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# KOMOTO®

## VALVES & CONTROLS

Product Guide



# KOMOTO®

- | Safe & Reliable Operation
- | Perfect Performance
- | Professional Technical Support
- | Easy Maintenance
- | Interchangeable Parts
- | Long Life

Korea Motoyama Inc. was founded in 1988 through the technology and capital investment by Japan Motoyama Inc., which has almost 90 years of history.

As one of the leading players in this industry, Japan Motoyama Inc. has provided more than one million valves all over the world. Based on its advanced technologies and experiences, Korea Motoyama Inc. has provided the 'KOMOTO®' brand valves to numerous global companies. KOMOTO® brand valves have been widely used in wide range of industries including oil & gas, refineries, power plants, petrochemical plants, and steel mills to accurately control cryogenic fluids, superheated steam and corrosive fluids under severe service conditions.

With long experiences of Japan Motoyama Inc., Korea Motoyama Inc., with 30 years of experiences continues to invest in research and development, testing facilities, and quality control systems. Today, we are ready to provide our customers with the best solutions to control special fluids under any severe conditions.



# Contents

## 04 P INDUSTRIES

KOMOTO offers optimal products and services specified for use in a wide range of industries, including oil and gas, refining, chemical, power generation, electronics, steel and other various general industries.

## 06 P FEATURES

Wide range of custom-designed products, Fast delivery, Superior cost effectiveness, Certified quality, Field proven performance, Prompt technical service.

## 09 P PRODUCTS

KOMOTO provides engineering solutions to optimize the performance of customer's specific process conditions with wide range of custom-designed products including automated quarter-turn valves, control valves, self-acting regulators, desuperheaters and valve actuators. Both valves & actuators are manufactured, assembled, and guaranteed together.

## 16 P SOLUTION TO SEVERE SERVICE

KOMOTO severe service products are engineered for customer's specific severe service conditions. Our wide range of severe service product portfolio provides the most optimized solutions to cavitation, flashing, and noise in various pressure, temperature, even fluid with particles.

## 19 P AFTER SALES SERVICE

KOMOTO provides total life cycle management support of all products with full range of training, engineering, field services. Hundreds of standardized modular parts are ready for quick service to deliver a lower total cost of ownership.

# Industries Served

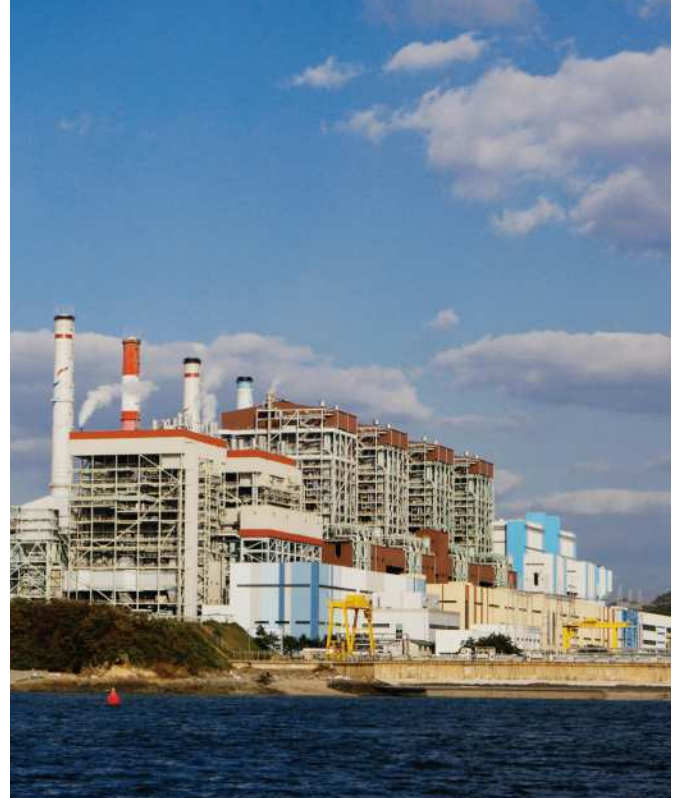


## OIL AND GAS INDUSTRY

KOMOTO has been providing engineered severe service valves to the oil and gas industry. Our valves are installed and in operation in a wide range of the oil and gas industry's harsh applications. KOMOTO holds major industry approvals, and served many of the world's major oil & gas companies.

### Products

- Globe/angle type control valves for general service and severe applications with high pressure drop, cavitation or flashing services.
- Triple offset butterfly valves for high pressure service.
- Trunnion-mounted ball valves for gas and liquid services.

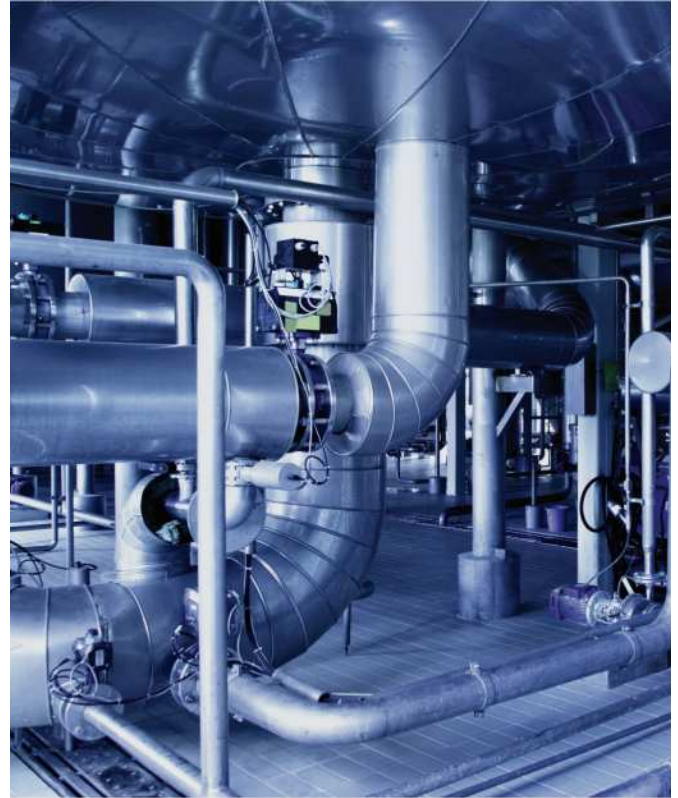


## POWER GENERATION

KOMOTO provides comprehensive range of products for high temperature and high pressure drop severe service conditions in power generation industry. Complete range of high pressure class valves with welding connections are available.

### Products

- Two-way and three-way Control valves for general service and severe applications actuated by pneumatic, electric, or electro-hydraulic actuators.
- Triple offset butterfly valves for high pressure service.
- Steam conditioning valves, Desuperheaters.



## CHEMICAL PROCESSING

KOMOTO's wide range of valves are designed for long service life in corrosive and abrasive applications of chemical processing in sophisticated materials such as titanium, hastelloy, monel, and so on. Special material products are supplied for corrosive chemical control services. We offer bellows seal & specially designed ISO 15848-1 Class A sealings for toxic service valves.

### Products

- Control valves with higher rangeability trims, special materials, cryogenic, and bellows.
- High performance & triple offset butterfly valves.
- Quarter turn control and on-off valves.

## GENERAL INDUSTRIES

KOMOTO's compact & modular design products can achieve quick delivery, superior cost effectiveness. Vast range of automation products are available. KOMOTO offers high flow capacity with smaller and better cost effective size of valves.

### Products

- Compact control valves for general service.
- High performance & triple offset butterfly valve.
- Quarter turn control and on-off valves.



# Our Features

Committed to providing top quality products and precisely engineered solutions to our customers

## WIDE RANGE OF ENGINEERED PRODUCTS

KOMOTO provides wide range of custom-designed products including automated quarter-turn valves, control valves, self-acting regulators, desuperheaters and valve actuators.

## CUSTOM-DESIGNED SOLUTIONS

KOMOTO products are engineered for customer's specific severe service conditions. Wide range of severe service portfolio provides the most optimized solutions to cavitation, flashing, and noise in various pressure, temperature, even fluid with particles.

## FIELD PROVEN PERFORMANCE

Thousands of valves are being installed every year and in operation for decades all around the world.

## COMPLETE GUARANTEE

Both valves & actuators are manufactured, assembled, and guaranteed by KOMOTO together.





### FAST DELIVERY

2 weeks to 3 months delivery time can be achieved for standard products.



### SUPERIOR COST EFFECTIVENESS

KOMOTO offers superior cost effectiveness by utilizing high capacity design and modular design parts.



### CERTIFIED QUALITY

KOMOTO achieved Lloyd's Register Quality Assurance 25-year ISO 9001 quality management system and holds SIL certificates for globe valves, butterfly valves, ball valves, diaphragm & cylinder actuators.



### PROMPT TECHNICAL SERVICE

By utilizing modular design and quick change trim package, hundreds of standardized modular parts are ready for quick service to deliver a lower total cost of ownership.

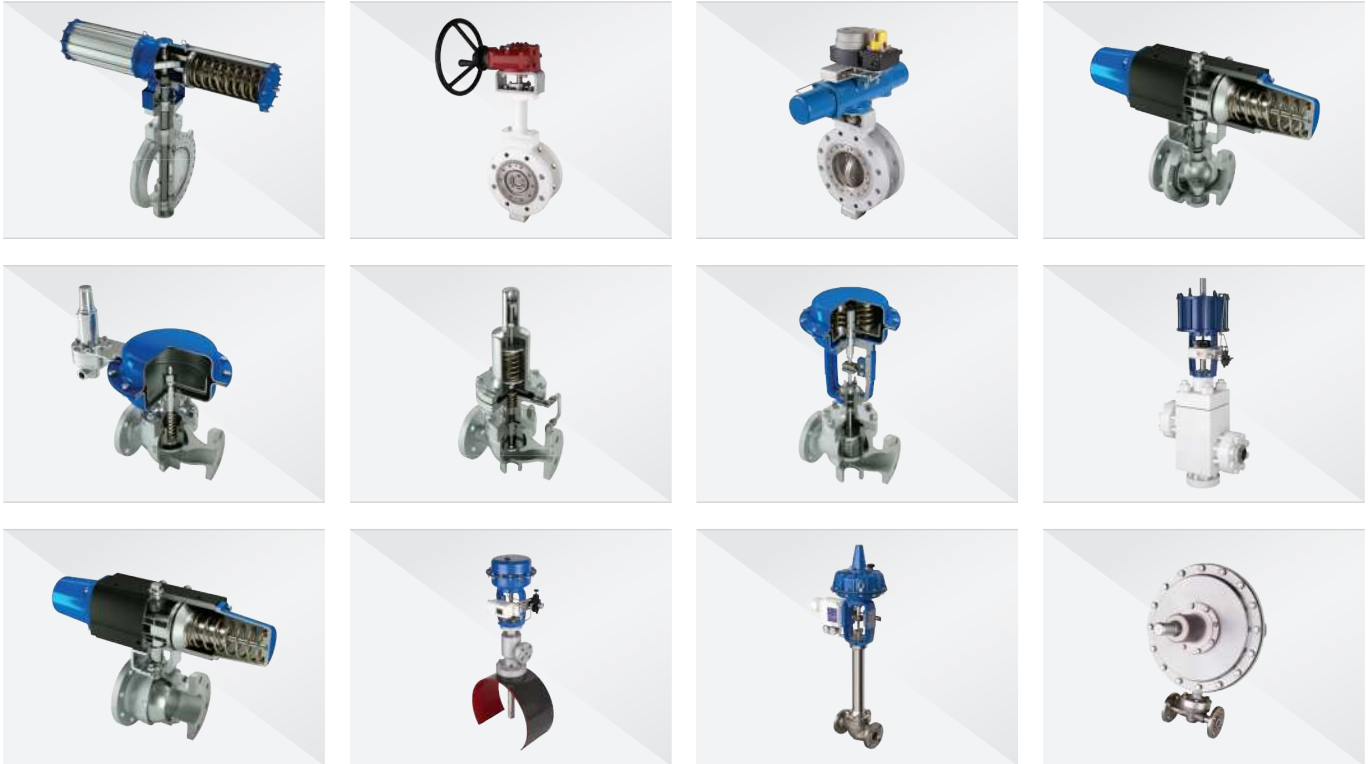




# KOMOTO®



# PRODUCT



## COMPLETE RANGE OF PRODUCTS FOR FLUID CONTROL SYSTEM

	Model	Feature	Size	Max Press. Rating
01	Globe Valves	Precise control / Severe service	1/2" - 36"	ANSI 150 ~ 2500
02	Angle Valves	Viscosity, Resistance	3/4" - 24"	ANSI 150 ~ 2500
03	3-Way Globe Valves	Mixing & Diverting	3/4" - 16"	ANSI 150 ~ 600
04	Pressure Regulators	Direct / Pilot	1" - 16"	ANSI 150 ~ 2500
05	Ball Valves	Soft / Metal Seat	1/2"- 24"	ANSI 150 ~ 2500
06	V-notch Ball Valves	High Rangeability	1" - 16"	ANSI 150 ~ 600
07	Butterfly Vales	High-performance / Triple Offset	2" - 100"	ANSI 150 ~ 1500
08	Teflon Blocked Valves	Anti-corrosion	3/4" - 2"	ANSI 150
09	Discharge Valves	Tank Bottom	1" - 10"	ANSI 150 ~ 300
10	Desuperheaters	Venturi / Mechanical Nozzle / Variable Nozzle	All	All

## Globe Valves

KOMOTO® Globe valves are the best solution for throttling service in oil, gas, petrochemical and other industrial purposes. It provides optimal solutions to control from general service fluids to corrosive, cryogenic, high temperatures fluids under severe service conditions containing erosion, corrosion and high pressure drops.

**Performance**

- High Cv to body size ratio, which allows for smaller and more cost effective valve size selection.
- High Cv to valve weight ratio.
- Optimized streamlined flow.
- Excellent flow control rangeability.

**Design Flexibility**

- Modular construction design.
- All trim components are replaceable from the top for easy maintenance.
- Wide range of supplementary cavitation & noise control options
- Inherently characterized trim offered in equal percentage, linear, quick opening and modified parabolic. Multi trim sizes are available.
- Full range of body and trim material options.
- Full range of bonnet and packing designs to suit various temperatures and fluids.



Size	1/2" - 36"	Max Press. Rating	ANSI 150 ~ 2500
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## Angle Valves

KOMOTO® angle valves are widely accepted for controlling fluid of high differential pressure, slurry, high viscosity, or adhesive. They are provided with a number of features such as low resistance of passage, anti-wear quality within the valve, and easy maintenance and inspection.

**Performance**

- High Cv to body size ratio.
- High Cv to valve weight ratio.
- Excellent flow control rangeability.

**Design Flexibility**

- Modular construction design available with a range of different connections and styles.
- All trim components removable from the top for easy maintenance.
- Wide range of supplementary noise control options. Inherently characterized trim offered in equal percentage, linear, quick opening and modified parabolic (options). Multi trim sizes available.
- Full range of body and trim material options.
- Full range of bonnet and packing designs to suit various temperatures and fluids.

Size	3/4" - 24"	Max Press. Rating	ANSI 150 ~ 2500
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## Mixing / Divert 3-way Valves

KOMOTO® three-way type control valves are used for controlling the fluids mutually to three directional pipings, i.e., mixing service or diverting service

### Performance

- High Cv to body size ratio.
- High Cv to valve weight ratio.
- Excellent flow control rangeability.

### Design Flexibility

- Modular construction design available with a range of different connections and styles.
- All trim components removable from the top for easy maintenance.
- Wide range of supplementary noise control options. Inherently characterized trim offered in equal percentage, linear, quick opening and modified parabolic (options).
- Multi trim sizes available.
- Full range of body and trim material options.
- Fully rationalized and interchangeable features.
- Full range of bonnet and packing designs to suit various temperatures and fluids.



Size	3/4" - 16"	Max Press. Rating	ANSI 150 ~ 600
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## Self-Acting Pressure Regulators

KOMOTO® pressure regulating valves are designed for controlling pressure of liquid s& gases in various industrial applications.

### Performance

- Direct operated / Pilot operated.
- Easy setting / Fast action.
- Low cost maintenance.

### Design Flexibility

- Wide spring selection range.
- Various types of pressure regulating valves for liquids & gases.

### Specification

- Pressure reducing type (P2 control).
- Back pressure/Relief type (P1 control).
- Tank blanketing type.

Size	1" - 16"	Max Press. Rating	ANSI 150 ~ 2500
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### Ball Valves

KOMOTO® ball valves have been developed for wide range of process industry applications. KOMOTO® ball valves comply with API standard that incorporate many special features. This series of valves is designed for both pressure and vacuum service.

#### Standard Specifications

- Flanged end, 2-pcs split body construction, top entry available.
- Fields serviceable, wrench/gear/actuator mounted.
- Test Pressure: As per API 6D Std.
- Face to Face Dimension: as per API 6D Std.

#### End Connections

- Flanged, conforming to ANSI B 16.5. The ball valves comply with one or more of the following standard specifications as to pressure, temperature ratings and dimensions: ANSI, API, BS, DIN, MSS.



05

Size	1/2" - 24"	Max Press. Rating	ANSI 150 ~ 2500
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06

### V-notch Ball Valves

ANYCON® V-notch ball valves are Top Entry, Full Bore, Trunnion, and stem ball type, which are exclusively designed for excellent proportional control. ANYCON® has special shape of ball which is suitable for accurate throttling control and on-off service not only general fluids but also critical conditions in powders, slurry, gummy, fibrous material and other fluids with special characteristics.

#### Performance

- High Cv body size ratio (Full bore).
- Controls through 90° rotation.
- Excellent control range ability.
- Easy maintenance.
- ISO standard Mounting.

#### Design Flexibility

- Direct mounting actuator design flexibility .
- Control any fluids.
- Full range of body and vane material options with availability of hard facings.
- Seat changeability.
- Equal or Linear characteristics available.
- Self-cleaning and tight seating.
- Double-eccentric disc options.

Size	1" - 16"	Max Press. Rating	ANSI 150 ~ 600
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## Butterfly Valves

KOMOTO® butterfly valves have been developed for a large number of applications throughout process industries. KOMOTO® high performance butterfly valves are mainly used for isolation or on-off applications but also suitable for control, especially on high-flow, lowpressure applications. It offers additional advantages such as simple structure and low cost.

### Performance

- High Cv to valve weight ratio compared to conventional control valves
- Throttling controls 60° rotation, on-off controls 90° rotation
- Excellent flow control range ability

### Design Flexibility

- Triple-offset design
- Metal / Laminated / Soft seat available
- Actuator mounting flange dimensions in accordance with ISO 5211
- Swing through and tight shut-off seated trim design.
- Flange types are available
- Full range of bonnet and packing design to suit various temperatures and fluids
- Provides fire safe sealing, which combines a soft seal ring and metal seal ring.
- Full range of body and vane material options. Hard facing available



07

Size	2" - 100"	Max Press. Rating	ANSI 150 ~ 1500
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08

Size	3/4" - 2"	Max Press. Rating	ANSI 150
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## Teflon Block Valves

KOMOTO® Teflon block valves are designed to be used for chemical injection service and acid or alkaline fluid service. This valve has very compact design assembled with multi-spring diaphragm actuator.

### Performance

- Integral body construction – All the wetted parts of the valve body are made of PTFE and realized superior anti-corrosive valve for acid or alkaline service.
- Main body is covered with stainless steel case providing high durability and long life.
- Compact design.
- Wide Cv range and controllability.

### Tank Bottom Flush Valves

KOMOTO® Tank bottom flush valves are designed for the convenient and fast draining of tanks (with or without steam jackets).

**Performance**

- Fast draining.
- No pocket or dead area in the body.

**Design Flexibility**

- The valves are made in stainless steel, nickel alloys, carbon steel, etc.
- The valve can be fabricated with steam jackets.
- Cleaning connection and plug are available (option).
- Quick-opening disc (standard) equal percentage or linear (option).

**Design Integrity**

- Valve size are determined by outlet flange.
- The outlet connection line is at approximately 45° to the center line of the valve.
- Large stem diameter.



09

Size	1" - 10"	Max Press. Rating	ANSI 150 ~ 300
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### Desuperheaters

KOMOTO® desuperheaters are designed to control steam temperature precisely and economically. KOMOTO's desuperheaters can optimize steam temperature, which can save fuel and in turn save investment cost.

**Maintenance**

- Venture style, fixed nozzle type, variable multiple nozzle type, steam conditioning type are available.
- Easy Installation & compact design.
- Excellent spray quality.
- Large control range.
- Long life.

**Design Flexibility**

- Tailor made design for each process.  
(No restriction for water or steam side flange)
- Carbon steel, Stainless Steel, Alloy steel materials are available



## Diaphragm Actuators

KOMOTO® linear actuators are designed to control the flow, level and the pressure of fluid to respond to demand for fine process control and various plant systems. The 3600 actuators will satisfy customer's needs with its high reliability, durability and performance.

### Specifications

- Maximum strength and reliable performance
- Compact design
- Multiple spring design



## Piston Actuators

KOMOTO® linear piston actuators are compact and provide long stroke and high thrust.

### Specifications

- Long stroke (max. 600mm)
- High thrust
- Good Reliability
- Low hysteresis
- Light weight
- Easy maintenance
- Double acting and spring return
- Wide selection of accessories are available



## Cylinder Actuators

KOMOTO® Rotary cylinder actuators are designed to operate rotary valves such as ball valves, butterfly valves and plug valves for throttling or on-off service.

KOMOTO® Rotary cylinder actuators have unique canted scotch-yoke mechanism

### Specifications

- Ideal high torque
- Light weight
- Double acting and spring return
- Wide selection of optional accessories available
- Low hysteresis
- Mounting flange dimensions in accordance with ISO 5211
- Solenoid valve pad in accordance with "NAMUR"



## Accessories

### Positioners : Available specifications

- Type: E/P, P/P, Smart
- Actuator type: Linear, Rotary
- Communication: 4-20mA, Hart, Fieldbus, Profibus
- Explosion proof type: ExialICT6, ExdIICT6/T5, etc.
- Enclosure: IP66
- Material: Aluminum die-casting, Stainless steel
- KOMOTO® (MH series) or other global brands

### Air filter regulators : Available specifications

- Material: Aluminum die-casting, Stainless steel
- High ambient temperature option (100°C) available.
- Connection: PT, NPT
- KOMOTO® (MR series) or other global brands



▶ MH-750



▶ MH-740



▶ MH-700



▶ MR-5000R

# SOLUTION TO SEVERE SERVICE

## Comprehensive portfolio of severe service solutions

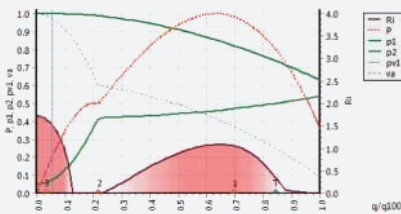
KOMOTO severe service products are engineered for customer's specific severe service conditions. Our wide range of severe service product portfolio provides the most optimized solutions to cavitation, flashing, and noise in various pressure, temperature, even fluid with particles.



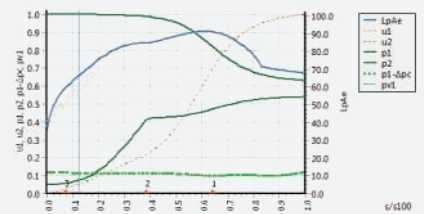
## Accurate prediction & designing technologies

KOMOTO utilizes cutting edge technologies for prediction of cavitation, flashing, and noise in severe service conditions. By having various types of multi stage trims, KOMOTO can offer most optimized solutions for each service condition.

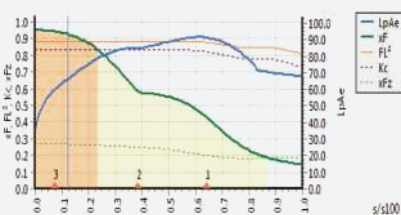
### Plant Characteristics Calculation



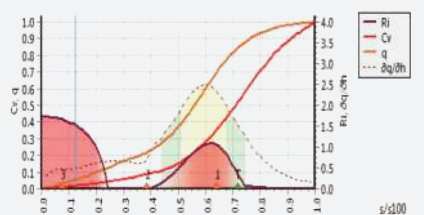
### Pressure Characteristics Calculation



### Valve Modifiers, Sound Data Calculation

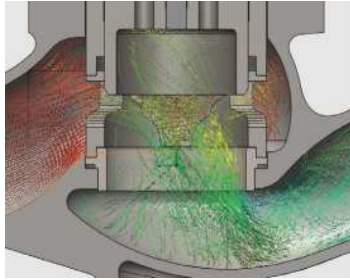


### Flow Characteristics Calculation

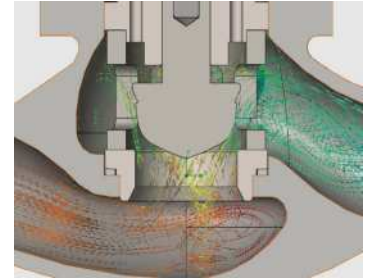


### Standard Service Trims

Unbalanced Contoured Single Port (S-P TYPE)



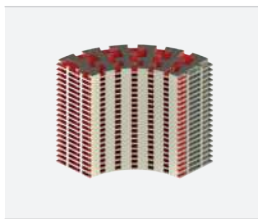
Unbalanced Contoured Single Port (C-B TYPE)



### Severe Service Trims



H Series Trim  
(Anti-Cavitation)



M Series Trim



T Series Trim

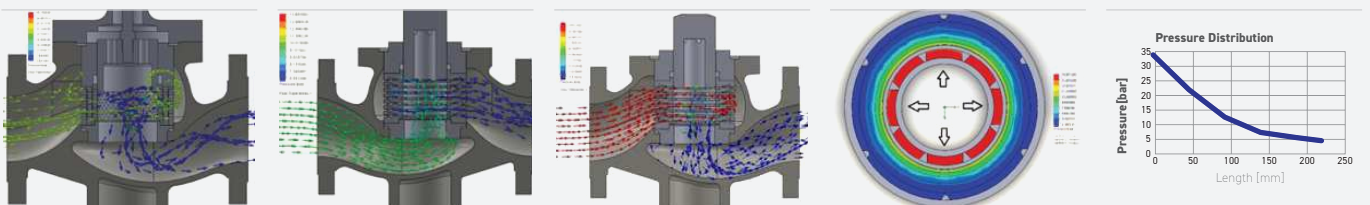


C Series Trim

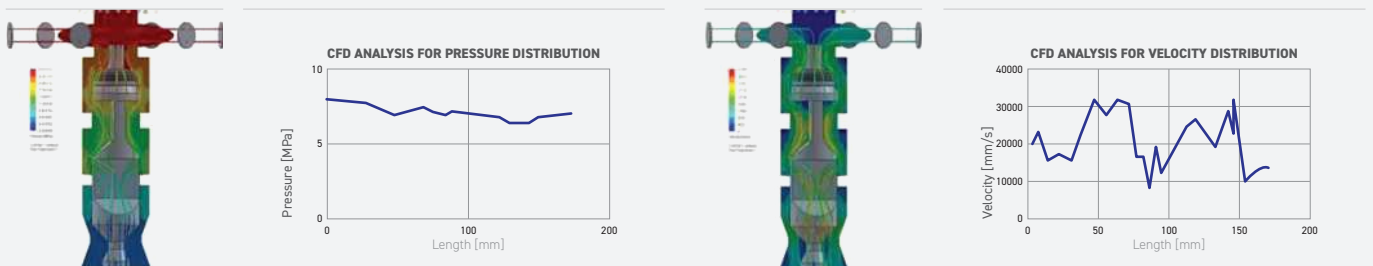


S Series Trim

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



### S Series Trim





## Verified design based on empirical evidence

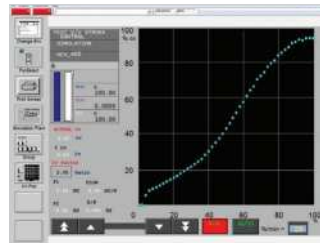
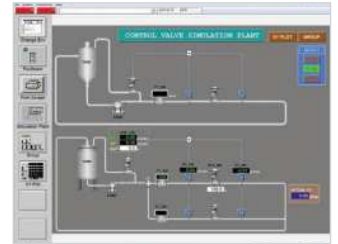
KOMOTO has been carrying out endless tests on its several fully automated pilot plants for valve and self-acting pressure regulators to verify flow capacity, flow characteristic, rangeabilities, pressure loss, flow coefficients, valve performance and so on. Numerous verification processes between computerized prediction and collected empirical data have been made for superior accuracy of all products.

### Pilot Plant for Control Valves



#### Characteristics

- Schneider Electric DCS System
- Flow Simulation
- Actual Cv<Max.> test
- Inherent Flow Characteristic Curve test
- Pressure Loss test
- Valve Travel & Actual Cv test

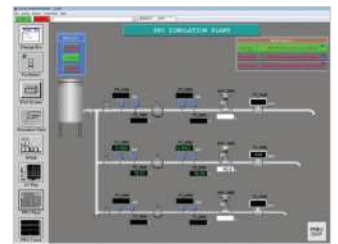


### Pilot Plant for Pressure Regulator



#### Characteristics

- Schneider Electric DCS System
- Flow Simulation
- Actual Cv<Max.> test
- Inherent Flow Characteristic Curve test
- Droop & Lock up test



# AFTER SALES SERVICE

## After Sales Service

### COMPLETE RANGE OF PRODUCTS FOR FLUID CONTROL SYSTEM

KOMOTO provides total life cycle management support of all products with full range of training, engineering, field services.

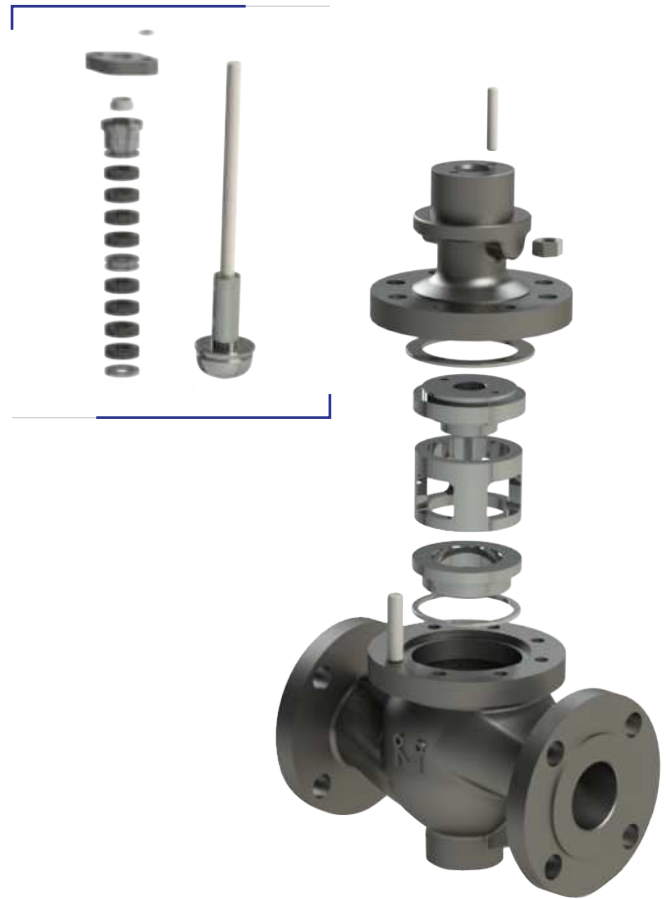
By utilizing modular design and quick change trim package, hundreds of standardized modular parts are ready for quick service to deliver a lower total cost of ownership.



#### Modular Design



#### Quick Change Trim Package





## WARRANTY / REMEDY

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Korea Motoyama Inc. warrants goods of its manufacture as being free of defective materials and faulty workmanship for 12 months from the date of shipment, unless otherwise specified. In this period, all of our products claimed by original defects may be returned to our factory after notice and authorization by us. If warranted goods are returned to Korea Motoyama Inc. during the period of coverage, it will be repaired or replaced without charge for those items it finds defective. Such defects shall be exclusive of the effects of corrosion, erosion, normal wear or improper handling and storage. In case our engineers have field service, the user shall detach and install valves by his cost. Determination of the suitability of the Products for the use contemplated by the buyer or buyer's customer(s) is the sole responsibility of the buyer in connection therewith. The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose.

### **KOREA MOTOYAMA INC.**

29, Hagunsandan 1-ro, Yangchon-eup, Gimpo-si,  
Gyeonggi-do, Korea (zip : 10049)

T. +82-31-996-5252 F. +82-31-996-2992

E. [info@komoto.co.kr](mailto:info@komoto.co.kr)

[www.komoto.co.kr](http://www.komoto.co.kr)

### **MOTOYAMA INC., JAPAN**

No. 14-26, 1-Chome, Haginaka, Ota-Ku, Tokyo, Japan

T. +81-3-3732-3696 F. +81-3-3738-9371

E. [info@motoyama-inc.co.jp](mailto:info@motoyama-inc.co.jp)

[www.motoyama-inc.co.jp](http://www.motoyama-inc.co.jp)

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