



# **K B FORGE INDUSTRIES**

## **COMPANY PROFILE**

**MANUFACTURER OF PIPE FITTINGS**

**"Connections with  
Precision & Strength"**

**"Your Trusted Partner in  
Pipe Fitting Excellence!"**



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# WELCOME MESSAGE

Welcome to our company profile! We are delighted to introduce you to our organization K B FORGE INDUSTRIES, where innovation, excellence, and customer satisfaction are at the core of everything we do. Our company specializes in manufacturing of Pipe Fittings and we pride ourselves on delivering high-quality products and services that meet the timely and quality needs of our clients.

With a experience of over 15 years and a dedicated team of experts, we continually strive to push boundaries and set new standards in the industry. Our hefty range makes us one of the leading manufacturer of Pipe Fittings. We take this opportunity to thank you for taking the time to learn more about us, and we look forward to the opportunity to work together soon.

## OUR VISION

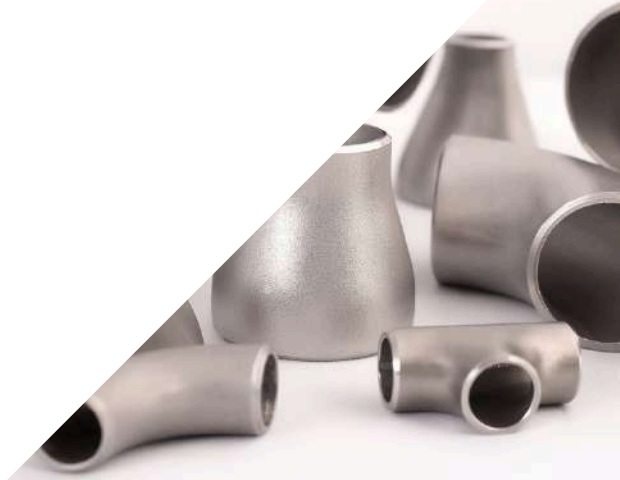
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Our vision at **K B FORGE INDUSTRIES** is to be the leading manufacturer of high-quality pipe fittings globally, setting the standard for excellence in the industry. We aim to empower our customers with reliable and quality product that enhance infrastructure and drive progress. By fostering a culture of integrity, precision, and continuous improvement, we aspire to build lasting partnerships with all our customers. Our commitment is to advance technology and craftsmanship, ensuring that every product we create is a hallmark of quality and efficiency.

## OUR MISSION

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"At **K B FORGE INDUSTRIES**, our foremost mission is to deliver exceptional quality pipe fittings that exceed our customers' expectations. We are committed to deliver the material within time frame ensuring customer needs. Further our mission is to continuous improve & have cutting-edge technology. We aim to be the trusted partner of choice for all pipe fitting needs.



# ANSI PIPE SCHEDULE SI-UNITS (METRIC)



Od's- mm

Wall thickness = mm

Weight = kg/m (Plain end mass)

For 5 S, 10 S, 40 S, 80 S:

Figures based on austenitic steel

Dimension and weights of pipes to

ANSI / ASME

B 36.10 and 36.19

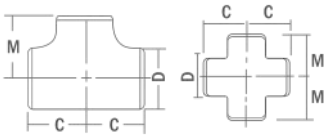
		B 36.10														B 36.19			
Nominal Pipe Size Inches	OD D mm	10	20	30	STD	40	60	XS	80	100	120	140	160	XXS	5 S	10 S	40 S	80 S	
1/8	10.30	1.24 0.28		1.45 0.32	1.73 0.37	1.73 0.37		2.41 0.47	2.41 0.47							1.24 0.28	1.73 0.36	2.41 0.48	
1/4	13.70	1.65 0.49		1.85 0.54	2.24 0.63	2.24 0.63		3.02 0.80	3.02 0.80							1.65 0.51	2.24 0.64	3.02 0.82	
3/8	17.10	1.65 0.63		1.85 0.70	2.31 0.84	2.31 0.84		3.20 1.10	3.20 1.10							1.65 0.64	2.31 0.86	3.20 1.12	
1/2	21.30	2.11 1.00		2.41 1.12	2.77 1.27	2.77 1.27		3.73 1.62	3.73 1.62				4.78 1.95	7.47 2.55	1.65 0.82	2.11 1.01	2.77 1.30	3.73 1.65	
3/4	26.70	2.11 1.28		2.41 1.44	2.87 1.69	2.87 1.69		3.91 2.20	3.91 2.20				5.56 2.90	7.82 3.64	1.65 1.04	2.11 1.31	2.87 1.71	3.91 2.24	
1	33.40	2.77 2.09		2.90 2.18	3.38 2.50	3.38 2.50		4.55 3.24	4.55 3.24				6.35 4.24	9.09 5.45	1.65 1.33	2.77 2.13	3.38 2.55	4.55 3.29	
1 1/4	42.20	2.77 2.69		2.97 2.87	3.56 3.39	3.56 3.39		4.85 4.47	4.85 4.47				6.35 5.61	9.70 7.77	1.65 1.68	2.77 2.76	3.56 3.46	4.85 4.56	
1 1/2	48.30	2.77 3.11		3.18 3.53	3.68 4.05	3.68 4.05		5.08 5.41	5.08 5.41				7.14 7.26	10.15 9.55	1.65 1.95	2.77 3.17	3.68 4.13	5.08 5.51	
2	60.30	2.77 3.93		3.18 4.48	3.94 5.44	3.91 5.44		5.54 7.48	5.54 7.48				8.74 11.11	11.07 13.44	1.65 2.44	2.77 4.01	3.91 5.54	5.54 7.63	
2 1/2	73.00	3.05 5.26		4.78 8.04	5.16 8.63	5.16 8.63		7.01 11.41	7.01 11.41				9.53 14.92	14.02 20.39	2.11 3.77	3.05 5.36	5.16 8.81	7.01 11.64	
3	88.90	3.05 6.46		4.78 9.92	5.49 11.29	5.49 11.29		7.62 15.27	7.62 15.27				11.13 21.35	15.24 27.68	2.11 4.60	3.05 6.59	5.49 11.52	7.62 15.59	
3 1/2	101.60	3.05 7.41		4.78 11.41	5.74 13.57	5.74 13.57		8.08 18.64	8.08 18.64				-	-	2.11 5.29	3.05 7.55	5.74 13.82	8.08 19.61	
4	114.3	3.05 8.37		4.78 12.91	6.02 16.08	6.02 16.08		8.56 22.32	8.56 22.32		11.13 28.32		13.49 33.54	17.12 41.03	2.11 5.96	3.05 8.52	6.02 16.40	8.56 22.77	
5	141.30	3.40 11.56		-	6.55 21.77	6.55 21.77		9.53 30.97	9.53 30.97		12.70 40.28		15.88 48.12	19.05 57.43	2.77 9.67	3.40 11.82	6.55 22.20	9.53 31.59	
6	168.30	3.40 13.83		-	7.11 28.26	7.11 28.26		10.97 42.56	10.97 42.56		14.27 54.21		18.26 67.56	21.95 79.22	2.77 11.55	3.40 14.13	7.11 28.83	10.97 43.42	
8	219.10	3.76 19.97	6.35 33.32	7.04 36.82	8.18 42.55	8.18 42.55	10.31 53.09	12.70 64.64	12.70 64.64	15.09 75.92	18.26 90.44	20.62 100.93	23.01 111.27	22.23 107.93	2.77 15.09	3.76 20.37	8.18 43.39	12.70 65.95	
10	273.10	4.19 27.78	6.35 41.76	7.80 51.01	9.27 60.29	9.27 60.29	12.70 81.53	15.09 95.98	15.09 95.98	18.26 114.71	21.44 133.01	25.40 155.10	28.58 172.27	25.40 155.10	3.40 23.08	4.19 28.34	9.27 61.52	12.70 83.19	
12	323.90	4.57 35.98	6.35 49.71	8.38 51.01	9.53 73.86	9.53 73.86	10.31 79.71	12.70 108.93	12.70 108.93	17.48 132.05	21.44 159.87	25.40 186.92	28.58 208.08	33.32 238.69	3.96 186.92	4.57 36.73	9.53 75.32	12.70 99.43	
14	355.60	6.35 54.69	7.92 67.91	9.53 81.33	9.53 81.33	11.13 94.55	15.09 108.93	12.70 107.40	15.09 108.93	19.05 158.11	23.83 194.98	27.79 224.66	31.75 253.58	35.71 281.72	3.96 36.06	4.78 42.14	9.53 82.95	12.70 109.55	
16	406.40	6.35 62.65	7.92 77.83	9.53 93.27	9.53 93.27	12.70 123.31	16.66 160.13	12.70 107.40	16.66 160.13	21.44 203.54	26.19 245.57	30.96 286.66	36.53 333.21	40.49 365.38	4.19 48.26	4.78 48.26	9.53 95.14	12.70 125.78	
18	457.00	6.35 70.57	7.92 87.71	11.13 122.38	9.53 105.17	14.27 155.81	19.05 205.75	12.70 139.16	15.09 139.16	23.88 254.57	29.36 309.64	34.93 363.58	39.67 408.28	45.24 459.39	4.19 47.77	4.78 54.36	9.53 107.27	12.70 141.94	
20	508.00	6.35 78.56	9.53 117.15	12.70 155.13	9.53 117.15	15.09 183.43	20.62 247.84	12.70 155.13	15.09 155.13	26.19 311.19	32.54 381.55	38.10 441.52	44.45 508.15	50.81 564.85	4.78 60.46	5.54 70.00	9.53 119.49	12.70 158.23	
22	559.00	6.35 86.55	9.53 129.14	12.70 171.10	9.53 129.14	-	22.23 294.27	12.70 171.10	15.09 171.10	28.58 373.85	34.93 451.45	41.28 527.05	47.63 600.67	53.98 672.30	4.78 66.57	5.54 77.06	-	-	
24	610.00	6.35 84.53	9.53 141.12	14.27 209.65	9.53 141.12	17.48 255.43	24.61 355.28	12.70 187.07	15.09 187.07	30.95 442.11	38.89 547.74	46.02 640.07	52.37 720.19	59.54 808.27	5.54 84.16	6.35 96.37	-	12.70 190.81	
26	660.00	7.92 127.36	12.70 202.74	-	9.53 152.88	-	-	12.70 202.74	-	-	-	-	-	-	-	-	-	-	
28	711.00	7.92 137.32	12.70 218.71	15.88 272.23	9.53 164.86	-	-	12.70 218.71	-	-	-	-	-	-	-	-	-	-	
30	762.00	7.92 147.29	12.70 234.68	15.88 292.20	9.53 176.85	-	-	12.70 234.68	-	-	-	-	-	-	6.35 120.72	7.92 150.36	-	-	
32	813.00	7.92 157.25	12.70 250.65	15.88 312.17	9.53 188.83	17.48 342.94	-	12.70 250.65	-	-	-	-	-	-	-	-	-	-	
34	864.00	7.92 167.21	12.70 266.63	15.88 332.14	9.53 200.82	17.48 364.92	-	12.70 266.63	-	-	-	-	-	-	-	-	-	-	
36	914.00	7.92 176.97	12.70 282.29	15.88 351.73	9.53 212.57	19.05 420.45	-	12.70 282.29	-	-	-	-	-	-	-	-	-	-	
38	965.00				9.53 224.56	-	-	12.70 298.26	-	-	-	-	-	-	-	-	-	-	
40	1016.00				9.53 236.54	-	-	12.70 314.23	-	-	-	-	-	-	-	-	-	-	
42	1067.00				9.53 248.53	-	-	12.70 330.21	-	-	-	-	-	-	-	-	-	-	
44	1118.00				9.53 260.52	-	-	12.70 346.18	-	-	-	-	-	-	-	-	-	-	
46	1169.00				9.53 272.27	-	-	12.70 361.84	-	-	-	-	-	-	-	-	-	-	
48	1219.00				9.53 284.25	-	-	12.70 377.81	-	-	-	-	-	-	-	-	-	-	

All dimension are in mm

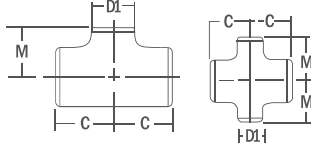
**DIMENSION OF BUTT WELDING FITTINGS TO ANSI B 16.9 (up to 48")/ MSS SP 43 (up to 24")**



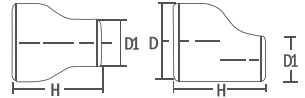
**EQUAL TEE & CROSS**



**UNEQUAL TEE & CROSS**



**CONCENTRIC & ECCENTRIC REDUCERS**



Nominal Pipe Size	Center to End Run	Center to End Branch	Length	Nominal Pipe Size	Center to End Run	Center to End Branch	Length	Nominal Pipe Size	Center to End Run	Center to End Branch	Length	Nominal Pipe Size	Center to End Run	Center to End Branch	Length	Nominal Pipe Size	Center to End Run	Center to End Branch	Length
D x D <sub>1</sub>	C	M	H	D x D <sub>1</sub>	C	M	H	D x D <sub>1</sub>	C	M	H	D x D <sub>1</sub>	C	M	H	D x D <sub>1</sub>	C	M	H
1 x 1	38	38	-	5x5	124	124	-	18x18	343	343	-	30x30	559	559	-	38x38	711	711	-
1 1/2	38	38	51	5x2	124	105	127	18x16	343	330	381	30x28	559	546	610	38x36	711	711	610
1 x 3/4	38	38	51	5x2 1/2	124	108	127	18x14	343	330	381	30x26	559	546	610	38x34	711	698	610
1 1/4 x 1 1/4	48	48	-	5x3	124	111	127	18x12	343	321	381	30x24	559	533	610	38x32	711	686	610
1 1/4 x 3/4	48	48	51	5x3 1/2	124	114	127	18x10	343	308	381	30x22	559	521	610	38x30	711	673	610
1 1/4 x 3/4	48	48	51	5x4	124	117	127	18x8	343	298	381	30x20	559	(508)	(610)	38x28	711	648	610
1 1/4 x 1	48	48	51	6x6	143	143	-	20x20	381	381	-	30x18	559	(495)	(610)	38x26	711	648	610
1 1/2 x 1 1/2	57	57	-	6x2 1/2	143	121	140	20x18	381	368	508	30x16	559	(483)	(610)	38x24	711	635	(610)
1 1/2 x 3/4	57	57	64	6x3	143	124	140	20x16	381	356	508	30x14	559	(483)	(610)	38x22	711	622	(610)
1 1/2 x 3/4	57	57	64	6x3 1/2	143	127	140	20x14	381	356	508	30x12	559	(473)	(610)	38x20	711	610	(610)
1 1/2 x 1	57	57	64	6x4	143	130	140	20x12	381	346	508	30x10	559	460	(610)	38x18	711	597	(610)
1 1/2 x 1 1/4	57	57	64	6x5	143	137	140	20x10	381	333	(508)	32x32	597	597	-	40x40	749	749	-
2 x 2	64	64	-	8x8	178	178	-	20x8	381	324	(508)	32x30	597	584	610	40x38	749	749	610
2 1/2 x 3/4	64	44	76	8x6	178	168	152	22x22	419	419	-	32x28	597	572	610	40x36	749	737	610
2 x 1	64	51	76	8x5	178	162	152	22x20	419	406	508	32x26	597	572	610	40x34	749	724	610
2x 1 1/4	64	57	76	8x4	178	156	152	22x18	419	394	508	32x24	597	559	610	40x32	749	711	610
2x 1 1/2	64	60	76	8x3 1/2	178	152	152	22x16	419	381	508	32x22	597	546	(610)	40x30	749	698	610
2 1/2 x 2 1/2	76	76	-	10x10	216	216	-	22x14	419	381	508	32x20	597	533	(610)	40x28	749	673	(610)
2 1/2 x 1	76	57	89	10x8	216	203	178	22x12	419	371	(508)	32x18	597	521	(610)	40x26	749	673	(610)
2 1/2 x 1 1/4	76	64	89	10x6	216	194	178	22x10	419	359	(508)	32x16	597	508	(610)	40x24	749	660	(610)
2 1/2 x 1 1/2	76	67	89	10x5	216	191	178	24x24	432	432	-	32x14	597	508	(610)	40x22	749	648	(610)
2 1/2 x 2	76	70	89	10x4	216	184	178	24x22	432	432	508	34x34	635	635	-	40x20	749	635	(610)
3 x 3	86	86	-	12x12	254	254	-	24x20	432	432	508	34x32	635	622	610	40x18	749	622	(610)
3x 1 1/4	86	70	89	12x10	254	241	203	24x18	432	419	508	34x30	635	610	610	42x42	762	711	-
3x 1 1/2	86	73	89	12x8	254	229	203	24x16	432	406	508	34x28	635	597	610	42x40	762	711	610
3 x 2	86	76	89	12x6	254	219	203	24x14	432	406	(508)	34x26	635	597	610	42x38	762	711	610
3x 2 1/2	86	83	89	12x5	254	216	203	24x12	432	397	(508)	34x24	635	584	(610)	42x36	762	711	610
3 1/2 x 3 1/2	95	95	-	14x14	279	279	-	24x10	432	384	(508)	34x22	635	572	(610)	42x34	762	711	610
3 1/2 x 1 1/2	95	79	102	14x12	279	270	330	26x26	495	495	-	34x20	635	559	(610)	42x32	762	711	610
3 1/2 x 2	95	83	102	14x10	279	257	330	26x24	495	483	610	34x18	635	546	(610)	42x30	762	711	610
3 1/2 x 2 1/2	95	89	102	14x8	279	248	330	26x22	495	470	610	34x16	635	533	(610)	42x28	762	698	(610)
3 1/2 x 3	95	92	102	14x6	279	238	330	26x20	495	457	610	36x36	673	673	-	42x26	762	698	(610)
4 x 4	105	105	-	16x16	305	305	-	26x18	495	444	610	36x34	673	660	610	42x24	762	660	(610)
4x 1 1/2	105	86	102	16x14	305	305	356	26x16	495	432	(610)	36x32	673	648	610	42x22	762	660	(610)
4 x 2	105	89	102	16x12	305	295	356	26x14	495	432	(610)	36x30	673	635	610	42x20	762	660	(610)
4x 2 1/2	105	95	102	16x10	305	283	356	26x12	495	422	(610)	36x28	673	622	610	42x18	762	648	(610)
4 x 3	105	98	102	16x8	305	273	356	28x28	521	521	-	36x26	673	622	610	42x16	762	635	(610)
4x 3 1/2	105	102	102	16x6	305	264	356	28x26	521	521	610	36x24	673	610	(610)				
								28x24	521	508	610	36x22	673	597	(610)				
								28x22	521	495	610	36x20	673	584	(610)				
								28x20	521	483	610	36x18	673	572	(610)				
								28x18	521	470	(610)	36x16	673	559	(610)				
								28x16	521	457	(610)								
								28x14	521	457	(610)								
								28x12	521	448	(610)								

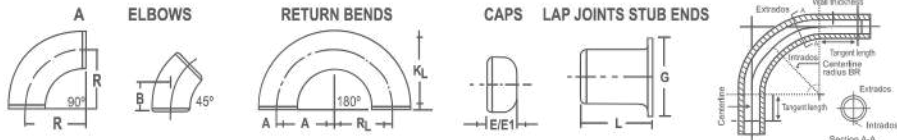
1. Figure in Brackets are as per the manufacturer standard.  
 2. Outlet dimension M for run sizes NPS 14 (DN 350) and larger is recommended but not required.

**All dimension are in mm**

# DIMENSION OF BUTT WELDING FITTINGS TO ANSI B 16.9 / MSS SP 43



**LONG RADIUS BENDS**



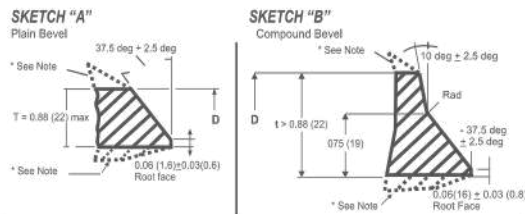
NOM BORE	PIPE OD	RADIUS R		B (1.5 D)	K	E (Note)	G	LENGTH L'	
		1 D	1.5 D					MSS SP 43	ANSI B 16.9
1/8	21.30	12.7	38.1	15.91	48	25.4	34.9	50.8	76.2
1/4	26.70	19.05	38.1	19	51	25.4	42.8	50.8	76.2
1/2	33.40	25.4	38.1	22.2	56	38.1	50.8	50.8	101.6
3/4	42.20	31.75	47.6	25.0	70	38.1	63.5	50.8	101.6
1	48.30	38.1	57.15	28.6	83	38.1	73.0	50.8	101.6
2	60.30	50.8	76.2	35	106	44*	92.0	63.5	152.4
2 1/2	73.00	63.5	95.25	44.0	132	51*	105	63.5	152.4
3	88.90	76.2	114.30	50.8	159	64*	127.0	63.5	152.4
3 1/2	101.60	88.9	133.35	57.2	184	76*	139.7	76.2	152.4
4	114.30	101.6	152.40	63.5	210	76*	157.2	76.2	152.4
5	141.30	127.0	190.50	79.4	262	89*	185.7	76.2	203.2
6	168.30	152.4	228.60	95.3	313	102*	216	88.9	203.2
8	219.10	203.2	304.50	127.0	414	127*	270.0	101.6	203.2
10	273.10	254.0	381.00	158.7	518	152*	324.0	127.0	254.0
12	323.90	304.8	457.20	190.5	619	178*	381.0	152.4	254.0
14	355.60	355.6	533.40	222.2	711	191*	412.8	152.4	305.0
16	406.40	406.4	609.60	254.0	813	203*	470.0	152.4	305.0
18	457.2	457.2	685.80	285.7	914	229*	533.4	152.4	305.0
20	508.00	508.0	762.00	317.6	1016	254*	584.20	152.4	305.0
22	558.8	558.8	838.20	343.0	1118	254*	641.40	152.4	305.0
24	609.6	609.6	914.40	381.0	1219	305*	692.20	152.4	305.0
26	660.0	660.0	991.00	406.0	--	267.0	--	--	--
28	711.0	711.0	1067.00	438.0	--	267.0	--	--	--
30	762.0	762.0	1143.00	470.0	--	267.0	--	--	--
32	813.0	813.0	1219.00	502.0	--	267.0	--	--	--
34	864.00	864.00	1295.00	533.0	--	267.0	--	--	--
36	914.0	914.0	1372.00	565.0	--	267.0	--	--	--
38	965.0	965.0	1448.00	600.0	--	305.0	--	--	--
40	1016.0	1016.0	1524.00	632.0	--	305.0	--	--	--
42	1067.0	1067.0	1600.00	665.0	--	305.0	--	--	--
44	1118.0	1118.0	1676.00	697.0	--	343.0	--	--	--
46	1168.0	1168.0	1753.00	727.0	--	343.0	--	--	--
48	1219.0	1219.0	1829.00	759.0	--	343.0	--	--	--

Nominal Pipe Size in.	Outside Diameter O.D. (mm)	Bending Radius (BR) mm					
		3D	4D	5D	6D	8D	10D
3"	88.90	229	305	381	457	610	752
4"	114.30	305	406	508	610	813	1016
6"	168.30	457	610	762	914	1219	1524
8"	219.10	610	813	1016	1219	1626	2032
10"	273.10	762	1016	1219	1524	2032	2540
12"	323.90	914	1219	1524	1829	2438	3048
14"	355.60	1068	1424	1780	2136	2848	3560
16"	406.40	1218	1624	2030	2436	3248	4060
18"	457.2	1371	1828	2285	2742	3656	4570
20"	508.00	1524	2032	2540	3048	4064	5080
22"	558.8	1677	2236	2795	3354	4472	5590
24"	609.6	1830	2440	3050	3660	4880	6100
26"	660.00	1990	2640	3300	3960	5280	6600
28"	711.0	2133	2844	3555	4266	5658	7110
30"	762.0	2286	3048	3810	4572	6096	7620
32"	813.0	2439	3252	4065	4878	6504	8130
34"	864.00	2592	3456	4320	5184	6912	8640
36"	914.0	2742	3656	4570	5484	7312	9140
38"	965.0	2895	3860	4825	5790	7720	9650
40"	1016.0	3048	4064	5080	6096	8128	10160
42"	1067.0	3201	4268	5335	6402	8536	10670
44"	1118.0	3354	4472	5590	6708	8940	11180
46"	1168.0	3504	4672	5840	7008	9348	11680
48"	1219.0	3657	4876	6095	7314	9752	12190
50"	1270.00	3810	5080	6350	7620	10156	12700
52"	1320.90	3963	5284	6605	7926	10560	13209
54"	1371.60	4116	5488	6860	8232	10964	13716
56"	1422.40	4266	5688	7110	8532	11368	14224

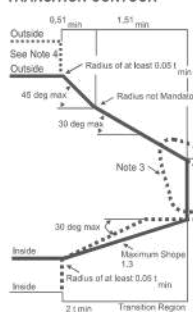
All dimensions are in mm

- Bend end preparation: Welding ends to be beveled per ASME B16.25 or as per specified purchaser
  - Angle Bending: 1° to 180°
  - Tangent Length: As per the choice of purchaser
  - Wall Thickness: Sch STD Sch10, Sch20, Sch30, Sch40, Sch80, etc. or as per the choice of Purchaser
- Induction Pipe Bending Standard Bend Tolerances
- \* Bend Angle: ± 1/2°
  - \* Bend Radius: ± 1%
  - End squareness:
    - \* Size NPS 36" smaller: 2.4mm (0.09) • Size Greater than NPS 36": 3.0 mm (0.12)
  - Ovality within bends: < 2.5% of mating pipe outside diameter
  - Ovality at End: < 1% of the outside diameter
  - Diameter at welding end: ± 4mm
  - Thinning proportional to Bending Radius.
  - For most of the cases < 0.10% of Nominal W.T.
  - \*Closer Tolerances than those given are available when required.

## ENDS PRERATION AS PER ANSI B 16.9



### TRANSITION CONTOUR



NORMAL WALL THICKNESS (t)	END PREPARATION
Less than X*	Cut square or slightly chamfer at mfr's option
X* to 0.88 incl. (22)	Plain bevel as in sketch "A" above
More than 0.88 (22)	Compound bevel as in sketch "B" above

X\* = 0.19 (5) for carbon steel or ferritic alloy steel and 0.12 (4) for austenitic alloy steel.

- The value t min. is whichever of the following is applicable:
  - the minimum ordered wall thickness of the pipe (b) 0.875 times the nominal wall thickness of pipe ordered to a pipe schedule wall thickness which has an under tolerance of 12.5%
- The maximum thickness at the end of the component is:
  - the greater of 1 min., ± 0.15 in. (4 mm) or 1.15 t min., when ordered on a minimum wall basis
  - the greater of 1 min., ± 0.15 in. (4 mm) or 1.10 t nom. When ordered on a nominal wall basis.
- Weld bevel is shown for illustrations only.
- Where transitions using maximum slope do not intersect outside surface, as shown by phantom outline, maximum slopes shown or alternate radii shown in phantom outlines shall be used
- Dimension is parenthesis are in millimeters. Other are in inches.
- The weld reinforcement permitted by an applicable code may lie outside the maximum envelope.

Note: The shape of cap shall be ellipsoidal. Given Dimension E is applicable for limiting wall thickness. For E1 Dimension, refer ASME B 16.9

\*\* E1 Height



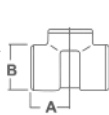
## DIMENSION IN M.M OF SCREWED FITTINGS TO ANSI B 16.11 THREAD TO ANSI B 1.20.1



90° ELBOW



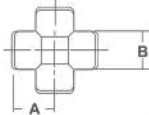
TEE



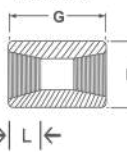
45° ELBOW



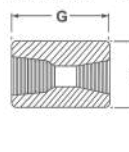
CROSS



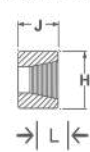
COUPLING



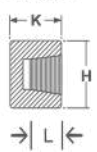
REDUCER



HALF COUPLING

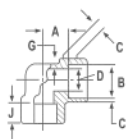


PIPE CAP

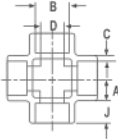


NOM BORE	PIPE O.D.	3000 LBS SERIES								6000 LBS SERIES							
		A	B	C	L	G	H	J	K	A	B	C	L	G	H	J	K
1/8	10.29	21	22	17	6.7	32	16	16	19	25	25	19	6.7	32	22	16	-
1/4	13.72	25	25	19	10.2	35	19	17.5	25	28	33	22	10.2	35	25	17.5	27
3/8	17.15	28	33	22	10.4	38	22	19	25	33	38	25	10.4	38	32	19	27
1/2	21.34	33	38	25	13.6	48	28	24	32	38	46	28	13.6	48	38	24	33
3/4	26.67	38	46	28	13.9	51	35	25.5	37	44	56	33	13.9	51	44	25.5	38
1	33.40	44	56	33	17.3	60	44	30	41	51	62	35	17.3	60	57	30	43
1-1/4	42.16	51	62	35	18.0	67	57	33.5	44	60	75	43	18.0	67	64	33.5	46
1-1/2	48.26	60	75	43	18.4	79	64	39.5	44	64	84	44	18.4	79	76	39.5	48
2	60.32	64	84	44	19.2	86	76	43	48	83	102	52	19.2	86	92	43	51
2-1/2	73.02	83	102	52	28.9	92	92	46	60	95	121	64	28.9	92	108	46	64
3	88.90	95	121	64	30.5	108	108	54	65	106	146	79	30.5	108	127	54	68
4	114.30	114	152	79	33.0	121	140	60.5	68	114	152	79	33.0	121	159	60.5	75

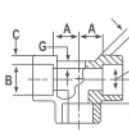
## DIMENSION IN M.M OF SOCKET WELD FITTINGS TO ANSI B 16.11



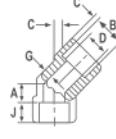
90-deg Elbow



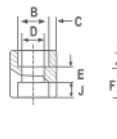
Cross



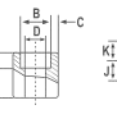
Tee



45-deg Elbow



Coupling



Half-Coupling



Cap

ASME B16.11-2005

Nominal Pipe Size	Socket Bore Diameter B [Note (1)]	Bore Diameter of Fittings D [Note (1)]		Socket Wall Thickness, C [Note (2)]				Body Wall G		Min Depth of Socket J	Center to Bottom of Socket, A				Laying Lengths		Tolerance ±			End Wall Thickness K min	
		Class Designation		Class Designation				Class Designation			90 Deg. Elbows, Tees and Crosses	45 Deg. Elbows		Tolerance ±		Class Designation					
		3000	6000	3000		6000		3000	6000			3000	6000	3000	6000	3000	6000	A	E	F	3000
				Avg.	Min.	Avg.	Min.				Min.										
1/8	11.2 10.8	7.6 6.1	4.8 3.2	3.18	3.18	3.96	3.43	2.41	3.15	9.5	11.0	11.0	8.0	8.0	6.5	16.0	1.0	1.5	1.0	4.8	6.4
1/4	14.6 14.2	10.0 8.5	7.1 5.6	3.78	3.30	4.60	4.01	3.02	3.68	9.5	11.0	13.5	8.0	8.0	6.5	16.0	1.0	1.5	1.0	4.8	6.4
3/8	18.0 17.6	13.3 11.8	9.9 8.4	4.01	3.50	5.03	4.37	3.20	4.01	9.5	13.5	15.5	8.0	11.0	6.5	17.5	1.5	3.0	1.5	4.8	6.4
1/2	22.2 21.8	16.6 15.0	12.5 11.0	4.67	4.09	5.97	5.18	3.73	4.78	9.5	15.5	19.0	11.0	12.5	9.5	22.5	1.5	3.0	1.5	6.4	7.9
3/4	27.6 27.2	21.7 20.2	16.3 14.8	4.90	4.27	6.96	6.04	3.91	5.56	12.5	19.0	22.5	13.0	14.0	9.5	24.0	1.5	3.0	1.5	6.4	7.9
1	34.3 33.9	27.4 25.9	21.5 19.9	5.69	4.98	7.92	6.93	4.55	6.35	12.5	22.5	27.0	14.0	17.5	12.5	28.5	2.0	4.0	2.0	9.6	11.2
1 1/4	43.1 42.7	35.8 34.3	30.2 28.7	6.07	5.28	7.92	6.93	4.85	6.35	12.5	27.0	32.0	17.5	20.5	12.5	30.0	2.0	4.0	2.0	9.6	11.2
1 1/2	49.2 48.8	41.6 40.1	34.7 33.2	6.35	5.54	8.92	7.80	5.08	7.14	12.5	32.0	38.0	20.5	25.5	12.5	32.0	2.0	4.0	2.0	11.2	12.7
2	61.7 61.2	53.3 51.7	43.6 42.1	6.93	6.04	10.92	9.50	5.54	8.74	16.0	38.0	41.0	25.5	28.5	19.0	41.0	2.0	4.0	2.0	12.7	15.7
2 1/2	74.4 73.9	64.2 61.2	---	8.76	7.67	---	---	7.01	---	16.0	41.0	---	28.5	---	19.0	43.0	2.5	5.0	2.5	15.7	19.0
3	90.3 89.8	79.4 76.4	---	9.52	8.30	---	---	7.62	---	16.0	57.0	---	32.0	---	19.0	44.5	2.5	5.0	2.5	19.0	22.4
4	115.7 115.2	103.8 100.7	---	10.69	9.35	---	---	8.56	---	19.0	66.5	---	41.0	---	19.0	48.0	2.5	5.0	2.5	22.4	28.4

GENERAL NOTE: Dimension are in millimeters.

NOTES:

(1) Upper and lower values for each size are the respective maximum and minimum dimensions.

(2) Average of socket wall thickness around periphery shall be no less than listed values. The minimum values are permitted in localized areas.

# CERTIFICATIONS

**Certificate**

This is to certify that

**K B FORGE INDUSTRIES**  
466/B, GIDC Industrial Estate, Por Ramnagar,  
Dist. Vadodra, Gujarat - 391243, India

has been assessed by B4Q Management Ltd. and  
found to comply with the requirements of

**ISO 9001:2015**  
Quality Management System

For the following scope:

Manufacturer's of Butt Welded Scambos & Welded Fittings,  
Forged Socket Welds / Screwed Fittings, Forged & Flat  
Flanges, Flow Tee, Barred Tee, Split Tee, Lateral Tee,  
Piping Spools, Hot Induction Beads & Fabrication of  
Equipment & Vessels.

IAF Code: 97

Certificate No.: MSKAL2ADQC  
Issue date: 06-December-2022  
1st Surv. on/after: 05-December-2023  
2nd Surv. on/after: 05-December-2024  
Date of Expiry: 05-December-2025  
To check this certificate status visit:  
"http://b4q.com/verify/certificate.asp"

Authorized Signatory  
**B4Q Management Ltd.**  
www.b4q.com

ISO 9001, ISO 9001:2015, IAS, IAF

**Certificate of Compliance**

Application for  
Personal Protective Equipment (PPE) 30146606U.

This is to certify that the product(s):  
Manufacturer's of Butt Welded Scambos & Welded Fittings,  
Forged Socket Welds / Screwed Fittings, Forged & Flat Flanges,  
Flow Tee, Barred Tee, Split Tee, Lateral Tee, Piping Spools, Hot  
Induction Beads & Fabrication of Equipment & Vessels.

Manufactured by  
**K B FORGE INDUSTRIES**  
466/B, GIDC Industrial Estate, Por Ramnagar,  
Dist. Vadodra, Gujarat - 391243, India

has been assessed & found in accordance with the requirements of  
Personal Protective Equipment (PPE) 30146606U.

CCC is a non-notified certification body, issue this  
Compliance certificate after audit of manufacturer's products & technical files.  
This certificate applies to the listed samples only, not for whole production.  
The manufacturer is responsible to ensure all the necessary conformity  
assessment activities, according to PPE 30146606U and related standards  
before placing them on the market & CE mark on the product(s).

Certificate No.: CE/ALBER/1222  
Original Certificate Date: 06-December-2022  
Issue Date: 06-December-2022  
Expiry Date: 05-December-2025  
To check this certificate status visit:  
"http://ccc.com/verify/certificate.asp"

Authorized Signatory  
For Quality Control Certification  
UK Office: 22, Ayley Street,  
London: E2 8QE, United Kingdom

CE

**Certificate**

This is to Certify that

**K B FORGE INDUSTRIES**  
466/B, GIDC Industrial Estate, Por Ramnagar,  
Dist. Vadodra, Gujarat - 391243, India

is in Compliance with

**GOST-R**  
for the following scope:

Manufacturer's of Butt Welded Scambos & Welded Fittings,  
Forged Socket Welds / Screwed Fittings, Forged & Flat  
Flanges, Flow Tee, Barred Tee, Split Tee, Lateral Tee,  
Piping Spools, Hot Induction Beads & Fabrication of  
Equipment & Vessels.

Certificate No.: GOST/UGAR/1222  
Original Certificate Date: 06-December-2022  
Issue Date: 06-December-2022  
Expiry Date: 05-December-2025  
To check this certificate status visit:  
"http://gost.com/verify/certificate.asp"

Authorized Signatory  
For Quality Control Certification  
Head Office: 22/Ayley Street,  
London: E2 8QE, United Kingdom  
UK Office: 22, Ayley Street,  
London: E2 8QE, UK

**Certificate**

This is to Certify that

**K B FORGE INDUSTRIES**  
466/B, GIDC Industrial Estate, Por Ramnagar,  
Dist. Vadodra, Gujarat - 391243, India

has been found in Compliance with requirements of

**Environmental Management System**  
**ISO 14001:2015**  
for the following scope:

Manufacturer's of Butt Welded Scambos & Welded Fittings,  
Forged Socket Welds / Screwed Fittings, Forged & Flat Flanges,  
Flow Tee, Barred Tee, Split Tee, Lateral Tee, Piping Spools, Hot  
Induction Beads & Fabrication of Equipment & Vessels.

Certificate No.: EHS/NE/99/1222  
Original Certificate Date: 06-December-2022  
Issue Date: 06-December-2022  
Expiry Date: 05-December-2025  
To check this certificate status visit:  
"http://eas.com/verify/certificate.asp"

Authorized Signatory  
Quality Control Certification  
UK Office: 22, Ayley Street,  
London: E2 8QE, United Kingdom  
India Office: 22/Ayley Street,  
London: E2 8QE, UK

**Certificate**

This is to Certify that

**K B FORGE INDUSTRIES**  
466/B, GIDC Industrial Estate, Por Ramnagar,  
Dist. Vadodra, Gujarat - 391243, India

has been found in Compliance with requirements of

**Occupational Health and Safety Management Systems**  
**ISO 45001:2018**  
for the following scope:

Manufacturer's of Butt Welded Scambos & Welded Fittings,  
Forged Socket Welds / Screwed Fittings, Forged & Flat Flanges,  
Flow Tee, Barred Tee, Split Tee, Lateral Tee, Piping Spools, Hot  
Induction Beads & Fabrication of Equipment & Vessels.

Certificate No.: OHSAS/0EBB/1222  
Original Certificate Date: 06-December-2022  
Issue Date: 06-December-2022  
Expiry Date: 05-December-2025  
To check this certificate status visit:  
"http://oas.com/verify/certificate.asp"

Authorized Signatory  
Quality Control Certification  
UK Office: 22, Ayley Street,  
London: E2 8QE, United Kingdom  
India Office: 22/Ayley Street,  
London: E2 8QE, UK



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VADODARA , GUJARAT , INDIA - 391243