

Global Leader for Industrial Plastic Extrusion



World Best DAE-A Industrial

고품질
HIGH QUALITY
高品质

고서비스
HIGH SERVICE
高服务

고정밀
HIGH PRECISION
高精度

GREETINGS



DAE-A is a manufacturer of automotive plastic-extruded products, such as fuel tube, protector tube (CORRUGATED TUBE, PVC TUBE), armoring tube, etc. We have been contributing to securing international competitiveness by further developing the automobile industry in Korea, and we continue to grow by manufacturing new products through our own research and development efforts.

We aim to continue as a company trusted by customers by manufacturing and supplying the best products as well as by working in harmony with the entire staff. The company's vision is to make our society better through customer satisfaction.

We will continue to research and develop in order to produce competitive products and make great efforts to become a trusted company.

We humbly ask for your continuous support and interest.
Thank you.

CEO Ki-geuk Son





Headquarters Factory 1

Factory 2 (DAE-A Tube)



DAE-A Industrial





Global Leader
DAE-A Industrial

I COMPANY HISTORY



- 1979 - Established DAE-A Industrial Co., Ltd.
- 1982 - Manufactured automobile PVC tubes
- 1983 - Moved its factory to the 3rd industrial complex
- 1986 - Manufactured automobile corrugated tubes
- 1996 - Manufactured nylon corrugated tubes
- 1997 - Moved its factory to the Seongseo 3rd industrial complex
- 1998 - Manufactured flame retardant corrugated tubes
- 2000 - Manufactured vacuum 5 ϕ corrugated tubes
- 2001 - Manufactured armoring tubes
- 2003 - Acquired the QS9000 certificate
- 2005 - Acquired the ISO 9001 certificate
- 2006 - Acquired the ISO 14001 certificate
/ Changed the company name to DAE-A Industrial Co., Ltd.
- 2008 - Acquired the TS 16949 certificate
- 2009 - Manufactured fuel tubes
- 2013 - Acquired the SQ certificate [Injection]
- 2015 - Extended the factory 2 DAE-A Tube (Seongseo 5th industrial complex)
/ Introduced the Multi 6 Layer facilities
- 2019 - Development of tube for degassing (first application of HMC/DN8)
- 2020 - Developed radiator cooler tube for electric vehicle in 2020



MAIN BUSINESS



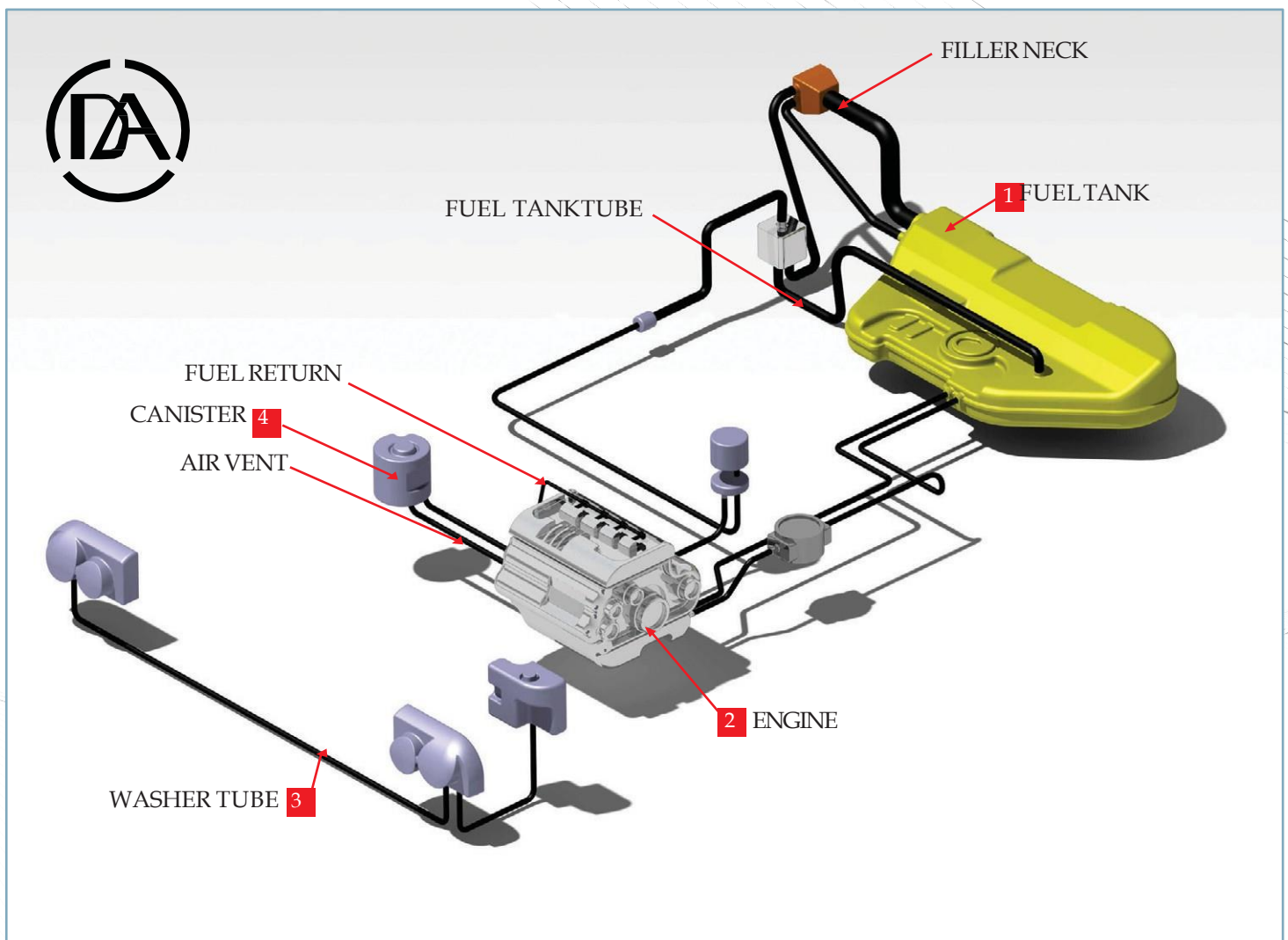
Automobile components

Automobile wire protective tube / electronic equipment wiring protective tube / wire protective tube / automobile fuel / automobile washer tube

Fuel Tube Applications

The fuel tube is made from nylon, and it is most suitable for FUEL TANK, FILLER NECK, VENT LINE, FEED LINE, CANISTER, and RETURN TUBE because of its high viscosity and excellent thermal stability.

FUEL LINES IN PASSENGER CAR

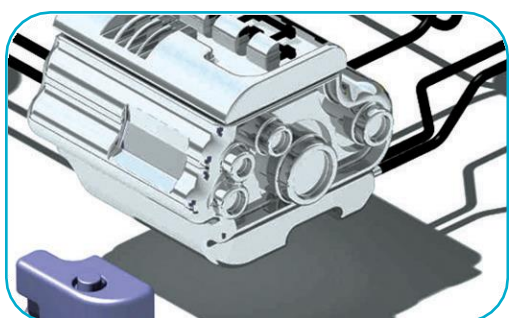




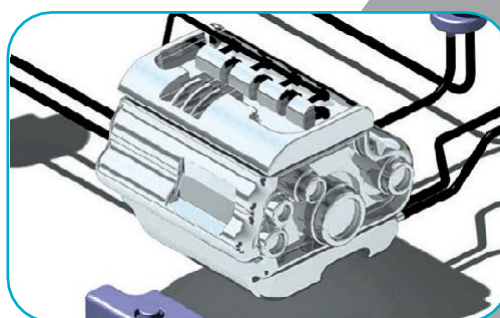
1.FUEL TANK



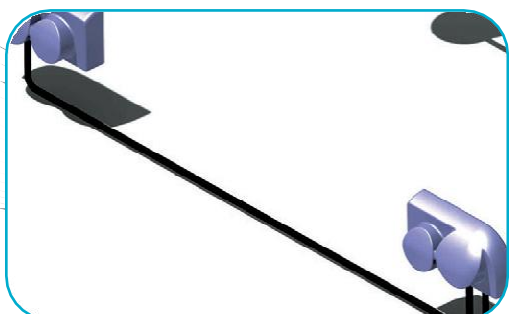
FILLER NECK



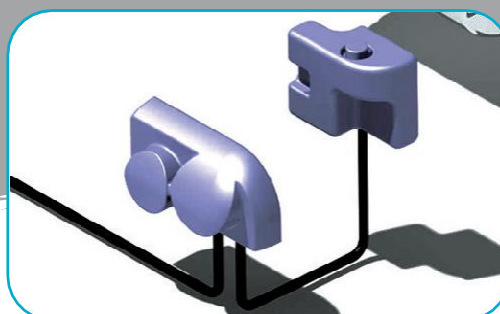
2.ENGINE



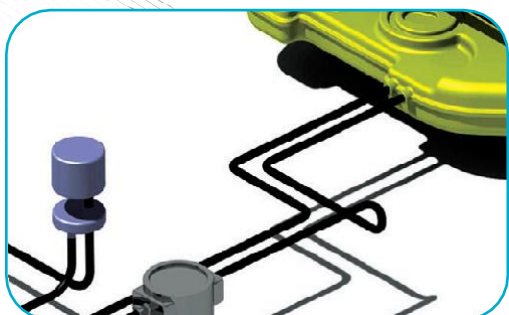
FUEL RETURN



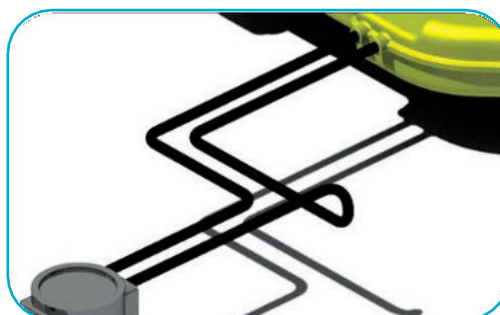
3.LAMP WASHER



WASHER TUBE



4.CANISTER



VENT /FEED LINE TUBE

TECHNOLOGY

Our products have the best quality and durability based on numerous technologies that were accumulated through the company's long experience and mass production process. We also prioritize customer satisfaction.

■ We provide customized solutions for customers.

We have the complete technologies and manufacturing facilities from the initial design to mass production. We can develop and manufacture products with our customers. We can also design and develop products in real time based on the demands of the customers.



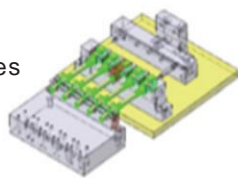
■ We can supply our products based on the schedule of the customers through quick and accurate product development.

As a leading manufacturer with expertise, technologies, and business experiences with various customers in the mold manufacturing industry, we have outstanding qualifications to develop new products. We can provide reliable products and meet the timeline set by customers through rapid product development.



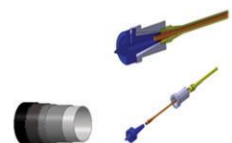
■ Leak Tester Device

Air leakage test facilities manufacturing technology



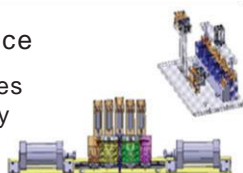
■ Multiple Extrusion

Vehicle weightlightening technology through multi-extrusion technology



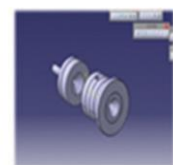
■ Tube Assembly Device

Tube assembly facilities manufacturing technology



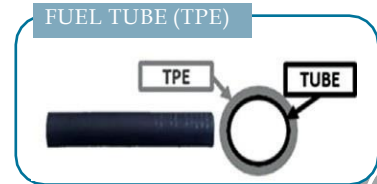
■ 3-D design

Complex shape design through the 3D self-design ability



Fuel Tube Assembly

The fuel tube is made from nylon, and it is most suitable for a fuel tube and an air vent because of its high viscosity and excellent thermal stability.



TUBE COLD START F/TANK F/VPR

- Brazil diesel vehicle
- ▶ It is a coupling item with a fuel auxiliary tank and helps the engine to start while adapting into the environmental conditions of North America.



Fuel return tube assy

- It is being applied to domestic diesel vehicles..
- ▶ It has been improved for the development of a new engine and to upgrade domestic diesel vehicles in accordance with the European environment regulations.



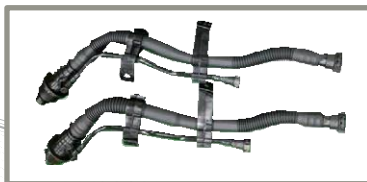
TUBE ASSY-RECIRCULATION

- It is being applied to electric vehicles..
- ▶ It has been advanced for the development of domestic hybrid vehicles.



TUBE ASSY-AIR VENT

- It is being applied to vehicles, which are exported to India.



UREA FILLER NECK PIPE

- Urea Main Pipe using TPO Materials, which will be applied to diesel vehicles in accordance with the regulations on gas emissions



FILLER NECK TUBE

- It has been installed in the exported vehicles of Hyundai and Kia.
- ▶ It safely transfers fuel from a fuel inlet to a fuel tank. FUEL MOTOR TUBE

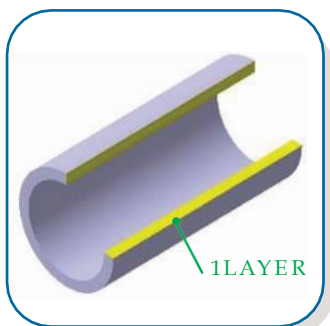


FUEL MOTOR TUBE

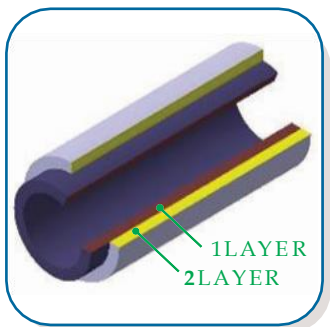
- It delivers fuel in a fuel tank to an engine.

Fuel Tube

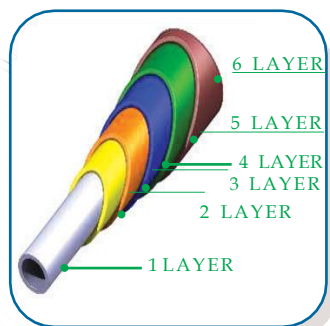
- PA11 or PA12 is being applied to materials of the fuel tube, and they have excellent durability even at low temperature, toughness, rigidity, high viscosity, and thermal stability. They are being applied to automobile components, such as fuel tube, washer tube, oil, hydraulic fluid, solvent, etc., because they are also strong against melting.



MONO TUBE



2 LAYER TUBE

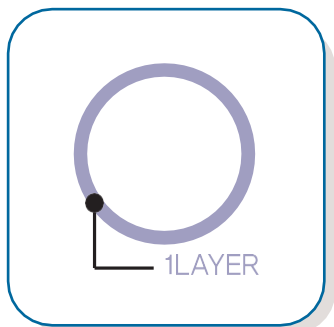


MULTI 6 LAYER TUBE

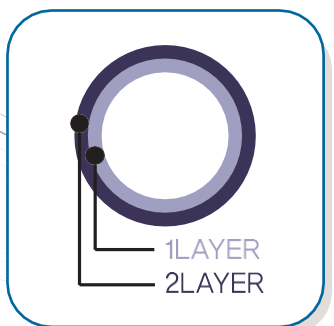
Model	DOD	Thickness (mm)	Standard Color (Black)
Ø4x6 (FUEL TUBE)	4.0/6.0	1.0	○
Ø5.89x7.89 (FUEL TUBE)	5.89/7.89	1.0	○
Ø6x8 (FUEL TUBE)	6.0/8.0	1.0	○
Ø8x9.5 (FUEL TUBE)	8.0/9.5	0.8	○
Ø10x13 (FUEL TUBE)	10/13	1.5	○
Ø4x6x8 (FUEL TUBE+TPE)	OD: 8	1.0	○
Ø5.89x7.89x9.89 (FUEL TUBE+TPE)	OD: 9.89	1.0	○
Ø10x13x16 (FUEL TUBE+TPE)	OD: 16	1.5	○

	Test	SPEC	Scope
	Room temperature burst	SAE J 2260	<ul style="list-style-type: none"> Bursting pressure with an outer diameter of Ø8 or less : 5.500 kpa or higher Bursting pressure with an outer diameter of Ø12 or less : 4.000 kpa or higher
	High temperature burst	SAE J 2260	<ul style="list-style-type: none"> High temperature burst : 2.100 kpa or higher
	Separation force	ES31310-20	<ul style="list-style-type: none"> There shall be no separation burst at 450 N.

Fuel Tube Concept



MONO TUBE



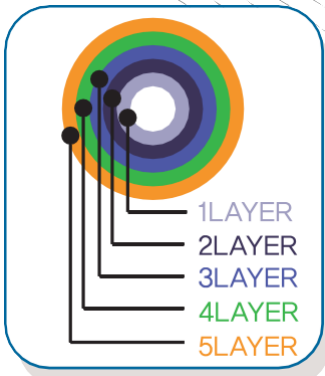
2LAYER TUBE



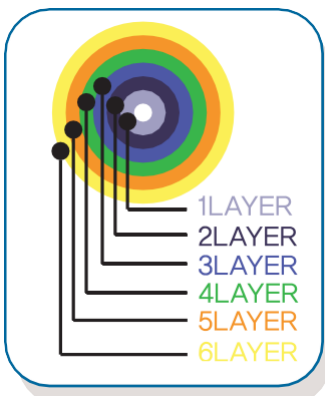
3LAYER TUBE

	Structure	Characteristics
MONO	PA12/ 11	<ul style="list-style-type: none"> ▣ LEV II & EURO5 ▣ High Temperature ▣ Application <ul style="list-style-type: none"> - Fuel lines - Vacuum Brakes ▣ Excellent cold impact resistance
2 Layers	Conductive PA12/ PA12 Conductive PA9T / PA12	<ul style="list-style-type: none"> ▣ LEV II & EURO5 ▣ High Temperature ▣ Application <ul style="list-style-type: none"> - Fuel lines - Vacuum Brakes ▣ Excellent cold impact resistance
3 Layers	Conductive PA9T ESD / PA9T / PA12	<ul style="list-style-type: none"> ▣ LEV III & EURO5 ▣ High Temperature ▣ Lower emission requirements ▣ Monomer/oligomer free▣ Application <ul style="list-style-type: none"> - Fuel lines ▣ Excellent cold impact resistance

Fuel Tube Concept



5LAYER TUBE

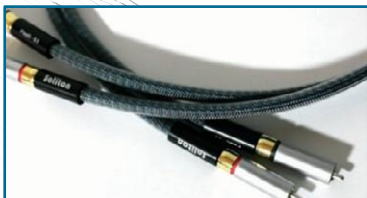
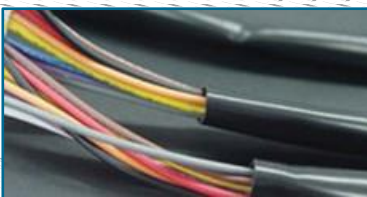


6LAYER TUBE

	Structure	Characteristics
5 Layers	Conductive PA12/ Adh / EVOH/ Adh / PA12	<ul style="list-style-type: none"> ▣ LEV III & EURO5 ▣ High Temperature ▣ Lower emission requirements ▣ Application - Fuel lines ▣ Excellent cold impact resistance
6 Layers	Conductive PA9T ESD/ PA12/ Adh / EVOH/ Adh / PA12	<ul style="list-style-type: none"> ▣ LEV III & EURO5(6) ▣ High Temperature ▣ Double Barrier Materials ▣ Lower emission requirements ▣ Low permeability to fuel ▣ Monomer/oligomer free ▣ Application - Fuel lines ▣ Excellent cold impact resistance

Protector (PVC)

- PVC is made up of 57% salt and 43% crude oil extract and has excellent corrosion resistance, chemical resistance, electrical insulation, and extrusion. It is currently being applied to many fields as a wire harness protective tube.

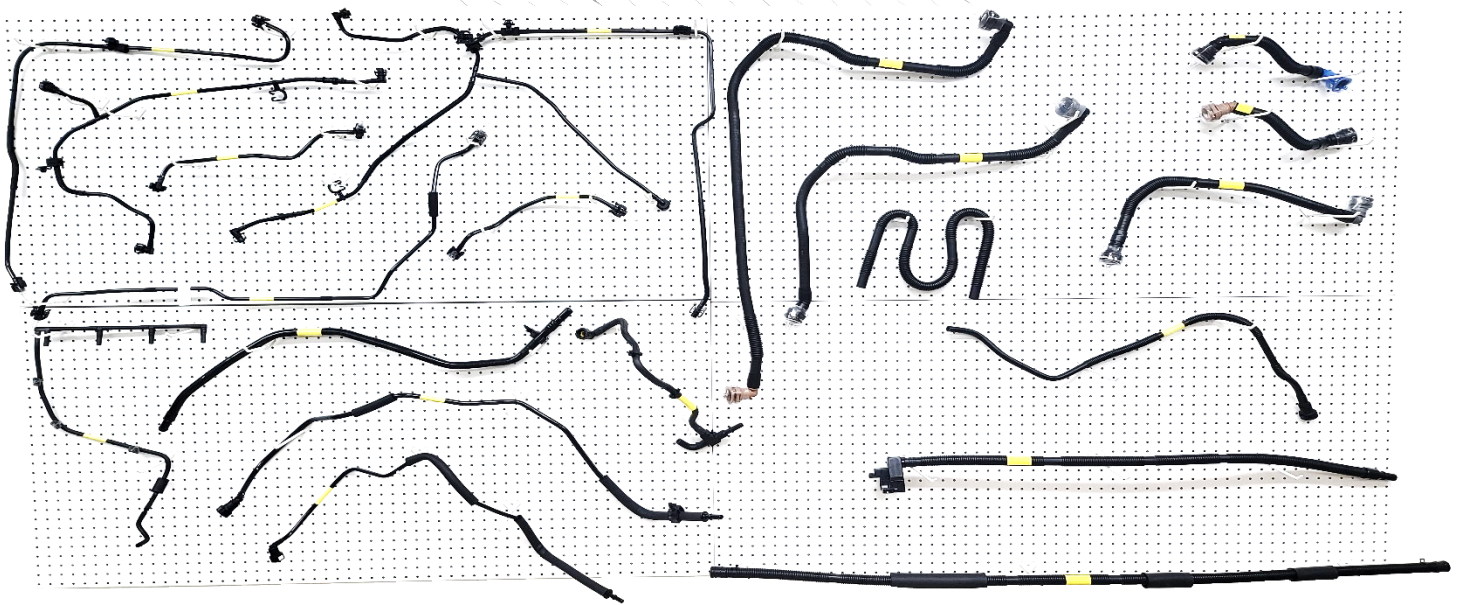


Model	DOD	Thickness (mm)	Standard Color (Color)				
			B	Y	Or	G	R
Ø3	3.0/4.0	0.5	○	○	○	○	○
Ø4	4.0/5.0	0.5	○	○	○	○	○
Ø5	5.0/6.0	0.5	○	○	○	○	○
Ø6	6.0/7.0	0.5	○	○	○	○	○
Ø7	7.0/8.0	0.5	○	○	○	○	○
Ø8	8.0/9.0	0.5	○	○	○	○	○
Ø9	9.0/10.0	0.5	○	○	○	○	○
Ø10	10.0/11.0	0.5	○	○	○	○	○
Ø11	11.0/12.0	0.5	○	○	○	○	○
Ø12	12.0/13.0	0.5	○	○	○	○	○
Ø13	13.0/14.0	0.5	○	○	○	○	○
Ø14	14.0/15.0	0.5	○	○	○	○	○
Ø16	16.0/17.0	0.5	○	○	○	○	○
Ø18	18.0/19.0	0.5	○	○	○	○	○
Ø20	20.0/21.0	0.5	○	○	○	○	○
Ø22	22.0/23.0	0.5	○	○	○	○	○
Ø24	24.0/25.0	0.5	○	○	○	○	○

	Test	SPEC	Scope
	Heat resistance	MS221-33	120±2°C x 30min
	Cold resistance	MS221-33	-40±3°C x 24h
	Tensile strength	MS221-33	1.6kgf/mm ² or higher

Electric vehicle technology

The thermal management system of electric vehicles can be largely divided into a cooling system to ensure stable performance of the driving system and a heating and cooling system for indoor temperature comfort related to the commercial characteristics of the vehicle.



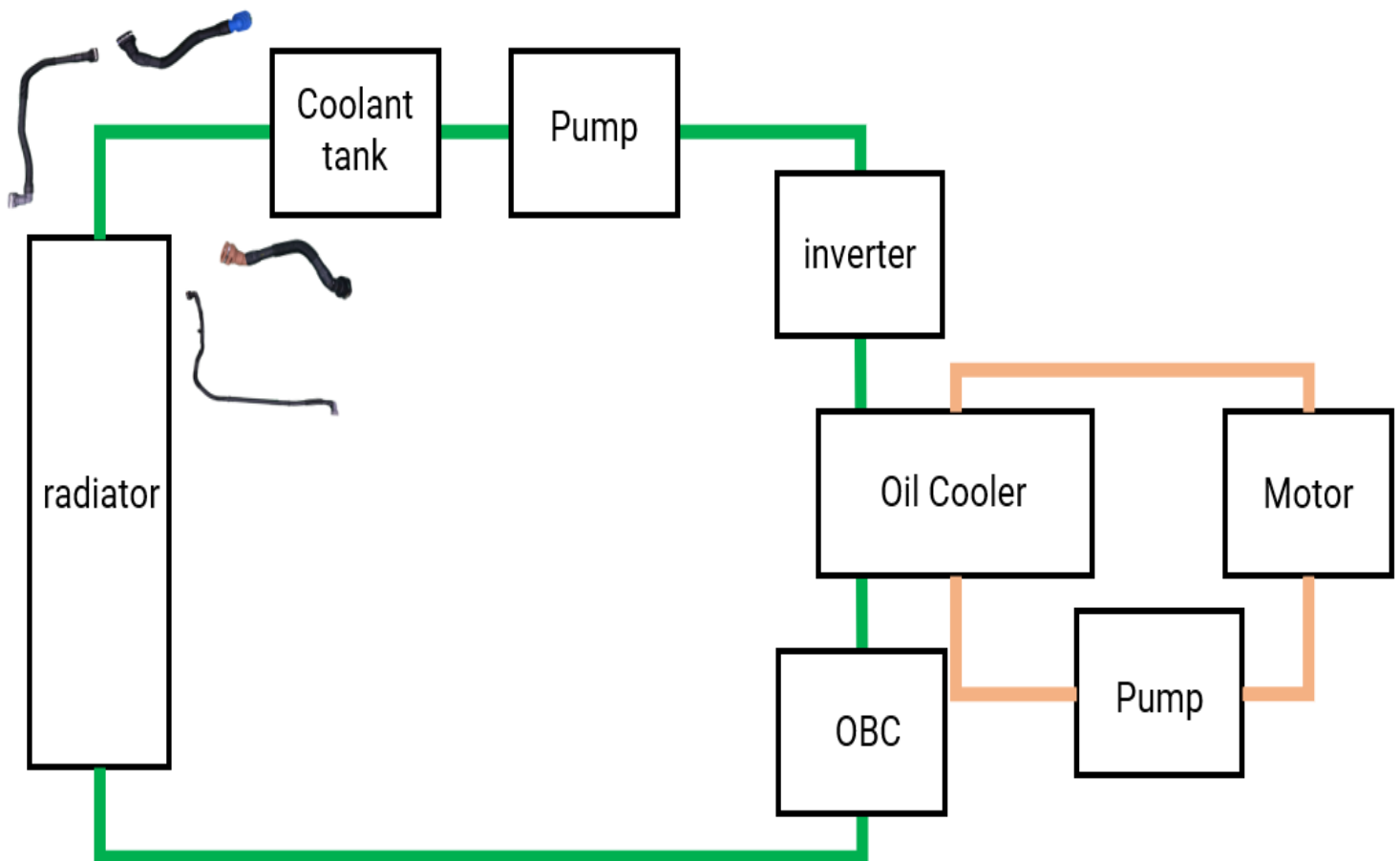
We are concentrating on developing motor cooling system cooling lines for electric vehicles and radiator cooling hoses.



Application of radiator for electric vehicles

1. motor cooling system cooling line
2. High Voltage Battery Cooling Line
3. battery reservoir line
4. Battery module cooling line, etc.

● Electric vehicle drive system



Four types of radiator hoses have been developed and are in mass production for Kia Motors' EV6 model.

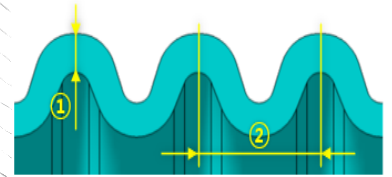
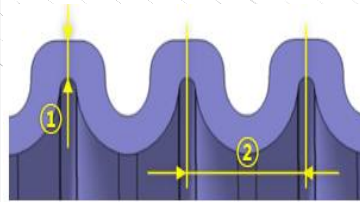
Electric vehicle only (corrugated tube type) tube configuration

straight tube part

Corrugated tube area



shape



① screw thread thickness

0.8

0.8

② Pitch

3.3

3.9

Pressure performance

Lower

Higher

Stretch ability

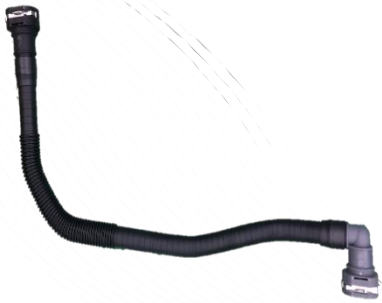
Higher


Lower

Bending

Higher

Lower



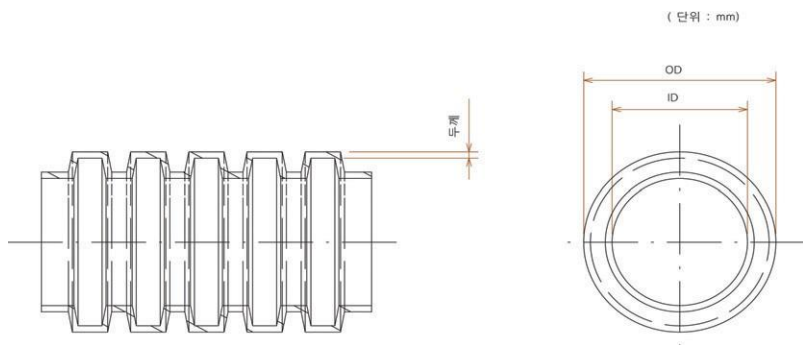
	Test	SPEC	Scope
	LEAK	ES25451-00	500kpa × 1min There will be no leakage
	burst pressure	ES25451-00	1,500kpa or more
	breakaway force	ES25451-00	450N or more

Protector (CORRUGATED)

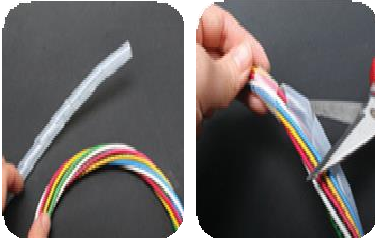
The environmental regulations for materials are rapidly increasing in all industries where plastic materials are applied to the global eco-friendly trend. Consequently, the eco-friendly characteristics of plastic materials, which are applied to automobiles, are considered to be very important. In particular, the corrugated tube is used for the electrical insulation of the wiring harness of automobiles as well as for various electrical devices and mechanical protection. It is considered to be the optimized material for the automobile corrugated tube by satisfying the rigidity, heat resistance, flame resistance, and cold resistance. It is most suitable for the wire protective tube because of its excellent rigidity, heat resistance, flame resistance, cold resistance, and extrusion.



Model	ID/OD	Thickness (mm)	Standard Color (Color)				
			B	Y	Or	G	R
Ø5	5.0/7.1	0.25	○	○	○	○	○
Ø7	7.3/10.7	0.27	○	○	○	○	○
Ø9	9.1/12.2	0.27	○	○	○	○	○
Ø11	11.1/14.5	0.27	○	○	○	○	○
Ø14	14.5/18.7	0.27	○	○	○	○	○
Ø16	16.8/21.4	0.27	○	○	○	○	○
Ø19	19.2/23.6	0.27	○	○	○	○	○
Ø22	22.3/27.4	0.30	○	○	○	○	○
Ø24	24.2/29.7	0.30	○	○	○	○	○
Ø30	30.0/35.0	0.40	○	○	○	○	○



	Test	SPEC	Scope
	Heat resistance	ES91404-00	150±2°C×300h
	Cold resistance	ES91404-00	-40±3°C×24h
	Flame resistance	ES91404-00	Less than 76mm/min

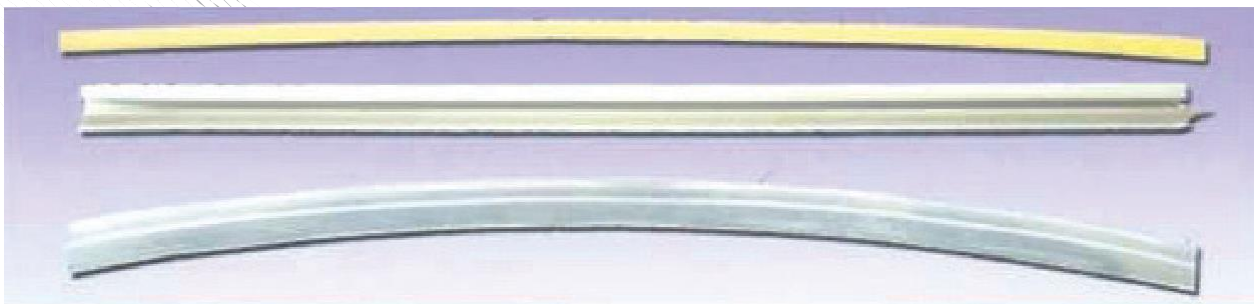


Protector (ARMORING)

It is strong against weather, friction, ultraviolet light, tensile strength, and oil solvent because PE and PA6 are used.

Model	ID/OD	Thickness (mm)	Standard color (color)				
			B	Y	Or	G	R
Ø6	6.0/8.0	1.0	○	○	○	○	○
Ø10	10.0/12.0	1.0	○	○	○	○	○
Ø12	12.0/14.0	1.0	○	○	○	○	○
Ø13	11.0/13.0	1.0	○	○	○	○	○
Ø20	20.0/22.0	1.0	○	○	○	○	○
Ø22	15.0/17.0	1.0	○	○	○	○	○
Ø24	18.0/20.5	12	○	○	○	○	○

PVC PROFILE & PIPE MANUFACTURING



Test Equipment



NO	Test name	standard	QT (EA)
1	Projector	50X50mm	1
2	Thermohygrostat	-40°C - 150°C	1
3	Combustion Tester	-	1
4	OVEN	10°C- 250°C	2
5	Withstanding Voltage Tester	AC5KV 10mA	1
6	Oil Bath	Roomtemperature -180°C	1
7	Impact Tester	-	1
8	Moisture Meter	0.01%	1
9	Electronic Scale	0.1g~600g 1kg~60kg	5
10	Vernier Calipers	150mm	4
11	Illuminometer	20~20000lex	1
12	Universal Testing Machine	100kg	1



Test Equipment

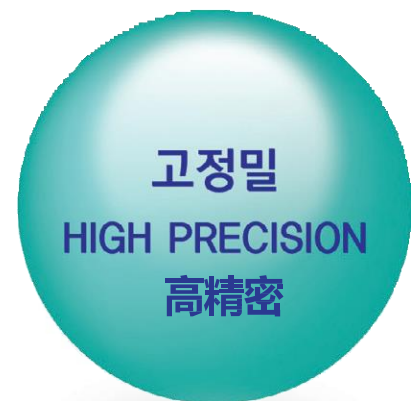


NO	Test name	standard	Quantity (EA)
1	Combined Environment Testing Machine	Capacity : 10Bar amplitude :±1.5, test speed :60Hz	1
2	salt part tester	RT~35°C central spray	1
3	Room temperature/high temperature burst tester	RT~150°C, 10,000Mpa	1
4	torsion testing machine	Tube rotation manual handle method	1
5	Repeated pressurization/complex environment (Cooling water tester)	0↔400kpa Amplitude: ±1.5, Test rate: 30Hz	1
6	Calcium Chloride / Bursting Pressure (Cooling water tester)	Max 100bar, high temperature 130°C Brine supply via air nozzle	1
7	Zinc Chloride Resistance Tester	23°C~60°C	1
8	low temperature impact tester	Height: 305±3mm impact weight : 15~88mm	1
9	electrical resistance tester	MEG-CHECK 2100A	1
10	repeated pressure tester	Capacity : 50Bar	1
11	LEAK tester	100Bar	1



Advantages of DAE-A Products

■ We promise to supply our products quickly and accurately through strict quality control and inventory management.



We manufacture top-quality products.

We manage the whole process from design, development, manufacture, quality control to distribution thoroughly, and we guarantee the best quality desired by customers with continuous innovation.



We guarantee the quality of our products.

We ensure that all customers can use our products conveniently through quality assurance. Customers can minimize the inconvenience of parts through quality assurance. They can also use a longer engine through easy installation.



We promise to supply your products quickly and accurately.

We supply components, which are desired by customers worldwide, quickly and accurately through the advanced component supply and management system and the component distribution network.





Corrugated Production Line



PVE Production Line



TubeMolding Production Line



TUBE ASSY LINE



LEAK TEST LINE



Laboratory

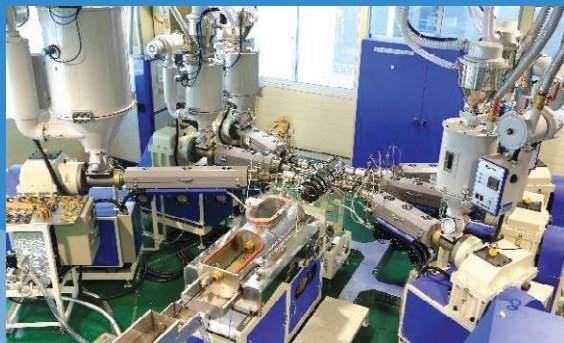


DAE-A Factory 1 Production Facilities

DAE-A Factory 2 Production Facilities



Fuel Tube Production Line



Multi 6 Layer Tube Production Line



CERTIFICATES



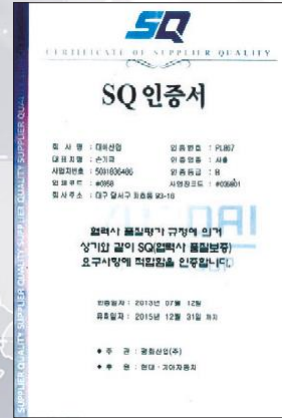
ISO 9001



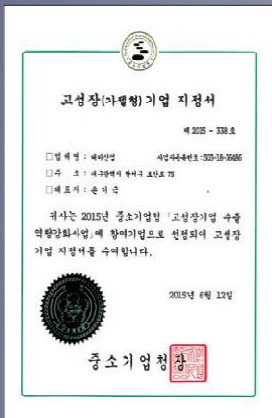
ISO 14001



ISO/ TS 16949



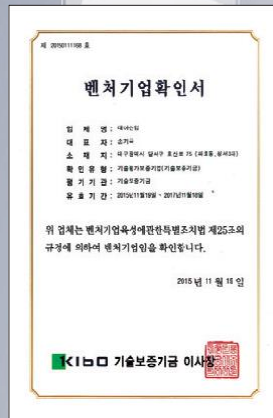
SQcertificate



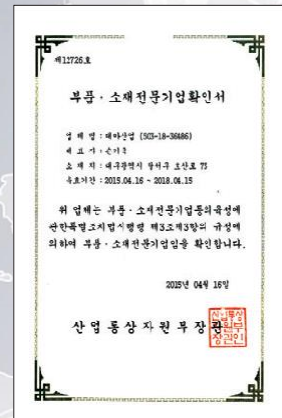
Certificate of designation as a high-growth firm



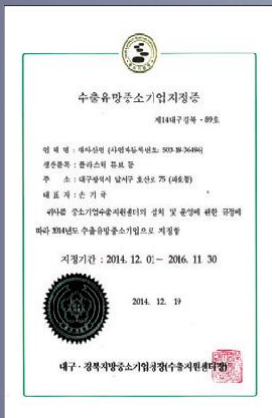
Certificate of affiliated research institute



Certificate of venture business



Certificate of components and material firm



Certificate of promising export firm by the Small and Medium Business Administration



INNO-BIZ certificate



MAIN-BIZ certificate

Major Clients





Headquarters Factory 1
75, Hosan-ro (Paho-dong), Dalseo-gu, Daegu
TEL. 053-587-1500~2 / FAX. 053-587-1503
Web site: www.daeatube.com

Factory 2 (DAE-A Tube)
120, Secheon-ro 1-gil, Dalseong-gun, Daegu