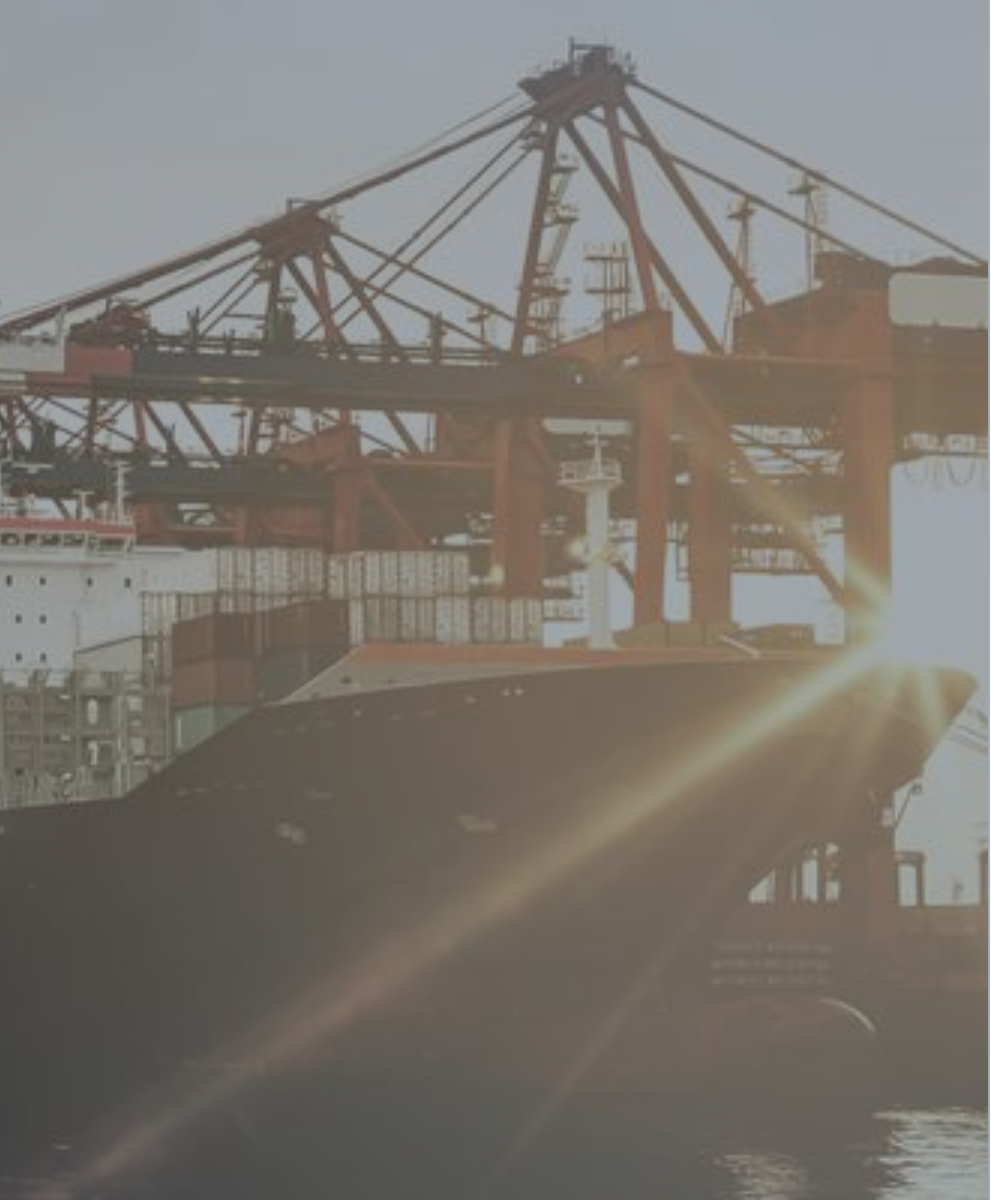
The Company Thinking First of Human Being and Nature

SEJIN VALVE CO., LTD.

Company Profile



01 ABOUT COMPANY

1) HISTORY OF COMPANY
2) OVERVIEW OF FACTORY
3) BUSINESS LICENSE
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5) ORGANIZATION
6) ANNUAL TURNOVER
7) MAJOR CUSTOMERS

02 PRODUCT

1) COMBINDED NON RETURN BUTTERFLY VALVE
2) BUTTERFLY VALVE (RUBBER & METAL SEAT)
3) DUAL PLATE CHECK VALVE
4) CRYOGENIC BALL VALVE

03 MANUFACTURING FACILITIES

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ABOUT COMPANY

HISTORY OF COMPANY

1999. Jul. : Established
1999. Nov. : Acquired ISO 9001 Certificate
2000. May : Registered as one of Supplying Vendor for Korea Electric Power Corporation (KEPCO), R-Class (~120”)
2000. Sep. : Developed Valve for Ultra-Low Temperature for LNG (-196)
2002. Aug. : Revised ISO 9001 Certificate in 2000 Year Edition (KSA)
2003. May. : Registered as one of Supplying Vendor for Korea Hydro & Nuclear Power Corporation, NUCLEAR R-Class (~120”)
2003. Jul. : Obtained Type Approval Certificate from LR
2003. Nov. : Obtained the Fire Test Certificate (VELOSI INTERNATIONAL)
2004. Aug. : Developed Valve for TRIPLE ECCENTRIC BUTTERFLY VALVE
2005. Jan. : Obtained the CE-PED Certificate from BV
2011. Aug. : Obtained API Monogram Certificate
2015. Mar. : Moving New Factory
2016. Jun. : Obtained Fugitive Emission Test Certificate from SGS
2016. Nov. : Obtained Design Approval Certificate from KR
2017. Feb. : Obtained Certificate of Design Assessment from ABS
2017. Feb. : Obtained Type Approval Certificate from DNV·GL
2017. Mar. : Obtained Fire Test Certificate from SGS
2017. April. : Obtained Type Approval Certificate from LR
2017. June. : Obtained Type Acceptance test according to MESC SPE 77/300 from SGS
2017. Aug. : Obtained Type Approval Certificate from BV
2021. May. : Obtained Type Approval Certificate from BV (Cryogenic Ball Valve)
2023. Jul. : Moving New Factory

OVERVIEW OF FACTORY

SEJIN VALVE

Location	16, Hwajeonsandan 2-ro 133beon-gil, Gangseo-gu, Busan, Republic of Korea
Scale of Factory	Ground : 13,300 m^2 Floor Space
Main Product	Butterfly valve, Dual Plate check valve, Cryogenic Ball valve
Employee	83
Production Capacity	3,000ea/Monthly

BUSINESS LICENSE

(1 / 1)

【국세청민원사무처리규정 제6호 서식】 (2024.4.17.개정)

발급번호 Issuance Number	사업자등록증명 Certificate of Business Registration (법인사업자) (Corporate Taxpayer)	처리기간 Processing Time
1182-416-6743-276		즉시 Immediately

상호(법인명) Name of Business	세진밸브공업 (주) SEJIN VALVE IND. CO., LTD. (606-81-23678)
사업자등록번호 Business Taxpayer ID Number	606-81-23678
성명(대표자) Name of Representative	방영혁 BANG YOUNG HYEOK (180111-0299338)
대표유형 Type of Representation	단독대표(Sole Representation)
주민(법인)등록번호 Residest(Corporation) Registration Number	180111-0299338
사업장소재지 Business Address	부산광역시 강서구 화전산단2로133번길 16(화전동) 16, Hwajeonsandan 2-ro 133beon-gil, Gangseo-gu, Busan, Republic of Korea
개업일 Date of Business Start	1999년(Year) 09월(Month) 10일(Day)
사업자등록일 Date of Business Registration	1999년(Year) 09월(Month) 13일(Day)
업태 Business Type	제조/제조업 Manufacturing/Manufacturing
종목 Business Item	밸브, 유압설비(Manufacture of Fluid Power Equipment, Butterfly Valve 산업기계 및 자동차용 부품 제조업 Manufacture of other new parts and accessories for motor vehicles n.e.c.
공동사업자 Joint Business Owner	성명(법인명) Name of Resident/Name of Business: 해당사항 없습니다 (No Data) 주민(사업자)등록번호 Resident Number/Business Taxpayer ID Number:

위와 같이 증명합니다.

I certify that above information is true and correct to the best of my knowledge and belief.

※ 위 내용은 발급일 현재 상황으로서 추후 변경될 수 있습니다.
This information is true as of the issuance date of this certification and but maybe subject to change in the future.

※ 임의 임의기재사항(상호, 성명(대표자), 업태, 종목, 상세주소)은 실제적 권리관계를 증명하는 효력이 없습니다.
Arbitrary data written in English (Name of Business, Name of Representative, Business Address, Business Type, and Business Item) do not hold a power to prove substantive rights and responsibilities.

접수번호 Receipt No.	504224709686
담당부서 Department	민원봉사실 Taxpayer Assistance Center
담당자 Staff in Charge	
연락처 Telephone No.	+82-51-740-9223

2024 년(Year) 11 월(Month) 5 일(Day)

부산강서세무서장

Head of Busangangseo District Office District Tax Office (Stamp)

부산강서세무서장인

국세청

COMPANY MOTTO

Belief in Human

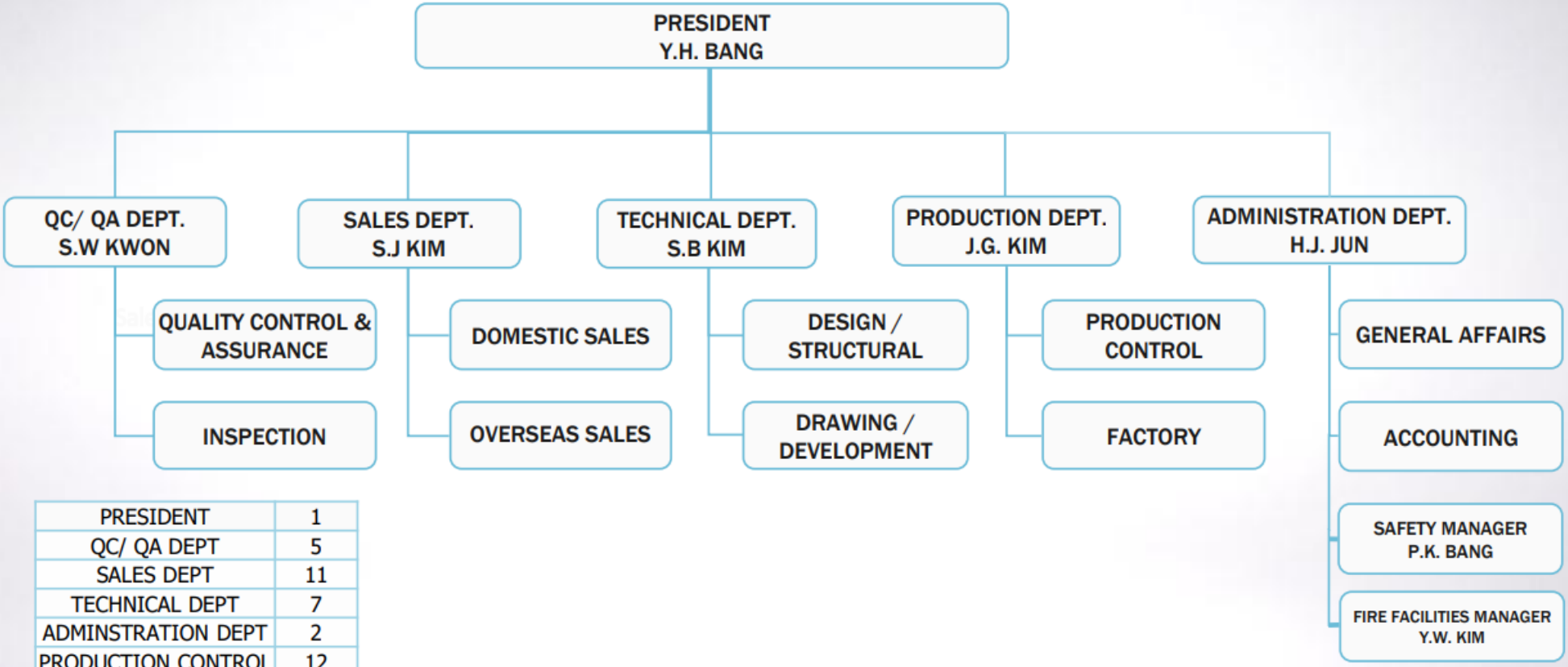
SEJIN VALVE IND,CO.,LTD.

Flexibility of Design

Technology for safety

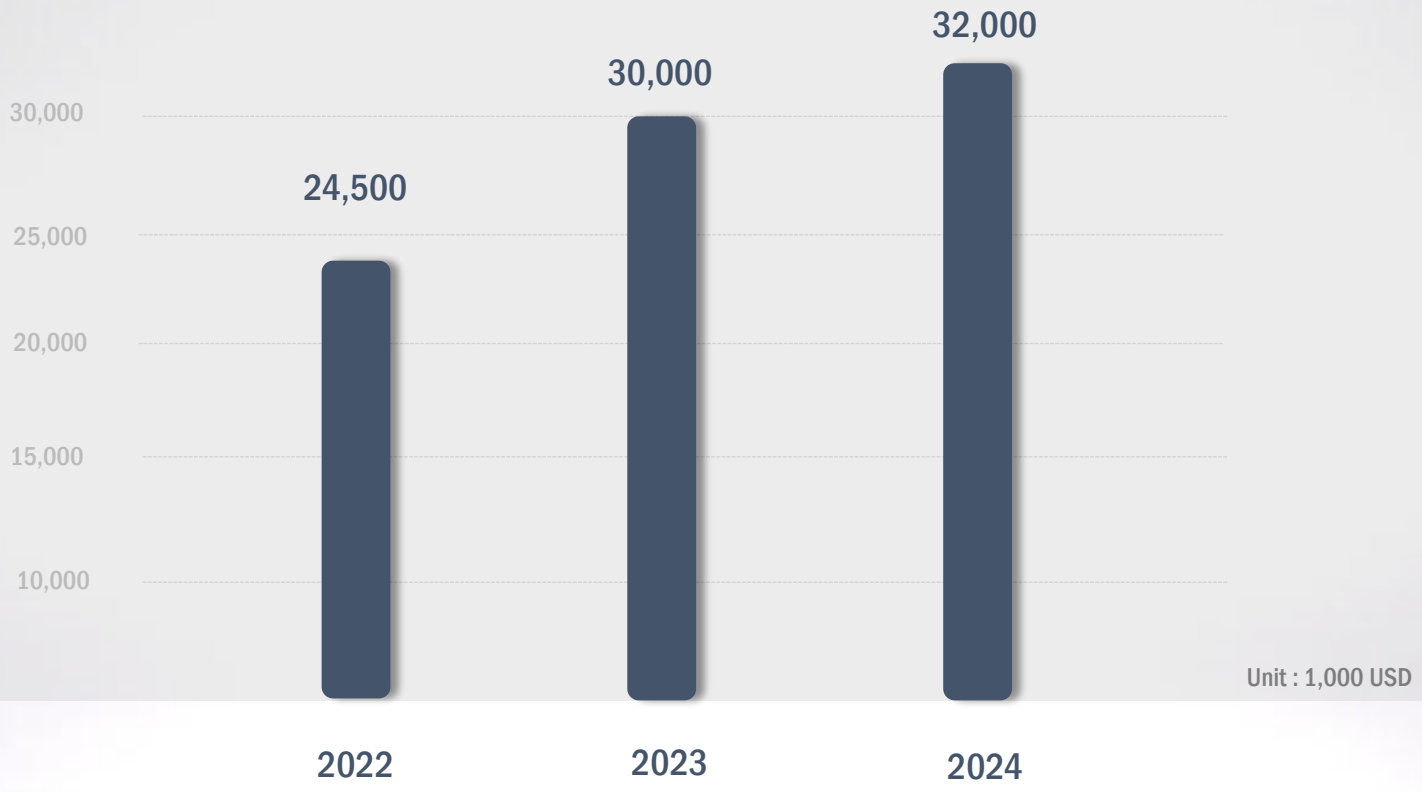
Quality in Production

ORGANIZATION



PRESIDENT	1
QC/ QA DEPT	5
SALES DEPT	11
TECHNICAL DEPT	7
ADMINSTRATION DEPT	2
PRODUCTION CONTROL	12
FACTORY STAFF	45
TOTAL	83

ANNUAL TURNOVER



MAJOR CUSTOMERS

1. Marine service

Hyundai Heavy Industries
Hyundai Mipo Dockyard
Hyundai Samho Heavy Industries
Hyundai Special & Naval Shipbuilding
Samsung Heavy Industries
Daewoo Heavy Industries
STX Offshore & Shipbuilding Co., Ltd.
Daehan Shipbuilding Co., Ltd.
Daesun Shipbuilding & Engineering Co., Ltd.
SamKang M&T Co., Ltd.

2. Plant industry

Doosan Heavy Industries
SK ECO PLANT
GS Engineering & Construction
Hyundai Engineering & Construction
Hanwha Engineering & Construction
Lotte Engineering & Construction
Samsung C&T
Hyundai Oil Bank
POSCO Engineering & Construction
Korea Electric Power Corporation (KEPCO)
Korea Hydro & Nuclear Power Corporation

MAJOR CUSTOMERS

3. Overseas Market

DUBAI ELECTRICITY & WATER AUTHORITY (U.A.E)

Kuwait National Petroleum Company (KUWAIT)

TAKREER(Abu Dhabi Oil Refining Company)

ADNOC(Abu Dhabi National Oil Company)

Q-CHEM(Qatar Chemical Company)

RGPC(Ras Girtas Power Company)

CTCI (Taiwan)

SEPCO-3(China)

ABENGOA (ITALY)

TOYO ENGINEERING (JAPAN)

SASAKURA ENGINEERING (JAPAN)

PETRONAS (MALAYSIA)

Kenya Electricity Generating Company (KENYA)

VIETNAM ELECTRICITY (VIETNAM)

Public Company Limited (THAILAND)

PRODUCT

PRODUCTION LINE UP

HF-Series

Resilient & Metal Seated High Performance Butterfly valve

Pressure : Rating	150/300LB
Size :	DN50 (2”) – DN1200 (48”)

TOM-Series

Triple offset Metal Seated Butterfly valve

Pressure : Rating	150/300/ Up to 2500LB
Size :	DN80 (3”) - DN1500(60”)

C-Series

Resilient Seated general service pipe line Butterfly valve

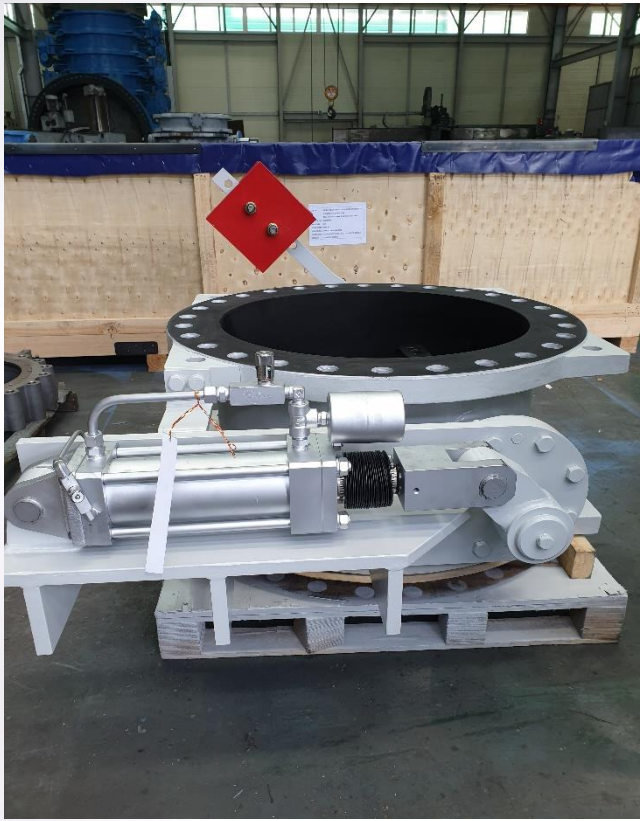
Pressure : Rating	150LB
Size :	DN40 (1.5”) - DN1200 (48”)

COMBINDED NON RETURN BUTTERFLY VALVE

COMBINDED NON RETURN BUTTERFLY VALVE

COMBINDED NON RETURN BUTTERFLY VALVE

NON RETURN BUTTERFLY VALVE



BUTTERFLY VALVE

Soft Seat Butterfly Valve

BUTTERFLY VALVE

Soft Seat Butterfly Valve

BUTTERFLY VALVE

Metal Seat Butterfly Valve

DUAL PLATE CHECK VALVE

DUAL PLATE CHECK VALVE

CRYOGENIC BALL VALVE

CRYOGENIC BALL VALVE

CRYOGENIC BALL VALVE

MANUFACTURING FACILITIES

EQUIPMENT LIST

No.	FACILITY	SIZE	MANUFACTORY	Production Date
SJ-M-01-01	LATHE	350 X 550	HOWA SANGYO	1975.01
SJ-M-01-02	LATHE	400 X 1060	HWACHEON	1987.10
SJ-M-01-03	LATHE	580 X 2000	HWACHEON	1989.07
SJ-M-01-04	LATHE	900 X 4000	HANKOOK MACHINE TOOLS	1989.07
SJ-M-01-05	LATHE	1300 X 3200	DAEDONG	1975.01
SJ-M-01-06	LATHE	580 X 2000	HWACHEON	2010.11
SJ-M-01-07	CNC LATHE	TNL-120V	S&T	2011.12
SJ-M-01-08	CNC LATHE	ST850VD	S&T	2011.12
SJ-M-02-01	DRILLING MACHINE	R27	NAMBUK	1993.02
SJ-M-02-02	DRILLING MACHINE	R300	KIL-IL	1988.02
SJ-M-02-03	RADIAL MACHINE	RADIAL 1500	OKUMA	1999.12
SJ-M-02-04	RADIAL MACHINE	RADIAL 1600	KIA	1991.12
SJ-M-02-05	RADIAL MACHINE	RADIAL 1500	BONGSIN	1991.12
SJ-M-02-06	RADIAL MACHINE	RADIAL 2000	OKUMA	1995.07
SJ-M-02-07	DRILLING MASTER	5000 X 5000	SENTROL	1999.05

EQUIPMENT LIST

No.	FACILITY	SIZE	MANUFACTORY	Production Date
SJ-M-03-01	BORING MACHINE	1120 X 1250	KIA	1993.05
SJ-M-03-02	BORING MACHINE	1800 X 1580	CCOP	1990.08
SJ-M-04-01	MILLING MACHINE	NO.2	HWACHEON	1998.05
SJ-M-04-02	MILLING MACHINE	NO.7 2700 X 750	KIHEUNG	2011.10
SJ-M-04-03	M.C.T	MH-630S	DAIKIN KOGYO	1986.02
SJ-M-04-04	M.C.T	HM-5000	DOOSAN	2011.12
SJ-M-04-05	M.C.T	HM-5000	DOOSAN	2014.09
SJ-M-05-01	TURNING MACHINE	2500 X 1500	O-M LTD	1971.11
SJ-M-05-02	TURNING MACHINE	5000 X 6000	F-ELD-KDBE	1971.11
SJ-M-05-03	TURNING MACHINE	7000 X 9000	O-M LTD	1981.11
SJ-M-06	CUTTING MACHINE	Ø500	YONG SOO	1999.09
SJ-M-07	SHAPER	900 X 2000	SUNG KWANG	1998.08
SJ-M-08	TABLE GRINDER	Ø150	SAMLI	1998.02
SJ-M-09	ELECTRIC WELDER	180A	DAELIM	1992.06

EQUIPMENT LIST

No.	FACILITY	SIZE	MANUFACTORY	Production Date
SJ-M-10	AIR COMPRESSOR	50HP	DAEDONG	2010.01
SJ-M-12-01	HYDRAULIC TESTER	2000 X 2000		2005.07
SJ-M-12-02	HYDRAULIC TESTER	600 X 600		2000.12
SJ-M-12-03	HYDRAULIC TESTER	200 X 200		1999.11
SJ-M-13-01	PAINTING SHOP	220V		2011.07
SJ-M-14-01	CRANE	20TON	BANDO	2010.12
SJ-M-14-02	CRANE	10TON	BANDO	2010.11
SJ-M-14-03	CRANE	5TON	BANDO	2010.11
SJ-M-14-04	CRANE	5TON	BANDO	2010.11
SJ-M-14-05	CRANE	5TON	BANDO	2010.11
SJ-M-14-06	CRANE	5TON	BANDO	2010.11
SJ-M-14-07	CRANE	2.8TON	BANDO	2010.11
SJ-M-14-08	CRANE	2.8TON	BANDO	2010.11

MEASURING INSTRUMENT LIST

INSTRUMENT	CAPACITY	SERIAL NO
PRESSURE GUAGE	0 ~ 35Kgf/cm2	10072800
PRESSURE GUAGE	0 ~ 50Kgf/cm2	P09122801
PRESSURE GUAGE	0 ~ 35Kgf/cm2	H82695780
PRESSURE GUAGE	0 ~ 100Kgf/cm2	10059904
OPERATION TESTER (MOTOR)	220V/330V	
THERMOMETER		
TORQUE GUAGE	1961 Nm	320456K
VERNIER CALIPER	0 ~ 200mm	#1
VERNIER CALIPER	0 ~ 200mm	1310599
VERNIER CALIPER	0 ~ 200mm	#2
VERNIER CALIPER	0 ~ 200mm	9029406
VERNIER CALIPER	0 ~ 200mm	3024202
VERNIER CALIPER	0 ~ 200mm	5061326
VERNIER CALIPER	0 ~ 300mm	7153769
VERNIER CALIPER	0 ~ 600mm	980736
VERNIER CALIPER	0 ~ 1000mm	22455
CALIPER	0 ~ 2000mm	K3731

MEASURING INSTRUMENT LIST

INSTRUMENT	CAPACITY	SERIAL NO
MICROMETER	0 ~ 25mm	8319355
MICROMETER	25 ~ 50mm	927926
MICROMETER	50 ~ 75mm	719242
MICROMETER	75 ~ 100mm	741146
MICROMETER	100 ~ 125mm	740399
MICROMETER	125 ~ 150mm	738555
MICROMETER	200 ~ 225mm	103-145
MICROMETER	100 ~ 2100mm	50
DEEP GUAGE	0 ~ 200mm	909739
DIAL GUAGE	0 ~ 130mm	A20428
THICKNESS GUAGE	0 ~ 1250㎛	MB2976-510
RUBBER HARDNESS GUAGE	0 ~ 100	193747
STOP WATCH	1/100sec	
PITCH GUAGE	0.5 ~ 0.7	
FILER GUAGE	0 ~ 25mm	
DIAL GUAGE	0 ~ 10mm	BEA212

CERTIFICATE

APPROVED CERTIFICATE & REGISTRATION

- ISO 9001 & ISO 14001
- API 609 MONOGRAM
- Fire Safe Test Approval based on API607
- CE-PED Approval (Bureau Veritas)
- Fugitive Emission Test Certificate
- NSF61
- TAT certificate by SGS
- Marine Class Type Approval
  (ABS, DNV·GL, LR, BV, KR)
- Korea-Hydro & Nuclear Power Corporation (R-Class)
- Korea-Electric Power Corporation
- (KEPCO R-Class)

Certificate of Authority to use the Official API Monogram

License Number: 609-0163

ORIGINAL

The American Petroleum Institute hereby grants to

SEJIN VALVE IND. CO., LTD
16, Hwajeonsandan 2-ro 133Beon-gil
Gangseo-gu, Busan
South Korea

the right to use the Official API Monogram® on manufactured products under the conditions in the official publications of the American Petroleum Institute entitled API Spec Q1® and **API-609** and in accordance with the provisions of the License Agreement.

In all cases where the Official API Monogram is applied, the API Monogram shall be used in conjunction with this certificate number: **609-0163**

The American Petroleum Institute reserves the right to revoke this authorization to use the Official API Monogram for any reason satisfactory to the Board of Directors of the American Petroleum Institute.

The scope of this license includes the following: Butterfly Valves - Category B, Butterfly Valves - Category A

QMS Exclusions: No Exclusions Identified as Applicable

Effective Date: FEBRUARY 13, 2024
Expiration Date: FEBRUARY 13, 2027

Anchal Liddar

Senior Vice President of Global Industry Services

To verify the authenticity of this license, go to www.api.org/compositelist.

®

American Petroleum Institute

AMERICAN PETROLEUM INSTITUTE
CORPORATE SEAL
INCORPORATED 1919

2018-151

Institute of Korea Global Certification

Management System Certification Body No. KAB-QC-72

Certificate of Approval

Quality Management System

NO. 022 80085 Q

SEJIN VALVE IND. CO., LTD.

16 Hwajeonsandan 2-ro 133beon-gil, Gangseo-gu, Busan, Korea

Korea Global Certification Institute hereby certifies that the Management System of the above organization has been assessed and found to meet the requirements of the standard and scope of certification detailed below:

KS Q ISO 9001:2015 / ISO 9001:2015

Scope of Certification

Development and production of butterfly valves for waterworks, ductile cast iron gate valves for waterworks, wafer type rubber seated butterfly valves, knife gate valves, check valves, dual plate check valves, expansion joints, flap valves, ball valves and sluice gates

Initial issue date	2002-08-21
Date of issue	2024-05-13
Expire date	2027-05-09

Dongbae, Park

KGC Co., Ltd.
Dong Bae Park
CEO

Approval: Korea Global Certification Institute Co., Ltd.

KAB-QC-72

•KGC Co., Ltd. has been accredited by Korea Accreditation Board (KAB) as an ISO 9001 Certification body. (Accreditation Number : KAB-QC-72)
•This certificate is only valid by completion of surveillance audit which is conducted at least once a year.
•If you cannot maintain the certification, this certificate shall be returned to KGC Co. Ltd.

(16079) Rm.1008, 1 dong, 25, Obongsandan 3 ro, Uiwang si , Gyeonggi do, Korea http://www.kgcert.com

Institute of Korea Global Certification

Management System Certification Body No. KAB-EC-64

Certificate of Approval

Environmental Management System

NO. 022 80085 E

SEJIN VALVE IND. CO., LTD.

16 Hwajeonsandan 2-ro 133beon-gil, Gangseo-gu, Busan, Korea

Korea Global Certification Institute hereby certifies that the Management System of the above organization has been assessed and found to meet the requirements of the standard and scope of certification detailed below:

KS I ISO 14001:2015 / ISO 14001:2015

Scope of Certification

Development and production of butterfly valves for waterworks, ductile cast iron gate valves for waterworks, wafer type rubber seated butterfly valves, knife gate valves, check valves, dual plate check valves, expansion joints, flap valves, ball valves and sluice gates

Initial issue date	2014-05-12
Date of issue	2024-05-13
Expire date	2027-05-09

Dongbae, Park

KGC Co., Ltd.
Dong Bae Park
CEO

Approval: Korea Global Certification Institute Co., Ltd.

KAB-EC-64

•KGC Co., Ltd. has been accredited by Korea Accreditation Board (KAB) as an ISO 14001 Certification body. (Accreditation Number : KAB-EC-64)
•This certificate is only valid by completion of surveillance audit which is conducted at least once a year.
•If you cannot maintain the certification, this certificate shall be returned to KGC Co. Ltd.

(16079) Rm.1008, 1 dong, 25, Obongsandan 3 ro, Uiwang si , Gyeonggi do, Korea http://www.kgcert.com

Certificate of Quality System Approval

This is to certify that the product listed below conforms to the requirements of the

Pressure Equipment Directive 2014/68/EU

Annex III Module H

Certificate Number	HPiVS-iP1013-140-Q-04-00		
Date of Issue	27-Feb-2024	**Date of Expiry**	09-Feb-2026
		Surveillance due:	09-Feb-2025
Manufacturer	**Sejin Valve Co., Ltd.** 16, Hwajeonsandan 2-ro 133beon-gil, Ganseo-gu, Busan, 46738, Korea		
Description of Pressure Equipment	Casting Butterfly and Check Valves Type : Wafer, Lug, Flange, Semi-Lug and Mono flanged type 2” to 80” (Class 150 & 300)		
Equipment Identification	CE data plate		
Type of material	steels		
Other Certification	ISO 9001:2015 Certificate No. 022-80085-Q issued by KGC		
Standards Applied	ASME B16.34-2021		
Report Reference	HPiVS-iP1013-140-4		

This Certificate is valid in any European Economic Area Member State.

This Report has been issued by HPi Verification Services (Ireland) Ltd. which is a body notified to the European Commission according to the provisions of the Pressure Equipment Directive (Notified Body number 2810).

This Report is issued following the assessment of the documentation and implementation of the Quality System in accordance with the provisions of the quoted Conformity Assessment Module of the above directive. The CE Mark must be affixed to the Pressure Equipment within the scope of approval as described above once the EU 'declaration of conformity' has been signed by the responsible person. The number '2810', being HPi Verification Services (Ireland) Ltd. Notified Body number must also be placed on the equipment dataplate.

Check this certificate is genuine

Quality Director

Technical Director

An INAB accredited Certification Body 5018.

© HPi Verification Services (Ireland) Ltd. 2024

Tel +353 (0)1 8017008
Email enquiries@hpivs.ie
www.hpivs.ie

HPi Verification Services (Ireland) Ltd.
Clonross
Dunshaughlin, Co.Meath
A85 XN59, Ireland

DNV

TYPE APPROVAL CERTIFICATE

Certificate No:
TAP00000TC
Revision No:
2

This is to certify:

That the Butterfly Valves

with type designation(s)
CRB, HFC, HFT

Issued to

Se Jin Valve Ind. Co., Ltd.
Busan, Korea, Korea, Republic of

is found to comply with
DNV rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV-OS-D101 – Marine and machinery systems and equipment, Edition July 2021
DNV class programme DNV-CP-0186 – Type approval – Valves

Application :

Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV.

Type:	Temperature range:	Max. working press.:	Sizes:
CRB	dependent on seat materials	Class #150, PN6 & PN10	50A to 700A (17 sizes)
HFC	dependent on seat materials	Class #150, PN6, PN10 & PN16	80A to 600A (13 sizes)
HFT	dependent on seat materials	Class #150, PN6, PN10 & PN16	50A to 600A (15 sizes)

Issued at **Høvik** on **2022-06-01**

This Certificate is valid until **2027-02-14**.
DNV local station: **Gimhae Station**

Approval Engineer: **Andreas Hansen**

for **DNV**

Digitally Signed By: Zeinab, Sharifi
Location: DNV Høvik, Norway

Zeinab Sharifi
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.

Product description

Three types of Butterfly valves: CRB – HFC – HFT, where all three may be delivered as wafer, lug and flange types.

Materials:

Body:	FC200; A126CLB (Grey iron castings)
	FCD400; A395 Gr.60-40-18; A536 Gr.60-40-18 (Nodular cast iron of the ferritic type)
	FCD450; A395 Gr.65-45-15; A536 Gr.65-45-12 (Nodular cast iron of the ferritic type)
	SC480; A216WCB (Carbon Steel Casting)
	SCS13; A351CF8 / SCS14; A351CF8M / SCS16; A351CF3M (Stainless Steel Casting)
Disc:	SCS13; A351CF8 / SCS14; A351CF8M / SCS16; A351CF3M (Stainless Steel Casting)
	ALBC1; B148C95200 / ALBC2; B148C95400 / ALBC3; B148C95800 (Aluminium bronze castings)
Seat:	NBR; EPDM; Viton; PTFE; RTFE
Stem:	SUS304; A276T304 / SUS316; A276T316/ SUS316L; A276316L / SUS410; A276T410 / SUS630; A564T630
O-ring: (Packing)	NBR; EPDM; VITON; PTFE; RTFE; Graphite

Size:

CRB:	50A, 65A, 80A, 100A, 125A, 150A, 200A, 250A, 300A, 350A, 400A, 450A, 500A, 550A, 600A, 650A, 700A
HFC:	80A, 100A, 125A, 150A, 200A, 250A, 300A, 350A, 400A, 450A, 500A, 550A, 600A
HFT:	50A, 65A, 80A, 100A, 125A, 150A, 200A, 250A, 300A, 350A, 400A, 450A, 500A, 550A, 600A

Pressure/temperature rating: 150# (ASME B16.34)

Flanges:

CRB:	150# (ASME B16.5) / PN6 & PN10 (EN 1092) / JIS5K & 10K (JISB2210)
HFC:	150# (ASME B16.5) / PN6, PN10 & PN16 (EN 1092) / JIS5K, JIS10K & 16K (JISB2210)
HFT:	150# (ASME B16.5) / PN6, PN10 & PN16 (EN 1092) / JIS5K, JIS10K & 16K (JISB2210)

Minimum wall thickness fulfils requirements in ASME B16.34

Application/Limitation

Valves covered by this certificate may be used in general machinery and cargo piping systems onboard DNV classed vessels and mobile offshore units.

Design temperatures depending on seat materials:

NBR:	-18°C to +100°C
EPDM:	-18°C to +110°C
Viton:	-10°C to +160°C

Austenitic stainless steels 304, 304L, 316 & 316L are not seawater resistant and shall not be used in direct contact with seawater.

Grey cast iron shall not be used for piping subject to pressure shock, excessive strains and vibration.

Grey cast iron shall not be used for class I and II piping with the exception of valves in hydraulic piping systems where failure will not render the system inoperative or introduce a fire risk.

Grey cast iron may be used for class III piping, with the following exceptions:

- valves fitted on ship sides and bottom and on sea chests
- valves fitted on collision bulkhead
- valves under static head fitted on the external wall of fuel tanks, lub. oil tanks and tanks for other flammable oils
- valves for fluids with temperatures in excess of 120°C.

Nodular cast iron of the ferritic type (with specified minimum elongation of 12%) may be used in class II and III piping and in valves located on the ship's side and bottom; and valves on the collision bulkhead.

Valves made of nodular cast iron shall not be used for media having a temperature below 0°C.

EPDM sealing shall not be used in hydrocarbon services.

Valves covered by this certificate are not to be considered fire safe and shall not be installed in systems where fire safe applications are required.

The approval does not include any operating gear for remote control of the valves.

This certificate does not cover valves installed in LNG/LPG applications.

Type Approval documentation

Drawings:
CRB1A-02~14BA, CRB1A-16~28BA, CRB2A-02~14BA, CRB2A-16~28BA, CRB3A-02~14BA, CRB3A-16~28BA Rev.B dated 2017-02-09
CRB series Table containing dimensional data, minimum wall thickness & stem diameter.
Calculation Sheets for CRB series.
Drawings:
HFC1A-06BA, HFC1A-18BA, HFC2A-06BA, HFC2A-18BA, HFC3A-06BA, HFC3A-18BA Rev.B dated 2017-02-09
HFC series Table containing dimensional data, minimum wall thickness & stem diameter.
Calculation Sheets for HFC series.
Drawings:
HFT1A-02~06BA, HFT1A-18BA, HFT2A-06BA, HFT2A-18BA, HFT3A-06BA, HFT3A-18BA Rev.B dated 2017-02-09
HFT series Table containing dimensional data, minimum wall thickness & stem diameter.
Calculation Sheets for HFT series.

Production Testing and Certification

Production Testing and Certification for the actual intended application shall follow the latest applicable edition of the Rules (as mentioned on the front page of this certificate).

Marking of product

Minimum marking requirements shall be as outlined in the valve design standard.

Periodical assessment

For retention of the Type Approval, a DNV Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the approval are complied with. Reference is made to DNV-CP-0338.

Marine & Offshore

Certificate number: 50128/B0 BV
File number: ACM 145/2603/01
Product code: 2205I

This certificate is not valid when presented without the full attached schedule composed of 7 sections

www.veristar.com

TYPE APPROVAL CERTIFICATE

This certificate is issued to

SEJIN VALVE IND. CO., LTD.

BUSAN - KOREA (REPUBLIC OF)

for the type of product

BUTTERFLY VALVES

Concentric and Double Eccentric Butterfly Valves : SJ-CRB, SJ-HFC, SJ-HFT

Requirements:
Bureau Veritas Rules for the Classification of Steel Ships
Bureau Veritas Rules for the Classification of Naval Ships
Bureau Veritas Rules for the Classification of Offshore Units

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 03 Jun 2027

For Bureau Veritas Marine & Offshore,
At BV PUSAN, on 03 Jun 2022,
Chang-Uk HONG

This certificate was created electronically and is valid without signature

This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

Concentric and Double Eccentric Butterfly Valves : Wafer/Lug/Flange Type
SJ-CRB (concentric) : ND 50 to 1400
SJ-HFC (double eccentric) : ND 80 to 800
SJ-HFT (double eccentric) : ND 50 to 800

1.1 Technical characteristics

Models	End connection	Size range (mm)	Maximum working pressure (MPa)	Pressure rating
SJ-CRB	Wafer, Lug, Flange	50 - 1400	1,0	ASME Class 150, JIS 5K/10K, PN 6/10
SJ-HFC	Wafer, Lug, Flange	80 - 800	2,0	ASME Class 150, JIS 5K/10K/16K, PN 6/10/16
SJ-HFT	Wafer, Lug, Flange	50 - 800	2,0	ASME Class 150, JIS 5K/10K/16K, PN 6/10/16

1.2 Temperature range depending on seat specifications:
- NBR: -18°C to 100°C
- Viton: -10°C to 160°C
- EPDM: -18°C to 110°C
-PTFE: -18°C to 200°C
-RTFE: -18°C to 230°C

1.3 Material specifications

Part	Material
Body	Carbon Steel: FC/FCD/SC/A126-CL.B,C/A536-Gr.60,65,70,80/A395-Gr.60,65/A216-Gr.WCA,WCB,WCC/SCPH2 Stainless Steel: SCS13/SCS14/SCS16/SCS13A/SCS14A/SCS16A/A351-CF8,CF3,CF3M Aluminum Blonze: ALBC1/ALBC2/ALBC3/B148-C95200,95400,95800 Duplex Stainless: A995-4A/A995-5A/SCS10/A890-4A/A890-5A Alloy Steel: Monel-400/Monel-K500/Inconel-600,601,625,718,X750,825/Hastelloy
Disc	Stainless Steel: SCS13/SCS14/SCS16/SCS13A/SCS14A/SCS16A/A351-CF8,CF3,CF3M Aluminum Blonze: ALBC1/ALBC2/ALBC3/B148-C95200,95400,95800 Duplex Stainless: A995-4A/A995-5A/SCS10/A890-4A/A890-5A Alloy Steel: Monel-400/Monel-K500/Inconel-600,601,625,718,X750,825/Hastelloy
Stem	Stainless Steel: SUS304/SUS316/SUS316L/SUS410/SUS630/A276-304/A276-316/A276-316L /A276-410/A564-630/17-4PH/SUS420-J1,J2/A276-S42000 Duplex Stainless: Duplex/UNS-S31803/UNS-S32750 Alloy Steel: Monel-400/Monel-K500/Inconel-600,601,625,718,X750,825/Hastelloy
Seat	NBR, Viton, EPDM, HNBR, PTFE, RTFE

When other choices of materials are used per manufacturer's recommendations, the BV agreement is to be obtained.

2. DOCUMENTS AND DRAWINGS

2.1 CRB Type

- Drawings N° CRB1A-02~06LO, N° CRB2A-02~06LO & N° CRB3A-02~06LO dated 22/04/2022: DN 50 to 150
- Drawings N° CRB1A-02~14GO, N° CRB2A-02~14GO & N° CRB3A-02~14GO dated 22/04/2022: DN 50 to 350
- Drawings N° CRB1A-16~28GO, N° CRB2A-16~28GO & N° CRB3A-16~28GO dated 22/04/2022: DN 400 to 700
- Drawings N° CRB1A-30~56GO, N° CRB2A-30~56GO & N° CRB3A-30~56GO dated 22/04/2022: DN 750 to 1400

2.2 HFC Type

- Drawings N° HFC1A-03~06LO, N° HFC2A-03~06LO & N° HFC3A-03~06LO dated 22/04/2022: DN 80 to 150
- Drawings N° HFC1A-03~06GO, N° HFC2A-03~06GO & N° HFC3A-03~06GO dated 22/04/2022: DN 80 to 150
- Drawings N° HFC1A-08~32GO, N° HFC2A-08~32GO & N° HFC3A-08~32GO dated 22/04/2022: DN 200 to 800

2.3 HFT Type

- Drawings N° HFT1A-02~06LO, N° HFT2A-02~06LO & N° HFT3A-02~06LO dated 22/04/2022: DN 50 to 150
- Drawings N° HFT1A-02~06GO, N° HFT2A-02~06GO & N° HFT3A-02~06GO dated 22/04/2022: DN 50 to 150
- Drawings N° HFT1A-08~32GO, N° HFT2A-08~32GO & N° HFT3A-08~32GO dated 22/04/2022: DN 200 to 800

No departure from the above documents shall be made without the prior consent of the Society. The manufacturer must inform the Society of any modification or changes to these documents and drawings.

3. TEST REPORTS

Hydrostatic & seat leakage tests witnessed by a Class Society' Surveyor : N° SJ1702-01 dated 14/02/2017 (CRB Series), N° SJ1702-02 dated 14/02/2017 (HFC Series), N° SJ1702-01 dated 14/02/2017 (HFT Series).

4. APPLICATION / LIMITATION

4.1 - May be used for the following services on board:

- Shipside valves - Sea water and fresh water - Bilge and ballast transfer - Compressed air - Cargo oil for tankers - Inert gas systems - Fuel-oil and lubricating oil transfer - Domestic and sanitary systems - washing and fire extinguishing - Hydraulic oil - Deck foam systems - Non-essential systems

4.2 - The butterfly valves belong to Class I, Class II and Class III according to the relevant requirements stated in Part C, Chapter 1, Sec 10 of the Bureau Veritas Rules. Valves under static pressure on fuel oil tanks or lubricating oil tanks and valves fitted on the ship side and collision bulkhead belong to Class II.

4.3 - The use of ordinary cast iron and stainless steel is to be restricted as per the Rules.

4.4 - The valve body, disc and seat should be suitable for the intended service. In particular the nature of materials, joints included, is to be selected according to the fluid to be conveyed.

4.5 - The approval does not include any remote control of the valves.

4.6 - The valve is to be installed according to manufacturer instructions and Bureau Veritas Rules.

4.7 - When the butterfly valves are not fitted with flanges their use may be accepted as shipside valves provided that arrangement are made to allow a possible disassembling at sea of the pipes immediately inboard without any risk of flooding.

4.8 - Bilge valves will be fitted in association with a non return valve.

5. PRODUCTION SURVEY REQUIREMENTS

5.1 - The products are to be supplied by **SEJIN VALVE IND. CO., LTD.** in compliance with the type and the requirements described in this certificate.

5.2 - This type of product is within the category IBV of Bureau Veritas Rule Note NR320.

5.3 - BUREAU VERITAS Certificates are required for materials of valve housings of Class I (DN≥50) and Class II (DN≥100). Materials of valve housings of Class I (DN<50) and Class II (DN<100) and for other parts of Class I and Class II are to be with Work's certificates.

5.4 - Each valve housing for Class I and Class II is to be hydraulically pressure tested to 1.5 times the design pressure.

5.5 - BV product certificate is required.

5.6 - For information, **SEJIN VALVE IND. CO., LTD.** has declared to Bureau Veritas the following production site:

SEJIN VALVE IND. CO., LTD.
24, Nakdongnam-ro, 549beon-gil
Gangseo-gu
BUSAN
KOREA (REPUBLIC OF)

6. MARKING OF PRODUCT

The valve is to be permanently marked with at least:

- Manufacturer's name or trademark
- Type designation
- Size
- Society's brand as relevant

7. OTHERS

It is **SEJIN VALVE IND. CO., LTD.**'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

This certificate supersedes the Type Approval Certificate N° 50128/A0 BV issued by the Society.

***** END OF CERTIFICATE *****

Electronically published by ABS Busan.
Reference T2234973, dated 25-MAR-2022.

CERTIFICATE NUMBER	22-2234973-PDA
EFFECTIVE DATE	25-Mar-2022
EXPIRY DATE	24-Mar-2027
ABS TECHNICAL OFFICE	Busan Engineering Services

CERTIFICATE OF

Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

SEJIN VALVE IND. CO., LTD.

located at

24, NAKDONGNAM-RO, 549 BEON-GIL, BUSAN, Korea, Republic of

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product:	**Wafer, Lug and Flanged Type Butterfly Valves**
Model:	**CRB, HFC, HFT series**
Endorsements:	
Tier:	**2 - PDA Issued**

This Product Design Assessment (PDA) Certificate remains valid until 24/Mar/2027 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau Of Shipping

Seong-Ju Kang, Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

Sensitivity: Internal & Restricted

Electronically published by ABS Busan.
Reference T1601127, dated 01-FEB-2017.

Terms & Conditions of
ABS Design Assessment

1. Agreement

Unless otherwise agreed in writing, all services rendered and certificates issued are governed by the terms and conditions of the "Request for Product Type Approval and Agreement" (the "Agreement") which are hereby incorporated by reference.

2. Representations as to Design Assessment

A certificate of design assessment represents that the product design meets the ABS, statutory, industrial or manufacturer's standard described on the reverse hereof and that the manufacturer has established a systematic quality monitoring system sufficient to show its capacity to consistently manufacture a product which meets the designated standards. ABS is not a substitute for the independent judgment of professional designers or engineers nor a substitute for the quality control procedures of constructors, steel makers, suppliers, manufacturers and vendors of marine structures, materials, machinery or equipment. ABS represents solely to the manufacturer or other client of ABS that it will use due diligence in developing Rules, Guides and standards and in surveying the plant as called for by ABS criteria for type approval.

3. Suspension of Certification

Any of the following events will cause immediate suspension of the certificate of design assessment unless the change is submitted to ABS for a new review and audit.

a) Redesign of the product or products covered by this certificate;

b) Change in production methods;

c) Substantial change in management organization;

d) Substantial change in frequency or curriculum for personnel training;

e) Refusing access to ABS personnel for periodic or annual audits;

f) Failure to correct a non-compliance identified during an audit or in service;

g) Failure to pay ABS fees.

4. Validity

The validity, applicability and interpretation of a certificate issued under the terms of or in contemplation of ABS Type Approval are governed by the Rules, Guides and standards of American Bureau of Shipping which shall remain the sole judge thereof. Nothing contained in this certificate or in any report issued in contemplation of this certificate shall be deemed to relieve any designer, builder, owner, manufacturer, seller, supplier, repairer, operator or other entity of any warranty express or implied, nor create any interest, right, claim or benefit in any third party. It is understood and agreed that nothing expressed herein is intended or shall be construed to give any person, firm or corporation other than the parties hereto, any right, remedy, or claim hereunder or under any of the provisions herein contained; all of the provisions hereof are for the sole and exclusive benefit of the parties hereto.

5. Limitation

ABS makes no representations beyond those contained herein and in the provisions of the Agreement regarding its reports, statements, plan review, surveys, certificates or other services.

6. Hold Harmless

The party to whom this certificate is issued, and his assignee and successor in interest, agree to indemnify and hold harmless ABS from and against any and all claims, demands, lawsuits, or actions for damages, including legal fees, to persons or other legal entities and property, tangible, intangible, or otherwise which may be brought against ABS incidental to, arising out of or in connection with the work done, services performed or material to be furnished under this certificate, except for those claims caused solely and completely by the negligence of ABS, its agents, employees, officers, directors or subcontractors.

7. Arbitration

Any and all differences and disputes of whatsoever nature arising out of this agreement shall be put to arbitration in the City of New York pursuant to the laws relating to the arbitration there in force, before a board of three persons, consisting of one arbitrator to be appointed by ABS, one by Client, and one by the two so chosen. The decision of any two of the three on any point or points shall be final. Until such time as the arbitrators finally close the hearings either party shall have the right by written notice served on the arbitrators and on an officer of the other party to specify further disputes or difference under this Agreement for hearing and determination. The arbitration is tobe conducted in accordance with the rules of the Society of Maritime Arbitrators, Inc. The arbitrators may grant any relief, other than punitive damages, which they, or a majority of them, deem just and equitable and within the scope of the agreement of the parties, including, but not limited to, specific performance. Awards made in pursuance to this clause may include costs including a reasonable allowance for attorney's fees and judgment may be entered upon any award made hereunder in any court having jurisdiction. ABS and client hereby mutually waive any and all claims to punitive damages in any forum.

Client shall be required to notify ABS within thirty (30) days of the commencement of any arbitration between it and third parties which may concern ABS's work in connection with this Agreement and shall afford ABS an opportunity, at ABS's sole option, to participate in the arbitration.

8. Time Bar to Legal Action

Any statutes of limitation notwithstanding, Client expressly agrees for itself and its affiliated companies that its right to bring or to assert against ABS any and all claims, demands or proceedings whether in arbitration or otherwise shall be waived unless (a) notice is received by ABS within thirty (30) days after Client or its affiliates had notice of or should reasonably have been expected to have had notice of the basis for such claims; and (b) arbitration or legal proceedings, if any, based on such claims or demands of whatever nature are commenced within one (1) year of the date of such notice to ABS.

9. Limitation of Liability

The combined liability of American Bureau of Shipping, its officers, employees, agents or subcontractors for any loss, claim, or damage arising from negligent performance or non-performance of any services under this Agreement, of from breach of any implied or express warranty of workmanlike performance in connection with the services, or from any other reason, to any person, corporation, partnership, business entity, sovereign, country or nation, shall be limited to the greater of a) $100,000 or b) an amount equal to ten times the sum actually paid for the services alleged to be deficient.

The limitation of liability may be increased up to an amount twenty-five times that sum paid for services upon receipt of Client's written request at or before the time of performance of service and upon payment by Client of an additional fee of $10.00 for every $1,000.00 increase in the limitation.

TX05/09_166-CTACO2b
US 1500

Electronically published by ABS Busan.
Reference T1601127, dated 01-FEB-2017.

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SC480 (A216WCB), SCS13(A351CF8), SCS14 (A351CF8M), SCS16(A351CF3M)
- Disc: SCS13, SCS14, SCS16
- Seat: PTFE, RTFE
- Retainer: SS400, SUS304, SUS316L
- Shaft: SUS304, SUS316, SUS630
- Valve ends: ASME Class 150, JIS 10K/16K, PN10/16

Rating:
1. Design pressure:
   a. CRB series: 10 bar or flange rating (ASME Class 150, JIS 5K/10K, PN6/10), whichever is the lesser
   b. HFC series: 20 bar or flange rating (ASME Class 150, JIS 10K/16K, PN10/16), whichever is the lesser
   c. HFT series: 20 bar or flange rating (ASME Class 150, JIS 10K/16K, PN10/16), whichever is the lesser

2. Design temperature:
   a. NBR seat: -18 to +100 deg. C
   b. EPDM seat: -18 to +110 deg .C
   c. Viton seat: -18 to +160 deg. C
   d. PTFE seat: -18 to +200 deg. C
   e. RTFE seat: -18 to +230 deg. C

Service Restriction:
1. Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.
2. Materials are to be compatible with intended services at the pressure-temperature rating.
3. Cast iron components is not to be used in systems that are exposed to pressure shock, vibration or excessive strain. In general, valves may be used only in Class III piping systems. Specifically, gray cast iron is not to be used for the following applications (4-6-2/3.1.3 of Steel Vessel Rules(SVR)):
   a. Valves for temperatures above 220 deg. C
   b. Valves connected to the collision bulkhead
   c. Valves connected to the shell of the vessel
   d. Valves fitted on the outside of fuel oil, lubricating oil, cargo oil and hydraulic oil tanks where subjected to a static head of oil
   e. Valves mounted on boilers except as permitted for heating boilers
   f. Valves in cargo oil piping on weather decks for pressures exceeding 16 bar (16.3 kgf/cm2, 232 psi)
   g. Valves in cargo oil manifolds for connection to cargo handling hoses
4. Nodular iron may be used for Classes I and II piping systems and for valves listed in 4-6-2/3.1.3 of SVR, provided it has an elongation of not less than 12% in 50 mm (2 in.). (4-6-2/3.1.4 of SVR)
5. Valves having nominal diameters exceeding 50 mm (2 in.) are not to be used for class I and II piping systems. (4-6-2/5.11.3(d) of SVR)
6. Wafer type butterfly valves are not to be installed next to rubber expansion joints with beaded end flange. (4-6-2/9.5 vi) of SVR)
7. Wafer type valves are not acceptable as shell valves. (4-6-2/9.13.2 ii) of SVR)
8. Valves are not to be used where materials readily rendered ineffective by heat are not acceptable (e.g. fire mains), unless the fire test report conforming to the latest edition of a recognized standard acceptable to ABS is submitted. (4-6-2/5.11.3 (c) & 4-7-3/1.11.1 of SVR)
9. EPDM seated valves are not to be used for oil lines.
10. Valves are not to be used on the outside of oil tanks where subjected to a static head of oil.

Comments:
1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Electronically published by ABS Busan.
Reference T1601127, dated 01-FEB-2017.

SEJIN VALVE IND. CO.
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Web: www.sjvalve.co.kr

2. This certificate may not be used for EU and US Flagged Vessels (MED and/or USCG have their own specific/ requirements).
3. Valves intended for installation on ship-side shell, including valves at sea chests, are to be hydrostatically tested, before installation, to a pressure of at least 5 bar, in the presence of the Surveyor. (4-6-2/7.3.2 of SVR)
4. Remote control valves are to be provided with a readily accessible manual means of operation upon loss of power. (4-6-2/9.13.2 iv), 4-6-4/7.5.2 & 5C-1-7/3.5.1 of SVR)
5. Open or closed indicators are to be provided (4-6-2/9.13.2 iii) of SVR)
6. Wafer type valves with non-conductive gaskets seals are to be earthed (grounded) to the hull such that the resistance between any point on the piping and the hull (across joints, pipe to hull) does not exceed 1 mega-ohm. (4-6-2/9.15 of the SVR)
7. Valves are to be of a type with positive holding arrangements, or equivalent that will prevent movement of the valve position due to vibration or flow of fluids. (4-6-4/7.5.1 of SVR)
8. All valves are to bear permanent identification, such as manufacturer's name or trademark, standard of compliance, material identity, pressure rating, etc., as required by the standard of compliance or the manufacturer's specification. Such markings may be cast or forged integral with, stamped on, or securely affixed by nameplate on the component, and are to serve as a permanent means of identification of the component throughout its service life.

Notes/Drawing/Documentation:
1. Drawing List
   a. CRB1A-02~14BA/16~28BA (Rev.B) "Concentric Rubber Seat - Wafer Type - Bare Stem Butterfly Valves" dated 7 October 2016
   b. CRB2A-02~14BA/16~28BA (Rev.B) "Concentric Rubber Seat - Lug Type - Bare Stem Butterfly Valves" dated 7 October 2016
   c. CRB3A-02~14BA/16~28BA (Rev.B) "Concentric Rubber Seat - Flange Type - Bare Stem Butterfly Valves" dated 7 October 2016
   d. HFC1A-06BA/18BA (Rev.B) "High-Performance (Rubber Seat) - Wafer Type - Bare Stem Butterfly Valves" dated 7 October 2016
   e. HFC2A-06BA/18BA (Rev.B) "High-Performance (Rubber Seat) - Lug Type - Bare Stem Butterfly Valves" dated 7 October 2016
   f. HFC3A-06BA/18BA (Rev.B) "High-Performance (Rubber Seat) - Flange Type - Bare Stem Butterfly Valves" dated 7 October 2016
   g. HFT1A-02~06BA/08~24BA (Rev.B) "High-Performance (Teflon Seat) - Wafer Type - Bare Stem Butterfly Valves" dated 7 October 2016
   h. HFT2A-02~06BA/08~24BA (Rev.B) "High-Performance (Teflon Seat) - Lug Type - Bare Stem Butterfly Valves" dated 7 October 2016
   i. HFT3A-02~06BA/08~24BA (Rev.B) "High-Performance (Teflon Seat) - Flange Type - Bare Stem Butterfly Valves" dated 7 October 2016
2. Burst test report (BK3251713) witnessed by ABS Surveyor dated 12 December 2016

Terms of Validity:
This Product Design Assessment (PDA) Certificate 17-BK1601127-PDA, dated 01/Feb/2017 remains valid until 31/Jan/2022 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Electronically published by ABS Busan.
Reference T1601127, dated 01-FEB-2017.

SEJIN VALVE IND. CO.
24, NAKDONGNAM-RO
549 BEON-GIL
GANGSEO-GU
BUSAN GYEONGSANGNAM-DO
Korea, Republic of
Telephone: +82-51-831-7747~9
Fax: +82-51-973-7742
Email: sjvalve@korea.com
Web: www.sjvalve.co.kr

Tier: 2 - PDA Issued

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

STANDARDS

ABS Rules:
The Rules for Conditions of Classification, Part 1 2017 Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:
2017 Steel Vessel Rules 4-6-2/5.11, 4-6-2/5.15

National:
NA

International:
NA

Government:
NA

EUMED:
NA

OTHERS:
NA

Certificate No: LR22273770TA
Issue Date: 03/04/2022
Expiry Date: 02/04/2027

Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

Manufacturer	**SEJIN VALVE IND. CO., LTD.**
Address	24, Nakdongnam-ro 549beon-gil, Gangseo-gu, Busan, 46728, South Korea
Type	Butterfly Valves
Description	Wafer/Lug/Flanged Type Butterfly Valve
Trade Name	CRB (Concentric NBR/EPDM/Viton seat),HFC (Double Eccentric NBR/EPDM/ Viton seat),HFT (Double Eccentric PTFE/RTFE seat)
Application	Marine Piping Systems:- · Cargo Handling Systems in Tankers · Cargo Stripping System · Tank Cleaning System · Cargo Venting and Inert Gas System · Steam/Exhaust System · Exhaust Gas System · Water Ballast System based on FC/FCD Body · Shipside Valve based on FCD/SC Body · Sea Water System · Fuel Oil and Diesel Oil System · Fresh Water System · Bulk mud & Cement Line System · Cooling System · Bilge and Drainage System · Other piping systems where applicable

Da-Young Kang

Senior Specialist to Lloyd's Register Asia
A member of the Lloyd's Register group

71 Fenchurch Street, London, EC3M 4BS, United Kingdom

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Type Approval Certificate

Note: see OTHER CONDITIONS below.

Specified Standard

Lloyd's Register Rules and Regulations for Classification of Ships (July 2021), Part 5, Chapter 12

Ratings

Nominal Diameter : 50 to 700A (CRB type)
80 to 600A (HFC type)
50 to 600A (HFT type)
Max. working pressure(MPa) : 1.0 (CRB type)
1.6 (HFC & HFT type)
Specified pipe flange design:
JIS 5K/10K, ASME Class 150, DIN PN6/PN10 (CRB type)
JIS 10K/16K, ASME Class 150, DIN PN10/PN16 (HFC & HFT type)

Other Conditions

For application on a LR classed vessel, the following conditions are to be complied with: -
1) The valves are to be made, installed and tested in accordance with Part5, Chapter12 of the Rules and Regulations for the Classification of Ships.
2) In all cases the materials are to be suitable for their intended service conditions.
3) Wafer type vales or grey cast iron are not to be used for shipside valve.
4) Grey cast iron is not to be used for valves in flammable oil systems where design pressure exceed 7 bar or the design operating temperature is greater than 60°C.
5) The valves are not to be used in spaces where leakage or failure caused by fire could result in fire spread, flooding or the loss of an essential service.
6) The valve is not to be used for bilge services, except i) bilge suctions for holds in bulk carriers when fitted in a pipe tunnel in association with a non-return valve and similar low fire risk spaces and ii) as pump suction valves from main bilge line where the valve is located in the immediate vicinity of the pump and fitted in conjunction with a metal non-return valve on the bilge

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TA01 1.0.0

Type Approval Certificate

main side of the butterfly valve (cargo ships only).
7) The valve may be used in low pressure air piping system except as stop valves on pressure vessels.

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register Asia of any modification or changes to the equipment in order to obtain a valid Certificate.

Previous Version: 17/40023

The Design Appraisal Document LR22273770TA and its supplementary Type Approval Terms and Conditions form part of this Certificate.

71 Fenchurch Street, London, EC3M 4BS, United Kingdom

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Design Approval Certificate

[Butterfly Valve]

Initial Approval 17th November, 2016

Manufacturer Sejin Valve Co., Ltd.

24, Nakdongnam-ro 549beon-gil, Gangseo-gu, Busan, Rep. of Korea

Product Description

Model : CRB, HFC, HFT
Connected Type : Wafer, Lug and Flange

" See Appendix 1 "

Approval Condition Individual Product Certification is required in case of pipes belonging to Class II.

THIS IS TO CERTIFY that the design of the above-mentioned product has been approved in accordance with relevant requirement of this Society's Rules and / or of the recognized standards as follows.

Pt. 5, Ch. 6, Sec. 1 of the Rules for Classification of Steel Ships.

This Certificate is valid until 16th November, 2026

Issued at Busan, Korea on 10th December, 2021

This certificate is signed electronically in accordance with IMO FAL.5/Circ.39/Rev.2. Validation and authentication of the certificate can be confirmed from "http://e-cert.krs.co.kr" by using the tracking No(ME21031628256) and certificate No.(GCH20975-VV001).

KOREAN REGISTER

General Manager of
Marine & Ocean Equipment Team

Note : *1. This certificate will be valid subject to complying with the approval conditions described on the certificate and/or on the Rules of this Society.*
2. This certificate will be invalid from the expiry date aforementioned unless the extension or renewal has been granted to the applicant or the manufacturer.
3. Any significant modifications or changes in design or construction to the above product without approval from this Society will render this certificate invalid.
4. Should the specified rules, regulations or standards be amended during the validity of this certificate, the product is to be re-approved by this Society in accordance with the requirements as amended.

Product Description and/or Approval Condition

Date of Issue : 10th December, 2021

1. Product Description;

1) CRB series (Concentric Design)
- Design Pressure : 10 kgf/cm2
- Flange : JIS 5K/10K, PN6/10, ASME Class 150
- Size and Approval Drawing No. ;

Type	Size Range	Drawing No.
WAFER (lever operated)	50 ~ 150 A	CRB1A-02~06L0
WAFER (gear operated)	50 ~ 350 A 400 ~ 700 A 750 ~ 1400 A	CRB1A-02~14G0 CRB1A-16~28G0 CRB1A-30~58G0
LUG (lever operated)	50 ~ 150 A	CRB2A-02~06L0
LUG (gear operated)	50 ~ 350 A 400 ~ 700 A 750 ~ 1400 A	CRB2A-02~14G0 CRB2A-16~28G0 CRB2A-30~58G0
FLANGE (lever operated)	50 ~ 150 A	CRB3A-02~06L0
FLANGE (gear operated)	50 ~ 350 A 400 ~ 700 A 750 ~ 1400 A	CRB3A-02~14G0 CRB3A-16~28G0 CRB3A-30~58G0

2) HFC series (Double Eccentric Design)
- Design Pressure : 16 kgf/cm2
- Flange : JIS 5K/10K/16K, PN6/10/16, ASME Class 150
- Size and Approval Drawing No. ;

Type	Size Range	Drawing No.
WAFER (lever operated)	80 ~ 150 A	HFC1A-03~06L0
WAFER (gear operated)	80 ~ 150 A 200 ~ 800 A	HFC1A-03~06G0 HFC1A-08~32G0
LUG (lever operated)	80 ~ 150 A	HFC2A-03~06L0
LUG (gear operated)	80 ~ 150 A 200 ~ 800 A	HFC1A-03~06G0 HFC2A-08~32G0
FLANGE (lever operated)	80 ~ 150 A	HFC3A-03~06L0
FLANGE (gear operated)	80 ~ 150 A 200 ~ 800 A	HFC3A-03~06G0 HFC3A-08~32G0

3) HFT series (Double Eccentric Design)
- Design Pressure : 16 kgf/cm2
- Flange : JIS 5K/10K/16K, PN6/10/16, ASME Class 150
- Size and Approval Drawing No. ;

Type	Size Range	Drawing No.
WAFER (lever operated)	50 ~ 150 A	HFT1A-02~06L0
WAFER (gear operated)	50 ~ 150 A 200 ~ 800 A	HFT1A-02~06G0 HFT1A-08~32G0
LUG (lever operated)	50 ~ 150 A	HFT2A-02~06G0

Product Description and/or Approval Condition

Date of Issue : 10th December, 2021

Type	Size Range	Drawing No.
LUG (gear operated)	50 ~ 150 A 200 ~ 800 A	HFT2A-02~06GO HFT2A-08~32GO
FLANGE (lever operated)	50 ~ 150 A	HFT3A-02~06LO
FLANGE (gear operated)	50 ~ 150 A 200 ~ 800 A	HFT3A-02~06GO HFT3A-08~32GO

2. Design Temperature based on seat materials;
   - NBR : -18 ℃ ~ +100 ℃
   - EPDM : -18 ℃ ~ +110 ℃
   - VITON : -10 ℃ ~ +160 ℃
   - TEFLON : -18 ℃ ~ +230 ℃

3. Range of Application;
   - Cargo handling system
   - Water ballast system
   - Tank cleaning system
   - Cargo tank venting and inert gas system
   - Bilge / sludge system
   - Sea water system
   - Fresh water system
   - Fuel oil, diesel oil and lubricating oil system

4. Material
   - Body ;
     - Carbon Steel : FC/FCD/SC/A126-CL.B, C/A536-Gr.60, 65, 70, 80/A395-Gr.60, 65/A216-Gr.WCA, WCB, WCC, SCPH2 etc
     - Stainless Steel : SCS13/SCS14/SCS16/SCS13A/SCS14A/SCS16A/A351-CF8, CF3, CF3M etc
     - Aluminum Blonze : ALBC1/ALBC2/ALBC3/B148-C95200, 95400, 95800 etc
     - Duplex Stainless: A995-4A/A995-5A/SCS10/A890-4A/A890-5A etc
     - Alloy Steel : Monel-400, K500/Inconel-600, 601, 625, 718, X750, 825/Hastelloy etc
   - Disc ;
     - Stainless Steel : SCS13/SCS14/SCS16/SCS13A/SCS14A/SCS16A/A351-CF8, CF3, CF3M etc
     - Aluminum Blonze : ALBC1/ALBC2/ALBC3/B148-C95200, 95400, 95800 etc
     - Duplex Stainless: A995-4A/A995-5A/SCS10/A890-4A/A890-5A etc
     - Alloy Steel : Monel-400, K500/Inconel-600, 601, 625, 718, X750, 825/Hastelloy etc

5. Limitations;
   1) Rubber seat butterfly valves should not be used for the following applications unless this Society accepts the intended use.
      a) Outlet valves fitted to the tank carrying flammable or combustible liquid (e.g., fuel oil, crude oil, etc.) and subjected to the liquid head, installed in the engine room or area susceptible to fire. However, they may be used for those installed within the cargo oil tanks or outlet valves leading to the pump room of oil tankers
      b) Valves in piping system handling special liquids other than water and oil
   2) The butterfly valves made of cast iron with an elongation of less than 12 % are not to be used for the following.
      a) Ship-side valves
      b) Valves fitted on the collision bulkhead
      c) Valves fitted on the external wall of fuel tanks and subjected to the static head of internal fluid
      d) Valves and pipe fittings for boiler blow-off piping
      e) Valves fitted on shore connection for cargo pipings of inflammable liquid
      f) Valves and pipe fittings for piping liable to be subjected to water hammer, excessive strain or vibration
      g) Valves and pipe fittings whose design temperature exceeds 220 ℃
      h) Valves and pipe fittings used for pipes of Class II
      i) Valves and pipe fittings for clean ballast piping systems which penetrate cargo oil tanks and reach the forepeak tank.

Product Description and/or Approval Condition

Date of Issue : 10th December, 2021

j) Valves and pipe fittings used for cargo oil pipelines exceeding design pressure of 1.6 MPa
k) Cast iron products are not to be used for valves in the piping system belonging to Class I, unless specially approved by the Society.

3) The butterfly valves used as sea water suction valves or overboard discharge valves are to be of the flange type.
4) The restricted materials under IGC Code and IBC Code can not be used where the valve may come into contact with cargo, cargo dust or cargo mist.

< End of Certificate >

ORIGINAL

FUGITIVE EMISSION TEST CERTIFICATE

Date : 15 June, 2016

Applicant / Manufacturer : Sejin Valve Industrial Co., Ltd.

Date and place of test : 30 May, 2016~2 June, 2016 at the manufacturer's premises in Busan, Korea

Kind of test : Witness of Fugitive Emission Test

Test valve : **Butterfly Valve (ASTM A216 WCB)**
- 10", CL300

Applicable drawing : TOM3B-10BA Rev.0

Test standard : ISO 15848 Part1, 2015 Edition

Test condition :

- Test Medium : Helium
- Test Pressure : 56.0 Bar at Ambient Temperature, 46.0 Bar at 200°C
- Tightness Class : BH
- Mechanical-Cycle Class : 1500 Cycles / CO2
- Number of Thermal Cycles : 3
- Number of Stem Seal Adjustment : 0
- Temperature Class : t200℃

Performance Class : **ISO FE BH-CO2- t(RT, 200℃)-CL300-ISO 15848-1**

Extension of Qualification : As per Para.8 of ISO 15848-1

** ** ** **

This is to certify that the Fugitive Emission Test was performed by the manufacturer under our witness as above, and the results were satisfied within acceptance criteria specified for the target performance class.

Note
The details of the test condition and data are as per manufacturer's Test Report No. SV-FET-10300-1, which were verified and endorsed by us.

** ** ** **

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SGS Korea Co., Ltd.

B. I. Lim
Team Lead, Industrial Division

SHJ/yjp

SGS

ORIGINAL

FUGITIVE EMISSION TEST CERTIFICATE

Date : 15 June, 2016

Applicant / Manufacturer : Sejin Valve Industrial Co., Ltd.

Date and place of test : 30 May, 2016~3 June, 2016 at the manufacturer's premises in Busan, Korea

Kind of test : Witness of Fugitive Emission Test

Test valve : **Butterfly Valve (ASTM A216 WCB)**
- 24", CL300

Applicable drawing : TOM3B-24BA Rev.0

Test standard : ISO 15848 Part1, 2015 Edition

Test condition :

- Test Medium : Helium
- Test Pressure : 56.0 Bar at Ambient Temperature, 46.0 Bar at 200°C
- Tightness Class : BH
- Mechanical-Cycle Class : 1500 Cycles / CO2
- Number of Thermal Cycles : 3
- Number of Stem Seal Adjustment : 1
- Temperature Class : t200℃

Performance Class : **ISO FE BH-CO2-SSA1- t(RT, 200℃)-CL300-ISO 15848-1**

Extension of Qualification : As per Para.8 of ISO 15848-1

** ** ** **

This is to certify that the Fugitive Emission Test was performed by the manufacturer under our witness as above, and the results were satisfied within acceptance criteria specified for the target performance class.

Note
The details of the test condition and data are as per manufacturer's Test Report No. SV-FET-24300-1, which were verified and endorsed by us.

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SGS Korea Co., Ltd.

B. I. Lim
Team Lead, Industrial Division

SHJ/yjp

FIRE TEST CERTIFICATE

Date: April 05, 2021
Certificate No. KR-5000-50007040-5

Applicant / Manufacturer	: Sejin Valve Industrial Co., Ltd. 24, Nakdongnam-ro 549 beon-gil, Gangseo-gu, Busan, Korea
Date and place of test	: April 10, 2018 at the Manufacturer's Premises in Busan, Korea
Kind of test	: Witness of Fire Test
Test valve	: **Butterfly Valve** **- 2", Class 150, ASTM A216 WCB**
Design standard	: API 609 Category B - 8TH Edition, February 2016
Applicable drawing	: A0392-15002-CS Rev.0
Test standard	: API STANDARD 607 - 7TH Edition, June, 2016

** ** ** **

This is to conform that the fire test was performed by the manufacturer under witness, and the results were satisfied with the requirements in API 607, so we hereby confirm that the coverage of the **qualification ranges Class150 through Class300 rating with 2" and below through 4" size for the Ferritic Material.**

Note
The details of the test condition and data are as per **Manufacturer's Test Report No. SV-FST-15002-CS-01 dated 10 April, 2018,** which were verified and endorsed by us.

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In accordance with Client's instructions, the Company's involvement has been limited to witnessing/observing a third party's intervention(s) at the third party's laboratory/test house or other facilities and installations used for the intervention(s). The Company's sole responsibility was to be present at the time of the third party's intervention(s) to forward the results, or confirm the occurrence, of the intervention(s). The Company is not responsible for the condition or calibration of apparatus, instruments and measuring devices used, the analysis methods applied the qualifications, actions or omissions of the third party's personnel or the analysis results.

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** ** ** **

SGS Korea Co., Ltd.

SGS Korea Industrial

Michael Kang
Business Manager, Industrial Division

SHJ/dsk

FIRE TEST CERTIFICATE

Date: April 05, 2021
Certificate No. KR-5000-50007040-4

Applicant / Manufacturer	: Sejin Valve Industrial Co., Ltd. 24, Nakdongnam-ro 549 beon-gil, Gangseo-gu, Busan, Korea
Date and place of test	: February 24, 2017 at the Manufacturer's Premises in Busan Korea
Kind of test	: Witness of Fire Test
Test valve	: **Butterfly Valve** **- 3", Class 150, ASTM A216 WCB**
Design standard	: API 609 Category B - 8TH Edition, February 2016
Applicable drawing	: A0392-15003-CS Rev.0
Test standard	: API STANDARD 607 - 7TH Edition, June, 2016

** ** ** **

This is to conform that the fire test was performed by the manufacturer under witness, and the results were satisfied with the requirements in API 607, so we hereby confirm that the coverage of the **qualification ranges Class150 through Class300 rating with 3" through 6" size for the Ferritic Material.**

Note
The details of the test condition and data are as per **Manufacturer's Test Report No. SV-FST-15003-CS-01 dated 24 Feb., 2017,** which were verified and endorsed by us.

In accordance with Client's instructions, the Company's involvement has been limited to witnessing/observing a third party's intervention(s) at the third party's laboratory/test house or other facilities and installations used for the intervention(s). The Company's sole responsibility was to be present at the time of the third party's intervention(s) to forward the results, or confirm the occurrence, of the intervention(s). The Company is not responsible for the condition or calibration of apparatus, instruments and measuring devices used, the analysis methods applied the qualifications, actions or omissions of the third party's personnel or the analysis results.

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** ** ** **

SGS Korea Co., Ltd.

Michael Kang
Business Manager, Industrial Division

SHJ/dsk

FIRE TEST CERTIFICATE

Date: April 05, 2021
Certificate No. KR-5000-50007040-3

Applicant / Manufacturer	: Sejin Valve Industrial Co., Ltd. 24, Nakdongnam-ro 549 beon-gil, Gangseo-gu, Busan, Korea
Date and place of test	: February 24, 2017 at the Manufacturer's Premises in Busan Korea
Kind of test	: Witness of Fire Test
Test valve	: **Butterfly Valve** **- 3", Class 150, ASTM A351 CF8M**
Design standard	: API 609 Category B - 8TH Edition, February 2016
Applicable drawing	: A0392-15003-SS Rev.0
Test standard	: API STANDARD 607 - 7TH Edition, June, 2016

** ** ** **

This is to conform that the fire test was performed by the manufacturer under witness, and the results were satisfied with the requirements in API 607, so we hereby confirm that the coverage of the **qualification ranges Class150 through Class300 rating with 3" through 6" size for the Austenitic Material.**

Note
The details of the test condition and data are as per **Manufacturer's Test Report No. SV-FST-15003-SS-01 dated 24 Feb., 2017,** which were verified and endorsed by us.

In accordance with Client's instructions, the Company's involvement has been limited to witnessing/observing a third party's intervention(s) at the third party's laboratory/test house or other facilities and installations used for the intervention(s). The Company's sole responsibility was to be present at the time of the third party's intervention(s) to forward the results, or confirm the occurrence, of the intervention(s). The Company is not responsible for the condition or calibration of apparatus, instruments and measuring devices used, the analysis methods applied the qualifications, actions or omissions of the third party's personnel or the analysis results.

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** ** ** **

SGS Korea Co., Ltd.

Michael Kang
Business Manager, Industrial Division

SHJ/dsk

FIRE TEST CERTIFICATE

Date: April 05, 2021
Certificate No. KR-5000-50007040-2

Applicant / Manufacturer	: Sejin Valve Industrial Co., Ltd. 24, Nakdongnam-ro 549 beon-gil, Gangseo-gu, Busan, Korea
Date and place of test	: February 23, 2017 at the Manufacturer's Premises in Busan, Korea
Kind of test	: Witness of Fire Test
Test valve	: **Butterfly Valve** **- 8", Class 150, ASTM A351 CF8M**
Design standard	: API 609 Category B - 8TH Edition, February 2016
Applicable drawing	: A0392-15008-SS Rev.0
Test standard	: API STANDARD 607 - 7TH Edition, June 2016

** ** ** **

This is to conform that the fire test was performed by the manufacturer under witness, and the results were satisfied with the requirements in API 607, so we hereby confirm that the coverage of the **qualification ranges Class150 through Class300 rating with 8" and above size for the Austenitic Material.**

Note
The details of the test condition and data are as per **Manufacturer's Test Report No. SV-FST-15008-SS-01 dated 23 Feb., 2017,** which were verified and endorsed by us.

In accordance with Client's instructions, the Company's involvement has been limited to witnessing/observing a third party's intervention(s) at the third party's laboratory/test house or other facilities and installations used for the intervention(s). The Company's sole responsibility was to be present at the time of the third party's intervention(s) to forward the results, or confirm the occurrence, of the intervention(s). The Company is not responsible for the condition or calibration of apparatus, instruments and measuring devices used, the analysis methods applied the qualifications, actions or omissions of the third party's personnel or the analysis results.

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** ** ** **

SGS Korea Co., Ltd.

Michael Kang
Business Manager, Industrial Division

SHJ/dsk

FIRE TEST CERTIFICATE

Date: April 05, 2021
Certificate No. KR-5000-50007040-1

Applicant / Manufacturer	: Sejin Valve Industrial Co., Ltd. 24, Nakdongnam-ro 549 beon-gil, Gangseo-gu, Busan, Korea
Date and place of test	: February 23, 2017 at the Manufacturer's Premises in Busan, Korea
Kind of test	: Witness of Fire Test
Test valve	: **Butterfly Valve** **- 8", Class 150, ASTM A216 WCB**
Design standard	: API 609 Category B - 8TH Edition, February 2016
Applicable drawing	: A0392-15008-CS Rev.0
Test standard	: API STANDARD 607 - 7TH Edition, June 2016

** ** ** **

This is to conform that the fire test was performed by the manufacturer under witness, and the results were satisfied with the requirements in API 607, so we hereby confirm that the coverage of the **qualification ranges Class150 through Class300 rating with 8" and above size for the Ferritic Material.**

Note
The details of the test condition and data are as per **Manufacturer's Test Report No. SV-FST-15008-CS-01 dated 23 Feb., 2017,** which were verified and endorsed by us.

In accordance with Client's instructions, the Company's involvement has been limited to witnessing/observing a third party's intervention(s) at the third party's laboratory/test house or other facilities and installations used for the intervention(s). The Company's sole responsibility was to be present at the time of the third party's intervention(s) to forward the results, or confirm the occurrence, of the intervention(s). The Company is not responsible for the condition or calibration of apparatus, instruments and measuring devices used, the analysis methods applied the qualifications, actions or omissions of the third party's personnel or the analysis results.

This document is issued by the Company under its General Conditions of Service accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

** ** ** **

SGS Korea Co., Ltd.

Michael Kang
Business Manager, Industrial Division

SHJ/dsk

TEST CERTIFICATE

ORIGINAL

Date: June 28, 2017
Certificate No. : B-50/2016-0023/015-02

Applicant / Manufacturer	: Sejin Valve Ind. Co., Ltd. 24, Nakdongnam-ro 549 beon-gil, Gangseo-gu, Busan, Korea
Date and place of test	: May 29 ~ June 12, 2017 at the manufacturer's premises in Busan, Korea
Kind of test	: **Type Acceptance Testing according to MESC SPE 77/300**
Test valve	: **Butterfly Valve** **- Triple-Offset, Double Flange, DN 600, Class 300, ASTM A351 CF8M**
Applicable drawing	: A1800
Test standard	: MESC SPE 77/300 December 2012
Test condition	
- Test Sequence No.	: 16
- Emission Tightness Class	: B
- Test Medium	: Helium
- Test Temperature	: High/Elevated Temperature : 200°C Low Temperature : - 196°C
Extension of qualification	: As per Appendix C of MESC SPE 77/300

** ** ** **

This is to certify that the test was performed by the manufacturer under witness and reviewed the EVADOCS as per MESC SPE 77/300D, and the result was satisfied within acceptance criteria specified in MESC SPE 77/300.

Note
The details of the test condition and data are as per manufacturer's Test Report No. SV-TAT-BF-600300-01, which was verified and endorsed.

This certificate is valid from June 27, 2017 until June 27, 2022.

In accordance with Client's instructions, the Company's involvement has been limited to witnessing/observing a third party's intervention(s) at the third party's laboratory/test house or other facilities and installations used for the intervention(s). The Company's sole responsibility was to be present at the time of the third party's intervention(s) to forward the results, or confirm the occurrence, of the intervention(s). The Company is not responsible for the condition or calibration of apparatus, instruments and measuring devices used, the analysis methods applied the qualifications, actions or omissions of the third party's personnel or the analysis results.

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** ** ** **

SGS Korea Co., Ltd.

The world's leading inspection, verification, testing and certification company
SGS Korea Industrial

I. J. Jun
Manager, Industrial Division

SHJ/jhs

TEST CERTIFICATE

COPY

Date: June 28, 2017
Certificate No. : B-50/2016-0023/015-02

Applicant / Manufacturer	: Sejin Valve Ind. Co., Ltd. 24, Nakdongnam-ro 549 beon-gil, Gangseo-gu, Busan, Korea
Date and place of test	: May 29 ~ June 12, 2017 at the manufacturer's premises in Busan, Korea
Kind of test	: **Type Acceptance Testing according to MESC SPE 77/300**
Test valve	: **Butterfly Valve** **- Triple-Offset, Double Flange, DN 600, Class 300, ASTM A351 CF8M**
Applicable drawing	: A1800
Test standard	: MESC SPE 77/300 December 2012
Test condition	
- Test Sequence No.	: 16
- Emission Tightness Class	: B
- Test Medium	: Helium
- Test Temperature	: High/Elevated Temperature : 200°C Low Temperature : - 196°C
Extension of qualification	: As per Appendix C of MESC SPE 77/300

** ** ** **

This is to certify that the test was performed by the manufacturer under witness and reviewed the EVADOCS as per MESC SPE 77/300D, and the result was satisfied within acceptance criteria specified in MESC SPE 77/300.

Note
The details of the test condition and data are as per manufacturer's Test Report No. SV-TAT-BF-600300-01, which was verified and endorsed.

This certificate is valid from June 27, 2017 until June 27, 2022.

In accordance with Client's instructions, the Company's involvement has been limited to witnessing/observing a third party's intervention(s) at the third party's laboratory/test house or other facilities and installations used for the intervention(s). The Company's sole responsibility was to be present at the time of the third party's intervention(s) to forward the results, or confirm the occurrence, of the intervention(s). The Company is not responsible for the condition or calibration of apparatus, instruments and measuring devices used, the analysis methods applied the qualifications, actions or omissions of the third party's personnel or the analysis results.

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SGS Korea Co., Ltd.

The world's leading inspection, verification, testing and certification company SGS Korea Industrial

I. J. Jun
Manager, Industrial Division

SHJ/jhs

TEST CERTIFICATE

ORIGINAL

Date: June 28, 2017
Certificate No. : B-50/2016-0023/015-01

Applicant / Manufacturer	: Sejin Valve Ind. Co., Ltd. 24, Nakdongnam-ro 549 beon-gil, Gangseo-gu, Busan, Korea
Date and place of test	: May 29 ~ June 09, 2017 at the manufacturer's premises in Busan, Korea
Kind of test	: **Type Acceptance Testing according to MESC SPE 77/300**
Test valve	: **Butterfly Valve** **- Triple-Offset, Double Flange, DN 250, Class 300, ASTM A351 CF8M**
Applicable drawing	: A1801
Test standard	: MESC SPE 77/300 December 2012
Test condition	
- Test Sequence No.	: 16
- Emission Tightness Class	: B
- Test Medium	: Helium
- Test Temperature	: High/Elevated Temperature : 200°C Low Temperature : - 196°C
Extension of qualification	: As per Appendix C of MESC SPE 77/300

** ** ** **

This is to certify that the test was performed by the manufacturer under witness and reviewed the EVADOCS as per MESC SPE 77/300D, and the result was satisfied within acceptance criteria specified in MESC SPE 77/300.

Note
The details of the test condition and data are as per manufacturer's Test Report No. SV-TAT-BF-250300-01, which was verified and endorsed.

This certificate is valid from June 27, 2017 until June 27, 2022.

In accordance with Client's instructions, the Company's involvement has been limited to witnessing/observing a third party's intervention(s) at the third party's laboratory/test house or other facilities and installations used for the intervention(s). The Company's sole responsibility was to be present at the time of the third party's intervention(s) to forward the results, or confirm the occurrence, of the intervention(s). The Company is not responsible for the condition or calibration of apparatus, instruments and measuring devices used, the analysis methods applied the qualifications, actions or omissions of the third party's personnel or the analysis results.

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** ** ** **

SGS Korea Co., Ltd.

I. J. Jun
Manager, Industrial Division

SHJ/jhs

TEST CERTIFICATE

COPY

Date: June 28, 2017
Certificate No. : B-50/2016-0023/015-01

Applicant / Manufacturer	: Sejin Valve Ind. Co., Ltd. 24, Nakdongnam-ro 549 beon-gil, Gangseo-gu, Busan, Korea
Date and place of test	: May 29 ~ June 09, 2017 at the manufacturer's premises in Busan, Korea
Kind of test	: **Type Acceptance Testing according to MESC SPE 77/300**
Test valve	: **Butterfly Valve** **- Triple-Offset, Double Flange, DN 250, Class 300, ASTM A351 CF8M**
Applicable drawing	: A1801
Test standard	: MESC SPE 77/300 December 2012
Test condition	
- Test Sequence No.	: 16
- Emission Tightness Class	: B
- Test Medium	: Helium
- Test Temperature	: High/Elevated Temperature : 200°C Low Temperature : - 196°C
Extension of qualification	: As per Appendix C of MESC SPE 77/300

** ** ** **

This is to certify that the test was performed by the manufacturer under witness and reviewed the EVADOCS as per MESC SPE 77/300D, and the result was satisfied within acceptance criteria specified in MESC SPE 77/300.

Note
The details of the test condition and data are as per manufacturer's Test Report No. SV-TAT-BF-250300-01, which was verified and endorsed.

This certificate is valid from June 27, 2017 until June 27, 2022.

In accordance with Client's instructions, the Company's involvement has been limited to witnessing/observing a third party's intervention(s) at the third party's laboratory/test house or other facilities and installations used for the intervention(s). The Company's sole responsibility was to be present at the time of the third party's intervention(s) to forward the results, or confirm the occurrence, of the intervention(s). The Company is not responsible for the condition or calibration of apparatus, instruments and measuring devices used, the analysis methods applied the qualifications, actions or omissions of the third party's personnel or the analysis results.

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** ** ** **

SGS Korea Co., Ltd.

The world's leading inspection, verification, testing and certification company SGS Korea Industrial

I. J. Jun
Manager, Industrial Division

SHJ/jhs

TEST CERTIFICATE

ORIGINAL

Date: June 29, 2017
Certificate No. : B-50/2016-0023/015-03

Applicant / Manufacturer	: Sejin Valve Ind. Co., Ltd. 24, Nakdongnam-ro 549 beon-gil, Gangseo-gu, Busan, Korea
Date and place of test	: June 12 ~ 19, 2017 at the manufacturer's premises in Busan, Korea
Kind of test	: **Type Acceptance Testing according to MESC SPE 77/300**
Test valve	: **Dual Plate Check Valve** **- Retainerless, Wafer, DN 250, Class 300, ASTM A351 CF8M**
Applicable drawing	: DC-T300-250-01
Test standard	: MESC SPE 77/300 December 2012
Test condition	
- Test Sequence No.	: 24
- Leakage Rate Class	: E
- Test Medium	: Helium
- Test Temperature	: High/Elevated Temperature : 200°C Low Temperature : - 196°C
Extension of qualification	: As per Appendix C of MESC SPE 77/300

** ** ** **

This is to certify that the test was performed by the manufacturer under witness and reviewed the EVADOCS as per MESC SPE 77/300D, and the result was satisfied within acceptance criteria specified in MESC SPE 77/300.

Note

The details of the test condition and data are as per manufacturer's Test Report No. SV-TAT-DC-250300-01, which was verified and endorsed.

This certificate is valid from June 27, 2017 until June 27, 2022.

In accordance with Client's instructions, the Company's involvement has been limited to witnessing/observing a third party's intervention(s) at the third party's laboratory/test house or other facilities and installations used for the intervention(s). The Company's sole responsibility was to be present at the time of the third party's intervention(s) to forward the results, or confirm the occurrence, of the intervention(s). The Company is not responsible for the condition or calibration of apparatus, instruments and measuring devices used, the analysis methods applied the qualifications, actions or omissions of the third party's personnel or the analysis results.

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I. J. Jun
Manager, Industrial Division

SHJ/jhs

TEST CERTIFICATE

COPY

Date: June 29, 2017
Certificate No. : B-50/2016-0023/015-03

Applicant / Manufacturer	: Sejin Valve Ind. Co., Ltd. 24, Nakdongnam-ro 549 beon-gil, Gangseo-gu, Busan, Korea
Date and place of test	: June 12 ~ 19, 2017 at the manufacturer's premises in Busan, Korea
Kind of test	: **Type Acceptance Testing according to MESC SPE 77/300**
Test valve	: **Dual Plate Check Valve** **- Retainerless, Wafer, DN 250, Class 300, ASTM A351 CF8M**
Applicable drawing	: DC-T300-250-01
Test standard	: MESC SPE 77/300 December 2012
Test condition	
- Test Sequence No.	: 24
- Leakage Rate Class	: E
- Test Medium	: Helium
- Test Temperature	: High/Elevated Temperature : 200°C Low Temperature : - 196°C
Extension of qualification	: As per Appendix C of MESC SPE 77/300

** ** ** **

This is to certify that the test was performed by the manufacturer under witness and reviewed the EVADOCS as per MESC SPE 77/300D, and the result was satisfied within acceptance criteria specified in MESC SPE 77/300.

Note
The details of the test condition and data are as per manufacturer's Test Report No. SV-TAT-DC-250300-01, which was verified and endorsed.

This certificate is valid from June 27, 2017 until June 27, 2022.

In accordance with Client's instructions, the Company's involvement has been limited to witnessing/observing a third party's intervention(s) at the third party's laboratory/test house or other facilities and installations used for the intervention(s). The Company's sole responsibility was to be present at the time of the third party's intervention(s) to forward the results, or confirm the occurrence, of the intervention(s). The Company is not responsible for the condition or calibration of apparatus, instruments and measuring devices used, the analysis methods applied the qualifications, actions or omissions of the third party's personnel or the analysis results.

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** ** ** **

SGS Korea Co., Ltd.

The world's leading inspection, verification, testing and certification company SGS Korea Industrial

I. J. Jun
Manager, Industrial Division

SHJ/jhs

CERTIFICATE OF
FIRE SAFETY TEST

(Attestation)

TÜV SÜD Korea Ltd.29F, Two IFC, 10 Gukjegeumyung-ro, Yeongdeungpo-gu, Seoul, 07326, Korea

Korea

Choose certainty.
Add value.

Certificate No.: TSK-IS-74956033-001
Manufacturer Name: SEJIN VALVE IND. CO., LTD.
Manufacturer Address: 24, 549BEON-GIL, NAKDONGNAM-RO, GANGSEO-GU, BUSAN, KOREA
Date of Test: 18th Feb. 2020 (1 Day)
Kind of Test: Witness of Fire Safety Test
Test Valve: 2"-150# 1pc, ECCENTRIC BUTTERFLY VALVE

Type of Test Valve	
Description of Test Valve	ECCENTRIC BUTTERFLY VALVE(HFTM)
Valve Size(Bore), NPS	2"
Pressure Rating(ANSI Class)	150#
Material(Body / Seat)	ASTM B148 C95800 / PTFE+SS 316L

Test Standard: API 607 Seventh Edition, June 2016
Applicable drawing: HFTM-50F-GO-BC
Qualified Range of Valves:

Qualified Sizes	2" and below & 2 1/2", 3", 4"
Qualified Class Ratings	150 & 300

Conclusion

The undersigned, Inspector to TÜV SÜD, certifies that the above type meets the applicable Requirements.
The details of the test condition and data are as per manufacturer's Test Report No. SJV-20200218-01 which were verified and endorsed by TUV SUD Korea.

Note: "In accordance with Client's instructions, the Company's involvement has been limited to witnessing/observing a third party's intervention(s) at the third party's laboratory/test house or other facilities and installations used for the intervention(s). The Company's sole responsibility was to be present at the time of the third party's intervention(s) to forward the results, or confirm the occurrence, of the intervention(s). The Company is not responsible for the condition or calibration of apparatus, instruments and measuring devices used, the analysis methods applied the qualifications, actions or omissions of the third party's personnel or the analysis results.

Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law."

This certificate is issued further to a test whose duration and scope were limited by the terms and conditions Of the contract with TÜV SÜD Korea Ltd. This certificate is NOT an indication that the item(s) is (are) fit for any

CERTIFICATE OF
FIRE SAFETY TEST

(Attestation)

TÜV SÜD Korea Ltd.29F, Two IFC, 10 Gukjegeumyung-ro, Yeongdeungpo-gu, Seoul, 07326, Korea

Korea

Choose certainty.
Add value.

Specific purpose and does not release the manufacturer, supplier and any party from their respective duty. Guarantee, obligation and/or indemnity relating to, without limitation, patents, workmanship, materials, safety, Performance in operation and/or reliability.

TÜV SÜD Korea Ltd.

Korea

Issued by Byung-Suk, Roh

CERTIFICATE OF
FIRE SAFETY TEST

(Attestation)

TÜV SÜD Korea Ltd.29F, Two IFC, 10 Gukjegeumyung-ro, Yeongdeungpo-gu, Seoul, 07326, Korea

Korea

Choose certainty.
Add value.

Certificate No. : TSK-IS-74956033-002
Manufacturer Name: SEJIN VALVE IND. CO., LTD.
Manufacturer Address: 24, 549BEON-GIL, NAKDONGNAM-RO, GANGSEO-GU, BUSAN, KOREA
Date of Test: 19th Feb. 2020 (1 Day)
Kind of Test: Witness of Fire Safety Test
Test Valve: 4"-150# 1pc, ECCENTRIC BUTTERFLY VALVE

Type of Test Valve	
Description of Test Valve	ECCENTRIC BUTTERFLY VALVE(HFTM)
Valve Size(Bore), NPS	4"
Pressure Rating(ANSI Class)	150#
Material(Body / Seat)	ASTM B148 C95800 / PTFE+ SS 316L

Test Standard: API 607 Seventh Edition, June 2016
Applicable drawing: HFTM-100F-GO-BC
Qualified Range of Valves:

Qualified Sizes	4", 5", 6", 8"
Qualified Class Ratings	150 & 300

Conclusion

The undersigned, Inspector to TÜV SÜD, certifies that the above type meets the applicable requirements.
The details of the test condition and data are as per manufacturer's Test Report No. SJV-20200219-02 which were verified and endorsed by TUV SUD Korea.

Note: "In accordance with Client's instructions, the Company's involvement has been limited to witnessing/observing a third party's intervention(s) at the third party's laboratory/test house or other facilities and installations used for the intervention(s). The Company's sole responsibility was to be present at the time of the third party's intervention(s) to forward the results, or confirm the occurrence, of the intervention(s). The Company is not responsible for the condition or calibration of apparatus, instruments and measuring devices used, the analysis methods applied the qualifications, actions or omissions of the third party's personnel or the analysis results.

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CERTIFICATE OF
FIRE SAFETY TEST

(Attestation)

TÜV SÜD Korea Ltd.29F, Two IFC, 10 Gukjegeumyung-ro, Yeongdeungpo-gu, Seoul, 07326, Korea

Choose certainty.
Add value.

Specific purpose and does not release the manufacturer, supplier and any party from their respective duty. Guarantee, obligation and/or indemnity relating to, without limitation, patents, workmanship, materials, safety, Performance in operation and/or reliability.

TÜV SÜD Korea Ltd.

Issued by Byung-Suk, Roh

CERTIFICATE OF
FIRE SAFETY TEST

(Attestation)

TÜV SÜD Korea Ltd.29F, Two IFC, 10 Gukjegeumyung-ro, Yeongdeungpo-gu, Seoul, 07326, Korea

Korea

Choose certainty.
Add value.

Certificate No. : TSK-IS-74956033-003
Manufacturer Name: SEJIN VALVE IND. CO., LTD.
Manufacturer Address : 24, 549BEON-GIL, NAKDONGNAM-RO, GANGSEO-GU, BUSAN, KOREA
Date of Test: 20th Feb. 2020 (1 Day)
Kind of Test: Witness of Fire Safety Test
Test Valve: 8"-150# 1pc, ECCENTRIC BUTTERFLY VALVE

Type of Test Valve	
Description of Test Valve	ECCENTRIC BUTTERFLY VALVE(HFTM)
Valve Size(Bore), NPS	8"
Pressure Rating(ANSI Class)	150#
Material(Body / Seat)	ASTM B148 C95800 / PTFE+ SS 316L

Test Standard: API 607 Seventh Edition, June 2016
Applicable drawing: HFTM-200F-GO-BC
Qualified Range of Valves:

Qualified Sizes	8" and larger
Qualified Class Ratings	150 & 300

Conclusion

The undersigned, Inspector to TÜV SÜD, certifies that the above type meets the applicable requirements.
The details of the test condition and data are as per manufacturer's Test Report No. SJV-20200220-03 which were verified and endorsed by TUV SUD Korea.

Note: "In accordance with Client's instructions, the Company's involvement has been limited to witnessing/observing a third party's intervention(s) at the third party's laboratory/test house or other facilities and installations used for the intervention(s). The Company's sole responsibility was to be present at the time of the third party's intervention(s) to forward the results, or confirm the occurrence, of the intervention(s). The Company is not responsible for the condition or calibration of apparatus, instruments and measuring devices used, the analysis methods applied the qualifications, actions or omissions of the third party's personnel or the analysis results.

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This certificate is issued further to a test whose duration and scope were limited by the terms and conditions of the contract with TÜV SÜD Korea Ltd.. This certificate is NOT an indication that the item(s) is (are) fit for any

CERTIFICATE OF
FIRE SAFETY TEST

(Attestation)

TÜV SÜD Korea Ltd.29F, Two IFC, 10 Gukjegeumyung-ro, Yeongdeungpo-gu, Seoul, 07326, Korea

Korea

Choose certainty.
Add value.

Specific purpose and does not release the manufacturer, supplier and any party from their respective duty. Guarantee, obligation and/or indemnity relating to, without limitation, patents, workmanship, materials, safety, Performance in operation and/or reliability.

TÜV SÜD Korea Ltd.

Korea

Issued by Byung-Suk, Roh

Business registration number in Korea:
116-81-68264 (Head Office)

Cert. No.: TSK-IS-2017-EX-029C

Seoul Office
Tel.: +82-(0)2-3215-1100
Fax: +82-(0)2-3215-1110
www.tuv-sud.kr

TÜV®

TÜV SÜD Korea Ltd.
HQ of Region Korea
29F, Two IFC, 10 Gukjegeumyung-ro,
Yeongdeungpo-gu, Seoul, 07326,
Korea

NSF International

789 N. Dixboro Road, Ann Arbor, MI 48105 USA

RECOGNIZES

Sejin Valve Ind. Co., Ltd.

Facility: Busan, Republic of Korea

AS COMPLYING WITH NSF/ANSI 61, 372 AND ALL APPLICABLE REQUIREMENTS.
PRODUCTS APPEARING IN THE NSF OFFICIAL LISTING ARE
AUTHORIZED TO BEAR THE NSF MARK.

ANSI Accredited Program
PRODUCT CERTIFICATION
#0216
Certification Program
Accredited by the
American National
Standards Institute

Certification Program
Accredited by the
Standards Council
of Canada

This certificate is the property of NSF International and must be returned upon request. This certificate remains valid as long as this client has products in Listing for the referenced standards. For the most current and complete Listing information, please access NSF's website (www.nsf.org).

Theresa Bellish

April 29, 2016
Certificate# C0263944 - 01

Theresa Bellish
General Manager, Water Systems

REFERENCE LIST

SEJIN VALVE

TEL : 82-51-831-7747~9 FAX : 82-51-831-7740 E-MAIL : sjvalve@korea.com

HEAD OFFICE & FACTORY : 24, Nakdongnam-ro 549beon-gil, Gangseo-gu, Busan, Republic of Korea

MAJOR REFERENCE LIST

2024-01-16

NO	COUNTRY	END USER	CLIENT	PROJECT NAME	VALVE TYPE	FLANGE RATING	BODY MATERIAL	DISC MATERIAL	SIZE	Q'TY (EA)	YEAR	MONTH
215	VIETNAM	PVPower	SANSUNG C&T	NHON TRACH 3 AND NHON TRACH 4 POWER PLANT PROJECT	Butterfly Valve (MOV)	150#	A216 WCB + R.L A216 WCB	A216 WCB + R.L A351 CF3M A351 CF8M	14" ~ 90"	13	2023	12
214	VIETNAM	PVPower	SANSUNG C&T	NHON TRACH 3 AND NHON TRACH 4 POWER PLANT PROJECT	Butterfly valve	150#	A216 WCB A351 CF3M A216 WCB + R.L	A351 CF8 A351 CF3M A216 WCB + R.L	4" ~ 30"	76	2023	12
213	SAUDI ARABIA	ARAMCO	SAMSUNG C&T	Tanajib ISPP project	Butterfly valve (MOV)	150#	A216 WCB	A351 CF8M	3" ~ 52"	23	2023	9
212	SAUDI ARABIA	ARAMCO	SAMSUNG C&T	Tanajib ISPP project	Butterfly valve	150#	A216 WCB+R.L	A890 5A	4" ~ 52"	302	2023	9
211	INDONESIA	Lotte Chemical Co., Ltd.	Hyundai Engineering	LINE Project	Butterfly valve	150#	B148 C95800	B148 C95800	3" ~ 54"	127	2023	9
210	GUAM	KEPCO&EWP	Doosan Heavey Ind. Co.,Ltd.	Guam Ukudu combined Cycle Power Plant(WT&WWT)	Butterfly valve	150#	A216 WCB	A351 CF3M	2" ~ 10"	306	2023	7
209	GUAM	KEPCO&EWP	Doosan Heavey Ind. Co.,Ltd.	Guam Ukudu combined Cycle Power Plant(WT&WWT)	Butterfly Valve/ Non Return valve	150#	A216 WCB	A351 CF3M	8" ~ 36"	16	2023	7
208	INDONESIA	PT INDO RAYA TENAGA	Doosan Heavey Ind. Co.,Ltd.	JAWA 9 & 10 COAL FIRED STEAM POWER PLANT PROJECT	Butterfly valve (POV)	150#	A216 WCB	A351 CF8	6" ~ 18"	44	2023	8
207	SAUDI ARABIA	Royal Commission	Gedik Termo Vana	RC Project	Butterfly valve (MOV&Manual)	125#	B148 C95800	B148 C95800	12" ~92"	56	2023	8
206	TAIWAN	TAIWAN POWER COMPANY	Hyundai Engineering	Datan Combined Cycle Expansion Project Unit 7 Add On	Butterfly valve (MOV)	150#	A536 Gr.65-45-12+R.L	A351 CF3M + R.L	30"~104"	8	2022	12
205	OMAN	GS INIMA	VCF	BARKA V IWO - RO DESALINATION PLANT	DUAL Check Valve	PN6 PN10 600#	A995 5A A351 CF8M	A995 5A A351 CF8M	DN80~ DN900	58	2022	11
204	INDONESIA	PT INDO RAYA TENAGA	EPC Energy Singapore - HK	JAWA 9 & 10 COAL FIRED STEAM POWER PLANT PROJECT	Butterfly valve / Non Return valve	AWWA C207 CLASS D 75B	A536Gr.65-45-12+Ebonite Lining	A536Gr.65-45-12+Ebonite Lining	DN800~ DN3500	13	2022	11
203	INDONESIA	PT INDO RAYA TENAGA	Doosan Heavey Ind. Co.,Ltd.	JAWA 9 & 10 COAL FIRED STEAM POWER PLANT PROJECT	Butterfly valve	150#	A216WCB+ R/L A216WCB	A216WCB+ R/L B148C95800 A351CF8M	18" ~ 100"	32	2022	11

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NO	COUNTRY	END USER	CLIENT	PROJECT NAME	VALVE TYPE	FLANGE RATING	BODY MATERIAL	DISC MATERIAL	SIZE	Q'TY (EA)	YEAR	MONTH
202	MALAYSIA	PULAU INDAH POWER PLANT SDN BHD	POSCO E&C	PULAU INDAH COMBINED CYCLE POWER PLANT	Butterfly valve / Non Return valve	150#	A216 WCB A351 CF3M A536 Gr.65-45-12+R.L	A351 CF8 A351 CF3M A536 Gr.65-45-12+R.L	2"~104"	120	2022	9
201	MALAYSIA	MMHE	MEERZA RESOURCES SDN BHD	SK408W JERUN FIELD DEVELOPMENT PROJECT	Butterfly valve	150#	A351-CF8M A351-CF8M+Stellite #6 B148C95800	A351-CF8M B148C95800	2" ~ 14"	117	2022	6
200	USA	U.S Arnold Air Force Base	Water Technology Resources	Jet Engine Combustion	Butterfly valve	AWWA C 207 CLASS D	A516 Gr.70	A156 Gr.70	156"	1	2022	3
199	SAUID ARABIA	UNITED PIPING SOLUTION	UNITED PIPING SOLUTION	AL JUBAIL SWRO DESALINATION PLANT PHASE 2	Butterfly valve	150#	A351CF3M A995 5A	A351CF3M A995 5A	4" ~ 12"	18	2022	2
198	TAIWAN	CPC CORPORATION	CTCI Corporation	EPCC WORK FOR LNG PLANT OF CPC THIRD TERMINAL L10502 PROJECT	Butterfly valve	150#	A536 Gr.65-45-12	B148C95800	60"	4	2022	1
197	VIETNAM	Van Phong Power Company Limited	CTCI Corporation	Van Phong 1 BOT Thermal Power Plant Project	DUAL Check Valve	150#	A216WCB+R/L	A351CF8M	12"	4	2021	11
196	TAIWAN	CPC CORPORATION	CTCI Corporation	EPCC WORK FOR LNG PLANT OF CPC THIRD TERMINAL L10502 PROJECT	DUAL Check Valve	150#	B148C95800	B148C95800	30"	36	2021	10
195	KOREA	SAMCHEOK BLUE POWER (POSCO)	Doosan Heavey Ind. Co.,Ltd.	Samcheok Thermal Power Plant Project	DUAL Check Valve	150#	A216WCB+R.L B148C95800 A351CF8	B148C95800 A351CF8	4" ~ 48"	29	2021	10
194	KOREA	SAMCHEOK BLUE POWER (POSCO)	Doosan Heavey Ind. Co.,Ltd.	Samcheok Thermal Power Plant Project	Butterfly valve / Non Return valve	150#	A536Gr 65-45-12+R/L A216WCB A351CF8	A536Gr 65-45-12+R/L A743CF3MN A351CF8	3" ~ 92"	72	2021	9
193	UAE	FUJAIRAH POWER COMPANY	SAMSUNG C&T	Fujairah 3 IPP PROJECT	Butterfly valve / Non Return valve	150#	A216WCB+R/L	A890 5A A216WCB+R/L	16" ~ 90"	61	2021	9
192	VIETNAM	Van Phong Power Company Limited	CTCI Corporation	Van Phong 1 BOT Thermal Power Plant Project	Butterfly valve / Non Return valve	AWWA C 207 CLASS D	A216WCB+R/L	A536Gr.65-45-12+R/L	104"	4	2021	8
191	UAE	FUJAIRAH POWER COMPANY	SAMSUNG C&T	Fujairah 3 IPP PROJECT	Butterfly valve / DUAL Check Valve	150#	A216WCB A890 5A	A890 5A	4" ~ 90"	140	2021	7

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190	BANGLADESH	RELIANCE BANGLADESH LNG & POWER LIMITED	SAMSUNG C&T	Meghnaghat 718MW CCPP	Butterfly valve	PN6 #150 AWWA C 207 CLASS D	A536Gr 65-45-12+R.L A536Gr 65-45-12 A216WCB	A536Gr 65-45-12+R.L A351CF8M A351CF8	6"~ DN2000	114	2021	6
189	BANGLADESH	RELIANCE BANGLADESH LNG & POWER LIMITED	SAMSUNG C&T	Meghnaghat 718MW CCPP	Butterfly valve / Non Return valve	PN6 #150	A536Gr 65-45-12+R.L A216WCB	A536Gr 65-45-12+R.L A351CF8	12" ~ DN2000	13	2021	6
188	THAILAND	PTT PUBLIC COMPANY LIMITED	TC ENSTAGE CO.,LTD	Future Tie -In RTO System for ESP and GSP#6 Plant Prject	Butterfly valve	150#	A351CF8	A351CF8	60" ~ 80"	10	2021	5
187	SINGAPORE	EXXON MOBIL	SBM OFFSHORE	LIZA UNITY PHASE 3	DUAL Check Valve	150# ~ 2500#	A216WCB A352 LCC A9954A B62 C83600 A351CF8M A9955A	A351CF8M A9954A B62 C83600 A351CF8M A9955A A240316	2" ~ 20"	200	2021	4
186	VIETNAM	Van Phong Power Company Limited	CTCI Corporation	Van Phong 1 BOT Thermal Power Plant Project	DUAL Check Valve	150#	B148C95800	B148C95800	6" ~ 24"	8	2021	3
185	KOREA	Hyundai Engineering & Construction Co.,Ltd.	Hyundai Engineering & Construction Co.,Ltd. - KOREA	JIJEL PJT	Butterfly Valve	150#	A351CF3M	A351CF3M	6" ~ 8"	12	2021	2
184	KOREA	Korea Hydro & Nuclear Power Co. Ltd.	Korea Hydro & Nuclear Power Co. Ltd.	SINKORI 5,6	Motor Butterfly Valve	150#	A216WCB+R/L A216WCB	A216WCB+R/L A216WCB	78" ~ 90"	15	2021	2
183	SAUDI ARABIA	SWCC	SASAKURA	Construction of MED-TVC unit and Water Production	Butterfly Valve	150#	A351CF3M	A351CF3M	24"	1	2021	1
182	SINGAPORE	PETRO BRAS	MOWE Marine & Offshore	FPSO ANNA NERY	Butterfly Valve	150#	A216WCB	B148C95800	6" ~ 24"	40	2020	12
181	ITALY	SAIPEM	CDB ENGINEERING	Cooling water side stream filter package	Pneumatic Butterfly Valve	150# ~ 300#	A536GR.60-40-18	B148C95800	8" ~ 10"	64	2020	12
180	SAUDI ARABIA	SWCC	SASAKURA	Construction of MED-TVC unit and Water Production	Butterfly Valve	300#	A216WCB+Stellite6	A216WCB	16"	3	2020	12

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179	INDONESIA	PT Asahimas Chmical (ASC)	HISAKADO	PT Asahimas Chmical (ASC)	Butterfly Valve	150#	A216WCB	A216WCB	24" & 44"	2	2020	11
178	AUSTRALIA	Chevron Australia Pty Ltd	Chevron Australia Pty Ltd	CHEVRON AUSTRALIA PTY LTD	Butterfly Valve	300#	BS1400 LG2	BS1400 LG2	4" ~ 6"	13	2020	9
177	UAE	ADNOC	GASCO	Seawater Intake03	Butterfly Valve	150#	A216WCB+R.L	B148C95400	60"	1	2020	9
176	UAE	ADNOC	GASCO	Seawater Intake03	Butterfly Valve	150#	A216 WCB+RL	HASTELLOY C276	6" ~ 12"	7	2020	7
175	UAE	EGA	ABENGOA	RO WATER PLANT FOR JEBEL ALI ALUMINUM SMELTER	Butterfly Valve	PN10	B148 C95800	B148 C95800	32" & 36"	3	2020	6
174	SAUID ARABIA	ABENGOA	UNITED PIPING SOLUTION	RABIGH III INDEPENDENT WATER	DUAL Check Valve	600#	A8905A	A8905A	16" & 22"	30	2020	4
173	UAE	DEWA	Hyundai E&C CO., LTD	JEBEL ALI L-2 STATION	Butterfly Valve	150# PN10 AWWAC-207	A216WCB B148C95800 A351CF3M	A216WCB B148C95800 A351CF3M A351CF8	DN150~ DN2200	23	2020	4
172	UAE	ADNOC	GASCO	Seawater Intake03	Butterfly Valve	150#	A216 WCB+RL	HASTELLOY C276	6" ~ 12"	30	2020	3
171	SINGAPORE	EXXON MOBIL	SBM OFFSHORE	LIZA UNITY PHASE 2	DUAL Check Valve	150# ~2500#	A216WCB A352 LCC A351CF8M A9954A B62 C83600 A9955A	A351CF8M A9954A B62 C83600 A9955A	2" ~ 16"	190	2019	12
170	INDONESIA	JAWA SATU POWER	SAMSUNG C&T	JAWA-1 COMBINED CYCLE GAS TURBINE POWER PLANTE(1760MW)	Butterfly Valve / Non-return Valve	150#	A536 Gr65-45-12+RL A351CF3 A890 5A	A536 Gr65-45-12+RL A351CF3 A890 5A	3"~108"	19	2019	12
169	KOREA	Hanwha Total Petrochemical	Hanwha Engineering & Construction Corp.	PP4 PJT	Butterfly Valve	150#	A216 WCB	A351CF8M	18"~32	22	2019	12

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NO	COUNTRY	END USER	CLIENT	PROJECT NAME	VALVE TYPE	FLANGE RATING	BODY MATERIAL	DISC MATERIAL	SIZE	Q'TY (EA)	YEAR	MONTH
168	KOREA	GS EPS	GS Engineering & Construction	DANGJIN BIOMASS#2	Butterfly Valve	150#	A536GR65-45-12, A536GR65-45-12+BUNA-N, A216WCB	A743CF3MN A351CF8M	6"~54"	20	2019	12
167	QATAR	QATAR CHEMICAL	QATAR CHEMICAL	Q2 SW DISCHARGE	DUAL Check Valve	150#	A395+EPDM	B148 C95800	36"	1	2019	11
166	KOREA	CGN	Hyundai Eng. & Const. Co., Ltd.	DAESAN BIOMASS PJT	Butterfly Valve	150#	A536 Gr65-45-12+R.L A351CF3M A216WCB	A351CF3M A351CF8	16"~40"	16	2019	11
165	KOREA	Korea Hydro & Nuclear Power Co. Ltd.	Korea Hydro & Nuclear Power Co. Ltd.	SHINKORI#5,6	Butterfly Valve	150#	A216WCB+R.L A216WCB	A216WCB+R.L A216WCB	78"~90"	27	2019	10
164	UAE	RUWAIS POWER COMPANY PJSC	SEWOONG PLANT CO.,LTD	SHUWEIHAT 2 POWER AND DESALINATION PLANT	Butterfly Valve	AWWA C 207 CLASS D	A536+R/L	A536+R/L	96"	1	2019	10
163	KUWAIT	KNPC	KNPC(WAA)	MAA DC BUTTERFLY VALVE FOR MPD-II	Butterfly Valve	150#	A216WCB+R.L	B148C95800	4"~30"	10	2019	9
162	KOREA	CGN	Hyundai Eng. & Const. Co., Ltd.	DAESAN BIOMASS	Butterfly Valve DUAL Check Valve	150#	A351CF3M A216WCB A351CF8 A536 Gr65-45-12+R/L	A351CF3M A351CF8 A536 Gr65-45-12+R/L	6"~40"	72	2019	9
161	KOREA	Hanwha Chemical	Hanwha Engineering & Construction Co., Ltd.	HCC V-3	Butterfly Valve	150#	A216WCB	A351CF8M	4"~24"	24	2019	6
160	KOREA	Hanwha Chemical	Hanwha Engineering & Construction Co., Ltd.	HCC K-10(PVC)	Butterfly Valve	150#	A216WCB	A351CF8M	4"~12"	20	2019	6
159	KUWAIT	KNPC	Arabian Darb	KNPC PO #274581	Butterfly Valve	150#	A216WCB+R/L A216WCB	B148C95500	42"	1	2019	5
158	KOREA	Korea Southern Power Co.,Ltd.	Korea Southern Power Co.,Ltd.	HADONG #8 POWER PLANT	Butterfly Valve	150#	A126CLB	A890 5A	44"	4	2019	5
157	KUWAIT	KNPC	Arabian Darb	EPC & COMMISSIONING OF KOC MOLTEN SULPHUR HANDLING FACILITIES AT MAA REFINERY	Butterfly Valve	150#	A216WCB+R/L A216WCB	B148C95500	6"~18"	51	2019	4

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156	KOREA	Korea Western Power Co. Ltd.	Korea Western Power Co. Ltd.	TAE AN #9 & 10 POWER PLANT	Butterfly Valve	150#	A536+R/L	A536+R/L	78"~102"	3	2018	9
155	ALGERIA	Sonelgaz Electricity Production Company (SPE)	SAMSUNG TRD. CONT. CO., LTD	ALGERIA MOSTAGHANEM CCPP	Butterfly Valve	150#	A536+R/L	A536+R/L	3"~114"	293	2018	9
154	KOREA	GOSUNG GREEN POWER	Doosan Heavey Ind. Co.,Ltd.	GOSUNGHAI POWER PLANT	Butterfly Valve	150#	A216 CLB	A351CF8	6"~40"	48	2018	7
153	KOREA	Hanwha Chemical	Hanwha Engineering & Construction Co., Ltd.	HCC THE PJT	Butterfly Valve	150#	A216WCB	B148C95800	8"~16"	34	2018	7
152	KOREA	Korea South-East Power Co.Ltd.	Korea South-East Power Co.Ltd.	YOUNGHUNG #9,10 POWER PLANT	Butterfly Valve	150#	A536+R/L	A743CF3MN	30"~36"	5	2018	6
151	KOREA	Korea Midland Power Co. Ltd.	Korea Midland Power Co. Ltd.	SHINSEOCHUN POWER PLATE	Butterfly Valve	150#	A536+R/L	A536+R/L A743CF3MN	6"~96"	56	2018	3
150	KOREA	Daelim Industrial Co.,Ltd	Daelim Industrial Co.,Ltd	LOTTE H-NC3	Butterfly Valve	150# ~ 300#	A351CF8 A216WCB	A351CF8M	18" ~ 20"	2	2018	1
149	IRAN	MINES & METAL TECHNOLOGICAL ENGINEERING CO.	HJ MetalKorea Co., Ltd	KOWSAR GISD MEGA MODULE	Butterfly Valve	150#	A216WCB	A216WCB	16"~ 72"	11	2017	11
148	QATAR	-	Doosan Heavey Ind. Co.,Ltd.	Doha RO DAF Sludge Treatment System Package	Butterfly Valve	150#	A216WCB	A351CF8M	2" ~ 14"	13	2017	11
147	KOREA	DONGSUNG HEAVY INDUSTRIES	KOLON PLASTICS	BKA-1 PJT	Butterfly Valve	150#	A351CF8M	A351CF8M	16" ~ 40"	12	2017	11
146	SAUDI ARABIA	MARAFIQ	Hanwha Engineering & Construction Co., Ltd.	KSA YANBU-II POWER & WATER	Butterfly Valve	150#	A216WCB+R.L	B148C95800	28"~32"	8	2017	11
145	ALGERIA	Naama CCPP	SAMSUNG TRD. CONT. CO., LTD	Algeria Naama CCPP PJT 1,164MW combined-cycle power plant	Butterfly Valve	150#	A216WCB	A351CF8M	4" ~ 6"	6	2017	8
144	KOREA	GS Engineering & Construction	GS Pocheon Green Energy Corp. / GS Engineering & Construction	GS Pocheon CHP Plant	Butterfly Valve	150#	A536+R/L A216WCB	A351CF3M A536+R/L	4" ~ 46"	21	2017	6

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143	MOROCO	Safi Energy Company	Safi Energy Company / Daewoo E&C	Safi Independent Power Project / Morocco	Butterfly Valve	150#	A536+R/L	A351CF8M A536+R/L	4" ~ 40"	8	2017	5
142	Kazakhstan	Karabatan Utility Solution LLP	Karabatan Utility Solution LLP / Doosan Heavy Industries & Construction	Karabatan Power Plant	Butterfly Valve	150#	A216WCB A351CF8	A351CF8	3" ~ 20"	78	2017	4
141	KOREA	KOREA MIDLAND POWER CO., LTD	Lotte E&C	SEOUL CHPP POWER PLANT	DUAL Check Valve	150#	A216-CLB	B148C95800	92"	2	2017	3
140	AUSTRALIA	Chevron Australia Pty Ltd	Chevron Australia Pty Ltd	CHEVRON AUSTRALIA PTY LTD	Butterfly Valve	300#	BS1400 LG2	BS1400 LG2	4"	7	2017	2
139	PANAMA	Gas Natural Atlantico S. de R.L	Gas Natural Atlantico S. de R.L / Posco E&C	Panama Colon Power	Butterfly Valve	150#	A536+R/L	A536+R/L	12" ~ 76"	15	2017	2
138	MALAYSIA	JIMAH EAST POWER SDN BHD	JIMAH EAST POWER SDN BHD./ Hyundai Engineering Co., Ltd.	JIMAH EAST POWER 2 X 1000MW CFPP	Butterfly Valve	150#	A536+R/L A216WCB	A536+R/L A351CF3M	3" ~ 112"	75	2016	12
137	KOREA	KOREA MIDLAND POWER CO., LTD	KOREA MIDLAND POWER CO., LTD. / Doosan Heavey Ind. Co.,Ltd.	Seoul CCPP	Butterfly Valve	150#	A216WCB A216WCB+R.L	A217CA15 A351CF8	16" ~ 62"	54	2016	12
136	KOREA	KDHC	KDHC / Doosan Heavey Ind. Co.,Ltd.	HWASUNG DONGTAN 2 CHP	Butterfly Valve	150#	A216WCB A351CF8	A351CF8	20" ~ 74"	58	2016	8
135	ALGERIA	Mostaganem CCPP	SAMSUNG TRD. CONT. CO., LTD	Algeria Mostaganem CCPP 1,450MW and 1,163MW combined-cycle power plant	Butterfly Valve	150#	A216WCB	A351CF8	4" ~ 114"	146	2016	5
134	ALGERIA	Naama CCPP	SAMSUNG TRD. CONT. CO., LTD	Algeria Naama CCPP PJT 1,164MW combined-cycle power plant	Butterfly Valve	150#	A216WCB	A351CF8	3" ~ 20"	172	2016	5
133	QATAR	KAHRAMAA	SAMSUNG TRD. CONT. CO., LTD	QATAR FACILITI D UHP	Butterfly Valve	150#	A536+R/L	A351CF3M A890 4A A536+R/L A351CF8	2" ~ 76"	169	2016	4
132	QATAR	KAHRAMAA	SAMSUNG TRD. CONT. CO., LTD	QATAR FACILITI D UHP	Butterfly Valve / Non-return Valve	150#	A536+R/L	A351CF3M	26"~64"	23	2016	4
131	TURKEY	ACWA	SAMSUNG TRD. CONT. CO., LTD	KIRIKKALE IPP	Butterfly Valve	150#~600#	A536-65-45-12 A217WC6	A351CF8 A743CF8	14" ~ 72"	39	2016	2

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130	SAUDI ARABIA	SWCC	SEWOONG PLANT CO.,LTD	Al-Jubail Plants	Butterfly Valve	125#	A536+R/L	A536+R/L	42"	2	2016	1
129	AUSTRALIA	Chevron Australia Pty Ltd	Chevron Australia Pty Ltd	CHEVRON AUSTRALIA PTY LTD	Butterfly Valve	300#	BS1400 LG2	BS1400 LG2	4"	7	2015	10
128	KOREA	Lotte Chemical Co., Ltd.	Lotte Chemical Co., Ltd. - SMC AUTOMATION CO., LTD.	LOTTE CHEMICAL DAESAN PLANT	Butterfly Valve	150#	A216WCB	A351CF3M	30" ~ 36"	6	2015	10
127	UAE	MIRFA IWPP	Mirfa Iternational Power and Water Company - Hyundai Eng. & Const. Co., Ltd.	MIRFA IWPP, U. A. E	Butterfly Valve	125#~150# PN16	B148C95800	B148C95800	4" ~ 64"	136	2015	10
126	UAE	MIRFA IWPP	Mirfa Iternational Power and Water Company - Hyundai Eng. & Const. Co., Ltd.	MIRFA IWPP, U. A. E	Butterfly Valve	150#	B148C95800	B148C95800	3" ~ 90"	13	2015	10
125	UAE	MIRFA IWPP	Mirfa Iternational Power and Water Company - Hyundai Eng. & Const. Co., Ltd.	MIRFA IWPP, U. A. E	DUAL Check Valve	125#~ 150#	B148C95800	B148C95800	3" ~ 34"	71	2015	9
124	QATAR	QATAR STEEL COMPANY	QATAR STEEL COMPANY - ACE CORP.	QATAR STEEL REFINERY	Butterfly Valve	150#/10K	A216WCB	A351CF8M	4" ~ 18"	11	2015	9
123	UAE	EMIRATES NUCLEAR ENGERY CORPORATION	EMIRATES NUCLEAR ENGERY CORPORATION - KEPCO	BRAKA NUCLEAR #3 & 4 POWER PLANT	Butterfly Valve	150#	B148C95800	B148C95800	6" ~ 12"	34	2015	8
122	KUWAIT	MEW	MEW - SATCO	SABIA POWER STATION	Butterfly Valve	150#	A351CF8M	A351CF8M	96"	1	2015	7
121	KOREA	KOREA SOUTH-EAST POWER CO., LTD.	KOREA SOUTH-EAST POWER CO., LTD.	SAMCHEONPO POWER DESULFURATION	Butterfly Valve	150#	A536+R/L	A536+R/L	40"	4	2015	7
120	UAE	GASCO	GASCO - ACE CORP	GASCO U. A. E PLANT	Butterfly Valve	150#	A8905A	A8905A	6"	2	2015	7
119	KOREA	KOREA SOUTH-EAST POWER CO., LTD.	KOREA SOUTH-EAST POWER CO., LTD.	TAE AN #7 & 8 POWER PLANT DESULFURATION	Butterfly Valve	125#	A216WCB	A351CD4M	1.5" ~ 8"	78	2015	6
118	QATAR	QATAR PETROLEUM	QATAR PETROLEUM - ACE CORP.	FEED FOR DELUGE PIPING(DRY) & FW LINE VALVES REPLACEMENT AT NF-A(PS-4) PLATFORM	Butterfly Valve	150#	B148C95800	B148C95800	3" ~ 12"	291	2015	5

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NO	COUNTRY	END USER	CLIENT	PROJECT NAME	VALVE TYPE	FLANGE RATING	BODY MATERIAL	DISC MATERIAL	SIZE	Q'TY (EA)	YEAR	MONTH
117	KOREA	HANHWA CHEMICAL CO., LTD.	HANHWA CHEMICAL CO., LTD.	HANHWA POLY-SILICONE INCREASED CVD	Butterfly Valve	150#	A216WCB	A351CF8M	16" ~ 18"	2	2015	5
116	KOREA	KOREA SOUTH-EAST POWER CO., LTD.	KOREA SOUTH-EAST POWER CO., LTD.	YOUNGHUNG #3 & 4 POWER PLANT DESULFURATION	Butterfly Valve	150#	A536+R/L	A536+R/L	48"	2	2015	5
115	KOREA	KOREA WEST POWER CO., LTD.	KOREA WEST POWER CO., LTD.	TAE AN #7 & 8 POWER PLANT	Butterfly Valve	150LB~300LB /10K	A216WCB	A351CF8M	3" ~ 14"	133	2015	5
114	KOREA	KOREA SOUTH-EAST POWER CO.,LTD.	KOREA SOUTH-EAST POWER CO.,LTD.	BORYEONG #1,2 POWER PLANT	DUAL Check Valve	#125	A216WCB+R.L	B148C95800	3" ~ 42"	26	2015	4
113	KOREA	KOREA SOUTH-EAST POWER CO., LTD.	KOREA SOUTH-EAST POWER CO., LTD.	YOUNGHUNG #5 & 6 POWER PLANT DESULFURATION	DUAL Check Valve	150#	A536+R/L A216WCB	B148C95800	10" ~ 36"	6	2015	3
112	MALAYSIA	SAPURAKENCANA PETROLEUM	SAPURAKENCANA PETROLEUM - HAWKS CO., LTD.	EPIC OF JDA GAS BALANCING EVACUATION - EVA	Butterfly Valve	150#	B148C95800	B148C95800	4"	2	2015	3
111	KOREA	Doosan Heavey Ind. Co.,Ltd.	Doosan Heavey Ind. Co.,Ltd.	Doosan Heavey Ind. Co.,Ltd.	DUAL Check Valve	PN6 #150	A216WCB	A351CF8	18" ~ 44"	11	2015	3
110	QATAR	QATAR PETROLEUM	QATAR PETROLEUM - ACE CORP.	FEED FOR DELUGE PIPING(DRY) & FW LINE VALVES REPLACEMENT AT NF-A(PS-4) PLATFORM	Butterfly Valve	150#	B148C95800	B148C95800	8" ~ 16"	67	2015	1
109	KOREA	KOREA EAST-WEST POWER CO.,LTD.	KOREA EAST-WEST POWER CO.,LTD.	DANGJIN #9 & 10 Thermal Power Plant Project	DUAL Check Valve	150#	A216WCB	A351CF8	32"	4	2015	1
108	KOREA	SAMCHEOK GREEN POWER	SAMCHEOK GREEN POWER	Samcheok Thermal Power Plant Project	DUAL Check Valve	150#	A216WCB+R.L	B148C95800	30"	4	2015	1
107	UAE	EMIRATES NUCLEAR ENGERY CORPORATION	EMIRATES NUCLEAR ENGERY CORPORATION - KEPCO	BRAKA NUCLEAR #1 & 2 POWER PLANT	Butterfly Valve	150#	A216WCB	A351CF8	4" ~ 6"	34	2014	12
106	KOREA	KOREA SOUTH-EAST POWER CO.,LTD.	KOREA SOUTH-EAST POWER CO.,LTD.	YOUSU #1 POWER PLANT	Butterfly Valve	150#	A536+R/L	A536+R/L	3" ~ 78"	25	2014	12
105	KOREA	KOREA HYDRO & NUCLEAR POWER CO.,LTD.	KOREA HYDRO & NUCLEAR POWER CO.,LTD.	SHIN-HANWOO #1 & 2 NUCLEAR POWER PLANT	Butterfly Valve	150#	A536+R/L	A536+R/L	3" ~ 90"	46	2014	12

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104	KOREA	POSCO E&C	POSCO E&C	POSCO SNG PROJECT	DUAL Check Valve	150# ~ 1500#	A351CF8M A216WCB A351CD4M	A351CF8M A351CD4M	2" ~ 32"	177	2014	9
103	KOREA	KOREA HYDRO & NUCLEAR POWER CO.,LTD.	KOREA HYDRO & NUCLEAR POWER CO.,LTD.	SHIN-HANWOO #1 & 2 NUCLEAR POWER PLANT PJT	Butterfly Valve	150#	A536+R/L	A536+R/L	6" ~ 90"	78	2014	9
102	MALAYSIA	TNB PRAI SDN.BHD	SAMSUNG C&T	PRAI CCGT	Butterfly Valve	150#	A536+R/L A351CF8 A216WCB	A536+R/L A351CF8M	3"~104"	79	2014	7
101	UAE	EMIRATES NUCLEAR ENGERY CORPORATION	EMIRATES NUCLEAR ENGERY CORPORATION - KEPCO	BRAKA NUCLEAR #1 & 2 POWER PLANT	Butterfly Valve	150#	A536+R/L	A536+R/L	6" ~ 38"	61	2014	6
100	SAUDI ARABIA	SWCC	SEWOONG PLANT CO.,LTD	Al-Jubail Plants	Butterfly Valve	125#	A536+R/L	A536+R/L	54"	1	2014	5
99	KOREA	KOREA EAST-WEST POWER CO.,LTD.	KOREA EAST-WEST POWER CO.,LTD.	DANGJIN #10 POWER PLANT	Butterfly Valve	150#	A536+R/L	A536+R/L	8" ~ 30"	21	2014	2
98	KOREA	KOREA EAST-WEST POWER CO.,LTD	KOREA EAST-WEST POWER CO.,LTD	DANGJIN #10 POWER PLANT	Butterfly Valve	150#	A536+R/L	A536+R/L	6" ~ 96"	37	2014	2
97	KOREA	KOREA WEST POWER CO.,LTD. - GS E&C	KOREA WEST POWER CO.,LTD. - GS E&C	TAEAN IGCC POWER PLANT	Butterfly Valve	150#	A216WCB	A351 CF8	28" ~ 60"	13	2014	1
96	SAUID ARABIA	SWCC	SEWOONG PLANT CO.,LTD	Al-Jubail, KSA	DUAL Check Valve	150#	A216WCB	B148C95800	3"~8"	3	2013	
95	SAUID ARABIA	SWCC	SEWOONG PLANT CO.,LTD	Al-Jubail, KSA	DUAL Check Valve	150#	A216WCB	B148C95800	8"	1	2013	
94	SAUID ARABIA	SWCC	SEWOONG PLANT CO.,LTD	Al-Jubail, KSA	DUAL Check Valve	150#	A216WCB	B148C95800	8"	3	2013	
93	SAUID ARABIA	SWCC	SEWOONG PLANT CO.,LTD	Al-Khobar, KSA	DUAL Check Valve	150#	A216WCB	B148C95800	3"	3	2013	
92	SAUID ARABIA	SWCC	SEWOONG PLANT CO.,LTD	Yanbu, KSA	DUAL Check Valve	150#	A216WCB	B148C95800	56"	1	2013	

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91	SAUID ARABIA	SWCC	SEWOONG PLANT CO.,LTD	-	DUAL Check Valve	150#	A216WCB	B148C95800	60"	1	2013	
90	KOREA	DONGDUCHEON DREAM POWER	SAMSUNG C&T	DONGDUCHEON CCPP	Butterfly Valve	150#	A536+R/L A216WCB	A536+R/L B148C95500	6"~78"	125	2013	8
89	KOREA	KOREA EAST-WEST POWER CO.,LTD.	KOREA EAST-WEST POWER CO.,LTD.	DANGJIN #9 POWER PLANT	Butterfly Valve	150#	A536+R/L	A536+R/L	8" ~ 30"	39	2013	7
88	KOREA	KOREA EAST-WEST POWER CO.,LTD.	KOREA EAST-WEST POWER CO.,LTD.	DANGJIN #9 POWER PLANT	Butterfly Valve	150#	A536+R/L	A536+R/L	12" ~ 96"	39	2013	7
87	KOREA	KOREA WEST POWER CO.,LTD.	HITACHI	TAEAN THERMAL POWER PLANT (UNIT 9 & 10 - 1050MW X 2)	Butterfly Valve	150#	A216WCB	A216WCB	84"	4	2013	6
86	SAUDI ARABIA	SWCC	SEWOONG PLANT CO.,LTD	Al-Jubail Plants	Butterfly Valve	125#	A536+R/L	A536+R/L	72"	1	2013	5
85	KOREA	KOREA WEST POWER CO.,LTD.	BUKPYEONG	BUKPYEONG THERMAL POWER PLANT (UNIT 1 & 2 - 595MW X 2)	Butterfly Valve	150#	A536+R/L	A536+R/L	72"	4	2013	5
84	VIETNAM	VIETNAM ELECTRICITY (EVN	VIETNAM ELECTRICITY (EVN) - HYUNDAI E&C CO., LTD	Mong Duong Thermal Power Plant	Butterfly Valve	150#	A536+R/L A216WCB+RL A351CF8M	A536+R/L A352CF3M	20" ~ 32"	8	2013	6
83	VIETNAM	VIETNAM ELECTRICITY (EVN	VIETNAM ELECTRICITY (EVN) - HYUNDAI E&C CO., LTD	Mong Duong Thermal Power Plant	Butterfly Valve	150#	A536+R/L A216WCB+RL A351CF8M	A536+R/L A352CF3M	8" ~ 40"	64	2013	6
82	VIETNAM	VIETNAM ELECTRICITY (EVN	VIETNAM ELECTRICITY (EVN) - HYUNDAI E&C CO., LTD	Mong Duong Thermal Power Plant	Butterfly Valve	150#	A536+R/L A216WCB+RL A351CF8M	A536+R/L A352CF3M	10" ~ 132"	44	2013	6
81	VIETNAM	VIETNAM ELECTRICITY (EVN	VIETNAM ELECTRICITY (EVN) - HYUNDAI E&C CO., LTD	Mong Duong Thermal Power Plant	Butterfly Valve / Non-return Valve	150#	A536+R/L	A536+R/L	96"	4	2013	5
80	VIETNAM	VIETNAM ELECTRICITY (EVN	VIETNAM ELECTRICITY (EVN) - HYUNDAI E&C CO., LTD	Mong Duong Thermal Power Plant	DUAL Check Valve	150#	A536+R/L A216WCB+RL A351CF8M	A536+R/L A352CF3M	4" ~ 24"	81	2013	5
79	KENYA	THE KENYA ELECTRICITY GENE.	THE KENYA ELECTRICITY GENE. - HYUNDAI ENGINEERING CO., LTD.	OLKARIA IV GEOTHERMAL POWER PLANT	Butterfly Valve	150#	A216WCB	A351CF8M	32"	1	2013	4

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78	KENYA	THE KENYA ELECTRICITY GENE.	THE KENYA ELECTRICITY GENE. - HYUNDAI ENGINEERING CO., LTD.	OLKARIA IAU GEOTHERMAL POWER PLANT	Butterfly Valve / Non-return Valve	150#	A351CF3M	A351CF3M	6" ~ 48"	45	2013	4
77	KENYA	THE KENYA ELECTRICITY GENE.	THE KENYA ELECTRICITY GENE. - HYUNDAI ENGINEERING CO., LTD.	OLKARIA IAU GEOTHERMAL POWER PLANT	Butterfly Valve	150#	A351CF3M	A351CF3M	8" ~ 60"	47	2013	4
76	KENYA	THE KENYA ELECTRICITY GENE	THE KENYA ELECTRICITY GENE. - HYUNDAI ENGINEERING CO., LTD.	OLKARIA IAU GEOTHERMAL POWER PLANT	Butterfly Valve	150#	A351CF3M	A351CF3M	18" ~ 44"	6	2013	4
75	KOREA	KOREA SOUTH-EAST POWER CO.,LTD.	KOREA SOUTH-EAST POWER CO.,LTD.	YUONGHUNG #6 POWER PLANT	Butterfly Valve	150#	A536+R/L	A536+R/L	6" ~ 40"	22	2013	1
74	KOREA	KOREA SOUTH-EAST POWER CO.,LTD.	KOREA SOUTH-EAST POWER CO.,LTD.	YUONGHUNG #6 POWER PLANT	Butterfly Valve	150#	A536+R/L	A536+R/L	6" ~ 104"	37	2013	1
73	KOREA	Dawoo E&C	Dawoo E&C	S3 PROJECT	DUAL Check Valve	150#	A216WCB+R/L	B148C95800	4" ~32"	11	2013	1
72	KENYA	THE KENYA ELECTRICITY GENE	THE KENYA ELECTRICITY GENE. - HYUNDAI ENGINEERING CO., LTD.	OLKARIA IV GEOTHERMAL POWER PLANT	Butterfly Valve	150#	A216WCB	A351CF8M	32"	1	2012	12
71	CHINA	CMC INTERNATIONAL	CMC INTERNATIONAL / NEWMANS - CHINA	District Heating Project	Butterfly Valve	PN25	A216WCB	A216WCB	12" ~ 40"	146	2012	11
70	SAUID ARABIA	HAJR ELECTRICITY PRODUCTION COMPANY	SANSUNG C&T	QURAYYAH INDEPENDENT POWER	Butterfly Valve	150#	A216WCB	A351CF8	1"~36"	463	2012	12
69	KENYA	THE KENYA ELECTRICITY GENE	THE KENYA ELECTRICITY GENE. - HYUNDAI ENGINEERING CO., LTD.	OLKARIA IV GEOTHERMAL POWER PLANT	Butterfly Valve	150#	A351CF3M	A351CF3M	8" ~ 60"	47	2012	12
68	KENYA	THE KENYA ELECTRICITY GENE	THE KENYA ELECTRICITY GENE. - HYUNDAI ENGINEERING CO., LTD.	OLKARIA IV GEOTHERMAL POWER PLANT	Butterfly Valve	150#	A351CF3M	A351CF3M	18" ~ 44"	6	2012	12
67	UAE	EMIRATES ALUMINIUM SMELTER COMPLEX	SANSUNG C&T	UAE EMAL PHASE II CCPP	Butterfly Valve	150#	A536+R/L	A536+R/L	3"~72"	50	2012	10
66	KOREA	KOREA SOUTH-EAST POWER CO.,LTD.	KOREA SOUTH-EAST POWER CO.,LTD.	YOUNGHUNG #5 POWER PLANT	Butterfly Valve	150#	A536+R/L	A536+R/L	6" ~ 40"	26	2012	8

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65	KOREA	KOREA SOUTH-EAST POWER CO.,LTD.	KOREA SOUTH-EAST POWER CO.,LTD.	YOUNGHUNG #5 POWER PLANT	Butterfly Valve	150#	A536+R/L	A536+R/L	6" ~ 104"	40	2012	8
64	IRAN	-	HYOSUNG	IRAN - LNG POWER PLANT	Butterfly Valve / Non-return Valve	150#	B148C95800	B148C95800	72"	3	2012	6
63	KOREA	Dawoo E&C	Dawoo E&C	S3 PROJECT	DUAL Check Valve	150# ~ 300#	A351 CF8M B148C95800 A216WCB	A351 CF8M B148C95800	12" ~ 24"	37	2012	5
62	BANGLADESH	EGCB	HYUNDAI E&C CO., LTD / BANGLADESH	NEW HARIPUR POWER PLANT	Butterfly Valve / Non-return Valve	150#	A536+R/L	A536+R/L	66"	3	2012	4
61	BANGLADESH	EGCB	HYUNDAI E&C CO., LTD / BANGLADESH	NEW HARIPUR POWER PLANT	Butterfly Valve	150#	A536+R/L A216WCB+RL	A536+R/L A352CF3M	20" ~ 36"	17	2012	4
60	BANGLADESH	EGCB	HYUNDAI E&C CO., LTD / BANGLADESH	NEW HARIPUR POWER PLANT	Butterfly Valve / Non-return Valve	150#	A536+R/L A216WCB+RL	A536+R/L A351CF3M	24" ~ 66"	18	2012	4
59	IRAN	IRAN MARNE INDUSTRIAL CO (SADRA)	IRAN MARNE INDUSTRIAL CO (SADRA)	IRAN - PGSOC SEA WATER INTAKE	Butterfly Valve	150#	A216WCB+R/L	A216WCB+R/L	36" ~ 88"	14	2012	3
58	IRAN	IRAN MARNE INDUSTRIAL CO (SADRA)	IRAN MARNE INDUSTRIAL CO (SADRA)	IRAN - PGSOC SEA WATER INTAKE	Butterfly Valve / Non-return Valve	150#	A216WCB+R/L	A216WCB+R/L	32" ~ 56"	12	2012	3
57	SAUID ARABIA	SEC	Doosan Heavey Ind. Co.,Ltd.	RABIGH PH2 PROJECT	DUAL Check Valve	150# ~ 300#	A216WCB	A351CF8	6" ~ 36"	83	2012	3
56	KOREA	BAEK KWANG INDUSTRY	BAEK KWANG INDUSTRY	BAEK KWANG YUCHON CA BRINE EQUIPMENT	Butterfly Valve	10K	GC200	SS14+PFA	3" ~ 8"	14	2012	1
55	KOREA	BAEK KWANG INDUSTRY	BAEK KWANG INDUSTRY	BAEK KWANG YUCHON CA BRINE EQUIPMENT	Butterfly Valve	10K	GC200	SS14+PFA	6" ~ 8"	20	2011	6
54	KOREA	KOREA HYDRO & NUCLEAR POWER CO.,LTD.	KOREA HYDRO & NUCLEAR POWER CO.,LTD.	SHIN-KORI #4 NUCLEAR POWER PLANT	Butterfly Valve	150#	A216WCB	A351 CF8M	6" ~ 28"	52	2011	6
53	KOREA	KOREA HYDRO & NUCLEAR POWER CO.,LTD.	KOREA HYDRO & NUCLEAR POWER CO.,LTD.	SHIN-KORI #4 NUCLEAR POWER PLANT	Butterfly Valve	150#	A216WCB	A351 CF8M	3" ~ 38"	142	2011	6

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52	KOREA	KOREA HYDRO & NUCLEAR POWER CO.,LTD.	KOREA HYDRO & NUCLEAR POWER CO.,LTD.	SHIN-KORI #3 NUCLEAR POWER PLANT	Butterfly Valve	150#	A216WCB	A351 CF8M	6" ~ 28"	52	2010	7
51	KOREA	KOREA HYDRO & NUCLEAR POWER CO.,LTD.	KOREA HYDRO & NUCLEAR POWER CO.,LTD.	SHIN-KORI #3 NUCLEAR POWER PLANT	Butterfly Valve	150#	A216WCB	A351 CF8M	3" ~ 38"	142	2010	7
50	KOREA	KOREA HYDRO & NUCLEAR POWER CO.,LTD.	KOREA HYDRO & NUCLEAR POWER CO.,LTD.	WOLSONG #1 NUECLEAR POWER PLANT	Butterfly Valve	150#	A536GR.+R/L	A351 CF8M B148 C95800	3" ~ 66"	57	2009	11
49	KOREA	KOREA HYDRO & NUCLEAR POWER CO.,LTD.	KOREA HYDRO & NUCLEAR POWER CO.,LTD.	SHIN-WOLSONG #1,2 NUECLEAR POWER PLANT	Butterfly Valve	150#	A216WCB	A351 CF8M	6" ~ 32"	71	2009	11
48	UAE	S2 Rvais Power Company	S2 Rvais Power Company / Doosan Heavey Ind. Co.,Lt - U.A.E	Shuweihat S2 PJT	Butterfly Valve	150#	A536Gr 65-45-12+R/L A536Gr 65-45-12 A216WCB A351CF3M	NI-AL BRONZE SS316L	12" ~ 96"	45	2009	10
47	UAE	EMAL	EMAL / NEWMANS VALVE - U.A.E	Emirates Aluminium Refineries	Butterfly Valve	150#	B148 C95800	B148 C95800	28"	2	2009	8
46	UAE	EMAL	EMAL / NEWMANS VALVE - U.A.E	Emirates Aluminium Refineries	Butterfly Valve	600#	A351 CF8M	A351 CF8M	2" ~ 18"	2	2009	7
45	UAE	EMAL	EMAL / NEWMANS VALVE - U.A.E	Emirates Aluminium Refineries	Butterfly Valve	150#	B148 C95800	B148 C95800	12" ~ 96"	26	2009	6
44	UAE	EMAL	EMAL / NEWMANS VALVE - U.A.E	Emirates Aluminium Refineries	Butterfly Valve	150#	B148 C95800	B148 C95800	42" ~ 60"	20	2009	5
43	UAE	EMAL	EMAL / NEWMANS VALVE - U.A.E	Emirates Aluminium Refineries	Butterfly Valve	150#	B148 C95800	B148 C95800	3" ~ 36"	114	2009	4
42	QATAR	Q-POWER	State of Qatar / Hyundai Engineering & Construction CO.LTD	RAS LAFFAN C IWPP PLANT	Butterfly Valve	150#	A216WCB	A351 CF8	54" ~ 72"	11	2009	2
41	KOREA	KOREA HYDRO & NUCLEAR POWER CO.,LTD.	KOREA HYDRO & NUCLEAR POWER CO.,LTD.	SHIN-KORI #1,2 POWER PLANT	Butterfly Valve	150#	A216WCB	A351 CF8M	8" ~ 30"	49	2008	11

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40	KUWAIT	MEW	MEW-Kuwait / Hyundai Engineering & Construction Co., Ltd	SHUAIBIA NORTH CO-GENERATION PLANT	Butterfly Valve	150#/PN10	A216-WCB + R/L A216-WCB	A351 CF8 A351 CF3M	6" ~ 96"	174	2008	10
39	KOREA	KOREA HYDRO & NUCLEAR POWER CO.,LTD.	KOREA HYDRO & NUCLEAR POWER CO.,LTD.	SHIN-KORI #1,2 POWER PLANT	Butterfly Valve	150#~300#	A216WCB	A351 CF8M	6" ~ 24"	10	2008	8
38	UAE	DEWA	DEWA / Doosan Heavey Ind. Co.,Ltd. - U.A.E	Jabel Ali Power and Desalination Station "M"	Butterfly Valve	150#	A216-WCB + STL A216-WCB	A216-WCB A351 CF8 A351 CF3M	6" ~ 66"	54	2008	5
37	KOREA	KOREA HYDRO & NUCLEAR POWER CO.,LTD.	KOREA HYDRO & NUCLEAR POWER CO.,LTD.	SHIN-KORI #1,2 POWER PLANT	Butterfly Valve	150#	A216WCB	A351 CF8M	3" ~ 32"	126	2007	10
36	KOREA	KOREA SOUTH-EAST POWER CO.,LTD.	KOREA SOUTH-EAST POWER CO.,LTD.	HADONG #7,8 POWER PLANT	Butterfly Valve	150#	A536GR.+R/L	A536GR.+R/L A743-CF3MN	4" ~ 72"	41	2007	8
35	SAUDI ARABIA	SWCC	SWCC-Saudi Arabia	AL KHOBAR	Butterfly Valve	300#	A743 CN7M	A743 CN7M	6"	3	2007	7
34	SAUDI ARABIA	SWCC	SWCC-Saudi Arabia (K.S.A)	JUBAIL	Butterfly Valve	150#	A516GR.60	A516GR.60	72"	2	2007	6
33	KOREA	KOREA SOUTH-EAST POWER CO.,LTD.	KOREA SOUTH-EAST POWER CO.,LTD.	BORYEONG #7,8 POWER PLANT	Butterfly Valve	150#	A536GR.+R/L	A536GR.+R/L	6" ~ 78"	67	2007	4
32	MALASIA	HABLEM OIL & GAS Co.,Ltd.	HABLEM OIL & GAS Co.,Ltd. - MALASIA	MALASIA PJT	Butterfly Valve	300#~600#	A216WCB	A351CF8M	18" ~ 24"	4	2007	4
31	SAUDI ARABIA	SWEC	SWEC / Doosan Heavey Ind. Co.,Ltd. - Saudi Arabia (K.S.A)	Shuaibah "PH-3"	Butterfly Valve	150#	A216WCB + R/L A536GR.+R/L	A216WCB + R/L A351CF8M	36" ~ 52"	18	2007	3
30	UAE	DEWA	DEWA / Hyundai Engineering & Construction Co.,Ltd. - U.A.E	JEBEL ALI POWER & DESALINATION STATION 'L'	Butterfly Valve	150#	A536GR.+R/L A216WCB+R/L A216WCB	A536GR.+R/L B148C95800 A216WCB	3" ~ 88"	180	2006	
29	KOREA	KOREA SOUTH-EAST POWER CO.,LTD.	KOREA SOUTH-EAST POWER CO.,LTD. / Doosan Heavy Ind. Co., Ltd.	YUONGHUNG #3,4 BFP Turbine Exaust Duct Appclication	Butterfly Valve	150#	A216WCB B148C95800	A216WCB B148C95800	90"	4	2006	4
28	KOREA	KOREA SOUTH-EAST POWER CO.,LTD.	KOREA SOUTH-EAST POWER CO.,LTD.	YUONGHUNG #3,4 POWER PLANT	Butterfly Valve	150#	A536GR.+R/L	A536GR.+R/L	36" ~ 120"	16	2006	4

SEJIN VALVE

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MAJOR REFERENCE LIST

2024-01-16

NO	COUNTRY	END USER	CLIENT	PROJECT NAME	VALVE TYPE	FLANGE RATING	BODY MATERIAL	DISC MATERIAL	SIZE	Q'TY (EA)	YEAR	MONTH
27	GERMANY	-	LURGI Engineering CO.,Ltd. - Germany	SHANGHAI- BASF	Butterfly Valve	150#~300#	A351 CF8M A352 LCB	A351 CF8M	2" ~ 48"	1896	2006	4
26	KOREA	KOREA EAST-WEST POWER CO.,LTD.	KOREA EAST-WEST POWER CO.,LTD.	DANGJIN#8 POWER PLANT	Butterfly Valve	150#	A536GR.+R/L	A536GR.+R/L	24" ~ 78"	42	2006	3
25	KOREA	KOREA EAST-WEST POWER CO.,LTD.	KOREA EAST-WEST POWER CO.,LTD.	DANGJIN#7 POWER PLANT	Butterfly Valve	150#	A536GR.+R/L	A536GR.+R/L	24" ~ 72"	44	2006	2
24	KOREA	Hyundai Engineering & Construction Co.,Ltd.	Hyundai Engineering & Construction Co.,Ltd. - KOREA	HYUNDAI OIL	Butterfly Valve	150#	A216WCB	A351 CF8M	12" ~ 16"	4	2005	11
23	KOREA	KOHAP PETROCHEMICAL CORP.	KOHAP PETROCHEMICAL CORP. - KOREA	ULSAN PJT	Butterfly Valve	150#	A216 WCB	A351 CF8M	18" ~ 28"	13	2005	9
22	KOREA	KOREA SOUTHERN POWER CO.,LTD.	KOREA SOUTHERN POWER CO.,LTD.	NAMJEJOO Deiesel Power Plant	Butterfly Valve	150#	A351 CF8	A351 CF8	8"	10	2005	10
21	UAE	SEWA	U.A.E(ACE CORP.)	Layyah Power Station	Butterfly Valve	150#	A351 CF8M	A351 CF8M	80"	4	2005	6
20	KOREA	POSCO	POSCO - KOREA	FINEX PLANT	Butterfly Valve	10K	A351 CF8M	A351 CF8M	20" ~ 24"	3	2005	5
19	KOREA	STX ENERGY CO.,LTD.	STX ENERGY CO.,LTD. - KOREA	BAN WOAL COMBINED POWER PLANT	Butterfly Valve	150#	A216 WCB	A216 WCB	28" ~ 40"	4	2005	5
18	TAIWAN	TAIWAN POWER COMPANY	TAIWAN POWER COMPANY (TAIWAN)	DATAN #1~4 POWER PLANT	Butterfly Valve	75#~150#	A126 CLB+R/L	A743CF3M	8" ~ 88"	96	2005	3
17	KOREA	KOHAP PETROCHEMICAL CORP.	KOHAP PETROCHEMICAL CORP. - KOREA	ULSAN PJT	Butterfly Valve	150#	A351 CF8M	A351 CF8M	3" ~ 14"	60	2004	11
16	EGYPT	ENPPI	PHOCEENINE (FRANCE)	-	DUAL Check Valve	150#	A216 WCB	A351 CF8	2" ~ 44"	66	2004	11
15	KOREA	KOREA WESTERN POWER CO.,LTD.	KOREA WESTERN POWER CO.,LTD.	TAE AN#7,8 POWER PLANT	Butterfly Valve	150#	A536GR.+R/L	A536GR.+R/L	24" ~ 78"	44	2004	10

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14	EGYPT	ENPPI	PHOCEENINE (FRANCE)	-	DUAL Check Valve	150#	A216 WCB	A351 CF8M	2" ~8"	47	2004	8
13	EGYPT	ENPPI	PHOCEENINE (FRANCE)	-	DUAL Check Valve	150#	A216 WCB	A351 CF8M	12" ~ 36"	3	2004	7
12	KOREA	KOREA WESTERN POWER CO.,LTD.	KOREA WESTERN POWER CO.,LTD.	TAE AN#5,6 POWER PLANT	Butterfly Valve	150#	A216 WCB	A216 WCB	78"	4	2003	1
11	EGYPT	ENPPI	PHOCEENINE (FRANCE)	-	DUAL Check Valve	150#	A216 WCB	A351 CF8M	54"	1	2003	7
10	EGYPT	ENPPI	PHOCEENINE (FRANCE)	-	DUAL Check Valve	600#	A216 WCB	A351 CF8M	6"	10	2003	9
9	THAILAND	-	THAILAND (HWAKS CORP.)	PONG PAISAN Power Station	Butterfly Valve	150LB~300LB	A351 CF8M	A351 CF8M	20" ~ 60"	4	2002	12
8	UAE	SEWA	U.A.E(ACE CORP.)	Layyah Power Station	Butterfly Valve	150#~300#	A536GR.65-45-12+R/L	B148C95800	4" ~ 36"	20	2002	4
7	KOREA	-	HANYANG CHEMICAL CORP. - KOREA	YEOCHON A/C PJT	Butterfly Valve	150#	A216 WCB	A351CF8M	8" ~ 20"	14	2002	2
6	SINGAPORE	POWERSERAYA LTD.	SAMSUNG ENG.&CONSTRUCTION CO.,LTD. (SINGAPORE)	SERAYA CCPP PJT	Butterfly Valve	150#	A536GR.65-45-12+R/L	B148C95400	16" ~ 84"	16	2001	11
5	SPAIN	FLUVAL CO.,LTD.	FLUVAL CO.,LTD. (SPAIN)	-	Butterfly Valve	150#	A536GR.65-45-12+R/L	A351CF8M	56" ~ 72"	20	2001	10
4	GERMANY	LURGI Engineering CO.,Ltd.	LURGI Engineering CO.,Ltd.(Germany)	-	Butterfly Valve	150#	A351CF8M	A351CF8M	40"	16	2001	3
3	ITALY	ITALVALVE CO.,LTD.	ITALVALVE CO.,LTD.(ITALY)	-	Butterfly Valve	150#	A126 CLB	A351CF8M	20" ~ 28"	20	2001	3
2	AUSTRALIA	Pipeline Supplies of Australia	Pipeline Supplies of Australia	Melbourne Water Authority PJT	Butterfly Valve	150#	A216 WCB	A216 WCB	18" ~ 72"	23	2000	5

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1	MALASIA	ENVICON CO.,LTD.	ENVICON CO.,LTD. (MALASIA)	WASTE WATER PLANT	Butterfly Valve	150#	A536GR.65-45-12	A536GR.65-45	20" ~ 32"	68	2000	4

THANK YOU FOR LISTENING!

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