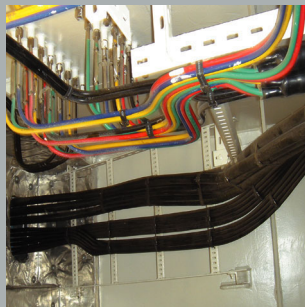
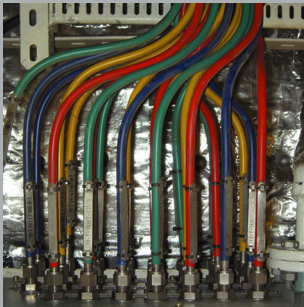


Total Tube Solutions

Multi Core Tube





CEO Message

DAECHUN INDUSTRIAL CO. LTD. manufactures Multi Core Tube, Stainless Steel Coiled Tube & Straight Tube for marine, offshore and industrial application with approvals from all classification societies.

As a world's leading specialist in the field, we have supplied and installed our products on more than ten thousand new buildings and retrofits by 2014.

Providing with high quality products and comprehensive services worldwide, we are prepared to serve our customers across the world.

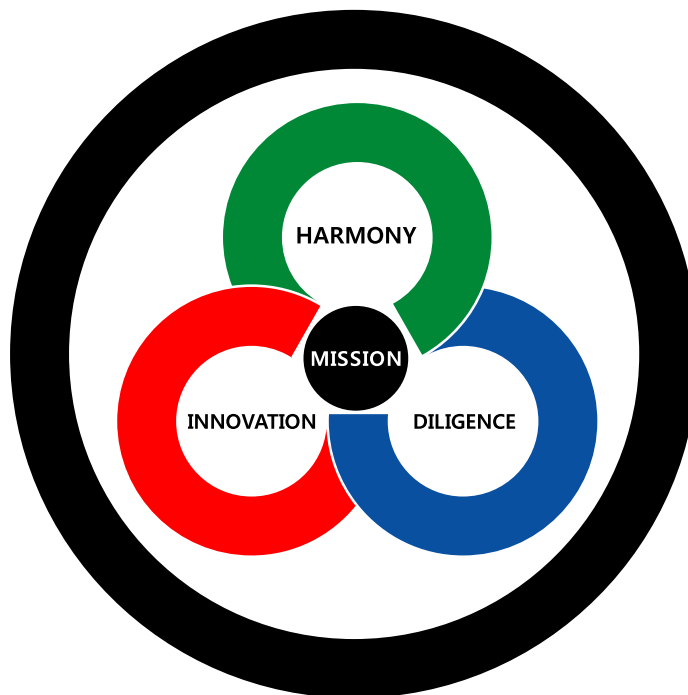
Mission & Value

SOCIETY

- Compliance with Laws & Regulations
- Fair Competition
- Contribute to National Welfare
- Provide Educational Support to Community
- Protect Shareholder's Interest

CUSTOMER

- Offer Best Quality
- Respect
- Creating & Providing Value
- Customer Satisfaction
- Privacy & Data Protection
- Taking Responsibility



ENVIRONMENT

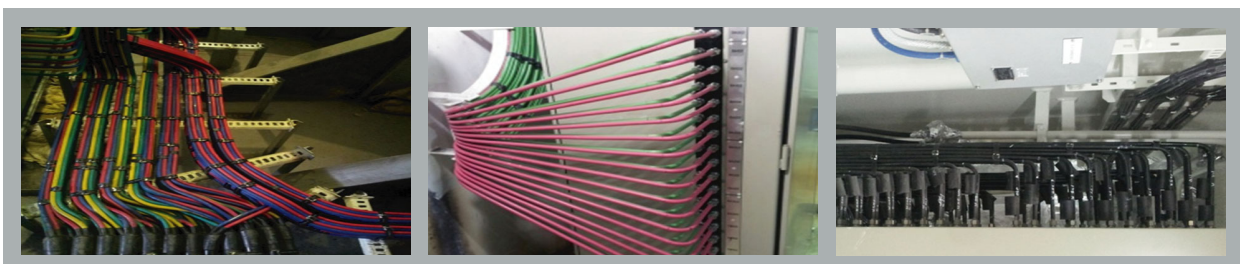
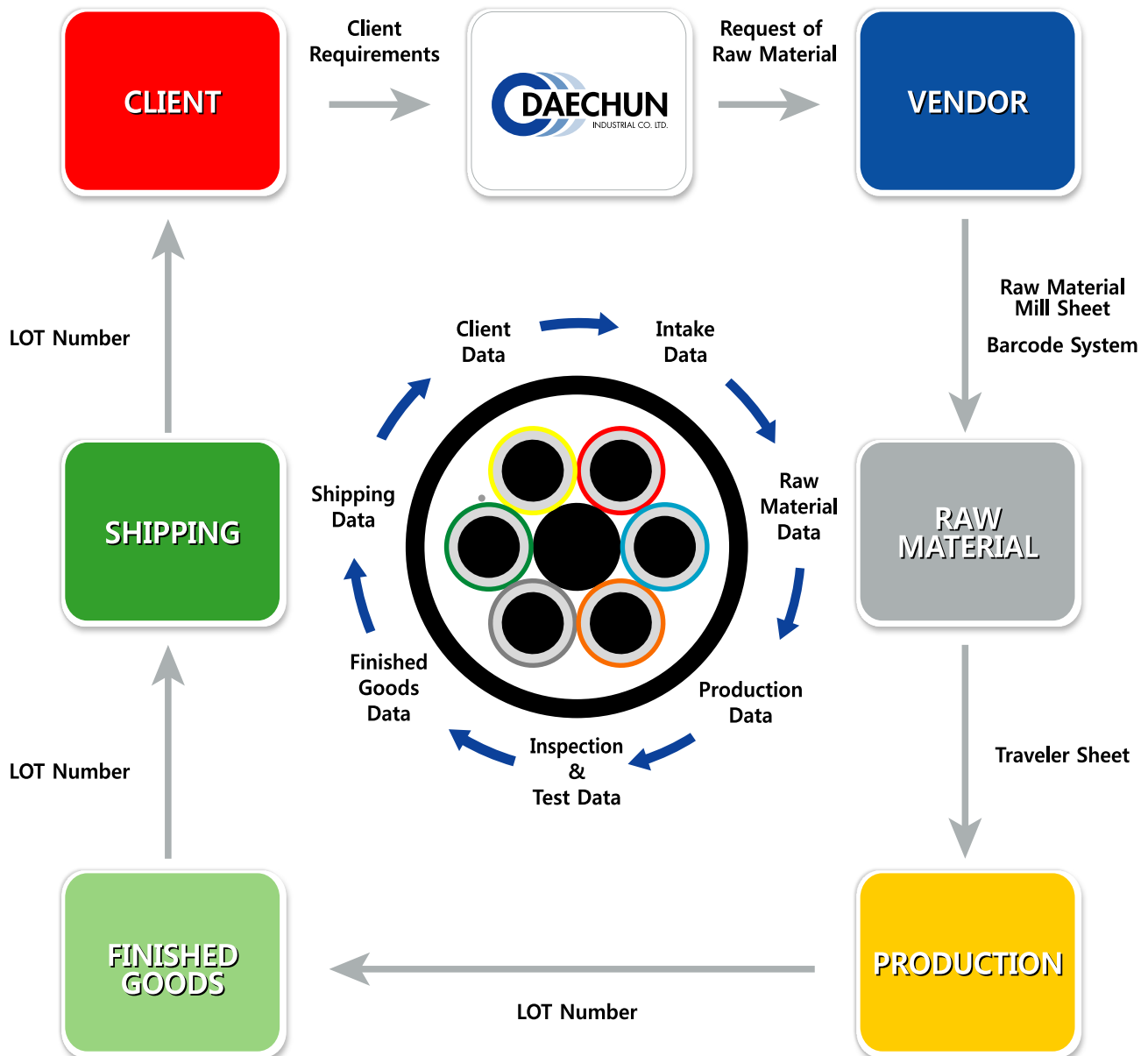
- Waste Reduction
- Recycle & Utilization of the Material
- Eco-efficient Operation
- Implementation of Energy Saving
- Continuous Improvement & Prevention of Pollution

EMPLOYEE

- Diversity & Equal Opportunity
- Training & Development
- Employee Health, Safety and Welfare
- Mutual Respect
- Reward & Discipline Action
- Anti-bribery Policy
- Protect Whistleblower

Product Traceability

Our Product Traceability System ensures full traceability of our products from raw materials to delivery of the final products and vice versa. Identification and status of products are provided by LOT numbering system. Our tubes are continuously marked with LOT number every 1 meter throughout the entire length and this enables the identification of product lot, production & inspection history, origin of raw material and delivery record. Our traceability system keeps track of the quality of our products to best fulfill our client's needs.





Approval Programs



ISO 9001



ISO 14001



OHSAS 18001



Brief History

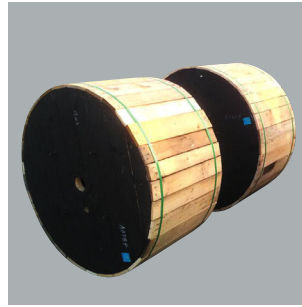
- 2019. 04 Designated as Small Giant Company of Korea by Ministry of SMEs and Startups
- 2018. 05 Received Award as Excellent suppliers by GSI China
- 2017. 04 Designated as Excellent Cooperating Company by SHI, Korea
- 02 Obtained Certificate of Reliability from KOSHIPA and KOMEA
- 2016. 12 Received Korean World-class Product Award by MOTIE, Korea
- 12 Received Export Tower Award from KITA, Korea
- 10 Received Export Grand Prize from Gyeongnam Province, Korea
- 02 Registered in Achilles Joint Qualification System
- 2014. 10 Achieved 10000 Shipset Supply
- 10 Obtained NK Factory Approval Certificate
- 05 Obtained RMRS Factory Approval Certificate
- 2013. 09 Received Silver Tower Industry Order by MOTIE, Korea
- 2012. 06 Obtained CCS Factory Approval Certificate
- 2008. 11 Received Ten Million Dollar Export Tower Award from KITA, Korea
- 2006. 11 Approved ISO 14001 Environmental Management System Certificate
- 10 Approved OHSAS 18001 Occupational Health & Safety Management System Certificate
- 06 Received Five Million Dollar Export Tower Award from KITA, Korea
- 2002. 09 Obtained BV Factory Approval Certificate
- 2001. 12 Obtained ABS Product Type Approval Certificate
- 09 Designated as Venture Business by SMBA, Korea
- 02 Obtained Utility Model Registration of The Bond Type Tube from KIPO (No. 0220542)
- 02 Selected as Promising Small and Mid-sized Business by KB Bank, Korea
- 2000. 10 Obtained RINA Factory Approval Certificate
- 09 Obtained GL Factory Approval Certificate
- 08 Obtained Self-quality Control Certificate by HMD, Korea
- 01 Received Award as Best Cooperating Company by DSME, Korea
- 1999. 04 Obtained LR Factory Approval Certificate
- 01 Received Award as Excellent Cooperating Company by HHI, Korea
- 1998. 10 Approved ISO 9001 Quality Management System Certificate
- 1997. 12 Obtained KR Factory Approval Certificate
- 01 Expanded facilities and moved to current place Gimhae, Korea
- 1995. 08 Obtained DNV Factory Approval Certificate
- 1994. 11 Received Award as Excellent Cooperating Company of 'Hope of 90s' by DSME, Korea
- 11 Re-established DAECHUN Industrial Co. Ltd.
- 06 Obtained The Patent regarding MCT from KIPO (No. 074403)
- 03 Received Award as Excellent Cooperating Company by HHIC, Korea
- 1991. 12 Selected as Advanced-tech Small and Mid-sized Company by MOTIE, Korea
- 1990. 07 Completed Multi Core Tube (MCT) development
- 1981. 10 Initiated Business under the name of DAECHUN Machinery





Product Information

DAECHUN leverages its state-of-the-art technology and facilities to manufacture and supply Multi Core Tube, Stainless Steel Tube, Copper Tube which are customized to each industry.



Multi Core Tube

Multi Core Tube is a bundled tube tied together to efficiently install, maintain and control at once. It is used in shipbuilding, on/offshore plants and other industries to transport hydraulic oil, air, gas and etc.

Product Advantages

Material Cost Reduction

- Dramatically decrease or eliminate welding and fittings
- Conveniently cut tubings to a precise length on site, reducing product scraps and wastes

Easy & Fast Installation

- Achieve convenient installation due to easy manual bending in any directions
- Reduce installation/inspection time by eliminating fittings and bundled tubings

Corrosion Prevention

- Prevent and shield tube from dissimilar metal contacts
- Protect tube from contamination such as construction debris, chloride deposit, abrasion and etc.

Complete Tube Protection

- Furnish complete tube protection by triplicate sheath system from outside impact
- Provide reliable protection from physical and service damage by sheathing tubes

Cost-effective Solution

- Reduce labor cost by faster installation and minimized inspection process
- Free from maintenance time and cost by its long term durability
- Provide space-saving and cost effective design solution

Tube Identification

- Ensure easy individual tube identification with different color identifying inner sheath
- Stencil tube specifications and detailed information every meter

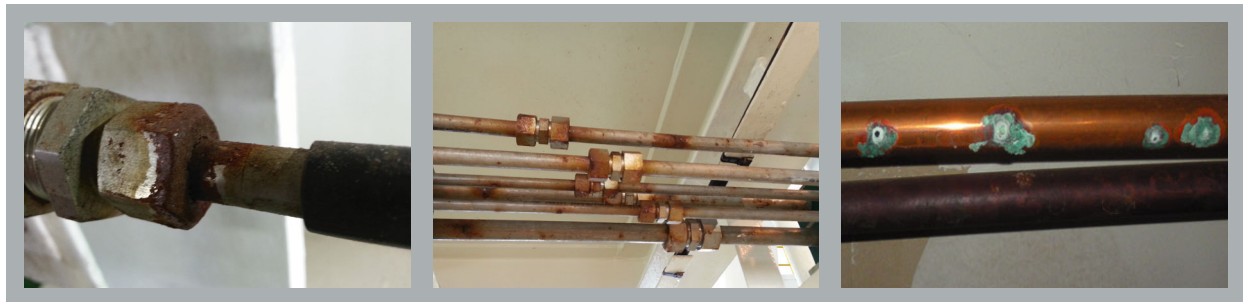
Product Application

- Valve Remote Control(VRC) Lines
- Fire Fighting Control Lines
- Pressure Sensing Lines
- Tank Level & Draft Gauging Lines
- Wellhead Control Panel Lines
- Process Instrument Lines
- Control & Instrumentation Lines
- Shipbuilding, Oil, Gas, Petrochemical, Desalination, Fertilizer & Chemical Industries
- Deck Machinery Remote Control Lines
- Fixed Gas Detection Sensing Lines
- Sampling & Drain Lines
- Heat Tracing Lines
- Chemical Injection Lines
- Hydraulic Control Lines
- Process & Power Plants

Multi Core Tube and Single Sheathed Tube

The corrosion of metals and alloys in natural and chlorinated seawater has presented tough challenges for Marine & Offshore Industries. Stainless Steel & Copper tubings are acclaimed for their excellent corrosion resistance and widely used in the field. Nonetheless, they are also susceptible to corrosion attack in the presence of water, oxygen, chloride and construction debris. Furthermore, there are common factors which lead tubing system to failure.

- Contact with Dissimilar Metal
- Construction Debris
- Incorrect or Poor Installation
- High Ambient Temperature
- Crevice Formation
- Periodic Testing of Seawater Deluge System
- Tray Vibration Damage on Bare Tube
- Strong Sand Wind



Consequences of Corrosion

The consequences of corrosion have been critical problems of worldwide vessels and offshore projects.

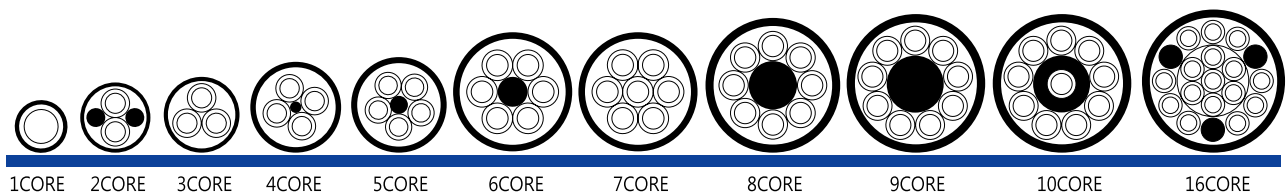
- Material Cost Loss
- Leakage & Damage in the process
- Incurring Replacement & Maintenance Cost
- Operating Cost Hike
- Increase in Labor cost
- Structural Failure or Breakdown
- Cause of Contamination
- Lost Production Opportunity

Total Tube Solution

Tube is durable and protected from physical & service damage and corrosive environment by sheathing the tube. UV resistant Polyvinyl Chloride (PVC) jacketed TP316L stainless steel coil tubing is highly proposed as most economical & effective choice considering the life cycle cost for shipbuilding and offshore projects.



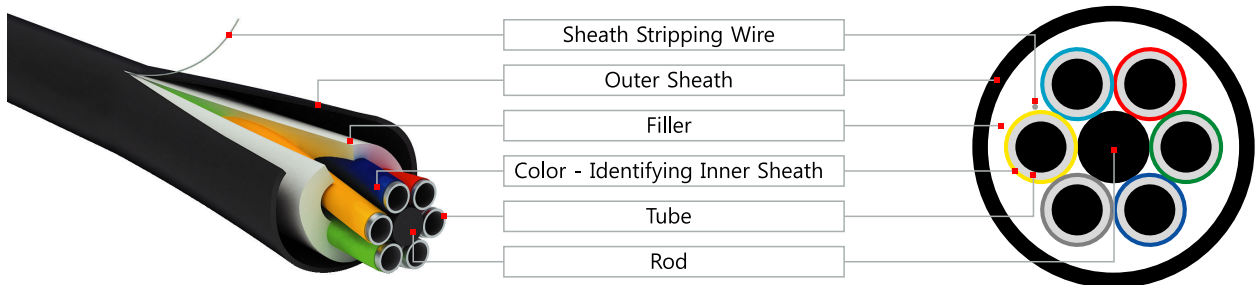
Structural Cross - Section





Construction

Cross Section View



Tube Material

Material	National Standard					
	Alloy	UNS CODE	ASTM	KS	JIS	DIN
Stainless Steel	304	S30400	304	STS 304	SUS 304	1.4301
	316	S31600	316	STS 316	SUS 316	1.4401
	316L	S31603	316L	STS 316L	SUS 316L	1.4404
	317L	S31703	317L	STS 317L	SUS 317L	1.4438
	321	S32100	321	STS 321	SUS 321	1.4541
	347	S34700	347	STS 347	SUS 347	1.4550
High Alloy Stainless Steel	904L	N08904	-	STS 890L	SUS 890L	1.4539
Super Austenitic	6 Mo	S31254	-	-	-	1.4547
Nickel Alloy	Monel 400	N04400	400	NCF 690 TB	NCF 690 TB	2.4360
	Nickel 200	N02200	200	NCF 600 TB	NCF 600 TB	2.4066
	Inconel 600	N06600	1600	NCF 800 TB	NCF 800 TB	2.4816
	Inconel 625	N06625	1625	NCF 625 TB	NCF 625 TB	2.4856
	Inconel 825	N08825	1825	NCF 825 TB	NCF 825 TB	2.4858
	Hastelloy C22	N06022	C22	NW6022	NW6022	2.4602
	Hastelloy C276	N10276	C276	NW0276	NW0276	2.4819
Duplex	Duplex	S31803, S32205	-	STS329J3L	SUS329J3L	1.4462
Super Duplex	Super Duplex	S32750	-	-	-	1.4410
Copper	Copper	C12200	C12200	C1220T	C1220T	2.0090
Copper-Nickel 90/10	Cu-Ni 90/10	C70600	C70600	C7060T	C7060T	2.1972

Please consult us for other materials not listed.

Sheath Material

Material		PVC	FR PVC	HR PVC	TPU	HFFR PE	PE	XLPE	FLUOROPOLYMER (TEFLON)		
									TF-1	TF-2	TF-3
Tensile Strength (kgf/mm ²)		1.2~1.4	1.3~1.8	1.2~1.7	2.0~2.5	1.0~1.4	2.3~2.8	2.0~2.5	2.0~3.0	2.0~2.5	2.5~3.0
Service Temperature (°C)		-40~+70	-40~+70	-50~+105	-50~+90	-45~+70	-75~+75	-50~+90	-200~+200	-150~+150	-60~+150
Elongation (%)		200~300	200~300	300~450	400~600	500~600	650~750	550~650	200~350	200~350	20~300
Hardness	Shore A	86~90	87~91	73~77	88~92	N/A	N/A	N/A	N/A	N/A	N/A
	Shore D	N/A	N/A	N/A	N/A	48~50	59~61	50~52	60~65	55~60	70~80
Halogenated		Detected	Detected	Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
Flame Retardant (IEC60332-1)		Satisfied	Satisfied	Satisfied	Satisfied	Satisfied	Not Satisfied	Not Satisfied	Satisfied	Satisfied	Satisfied
Flame Retardant (IEC60332-3-22 Category A)		Not Satisfied	Satisfied	Satisfied	Satisfied	Satisfied	Not Satisfied	Not Satisfied	Satisfied	Satisfied	Satisfied

Please consult us for other materials not listed.

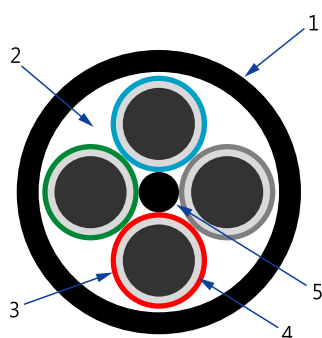
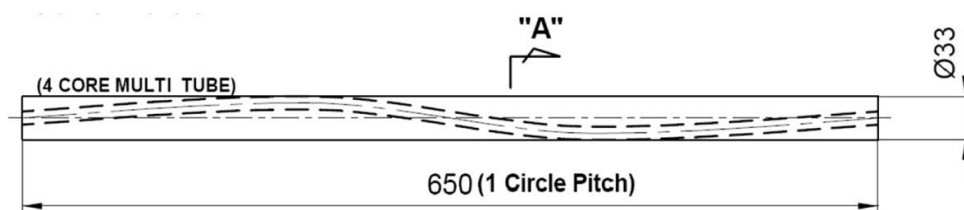
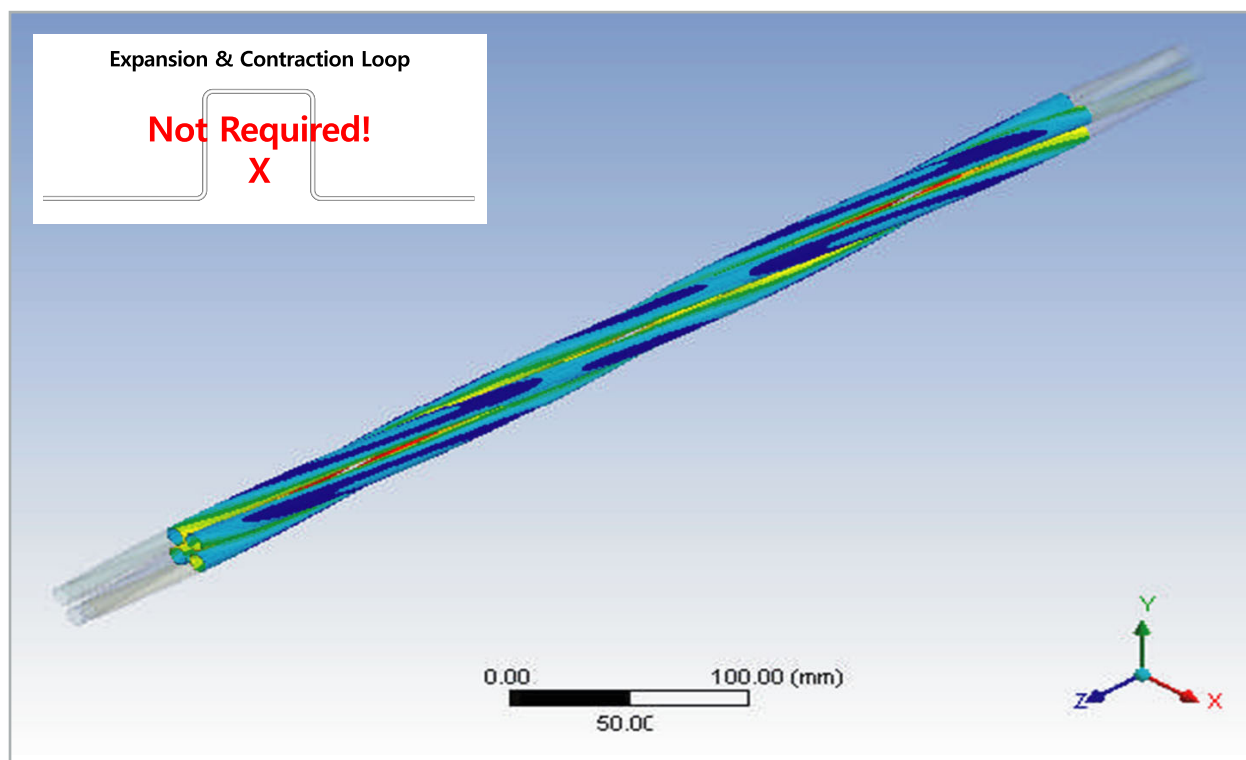
PVC : Polyvinyl Chloride, FR : Flame Retardant, HR : Heat Resistant, TPU : Thermal Plastic Polyurethane, HFFR : Halogen Free & Flame Retardant, PE : Polyethylene, XL : Cross-linked, TF-1 : PFA(PerFluoroAlkoxy), TF-2 : FEP(Fluorinated Ethylene Propylene), TF-3 : PVDF(PolyVinylideneFluoride)

Free from Expansion & Contraction Loop

Considering a vessel's hull deflection stainless steel stick bare tubing is installed with a bend loop to allow for expansion and contraction. As this regular tube bend loop work is one of the main reasons increasing labor cost, time and installation space installers in shipbuilding and offshore industries have been in search of alternative tubings. Stranded Multi Core Tube bundle has the advantage to absorb hull deflection without doing routine and time-consuming bend procedures. Well-designed DAECHUN's Multi Core Tubes from 2core and over naturally absorb every vessel type's hull deflection with its own structure without an artificial expansion and contraction bend loop.

Multi Core Tube Design

Example



No.	Description	Material	Nominal Thickness	Q'ty
1	Outer Sheath	PVC	2.5mm	1
2	Filler	Synthetic rubber	-	1
3	Color Identifying Inner Sheath	PVC	0.5mm	4
4	Tube	TP316/316L	1.0mm	4
5	PVC Rod	PVC	4.36mm	1

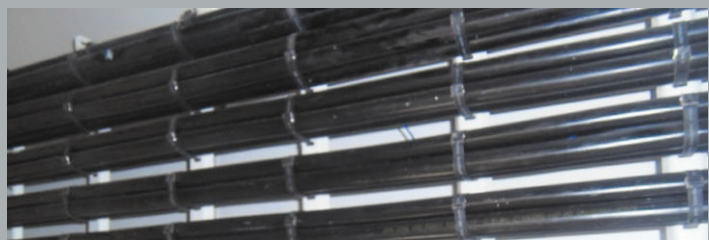
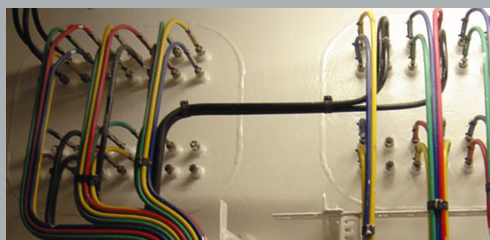


Specification (Metric size)

O.D.(mm) x Core	Bundle Weight(Kg/M)								Overall Diameter Approx. (mm)
	Stainless Steel				Copper & Copper Alloy				
	Wall Thickness(mm)				Wall Thickness(mm)				
	0.5	0.8	1.0	1.2	0.8	1.0	1.2	1.4	
6 x 1	0.12	0.16	0.18	0.20	0.17	0.20	-	-	9
6 x 2	0.49	0.56	0.60	0.64	0.58	0.63	-	-	19
6 x 3	0.57	0.66	0.72	0.78	0.69	0.77	-	-	20
6 x 4	0.72	0.86	0.95	1.03	0.91	1.01	-	-	23
6 x 5	0.81	0.98	1.08	1.18	1.04	1.16	-	-	24
6 x 6	1.01	1.22	1.34	1.46	1.29	1.43	-	-	27
6 x 7	1.04	1.28	1.43	1.57	1.36	1.53	-	-	27
6 x 8	1.39	1.67	1.84	2.01	1.76	1.96	-	-	32
6 x 9	1.60	1.92	2.10	2.28	2.10	2.22	-	-	34
6 x10	1.63	1.98	2.18	2.39	2.17	2.37	-	-	34
8 x 1	0.17	0.22	0.25	0.28	0.23	0.27	0.30	-	11
8 x 2	0.64	0.74	0.80	0.86	0.81	0.88	0.94	-	23
8 x 3	0.71	0.86	0.95	1.03	0.94	1.04	1.14	-	24
8 x 4	0.94	1.14	1.26	1.38	1.24	1.38	1.51	-	28
8 x 5	1.19	1.44	1.60	1.75	1.56	1.73	1.89	-	31
8 x 6	1.35	1.65	1.83	2.01	1.78	1.99	2.18	-	33
8 x 7	1.37	1.72	1.93	2.14	1.87	2.11	2.34	-	33
8 x 8	2.07	2.47	2.72	2.96	2.64	2.92	3.18	-	41
8 x 9	2.43	2.83	3.08	3.37	2.88	3.20	3.49	-	43
8 x10	2.45	2.90	3.18	3.47	2.97	3.32	3.64	-	43
10x 1	-	0.27	0.32	0.35	0.33	0.34	0.38	0.41	13
10x 2	-	1.02	1.10	1.18	1.07	1.16	1.25	1.33	28
10x 3	-	1.20	1.32	1.44	1.27	1.40	1.54	1.66	29
10x 4	-	1.55	1.71	1.87	1.64	1.82	2.20	2.36	33
10x 5	-	1.96	2.17	2.37	2.07	2.30	2.52	2.72	37
10x 6	-	2.26	2.50	2.74	2.39	2.67	2.93	3.17	40
10x 7	-	2.33	2.62	2.90	2.49	2.80	3.11	3.39	40
10x 8	-	3.23	3.55	3.87	3.41	3.77	4.12	4.45	48
10x 9	-	3.72	4.05	4.41	-	4.29	4.68	5.05	51
10x10	-	3.79	4.11	4.51	-	4.38	4.81	5.22	51
12x 1	-	0.32	0.38	0.42	0.34	0.41	0.46	0.51	15
12x 2	-	1.35	1.45	1.55	1.41	1.52	1.72	1.82	33
12x 3	-	1.90	2.05	2.20	-	2.15	2.32	2.47	38
12x 4	-	2.02	2.23	2.43	-	2.36	2.58	2.78	39
12x 5	-	2.17	2.43	2.68	-	2.59	-	-	44
12x 6	-	3.01	3.32	3.62	-	3.52	-	-	48

O.D.(mm) x Core	PVC Sheathed Tube Weight(Kg/M)						Overall Diameter Approx. (mm)
	Stainless Steel				Copper & Copper Alloy		
	Wall Thickness(mm)				Wall Thickness(mm)		
	1.0	1.2	1.5	2.0	1.0	1.2	
10 x 1	0.32	0.35	0.40	0.48	0.34	0.38	13
12 x 1	0.38	0.42	0.49	0.60	0.41	0.46	15
15 x 1	0.47	0.54	0.63	-	0.51	0.59	18

Please consult us for other sizes not listed.



Specification (Imperial size)

O.D.(inch) x Core	Bundle Weight (Kg/M)					Overall Diameter Approx. (mm)
	Stainless Steel			Copper & Copper Alloy		
	Wall Thickness (inch)			Wall Thickness (inch)		
	0.035	0.049	0.065	0.035	0.049	
1/4 x 1	0.17	0.21	0.24	0.19	0.23	9
1/4 x 2	0.75	0.83	0.90	0.78	0.87	21
1/4 x 3	0.82	0.93	1.04	0.87	0.99	22
1/4 x 4	1.10	1.28	1.43	1.16	1.34	25
1/4 x 5	1.20	1.40	1.59	1.27	1.50	26
1/4 x 6	1.40	1.64	1.87	1.49	1.76	29
1/4 x 7	1.50	1.76	2.03	1.57	1.85	29
1/4 x 8	1.94	2.24	2.55	2.02	2.34	34
1/4 x 9	2.22	2.56	2.91	2.31	2.67	36
1/4 x 10	2.29	2.67	3.06	2.39	2.79	36
3/8 x 1	0.28	0.35	0.41	0.31	0.38	13
3/8 x 2	1.14	1.27	1.40	1.18	1.33	28
3/8 x 3	1.30	1.49	1.69	1.37	1.59	29
3/8 x 4	1.59	1.85	2.12	1.68	1.98	32
3/8 x 5	1.99	2.32	2.66	2.10	2.47	36
3/8 x 6	2.35	2.74	3.14	2.47	2.86	39
3/8 x 7	2.41	2.87	3.34	2.58	3.09	39
3/8 x 8	3.31	3.84	4.38	3.50	4.09	47
3/8 x 9	3.72	4.31	4.92	3.92	4.59	50
3/8 x 10	3.87	4.53	5.21	4.10	4.84	50
1/2 x 1	-	0.47	0.57	-	0.51	16
1/2 x 2	-	1.84	2.04	-	1.92	35
1/2 x 3	-	2.61	2.91	-	2.74	41
1/2 x 4	-	2.83	3.23	-	3.00	42
1/2 x 5	-	3.50	4.00	-	3.71	47
1/2 x 6	-	4.14	4.74	-	4.39	51

Please consult us for other sizes not listed.

Maximum Allowable Working Pressure

Stainless Steel Seamless Tube

(Unit : bar)

O.D. (mm)	Wall Thickness (mm)					
	0.5	0.8	1.0	1.2	1.5	2.0
6	215	358	459	566	737	-
8	160	263	335	410	528	-
10	127	208	264	322	412	571
12	-	172	218	265	337	465
15	-	-	173	209	265	363

(Unit : psi)

O.D. (inch)	Wall Thickness (inch)		
	0.035	0.049	0.065
1/4	5500	8000	11200
3/8	3600	5100	7000
1/2	2600	3800	5100

Stainless Steel Seam-welded Tube

(Unit : bar)

O.D. (mm)	Wall Thickness (mm)					
	0.5	0.8	1.0	1.2	1.5	2.0
6	172	287	368	453	-	-
8	128	211	268	328	423	-
10	102	167	212	258	330	457
12	-	138	175	212	270	372
15	-	110	139	168	212	291

(Unit : psi)

O.D. (inch)	Wall Thickness (inch)		
	0.035	0.049	0.065
1/4	4400	6400	9000
3/8	2900	4100	5600
1/2	2100	3100	4100

Copper Tube (Soft-annealed)

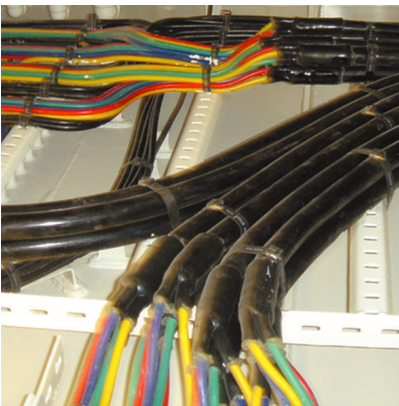
(Unit : bar)

O.D. (mm)	Wall Thickness (mm)					O.D. (inch)	Wall Thickness (inch)	
	0.8	1.0	1.2	1.4	1.6		0.035	0.049
6	95	120	150	-	-	1/4	95	150
8	70	85	110	-	-	3/8	60	95
10	55	70	85	105	-	1/2	45	70
12	45	55	70	85	100			
15	35	45	55	65	-			

Cu-Ni(90/10) Tube

(Unit : bar)

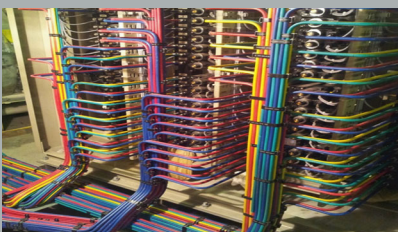
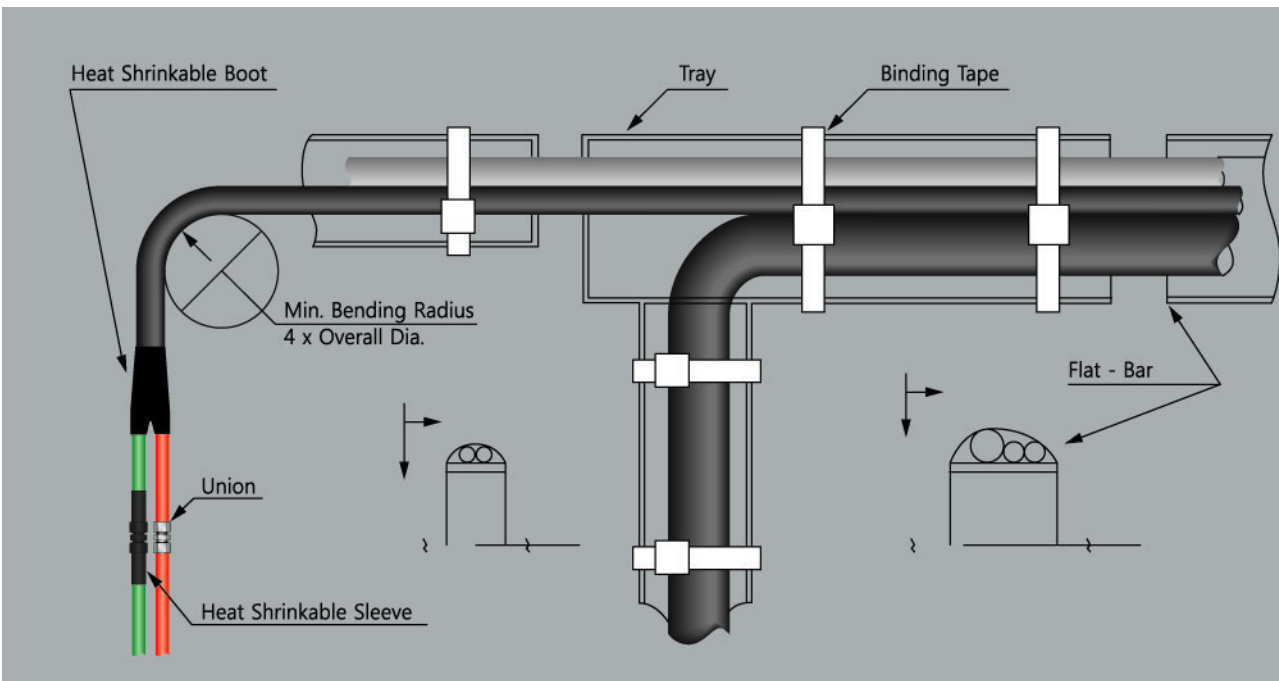
O.D. (mm)	Wall Thickness (mm)					O.D. (inch)	Wall Thickness (inch)	
	0.8	1.0	1.2	1.4	1.5		0.035	0.049
6	180	230	280	-	-	1/4	190	275
8	130	165	205	-	-	3/8	120	175
10	100	130	160	190	205	1/2	90	125
12	-	105	130	155	165			
15	-	85	100	120	130			



Installation

Multi Core Tube bundle is wound onto wooden drums and supplied to customers worldwide. Installation of Multi Core Tube, e.g. uncoiling from wooden drums, straightening, running, cutting, etc. is applied in the same way as that of electrical cable. See typical installation shown below.

Multi Core Tube can be run on ladder tray, perforated tray or flat-bar tray and penetrate deck or bulkhead (wall) by either coaming or appropriate penetration fittings. Suitable fittings such as straight union, male/female connector, Welding bulk head union, etc. are used for connection or termination of the tube.



Special Single Core Tube

Teflon Sheathed Tube

Heat Resistance

Fluoropolymer can be operated from -200°C to +200°C or wider service temperature ranges, showing excellent heat resistance.

Chemical Resistance

Fluoropolymers are resistant to most chemicals and show strong stability to all chemicals. They are slightly affected by alkali metal products and severe fluorochemicals.

Unique Electrical Properties

Fluoropolymers have very high electric insulation resistance, low dissipation factor and excellent surface resistivity. Conductive coating (anti-static) is available for antistatic purpose by special technology.

Cryogenic Stability

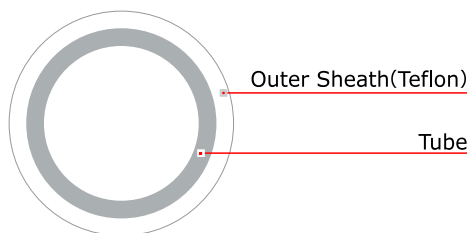
Most fluoropolymer coating maintains their physical properties unchanged even at extremely low temperatures. Fluoropolymer can be used at temperature as low as -200°C or lower, depending on the fluoropolymer material.

Non-sticking

Most materials do not stick to the surface coated with fluoropolymer and easily come off even with very sticky materials. Physical deposition of contaminants or impurities is difficult.

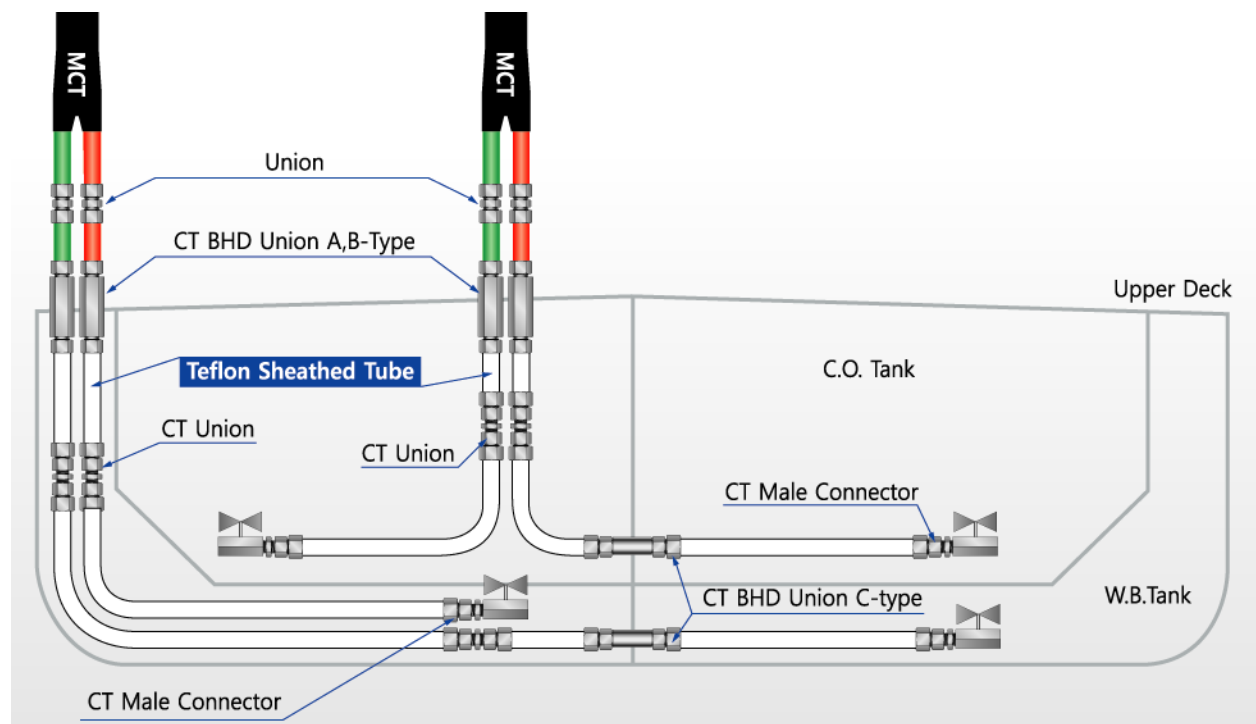
Non-wetting

Surface coated with fluoropolymer does not tend to get wet or stained with water or oil. Therefore, the surface does not get contaminated and clean-up is very easy, which can shorten the maintenance time of the system and improve productivity.



O.D. (mm)	Wall Thickness (mm)	Overall Diameter Approx. (mm)
10	0.8 / 1.0 / 1.2 / 1.5 / 2.0	13

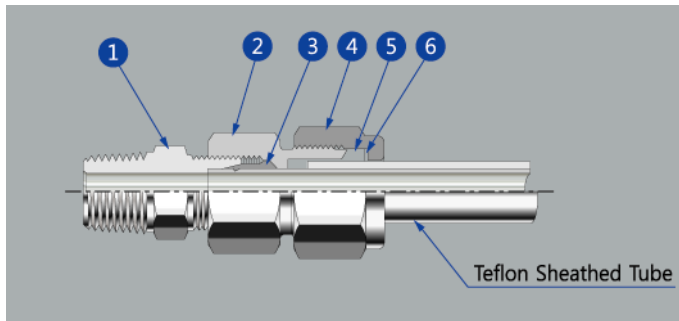
Recommended Installation inside Product Oil / Chemical Tanks



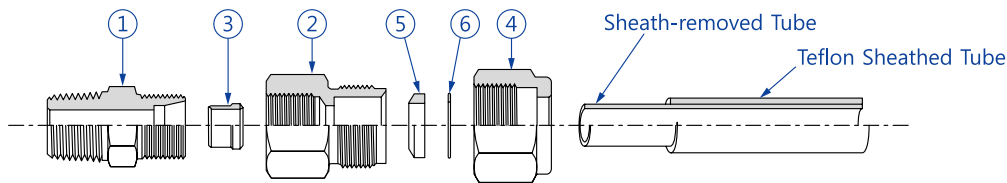
* Please consult us for further questions.



Special Fittings For Teflon Sheathed Tube



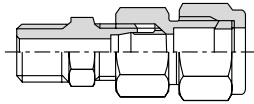
No	Part name	Material
1	Body	AISI 316
2	Tube Fitting Nut	AISI 316
3	Sleeve	AISI 316
4	Sheath Seal Nut	AISI 316
5	Seal Packing	VITON
6	Seal Washer	TEFLON



Teflon Sheathed Tube is installed together with suitable fittings for tube & fitting leak-tight metal to metal connection and water-tight seal on the out-sheath of the sheathed tube, discarding the want for heat shrinkable sleeves and silicon sealing tapes.

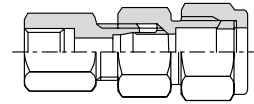
CT Male Connector

Tube & fitting leak-tight sealed and out-sheath water-tight sealed



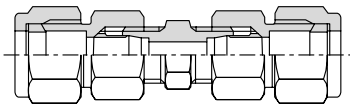
CT Female Connector

Tube & fitting leak-tight sealed and out-sheath water-tight sealed



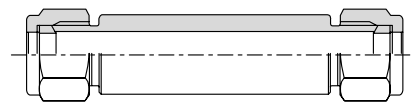
CT Union

Both sides tube & fitting leak-tight sealed and out-sheath water-tight sealed



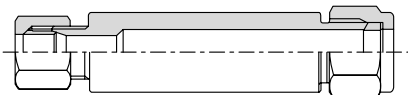
CT Bulkhead Union A type

Both sides out-sheath water-tight sealed



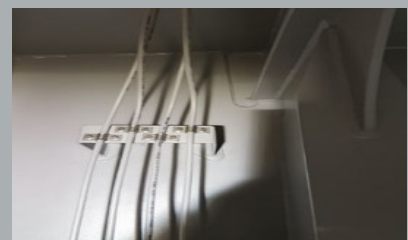
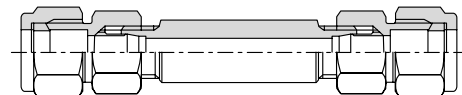
CT Bulkhead Union B type

On the one hand, bare tube & fitting are leak-tight metal connected, but on the other hand out-sheath is water-tight sealed



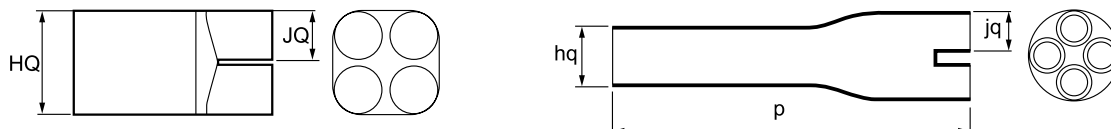
CT Bulkhead Union C type

Both sides tube & fitting leak-tight sealed and out-sheath water-tight sealed



Heat Shrinkable Boot

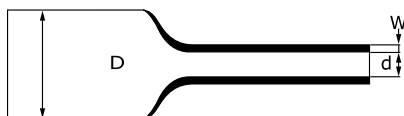
Material	Cross - linked Polyolefin (Flame Retardant)	
Temperature	Operating Temperature Range	-40°C ~ 100°C
	Minimum Shrinking Temperature	125°C



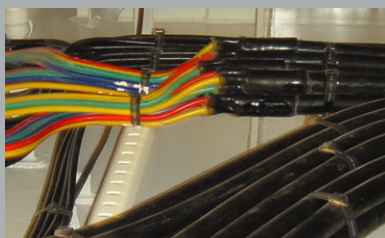
Type	As Supplied		After Recovery (min.)			Suitable Multi Core Tube
	HQ	JQ	hq	jq	p	
DCHB - 02 - 1	34	14	12	4	78	O.D. 6mm X 2CORE O.D. 8mm X 2CORE
DCHB - 02 - 2	45	18	15	6	90	O.D. 10mm X 2CORE O.D. 12mm X 2CORE
DCHB - 03 - 1	35	15	17	5	76	O.D. 6mm X 3CORE O.D. 8mm X 3CORE
DCHB - 03 - 2	50	25	27	9	100	O.D. 10mm X 3CORE O.D. 12mm X 3CORE
DCHB - 04 - 1	40	14	22	5	90	O.D. 6mm X 4CORE O.D. 8mm X 4CORE
DCHB - 04 - 2	50	18	26	5	90	O.D. 10mm X 4CORE O.D. 12mm X 4CORE
DCHB - 05 - 1	40	13	20	5	90	O.D. 6mm X 5CORE O.D. 8mm X 5CORE
DCHB - 05 - 2	55	17	23	5	110	O.D. 10mm X 5CORE O.D. 12mm X 5CORE
DCHB - 06 - 1	45	12	20	4	100	O.D. 6mm X 6CORE O.D. 8mm X 6CORE
DCHB - 06 - 2	85	23	37	7	140	O.D. 10mm X 6CORE O.D. 12mm X 6CORE

Heat Shrinkable Sleeve

Material	Cross - linked Polyolefin (Flame Retardant)	
Temperature	Operating Temperature Range	-40°C ~ 110°C
	Minimum Shrinking Temperature	125°C



Type	As Supplied	After Recovery (min)	Wall Thickness After Recovery
	D(mm)	d(mm)	w(mm)
DCHT 12 / 4	12	4	1.5
DCHT 15 / 5	15	5	1.9
DCHT 25 / 6	25	6	2.2
DCHT 32 / 11	32	11	2.5
DCHT 40 / 12	40	12	2.5
DCHT 50 / 16	50	16	2.7
DCHT 70 / 22	70	22	3.0





Heat Shrinkable Boot and Sleeve (HSB & HSS)

Corrosion Protective

Special care is required for installers due to the potential corrosion of metals and alloys when installed in aggressive shipyard environments such as scratches, salt water, alien objects and carbon dusts. Those contaminants may start breaking the passivity of stainless steel bare tube & fitting, combine with the oxygen and result in tube corrosion.

During the installation scratches, metallic dusts, and etc. must be avoided. For longer and more reliable protection purposes, we highly recommend sheathed tubes and jacket bare exposed stainless steel tubes and fitting surfaces with heat shrinkable boots and sleeves.

Designed for insulating and sealing a multicore tube crotch and individual tube, a cross-linked polyolefin HSB and HSS are supplied along with an adhesive inner coating for reliable environmental sealing.

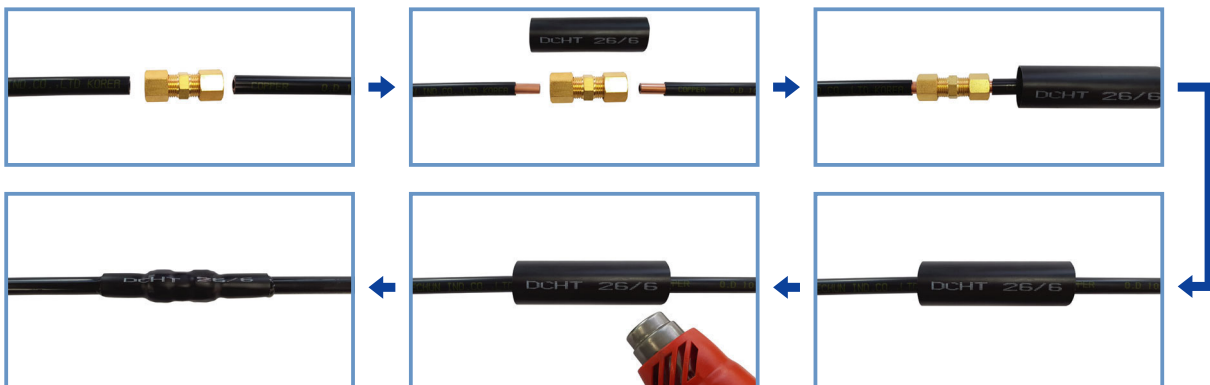
Heat Shrinkable Boot(HSB) Installation Process



Installation Steps for HSB

1. Pass the breakout over the cores and push it well down into the crotch.
2. Shrink the breakout into place starting at the center. Work first towards the over-sheath and then shrink the fingers onto the cores.
3. When installation of breakout is completed, allow the breakout to cool before applying any mechanical strain.

Heat Shrinkable Sleeve(HSS) Installation Process

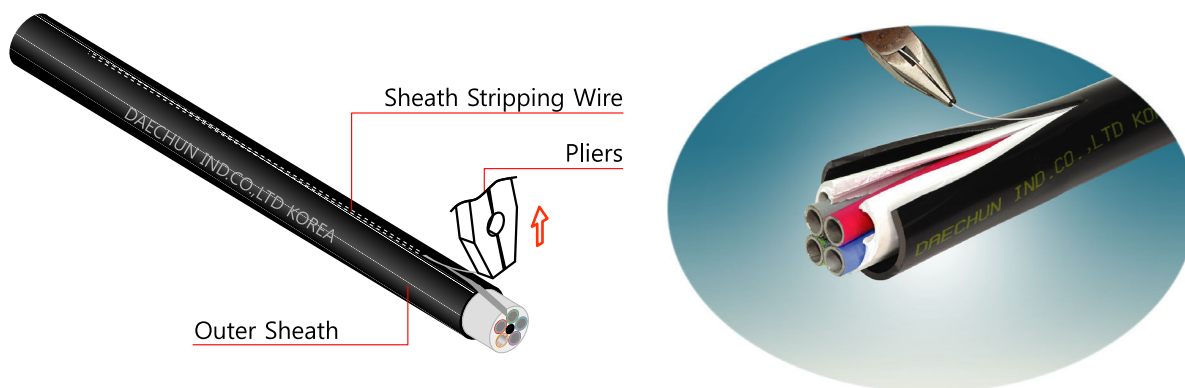


Installation Steps for HSS

1. Cut(square) to desired length and slide the expanded tubing over the item to be covered.
2. Shrink tubing by applying heat using a heat gun or other heat sources. Tubing starts to shrink at around 125°C. As heat is applied, move heat source back and forth and around the tubing to be shrunk. Shrink from the center toward the ends to ensure even shrinkage and avoid air entrapment.
3. When the tubing has shrunk enough to assume the configuration of the item covered, discontinue heating. Additional heating will not make the tubing shrink tighter.

Easier & Safer Sheath Removing Procedure

Sheath stripping wire embedded along the tube (see below picture) ensures easier and safer sheath removing procedure. The sheath can be simply stripped out by pulling the wire without using tools like knife, etc.



Tools & Accessories



Manual Bender



Tube Cutter and Blade



Sheath Removing Knife



Tube Deburring Tool



Tube Fitting



Binding Tape



Plastic Clamp



Heat Shrinkable Boot and Sleeve



Hot Air Gun



How To Choose Tube Fitting

1 Step Type

Type
LOK - (S)
DIN 2353 - (D)
JIS B2351 - (B)

Please consult us for other types not listed

2 Step Material

Material	Bar Stock	Forgings
Stainless Steel 316/316L	ASTM A479/A276	ASTM A182
Duplex / Super Duplex	ASTM A479/A276	ASTM A182
Alloy 625	ASTM B446	ASTM B564
Alloy 825	ASTM B425	ASTM B564
Brass	ASTM B16 JIS H3250	ASTM B283 JIS H3250

Please consult us for other materials not listed

3 Step Design

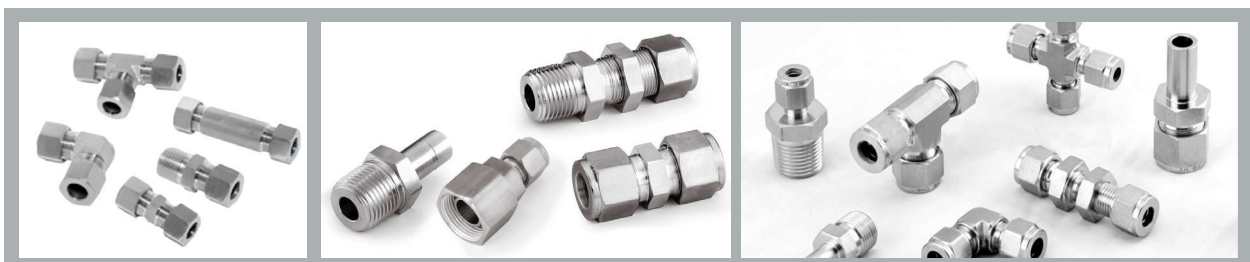
Design		
Union	Welding Bulk Head Union	Male Adaptor
Union Tee	Male Connector	Female Adaptor
Union Elbow	Female Connector	Reducing Hex Nipple
Union Cross	Plug	Hex Nipple
Bulk Head Union	Cap	Hex Bushing

Please consult us for other designs not listed

4 Step Size (Metric/Imperial)

O.D.	Metric (mm)				
	6	8	10	12	15
	Imperial (inch)				
	1/4	5/16	3/8	1/2	5/8

Please consult us for other sizes not listed



Tube Fitting



Union



Union Tee



Union Elbow



Union Cross



Bulk Head Union



Welding Bulk Head Union



Male Connector



Female Connector



Plug



Cap



Male Adaptor



Female Adaptor



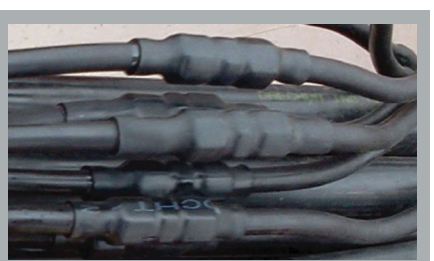
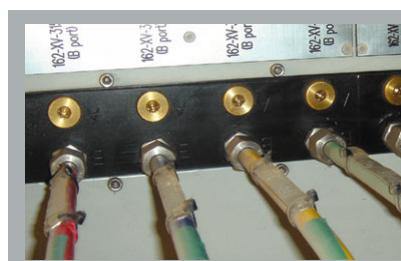
Hex. Bushing



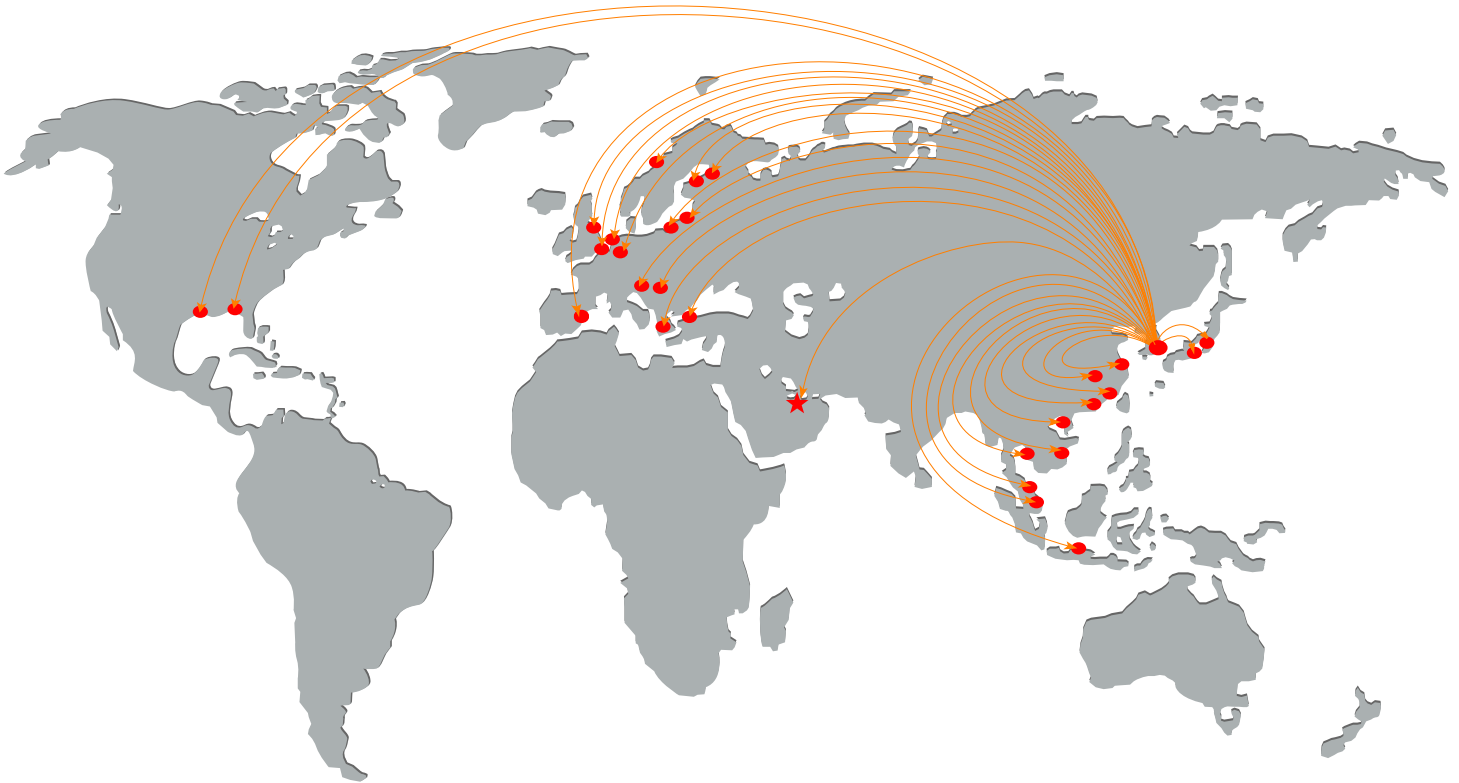
Reducing Hex. Nipple



Hex. Nipple



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