

Shine & Salt
Share & Satisfaction
Self-Creativity & Sincerity

S&S Valve

S&**S** **A**dvanced **V**alve **E**ngineering

Company Overview

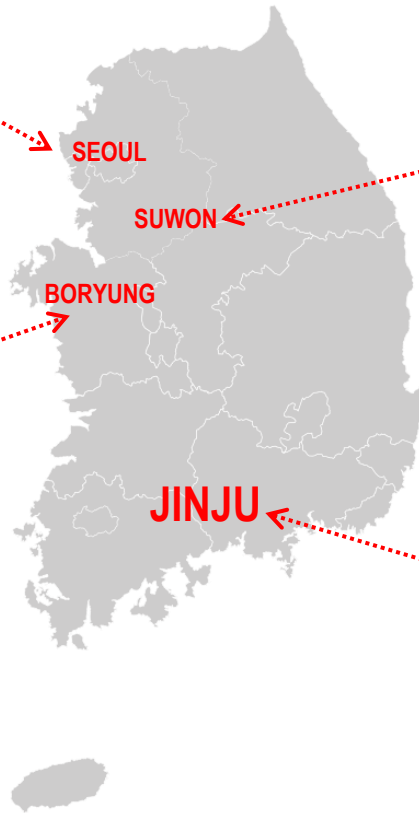
Current Operation

Valve Line-up

Major Customer



S&S GROUP



Company Overview

Jinju factory for valve

S&S Advanced **V**alve **E**ngineering



21,158 m²
Jinju factory

1 Hour 30 Min.



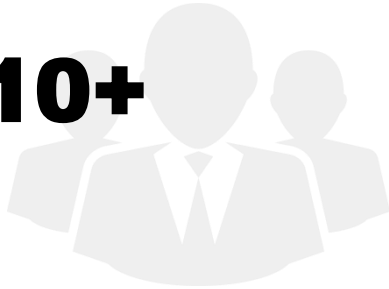
to Busan port



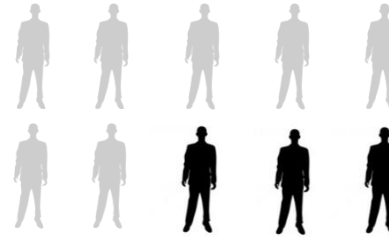
**New factory
completed in
2015**

No. of employees

110+



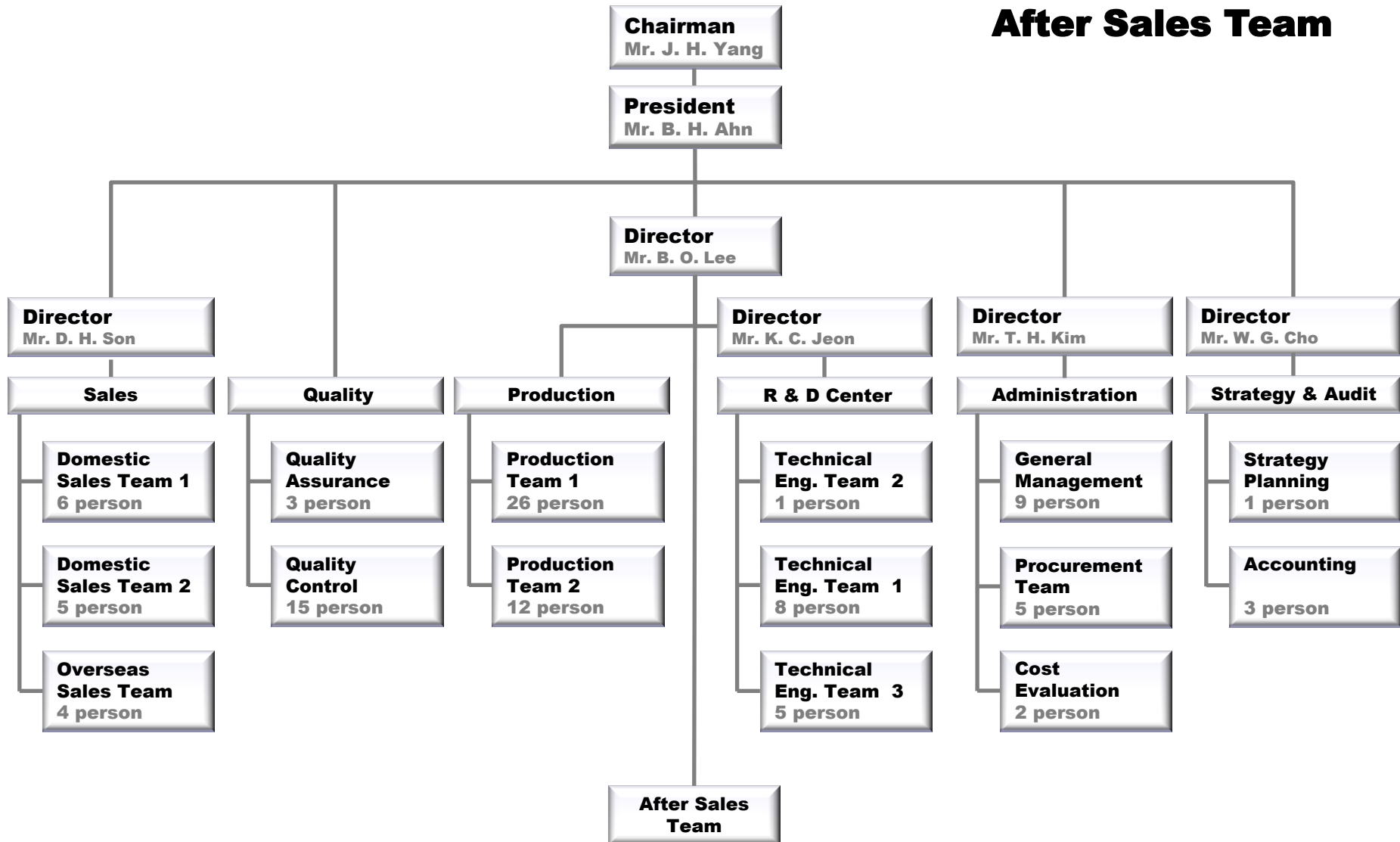
**Ratio of Technical Experts
 (Quality & Design)**



30%

Dept. \ Location	Factory	Seoul Office	Total
Management	4	1	5
Sales Engineers		15	15
Technical Engineers	14	1	15
QA / QC Engineers	18		18
Field Engineers	38		38
Account & Administration	16	4	20
Total	90	21	111

6 Divisions & After Sales Team





Manual

+



Control

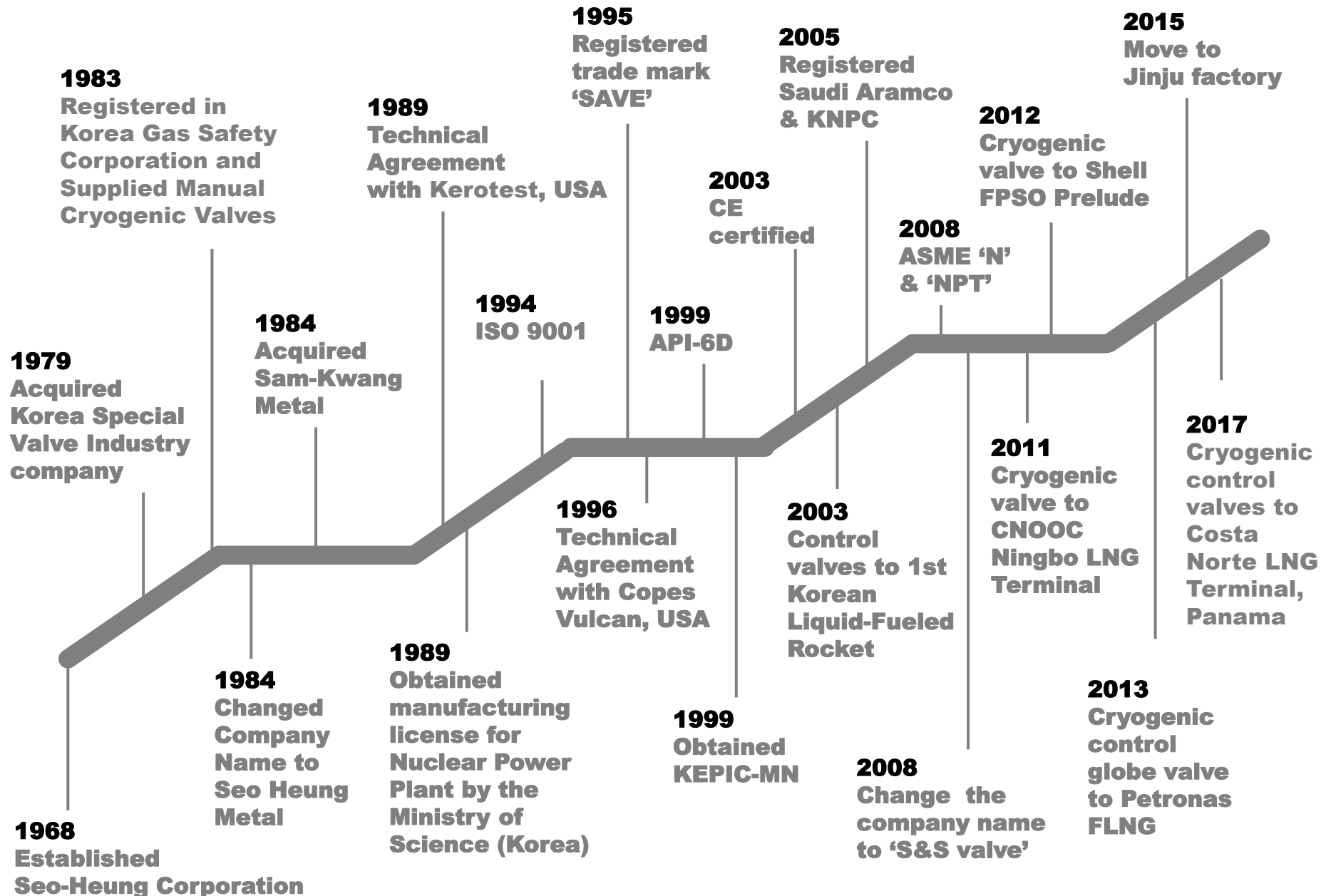
468,000 EA
per 1 year

Main Products	Ratio of Sales Production (Sales amount basis)	Production Capacity (Qty)	Lead time
Manual Casting (GATE,GLOBE,CHECK & Ball)	40%	96,000	24 weeks
Manual Forged (GATE,GLOBE,CHECK & Ball)	20%	360,000	20 weeks
Control (Modulating, On/off)	40%	12,000	24 weeks

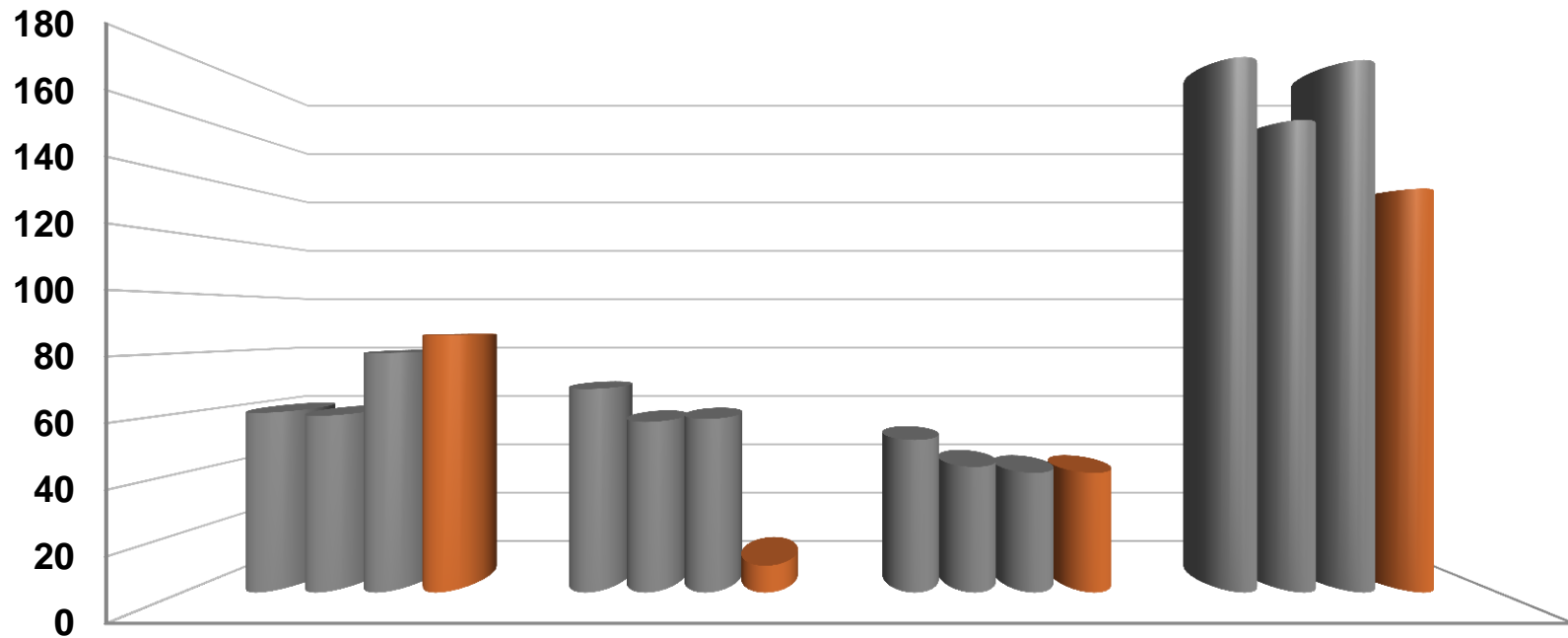
Company Overview

Milestone

S&S Advanced **V**alve **E**ngineering



[Unit: Million US Dollars]



	INC	M-tech	Valve	S&S GROUP
■ 2013	60	68	51	179
■ 2014	59	57	42	158
■ 2015	80	58	40	178
■ 2016	86	9	40	135

Company Overview

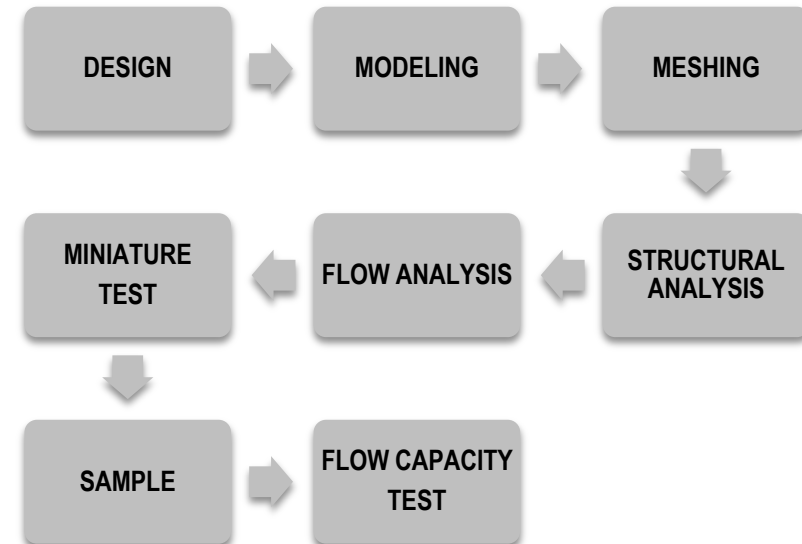
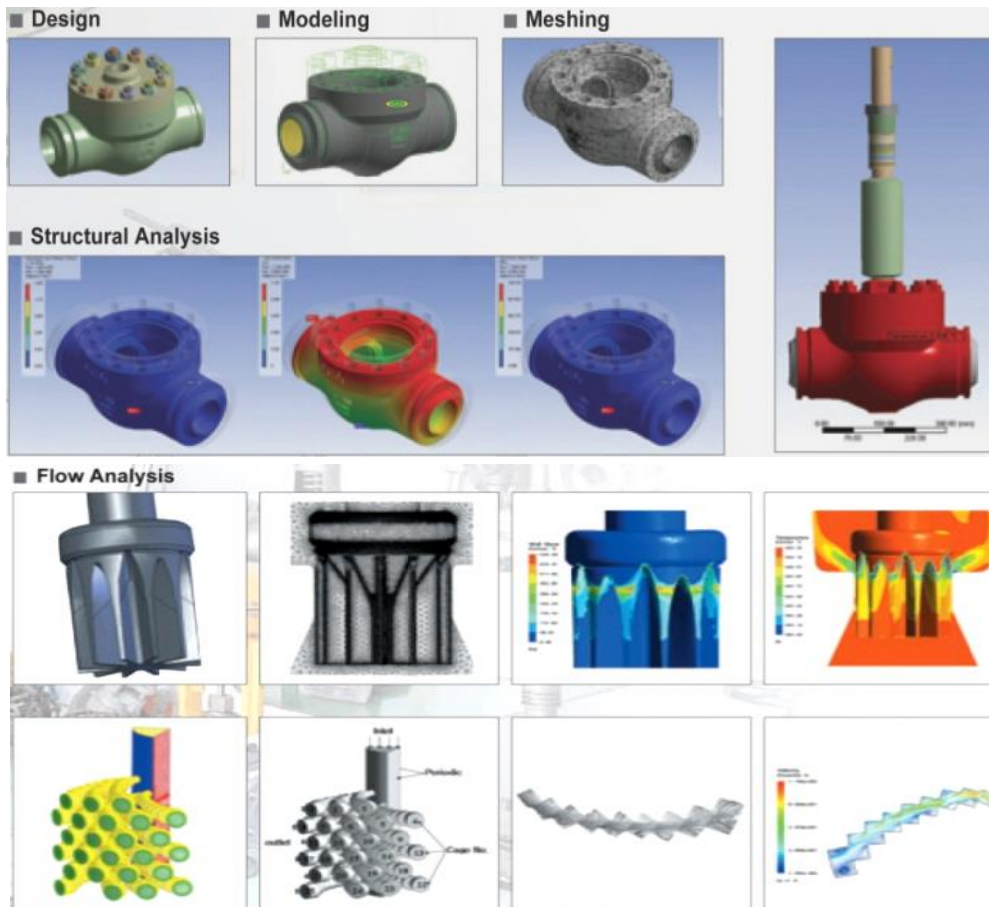
Current Operation

Valve Line-up

Major Customer

S&S Valves are basically designed to meet the *ASME Sec-III Design Standards*.

In addition to 3D-modeling and analysis for structural safety, flow analysis is carried out on TRIM to guarantee its accurate Cv value as well as to verify structural strength under limited conditions at which actual testing is impossible to provide safe and accurate performance.



DESIGN SOFTWARE

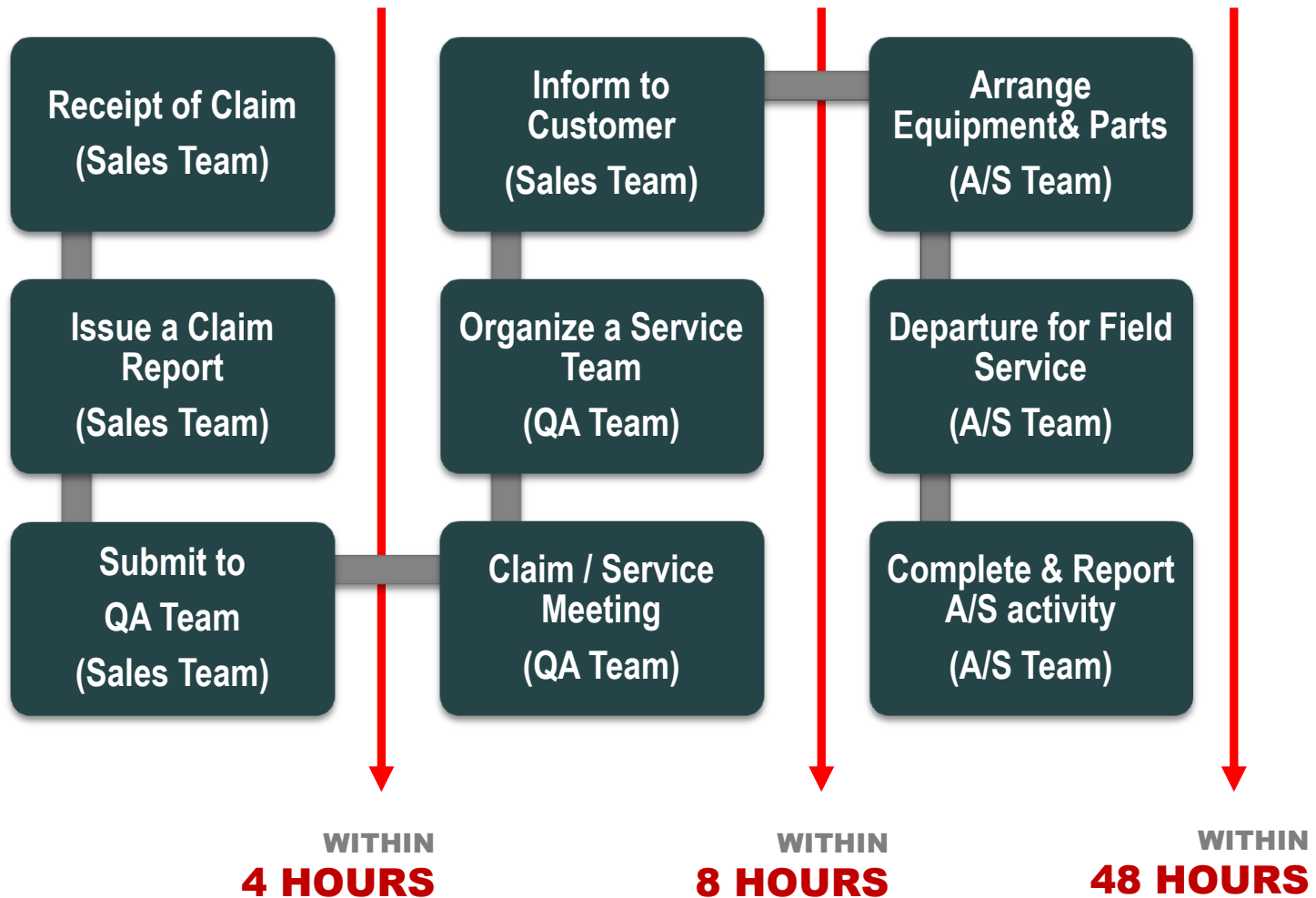
- 2D: AUTOCAD
- 3D: SOLIDWORK
- Analysis software: ANSYS16.0

**Pre-Commissioning & Commissioning Supervision
Site Engineer Training Service
Maintenance & After Sales Services**



Current Operation

Flowchart in customer claim





**Valid to 30 APR 2018
ISO 9001 : 2008**



**Valid to 12 JUL 2018
ISO 14001 : 2009**



**Valid to 12 JUL 2018
OHSAS 18001 : 2007**

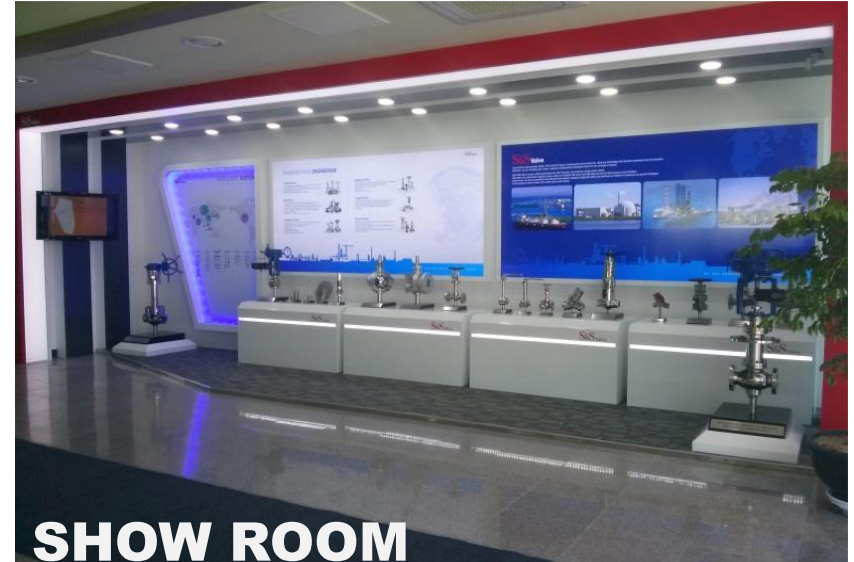
TYPE	CERTIFICATE	ISSUED BY	Certificate No.
Application	CE 0035 (MODULE H)	TUV Rheinland	01 202 ROK / Q-02 0016
	Fugitive Emission	ABS	N/A
	API 6D Monogram	American Petroleum Institute	6D-0304
	SIL	SGS TUV SAAR	FS/71/220/14/0070
	FIRE SAFETY BALL	WAY PLANTECH	FTC-S&SVALVE-20170727- BALL037~039, 042, 043, 045, 047, 059
	FIRE SAFETY GATE	WAY PLANTECH	FTC-6FA-S&SVALVE-201412 23-GATE001(RENEWAL1) ~
	FIRE SAFETY GLOBE	WAY PLANTECH	FTC-6FA-S&SVALVE-201412 23-GLOBE001(RENEWAL1) ~
	FIRE SAFETY Life Check	WAY PLANTECH	FTC-6FA-S&SVALVE-201412 23-CHECK001(RENEWAL1) ~
	KEPIC-MN	Korea Electric Power Industry Code	MN-643

TYPE	CERTIFICATE	ISSUED BY	Certificate No.
Classification Type Approval	Cryogenic Top Entry Ball valve	Lloyd's Register	14026/A0 BV
	Globe/Ball/Needle/Check/Remote Control /Pneumatic Control Valve	Korea Register of Shipping	INC20694-VV001
	Check V/V	BV	21763/A0 BV
	Gate V/V	BV	21764/A0 BV
	Globe V/V	BV	21765/A0 BV
	Ball V/V	BV	14026/A0 BV
Other Certificates	Certificate of New Excellent Product Top Entry Ball Valve (Cryogenic & High Pressure)	Ministry of Knowledge Economy, Korea	NEP-MKE-2009-026
	Certificate of Patent; (Cryogenic Ball Valve)	Commissioner, The Korea Intellectual Property Office	10-0835853



**S&S valve has been awarded
the certificate
'Supplier Certificate'
from KOGAS**

18 Sep. 2017



Current Operation

Factory view - storage, assembly line

S&**S** **A**dvanced **V**alve **E**ngineering



PATTERN & MOLD STORAGE



51



PAINT BOOTH



M/V ASSEMBLY LINE



C/V ASSEMBLY LINE



ACTUATOR ASSEMBLY LINE

Current Operation Equipment for machining, welding

S&S Advanced Valve Engineering



MACHINING CENTER



CNC MACHINE



LATHE MACHINE



MILLING MACHINE

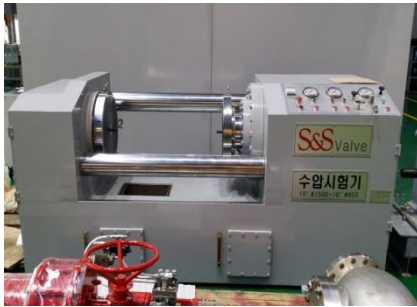


DRILL MACHINE



WELDING MACHINE

Process	Equipment	Units
Machining	Machining Center	4
Machining	CNC Lathe	10
Machining	Lathe	14
Machining	Milling M/C	6
Machining	Drilling M/C	19
Machining	Welding M/C	10



HYDRO TERSTER 1



HYDRO TESTER 2



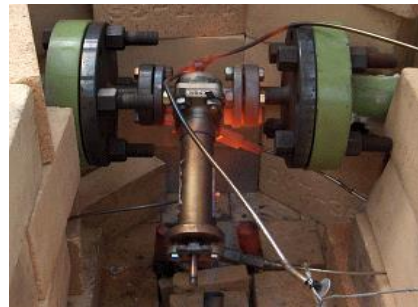
HYDRO TESTER 3



ACT'R TESTER (DURABILITY)



FIRE SAFETY TESTER



SAFETY VALVE TESTER



SPECTROMETER



CRYOGENIC TEST EQUIPMENT

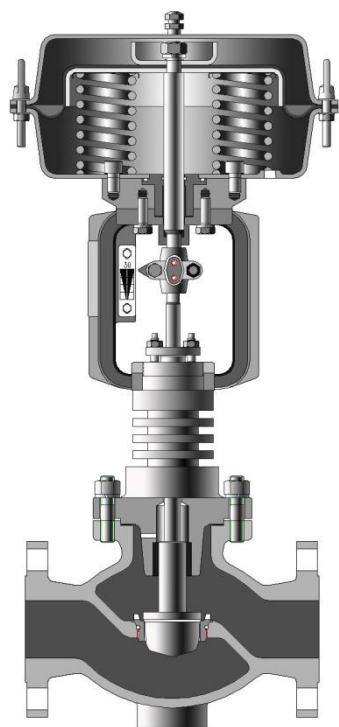
Company Overview

Current Operation

Valve Line-up

Major Customer

Control GLOBE for modulating In general condition

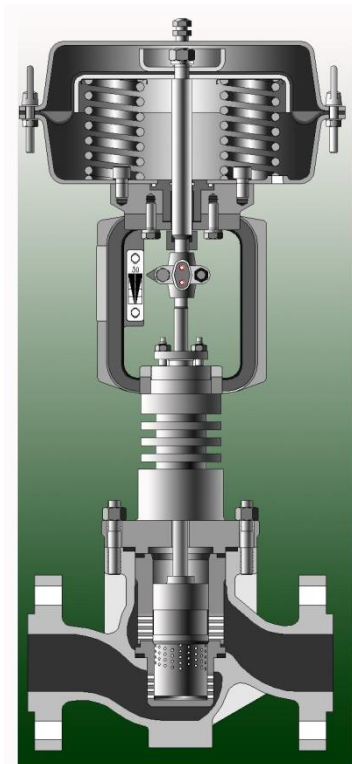


Size		1/2" (15A) - 16" (400A)
Pressure class		150# - 300#
Design temperature	Max	550°C - Carbon steel, Low alloy steel
	Min	-196°C - Stainless steel
Trim type		Top guide type, Quick change type
Certificate		CE certified (2002)
Actuator		Diaphragm actuator or Cylinder actuator
Remarkable supply		Costa Norte LNG Terminal in Panama / POSCO E&C (2017)
		WUHAOGOU LNG Terminal in China / CHINA HUANQIU E&C (2017)
		ASSUIT HRSG in Egypt / General Electric (2017)
		South Azadegan Oil Field Development in Iran / PEDEC (2017)



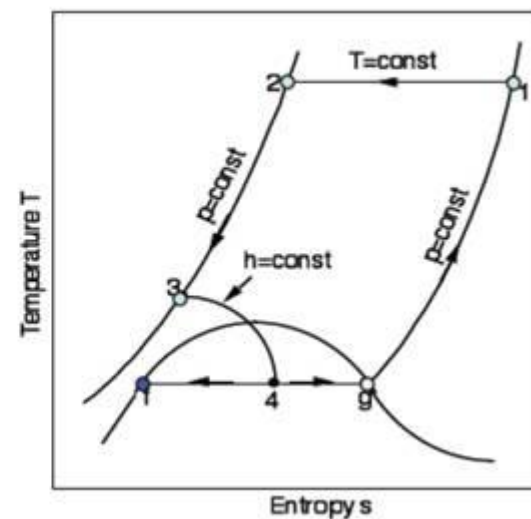
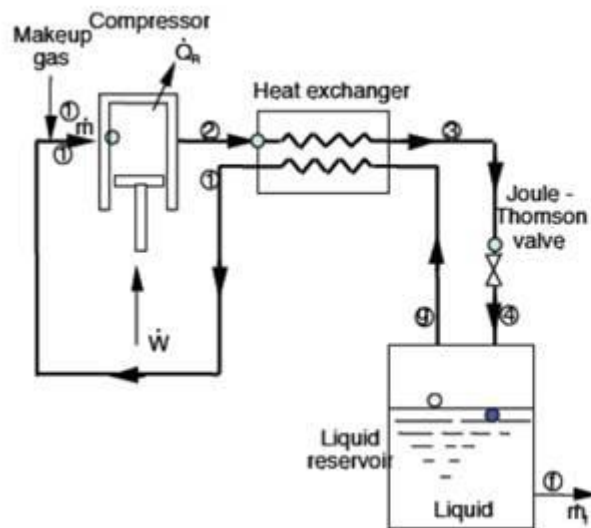
Control **GLOBE** for modulating In high pressure condition

Size		1/2" (15A) - 16" (400A)
Pressure class		150# - 4500#
Design temperature	Max	550°C - Carbon steel, Low alloy steel
	Min	-196°C - Stainless steel
Trim type		Quick change type
Certificate		CE certified (2002)
Actuator		Diaphragm actuator or Cylinder actuator
Remarkable supply	TOUL HRSG in France (HP Drum Level 100% CV) / SIEMENS (2011)	
	SOHAR II HRSG (HP Drum Level 100% MOV Control) / SIEMENS (2011)	
	PAGBILAO (420MW) in Philippines / Daelim Ind. (2015)	
	West Damietta (250MW) in Egypt / Doosan Heavy Ind. (2017)	
	Panama costa norte ccpp (380MW) in Panama / GE PSK (2017)	
		Shin Pyeongtaek CCPP (950MW) in Korea / GE PSK (2017)



'Joule-Thomson effects'

When a compressed gas is allowed a free expansion through a narrow opening, the temperature of the system falls rapidly.



Inlet Condition		Outlet Condition	
Design Pressure	304bar	Design Pressure	1.1bar
Design Temperature	-131°C	Design Temperature	-161°C

S&S J-T Valve



SIZE	15A ~ 100A
BONNET	EXTENDED BONNET
BODY MAT'L	CF8M, CF3M ,CF8, CF3
RATING	ANSI #900 ~ #2500
TEMP.	DOWN TO - 196 °C
APPLICATION	FUEL GAS SUPPLY SYSTEM
	PARTIAL RE-LIQUEFACTION SYSTEM

Applicable to where high pressure drop, cavitation and erosion occurred during cyclic compression process or gas expansion



Valve Line-up Installed S&S J-T valve

S&S Advanced **V**alve **E**ngineering

FGS SKID

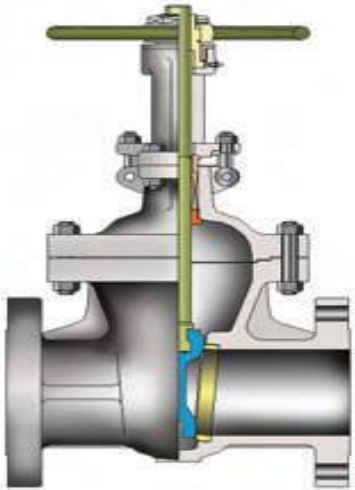


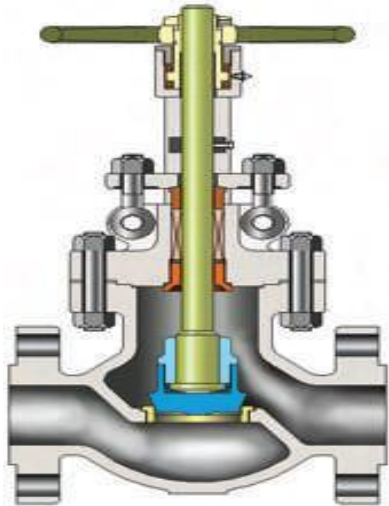
**Installed S&S J-T valve
for MEGI & Fuel Gas Supply System (FGSS)
NASSCO in 2015**



Casting GATE

Bonnet type		Bolted / Seal Welded / Pressure Seal
Size		2" - 56"
Pressure class		150# - 4500#
Design temperature	Max	600°C - Carbon steel, Low alloy steel
	Min	-196°C - Stainless steel
End connections		Butt-Welded or Flanged ends
Operating		Manual Handwheel, Gear box, Motor
Design standard		ASME B16.10 / 16.25 / 16.34 / 16.5, API 598 / 600 and BS1414
Remarkable supply		900# 24" Boryung LNG terminal in Korea, Republic of (2017)
		600# 8" Maputo CCPP, Mozambique (2017)



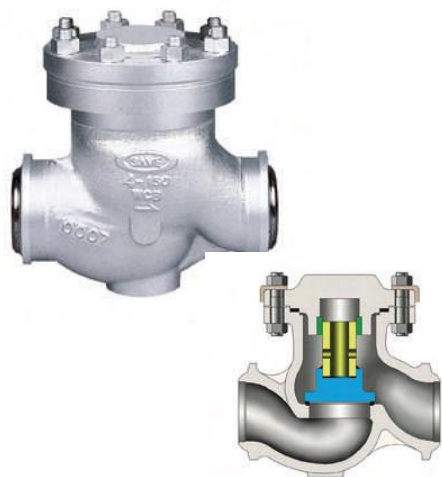


Casting GLOBE

Bonnet type		Bolted / Seal Welded / Pressure Seal
Size		2" - 24"
Pressure class		150# - 4500#
Design temperature	Max	600°C - Carbon steel, Low alloy steel
	Min	-196°C - Stainless steel
End connections		Butt-Welded or Flanged ends
Operating		Manual Handwheel, Gear box, Motor
Design standard		ASME B16.10 / 16.25 / 16.34 / 16.5, API 598 / 600 and BS1873
Remarkable supply		2500# 6" Pneumatic control, Santo Domingo HRSG in Dominican Republic (2017)
		1500# 6" Pneumatic control, Jeju CCPP in Korea, Republic of (2017)



Casting LIFT CHECK



Cap type		Bolted / Seal Welded / Pressure Seal
Size		2" - 8"
Pressure class		150#
Design temperature	Max	600°C - Carbon steel, Low alloy steel
	Min	-196°C - Stainless steel
End connections		Butt-Welded or Flanged ends
Design standard		ASME B16.10 / 16.25 / 16.34 / 16.5, API 598 / 600
Remarkable supply		150# 8" MARAN 173,400 CBM LNG CARRIER (2017)

Casting SWING CHECK



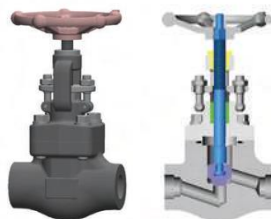
Cap type		Bolted / Seal Welded / Pressure Seal
Size		2" - 36"
Pressure class		150# - 2500#
Design temperature	Max	600°C - Carbon steel, Low alloy steel
	Min	-196°C - Stainless steel
End connections		Butt-Welded or Flanged ends
Design standard		ASME B16.10 / 16.25 / 16.34 / 16.5, API 598 / 600 / 1868
Remarkable supply		150# 16" MHI Shale GAS LNG Carrier (2016 - 2017)
		900# 8" Boryung LNG terminal in Korea, Republic of (2017)

Forged GATE

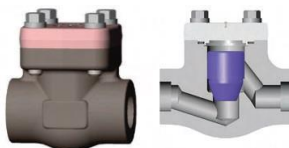


Bonnet / Cap type		Bolted / Seal Welded / Pressure Seal
Port type		Standard bore / Full bore
Size		1/2" - 2"
Pressure class		150# - 4500#
Design temperature	Max	600°C - Carbon steel, Low alloy steel
	Min	-196°C - Stainless steel
End connections		SW, NPT, Butt-Welded & Flanged ends
Design standard		ASME B16.11 / 16.34 / 16.5, API 602, 600 / BS5352
Remarkable supply		150# - 600# Daelim Ind. / Refinery Master Plan2 (RMP2) 25,000 EA (2012)
		150# - 2500# HHI / SHUQAIQ STEAM POWER PLATN 18,018 EA (2014 - 2015)
		150# - 2500# MHI / Turkmenistan Garabogaz Fertilizer 17,059EA (2017)
		150# - 2500# MHI / Uzbekistan Navoiy Fertilizer 17,960EA (2017)

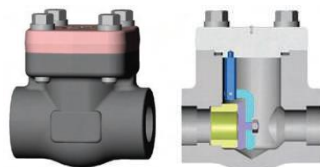
Forged GLOBE



Forged LIFT CHECK



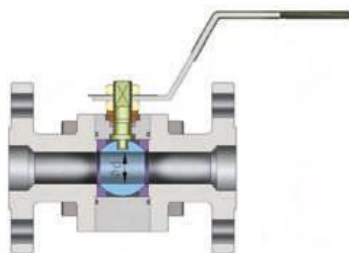
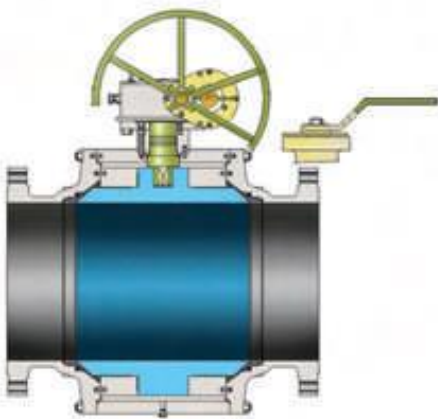
Forged SWING CHECK





Side Entry Ball valve by forging & casting

Ball construction		Floating & Trunnion mounted
Size		1/2" (15A) - 24"(600A)
Pressure class		150# - 2500#
Seat insert		PTFE, RPTFE, NYLON, PEEK, PCTFE
Design temperature	Max	230°C - Carbon steel, Low alloy steel
	Min	-196°C - Stainless steel
End connections		Butt-Welded or Flanged ends
Design standard		ASME B16.10 / 16.34 / 16.5, API6D, BS5351
Remarkable supply		Incheon LNG terminal / GS E&C (2017)
		50K BC LNG Vaporizer System / IL SHIN MARINE (2017)
		ALGERIA ANAA/ Samsung C&T (2016 - 2017)





GATE, GLOBE, CHECK

Cryogenic condition

Bonnet type	Extended bonnet
Size	2" - 24"
Pressure class	150# - 2500#
Design temperature	-196 °C
End connections	Butt-Welded or Flanged ends
Operating	Manual Handwheel, Gear operator, Motor
Design standard	ASME B16.34 / BS6364
Remakable supply	Incheon LNG Terminal / Daewoo Eng. (1998)
	Tongyoung LNG Terminal / Daelim Ind. (2001)
	Kwangyang LNG Terminal / Daelim Ind. (2003)
	Pyungtaek LNG Terminal / Daelim Ind. (2006)
	PETRONAS FLNG / SHI & DSME (2013)
	SLNG / Samsung C&T (2013)
	Boryung LNG Terminal / SK E&C, GS E&C (2014)
	Wuhaogou LNG Terminal / China Huanqiu E&C (2017)
Costa Norte LNG Terminal / Posco E&C (2017)	





Top Entry Ball valve

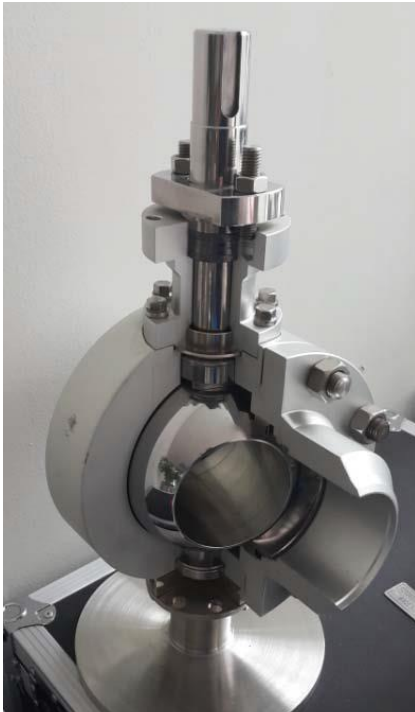
Cryogenic condition

Body construction	Top Entry
Size	1/2" (15A) - 24"(600A)
Pressure class	150# - 1500#
Seat insert	PCTFE
Design temperature	-196°C - Stainless steel
End connections	Butt-Welded or Flanged ends
Design standard	BS5351, ASME B16.34, and ASME B16.25/16.5
Remarkable supply	Incheon LNG Terminal / Daewoo Eng. (1998)
	Tongyoung LNG Terminal / Daelim Ind. (2001)
	Kwangyang LNG Terminal / Daelim Ind. (2003)
	Pyungtaek LNG Terminal / Daelim Ind. (2006)
	PRELUDE FPSO Shell / Samsung Heavy Ind. (2012)
	PETRONAS FLNG / SHI & DSME (2013)
	SLNG / Samsung C&T (2013)
	Boryung LNG Terminal / SK E&C, GS E&C (2014)
	Wuhaogou LNG Terminal / China Huanqiu E&C (2017)
	Costa Norte LNG Terminal / Posco E&C (2017)
	Incheon LNG Terminal / Hanyang Corp. (2017)



Metal Seated Ball valve

For power plant



Type	Metal Seated Ball Valve
Design	ASME B16.34/ 16.10 / 16.25 API / BS / ASTM / KGSC
Rating	ASME CL.600# 900# 1500# 2500#
Size	2" up to 16"
Connection	Flanged Type, Ring Type Joint and butt-welded Type.
Temperature Range	Up to 500'C
Body type	Two Piece body type
Main Material	Body : A216-WCB/WCC, A217-WC6/WC9, A351-CF8/CF8M Ball : A351-CF8 WITH STELLITE/Ni-Cr COATING/NICKEL ALLOY OVERLAY STEM : A536-360 / AISI 1020+ENP COATING SEAT : A276-316 WITH STELLITE/Ni-Cr COATING/NICKEL ALLOY OVERLAY GASKET : SPIRAL WOUNDED GRAPHITE (WITH 316SS)



Parallel Slide Gate valve

For power plant



Type	Parallel Slide Gate
Design	ASME B16.34/ 16.10 / 16.25 API / BS / ASTM / KGSC
Rating	ASME CL.600# 900# 1500#
Size	2" up to 16"
Connection	Flanged Type, Ring Type Joint and butt-welded Type.
Temperature Range	Up to 500'C
Body type	One Piece body type
Main Material	Body : A216-WCB/WCC, A217-WC6/WC9, A351-CF8/CF8M Ball : A351-CF8 WITH STELLITE/Ni-Cr COATING/NICKEL ALLOY OVERLAY STEM : A536-360 / AISI 1020+ENP COATING SEAT : A276-316 WITH STELLITE/Ni-Cr COATING/NICKEL ALLOY OVERLAY GASKET : SPIRAL WOUNDED GRAPHITE (WITH 316SS)



Company Overview

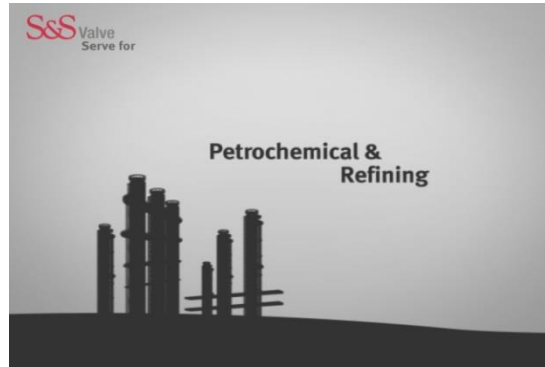
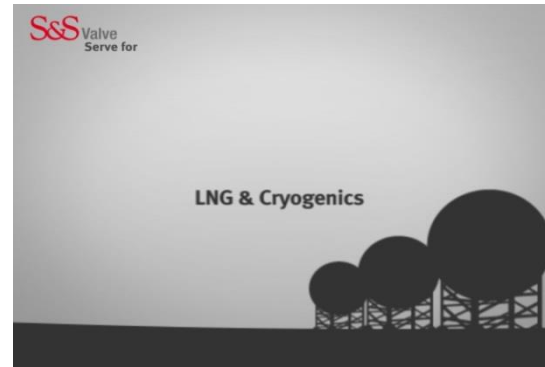
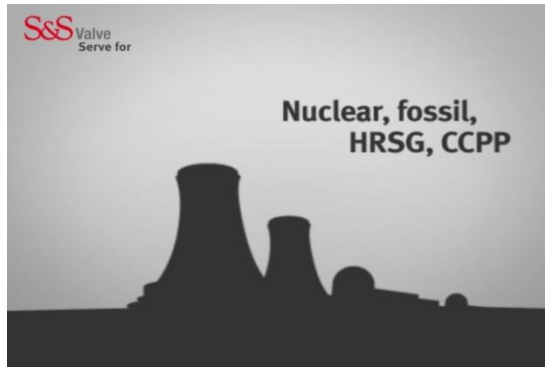
Current Operation

Valve Line-up

Major Customer

Major Customer Applicable industries

S&S Advanced Valve Engineering



Major Customer Over the world

S&S Advanced Valve Engineering



Shine & Salt

Share & Satisfaction

Self-Creativity & Sincerity

S&S Valve

Thank you