DSPF

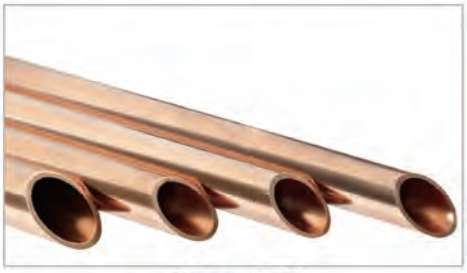
The World Best Donghwa Special Pipe & Fitting

Pipes Division

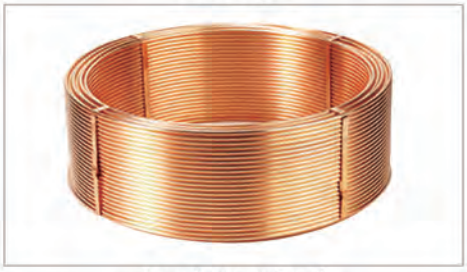
Pipe Products

Copper and Copper alloy tubes for industry are superior at Thermal conductivity, Corrosion resistance, Physical properties and Mechanical properties. Using in the field of Shipbuilding, Heat exchanger, Heating coil, Desalination plants, Petrochemistry equipment and offshore project.

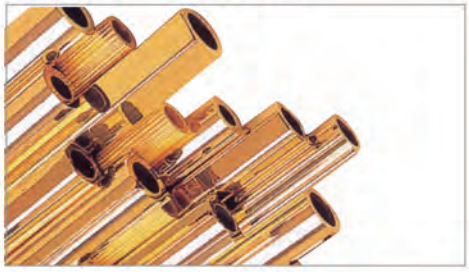
CuNi Pipe



Copper Tube



Level wound coil

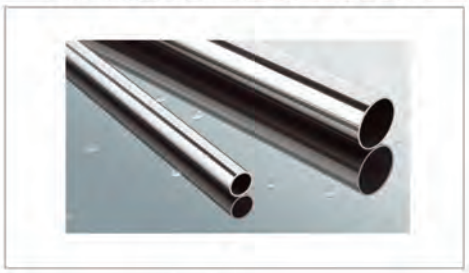


Brass tube

Pan cake coil

Aluminum inner fin tube & fin tube

Round Bar



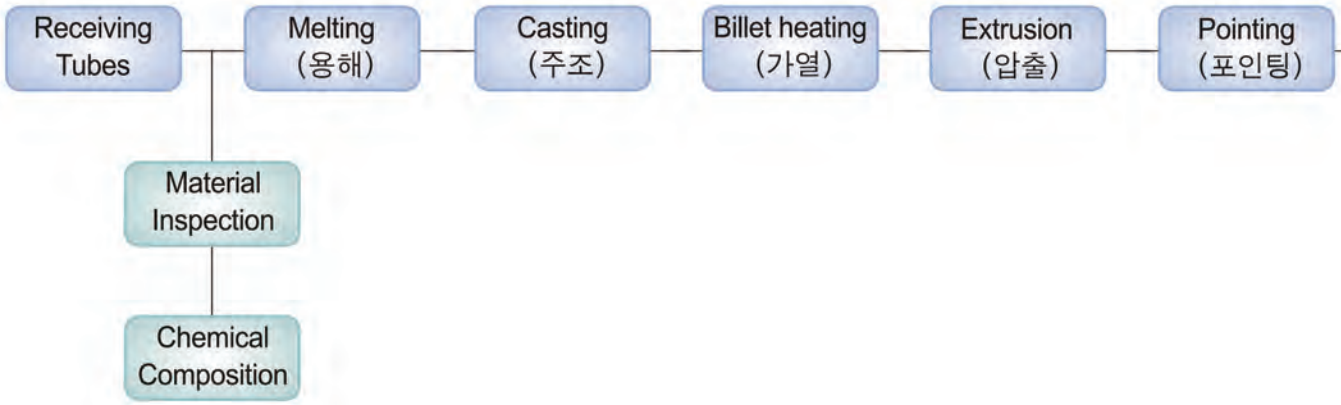
Stainless Pipe

PRODUCTS

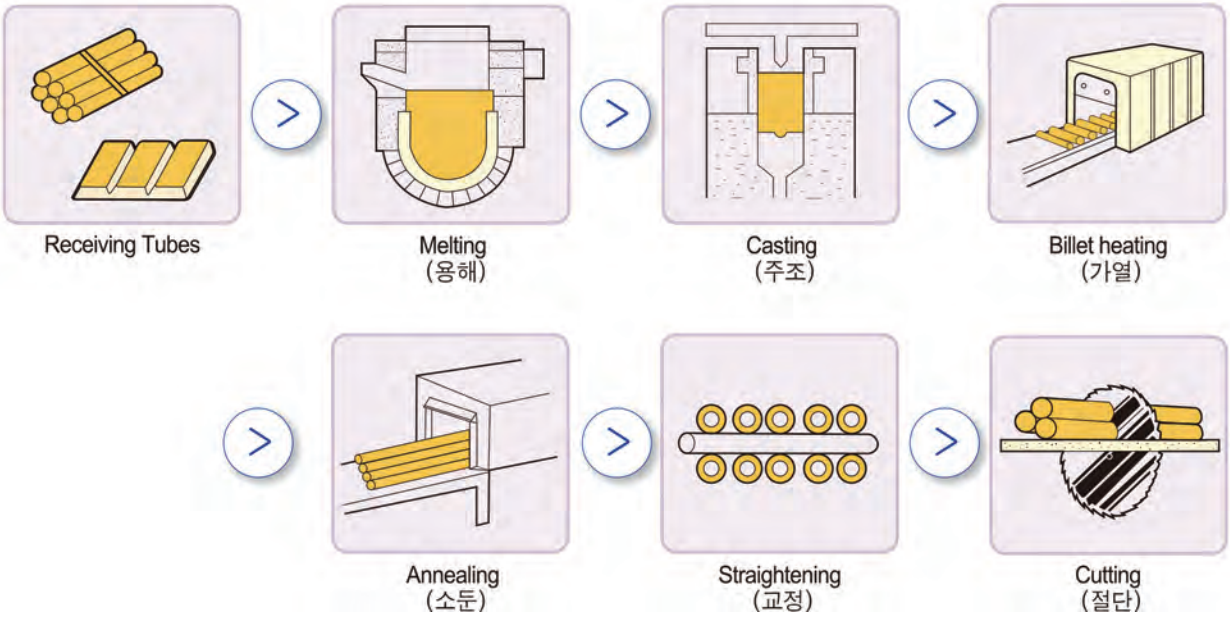
- COPPER NICKEL PIPES
- COPPER TUBES
- COPPER CHROMIUM TUBES
- PHOSPHOR BRONZE
- OXYGEN-FREE ELECTROLYTIC COPPER
- Silicon bronze
- AL-BRASS / BRASS TUBES
- ALUMINUM TUBES
- COPPER BARS
- HEAT-TRANSFER TUBES
- COPPER CHROMIUM BARS
- STAINLESS PIPE(SEAMLESS)

Class	Certificate Items
B.V.	CUNI, AL-BRASS, ADMIRALTY, COPPER TUBES.
L.R.	
A.B.S.	
D.N.V.	
K.R.	
RINA	
G.L.	

Manufacturing



Manufacturing process



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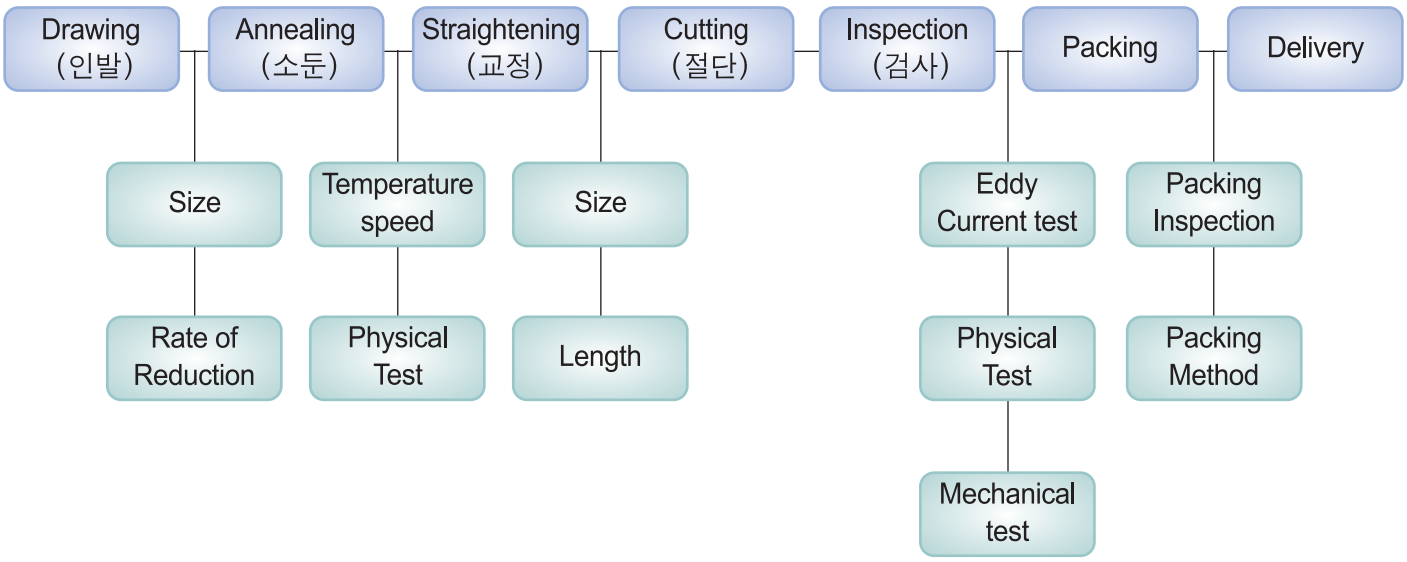
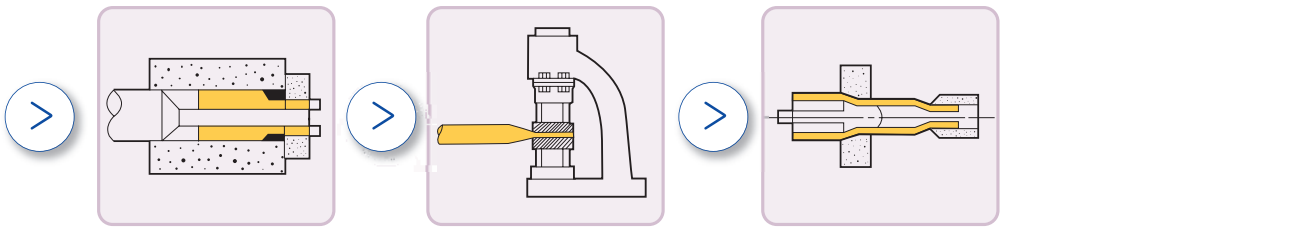
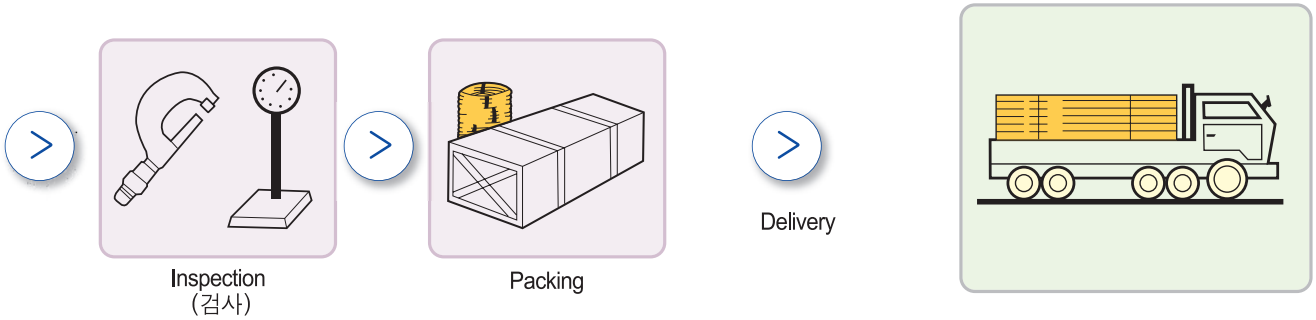

Drawing (인발)
Annealing (소둔)
Straightening (교정)
Cutting (절단)
Inspection (검사)
Packing
Delivery
Size
Rate of Reduction
Temperature speed
Physical Test
Size
Length
Eddy Current test
Physical Test
Mechanical test
Packing Inspection
Packing Method


동화 TCA


Extrusion (압출)
Pointing (포인팅)
Drawing (인발)


Inspection (검사)
Packing
Delivery

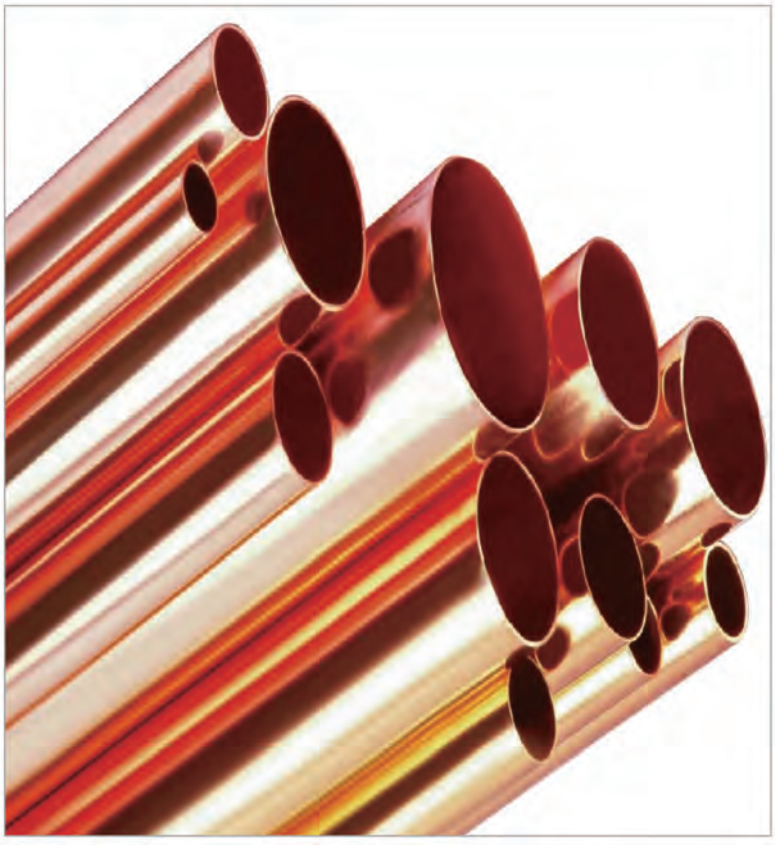
Manufacturing Capacty of Seamless

PRODUCT	O.D(MM)		THICKNESS(MM)		LENGTH(M)	
	MAX	MIN	MAX	MIN	STRAGHT	R/L
CUNI 90/10 TUBE C7060T	419.1	6.0	14.0	0.5	23.0	
CUNI 70/30 TUBE C7150T	219.1	6.0	8.5	0.6	23.0	
ADMIRALTY BRASS TUBE C4430T	110.0	9.0	10.0	0.5	23.0	
AL-BRASS TUBE C6870T C6871T C6872T	 110.0 110.0 110.0	 9.0 9.0 9.0	 10.0 10.0 10.0	 0.5 0.5 0.5	 23.0 23.0 23.0	
BRASS TUBE C2600T C2700T	 110.0 110.0	 3.0 3.0	 10.0 10.0	 0.2 0.2	 23.0 23.0	
COPPER TUBE C1100T C1201T C1220T	 219.0 219.0 219.0	 3.0 3.0 3.0	 15.0 15.0 15.0	 0.4 0.4 0.4	 23.0 23.0 23.0	 10.0 ~ 150.0

- TEMPER : H, 1/2H, 1/4H, OL, O
- Limits for unnamed size may be established by agreement between manufacturer and purchaser
- Chemical composition is followed by JIS But other specs also be matched

Copper & Copper Alloy

- PRODUCT : PIPE
- MATEAL : Copper Alloy
- Type : C7060, C7150, C2600, C2700, C4430, C6870, C6871, C6872
- CUNI 90/10
  SIZE : OD(MAX : 419.1mm MIN 6.0mm) THICKNESS (MAX : 14mm, MIN : 0.5mm) up to LENGTH : 23.0mm
- CUNI 70/30
  SIZE : OD(MAX : 219.1mm MIN 6.0mm) THICKNESS (MAX : 8.5mm, MIN : 0.6mm) up to LENGTH : 23.0mm
- ADMIRALTY BRASS
  SIZE : OD(MAX : 110mm MIN 9.0mm) THICKNESS (MAX : 10mm, MIN : 0.5mm) up to LENGTH : 23.0mm
- AL-BRASS
  SIZE : OD(MAX : 110mm MIN 9.0mm) THICKNESS (MAX : 10mm, MIN : 0.5mm) up to LENGTH : 23.0mm
- BRASS
  SIZE : OD(MAX : 110mm MIN 3.0mm) THICKNESS (MAX : 10mm, MIN : 0.5mm) up to LENGTH : 23.0mm



- PRODUCT : PIPE
- MATEAL : Copper
- Type : C1100, C1220, C1201
- SIZE : OD(MAX : 219.0mm, MIN 3.0mm) THICKNESS(MAX : 15mm, MIN : 0.4mm) up to LENGTH : 23.0mm

크롬동 (Chromium Copper)

Item	Alloy No.	Common Characteristics and Usage
크롬동 (Chromium Copper)	C18200	- Resistance welding electrode - Copper alloy material containing 0.4 to 1.2% of Cr - High softening temperature and conductivity - Excellent thermal conductivity and strength
	C18150	
베릴륨동 (Beryllium Copper)	C17200	- High tensile energizing parts, discharge machining, electrodes

• Chemical Composition

Alloy No.	Cr	Si	Fe	Pb	Zr	Al	Be	Cu
C18200	0.6~1.2	0.1 MAX	0.1 MAX	0.5 MAX				Balance
C18150	0.5~1.5	0.1 MAX			0.5~0.25			Rem
C17200		0.2 MAX		0.2 MAX		0.2 MAX	1.8~2.0	Rem

* Type: Rods, Tube/Pipe (Order Production)

인청동 (Phosphor bronze)

Item	Alloy No.	Common Characteristics and Usage
인청동 (Phosphor Bronze)	C5111	- Good fatigue resistance, corrosion resistance, wear resistance - Rods are used for gears, cams, fittings, shafts, bearings, small screws, bolts, nuts, perturbing parts, connectors, hanger for trolleys - Lines are used for coil springs, spiral springs, snap buttons, electrical bind wires, wire mesh, header materials, washers, etc.
	C5102	
	C5191	
	C5212	

• **Chemical Composition**

Alloy No.	Cu	Pb	Fe	Sn	Zn	Be	Mn	Ni	Ni+Co	Ni+Co+Fe	P	Cu+Sn+P	Cu+Be+Ni+Co+Fe
C5111	-	-	-	3.5~4.5	-	-	-	-	-	-	0.03~0.35	99.5 MIN	-
C5102	-	-	-	4.5~5.5	-	-	-	-	-	-	0.03~0.35	99.5 MIN	-
C5191	-	-	-	5.5~7.0	-	-	-	-	-	-	0.03~0.35	99.5 MIN	-
C5212	-	-	-	7.0~9.0	-	-	-	-	-	-	0.03~0.35	99.5 MIN	-

* Type: Rods, Tube/Pipe, Bus bar, Plate (Order Production)

실리콘 청동 (Silicon bronze)

Item	Alloy No.	Common Characteristics and Usage
실리콘 청동 (Silicon Bronze)	C6510 C6550	- Aircraft: Hydraulic line - Hardware: Bolts, burs, butts, clamps, cotter pins, hinges, offshore structures, nails, nuts, polyline hardware, screws. - Industry: Bearing plates, bushings, cables, channels, chemical equipment, heat exchanger tubes, kettle, piston rings, tanks, rivets, screen cloth and wear, Screen plate, shaft - Marine: Propeller shaft. AB65 Agua Bronze

• **Chemical Composition**

Alloy No.	Cu	Pb	Fe	Zn	Sn	P	Mn	Ni	Si	Cu+Sn+P	Remark
C6510	REM	0.05 MAX	0.08 MAX	1.5 MAX	----	----	0.7 MAX	----	0.8~2.0	----	
C6550	REM	0.05 MAX	0.08 MAX	1.5 MAX	----	----	1.5 MAX	0.6 MAX	2.8~3.8	----	

* Type: Rods, Tube/Pipe, Bus bar, Plate(Order Production)

무산소동 (Oxygen-free electrolytic copper)

• Chemical Composition

Alloy No.	Cu	Ag	O2	Common Characteristics and Usage
C10100	99.99%MIN	-	5ppm MAX	- Excellent electrical, thermal conductivity, ductility and drawability - Good weldability, corrosion resistance and weatherability. - No hydrogen embrittlement even when heated in a reducing atmosphere of high temperature - Used for heat exchanger, electricity, chemical industry, water supply and hot water supply
C10200	99.99%MIN	-	10ppm MAX	
C10400	99.99%MIN	0.027% MIN	10ppm MAX	
C10500	99.99%MIN	0.034% MIN	10ppm MAX	
C10700	99.99%MIN	0.085% MIN	10ppm MAX	

* Type: Rods, Tube/Pipe, Bus bar, Plate (Order Production)

Pan Cake Coil & Level Wound Coil

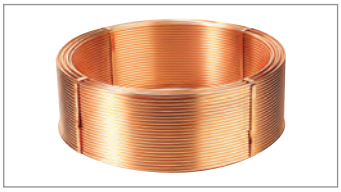
▷ Chemical Composition

Spec	Alloy No.	Chemical Composition (%)		Applications
		Cu	P	
JIS H3300 ASTM B111 DIN 1787 BS 2871	C1220	99.90 이상	0.015 – 0.040	Heatexchanger, Petrochemical

▷ Mechanical Properties

Temper	Alloy No.	Tensile Test			Hardness Test					
		OD (mm)	Thinkness (mm)	Tensile Strength Kgf/㎟ (N/㎟)	Elongation %	Thinkness (mm)	Rockwell			Grain Size (mm)
							HR 30T	HR 15T	HRF (Reter)	
O	C1220T-O C1220TS-O	4-250	0.25-30	21Min (205Min)	40Min	0.6Min	-	60Max	50Max	0.025-0.060
OL	C1220T-OL C1220TS-OL	4-250	0.25-30	21Min (205Min)	40Min	0.6Min	-	65Max	55Max	0.040Max
1/2H	C1220T-1/2H C1220TS-/2H	4-250	0.25-25	21Min (245-325)	-	-	30-60	-	-	-
H	C1220T-H	25Max	0.25-3	32Min (315Min)	-	-	55Min	-	-	-
		25-50	0.9-4		-	-	-	-	-	
		50-100	1.5-6		-	-	-	-	-	
		100-200	2-6	28Min (275Min)	-	-	-	-	-	
		200-350	3-8	26Min (255Min)	-	-	-	-	-	

▷ PRODUCTS

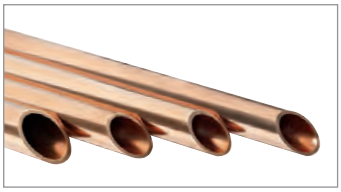


Level Wound Coil

We supply them based on coil weight but it depends on customer`s request.

Pan Cake Coil

Average Length 15M but we are able to produce up to 12~30M length according to customer`s order.



Straight Tube

Up To 12M Length

Heat-Exchanger Pipe

MATERIAL :

ASTM A 213	SEAMLESS FERRITIC ALLOY-STEEL

Outside diameter of tube		Wall thickness		Theoretical weight		Wall thickness		Theoretical weight	
actual inch	actual mm	actual inch	actual mm	Lb / Ft	Kg / m	actual inch	actual mm	Lb / Ft	Kg / m
0.500	12.70	0.035	0.89	0.578	0.262				
0.625	15.88	0.048	1.24	0.968	0.439	0.090	2.30	1.717	0.779
		0.064	1.65	1.257	0.570	0.102	2.60	1.898	0.861
		0.084	2.11	1.526	0.692	0.114	2.90	2.070	0.939
0.750	19.05	0.048	1.24	1.173	0.532	0.090	2.30	2.110	0.957
		0.064	1.65	1.528	0.693	0.120	2.60	2.337	1.060
		0.083	2.11	1.867	0.847	0.114	2.90	2.557	1.160
0.854	21.70	0.048	1.24	1.351	0.613	0.090	2.30	2.447	1.110
		0.064	1.65	1.766	0.801	0.120	2.60	2.734	1.240
		0.083	2.11	2.163	0.981	0.114	2.90	2.998	1.360
1.000	25.40	0.048	1.24	1.594	0.723	0.090	2.30	2.910	1.320
		0.064	1.65	2.092	0.949	0.120	2.60	3.263	1.480
		0.083	2.11	2.579	1.170	0.114	2.90	3.594	1.630
1.070	27.20	0.048	1.24	1.713	0.777	0.090	2.30	3.153	1.430
		0.064	1.65	2.249	1.020	0.120	2.60	3.505	1.590
		0.083	2.11	2.778	1.260	0.114	2.90	3.880	1.760
1.251	31.80	0.048	1.24	2.017	0.915	0.090	2.30	3.726	1.690
		0.064	1.65	2.646	1.200	0.120	2.60	4.167	1.890
		0.083	2.11	3.263	1.480	0.114	2.90	4.608	2.090
1.338	34.00	0.064	1.65	2.844	1.290	0.102	2.60	4.475	2.030
		0.083	2.11	3.505	1.590	0.114	2.90	4.960	2.250
		0.090	2.30	4.012	1.820	0.125	3.20	5.423	2.460
1.500	38.10	0.064	1.65	3.197	1.450	0.102	2.60	5.071	2.300
		0.083	2.11	3.968	1.800	0.114	2.90	5.600	2.540
		0.090	2.30	4.519	2.050	0.125	3.20	6.129	2.780
1.681	42.70	0.083	2.11	4.475	2.030	0.114	2.60	6.349	2.880
		0.090	2.30	5.093	2.310	0.125	2.90	6.945	3.150
		0.102	2.60	5.732	2.600	0.137	3.20	7.540	3.420
1.771	45.00	0.083	2.11	4.718	2.140	0.114	2.90	6.702	3.040
		0.090	2.30	5.401	2.450	0.125	3.20	7.341	3.330
		0.102	2.60	6.063	2.750	0.137	3.50	7.981	3.620
1.913	48.60	0.083	2.11	5.115	2.320	0.114	2.90	7.275	3.300
		0.090	2.30	5.842	2.650	0.125	3.20	7.981	3.620
		0.102	2.60	6.570	2.980	0.137	3.50	8.664	3.930
2.000	50.80	0.083	2.11	5.357	2.430	0.114	2.90	7.628	3.460
		0.090	2.30	6.129	2.780	0.125	3.20	8.356	3.790
		0.102	2.60	6.878	3.120	0.137	3.50	9.083	4.120
2.125	54.00	0.083	2.11	5.710	2.590	0.114	2.90	8.135	3.690
		0.090	2.30	6.526	2.960	0.125	3.20	8.929	4.050
		0.102	2.60	7.341	3.330	0.137	3.50	9.700	4.400
2.248	57.10	0.083	2.11	6.063	2.750	0.114	2.90	8.642	3.920
		0.090	2.30	6.923	3.140	0.125	3.20	9.480	4.300
		0.102	2.60	7.385	3.350	0.137	3.50	10.296	4.670
2.374	60.30	0.083	2.11	6.393	2.900	0.125	2.90	9.149	4.150
		0.090	2.30	7.319	3.320	0.137	3.20	10.031	4.550
		0.102	2.60	8.245	3.740	0.157	3.50	10.913	4.950
2.500	63.50	0.090	2.30	7.738	3.510	0.125	3.20	10.604	4.810
		0.102	2.60	8.686	3.940	0.137	3.50	11.530	5.230
		0.114	2.90	9.656	4.380	0.157	4.00	13.073	5.930
2.559	65.00	0.090	2.30	7.915	3.590	0.125	3.20	10.869	4.930
		0.102	2.60	8.907	4.040	0.137	3.50	11.817	5.360
		0.114	2.90	9.899	4.490	0.157	4.00	13.404	6.080
2.755	70.00	0.090	2.30	8.554	3.880	0.125	3.20	11.729	5.320
		0.102	2.60	9.634	4.370	0.137	3.50	12.787	5.800
		0.114	2.90	10.692	4.850	0.157	4.00	14.506	6.580
3.000	76.20	0.090	2.30	9.326	4.230	0.125	3.20	12.831	5.820
		0.102	2.60	10.516	4.770	0.137	3.50	13.977	6.340
		0.114	2.90	11.685	5.300	0.157	4.00	15.807	7.170