

BOMYUNG METAL Co., Ltd
Copper & Copper-Alloy Pipes, Fittings & Flanges



Contents

ABOUT US

- 03p Company History
- 05p Company Information
& Organization
- 07p Greeting
& Classification Certificates
- 08p Manufacturing Process
- 09p Comparison table of international
Standard for Cu-Ni 90/10
- 10p Welding Instruction

PIPE

- 11p European Standard
- 12p U.S Standard
- 15p Japanese Standard

BUTT WELDING FITTING

- 16p General Information
- 17p Elbow
- 19p Reducer
- 20p Concentric Reducer
- 22p Equal Tee

FLANGE

- 24p General Information
- 25p Solid Weiding Neck
- 26p Solid Slip On
- 27p Composite Welding Neck
- 28p Composite Slip On

Company History

- 2014 Dec. Achievement CE(PED) Certification (BV)
- 2014 Oct. Achievement ISO14001:2004 OSHAS18001:2007 Certification (BV)
- 2012 Oct. Approved as manufacturing for Copper & Copper-Alloy Pipe, Fittings & Flanges(LR)
- 2012 Jun. Designated as a Promising Export Firm by the Small & Medium Business Administration(SMBA)
- 2012 May. Approved as INNO-BIZ by the Korea Technology Finance Corp.(Klbo)
- 2011 Dec. Approved as manufacturing for Copper & Copper-Alloy Pipe, Fittings & Flanges(BV)
- 2011 Nov. Approved as manufacturing for Copper & Copper-Alloy Pipe, Fittings & Flanges(ABS)
- 2011 Jun. Achievement of ISO 9001 : 2008 (BV)
- 2011 Apr. Registration of approval Vender from Samsung Heavy Ind. Co., Ltd.
- 2011 Mar. Approved as manufacturing for Copper & Copper-Alloy Pipe, Fittings & Flanges by Det Norske Veritas(DNV)
- 2011 Feb. Approved as manufacturing for Copper & Copper-Alloy Pipe, Fittings & Flanges by Korea Register(KR)
- 2010 Oct. Approved as Technical Laboratory by Korea Industrial Technology Association(Koita)
- 2010 May. Moved to the new factory at Hwajeoun Industrial Complex, Gangseo-Gu, Busan
- 2009 Oct. Designated as a Main-BIZ by Small and Midium Business Adiministration.(SMBA)
- 2009 May. Established Technical Laboratory
- 2008 July. Registration of approval Vender from Dusan Engine Co., Ltd.
- 2008 May. Registration of approval Vender from Hyuoungsung Heavy Ind. Co., Ltd.
- 2007 Feb. Established a subsidiary-company(BoMyung P&Tco., Ltd.)
- 2006 Jun. Approved as a Venture Enterprise by the Korea Thchnology Finance Corporation.(Klbo)
- 2006 Jun. Designated as Clean-Enterprize by Korea Occupational Safety & Health Agencyz(KOSHA)
- 2005 Sep. Registration of approval Vender from Hyundai Heavy Ind. Co., Ltd.
- 2005 Jul. Achievement of ISO 9002 : 2000 Certification
- 2000 Jun. Moved to the new factory at Janglim-Dong, Saha-Gu, Busan
- 1998 Jul. Registration of approval Vender from Accelerator Laboratory in Pohang Industrial Collage.
- 1998 May. Registration of approval Vender from DaeWoo Shipbuilding & Marine Engineering Co.,Ltd.
- 1997 Jan. Registration of approval Vender from Hanjin Heavy Ind. Co., Ltd.
- 1996 Nov. Changed name to BoMyoung Metal Co.,Ltd.
- 1994 Apr. Established BoMyoung Metal Co. at Handan-Dong, Saha-Gu, Busan

Company Information

Copper & Copper-Nickel Alloy for Sea-Water corrosion resistant system.

PRODUCT

- Pipe
- Fittings
- Plate
- Flanges

MATERIAL

- Copper
- Copper Nickel 90/10
- Copper Nickel 70/30
- Brass
- Bronze etc.

STANDARDS

- EEMUA
- EN
- NES
- SAE
- DIN
- ASTM
- MIL
- AFNOR
- BS
- JIS
- ISO

APPLICATION OF PRODUCT

- Shipbuilding
- Offshore
- Desalinization
- Power Generation
- Heat Exchanger
- Condenser

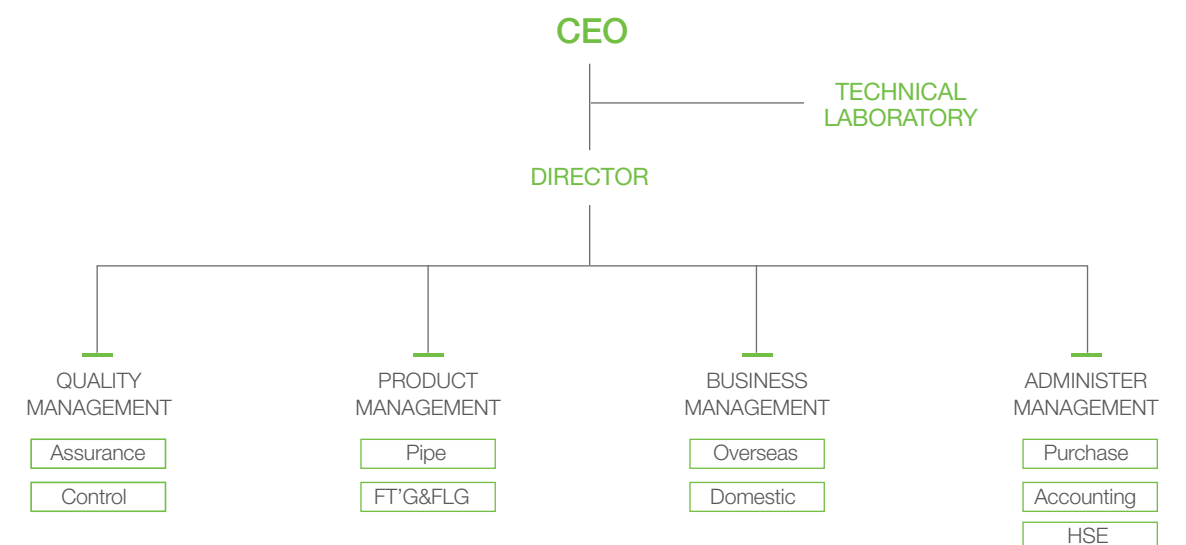
PRODUCT RANGE

Normal sizes from 1/2"OD to 40"OD

Other sizes are also available upon request on the application.



Company Organization





Company Introduction

Welcome!

Since our birth in 1994, Bo Myung has been leading the business world in Asia.

With over 20 years of experience we have grown to establish ourselves as one of Korea's leading companies providing complete integrated solutions for all your needs in the shipbuilding, offshore, oil and gas, construction, petrochemical and water/power industries.

Bo Myung is capable of supplying all types of Copper & Copper Nickel Pipes, Fittings, Flanges, etc.

Our extensive range of manufacturing facilities helps offer our clients a fully integrated complete package to facilitate and fulfill their needs no matter what the requirements are.

Thank you.

President / Su-Sik, Hong



Who BOMYUNG is :

A regional leader built on over 20 Years of experience focused on high quality manufacturing & expert solutions.

Certificates

MANAGEMENT SYSTEM



1. ISO/TS29001 : 2010
2. ISO9001:2008
3. ISO14001:2004
4. OHSAS18001:2007

APPROVAL OF MANUFACTURER



1. Lloyd's (LR)
2. Bureau Veritas (BV)
3. Det Norske Veritas (DNV)
4. American Bureau of Shipping (ABS)

환영합니다!

1994년 창립 이래, 우리 보명금속은 아시아에서 비즈니스를 선도하고 있습니다.

20년이 넘는 경험으로 우리는 조선, 해양, 석유 및 가스, 건설, 정유화학 및 담수화, 발전 산업의 모든 요구에 완벽한 통합 솔루션을 제공하는 한국업체로 자리매김하고 있습니다.

보명금속은 동 및 동합금 파이프, 피팅과 플랜지 등의 모든 제품을 공급할 수 있습니다.

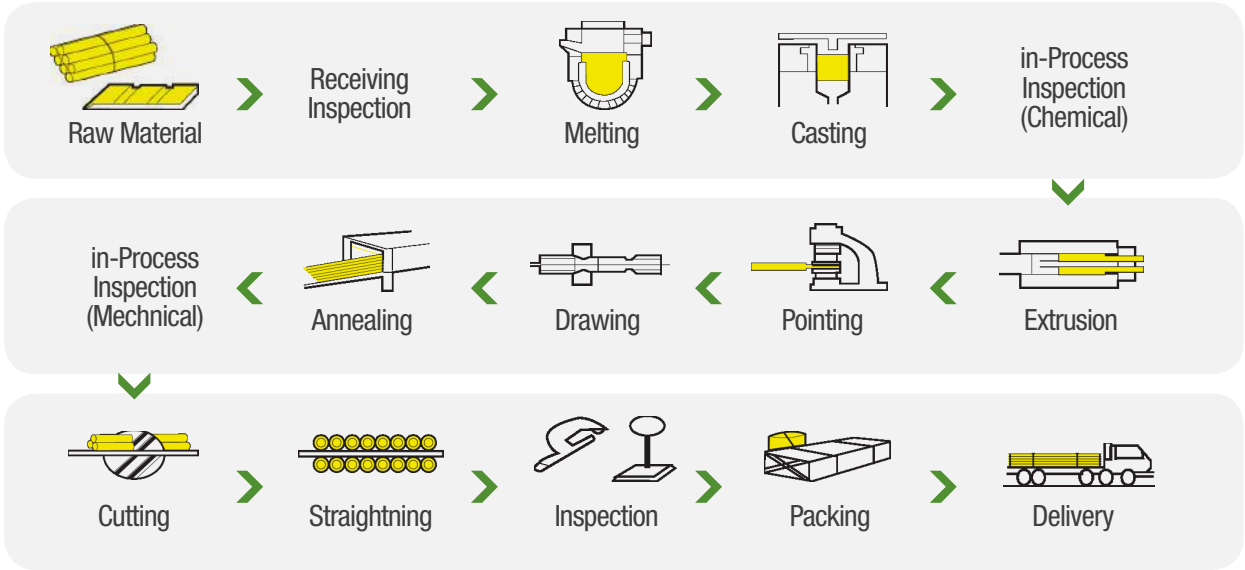
우리의 뛰어난 제조역량은 고객들의 어떠한 요구에도 통합된 완벽한 패키지 솔루션을 제공하는데 도움이 됩니다.

감사합니다.

대표이사 / 홍수식

Manufacturing Process

PIPE

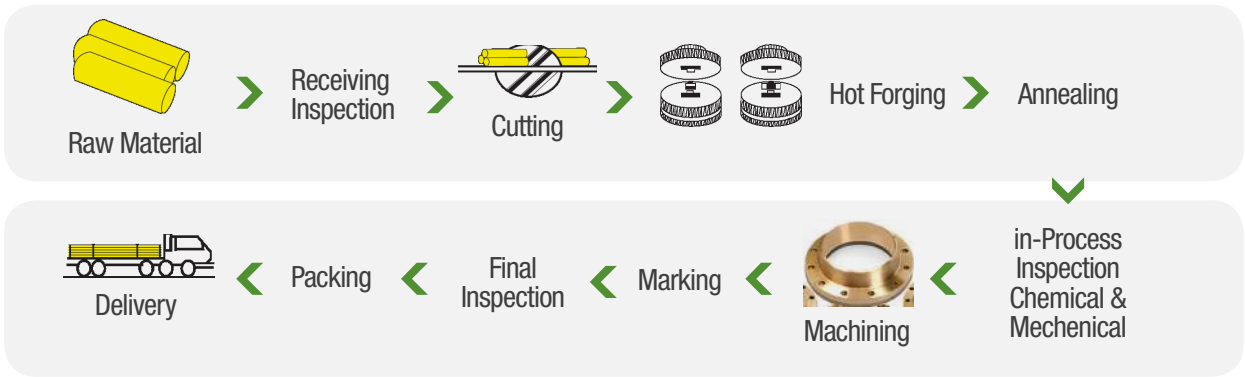


FITTING

SEAMLESS : ELBOW 1/2"~12" REDUCER 1/2"~10" TEE 1/2"~8"
WELDED : ELBOW OVER 12" REDUCER OVER 10" TEE OVER 10"



FORGED FITTINGS & FLANGES



Product Information

Copper & Copper-Nickel Alloy for Sea-Water corvsistant system.

Comparison table of International Standard for Cu-Ni 90/10

Chemical compositon	EEMUA 144 UNS 7060X	BS 2870 CN 102	BS EN 12449 CW352H	ASTM B466 C70600	DIN 17664 2.0872	DIN86019 2.1972	NES 779 779	MIL-T- 16420K C70600	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	1.0-2.0	1.0-1.8	1.0-2.0	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	0.5-1.0	0.5-1.0	0.5-1.0	Max.1.0	0.2-1.0
Zn%	Max.0.20	-	Max.0.50	Max.0.50	Max.0.5	Max.0.15	-	Max.0.50	Max.0.50
Pb%	Max.0.01	Max.0.01	Max.0.02	Max.0.02	Max.0.03	Max.0.01	Max.0.01	Max.0.02	Max.0.05
P%	Max.0.02	-	Max.0.02	Max.0.02	Max.0.015	Max.0.015	-	Max.0.02	-
S%	Max.0.02	Max.0.05	Max.0.05	Max.0.015	Max.0.02	Max.0.015	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	Max.0.05	Max.0.05	-
Sn%	-	-	Max.0.03	-	-	-	-	-	-
Zr%	-	-	-	-	-	-	Max.0.03	-	-
Other imp.	Max.0.30	Max.0.30	-	-	Max.0.30	Max.0.30	Max.0.30	-	-
Cu%	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Min.86.5	Cu+Ni+Fe+Mn Min.99.5

Mechanical prorerties	EEMUA 144 UNS 7060X	BS 2870 CN 102	BS EN 12449 CW352H	ASTM B466 C70600	DIN 17664 2.0872	DIN86019 2.1972	NES 779 779	MIL-T- 16420K C70600	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		300~380 N/mm ²	MIN.280 N/mm ²	MIN.38 l b/in ²	MIN.275 N/mm ²
Yield strength	Min.105 N/mm ²	-	-	Min.90 N/mm ²		Min.105 N/mm ²	**Min.110 N/mm ²	***MIN.13 lb/in ²	-
Elongation	MIN. 30%	MIN. 30%	MIN. 30%	-		MIN. 30%	MIN. 30%	MIN. 30%	MIN. 30%
Hardness	*HV5 /MAX.120	HV5 /MAX.100	HV5 /75~100	HR30T /MAX.45		-	HV /MAX.90	-	-

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 S-CuNi10Fe No. 2.0873	DIN 1733 S-CuNi10Fe No. 2.0873	DIN 1733 S-CuNi30Fe No. 2.0873	DIN 1733 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
USA			AWS A 5.6 E CuNi	AWS A 5.7 ER CuNi

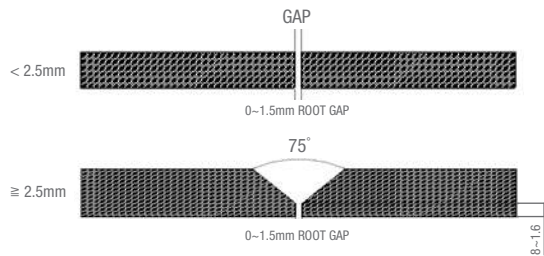


fig.1

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.
Weding operation can be carried out under conditions if jointing parts are perfectly clean
and free greas, 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)

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 weldind current. The following table showing the typical data

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.

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

General Information Of Pipes

PIPE - European Standard

MATERIAL : Cu-Ni 90/10, Cu-Ni 70/30 Seamless (1/2”~14”) Seam Welded Over 14”



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
Inch	Metric	Actual (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		0.53		0.53		1.01		1.01
3/4	20	25.0	1.5	0.99	1.5	0.99	2.0	1.30	2.0	1.30
1	25	30.0		1.20		1.20		1.93		1.93
1 1/4	32	38.0		1.54		1.54		2.50		2.50
1 1/2	40	44.5		1.81		1.81		2.95		2.95
2	50	57.0	2.0	2.34	2.0	2.34	2.5	3.83	2.5	3.83
2 1/2	65	76.1		4.16		4.16		5.17		5.17
3	80	88.9		4.88		6.07		6.07		6.07
4	100	108.0		7.41	2.5	7.41		8.85	3.0	8.85
5	125	133.0	2.5	9.16		10.95	3.0	10.95		10.95
6	150	159.0		10.99		13.14		13.14		15.29
8	200	219.1		18.21	3.0	21.19	4.0	24.17	4.5	27.12
10	250	267.0	4.0	22.24		29.55		33.18		40.39
12	300	323.9		35.94		44.78	5.0	49.18	5.5	62.30
14	350	368.0		40.89	5.5	56.00		65.99		80.89
16	400	419.1		46.62	6.0	69.60		81.00		103.64
18	450	457.2		50.91		76.03		100.93		119.45
20	500	508.0	4.5	63.63	6.5	91.55	8.5	119.24	11.0	153.54
24	600	610.0		84.96		135.26		176.79		217.97
28	700	711.0		118.80	9.0	177.45	12.0	235.58	15.0	293.22
32	800	813.0		135.99		225.53		303.14		380.06
36	900	914.0	8.0	203.57	11.0	278.98	15.5	391.14	19.0	477.60

PIPE - U.S. Standard

MATERIAL : Cu-Ni 90/10, Cu-Ni 70/30 Seamless (1/2”~14”) Seam Welded Over 14”

According to ASTM B 466 & B467 UNS C70600(90/10), C71500(70/30)

Outside diameter of pipe			Wall thickness		Theoretical Weight	
Nominal Inch	Actual Inch	Actual (mm)	Actual Inch	Actual mm	LB / Ft	Kg / m
1/8	0.4	10.3	0.058	1.47	0.24	0.36
1/4	0.5	13.7	0.065	1.650	0.38	0.56
3/8	0.7	17.2			0.48	0.72
1/2	0.8	21.3			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	0.134	3.400	10.58	15.75
8	8.6	219.1			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 (1/2”~14”) Seam Welded Over 14”

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

Outside diameter of pipe			Schedule 5S				Schedule 10S			
			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
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	0.650	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			
			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
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	4.41
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 (1/2"~14") Seam Welded Over 14"

According to MIL - 16420K ALLOY 706(90/10), 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		
	0.50	12.70			0.200	0.29			0.340	0.51
1/8	0.54	13.72	0.065	1.65	0.380	0.56			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	0.072	1.83	0.990	1.47	0.095	2.41	1.410	2.10
1 1/4	1.66	42.16			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 21/2	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	67.00	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	132.87
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~350A) Seam Welded Over 350A

According to JIS H3300 C7060T(90/10), C7150T(70/30)

Nominal MM	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)	Kg / m	(mm)	Kg / m	(mm)		Kg / m	(mm)		Kg / m	
6A	6.35	1.21	0.47	0.89	0.14		1.0					
10A	12.71			0.89	0.29	16.00		0.42	15.00	1.5	0.57	
15A	15.14			1.65	0.62	20.00		0.53	20.00		0.78	
20A	21.49				0.92	25.00		0.99	25.00		0.99	
25A	28.25	1.42	1.07		1.23	30.00	1.20	30.00	1.20			
32A	34.60		1.32		1.53	38.00	1.54	38.00	2.0	2.02		
40A	40.95		1.58	1.83	2.01	44.50	1.81	45.00		2.41		
50A	54.05		1.62	2.39	2.11	3.08	57.00	2.34		55.00	2.98	
65A	66.75	2.96		2.41	4.35	76.10	2.0	4.16		70.00	3.82	
80A	79.86	1.82			3.99	5.24	88.90	2.5	6.07	85.00	6.91	
100A	106.27	2.33			6.80	2.77	8.05		108.00	7.41	110.00	9.02
125A	131.67		8.46		3.18	11.47	133.00		9.16	130.00	10.70	
150A	157.68		2.64	11.49	3.40	14.73	159.00		10.99	160.00	17.52	
200A	208.48		2.64	15.26	3.76	21.61	219.10	18.21	210.00	23.14		
250A	260.50	3.25	23.48	4.75	34.11	267.00	3.0	22.24	260.00	4.5	32.29	
300A	312.11	3.68	31.87	6.35	54.52	323.90		4.0	35.94	310.00	5.5	47.03
350A						368.00			40.89			
400A						419.00			46.62			
450A						457.20	50.91					
500A						508.00	4.5	63.63				
600A						610.00	5.0	84.96				
700A						711.00	6.0	118.80				

General Information Of 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 catalogueand in nonstandard sizes.

Standard sizes 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 - Boiler and Pressure Vessel) whose qualification are regularly checked and approved. Established welding methods include pulsed TIG and shielded electrode techniques.

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.

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

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.

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.

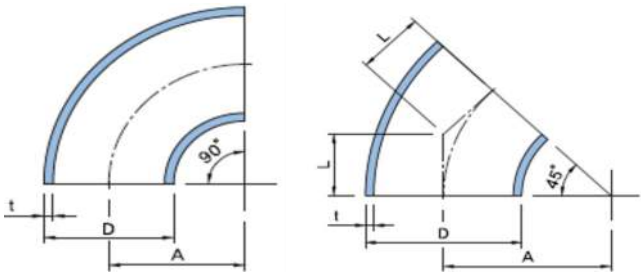
ELBOW (Short Radius) - 10bar and ■ 14bar

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

DIMENSION : DIN 86090

1/2" ~ 12" : SEAMLESS

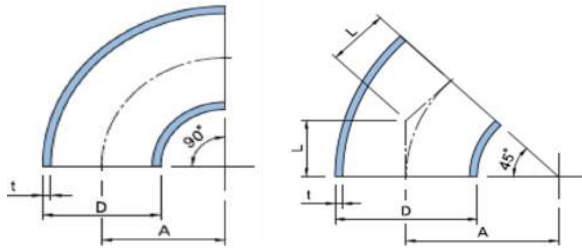
14" & OVER : SEAM WELDED



Outside diameter of pipe		Wall thickness	Center to end		Weight	
Nominal (Inch)	D (mm)	t (mm)	A (mm)	B (mm)	90°	45°
					(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 Radius) - 16bar

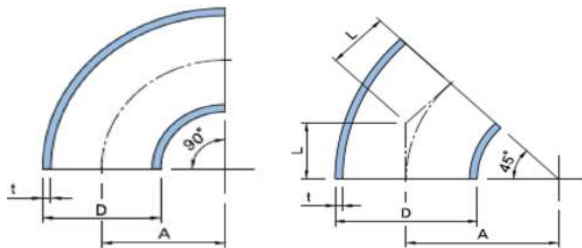
MATERIAL : Cu-Ni 90/10, Cu-Ni 70/30
DIMENSION : EEMUA Pub. No. 146
1/2" ~ 10" : SEAMLESS
12" & OVER : SEAM WELDED



Outside diameter of pipe		Wall thickness	Radius	Center to end	Weight	
Nominal (Inch)	D (mm)	t (mm)	A (mm)	B (mm)	90°	45°
					(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	576.00	288.00
36	914.0	15.5	1372	565	837.20	418.60

ELBOW (Long Radius) - 20bar

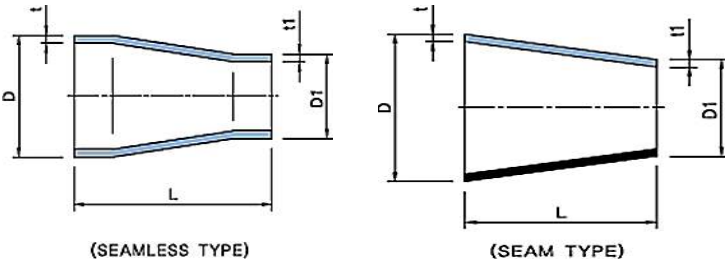
MATERIAL : Cu-Ni 90/10, Cu-Ni 70/30
DIMENSION : EEMUA Pub. No. 146
1/2" ~ 10" : SEAMLESS
12" & OVER : SEAM WELDED



Outside diameter of pipe		Wall thickness	Radius	Center to end	Weight	
Nominal (Inch)	D (mm)	t (mm)	A (mm)	L (mm)	90°	45°
					(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

REDUCER 10bar and 14bar

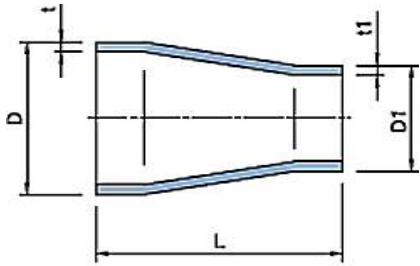
MATERIAL : Cu-Ni 90/10, Cu-Ni 70/30
DIMENSION : DIN 86089
1/2" ~10" : SEAMLESS TYPE
12" & OVER : SEAM WELDED TYPE



Outside diameter of pipe				Wall	Center to end		Weight	
Nominal (Inch)			D (mm)	D1 (mm)	t (mm)	t1 (mm)	L (mm)	(kg)
1		1/2		20.0	1.5	1.0	35	0.04
		3/4		25.0		1.5		0.05
1 1/4	X	1/2	38.0	20.0		1.0		0.06
		3/4		25.0	1.5	1.5	50	0.07
		1		30.0		1.5		0.08
1 1/2	X	3/4		25.0		1.5		0.11
		1	45.0	30.0	1.5	1.5	80	0.12
		1 1/4		38.0		1.5		0.13
		1		30.0		1.5		0.14
2	X	1 1/4	57.0	38.0	1.5	1.5	80	0.15
		1 1/2		44.5		1.5		0.16
		1 1/4		38.0		1.5		0.25
2.5	X	1 1/2	76.1	44.5	2.0	1.5	90	0.26
		2		57.0		1.5		0.29
					2.0			0.30
3	X	1 1/2		44.5	2.0	1.5		0.35
					2.5	1.5	90	0.32
		2	88.9	57.0	2.0	1.5		0.38
					2.5	1.5		0.40
		2 1/2		76.1	2.0	2.0		0.48
					2.5	2.0		0.48
4	X	2	108.0	57.0	2.5	1.5		0.57
		2 1/2		76.1	2.5	2.0	100	0.61
		3		88.9	2.5	2.0		0.61
					2.5	2.5		0.93
5	X	2 1/2	133.0	76.1	2.5	2.0	140	1.06
					3.0	2.0		0.98
		3		88.9	2.5	2.0		1.13
					3.0	2.5		1.16
		4	108.0	108.0	2.5	2.5		1.34
					3.0	2.5		1.19
6	X	3	159.0	88.9	2.5	2.0	150	1.42
		4		108.0	2.5	2.5		1.38
					3.0	2.5		1.65
		5		133.0	2.5	2.5		1.51
					3.0	3.0		1.81
					3.0	2.5		2.47
8	X	4	219.1	108.0	3.5	2.5	155	2.88
		5		133.0	3.0	2.5		2.60
					3.5	3.0		3.03
		6		159.0	3.0	2.5		2.74
					3.5	3.0		3.20
10	X	5	267.0	133.0	3.0	2.5	210	3.30
					4.0	3.0		4.40
		6		159.0	3.0	2.5		3.49
					4.0	3.0		4.65
		8	219.1	219.1	3.0	3.0		4.25
					4.0	3.5		5.00
12	X	6	323.9	159.0	4.0	2.5	210	-
					5.0	3.0		7.00
		8		219.1	4.0	3.0		6.30
					5.0	3.5		7.90
		10		267.0	4.0	3.0		6.88
					5.0	4.0		8.60
14	X	8	368.0	219.1	4.0	3.0	300	9.76
					5.5	3.5		13.42
		10		267.0	4.0	3.0		10.57
					5.5	4.0		14.53
		12	323.9	323.9	4.0	4.0		11.53
					5.5	5.0		15.85
16	X	10	419.1	267.0	4.0	3.0	300	12.38
					6.0	4.0	325	18.57
		12		323.9	4.0	4.0	300	13.42
					6.0	5.0	325	20.13
					4.0	4.0	300	14.22
		14		368.0	4.0	5.5	325	21.33

CONCENTRIC REDUCER 16bar

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

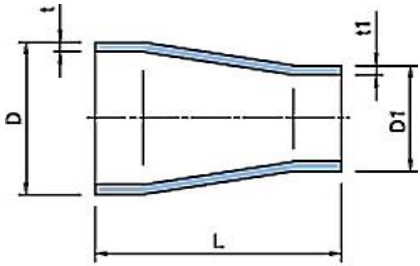


(SEAMLESS TYPE)

Outside diameter of pipe				Wall		Center to end	Weight	
Nominal (Inch)			D (mm)	D1 (mm)	t (mm)	t1 (mm)	L (mm)	(kg)
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	45.0	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
12	X	6	323.9	159.0	5.5	3.0	203	7.39
		8		219.1		4.0		8.33
		10		267.0		4.5		9.09
14	X	8	368.0	219.1	6.5	4.0	330	17.28
		10		267.0		4.5		18.73
		12		323.9		5.5		20.44
16	X	10	419.1	267.0	7.0	4.5	356	23.51
		12		323.9		5.5		25.51
		14		368.0		6.5		27.04
18	X	12	457.2	323.9	8.0	5.5	381	32.71
		14		368.0		6.5		34.61
		16		419.1		7.0		36.80
20	X	14	508.0	368.0	8.5	6.5	508	52.07
		16		419.1		7.0		55.17
		18		457.2		8.0		57.48
24	X	16	610.0	419.1	10.5	7.0	508	75.49
		18		457.2		8.0		78.34
		20		508.0		8.5		82.15
28	X	18	711.0	457.2	12.0	8.0	610	117.58
		20		508.0		8.5		122.82
		24		610.0		10.5		133.30
32	X	24	813.0	610.0	13.5	10.5	610	161.42
		28		711.0		12.0		173.09
36	X	24	914.0	610.0	15.5	10.5	610	274.48
		28		711.0		12.0		287.89
		32		813.0		13.5		301.43

CONCENTRIC REDUCER 20bar

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

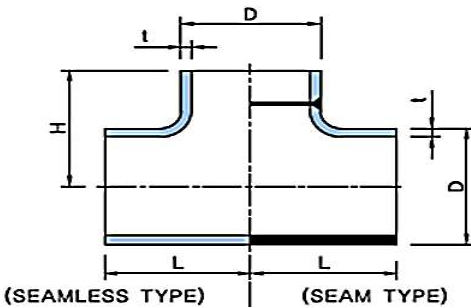


(SEAMLESS TYPE)

Outside diameter of pipe					Wall		Center to end	Weight
Nominal (Inch)			D (mm)	D1 (mm)	t (mm)	t1 (mm)	L (mm)	(kg)
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	2.5	51	0.10
		1		30.0		2.5		0.11
1 1/2	X	3/4	45.0	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
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

EQUAL TEE 10bar and ■14bar

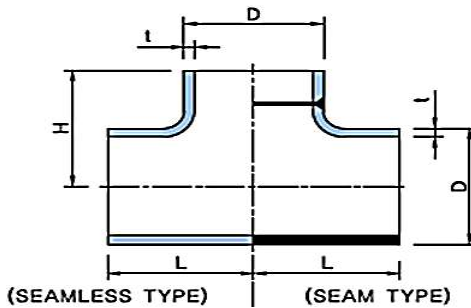
MATERIAL : Cu-Ni 90/10, Cu-Ni 70/30
DIMENSION : DIN 86088
1/2" ~8" : SEAMLESS TYPE
10" ~12": SEAMLESS or SEAM WELDED TYPE
14" & OVER : SEAM TYPE



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
3/4	25.0	1.5	29	29	0.07
1	30.0	1.5	38	38	0.10
1 1/4	38.0	1.5	48	48	0.13
1 1/2	44.5	1.5	57	57	0.13
2	57.0	1.5	64	64	0.29
2 1/2	76.1	2.0	76	76	0.65
3	88.9	3.5	86	86	0.82
		■ 2.5			1.03
4	108.0	2.5	105	105	1.60
5	133.0	2.5	124	124	2.80
		■ 3.0			3.36
6	159.0	2.5	143	143	4.40
		■ 3.0			5.28
8	219.1	3.0	178	178	12.80
		■ 3.5			14.95
10	267.0	3.0	216	216	16.60
		■ 4.0			22.10
12	323.9	4.0	254	254	31.50
		■ 5.0			39.40
14	368.0	4.0	279	279	39.40
		■ 5.5			54.20
16	419.1	4.0	305	305	55.10
		■ 6.0			82.65
18	457.2	4.0	343	343	67.65
		■ 6.0			101.50
20	508.0	4.5	381	381	92.80
		■ 6.5			134.10
24	610.0	5.0	432	432	126.60
		■ 8.0			202.60

EQUAL TEE 16bar

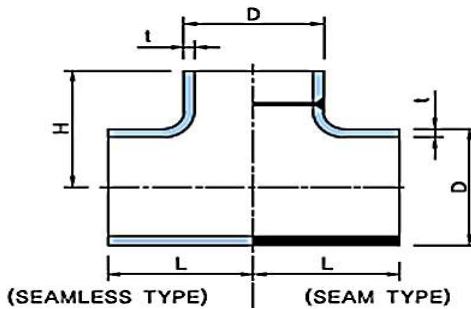
MATERIAL : Cu-Ni 90/10, Cu-Ni 70/30
DIMENSION : EEMUA Pub No. 146
1/2" ~8" : SEAMLESS TYPE
10" ~12": SEAMLESS or SEAM WELDED TYPE
14" & OVER : SEAM TYPE



Outside diameter of pipe		Wall thickness	Center to end		Weight
Nominal (Inch)	D (mm)	t (mm)	L (mm)	H (mm)	(kg)
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, 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 (Inch)	D (mm)	t (mm)	L (mm)	H (mm)	(kg)
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

Genaral Information Of Flanges

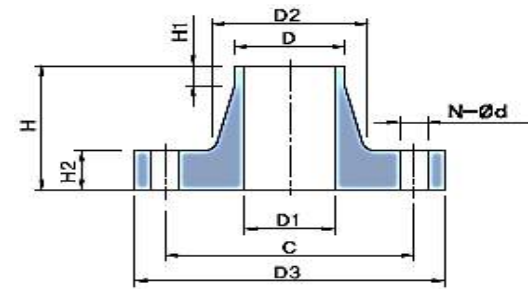
The national and international standards to which the flanges are produced are detailed in the relevant product tables.

Materials	Applied Cade	
Cu-Ni 90/10	EEMUA 7060X ASTM B151 C70600 BS 2872 CN102	Din CuNi 10Fe1Mn JIS H3300 C7060
Cu-Ni 70/10	ASTM B151 C71500 BS 2782 CN107	Din CuNi30 Mn1Fe JIS H3300 C7150
Cast bronze	ASTM B61, B62, JIS H5111 BC1~BC7	BS 1400LG ₂ C
Leaded yellow brass	ASTM B584 C85400	JIS H5101 YBSC ₂ (CAC202)
Steel	ASTM A105	JIS G3101 SS400



SOLID WELDING NECK FLANGE

MATERIAL : Cu-Ni 90/10, Cu-Ni 70/30
DIMENSION : EEMUA Pub. No.145 /16bar



Composite Flanges

Composite weld-neck and composite slip-on flanges are made up from two components, an internal flanges (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 overayed-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.

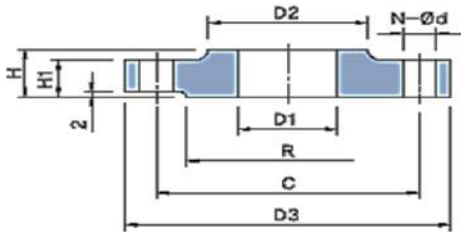
Packing

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

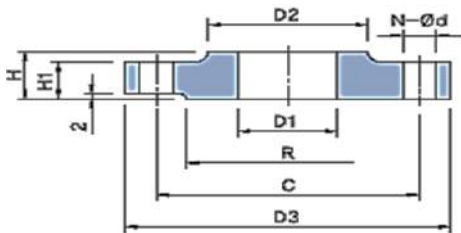
Outside diameter of pipe								Drilling of Bolt-Hole			Weight
Nominal (Inch)	Actual (mm)	D3 (mm)	H (mm)	H2 (mm)	D2 (mm)	D1 (mm)	H1 (mm)	C (mm)	N	Ød (mm)	(kg)
1/2	16.0	89	48	14	23	12.00	8	60.3	4	15.9	0.7
3/4	25.0	98	52	16	32	21.00	7	69.8			1.0
1	30.0	108	56		42	25.00	8	79.4			1.4
1 1/4	39.0	117	57	17	51	33.03		88.9			1.7
1 1/2	44.5	127	62	20	61	39.53	7	98.4			2.4
2	57.0	152	64	25	73	52.16	9	120.6	8	19.0	3.9
2 1/2	76.1	178	70	27	91	71.23	8	139.7			5.6
3	88.9	190			105	84.08		152.4			6.3
4	108.0	229	76		135	102.13		190.5		22.2	9.5
6	159.0	279	89		192	153.75		241.3			13.7
8	219.1	343	98	31	246	211.10		298.4	12	25.4	21.2
10	267.0	406			305	257.97		362.0			29.5
12	323.9	483		35	365	312.83		431.8		28.6	44.8
14	368.0	533	99	41	400	354.22		476.2	16		57.3
16	419.0	597	106	43	457	404.17		539.8	31.8	16	74.4
18	457.2	635	113	45	505	441.50		577.8			88.2
20	508.0	698	118		559	490.50		635.0	20	31.8	106.2
24	610.0	813	137	49	664	589.50		749.3			20

SOLID SLIP ON FLANGE

MATERIAL : Cu-Ni 90/10, Cu-Ni 70/30
DIMENSION : EEMUA Pub. No.145



Outside diameter of pipe								Drilling of Bolt-Hole			Weight
Nominal (Inch)	Actual (mm)	D3 (mm)	H (mm)	H1 (mm)	D1 (mm)	D2 (mm)	R (mm)	C (mm)	N	Ød (mm)	(kg)
1/2	16.0	89	20	14	16.07	23	34.9	60.3	4	15.9	1.15
3/4	25.0	98	24	16	25.08	32	42.9	69.8			1.20
1	30.0	108			30.38	47	50.8	79.4			1.30
1 1/4	38.0	117	26	17	38.10	51	63.5	88.9			1.70
1 1/2	44.5	127	26	20	44.60	61	73.0	98.4			1.80
2	57.0	152	28	25	57.23	73	92.1	120.6			2.90
2 1/2	76.1	178	32	27	76.33	91	104.8	139.7		19.0	4.30
3	88.9	190	34		89.13	105	127.0	152.4			4.40
4	108.0	229	40		108.38	135	157.2	190.5	8		7.30



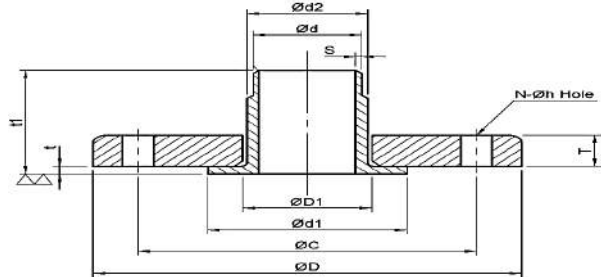
SOLID SLIP ON FLANGE

MATERIAL : Cu-Ni 90/10, Cu-Ni 70/30
DIMENSION : ASME B16.5 150LB

Outside diameter of pipe								Drilling of Bolt-Hole			Weight
Nominal (Inch)	Actual (mm)	D1 (mm)	D2 (mm)	D3 (mm)	H1 (mm)	H (mm)	R (mm)	C (mm)	N	Ød (mm)	(kg)
1/2	16.0	16.2	30.2	88.9	11.1	15.9	34.9	60.3	4	15.9	0.90
3/4	25.0	25.2	38.1	98.4	12.7		42.9	69.9			1.10
1	30.0	30.2	49.2	107.9	14.3	17.5	50.8	79.4			1.20
1 1/4	38.0	38.3	58.7	117.5	15.9	20.6	63.5	88.9			1.50
1 1/2	44.5	44.8	65.1	127.0	17.5	22.2	73.0	98.4			1.60
2	57.0	57.4	77.8	152.4	19.1	25.4	92.1	120.6			2.70
2 1/2	76.1	76.5	90.5	177.8	22.2	28.6	104.8	139.7		19.1	4.10
3	88.9	89.4	107.9	190.5	23.8	30.2	127.0	152.4			4.10
4	180.0	108.5	134.9	228.6		33.3	157.2	190.5	8	22.2	7.00
5	133.0	133.8	163.5	254.0		36.5	185.7	215.9			8.00
6	159.0	159.8	192.1	279.4	25.4	39.7	215.9	241.3			9.90
8	219.1	220.3	246.1	342.9	28.6	44.4	269.9	298.4			15.70
10	267.0	268.4	304.8	406.4	30.2	49.2	323.8	362.0	12	25.4	22.80
12	323.9	325.4	365.1	482.6	31.8	55.6	381.0	431.8			33.90
14	368.0	369.5	400.0	533.4	34.9	57.1	412.8	476.2		28.6	45.00
16	419.0	420.5	457.2	596.9	36.5	63.5	469.9	539.8			49.00
18	457.2	458.7	504.8	635.0	39.7	68.3	533.4	577.9	16	31.8	63.00
20	508.0	509.5	558.8	698.5	42.9	73.0	584.2	635.0			81.50
24	610.0	611.5	663.6	812.8	47.6	82.5	692.1	749.3		34.9	105.55

COMPOSITE WELDING NECK FLANGE 10bar and 14bar

MATERIAL : Internal : Cu-Ni 90/10, Cu-Ni 70/30
External : Carbon Steel
DIMENSION : DIN 86037



N.D	O.D	Inner Flange					Outer Flange				Bolt		Weight	
Inch	d (mm)	d1 (mm)	d2 (mm)	t (mm)	t1 (mm)	S (mm)	D (mm)	D1 (mm)	T (mm)	C (mm)	N	H (mm)	(kg)	
3/4	25.0	58	27.0	5	40	1.5	105	28	14	75	4	14	0.97	
1	30.0	68	32.0				115	33	16	85			1.34	
1 1/4	38.0	78	40.0				140	42		100			1.91	
1 1/2	44.5	88	46.5	150	50		110	2.27						
2	57.0	102	59.0	6	45		165	62		125		2.73		
2 1/2	76.1	122	78.0			2.0	185	81	145	3.29				
3	88.9	138	91.0	7	50	2.0	200	94	18	160	8	18	4.16	
						2.5							220	113
4	108.0	158	110.0			2.5	250	138		210			4.75	
						3.0				240			6.05	
5	133.0	188	135.5			2.5	285	164		240			6.10	
				3.0		20			295	7.60				
6	159.0	212	161.5	9		2.5	340	225	20	295		12	22	7.70
						3.0								395
8	219.1	268	222.0			2.5	445	331	24	400	10.35			
						3.0					505			375
10	267.0	320	270.0			11	4.0	565	426	26	515			16
				5.0	615		465						28	
12	323.9	370	327.0	4.0	670		517	30	620	17.40				
				5.5						780	618		32	
14	368.0	430	371.0	12	5.5		615	465	28	565	20	30	22.95	
					6.0	670							517	
16	419.1	482	422.0		4.0	780	618	32	725	28.65				
					6.0					670			517	
18	457.2	530	460.0		4.5	780	618	32	725	35.15				
				6.5	670					517		30	620	41.65
20	508.0	585	511.0	14	60	5.0	780	618	32	725		20	30	42.90
						8.0								670
24	610.0	685	613.0			5.0	780	618	32	725	57.65			
						8.0					670			517

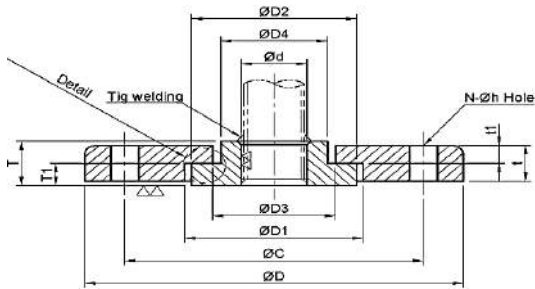
COMPOSITE SLIP ON FLANGE

MATERIAL : Internal : Cu-Ni 90/10
External : Carbon Steel

DIMENSION : JIS F7804 5K

Internal : Based on BS4501

External : Based on JIS B2210



JIS 5K	PIPE O.D (mm)	Inner Flange					Outer Flange						Bolt		Weight
		d (mm)	D2 (mm)	D4 (mm)	T (mm)	T1 (mm)	D (mm)	D1 (mm)	D3 (mm)	C (mm)	t (mm)	t1 (mm)	N	H (mm)	
50	57.0	57.3	84	67	20	7	130	86	70	105	14	8	4	15	1.15
65	76.1	76.4	109	86			155	111	89	130					1.58
80	88.9	89.2	120	101			180	122	104	145					2.38
100	108.0	108.5	140	121	22	10	200	142	124	165	18	10	8	19	2.95
125	133.0	133.5	175	146			235	177	150	200					4.03
150	159.0	159.5	205	173			265	209	177	230					5.44
200	219.1	219.6	251	234	24	10	320	255	238	280	20	12	8	8	6.39
250	267.0	267.5	313	282	28	12	385	317	286	345			12	23	10.86
300	323.9	324.6	361	342	32		430	365	346	390					12.33
350	368.0	368.7	405	386	34		480	409	390	435					15.67
400	419.1	419.8	460	439	36	14	540	464	444	495	30	20	16	25	20.20
450	457.2	457.9	518	777	38		605	522	482	555					30.13
500	508.0	508.7	568	531	40		655	572	537	605					34.33
550	558.0	558.7	628	581	42	15	720	632	587	665	38	25	20	27	46.18
600	610.0	611.0	678	635			770	682	641	715					49.42
700	711.0	712.0	782	736			875	786	744	820					57.53
800	812.8	814.1	887	841	46	18	995	891	849	930	38	24	24	33	74.44
900	914.0	915.5	987	944			1095	991	952	1030					82.33

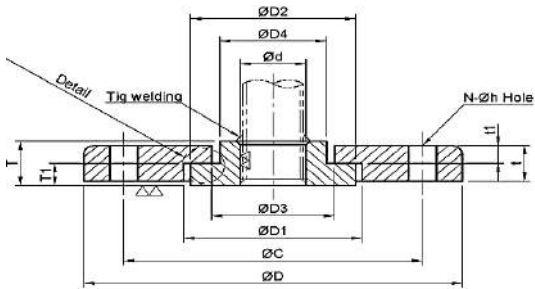
COMPOSITE SLIP ON FLANGE

MATERIAL : Internal : Cu-Ni 90/10
External : Carbon Steel

DIMENSION : JIS F7804 10K

Internal : Based on BS4501

External : Based on JIS B2210



JIS 10K	PIPE O.D (mm)	Inner Flange					Outer Flange						Bolt		Weight
N.D		d (mm)	D2 (mm)	D4 (mm)	T (mm)	T1 (mm)	D (mm)	D1 (mm)	D3 (mm)	C (mm)	t (mm)	t1 (mm)	N	H (mm)	(kg)
50	57.0	57.3	84	67	20	7	155	87	70	120	14	8	4	19	1.72
65	76.1	76.4	109	86			175	112	89	140					2.10
80	88.9	89.2	120	101		8	185	123	104	150	16	10	8		2.42
100	108.0	108.5	140	121	22		10	210	143	124	175				18
125	133.0	133.5	175	146		24		10	250	179	150	210	20	12	
150	159.0	159.5	205	173	28		12		280	209	177	240			26
200	219.1	219.6	251	234		32		12	330	255	238	290	28	18	
250	267.0	267.5	313	282	34		14		400	317	286	355			30
300	323.9	324.6	361	342		36		15	445	365	346	400	32	22	
350	368.0	368.7	405	386	38		15		490	409	390	445			34
400	419.1	419.8	460	439		40		18	560	465	444	510	36	26	
450	457.2	457.9	518	477	42		18		620	523	482	565			38
500	508.0	508.7	568	531		44		18	675	574	537	620	40	30	
550	558.0	558.7	628	581	46		18		745	634	587	680			42
600	610.0	611.0	678	635		48		18	795	684	641	730	44	34	
700	711.0	712.0	782	736	50		18		905	790	744	840			46
800	812.8	814.1	887	841		52		18	1020	895	849	950	48	38	
900	914.0	915.5	987	944	1120		995		952	1050	1000	950			1000