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## COMPANY INTRODUCTION

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THE LEADER OF TECHNOLOGY INNOVATION

**KOREA MOTOYAMA INC.**

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1

# INTRODUCTION

## INTRODUCTION

# MOST-TRUSTED COMPANY

▶ Watch Video

1976 ~ 1987

~ 2005

~ 2014

after 2015

### Aug 1976

- Korea united Mfg. Co., Inc. was established.
- Export machine tools & gauges.
- Import Ball valves & regulators

### Oct 1977

- Sales agent agreement for **Kitazawa Valve**  
(Japanese No.1 manual valve Mfg. Co. )

### Mar 1978

- Started to import control valves from **Motoyama Engineering Works Ltd.**
- And field service for Motoyama's control valves.

### Nov 1979

- Agent agreement for sales of valves with **Neles** (Ball, V-Ball, Butterfly valve Mfg.) **Finland**, **Euroval**.(Ball valve) **Italy**, **KTM**.(Ball valve) **Japan**, **Vanessa**. **Italy and Jordan** Valve(Regulator, Small flow control valve) **USA**.

### Mar 1987

- Started assembling Control valves of **Motoyama Inc, Japan**.

### Jul 1987

- Established a joint venture company, **Korea Motoyama Inc.**, with Motoyama Japan and authorized by Korean Government

INTRODUCTION

# MOST-TRUSTED COMPANY

▶ Watch Video

1976 ~ 1987

~ 2005

~ 2014

after 2015

## Aug 1991

- Completed pilot plant Foxboro's DCS System for control valve test

## May 1992

- Started to manufacture control valves for Foxboro Korea Ltd. by OEM.

## May 1995

- Acquired a certificate of approval for quality management system standards, ISO 9001 from Lloyd's Register Quality Assurance Ltd.



## Aug 1996

- Appointed major supplier of control valves by EPC (Samsung Eng., Daelim, Hyundai Eng., Daewoo Eng., etc) - Major vendor list will be explained later

## Oct 1996

- Completed new testing facilities for micro flow, fire safe, cryogenic and high temperature

## May 2001

- Established Korea Valve Service Ltd. for maintenance & service of KOMOTO valves.

## May 2005

- Acquired CE mark from TUV for Rotary piston actuator.



INTRODUCTION

# MOST-TRUSTED COMPANY

▶ Watch Video

1976 ~ 1987

~ 2005

~ 2014

after 2015

May 2006

- ODM contracted with Honeywell



Oct 2008

- Acquired certificate of approval for API602 <Globe>, 608 <Ball>, 609 <Butterfly>

Dec 2009

- Contracted a technical joint venture company with Eshteal Energy Engineering p.j.s. in Iran.

Feb 2012

- Established a factory of Radman Process Development with Eshteal Energy Engineering p.j.s. in Tehran.

Aug 2012

- Opened Korea Control Valve R&D Center in Gimpo Industrial zone.
  - Control valve Pilot plant / Foxboro DCS System <1/2" ~ 12">
  - Control valve Function Test System / Fisher FGS System

Dec 2012

- Recognized as a **visionary enterprise** from Korean Government.

Dec 2013

- Won \$10 Mil. Export Tower Award from Korea International Trade Association, Ministry of Trade, Industry & Energy

Apr 2014

- Recognized as a **'Rising Star Company'** from Korea Credit Guarantee Fund

Oct 2014

- Acquired **SIL certificates** from TUV SGS for globe #150 ~ #2500 & Diaphragm actuator (all size)



Nov 2014

- Recognized as a **'Innovation-Business Company'** from SME Administration of Korea

INTRODUCTION

# MOST-TRUSTED COMPANY

▶ Watch Video

1976 ~ 1987

~ 2005

~ 2014

after 2015

## Jan 2015

- Moved and expanded to Gimpo Factory

## Oct 2015

- Acquired TR-CU certificates (Previously GOST certificate) for all product range



## Nov 2015

- Won the 'Grand Prize for quality of SME' from Seoul Economy Network

## Jan 2016

- Won the 'Grand Prize for management of SME' from Korea Chamber of Commerce and Industry
- Acquired a certificate of approval for quality management system standards, Q1 from American Petroleum Institute



## Aug 2016

- Acquired a certificate of approval for quality management System standards, ISO 14001 from Lloyd's Register Quality Assurance Ltd.



## May 2017

- Recognized as a 'High Technology Company' from Korea Technology Finance Corporation
- Recognized as a 'Star Company' from Provincial Government

## Jul 2017

- Recognized as Promising SME from Korea Technology Finance Corporation

## INTRODUCTION

# MOST-TRUSTED COMPANY

▶ Watch Video

### Sep 2017

- Awarded a prize for Industrial Development from Ministry of Trade and Industry

### May 2018

- Acquired **SIL certificates** from **DNV GL** for Ball #150 ~ #2500 & Cylinder actuator (all size)



### Oct 2018

- Establish KOMOTO Technologies India

### Jan 2020

- Acquired **ISO-15848-1 Certificates** for Globe Valve & Butterfly Valve



### Feb 2020

- Acquired **SIL certificates DNV GL** for Butterfly Valve (~ #900)



### Mar 2020

- Established pilot plant for Pressure Regulating Valve (PRV)

### May 2020

- Acquired certificate of 25 years quality management excellence from TUV



### Mar 2021

- Acquired API 6D

### Mar 2023

- Acquired ISO 45001

### Jun 2023

- Acquired PED for Globe Valves







2

PORTFOLIO



# PORTFOLIO



# PORTFOLIO



# PORTFOLIO





3

**VALUED CUSTOMERS**

# VALUED CUSTOMERS

: International



# VALUED CUSTOMERS

: Domestic





# 4 PRODUCT



PRODUCT

# OVERVIEW

: Product Range

	Model	Feature	Size	Max Press. Rating	Max Temp. (°C)	Range Ability
1	Globe	Mid / Low Pressure	1/2 - 36"	ANSI 150 / 300	-195 ~ 550	30 : 1
			1/2 - 30"	ANSI 600		50 : 1
		High Pressure	1/2 - 30"	ANSI 900		80 : 1
			1/2 - 26"	ANSI 1500		100 : 1
			1/2 - 24"	ANSI 2500		150 : 1
2	Teflon Blocked	Anti-corrosion	3/4" - 2"	ANSI 150	120	30 : 1
3	3-Way Globe	Mixing & Diverting	3/4" - 24"	ANSI 150 / 300 / 600	300	50 : 1
4	Angle	Viscosity, Resistance	3/4" - 16"	ANSI 150 ~ 2500	550	30 : 1
5	V-notch Ball	High Rangeability	1" - 16"	ANSI 150 / 300 / 600	500	50 : 1
6	Discharge	Tank Bottom	1" - 10"	ANSI 150 / 300	500	-
7	Butterfly	High-performance / Triple Offset	2" - 100"	Wafer / flange	200 - 800	30 : 1
				ANSI 150 ~ 900		
8	2-Way Ball	Soft / Metal Seat	1/2" - 24"	ANSI 150 ~ 2500	200 / 500	50 : 1
9	Pressure Regulator	Direct / Pilot	1" - 16"	ANSI 150 ~ 2500	200	3 : 1
10	Desuperheater	Venturi / Mechanical Nozzle / Variable Nozzle	All	All	550	

PRODUCT

# GLOBE VALVES

*Various Body Types Available*



HP TYPE



FORGED SPECIAL



CRYOGENIC



ANGLE



3-WAY GLOBE  
MIXING, DIVERT



TEFLON BLOCK



TANK BOTTOM  
FLUSH

PRODUCT

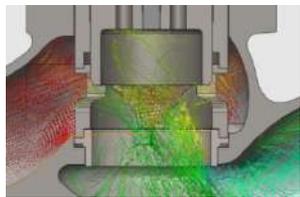
# GLOBE VALVES

## Various Trim Selection

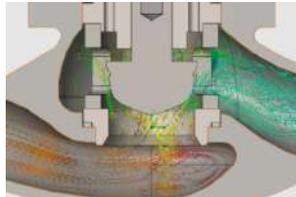


Based on Service Condition

### Standard Service Trims



Unbalanced Contoured Single Port (S-P TYPE)

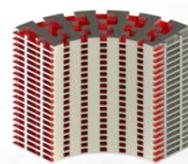


Balanced Cage Port (C-B TYPE)

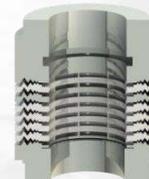
### Severe Service Trims



H Series Trim (Anti-Cavitation)



M Series Trim



T Series Trim



C Series Trim

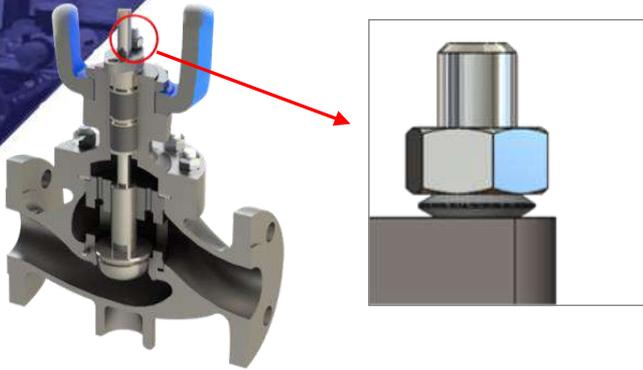


S Series Trim

PRODUCT

# GLOBE VALVES

## *Live Loading Packing System*



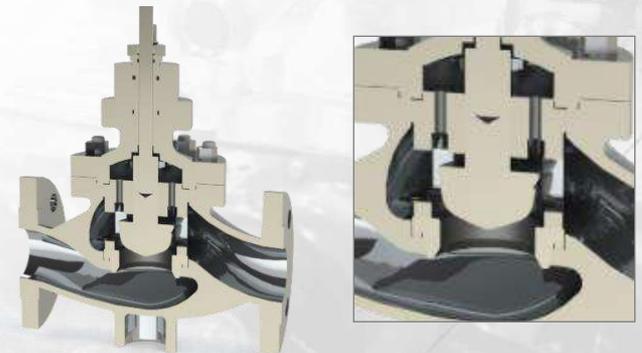
## *Quick Change Trim Package*



## *Modular Design*



## *Streamlined Flow Passages*



PRODUCT

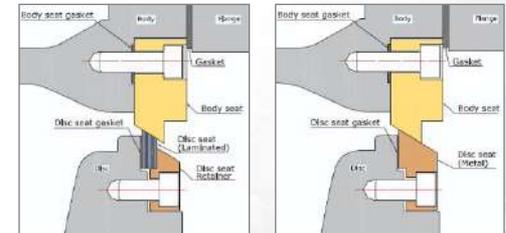
# BUTTERFLY VALVES



## Triple Offset Butterfly Valves

- For High pressure up to ANSI Class 900
- High Temperature service
- Tight Shut-off with Metal seat
- Two Replaceable Seats Design (Separate Body & Disc seat)
- Easy Maintenance (Tight Shut-off after seat change)
- Optional Manual Hand Wheel

### • Detail Seat Design



▾ Laminated Seat

▾ Metal Seat



## Double Offset High Performance Butterfly Valves

- For High pressure up to ANSI Class 600
- Soft & Metal Seat
- Fire Safe design
- High Cv to valve weight ratio compared to conventional control valves
- Throttling controls 60 rotation, on-off controls 90 rotation
- Wafer, Lug, Flange connections available

PRODUCT

# V-NOTCH BALL VALVES

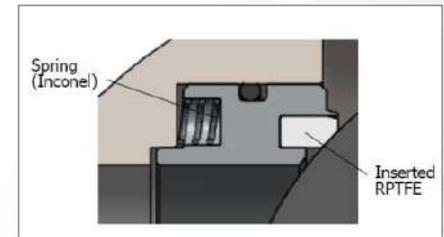


## V-notch Ball Control Valves

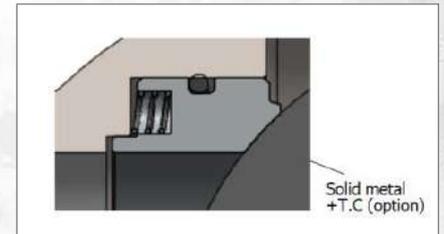
- Accurate throttling control for slurry, gummy, fibrous fluids
- High Cv to body size ratio
- Controls through 90° rotation
- Excellent flow control rangeability
- Metal & Soft seat available
- Self-centering and tight seating
- Full range of body and trim materials
- Inner part



### • Detail Seat Design



### ▣ Soft Seat



### ▣ Metal Seat

PRODUCT

# BALL VALVES

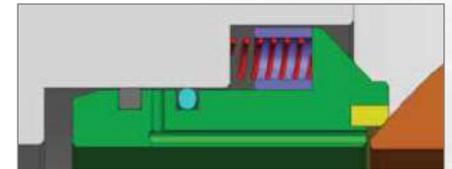


## API 6D On-Off Ball Valves

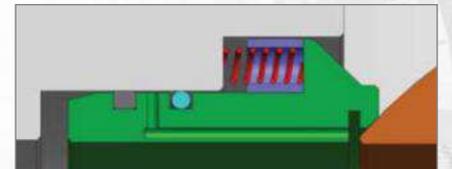
- Soft & Metal Seat, PMSS design available
- Floating / Trunnion types available
- Two Piece / Three Piece
- Side entry / Top entry
- Fire Safe Design
- Anti-blow out Design
- Anti-Static Design
- Full range of body and trim materials
- Inner Parts



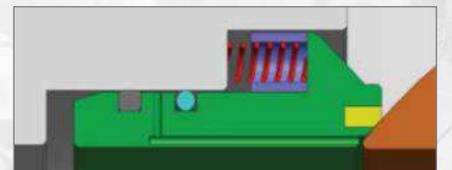
- Detail Seat Design



Soft Seat



Metal Seat



PMSS Seat

PRODUCT

# SELF-ACTING PRESSURE REGULATORS



## Self-Acting PRVs

- Pressure Reducing / Back pressure regulating option
- Direct-Operated / Pilot-Operated
- Wide Control Range ( 0.005 Bar ~ 100 Bar )
- High capacity

- Accurate Regulation
- Quick Change Trim Package
- Internal / External Sensing
- Tank Blanketing types are available



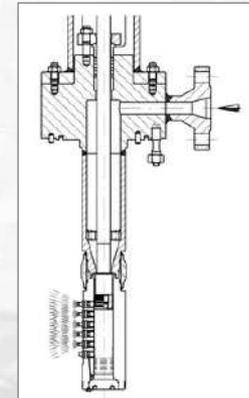
PRODUCT

# DESUPERHEATERS



## Desuperheaters with Temperature Control Valves

- Optimize process control can save fuel and in turn save investment cost
- Customized Size & Pressure rating
- Large range of design Cv
- High rangeability
- Venturi Type / Variable Nozzle Type / Fixed Nozzle Type / Steam Atomizing Type are available



PRODUCT

# DIAPHRAGM ACTUATORS

## Multi-Spring Diaphragm Actuators

- Multi Spring Type
- Compact Design
- Steel Material
- Accurate Spring Range
- Top / Side / Top-side Handwheel Options



Top Handwheel



Side Handwheel



Top-side Handwheel

PRODUCT

# CYLINDER ACTUATORS



## Multi Spring Cylinder Actuators

- Linear / Rotary Type
- Compact Design / Heavy Duty Design
- Aluminum Body / Carbon Steel Body

- Accurate Spring Range
- Scotch & Yoke / Rack & Pinion available

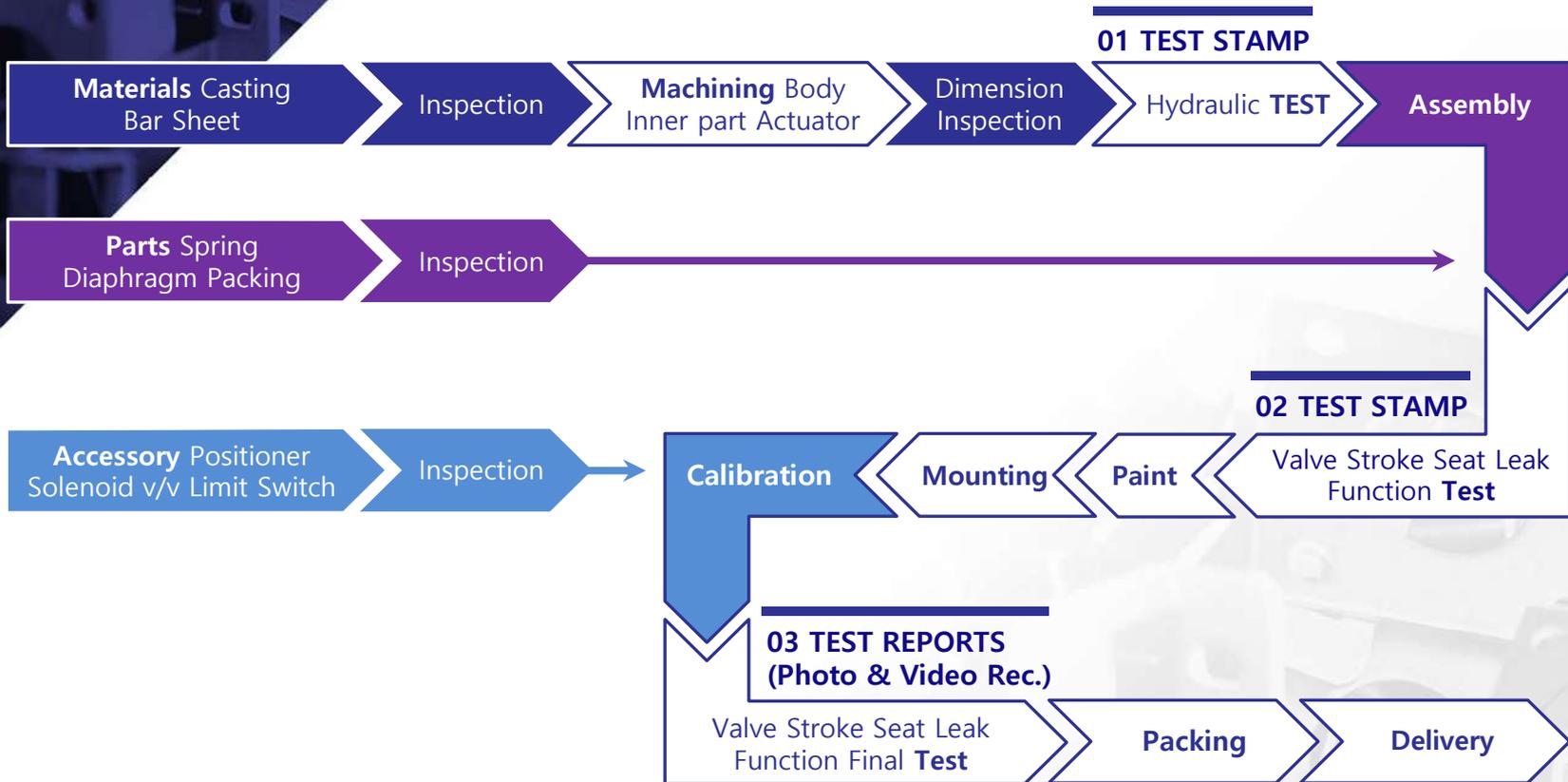


5

# QUALITY CONTROL

QUALITY CONTROL

# IN PROCESS QUALITY CONTROL SYSTEM



QUALITY CONTROL

# MATERIALS CASTING BAR SHEET

Molding & Pouring Area



Melting Area



Spectrometer



Mechanical Testing Equipments



Shot Blasting Machine



Heat Treatment Furnace



QUALITY CONTROL

# MACHINING BODY INNER PART ACTUATOR

Body Machining



Trim Machining



Body Machining



Hard Facing



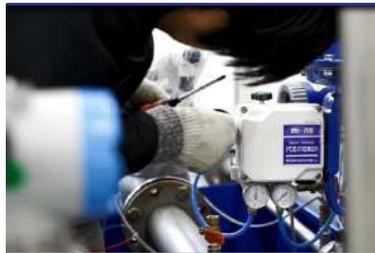
QUALITY CONTROL

# ASSEMBLY / MOUNTING / PAINTING

Assembly



Mounting



Painting





QUALITY CONTROL

# QUALITY CONTROL TEST

## Material Test



### Spectrometer

(MH-100-0010, Belec, Germany)

## Hydraulic Test



### No.1 Low pressure tester

ANSI 150 ~ 300#, 1/2" ~ 10"  
ANSI 600#, 1/2" ~ 10"

### No.2 High pressure tester

ANSI 150 ~ 300#, 1" ~ 28"  
ANSI 600#, 1" ~ 22"  
ANSI 900#, 1" ~ 18"  
ANSI 1500#, 1" ~ 14"  
ANSI 2500#, 1" ~ 12"

### No.3 Butterfly valve tester

ANSI 150# ~ 300#, 6" ~ 24"

### No.4 Butterfly valve tester

ANSI 150# ~ 900#, 20" ~ 64"

### No.5 Ball valve tester

ANSI 150# ~ 2500#, 3" ~ 24"

### No.6 Air bobble tester

(Secondary tester)

ANSI 150 ~ 300#, 1/2" ~ 8"

QUALITY CONTROL

# QUALITY CONTROL TEST

## Leakage Test



8 units for All size & rating  
From ANSI Class II to Tight shut-off  
with [calibrated measuring Instruments](#)

## Function Test



Function Test – Fisher FGS System  
- All Size Friction, Signal response,  
Storke time test

## Fugitive Emission Test



According to ISO 15848-1&2-2006  
Three sizes of packing box  
Helium Dectector : Ion Science,  
Gas Check G2 He

QUALITY CONTROL

# QUALITY CONTROL TEST

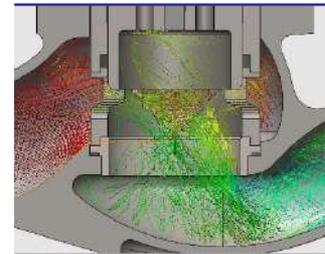
## Other Test

### Fire Test



- ▶ **Globe Valve (1/2" ~ 16")** : Rating 600#
- ▶ **Globe Valve (1/2" ~ 8")** : Rating 1500#
- ▶ **Globe Valve (1/2" ~ 6")** : Rating 2500#
- ▶ **Butterfly Valve (2" ~ 24")** : Rating 300#
- ▶ **Ball Valve (1/2" ~ 16")** : Rating 600#
- ▶ Up to 870 Deg.C

### Software



- ▶ **3D Design Tools:** Solidworks Premium  
Flow Simulation
- ▶ **2D Design Tools :** Autocad, Cadian
- ▶ **Sizing Tools :** F.I.R.S.T gmbh, Conval 10.0  
KOMOTO SZP 4.3

### Cryogenic Test



- ▶ **Globe Valve (1/2" ~ 16")** : Rating 600#
- ▶ **Globe Valve (1/2" ~ 8")** : Rating 1500#
- ▶ **Globe Valve (1/2" ~ 6")** : Rating 2500#
- ▶ **Butterfly Valve (2" ~ 24")** : Rating 300#
- ▶ **Ball Valve (1/2" ~ 10")** : Rating 600#
- ▶ Up to -195 Deg.C

### Etc.

- ▶ **High temperature tester**
- ▶ **Min. flow tester**
- ▶ **Sound level tester**
- ▶ **Regulator tester**
- ▶ **Simulation tester**
- ▶ **Duration Tester for Actuator**
- ▶ **Tank blanketing Valve Tester**
- ▶ **Desuperheater nozzle tester**

- ▶ **Hardness Tester**
- ▶ **Ultrasonic Thickness Tester**
- ▶ **Paint Adhesion Tester**
- ▶ **Up to 450 Deg.C**
- ▶ **Cv 0.00001**
- ▶ **Micro-computer : RION**
- ▶ **200Kg/cm2 for all size regulator**



6

# DESIGN CAPABILITY

# DESIGN CAPABILITY

## Control Valve Sizing Calculation



**KOMOTO**

**Control Valve Sizing Calculation**

Customer	_____	SHT. No.	1
End User	_____	Rev. No.	00
Project	_____	Date	22-Apr-20
Tag No.	_____		

---

**1. Line**

Inlet Line Size	3	Inlet Line Schedule	40
Outlet Line Size	3	Outlet Line Schedule	40
Body Size	2" (50A)	Trim Size	2

---

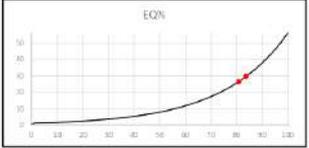
**2. Process Data**

Cooking Water			
Fluid Name	Units	Max.	Min.
Variable Name			
Temp	Deg C	45	45
Flow	Kg/hr	23320	21000
P1	Kg/cm <sup>2</sup> G	8.68	1.7
P2	Kg/cm <sup>2</sup> G	6.8	0.6
Dp	Kg/cm <sup>2</sup>	0.88	0.9
Specific Gravity	SG	0.9900	0.9905
Vapor Pressure	Kg/cm <sup>2</sup> A	6.1	0.1
Viscosity	cp	0.597	0.597
Outlet Valve Velocity	m/sec	1.2	2.0
Outlet Line Velocity	m/sec	1.4	1.3
Note	ISA	53	52

---

**3. Calculated Data**

Trim Type	C-0 / CAGE
Rated CV	56.2
Character <sup>2</sup> EQ%	EQ%
Rangeability	50
Calculated CV	29.57 20.51
Opening %	84 81
Checked Flare	None None
Calculation/Flashing	None None



\* Calculated Based on ISA-67501, "Flow Equations For Sizing Control Valves"

**Korea Motoyama Inc.**

## Control Valve Energy Calculation Sheet



**KOMOTO**

**CONTROL VALVE ENERGY CALCULATION SHEET**

Project	0	Revision No.	00
Customer	0	SHT. No.	1
End User	0	Prepared By	
Tag No.	0	Date	2020-04-22

Trim Type: C-0 / CAGE    N/A    0

---

**Trim Exit Velocity / Energy Analysis**

Required Cv	Max	Min		
	284	265		

Stages/Turns to Avoid Cavitation, Vibration and Erosion Related Problems

Min. Required Stages/Turns	0	0
----------------------------	---	---

Trim Exit Velocity / Energy with Minimum Required Stages/Turns

Trim Exit Velocity (m/s)	13.03	13.24
--------------------------	-------	-------

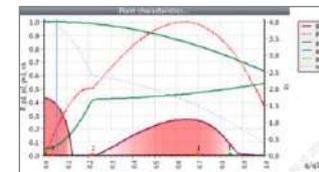
Trim Exit Velocity (m/s) versus Trim Type

Ported Trim	13.03	13.24
1 Stage Drilled Hole Trim	20.64	10.79
2 Stage Drilled Hole Trim	4.24	4.33
3 Stage Drilled Hole Trim	2.32	2.27
4 Turns Disk Stack Trim	4.26	4.33
6 Turns Disk Stack Trim	5.52	5.27
8 Turns Disk Stack Trim	2.70	2.34
10 Turns Disk Stack Trim	2.23	2.23
12 Turns Disk Stack Trim	3.29	3.32
14 Turns Disk Stack Trim	3.65	3.69
16 Turns Disk Stack Trim	3.88	3.45
18 Turns Disk Stack Trim	3.33	3.20
20 Turns Disk Stack Trim	3.22	3.04
22 Turns Disk Stack Trim	0.98	0.93
24 Turns Disk Stack Trim	0.77	0.78
26 Turns Disk Stack Trim	0.86	0.87
28 Turns Disk Stack Trim	0.59	0.59
30 Turns Disk Stack Trim	0.50	0.51

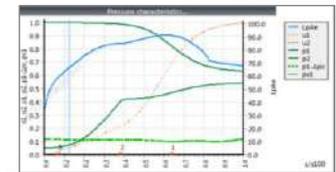
**Notes:**

- Trim exit velocity of the fluid should be limited to 100 ft/s (30 m/s) and to 75 ft/s (23 m/s) for flashing or potentially cavitating service.
- Cavitation - Higher velocities will result in erosion damage to the trim, valve body and downstream piping.

## Plant Characteristics Calculation



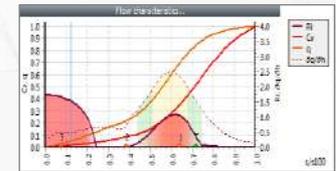
## Pressure Characteristics Calculation



## Valve Modifiers, Sound Data Calculation



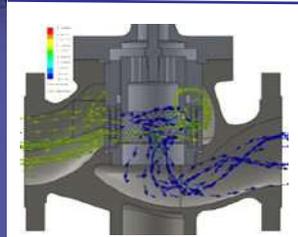
## Flow Characteristics Calculation



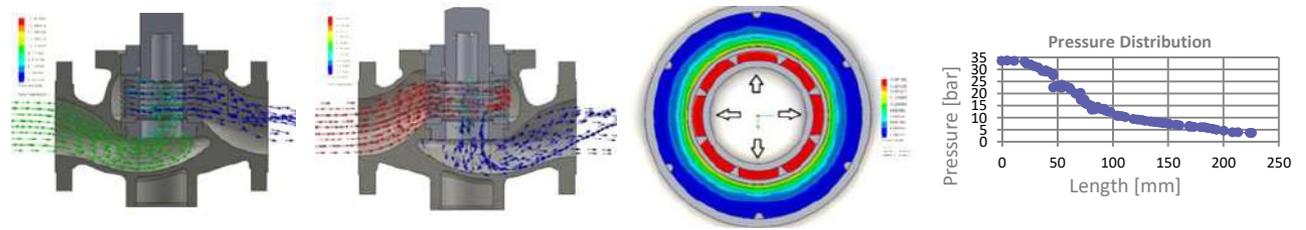
DESIGN CAPABILITY

# FLOW SIMULATION

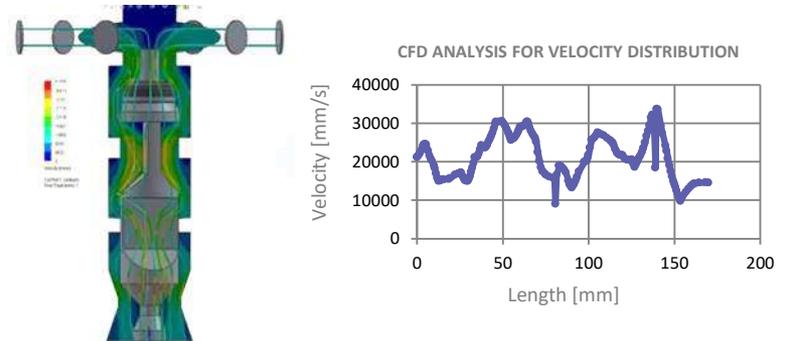
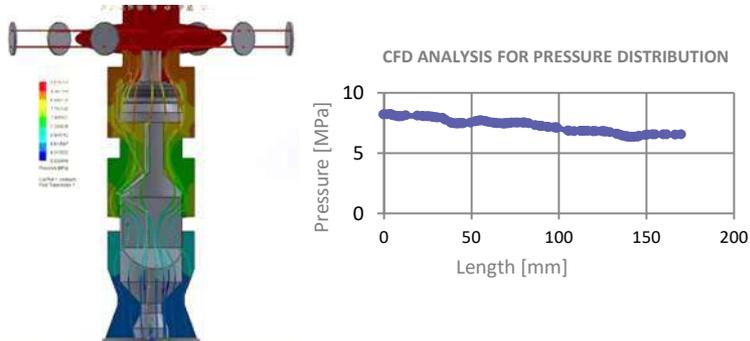
## H-Series Flow and Pressure simulation



## T Series Trim Flow Simulation (Low Noise Trim / Anti-Cavitation Trim)



## S Series Trim

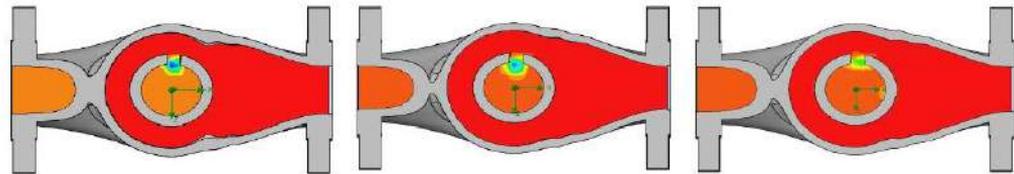
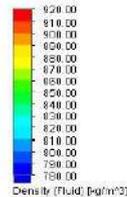


DESIGN CAPABILITY

# R&D WITH UNIVERSITY LABORATORY

## *Cavitation Analysis*

Window Type

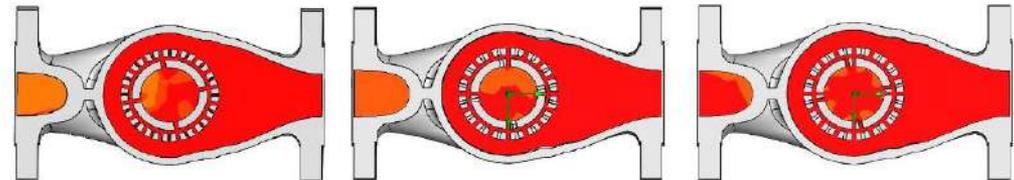
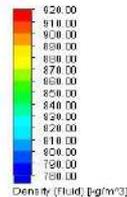


Open 25%

Open 45%

Open 75%

Multi hole Type



“Developing Severe Service Control Valves  
with Seoul National University,  
Department of Mechanical & Aerospace Engineering”

DESIGN CAPABILITY

# ADVANCED DESIGNING CAPABILITY

3D Printing Technology



**3D Design Tools:** Solidworks Premium / Flow Simulation

**2D Design Tools :** Autocad, Cadian

**Sizing Tools :** F.I.R.S.T gmbh, Conval 10.0, KOMOTO SZP 4.3





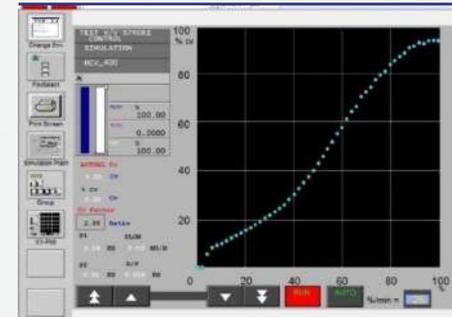
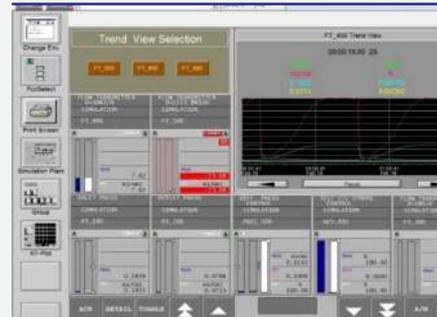
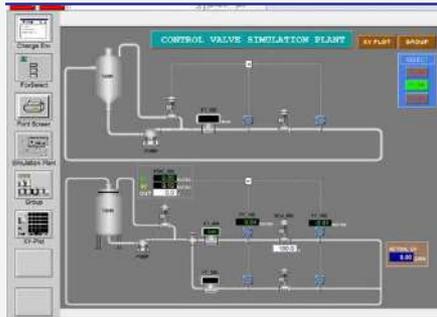
DESIGN CAPABILITY

# PILOT PLANT FOR CONTROL VALVES



## Characteristics

- Schneider Electric DCS System
- 1/2" ~ 16" for all rating
- Flow Simulation
- Actual Cv<Max.> test
- Inherent Flow Characteristic Curve test
- Pressure Loss test
- Valve Travel & Actual Cv test



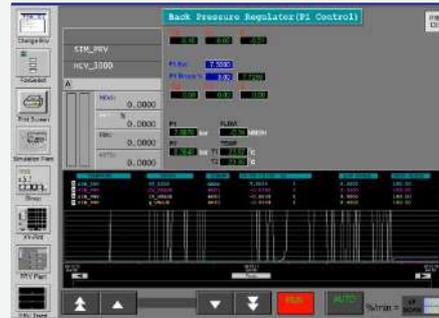
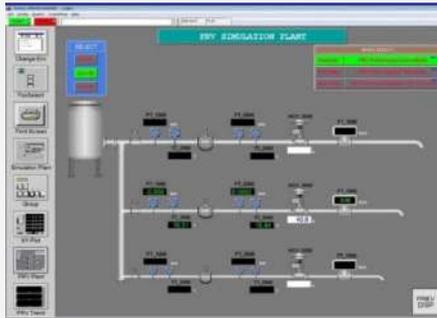
DESIGN CAPABILITY

# PILOT PLANT FOR PRESSURE REGULATOR



## Characteristics

- Schneider Electric DCS System
- 1/2" ~ 4" for all rating
- Flow Simulation
- Actual  $C_v < \text{Max.} >$  test
- Inherent Flow Characteristic Curve test
- Droop & Lock up test





DESIGN CAPABILITY

# SPECIAL TRIM PARTS





7

MERITS

# MERITS

## Rich experience

- Based on long experienced **Motoyama Inc. (since 1927), Japan**
- 40 years of experience

## Quality assurance system

- ISO 9001, 14001, API Q1, SIL, CE, Fire Certificate, PL Insurance USD 1,000,000

## Reasonable price

- Competitive price for user requirement

## Single responsibility

- **Wide range of Products** - Globe, V-ball, Butterfly, Ball, Pressure Regulating Valve, Tank blanketing valve, Tank Bottom Flush, Teflon Block Valve, Desuperheater
- **Various Actuators** - Diaphragm, Cylinder, Electric
- **Special Materials** (Alloy20, Hastelloy C, Monel, Duplex, etc) are available

# MERITS

## Prompt delivery

- Ready Products : 1-2 weeks
- Normal Delivery : 1.5 ~ 2.0 months
- Normal Project : 3.0 ~ 5.0 months
- A lot of Stocks – Casting & Parts



## Flexible and Fast technical response

- Fast Reaction



## Prompt & Rich experienced service

- Service First, Cost Second
- Regular Checking Service
- Control Valve Technical Training Course

