	140,0	140,0	151,0
3"	228,6	165,4	165,4	176,4
4"	304,8	218,2	220,2	231,2
6"	457,2	324,8	-	341,8

(medidas e mm)

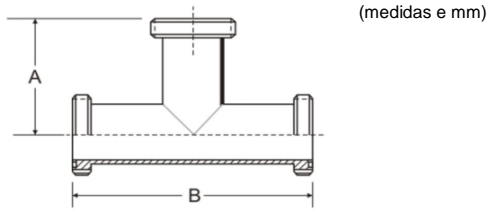
Curva de Redução 90° M-NP

Ø	RJT		SMS		DIN	
	A	B	A	B	B	
1½" x 1"	51,1	64,6	51,1	54,1	58,1	62,1
2" x 1"	51,1	64,6	51,1	54,1	59,1	62,1
2" x 1½"	70,2	83,6	70,2	77,2	78,2	81,2
2½" x 1"	51,1	64,6	51,1	54,1	62,1	62,1
2½" x 1½"	70,2	83,6	70,2	77,2	82,2	81,2
2½" x 2"	89,2	103	89,2	96,2	100,2	100,2
3" x 1½"	70,2	83,6	70,2	77,2	81,2	81,2
3" x 2"	89,2	103	89,2	96,2	100,2	100,2
3" x 2½"	108,3	122,3	108	119	119,3	122,3
4" x 2"	91,2	103	93,2	96,2	104,2	100,2
4" x 2½"	110,3	122,3	112	119	123,3	122,3
4" x 3"	129,3	141	131	138	142,3	145,3



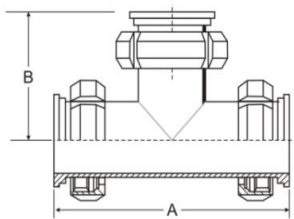


Tê Reto 3M



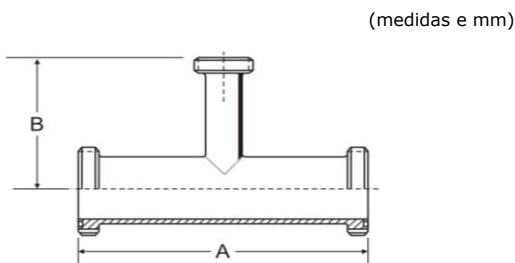
Ø	RJT		SMS		DIN	
	A	B	A	B	A	B
1"	149,0	74,5	128,0	64,0	144,0	72,0
1½"	167,4	83,7	154,4	77,2	162,4	81,2
2"	205,4	102,7	192,4	96,2	200,4	100,2
2½"	207,0	103,5	202,0	101,0	208,0	104,0
3"	219,0	109,5	214,0	107,0	228,0	114,0
4"	250,0	125,0	267,0	133,5	259,0	129,5
6"	279,0	139,5	-	-	326,0	163,0

Tê Reto 3 NP



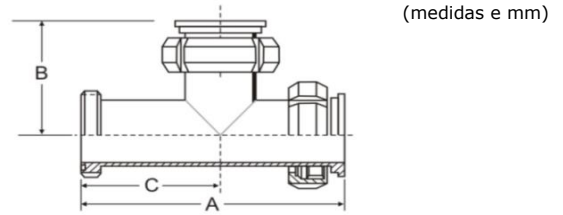
Ø	RJT		SMS		DIN	
	A	B	A	B	A	B
1"	122,0	61,0	122,0	61,0	136,0	68,0
1½"	140,4	70,2	140,4	70,2	154,4	77,2
2"	178,4	89,2	178,4	89,2	194,4	97,2
2½"	180,0	90,0	180,0	90,0	202,0	101,0
3"	192,0	96,0	192,0	96,0	214,0	107,0
4"	227,0	113,5	231,0	115,5	253,0	126,5
6"	266,0	133,0	-	-	300,0	150,0

Tê Reto de Redução 3M



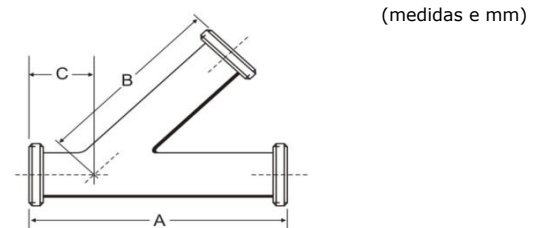
Ø	RJT	SMS		DIN	
		A	B	A	B
1½"	1"	167,4	83,7	154,4	77,2
2"	1"	205,4	102,7	192,4	96,2
2"	1½"	205,4	102,7	192,4	96,2
2½"	1"	205,4	102,7	202,0	101,0
2½"	1½"	207,0	103,5	202,0	101,0
2½"	2"	207,0	103,5	202,0	101,0
3"	1½"	219,0	109,5	214,0	107,0
3"	2"	219,0	109,5	214,0	107,0
3"	2½"	210,0	109,5	214,0	107,0
4"	2"	250,0	125,0	267,0	133,5
4"	2½"	250,0	125,0	267,0	133,5
4"	3"	250,0	125,0	267,0	133,5
6"	4"	279,0	139,5	-	-

Tê Reto M-NP-NP



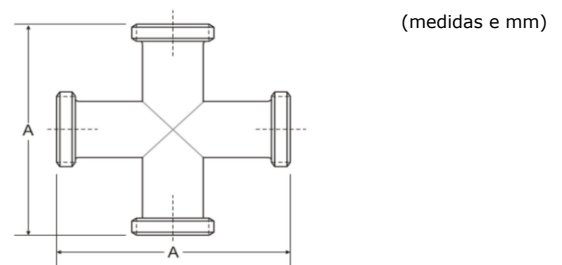
Ø	RJT			SMS			DIN		
	A	B	C	A	B	C	A	B	C
1"	135,5	61,0	74,5	125,0	61,0	64,0	140,0	68,0	72,0
1½"	153,9	70,2	83,7	147,4	70,2	77,2	158,4	77,2	81,2
2"	191,9	89,2	102,7	185,4	89,2	96,2	197,4	97,2	100,2
2½"	193,5	90,0	103,5	191,0	90,0	101,0	205,0	101,0	104,0
3"	205,5	96,0	109,5	203,0	96,0	107,0	221,0	107,0	114,0
4"	238,5	113,5	125,0	249,0	115,0	133,5	256,0	126,5	129,5
6"	272,5	133,0	139,5	-	-	-	313,0	150,0	163,0

Tê 45° 3M



Ø	RJT			SMS			DIN		
	A	B	C	A	B	C	A	B	C
1"	205,5	153,5	52,3	184,4	143,0	41,8	200,4	151,0	49,8
1½"	240,3	183,6	56,9	227,3	177,1	50,4	235,3	181,1	54,4
2"	275,2	207,4	68,0	262,2	200,9	61,5	270,2	204,9	65,5
2½"	307,0	242,2	64,7	302,0	239,7	62,2	308,0	242,7	65,2
3"	326,0	251,7	74,3	321,0	249,2	71,8	335,0	256,2	78,8
4"	378,4	299,3	78,5	395,4	307,8	87,0	387,4	303,8	83,0

Cruzeta 4M



Ø	RJT	SMS	DIN
	A	A	A
1"	149,0	128,0	144,0
1½"	167,4	154,4	162,4
2"	205,4	192,4	200,4
2½"	207,0	202,0	208,0
3"	219,0	214,0	208,0
4"	250,0	267,0	259,0
6"	279,0	-	326,0

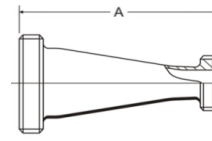


Redução Cônica 2M

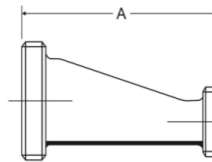
(medidas e mm)

Ø	RJT		SMS		DIN	
	conc.	exc.	conc.	exc.	conc.	exc.
1½" x 1"	97,0	92,0	80,0	75,0	92,0	87,0
2"x1" x 1"	139,0	131,0	122,0	114,0	134,0	126,0
2" x 1½"	95,0	92,0	82,0	79,0	90,0	87,0
2½" x 1"	181,0	170,0	168,0	157,0	182,0	171,0
2½" x 1½"	137,0	131,0	128,0	122,0	135,0	129,0
2½" x 2"	95,0	92,0	86,0	83,0	93,0	90,0
3" x 1½"	179,0	170,0	170,0	161,0	181,0	172,0
3" x 2"	137,0	131,0	128,0	122,0	139,0	133,0
3" x 2½"	95,0	93,0	90,0	88,0	100,0	98,0
4" x 2"	220,0	210,0	222,0	212,0	222,0	212,0
4" x 2½"	178,0	171,0	184,0	177,0	183,0	176,0
4" x 3"	136,0	131,0	142,0	137,0	145,0	140,0

Concêntrica



Excêntrica



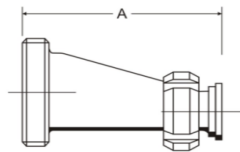
Outras bitolas sob consulta.

Redução Cônica M NP

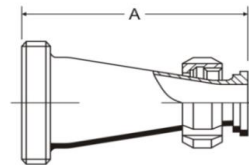
(medidas e mm)

Ø	RJT		SMS		DIN	
	conc.	exc.	conc.	exc.	conc.	exc.
1½" x 1"	83,5	78,5	77,0	72,0	88,0	83,0
2" x 1"	125,5	117,5	115,0	107,0	130,0	122,0
2" x 1½"	81,5	78,5	75,0	72,0	87,0	84,0
2½" x 1"	167,5	156,5	157,0	146,0	179,0	168,0
2½" x 1½"	123,5	117,5	117,0	111,0	132,0	126,0
2½" x 2"	81,5	78,5	75,0	72,0	90,0	87,0
3" x 1½"	165,5	156,5	159,0	150,0	177,0	168,0
3" x 2"	123,5	117,5	121,0	115,0	136,0	130,0
3" x 2½"	81,5	79,5	79,0	77,0	97,0	95,0
4" x 2"	208,5	198,5	215,0	205,0	219,0	209,0
4" x 2½"	166,5	159,5	173,0	166,0	180,0	173,0
4" x 3"	124,5	119,5	131,0	126,0	138,0	133,0

Concêntrica



Excêntrica

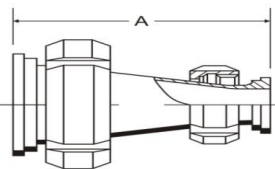


Redução Cônica 2 NP

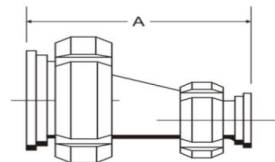
(medidas e mm)

Ø	RJT		SMS		DIN	
	conc.	exc.	conc.	exc.	conc.	exc.
1½" x 1"	70,0	65,0	70,0	65,0	84,0	79,0
2" x 1"	112,0	104,0	112,0	104,0	126,0	118,0
2" x 1½"	68,0	65,0	68,0	65,0	83,0	80,0
2½" x 1"	154,0	143,0	154,0	143,0	172,0	161,0
2½" x 1½"	110,0	104,0	110,0	104,0	128,0	122,0
2½" x 2"	68,0	63,0	68,0	63,0	87,0	84,0
3" x 1½"	152,0	143,0	152,0	143,0	170,0	161,0
3" x 2"	110,0	104,0	110,0	104,0	129,0	123,0
3" x 2½"	68,0	66,0	68,0	66,0	90,0	88,0
4" x 2"	195,0	185,0	197,0	187,0	216,0	206,0
4" x 2½"	153,0	146,0	155,0	148,0	177,0	170,0
4" x 3"	111,0	106,0	113,0	108,0	135,0	130,0

Concêntrica

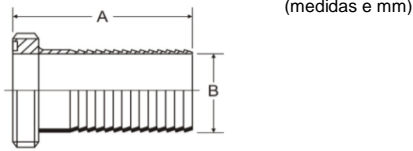


Excêntrica



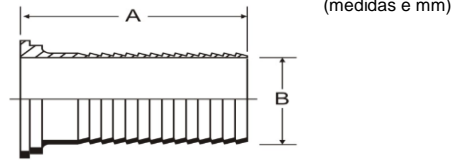


Macho adaptador p/ mangueira



Ø	A			B
	RJT	SMS	DIN	
1"	86,5	76,0	84,0	25,5
1½"	106,5	100,0	104,0	38,1
2"	106,5	100,0	104,0	50,8
2½"	126,5	124,0	127,0	63,5
3"	126,5	124,0	131,0	76,2
4"	126,5	135,0	131,0	101,6
6"	126,5	-	170,0	152,4

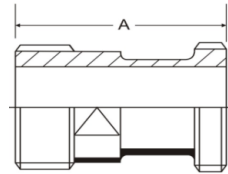
Niple Adaptador p/ mangueira



Ø	A			B
	RJT	SMS	DIN	
1"	73,0	73,0	80,0	25,4
1½"	93,0	93,0	100,0	38,1
2"	93,0	93,0	101,0	50,8
2½"	113,0	113,0	124,0	63,5
3"	113,0	113,0	124,0	76,2
4"	115,0	117,0	128,0	101,6
6"	140,0	-	152,0	125,4

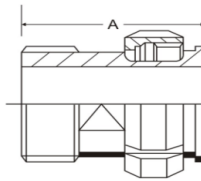
Macho Adaptador Tipo N

Ø	RJT		SMS		DIN	
	BSP	NPT	BSP	NPT	BST	NPT
1"	73,5	73,5	63,0	63,0	71,0	71,0
1½"	78,5	75,5	72,0	69,0	76,0	73,0
2"	83,5	77,5	77,0	71,0	81,0	75,0
2½"	88,5	85,5	86,0	83,0	89,0	86,0
3"	93,5	89,5	91,0	87,0	98,0	94,0
4"	101,5	91,5	110,0	100,0	106,0	96,0



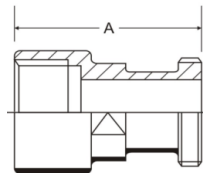
Niple Porca Adaptador Tipo N

Ø	RJT		SMS		DIN	
	BSP	NPT	BSP	NPT	BST	NPT
1"	60,0	60,0	60,0	60,0	67,0	67,0
1½"	65,0	62,0	65,0	62,0	72,0	69,0
2"	70,0	64,0	70,0	64,0	78,0	72,0
2½"	75,0	72,0	75,0	72,0	86,0	83,0
3"	80,0	76,0	80,0	76,0	95,0	91,0
4"	90,0	80,0	92,0	82,0	107,0	97,0



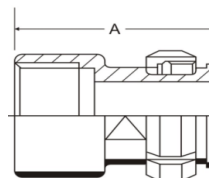
Macho Adaptador Tipo L

Ø	RJT		SMS		DIN	
	BSP	NPT	BSP	NPT	BST	NPT
1"	61,5	61,5	51,0	51,0	59,0	59,0
1½"	66,5	66,5	60,0	60,0	64,0	64,0
2"	71,5	71,5	65,0	65,0	69,0	69,0
2½"	76,5	76,5	74,0	74,0	77,0	77,0
3"	81,5	81,5	79,0	79,0	86,0	86,0
4"	86,5	86,5	95,0	95,0	91,0	91,0



Niple Porca Adaptador Tipo L

Ø	RJT		SMS		DIN	
	BSP	NPT	BSP	NPT	BST	NPT
1"	48,0	48,0	48,0	48,0	55,0	55,0
1½"	53,0	53,0	53,0	53,0	60,0	60,0
2"	58,0	58,0	58,0	58,0	66,0	66,0
2½"	63,0	63,0	63,0	63,0	74,0	74,0
3"	68,0	68,0	68,0	68,0	79,0	79,0
4"	75,0	75,0	77,0	77,0	88,0	88,0

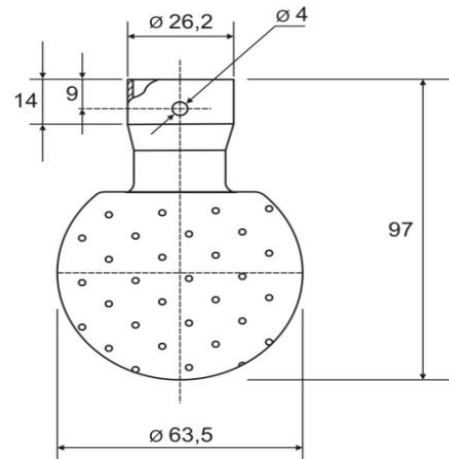




Aspersores "Spray-ball"

(medidas e mm)

	Ø	vazão à 2 Kgf/cm ²	Ø do leque
Padrão	furo	m ³ /h	m
360°	3/32"	16,0	4,0
	1/16"	10,0	3,8
270° superior	3/32"	15,0	40,0
	1/16"	9,0	3,8
270° inferior	3/32"	15,0	4,0
	1/16"	9,0	3,8
180° superior	3/32"	10,0	3,9
	1/16"	6,0	3,7
180° inferior	3/32"	8,0	4,1
	1/16"	5,0	3,9
150° lateral	3/32"	9,0	2,0
150° superior	3/32"	9,0	4,2
150° inferior	3/32"	12,0	3,8

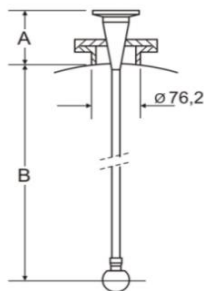


Todos os adaptadores podem ser fornecidos com redução

Adaptador para Aspersor

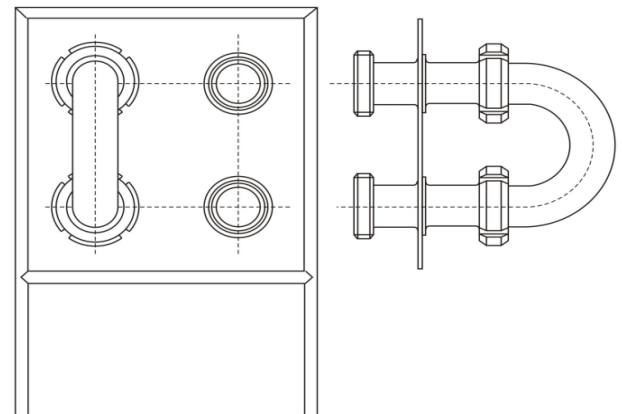
(medidas em mm)

Ø	A				B
	TC	M RJT	M SMS	M DIN	
1"	92,2	106,0	95,5	103,5	800,0
1½"	92,2	106,0	99,5	103,5	800,0
2"	128,2	142,0	135,3	139,3	800,0
2½"	164,7	178,5	176,0	179,0	800,0



Todos os adaptadores podem ser fornecidos com redução

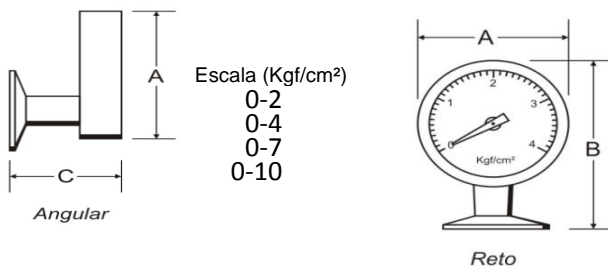
Painel de Distribuição de Fluxo



São fabricados sob encomendas com bocas fixa ou removível

Manômetro

(medidas e mm)

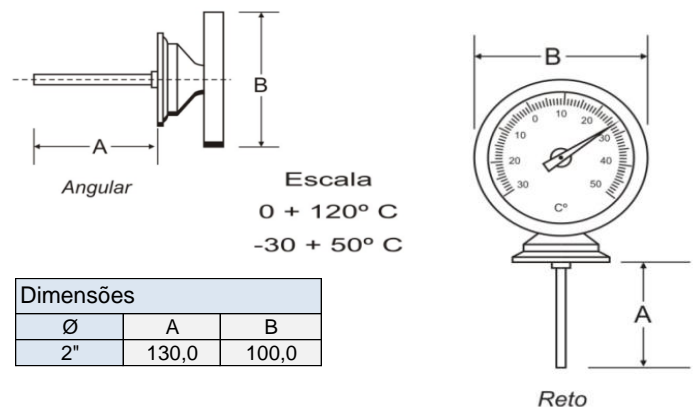


Dimensões			
Ø	A	B	C
2"	100,0	145,0	86,0

Diafragma Sanitário
Enchimento em glicerina para trabalho em tubulação sob efeito de vibrações

Termômetro

(medidas e mm)



Dimensões		
Ø	A	B
2"	130,0	100,0

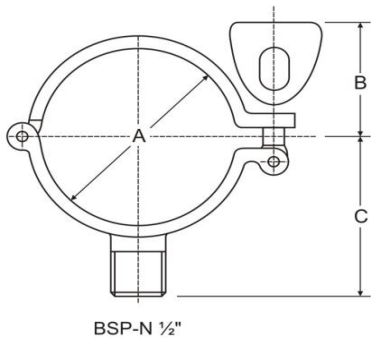
Com selo bimetálico sanitário



Abraçadeira Suporte para Tubo

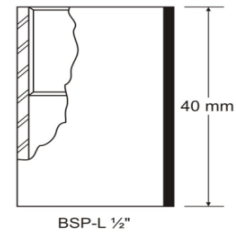
(medidas e mm)

Ø A	B	C
1"	58,7	43,7
1½"	65,0	50,0
2"	71,4	62,7
2½"	84,1	56,4
3"	77,7	69,1
4"	96,8	81,8
5"	109,5	94,5
6"	122,2	107,2



Luva para Abraçadeira

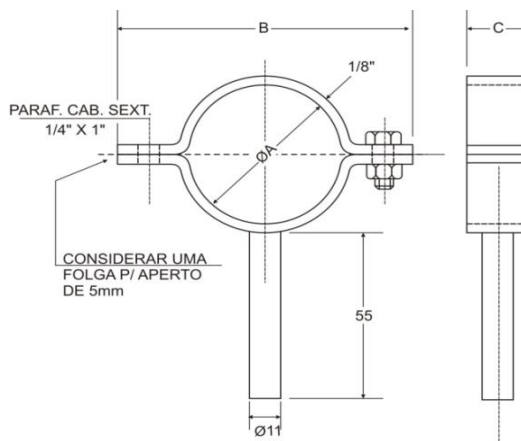
(medida e mm)



Esta luva geralmente acompanha Abraçadeira Suporte para tubos (vide ilustração de Abraçadeira Suporte p/tubo)

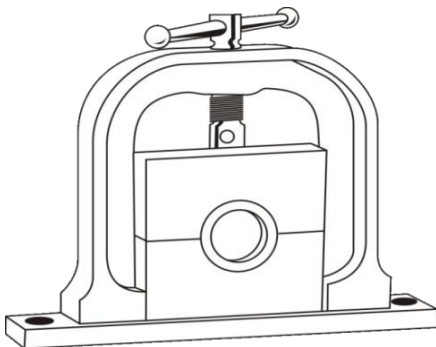
Abraçadeira Suporte para Tubo Haste Fixa

Ø	A	B	C
1/2"	12,7	59,0	3/4"
3/4"	19,5	65,0	3/4"
1"	25,5	80,0	3/4"
1 1/2"	35,5	94,0	3/4"
2"	51,5	113,0	3/4"
2 1/2"	64,0	127,0	3/4"
3"	76,5	144,0	3/4"
4"	102,0	168,0	3/4"

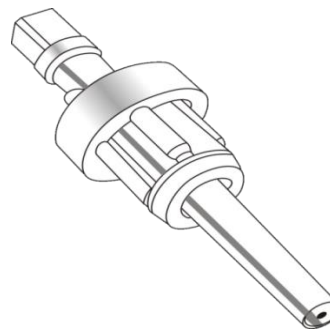


Morsa e Boco de Expansão

Bitola
1"
1½"
2"
2½"
3"



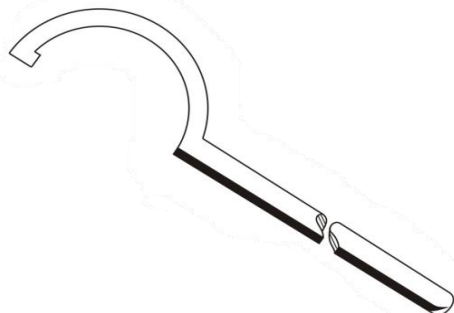
Expandidor



Bitola	torque p/exp Kgf.m
1"	2,0
1½"	4,0
2"	8,0
2½"	14,0
3"	17,0

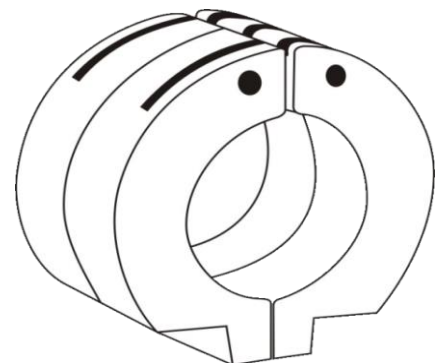
Chave para Porca

Bitola
1"
1½"
2"
2½"
3"
4"
5"
6"



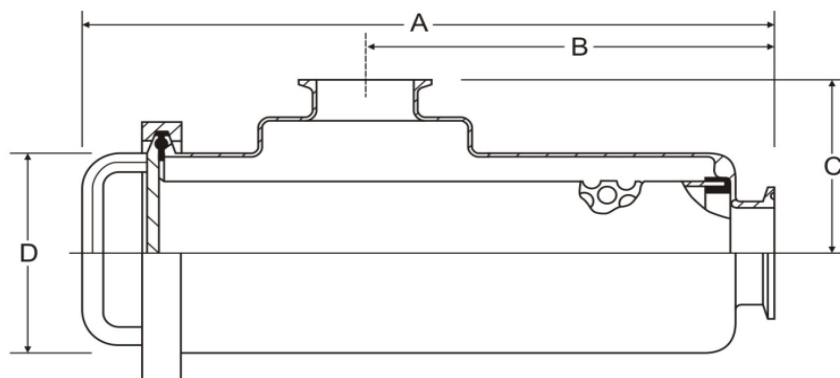
Guia para Corte de Tubo

Bitola
1"
1½"
2"
2½"
3"
4"





Dimensões Gerais



MODELO F600

Bitola	A					B					C					ØD
	Ø	solda	TC	RJT	SMS	DIN	solda	TC	RJT	SMS	DIN	solda	TC	RJT	SMS	
1"	320,5	333,2	347,0	336,5	344,5	182,1	194,8	208,6	198,1	206,1	72,0	84,7	98,5	88,0	96,0	101,6
1½"	320,5	333,2	347,0	340,5	344,5	182,1	194,8	208,6	202,1	206,1	72,0	84,7	98,5	92,0	96,0	101,6
2"	320,5	333,2	347,0	340,5	344,5	182,1	194,8	208,6	202,1	206,1	72,0	84,7	98,5	92,0	96,0	101,6
2½"	320,5	333,2	347,0	344,5	347,5	182,1	194,8	208,6	206,1	209,1	72,0	84,7	98,5	96,0	99,0	101,6
3"	331,5	344,2	358,0	355,5	362,5	193,1	205,8	219,6	217,1	224,1	72,0	84,7	98,5	96,0	103,0	101,6
4"	339,5	355,4	366,0	374,5	370,5	201,1	217,0	227,6	236,1	232,1	55,0	71,0	81,5	90,0	86,0	101,6

MODELO F1200

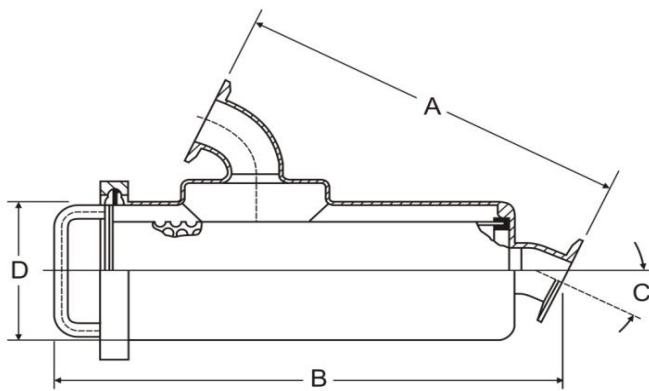
Bitola	A					B					C					ØD
	Ø	solda	TC	RJT	SMS	DIN	solda	TC	RJT	SMS	DIN	solda	TC	RJT	SMS	
1"	600,5	613,2	627,0	616,5	624,5	462,1	474,8	488,6	478,1	486,1	72,0	84,7	98,5	88,0	96,0	101,6
1½"	600,5	613,2	627,0	620,5	624,5	462,1	474,8	488,6	482,1	486,1	72,0	84,7	98,5	92,0	96,0	101,6
2"	600,5	613,2	627,0	620,5	624,5	462,1	474,8	488,6	482,1	486,1	72,0	84,7	98,5	92,0	96,0	101,6
2½"	600,5	613,2	627,0	624,5	627,5	462,1	474,8	488,6	486,1	489,1	72,0	84,7	98,5	96,0	99,0	101,6
3"	611,5	624,2	638,0	635,5	642,5	473,1	485,8	499,6	497,1	504,1	72,0	84,7	98,5	96,0	103,0	101,6
4"	619,5	635,3	646,0	654,5	650,5	481,1	497,0	507,6	516,1	512,1	55,0	71,0	81,5	90,0	86,0	101,6

MODELO F750

Bitola	A					B					C					ØD
	Ø	solda	TC	RJT	SMS	DIN	solda	TC	RJT	SMS	DIN	solda	TC	RJT	SMS	
1"	320,0	332,7	346,5	336,0	344,0	156,1	168,8	182,6	172,1	180,1	97,0	109,7	123,5	113,0	121,0	152,4
1½"	320,0	332,7	346,5	336,0	344,0	156,1	168,8	182,6	176,1	180,1	97,0	109,7	123,5	117,0	121,0	152,4
2"	320,0	332,7	346,5	336,0	344,0	156,1	168,8	182,6	176,1	180,1	97,0	109,7	123,5	117,0	121,0	152,4
2½"	320,0	332,7	346,5	336,0	347,0	156,1	168,8	182,6	180,1	183,1	97,0	109,7	123,5	121,0	124,0	152,4
3"	320,0	332,7	346,5	344,0	351,0	156,1	168,8	182,6	180,1	187,1	97,0	109,7	123,5	121,0	128,0	152,4
4"	327,0	343,4	353,5	362,0	358,0	163,6	179,5	190,1	198,6	194,6	80,0	96,0	106,5	115,0	111,0	152,4
5"	343,5	359,4	370,0	378,5	393,5	177,4	193,3	203,9	212,4	227,4	80,0	96,0	106,5	115,0	111,0	152,4
6"	343,5	359,4	370,0	378,5	393,5	177,4	193,3	203,9	212,4	227,4	80,0	96,0	106,5	115,0	111,0	152,4

MODELO F1500

Bitola	A					B					C					ØD
	Ø	solda	TC	RJT	SMS	DIN	solda	TC	RJT	SMS	DIN	solda	TC	RJT	SMS	
1"	602,5	615,2	629,0	618,5	626,5	436,1	448,8	462,6	452,1	460,1	97,0	109,7	123,5	113,0	121,0	152,4
1½"	602,5	615,2	629,0	622,5	626,5	436,1	448,8	462,6	456,1	460,1	97,0	109,7	123,5	117,0	121,0	152,4
2"	602,5	615,2	629,0	622,5	626,5	436,1	448,8	462,6	456,1	460,1	97,0	109,7	123,5	117,0	121,0	152,4
2½"	602,5	615,2	629,0	626,5	629,5	436,1	448,8	462,6	460,1	463,1	97,0	109,7	123,5	121,0	124,0	152,4
3"	602,5	615,2	629,0	626,5	633,5	436,1	448,8	462,6	460,1	467,1	97,0	109,7	123,5	121,0	128,0	152,4
4"	610,0	625,9	636,5	645,0	641,0	443,6	459,5	470,1	478,6	474,6	80,0	95,9	106,5	115,0	111,0	152,4
5"	623,5	639,4	650,0	658,5	673,5	457,0	472,9	483,5	492,0	503,0	80,0	95,9	106,5	115,0	126,0	152,4
6"	623,5	639,4	650,0	658,5	673,5	457,0	472,9	483,5	492,0	507,0	80,0	95,9	106,5	115,0	130,0	152,4



MODELO F600 tipo Y

Bitola	A				
Ø	solda	TC	RJT	SMS	DIN
1"	246,2	271,6	299,2	278,2	294,2
1½"	273,3	298,7	326,3	313,3	321,3
2"	300,0	325,4	353,0	340,0	348,0
2½"	326,6	352,0	379,6	374,3	380,6
3"	352,8	278,2	405,8	400,8	414,8
4"	404,3	429,4	457,3	474,3	466,3

B					C	ØD
solda	TC	RJT	SMS	DIN		
199,1	217,0	226,6	226,3	226,3	26°	101,6
209,3	232,2	239,9	239,9	239,9	28°	101,6
220,0	248,4	254,9	254,9	254,9	29°	101,6
231,3	265,3	271,1	271,1	272,9	31°	101,6
252,3	292,5	297,3	297,3	301,4	31°	101,6
278,2	331,5	334,3	339,8	332,7	30°	101,6

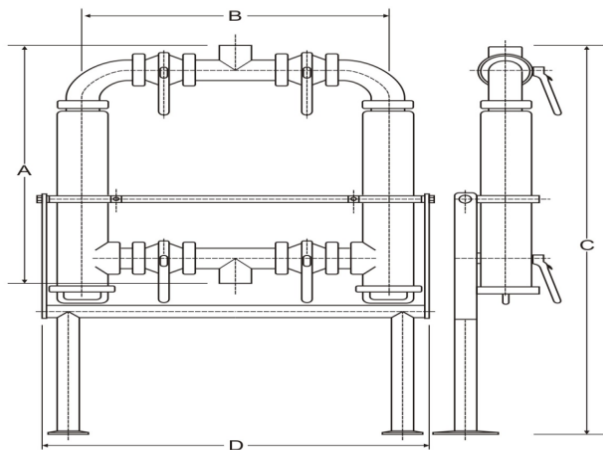
MODELO F750 tipo y

Bitola	A				
Ø	solda	TC	RJT	SMS	DIN
1"	236,8	262,2	289,8	268,8	284,8
1½"	263,6	289,0	316,6	303,6	311,6
2"	290,4	315,8	343,4	330,4	338,4
2½"	317,3	342,7	370,3	365,3	371,3
3"	344,2	369,6	397,2	392,2	406,2
4"	397,2	428,9	450,2	467,2	459,2
6"	510,0	541,8	563,0	580,0	610,0

B					C	ØD
solda	TC	RJT	SMS	DIN		
341,7	359,7	341,6	362,8	368,8	34°	152,4
353,5	376,4	386,1	381,1	384,1	35°	152,4
365,4	393,8	402,3	397,3	400,3	36°	152,4
377,9	411,9	419,7	417,7	419,5	37°	152,4
390,4	430,5	437,4	435,4	439,5	38°	152,4
417,7	471,1	475,8	479,4	477,3	36°	152,4
481,2	493,9	501,9	509,2	520,7	37°	152,4

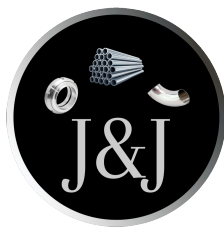
MODELO 2F 1200

Bitola	A	B	C	D
1"	624,0	490,0	1414,0	754,0
1½"	661,4	508,0	1442,0	772,0
2"	718,0	547,0	1480,0	811,0
2½"	739,1	549,0	1500,0	813,0
3"	770,1	560,4	1525,0	824,4
4"	842,4	576,6	1565,0	840,6



MODELO 2F 1500

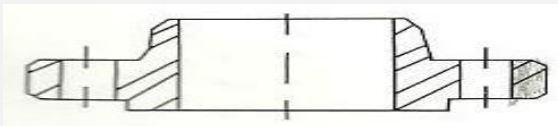
Bitola	A	B	C	D
1"	500,5	538,4	1415,0	802,4
1½"	520,4	556,8	1444,0	820,8
2"	539,4	594,8	1482,0	858,8
2½"	558,5	596,4	1502,0	860,4
3"	577,5	608,4	1527,0	872,4
4"	629,5	631,0	1579,0	895,0
5"	665,9	700,0	1629,0	964,0
6"	705,3	750,0	1669,0	1014,0



Tipo de Flanges

Pescoço

Recebe solda circunferencial no pescoço, o que facilita o exame da solda por raio X. São resistentes à tensões e reduzem as turbulências e erosões dentro das tubulações. São recomendadas para trabalhos em qualquer situação de temperatura e pressão.



Encaixe

Dotada de um encaixe que recebe a tubulação a ser soldada, utilizando somente a solda externa. Facilita a condução de fluidos. Recomendadas para trabalhar em qualquer situação de pressão e temperatura, desde que não sujeitas a severos gradientes térmicos. Aplicáveis em diâmetros menores.



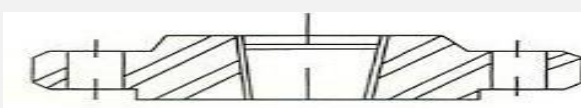
Sobreposto

Sobre põe ao tubo e recebe solda interna e externa. De fácil aplicação e recomendadas para pressão e esforço moderados. Tem uma vantagem econômica sobre a flange de perçoço.



Roscadas

Provida de rosca interna e usada para conectar outros componentes roscados em baixa pressão. Recomendados para temperaturas e tensões moderadas em qualquer pressão. Também são aplicáveis em diâmetros menores.



Cego

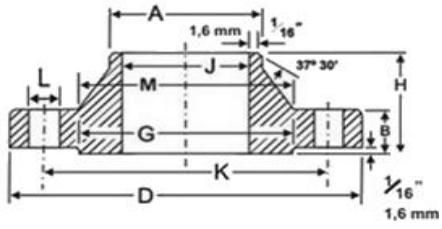
Utilizadas para interromper a passagem de fluidos em tubulações, válvulas e bombas. Usadas também para facilitar a inspeção da linha. Recomendadas para trabalhos em qualquer situação de pressão e temperatura, desde que não sujeitos a golpes de ariete.



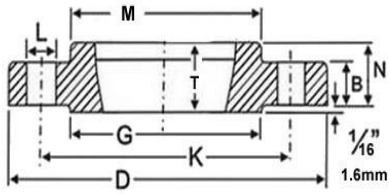
Solto

Apropriadas para pestanas. Não são fixadas as tubulações por soldas, somente fixada a outra flange por parafusos, facilitando por estar solta na linha. Recomendadas para baixas pressões, representando baixo custo, pois são utilizadas em linhas de aço inox trabalhando em conjunto as pestanas.

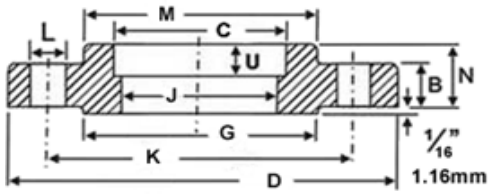




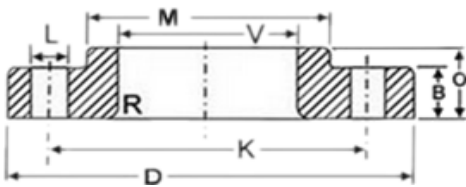
Pescoço (Welding Neck)



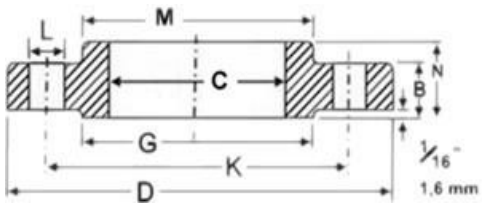
Roscada (Threaded)



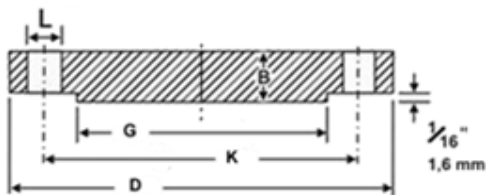
Encaixe Solda (Socket Welding)



Solto (Lap Joint)



Sobreposto (Slip-On)



Cego (Blind)

FLANGES 150#

Diâmetro Nominal	Medidas Comuns					Diâmetro Externo do Charnifro	Altura Total Flange			Diâmetro Interno			Raio da Ranhura	Profundidade da Rosca	Profundidade do Encaixe	Furos		
	Diâmetro Externo	Diâmetro Externo do RF	Diâmetro Externo do Pescoço	Espessura da Flange	Centro entre Furos		Sobreposto Roscada Encaixe	Pescoço	Solto	Sobreposto Encaixe	Pescoço Encaixe	Solto				Número de Furos	Diâmetro dos Furos	Diâmetro dos Parafusos
	D	G	M	B	K		A	N	H	O	C	J				V	R	T
1/4 3/4 1	88,9	34,9	30,2	11,2	60,3	21,3	15,9	47,6	15,9	22,2	15,8	22,9	3,2	15,9	9,5	4	15,9	12,7
	98,4	42,9	38,1	12,7	69,8	26,7	15,9	52,4	15,9	27,7	20,9	28,2	3,2	15,9	11,1	4	15,9	12,7
	108,0	50,8	49,2	14,3	79,4	33,4	17,5	55,6	17,5	34,5	26,6	34,9	3,2	17,5	12,7	4	15,9	12,7
1 1/4 1 1/2 2	117,0	63,5	58,7	15,9	88,9	42,2	20,6	57,2	20,6	43,2	35,1	43,7	4,8	20,6	14,3	4	15,9	12,7
	127,0	73,0	65,1	17,5	98,4	48,3	22,2	61,9	22,2	49,5	40,9	50,0	6,4	22,2	15,9	4	15,9	12,7
	152,0	92,1	77,8	19,1	121,0	60,3	25,4	63,5	25,4	61,9	52,5	62,5	7,9	25,4	17,5	4	19,0	15,9
2 1/4 3 3 1/2	178,0	105,0	90,5	22,2	140,0	73,0	28,6	69,8	28,6	74,6	62,7	75,4	7,9	28,6	19,0	4	19,0	15,9
	190,0	127,0	108,0	23,9	152,0	88,9	30,2	69,8	30,2	90,7	77,9	91,4	9,5	30,2	20,6	4	19,0	15,9
	216,0	140,0	122,0	23,9	178,0	101,6	31,8	71,4	31,8	103,4	90,1	104,1	9,5	31,8	22,2	8	19,0	15,9
4 5 6	229,0	157,0	135,0	23,9	190,0	114,3	33,3	76,2	33,3	116,1	102,3	116,8	11,1	33,3	23,8	8	19,0	15,9
	254,0	186,0	164,0	23,9	216,0	141,3	36,5	88,9	36,5	143,8	128,2	144,4	11,1	36,5	23,8	8	22,2	19,0
	279,0	216,0	192,0	25,4	241,0	168,3	39,7	88,9	39,7	170,7	154,1	171,4	12,7	39,7	27,0	8	22,2	19,0
8 10 12	343,0	270,0	246,0	28,6	298,0	219,1	44,4	102,0	44,4	221,5	202,7	222,2	12,7	44,4	31,7	8	22,2	19,0
	406,0	324,0	305,0	30,2	362,0	273,0	49,2	102,0	49,2	276,2	254,6	277,4	12,7	49,2	33,3	12	25,4	22,2
	483,0	381,0	365,0	31,8	432,0	323,8	55,6	114,0	55,6	327,0	304,8	328,2	12,7	55,6	39,7	12	25,4	22,2
14 16 18	533,0	413,0	400,0	34,9	476,0	355,6	57,2	127,0	79,4	359,2	336,5	360,2	12,7	57,2	41,3	12	28,6	25,4
	597,0	470,0	457,0	36,6	540,0	406,4	63,5	127,0	87,3	410,5	387,0	411,2	12,7	63,5	44,4	16	28,6	25,4
	635,0	533,0	505,0	39,7	578,0	457,0	68,3	140,0	96,8	461,8	438,0	462,3	12,7	68,3	49,2	16	31,8	28,6
20 24 26	698,0	584,0	559,0	42,9	635,0	508,0	73,0	144,0	103,0	513,1	489,0	514,4	12,7	73,0	54,0	20	31,8	28,6
	813,0	692,0	664,0	47,7	749,0	610,0	82,6	152,0	111,0	616,0	590,5	616,0	12,7	82,6	63,5	20	34,9	31,8
	869,9	742,9	723,9	50,8	806,4	660,4	85,7	127,0		666,8						24	34,9	31,8
28 30 32	927,1	793,7	781,0	52,4	863,6	711,2	87,3	128,6		717,6						28	34,9	31,8
	984,2	857,2	831,8	54,0	914,4	762,0	88,9	130,2		768,4						28	34,9	31,8
	1060,4	908,0	889,0	57,1	977,9	812,8	92,1	133,4		819,2						28	41,3	34,9
34 36	1111,2	958,8	939,8	58,7	1028,7	863,6	93,7	134,9		870,0						32	41,3	34,9
	1168,4	1022,3	996,9	60,3	1085,8	914,4	95,2	136,5		920,8						32	41,3	34,9

FLANGES 300#

Diâmetro Nominal	Medidas Comuns					Diâmetro Externo do Chanfro	Altura Total da Flange				Diâmetro Interno			Raio da Ranhura	Profundidade da Rosca	Profundidade do Encaixe	Furos		
	Diâmetro Externo	Diâmetro Externo do RF	Externo do Pescoço	Espessura da Flange	Centro entre Furos		Sobreposto Roscada Encaixe	Pescoço	Solo	Sobreposto Encaixe	Pescoço Encaixe	Solo	Número de furos				Diâmetro dos Furos	Diâmetro dos Parafusos	
	D	G	M	B	K		A	N	H	O	C	J	V				R	T	U
½ ¾ 1	95,2	34,9	38,1	14,3	66,7	21,3	22,2	52,4	22,2	22,2	15,8	22,9	3,2	15,9	9,5	4	15,9	12,7	
	117,0	42,9	47,6	15,9	82,6	26,7	25,4	57,2	25,4	27,7	20,9	26,2	3,2	15,9	11,1	4	19,0	15,9	
	124,0	50,8	54,0	17,5	88,9	33,4	27,0	61,9	27,0	34,5	26,6	34,9	3,2	17,5	12,7	4	19,0	15,9	
1¼ 1½ 2	133,0	63,5	63,5	19,1	98,4	42,2	27,0	65,1	27,0	43,2	35,1	43,7	4,8	20,6	14,3	4	19,0	15,9	
	156,0	73,0	69,8	20,7	114,0	48,3	30,2	68,3	30,2	49,5	40,9	50,0	6,4	22,2	15,9	4	22,2	19,0	
	165,0	92,1	84,1	22,3	127,0	60,3	33,3	69,8	33,3	61,9	52,5	62,5	7,9	28,6	17,5	8	19,0	15,9	
2½ 3 3½	190,0	105,0	100,0	25,4	149,0	73,0	38,1	76,2	38,1	74,6	62,7	75,4	7,9	31,8	19,0	8	22,2	19,0	
	210,0	127,0	117,0	28,6	168,0	88,9	42,9	79,4	42,9	90,7	77,9	91,4	9,5	31,8	20,6	8	22,2	19,0	
	229,0	140,0	133,0	30,2	184,0	101,6	44,4	81,0	44,4	103,4	90,1	104,1	9,5	36,5	22,2	8	22,2	19,0	
4 5 6	254,0	157,0	146,0	31,8	200,0	114,3	47,6	85,7	47,6	116,1	102,3	116,8	11,1	36,5	23,8	8	22,2	19,0	
	279,0	186,0	178,0	35,0	235,0	141,3	50,8	98,4	50,8	143,8	128,2	144,4	11,1	42,9		8	22,2	19,0	
	318,0	216,0	206,0	36,6	270,0	168,3	52,4	98,4	52,4	170,7	154,1	171,4	12,7	46,0		12	22,2	19,0	
8 10 12	381,0	270,0	260,0	41,3	330,0	219,1	61,9	111,0	61,9	221,5	202,7	222,2	12,7	50,8		12	25,4	22,2	
	444,0	324,0	321,0	47,7	387,0	273,0	66,7	117,0	95,2	276,2	254,6	277,4	12,7	55,6		16	28,6	25,4	
	521,0	381,0	375,0	50,8	451,0	323,8	73,0	130,0	102,0	327,0	304,8	328,2	12,7	60,3		16	31,8	28,6	
14 16 18	584,0	413,0	425,0	54,0	514,0	355,6	76,2	143,0	111,0	359,2	336,5	360,2	12,7	63,5		20	31,8	28,6	
	648,0	470,0	483,0	57,2	572,0	406,4	82,6	146,0	121,0	410,5	387,0	411,2	12,7	68,3		20	34,9	31,8	
	711,0	533,0	533,0	60,4	629,0	457,0	88,9	159,0	130,0	461,8	438,0	462,3	12,7	69,8		24	34,9	31,8	
20 24 26	775,0	584,0	587,0	63,5	686,0	508,0	95,2	162,0	140,0	513,1	489,0	514,4	12,7	73,0		24	34,9	31,8	
	914,0	692,0	702,0	69,9	813,0	610,0	106,0	168,0	152,0	616,0	590,5	616,0	12,7	82,6		24	41,3	34,9	
	971,5	749,3	720,7	79,4	876,3	666,7	184,2	184,2		666,8						28	44,4	41,3	
28 30 32	1035,0	800,1	774,7	85,7	939,8	717,5	196,9	196,9		717,6						28	44,4	41,3	
	1092,2	857,2	827,1	92,1	996,9	768,3	209,6	209,6		768,4						28	47,6	44,4	
	1149,3	914,4	881,0	98,4	1054,1	819,1	222,3	222,3		819,2						28	50,8	47,6	
34 36	1206,5	965,2	936,6	101,6	1104,9	871,5	231,8	231,8		870,0						28	50,8	47,6	
	1270,0	1022,3	990,6	104,8	1168,4	922,3	241,3	241,3		920,8						32	54,0	50,8	



TUBOS DE AÇO INOXIDÁVEL COM E SEM COSTURA - PADRÃO SCHEDULE

ESPESSURA DE PAREDE (mm) / PESO TEÓRICO (Kg/m)

DIÂMETRO		SCH 5S		SCH 10S		SCH 40S		SCH 80S		SCH 160S		SCH XXS	
Nominal (pol)	Externo (mm)	Parede (mm)	peso (kg / m)	Parede (mm)	peso (kg / m)	Parede (mm)	peso (kg / m)	Parede (mm)	peso (kg / m)	Parede (mm)	peso (kg / m)	Parede (mm)	peso (kg / m)
1/8"	10,29			1,24	0,281	1,73	0,371	2,41	0,475				
1/4"	13,72			1,65	0,498	2,24	0,644	3,02	0,809				
3/8"	17,15			1,65	0,640	2,31	0,858	3,20	1,117				
1/2"	21,34	1,65	0,813	2,11	1,016	2,77	1,288	3,73	1,644	4,78	1,981	7,47	2,593
3/4"	26,67	1,65	1,033	2,11	1,297	2,87	1,710	3,91	2,227	5,56	2,938	7,82	3,690
1"	33,40	1,65	1,311	2,77	2,124	3,38	2,540	4,55	3,286	6,35	4,299	90,09	5,531
1.1/4"	42,16	1,65	1,673	2,77	2,731	3,56	3,440	4,85	4,529	6,35	5,692	9,70	7,881
1.1/2"	48,26	1,65	1,925	2,77	3,154	3,68	4,106	5,08	5,490	7,14	7,349	10,15	9,689
2"	60,33	1,65	2,423	2,77	3,991	3,91	5,522	5,54	7,598	8,74	11,286	11,07	13,649
2.1/2"	73,03	2,11	3,746	3,05	5,342	5,16	8,766	7,01	11,584	9,53	15,147	14,02	20,708
3"	88,90	2,11	4,584	3,05	6,554	5,49	11,462	7,62	15,502	11,13	21,665	15,24	28,098
3.1/2"	101,60	2,11	5,254	3,05	7,523	5,74	13,772	8,08	18,914			16,15	34,542
4"	114,30	2,11	5,925	3,05	8,493	6,02	16,316	8,56	22,656	13,49	34,039	17,12	41,643
5"	141,30	2,77	9,605	3,40	11,736	6,55	22,092	9,53	31,432	15,88	49,851	19,05	58,291
6"	168,28	2,77	11,475	3,40	14,032	7,11	28,682	10,97	43,194	18,26	68,566	21,95	80,395
8"	219,08	2,77	14,997	3,76	20,264	8,18	43,181	12,70	65,604	23,01	112,925	22,23	109,531
10"	273,05	3,40	22,948	4,19	28,197	9,27	61,204	12,70	82,760	28,58	174,883	25,40	157,446
12"	323,85	3,96	31,707	4,57	36,522	9,53	74,977	12,70	98,909	33,32	242,302	25,40	189,743
14"	355,60	3,96	34,854	4,78	41,973	9,53	82,550	12,70	109,001	35,71	285,924		
16"	406,40	4,19	42,182	4,78	48,051	9,53	94,668	12,70	125,150	40,49	370,837		
18"	457,20	4,19	47,510	4,78	54,129	9,53	106,785	12,70	141,298	45,24	466,486		
20"	508,00	4,78	60,207	5,54	69,674	9,53	118,903	12,70	157,446	50,01	573,289		
22"	558,80	4,78	66,285	5,54	76,718	9,53	131,021	12,70	173,595	53,98	682,072		
24"	609,60	5,54	83,763	6,35	95,881	9,53	143,138	12,70	189,743	59,54	819,747		
26"	660,40	6,35	90,807	7,92	103,955	9,53	155,256	12,70	205,891				
28"	711,20	6,35	112,029	7,92	139,416	9,53	167,373	12,70	222,040				
30"	762,00	6,35	120,103	7,92	149,487	9,53	179,491	12,70	238,188				

TUBOS REDONDOS OD

DIÂMETRO		ESPESSURA DE PAREDE (mm) / PESO TEÓRICO (Kg/m)									
Nominal (pol)	Externo (mm)	Parede (mm)	peso (kg / m)	Parede (mm)	peso (kg / m)	Parede (mm)	peso (kg / m)	Parede (mm)	peso (kg / m)	Parede (mm)	peso (kg / m)
1/4"	6,35	0,70	0,10	1,00	0,13	1,20	0,15	1,50	0,18		
3/8"	9,53	0,70	0,15	1,00	0,21	1,20	0,25	1,50	0,30		
1/2"	12,70	0,70	0,21	1,00	0,29	1,20	0,34	1,50	0,42	2,00	0,54
5/8"	15,87	0,70	0,27	1,00	0,37	1,20	0,44	1,50	0,54	2,00	0,69
3/4"	19,05	1,00	0,45	1,20	0,54	1,50	0,66	2,00	0,85		
7/8"	22,22	1,00	0,53	1,20	0,63	1,50	0,78	2,00	1,01		
1"	25,40	1,00	0,61	1,20	0,73	1,50	0,90	2,00	1,17	3,00	1,68
1.1/4"	31,75	1,00	0,77	1,20	0,92	1,50	1,14	2,00	1,49	3,00	2,16
1.1/2"	38,10	1,00	0,93	1,20	1,11	1,50	1,37	2,00	1,81	3,00	2,64
1.3/4"	44,45	1,00	1,09	1,20	1,30	1,50	1,61	2,00	2,12	3,00	3,11
2"	50,80	1,00	1,25	1,20	1,49	1,50	1,85	2,00	2,44	3,00	3,59
2.1/2"	63,50			1,20	1,87	1,50	2,33	2,00	3,08	3,00	4,54
3"	76,20			1,20	2,25	1,50	2,80	2,00	3,71	3,00	5,50
4"	101,60					1,50	3,76	2,00	4,99	3,00	7,40
5"	127,00							2,00	6,26	3,00	9,31
6"	152,40							2,00	7,53	3,00	11,22
8"	203,20							2,00	10,07	3,00	15,03
10"	254,00							2,00	12,61	3,00	18,85
12"	304,80							2,00	15,16	3,00	22,66

TUBOS ESTRUTURAIS QUADRADOS E RETANGULARES

TUBOS ESTRUTURAIS QUADRADOS

Bitola (mm)	PESO EM QUILOS POR METRO (KG/M)				
	Espessura (mm)				
	1,00	1,20	1,50	2,00	3,00
10 x 10	0,29	0,34	0,41	0,54	0,73
15 x 15	0,45	0,53	0,65	0,84	1,19
20 x 20	0,60	0,72	0,89	1,16	1,66
25 x 25	0,76	0,90	1,12	1,47	2,13
30 x 30	0,92	1,09	1,36	1,78	2,60
35 x 35	1,07	1,28	1,59	2,10	3,07
40 x 40	1,23	1,47	1,83	2,41	3,54
50 x 50	1,56	1,85	2,30	3,04	4,48
60 x 60	1,88	2,22	2,77	3,66	5,42
70 x 70	2,20	2,60	3,24	4,29	6,36
80 x 80	2,52	2,97	3,71	4,92	7,30
100 x 100	3,15	3,73	4,65	6,17	9,18
120 x 120	3,79	4,54	5,67	7,53	11,22
150 x 150	4,74	5,69	7,10	9,44	14,08

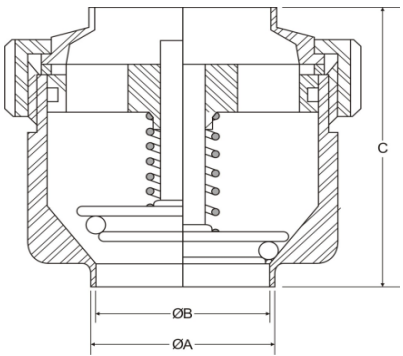
TUBOS ESTRUTURAIS RETANGULARES

Bitola (mm)	PESO EM QUILOS POR METRO (KG/M)				
	Espessura (mm)				
	1,00	1,20	1,50	2,00	3,00
15 x 30	0,69	0,83	1,02	1,34	1,93
20 x 10	0,45	0,54	0,66	0,86	1,21
25 x 15	0,61	0,73	0,90	1,18	1,69
30 x 10	0,61	0,73	0,90	1,18	1,69
30 x 15	0,69	0,83	1,02	1,34	1,93
30 x 20	0,77	0,92	1,14	1,49	2,17
35 x 15	0,77	0,92	1,14	1,49	2,17
35 x 20	0,85	1,02	1,26	1,65	2,41
40 x 10	0,77	0,92	1,14	1,49	2,17
40 x 15	0,85	1,02	1,26	1,65	2,41
40 x 20	0,93	1,11	1,38	1,81	2,65
40 x 30	1,09	1,30	1,62	2,13	3,12
50 x 15	1,01	1,21	1,50	1,97	2,89
50 x 20	1,09	1,30	1,62	2,13	3,12
50 x 25	1,17	1,40	1,74	2,29	3,36
50 x 30	1,25	1,50	1,86	2,45	3,60



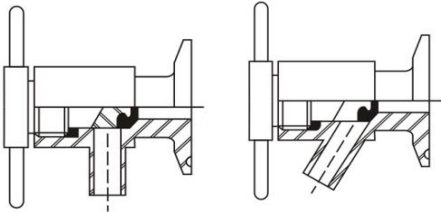
Válvula de retenção para solda (VRA)

	ØA	ØB	C
1"	25,4	22,4	93
1½"	38,1	35,1	93
2"	50,8	47,8	104
2½"	63,5	59,5	122
3"	76,2	72,2	122
4"	101,6	97,6	154
5"	127	122	176
6"	152,4	147,4	176
8"	203,2	198,2	212

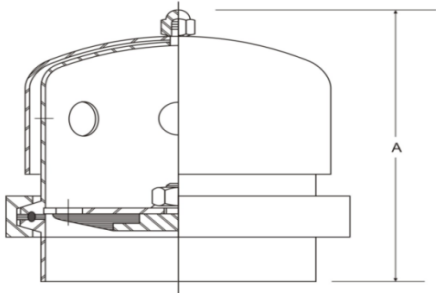


Torneira de amostra

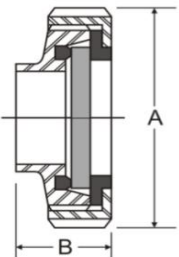
Terminais	
TC	½" e ¾"
	1" e 1½"
BSP	½"
	¾"
NPT	½"
	¾"



Válvula quebra vácuo



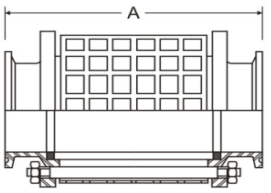
Visor de linha tipo macho (medidas e mm)



Ø	A	B	Pressão Máx. (Kgf/cm²)
1"	63,0	31,0	15,0
1½"	78,0	31,0	11,0
2"	92,0	31,0	10,0
2½"	112,0	35,0	10,0
3"	127,0	40,0	8,0
4"	148,0	41,0	6,0
5"	178,0	57,0	5,0
6"	210,0	62,0	4,0

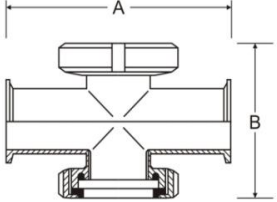
Ø	A
2"	82,0
4"	117,0

Visor de linha tubular (medidas e mm)



Ø	solda	2TC	A					
			RJT		SMS		DIN	
			2M	M-NP	2M	M-NP	2M	M-NP
1"	145,0	170,4	198,0	184,5	177,0	174,0	193,0	189,0
1½"	145,0	170,4	198,0	184,5	185,0	178,0	193,0	189,0
2"	145,0	170,4	198,0	184,5	185,0	178,0	193,0	190,0
2½"	149,0	174,4	202,0	188,5	197,0	186,0	203,0	200,0
3"	153,0	178,4	206,0	192,5	201,0	190,0	215,0	208,0
4"	171,0	202,8	224,0	217,5	241,0	223,0	233,0	230,0

Visor de linha tipo cruzeta (medidas e mm)



Ø	A					B
	solda	TC	SMS	RJT	DIN	
1"	96	121,4	149	128	144	93,4
1½"	114,4	140	167,4	154	163	105
2"	152,4	177,8	205,4	192	202	119
2½"	154	179,4	207	202	208	139,5
3"	166	191,4	219	214	228	162,2
4"	197	228,8	250	267	259	189,6
5"	226	257,8	-	-	-	247
6"	226	257,8	-	-	-	282,4

Os visores são fabricados em borossilicato temperado que possui alta resistência a ataques químicos, suporta temperaturas de até 320° C e tolera choques térmicos de até 265° C

Sob consulta
Para as normas DIN, RJT e SMS foram considerada terminais tipo macho.

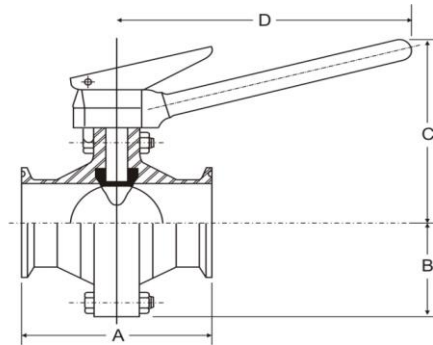


Pneumática

(medidas e mm)

Pressão de teste hidrostático: 1" a 3" - 13kgf/cm² 22°C
4" - 6kgf/cm² 22°C

Temperatura máxima de trabalho: EPDM - 90°C
Silicone - 140°C
Viton - 250°C



Ø	DIN								RJT		SMS	
	So1	2TC	2M	MNP	2M	MNP	2N	MNP	A	B	C	
1"	48,0	73,0	92,0	90,0	92,0	83,0	80,0	77,0	75,0	106		
1½"	48,0	73,0	92,0	90,0	92,0	83,0	88,0	81,0	82,0	106		
2"	48,0	73,0	92,0	90,0	92,0	83,0	88,0	81,0	90,0	106		
2½"	52,0	77,0	104,0	102,0	96,0	88,0	100,0	89,0	97,0	106		
3"	52,0	77,0	112,0	106,0	96,0	90,0	100,0	89,0	102,0	158		
4"	64,0	96,0	124,0	122,0	118,0	107,0	140,0	119,0	116,0	158		

Esta válvula possui uma posição intermediária de 45° (entre fechada e aberta), permanecendo assim, ele permite esta regulagem de fluxo.

Pneumática

(medidas e mm)

Para operações automatizadas a Válvula Borboleta pode ser fornecida com atuador pneumático com acionamento por AR retorno por AR ou acionamento por AR e retorno por Mola, assumindo a posição NF (Normalmente Fechada) ou NA (Normalmente Aberta).

Opcionais:

Uma ou duas chaves de fim de curso (microswitches) para indicação remota da posição da válvula (alternativa) também disponível na Válvula Manual)
Válvula Solenóide para controle do ar do Atuador

Torque da Válvula Borboleta:

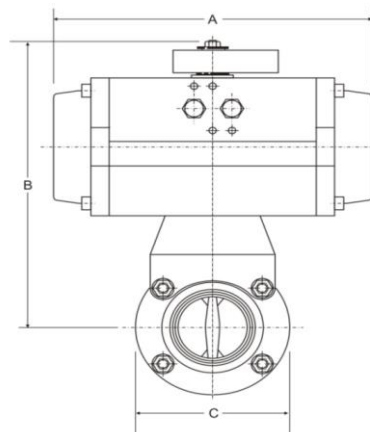
Bitola 1" 1½" 2" 2½" 3" 4"
Torque Kgf.m 0,7 1,0 1,4 2,0 2,4 3,1

Ar Comprimido:

Pressão mínima de ar recomendável: 6,0 Kgf/cm²
Pressão máxima de ar recomendável: 10,0 Kgf/cm²

Ø	A	B	C
1"	152,0	148,6	80,0
1½"	152,0	176,3	96,0
2"	152,0	173,4	111,0
2½"	193,0	184,4	125,0
3"	193,0	201,8	132,0
4"	225,0	210,1	156,0

DEMAIS NORMAS OU GRAUS, SOB CONSULTA.

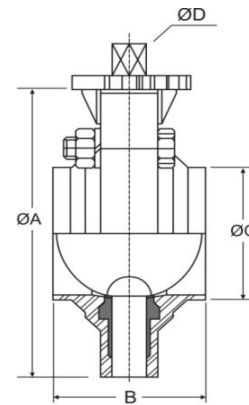




Válvula Borboleta tipo VB com terminais para Solda

(medidas e mm)

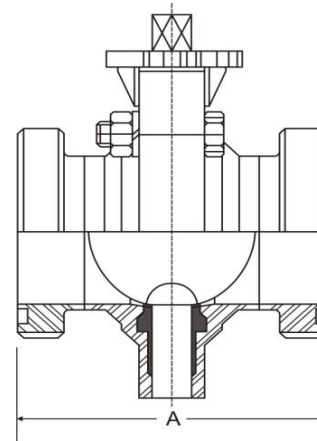
	Ø A	B	Ø C	Ø D
1"	74,0	36,0	25,4	9,5
1.1½"	97,0	44,0	38,1	9,5
2"	110,0	44,0	50,8	9,5
2.1½"	127,0	44,0	63,5	9,5
3"	140,0	48,0	76,2	9,5
4"	160,0	48,0	101,6	9,5
5"	192,0	60,0	127,0	15,0
6"	220,0	60,0	152,4	15,0



Válvula Borboleta tipo VB com dois machos

(medidas e mm)

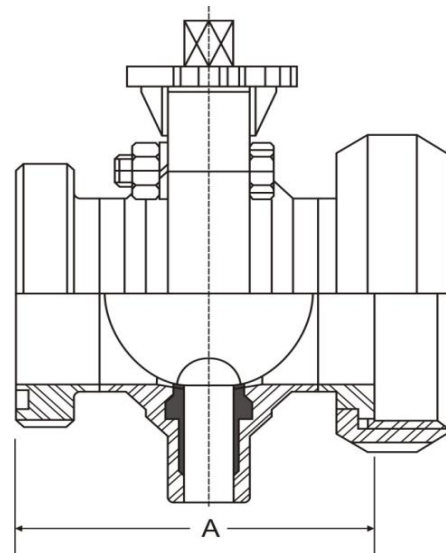
	A			
	DIN	RJT	SMS	IDF
1"	80,0	84,0	76,0	79,0
1.1½"	88,0	92,0	84,0	87,0
2"	88,0	92,0	84,0	87,0
2.1½"	96,0	92,0	92,0	87,0
3"	108,0	96,0	96,0	91,0
4"	108,0	96,0	118,0	91,0
5"	128,0	110,0	130,0	103,0
6"	140,0	118,0	130,0	103,0



Válvula Borboleta tipo VB com Macho / Niple + Porca

(medidas e mm)

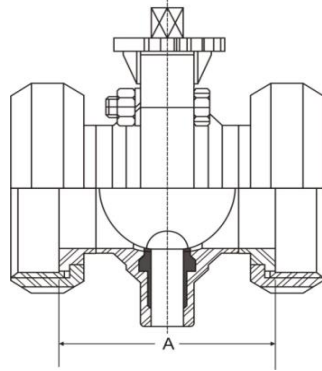
	A			
	DIN	RJT	SMS	IDF
1"	78,0	74,0	69,0	79,0
1.1½"	86,0	83,0	77,0	87,0
2"	88,0	84,0	77,0	87,0
2.1½"	94,0	84,0	81,0	87,0
3"	102,0	88,0	86,0	91,0
4"	105,0	88,0	99,0	91,0
5"	124,0	104,0	115,0	103,0
6"	130,0	109,0	115,0	103,0





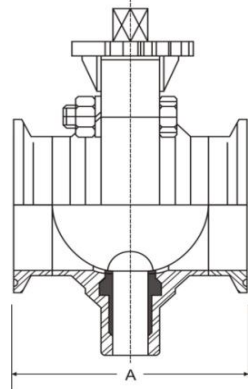
Válvula Borboleta tipo VB com dois Niples + Porca

A				
	DIN	RJT	SMS	IDF
1"	76,0	64,0	62,0	79,0
1.1½"	84,0	74,0	70,0	87,0
2"	88,0	76,0	70,0	87,0
2.1½"	92,0	76,0	70,0	87,0
3"	96,0	80,0	76,0	91,0
4"	102,0	80,0	80,0	91,0
5"	120,0	100,0	100,0	103,0
6"	120,0	100,0	100,0	103,0



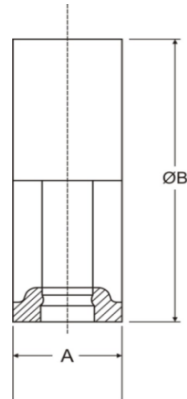
Válvula Borboleta tipo VB com dois Biples Clamp

Ø	A
1"	62,0
1.1½"	70,0
2"	70,0
2.1½"	70,0
3"	74,0
4"	74,0
5"	90,0
6"	90,0



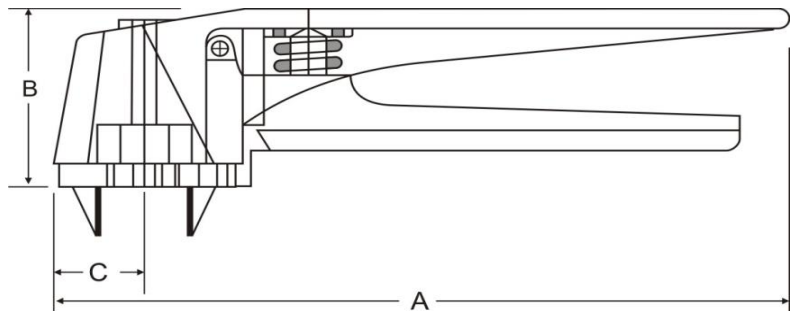
Vedação para Valvula Borboleta tipo VB

Ø	A	
1"	22,7	35,8
1.1½"	22,7	54,0
2"	22,7	66,0
2.1½"	22,7	82,0
3"	22,7	97,0
4"	26,5	116,4
5"	32,5	143,0
6"	32,5	168,0



Manipulo com trava e regulagem de 0 a 90 graus

A	B	C
171	46,0	21,0

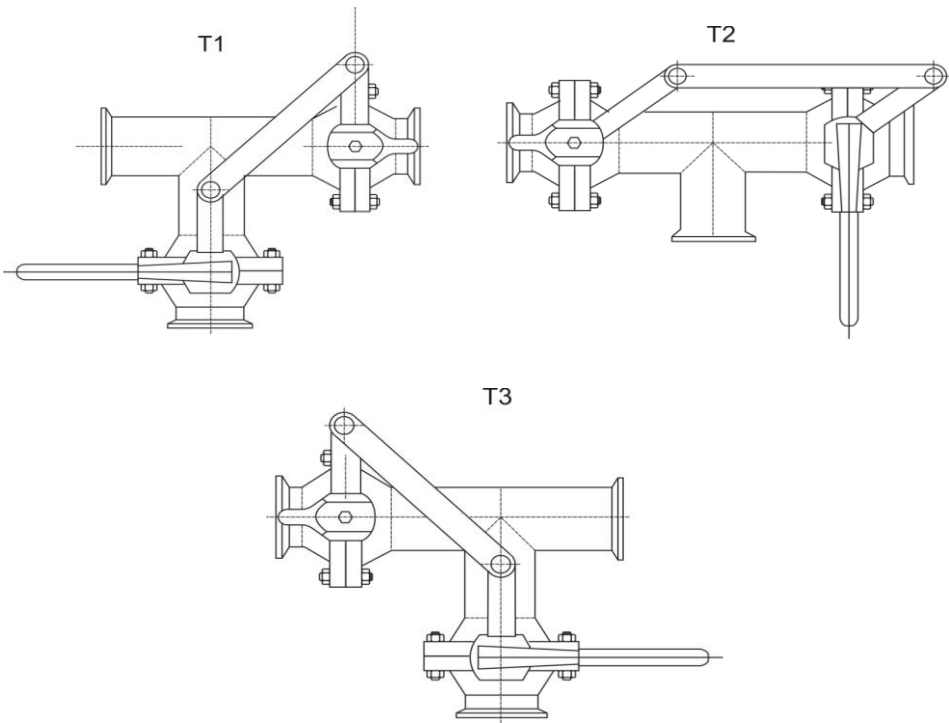




Multivias tipo T

(medidas e mm)

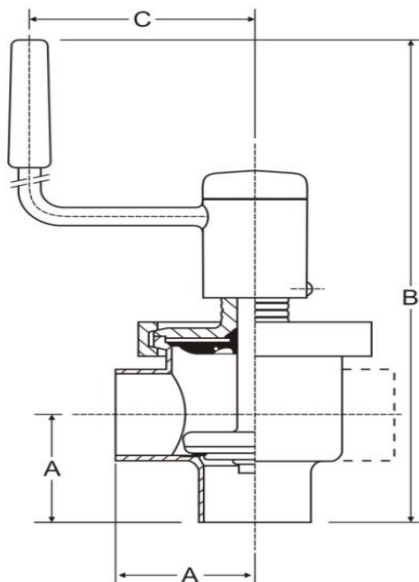
Ø	A	B	TC	C						D			
				RJT	SMS	IDF	DIM	TC	RJT	SMS	IDF	DIM	
1"	40,0	148,0	61,0	75,0	64,0	70,0	72,0	131,0	145,0	134,0	140,0	142,0	
1.1/2"	48,0	148,0	70,0	84,0	77,2	79,0	81,0	140,0	153,5	147,0	149,0	151,0	
2"	55,5	148,0	89,0	103,0	96,2	98,0	100,0	159,0	172,5	166,0	168,0	170,0	
2.1/2"	52,5	194,0	90,0	104,0	101,0	99,0	104,0	160,0	173,5	171,0	169,0	174,0	
3"	66,0	194,0	96,0	110,0	107,0	105,0	114,0	166,0	179,5	177,0	175,0	184,0	
4"	78,0	194,0	114,0	125,0	134,0	129,0	130,0	184,0	195,0	204,0	199,0	200,0	
5"	92,0	230,0	122,0	132,0	-	-	152,0	212,0	222,5	-	-	242,0	
6"	108,5	230,0	129,0	140,0	-	-	163,0	244,0	254,5	-	-	278,0	



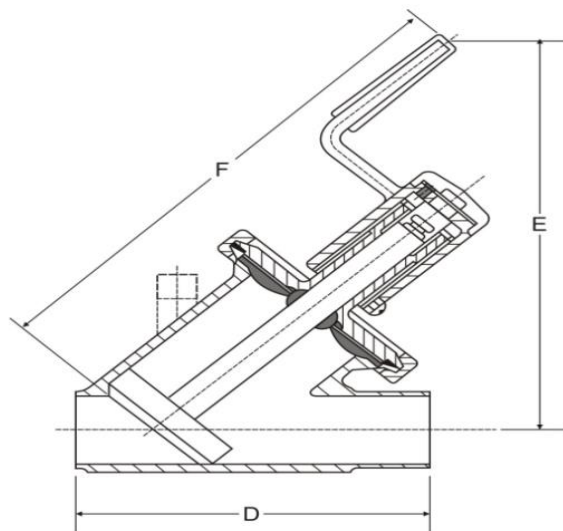


Válvula SMF e SPF

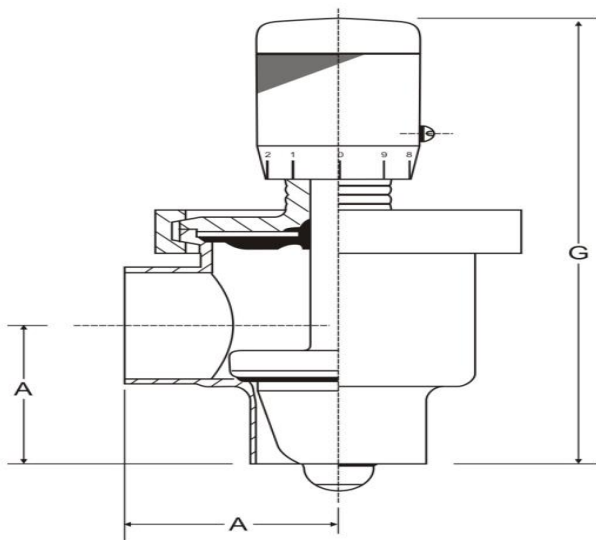
SMF Modelo 20



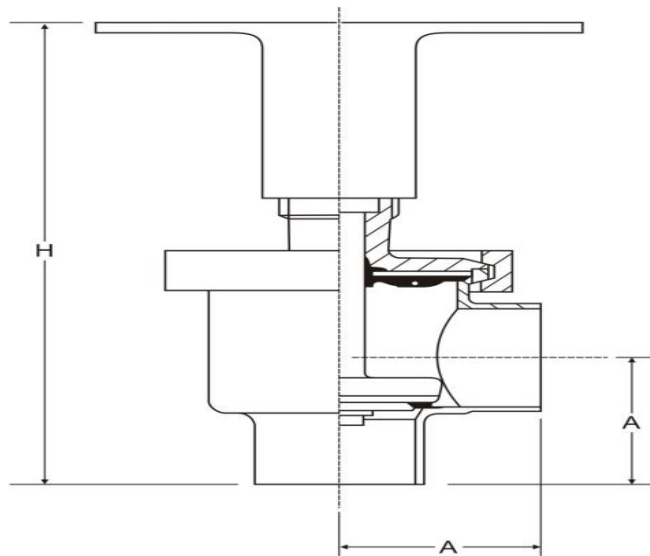
Planagem Reta



Micrométrica



Segurança

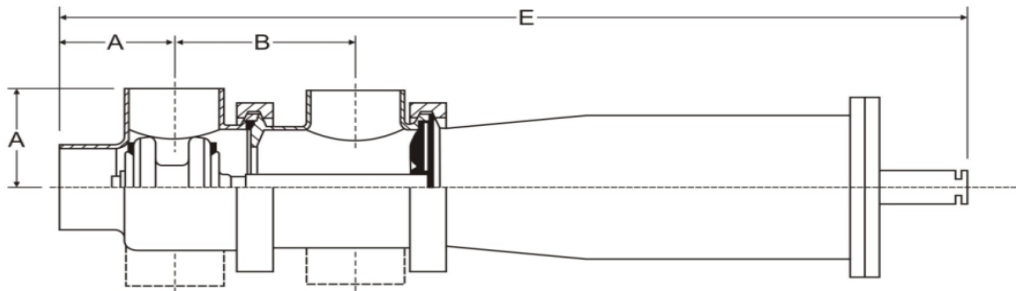


Ø	A	B	C	D	E	F	G	H
1"	48,2	298,5	100,0	-	-	-	214,5	272,5
1½"	48,5	292,5	100,0	-	-	-	208,5	266,5
2"	61,5	302,5	100,0	182,0	204,0	289,5	218,5	276,5
2½"	82,3	337,6	100,0	-	-	-	253,6	311,6
3"	87,3	355,2	100,0	-	-	-	271,2	329,2
4"	133,0	425,0	100,0	-	-	-	341,0	399,0

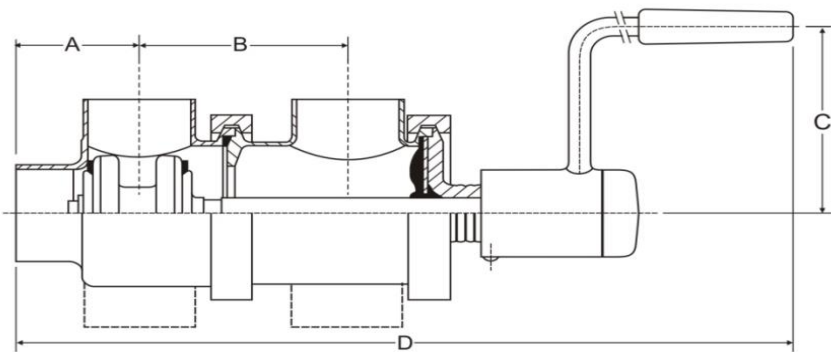
As dimensões referem-se à válvula para solda. Fornecemos também soldadas à terminais TC, RJT, SMS E DIN.



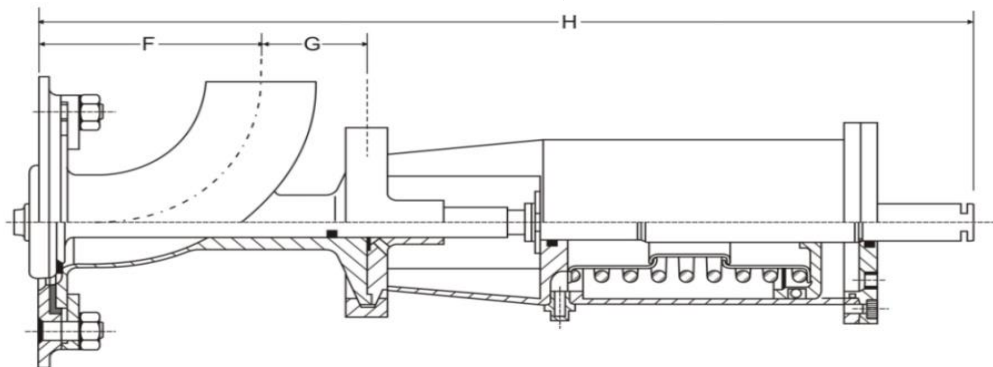
SPF Modelo 21



SPF Modelo 21



SPF Modelo 21



Ø	A	B	C	D	E	F	G	H
1"	48,2	85,7	100,0	298,5	377,0	63,5	38,1	384,8
1½"	48,5	79,5	100,0	292,5	371,0	82,6	44,5	410,3
2"	61,5	94,0	100,0	302,5	381,0	101,6	50,8	435,6
2½"	82,3	113,1	100,0	337,6	416,1	120,7	57,2	461,1
3"	87,3	131,9	100,0	355,2	438,2	139,7	63,5	486,4
4"	133,0	181,0	100,0	425,0	508,0	179,0	76,2	538,4

Nossa linha de válvulas da série SMF / SPF possuem peças modulares e intercambiáveis, facilitando assim a transformação de um modelo em outro. As válvulas manuais podem ser convertidas em pneumáticas apenas trocando-se o comando manual pelo atuador.