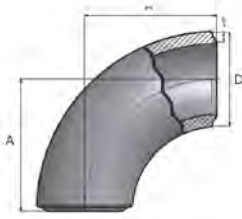


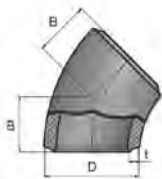
DIMENSIONS & GRADES



PRODUCTION SIZE RANGE ACCORDING TO ANSI B16.9



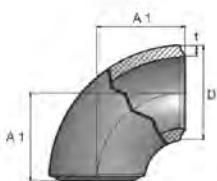
90° LR ELBOWS



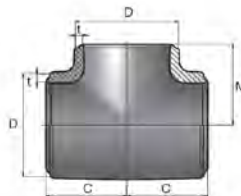
45° LR ELBOWS



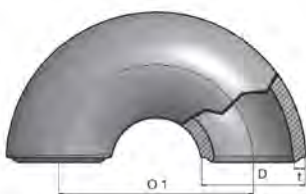
180° LR ELBOWS



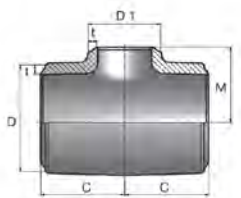
90° SR ELBOWS



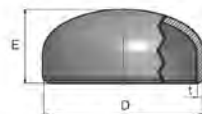
EQUAL TEES



180° SR ELBOWS



REDUCING TEES



CAPS

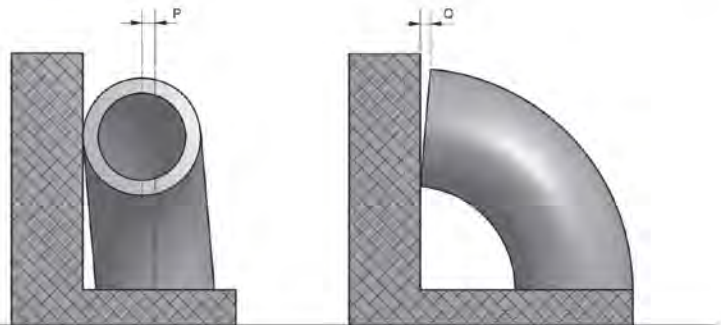
ELBOWS and CAPS								
NOMINAL PIPE SIZE	OUTSIDE DIAMETER D	CENTER to FACE A	CENTER to FACE A1	CENTER to CENTER O	CENTER to CENTER O1	CENTER to FACE B	LENGTH E	
							≤XS	<XS
1/2"	21	38	19	76	38	16	25	25
3/8"	27	38	18	76	36	11	25	25
1"	33	38	25	76	51	22	38	38
1 1/4"	42	48	32	95	64	25	38	38
1 1/2"	48	57	38	114	76	29	38	38
2"	60	76	51	152	102	35	38	44
2 1/2"	73	95	64	191	127	44	38	51
3"	89	114	76	229	152	51	51	64
3 1/2"	102	133	89	267	178	57	64	76
4"	114	152	102	305	203	64	64	76
5"	141	190	127	381	254	79	76	89
6"	168	229	152	457	305	95	89	102
8"	219	305	203	610	406	127	102	127
10"	273	381	254	762	508	159	127	152
12"	324	457	305	914	610	190	152	178
14"	356	533	356	1067	711	222	165	191
16"	406	610	406	1219	813	254	178	203
18"	457	686	457	1372	914	286	203	229
20"	508	762	508	1524	1016	318	229	254
22"	559	838	559	1676	1118	343	254	254
24"	610	914	610	1829	1219	381	267	305
26"	660	991	660			406	267	267
28"	711	1067	711			438	267	267
30"	762	1143	762			470	267	267
32"	813	1219	813			502	267	267
34"	864	1295	864			533	267	267
36"	914	1372	914			565	267	267
38"	965	1448	965			600	305	305
40"	1016	1524	1016			632	305	305
42"	1067	1600	1067			660	305	305
44"	1118	1676	1118			695	343	343
46"	1168	1753	1168			727	343	343
48"	1219	1829	1219			759	343	343
50"	1270	1905	1270			789	367	367
52"	1321	1982	1321			821	381	381
54"	1372	2058	1372			852	393	393
56"	1422	2133	1422			883	406	406

TEES and REDUCERS					
NOMINAL PIPE SIZE	OUTSIDE DIAMETER D	OUTSIDE DIAMETER D1	CENTER to END C	CENTER to END M	LENGTH H
1/2" x 1/2"	27	21	29	29	38
1/2" x 1/2"	27	17	29	29	38
1" x 1"	33	33	38	38	51
1" x 1/2"	33	27	38	38	51
1" x 1/2"	33	21	38	38	51
1 1/4" x 1 1/4"	42	42	48	48	51
1 1/4" x 1"	42	33	48	48	51
1 1/4" x 1/2"	42	27	48	48	51
1 1/4" x 1/2"	42	21	48	48	51
1 1/2" x 1 1/2"	48	48	57	57	63
1 1/2" x 1"	48	42	57	57	63
1 1/2" x 1/2"	48	33	57	57	63
1 1/2" x 1/2"	48	27	57	57	63
1 1/2" x 1/2"	48	21	57	57	63
2" x 2"	60	60	64	64	76
2" x 1 1/2"	60	48	64	60	76
2" x 1 1/2"	60	42	64	57	76
2" x 1"	60	33	64	51	76
2" x 1/2"	60	27	64	44	76
2 1/2" x 2 1/2"	73	73	76	76	89
2 1/2" x 2 1/2"	73	60	76	70	89
2 1/2" x 1 1/2"	73	48	76	67	89
2 1/2" x 1 1/2"	73	42	76	64	89
2 1/2" x 1"	73	33	76	57	89
3" x 3"	89	89	86	86	89
3" x 2 1/2"	89	73	86	83	89
3" x 2"	89	60	86	76	89
3" x 1 1/2"	89	48	86	73	89
3" x 1 1/2"	89	42	86	70	89
3 1/2" x 3 1/2"	102	102	95	95	102
3 1/2" x 3"	102	89	95	92	102
3 1/2" x 2 1/2"	102	73	95	89	102
3 1/2" x 2"	102	60	95	83	102
3 1/2" x 1 1/2"	102	48	95	79	102
4" x 4"	114	114	105	105	102
4" x 3 1/2"	114	102	105	102	102
4" x 3"	114	89	105	98	102
4" x 2 1/2"	114	73	105	95	102
4" x 2"	114	60	105	89	102
4" x 1 1/2"	114	48	105	86	102
5" x 5"	141	141	124	124	127
5" x 4"	141	114	124	117	127
5" x 3 1/2"	141	102	124	114	127
5" x 3"	141	89	124	111	127
5" x 2 1/2"	141	73	124	108	127
5" x 2"	141	60	124	105	127
6" x 6"	168	168	143	143	140
6" x 5"	168	141	143	137	140
6" x 4"	168	114	143	130	140
6" x 3 1/2"	168	102	143	127	140
6" x 3"	168	89	143	124	140
6" x 2 1/2"	168	73	143	121	140
8" x 8"	219	219	178	178	152
8" x 6"	219	168	178	168	152
8" x 5"	219	141	178	162	152
8" x 4"	219	114	178	156	152
8" x 3 1/2"	219	102	178	152	152

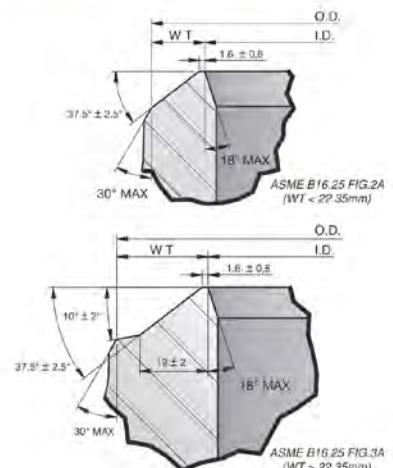
PRODUCTION SIZE RANGE ACCORDING TO ANSI B16.9

ASME B36.10													ASME B36.19							
NOMINAL PIPE SIZE	OUTSIDE DIAMETER	DN	NOMINAL WALL THICKNESS (mm)										NOMINAL WALL THICKNESS (mm)							
			Sch.10	Sch.20	Sch.30	STD	Sch.40	Sch.60	XS	Sch.80	Sch.100	Sch.120	Sch.140	Sch.160	XXS	Sch.55	Sch.10S	Sch.40S	Sch.80S	
1/2"	21,3	15				2,77	2,77			3,73	3,73				4,78	7,47	1,65	2,11	2,77	3,73
3/4"	26,7	20				2,87	2,87			3,91	3,91				5,56	7,82	1,65	2,11	2,87	3,91
1"	33,4	25				3,38	3,38			4,55	4,55				6,35	9,09	1,65	2,77	3,38	4,55
1-1/8"	42,2	32				3,56	3,56			4,85	4,85				6,35	9,7	1,65	2,77	3,56	4,85
1-1/2"	48,3	40				3,68	3,68			5,08	5,08				7,14	10,16	1,65	2,77	3,68	5,08
2"	60,3	50				3,91	3,91			5,54	5,54				8,74	11,07	1,65	2,77	3,91	5,54
2-1/2"	73	65				5,16	5,16			7,01	7,01				9,52	14,02	2,11	3,05	5,16	7,01
3"	88,9	80				5,49	5,49			7,62	7,62				11,13	15,24	2,11	3,05	5,49	7,62
3-1/2"	101,6	90				5,74	5,74			8,08	8,08						2,11	3,05	5,74	8,08
4"	114,3	100				6,02	6,02			8,56	8,56		11,13		13,49	17,12	2,11	3,05	6,02	8,56
5"	141,3	125				6,55	6,55			9,52	9,52		12,7		15,88	19,05	2,77	3,4	6,55	9,52
6"	168,3	150				7,11	7,11			10,97	10,97		14,27		18,26	21,95	2,77	3,4	7,11	10,97
8"	219,1	200		6,35	7,04	8,18	8,18	10,31	12,7	12,7	15,09	18,26	20,62	23,01	22,22	2,77	3,76	8,18	12,7	
10"	273	250		6,35	7,8	9,27	9,27	12,7	12,7	15,09	18,26	21,44	25,4	28,58	25,4	3,4	4,19	9,27	12,7	
12"	323,9	300		6,35	8,38	9,52	10,31	14,27	12,7	17,48	21,44	25,4	28,58	33,32	25,4	3,96	4,57	9,52	12,7	
14"	355,6	350	6,35	7,92	9,52	9,52	11,13	15,09	12,7	19,05	23,83	27,79	31,75	35,71		3,96	4,78	9,52	12,7	
16"	406,4	400	6,35	7,92	9,52	9,52	12,7	16,66	12,7	21,44	26,19	30,96	36,53	40,49		4,19	4,78	9,52	12,7	
18"	457,2	450	6,35	7,92	11,13	9,52	14,27	19,05	12,7	23,83	29,36	34,92	39,67	45,24		4,19	4,78	9,52	12,7	
20"	508	500	6,35	9,52	12,7	9,52	15,09	20,62	12,7	26,19	32,54	38,1	44,45	50,01		4,78	5,54	9,52	12,7	
22"	558,8	550	6,35	9,52	12,7	9,52	15,88	22,22	12,7	28,58	34,92	41,28	47,62	53,89		4,78	5,54	9,52	12,7	
24"	609,6	600	6,35	9,52	14,27	9,52	17,48	24,61	12,7	30,96	38,89	46,02	52,37	59,54		5,54	6,35	9,52	12,7	
26"	660,4	650	7,92	12,7		9,52			12,7											
28"	711,2	700	7,92	12,7	15,88	9,52			12,7											
30"	762	750	7,92	12,7	15,88	9,52			12,7								7,92			
32"	812,8	800	7,92	12,7	15,88	9,52	17,48		12,7											
34"	863,6	850	7,92	12,7	15,88	9,52	17,48		12,7											
36"	914,4	900	7,92	12,7	15,88	9,52	19,05		12,7											

ANGULARITY TOLERANCES		
NOMINAL PIPE SIZE	OFF ANGLE Q	OFF PLANE P
1/2" to 4"	± 1	± 2
5" to 8"	± 2	± 4
10" to 12"	± 3	± 5
14" to 16"	± 3	± 7
18" to 24"	± 4	± 10
26" to 30"	± 5	± 10
32" to 42"	± 5	± 13
44" to 48"	± 5	± 20



TOLERANCES ASME B16.9										
NOMINAL PIPE SIZE	ALL FITTINGS			WALL THICKNESS	90° - 45° ELBOWS TEES		REDUCERS	CAPS	180° RETURN BENDS	
	OUTSIDE DIAMETER AT BEVEL	INSIDE DIAMETER AT BEVEL			CENTER TO END	OVERALL LENGTH			LENGTH	CENTER TO CENTER
1/2" to 2-1/2"	± 1	± 0.8		± 2	± 2	± 4	± 7	± 7	± 1	
3" to 3-1/2"	± 1	± 1.6		± 2	± 2	± 4	± 7	± 7	± 1	
4"	+2 -1	± 1.6	Not less than 87.5% of nominal wall thickness	± 2	± 2	± 4	± 7	± 7	± 1	
5" to 6"	+3 -1	± 1.6		± 2	± 2	± 7	± 7	± 7	± 1	
8"	± 2	± 1.6		± 2	± 2	± 7	± 7	± 7	± 1	
10"	+4 -3	± 3.2		± 2	± 2	± 7	± 10	± 7	± 2	
12" to 18"	+4 -3	± 3.2		± 3	± 3	± 7	± 10	± 7	± 2	
20" to 24"	+6 -5	± 4.8		± 3	± 3	± 7	± 10	± 7	± 2	
26" to 30"	+7 -5	± 4.8		± 3	± 3	± 10				
32" to 48"	+7 -5	± 4.8		± 5	± 5	± 10				



MAIN COMMON STEEL GRADES

Other steel grades available on demand.

MATERIAL	MAIN APPLICATION	STANDARD	GRADE
CARBON STEEL	PROCESS PIPING / GENERAL CONSTRUCTION	ASTM A/ASME SA 234 EN10253-2 ASTM A 860	WPB, WPC P235GH, P265GH, L290NB WPHY42, WPHY52
	OIL & GAS PIPELINE	EN10253-2	L360NB, L360QB
LOW TEMPERATURE CARBON STEEL	PROCESS PIPING / GENERAL CONSTRUCTION / LOW TEMPERATURE	ASTM A/ASME SA 420	WPL3, WPL6, WPL8
HIGH YIELD CARBON STEEL	OIL & GAS PIPELINE / PETROCHEMICAL / PENSTOCK / PROCESS PIPING / SOUR SERVICE	ASTM A 860 MSS SP75	WPHY60, WPHY65, WPHY70
	OIL & GAS PIPELINE	EN10253-2	L415QB, L450QB
ALLOY STEEL	PETROCHEMICAL / POWER & PROCESS PIPING	ASTM A/ASME SA 234 EN10253-2	WP1, WP11CL1/2/3, WP12CL1/2, WP22CL1/3, WP5CL1/3, WP9CL1/3 16MO3, 10CrMo5-5, 13CrMo4-5, 10CrMo9-10, 15NiCuMoNb5-6-4 (WB36)
		ASTM A/ASME SA 182 EN10222-2	F22V 14MoV6-3
	POWER PLANTS	ASTM A/ASME SA 234 EN10253-2 ASTM A234 ASME B31.1 EN10253-2 EN10222-2	WP91 X10CrMoVNb9-1 WP92 B31 CASE 183--2 X10CrWMoVNb9-2 X20CrMoV11-1
AUSTENITIC STAINLESS STEEL	CHEMICAL / PETROCHEMICAL / GENERAL ANTI CORROSION	ASTM A/ASME SA 403	WP304/304L/304H, WP316/316L/316H/316LN, WP317L
	CHEMICAL / PETROCHEMICAL / HIGH TEMPERATURE	ASTM A/ASME SA 403	WP321/321H, WP347/347H
SUPER AUSTENITIC STAINLESS STEEL	WATER TREATMENT / OFFSHORE / FLOWLINES	ASTM A/ASME SA 403	WP904L, UNS31254 (254 SMO)
AUSTENITIC STAINLESS STEEL/ UREA GRADE	UREA PLANTS	ASTM A/ASME SA 403	UNS31050, WP316L UREA GRADE
AUSTENITIC/FERRITIC (DUPLEX) STAINLESS STEEL	WATER TREATMENT / OFFSHORE / FLOWLINES	ASTM/ASME A/SA 815	UNS31803, UNS32205, UNS32750, UNS32760
NICKEL ALLOYS	HIGH RESISTANT CORROSION / HIGH TEMPERATURE	ASTM/ASME B/SB 366	Monel 400 (UNS N04400), Alloy 800 (UNS N06600), Alloy 625(UNS N06625), Alloy 20 (UNS N08020), Alloy 800 (UNS N08800), Alloy 800H (UNS N08810), Alloy 800HT (UNS N08811), Alloy 825 (UNS N08825), Alloy C276 (UNS N10276)
TITANIUM	PETROCHEMICAL / OFF-SHORE FIRE PREVENTION SYSTEM	ASTM B363	WPT2

Whilst every effort has been made to verify the correctness of the information and data herein, Raccortubi Group do not hold themselves responsible for any inaccuracies.

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Электронная почта: info@tisis.ru Интернет: www.tisis.ru www.tisis.kz www.tisis.by

FITTINGS TO CUSTOMER DRAWING

Beyond the standard dimensions and grades, full commercial, technical and manufacturing support is offered for all kinds of unusual dimensions, calculation requirements and special materials in the production of fittings to customer drawings.



EXTRUDED MANIFOLD



COMPLETE SPOOL OF
SPECIAL EXTRUDED TEE



BARRED TEE



PIGGABLE WYE



WYE PIECE



WYE PIECE



WYE PIECE



60° LATERAL TEE



SPECIAL FLOW TEE



EXTRUDED TEE



EXTRUDED SPECIAL ELBOW



SPECIAL HEADER