E-CATALOG

Green Energy Solutions

PK Valve & Engineering
Controls the flow

Head Office & Factory

Address_ 80 Gongdan-ro, Seungsan-gu, Changwon-si, Gyeongsangnam-do, Korea, 51567
Tel_ +82-55-268-3777
Fax_ +82-55-286-0281

Seoul Sales Office

Address_ 1318, Myeongdong MFirst Place, 15-1, Samil-daero 8-gil, Jung-gu, Seoul
Tel_ +82-55-260-5795 / 5796

Korea's First and Largest Industrial Valve Specialized Manufacturer, PK Valve & Engineering Co.,Ltd.

1980
Renamed to Pan-Korea Metal Ind.

1974
Moved to Changwon Industrial Complex

1946
Established Busan Pokum .Ind

1994
Established R&BD Center

1988
Registered as selected localization company of Cryogenic Valve at KOGAS

1985
Developed Cryogenic Valve

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

2000
1st Valve Academy launched

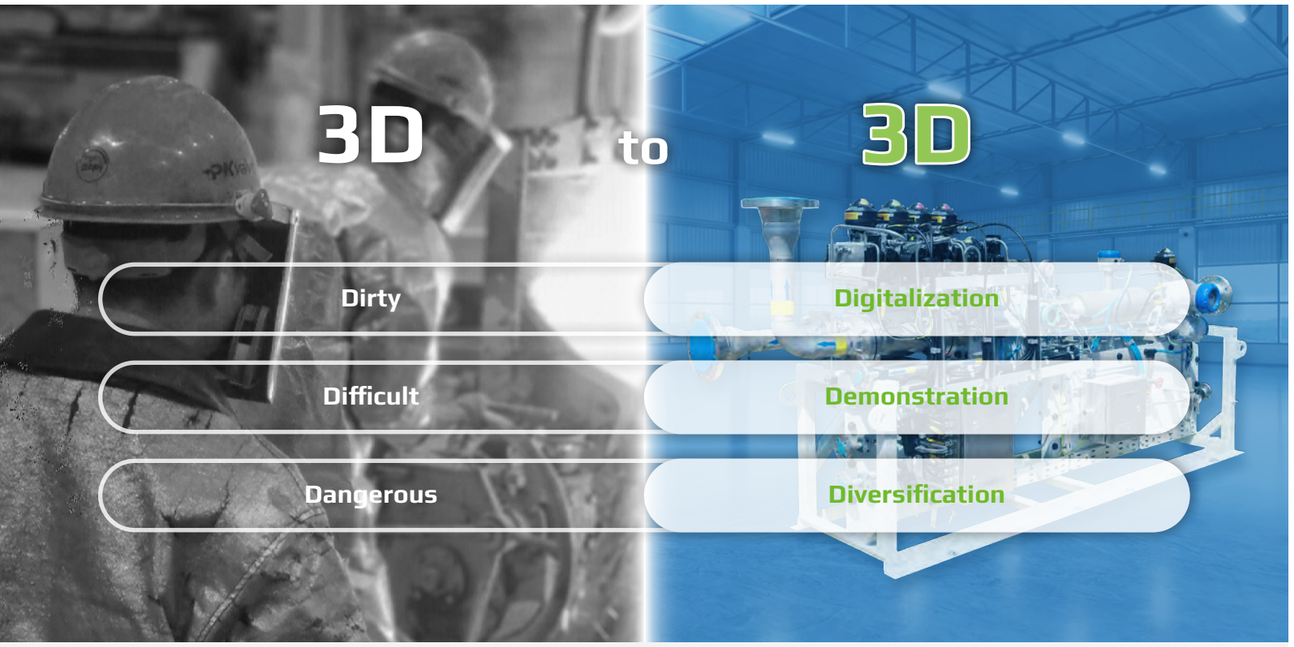
2022
Changed company name to PK Valve & Engineering Controls the flow

2021
Expansion of cryogenic valve factory

2017
Cryogenic Butterfly valves supply started to LNGC

2012
Awarded 100 Million Dollar Export Tower

About Us



Digitalization

PK VALVE&ENGINEERING has already achieved digitalization of data on orders, production process, and quality control for the past 20 years through the establishment of an ERP system, and now PK VALVE&ENGINEERING is preparing to digitize the development process and results. By accumulating data on the development process, we will dramatically reduce trial and error and provide solutions that satisfy customers within a short delivery

Demonstration

PK VALVE&ENGINEERING is starting a performance verification demonstration business for products that are not regulated by codes and standards. By applying data sensing technology and data collection technology to design and manufacture new products, we are accumulating technologies that can accurately reflect customer requirements by implementing actual use environments.

Diversification

PKVALVE & ENGINEERING is striving to diversify its products by developing various products that can be used in extreme conditions such as ultra-low temperature, ultra-high temperature, ultra-large size, and ultra-high pressure through digitalization and demonstration.

Certificates

Marine Classification


DNV-GL


LR


KR


BV


ABS

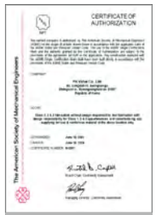

NK


CCS

Nuclear


KEPIC MN


ASME N


ASME NPT

SHEQ & Product


API Q1&6D


API Q1&600


CE PED


SIL Level 2


TR-CU


ISO 9001


ISO 14001


ISO 45001

Cryogenic Valves

PK VALVE&ENGINEERING started research & development of cryogenic service valves in cooperation with KIMM (Korea Institute of Machinery and Material) under Korea Government in 1983s. Due to high stability requirement for Cryogenic service valves, it requires many restrictions for material selection and extend bonnet length selection. By considering the selection of material and optimized extension bonnet length determination to keep the temperature close to ambient of gland packing, PK VALVE&ENGINEERING completed the development at 1985 and has been supplying to oversea and domestic customers for cryogenic industries including LNG liquefaction plant, receiving terminal and other gas plants for production, transportation and storage of liquefied gases such as oxygen, nitrogen, natural gas, hydrogen or helium. These optimized lengths for different sizes are then subjected to thermal analysis using finite element method for evaluate the temperature at the gland packing area. The thermal analysis is done using ANSYS software. Along with material selection and optimized extension length PK VALVE&ENGINEERING has improved assembly, production and management method to keep the capability and quality.

Characteristic of Cryogenic Valve

- Packing protected from cryogenic temperatures
- Anti Inner Pressure Build-Up by Bleed hole on the Disc of Gate Valve or Ball Valve
- Stable sealing by Bi-directional sealing design
- Quick and easy maintenance due to side entry design
- Prevent leakage and ensure long life through double & triple eccentric design

Manufacturing Item

Type	Class	150	300	600	900	1500	2500
Gate		2~56	2~48	2~36	2~24	2~16	2~8
Globe		2~30	2~30	2~30	2~14	2~10	2~8
Check	Swing	2~36	2~36	2~36	2~24	2~16	2~8
	Dual	2~36	2~36	2~12	2~6	2~6	-
	Axial	2~36	2~36	2~36	2~32	-	-
Ball	Floating	½~6	½~6	½~4	½~2	½~2	-
	Trunnion	8~24	8~24	6~24	3~24	3~24	-
	DBB(2 Ball)	½~6	½~6	½~4	½~2	½~2	-
Butterfly		4~48	4~24	*UD	-	-	-

*UD : Under Development

Cryogenic Top Entry Ball Valve

Cryogenic Butterfly Valve

LH_2 Valves

PK VALVE&ENGINEERING has been supplying cryogenic(-196℃) valves for 40 years based on technology and know-how, and based on this, we provide valve solutions optimized for liquefied hydrogen(-253℃) and liquefied helium(-269℃) environments. We provide verification test service by establishing a test device capable of testing valve performance at the temperature of liquefied hydrogen (-253℃), and supply the highest quality and reliable products.

LH_2 Check Valve (2”)

LH_2 Globe Valve (2”)

LH_2 Emergency Shutoff Valve (2”)

LH_2 Globe Valve (3”)

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Characteristic of LH_2 Valve

- Designed with our unique design that enables high-vacuum insulation and maintenance outside the cold box
- Provide Globe Valve, Check Valve (Lift Type), Emergency Shut-Off Valve
- Provide various operation options (manual, gear, MOV, POV)
- Block external leakage by applying bellows seal and gland packing
- Application of thermal barrier structure that BOG(Boil-Off Gas) that may occur inside the valve

Specification

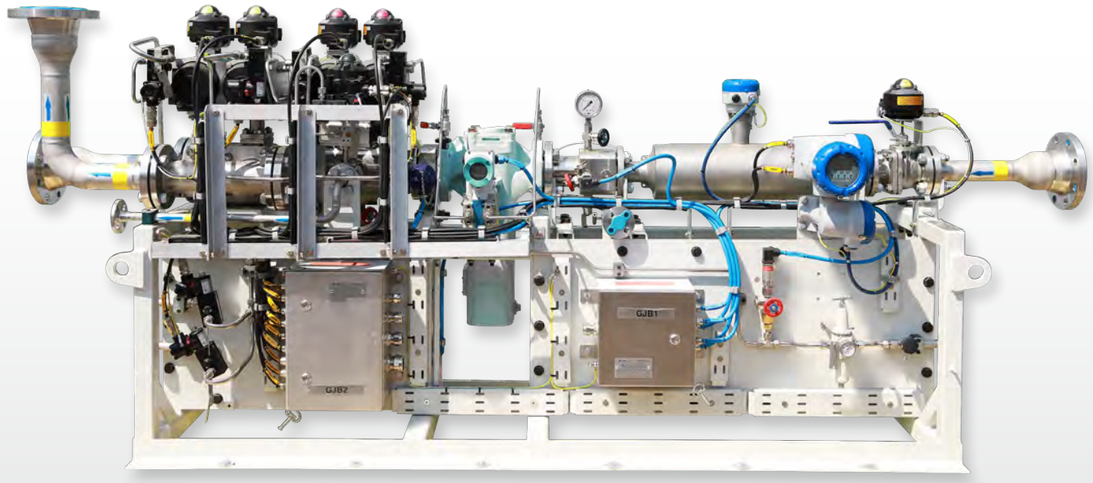
Type	Specification
Operating Temp.	-253°C (-269°C) to +80°C
Service Fluids	LH_2, LHe, LNG, LO_2
Valve Type	Globe, Check Valve
Material	304L, 316L Stainless Steel
Valve Size	½” ~ 10”
Valve Rating (ASME)	Class 150 to 300
End Connections	Butt welding According to ASME B16.25
Operation	Manual, Gear, Motor, pneumatic
Cryogenic Extension	As per MSS SP-134, BS 6364, ISO 28921-1
Stem Sealing	Bellows & Gland Packing
Seat Material	Metal (Body) / PCTFE (Disc)
	Metal (Body) / Metal (Disc)
Flow Characteristic	Linear or On/Off
Special	Position Indicator
	Thermal Barrier
	Vacuum jacketed with M.L.I or Non jacketed
	Suitable for Cold Box
	Outside screw and yoke Type Easy maintenance
	Degreasing & Cleaning
	Full Penetration Weld applied on extension joint (Available Radiographic Testing)

Gas Valve Unit (GVU)

A device that controls gas in engines, generators, and boilers in ships that use natural gas as fuel. The Gas Valve Unit (GVU) represents the interface between the engine and the fuel gas supply system. It ensures safe isolation of the engine during shutdown and maintenance.

Function of gas valve unit

- Leakage test before engine start
- Suppling the gas by engine control system
- Purging with nitrogen before maintenance service
- Quick stop at the end of DF operation mode
- Quick stop in case of an emergency mode



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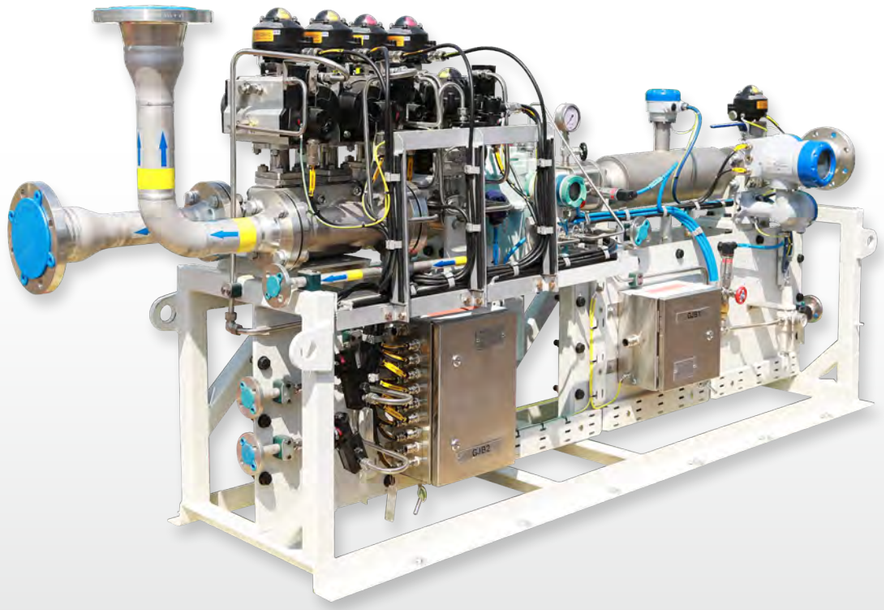
Specification

Item	Specification
GVU Type	Vertical / Horizontal / Enclosure / Open
Pipe Connection	DN 50 ~ DN 100
Valve Type	Ball Valves, Axial Valves
Design Pressure	16 bar
Service Media	Gas
Media Temperature	-25 ~ 60℃
Ambient Temperature	0 ~ 60℃
Ex Classification	ATEX, IECEx
Compressed Air Pressure	5 ~ 9bar
Options	Flowmeter, Filter



Supply Reference - LNG Carrier

No.	Area	Owner/Client	PROJECT NAME	TYPE OF VESSEL	VESSEL QTY	SHIP YARD	CLASS	ENGINE	TANK	ACTUATOR MAKERAREA
1	CHINA	CMES	DSIC 175K LNGC G175K-1	LNGC	4	DSIC	LR+CCS			EMERSON
2	CHINA	CNOOC / MOL	H1880A SERIES 174K LNGC	LNGC	6	HZS	ABS+CCS	X-DF	NO96	KSB
3	CHINA	COSCO SHIPPING CO., LTD. / K-LINE	H1892A SERIES 174K LNGC	LNGC	2	HZS	ABS+CCS	X-DF	NO96	KSB
4	CHINA	COSCO SHIPPING CO., LTD. / MOL	H1831A SERIES 174K LNGC	LNGC	6	HZS	ABS+CCS	X-DF	NO96	KSB
5	CHINA	CSSC SHIPPING CO., LTD. / MOL	H1827A SERIES 174K LNGC	LNGC	2	HZS	LR+CCS	X-DF	NO96	KSB
6	DENMARK	CELSIUS SHIPPING	2459 SERIES 180K LNGC	LNGC	8	SHI	LR	X-DF	MKIII	KSB
7	GREECE	ALPHAGAS	#8105 SERIES 174K LNGC	LNGC	3	HSHI	DNV	X-DF	MKIII	EMERSON
8	GREECE	MARANGAS	SN2425 SERIES 174K LNGC	LNGC	3	SHI	BV	X-DF	MKIII	KSB
9	GREECE	MARANGAS	2528 SERIES 174K LNGC	LNGC	11	DSME	ABS	ME-GI	NO96	KSB
10	GREECE	TMS CARDIFF GAS	2635 SERIES 174K LNGC	LNGC	2	SHI	ABS	ME-GA	MKIII	SCANA
11	JAPAN	MOL	QATAR GAS 1790 SERIES 174K LNGC	LNGC	4	HZS	ABS+CCS	X-DF	NO96	KSB
12	JAPAN	NYK	2580 SERIES 174K LNGC	LNGC	4	SHI	DNV	X-DF	MKIII	EMERSON
13	JAPAN	NYK / C-LNG	QATAR GAS 1797 SERIES 174K LNGC	LNGC	2	HZS	ABS+CCS	X-DF	NO96	KSB
14	KOREA	H-LINE SHIPPING CO., LTD.	#8025 SERIES H-LINE SHPPING 174K LNGC	LNGC	4	HSHI	ABS	X-DF	MKIII	EMERSON
15	KOREA	H-LINE SHIPPING CO., LTD.	EXXONMOBIL 2607 SERIES 174K LNGC	LNGC	4	SHI	LR+KR	ME-GA	MKIII	EMERSON
16	KOREA	HYUNDAI GLOVIS	8170 HYUNDAI GLOVIS 174K LNGC	LNGC	1	HSHI	DNV-KR	X-DF	MKIII	EMERSON
17	KOREA	HYUNDAI LNG SHIPPING	H2521 SERIES HYUNDAI LNG 174K LNGC	LNGC	2	DSME	KR	ME-GI	NO96	KSB
18	KOREA	HYUNDAI LNG SHIPPING	#2451 SERIES HYUNDAI 174K LNG CARRIER	LNGC	2	DSME	KR	ME-GI	NO96	EMERSON
19	KOREA	KC(H-LINE, SK, PAN OCEAN)	QATAR GAS 2546 SERIES 174K LNGC	LNGC	11	DSME	BV-KR	ME-GA	NO96	TBD
20	KOREA	KC(H-LINE, SK, PAN OCEAN)	QATAR GAS 2611 SERIES 174K LNGC	LNGC	4	SHI	ABS	ME-GA	MKIII	KSB
21	KOREA	KOREA SM LINE	SN2233 SERIES KOGAS 7.5K LNGC	LNGC	2	SHI	KR			EMERSON
22	KOREA	KOREA SM LINE	#3185 SERIES KSL 174K LNGC(SHELL)	LNGC	4	HHI	KR	X-DF	MKIII	EMERSON
23	KOREA	PAN OCEAN	#3221 SERIES PAN OCEAN 174K LNGC(SHELL)	LNGC	4	HHI	DNV-KR	X-DF	MKIII	EMERSON
24	KOREA	PAN OCEAN	SN2426 PANOCEAN 174K LNGC	LNGC	1	SHI	ABS	X-DF	MKIII	KSB
25	MALAYSIA	MISC	SN2364 SERIES MISC 174K LNGC	LNGC	2	SHI	ABS	X-DF	MKIII	KSB
26	NORWAY	KNUTSEN	#8091 SERIES KNUTSEN 174K LNGC(SHELL)	LNGC	9	HSHI	LR	X-DF	MKIII	EMERSON
27	RUSSIA	SOVCOMFLOT	#8006 SERIES SOVCOMFLOT 174K LNGC	LNGC	3	HSHI	BV	X-DF	MKIII	EMERSON
28	RUSSIA	SOVCOMFLOT	SN2366 SERIES ARCTIC LNG-2 ICEBREAKING LNGC	ICEBREAKING LNGC	15	SHI	BV	X-DF	MKIII	ROTORK/PLEIGER
29	TURKEY	Pardus Energy Limited(BOTAS)	#2945 Pardus Energy Limited 170K FSRU	FSRU	1	HHI	BV	DFDE	MKIII	EMERSON
30	UK	JP MORGAN	#3187 SERIES JP MORGAN 174K LNGC(SHELL)	LNGC	1	HHI	DNV	X-DF	MKIII	EMERSON
31	UK	JP MORGAN	SN2592 SERIES 174K LNGC	LNGC	6	SHI	ABS	ME-GA	MKIII	SCANA
32	UK	JP MORGAN	2596 SERIES QATAR GAS 174K LNGC	LNGC	14	SHI	ABS	ME-GA	MKIII	SCANA

Supply Reference - LNG Terminal

Manzanillo LNG Terminal / Mexico
- EPC / END USER : SAMSUNG ENG / CFE
- Delivery : 2010
- Cryogenic Gate, Globe, Check, Butterfly V/V

PANAMA LNG Terminal / PANAMA
- EPC / END USER : POSCO E&C / AES
- Delivery : 2017
- Cryogenic Gate, Globe, Check, Butterfly V/V

Incheon LNG Terminal 3
- 2001 ~ 2013
- Gate, Globe, Check, Butterfly, Ball V/V
- Class 150 ~ 900, 1360 EA

SamChuck LNG Terminal
- 2013 ~ ongoing
- Gate, Globe, Check, Butterfly
- Class 150 ~ 900, 846 EA

Ogishima LNG Terminal / Japan
- EPC / END USER : IHI Corp / Tokyo Gas
- Cryogenic Gate, Globe, Check

PyengTaek LNG Terminal
- 2004 ~ 2012
- Gate, Globe, Check, Butterfly, Ball V/V
- Class 150 ~ 1500, 1652 EA

Tongyeong LNG Terminal
- 2001 ~ 2012
- Gate, Globe, Check, Butterfly, Ball V/V
- Class 150 ~ 900, 1599 EA

SOMA LNG Terminal II / Japan
- EPC / END USER : IHI Corp / JAPEX
- Delivery : 2017
- Cryogenic Gate, Globe, Check V/V

Boryeong LNG Terminal
- 2015 ~ 2018
- Gate, Globe, Check, Butterfly, Ball V/V
- Class 150 ~ 300, 66 EA

Gwangyang LNG Terminal3
- 2005 ~ 2010
- Globe, Check, Butterfly
- Class 150 ~ 900, 31 EA

Gwangyang LNGT Terminal4
- 2021~2022
- Gate, Globe, Check, Butterfly, Ball V/V
- Class 150~900, 251EA

Gwangyang LNGT Terminal6
- 2022~2023
- Gate, Globe, Check, Butterfly V/V
- Class 150~900, 62EA

Negishi LNG Terminal / Japan
- EPC / END USER : Chiyoda Corp / Tokyo Gas
- Cryogenic Gate, Globe, Check

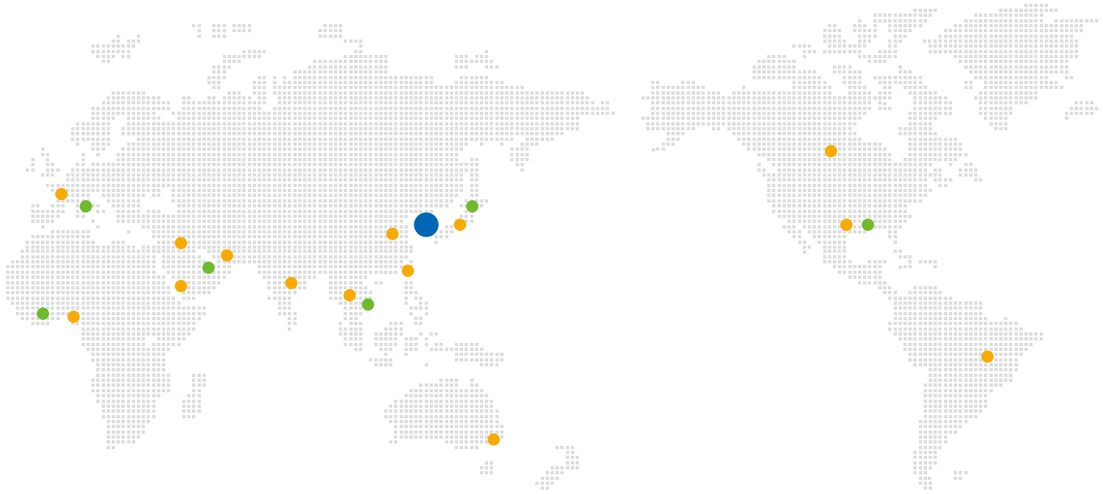
Hitachi LNG Terminal / Japan
- EPC / END USER : Chiyoda Corp / Tokyo Gas
- Cryogenic Gate, Globe, Check

Jeju LNG Terminal
- 2018
- Globe, Check, Butterfly V/V
- Class 150 ~ 600, 213 EA

Customers Care

Global Network

Head Office Representatives After-Sales Representatives



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.

Training & Education

Engineer Training

Training Service for Engineers came from Middle East Fuji LLC.

Training Service for Engineers came from Marine Systems & Solutions

Valve Academy

PK VALVE&ENGINEERING is the only valve manufacture in the world that has been running the “Valve Academy” program since 2000 to strengthen communication with customers. It was first held free courses for valve agency employees in terms of valve job training, and it was opened to general customers in 2005 at the request of major customers. In 2023, the “18th Valve Academy” was held to expand communication with customers.

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HOMEPAGE

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