E-CATALOG

Solutions for e-Fuel Engine

Since 1946 PK Valve & Engineering
Controls the flow

Head Office & Factory

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Beginning

1980
Renamed to Pan-Korea Metal Ind.

1974
Moved to Changwon Industrial Complex

1946
Established Busan Pokum .Ind

Challenge

2000
1st Valve Academy launched

1994
Established R&BD Center

1988
Registered as selected localization company of Cryogenic Valve at KOGAS

1985
Developed Cryogenic Valve

Leading Manufacturer for Marine Engine Fuel Supply Unit PK Valve & Engineering Co.,Ltd.

Growth

2017
Cryogenic Butterfly valves supply started to LNGC

2012
Awarded 100 Million Dollar Export Tower

2006
NEP Certification for Cryogenic Metal Seated Butterfly Valve
Changed company name to PK Valve

2002
Developed Cryogenic Butterfly Valve
Cryogenic valve supply started to KOGAS

Leap

2024
Certified as a Hydrogen Specialized Company
Accredited by KOLAS(Korea Laboratory Accerditation Scheme)

2023
Selected as a World Class Company

2022
Changed company name to PK Valve & Engineering Controls the flow

2021
Expansion of cryogenic valve factory

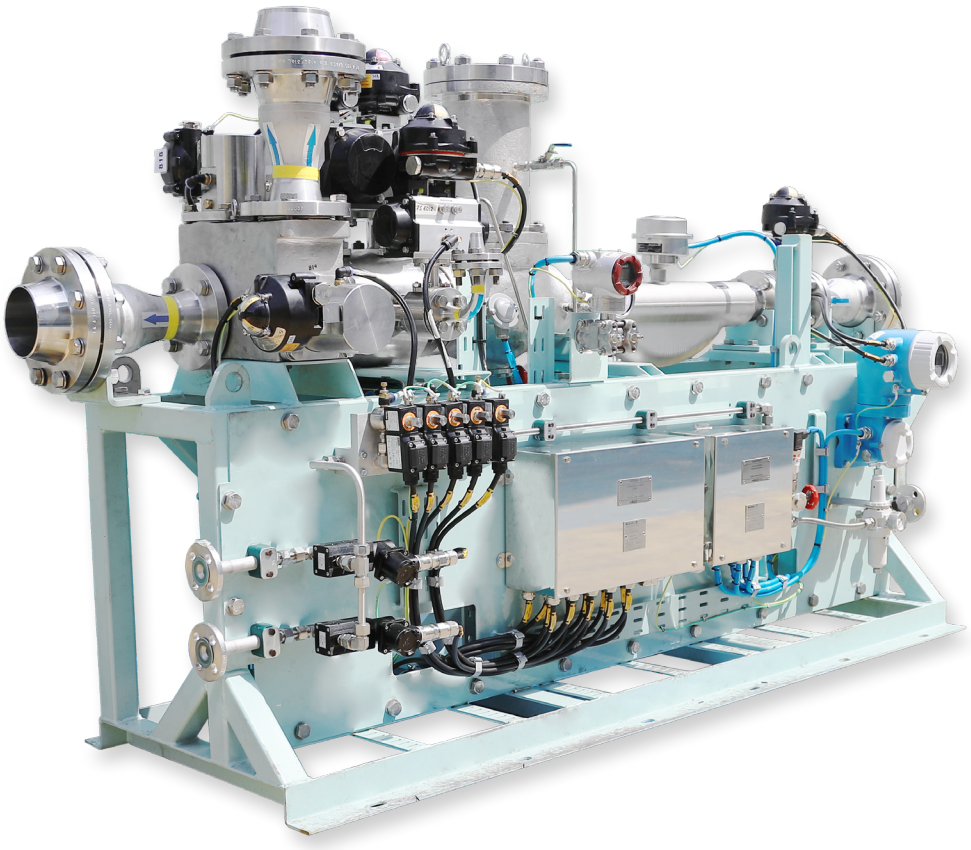
Gas Valve Unit (Open GVU)

Gas Valve Unit for Gas-Fueled Engines(Everllence)

The GVU contains a number of functions which are required by the IGF Code and the IGC Code for each gas consumer. Furthermore an additional number of functions are required for the safe and reliable operation of the ME-GA engine and its associated systems.

The GVU is mainly consist of manual valve, safety filter, double block and bleed(DBB) valve, vent valve, flowmeter, measuring device such as pressure and temperature transmitter, junction box and electric cabinet.

All the function of the GVU is controlled by only external system ECS. Therefore, GVU does not have any control system but two junction box for solenoid valves and sensors and an electric cabinet are prepared for the interface between GVU and external system ECS.



Controls the flow

Description

Media Dimensioning	GVU 2½"
Gas Line Size	2½" (DN65)
Bleed Line Size	½" (DN15)
Media for the Engine	Natural Gas
Media for Purge	Nitrogen
Gas Design Pressure [PN]	16bar
Maximum Pressure Drop including the Gas Filter	0.7bar
Maximum Gas Flow	3,200 kg/h
Gas Design Temperature	-25°C to +60°C
Filter Rating of Gas Filter	10µm

Physical Dimensioning	GVU 2½"
Dimension (W x H x L mm)	740 x 1240 x 2200
Weight	Approx. 600kg

Environment	GVU 2½"
Ambient Temperature	-25°C to +55°C
Degree of Protection	IP65

Supply	GVU 2½"
Supply Voltage	24VDC
Pneumatic Air	5-9 bar, dry air

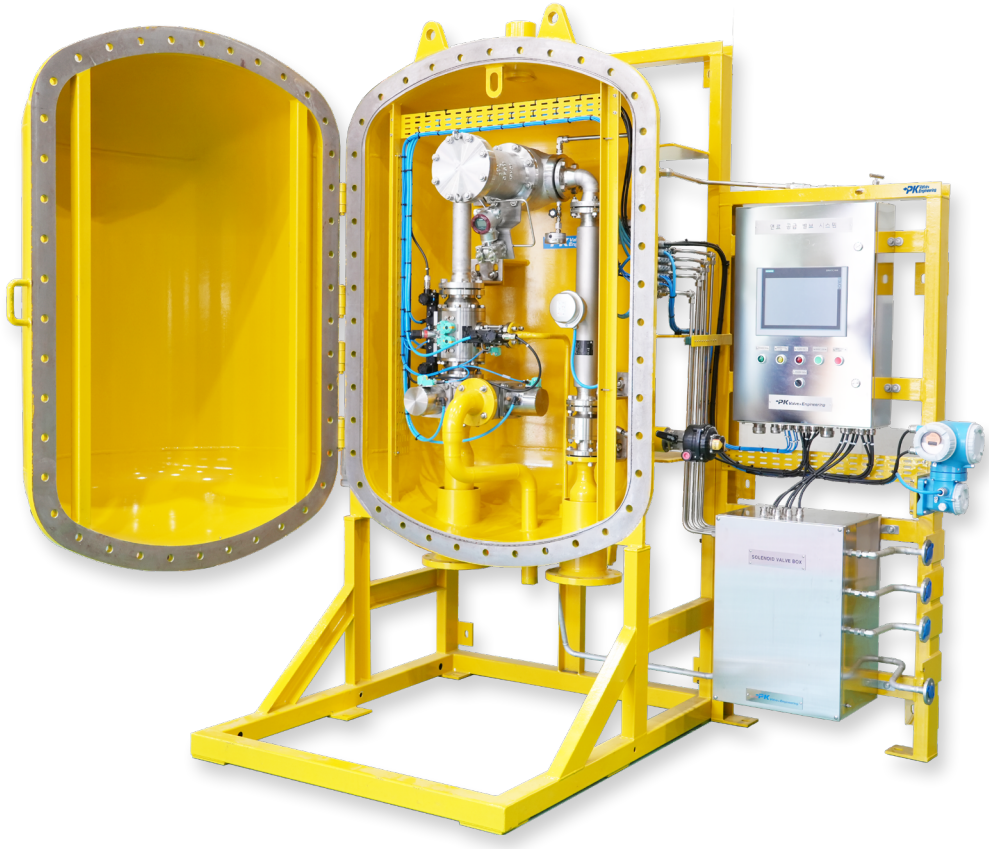
Gas Valve Unit (Enclosure GVU)

Gas Valve Unit for Gas-Fueled Engines(Everllence)

The GVU contains a number of functions which are required by the IGF Code and the IGC Code for each gas consumer. Furthermore an additional number of functions are required for the safe and reliable operation of the ME-GA engine and its associated systems.

The GVU is mainly consist of manual valve, safety filter, double block and bleed(DBB) valve, vent valve, flowmeter, measuring device such as pressure and temperature transmitter, junction box and electric cabinet.

Designed with a fully sealed structure, all components are integrated into a single housing. This configuration ensures protection against external environmental factors and prevents gas dispersion in the event of leakage.



Controls the flow

Description

Media Dimensioning	GVU 2½"
Gas Line Size	2½" (DN65)
Bleed Line Size	½" (DN15)
Media for the Engine	Natural Gas
Media for Purge	Nitrogen
Gas Design Pressure [PN]	16bar
Maximum Pressure Drop including the Gas Filter	0.7bar
Maximum Gas Flow	3,200 kg/h
Gas Design Temperature	-25°C to +60°C
Filter Rating of Gas Filter	10µm

Physical Dimensioning	GVU 2½"
Dimension (W x H x L mm)	2340 x 2560 x 1590
Weight	Approx. 1150kg

Environment	GVU 2½"
Ambient Temperature	-25°C to +55°C
Degree of Protection	IP65

Supply	GVU 2½"
Supply Voltage	24VDC
Pneumatic Air	5-9 bar, dry air

Fuel Valve Train (FVT)

Fuel Valve Train for Methanol-Fueled Engines(Everllence)

The Fuel Valve Train used in Everllence's methanol engines is a critical system designed to safely and efficiently supply methanol—one type of Low Flashpoint Fuel (LFL)—to the engine.It is applied in 2-stroke dual-fuel engines (ME-LGIM) that run on methanol, and plays a vital role in ensuring the safe operation of methanol-fueled marine vessels while meeting emission regulations.

The FVT consists of key lines such as the methanol supply line, inert gas supply line and bleed line. Its components include manual valves, double block and bleed (DBB) valves, measuring devices such as pressure and temperature transmitters, a junction box, and an electric cabinet.

Controls the flow

Description

Media Dimensioning	FVT 1½"	FVT 2"	FVT 2½"
Fuel Line Size	1½" (DN40)	2" (DN50)	2½" (DN65)
N2 Line Size	½" (DN15)	1" (DN25)	1" (DN25)
Media for the Engine	Methanol	Methanol	Methanol
Media for Purge	Nitrogen	Nitrogen	Nitrogen
Fuel Design Pressure [PN]	16bar	16bar	16bar
Maximum Pressure Drop including the Fuel Filter	1.0bar	1.0bar	1.0bar
Maximum Fuel Flow	12,000 kg/h	19,000 kg/h	31,000 kg/h
Fuel Design Temperature	-25°C to +60°C	-25°C to +60°C	-25°C to +60°C
Filter Rating of Fuel Filter	20µm	20µm	20µm
Filter Rating of N2 Filter	20µm	20µm	20µm

Physical Dimensioning	FVT 1½"	FVT 2"	FVT 2½"
Dimension (W x H x L mm)	800 x 1640 x 1940	800 x 1650 x 1940	810 x 1850 x 2210
Weight	Approx. 680kg	Approx. 730kg	Approx. 780kg

Environment	FVT 1½"	FVT 2"	FVT 2½"
Ambient Temperature	-25°C to +55°C	-25°C to +55°C	-25°C to +55°C
Degree of Protection	IP65	IP65	IP65

Supply	FVT 1½"	FVT 2"	FVT 2½"
Supply Voltage	24VDC	24VDC	24VDC
Pneumatic Air	5-9 bar, dry air	5-9 bar, dry air	5-9 bar, dry air

Fuel Valve Unit (FVU)

Fuel Valve Unit for Methanol-fueled Engines(WinGD)

The Fuel Valve Unit applied to WinGD (Winterthur Gas & Diesel) methanol engines is a key component designed to safely and efficiently supply methanol—a type of Low Flashpoint Fuel (LFL)—to the engine.

The FVU consists of key lines such as the methanol supply line, inert gas supply line, vent/bleed line, and drain line. Its components include manual valves, double block and bleed (DBB) valves, vent valves, measuring devices such as pressure and temperature transmitters, a junction box, and an electric cabinet.

Controls the flow

Description

Media Dimensioning	FVU 2”	FVU 2½”	FVU 3”
Fuel Line Size	2” (DN50)	2½“ (DN65)	3“ (DN80)
N2 Line Size	½“ (DN15)	½“ (DN15)	½“ (DN15)
Water Line Size	1½“ (DN40)	1½“ (DN40)	1½“ (DN40)
Media for the Engine	Methanol	Methanol	Methanol
Media for Purge	Nitrogen/Water	Nitrogen/Water	Nitrogen/Water
Fuel Design Pressure [PN]	16bar	16bar	16bar
Maximum Engine Size	6X82DF	9X92DF	12X92DF
Fuel Design Temperature	25°C to +50°C	25°C to +50°C	25°C to +50°C
Filter Rating of Water Filter	10µm	10µm	10µm

Physical Dimensioning	FVU 2”	FVU 2½”	FVU 3”
Dimension (W x H x L mm)	950 x 1660 x 1900	950 x 1660 x 1900	950 x 1680 x 1970
Weight	Approx. 600kg	Approx. 630kg	Approx. 660kg

Environment	FVU 2”	FVU 2½”	FVU 3”
Fuel Pipe Temperature	0°C to +60°C	0°C to +60°C	0°C to +60°C
Degree of Protection	IP65	IP65	IP65

Supply	FVU 2”	FVU 2½”	FVU 3”
Supply Voltage	24VDC	24VDC	24VDC
Pneumatic Air	5-9 bar, dry air	5-9 bar, dry air	5-9 bar, dry air

Safety Valve Unit (SVU)

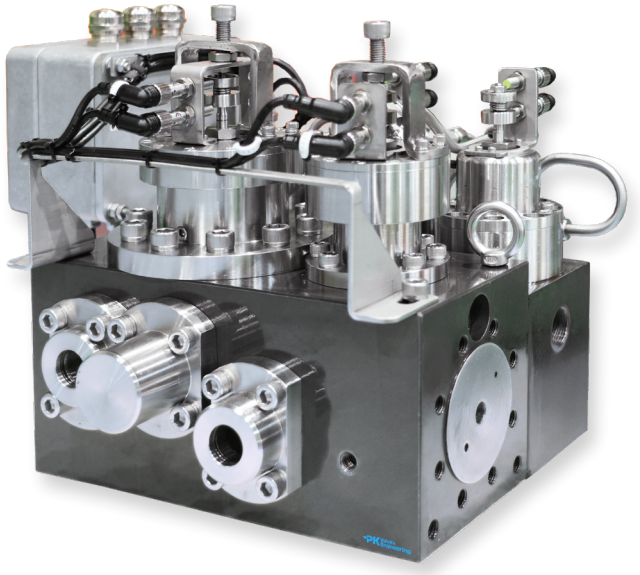
Safety Valve Unit for Ammonia-Fueled Engines(HiMSEN)

The Safety Valve Unit installed near the engine injector is designed with a double-walled pipe and incorporates various safety features.

These include :

- Prevention of excessive pressure rise
- Leak detection
- Automatic venting

These features ensure the Safety Valve Unit enhances the overall safety and reliability of the engine system.



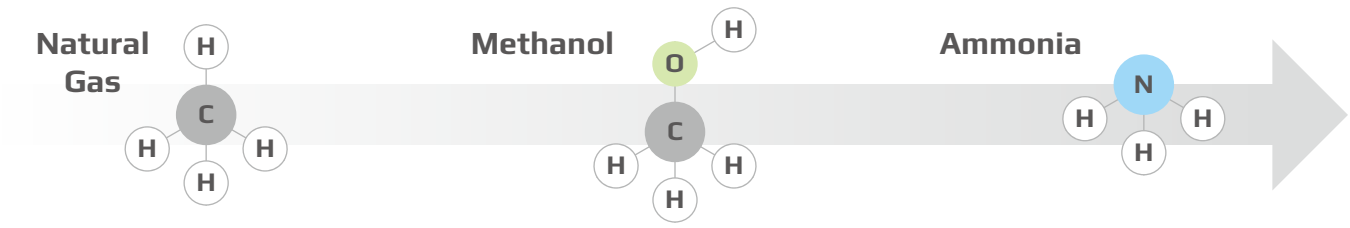
Description

Media Dimensioning	SVU ¾"
Fuel Line Size	¾"
Media for the Engine	Ammonia
Media for Purge	Nitrogen
Fuel Design Pressure [PN]	720bar
Fuel Design Temperature	-33°C to +80°C

Physical Dimensioning	SVU ¾"
Dimension (W x H x L mm)	430 x 310 x 390
Weight	Approx. 100kg

PK's road toward Green Energy is

An e-Fuel Supply Unit to Provide a Solution for GHG Emission and to Overcome Decarbonization



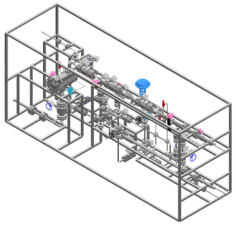
Open GVU

ME-LGIM FVT

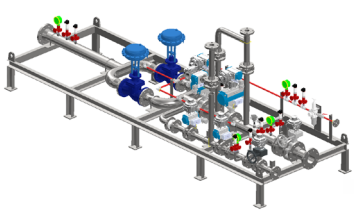
HiMSEN SVU

Enclosure GVU

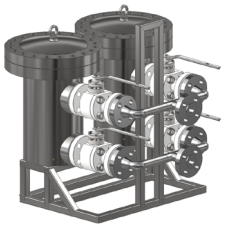
X-DF-M FVU



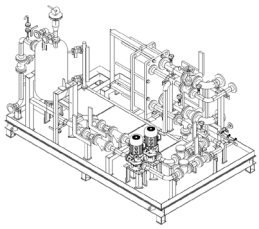
ME-LGIA FVT



GVT for GCU



Duplex Filter



G/W System

Supply Reference

GVU(LNG-EVERLLENCE)

No.	CUSTOMER	SHIP OWNER	SHIPYARD	HULL NO.	ENGINE	Q'TY	SIZE	CLASS	DELIVERY
1	HHI EMD	JP MORGAN	SHI	2592~5, 2600~1	ME-GA	12	2-1/2"	ABS	2023~2024
2	HANWHA	JP MORGAN	SHI	2596~7, 2634, 2637~44	ME-GA	28	2-1/2"	ABS, DNV, LR	2023~2025
3	HANWHA	HAMMONIA	JIANGSU NEW YANGZI	YZJ2022-1475~6	ME-GA	4	2-1/2"	BV	2024~2025
4	HANWHA	H-LINE	SHI	2607~11	ME-GA	10	2-1/2"	LR	2024
5	HANWHA	PAN OCEAN	SHI	2602, 2612	ME-GA	4	2-1/2"	ABS+KR	2023~2024
6	HANWHA	SK SHIPPING	SHI	2603	ME-GA	2	2-1/2"	BV+KR	2023
7	HANWHA	K-LINE	SHI	2664~5	ME-GA	4	2-1/2"	ABS	2025
8	HANWHA	MOL	SHI	2662~3, 2687	ME-GA	6	2-1/2"	LR	2025
9	HANWHA	MINERVA	SHI	2652~3	ME-GA	4	2-1/2"	LR	2025
10	HANWHA	SEAPEAK	SHI	2656~60	ME-GA	10	2-1/2"	LR	2025~2026
11	HHI EMD	SINOKOR	SHI	2316~8	ME-GA	6	2-1/2"	ABS	2025~2026
12	HANWHA	Test Facility			ME-GA	5	2-1/2"	-	2023~2024

FVT(METHANOL-EVERLLENCE)

No.	CUSTOMER	SHIP OWNER	SHIPYARD	HULL NO.	ENGINE	Q'TY	SIZE	CLASS	DELIVERY
1	HANWHA	EVERGREEN	SHI	2670~85	ME-LGIM	16	2"	ABS, NK, LR	2025~2026
2	HANWHA	Test Facility			ME-LGIM	1	2.5"	-	2024
3	MITSUI E&S	Test Facility			ME-LGIM	1	2.5"	-	2025
4	MITSUI E&S	Test Facility			ME-LGIM	1	1.5"	-	2025

FVT(AMMONIA-EVERLLENCE)

No.	CUSTOMER	SHIP OWNER	SHIPYARD	HULL NO.	ENGINE	Q'TY	SIZE	CLASS	DELIVERY
1	HHI EMD	Test Facility			ME-LGIA	1	2"	-	2025

FVU(METHANOL-WinGD)

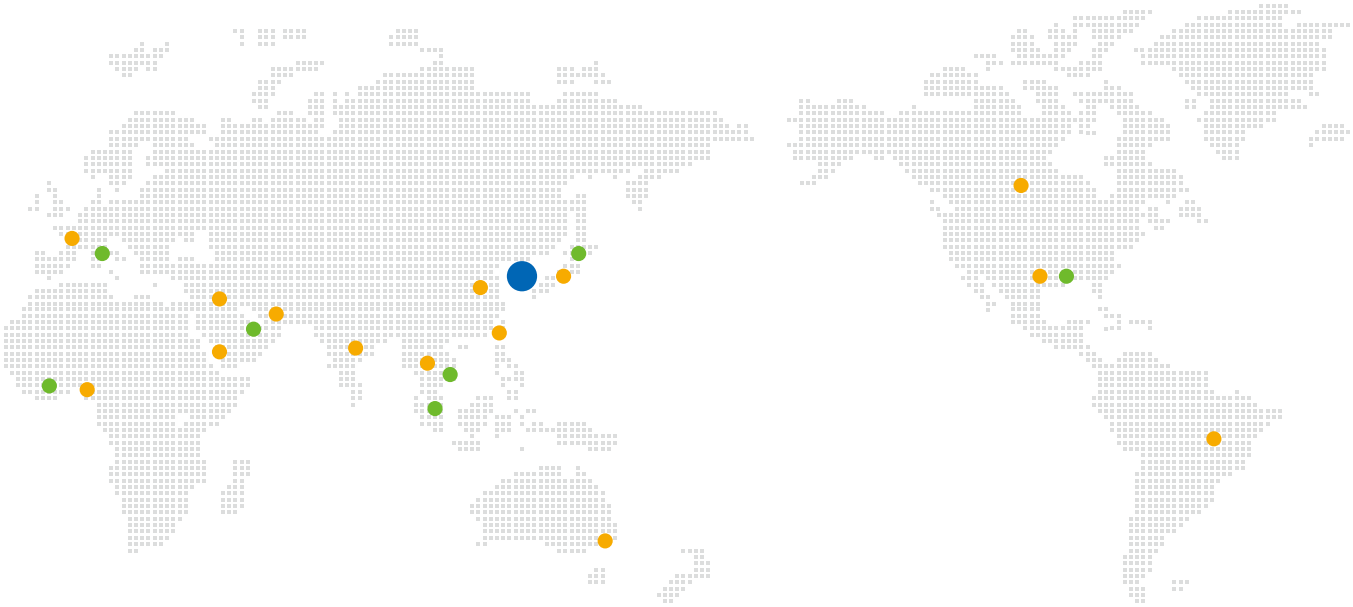
No.	CUSTOMER	SHIP OWNER	SHIPYARD	HULL NO.	ENGINE	Q'TY	SIZE	CLASS	DELIVERY
1	HHI EMD	EVERGREEN	YANGZIJIANG SHIPBUILDING	YZJ2023 1566~71YZJ2024 1614~5, 60~63	X-DF-M	12	2"	LR, NK	2025~2027
2	HHI EMD	Test Facility			X-DF-M	1	2.5"	-	2025
3	MITSUI E&S	Test Facility			X-DF-M	1	3"	-	2025
4	MITSUI E&S	Test Facility			X-DF-M	1	2"	-	2025

SVU(AMMONIA-HiMSEN)

No.	CUSTOMER	SHIP OWNER	SHIPYARD	HULL NO.	ENGINE	Q'TY	SIZE	CLASS	DELIVERY
1	HHI HiMSEN	Test Facility			H32CDF-LA	1	3/4"	-	2025

Customers Care

Global Network



SOUTH KOREA

- BUMHAN VALVE CO., LTD
- DAESUNG TMS
- PK VALVE PLUS
- DAESUNG PIPING
- HOAM CO., LTD

ASIA

- PT. VALVE AUTOMATION INDONESIA
- S.A. PETROTECH CO., LTD
- MIDDLE EAST FUJI
- SINCO AUTOMATION

AMERICA

- UNITED VALVE
- GULF COAST MODIFICATION

EUROPE & AFRICA

- G.G.C VALVES(UK)
- FRANMAN

Valve Medic

After consultation with the customers, our engineers visit the customers and provide customized training and consulting to solve the problems faced by the customers. We respond to customer problems together, such as valve troubleshooting, maintenance method training, valve specification review.

AEO

On April 30, 2023, AEO certification (KR AEO 3123007) was obtained from the Korea Customs Service. AEO certification is a system that certifies export safety management companies that meet the international standards of the World Customs Organization for trade safety and facilitation.

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Controls the flow

HOMEPAGE

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