DongHwa brings you good luck~

Established 1979

DSPF

The World Best Donghwa Special Pipe & Fitting

DongHwa TCA

Partnership & Certificate

HYUNDAI HEAVY INDUSTRIES CO.,LTD.

HYUNDAI MIPO DOCKYARD CO.,LTD.

HYUNDAI SAMHO HEAVY INDUSTRIES CO.,LTD.

DSME

SAMSUNG HEAVY INDUSTRIES

Company History

1979. 03.	Established Dong Hwa Metal
1990. 02.	Changed company name into Dong Hwa Metal Co., LTD
1991. 08.	Achieve KS certification
1992. 12.	Registered as a partner company with Hyundai Heavy Industry
1993. 11.	Established Welding business section
1993. 12.	Approved as military service person's workplace
1994. 01.	Achieve additional KS certification
1994. 06.	Registered as a trading company
1997. 11.	Registered as a partner company wih Daewoo Heavy Industries
1997. 12.	Appointed as a promising small&midium sized company by Kookmin Bank
1998. 01.	Established a second factory
1998. 03.	Registered as a partner company with by Hyundai Mipo Shipyard
1998. 04.	Registered as a partner company with by Samsung Heavy Industries
1998. 11.	Approval for KS A 9001:2001 / ISO 9001:2000 QC system
1999. 04.	Appointed as a promising small & medium sized company by Small Business Corporation
1999. 09.	Moved factory to Yangsan
2000. 03.	Received a prize from Korea Internation Trade Association
2000. 05.	Approval from Lloyd's Register of Shipping
2000. 12.	Registered Utility Model Patent for gas torch welding nozzle
2001. 11.	Received a prize for $1million export
2001. 11.	Received a prize from Minister of Commerce
2002. 02.	Approval from BEREAU VERITAS INTERNATIONAL REGISTER
2002. 06.	Approval for copper pipe as self-inspection item by Hyundai Heavy Industries
2002. 06.	Appointed as a promising export company
2002. 07.	Enlarged factory capacuty
2002. 11.	Approval from A.B.S
2003. 06.	Approval from D.N.V
2003. 04.	Approval from K.R
2003. 04.	Equiped with 3 1/2" Twin Cold Pilger Mill
2003. 06.	Approval from B.V
2003. 08.	Equiped with additional consecutive furnace
2004. 01.	Changed company name into Dong Hwa TCA
2004. 11.	Received a prize for $3million export
2004. 11.	Received a prize from
2004. 02.	Approval as a partner company with Dae Woo Shipyard
2005. 01.	Approval as a partner company with clean workplace from Korea Occupational Safety and Health Agency
2005. 05.	Appointed as a Inno-Biz from
2005. 06.	Appointed as a Venture company from Small and Midium Business Administration
2005. 06.	Approval from RINA
2005. 10.	Utility Model Patent for welding tip press

2006. 03.	Received a prize from district tax office
2006. 03.	Utility Model Patent for ring preventing tubes from bending
2006. 07.	Appointed as a high-tech company from KIBO Technology Fund
2006. 08.	Appointed as a leading company from Kook Min Bank
2006. 08.	Signed contract for industry and academy cooperation with Bu Kyung University
2006. 09.	Received a prize from Prime Minster
2006. 11.	Aquired a license for welding torch tip and gas diffuser connection structure
2006. 11.	Received a prize for $5million export
2007. 01.	Received a prize for 1st best enterpriser from yangsan city
2007. 02.	Approval As Manufacturer of Copper Alloy Tube From GS Caltex
2007. 05.	Aquired a license for a heat treatment formula of Precipitation Hardening-Type Copper Alloy Tubes or Bars for mass production
2007. 11.	Received a prize for $10million export
2008. 02.	Eatablished of The Metal Laboratory attached Dong Hwa T.C.A Co., LTD
2009. 03.	Received a prize for Tax-Player's day(Busan Regional Tax Office)
2010. 12.	The Best small & medium company membership & select world class company(Small & Medium business corporation)
2011. 11.	Received a prize from the mayor of Yang San-City
2011. 12.	Received a prize from Gyeongsang Province Governor " Prize of Gyeongnam Trading"
2012. 10.	Approval for ISO 14001: 2004 from ABS
2012. 10.	Aprroval for OHSAS 18001:2007 from ABS
2012. 11.	Renewal ISO 9001:2008 from ABS
2012. 11.	Received a prize for $30 million export
2013. 04.	Merged with Dong Hwa S&S, Took over KOREA NIPPLE
2013. 06.	Approval for KS A 9001:2001 / ISO 9001:2000 QC system (FACTORY4)
2013. 08.	Registered as a partner company with Hyundai Mipo Shipyard (FACTORY4)
2013. 08.	Approval from Lloyd's (FACTORY4)
2013. 08.	Approval from KS(C8460, B1533, B1541, B1543) (FACTORY4)
2013. 09.	Registered as a partner company with Hyundai Heavy Industry (FACTORY4)
2013. 12.	Received a prize from Ministry of SMEs and Startups
2015. 05.	Receive a prize from Korea International Business Association "Global CEO"
2016. 03.	Receive a prize from Gyeongsang Province Governor "Prize of Gyeongnam Small and Medium Enterprise"
2016. 04.	Selection of a company specializing in root technology
2017. 12.	Selection of Small and Medium Enterprises for Human Resources Development
2019. 11.	Receive a prize from Minister of Education
2020. 02.	Receive a prize from the Minister of Trade and Industry

Message From CEO

We, DONG HWA TCA CO., LTD (DHTCA) were established in 1979 to manufacture copper and copper alloy products and we have been supplying them to the various field of industry such as Shipbuilding, Heating coil, Heat exchanger, Desalination plants, Petrochemistry equipment, offshore etc.

We have a recognition of top quality from prominent companies of overseas country and domestic.

We obtained ISO 9001 quality system, ISO 14001 environmental management system, OHSAS 18001 occupational safety and health management system and various classes of certificates such as ABS, Lloyds, DNV, BV, KR through highest quality control system.

We have accumulated technology and abundant experience for over 35 years will satisfy the customers with the best delivery, the highest quality and the most competitive prices.

We are doing our utmost for customer satisfaction

We always stand by customer.
Please do not hesitate to contact us for all of your requirements and inquiries.

We sincerely hope you to give us continuous advice and interest.

PRESIDENT **TAE HO. SON**

• Basic Management Policy

1) The Slogan of Company
The quality is the foundation of our company

2) Top management policy this year

• Quality

TEST & INSPECTION

- Chemical Composition Test
- Dimension Inspection
- Surface Inspection
- Eddy Current Test
- Hydraulic or Pneumatic Test
- Mechanical & Physical Properties Test
- Tensile Strength
- Elongation
- Flattening
- Microscopic Structure
- Hydrogen Embrittlement
- Mercurous Nitrate
- Expansion
- Hardness Test Machine
- Bending

All of DONG HWA TCA products are passed the various test and severe inspection.

■ Eddy Current Test Machine ■

■ Portable Hardness Test Machine ■

■ Hardness Test Machine ■

■ Mounting press ■

■ Universal Test Machine ■

■ Hardnesstester ■

■ PMI ■

■ Microscope ■

■ Spectrometer ■

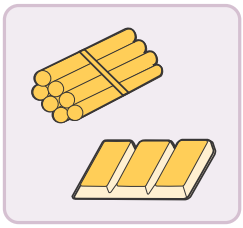
• Manufacturing

Receiving Tubes → Melting (용해) → Casting (주조) → Billet heating (가열) → Extrusion (압출) → Pointing (포인팅)

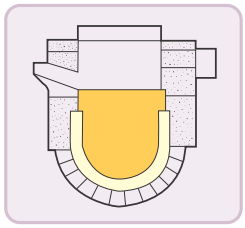
Material Inspection

Chemical Composition

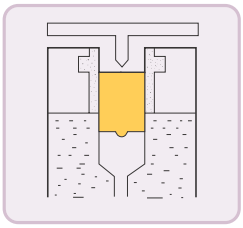
Manufacturing process



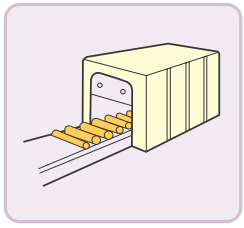
Receiving Tubes



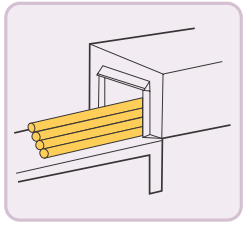
Melting
(용해)



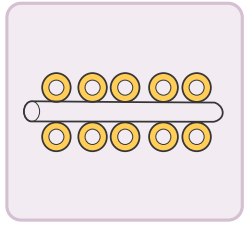
Casting
(주조)



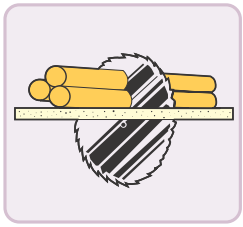
Billet heating
(가열)



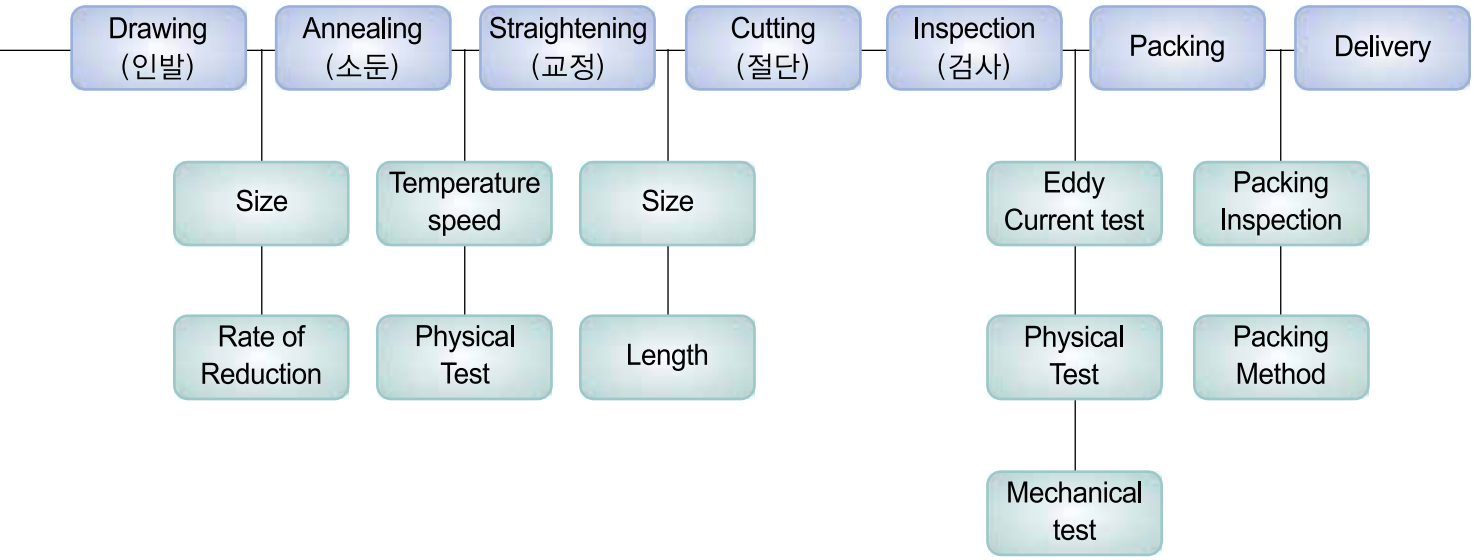
Annealing
(소둔)



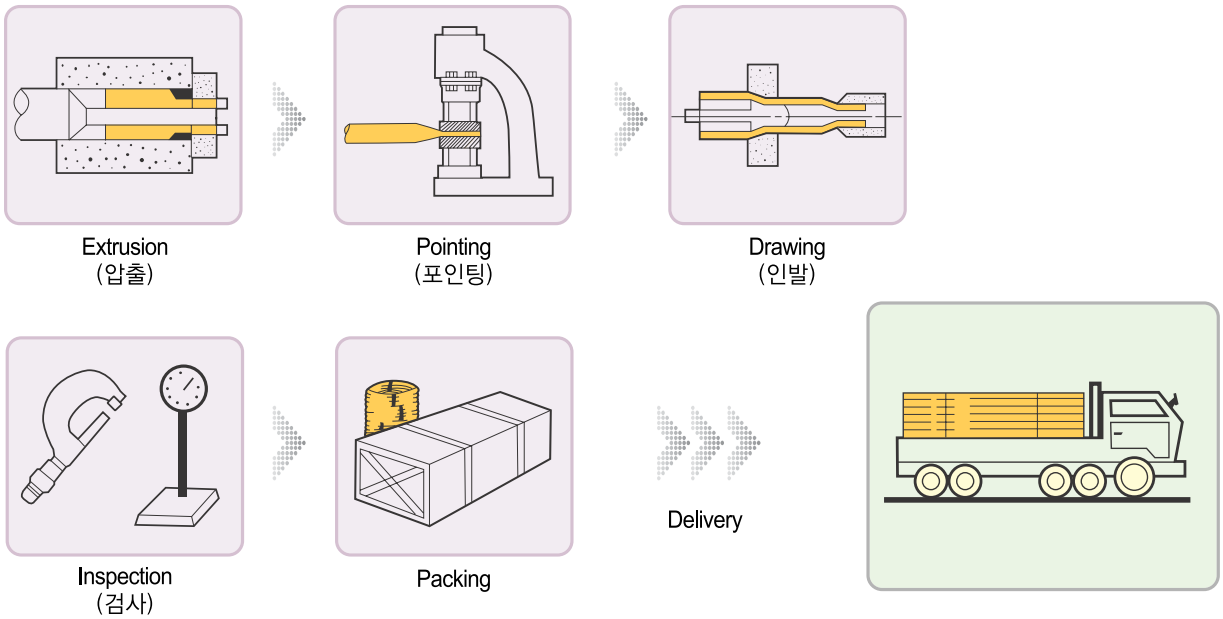
Straightening
(교정)



Cutting
(절단)


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

Contents

• Manufacturing Capacity of Seamless

PRODUCT		O.D(MM)		THICKNESS(MM)		LENGTH(M)	
		MAX	MIN	MAX	MIN	STRAGHT	R/L
CUNI 90/10 TUBE C7060T	seamless	419	6.0	9	0.5	16	
	welded	1067		17			
CUNI 70/30 TUBE C7150T	seamless	323.9	6.0	6.35	0.6	16	
	welded	813		17			
ADMIRALTY BRASS TUBE C4430T		110.0	9.0	10.0	0.5	16	
AL-BRASS TUBE							
C6870T		110.0	9.0	10.0	0.5	16	
C6871T		110.0	9.0	10.0	0.5	16	
C6872T		110.0	9.0	10.0	0.5	16	
BRASS TUBE							
C2600T		110.0	3.0	10.0	0.2	16	
C2700T		110.0	3.0	10.0	0.2	16	
COPPER TUBE							
C1100T		219.0	3.0	15.0	0.4	16	
C1201T		219.0	3.0	15.0	0.4	16	
C1220T		219.0	3.0	15.0	0.4	16	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

• Production Item

Tube Division

PRODUCTION	SPEC.				
	KS D5301 JIS H3300	ASTM	BS2871 (PART2)	EEMUA	DIN
Copper Nickel (90/10)tube / pipe	C7060T	C70600	CN102	C7060X	DIN 17644 CuNi10FeMn 2.0872
Copper Nickel (70/30) tube / pipe	C7150T	C71500	CN107		DIN 17644 CuNi30FeMn 2.0882
Copper tube / Pipe, LWC, Pan cake coil	C1220T	C12200	C102		DIN 1786 SFCuF37
Copper Chrom plating tube / Pipe					
Aluminium Brass tube / Pipe	C6870T C6871T C6872T	C68700			
Brass tube / Pipe	C2700T	C26000			
Admiralty Brass tube / Pipe	C4430T	C44300			DIN 17660
Copper Bus Bar					
Stainless steel tube / Pipe(seamless)	SUS 304, SUS 316				

• Production Capacity

Description	Capacity / Month	Size (Out Dia)		Remarks
		Min	Max	
Copper Tube	700 TON	3.0mm	219.0mm	
Brass Tube		9.0mm	110.0mm	
AL-Brass Tube		9.0mm	110.0mm	
Cu-Ni Tube (90/10)		6.0mm	1067mm	
Cu-Ni Tube (70/30)		6.0mm	913mm	
STAINLESS TUBE		16.0mm	55.0mm	
TOTAL	700 TON			

* TEMPER : H, 1/2H, 1/4H, OL, O

• Copper and Copper Alloy Tube & Pipe

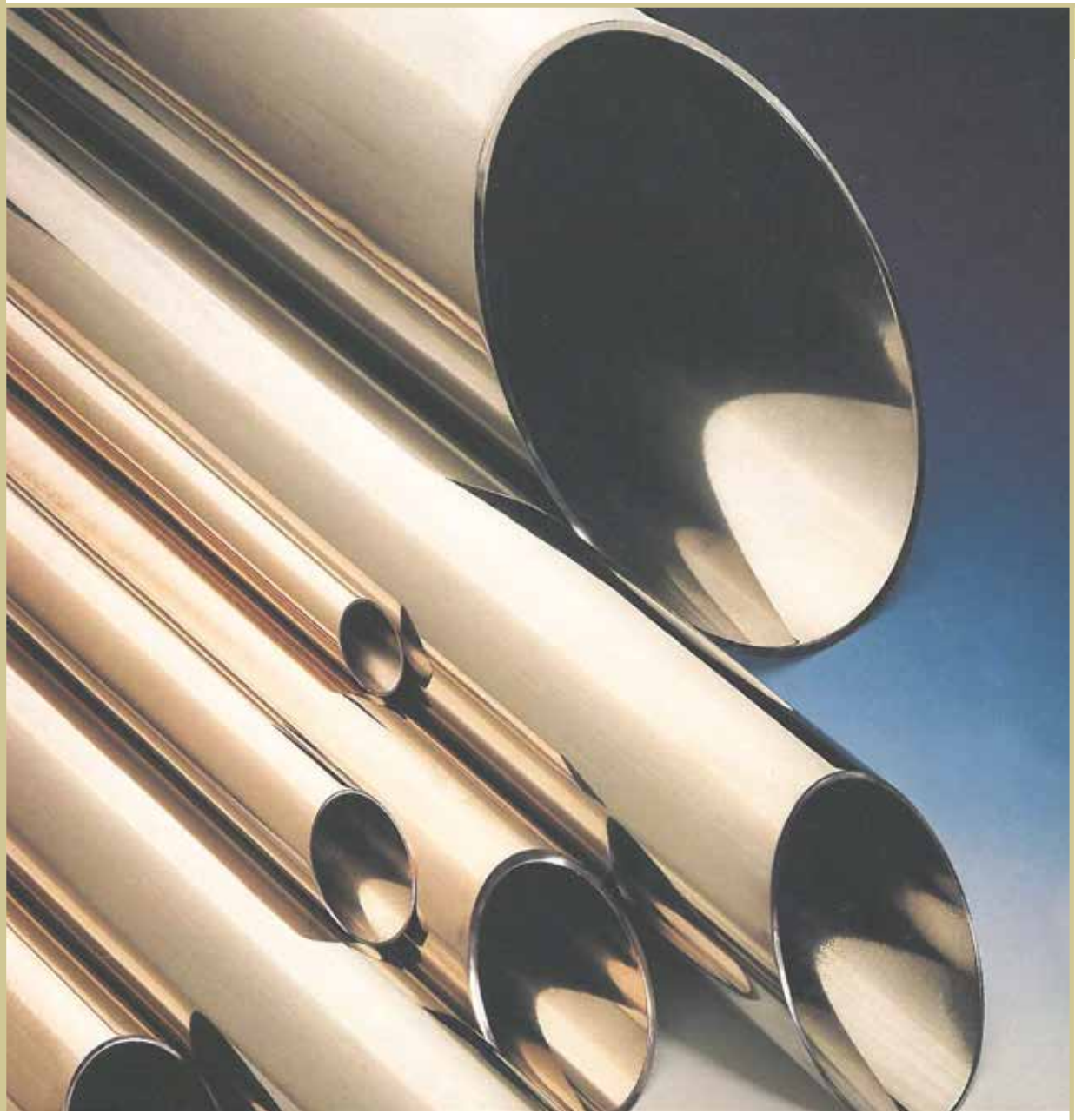
ITEM	Class	Chemical Composition (%)											Related Standards				
		Cu	Zn	Pb	Fe	P	Sn	Ni	Mn	Al	As	other	KS	JIS	ASTM	BS	DIN
Toughpitch Copper	1	99.9 MIN											D5301 C1100	H3300 C1100	B188 C11000	2871 C101 C102	1787 ECU58 ECU57
Copper Capilary	1	99.9 MIN				0.015 -0.040							D5301 C1220	H3300 C1220	B68 B75 B360 B12200	2871 C106	1787 SF-CU
Phos-Phorus Deoxidized Copper	1	99.9 MIN				0.004 -0.015							D5301 C1201	H3300 C1201	B75 C12000	2871 C106	1787 SW-CU
	2	99.9 MIN				0.015 -0.040							D5301 C1220	H3300 C1220	B75 C12200	2871 C106	1787 SF-CU
Brass Tube	1	68.5 -71.5	REM	0.05 MAX	0.05 MAX								D5301 C2600	H3300 C2600	B135 C26000	2871 Cz106	17660 cuzn30
	2	63.0 -67.0	REM	0.05 MAX	0.05 MAX								C2700	C2700	C27000		cuzn36
	3	59.0 -63.0	REM	0.10 MAX	0.07 MAX								C2800	C2800	C28000	Cz119	cuzn40
Admiralty Brass Tube	1	70.0 -73.0	REM	0.07 MAX	0.05 MAX		0.9 -1.2				0.02 -0.06		D5301 C4430	H3300 C4430	B111 C44300	2871 Cz111	1785 cuzn28sn
Al-Brass Tube	1	76.0 -79.0	REM	0.05 MAX	0.05 MAX					1.8 -2.5	0.02 -0.06	Si0.2 -0.5	C6871	C6871	C68700	Cz110	cuzn20Al
	2	76.0 -79.0	REM	0.05 MAX	0.05 MAX			0.20 -1.0		1.8 -2.5	0.02 -0.06		C6872	C6872	C68700	Cz110	cuzn20Al
	3	76.0 -79.0	REM	0.05 MAX	0.05 MAX					1.8 -2.5	0.02 -0.06		C6870	C6870	C68700	Cz110	cuzn20Al
Cu-Ni Tube	1		0.5 MAX	0.05 MAX	1.0 -1.8			9.0 -11.0	0.2 -1.0		Cu+Ni+ Fe+Mn 99.5MIN		D5301 C7060	H3300 C7060	B111 C70600	2871 CN102	17664 CuNi10Fe
	2		0.5 MAX	0.05 MAX	0.5 -1.0			19.0 -23.0	0.2 -1.0		Cu+Ni+ Fe+Mn 99.5MIN		C7100	C7100	C71000	CN107	CuNi20Fe
	3		0.5 MAX	0.05 MAX	0.4 -1.0			29.0 -33.0	0.2 -1.0		Cu+Ni+ Fe+Mn 99.5MIN		C7150	C7150	C71500	CN106	CuNi30Fe

* Chemical composition is followed by JIS But other specs also be matched

DSPF

The World Best Donghwa Special Pipe & Fitting

PIPES Division



• PIPES - European Standards

MATERIAL : **NAVINIC 10®** CuNi10Fe1Mn
NAVINIC 30® CuNi30Mn1Fe

DIMENSION : EEMUA234

Outside diameter of pipe ØD			10 bar		14 bar		16 bar		20 bar	
			Wall thickness	Theoretical weight	Wall thickness	Theoretical weight	Wall thickness	Theoretical weight	Wall thickness	Theoretical weight
nominal		actual	actual		actual		actual		actual	
inch	ND	mm	mm	Kg/m	mm	Kg/m	mm	Kg/m	mm	Kg/m
SEAMLESS										
1/2	15	16.0	1.0	0.53	1.0	0.53	2.0	1.01	2.0	1.01
3/4	20	25.0	1.5	0.99	1.5	0.99		1.30		1.30
1	25	30.0		1.20		1.20	2.5	1.93	2.5	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		2.34		2.34		3.83		3.83
2 1/2	65	76.1	2.0	4.16	2.0	4.16		5.17		5.17
3	80	88.9		4.88	2.5	6.07		6.07		6.07
4	100	108.0	2.5	7.41		7.41	3.0	8.85	3.0	8.85
5	125	133.0		9.16	3.0	10.95		10.95		10.95
6	150	159.0		10.99		13.14		13.14	3.5	15.29
7	175	193.7		13.43	3.5	18.70		16.07		18.70
8	200	219.1	3.0	18.21		21.19	4.0	24.17	4.5	27.12
10	250	267.0		22.24	4.0	29.55	4.5	33.18	5.5	40.39
12	300	323.9	4.0	35.94	5.0	44.78	5.5	49.18	7.0	62.30
14	350	368.0		40.89	6.5	56.00	6.5	65.99	8.0	80.89
SEAMLESS or SEAM WELDED										
16	400	419.1	4.0	46.62	6.0	69.60	7.0	81.00	9.0	103.64
SEAM WELDED										
18	450	457.2	4.0	50.91	6.0	76.03	8.0	100.93	9.5	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	5.0	84.96	8.0	135.26	10.5	176.79	13.0	217.97
28	700	711.0	6.0	118.80	9.0	177.45	12.0	235.58	15.0	293.22
32	800	813.0		135.99	10.0	225.53	13.5	303.14	17.0	380.06
36	900	914.0	8.0	203.57	11.0	278.98	15.5	391.14	19.0	477.60

Other wall thinknesses are also available upon request.

• PIPES - U.S. Standards

MATERIAL :

NAVINIC 10® CuNi10Fe1Mn

SEAMLESS	ASTM B 466 alloy UNS C70600
SEAM WELDED	ASTM B 467 alloy UNS C70600

NAVINIC 30® CuNi30Mn1Fe

SEAMLESS	ASTM B 466 alloy UNS C71500
SEAM WELDED	ASTM B 467 alloy UNS C71500

Outside diameter of pipe ØD			Wall thickness		Theoretical weight	
nominal inch	actual inch	actual mm	actual inch	actual mm	Lb / 19.68Ft	Kg / 6m
SEAMLESS						
1/8	0.540	13.72	0.058	1.47	6.68	3.03
1/4			0.065	1.65		
3/8	0.675	17.15			9.50	4.31
1/2	0.840	21.34			12.06	5.47
3/4	1.050	26.67			15.34	6.96
1	1.315	33.40			19.47	8.83
1 1/4	1.660	42.16	0.072	1.83	27.40	12.43
1 1/2	1.900	48.27			31.57	14.32
2	2.375	60.32	0.083	2.11	45.61	20.69
2 1/2	2.875	73.03			55.58	25.21
3	3.500	88.90	0.095	2.41	77.43	35.12
4	4.000	114.30			100.16	45.43
5	4.500	141.30	0.109	2.77	142.53	64.65
6	5.563	168.30	0.125	3.18	195.04	88.47
7	6.625	193.70	0.134	3.40	240.33	109.01
8	8.625	219.10			272.40	123.56
10	10.750	273.05	0.134	3.40	340.53	154.46
12	12.750	323.90	0.156	3.96	470.60	213.46
14	14.000	355.60	0.165	4.19	546.90	248.07
SEAMLESS or SEAM WELDED						
16	16.000	406.40	0.165	4.19	625.96	283.93
SEAM WELDED						
18	18.000	457.20	0.180	4.57	768.31	348.50
20	20.000	508.00			854.88	387.77
24	24.000	609.60	0.180	4.57	1027.02	465.85
30	30.000	762.00	0.250	6.35	1794.08	813.78

Other special wall thinknesses, regular or extra strong as well as relevant flanges, butt weld and machined fittings also available upon request.

• PIPES - U.S. Standards

MATERIAL : **NAVINIC 10®** CuNi10Fe1Mn alloy UNS C70600 **NAVINIC 30®** CuNi30Mn1Fe alloy UNS C71500

DIMENSION : **ANSI / STATIN LESS STEEL PIPE**

Outside diameter of pipe ØD			Schedule 5S				Schedule 10S			
			Wall thickness		Theoretical weight		Wall thickness		Theoretical weight	
nominal inch	actual inch	actual mm	actual inch	actual mm	Lb / Ft	Kg / m	actual inch	actual mm	Lb / Ft	Kg / m
SEAMLESS										
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							0.42	0.63
1/2	0.840	21.34			0.54	0.80	0.083	2.11	0.67	1.00
3/4	1.050	26.67			0.69	1.03			0.86	1.28
1	1.315	33.40	0.065	1.65	0.87	1.30			1.40	2.09
1 1/4	1.660	42.16			1.11	1.65	0.109	2.77	1.81	2.70
1 1/2	1.900	48.27			1.28	1.91			2.09	3.11
2	2.375	60.32			1.61	2.40			2.64	3.93
2 1/2	2.875	73.03			2.48	3.69			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			3.48	5.18			4.97	7.40
4	4.500	114.30			3.92	5.84			5.61	8.36
5	5.563	141.30		2.77	6.36	9.47	0.134	3.40	7.77	11.57
6	6.625	168.30	0.109		7.60	11.32			9.29	13.84
8	8.625	219.10		3.40	9.93	14.79	0.148	3.76	13.40	19.96
10	10.750	273.05	0.134	3.96	15.19	22.63	0.165	4.19	18.65	27.78
12	12.750	323.90	0.156		20.98	31.25	0.180	4.57	24.17	36.00

Outside diameter of pipe ØD			Schedule 40S				Schedule 80S			
			Well thickness		Theoretical weight		Well thickness		Theoretical weight	
nominal inch	actual inch	actual mm	actual inch	actual mm	Lb / Ft	Kg / m	actual inch	actual mm	Lb / Ft	Kg / m
SEAMLESS										
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

Other dimensions, wall thinknesses and outside and diameters as well as relevant flanges, butt weld and machined fittings also available upon request.

• PIPES - U.S. Navy Standards

MATERIAL :

NAVINIC 10® CuNi10Fe1Mn MIL - T -16420K alloy 706 (90/10)
US Navy Specification

NAVINIC 30® CuNi30Mn1Fe MIL - T -16420K alloy 715 (70/30)
US Navy Specification

Type I Seamless or Type II Seam welded Grade 1 or 2
(without or with heat identification)

Outside diameter of pipe ØD			Class 200				Class 700			
			Minimum Wall thickness		Theoretical weight		Minimum Wall thickness		Theoretical weight	
nominal inch	actual inch	actual mm	actual inch	actual mm	Lb / Ft	Kg / m	actual inch	actual mm	Lb / Ft	Kg / m
SEAMLESS										
	0.025	6.35	0.035	0.89	0.09	0.14				
	0.500	12.70			0.20	0.29	0.065	1.65	0.34	0.51
1/8	0.540	13.72			0.38	0.56			0.38	0.56
3/8	0.675	17.15			0.48	0.72	0.072	1.83	0.53	0.79
1/2	0.840	21.34	0.065	1.65	0.61	0.91			0.67	1.00
3/4	1.050	26.67			0.78	1.16	0.083	2.11	0.98	1.45
1	1.315	33.40			0.99	1.47	0.095	2.41	1.41	2.10
1 1/4	1.660	42.16	0.072	1.83	1.39	2.07			1.81	2.69
1 1/2	1.900	48.27			1.60	2.39	0.109	2.77	2.38	3.54
2	2.375	60.32	0.083	2.11	2.32	3.45	0.120	3.05	3.30	4.91
2 1/2	2.875	73.03			2.82	4.20	0.134	3.40	4.47	6.65
3	3.500	88.90	0.095	2.41	3.93	5.85	0.165	4.19	6.70	9.97
3 1/2	4.000	101.60			4.51	6.71	0.180	4.57	8.37	12.45
4	4.500	114.30	0.109	2.77	5.83	8.68	0.203	5.15	10.61	15.78
	5.000	127.00	0.120	3.05	7.14	10.62			11.84	17.62
5	5.563	141.30	0.125	3.18	8.29	12.34	0.220	5.59	14.32	21.30
6	6.625	168.30	0.134	3.40	10.58	15.75	0.259	6.58	20.08	29.89
	7.625	193.70			12.21	18.17	0.284	7.21	25.38	37.76
8	8.625	219.10	0.148	3.76	15.28	22.74	0.340	8.64	34.32	51.07
	9.625	244.48	0.187	4.75	21.49	31.98			38.46	57.23
10	10.750	273.05			24.05	35.79	0.380	9.65	47.96	71.37
12	12.750	323.90	0.250	6.35	38.05	56.63	0.454	11.53	67.97	101.15
14	14.000	355.60	0.165	4.19	27.78	41.35	0.473	12.01	77.90	115.87
	15.000	381.00					0.503	12.77	88.80	132.04
SEAMLESS or SEAM WELDED			Class 50				Class 700			
16	16.000	406.40	0.165	4.19	31.80	47.32	0.534	13.56	101.00	149.58
SEAMLESS WELDED										
18	18.000	457.20	0.180	4.19	39.03	58.10				
20	20.000	508.20		4.57	43.41	64.62				
22	22.000	558.80			47.80	71.12				
	22.750	577.85			49.50	73.57				
30	30.000	762.00	0.250	6.35	90.54	134.77				
40	40.000	1016.00	0.312	7.92	150.70	224.19				

Special classes, class 1650, class 3300 and class 6000 well as relevant flanges, butt weld and machined fittings also available upon request.

• PIPES - Japanese Standards

MATERIAL :

NAVINIC 10® CuNi10Fe1Mn
JIS H 3300 alloy C7060 T or TS

NAVINIC 30® CuNi30Mn1Fe
JIS H 3300 alloy C7150 T or TS

NOMINAL DIAMETER		METRIC SIZE			NAVY DIMENSION inch Size						M.M. (NDS) Size		
					5K			10K					
inch	M/M	outside Diam. (mm)	Wall thick. (mm)	Theore. weight (Kg/m)	outside Diam. (mm)	Wall thick. (mm)	Theore. weight (Kg/m)	outside Diam. (mm)	Wall thick. (mm)	Theore. weight (Kg/m)	outside Diam. (mm)	Wall thick. (mm)	Theore. weight (Kg/m)
SEAMLESS													
1/8	6A							6.35	0.89	0.14			
3/8	10A	16.0	1.0	0.42				12.71	0.89	0.29	15.0	1.5	0.57
1/2	15A	20.0	1.0	0.53	15.14	1.21	0.47	15.14	1.65	0.62	20.0	1.5	0.78
3/4	20A	25.0	1.5	0.99	21.49	1.21	0.69	21.49	1.65	0.92	25.0	1.5	0.99
1	25A	30.0	1.5	1.20	28.25	1.42	1.07	28.25	1.65	1.23	30.0	1.5	1.20
1 1/4	32A	38.0	1.5	1.54	34.60	1.42	1.32	34.60	1.65	1.53	38.0	2.0	2.02
1 1/2	40A	44.5	1.5	1.81	40.95	1.42	1.58	40.95	1.83	2.01	45.0	2.0	2.41
2	50A	57.0	1.5	2.34	54.05	1.62	2.39	54.05	2.11	3.08	55.0	2.0	2.98
2 1/2	65A	76.1	2.0	4.16	66.75	1.62	2.96	66.75	2.41	4.35	70.0	2.0	3.82
3	80A	88.9	2.5	6.07	79.86	1.82	3.99	79.86	2.41	5.24	85.0	3.0	6.91
3 1/2	90A										95.0	3.0	7.75
4	100A	108.0	2.5	7.41	106.27	2.33	6.80	106.27	2.77	8.05	110.0	3.0	9.02
5	125A	133.0	2.5	9.16	131.67	2.33	8.46	131.67	3.18	11.47	130.0	3.0	10.70
6	150A	159.0	2.5	10.99	157.68	2.64	11.49	157.68	3.40	14.73	160.0	4.0	17.52
7	175A										180.0	4.0	19.77
8	200A	219.1	3.0	18.21	208.48	2.64	15.26	208.48	3.76	21.61	210.0	4.0	23.14
	225A										230.0	4.0	25.39
10	250A	267.0	3.0	22.24	260.50	3.25	23.48	260.50	4.75	34.11	260.0	4.5	32.29
12	300A	323.9	4.0	35.94	312.11	3.68	31.87	312.11	6.35	54.52	310.0	5.5	47.03
14	350A	368.0	4.0	40.89									
SEAMLESS or SEAM WELDED													
16	400A	419.1	4.0	46.62									
SEAM WELDED													
18	450A	457.2	4.0	50.91									
20	500A	508.0	4.5	63.63									
24	600A	610.0	5.0	84.96									
28	700A	711.0	6.0	118.80									

Other diameters and wall thinknesses are also available upon request.

DSPF

The World Best Donghwa Special Pipe & Fitting

TUBE Division

• HEAT - EXCHANGER TUBE (U-tube, Fin-tube)

MATERIAL :

ASTM B111 ASME SB111	COPPER ALLOY (C7150, C7060, C1220, C6870, C4430)

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

• HEAT - EXCHANGER TUBE (U-tube, Fin-tube)

MATERIAL :

ASTM ASME	Alloy Steel (Sus, Carbon, etc)

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

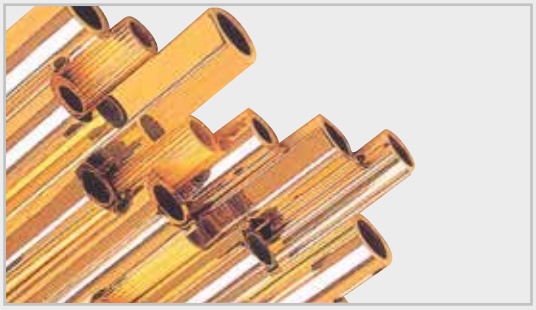
• Tube Division

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 tube

Copper Tube

Level wound coil



Brass tube

Pan cake coil

Aluminum inner fin tube & fin tube

PRODUCTS

- COPPER TUBES
- BRASS TUBES
- AL-BRASS TUBES
- ALUMINUM TUBES
- COPPER NICKEL TUBES
- COPPER CHROMIUM TUBES
- COPPER BARS
- HEAT-TRANSFER TUBES
- COPPER CHROMIUM BARS
- STAINLESS TUBE(SEAMLESS)

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

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.

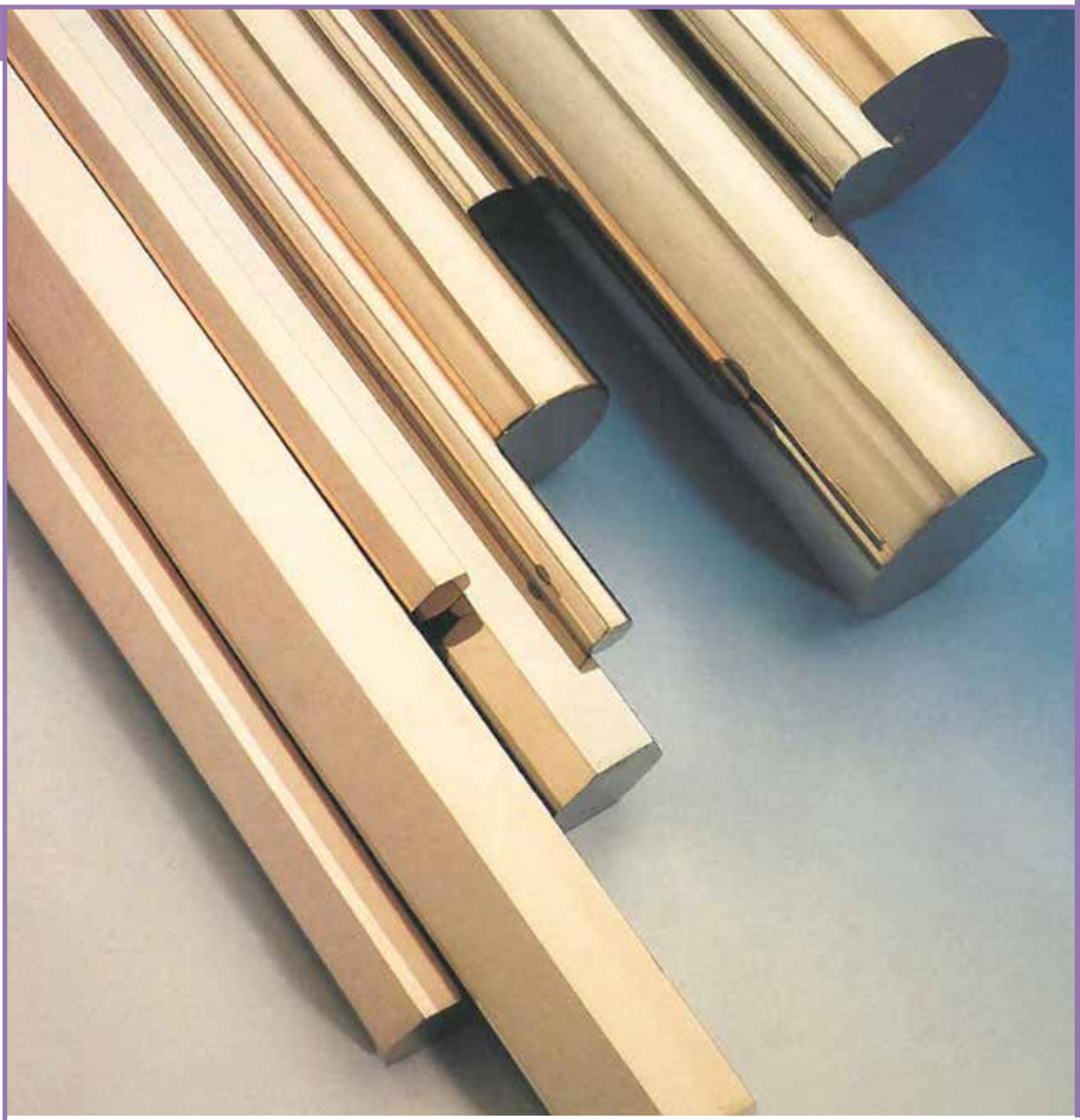
Pan Cake Coil
Average Length 15M but we are able to produce up to 12~30M length according to customer`s order.

Straight Tube
Up To 12M Length

DSPF

The World Best Donghwa Special Pipe & Fitting

BARS Division



• BARS - metric sizes

FRANCE	GERMANY	UNITED KINGDOM	U.S.A
	NAVINIC 10® CuNi10Fe1Mn		
GAM MM11 (French Navy) GAM MM13 (French Navy)	DIN 17664 alloy 2.0872 Chemicals DIN 17672 alloy 2.0872.10 Mechanicals	BS 2872 alloy CN 102-O BS 2874 alloy CN 102-O Mechanicals Chemicals	ASTM B 151 alloy C70600 Mechanicals Chemicals ASTM B 249 alloy Dimensional
	NAVINIC 30® CuNi30Mn1Fe		
	DIN 17664 alloy 2.0872 Chemicals DIN 17672 alloy 2.0872.10 Mechanicals	BS 2872 alloy CN 102-O BS 2874 alloy CN 102-O Mechanicals Chemicals	ASTM B 151 alloy C71500 Mechanicals Chemicals ASTM B 249 alloy Dimensional

Rounds		Hexagonals		Flats		Squares	
D mm	Theoretical weight Kg/m	H mm	Theoretical weight Kg/m	L x l mm	Theoretical weight Kg/m	C mm	Theoretical weight Kg/m
10	0.70	12	1.11	20 x 10	1.70	10 x 10	0.90
■ 15	1.58	14	1.51	30 x 10	2.67	20 x 20	3.57
■ 20	2.80	17	2.27	40 x 10	3.57	30 x 30	8.05
■ 25	4.39	■ 19	2.78	40 x 20	7.13	40 x 40	14.26
■ 30	6.32	■ 22	3.73	45 x 30	12.05	50 x 50	22.35
■ 35	8.60	■ 24	4.43	50 x 20	8.90	60 x 60	32.25
■ 40	11.20	■ 27	5.64	60 x 20	10.75	70 x 70	43.80
■ 45	14.20	■ 30	6.97	60 x 30	16.13	80 x 80	57.16
■ 50	17.55	■ 32	7.92	60 x 40	21.90	90 x 90	72.44
■ 55	21.20	■ 36	9.96	80 x 20	14.30	100 x 100	89.50
■ 60	25.30	37	10.77	80 x 40	28.57		
■ 65	29.70	■ 38	11.13	90 x 30	24.15		
■ 70	34.40	■ 40	12.35	90 x 60	48.30		
■ 75	39.40	■ 41	12.98	100 x 50	44.75		
■ 80	44.90	■ 42	13.59	100 x 70	62.45		
■ 85	50.70	■ 46	16.30	120 x 30	32.12		
■ 90	56.90	■ 50	19.36	120 x 40	42.82		
■ 95	63.10	■ 55	23.40	120 x 60	64.23		
■ 100	69.87	■ 60	27.90	120 x 80	85.65		
■ 105	77.03	■ 65	32.60				
■ 110	84.54	70	38.55				
115	92.40	75	44.25				
■ 120	100.61	■ 80	49.53				
■ 125	109.00	■ 85	55.93				
■ 130	118.00						
140	136.00						
■ 150	157.00						
160	179.00						
170	206.00						
180	228.00						
190	257.50						
■ 200	280.00						
250	445.80						
■ 285	570.50						

■ Dimensions kept on stock alloy **NAVINIC 10®**
Please inquire for other dimensions as for forgings such as plates, discs, rings and blocks.

• BARS - imperial sizes

FRANCE	GERMANY	UNITED KINGDOM	U.S.A
NAVINIC 10®		CuNi10Fe1Mn	
BS 2872 alloy CN 102-O Mechanicals Chemicals BS 2874 alloy CN 102-O Mechanicals Chemicals		ASTM B 151 alloy C70600 Mechanicals Chemicals MIL-C-15726 alloy C70600 Mechanicals Chemicals	
NAVINIC 30®		CuNi30Mn1Fe	
BS 2872 alloy CN 102-O Mechanicals Chemicals BS 2874 alloy CN 102-O Mechanicals Chemicals NES 780 PART 2 Mechanicals Chemicals		ASTM B 151 alloy C71500 Mechanicals Chemicals MIL-C-15726 alloy C71500 Mechanicals Chemicals	

Rounds				Hexagonals			
D		Theoretical weight		H		Theoretical weight	
inch	mm	Kg/m	Lb/Ft	inch	mm	Kg/m	Lb/Ft
1/4 ″	6.35	0.29	0.19	1 3/8 ″	34.93	9.60	6.45
3/8 ″	9.53	0.65	0.43	1 5/8 ″	41.27	13.40	9.00
1/2 ″	12.70	1.15	0.77	2 ″	50.80	20.30	13.64
5/8 ″	■ 15.87	1.79	1.21	2 1/4 ″	57.15	25.69	17.26
3/4 ″	19.05	2.59	1.74	2 9/16 ″	65.08	33.32	22.38
7/8 ″	■ 22.22	3.52	2.36	3 ″	76.20	45.68	30.69
1 ″	■ 25.40	4.60	3.09	3 1/2 ″	88.90	62.18	41.77
1 1/8 ″	28.58	5.83	3.91				
1 1/4 ″	31.75	7.19	4.83				
1 3/8 ″	34.93	8.70	5.85				
1 1/2 ″	■ 38.10	10.35	6.96				
1 3/4 ″	44.45	14.09	9.47				
2 ″	■ 50.80	18.41	12.37				
2 1/4 ″	57.15	23.30	15.65				
2 3/8 ″	60.32	25.95	17.43				
2 1/2 ″	■ 63.50	28.76	19.32				
2 3/4 ″	69.85	34.80	23.38				
3 ″	■ 76.20	41.42	27.82				
3 1/2 ″	■ 88.90	56.37	37.87				
4 ″	101.60	73.63	49.46				
4 1/2 ″	114.30	93.18	62.60				
5 ″	127.00	115.05	77.29				
5 1/2 ″	139.70	139.21	93.52				
6 ″	■ 152.40	165.67	111.29				
7 ″	■ 177.80	225.49	151.49				
8 ″	203.20	294.52	197.86				
9 ″	■ 228.60	372.76	250.42				
10 ″	254.00	460.19	309.16				
11 ″	279.40	556.83	374.08				
12 ″	304.80	662.68	445.19				

■Dimensions kept on stock alloy **NAVINIC 10®**
Please inquire for other dimensions as for forgings such as plates, discs, rings and blocks.

Free - Cutting Brass(Hard brass)

Free Cutting brass(Hard brass) are excellent of cutting properties and processes surface, especially, C3601, C3602 is good for ductility too. Using in field of bolt, nut, screw, spindle,gear, valve, lighter, watch, camera accessories.

Chemical Composition

Alloy No.		Chemical Composition					
KS/JIS	UNS	Cu	Pb	Fe	Sn	Zn	Others
C3601	C36000	59.0~63.0	1.8~3.7	0.3	(Fe+Sn)0.5	Rem.	-
C3602	C36000	59.0~63.0	1.6~3.7	0.5	(Fe+Sn)1.2	Rem.	-
C3603	-	57.0~61.0	1.8~3.7	0.35	(Fe+Sn)0.6	Rem.	-
C3604	-	57.0~61.0	1.8~3.7	0.5	(Fe+Sn)1.2	Rem.	-
C3605	-	56.0~60.0	3.5~4.5	0.5	(Fe+Sn)1.2	Rem.	-

Mechanical Properties

Alloy No. (UNS)	STANDARD NO.	Temper	Tensile Strength Test			Hardness Test	
			O.DIA (mm)	Tensile Strength (Kgf/mm²)	Elongation (%)	HV	HBW
C3601	KSD 5101	F	6 ↑	30	15		
		O	6 - 75		25		
		1/2 H	6 - 50	35		95	
		H	6 - 20	46		130	
C3602	KSD 5101	F	6 - 75	32		75 ↑	
C3603	KSD 5101	F	6 ↑	32	10		
		O	6 - 75	32	20		
		1/2 H	6 - 50	37		100	
		H	6 - 20	46		130	
C3604	KSD 5101	F	6 - 75	34		80	

Production range & Shape

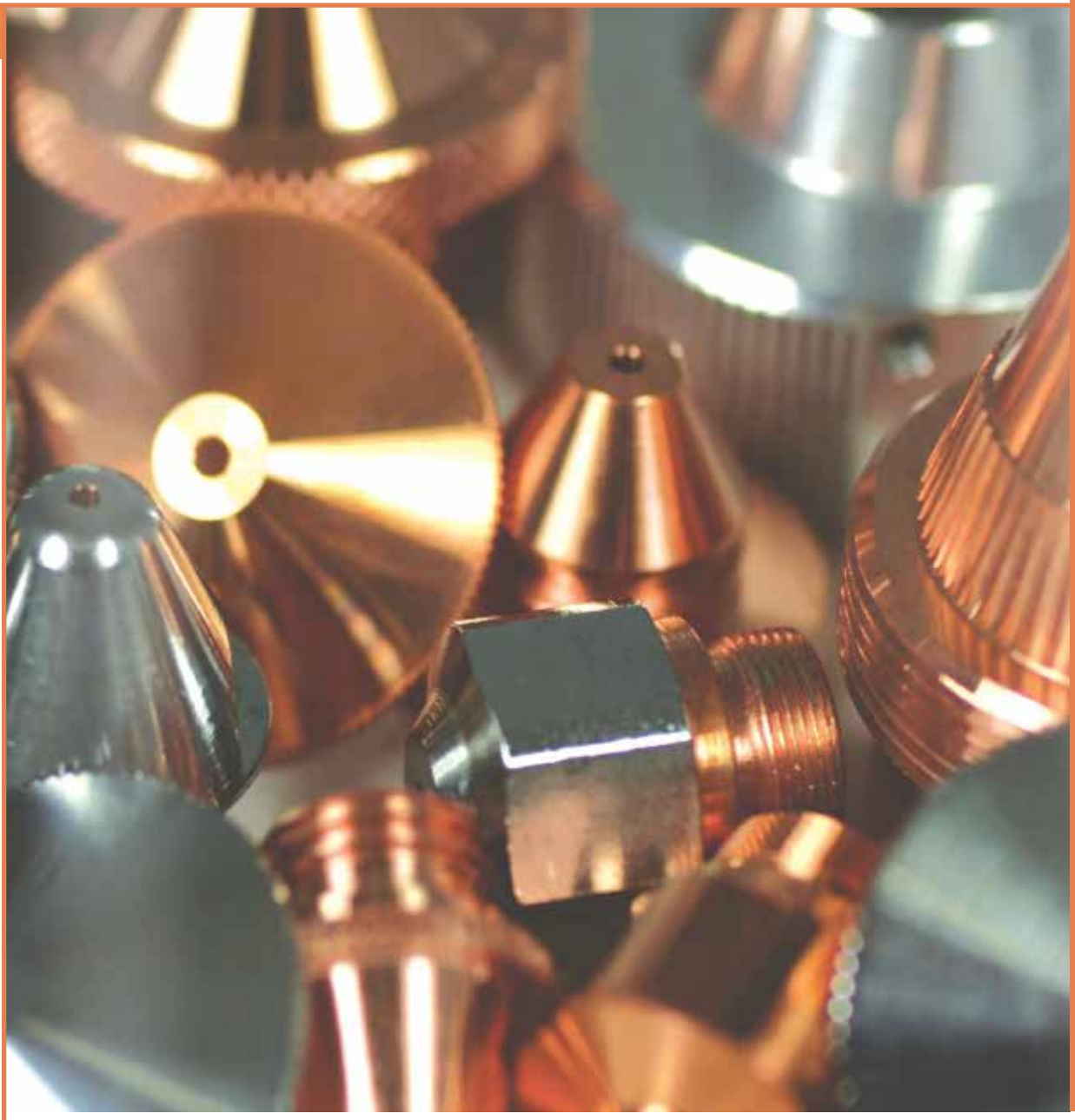
Shape	Production range
Haxagon	Ø3 ~
Square Rod	Ø2 ~
Wire	Ø0.2 ~
Hol low bar	ID : MIN. 14 ~
	Thickness : Min.5T

DSPF

The World Best Donghwa Special Pipe & Fitting

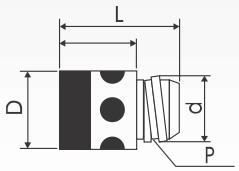
Weld Division

CO2 Accessories Division

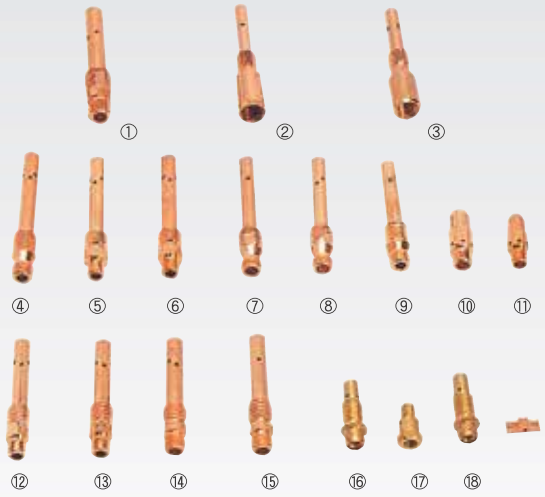


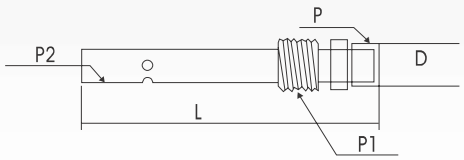
• CO2 Accessories

INSULATOR



GAS DIFFUSER



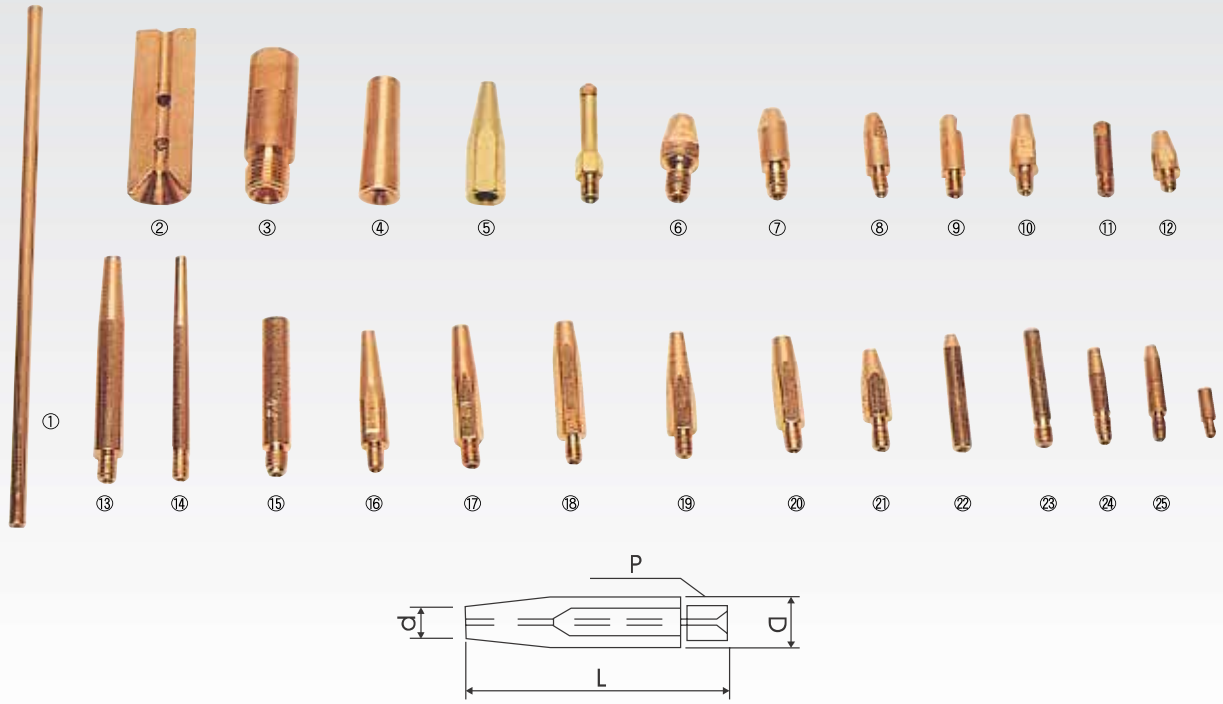


No	Products	Size					
		A	D	d	ℓ	L	P
1	현대	F500	28.5	52.0	52	52.0	3.175P
2	두산	F400	27.0	50.0	50	50.0	3.175P
3	삼성	500A	32.0		30	42.0	3.000P
4	삼성	400A	24.0		22	34.0	1.750P
5	부싱	500A	25.0	21.0	24	37.0	5.000P
6	일반	500A	25.0	21.0	24	37.0	5.000P
7	대우	350A	21.0	18.0	26	41.0	4.000P
8	일흥	350A	21.0	18.0	26	41.0	4.000P
9	일흥(부싱)	350A	21.0	18.0	26	41.0	4.000P
10	파나소닉	350A	20.0	17.5	24	38.5	4.000P
11	부싱	350A	20.0	17.0	25	40.0	4.000P
12	일반	350A	20.0	17.0	25	40.0	4.000P
13	OTC	350A	20.0	17.0	24	38.0	4.000P
14	빼크	350A	20.0	17.0	25	40.0	4.000P
15	OTC	180A	18.0	16.0	13	25.0	4.000P
16	파나소닉	350A					
17	NOR	180A					

No	Products	Size					
		A	D	L	P	P1	P2
1	히다치	500A	16.0	84.0	1.5P	2P	1.25P
2	OTC	350A	17.0	84.7		1.75P	6x1P
3	OTC	350A	17.0	81.0		1/2x12산	6x1P
4	일반	500A	14.0	85.0	12x1P	1/2x13산	6x1P
5	일반	500A	14.0	81.0	10x1P	1/2x13산	6x1P
6	일반(롱)	500A	14.0	81.0	11x1P	1/2x13산	6x1P
7	현대	350A	14.0	78.5	12x1P	1/2x13산	6x1P
8	미포	305A	14.0	76.0	12x1P	1/2x13산	6x1P
9	삼성	350A	14.0	72.0	12x1P	1/2x12산	6x1P
10	현대	F500	13.0	35.0	7/16x20산		5/8x24산
11	두산	F400	11.0	32.0	3/8x24산		1/4x28산
12	일반	350A	12.5	68.0	10x1P	1/2x12산	6x1P
13	일반	350A	12.5	70.0	10x1P	1/2x12산	6x1P
14	일반	350A	13.0	68.0	10x1P	1/2x12산	6x1P
15	대우	350A	13.0	68.0	11x1P	1/2x13산	6x1P
16	빈젤	180A	12.0				6x1P
17	빈젤	350A	12.0	24.0	8x125P		8x125P
18	엔드블락	500A	13.0	40.0			

• CO2 Accessories

TIP



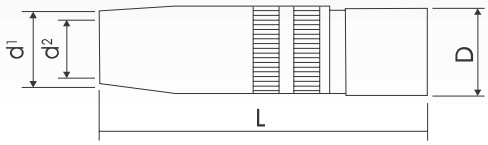
Use : Contact Tip for Co2 Welding

TIP	규격(Spec)
크롬팁(Chrome 0.5%)	경도(Hardness) 160 350A – 500A
지르코늄팁(zirconium)	
일반동 팁(copper)	

No	Products	Size			
		D	d	L	P
1	롱(크롬)	6.3	6.0	210	
2	셔브	20.0	9.0	58	
3	링컨	16.0	13.0	48	
4	셔브	12.7	10.8	40	14x1.5P
5	산소	11.0	5.0	40	
6	빈젤	13.0	8.0	28	8x1.25P
7	빈젤	10.0	7.0	28	9x1.25P
8	빈젤	8.0	6.0	28	8x1.25P
9	빈젤	8.0	5.0	28	6x1P
10	빈젤	9.0	6.0	28	6x1P
11	미그	6.0	5.0	25	6x1P
12	미그	9.0	6.0	20	6x1P
13	롱	9.0	6.0	72	6x1P
14	롱	6.0	4.0	72	6x1P
15	F500(크롬)	9.0	R	50	8x1.25P
16	현대(크롬)	9.0	5.0	45	6x1P
17	일반	8.0	6.0	45	6x1P
18	수입	8.0	6.0	45	6x1P
19	자동	8.0	5.5	40	6x1P
20	F400	8.0	5.5	36	1/4x2841
21	빈젤	6.0	5.0	30	6x1P
22	자동	8.0	5.0	32	6x1P
23	미그	6.0	R	37	1/4x2841
24	미니	6.0	4.0	30	5x0.7P
25	미니	5.0	R	15	4x0.5P

• CO2 Accessories

NOZZLE



No	Products	Size					
		A	D(Ø)	d1(Ø)	d2(Ø)	L	P
1	3단 롱	현대 350	25	16.0	12.0	130	5P
2	3단	현대 350	25	16.0	12.0	80	5P
3	2단	현대 350	25	22.0	16.0	80	5P
4	일반	500A	25	25.0	19.0	88	5P
5	세경	500A	25	20.0	14.0	88	5P
6	롱	500A	25	25.0	19.0	88	5P
7	히다치	500A	26	23.5	18.0	82	5P
8	삼성	350A	24	20.0	16.0	70	3P
9	서브	500A	25	25.0	25.0	100	2P
10	롱	350A	20	16.0	12.0	102	4P
11	세경	350A	20	16.0	12.0	73	4P
12	세경	350A	20	13.0	10.0	73	4P
13	(동)세경	350A	20	16.5	13.0	73	4P
14	세경	350A	20	16.5	13.0	73	4P
15	일흥	350A	21	19.5	16.0	73	4P
16	대우	350A	21	21.0	16.0	73	4P
17	일반	350A	20	20.0	16.5	73	4P
18	삼성	350A	21	21.0	18.0	74	4P
19	OTC	350A	20	17.0	14.5	65	4P

No	Products	Size					
		A	D(Ø)	d1(Ø)	d2(Ø)	L	P
20	오토케리지	500A	28.0	24.0	20.0	76.0	
21	오토케리지	500A	30.0	26.0	22.0	71.0	
22	오토케리지	500A	28.5	28.5	23.5	56.0	3.175P
23	빈젤	500A	26.0	26.0	21.0	67.0	
24	빈젤		24.0	20.0	16.0	84.0	
25	삼성	500A	28.0	22.0	17.0	55.0	
26	현대	F500	28.5	24.0	19.0	56.0	3.175P
27	두산	F400	27.0	21.0	17.0	45.0	
28			25.5	21.0	16.0	41.5	1.750P
29	일체형	180A	19.0	16.0	13.0	77.0	
30	일체형	180A	18.0	15.0	13.0	72.0	
31	결합형	180A	18.0	15.0	13.0	80.0	
32	세경	180A	18.0	16.0	13.0	66.0	4.000P
33	분리형	180A	18.0	18.0	15.0	64.0	4.000P
34	일체형	180A	18.0	15.0	12.0	53.0	10.350P
35	일체형	180A	18.0	15.0	12.0	53.0	12.000P
36	일반	350A	20.0	20.0	16.5	60.0	4.000P
37	OTC	350A	20.0	20.0	16.5	60.0	4.000P
38	S-4		34.0	27.0	21.0	35.0	1.250P

Certifications


DNV·GL

APPROVAL OF MANUFACTURER CERTIFICATE


ABS

Certificate of MANUFACTURING ASSESSMENT


ABS

CERTIFICATE OF Design Assessment

This is to Certify that a representative of this Bureau did, at the request of Donghwa T.C.A. Co., Ltd.


RECOGNITION FOR BV MODE II SCHEME

DONG HWA T.C.A CO., LTD.


DET NORSKE VERITAS

APPROVAL OF MANUFACTURER CERTIFICATE

Dong Hwa T.C.A. Co, Ltd.

Yangsan-si, Republic of Korea

COPPER AND COPPER ALLOY TUBES AND PIPES


DONG HWA T.C.A

Copper alloy tubes


APPROVAL CONDITIONS


CERTIFICATE OF APPROVAL OF MANUFACTURERS OF MATERIALS


Korean Standards Association

CERTIFICATE OF APPROVAL

DONGHWA TCA Co., Ltd. MIRYANG FACTORY

KOREAN STANDARDS ASSOCIATION

KSA IAF

Certifications


Certificate of Registration

DONGHWA TCA CO., LTD.

ISO 45001:2018


Certificate of Registration

DONGHWA TCA CO., LTD.

KS I ISO 14001:2015 / ISO 14001:2015


Certificate of Registration

DONGHWA TCA CO., LTD.

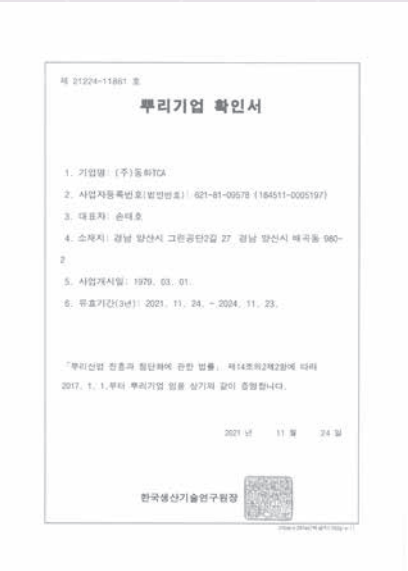
KS Q ISO 9001:2015 / ISO 9001:2015


중소기업 확인서

[중기업]

2022년 04월 19일

중소벤처기업부장관


뿌리기업 확인서

1. 기업명 : (주)동화TCA
2. 사업자등록번호(법인번호) : 621-81-00578 (184511-0005197)
3. 대표자 : 손태호
4. 소재지 : 경남 양산시 그린공단2길 27 경남 양산시 매곡동 980-2
5. 사업개시일 : 1979. 03. 01.
6. 유효기간(3년) : 2021. 11. 24. ~ 2024. 11. 23.

2021 년 11 월 24 일

한국생산기술연구원장

Pipe Division (Head Office)			
Division	Position	Name	Direct Line
Executive	Chairman / CEO	Tae-Ho, SON	
	Director / CFO	Mee-Bong, HA	
Secretary's Office	Staff	Eun-Ji, KIM	055-367-0033
General Affairs Dept	Manager Director	Pal-Bong, PARK	070-8894-0605
	Team Manager	Jeong-Soo, Jeong	070-8894-0606
Sales Dept.	Team Manager	Seul-Gi, SON	070-8894-0325
	General Manager	Hyo-Sun, HA	055-367-0038
	Deputy General Manager	Dong-Chel, LEE	055-367-0036
	assistant manager	Su-Hee, JI	055-367-0035
	Team Manager	Dong-Uk, Cheoi	055-367-0037
Purchaing Dept	Team Manager	Jae-Seon, JEON	055-367-0032
Manufacturing Management	Manager Director	Cheol-Hoan, OH	070-8894-0617
	Staff	Sung-Uk, Kim	070-8894-0621
Quality Control Dept.	Team Manager	Byung-Suk, SHIM	055-367-0044
	Manager	Sang-Hak, LEE	055-367-0043
Address	27, Green gongdan 2-gil, Yangsan-si, Gyeongsangnam-do, South Korea		

Pipe Division (Overseas office)			
Division		Position	Name
United States	Vermont	Branch offce President	Roy, Kim
	San Francisco	Branch offce President	Hee jin, Park
India	New Delhi	Branch offce President	Tae-Ho, Jeong

DSPF
The World Best Donghwa Special Pipe & Fitting

DongHwa TCA

Pipe Division (HEAD OFFICE)

27, Green gongdan 2-gil, Yangsan-si, Gyeongsangnam-do, South Korea
TEL : +82-55-367-0033~44 F A X : +82-55-367-0039
http://www.dspf.co.kr E-mail : dspipe@dspf.co.kr

OVERSEAS OFFICE

- India(New delhi)
- The united States(Vermont / San francisco)