



Copper & Copper Nickel

Pipes • Fittings • Flanges

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 **BOMYUNG METAL.Co.,Ltd**

BOMYUNG METAL.Co.,Ltd

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10kg/cm² / 20kg/cm² / 125LB / 150LB

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COMPARISON TABLE OF INTERNATIONAL STANDARD FOR COPPER

Chemical composition	BS 2871 C106	ASTM B88 C12200	ASTM B280 C12200	JIS H3300 C1220T	DIN 1786 2.0090	BS EN12735-1	BS EN1057
Cu %	Min.99.85	Min.99.90	Min.99.90	Min.99.90	Min.99.90	Min.99.90	Min.99.90
Ni %	Max.0.10	-	-	-	-	-	-
Fe %	Max.0.003	-	-	-	-	-	-
As %	Max.0.05	-	-	-	-	-	-
Sb %	Max.0.005	-	-	-	-	-	-
Pb %	Max.0.01	-	-	-	-	-	-
P %	0.013~0.050	0.015~0.040	0.015~0.040	0.015~0.040	0.015~0.040	0.015~0.040	0.015~0.040
Bi %	Max.0.003	-	-	-	-	-	-
Te %	Max.0.01	-	-	-	-	-	-
Other imp.	Max.0.06	-	-	-	-	-	-

Mechanical properties	Temper		Tensile strength	Yield strength	Elongation	Hardness	Grain Size
BS 2871 C106	O	Annealed	200-250 [N/mm ²]	-	Min.40%	Max.60 (HV 5)	-
ASTM B88 C12200	O60	Soft Annealed	Min.205 [N/mm ²]	-	-	Max.50 (HRF)	Min.0.040 (mm)
	O50	Light Annealed	Min.205 [N/mm ²]	-	-	Max.55 (HRF)	Min.0.025 (mm)
	H58	Drawn	Min.246 [N/mm ²]	-	-	Min.30 (HR30T)	-
ASTM B280 C12200	O60	Soft Annealed	Min.205 [N/mm ²]	-	Min.40%	-	Min.0.040 (mm)
	H58	Drawn	Min.250 [N/mm ²]	-	-	-	-
JIS H3300 C1220T	O	Soft Annealed	Min.205 [N/mm ²]	-	Min.40%	Max.60 (HR15T)	0.025-0.060 (mm)
	OL	Light Annealed	Min.205 [N/mm ²]	-	Min.40%	Max.65 (HR15T)	Max.0.040 (mm)
	1/2H	Annealed	245-325 [N/mm ²]	-	-	30-60 (HR30T)	-
	H	Hard	Min.315 [N/mm ²]	-	-	Min.55 (HR30T)	-
DIN 1786 2.0090	F25	Annealed	250-300 [N/mm ²]	Min.150 [N/mm ²]	Min.20%	Max.80 (HB)	-
BS EN12735-1	R290	Hard	Min.290 [N/mm ²]	-	Min.3%	Max.100 (HV 5)	-
BS EN1057	R220	Annealed	Min.220 [N/mm ²]	-	Min.40%	40-70 (HV 5)	-
	R250	Half Hard	Min.250 [N/mm ²]	-	Min.20%	75-100 (HV 5)	-
	R290	Hard	Min.290 [N/mm ²]	-	Min.3%	Min.100 (HV 5)	-

BRAZING, SOLDERING INSTRUCTION

Brazing is a distinctive joining method of metals without melting of the parent metals.

Brazing is a joining process of two or more metal parts into a single assembly by heating the assembly to at least 800°F, Namely, brazing is the joining of metals through the use of heat and a filler metal-one whose melting temperature is above 840°F. But below the melting point of the filler metals being joined (above 840°F), (Soldering is similar to brazing but the filler metals below 800°F). When the brazing is proceeding, the filler metals are to be melted but the base metals are not to be melted by heating. The filler metals melted will be infiltrated by the capillary phenomenon through the narrow gap of base metals.

● In case of general application

- It is taking advantage of joining in the piping of non-ferrous metals.
Complicate shapes of goods.
Important point on the external appearance
The jointing of different materials
Wide-Difference of wall thickness.
- The characteristic of brazing is substantially different from ARC welding
Therefore brazing shall be checked below points.

● Filler metals

- The filler metals shall be melted on lower temperature than parent metals.
In case of Copper & Copper-Alloy metal,
"Silver brazing rod", "Brass welding rod" or "Phosphor copper welding rod" is used as a filler metals.

● Cleaning

- Cleaning of the parent metals is most important operation.
Brazing can only be carried out under correct conditions if joining parts are clean and free from grease, oxidation, rust.

● Gap

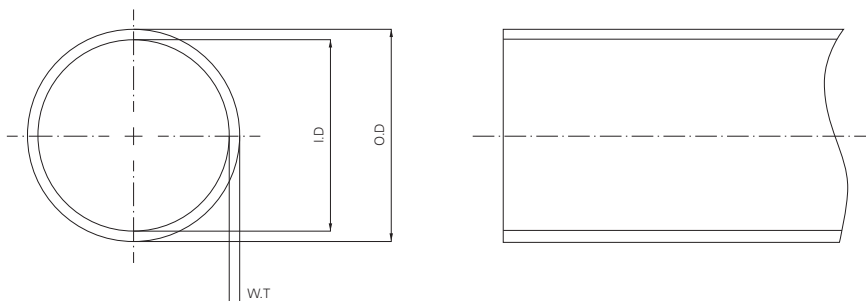
- The gap between material and material shall be tight because of brazing will be proceed from capillary action.

● Flux

- The flux will be used properly for the purpose of no more proceeding oxidization in process of brazing.
- After brazing, flux and slags should be removed.
The oxidization is caused on flux & slags.

COPPER PIPE - JAPANESE & U.S STANDARD

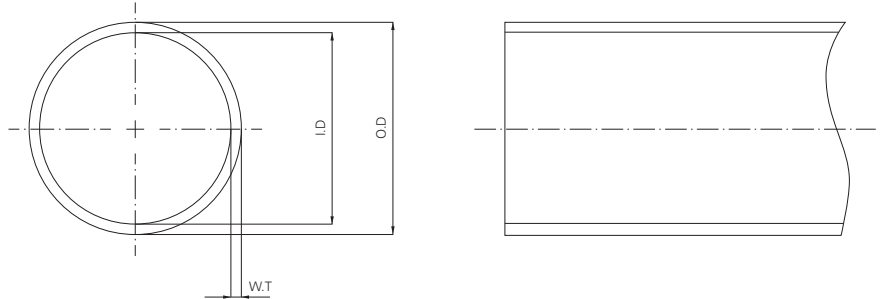
According to JIS H3300 C1220, ASTM B88 UNS C12200



JIS H3300 C1220			ASTM B88 UNS C12200					
Nominal Diameter	OD	WT	Nominal Diameter		OD	WT		
(ND)	(mm)	(mm)	(ND)	(Inch)	(mm)	K	L	M
4	6	1.2			-	-	-	-
5	8	1.2						
6	10	1.2	8	1/4	9.52	0.89	0.76	-
8	12	1.2	10	3/8	12.70	1.24	0.89	0.64
10	15	1.4	15	1/2	15.88	1.24	1.02	0.71
15	20	1.6	-	5/8	19.05	1.24	1.07	-
20	25	1.6	20	3/4	22.22	1.65	1.14	0.81
25	30	1.6	25	1	28.58	1.65	1.27	0.89
32	35	1.6	32	1 1/4	34.92	1.65	1.40	1.07
40	45	2.0	40	1 1/2	41.28	1.83	1.52	1.24
50	55	2.0	50	2	53.98	2.11	1.78	1.47
65	70	2.0	65	2 1/2	66.68	2.41	2.03	1.65
80	85	2.5	80	3	79.38	2.77	2.29	1.83
100	110	3.0	90	3 1/2	92.08	3.05	2.54	2.11
125	140	3.0	100	4	104.78	3.40	2.79	2.41
			125	5	130.18	4.06	3.18	2.77
			150	6	155.58	4.88	3.56	3.10
			200	8	206.38	6.88	5.08	4.32
			250	10	257.18	8.59	6.35	5.38

COPPER COIL - JAPANESE & U.S STANDARD

According to JIS H3300 C1220, ASTM B88 UNS C12200



OD	WT	Weight	Length
(mm)	(mm)	(kg/m)	(M)
4.00	0.80	0.07	10-30M
5.00	0.80	0.09	
6.00	0.80	0.12	
6.00	1.00	0.14	
6.00	1.20	0.16	
6.35	0.80	0.12	
6.35	1.00	0.15	
8.00	0.80	0.16	
8.00	1.00	0.20	
8.00	1.20	0.23	
9.53	0.80	0.20	
9.53	1.00	0.24	
10.00	0.80	0.21	
10.00	1.00	0.25	
10.00	1.20	0.30	
10.00	1.40	0.34	
12.00	1.00	0.31	
12.00	1.20	0.36	
12.70	0.80	0.27	
12.70	1.00	0.33	
12.70	1.20	0.39	
15.00	1.20	0.47	
15.00	1.40	0.53	
15.00	1.60	0.60	

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COPPER
FITTINGS
(JIS)

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- **COPPER NICKEL MACHINED FITTINGS**

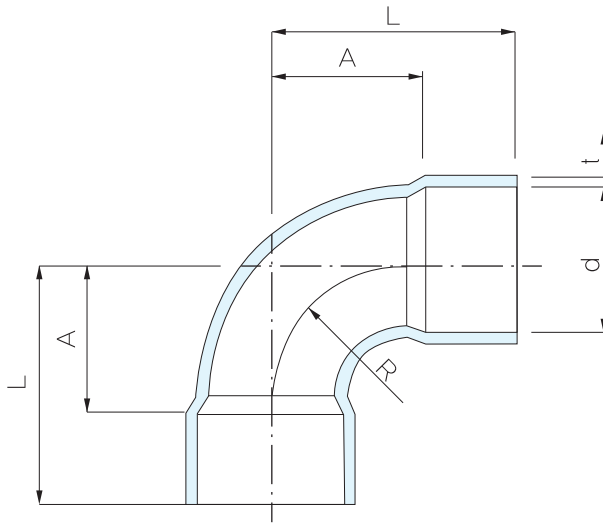
SOCKET WELDING OR CAPILLARY END - ELBOW / TEE / REDUCER / COUPLING / UNION / ADAPTOR / OUTLET / END CAP / SPRINKLER BUSH

- **COPPER NICKEL FITTINGS & FLANGES – NAVY STANDARD**

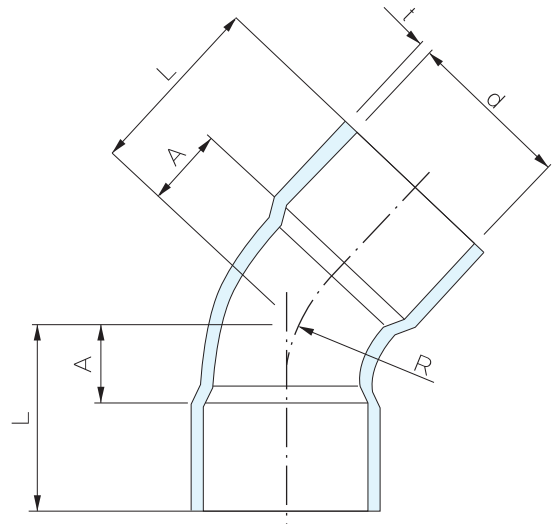
SOCKET WELDING & BUTT WELDING - ELBOW / REDUCER / TEE / COUPLING / SLEEVE / FLANGE

SOLDER BRAZING ELBOW

● MATERIAL : JIS H3300 C1220T-1/2H



90° ELBOW

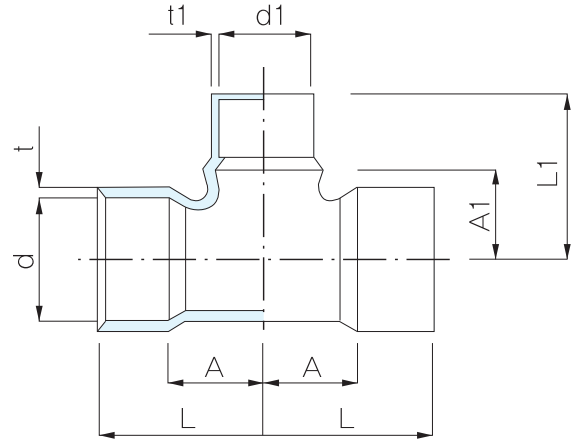
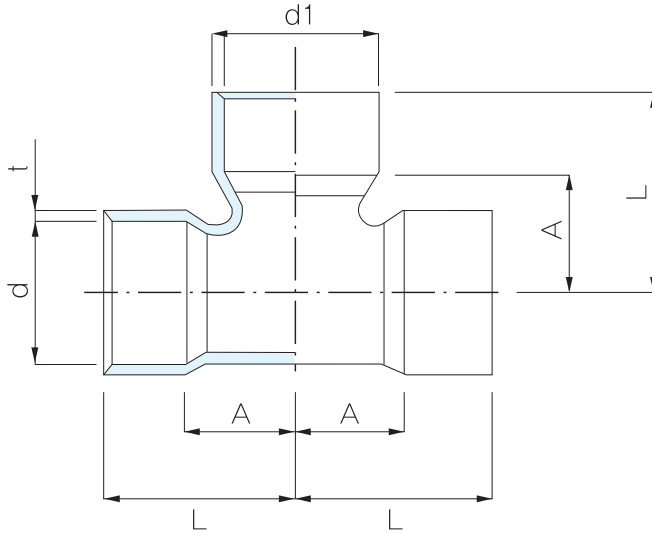


45° ELBOW

Pipe Out Diameter		d		A		R		L		t	Weight	
				90D	45D	90D	45D	90D	45D		90D	45D
Nominal	Actual	±	0.2 0	±1.0	±1.0	±1.0	±1.0	±1.0	±1.0	-0		
(ND)	(mm)	(mm)		(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)	
10	15	15.1	20	8.3	20	20	20	32	23.3	1.4	0.04	0.03
15	20	20.2						35		1.6	0.06	0.04
20	25	25.2	25	10.4	25	25	25	40	25.4		0.09	0.06
25	30	30.3									0.14	0.10
32	35	35.3	32	13.3	32	32	32	50	31.3		0.20	0.14
40	45	45.3	40	16.6	40	40	40	60	36.6	2.0	0.35	0.19
50	55	55.4	50	20.7	50	50	50	75	45.7		0.60	0.42
65	70	70.4	65	26.9	65	65	65	95	59.6		1.12	0.78
80	85	85.4	80	31.1	80	80	80	110	61.6	2.5	1.60	1.12
100	110	110.5	100	41.1	100	100	100	135	76.4	3.0	2.80	2.00
125	140	140.6	125	51.5	125	125	125	165	91.5		3.90	2.90

SOLDER BRAZING TEE

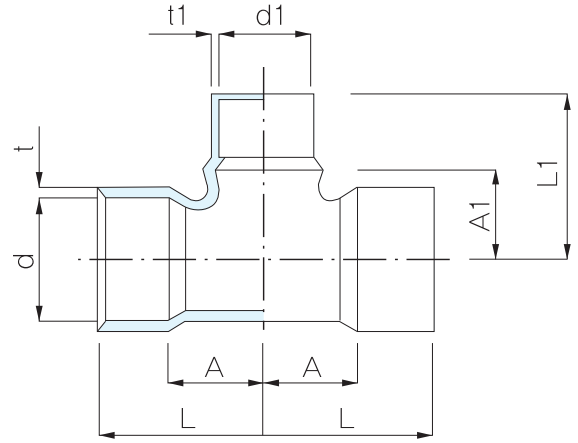
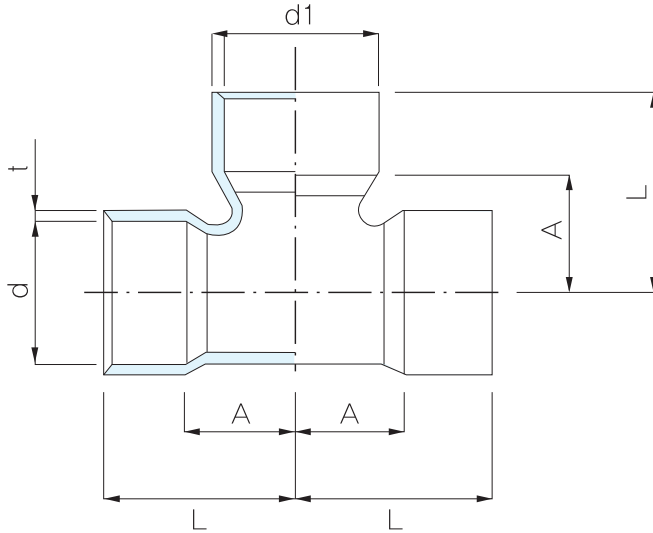
● MATERIAL : JIS H3300 C1220T-1/2H



Pipe Out Diameter				d		d1		L	L1	A	A1	t	t1	Weight	
Nominal	Actual			±	0.2 0	±	0.2 0	±1.0	±1.0	±1.0	±1.0	-0	-0	(kg)	
(ND)	(mm)			(mm)		(mm)		(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		
6	10	x	10	10.1		10.1		15	15	7.5	7.5	1.0	1.0	0.05	
10	15	x	15	15.1		15.1		27	27	15	15	1.4	1.4	0.07	
10 X 6			10			10.1			31				21	1.0	0.06
15	20	x	20	20.2		20.2		29	29	15	15	1.6	1.6	0.10	
15 X 10			15			15.1			32				20	1.4	0.08
15 X 6			10			10.1			32				22	1.0	0.07
20	25	x	25	25.2		25.2		32	32	17	17	1.6	1.6	0.16	
20 X 15			20			20.2			34				20	0.14	
20 X 10			15			15.1			36				24	1.4	0.12
25	30	x	30	30.3		30.3		36	36	20	20	1.6	1.6	0.25	
25 X 20			25			25.2			40				25	0.23	
25 X 15			20			20.2			42				28	0.21	
25 X 10			15			15.1			44				32	1.4	0.18
32	35	x	35	35.3		35.3		42	42	24	24	2.0	2.0	0.32	
32 X 25			30			30.3			47				31	0.29	
32 X 20			25			25.2			50				35	0.27	
32 X 15			20			20.2			52				38	0.25	
40	45	x	45	45.3		45.3		50	50	30	30	2.0	2.0	0.46	
40 X 32			35			35.3			56				38	0.42	
40 X 25			30			30.3			56				42	1.6	0.40
40 X 20			25			25.2			58				43	0.37	

SOLDER BRAZING TEE

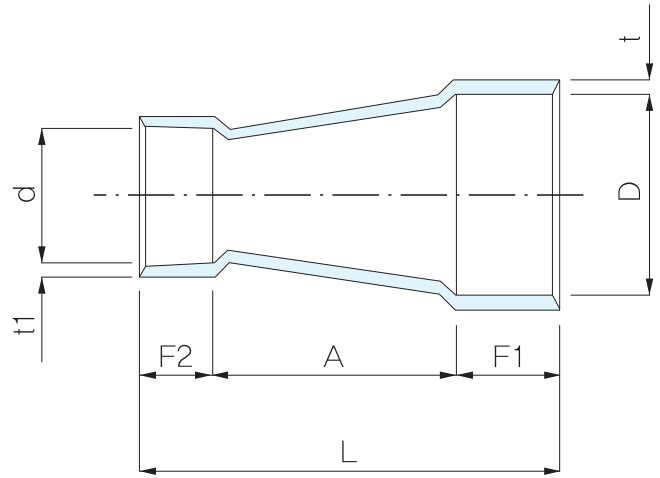
● MATERIAL : JIS H3300 C1220T-1/2H



Pipe Out Diameter		d		d1		L	L1	A	A1	t	t1	Weight
Nominal	Actual	±	0.2 0	±	0.2 0	±1.0	±1.0	±1.0	±1.0	-0	-0	(kg)
(ND)	(mm)	(mm)		(mm)		(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	
50	55 X	55	55.4	57	35	2.0	1.6	0.66	0.61	0.58	0.56	
50 X 40												
50 X 32												
50 X 25												
65	70 X	70	70.4	69	43	2.0	2.0	1.16	0.99	0.97	0.95	
65 X 50												
65 X 40												
65 X 32												
80	85 X	85	85.4	81	51	2.5	2.5	1.86	1.63	1.51	1.47	
80 X 65												
80 X 50												
80 X 40												
100	110 X	110	110.5	100	66	3.0	3.0	2.86	2.49	2.31	2.24	
100 X 80												
100 X 65												
100 X 50												
125	140 X	140	140.6	125	85	3.0	3.0	4.20	4.30	4.20		
125 X 100												
125 X 80												

SOLDER BRAZING REDUCER

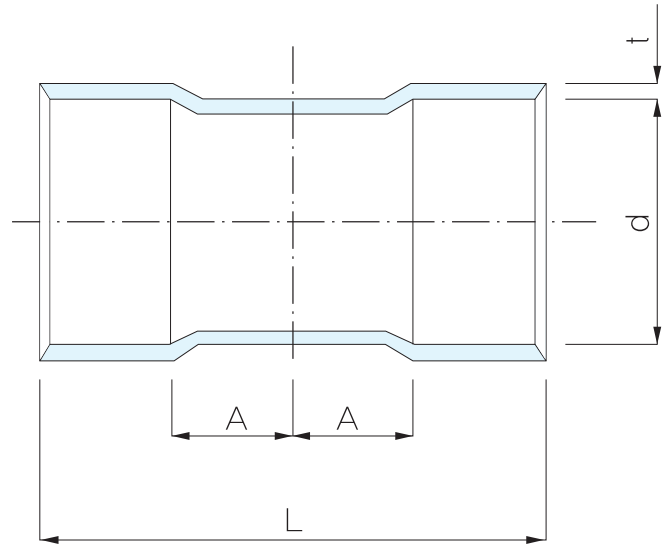
● MATERIAL : JIS H3300 C1220T-1/2H



Pipe Out Diameter				D		d		L	A	F1	F2	t	t1	Weight
Nominal	Actual			±	0.2 0	±	0.2 0	±1.0	±1.0	±1.0	±1.0	-0	-0	(kg)
(ND)	(mm)			(mm)		(mm)		(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	
10 X 6	15	X	10	15.1		10.1		29	7	12	10	1.4	1.0	0.02
15 X 10	20	X	15	20.2		15.1		35	9	14	12	1.6	1.4	0.04
15 X 6			10			10.1		35	11	14	10		1.0	0.03
20 X 15	25	X	20	25.2		20.2		35	6	15	14		1.6	0.08
20 X 10			15			15.1		36	9	15	12		1.4	0.06
20 X 6			10			10.1		38	14	15	10		1.0	0.05
25 X 20			25			25.2		43	12	16	15		1.6	0.12
25 X 15	30	X	20	30.3		20.2		47	17	16	14		1.6	0.10
25 X 10			15			15.1		50	22	16	12		1.4	0.09
32 X 25			30			30.3		44	10	18	16	1.6		0.17
32 X 20	35	X	25	35.3		25.2		51	18	18	15			0.15
32 X 15			20			20.2		51	19	18	14			0.17
40 X 32			35			35.3		50	12	20	18	2.0		0.20
40 X 25	45	X	30	45.3		30.3		62	26	20	16			0.22
40 X 15			20			20.2		72	38	20	14			0.18
50 X 40			45			45.3		60	18	22	20		2.0	0.31
50 X 32	55	X	35	55.4		35.3		77	37	22	18		1.6	0.25
50 X 25			30			30.3		75	39	22	16		1.6	0.23
65 X 50			55			55.4		74	26	26	22		2.0	0.58
65 X 40	70	X	45	70.4		45.3		90	44	26	20		2.0	0.63
65 X 32			35			35.3		75	34	26	18		1.6	0.50
80 X 65			70			70.4		82	26	30	26	2.5		0.90
80 X 50	85	X	55	85.4		55.4		99	47	30	22		2.0	0.80
80 X 40			45			45.3		99	49	30	20		2.0	0.75
100 X 80			85			85.4		107	45	34	30	3.0	2.5	1.34
100 X 65	110	X	70	110.5		70.4		129	69	34	26		2.0	1.50
100 X 50			55			55.4		126	70	34	22		2.0	1.35
125 X 100			110			110.5		109	35	40	34		3.0	2.10
125 X 80	140	X	85	140.6		85.4		148	78	40	30		2.5	2.20

SOLDER BRAZING COUPLING

● MATERIAL : JIS H3300 C1220T-1/2H



Pipe Out Diameter		d		A	L	t	Weight
Nominal	Actual	±	0.2 0	±1.0	±1.0	±1.0	(kg)
(ND)	(mm)	(mm)		(mm)	(mm)	(mm)	
10	15	15.1		6	36	1.4	0.03
15	20	20.2		7	42	1.6	0.05
20	25	25.2		8	46		0.07
25	30	30.3		8	48		0.11
32	35	35.3		9	54		0.15
40	45	45.3		10	60	2.0	0.26
50	55	55.4		11	66		0.33
65	70	70.4		13	78		0.60
80	85	85.4		15	90	2.5	0.72
100	110	110.5		17	102	3.0	1.10
125	140	140.6		20	120		1.40

BOMYUNG METAL.Co.,Ltd

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03

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(JIS)

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SOCKET WELDING / BLIND

- **COPPER NICKEL MACHINED FITTINGS**

SOCKET WELDING OR CAPILLARY END - ELBOW / TEE / REDUCER / COUPLING / UNION / ADAPTOR / OUTLET / END CAP / SPRINKLER BUSH

- **COPPER NICKEL FITTINGS & FLANGES – NAVY STANDARD**

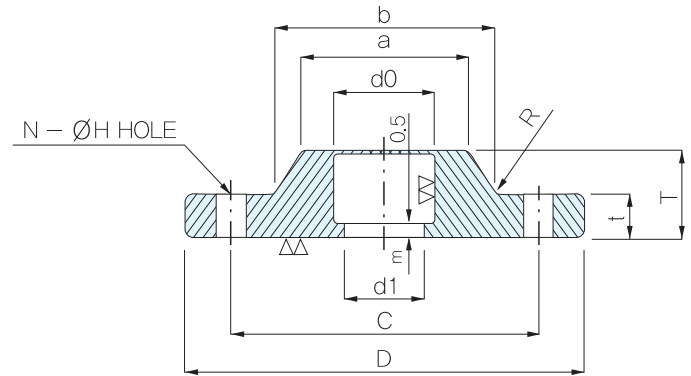
SOCKET WELDING & BUTT WELDING - ELBOW / REDUCER / TEE / COUPLING / SLEEVE / FLANGE

SOLDER BRAZING SOLID FLANGE

(SOCKET BRAZING OR CAPILLARY END)

● MATERIAL : JIS H5120 CAC202 (YBSC2)

● DIMENSION : JIS F7804



5kg.f/cm²

Pipe Out Diameter		FLANGE						STOPPER		BOLT			R
		d0	D	a	b	t	T	d1	m	C	N	H	
Nominal	Actual	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	(mm)
(ND)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	(mm)
10	15	15.1	75	26	30	9	15	12.2	2.5	55	4	12	3
15	20	20.2	80	30	34			16.8		60			
20	25	25.2	85	37	41	10	16	21.8		65			
25	30	30.3	95	42	46			26.8		75			
32	35	35.3	115	50	54	12	18	31.8		90	4	15	4
40	45	45.3	120	57	61			41.0		95			

10kg.f/cm²

Pipe Out Diameter		FLANGE						STOPPER		BOLT			R
		d0	D	a	b	t	T	d1	m	C	N	H	
Nominal	Actual	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	(mm)
(ND)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	(mm)
10	15	15.1	90	26	30	12	16	12.2	2.5	65	4	15	3
15	20	20.2	95	30	34			16.8		70			
20	25	25.2	100	37	41	14	18	21.8		75			
25	30	30.3	125	42	46			26.8		90			
32	35	35.3	135	50	54	16	20	31.8		100	4	19	4
40	45	45.3	140	57	61			41.0		105			

SOLDER BRAZING COMPOSITE FLANGE

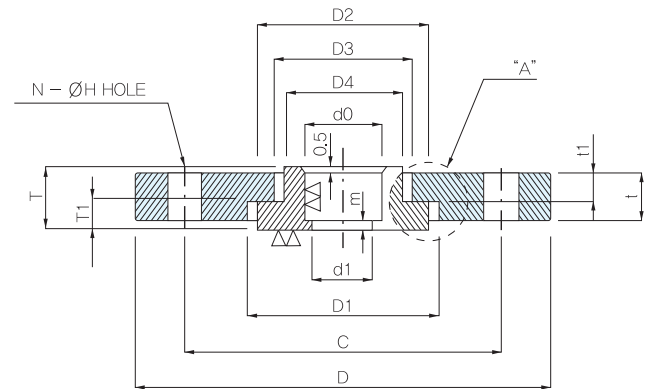
(SOCKET BRAZING OR CAPILLARY END)

● MATERIAL :

INTERNAL : JIS H5120 CAC202

EXTERNAL : JIS G3101 SS400

● DIMENSION : JIS F7804



5kg.f/cm²

Pipe Out Diameter		Internal Flange					External Flange					Stopper		Bolt-Hole			
Nominal	Actual	d0	D2	D4	T	T1	D	D1	D3	t	t1	d1	m	C	N	H	
(ND)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	(mm)
50	55	55.4	84	64	20	7	130	86	66	14	8	51	3	105	4	15	
65	70	70.4	109	77		8	155	111	79	16	10	66	4	130		8	19
80	85	85.4	120	92			180	122	94			80		145			
100	110	110.5	140	122	22	10	200	142	124	18	104	165					
125	140	141.6	175	146			235	177	148		-	-	200				

10kg.f/cm²

Pipe Out Diameter		Internal Flange					External Flange					Stopper		Bolt-Hole		
Nominal	Actual	d0	D2	D4	T	T1	D	D1	D3	t	t1	d1	m	C	N	H
(ND)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)
50	55	55.4	84	64	20	7	155	86	66	14	8	51	3	120	4	19
65	70	70.4	109	77		8	175	111	79	16	10	66	4	140		
80	85	80.5	120	92			185	122	94			80		150		
100	110	110.5	140	122	22	10	210	142	124	18	10	104	-	175	8	23
125	140	141.6	175	146			250	177	148			-		210		

BOMYUNG METAL.Co.,Ltd

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SOCKET WELDING / BLIND

- **COPPER NICKEL MACHINED FITTINGS**

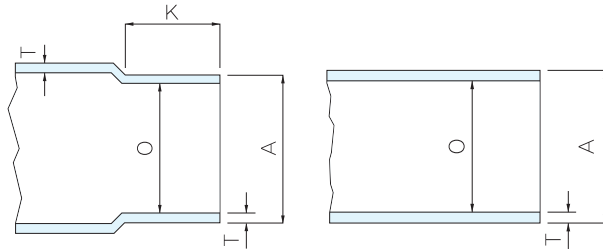
SOCKET WELDING OR CAPILLARY END - ELBOW / TEE / REDUCER / COUPLING / UNION / ADAPTOR / OUTLET / END CAP / SPRINKLER BUSH

- **COPPER NICKEL FITTINGS & FLANGES – NAVY STANDARD**

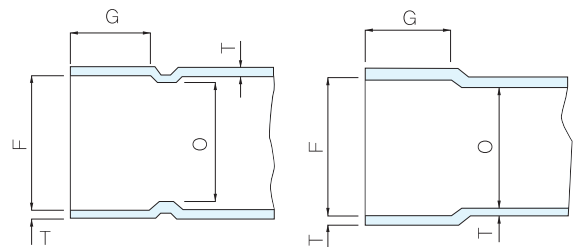
SOCKET WELDING & BUTT WELDING - ELBOW / REDUCER / TEE / COUPLING / SLEEVE / FLANGE

WROUGHT SOLDER JOINT FITTINGS

DIMENSIONS OF SOLDER JOINT ENDS



MALE END (FTG)



FEMALE END (C)

Nominal Size		Joint Ends										Metal Thickness (Min) T(mm)	Inside Diameter (Min) O(mm)
		Male End					Female End						
		Outside diameter A(mm)	Average Tolerance (mm)	Actual O.D		Length (Min) K(mm)	Inside Diameter F(mm)	Average Tolerance (mm)	Actual I.D		Length (Min) G(mm)		
MIN (mm)	MAX (mm)			MIN (mm)	MAX (mm)								
(Inch)	(mm)												
1/8	6	6.34	±0.03	6.28	6.40	7.9	6.45	±0.03	6.39	6.51	6.4	0.50	4.6
1/4	8	9.52		9.46	9.58	9.0	9.62		9.56	9.68	8	0.60	6
3/8	10	12.70		12.63	12.77	10.0	12.81		12.74	12.88	9	0.70	9
1/2	15	15.88		15.79	15.97	12.0	16.00		15.92	16.08	11	0.80	12
5/8	19	19.05		18.95	19.15	16.0	19.19		19.09	19.29	15	0.80	14
3/4	20	22.22		22.12	22.32	18.0	22.36		22.26	22.46	17	0.90	17
1	25	25.40	±0.04	25.36	25.44	20.0	25.56	±0.04	25.54	25.62	19	0.95	20
		28.58		28.45	28.71	22.0	28.75		28.63	28.87	21	1.00	23
1 1/4	32	31.75		31.71	31.79	23.0	31.93		31.91	31.99	22	1.10	26
		34.92		34.77	35.07	25.0	35.11		34.97	35.25	24	1.20	28
1 1/2	40	38.10		±0.05	38.05	38.15	27.0		38.31	±0.05	38.29	38.39	26
		41.28	41.09		41.47	28.0	41.50	41.34	41.66		27	1.30	34
1 3/4	44.45	44.40	44.50		30.0	44.68	44.66	44.76	29		1.35	36	
2	50	50.80	50.75		50.85	32.0	51.03	51.01	51.11		31	1.40	40
		53.98	53.78		54.18	34.0	54.22	54.04	54.40		33	1.50	45
2 1/2	65	66.68	66.44		66.92	38.0	66.96	66.74	67.18		37	1.70	55
3	80	79.38	79.14		79.62	43.0	79.66	79.44	79.88		42	2.00	67
4	100	104.78	104.48	105.08	55.0	105.12	104.84	105.40	54	2.40	90		
5	125	130.18	±0.08	129.84	130.52	69.0	130.55	±0.08	130.21	130.89	67	2.80	119
6	150	155.58		155.19	155.97	82.0	156.00		155.61	156.39	78	3.10	145
8	200	206.38		205.86	206.90	104.0	207.27		206.75	207.79	100	4.50	192
10	250	257.18	±0.35	256.48	257.88	115.0	259.06	±0.35	258.36	259.76	110	5.00	235

Symbol of Joint Ends

C : Solder joint fitting end made to receive copper tube diameter (Female)

Ftg : Solder joint fitting end made to copper tube diameter (Male)

F : Internal ANSI Standard Taper Pipe Thread (Female, NPTI)

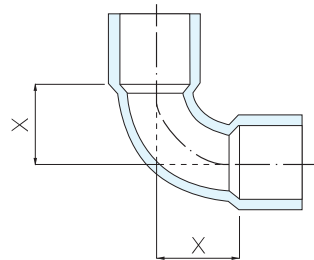
M : External ANSI Standard Taper Pipe Thread (Male, NPTE)

WROUGHT SOLDER JOINT FITTINGS

ELBOW

90 ° ELBOW

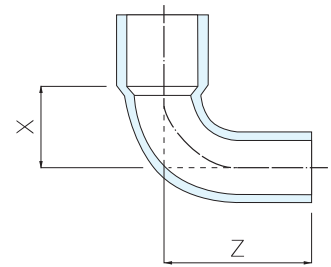
A-TYPE
90EA (C X C)



Nominal Size		Pkg. Qty	Figure X (mm)
(Inch)	(mm)		
1/4	8	1200/25	10.0
3/8	10	1000/25	12.0
1/2	15	500/25	16.0
5/8	19	300/25	17.0
3/4	20	200/20	19.5
1	25	100/10	23.0
1 1/4	32	50	21.0
1 1/2	40	30	26.0
2	50	15	35.0
2 1/2	65	20	45.0
3	80	13	48.0
4	100	6	64.0
5	125	6	85.0
6	150	5	115.0
8	200	1	121.0
1/8	6	2000/25	8.0
10	250	1	150.0
1	25.4	100/10	21.0
1 1/4	31.75	70	26.0
1 1/2	38.1	35	30.0
1 3/4	44.45	20	39.0
2	50.8	15	42.0

90 ° ELBOW

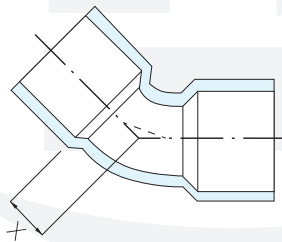
B-TYPE
90EB (Ftg X C)



Nominal Size		Pkg. Qty	Figure	
(Inch)	(mm)		X (mm)	Z (mm)
1/4	8	1200/25	10.0	18.0
3/8	10	1000/25	11.0	19.0
1/2	15	500/25	12.5	25.5
5/8	19	300/25	14.5	30.5
3/4	20	200/20	17.5	38.0
1	25	100/10	22.5	42.0
1 1/4	32	50	29.5	55.0
1 1/2	40	30	34.5	58.0
2	50	15	44.5	72.0
2 1/2	65	20	52.5	88.0
3	80	13	59.0	103.0
4	100	6	85.0	135.0
5	125	-	97.0	159.0
6	150	-	115.0	202.0
8	200	-	160.0	254.0

45 ° ELBOW * 22.5 ° ELBOW

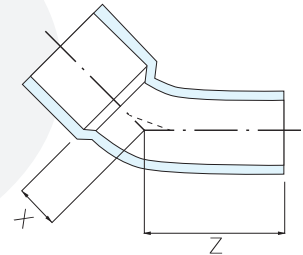
A-TYPE
45EA (C X C)



Nominal Size		Pkg. Qty	Figure X (mm)
(Inch)	(mm)		
1/4	8	1200/25	5.0
3/8	10	1000/25	6.5
1/2	15	500/25	6.5
5/8	19	300/25	7.5
3/4	20	200/20	9.0
1	25	100/10	14.0
1 1/4	32	50	15.5
1 1/2	40	30	18.0
2	50	15	22.0
* 2 1/2	65	20	28.0
* 3	80	15	30.5
* 4	100	6	43.0
* 5	125	4	40.0
* 6	150	5	51.0
8	200	1	72.5
10	250	1	92.0
1/8	6.35	2000/25	3.0
1	25.4	100/10	10.0
1 1/4	31.75	70	15.0
1 1/2	38.1	35	16.0
1 3/4	44.45	20	18.0
2	50.8	15	22.0

45° ELBOW

B-TYPE
45EB (Ftg X C)



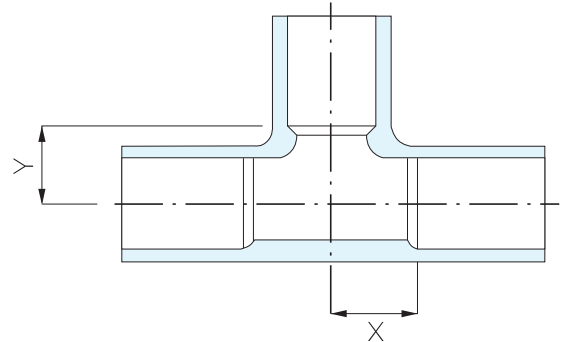
Nominal Size		Pkg. Qty	Figure	
(Inch)	(mm)		X (mm)	Z (mm)
1/4	8	1200/25	3	14.0
3/8	10	1000/25	3.5	16.5
1/2	15	500/25	4.5	19.5
5/8	19	300/25	5.0	25.0
3/4	20	200/20	6.5	29.0
1	25	100/10	7.5	36.0
1 1/4	32	50	9.0	40.5
1 1/2	40	30	10.5	46.0
2	50	15	15	56.0
2 1/2	65	20	19	66.0
3	80	15	23	73.5
4	100	6	38	98.0
5	125	-	46	125.0
6	150	-	67	141.5
8	200	-	75	176.5

WROUGHT SOLDER JOINT FITTINGS

TEE

- TEE - EQUAL
- REDUCER

A-TYPE
(C X C X C)



Nominal Size		Pkg. Qty	Figure	
(Inch)	(mm)		X (mm)	Y (mm)
1/4 X 1/4	8 X 8	1300/25	5.5	6.5
3/8 X 3/8	10 X 10	600/25	7.5	8.5
3/8 X 1/4	10 X 8	600/25	6.0	8.0
1/2 X 1/2	15 X 15	300/25	9.0	10.0
1/2 X 3/8	15 X 10	300/25	7.5	10.0
5/8 X 5/8	19 X 19	200/25	10.5	12.0
5/8 X 1/2	19 X 15	200/25	9.0	12.0
3/4 X 3/4	20 X 20	120/10	12.5	13.5
3/4 X 5/8	20 X 19	120/10	11.0	13.5
3/4 X 1/2	20 X 15	150/10	9.0	13.5
1 X 1	25 X 25	60/10	15.5	17.0
1 X 3/4	25 X 20	60/10	12.5	17.0
1 X 5/8	25 X 19	80/10	10.5	16.5
1 X 1/2	25 X 15	100/10	9.0	16.5
1 1/4 X 1 1/4	32 X 32	30	19.0	20.5
1 1/4 X 1	32 X 25	40	16.0	20.5
1 1/4 X 3/4	32 X 20	50	12.5	20.0
1 1/4 X 5/8	32 X 19	50	11.0	20.0
1 1/4 X 1/2	32 X 15	50	9.5	20.0
1 1/2 X 1 1/2	40 X 40	20	22.5	24.0
1 1/2 X 1 1/4	40 X 32	20	19.0	24.0
1 1/2 X 1	40 X 25	30	15.5	23.5
1 1/2 X 3/4	40 X 20	35	12.5	23.5
1 1/2 X 5/8	40 X 19	35	11.0	23.5
1 1/2 X 1/2	40 X 15	40	9.5	23.5
2 X 2	50 X 50	10	29.0	31.0
2 X 1 1/2	50 X 40	10	22.5	31.0
2 X 1 1/4	50 X 32	13	19.0	30.0
2 X 1	50 X 25	15	16.0	30.0
2 X 3/4	50 X 20	15	12.5	30.0
2 X 5/8	50 X 19	20	11.0	30.0
2 X 1/2	50 X 15	20	9.5	30.0
2 1/2 X 2 1/2	65 X 65	13	35.5	37.5
2 1/2 X 2	65 X 50	15	29.0	37.5
2 1/2 X 1 1/2	65 X 40	20	22.5	37.0
2 1/2 X 1 1/4	65 X 32	20	19.0	37.0
2 1/2 X 1	65 X 25	25	16.0	37.0
2 1/2 X 3/4	65 X 20	25	13.0	37.0
2 1/2 X 5/8	65 X 19	25	11.0	37.0
2 1/2 X 1/2	65 X 15	25	9.5	37.0
3 X 3	80 X 80	10	42.0	44.5

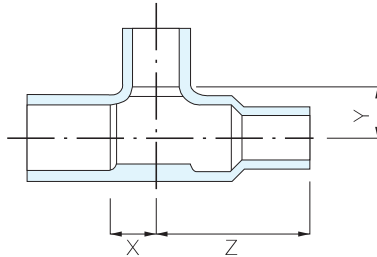
Nominal Size		Pkg. Qty	Figure	
(Inch)	(mm)		X (mm)	Y (mm)
3 X 2 1/2	80 X 65	10	35.5	44.5
3 X 2	80 X 50	13	29.0	44.5
3 X 1 1/2	80 X 40	13	23.0	44.5
3 X 1 1/4	80 X 32	13	19.5	44.5
3 X 1	80 X 25	15	16.5	44.5
3 X 3/4	80 X 20	15	13.5	44.5
3 X 5/8	80 X 19	15	11.5	44.5
3 X 1/2	80 X 15	10	10.0	44.5
4 X 4	100 X 100	5	55.0	58.0
4 X 3	100 X 80	5	42.0	58.0
4 X 2 1/2	100 X 65	5	36.0	58.0
4 X 2	100 X 50	6	29.5	58.0
4 X 1 1/2	100 X 40	6	23.0	58.0
4 X 1 1/4	100 X 32	8	20.0	58.0
4 X 1	100 X 25	8	16.5	58.0
4 X 3/4	100 X 20	8	13.5	58.0
4 X 5/8	100 X 19	8	12.0	58.0
4 X 1/2	100 X 15	5	10.5	58.0
5 X 5	125 X 125	2	68.5	71.5
5 X 4	125 X 100	3	55.5	71.0
5 X 3	125 X 80	3	42.5	71.0
5 X 2 1/2	125 X 65	4	36.0	71.0
5 X 2	125 X 50	4	30.0	71.0
5 X 1 1/2	125 X 40	4	23.5	71.0
5 X 1 1/4	125 X 32	4	20.5	71.0
5 X 1	125 X 25	4	17.0	71.0
6 X 6	150 X 150	2	81.5	85.0
6 X 5	150 X 125	2	68.5	85.0
6 X 4	150 X 100	2	55.5	84.5
6 X 3	150 X 80	2	43.0	84.5
6 X 2 1/2	150 X 65	3	36.5	84.5
6 X 2	150 X 50	3	30.0	84.5
8 X 8	200 X 200	1	108.5	113.5
8 X 6	200 X 150	1	82.5	113.0
8 X 5	200 X 125	1	69.5	113.0
8 X 4	200 X 100	1	57.0	113.5
8 X 3	200 X 80	1	44.0	113.5
8 X 2 1/2	200 X 65	1	38.0	113.5
8 X 2	200 X 50	1	31.5	113.5
1/8 X 1/8	6 X 6	2000/25	4.0	5.0
10 X 10	250 X 250	1	135	142.0

WROUGHT SOLDER JOINT FITTINGS

TEE

TEE-REDUCER

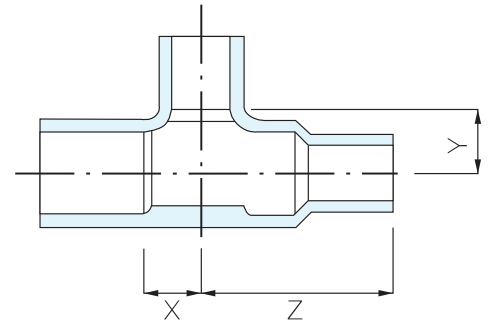
3B-TYPE
(C X Ftg X C)



Nominal Size		Pkg. Qty	Figure		
(Inch)	(mm)		A (mm)	B (mm)	Z (mm)
5/8 X 1/2 X 1/2	19 X 15 X 15	200	10.0	12.5	25.0
3/4 X 1/2 X 1/2	20 X 15 X 15	180/10	11.0	13.5	34.0
1 X 3/4 X 3/4	25 X 20 X 20	60	13.0	20.0	40.5
1 X 3/4 X 5/8	25 X 20 X 19	60	10.5	18.5	43.5

TEE-REDUCER

3A-TYPE
(C X C X C)



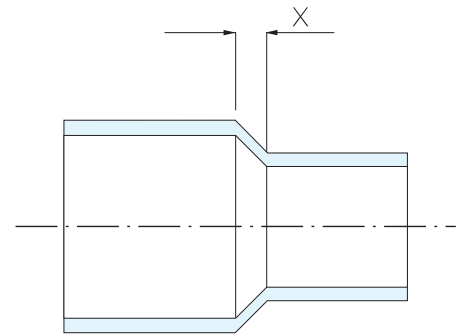
Nominal Size		Pkg. Qty	Figure		
(Inch)	(mm)		X (mm)	Y (mm)	Z (mm)
1/2 X 3/8 X 3/8	15 X 10 X 10	-	7.0	8.5	25.0
3/4 X 1/2 X 1/2	20 X 15 X 15	-	8.5	11.5	32.0
3/4 X 1/2 X 3/4	20 X 15 X 20	-	12.5	13.5	33.0
1 X 1/2 X 1/2	25 X 15 X 15	-	9.0	13.5	29.0
1 X 1/2 X 3/4	25 X 15 X 20	-	12.5	16.5	39.5
1 X 1/2 X 1	25 X 15 X 25	-	15.5	17.0	43.0
1 X 3/4 X 1/2	25 X 20 X 15	-	9.0	16.5	39.0
1 X 3/4 X 3/4	25 X 20 X 20	-	12.5	16.5	42.5
1 X 3/4 X 1	25 X 20 X 25	-	15.5	17.0	46.0
1 1/4 X 1/2 X 1/2	32 X 15 X 15	-	9.0	20.0	41.0
1 1/4 X 1/2 X 1 1/4	32 X 15 X 32	-	19.0	20.5	51.0
1 1/4 X 3/4 X 1/2	32 X 20 X 15	-	9.0	20.0	44.0
1 1/4 X 3/4 X 3/4	32 X 20 X 20	-	12.5	20.0	47.0
1 1/4 X 3/4 X 1	32 X 20 X 25	-	16.0	20.5	50.5
1 1/4 X 3/4 X 1 1/4	32 X 20 X 32	-	19.0	20.5	53.5
1 1/4 X 1 X 1/2	32 X 25 X 15	-	9.0	20.0	43.5
1 1/4 X 1 X 3/4	32 X 25 X 20	-	12.5	20.0	46.5
1 1/4 X 1 X 1	32 X 25 X 25	-	16.0	20.5	50.0
1 1/4 X 1 X 1 1/4	32 X 25 X 32	-	19.0	20.5	53.0
1 1/2 X 1/2 X 1	40 X 15 X 25	-	15.5	23.5	53.0
1 1/2 X 1/2 X 1 1/2	40 X 15 X 40	-	22.5	24.0	59.0
1 1/2 X 1/2 X 1 1/2	40 X 20 X 15	-	9.5	23.5	49.0
1 1/2 X 3/4 X 3/4	40 X 20 X 20	-	12.5	23.5	52.0
1 1/2 X 3/4 X 1	40 X 20 X 25	-	15.5	23.5	55.0
1 1/2 X 3/4 X 1 1/4	40 X 20 X 32	-	19.0	24.0	58.0
1 1/2 X 3/4 X 1 1/2	40 X 20 X 40	-	22.5	24.0	62.0
1 1/2 X 1 X 1/2	40 X 25 X 15	-	9.5	23.5	48.0
1 1/2 X 1 X 3/4	40 X 25 X 20	-	12.5	23.5	51.0
1 1/2 X 1 X 1	40 X 25 X 25	-	15.5	23.5	54.5
1 1/2 X 1 X 1 1/4	40 X 25 X 32	-	19.0	24.0	57.5
1 1/2 X 1 X 1 1/2	40 X 25 X 40	-	22.5	24.0	61.0
1 1/2 X 1 1/4 X 1/2	40 X 32 X 15	-	9.5	23.5	45.0
1 1/2 X 1 1/4 X 3/4	40 X 32 X 20	-	12.5	23.5	49.0
1 1/2 X 1 1/4 X 1	40 X 32 X 25	-	15.5	23.5	52.0
1 1/2 X 1 1/4 X 1 1/4	40 X 32 X 32	-	19.0	24.0	55.5
1 1/2 X 1 1/4 X 1 1/2	40 X 32 X 40	-	22.5	24.0	59.0

Nominal Size		Pkg. Qty	Figure		
(Inch)	(mm)		X (mm)	Y (mm)	Z (mm)
2 X 1/2 X 2	50 X 15 X 50	-	29.0	31.0	75.0
2 X 3/4 X 2	50 X 20 X 50	-	29.0	31.0	78.5
2 X 1 X 1	50 X 25 X 25	-	16.0	30.0	65.0
2 X 1 X 1 1/2	50 X 25 X 40	-	22.5	30.5	72.5
2 X 1 X 2	50 X 25 X 50	-	29.0	31.0	79.0
2 X 1 1/4 X 3/4	50 X 32 X 20	-	12.5	30.0	61.5
2 X 1 1/4 X 1	50 X 32 X 25	-	16.0	30.0	64.5
2 X 1 1/4 X 1 1/4	50 X 32 X 32	-	19.0	30.0	67.5
2 X 1 1/4 X 1 1/2	50 X 32 X 40	-	22.5	30.5	71.0
2 X 1 1/4 X 2	50 X 32 X 50	-	29.0	31.0	77.5
2 X 1 1/2 X 3/4	50 X 40 X 20	-	12.5	30.0	60.5
2 X 1 1/2 X 1	50 X 40 X 25	-	16.0	30.0	64.0
2 X 1 1/2 X 1 1/4	50 X 40 X 32	-	19.0	30.0	67.0
2 X 1 1/2 X 1 1/2	50 X 40 X 40	-	22.5	30.5	70.5
2 X 1 1/2 X 2	50 X 40 X 50	-	29.0	31.0	77.0
2 1/2 X 3/4 X 2 1/2	65 X 20 X 65	-	35.5	37.5	92.5
2 1/2 X 1 X 2 1/2	65 X 25 X 65	-	35.5	37.5	93.0
2 1/2 X 1 1/4 X 1 1/4	65 X 32 X 32	-	19.0	37.0	75.5
2 1/2 X 1 1/4 X 2 1/2	65 X 32 X 65	-	35.5	37.5	91.5
2 1/2 X 1 1/2 X 2 1/2	65 X 40 X 65	-	35.5	37.5	91.0
2 1/2 X 2 X 1/2	65 X 50 X 15	-	9.5	37.0	64.0
2 1/2 X 2 X 3/4	65 X 50 X 20	-	13.0	37.0	68.0
2 1/2 X 2 X 1	65 X 50 X 25	-	16.0	37.0	71.0
2 1/2 X 2 X 1 1/4	65 X 50 X 32	-	19.0	37.0	74.5
2 1/2 X 2 X 1 1/2	65 X 50 X 40	-	22.5	37.0	77.5
2 1/2 X 2 X 2	65 X 50 X 50	-	29.0	37.5	84.0
2 1/2 X 2 X 2 1/2	65 X 50 X 65	-	35.5	37.5	90.5
3 X 2 X 2	80 X 50 X 50	-	29.0	44.0	92.0
3 X 2 X 3	80 X 50 X 80	-	42.0	44.5	104.5
3 X 2 1/2 X 3/4	80 X 65 X 20	-	13.0	44.0	73.0
3 X 2 1/2 X 1 1/2	80 X 65 X 40	-	23.0	44.0	82.5
3 X 2 1/2 X 2	80 X 65 X 50	-	29.0	44.0	88.5
3 X 2 1/2 X 2 1/2	80 X 65 X 65	-	35.5	44.0	95.0
3 X 2 1/2 X 3	80 X 60 X 80	-	42.0	44.5	101.5
4 X 3 X 4	100 X 80 X 100	-	55.0	58.0	128.0
4 X 3 X 3	100 X 80 X 80	-	42.0	57.5	115.0

WROUGHT SOLDER JOINT FITTINGS

REDUCER

- A-TYPE
(C X C)



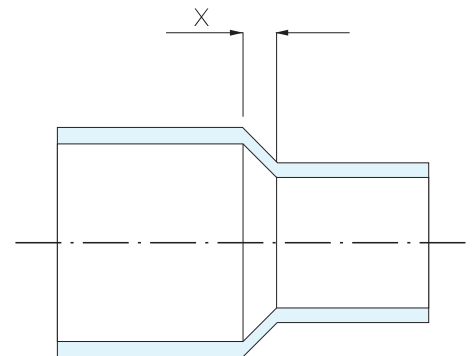
Nominal Size		Pkg. Qty	Figure
(Inch)	(mm)		
3/8 X 1/4	10 X 8	800/25	5.0
1/2 X 3/8	15 X 10	800/25	5.0
5/8 X 1/2	19 X 15	500/25	5.0
3/4 X 5/8	20 X 19	350/25	5.0
3/4 X 1/2	20 X 15	350/25	7.5
1 X 3/4	25 X 20	160/10	7.5
1 X 5/8	25 X 19	160/10	9.5
1 X 1/2	25 X 15	200/10	12.0
1 1/4 X 1	32 X 25	100	7.5
1 1/4 X 3/4	32 X 20	100	12.0
1 1/4 X 5/8	32 X 19	100	14.5
1 1/4 X 1/2	32 X 15	100	17.0
1 1/2 X 1 1/4	40 X 32	70	7.5
1 1/2 X 1	40 X 25	70	12.0
1 1/2 X 3/4	40 X 20	70	17.0
1 1/2 X 5/8	40 X 19	70	19.0
1 1/2 X 1/2	40 X 15	70	21.5
2 X 1 1/2	50 X 40	50	12.0
2 X 1 1/4	50 X 32	50	17.0
2 X 1	50 X 25	50	21.5
2 X 3/4	50 X 20	50	24.5
2 X 5/8	50 X 19	50	28.5
2 X 1/2	50 X 15	50	28.5
2 1/2 X 2	65 X 50	30	12.5
2 1/2 X 1 1/2	65 X 40	30	21.5
2 1/2 X 1 1/4	65 X 32	30	26.5
2 1/2 X 1	65 X 25	30	25.5
2 1/2 X 3/4	65 X 20	30	29.5
2 1/2 X 5/8	65 X 19	30	31.5
2 1/2 X 1/2	65 X 15	30	33.5
3 X 2 1/2	80 X 65	15	12.5
3 X 2	80 X 50	20	22.0
3 X 1 1/2	80 X 40	20	31.0
3 X 1 1/4	80 X 32	20	29.5
3 X 1	80 X 25	20	33.5
3 X 3/4	80 X 20	20	37.0
3 X 5/8	80 X 19	20	39.0
3 X 1/2	80 X 15	20	41.0
4 X 3	100 X 80	20	22.0
4 X 2 1/2	100 X 65	20	31.5

Nominal Size		Pkg. Qty	Figure
(Inch)	(mm)		
4 X 2	100 X 50	20	33.5
4 X 1 1/2	100 X 40	20	41.0
4 X 1 1/4	100 X 32	20	45.0
4 X 1	100 X 25	20	48.5
4 X 3/4	100 X 20	20	52.5
4 X 5/8	100 X 19	20	54.5
4 X 1/2	100 X 15	20	56.5
5 X 4	125 X 100	9	29.0
5 X 3	125 X 80	10	41.0
5 X 2 1/2	125 X 65	10	41.5
5 X 2	125 X 50	10	49.0
5 X 1 1/2	125 X 40	10	56.5
5 X 1 1/4	125 X 32	10	60.0
5 X 1	125 X 25	10	64.0
5 X 3/4	125 X 20	12	68.0
5 X 5/8	125 X 19	12	69.5
5 X 1/2	125 X 15	12	71.5
6 X 5	150 X 125	4	26.0
6 X 4	150 X 100	4	41.0
6 X 3	150 X 80	6	60.0
6 X 2 1/2	150 X 65	6	56.5
6 X 2	150 X 50	6	64.0
6 X 1 1/2	150 X 40	5	71.5
6 X 1 1/4	150 X 32	5	75.5
6 X 1	150 X 25	5	79.5
6 X 3/4	150 X 20	5	83.0
6 X 5/8	150 X 19	5	70.5
6 X 1/2	150 X 15	5	87.0
8 X 6	200 X 150	2	45.5
8 X 5	200 X 125	2	64.5
8 X 4	200 X 100	2	64.5
8 X 3	200 X 80	2	80.0
8 X 2 1/2	200 X 65	2	87.5
8 X 2	200 X 50	2	95.0
10 X 8	250 X 200	2	39.5
10 X 6	250 X 150	2	70.0
10 X 5	250 X 125	2	85.0
10 X 4	250 X 100	2	96.5
10 X 3	250 X 80	2	111.5
10 X 2 1/2	250 X 65	2	119.0

WROUGHT SOLDER JOINT FITTINGS

REDUCER

- B-TYPE
(C X Ftg)



Nominal Size		Pkg. Qty	Figure
(Inch)	(mm)		
3/8 X 1/4	10 X 8	300	3.5
1/2 X 3/8	15 X 10	200	3.5
5/8 X 1/2	19 X 15	100	3.0
3/4 X 5/8	20 X 19	200	3.0
3/4 X 1/2	20 X 15	200	5.5
1 X 3/4	25 X 20	100	5.0
1 X 5/8	25 X 19	100	7.5
1 X 1/2	25 X 15	100	10.0
1 1/4 X 1	32 X 25	100	5.0
1 1/4 X 3/4	32 X 20	100	9.5
1 1/4 X 5/8	32 X 19	100	12.0
1 1/4 X 1/2	32 X 15	100	14.5
1 1/2 X 1 1/4	40 X 32	70	4.5
1 1/2 X 1	40 X 25	70	9.5
1 1/2 X 3/4	40 X 20	70	14.0
1 1/2 X 5/8	40 X 19	70	16.5
1 1/2 X 1/2	40 X 15	70	19.0
2 X 1 1/2	50 X 40	50	9.0
2 X 1 1/4	50 X 32	50	14.0
2 X 1	50 X 25	50	18.5
2 X 3/4	50 X 20	50	19.0
2 X 5/8	50 X 19	50	21.0
2 X 1/2	50 X 15	50	23.0
2 1/2 X 2	65 X 50	30	7.5
2 1/2 X 1 1/2	65 X 40	30	15.0
2 1/2 X 1 1/4	65 X 32	30	19.0
2 1/2 X 1	65 X 25	30	22.5
2 1/2 X 3/4	65 X 20	30	26.5
2 1/2 X 5/8	65 X 19	30	28.5
2 1/2 X 1/2	65 X 15	30	30.0
3 X 2 1/2	80 X 65	20	8.5
3 X 2	80 X 50	20	15.0
3 X 1 1/2	80 X 40	20	22.5
3 X 1 1/4	80 X 32	20	26.0
3 X 1	80 X 25	20	30.0
3 X 3/4	80 X 20	20	33.5
3 X 5/8	80 X 19	20	35.5
3 X 1/2	80 X 15	20	37.5
4 X 3 1/2	100 X 90	20	6.5
4 X 3	100 X 80	20	14.0
4 X 2 1/2	100 X 65	20	21.5

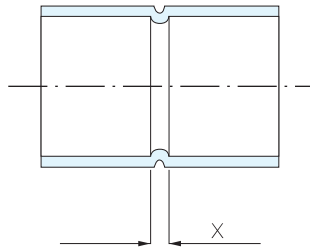
Nominal Size		Pkg. Qty	Figure
(Inch)	(mm)		
4 X 2	100 X 50	20	29.0
4 X 1 1/2	100 X 40	20	37.0
4 X 1 1/4	100 X 32	20	40.5
4 X 2	100 X 50	20	44.5
4 X 3/4	100 X 20	20	48.0
4 X 5/8	100 X 19	20	50.0
4 X 1/2	100 X 15	20	52.0
5 X 4	125 X 100	9	13.5
5 X 3	125 X 80	10	28.5
5 X 2 1/2	125 X 65	10	36.5
5 X 2	125 X 50	10	44.0
5 X 1 1/2	125 X 40	10	51.5
5 X 1 1/4	125 X 32	10	50.0
5 X 1	125 X 25	12	59.0
5 X 3/4	125 X 20	12	63.0
5 X 5/8	125 X 19	12	64.5
5 X 1/2	125 X 15	12	66.5
6 X 5	150 X 125	4	17.0
6 X 4	150 X 100	4	28.5
6 X 3	150 X 80	6	43.5
6 X 2 1/2	150 X 65	6	51.0
6 X 2	150 X 50	6	58.5
6 X 1 1/2	150 X 40	5	66.0
6 X 1 1/4	150 X 32	5	70.0
6 X 1	150 X 25	5	73.5
6 X 3/4	150 X 20	5	77.5
6 X 5/8	150 X 19	5	79.5
6 X 1/2	150 X 15	5	81.5
8 X 6	200 X 150	2	30.5
8 X 5	200 X 125	2	45.5
8 X 4	200 X 100	2	56.5
8 X 3	200 X 80	2	72.0
8 X 2 1/2	200 X 65	2	79.5
8 X 2	200 X 50	2	87.0
8 X 1 1/2	200 X 40	2	94.5
8 X 1 1/4	200 X 32	2	98.5
8 X 1	200 X 25	2	102.0
8 X 3/4	200 X 20	2	106.0
8 X 5/8	200 X 19	2	107.5
8 X 1/2	200 X 15	2	109.5
10 X 8	250 X 200	2	53.5

WROUGHT SOLDER JOINT FITTINGS

SOCKET / CAP / AIR CHAMBER / RETURN BEND

SOCKET

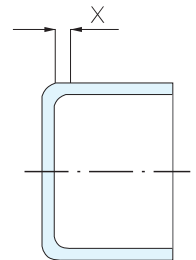
A-TYPE
(C X C)



Nominal Size		Pkg. Qty	Figure	
(Inch)	(mm)		X (mm)	
3/8	10	1200/25	2.0	
1/2	15	800/25	2.0	
5/8	19	400/25	2.0	
3/4	20	300/25	2.0	
1	25	150/10	2.0	
1 1/4	32	100	2.0	
1 1/2	40	50	2.0	
2	50	40	2.0	
2 1/2	65	40	2.0	
3	80	30	2.0	
4	100	15	2.0	
5	125	6	6.0	
6	150	4	6.0	
8	200	2	6.0	
10	250	2	6.0	
1/8	6.35	2500/25	2.0	
1	25.4	200/10	2.0	
1 1/4	31.75	100	2.0	
1 1/2	38.1	80	2.0	
1 3/4	44.45	50	2.0	
2	50.8	40	2.0	

CAP

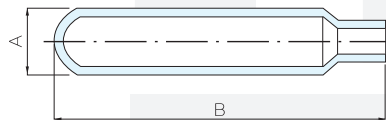
(C)



Nominal Size		Pkg. Qty	Figure	
(Inch)	(mm)		X (mm)	
1/4	8	-	1.5	
3/8	10	2500/25	1.5	
1/2	15	1400/25	2.0	
5/8	19	700/25	2.0	
3/4	20	550/25	2.3	
1	25	300/110	2.7	
1 1/4	32	200	2.6	
1 1/2	40	140	2.4	
2	50	60	2.7	
2 1/2	65	30	3.4	
3	80	20	3.3	
4	100	30	6.0	
5	125	12	6.0	
6	150	8	7.0	

AIR CHAMBER

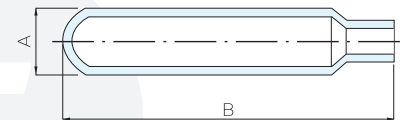
A-TYPE
(C)



Nominal Size		Pkg. Qty	Figure	
(Inch)	(mm)		A (mm)	B (mm)
1/2 X 6	15 X 150	80	28.58	150
1/2 X 12	15 X 300	40	28.58	300
5/8 X 12	19 X 300	40	28.58	300
3/4 X 12	20 X 300	40	28.58	300
1 X 12	25 X 300	25	34.92	300
1 1/4 X 12	32 X 300	-	41.28	300

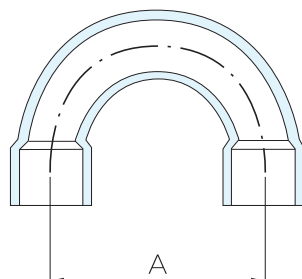
AIR CHAMBER

C-TYPE
(Ftg)



Nominal Size		Pkg. Qty	Figure	
(Inch)	(mm)		A (mm)	B (mm)
1/2 X 6	15 X 150	-	28.58	150
1/2 X 12	15 X 300	-	28.58	300
5/8 X 12	19 X 300	-	28.58	300
3/4 X 12	20 X 300	-	28.58	300
1 X 12	25 X 300	-	34.92	300
1 1/4 X 12	32 X 300	-	41.28	300

RETURN BEND

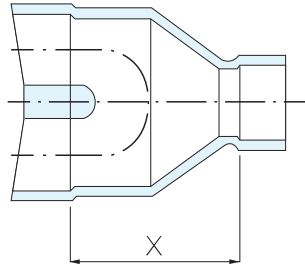


Nominal Size		Pkg. Qty	Figure	
(Inch)	(mm)		X (mm)	
1/4	8	800	35	
3/8	10	400	37.5	
1/2	15	300	37.5	
1/2	15	300	38.1	
1/2	15	250	41.5	
1/2	15	-	47.5	
5/8	19	150	47.5	
3/4	20	80	62	
3/4	20	-	65	
1	25	40	70	
1 1/4	32	-	130	
1 1/2	40	-	130	

WROUGHT SOLDER JOINT FITTINGS

Y-JOINT / P-TRAP / SOLDER JOINT

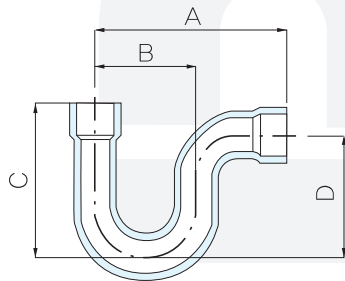
Y-JOINT



Tube Size (mm)	X (mm)	Pkg. Qty Box	
		Poly	Box
6.35	17	-	-
9.52	23	-	500
12.7	25.5	-	250
15.88	31	-	200
19.05	39	-	80
22.22	44.5	-	50
25.4	44.5	-	40
28.58	45.5	-	30
31.75	54.5	-	20
34.92	52.5	-	18
38.1	56	-	13

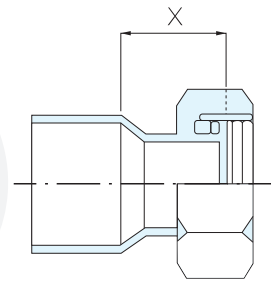
Tube Size (mm)	X (mm)	Pkg. Qty Box	
		Poly	Box
9.52 X 6.35	15	20	500
12.70 X 6.35	11.5	20	340
12.70 X 9.52	19	20	500
15.88 X 9.52	17	20	400
15.88 X 12.70	23.5	20	240
19.05 X 9.52	17	10	250
19.05 X 12.70	21.5	10	200
19.05 X 15.88	29	10	130
22.22 X 19.05	38.5	10	60
25.40 X 12.70	19	10	170
25.40 X 15.88	27.5	10	110
25.40 X 19.05	34	10	60
28.58 X 19.05	31.5	5	60
28.58 X 22.22	38	5	50
28.58 X 25.40	44	5	40
44.45 X 25.40	32	-	30
50.80 X 19.05	36.5	-	30
50.80 X 25.40	29.5	-	25
50.80 X 31.75	41	-	17

P-TRAP



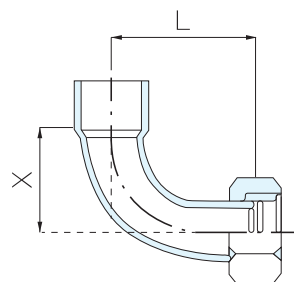
Tube Size (mm)	A (mm)	B (mm)	C (mm)	D (mm)	Pkg. Qty Box	
					Poly	Box
12.7	55	30	40	31	10	250
15.88	75	40	56	45	10	100
19.05	94	50	68	53	5	60
22.22	106	55	75	58	6	30
25.4	135	70	93	74	-	20
28.58	150	80	135	114	-	15
31.75	153	80	115	93	-	12

SOLDER JOINT (STRAIGHT)



Tube Size (mm)	X (mm)	Thread	Pkg. Qty Box
9.52	16	G1/2	350
12.7	16	G1/2	350
15.88	19	G1/2	300
15.88	19	G3/4	200
22.22	23	G1/2	200
22.22	21	G3/4	160
22.22	21	G1	100
28.58	24	G1	80

SOLDER JOINT (BENT)

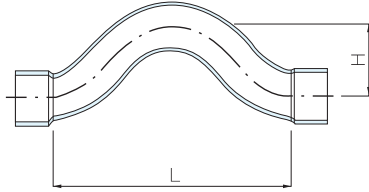


Tube Size (mm)	L (mm)	X (mm)	Thread	Pkg. Qty Box
12.7	35	24	G1/2	300
15.88	35	24	G1/2	200
15.88	39	26	G3/4	120
22.22	47	30	G3/4	90
28.58	61	36	G1	50

WROUGHT SOLDER JOINT FITTINGS

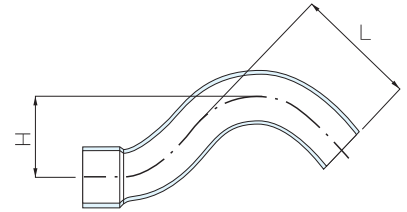
CROSS OVER / ADAPTER

● CROSS OVER (C X C)



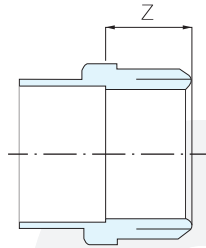
Tube Size (mm)	L (mm)	H (mm)	Pkg. Qty	
			Poly	Box
15.88	91	27	-	-
22.22	118	32.5	-	-

● CROSS OVER (F X C)



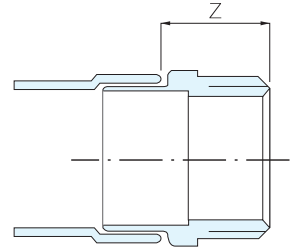
Tube Size (mm)	L (mm)	H (mm)	Pkg. Qty	
			Poly	Box
15.88	40.8	27	-	-
22.22	53.8	32.5	-	-

● ADAPTER (C X M)



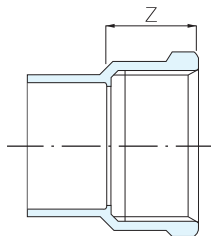
Tube Size (mm)	Z (mm)	Thread	Pkg. Qty	
			Poly	Box
12.7	15	R3/8	20	1,000
12.7	21	R1/2	20	500
15.88	14.5	R1/2	20	600
22.22	20	R3/4	20	240
22.22	18	R1/2	20	240
28.58	22	R1	10	150
34.92	25	R1 1/4	-	110
41.28	26	R1 1/2	-	65
53.98	29	R2	-	38

● ADAPTER (FTG X M)



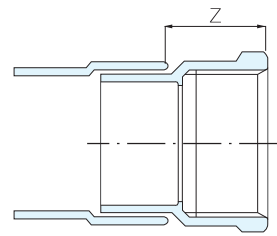
Tube Size (mm)	Z (mm)	Thread	Pkg. Qty	
			Poly	Box
12.7	16	R3/8	20	800
15.88	20	R1/2	20	500
22.22	23	R3/4	20	240
28.58	26	R1	10	130
34.92	30	R1 1/4	-	80
41.28	32	R1 1/2	-	50
53.98	36	R2	-	38

● ADAPTER (C X F)



Tube Size (mm)	Z (mm)	Thread	Pkg. Qty	
			Poly	Box
12.7	15	Rc 3/8	20	800
12.7	18	Rc 1/2	20	500
15.88	20	Rc 1/2	20	440
22.22	21.5	Rc 3/4	20	200
22.22	18	Rc 1/2	20	300
28.58	21	Rc 1	10	140
34.92	25	Rc 1 1/4	-	80
41.28	26	Rc 1 1/2	-	60
53.98	32	Rc 2	-	36

● ADAPTER (FTG X F)



Tube Size (mm)	Z (mm)	Thread	Pkg. Qty	
			Poly	Box
15.88	19	Rc 1/2	20	500
22.22	22	Rc 3/4	20	200
28.58	26	Rc 1	10	130
34.92	29	Rc 1 1/4	-	80
41.28	29	Rc 1 1/2	-	50
53.98	34	Rc 2	-	38

BOMYUNG METAL.Co.,Ltd

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10kg/cm² / 20kg/cm² / 125LB / 150LB

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- **COPPER NICKEL MACHINED FITTINGS**

SOCKET WELDING OR CAPILLARY END - ELBOW / TEE / REDUCER / COUPLING / UNION / ADAPTOR / OUTLET / END CAP / SPRINKLER BUSH

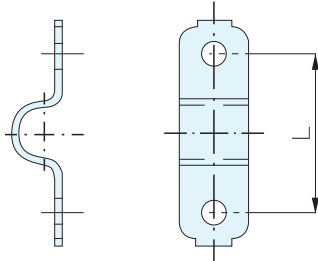
- **COPPER NICKEL FITTINGS & FLANGES – NAVY STANDARD**

SOCKET WELDING & BUTT WELDING - ELBOW / REDUCER / TEE / COUPLING / SLEEVE / FLANGE

WROUGHT SOLDER JOINT FITTINGS

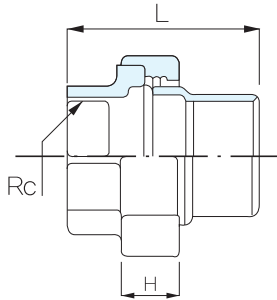
TUBE STRAP / DIELECTRIC UNION

- TUBE STRAP
(2 HOLE STRAP)



Tube Size (mm)	L (mm)	Pkg. Qty Box
6.35	23	2000
15.88	35	1000
22.22	44	600
28.58	51	350
34.92	51	350
41.28	58	300
53.98	73	200

- DIELECTRIC UNION
(C X F)

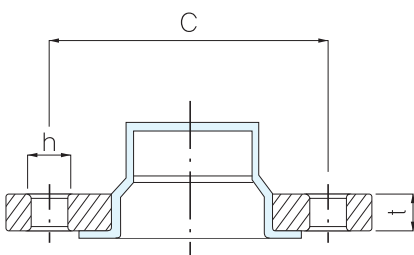


Nominal Size		Pkg. Qty Box	Application Copper Tube O.D (mm)	Dimension (mm)		PT
(Inch)	(mm)			L	H	
1/2	15	50	15.88	47	17.0	1/2
3/4	20	50	22.22	58	18.5	3/4
1	25	30	28.58	63	20.0	1
1 1/4	32	20	34.92	73	22.0	1 1/4
1 1/2	40	12	41.28	80	24.5	1 1/2
2	50	6	53.98	94	27.0	2

DIELECTRIC (ISOLATED) FLANGE

DIELECTRIC FLANGE

- DIELECTRIC FLANGE
CLASS 10kg/cm²



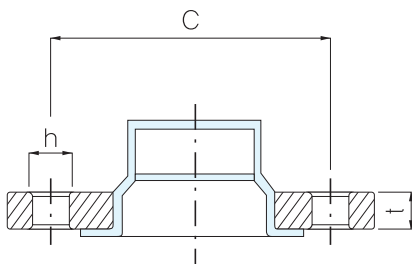
Nominal Size		Pkg. Qty	Application Copper Tube O.D (mm)	Dimension (mm)		
(Inch)	(mm)			X	Y	Z
1/2	15	20	15.88	70	15 X 4	12
3/4	20	16	22.22	75	15 X 4	14
1	25	8	28.58	90	19 X 4	14
1 1/4	32	8	34.92	100	19 X 4	16
1 1/2	40	8	41.28	105	19 X 4	16
2	50	6	53.98	120	19 X 4	16
2 1/2	65	4	66.68	140	19 X 4	18
3	80	4	79.38	150	19 X 8	18
4	100	2	104.78	175	19 X 8	18
5	125	2	130.18	210	23 X 8	20
6	150	1	155.58	240	23 X 12	22
8	200	1	206.38	290	23 X 12	22
10	250	1	257.18	355	23 X 12	24

DIELECTRIC (ISOLATED) FLANGE

DIELECTRIC FLANGE

● DIELECTRIC FLANGE

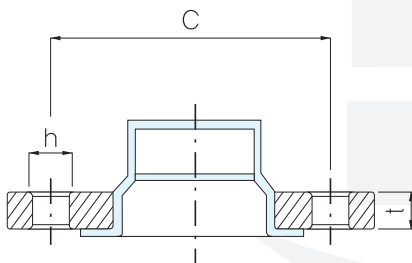
CLASS 20kg/cm²



Nominal Size		Pkg. Qty.	Application Copper Tube O.D (mm)	Dimension (mm)		
(Inch)	(mm)			c	h	t
1/2	15	20	15.88	70	15 X 4	14
3/4	20	16	22.22	75	15 X 4	16
1	25	8	28.58	90	19 X 4	16
1 1/4	32	8	34.92	100	19 X 4	18
1 1/2	40	8	41.28	105	19 X 8	18
2	50	6	53.98	120	19 X 8	18
2 1/2	65	4	66.68	140	23 X 8	20
3	80	2	79.38	160	23 X 8	22
4	100	2	104.78	185	23 X 8	24
5	125	2	130.18	225	25 X 8	26
6	150	1	155.58	260	25 X 12	28
8	200	1	206.38	305	25 X 12	30
10	250	1	257.18	380	27 X 12	34

● DIELECTRIC FLANGE

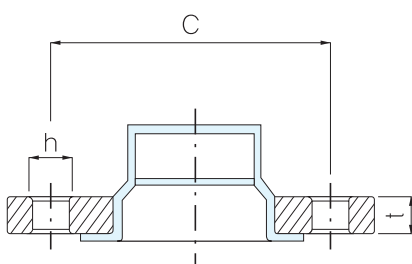
CLASS 125LB



Nominal Size		Pkg. Qty.	Application Copper Tube O.D (mm)	Dimension (mm)		
(Inch)	(mm)			c	h	t
1	25	8	28.58	79.5 (3 1/8)	16 X 4	11.2
1 1/4	32	8	34.92	89.0 (3 1/2)	16 X 4	12.7
1 1/2	40	8	41.28	98.5 (3 7/8)	16 X 4	14.3
2	50	6	53.98	120.5 (4 3/4)	19 X 4	15.9
2 1/2	65	4	66.68	139.5 (5 1/2)	19 X 4	17.5
3	80	2	79.38	152.5 (6)	19 X 4	19.1
4	100	2	104.78	190.5 (7 1/2)	19 X 8	23.9
5	125	2	130.18	216.0 (8 1/2)	22 X 8	23.9
6	150	1	155.58	241.5 (9 1/2)	22 X 8	25.4
8	200	1	206.38	298.5 (11 3/4)	22 X 8	28.6

● DIELECTRIC FLANGE

CLASS 150LB



Nominal Size		Pkg. Qty.	Application Copper Tube O.D (mm)	Dimension (mm)		
(Inch)	(mm)			c	h	t
1/2	15	20	15.88	60.5 (2 3/8)	16 X 4	11.2
3/4	20	16	22.22	70.0 (2 3/4)	16 X 4	12.7
1	25	8	28.58	79.5 (3 1/8)	16 X 4	14.3
1 1/4	32	8	34.92	89.0 (3 1/2)	16 X 4	15.9
1 1/2	40	8	41.28	98.5 (3 7/8)	16 X 4	17.5
2	50	6	53.98	120.5 (4 3/4)	19 X 4	19.1
2 1/2	65	4	66.68	139.5 (5 1/2)	19 X 4	21.9
3	80	2	79.38	152.5 (6)	19 X 4	23.9
4	100	2	104.78	190.5 (7 1/2)	19 X 8	23.9
5	125	2	130.18	216.0 (8 1/2)	22 X 8	23.9
6	150	1	155.58	241.5 (9 1/2)	22 X 8	25.4
8	200	1	206.38	298.5 (11 3/4)	22 X 8	28.6

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10kg/cm² / 20kg/cm² / 125LB / 150LB

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● COPPER NICKEL FITTINGS & FLANGES – NAVY STANDARD

SOCKET WELDING & BUTT WELDING - ELBOW / REDUCER / TEE / COUPLING / SLEEVE / FLANGE

COMPARISON TABLE OF INTERNATIONAL STANDARD FOR CU-NI 90/10

Chemical composition	EEMUA144 UNS 7060X	BS 2871 CN102	BSEN 12449 CW352H	ASTM B466 C70600	ASTM B467 C70600	CuNi10Fe1.6Mn 2.1972.22	NES779 PART 3	MIL-T-16420K No. 706	JIS H3300 C7060
Ni %	10.0-11.0	10.0-11.0	9.0-11.0	9.0-11.0	9.0-11.0	9.0-11.0	10.0-11.0	9.0-11.0	9.0-11.0
Fe %	1.5-2.0	1.0-2.0	1.5-1.8	1.0-1.8	1.0-1.8	1.5-1.8	1.0-2.0	1.0-1.8	1.0-1.8
Mn %	0.5-1.0	0.5-1.0	0.5-1.0	Max.1.0	Max.1.0	0.5-1.0	0.5-1.0	Max.1.0	0.2-1.0
Zn %	Max.0.20	-	Max.0.50	Max.1.0	Max.1.0	Max.0.05	-	Max.0.50	Max.0.50
Pb %	Max.0.01	Max.0.01	Max.0.02	Max.0.05	Max.0.05	Max.0.01	Max.0.01	Max.0.02	Max.0.05
P %	Max.0.02	-	Max.0.02	-	-	Max.0.02	-	Max.0.02	-
S %	Max.0.02	Max.0.05	Max.0.05	-	-	Max.0.005	Max.0.05	Max.0.02	-
C %	Max.0.05	Max.0.05	Max.0.05	-	-	Max.0.05	Max.0.05	Max.0.05	-
Sn %	-	-	Max.0.03	-	-	-	-	-	-
Zr %	-	-	-	-	-	Max.0.03	-	-	-
Other imp.	Max.0.30	Max.0.30	Max.0.20	-	-	Max.0.20	Max.0.30	-	-
Purity	-	-	-	Cu+Ni+Fe+Mn Min 99.5	Cu+Ni+Fe+Mn Min 99.5	-	-	Named Elements Min 99.5	Cu+Ni+Fe+Mn Min 99.5
Cu %	Remainder	Remainder	Remainder	Remainder	Remainder	Remainder	Remainder	Min.86.5	Remainder

Mechanical Properties (Annealed Condition)	EEMUA 144 UNS 7060X	BS 2871 CN102	BSEN 12449 CW352H	ASTM B466 C70600	ASTM B467 C70600	CuNi10Fe1.6Mn 2.1972.22	NES779 PART 3	MIL-T-16420K No. 706	JIS H3300 C7060
Tensile strength	300-380 (N/mm ²)	300-380 (N/mm ²)	Min.290 (N/mm ²)	Min.260 (N/mm ²)	*Min.260 (N/mm ²)	320-420 (N/mm ²)	Min.310 (N/mm ²)	Min.38 (lb/in ²)	Min.275 (N/mm ²)
Yield strength	Min.105 (N/mm ²)	-	Min.90 (N/mm ²)	Min.90 (N/mm ²)	*Min.90 (N/mm ²)	160-220 (N/mm ²)	**Min.110 (N/mm ²)	***Min.15 (lb/in ²)	-
Elongation	Min.30%	Min.30%	Min.30%	-	*Min.25%	Min.25%	Min.30%	Min.30%	Min.30%
Hardness	*Max.100 (HV 5)	Max.100 (HV 5)	-	Max.45 (HR30T)	-	80-100 (HB)	Max.95 (HV 5)	-	-

* only seam-welded

** only pt.1 (bar-stock)

*** Up to 4 1/2" : MIN 15 lb/in²

WELDING INSTRUCTION

Welding equipment should be required direct current.

Filler metal

The filler wire or rod has a grade identical to that of the parent metal. However, the filler wire or rod used for weld Cu-Ni 90/10 with Cu-Ni 70/30 bare metal available.

Flux coated electrodes can be used for wall thickness of 6mm above.

Cu-Ni 70/30 can be welded with Cu-Ni 70/30 filler metal. It is important to degrease of parent metal filler metal.

Table 1. is showing national specification of the filler metal.

National	Cu-Ni 90/10		Cu-Ni 70/30	
	Flux coated electrode	Filler wire	Flux coated electrode	Filler wire
Germany	DIN 1733	DIN 1733	DIN 1733	DIN 1733
	S-CuNi10Fe No. 2.0873	S-CuNi10Fe No. 2.0873	S-CuNi30Fe No. 2.0873	S-CuNi30Fe No. 2.0873
British	-	BS 2901 Part.3 Type C16 90/10 Cu-Ni-Fe-Ti	-	BS 2901 Part.3 Type C18 90/10 Cu-Ni-Fe-Ti
	-	-	AWS A 5.6 E CuNi	AWS A 5.7 ER CuNi
USA	-	-	-	-

Tacking

The parts to be joined together are edge to edge and tacked. The tack weld should be kept to a minimum and as short as possible and should be deposited, cleaned thoroughly before welding commences. Positional welding is facilitated by making the root run by the TIG process. Then, travel is reversed and welding continued with a weave motion. The diameter of the electrode is individual on the welding current. The following table showing the typical data.

Table 2. Operating data for the TIG welding

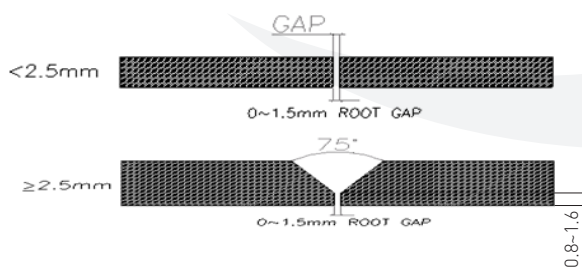
The number of pass is necessary to follow table. 2 in order to avoid local overheating which risks causing collapse of the bead.

Metal thickness (mm)	Diameter of electrode (mm)	Diameter of filler wire (mm)	Welding current (Ampere)	Argon flow (L/mm)	Number of pass
2	1.6	2	100 - 120	7	1
3	2.4	2	140 - 160	8	2
4	3.2	3.2 - 5.0	180 - 200	8	2
6	3.2	3.2 - 5.0	220 - 260	8	3
8	3.2	3.2 - 5.0	220 - 260	8	4
10	3.2	3.2 - 5.0	220 - 260	8	5

** Detailed welding procedure specification is available upon request.

Edge preparation for butt welded joints

Joint Preparation on pipes (End beveling to welding) can be used to all types. Generally, edge preparation is the same fig.1.



(Fig. 1)

Welding operation can be carried out under conditions if jointing parts are perfectly clean and free grease, oxidation and dust. If possible, welding is carried out in down-hand position with "1G"

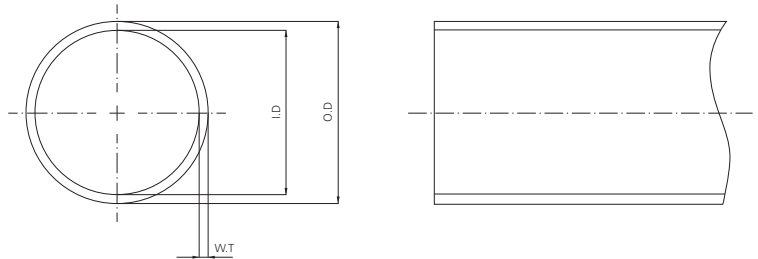
Internal Protection

To avoid oxidation and fluxing on the inside of the joint, it is required to ensure internal protection by shielding gas (pure 99.9% argon) which is used as the back purging gas (pure 99.9% argon or nitrogen)

PIPE - EUROPEAN STANDARD

- MATERIAL : Cu-Ni 90/10
Cu-Ni 70/30
Seamless (1/8"-16")
Seam Welded (14" and Over)

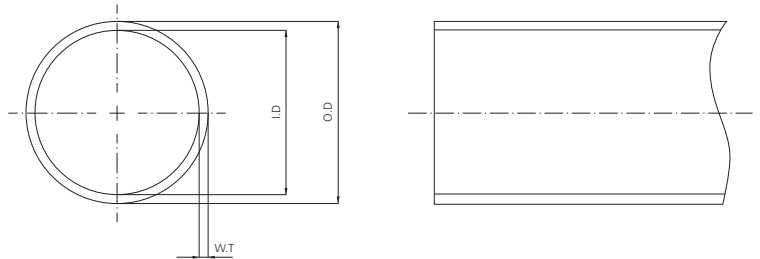
- According to : BS 2871 / 2872 Pt.2
EEMUA Pub. No.144
DIN 86018 & 86019



Outside diameter of pipe			10 bar		14 bar		16 bar		20 bar	
			Wall thickness	Weight	Wall thickness	Weight	Wall thickness	Weight	Wall thickness	Weight
Nominal	Actual									
(Inch)	(Metric)	(mm)	(mm)	(kg/m)	(mm)	(kg/m)	(mm)	(kg/m)	(mm)	(kg/m)
1/8		10.0	1.0	0.26	1.0	0.26	1.0	0.26	1.0	0.26
1/4		12.0		0.31		0.31		0.31		0.31
3/8	10	16.0		0.42		0.42		0.79		0.79
1/2	15	20.0	1.5	0.53	1.5	0.53	2.0	1.01	2.0	1.01
3/4	20	25.0		0.99		0.99		1.30		1.30
1	25	30.0		1.20		1.20		1.93		1.93
1 1/4	32	38.0	2.0	1.54	2.0	1.54	2.5	2.50	2.5	2.50
1 1/2	40	44.5		1.81		1.81		2.95		2.95
2	50	57.0		2.34		2.34		3.83		3.83
2 1/2	65	76.1	2.5	4.16	2.5	4.16	3.0	5.17	3.0	5.17
3	80	88.9		4.88		6.07		6.07		6.07
4	100	108.0		7.41		7.41		8.85		8.85
5	125	133.0	3.0	9.16	3.0	10.95	4.0	10.95	4.5	10.95
6	150	159.0		10.99		13.14		13.14		15.29
8	200	219.1		18.21		21.19		24.17		27.12
10	250	267.0	4.0	22.24	4.0	29.55	5.5	33.18	7.0	40.39
12	300	323.9		35.94		44.78		49.18		62.30
14	350	368.0		40.89		56.00		65.99		80.89
16	400	419.1	6.0	46.62	6.0	69.60	7.0	81.00	9.0	103.64
18	450	457.2		50.91		76.03		100.93		119.45
20	500	508.0		63.63		91.55		119.24		153.54
24	600	610.0	8.0	84.96	8.0	135.26	10.5	176.79	13.0	217.97
28	700	711.0		118.80		177.45		235.58		293.22
32	800	813.0		135.99		225.53		303.14		380.06
36	900	914.0		203.57		278.98		391.14		477.60

PIPE - U.S. STANDARD

- MATERIAL : Cu-Ni 90/10
Cu-Ni 70/30
Seamless (1/8"~12")
Seam Welded (14" and Over)
- According to : ASTM B466 & B467
UNS C70600 (90/10)
UNS C71500 (70/30)

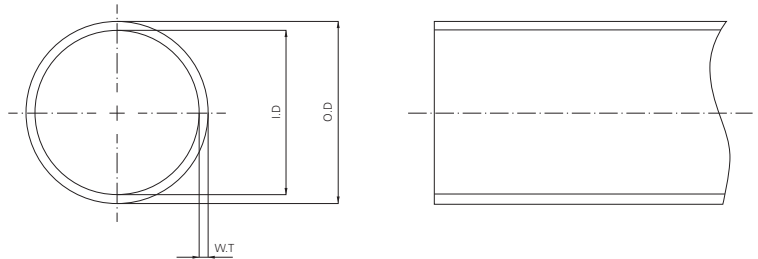


Outside diameter of pipe			Wall thickness		Theoretical Weight	
Nominal	Actual	Actual	Actual	Actual		
(Inch)	(Inch)	(mm)	(Inch)	(mm)	(LB/Ft)	(kg/m)
1/8	0.4	10.3	0.058	1.470	0.24	0.36
1/4	0.5	13.7			0.38	0.56
3/8	0.7	17.2			0.48	0.72
1/2	0.8	21.3	0.065	1.650	0.61	0.91
3/4	1.1	26.7			0.78	1.16
1	1.3	33.4			0.99	1.47
1 1/4	1.7	42.2	0.072	1.830	1.39	2.07
1 1/2	1.9	48.3			1.60	2.39
2	2.4	60.3	0.083	2.110	2.32	3.45
2 1/2	2.9	73.0			2.82	4.20
3	3.5	88.9	0.095	2.410	3.93	5.85
3 1/2	4.0	101.6			4.51	6.71
4	4.5	114.3	0.109	2.770	5.83	8.68
5	5.6	141.3	0.125	3.180	8.29	12.34
6	6.6	168.3			10.58	15.75
8	8.6	219.1	0.134	3.400	13.83	20.59
10	10.8	273.1			17.29	25.74
12	12.8	323.9	0.156	3.960	23.90	35.58
14	14.0	355.6	0.165	4.190	27.78	41.35
16	16.0	406.4			31.80	47.33
18	18.0	457.2	0.180	4.570	39.03	58.10
20	20.0	508.0			43.41	64.62
24	24.0	609.6			52.17	77.66
30	30.0	762.0	0.250	6.350	90.54	134.77

PIPE - U.S. STANDARD

- MATERIAL : Cu-Ni 90/10
Cu-Ni 70/30
Seamless (1/8"~12")
Seam Welded (14" and Over)

- According to : ASME B36.19M
UNS C70600 (90/10)
UNS C71500 (70/30)

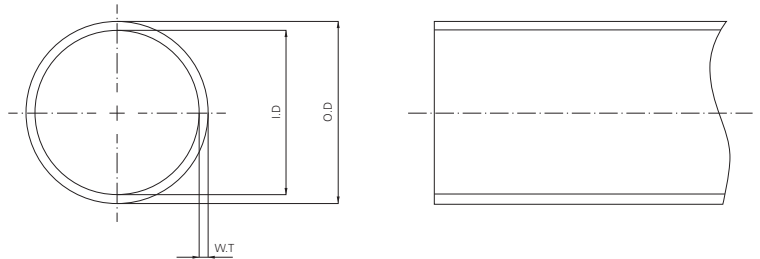


Outside diameter of pipe			Schedule 5S				Schedule 10S			
Nominal (Inch)	Actual (Inch)	Actual (mm)	Wall thickness		Theoretical weight		Wall thickness		Theoretical weight	
			Actual				Actual			
			(Inch)	(mm)	(LB/Ft)	(kg/m)	(Inch)	(mm)	(LB/Ft)	(kg/m)
1/8	0.405	10.29					0.049	1.24	0.19	0.28
1/4	0.540	13.72					0.065	1.65	0.33	0.49
3/8	0.675	17.15					0.065	1.65	0.42	0.63
1/2	0.840	21.34	0.065	1.65	0.54	0.80	0.083	2.11	0.67	1.00
3/4	1.050	26.67	0.065	1.65	0.69	1.03	0.083	2.11	0.86	1.28
1	1.315	33.40	0.065	1.65	0.87	1.30	0.109	2.77	1.40	2.09
1 1/4	1.660	42.16	0.065	1.65	1.11	1.65	0.109	2.77	1.81	2.70
1 1/2	1.900	48.27	0.065	1.65	1.28	1.91	0.109	2.77	2.09	3.11
2	2.375	60.32	0.065	1.65	1.61	2.40	0.109	2.77	2.64	3.93
2 1/2	2.875	73.03	0.083	2.11	2.48	3.69	0.120	3.05	3.53	5.26
3	3.500	88.90	0.083	2.11	3.03	4.51	0.120	3.05	4.33	6.45
3 1/2	4.000	101.60	0.083	2.11	3.48	5.18	0.120	3.05	4.97	7.40
4	4.500	114.30	0.083	2.11	3.92	5.84	0.120	3.05	5.61	8.36
5	5.563	141.30	0.109	2.77	6.36	9.47	0.134	3.40	7.77	11.57
6	6.625	168.30	0.109	2.77	7.60	11.32	0.134	3.40	9.29	13.84
8	8.625	219.10	0.109	2.77	9.93	14.79	0.148	3.76	13.40	19.96
10	10.750	273.05	0.134	3.40	15.19	22.63	0.165	4.19	18.65	27.78
12	12.750	323.90	0.156	3.96	20.98	31.25	0.180	4.57	24.17	36.00

Outside diameter of pipe			Schedule 40S				Schedule 80S			
Nominal (Inch)	Actual (Inch)	Actual (mm)	Wall thickness		Theoretical weight		Wall thickness		Theoretical weight	
			Actual				Actual			
			(Inch)	(mm)	(LB/Ft)	(kg/m)	(Inch)	(mm)	(LB/Ft)	(kg/m)
1/8	0.405	10.29	0.068	1.73	0.24	0.37	0.095	2.41	0.31	0.47
1/4	0.540	13.72	0.088	2.24	0.42	0.63	0.119	3.02	0.54	0.80
3/8	0.675	17.15	0.091	2.31	0.57	0.84	0.126	3.20	0.74	1.10
1/2	0.840	21.34	0.109	2.77	0.85	1.27	0.147	3.73	1.09	1.62
3/4	1.050	26.67	0.113	2.87	1.13	1.69	0.154	3.91	1.47	2.20
1	1.315	33.40	0.133	3.38	1.68	2.50	0.179	4.55	2.17	3.24
1 1/4	1.660	42.16	0.140	3.56	2.27	3.39	0.191	4.85	3.00	4.47
1 1/2	1.900	48.27	0.145	3.68	2.72	4.05	0.200	5.08	3.63	5.41
2	2.375	60.32	0.154	3.91	3.65	5.44	0.218	5.54	5.02	7.48
2 1/2	2.875	73.03	0.203	5.16	5.79	8.63	0.276	7.01	7.66	11.41
3	3.500	88.90	0.216	5.49	7.58	11.29	0.300	7.62	10.25	15.27
3 1/2	4.000	101.60	0.226	5.74	9.11	13.57	0.318	8.08	12.51	18.63
4	4.500	114.30	0.237	6.02	10.79	16.07	0.337	8.56	14.98	22.32
5	5.563	141.30	0.258	6.55	14.62	21.77	0.375	9.53	20.78	30.97
6	6.625	168.30	0.280	7.11	18.97	28.26	0.432	10.97	28.57	42.56
8	8.625	219.10	0.322	8.18	28.55	42.55	0.500	12.70	43.39	64.64
10	10.750	273.05	0.365	9.27	40.48	60.31	0.500	12.70	54.74	96.01
12	12.750	323.90	0.375	9.53	49.56	73.88	0.500	12.70	65.42	132.08

PIPE - U.S. STANDARD

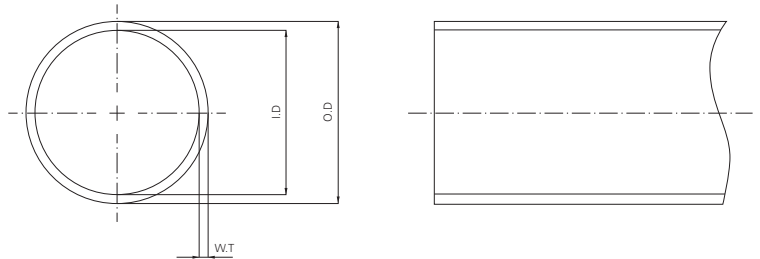
- MATERIAL : Cu-Ni 90/10
Cu-Ni 70/30
Seamless (1/8"~12") Seam
Welded (14" and Over)
- According to : MIL-T-16420K
UNS 706 (90/10)
UNS 715 (70/30)



Outside diameter of pipe			CLASS 200				CLASS 700				
			Wall thickness		Theoretical weight		Wall thickness		Theoretical weight		
Nominal	Actual	Actual	Actual				Actual				
(Inch)	(Inch)	(mm)	(Inch)	(mm)	(LB/Ft)	(kg/m)	(Inch)	(mm)	(LB/Ft)	(kg/m)	
	0.25	6.35	0.035	0.89	0.090	0.14	0.065	1.65	0.340	0.51	
	0.50	12.70			0.200	0.29					
1/8	0.54	13.72	0.065	1.65	0.380	0.56	0.072	1.83	0.380	0.56	
3/8	0.68	17.15			0.480	0.72			0.530	0.79	
1/2	0.84	21.34			0.610	0.91			0.670	1.00	
3/4	1.05	26.67			0.780	1.16	0.083	2.11	0.980	1.45	
1	1.32	33.40			0.990	1.47	0.095	2.41	1.410	2.10	
1 1/4	1.66	42.16	0.072	1.83	1.390	2.07			1.810	2.69	
1 1/2	1.90	48.27			1.600	2.39	0.109	2.77	2.380	3.54	
2	2.38	60.32	0.083	2.11	2.320	3.45	0.120	3.05	3.300	4.91	
2 1/2	2.88	73.03			2.820	4.20	0.134	3.40	4.470	6.65	
3	3.50	88.90	0.095	2.41	3.930	5.85	0.165	4.19	6.700	9.97	
3 1/2	4.00	101.60			4.510	6.71	0.180	4.57	8.370	12.45	
4	4.50	114.30	0.109	2.77	5.830	8.68	0.203	5.15	10.610	15.78	
	5.00	127.00	0.120	3.05	7.140	10.62			11.840	17.62	
5	5.56	141.30	0.125	3.18	8.290	12.34	0.220	5.59	14.320	21.30	
6	6.63	168.30	0.134	3.40	10.580	15.75	0.259	6.58	20.080	29.89	
	7.63	193.70			12.210	18.17	0.284	7.21	25.380	37.76	
8	8.63	219.10	0.148	3.76	15.280	22.74	0.340	8.64	34.320	51.07	
	9.63	244.48	0.187	4.75	21.490	31.98			38.460	57.23	
10	10.75	273.05			24.050	35.79	0.380	9.65	47.960	71.37	
12	12.75	323.90	0.250	6.35	38.050	56.63	0.454	11.53	67.970	101.15	
			CLASS 50				CLASS 700				
14	14.00	355.60	0.165	4.19	27.780	41.35	0.473	12.01	77.90	115.87	
	15.00	381.00					0.503	12.77	88.80	132.04	
16	16.00	406.40	0.165	4.19	31.800	47.32	0.534	13.56	101.00	149.58	
18	18.00	457.20	0.180	4.57	39.030	58.10					
20	20.00	508.20				43.410					64.62
22	22.00	588.80	0.180	4.57	47.800	71.12					
	22.75	577.85				49.500					73.57
30	30.00	762.00	0.250	6.35	90.540	134.77					
40	40.00	1016.00	0.312	7.92	150.700	224.19					

PIPE - JAPANESE STANDARD

- MATERIAL : Cu-Ni 90/10
Cu-Ni 70/30
Seamless (6A~300A)
Seam Welded (350A and Over)
- According to : JIS H3300
C7060T (90/10)
UNS C7150T (70/30)



Nominal	Navy size					Metric size			M.M. size				
	Out-Dia	5K		10K									
		Th'k	Weight	Th'k	Weight	Out-Dia	Th'k	Weight	Out-Dia	Th'k	Weight		
(mm)	(mm)	(mm)	(kg/m)	(mm)	(kg/m)	(mm)		(kg/m)	(mm)		(kg/m)		
6A	6.35	1.21	0.47	0.89	0.14	16.00	1.0	0.42	15.00	1.5	0.57		
10A	12.71				0.29				20.00		25.00	0.78	
15A	15.14				0.62				30.00		38.00	0.99	
20A	21.49				0.92				44.50		57.00	1.20	
25A	28.25	1.42	1.07	1.65	1.23	20.00	1.5	1.20	30.00	2.0	1.20		
32A	34.6		1.32		1.53			38.00	1.54		45.00	2.02	
40A	40.95		1.58		1.83			2.01	1.81		55.00	2.41	
50A	54.05	1.62	2.39	2.11	3.08	25.00	2.0	2.34	70.00	3.0	2.98		
65A	66.75		2.96	2.41	4.35			4.16	85.00		3.82		
80A	79.86	1.82	3.99	2.41	5.24	32.00	2.5	6.07	110.00	4.0	6.91		
100A	106.27	2.33	6.80		8.05			7.41	130.00		9.02		
125A	131.67		8.46		11.47			10.99	160.00		10.70		
150A	157.68	2.64	11.49		14.73			18.21	210.00		17.52		
200A	208.48		15.26		21.61	22.24	260.00	23.14					
250A	260.5	3.25	23.48		4.75	34.11	40.00	3.0	35.94	310.00	4.5	32.29	
300A	312.11	3.68	31.87	6.35	54.52	40.89			5.0	47.03			
350A	363.72	4.06	41.00	6.35	63.72	46.62							
400A	414.32	4.06	46.77	6.35	72.74	50.91							
450A	465.32	4.06	52.59	6.35	81.84	457.20	5.0	63.63	310.00	5.5	47.03		
500A						508.00						4.5	84.96
600A						610.00						5.0	118.80
700A						711.00						6.0	

BOMYUNG METAL.Co.,Ltd

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- **COPPER NICKEL MACHINED FITTINGS**

SOCKET WELDING OR CAPILLARY END - ELBOW / TEE / REDUCER / COUPLING / UNION / ADAPTOR / OUTLET / END CAP / SPRINKLER BUSH

- **COPPER NICKEL FITTINGS & FLANGES – NAVY STANDARD**

SOCKET WELDING & BUTT WELDING - ELBOW / REDUCER / TEE / COUPLING / SLEEVE / FLANGE

GENERAL INFORMATION OF CU-NI BUTT WELDING FITTINGS

Butt welding fittings meet the following national and international product standards. Production to other standards specifications may be supplied upon special agreement.



● Seamless Butt-Welding Fittings

Seamless butt-welding fittings are produced from seamless tube and pipe by cold extrusion, forming, machining, or by a combination of two or more of these operations.

● Seam-Welded Butt-Welding Fittings

Seam-welded butt-welding fittings are produced from cold rolled annealed and pickled sheet or plate, formed into half shells or segments and longitudinally seam-welded.

Butt-welding fittings are available in standard size, as published in this catalogue, and in nonstandard sizes. Standard size fittings are generally available ex-stock. Non-standard size fittings are produced subject to certain minimum quantity limitations.

Details are available on application.

● Welding

Welding is carried out by Code-Qualified personnel (ASME Code Section IX-Boiler and Pressure Vessel) whose qualification are regularly checked and approved. Established welding methods include pulsed TIG and shielded electrode techniques.

● Marking

All butt-welding fittings are marked with Alloy No, Lot No, Nominal Diameter, Degree and maker's trade mark. Additional information, e.g standard and alloy number, maximum pressure rating, can be added on request.

Materials	Applied Code
Cu-Ni 90/10	EEMUA 7060X
	ASTM B466, B467 C70600
	BS 2871, 2872,2875 CN102
	DIN17664(CuNi10Fe1Mn)
	JIS H3300 C7060
Cu-Ni 70/30	ASTM B466, B467 C71500
	BS 2871,2872,2875 CN107
	DIN17664 [CuNi30Mn1Fe]
	JIS H3300 C7150
Dimension	DIN 86011,86087,86088,
	DIN 86089,86090
	BS1640
	ASME B16.9,B16.28
	JMS 7354

● End Preparation

Unless otherwise agreed, butt-welding fittings are supplied with plain ends. Cut square and deburred at a wall of 2mm below Alternatively, fittings with a wall thickness of 2.0mm and above can be supplied with beveled ends to ASME B16.25.

● Inspection and Testing

Throughout the manufacturing process, from melting and alloying to the finished product, stringent quality control inspections and tests are carried out to ensure that product quality complies fully with customer requirements.

All tests are performed in accordance with the requirements of the relevant specification.

● Certification

Fittings are supplied with a certificate listing the tests which have been performed in accordance with proper specifications or customer's specifications.

● Supply Condition

Unless otherwise agreed, seamless butt-welding fittings are supplied. Heat-treatment scale is removed. Seam-welded butt-welding fittings are supplied in the as-welded condition.

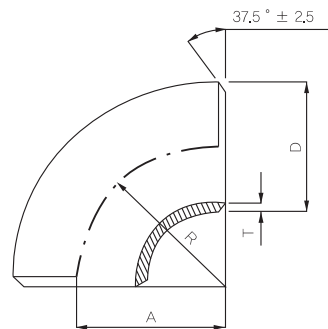
● Packing

The utmost care is taken to ensure that butt-welding fittings are fully protected against damage during transit.

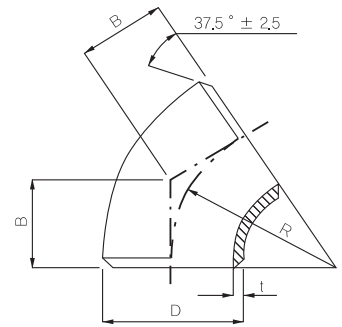
ELBOW (SHORT RADIOUS)

10bar and ■14bar

- MATERIAL : Cu-Ni 90/10
- DIMENSION : DIN 86090
1/2" ~ 12" : SEAMLESS
14" & OVER : SEAM WELDED



90° ELBOW



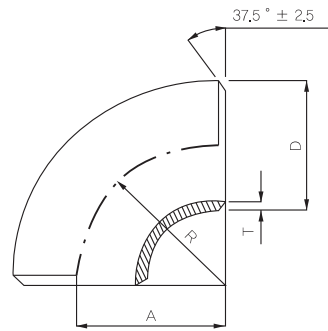
45° ELBOW

Outside diameter of pipe		Wall thickness	Center to end		Weight	
Nominal	D	t	A	B	90°	45°
(Inch)	(mm)	(mm)	(mm)	(mm)	(kg)	
1	30.0	1.5	30.0	12	0.04	0.02
1 1/4	38.0	1.5	32.5	14	0.08	0.04
1 1/2	44.5	1.5	40.0	17	0.12	0.06
2	57.0	1.5	52.5	22	0.20	0.10
2 1/2	76.1	2.0	70.0	29	0.44	0.22
3	88.9	2.0	82.5	34	0.64	0.32
		■ 2.5			0.80	0.40
4	108.0	2.5	100.0	41	1.16	0.58
5	133.0	2.5	125.0	52	1.80	0.90
		■ 3.0			2.16	1.08
6	159.0	2.5	150.0	62	2.60	1.30
		■ 3.0			3.12	1.56
8	219.1	3.0	210.0	87	6.00	3.00
		■ 3.5			7.00	3.50
10	267.0	3.0	255.0	106	8.80	4.40
		■ 4.0			11.74	5.87
12	323.9	4.0	305.0	126	17.20	8.60
		■ 5.0			21.50	10.75
14	368.0	4.0	352.5	146	22.60	11.30
		■ 5.5			31.08	15.54
16	419.1	4.0	400.0	166	32.80	16.40
		■ 6.0			43.74	21.87
18	457.2	4.0	455.0	188	40.80	20.40
		■ 6.0			61.20	30.60
20	508.0	4.5	505.0	209	56.20	28.10
		■ 6.5			84.30	42.15
24	610.0	5.0	610.0	253	81.80	40.90
		■ 8.0			130.90	65.45

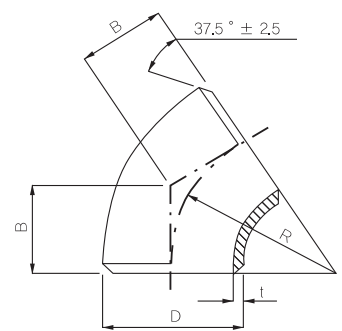
ELBOW (LONG RADIOUS)

10bar and 14bar

- MATERIAL : Cu-Ni 90/10
- DIMENSION : DIN 86090
 - 1/2" ~ 12" : SEAMLESS
 - 14" & OVER : SEAM WELDED



90° ELBOW



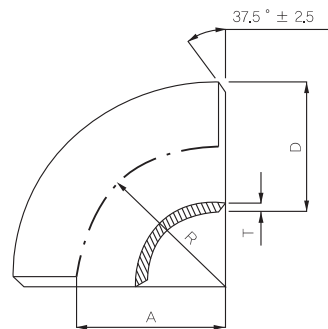
45° ELBOW

Outside diameter of pipe		Wall thickness	Center to end		Weight	
Nominal	D	t	A	B	90°	45°
(Inch)	(mm)	(mm)	(mm)	(mm)	(kg)	
1/2	20.0	1.0	25.0	10.4	0.02	0.01
3/4	25.0	1.5	27.5	11.4	0.04	0.02
1	30.0	1.5	33.5	14.0	0.06	0.03
1 1/4	38.0	1.5	45.0	19.0	0.10	0.05
1 1/2	44.5	1.5	51.0	21.0	0.14	0.07
2	57.0	1.5	72.0	30.0	0.26	0.13
2 1/2	76.1	2.0	95.0	39.0	0.60	0.30
3	88.9	2.0	114.5	47.0	0.86	0.43
		2.5			1.08	0.54
4	108.0	2.5	142.5	59.0	1.64	0.82
5	133.0	2.5	181.0	75.0	2.58	1.29
		3.0			3.10	1.55
6	159.0	2.5	216.0	89.0	3.70	1.85
		3.0			4.44	2.22
8	219.1	3.0	305.0	126.0	8.66	4.33
		3.5			10.08	5.04
10	267.0	3.0	378.0	157.0	13.10	6.55
		4.0			17.46	8.73
12	323.9	4.0	457.0	189.0	25.60	12.80
		5.0			32.00	16.00
14	368.0	4.0	533.5	221.0	34.00	17.00
		5.5			46.74	23.37
16	419.1	4.0	609.5	252.0	39.40	29.90
		6.0			66.40	33.20
18	457.2	4.0	686.0	284.0	48.40	30.70
		6.0			72.63	46.05
20	508.0	4.5	762.0	316.0	75.62	41.90
		6.5			125.70	62.85
24	610.0	5.0	915.0	379.0	121.24	60.62
		8.0			194.00	97.00

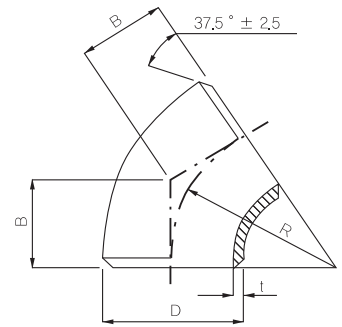
ELBOW (LONG RADIOUS)

16bar

- MATERIAL : Cu-Ni 90/10
- DIMENSION : EEMUA Pub. No. 146
1/2" ~ 12" : SEAMLESS
14" & OVER : SEAM WELDED



90° ELBOW



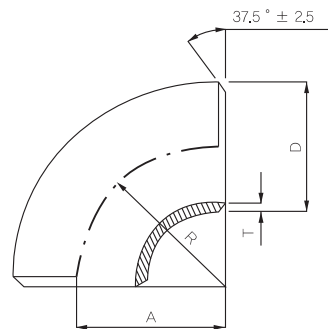
45° ELBOW

Outside diameter of pipe		Wall thickness	Center to end		Weight	
Nominal	D	t	A	B	90°	45°
(Inch)	(mm)	(mm)	(mm)	(mm)	(kg)	
1	30.0	2.5	38	22	0.12	0.06
1 1/4	38.0	2.5	48	25	0.18	0.09
1 1/2	44.5	2.5	57	29	0.26	0.13
2	57.0	2.5	76	35	0.46	0.23
2 1/2	76.1	2.5	95	44	0.76	0.38
3	88.9	2.5	114	51	1.08	0.54
4	108.0	3.0	152	64	2.10	1.05
6	159.0	3.0	229	95	4.70	2.35
8	219.1	4.0	305	127	11.50	5.75
10	267.0	4.5	381	159	19.70	9.85
12	323.9	5.5	457	190	35.06	17.53
14	368.0	6.5	533	222	54.92	27.46
16	419.1	7.0	610	254	77.00	38.50
18	457.2	8.0	686	286	108.20	54.10
20	508.0	8.5	762	318	141.86	70.93
24	610.0	10.5	914	381	252.84	126.42
28	711.0	12.0	1067	438	392.60	196.30
32	813.0	13.5	1219	502	577.90	288.00
36	914.0	15.5	1372	565	837.20	418.60

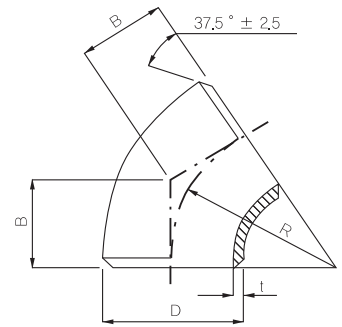
ELBOW (LONG RADIOUS)

20bar

- MATERIAL : Cu-Ni 90/10
- DIMENSION : EEMUA Pub. No. 146
1/2" ~ 12" : SEAMLESS
14" & OVER : SEAM WELDED



90° ELBOW



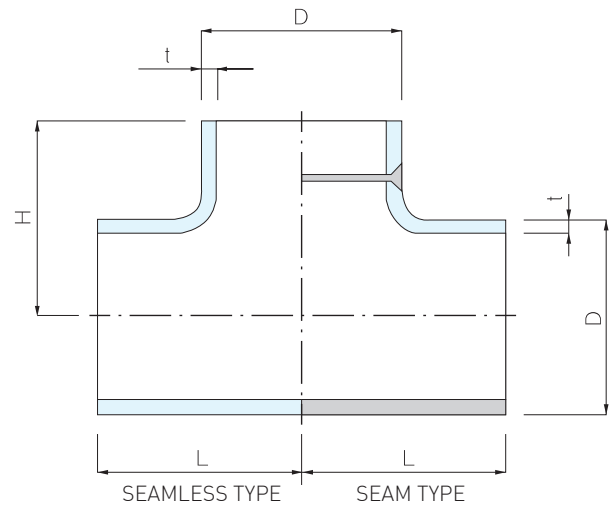
45° ELBOW

Outside diameter of pipe		Wall thickness	Center to end		Weight	
Nominal	D	t	A	B	90°	45°
(Inch)	(mm)	(mm)	(mm)	(mm)	(kg)	
1	30.0	2.5	38	22	0.12	0.06
1 1/4	38.0	2.5	48	25	0.18	0.09
1 1/2	44.5	2.5	57	29	0.26	0.13
2	57.0	2.5	76	35	0.46	0.23
2 1/2	76.1	2.5	95	44	0.76	0.38
3	88.9	2.5	114	51	1.08	0.54
4	108.0	3.0	152	64	2.10	1.05
6	159.0	3.5	229	95	5.48	2.74
8	219.1	4.5	305	127	12.94	6.47
10	267.0	5.5	381	159	24.08	12.04
12	323.9	7.0	457	190	44.60	22.30
14	368.0	8.0	533	222	67.60	33.80
16	419.1	9.0	610	254	99.00	49.50
18	457.2	9.5	686	286	128.50	64.25
20	508.0	11.0	762	318	183.60	91.80
24	610.0	13.0	914	381	313.20	156.60
28	711.0	15.0	1067	438	490.80	245.40
32	813.0	17.0	1219	502	727.70	363.85
36	914.0	19.0	1372	565	1026.26	513.13

EQUAL TEE

10bar and 14bar

- MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30
- DIMENSION : DIN 86088
 - 1/2" ~ 8" : SEAMLESS TYPE
 - 10" & 12" : SEAMLESS or SEAM WELDED TYPE
 - 14" & OVER : SEAM TYPE

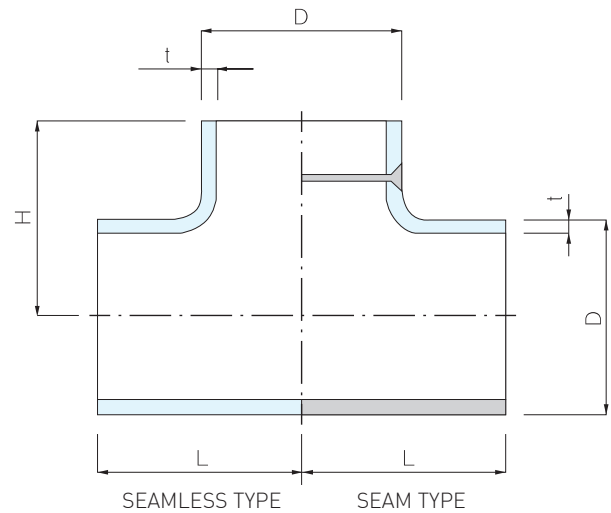


Outside diameter of pipe		Wall thickness	Center to end		Weight
Nominal (Inch)	D (mm)	t (mm)	L (mm)	H (mm)	(kg)
1/2	20.0	1.0	25	25	0.05
		1.5			
3/4	25.0	1.5	29	29	0.07
1	30.0	1.5	38	38	0.10
		2.0			
1 1/4	38.0	1.5	48	48	0.13
		2.0			
1 1/2	44.5	1.5	57	57	0.19
		2.0			
2	57.0	1.5	64	64	0.29
		2.0			
2 1/2	76.1	2.0	76	76	0.65
		2.0			
3	88.9	2.0	86	86	0.82
		2.5			
4	108.0	2.5	105	105	1.60
		2.5			
5	133.0	2.5	124	124	2.80
		3.0			
6	159.0	2.5	143	143	4.40
		3.0			
8	219.1	3.0	178	178	12.80
		3.5			
10	267.0	3.0	216	216	16.60
		4.0			
12	323.9	4.0	254	254	22.10
		5.0			
14	368.0	4.0	279	279	31.50
		5.5			
16	419.1	4.0	305	305	39.40
		6.0			
18	457.2	4.0	343	343	55.10
		6.0			
20	508.0	4.5	381	381	67.65
		6.5			
24	610.0	5.0	432	432	101.50
		8.0			
					126.60
					202.60

EQUAL TEE

16bar

- MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30
- DIMENSION : EEMUA Pub. No. 146
 - 1/2" ~ 8" : SEAMLESS TYPE
 - 10" & 12" : SEAMLESS or SEAM WELDED TYPE
 - 14" & OVER : SEAM TYPE

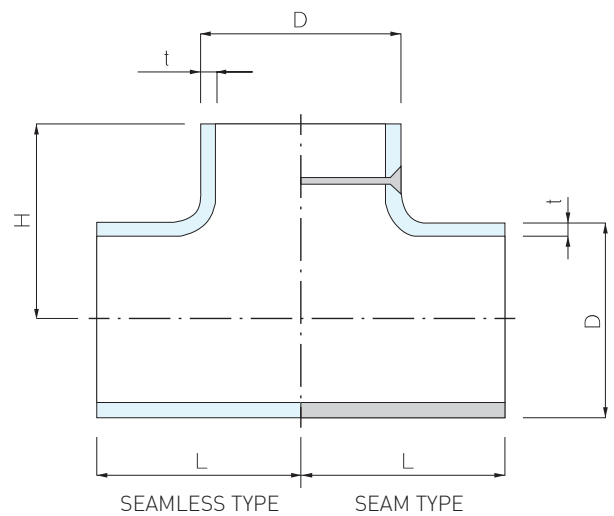


Outside diameter of pipe		Wall thickness	Center to end		Weight
Nominal	D	t	L	H	(kg)
(Inch)	(mm)	(mm)	(mm)	(mm)	
1	30.0	2.5	38	38	0.18
1 1/4	38.0	2.5	48	48	0.29
1 1/2	44.5	2.5	57	57	0.43
2	57.0	2.5	64	64	0.57
2 1/2	76.1	2.5	76	76	0.88
3	88.9	2.5	86	86	1.16
4	108.0	3.0	105	105	2.09
6	159.0	3.0	143	143	4.07
8	219.1	4.0	178	178	17.00
10	267.0	4.5	216	216	24.90
12	323.9	5.5	254	254	43.30
14	368.0	6.5	279	279	64.05
16	419.1	7.0	305	305	96.40
18	457.2	8.0	343	343	135.30
20	508.0	8.5	381	381	175.30
24	610.0	10.5	432	432	265.90
28	711.0	12.0	521	521	427.00
32	813.0	13.5	597	597	546.10
36	914.0	15.5	673	673	794.10

EQUAL TEE

20bar

- MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30
- DIMENSION : EEMUA Pub. No. 146
 - 1/2" ~ 8" : SEAMLESS TYPE
 - 10" & 12" : SEAMLESS or SEAM WELDED TYPE
 - 14" & OVER : SEAM TYPE

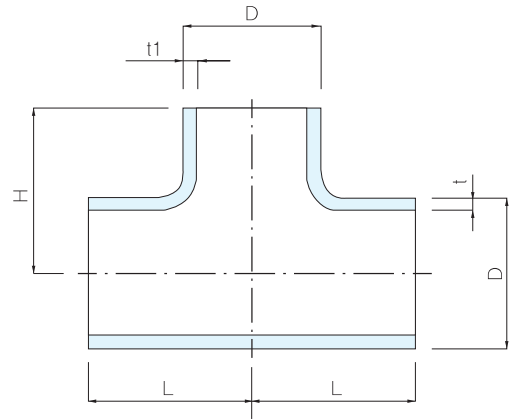


Outside diameter of pipe		Wall thickness	Center to end		Weight
Nominal	D	t	L	H	(kg)
(Inch)	(mm)	(mm)	(mm)	(mm)	
1	30.0	2.5	38	38	0.18
1 1/4	38.0	2.5	48	48	0.29
1 1/2	44.5	2.5	57	57	0.43
2	57.0	2.5	64	64	0.57
2 1/2	76.1	2.5	76	76	0.88
3	88.9	2.5	86	86	1.16
4	108.0	3.0	105	105	2.09
6	159.0	3.5	143	143	4.74
8	219.1	4.5	178	178	19.10
10	267.0	5.5	216	216	30.40
12	323.9	7.0	254	254	55.10
14	368.0	8.0	279	279	78.80
16	419.1	9.0	305	305	124.00
18	457.2	9.5	343	343	160.55
20	508.0	11.0	381	381	226.90
24	610.0	13.0	432	432	329.20
28	711.0	15.0	521	521	533.75
32	813.0	17.0	597	597	687.70
36	914.0	19.0	673	673	973.40

REDUCING TEE

10bar and 14bar

- MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30
- DIMENSION : DIN 86088
1/2" ~ 8" : SEAMLESS TYPE



Outside diameter of pipe				Wall thickness		Center to end		Weight		
Nominal			D	D1	t	t1	L	H	(kg)	
(Inch)			(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		
1 1/4	X	1	38.0	30.0	1.5	1.5	48	42	0.10	
					2.0	2.0				
1 1/2	X	1	44.5	30.0	1.5	1.5	57	45	0.21	
		1 1/4		38.0	2.0	2.0		51	0.21	
2	X	1	57.0	30.0	1.5	1.5		64	51	0.32
					2.0	2.0				
		1 1/4		38.0	1.5	1.5	57		0.32	
					2.0	2.0				
		1 1/2	44.5	1.5	1.5	63	0.32			
				2.0	2.0					
2 1/2	X	1 1/4	76.1	38.0	2.0	1.5	76	62	0.65	
						2.0				
		1 1/2		44.5		1.5		1.5	71	0.67
						2.0				
		2	57.0		1.5	1.5	73	0.67		
				2.0						
3	X	1 1/2	88.9	44.5	2.0	1.5	86	76	0.87	
					2.5				1.08	
		2		57.0	2.0	1.5		80	0.89	
					2.5				1.10	
		2 1/2		76.1	2.0	2.0		83	0.92	
					2.5				1.15	
4	X	2	108.0	57.0	2.5	1.5	105	90	1.60	
						2.0				
		2 1/2		76.1		2.0		2.0	92	1.65
						2.0		2.0	96	1.65
		3		88.9		2.5				
5	X	2 1/2	133.0	76.1	2.5	2.0	124	105	3.10	
						3.0				3.70
		3		88.9		2.5		2.0	108	3.25
						3.0		2.5		
		4		108.0		2.5		2.5	117	3.30
						3.0				
6	X	3	159.0	88.9	2.5	2.0	143	121	4.50	
						3.0		2.5		5.40
		4		108.0		2.5		2.5	130	4.60
						3.0				
		5		133.0		2.5		2.5	136	4.60
						3.0		3.0		
8	X	4	219.1	108.0	3.0	2.5	178	156	12.60	
						3.5				14.75
		5		133.0		3.0		2.5	162	12.70
						3.5		3.0		
		6		159.0		3.0		2.5	168	12.80
						3.5		3.0		

REDUCING TEE

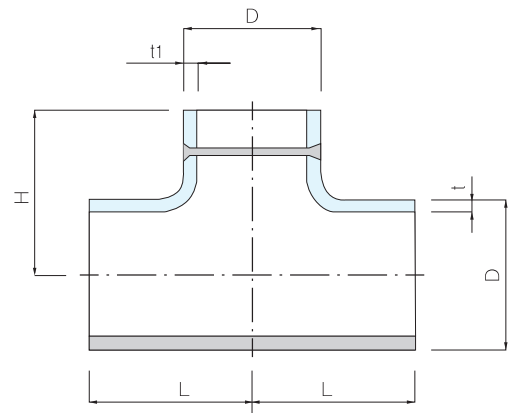
10bar and 14bar

● MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30

● DIMENSION : DIN 86088

10" & 12" : SEAMLESS or SEAM WELDED TYPE

14" & OVER : SEAM TYPE



SEAM TYPE

Outside diameter of pipe				Wall thickness		Center to end		Weight	
Nominal			D	D1	t	t1	L	H	(kg)
(Inch)			(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	
10	X	5	267.0	133.0	3.0	2.5	217	219	13.50
					■ 4.0	■ 3.0			18.00
		6		159.0	3.0	2.5	240	229	14.80
					■ 4.0	■ 3.0			19.75
		8		219.1	3.0	3.0	290	259	16.60
					■ 4.0	■ 3.5			22.10
12	X	6	323.9	159.0	4.0	2.5	240	257	30.45
					■ 5.0	■ 3.0			38.00
		8		219.1	4.0	3.0	290	287	34.60
					■ 5.0	■ 3.5			43.25
		10		267.0	4.0	3.0	324	317	37.80
					■ 5.0	■ 4.0			47.25
14	X	8	368.0	219.1	4.0	3.0	290	309	42.10
					■ 5.5	■ 3.5			57.90
		10		267.0	4.0	3.0	324	339	45.55
					■ 5.5	■ 4.0			62.65
		12		323.9	4.0	4.0	380	369	52.00
					■ 5.5	■ 5.0			71.50
16	X	10	419.1	267.0	4.0	3.0	324	365	56.40
					■ 6.0	■ 4.0			84.60
		12		323.9	4.0	4.0	380	395	64.80
					■ 6.0	■ 5.0			97.20
		14		368.0	4.0	4.0	407	410	68.90
					■ 6.0	■ 5.5			103.35

REDUCING TEE

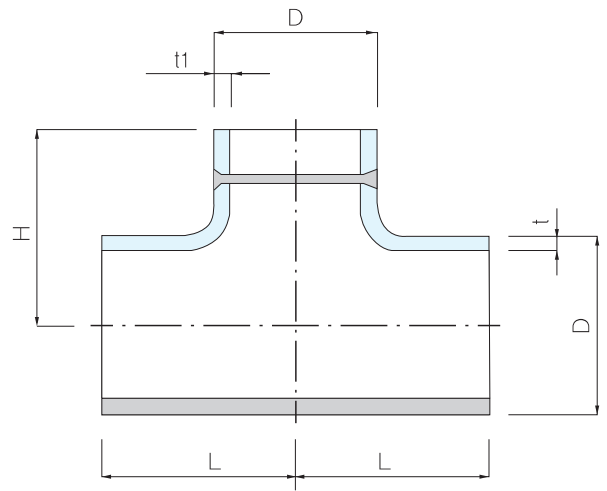
10bar and 14bar

● MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30

● DIMENSION : DIN 86088

10" & 12" : SEAMLESS or SEAM WELDED TYPE

14" & OVER : SEAM TYPE



SEAM TYPE

Outside diameter of pipe			Wall thickness		Center to end		Weight
Nominal	D	D1	t	t1	L	H	(kg)
(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	
18	X	12	323.9	4.0	380	413	64.60
				■ 6.0			96.90
		14	368.0	4.0	407	428	68.90
				■ 6.0			103.35
		16	419.1	4.0	440	453	74.60
				■ 6.0			111.90
20	X	14	368.0	4.5	407	454	77.40
				■ 6.5			111.80
		16	419.1	4.5	440	479	83.90
				■ 6.5			121.20
		18	457.2	4.5	500	509	94.10
				■ 6.5			135.90
24	X	16	419.1	5.0	440	530	117.85
				■ 8.0			188.55
		18	457.2	5.0	500	555	130.35
				■ 8.0			208.60
		20	508.0	5.0	540	580	141.85
				■ 8.0			226.95

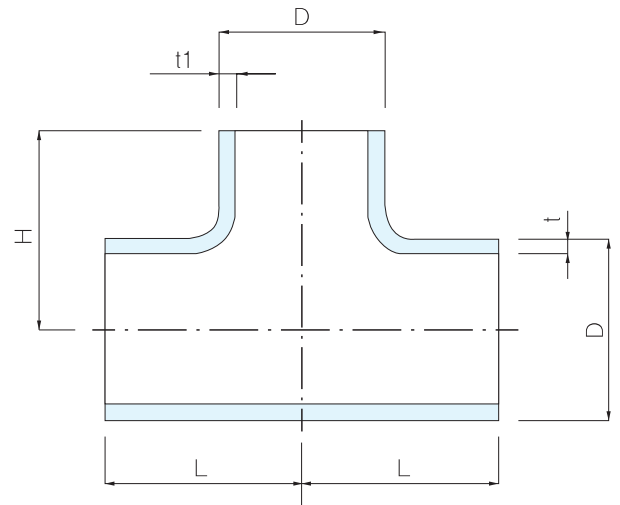
REDUCING TEE

16bar

● MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30

● DIMENSION : EEMUA Pub. No. 146

1/2" ~ 8" : SEAMLESS TYPE

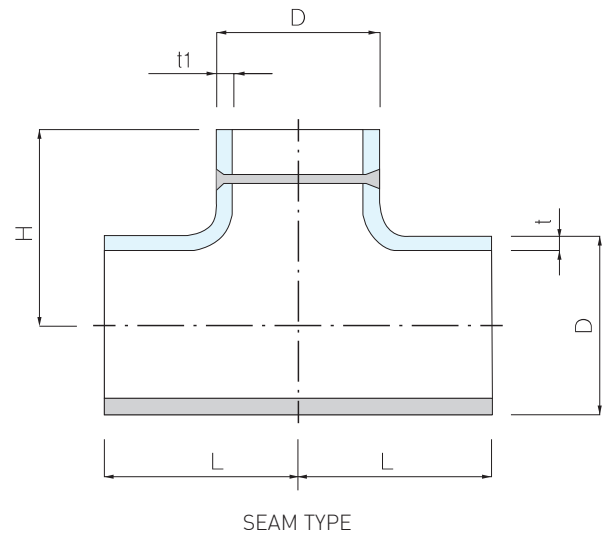


Outside diameter of pipe				Wall thickness		Center to end		Weight	
Nominal			D	D1	t	t1	L	H	(kg)
(Inch)			(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	
1	X	3/4	30.0	25.0	2.5	2.0	38	38	0.17
1 1/4	X	3/4	38.0	25.0	2.5	2.0	48	48	0.28
		1		30.0		2.5			0.28
1 1/2	X	3/4	44.5	25.0	2.5	2.0	57	57	0.37
		1		30.0		2.5			0.40
		1 1/4		38.0		2.5			0.41
2	X	1	57.0	30.0	2.5	2.5	64	51	0.51
		1 1/4		38.0		2.5		57	0.54
		1 1/2		44.5		2.5		60	0.55
2 1/2	X	1 1/4	76.1	38.0	2.5	2.5	76	64	0.83
		1 1/2		44.5		2.5		67	0.84
		2		57.0		2.5		70	0.85
3	X	1 1/2	88.9	44.5	2.5	2.5	86	73	1.10
		2		57.0		2.5		76	1.12
		2 1/2		76.1		2.5		83	1.15
4	X	2	108.0	57.0	3.0	2.5	105	89	1.90
		2 1/2		76.1		2.5		95	1.92
		3		88.9		2.5		98	1.95
6	X	2 1/2	159.0	76.1	3.0	2.5	143	121	3.95
		3		88.9		2.5		124	4.00
		4		108.0		3.0		130	4.05
8	X	3	219.1	88.9	4.0	2.5	178	152	16.60
		4		108.0		3.0		156	16.90
		6		159.0		3.0		168	17.00

REDUCING TEE

16bar

- MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30
- DIMENSION : EEMUA Pub. No. 146
 - 10" & 12" : SEAMLESS or SEAM WELDED TYPE
 - 14" & OVER : SEAM TYPE



Outside diameter of pipe				Wall thickness		Center to end		Weight	
Nominal			D	D1	t	t1	L	H	(kg)
(Inch)			(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	
10	X	4	267.0	108.0	4.5	3.0	216	184	21.60
		6		159.0		3.0		194	21.75
		8		219.1		4.0		203	21.90
12	X	6	323.9	159.0	5.5	3.0	254	219	38.50
		8		219.1		4.0		229	39.60
		10		267.0		4.5		241	40.70
14	X	8	368.0	219.1	6.5	4.0	279	248	58.80
		10		267.0		4.5		257	59.70
		12		323.9		5.5		270	61.50
16	X	10	419.1	267.0	7.0	4.5	305	283	89.60
		12		323.9		5.5		295	91.40
		14		368.0		6.5		305	93.50
18	X	12	457.2	323.9	8.0	5.5	343	321	126.30
		14		368.0		6.5		330	128.30
		16		419.1		7.0		330	129.90
20	X	14	508.0	368.0	8.5	6.5	381	356	162.00
		16		419.1		7.0		356	164.20
		18		457.2		8.0		368	168.30
24	X	16	610.0	419.1	10.5	7.0	432	406	248.30
		18		457.2		8.0		419	251.70
		20		508.0		8.5		432	255.30
28	X	18	711.0	457.2	12.0	8.0	521	470	394.60
		20		508.0		8.5		483	398.20
		24		610.0		10.5		508	409.90
32	X	20	813.0	508.0	13.5	8.5	597	533	495.00
		24		610.0		10.5		559	506.80
		28		711.0		12.0		572	518.80
36	X	24	914.0	610.0	15.5	10.5	673	610	723.60
		28		711.0		12.0		622	735.40
		32		813.0		13.5		648	754.40

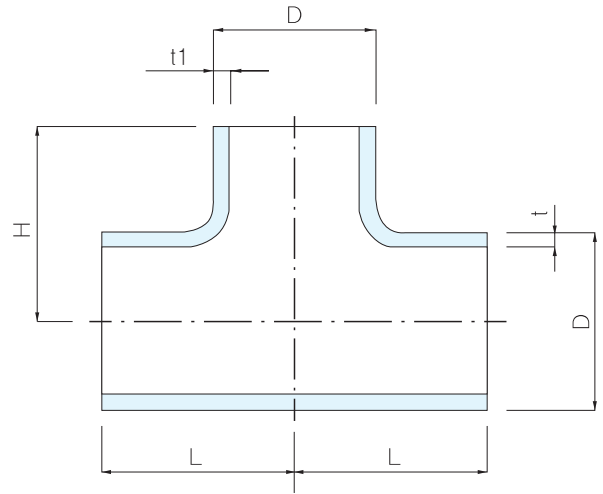
REDUCING TEE

20bar

● MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30

● DIMENSION : EEMUA Pub. No. 146

1/2" ~ 8" : SEAMLESS TYPE



Outside diameter of pipe				Wall thickness			Center to end		Weight
Nominal			D	D1	t	t1	L	H	(kg)
(Inch)			(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	
1	X	3/4	30.0	25.0	2.5	2.0	38	38	0.17
1 1/4	X	3/4	38.0	25.0	2.5	2.0	48	48	0.28
		1		30.0		2.5			0.28
1 1/2	X	3/4	44.5	25.0	2.5	2.0	57	57	0.37
		1		30.0		2.5			0.40
		1 1/4		38.0		2.5			0.41
2	X	1	57.0	30.0	2.5	2.5	64	51	0.51
		1 1/4		38.0		2.5		57	0.54
		1 1/2		44.5		2.5		60	0.55
2 1/2	X	1 1/4	76.1	38.0	2.5	2.5	76	64	0.83
		1 1/2		44.5		2.5		67	0.84
		2		57.0		2.5		70	0.85
3	X	1 1/2	88.9	44.5	2.5	2.5	86	73	1.10
		2		57.0		2.5		76	1.12
		2 1/2		76.1		2.5		83	1.15
4	X	2	108.0	57.0	3.0	2.5	105	89	1.90
		2 1/2		76.1		2.5		95	1.92
		3		88.9		2.5		98	1.95
6	X	2 1/2	159.0	76.1	3.5	2.5	143	121	4.60
		3		88.9		2.5		124	4.65
		4		108.0		3.0		130	4.72
8	X	3	219.1	88.9	4.5	2.5	178	152	18.70
		4		108.0		3.0		156	19.00
		6		159.0		3.5		168	19.10

REDUCING TEE

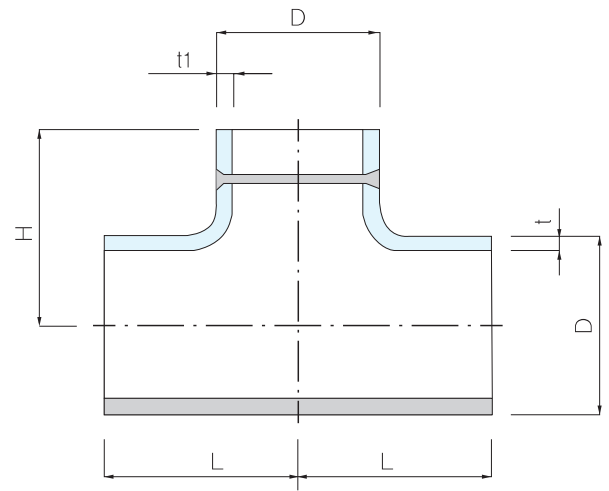
20bar

● MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30

● DIMENSION : EEMUA Pub. No. 146

10" & 12" : SEAMLESS or SEAM WELDED TYPE

14" & OVER : SEAM TYPE



SEAM TYPE

Outside diameter of pipe			Wall thickness		Center to end		Weight
Nominal		D	t	t1	L	H	(kg)
(Inch)		(mm)	(mm)	(mm)	(mm)	(mm)	
10	X	267.0	5.5	3.0	216	184	26.40
				3.5		194	26.60
				4.5		203	26.75
12	X	323.9	7.0	3.5	254	219	49.00
				4.5		229	50.40
				5.5		241	51.80
14	X	368.0	8.0	4.5	279	248	72.35
				5.5		257	73.50
				7.0		270	75.70
16	X	419.1	9.0	5.5	305	283	115.20
				7.0		295	117.50
				8.0		305	120.20
18	X	457.2	9.5	7.0	343	321	150.00
				8.0		330	152.35
				9.0		330	154.25
20	X	508.0	11.0	8.0	381	356	209.65
				9.0		356	212.50
				9.5		368	217.80
24	X	610.0	13.0	9.0	432	406	307.40
				9.5		419	311.60
				11.0		432	310.10
28	X	711.0	15.0	9.5	521	470	493.25
				11.0		483	497.75
				13.0		508	512.40
32	X	813.0	17.0	11.0	597	533	623.30
				13.0		559	638.20
				15.0		572	563.30
36	X	914.0	19.0	13.0	673	610	887.00
				15.0		622	901.45
				17.0		648	924.75

REDUCER

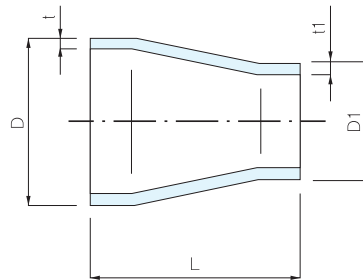
10bar and 14bar

● MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30

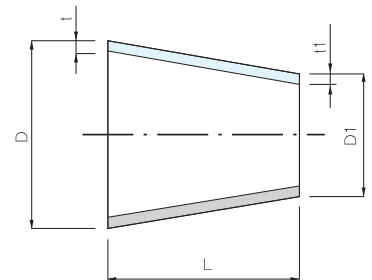
● DIMENSION : DIN 86089

1/2" ~ 10" : SEAMLESS TYPE

12" & OVER : SEAM WELDED TYPE



SEAMLESS TYPE



SEAM TYPE

Outside diameter of pipe					Wall thickness		Center to end	Weight			
Nominal			D	D1	t	t1	L	(kg)			
(Inch)			(mm)	(mm)	(mm)	(mm)	(mm)				
1	X	1/2	30.0	20.0	1.5	1.0 ■ 1.5	35	0.04			
		3/4		25.0	■ 2.0	1.5		0.05			
		1/2		20.0	1.5	1.0		0.06			
1 1/4	X	3/4	38.0	20.0	1.5	1.0 ■ 1.5	50	0.07			
		25.0		1.5		1.5		0.08			
		30.0		■ 2.0		■ 2.0		0.11			
		1		38.0	■ 2.0	1.5		0.12			
1 1/2	X	3/4	44.5	25.0	1.5	1.5	80	0.13			
		30.0		1.5		1.5		0.14			
		38.0		■ 2.0		■ 2.0		0.15			
		1 1/4		44.5	■ 2.0	1.5		0.16			
2	X	1	57.0	30.0	1.5	1.5 ■ 2.0	80	0.25			
		38.0		1.5		1.5		0.26			
		44.5		■ 2.0		■ 2.0		0.29			
		1 1/2		57.0	■ 2.0	1.5		0.30			
2 1/2	X	1 1/4	76.1	38.0	2.0	1.5 ■ 2.0	90	0.32			
		44.5		1.5		1.5		0.35			
		57.0		■ 2.0		■ 2.0		0.38			
		2		76.1	■ 2.5	2.0		0.40			
3	X	1 1/2	88.9	44.5	2.0	1.5 ■ 2.5	90	0.48			
		57.0		1.5		1.5		0.57			
		76.1		2.0		■ 2.5		0.61			
		2		2.5	2.0	2.0		0.93			
		3						108.0	■ 3.0	2.0	1.06
		4						108.0	■ 3.0	2.5	1.13
4	X	2	108.0	57.0	2.5	1.5 ■ 2.0	140	1.16			
		76.1		2.0		2.0		1.34			
		88.9		2.5		■ 2.5					
		3		108.0	2.5	2.0					
5	X	2 1/2	133.0	76.1	2.5	2.0	140				
		88.9		2.0		■ 2.5					
		108.0		2.5		2.5					
		4		133.0	■ 3.0	2.5					

REDUCER

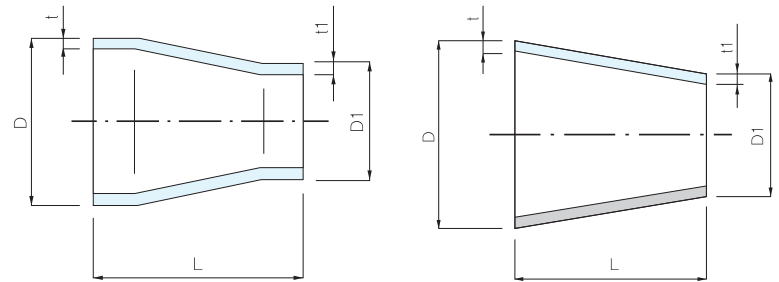
10bar and 14bar

● MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30

● DIMENSION : DIN 86089

1/2" ~ 10" : SEAMLESS TYPE

12" & OVER : SEAM WELDED TYPE



SEAMLESS TYPE

SEAM TYPE

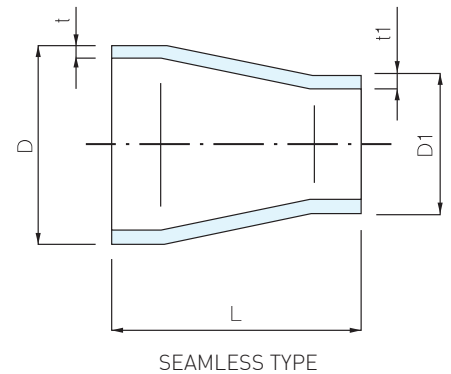
Outside diameter of pipe			Wall thickness		Center to end	Weight
Nominal	D	D1	t	t1	L	(kg)
(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)	
6	X 3	159.0	88.9	2.5	150	1.19
			■ 3.0	■ 2.5		1.42
	X 4	159.0	108.0	2.5		1.38
			■ 3.0	■ 2.5		1.65
	X 5	159.0	133.0	2.5		1.51
			■ 3.0	■ 3.0		1.81
8	X 4	219.1	108.0	3.0	155	2.47
			■ 3.5	■ 2.5		2.88
	X 5	219.1	133.0	3.0		2.60
			■ 3.5	■ 3.0		3.03
	X 6	219.1	159.0	3.0		2.74
			■ 3.5	■ 3.0		3.20
10	X 5	267.0	133.0	3.0	210	3.30
			■ 4.0	■ 3.0		4.40
	X 6	267.0	159.0	3.0		3.49
			■ 4.0	■ 3.0		4.65
	X 8	267.0	219.1	3.0		4.25
			■ 4.0	■ 3.5		5.00
12	X 6	323.9	159.0	4.0	210	5.60
			■ 5.0	■ 3.0		7.00
	X 8	323.9	219.1	4.0		6.30
			■ 5.0	■ 3.5		7.90
	X 10	323.9	267.0	4.0		6.88
			■ 5.0	■ 4.0		8.60
14	X 8	368.0	219.1	4.0	300	9.76
			■ 5.5	■ 3.5		13.42
	X 10	368.0	267.0	4.0		10.57
			■ 5.5	■ 4.0		14.53
	X 12	368.0	323.9	4.0		11.53
			■ 5.5	■ 5.0		15.85
16	X 10	419.1	267.0	4.0	300	12.38
			■ 6.0	■ 4.0		18.57
	X 12	419.1	323.9	4.0		13.42
			■ 6.0	■ 5.0		20.13
	X 14	419.1	368.0	4.0		14.22
			■ 6.0	■ 5.5		21.33

Outside diameter of pipe			Wall thickness		Center to end	Weight
Nominal	D	D1	t	t1	L	(kg)
(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)	
18	X 8	457.2	219.1	4.0	350	13.14
			■ 6.0	■ 3.5		19.70
	X 10	457.2	267.0	4.0		14.08
			■ 6.0	■ 4.0		21.10
	X 12	457.2	323.9	4.0		15.20
			■ 6.0	■ 5.0		22.80
20	X 14	508.0	368.0	4.0	375	16.06
			■ 6.0	■ 5.5		24.10
	X 16	508.0	419.1	4.0		17.07
			■ 6.0	■ 6.0		25.80
	X 10	508.0	267.0	4.5		18.07
			■ 6.5	■ 4.0		26.10
24	X 12	610.0	323.9	4.5	400	19.42
			■ 6.5	■ 5.0		28.05
	X 14	610.0	368.0	4.5		20.47
			■ 6.5	■ 5.5		29.60
	X 16	610.0	419.1	4.5		21.68
			■ 6.5	■ 6.0		31.30
28	X 18	711.2	457.2	4.5	400	22.57
			■ 6.5	■ 6.0		32.60
	X 20	711.2	508.0	5.0		27.19
			■ 8.0	■ 5.5		43.50
	X 24	711.2	610.0	5.0		28.62
			■ 8.0	■ 6.0		45.80
32	X 24	812.8	610.0	5.0	400	29.69
			■ 8.0	■ 6.0		47.50
	X 28	812.8	711.2	5.0		31.12
			■ 8.0	■ 6.5		49.80
	X 32	812.8	812.8	5.0		31.12
			■ 8.0	■ 6.5		49.80

REDUCER

16bar

- MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30
- DIMENSION : EEMUA Pub. 146
 - 1/2" ~ 10" : SEAMLESS TYPE
 - 12" & OVER : SEAM WELDED TYPE

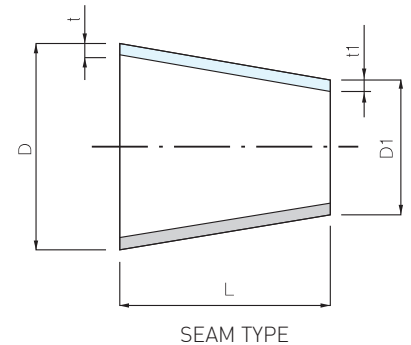


Outside diameter of pipe					Wall thickness		Center to end	Weight
Nominal			D	D1	t	t1	L	(kg)
(Inch)			(mm)	(mm)	(mm)	(mm)	(mm)	
1	X	3/4	30.0	25.0	2.5	2.0	51	0.09
1 1/4	X	3/4	38.0	25.0	2.5	2.0	51	0.10
		1		30.0		2.5		0.11
1 1/2	X	3/4	44.5	25.0	2.5	2.0	64	0.14
		1		30.0		2.5		0.15
		1 1/4		38.0		2.5		0.17
2	X	1	57.0	30.0	2.5	2.5	76	0.21
		1 1/4		38.0		2.5		0.23
		1 1/2		44.5		2.5		0.25
2 1/2	X	1 1/4	76.1	38.0	2.5	2.5	89	0.34
		1 1/2		44.5		2.5		0.36
		2		57.0		2.5		0.40
3	X	1 1/2	88.9	44.5	2.5	2.5	89	0.40
		2		57.0		2.5		0.44
		2 1/2		76.1		2.5		0.50
4	X	2	108.0	57.0	3.0	2.5	102	0.68
		2 1/2		76.1		2.5		0.76
		3		88.9		2.5		0.82
6	X	2 1/2	159.0	76.1	3.0	2.5	140	1.35
		3		88.9		2.5		1.42
		4		108.0		3.0		1.54
8	X	3	219.1	88.9	4.0	2.5	152	2.55
		4		108.0		3.0		2.72
		6		159.0		3.0		3.16
10	X	4	267.0	108.0	4.5	3.0	178	4.11
		6		159.0		3.0		4.69
		8		219.1		4.0		5.36

REDUCER

16bar

- MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30
- DIMENSION : EEMUA Pub. 146
 - 1/2" ~ 10" : SEAMLESS TYPE
 - 12" & OVER : SEAM WELDED TYPE

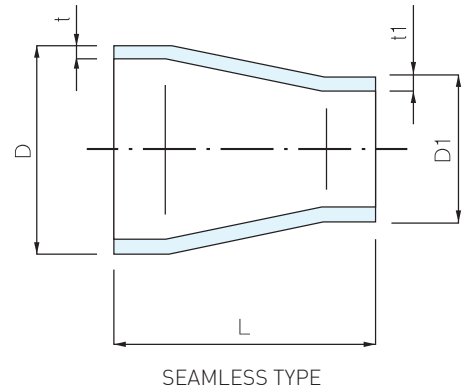


Outside diameter of pipe			Wall thickness		Center to end	Weight
Nominal	D	D1	t	t1	L	(kg)
(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)	
12	X	6	5.5	3.0	203	7.39
		8		4.0		8.33
		10		4.5		9.09
14	X	8	6.5	4.0	330	17.28
		10		4.5		18.73
		12		5.5		20.44
16	X	10	7.0	4.5	356	23.51
		12		5.5		25.51
		14		6.5		27.04
18	X	12	8.0	5.5	381	32.71
		14		6.5		34.61
		16		7.0		36.80
20	X	14	8.5	6.5	508	52.07
		16		7.0		55.17
		18		8.0		57.48
24	X	16	10.5	7.0	508	75.49
		18		8.0		78.34
		20		8.5		82.15
28	X	18	12.0	8.0	610	117.58
		20		8.5		122.82
		24		10.5		133.30
32	X	24	13.5	10.5	610	161.42
		28		12.0		173.09
36	X	24	15.5	10.5	610	274.48
		28		12.0		287.89
		32		13.5		301.43

REDUCER

20bar

- MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30
- DIMENSION : EEMUA Pub. 146
1/2" ~ 10" : SEAMLESS TYPE
12" & OVER : SEAM WELDED TYPE

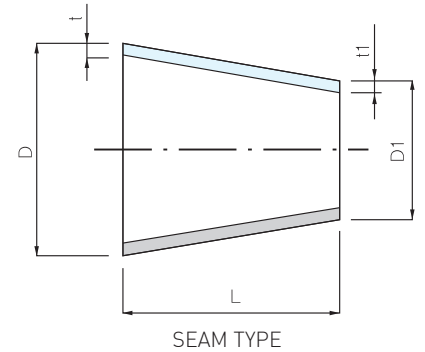


Outside diameter of pipe				Wall thickness		Center to end	Weight	
Nominal			D	D1	t	t1	L	(kg)
(Inch)			(mm)	(mm)	(mm)	(mm)	(mm)	
1	X	3/4	30.0	25.0	2.5	2.0	51	0.09
1 1/4	X	3/4	38 0	25.0	2.5	2.0	51	0.10
		1		30.0		2.5		0.11
1 1/2	x	3/4	44.5	25.0	2.5	2.0	64	0.14
		1		30.0		2.5		0.15
		1 1/4		38.0		2.5		0.17
2	x	1	57.0	30.0	2.5	2.5	76	0.21
		1 1/4		38.0		2.5		0.23
		1 1/2		44.5		2.5		0.25
2 1/2	x	1 1/4	76.1	38.0	2.5	2.5	89	0.34
		1 1/2		44.5		2.5		0.36
		2		57.0		2.5		0.40
3	x	1 1/2	88.9	44.5	2.5	2.5	89	0.40
		2		57.0		2.5		0.44
		2 1/2		76.1		2.5		0.50
4	x	2	108.0	57.0	3.0	2.5	102	0.68
		2 1/2		76.1		2.5		0.76
		3		88.9		2.5		0.82
6	x	2 1/2	159.0	76.1	3.5	2.5	140	1.56
		3		88.9		2.5		1.65
		4		108.0		3.0		1.78
8	x	3	219.1	88.9	4.5	2.5	152	2.87
		4		108.0		3.0		3.05
		6		159.0		3.5		3.54
10	x	4	267.0	108.0	5.5	3.0	178	5.00
		6		159.0		3.5		5.70
		8		219.1		4.5		6.53

REDUCER

20bar

- MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30
- DIMENSION : EEMUA Pub. 146
 - 1/2" ~ 10" : SEAMLESS TYPE
 - 12" & OVER : SEAM WELDED TYPE

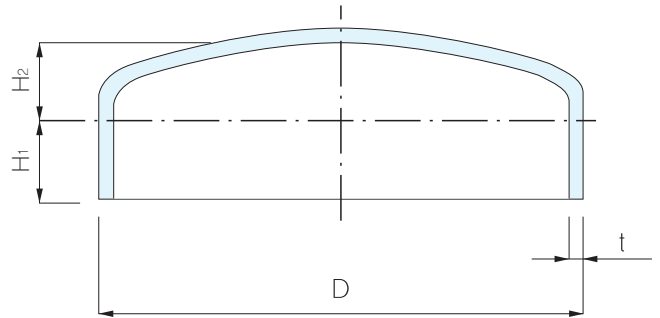


Outside diameter of pipe				Wall thickness		Center to end	Weight	
Nominal			D	D1	t	t1	L	(kg)
(Inch)			(mm)	(mm)	(mm)	(mm)	(mm)	
12	X	6	323.9	159.0	7.0	3.5	203	9.35
		8		219.1		4.5		10.55
		10		267.0		5.5		11.52
14	X	8	368.0	219.1	8.0	4.5	330	21.16
		10		267.0		5.5		22.95
		12		323.9		7.0		25.06
16	X	10	419.1	267.0	9.0	5.5	356	30.05
		12		323.9		7.0		32.62
		14		368.0		8.0		34.60
18	X	12	457.2	323.9	9.5	7.0	381	38.85
		14		368.0		8.0		41.10
		16		419.1		9.0		43.70
20	X	14	508.0	368.0	11.0	8.0	508	67.38
		16		419.1		9.0		71.39
		18		457.2		9.5		74.38
24	X	16	610.0	419.1	13.0	9.0	508	93.46
		18		457.2		9.5		96.99
		20		508.0		11.0		101.70
28	X	18	711.0	457.2	15.0	9.5	610	146.97
		20		508.0		11.0		153.32
		24		610.0		13.0		166.62
32	X	24	813.0	610.0	17.0	13.0	610	203.26
		28		711.0		15.0		217.96
36	X	24	914.0	610.0	19.0	13.0	610	336.45
		28		711.0		15.0		352.89
		32		813.0		17.0		369.49

END CAP

10bar and 14bar

- MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30
- DIMENSION : DIN 28011

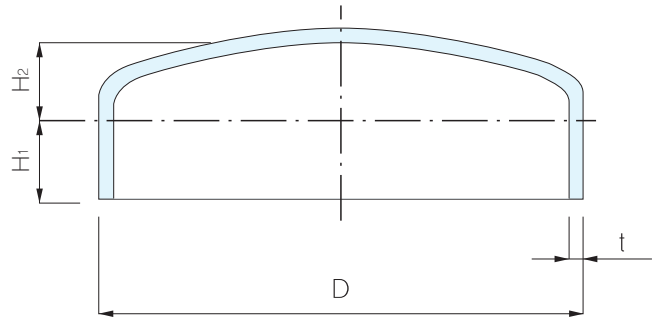


Outside diameter of pipe		Wall thickness	Radius		Weight
Nominal	D	t	H1	H2	(kg)
(Inch)	(mm)	(mm)	(mm)	(mm)	
1	30.0	1.5 ■ 2.0	14	5	0.07
1 1/4	38.0	1.5 ■ 2.0		6.5	0.10
1 1/2	44.5	1.5 ■ 2.0		8	0.12
2	57.0	1.5 ■ 2.0	18	10	0.18
2 1/2	76.1	2.0		14	0.31
3	88.9	2.0 ■ 2.5	20	16	0.39 0.53
4	108.0	2.5		20	0.75
5	133.0	2.5 ■ 3.0		24	0.95 1.20
6	159.0	2.5 ■ 3.0		29	1.35 1.60
8	219.1	3.0 ■ 3.5		41	2.60 3.10
10	267.0	3.0 ■ 4.0		50	3.85 4.85
12	323.9	4.0 ■ 5.0		61	6.60 8.20
14	368.0	4.0 ■ 5.5		69	8.80 12.60
16	419.1	4.0 ■ 6.0		79	12.20 17.40
18	457.2	4.0 ■ 6.0	25	96	12.55 17.90
20	508.0	4.5 ■ 6.5	20		18.80 26.35
24	610.0	5.0	20		26.70
		■ 8.0	35	115	49.60

END CAP

16bar

- MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30
- DIMENSION : EEMUA Pub. No.146

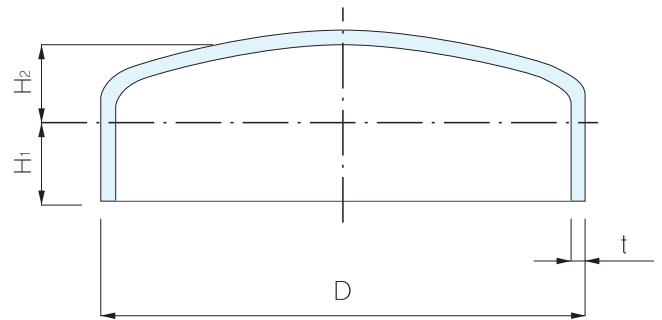


Outside diameter of pipe		Wall thickness	Radius	Weight
Nominal	D	t	H1 + H2	(kg)
(Inch)	(mm)	(mm)	(mm)	
1 1/2	44.5	2.5	19.6	0.13
2	57.0	2.5	22	0.19
2 1/2	76.1	2.5	25.7	0.31
3	88.9	2.5	28.2	0.40
4	108.0	3.0	31.7	0.75
6	159.0	3.0	41	1.50
8	219.1	4.0	55	2.75
10	267.0	4.5	69	4.90
12	323.9	5.5	80	9.17
14	368.0	6.5	93	14.05
16	419.1	7.0	102	18.60
18	457.2	8.0	119	22.75
20	508.0	8.5	129	31.70
24	610.0	10.5	148	56.16
28	711.0	12.0	176	85.55
32	813.0	13.5	200	125.40
36	914.0	15.5	221	175.40

END CAP

20bar

- MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30
- DIMENSION : EEMUA Pub. No.146



Outside diameter of pipe		Wall thickness	Radius	Weight
Nominal	D	t	H1 + H2	(kg)
(Inch)	(mm)	(mm)	(mm)	
1 1/2	44.5	2.5	19.6	0.13
2	57.0	2.5	22	0.19
2 1/2	76.1	2.5	25.7	0.31
3	88.9	2.5	28.2	0.40
4	108.0	3.0	31.7	0.75
6	159.0	3.5	44	1.75
8	219.1	4.5	60	3.10
10	267.0	5.5	69	5.96
12	323.9	7.0	85	11.68
14	368.0	8.0	103	17.30
16	419.1	9.0	112	23.90
18	457.2	9.5	119	27.00
20	508.0	11.0	139	41.00
24	610.0	13.0	163	68.30
28	711.0	15.0	191	106.90
32	813.0	17.0	210	157.90
36	914.0	19.0	231	215.00

BOMYUNG METAL.Co.,Ltd

CONTENTS

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CHEMICAL COMPOSITION / MECHANICAL PROPERTIES / WELDING INSTRUCTION / PIPE / COIL

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SOCKET WELDING & BUTT WELDING - ELBOW / REDUCER / TEE / COUPLING / SLEEVE / FLANGE

08

COPPER
NICKEL
FLANGES

GENERAL INFORMATION OF CU-NI FLANGES

The national and international standards to which the flanges are produced are detailed in the relevant product tables.



Materials	Applied Code	
Cu-Ni 90/10	EEMUA 7060X	Din CuNi10Fe1Mn
	ASTM B151 C70600	JIS H3300 C7060
	BS 2872 CN102	-
Cu-Ni 70/30	ASTM B151 C71500	Din CuNi30Mn1Fe
	BS 2872 CN107	JIS H3300 C7150
Cast bronze	ASTM B61, B62	BS 1400 LG2C
	JIS H5111 BC1 ~ BC7	-
Leaded yellow brass	ASTM B584 C85400	JIS H5101 YBSC ₂ (CAC202)
Steel	ASTM A105	JIS G3101 SS400

● Composite Flanges

Composite weld-neck and composite slip-on flanges are made up from two components, an internal flange (welding collar) in Cu-Ni 90/10, Cu-Ni 70/30 and an external flange in carbon steel.

Composite blind flanges are made up from a carbon steel blind flange overlayed-on, and machined disc in Cu-Ni 90/10 or Cu-Ni 70/30.

● Solid Flanges

Solid flanges in Cu-Ni 90/10 or Cu-Ni 70/30 are produced from bar by hot forging and machining. Solid flanges in bronze are produced by casting and machining. Solid flanges in Leaded yellow brass are produced by extrusion bar and machining.

● Solid Silver-Brazing Flanges

Solid silver brazing flanges incorporate integral silver-brazing alloy rings and under normal circumstances. There is generally no need to socket feed with additional brazing alloy. The silver brazing alloy to AWS A5.8 (BAG1, BAG7), JIS E3261 (BAG1, BAG7) or BS1845 (AG1, AG7).

● Product Range

Composite and solid flanges are available in standard sizes machining those of the relevant pipe and butt welding fittings. Non-standard size flanges are produced to certain minimum quantity limitations, availability on application.

● Joint facing

All flange jointing faces are machine finished according to ASME B16.5 including smooth finish.

● Inspection and Testing

A Series of stringent quality-control inspections and tests is performed throughout the entire manufacturing process, from melting and alloying to the finished product to ensure product quality which complies with the customer's requirements. Final inspection generally includes visual and dimensional control as well as chemical and mechanical tests to ensure chemical, physical and dimensional accuracy.

● Certification

All flanges are supplied with a certificate listing the tests which have been performed in accordance with relevant specifications and / or customer requests.

● Packing

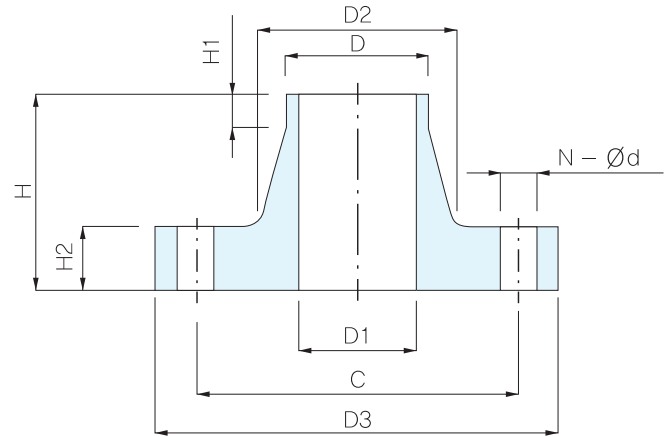
The utmost care is taken to ensure that butt-welding fittings are fully protected against damage during transit.

SOLID WELDING NECK FLANGE

10bar

● MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30

● DIMENSION : DIN 2632



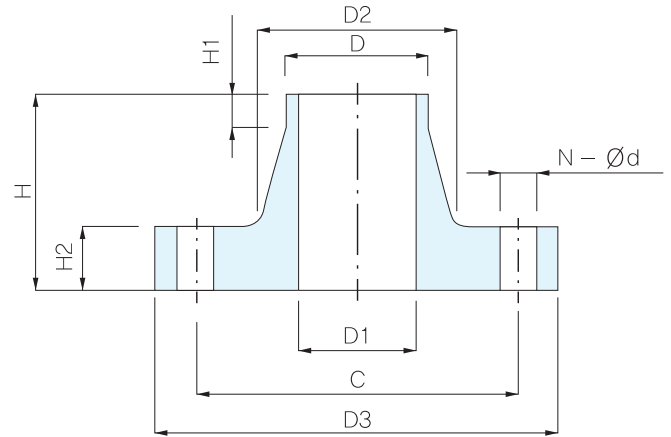
Outside diameter of pipe (D)		FLANGE						Drilling of Bolt-Hole			Weight
Nominal	Actual	D3	H	H2	D2	D1	H1	C	N	Ød	(kg)
(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	
1/2	20.0	95	35	14	30	To be specified by thickness of suitable pipe	6	65	4	14	0.7
3/4	25.0	105	38	16	38			75			1.1
1	30.0	115			42			85			1.3
1 1/4	38.0	140	40	18	52		7	100	8	18	1.9
1 1/2	44.5	150	42					60			110
2	57.0	165	45	18	72		8	125			2.9
2 1/2	76.1	185			90		10	145			3.5
3	88.9	200	50	20	105			160	8	22	4.2
4	108.0	220	52		125		12	180			5.3
5	133.0	250	55	22	150			210			7.2
6	159.0	285			175		240	16	295	12	26
8	219.1	340	62	24	235		350		12.8		
10	267.0	395	68	26	285				400		
12	323.9	445			344		460		19.8		
14	368.0	505			385		515		26.8		
16	419.1	565	72		440			620	26	32.5	
20	508.0	670	75	28	542		20			43.3	
24	610.0	780	80		642			18	725	30	50.7

SOLID WELDING NECK FLANGE

16bar

● MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30

● DIMENSION : DIN 2633



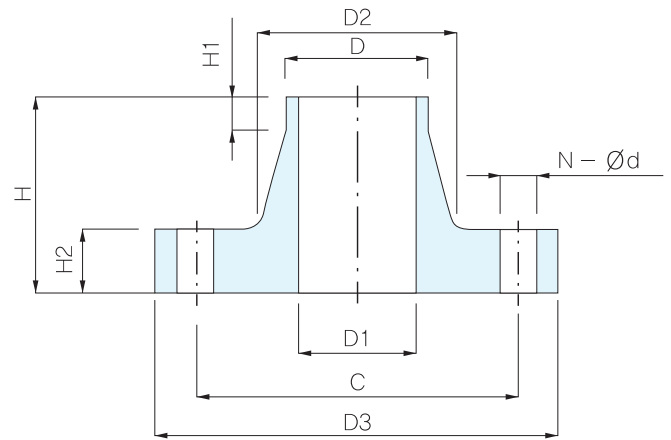
Outside diameter of pipe (D)		FLANGE						Drilling of Bolt-Hole			Weight
Nominal	Actual	D3	H	H2	D2	D1	H1	C	N	Ød	(kg)
(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	
1/2	20.0	95	35	14	30	To be specified by thickness of suitable pipe	6	65	4	14	0.7
3/4	25.0	105	38	16	38			75			1.1
1	30.0	115			42			85			1.3
1 1/4	38.0	140	40		52		7	100	18	1.9	
1 1/2	44.5	150	42		60			110		2.1	
2	57.0	165	45	18	72		8	125		2.9	
2 1/2	76.1	185			90		10	145		3.5	
3	88.9	200	50		105			160		8	22
4	108.0	220	52	20	125		180	5.3			
5	133.0	250	55		22		150	210	7.2		
6	159.0	285		175			12	240	27	8.8	
8	219.1	340	62	24				235		295	12.5
10	267.0	405	70	26	285			355		12	17.7
12	323.9	460	78	28	338		410	16	25.0		
14	368.0	520	82	30	390		470		30		35.5
16	419.1	580	85	32	445		525			45.2	
20	508.0	715	90	34	548		18	650	20	33	69.3
24	610.0	840	95	36	652			770		36	85.7

SOLID WELDING NECK FLANGE

16bar

● MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30

● DIMENSION : EEMUA Pub. No. 145



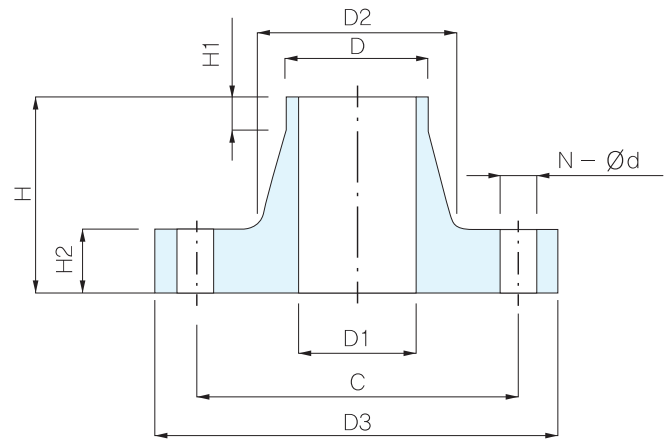
Outside diameter of pipe (D)		FLANGE						Drilling of Bolt-Hole			Weight
Nominal	Actual	D3	H	H2	D2	D1	H1	C	N	Ød	(kg)
(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	
1/2	16.0	89	48	14	23	12.0	8	60.3	4	15.9	0.6
3/4	25.0	98	52	16	32	21.0	7	69.8			0.9
1	30.0	108	56		42	25.0	8	79.4			1.3
1 1/4	38.0	117	57	17	51	33.0		88.9			1.7
1 1/2	44.5	127	62	20	61	39.5	7	98.4			2.1
2	57.0	152	64	25	73	52.0	9	120.6	8	19.0	3.1
2 1/2	76.1	178	70	27	91	71.1	8	139.7			4.6
3	88.9	190			105	83.9		152.4			5.5
4	108.0	229	76		135	102.0		190.5			9.5
6	159.0	279	89		192	153.0		241.3			13.7
8	219.1	343	98	31	246	211.1		298.4	8	22.2	21.2
10	267.0	406			305	258.0		362.0			29.5
12	323.9	483		35	365	312.9	8	431.8	12	25.4	44.8
14	368.0	533			400	355.0		476.2			57.3
16	419.1	597		45	457	405.1		539.8	16	28.6	74.4
18	457.2	635			505	441.2		577.8			88.2
20	508.0	698			559	491.0		635.0	20	31.8	106.2
24	610.0	813	137	49	664	589.0		749.3			153.2

SOLID WELDING NECK FLANGE

20bar

● MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30

● DIMENSION : EEMUA Pub. No. 145



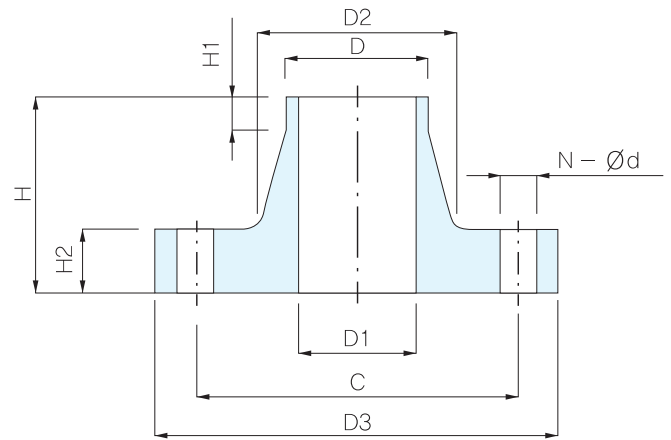
Outside diameter of pipe (D)		FLANGE						Drilling of Bolt-Hole			Weight
Nominal	Actual	D3	H	H2	D2	D1	H1	C	N	Ød	(kg)
(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	
1/2	16.0	89	48	14	23	12.0	8	60.3	4	15.9	0.6
3/4	25.0	98	52	16	32	21.0	7	69.8			0.9
1	30.0	108	56		42	25.0	8	79.4			1.3
1 1/4	38.0	117	57	17	51	33.0		88.9			1.7
1 1/2	44.5	127	62	20	61	39.5	7	98.4			2.1
2	57.0	152	64	25	73	52.0	9	120.6	8	19.0	3.1
2 1/2	76.1	178	70	27	91	71.1	8	139.7			4.6
3	88.9	190			105	83.9		152.4			5.5
4	108.0	229	76		135	102.0		190.5			9.5
6	159.0	279	89		192	152.0		241.3			14.0
8	219.1	343	98	31	246	210.1		298.4	8	22.2	21.6
10	267.0	406			305	256.0		362.0			30.5
12	323.9	483		35	365	309.9		431.8	12	25.4	46.6
14	368.0	533	99	41	400	352.0		476.2			59.5
16	419.1	597	106	43	457	401.1		539.8	16	28.6	79.0
18	457.2	635	113	45	505	438.2		577.8			91.1
20	508.0	698	118		559	486.0		635.0	20	31.8	110.7
24	610.0	813	137		664	584.0		749.3			160.8

SOLID WELDING NECK FLANGE

150Lbs

● MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30

● DIMENSION : ASME B16.5



Outside diameter of pipe (D)		FLANGE					Drilling of Bolt-Hole			Weight
Nominal	Actual	D3	H	H2	D2	RF	C	N	Ød	(kg)
(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	
1/2	16.0 20.0	88.9	47.6	11.1	30.2	34.9	60.3	4	15.9	0.7
3/4	25.0		98.4	52.4	12.7	38.1	42.9			69.8
1	30.0	108.0	55.6	14.3	49.2	50.8	79.4			1.3
1 1/4	38.0	117.5	57.1	15.9	58.7	63.5	88.9			1.6
1 1/2	44.5	127.0	61.9	17.5	65.1	73.0	98.4			2.1
2	57.0	152.4	63.5	19.1	77.8	92.1	120.6		19.1	3.1
2 1/2	76.1	177.8	69.8	22.2	90.5	104.8	139.7	5.1		
3	88.9	190.5				107.9	127.0	152.4		5.2
4	108.0	228.6	76.2	23.8	134.9	157.2	190.5	8		7.9
5	133.0	254.0	88.9			163.5	185.7			215.9
6	159.0	279.4			25.4	192.1	215.9		241.3	12.2
8	219.1	342.9	101.6	28.6	246.1	269.9	298.4	12	25.4	20.0
10	267.0	406.4			30.2	304.8	323.8			362.0
12	323.9	482.6	114.3	31.8	365.1	381.0	431.8		16	28.6
14	368.0	533.4	127.0	34.9	400.0	425.1	476.2	31.8		
16	419.1	596.9			36.5	457.2	482.6			539.8
18	457.2	635.0	139.7	39.7	504.8	533.4	577.8	20	34.9	72.0
20	508.0	698.5	144.5	42.9	558.8	584.2	635.0			87.0
24	610.0	812.8	152.4	47.6	663.6	692.1	749.3			

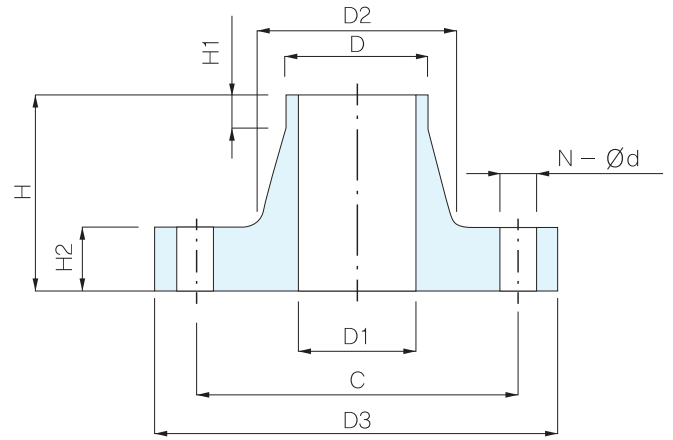
* "D1" : To be specified by thickness of suitable pipe

SOLID WELDING NECK FLANGE

300Lbs

● MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30

● DIMENSION : ASME B16.5



Outside diameter of pipe (D)		FLANGE					Drilling of Bolt-Hole			Weight
Nominal	Actual	D3	H	H2	D2	RF	C	N	Ød	(kg)
(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	
1/2	16.0 20.0	95.2	52.4	14.3	38.1	34.9	66.7	4	15.9	1.7
3/4	25.0	117.5	57.1	15.9	47.6	42.9	82.6		19.0	2.1
1	30.0	123.8	61.9	17.5	54.0	50.8	88.9			2.3
1 1/4	38.0	133.3	65.1	19.0	63.5	63.5	98.4		2.9	
1 1/2	44.5	155.6	68.3	20.6	69.8	73.0	114.3		22.2	4.0
2	57.0	165.1	69.8	22.2	84.1	92.1	127.0	8	19.0	4.6
2 1/2	76.1	190.5	76.2	25.4	100.0	104.8	149.2		22.2	5.7
3	88.9	209.5	79.4	28.6	117.5	127.0	168.3			8.0
4	108.0	254.0	85.7	31.8	146.1	157.2	200.0			12.6
5	133.0	279.4	98.4	34.9	177.8	185.7	235.0			17.9
6	159.0	317.5	98.4	36.5	206.4	215.9	269.9	12	21.8	
8	219.1	381.0	111.1	41.3	260.4	269.9	330.2		25.4	34.4
10	267.0	444.5	117.5	47.6	320.7	323.8	387.4	16	28.6	47.0
12	323.9	520.7	130.2	50.8	374.6	381.0	450.8		31.7	71.0
14	368.0	584.2	142.9	54.0	425.4	425.1	514.4	20		96.2
16	419.1	647.7	146.1	57.2	482.6	482.6	571.5		34.9	127.1
18	457.2	711.2	158.7	60.3	533.3	533.4	628.6	24		158.0
20	508.0	774.7	161.9	63.5	587.4	584.2	685.8			195.8
24	610.0	914.4	168.3	69.8	701.7	692.1	812.8	41.3	283.0	

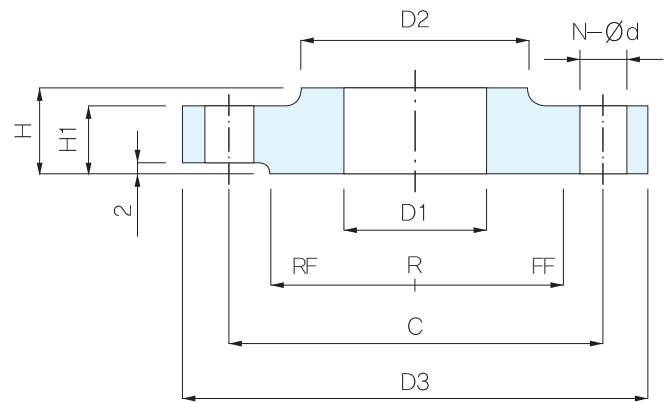
* "D1" : To be specified by thickness of suitable pipe

SOLID SLIP ON FLANGE

10bar

● MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30

● DIMENSION : DIN 86033



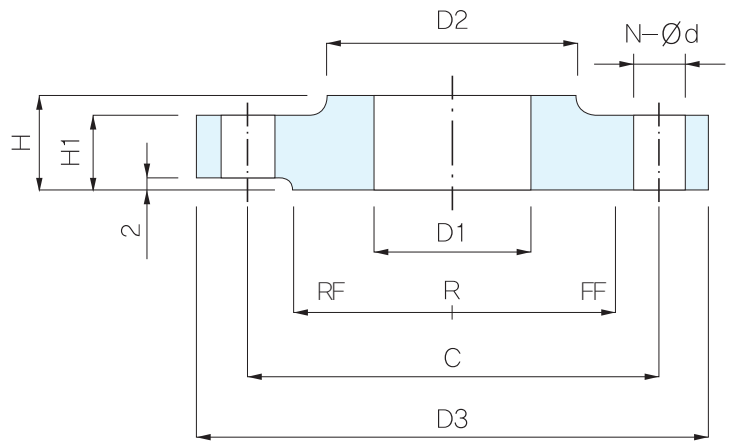
Outside diameter of pipe		FLANGE						Drilling of Bolt-Hole			Weight
Nominal	Actual	D3	H	H1	D2	D1	R	C	N	Ød	(kg)
(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	
1/2	20.0	95	18	12	30	20.2	45	65	4	14	0.6
3/4	25.0	105			35	25.2	58	75			0.7
1	30.0	115			40	30.2	68	85			0.9
1 1/4	38.0	140	20	14	49	38.3	78	100		18	1.5
1 1/2	44.5	150			56	44.8	88	110			1.6
2	57.0	165	22	16	69	57.3	102	125			2.2
2 1/2	76.1	185			88	76.3	122	145			2.7
3	88.9	200	24	18	101	89.4	138	160	8		3.3
4	108.0	220	28	20	120	108.4	158	180			4.3
5	133.0	250			146	133.7	188	210			5.4
6	159.0	285	30	22	172	159.7	212	240		22	6.4
8	219.1	340	32	24	234	220.0	268	295	9.1		
10	267.0	395	34	26	284	268.2	320	350	12.1		
12	323.9	445	36		343	325.4	370	400	13.7		
14	368.0	505	38	28	389	369.4	430	460	16		19.3
16	419.1	565	40		442	420.5	482	515		23.2	
18	457.2	615	42		31	482	458.5	530	565	20	27.9
20	508.0	670	47	535		509.5	585	620	35.0		
24	610.0	780	49	640		612.0	685	725	30		42.9

SOLID SLIP ON FLANGE

16bar / 20bar

● MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30

● DIMENSION : EEMUA Pub. No. 145



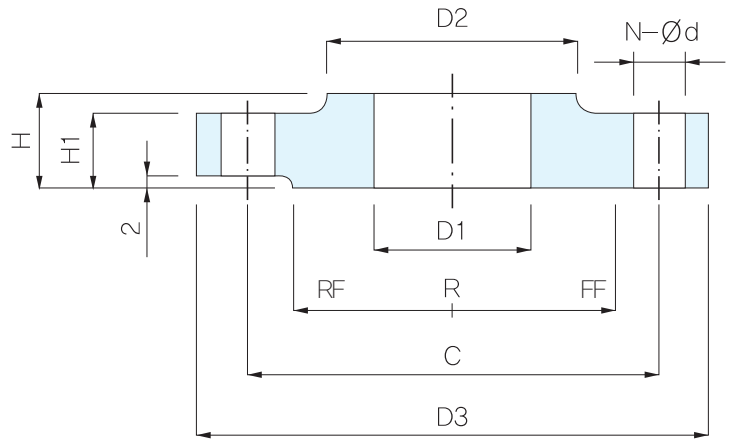
Outside diameter of pipe		FLANGE						Drilling of Bolt-Hole			Weight
Nominal	Actual	D3	H	H1	D1	D2	R	C	N	Ød	(kg)
(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	
1/2	16.0	89	20	14	16.07	23	34.9	60.3	4	15.9	1.2
3/4	25.0	98	24	16	25.08	32	42.9	69.8			1.2
1	30.0	108			30.08	47	50.8	79.4			1.3
1 1/4	38.0	117	26	17	38.10	51	63.5	88.9			1.7
1 1/2	44.5	127		20	44.60	61	73.0	98.4			1.8
2	57.0	152	28	25	57.23	73	92.1	120.6		19.0	2.9
2 1/2	76.1	178	32	27	76.33	91	104.8	139.7			4.3
3	88.9	190	34		89.18	105	127.0	152.4			4.4
4	108.0	229	40		108.38	135	157.2	190.5	8		7.3

SOLID SLIP ON FLANGE

150Lbs

● MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30

● DIMENSION : ASME B16.5



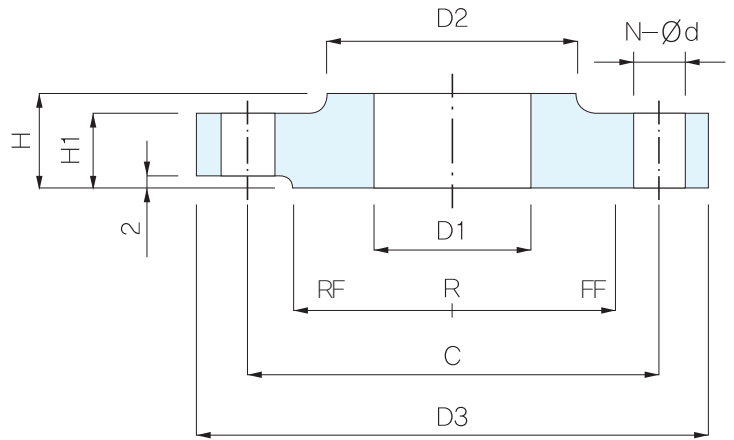
Outside diameter of pipe		FLANGE						Drilling of Bolt-Hole			Weight
Nominal	Actual	D3	H	H1	D2	D1	R	C	N	Ød	(kg)
(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	
1/2	16.0	88.9	15.7	11.1	30.2	16.2	34.9	60.3	4	15.9	0.9
	20.0										1.1
3/4	25.0	98.4	12.7	38.1	25.2	42.9	69.8	1.2			
1	30.0	107.9	17.5	14.3	49.2	30.2	50.8	79.4			1.5
1 1/4	38.0	117.5	20.6	15.9	58.7	38.3	63.5	88.9			1.6
1 1/2	44.5	127.0	22.2	17.5	65.1	44.8	73.0	98.4			
2	57.0	152.4	25.4	19.1	77.8	57.4	92.1	120.6		19.1	2.7
2 1/2	76.1	177.8	28.6	22.2	90.5	76.5	104.8	139.7			3.9
3	88.9	190.5	30.2	23.8	107.9	89.4	127.0	152.4			4.7
4	108.0	228.6	33.3		134.9	108.5	157.2	190.5	8	6.7	
5	133.0	254.0	36.5		163.5	133.8	185.7	215.9		22.2	8.0
6	159.0	279.4	39.6	25.4	192.1	159.8	215.9	241.3			9.9
8	219.1	342.9	44.5	28.6	246.1	220.3	269.9	298.4			15.7
10	267.0	406.4	49.2	30.2	304.8	268.4	323.8	361.9	12	25.4	22.8
12	323.9	482.6	55.6	31.8	365.1	325.4	381.0	431.8		28.6	33.9
14	368.0	533.4	57.2	34.9	400.0	369.5	425.1	476.2			45.0
16	419.1	596.9	63.5	36.5	457.2	420.5	482.6	539.7	16	31.7	49.0
18	457.2	635.0	68.3	39.7	504.8	458.7	533.4	577.8			63.0
20	508.0	698.5	73.0	42.9	558.8	509.5	584.2	635.0	20	34.9	81.5
24	610.0	812.8	82.5	47.6	663.6	611.5	692.1	749.3			105.6

SOLID SLIP ON FLANGE

300Lbs

● MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30

● DIMENSION : ASME B16.5



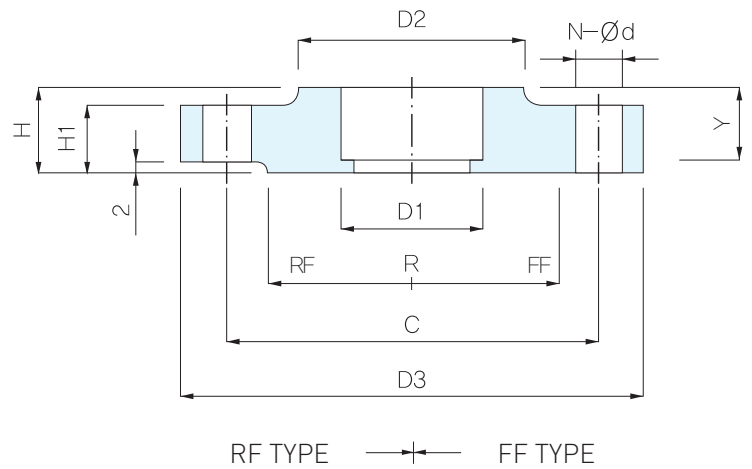
Outside diameter of pipe		FLANGE						Drilling of Bolt-Hole			Weight
Nominal	Actual	D3	H	H1	D2	D1	R	C	N	Ød	(kg)
(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	
1/2	16.0 20.0	95.2	22.2	14.3	38.1	16.2 20.2	34.9	66.7	4	15.9	0.9
3/4	25.0	117.5	25.4	15.9	47.6	25.2	42.9	82.5		19.1	1.4
1	30.0	123.8	27.0	17.5	54.0	30.2	50.8	88.9			1.7
1 1/4	38.0	133.3		19.0	63.5	38.3	63.5	98.4			2.1
1 1/2	44.5	155.6	30.2	20.6	69.8	44.8	73.0	114.3		22.2	3.1
2	57.0	165.1	33.3	22.2	84.1	57.4	92.1	127.0		8	19.1
2 1/2	76.1	190.5	38.1	25.4	100.0	76.5	104.8	149.2	22.2		5.1
3	88.9	209.5	42.9	28.6	117.5	89.4	127.0	168.3			7.0
4	108.0	254.0	47.6	31.8	146.0	108.5	157.2	200.0			12.0
5	133.0	279.4	50.8	34.9	177.8	133.8	185.7	234.9			14.2
6	159.0	317.5	52.4	36.5	206.4	159.8	215.9	269.9	12		19.8
8	219.1	381.0	61.9	41.3	260.3	220.3	269.9	330.2		25.4	28.8
10	267.0	444.5	66.7	47.6	320.7	268.4	323.8	387.3	16	28.6	42.1
12	323.9	520.7	73.2	50.8	374.6	325.4	381.0	450.8		31.7	59.1
14	368.0	584.2	76.2	54.0	425.4	369.5	425.1	514.3	20		77.6
16	419.1	647.7	82.5	57.2	482.6	420.5	482.6	571.5			24
18	457.2	711.2	88.9	60.3	533.4	458.7	533.4	628.5	35.1	128.5	
20	508.0	774.7	95.2	63.5	587.4	509.5	584.2	685.8		154.7	
24	610.0	914.4	106.4	69.8	701.7	611.5	692.1	812.8		41.3	

SOLID SOCKET WELDING FLANGE

150Lbs / 300Lbs

● MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30

● DIMENSION : ASME B16.5



150Lbs

Outside diameter of pipe		FLANGE							Drilling of Bolt-Hole			Weight
Nominal	Actual	D3	H	H1	D1	D2	R	Y	C	N	Ød	(kg)
(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	
1/2	16.0	88.9	15.9	11.1	16.2	30.2	34.9	9.5	60.3	4	15.9	0.9
	20.0				20.2							0.8
3/4	25.0	98.4		12.7	25.2	38.1	42.9	11.1	69.8			1.4
1	30.0	107.9	17.5	14.3	30.2	49.2	50.8	12.7	79.4			1.7
1 1/4	38.0	117.5	20.6	15.9	38.3	58.7	63.5	14.3	88.9			2.1
1 1/2	44.5	127.0	22.2	17.5	44.8	65.1	73.0	15.9	98.4			3.1
2	57.0	152.4	25.5	19.1	57.4	77.8	92.1	17.5	120.6	8	19.1	3.6
2 1/2	76.1	177.8	28.6	22.2	76.5	90.5	104.8	19.0	139.7			5.1
3	88.9	190.5	30.2	23.8	89.4	107.9	127.0	20.6	152.4			7.0
4	108.0	228.6	33.3		108.5	134.9	157.2	23.8	190.5			12.0

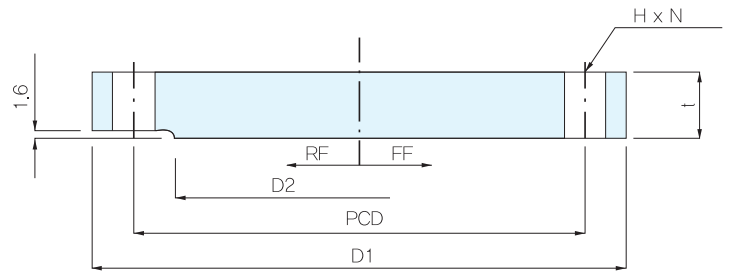
300Lbs

Outside diameter of pipe		FLANGE							Drilling of Bolt-Hole			Weight
Nominal	Actual	D3	H	H1	D1	D2	R	Y	C	N	Ød	(kg)
(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	
1/2	16.0	95.2	22.2	14.3	16.2	38.1	34.9	9.5	66.7	4	15.9	0.9
	20.0				20.2							0.8
3/4	25.0	117.5	25.4	15.9	25.2	47.6	42.9	11.1	82.5		19.1	1.4
1	30.0	123.8	27.0	17.5	30.2	54.0	50.8	12.7	88.9			1.7
1 1/4	38.0	133.3		19.0	38.3	63.5	63.5	14.3	98.4			2.1
1 1/2	44.5	155.6	30.2	20.6	44.8	69.8	73.0	15.9	114.3		22.2	3.1
2	57.0	165.1	33.3	22.2	57.4	84.1	92.1	17.5	127.0	8	19.1	3.6
2 1/2	76.1	190.5	38.1	25.4	76.5	100.0	104.8	19.0	149.2		22.2	5.1
3	88.9	209.5	42.9	28.6	89.4	117.5	127.0	20.6	168.3			7.0
4	108.0	254.0	47.6	31.8	108.5	146.0	157.2	23.8	200.0			12.0

SOLID BLIND FLANGE

10bar

- MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30
- DIMENSION : ISO PN10

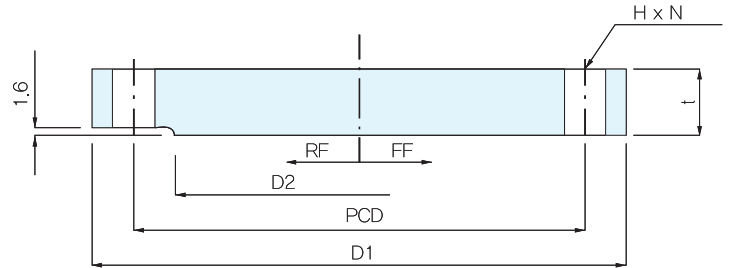


Outside diameter of pipe		FLANGE			Drilling of Bolt-Hole			Weight	
Nominal	Actual	D1	t	D2	C	N	Ød	(kg)	
(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)		
1/2	20.0	95	14	46	65	4	14	0.8	
3/4	25.0	105	16	56	75			1.2	
1	30.0	115		65	85			1.4	
1 1/4	38.0	140	18	76	100		18	2.1	
1 1/2	44.5	150		84	110			2.4	
2	57.0	165	20	99	125			3.3	
2 1/2	76.1	185		118	145			4.2	
3	88.9	200	22	132	160	8		5.8	
4	108.0	220		156	180			7.1	
5	133.0	250		184	210			10.1	
6	159.0	285	24	211	240		22	13.0	
8	219.1	340		266	295			20.4	
10	267.0	395	26	319	350			12	30.0
12	323.9	445		370	400				37.6
14	368.0	505		429	460	16		52.5	
16	419.1	565	28	480	515		26	68.4	
18	457.2	615		530	565	20		81.0	
20	508.0	670	30	582	620			103.8	
24	610.0	780	34	682	725		30	149.5	

SOLID BLIND FLANGE

150Lbs

- MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30
- DIMENSION : ASME B16.5

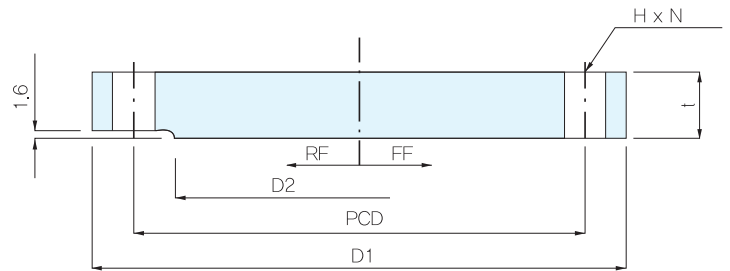


Outside diameter of pipe		FLANGE			Drilling of Bolt-Hole			Weight
Nominal	Actual	D1	t	D2	C	N	Ød	(kg)
(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	
1/2	20.0	88.9	11.1	34.9	60.3	4	15.9	0.9
3/4	25.0	98.4	12.7	42.9	69.8			1.1
1	30.0	108.0	14.3	50.8	79.4			0.2
1 1/4	38.0	117.5	15.9	63.5	88.9			1.5
1 1/2	44.5	127.0	17.5	73.0	98.4			1.6
2	57.0	152.4	19.1	92.1	120.6	8	19.1	2.1
2 1/2	76.1	177.8	22.2	104.8	139.7			3.7
3	88.9	190.5	23.8	127.0	152.4			4.6
4	108.0	228.6		157.2	190.5			9.1
5	133.0	254.0		185.7	215.9			10.3
6	159.0	279.4	25.4	215.9	241.3	12	22.2	13.7
8	219.1	342.9	28.6	269.9	298.4			22.8
10	267.0	406.4	30.2	323.8	361.9			36.5
12	323.9	482.6	31.8	381.0	431.8			57.0
14	368.0	533.4	34.9	425.1	476.2	16	28.6	67.3
16	419.1	596.9	36.5	482.6	539.7			87.8
18	457.2	635.0	39.7	533.4	577.8			108.3
20	508.0	698.5	42.9	584.2	635.0			140.3
24	610.0	812.8	47.6	692.1	749.3	20	34.9	212.1

SOLID BLIND FLANGE

300Lbs

- MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30
- DIMENSION : ASME B16.5



Outside diameter of pipe		FLANGE			Drilling of Bolt-Hole			Weight
Nominal	Actual	D1	t	D2	C	N	Ød	(kg)
(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	
1/2	16.0	95.2	14.3	34.9	66.7	4	15.9	1.2
3/4	25.0	117.5	15.9	42.9	82.6		19.0	1.7
1	30.0	123.8	17.5	50.8	88.9			2.3
1 1/4	38.0	133.3	19.0	63.5	98.4			2.9
1 1/2	44.5	155.6	20.6	73.0	114.3		22.2	3.4
2	57.0	165.1	22.2	92.1	127.0	8	19.0	4.0
2 1/2	76.1	190.5	25.4	104.8	149.2		22.2	6.3
3	88.9	209.5	28.6	127.0	168.3			8.0
4	108.0	254.0	31.8	157.2	200.0			13.7
5	133.0	279.4	34.9	185.7	235.0			18.3
6	159.0	317.5	36.5	215.9	269.9	12	25.4	26.2
8	219.1	381.0	41.3	269.9	330.2			41.6
10	267.0	444.5	47.6	323.8	387.4	16	28.6	66.6
12	323.9	520.7	50.8	381.0	450.8		31.7	94.6
14	368.0	584.2	54.0	425.1	514.4	20		122.0
16	419.1	647.7	57.2	482.6	571.5		34.9	
18	457.2	711.2	60.3	533.4	628.6	24		201.8
20	508.0	774.7	63.5	584.2	685.8			254.2
24	610.0	914.4	69.8	692.1	812.8			41.3

COMPOSITE WELDING NECK FLANGE

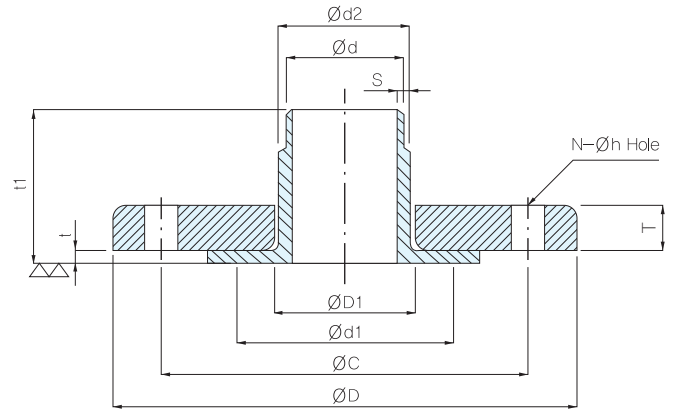
10bar and 14bar

MATERIAL :

INTERNAL : Cu-Ni 90/10 or Cu-Ni 70/30

EXTERNAL : Carbon Steel (A105 Galvanized)

DIMENSION : DIN 86037

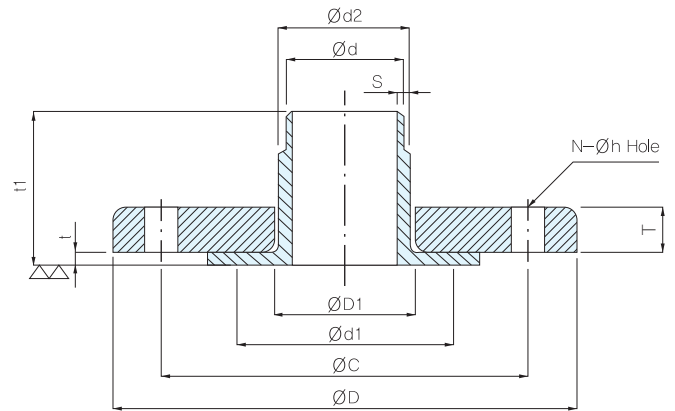


N.D	O.D	Internal Flange					External Flange				Bolt-Hole		Weight
	d	d1	d2	t	t1	S	D	D1	T	C	N	H	
(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	(kg)
3/4	25.0	58	27	5	40	1.5	105	28	14	75	4	14	0.97
1	30.0	68	32				115	33		85			1.34
1 1/4	38.0	78	40				140	42		100			1.91
1 1/2	44.5	88	46.5	6	45	2.0	150	50	16	110		18	2.27
2	57.0	102	59				165	62		125			2.73
2 1/2	76.1	122	78				185	81		145			3.29
3	88.9	138	91	7	50	2.0	200	94	18	160	8	22	4.16
						2.5	200	94		160			4.20
4	108.0	158	110			2.5	220	113		180			4.75
5	133.0	188	135.5	9	50	2.5	250	138	20	210		26	6.05
						3.0	250	138		210			6.10
6	159.0	212	161.5			3.0	285	164		240			7.60
				11	60	3.0	340	225	24	295	12	30	10.15
8	219.1	268	222			3.5	340	225		295			10.35
						4.0	395	273		350			13.70
10	267.0	320	270	12	60	4.0	445	331	26	400		30	14.10
						5.0	445	331		400			16.60
12	323.9	370	327			4.0	505	375		460			17.40
14	368.0	430	371	14	60	5.5	505	375	28	515	16	30	22.20
						6.0	565	426		515			22.95
16	419.1	482	422			4.0	615	465		565			27.50
				16	60	6.0	615	465	30	620		30	28.65
18	457.2	530	460			4.0	670	517		620			34.00
						6.5	670	517		620			35.15
20	508.0	585	511	18	60	4.5	780	618	32	725	20	30	41.65
						8.0	780	618		725			42.90
24	610.0	685	613			5.0	780	618		725			54.90
				20	60	8.0	780	618		725			57.65

COMPOSITE WELDING NECK FLANGE (SHORT TYPE)

16bar and 20bar

- MATERIAL :
Internal : Cu-Ni 90/10 or Cu-Ni 70/30
External : Carbon Steel (A105 Galvanized)
- DIMENSION :
Internal : EEMUA Pub. No. 145
External : ASME B16.5 150LB



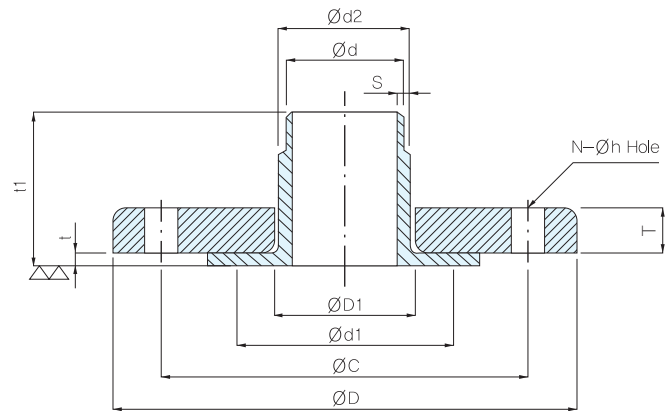
N.D	O.D	Internal Flange					External Flange				Bolt-Hole		Weight			
	d	d1	d2	t	t1	S	D	D1	T	C	N	H				
(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)			(mm)	(kg)		
* 1/2	16.0	40	18	4	35	2.0	88.9	21	11.1	60.3	4	15.9	0.85			
* 3/4	25.0	50	27	5	40		2.0	98.4	30	12.7			69.9	1.04		
* 1	30.0	60	32			2.5		107.9	35	14.3			79.4	1.18		
* 1 1/4	38.0	70	40				2.5	117.5	43	15.9			88.9	1.52		
* 1 1/2	44.5	80	46.5	6		45		2.5	127.0	49.5			17.5	98.4	1.79	
* 2	57.0	99	59		7		45		2.5	152.4		62	19.0	120.6	2.75	
* 2 1/2	76.1	120	78	7				45		2.5		177.8	81	22.2	139.7	3.81
* 3	88.9	130	91		7	45	2.5		190.5			94	23.8	152.4	4.39	
* 4	108.0	158	110	7				45	2.5	190.5	94	23.8	152.4	4.39		
6	159.0	212	161.5		9	50	3.0			228.6	113		190.5	8	19.1	6.96
				9			50	3.0	228.6	113		190.5	22.2			10.63
					9			50	3.5	279.4	165	25.4				241.3
8	219.1	270	222	9			50		4.0	342.9	226	28.6	298.4			22.2
					9	50		4.5	342.9	226	28.6	298.4	22.2		16.63	
10	267.0	320	270	11			50	4.5	406.4	274	30.2	361.9			12	25.4
					11	50		5.5	406.4	274	30.2	361.9	25.4			
12	323.9	370	327	11				50	5.5	482.6	331	31.7				
					11	50			7.0	482.6	331	31.7	431.8	25.4		
14	368.0	430	371	12			50	6.5	533.4	375	34.9	476.2	16			28.6
					12	50		8.0	533.4	375	34.9	476.2		28.6		
16	419.1	482	422	12				50	7.0	596.9	427	36.5				
					12	50			9.0	596.9	427	36.5		539.7		
18	457.2	530	460	12			50	8.0	635.0	465	39.7	577.8		20	31.7	76.13
					12	50		9.5	635.0	465	39.7	577.8				31.7
20	508.0	585	511	14				60	8.5	698.5	517	42.9				
					14	60			11.0	698.5	517	42.9				635
24	610.0	685	613	14			60	10.5	812.8	619	47.6	749.3	20		34.9	136.4
						13.0	812.8	619	47.6	749.3						138.9

*16bar and 20bar are oneness from 1/2" to 4"

COMPOSITE WELDING NECK FLANGE (SHORT TYPE)

16bar and 20bar

- MATERIAL :
Internal : Cu-Ni 90/10 or Cu-Ni 70/30
External : Carbon Steel
- DIMENSION :
Internal : EEMUA Pub. No. 145
External : ASME B16.5 300LB



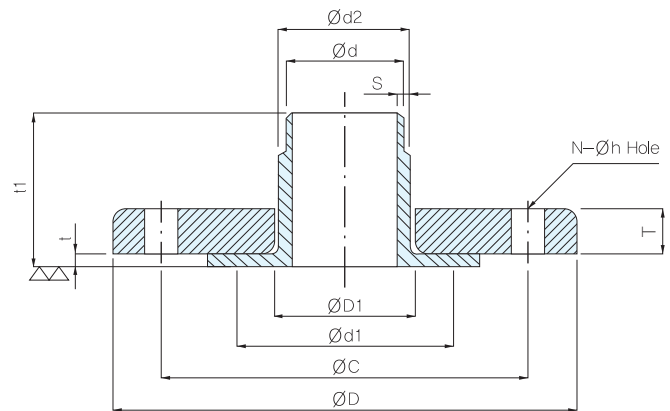
N.D	O.D	Internal Flange					External Flange				Bolt-Hole		Weight			
	d	d1	d2	t	t1	S	D	D1	T	C	N	H				
(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)			(mm)	(kg)		
* 1/2	16.0	40	18	4	35	2.0	95.2	21	14.3	66.7	4	15.9	1.25			
* 3/4	25.0	50	27	5	40		117.5	30	15.9	82.5		19.0	1.43			
* 1	30.0	60	32				123.8	35	17.5	88.9			1.57			
* 1 1/4	38.0	70	40				133.3	43	19.0	98.4			2.01			
* 1 1/2	44.5	80	46.5	6	45	2.5	155.6	49.5	20.6	114.3	8	22.2	3.07			
* 2	57.0	99	59				165.1	62	22.2	127		19.0	3.64			
* 2 1/2	76.1	120	78	190.5	81		25.4	149.2	22.2	5.08						
* 3	88.9	130	91	7		209.5	94	28.6		168.3		6.64				
* 4	108.0	158	110			254.0	113	31.7		200	10.98					
6	159.0	212	161.5	9		3.0	254.0	113	31.7	200	12	22.2	19.55			
						3.5	317.5	165	36.5	269.9			19.55			
8	219.1	270	222			4.0	381.0	226	41.3	330.2			25.4	28.97		
						4.5	381.0	226	41.3	330.2				29.07		
10	267.0	320	270	11	50	4.5	444.5	274	47.6	387.3	16	28.6	44.08			
						5.5	444.5	274	47.6	387.3			44.38			
5.5	520.7	331	50.8			450.8	31.7	68.24								
7.0	520.7	331	50.8			450.8		68.54								
6.5	584.2	375	54.0			514.3		20	92.48							
8.0	584.2	375	54.0			514.3				116.0						
7.0	647.7	427	57.1			571.5	24			34.9	117.2					
9.0	647.7	427	57.1			571.5					146.7					
8.0	711.2	465	60.3	628.6	147.6											
9.5	711.2	465	60.3	628.6	180.0											
20	508.0	585	511	12		8.5	774.7	517	63.5	685.8	24	34.9	181.7			
						11.0	774.7	517	63.5	685.8			256.9			
24	610.0	685	613			14	60	10.5	914.4	619			69.8	812.8	41.3	259.4
								13.0	914.4	619			69.8	812.8		

*16bar and 20bar are oneness from 1/2" to 4"

COMPOSITE WELDING NECK FLANGE (LONG TYPE)

16bar and 20bar

- MATERIAL :
Internal : Cu-Ni 90/10 or Cu-Ni 70/30
External : Carbon Steel
- DIMENSION :
Internal : EEMUA Pub. No. 145
External : ASME B16.5 150LB



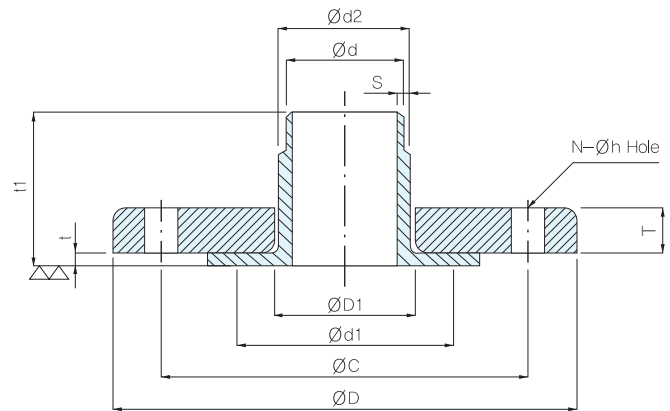
N.D	O.D	Internal Flange					External Flange				Bolt-Hole		Weight	
	d	d1	d2	t	t1	S	D	D1	T	C	N	H		
(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)			(mm)	(kg)
* 1/2	16.0	40	18	4	51	2.0	88.9	21	11.1	60.3	4	15.9	0.85	
* 3/4	25.0	50	27	5			2.5	98.4	30	12.7			69.9	1.04
* 1	30.0	60	32			107.9		35	14.3	79.4			1.18	
* 1 1/4	38.0	70	40			117.5		43	15.9	88.9			1.52	
* 1 1/2	44.5	80	46.5	6		127		49.5	17.5	98.4			1.79	
* 2	57.0	99	59		64	152.4		62	19	120.6		2.75		
* 2 1/2	76.1	120	78	177.8		81	22.2	139.7	3.81					
* 3	88.9	130	91	7		190.5	94	23.8	152.4	4.39				
* 4	108.0	158	110		76	3.0	228.6		113	190.5		6.96		
6	159.0	212	161.5	9	89		3.5	279.4	165	25.4		241.3	8	22.2
8	219.1	270	222		102	4.0		342.9	226	28.6	298.4	10.63		
						4.5	16.53							
						16.63								
10	267.0	320	270		11	127	4.5	406.4	274	30.2	361.9	12	25.4	23.01
12	323.9	370	327	152		5.5	482.6	331	31.7	431.8	23.31			
						7.0	533.4	375	34.9	476.2	34.92			
						6.5					35.22			
14	368.0	430	371	8.0		596.9					427	36.5	539.7	51.55
16	419.1	482	422	12		152	7.0	635	465	39.7	577.8	16	28.6	52.30
							9.0							66.04
							9.5							67.19
18	457.2	530	460		8.0		698.5	517	42.9	635	20			31.7
20	508.0	585	511		9.5							77.08		
					8.5							95.72		
					11.0		97.42							
24	610.0	685	613		14		152	10.5	812.8	619	47.6	749.3		34.9
				13.0		138.9								

*16bar and 20bar are oneness from 1/2" to 4

COMPOSITE WELDING NECK FLANGE (LONG TYPE)

16bar and 20bar

- MATERIAL :
Internal : Cu-Ni 90/10 or Cu-Ni 70/30
External : Carbon Steel (A105 Galvanized)
- DIMENSION :
Internal : EEMUA Pub. No. 145
External : ASME B16.5 300LB



N.D	O.D	Internal Flange					External Flange				Bolt-Hole		Weight				
	d	d1	d2	t	t1	S	D	D1	T	C	N	H					
(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)			(mm)	(kg)			
* 1/2	16.0	40	18	4	51	2.0	95.2	21	14.3	66.7	4	15.9	1.25				
* 3/4	25.0	50	27	5			2.5	117.5	30	15.9		82.5	19.1	1.43			
* 1	30.0	60	32					123.8	35	17.5		88.9		1.57			
* 1 1/4	38.0	70	40					133.3	43	19.0		98.4		2.01			
* 1 1/2	44.5	80	46.5	6	64	2.5		155.6	49.5	20.6	114.3	8	22.2	3.07			
* 2	57.0	99	59				165.1	62	22.2	127	19.1		3.64				
* 2 1/2	76.1	120	78	7			76	3.0	190.5	81	25.4		149.2	22.2	5.08		
* 3	88.9	130	91						209.5	94	28.6		168.3		6.64		
* 4	108.0	158	110		254.0	113			31.7	200	10.98						
6	159.0	212	161.5	9	89	3.5			317.5	165	36.5	269.9	12		19.55		
8	219.1	270	222		102		4.0	381.0	226	41.3	330.2	28.97					
						4.5	29.07										
10	267.0	320	270		127	4.5	5.5	444.5	274	47.6	387.3	16		28.6	44.08		
12	323.9	370	327	11		152		5.5	520.7	331	50.8		450.8	44.38			
							7.0	584.2	375	54.0	514.3		31.7	68.24			
6.5	68.54																
14	368.0	430	371	11	8.0		647.7	427	57.1	571.5	20	34.9	91.73				
16	419.1	482	422		12	7.0							92.48				
						9.0							116.0				
18	457.2	530	460			12							8.0	711.2	465	60.3	628.6
				9.5			146.7										
20	508.0	585	511	14	8.5		774.7	517	63.5	685.8	180.0						
					11.0							181.7					
24	610.0	685	613		10.5	914.4						619	69.8	812.8	256.9		
																13.0	259.4

*16bar and 20bar are oneness from 1/2" to 4"

COMPOSITE SLIP ON FLANGE

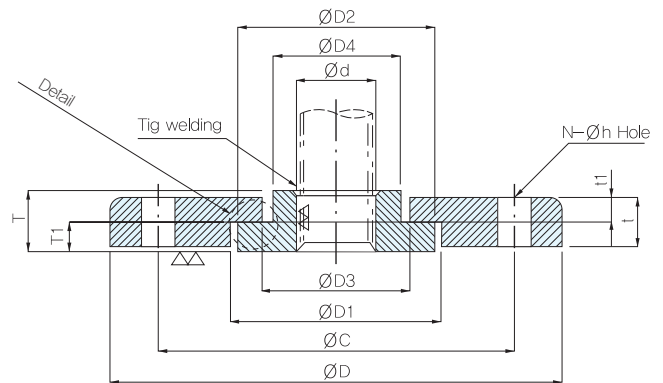
10bar and 16bar

MATERIAL :

Internal : Cu-Ni 90/10 or Cu-Ni 70/30
External : Carbon Steel (A105 Galvanized)

DIMENSION :

Internal : Based on BS4501
External : Based on DIN 2567 (10bar) / 2543 (16bar)



DIN 10B	PIPE	Internal Flange					External Flange						Bolt-Hole		Weight
	O.D	d	D2	D4	T	T1	D	D1	D3	C	t	t1	N	H	
N.D	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	N	(mm)	(kg)
50	57.0	Use DIN 16Bar													
65	76.1														
80	88.9														
100	108.0														
125	133.0														
150	159.0														
200	219.1	220.0	251	234	24	10	340	253	237	295	24	16	8	23	10.00
250	267.0	268.0	313	282	28	12	395	316	285	350	26	16	12	23	12.78
300	323.9	325.1	361	342	32	12	445	364	345	400	26	16	12	23	15.04
350	368.0	369.2	405	386	34	12	505	408	389	460	28	18	16	23	21.01
400	419.1	420.2	460	439	36	12	565	464	443	515	32	22	16	27	28.49
500	508.0	509.3	568	531	40	14	670	572	535	620	38	26	20	27	42.64
600	610.0	611.5	678	635	42	15	780	682	639	725	38	25	20	30	52.05

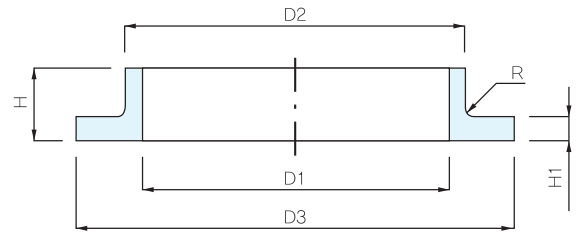
Use DIN 16Bar

DIN 16B	PIPE	Internal Flange					External Flange						Bolt-Hole		Weight
	O.D	d	D2	D4	T	T1	D	D1	D3	C	t	t1	N	H	
N.D	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	N	(mm)	(kg)
50	57.0	57.3	84	67	20	7	165	86	69	125	18	12	4	18	2.70
65	76.1	76.4	109	86	20	7	185	111	88	145	18	12	4	18	3.12
80	88.9	89.4	120	101	20	8	200	122	103	160	20	14	8	18	3.97
100	108.0	108.5	140	121	22	10	220	142	123	180	20	12	8	18	4.51
125	133.0	133.7	175	146	22	10	250	177	148	210	22	14	8	18	5.81
150	159.0	159.7	205	173	24	10	285	207	175	240	22	14	8	23	7.24
200	219.1	220.0	251	234	24	10	340	253	237	295	24	16	12	23	10.00
250	267.0	268.0	313	282	28	12	405	316	285	355	26	16	12	27	14.14
300	323.9	325.1	361	342	32	12	460	364	345	410	28	18	12	27	18.61
350	368.0	369.2	405	386	34	12	520	408	389	470	30	20	16	27	25.43
400	419.1	420.2	460	439	36	12	580	464	443	525	32	22	16	30	32.13
500	508.0	509.3	568	531	40	14	715	572	535	650	36	24	20	33	55.36
600	610.0	611.5	678	635	42	15	840	682	639	770	40	27	20	36	80.52

COMPOSITE SLIP ON FLANGE (STUB END)

20bar

- MATERIAL :
Internal : Cu-Ni 90/10 or Cu-Ni 70/30
- DIMENSION :
Internal : Based on EEMUA Pub. No.145



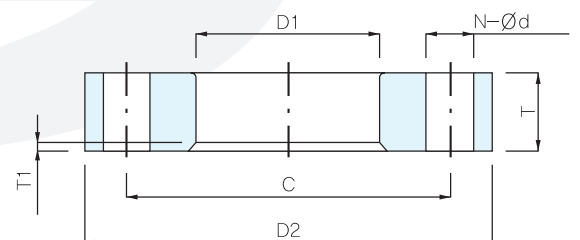
N.D	O.D d	D1	D2	D3	H	H1	R	Weight	
(Inch)	(mm)								(mm)
1/2	16.0	16.07	21	40	16	5	1	0.06	
3/4	25.0	25.08	31	53				18	0.10
1	30.0	30.08	36	60					19
1.1/4	38.0	38.10	45	70	6				
1.1/2	44.5	44.60	51	80				7	
2	57.0	57.23	67	99		0.39			
2.1/2	76.1	76.33	87	120	0.53				
3	88.9	89.18	100	130	21	7		0.65	
4	108.0	108.38	120	158	23			0.95	

* These Internal Flanges are for use in both 16bar and 20bar systems.

COMPOSITE SLIP ON FLANGE (EXTERNAL)

150Lbs

- MATERIAL :
External : Carbon Steel (A105 Galvanized)
- DIMENSION :
External : Based on EEMUA Pub. No.145

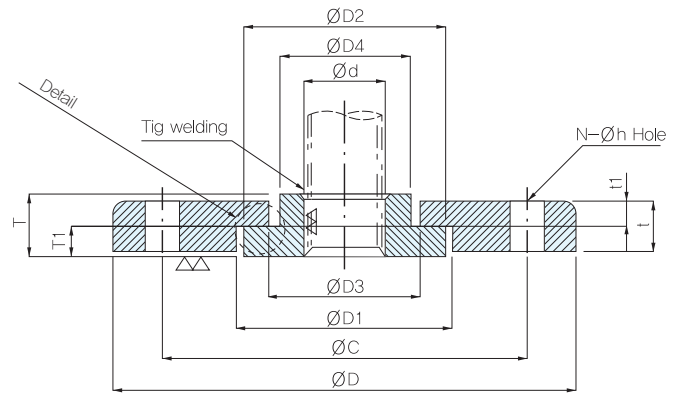


N.D	O.D	D2	D1	T	T1	Bolt - Hole			Weight
	d					C	N	d	
(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)			(mm)
1/2	16.0	89	23	14	3	60.3	4	15.9	0.60
3/4	25.0	98	33			69.9			0.80
1	30.0	108	38			79.4			0.90
1.1/4	38.0	117	47			88.9			1.00
1.1/2	44.5	127	53	18		98.4	4	19.1	1.20
2	57.0	152	69			120.6			2.10
2.1/2	76.1	178	89			139.7			2.70
3	88.9	190	103			152.4			3.10
4	108.0	229	123	24		190.5	8		5.60

COMPOSITE SLIP ON FLANGE

- MATERIAL :
Internal : Cu-Ni 90/10 or Cu-Ni 70/30
External : Carbon Steel SS400 (Galvanized)

- DIMENSION :
Internal : Based on JIS F7804
External : Based on JIS B2210



JIS 5K	PIPE	Internal Flange					External Flange						Bolt-Hole		Weight
	O.D	d	D2	D4	T	T1	D	D1	D3	C	t	t1	N	H	
N.D	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	(kg)
50	57.0	57.3	84	67	20	7	130	86	70	105	14	8	4	15	1.24
65	76.1	76.4	109	86	20	7	155	111	89	130	14	8	4	15	1.71
80	88.9	89.2	120	101	20	8	180	122	104	145	16	10	4	19	2.57
100	108.0	108.5	140	121	22	10	200	142	124	165	18	10	4	19	3.19
125	133.0	133.5	175	146	22	10	235	177	150	200	18	10	4	19	4.35
150	159.0	159.5	205	173	24	10	265	209	177	230	20	12	4	19	5.88
200	219.1	219.6	251	234	24	10	320	255	238	280	20	12	4	23	6.9
250	267.0	267.5	313	282	28	12	385	317	286	345	24	14	12	23	11.73
300	323.9	324.6	361	342	32	12	430	365	346	390	26	16	12	23	13.32
350	368.0	368.7	405	386	34	12	480	409	390	435	28	18	12	25	16.92
400	419.1	419.8	460	439	36	12	540	464	444	495	30	20	16	25	21.82
450	457.2	457.9	518	477	38	14	605	522	482	555	32	20	16	25	32.54
500	508.0	508.7	568	531	40	14	655	572	537	605	34	22	20	25	37.08
550	558.0	558.7	628	581	42	15	720	632	587	665	38	25	20	27	49.87
600	610.0	611.0	678	635	42	15	770	682	641	715	38	25	20	27	53.37
700	711.0	712.0	782	736	42	15	875	786	744	820	38	25	24	27	62.13
800	812.8	814.1	887	841	46	18	995	891	849	930	38	24	24	33	80.4
900	914.0	915.5	987	944	46	18	1095	991	952	1,030	40	26	24	33	89.46

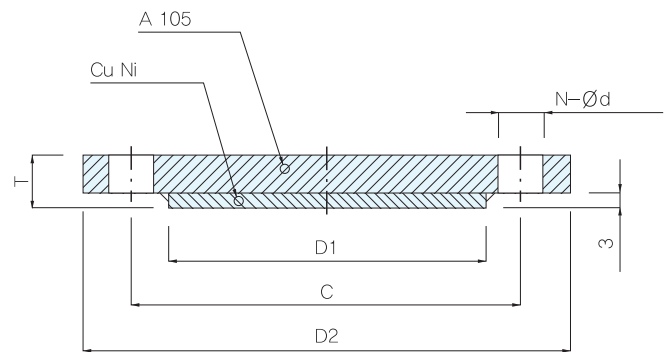
JIS 10K	PIPE	Internal Flange					External Flange						Bolt-Hole		Weight
	O.D	d	D2	D4	T	T1	D	D1	D3	C	t	t1	N	H	
N.D	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	(kg)
50	57.0	57.3	84	67	20	7	155	87	70	120	14	8	4	19	1.86
65	76.1	76.4	109	86	20	7	175	112	89	140	14	8	4	19	2.27
80	88.9	89.2	120	101	20	8	185	123	104	150	16	10	8	19	2.61
100	108.0	108.5	140	121	22	10	210	143	124	175	18	10	8	19	3.68
125	133.0	133.5	175	146	22	10	250	179	150	210	18	10	8	23	5.07
150	159.0	159.5	205	173	24	10	280	209	177	240	20	12	8	23	6.78
200	219.1	219.6	251	234	24	10	330	255	238	290	20	12	12	23	7.48
250	267.0	267.5	313	282	28	12	400	317	286	355	24	14	12	25	13.42
300	323.9	324.6	361	342	32	12	445	365	346	400	26	16	16	25	14.96
350	368.0	368.7	405	386	34	12	490	409	390	445	28	18	16	25	18.26
400	419.1	419.8	460	439	36	12	560	465	444	510	30	20	16	27	25.88
450	457.2	457.9	518	477	38	14	620	523	482	565	32	20	20	27	35.48
500	508.0	508.7	568	531	40	14	675	574	537	620	34	22	20	27	42.62
550	558.0	558.7	628	581	42	15	745	634	587	680	38	25	20	33	57.32
600	610.0	611.0	678	635	42	15	795	684	641	730	38	25	24	33	60.34
700	711.0	712.0	782	736	42	15	905	790	744	840	38	25	24	33	73.45
800	812.8	814.1	887	841	46	18	1020	895	849	950	38	24	28	33	92.04
900	914.0	915.5	987	944	46	18	1,120	995	952	1,050	40	26	28	33	102.36

COMPOSITE BLIND FLANGE

10bar

● MATERIAL : CARBON STEEL (Galvanized)
with Cu-Ni 90/10 or Cu-Ni 70/30

● DIMENSION : ISO PN10

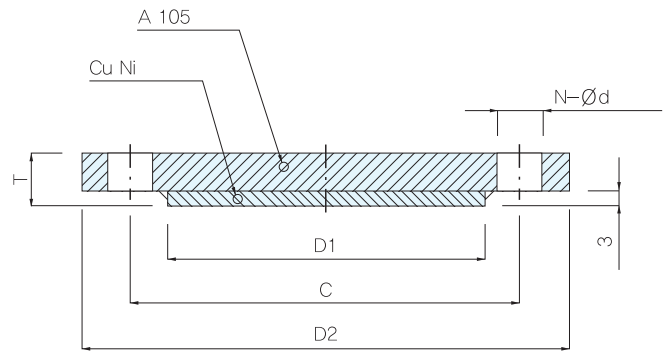


Outside diameter of pipe		FLANGE			Drilling of Bolt-Hole			Weight
Nominal	Actual	D2	T	D1	C	N	Ød	(kg)
(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	
1/2	20.0	95	14	46	65	4	14	0.7
3/4	25.0	105	16	56	75	4	14	1.0
1	30.0	115	16	65	85	4	14	1.2
1 1/4	38.0	140	18	76	100	4	18	2.1
1 1/2	44.5	150	18	84	110	4	18	2.4
2	57.0	165	20	99	125	4	18	3.2
2 1/2	76.1	185	20	118	145	4	18	4.1
3	88.9	200	20	132	160	8	18	4.8
4	108.0	220	22	156	180	8	18	7.6
5	133.0	250	22	184	210	8	18	9.8
6	159.0	285	24	211	240	8	22	12.0
8	219.1	340	24	266	295	8	22	17.3
10	267.0	395	26	319	350	12	22	25.5
12	323.9	445	26	370	400	12	22	32.5
14	368.0	505	26	429	460	16	22	42.0
16	419.1	565	28	480	515	16	26	56.7
18	457.2	615	28	530	565	20	26	67.4
20	508.0	670	30	582	620	20	26	85.9
24	610.0	780	34	682	725	20	30	132.4

COMPOSITE BLIND FLANGE

150Lbs

- MATERIAL : CARBON STEEL (Galvanized)
with Cu-Ni 90/10 or Cu-Ni 70/30
- DIMENSION : ASME B16.5

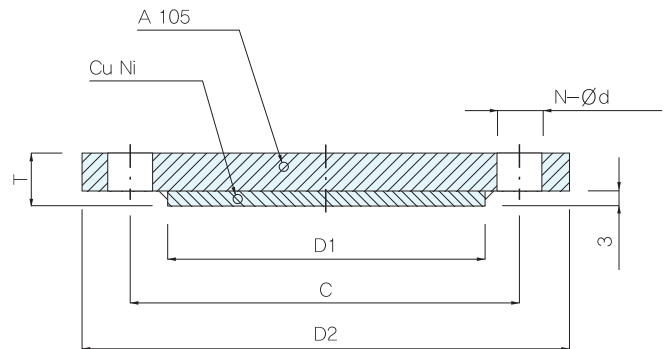


Outside diameter of pipe		FLANGE				Drilling of Bolt-Hole			Weight
Nominal	Actual	D2	T	D1	C	N	Ød	(kg)	
(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)		
1/2	20.0	88.9	12.5	34.9	60.3	4	15.9	0.5	
3/4	25.0	98.4	14.1	42.9	69.9			0.7	
1	30.0	108.0	15.7	50.8	79.4			1.0	
1 1/4	38.0	117.5	17.3	63.5	88.9			1.4	
1 1/2	44.5	127.0	20.5	73.0	98.4			1.8	
2	57.0	152.4	22.5	92.1	120.6		19.0	2.8	
2 1/2	76.1	177.8	23.7	104.8	139.7	4.5			
3	88.9	190.5	25.2	127.0	152.4	5.6			
4	108.0	228.6		157.2	190.5	8.1			
5	133.0	254.0	26.8	185.7	215.9	22.2	10.1		
6	159.0	279.4		215.9	241.3		13.1		
8	219.1	342.9	30.0	269.9	298.4		22.3		
10	267.0	406.4	31.6	323.8	361.9	12	25.4	33.1	
12	323.9	482.6	33.2	381.0	431.8			49.0	
14	368.0	533.4	36.3	425.1	476.2	28.6	65.4		
16	419.0	596.9	37.9	482.6	539.7		85.8		
18	457.2	635.0	41.1	533.4	577.8		31.7	106.2	
20	508.0	698.5	44.3	584.2	635.0	138.5			
24	610.0	812.8	49.0	692.1	749.3	20	34.9	208.1	

COMPOSITE BLIND FLANGE

300Lbs

- MATERIAL : CARBON STEEL (Galvanized)
with Cu-Ni 90/10 or Cu-Ni 70/30
- DIMENSION : ASME B16.5



Outside diameter of pipe		FLANGE			Drilling of Bolt-Hole			Weight
Nominal	Actual	D2	T	D1	C	N	Ød	(kg)
(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	
1/2	16.0	95.2	15.6	34.9	66.7	4	15.9	1.4
3/4	25.0	117.5	17.3	42.9	82.5		19.0	1.4
1	30.0	123.8	18.9	50.8	88.9			1.6
1 1/4	38.0	133.3	20.4	63.5	98.4			2.1
1 1/2	44.5	155.6	22.0	73.0	114.3		22.2	3.1
2	57.0	165.1	23.6	92.1	127.0	8	19.0	3.8
2 1/2	76.1	190.5	26.8	104.8	149.2		22.2	5.9
3	88.9	209.5	30.0	127.0	168.3			8.1
4	108.0	254.0	33.2	157.2	200.0			13.2
5	133.0	279.4	36.3	185.7	234.9			17.7
6	159.0	317.5	37.9	215.9	269.9	12	23.9	23.9
8	219.1	381.0	42.7	269.9	330.2			25.4
10	267.0	444.5	49.0	323.8	387.3	16	28.6	61.3
12	323.9	520.7	52.2	381.0	450.8		31.7	89.8
14	368.0	584.2	55.4	425.1	514.3	20		119.8
16	419.0	647.7	58.6	482.6	571.5		34.9	156.2
18	457.2	711.2	61.7	533.4	628.6	24		198.9
20	508.0	774.7	64.9	584.2	685.8			248.5
24	610.0	914.4	71.2	692.1	812.8		41.3	380.4

BOMYUNG METAL.Co.,Ltd

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- **COPPER PIPES**

CHEMICAL COMPOSITION / MECHANICAL PROPERTIES / WELDING INSTRUCTION / PIPE / COIL

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- **COPPER DIELECTRIC (ISOLATED) FLANGES – U.S. STANDARD**

10kg/cm² / 20kg/cm² / 125LB / 150LB

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SOCKET WELDING & BUTT WELDING - ELBOW / REDUCER / TEE / COUPLING / SLEEVE / FLANGE

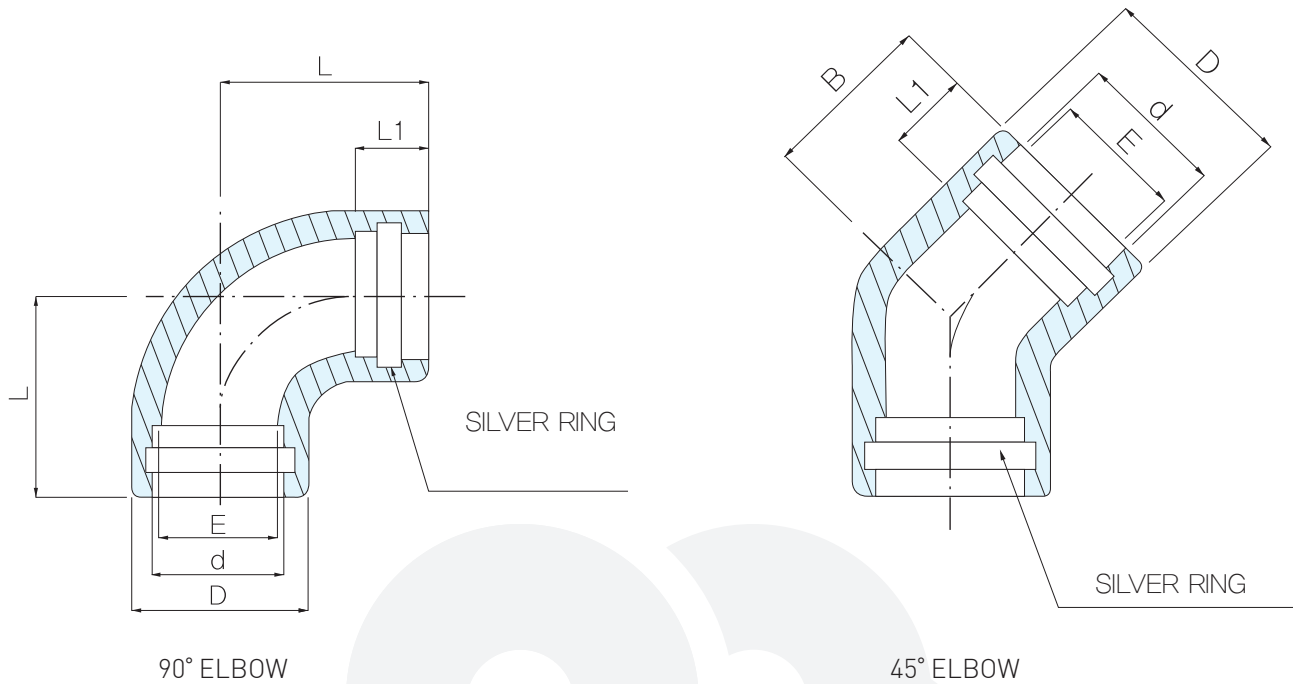
09

CU-NI
FITTINGS
(MACHINED)

SOCKET WELDING (BRAZING) ELBOW

[SOCKET WELDING OR CAPILLARY END]

● MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30



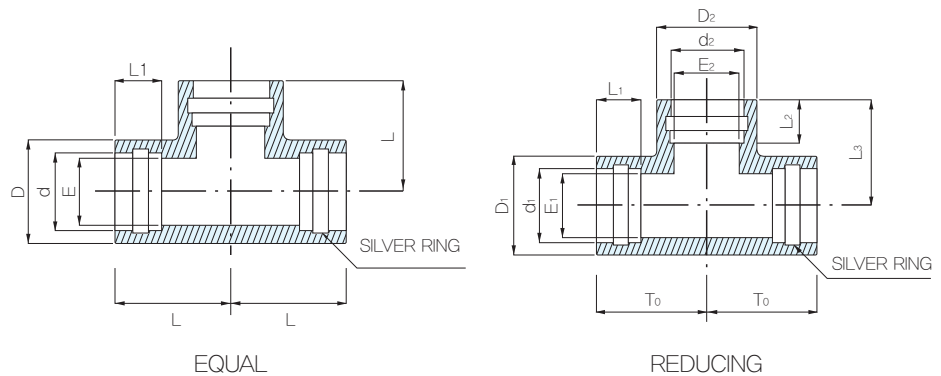
Outside diameter of pipe		*d	D	E	L1	L		B	
						L/R	S/R	L/R	S/R
Nominal	Actual	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	
(Inch)	(mm)								
1/2	16.0	16.1	22	14.0	10.0	40	24	22	15
5/8	20.0	20.1	27	18.0		45	30	22	18
3/4	25.0	25.1	32	22.0	13.0	50.5	32	28.5	23
1	30.0	30.1	37	27.0		58	38	31.6	28
1 1/4	38.0	38.1	45	35.0		70	45	36.6	38
1 1/2	44.5	44.6	52	41.5		79.8	52	40.6	42
2	57.0	57.2	65	54.0	16.0	101.5	64	51.3	51

* In case of brazing, the gap of in-diameter will be about 0.05mm ~ 0.15mm

SOCKET WELDING (BRAZING) EQUAL & REDUCING TEE

(SOCKET WELDING OR CAPILLARY END)

- MATERIAL : Cu-Ni 90/10
Cu-Ni 70/30



● EQUAL

Outside diameter of pipe		*d	D	E	L1	L
Nominal	Actual	(mm)	(mm)	(mm)	(mm)	(mm)
(Inch)	(mm)					
1/2	16.0	16.1	22	14.0	10.0	20
5/8	20.0	20.1	27	18.0		22
3/4	25.0	25.1	32	22.0	13.0	27
1	30.0	30.1	37	27.0		30
1 1/4	38.0	38.1	45	35.0		35
1 1/2	44.5	44.6	52	41.5		37
2	57.0	57.2	65	54.0	16.0	48

● REDUCING

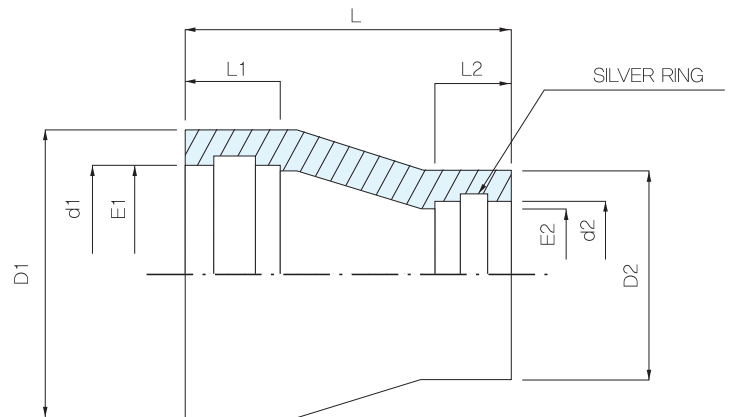
Outside diameter of pipe						*d1	*d2	D1	D2	E1	E2	L1	L2	L3	L	
Nominal			Actual			(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	
(Inch)			(mm)													
5/8	X	1/2	20.0	X	16.0	20.1	16.1	27	22	18	14	10	10	22	22	
3/4	X	5/8	25.0	X	20.0	25.1	20.1	32	27	22	18	13		27	27	
		1/2			16.0		16.1		22		14					
1	X	3/4	30.0	X	25.0	30.1	25.1	37	32	27	22			13	10	30
		5/8			20.0		20.1		27		18		30	30		
		1/2			16.0		16.1		22		14					
1 1/4	X	1	38.0	X	30.0	38.1	30.1	45	37	35	27	13	10	35	35	
		3/4			25.0		25.1		32		22					
		5/8			20.0		20.1		27		18					
		1/2			16.0		16.1		22		14					
1 1/2	X	1 1/4	44.5	X	38.0	44.6	38.1	52	45	41.5	35	13	10	37	37	
		1			30.0		30.1		37		27					
		3/4			25.0		25.1		32		22					
		5/8			20.0		20.1		27		18					
		1/2			16.0		16.1		22		14					
2	X	1 1/2	57.0	X	44.5	57.2	44.6	65	52	54	41.5	16	13	48	48	
		1 1/4			38.0		38.1		45		35					
		1			30.0		30.1		37		27					
		3/4			25.0		25.1		32		22					
		5/8			20.0		20.1		27		18					
		1/2			16.0		16.1		22		14					

* In case of brazing, the gap of in-diameter will be about 0.05mm ~ 0.15mm.

SOCKET WELDING (BRAZING) REDUCER

(SOCKET WELDING OR CAPILLARY END)

- MATERIAL : Cu-Ni 90/10
Cu-Ni 70/30



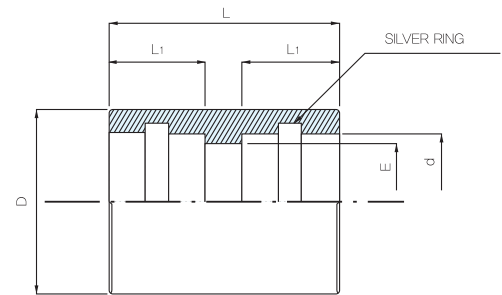
Outside diameter of pipe						*d1	*d2	D1	D2	E1	E2	L1	L2	L					
Nominal			Actual			(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)					
(Inch)			(mm)																
5/8	X	1/2	20.0	X	16.0	20.1	16.1	27	22	18	14	10	13	25					
3/4	X	5/8	25.0	X	20.0	25.1	20.1	32	27	22	18	13		10	28				
		1/2			16.0		16.1		22		14				30				
1	X	3/4	30.0	X	25.0	30.1	25.1	37	32	27	22			13	13	36			
		5/8			20.0		20.1		27		18				10	30			
		1/2			16.0		16.1		22		14					33			
1 1/4	X	1	38.0	X	30.0	38.1	30.1	45	37	35	27				13	13	32		
		3/4			25.0		25.1		32		22						35		
		5/8			20.0		20.1		27		18					10	34		
		1/2			16.0		16.1		22		14						32		
1 1/2	X	1 1/4	44.5	X	38.0	44.6	38.1	52	45	41.5	35					13	13	32	
		1			30.0				30.1		37							27	36
		3/4			25.0				25.1		32							22	10
		5/8			20.0				20.1		27						18	38	
		1/2			16.0				16.1		22						14	40	
2	X	1 1/2	57.0	X	44.5	57.2	44.6	65	52	54	41.5						16	13	38
		1 1/4			38.0				38.1		45		35						41
		1			30.0				30.1		37	27	45						
		3/4			25.0				25.1		32	22	48						
		5/8			20.0				20.1		27	18	10	47					
		1/2			16.0				16.1		22	14		50					

* In case of brazing, the gap of in-diameter will be about 0.05mm ~0.15mm.

SOCKET WELDING (BRAZING) COUPLING

(SOCKET WELDING OR CAPILLARY END)

- MATERIAL : Cu-Ni 90/10
Cu-Ni 70/30



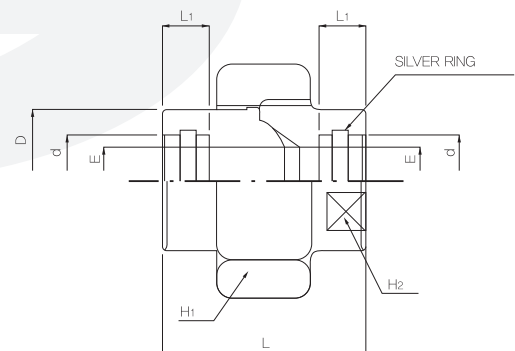
Outside diameter of pipe		*d	D	E	L1	L
Nominal (Inch)	Actual (mm)	(mm)	(mm)	(mm)	(mm)	(mm)
1/2	16.0	16.1	22	14	10	22
5/8	20.0	20.1	27	18		22
3/4	25.0	25.1	32	22	13	29
1	30.0	30.1	37	27		29
1 1/4	38.0	38.1	45	35		30
1 1/2	44.5	44.6	52	41.5		32
2	57.0	57.2	65	54	16	37

* In case of brazing, the gap of in-diameter will be about 0.05mm ~ 0.15mm.

SOCKET WELDING (BRAZING) UNION

(SOCKET WELDING OR CAPILLARY END)

- MATERIAL : Cu-Ni 90/10
Cu-Ni 70/30



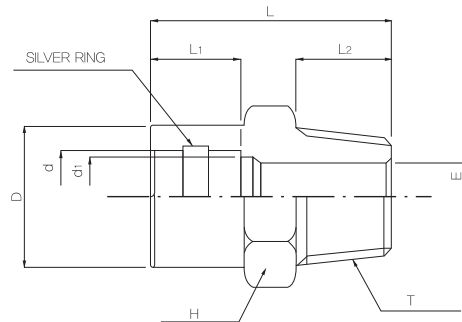
Outside diameter of pipe		*d	D	E	L1	L	H1	H2
Nominal (Inch)	Actual (mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
1/2	16.0	16.1	22	14	10	44	22	35
5/8	20.0	20.1	27	18		44	27	41
3/4	25.0	25.1	32	22	13	50	32	48
1	30.0	30.1	37	27		56	37	54
1 1/4	38.0	38.1	45	35		60	45	65
1 1/2	44.5	44.6	52	42		72	52	70
2	57.0	57.2	65	54	16	72	65	85

* In case of brazing, the gap of in-diameter will be about 0.05mm~ 0.15mm.

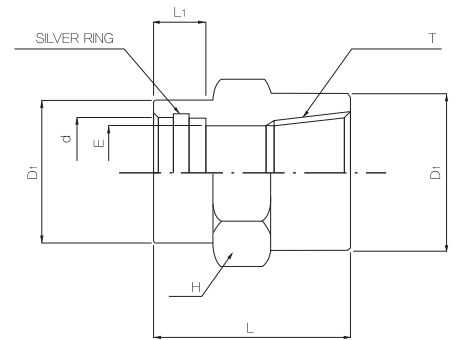
MALE & FEMALE ADAPTOR

(SOCKET WELDING OR CAPILLARY END)

- MATERIAL : Cu-Ni 90/10
Cu-Ni 70/30



MALE ADAPTOR



FEMALE ADAPTOR

● MALE ADAPTOR

Outside diameter of pipe		*d	D	d1	E	L1	L2	L	H	T (NPT)
Nominal	Actual	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(Inch)
(Inch)	(mm)									
1/2	16.0	16.1	22	14	11	10	19	38	22	1/2
5/8	20.0	20.1	27	18	11			39	27	1/2
3/4	25.0	25.1	32	22	16	13	24	42	32	3/4
1	30.0	30.1	37	27	20			48	37	1
1 1/4	38.0	38.1	45	35	27			49	45	1 1/4
1 1/2	44.5	44.6	52	41.5	35	16	25	52	52	1 1/2
2	57.0	57.2	65	54	45		26	58	65	2

* In case of brazing, the gap of in-diameter will be about 0.05mm ~ 0.15mm.

● FEMALE ADAPTOR

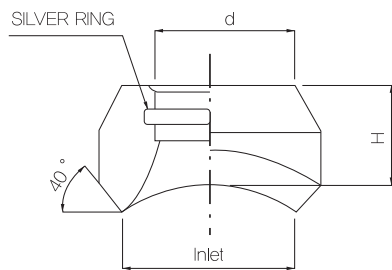
Outside diameter of pipe		*d	D1	E	D2	L1	L	H	T (Thread)
Nominal	Actual	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(Inch)
(Inch)	(mm)								
1/2	16.0	16.1	22	14	27	10	32	27	1/2
5/8	20.0	20.1	27	18	27			27	1/2
3/4	25.0	25.1	32	22	32	13	37	32	3/4
1	30.0	30.1	37	27	41			41	1
1 1/4	38.0	38.1	45	35	50			50	1 1/4
1 1/2	44.5	44.6	52	41.5	55	16	43	55	1 1/2
2	57.0	57.2	65	54	70			70	2

* In case of brazing, the gap of in-diameter will be about 0.05mm ~ 0.15mm.

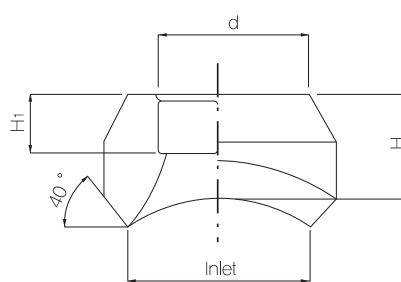
INTEGRALLY FORGED OUTLET (SELF-REINFORCED BRANCH CONNECTOR)

[CAPILLARY, SOCKET WELDING, THREADED TYPE]

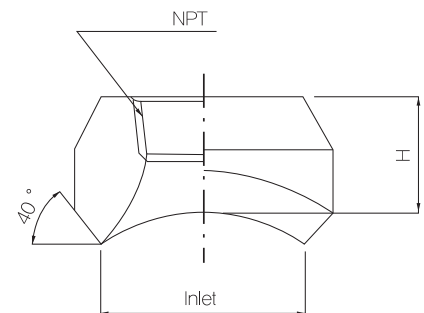
● MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30



CAPILLARY TYPE



SOCKET WELDING TYPE



THREADED TYPE

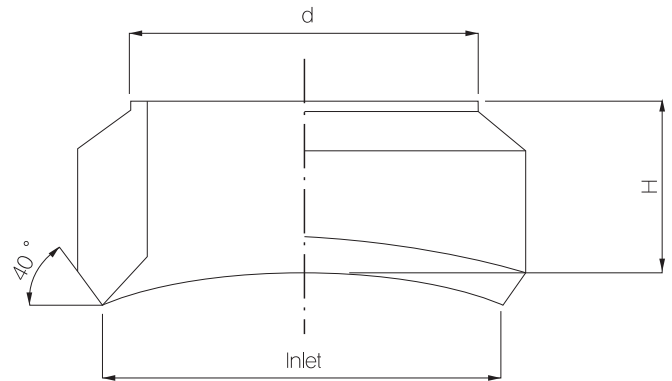
Outside diameter of pipe		Main pipe size range	*d	H1	H	Inlet	T (Thread)
Nominal	Actual	(mm)	(mm)	(mm)	(mm)	(mm)	(Inch)
(Inch)	(mm)						
1/2	16.0	25 - 44.5	16.1	10	23.8	22	1/2
		57 - 914					
3/4	25.0	30 - 44.5	25.1	13	26.9	30	3/4
		57 - 914			25.4		
1	30.0	38 - 44.5	30.1		33.3	36	1
		57 - 914			28.6		
1 1/4	38.0	57 - 914	38.1		33.3	45	1 1/4
1 1/2	44.5	57 - 914	44.6		30.2	50	1 1/2
2	57.0	76.1 - 914	57.2	16	38.1	65	2

* In case of brazing, the gap of in-diameter will be about 0.05mm ~ 0.15mm.

INTEGRALLY FORGED OUTLET (SELF-REINFORCED BRANCH CONNECTOR)

(BUTT WELDING TYPE)

● MATERIAL : Cu-Ni 90/10 or Cu-Ni 70/30



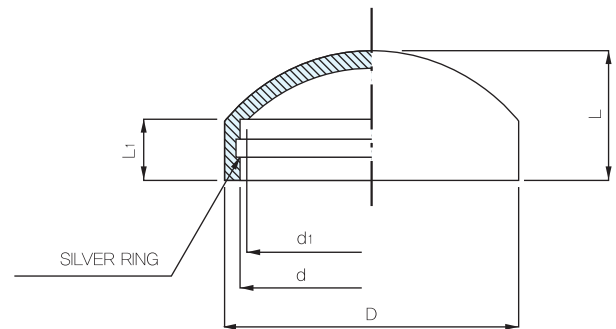
Outside diameter of pipe		Main pipe size range	d	H	Inlet
Nominal (Inch)	Actual (mm)	(mm)	(mm)	(mm)	(mm)
1/2	16.0	16.0 - 44.5	16.0	19.1	22.0
		57.0 - 610.0		17.5	
3/4	25.0	25.0 - 44.5	25.0	22.2	30.0
		57.0 - 610.0		20.6	
1	30.0	30.0 - 44.5	30.0	27.0	36.0
		57.0 - 610.0		22.2	
1 1/4	38.0	38.0 - 44.5	38.0	30.2	45.0
		57.0 - 610.0		25.4	
1 1/2	44.5	44.5	44.5	33.3	50.0
		57.0 - 76.1		28.6	
2	57.0	57.0 - 914.0	57.0	38.1	65.0
		88.9 - 610.0		33.3	
2 1/2	76.1	76.1 - 108.0	76.1	47.6	84.0
		159.0 - 610.0		44.5	
3	88.9	88.9 - 108.0	88.9	47.6	98.0
		159.0 - 610.0		44.5	
4	108.0	108.0	108.0	46.8	120.0
		159.0		52.4	
		219.1 - 610.0		49.2	
6	159.0	159.0 - 610.0	159.0	60.3	158.0
8	219.1	219.1 - 610.0	219.1	69.9	225.0
10	267.0	267.0 - 610.0	267.0	77.8	275.0

* In case of brazing, the gap of in-diameter will be about 0.05mm ~ 0.15mm.

SOCKET WELDING (BRAZING) END CAP

(SOCKET WELDING OR CAPILLARY END)

- MATERIAL : Cu-Ni 90/10
Cu-Ni 70/30

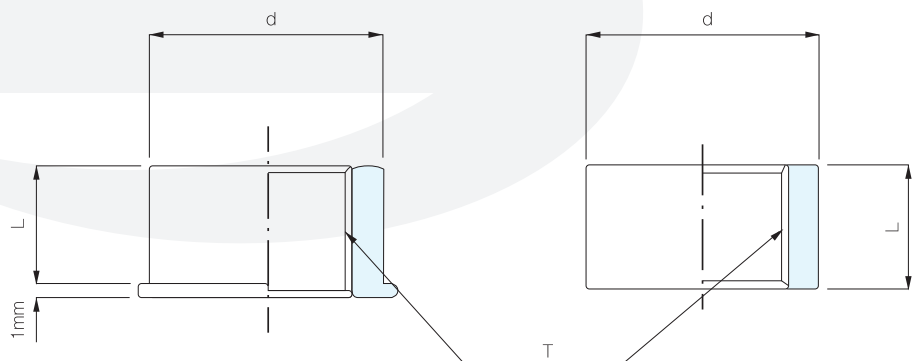


Outside diameter of pipe		*d	D	d1	l	L
Nominal (Inch)	Actual (mm)	(mm)	(mm)	(mm)	(mm)	(mm)
1/2	16.0	16.1	22.0	14.0	10.0	27.0
5/8	20.0	20.1	27.0	18.0		32.0
3/4	25.0	25.1	32.0	22.0		38.0
1	30.0	30.1	37.0	27.0	13.0	43.0
1 1/4	38.0	38.1	45.0	35.0		51.0
1 1/2	44.5	44.6	52.0	41.5		58.0
2	57.0	57.2	65.0	54.0	16.0	71.0

* In case of brazing, the gap of in-diameter will be about 0.05mm ~ 0.15mm.

SPRINKLER BUSH

- MATERIAL : Cu-Ni 90/10
Cu-Ni 70/30



Outside diameter of pipe		d	L	T (Thread)
Nominal (Inch)	Actual (mm)	(mm)	(mm)	(Inch)
1/2	16.0	16.0	10	On Application
3/4	25.0	25.0	13	
1	30.0	30.0		
1 1/4	38.0	38.0		
1 1/2	44.5	44.5		
2	57.0	57.0	16	

BOMYUNG METAL.Co.,Ltd

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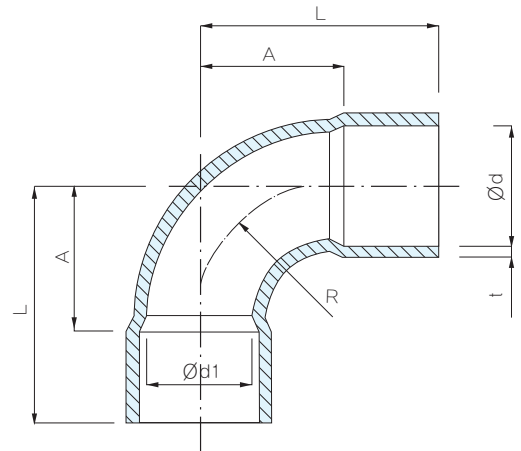
- **COPPER NICKEL FITTINGS & FLANGES – NAVY STANDARD**

SOCKET WELDING & BUTT WELDING - ELBOW / REDUCER / TEE / COUPLING / SLEEVE / FLANGE

SOCKET WELDING ELBOW (5K & 10K)

(FOR CU-NI PIPE)

● MATERIAL : CU-NI (90/10)

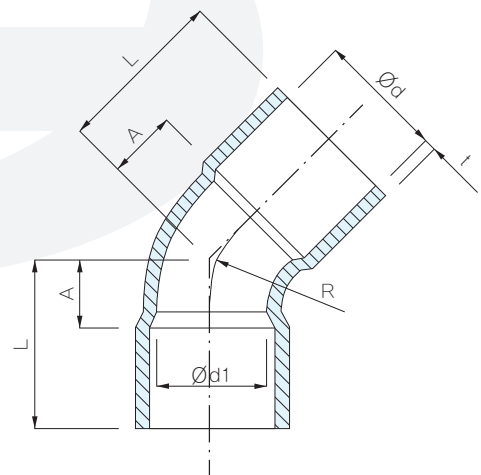


90° ELBOW

UNIT : mm

N/D	O/D	d		L		A		R	t	d1		W.T (kg)	REMARKS
		±	$\frac{0.2}{0}$	±	1.0	±	1.0			±	$\frac{0.1}{0}$		
15A	15.14	15.3		30		15		15	1.65	11.8		0.03	
20A	21.49	21.6		35		20		20	1.65	18.1		0.06	
25A	28.25	28.4		40		25		25	1.65	24.9		0.09	
32A	34.60	34.75		50		32		32	1.65	31.4		0.13	
40A	40.95	41.1		60		40		40	1.83	37.2		0.21	

● MATERIAL : CU-NI (90/10)



45° ELBOW

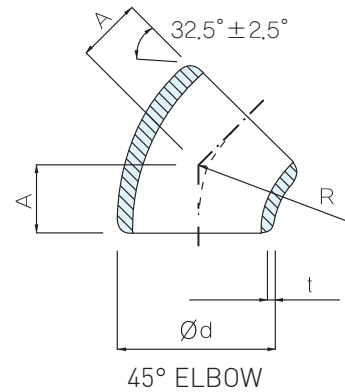
UNIT : mm

N/D	O/D	d		L		A		R	t	d1		W.T (kg)	REMARKS
		±	$\frac{0.2}{0}$	±	1.0	±	1.0			±	$\frac{0.1}{0}$		
15A	15.14	15.3		21		6.2		15	1.65	11.8		0.03	
20A	21.49	21.6		23		8.3		20	1.65	18.1		0.04	
25A	28.25	28.4		25.4		10.4		25	1.65	24.9		0.06	
32A	34.60	34.75		31		13.3		32	1.65	31.4		0.09	
40A	40.95	41.1		37		16.6		40	1.83	37.2		0.14	

BUTT WELDING ELBOW (5K & 10K)

(FOR CU-NI PIPE)

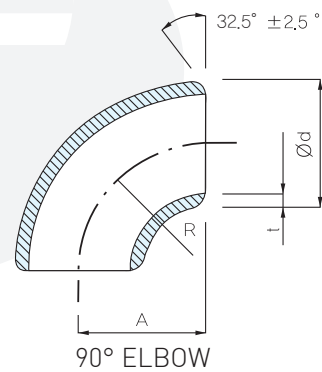
● MATERIAL : CU-NI (90/10)



UNIT : mm

N/D	d	R	A	t	W.T (kg)	REMARKS
50A	54.05	50	20.7	2.11	0.12	
65A	66.75	65	26.2	2.41	0.22	
80A	79.86	80	33.1	2.41	0.33	
100A	106.27	100	41.4	2.77	0.63	
125A	131.67	125	51.7	3.18	1.12	
150A	157.68	150	62.1	3.40	1.73	
200A	208.48	200	82.8	3.76	3.38	
250A	260.50	250	103.6	4.75	6.67	
300A	312.11	300	124.3	6.35	12.79	
350A	363.72	350	145.0	6.35	17.44	
400A	414.52	400	165.7	6.35	22.77	
450A	465.32	450	186.4	6.35	28.80	

● MATERIAL : CU-NI (90/10)



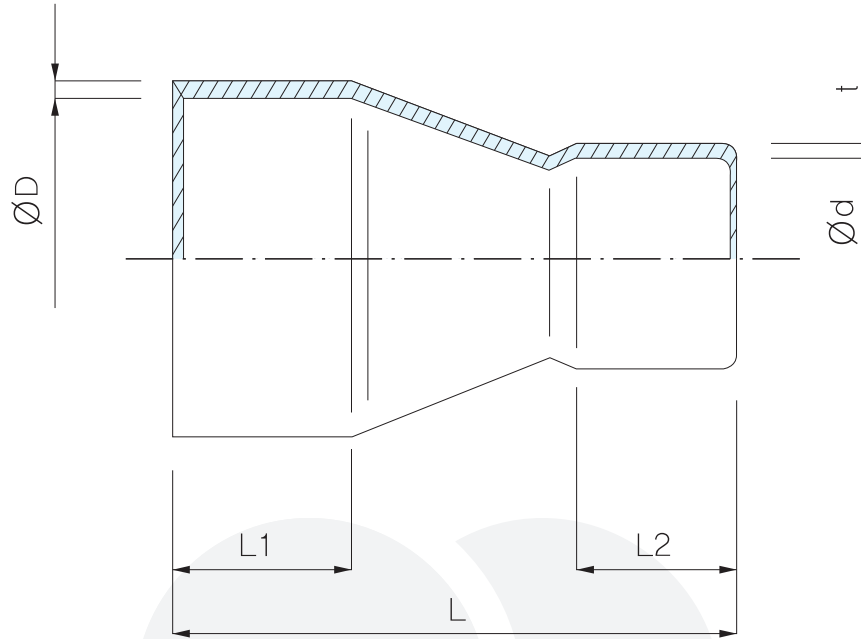
UNIT : mm

N/D	d	R	A	t	W.T (kg)	REMARKS
50A	54.05	50	50	2.11	0.24	
65A	66.75	65	65	2.41	0.44	
80A	79.86	80	80	2.41	0.66	
100A	106.27	100	100	2.77	1.26	
125A	131.67	125	125	3.18	2.24	
150A	157.68	150	150	3.40	3.46	
200A	208.48	200	200	3.76	6.76	
250A	260.50	250	250	4.75	13.34	
300A	312.11	300	300	6.35	25.88	
350A	363.72	350	350	6.35	34.88	
400A	414.52	400	400	6.35	45.53	
450A	465.32	450	450	6.35	57.60	

SOCKET WELDING REDUCER (5K & 10K)

(FOR CU-NI PIPE)

- MATERIAL : CU-NI (90/10)



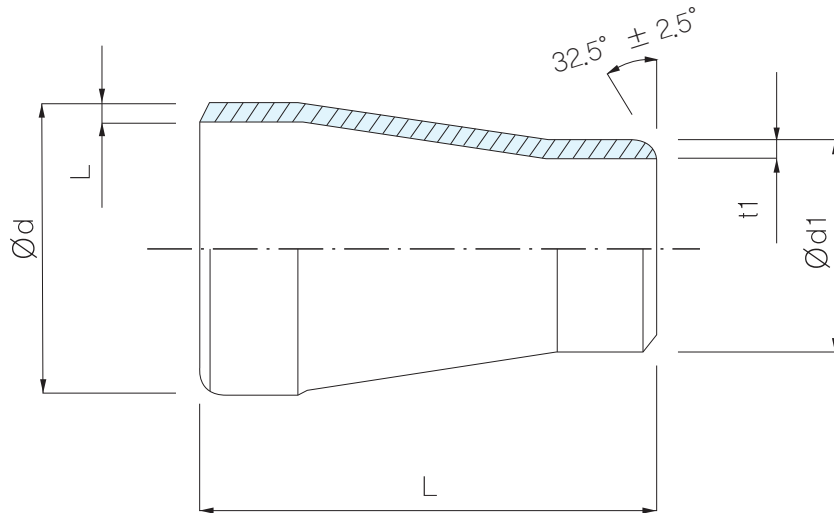
UNIT : mm

N/D	D		d		T	t	L		L1		L2		W.T (kg)
	±	0.2 0	±	0.2 0			±	1.0	±	1.0	±	1.0	
20A X 15A	21.6		15.3		1.65	1.65	50		15		15		0.05
25A X 20A	28.4		21.6		1.65	1.65	50		17		15		0.06
25A X 15A	28.4		15.3		1.65	1.65	50		17		15		0.05
32A X 25A	34.75		28.4		1.65	1.65	50		20		17		0.08
32A X 20A	34.75		21.6		1.65	1.65	50		20		15		0.07
32A X 15A	34.75		15.3		1.65	1.65	50		20		15		0.06
40A X 32A	41.1		34.75		1.83	1.65	50		20		20		0.09
40A X 25A	41.1		28.4		1.83	1.65	50		20		17		0.09
40A X 20A	41.1		21.6		1.83	1.65	50		20		15		0.08
40A X 15A	41.1		15.3		1.83	1.65	50		20		15		0.08

BUTT WELDING REDUCER (5K & 10K)

(FOR CU-NI PIPE)

● MATERIAL : CU-NI (90/10)



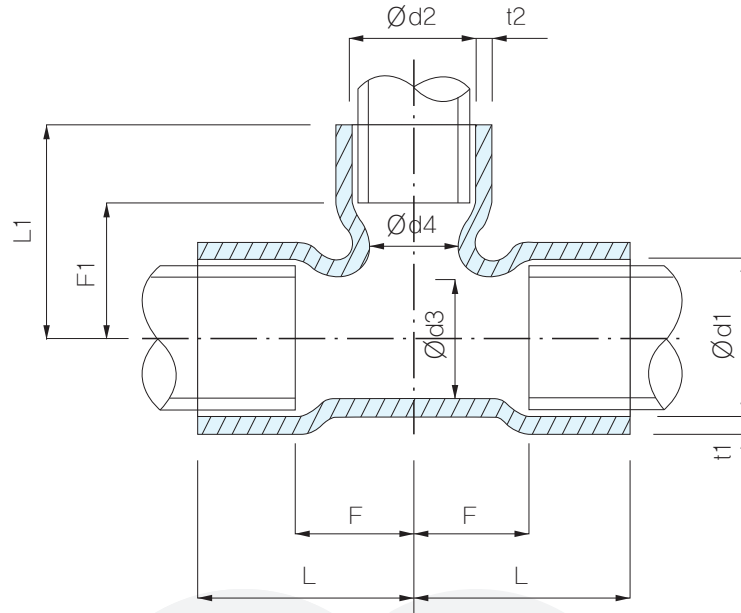
UNIT : mm

N/D	d	d1	t	t1	L	W.T (kg)
50A X 40A	54.05	40.95	2.11	1.83	100	0.25
50A X 32A	54.05	34.60	2.11	1.65	100	0.22
50A X 25A	54.05	28.25	2.11	1.65	100	0.21
65A X 50A	66.75	54.05	2.41	2.11	100	0.37
65A X 40A	66.75	40.95	2.41	1.83	100	0.31
65A X 32A	66.75	34.60	2.41	1.65	100	0.28
80A X 65A	79.86	66.75	2.41	2.41	100	0.48
80A X 50A	79.86	54.05	2.41	2.11	100	0.41
80A X 40A	79.86	40.95	2.41	1.83	100	0.35
100A X 80A	106.27	79.86	2.77	2.41	100	0.65
100A X 65A	106.27	66.75	2.77	2.41	100	0.61
100A X 50A	106.27	54.05	2.77	2.11	100	0.53
125A X 100A	131.67	106.27	3.18	2.77	100	0.96
125A X 80A	131.67	79.86	3.18	2.41	100	0.80
125A X 65A	131.67	66.75	3.18	2.41	100	0.75
150A X 125A	157.68	131.67	3.40	3.18	100	1.30
150A X 100A	157.68	106.27	3.40	2.77	100	1.11
150A X 80A	157.68	79.86	3.40	2.41	100	0.94
200A X 150A	208.48	157.68	3.76	3.40	150	2.69
200A X 125A	208.48	131.67	3.76	3.18	150	2.42
200A X 100A	208.48	106.27	3.76	2.77	150	2.11
250A X 200A	260.50	208.48	4.75	3.76	150	4.11
250A X 150A	260.50	157.68	4.75	3.40	150	3.50
250A X 125A	260.50	131.67	4.75	3.18	150	3.19

SOCKET WELDING TEE (5K & 10K)

(FOR CU-NI PIPE)

● MATERIAL : CU-NI (90/10)



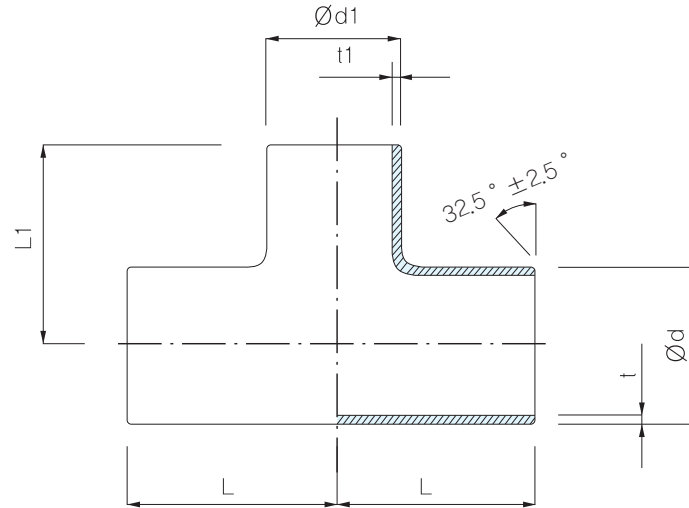
UNIT : mm

N/D (A)	O/D ($\varnothing$)	d1		d2		d3		d4		L		L1		F		F1		t1	t2	W.T (kg)
		$\pm$	$\frac{0.2}{0}$	$\pm$	$\frac{0.2}{0}$	$\pm$	$\frac{0.2}{0}$	$\pm$	$\frac{0.2}{0}$	$\pm$	$\frac{1.0}{1.0}$	$\pm$	$\frac{1.0}{1.0}$	$\pm$	$\frac{1.0}{1.0}$	$\pm$	$\frac{1.0}{1.0}$			
15 X 15	15.14 X 15.14	15.3		15.3		11.8		11.8		25		25		14		14		1.65	1.65	0.05
20 X 20	21.49 X 21.49	21.6		21.6		18.1		18.1		30		30		18		18		1.65	1.65	0.08
20 X 15	21.49 X 15.14	21.6		15.3		18.1		11.8		27		27		14		15		1.65	1.65	0.07
25 X 25	28.25 X 28.25	28.4		28.4		24.9		24.9		35		35		21		21		1.65	1.65	0.12
25 X 20	28.25 X 21.49	28.4		21.6		24.9		18.1		34		34		20		20		1.65	1.65	0.11
25 X 15	28.25 X 15.14	28.4		15.3		31.4		11.8		31		27		16		17		1.65	1.65	0.09
32 X 32	34.60 X 34.60	34.75		34.75		31.4		31.4		40		40		25		25		1.65	1.65	0.17
32 X 25	34.60 X 28.25	34.75		28.4		31.4		24.9		37		37		22		24		1.65	1.65	0.15
32 X 20	34.60 X 21.49	34.75		21.6		31.4		18.1		37		37		22		22		1.65	1.65	0.14
32 X 15	34.60 X 15.14	41.1		15.3		37.2		11.8		34		34		15		21		1.65	1.65	0.13
40 X 40	40.95 X 40.95	41.1		41.1		37.2		37.2		45		45		28		28		1.83	1.83	0.25
40 X 32	40.95 X 34.60	41.1		34.75		37.2		31.4		43		44		25		28		1.83	1.65	0.23
40 X 25	40.95 X 28.25	41.1		28.4		37.2		24.9		40		41		22		28		1.83	1.65	0.20
40 X 20	40.95 X 21.49	41.1		21.6		37.2		18.1		40		41		20		29		1.83	1.65	0.20
40 X 15	40.95 X 15.14	41.1		15.3		37.2		11.8		35		36		15		24		1.83	1.65	0.16

BUTT WELDING TEE (5K & 10K)

(FOR CU-NI PIPE)

● MATERIAL : CU-NI (90/10)



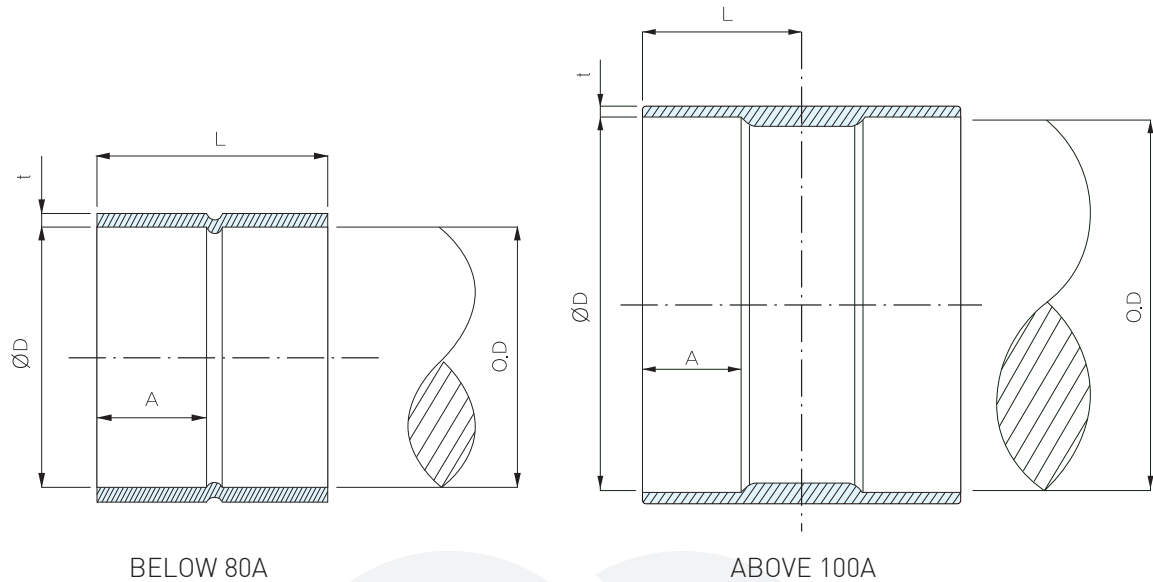
UNIT : mm

N/D	O/D	d		d1		t	t1	L		L1		W.T (kg)
		±	0.2 0	±	0.2 0			±	1.0	±	1.0	
50A X 50A	54.05 X 54.05	54.05		54.05		2.11	2.11	60		60		0.47
50A X 40A	54.05 X 40.95	54.05		40.95		2.11	1.83	60		50		0.42
50A X 32A	54.05 X 34.60	54.05		34.60		2.11	1.65	60		50		0.40
50A X 25A	54.05 X 28.25	54.05		28.25		2.11	1.65	60		50		0.40
65A X 65A	66.75 X 66.75	66.75		66.75		2.41	2.41	70		70		0.77
65A X 50A	66.75 X 54.05	66.75		54.05		2.41	2.11	70		60		0.69
65A X 40A	66.75 X 40.95	66.75		40.95		2.41	1.83	70		60		0.66
65A X 32A	66.75 X 34.60	66.75		34.60		2.41	1.65	70		60		0.65
80A X 80A	79.86 X 79.86	79.86		79.86		2.41	2.41	80		80		1.05
80A X 65A	79.86 X 66.75	79.86		66.75		2.41	2.41	80		80		1.01
80A X 50A	79.86 X 54.05	79.86		54.05		2.41	2.11	80		75		0.95
80A X 40A	79.86 X 40.95	79.86		40.95		2.41	1.83	80		75		0.91
100A X 100A	106.27 X 106.27	106.27		106.27		2.77	2.77	100		100		1.99
100A X 80A	106.27 X 79.86	106.27		79.86		2.77	2.41	100		85		1.78
100A X 65A	106.27 X 66.75	106.27		66.75		2.77	2.41	100		85		1.75
100A X 50A	106.27 X 54.05	106.27		54.05		2.77	2.11	100		80		1.69
125A X 125A	131.67 X 131.67	131.67		131.67		3.18	3.18	120		120		3.38
125A X 100A	131.67 X 106.27	131.67		106.27		3.18	2.77	120		90		2.95
125A X 80A	131.67 X 79.86	131.67		79.86		3.18	2.41	120		90		2.87
125A X 65A	131.67 X 66.75	131.67		66.75		3.18	2.41	120		90		2.85
150A X 150A	157.68 X 157.68	157.68		157.68		3.40	3.40	130		130		4.59
150A X 125A	157.68 X 131.67	157.68		131.67		3.40	3.18	130		110		4.19
150A X 100A	157.68 X 106.27	157.68		106.27		3.40	2.77	130		110		4.07
150A X 80A	157.68 X 79.86	157.68		79.86		3.40	2.41	130		110		3.98
200A X 200A	208.48 X 208.48	208.48		208.48		3.76	3.76	178		178		9.29
200A X 150A	208.48 X 157.68	208.48		157.68		3.76	3.40	178		168		8.62
200A X 125A	208.48 X 131.67	208.48		131.67		3.76	3.18	178		168		8.41
200A X 100A	208.48 X 106.27	208.48		106.27		3.76	2.77	178		168		8.18
250A X 250A	260.50 X 260.50	260.50		260.50		4.75	4.75	216		216		17.66
250A X 200A	260.50 X 208.48	260.50		208.48		4.75	3.76	216		203		16.56
250A X 150A	260.50 X 157.68	260.50		157.68		4.75	3.40	216		194		15.64
250A X 125A	260.50 X 131.67	260.50		131.67		4.75	3.18	216		194		15.42

SOCKET WELDING COUPLING (5K & 10K)

(FOR CU-NI PIPE)

● MATERIAL : CU-NI (90/10)



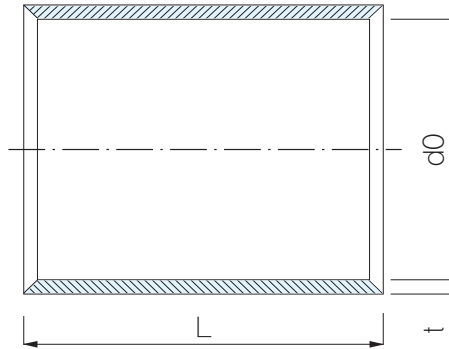
UNIT : mm

PIPE O.D (d)		t	D	L	A	W.T (kg)	REMARK
N.D	O.D						
15A	15.14	1.65	15.3	31	14	0.024	
20A	21.49	1.65	21.7	33	15	0.035	
25A	28.25	1.65	28.4	35	16	0.048	
32A	34.60	1.65	34.7	39	18	0.065	
40A	40.95	1.83	41.1	43	20	0.093	
50A	54.05	2.11	54.2	47	22	0.154	
65A	66.75	2.41	66.9	55	26	0.254	
80A	79.85	2.41	80.0	63	30	0.346	
100A	106.30	2.77	106.4	51	34	0.853	
125A	131.70	3.18	131.8	56	36	1.329	
150A	157.70	3.40	157.9	69	44	2.092	
200A	208.70	3.76	208.9	75	50	3.316	
250A	260.50	6.35	261.0	80	55	7.509	
300A	312.10	6.35	312.8	80	55	8.964	

SLEEVE (5K & 10K)

(FOR CU-NI PIPE)

● MATERIAL : CU-NI (90/10)



UNIT : mm

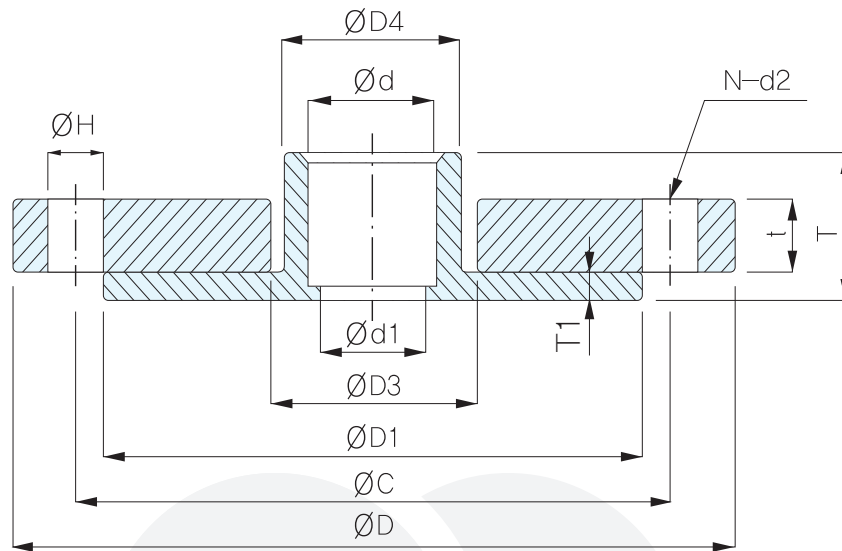
N.D	O.D	t	d0	L	W.T (kg)	REMARKS
15	15.14	1.65	15.7	100	0.80	
20	21.49	1.65	22.0	100	0.11	
25	28.25	1.65	28.8	100	0.14	
32	34.60	1.65	35.1	100	0.17	
40	40.95	1.83	41.5	100	0.22	
50	54.05	2.11	54.6	100	0.33	
65	66.75	2.41	67.3	100	0.47	
80	79.86	2.41	80.4	150	0.83	
100	106.27	2.77	106.8	150	1.27	
125	131.67	3.18	132.2	150	1.80	
150	157.68	3.40	158.3	150	2.30	
200	208.48	3.76	209.3	150	3.35	
250	260.50	4.76	261.2	150	5.28	
300	312.11	6.35	312.8	150	8.48	
350	363.72	6.35	364.42	150	9.86	
400	419.10	7.00	419.8	150	10.70	
450	457.20	8.00	457.9	150	11.66	
500	508.00	8.50	508.7	150	14.03	
550	558.80	9.50	559.5	150	15.41	
600	610.00	10.50	610.7	150	20.74	

CU-NI FLANGE (5K & 10K)

[SOCKET WELDING TYPE]

● MATERIAL

- INTERNAL : CU-NI (90/10)
- EXTERNAL : SS400 (G)



5kg/cm²

UNIT : mm

N.D	PIPE O.D	INTERNAL FLANGE					STOPPER		EXTERNAL FLANGE					BOLT HOLE			W.T
		d	D1	D4	T	T1	d1	m	D	D1	D3	C	t	N	H	d2	
15A	15.14	15.7	48	20	25	3	12.7	2.5	80	48	23	60	9	4	12	M10	0.34
20A	21.49	22.0	53	26	28	4	19.1	2.5	85	53	29	65	10	4	12	M10	0.44
25A	28.25	28.8	63	33	28	4	25.4	2.5	95	63	36	75	10	4	12	M10	0.54
32A	34.60	35.1	75	39	30	4	31.8	2.5	115	75	42	90	12	4	15	M12	0.95
40A	40.95	41.5	80	46	30	5	38.1	2.5	120	80	49	95	12	4	15	M12	1.01

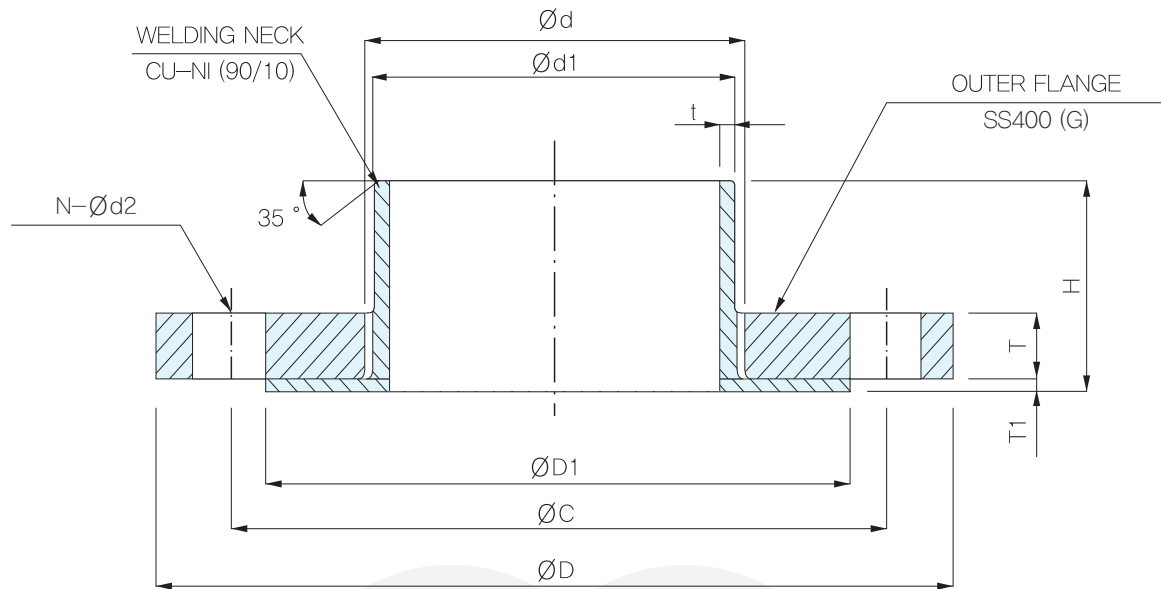
10kg/cm²

UNIT : mm

N.D	PIPE O.D	INTERNAL FLANGE					STOPPER		EXTERNAL FLANGE					BOLT HOLE			W.T
		d	D1	D4	T	T1	d1	m	D	D1	D3	C	t	N	H	d2	
15A	15.14	15.7	48	20	25	3	12.7	2.5	95	48	23	70	12	4	15	M12	0.61
20A	21.49	22.0	53	26	28	4	19.1	2.5	100	53	29	75	14	4	15	M12	0.80
25A	28.25	28.8	63	33	28	4	25.4	2.5	125	63	36	90	14	4	19	M16	0.21
32A	34.60	35.1	75	39	30	4	31.8	2.5	135	75	42	100	16	4	19	M16	1.64
40A	40.95	41.5	80	46	30	5	38.1	2.5	140	80	49	105	16	4	19	M16	1.75

JIS 5K CU-NI FLANGE

(BUTT WELDING TYPE)



UNIT : mm

N.D	WELDING NECK					OUTER FLANGE				
	D1	d1	H	T1	t	D	C	d	T	N-d2
50	90	54.05	40	5	1.62	130	105	d1+5	14	4-15
65	115	66.75	40	5	1.62	155	130	d1+5	14	4-15
80	126	79.85	45	6	1.82	180	145	d1+5	14	4-19
100	146	106.27	45	6	2.33	200	165	d1+5	16	8-19
125	181	131.67	45	6	2.33	235	200	d1+5	16	8-19
150	211	157.65	45	8	2.64	265	230	d1+5	18	8-19
200	257	208.48	45	8	2.64	320	280	d1+5	20	8-23
250	267	260.50	45	8	3.25	385	345	d1+5	22	12-23
300	322	312.11	45	10	3.68	430	390	d1+5	22	12-23
350	410	363.72	50	10	4.06	480	425	d1+5	24	12-25
400	470	414.32	50	10	4.06	540	495	d1+5	24	15-25
450	530	465.32	50	10	4.06	605	535	d1+5	24	15-25

