


# The solution to your valve and piping problems has a name.



## Overview: Butterfly Valve



The largest selection in the world  
in thermoplastic valves.



# Butterfly Valve

## Overview



# Why ASAHI AV ?

Asahi Yukizai was founded in March 1945 as a company that built aircraft parts from wood rather than metal. Since the foundation of the company, Asahi Yukizai has continued to grow with a DNA that finds organic alternatives to metal materials, and is still one of the global leaders in the development and manufacture of thermoplastic valves and pipeline systems, setting new standards year by year.

Today, we offer solutions to customers in a wide range of fields in three core businesses;

## » “ASAHI AV” - Valve & Piping Systems Business

Started the manufacturing of thermoplastic valves first in the world in 1956.

## » Resin Business

Founded in the core technologies of phenol resin polymerization and synthesis technologies which allows Asahi Yukizai to develop unique raw materials and to offer outstanding product performances.

## » Water Treatment & Natural Resources Development Business

Pursues the potential of water and renewable resources and provides solutions for design and realization of enormous projects and infrastructures.

## Made in Japan

We take pride in quality control every step of the way through the raw materials, molding, processing, precision measuring, assembly, testing, evaluation and analysis, and finally, through our “Action Guarantee”, and all these steps are carried out in Nobeoka, Japan. At our raw material factory, we do everything from blending our main raw materials to manufacturing pellets. To ensure durability of our valves and actuators, our pass-fail criteria are based on 100,000 successful open/close cycles. Even after products clear the pass-fail criteria, we check their limit values. We carry out durability testing on valves with our customers’ use cases firmly in mind. In order to eliminate human error, we ensure that all actions through the process are guaranteed - what we call “Action Guarantee”.

Our corporate culture to work closely with our customers and fully solve their problems that they face is the very thing that has supported our growth for more than 70 years. Asahi Yukizai remain dedicated to creating products that please and satisfy customers by solving their problems.

# Approvals and Certificates

## Quality management

For Asahi Yukizai, quality is a decisive criteria for ensuring long-term relationships with our customers and business partners, and it is a value shared by every employee as an ISO 9001 certified company. Besides certifications, we are always working to reach the highest quality level towards one of our most important objectives: the satisfaction of our customers and stakeholders.

## Environmental management

Asahi Yukizai introduced an environmental management system certified to ISO 14001 in order to promote and continually improve our environmental performance. For us, sustainability is a clear goal.

## International Standards

Complying with its own national and international standards is more than just a duty for Asahi Yukizai. ASAHI AV products are produced and tested in accordance with the applicable standards and laws to be delivered globally. For instance, all ASAHI AV butterfly valves are manufactured in accordance with ISO 16136.



# Applications in Industry

We believe in making a world without corrosion. From heavy industry and chemicals, to water treatment, desalination plants, device manufacturing, and even aquariums, Asahi Yukizai is here to provide safe and reliable solutions that support people all across the world. We offer an extensive range of ASAHI AV thermoplastic valves and associated products to suit many demanding processes and harsh environments. ASAHI AV valves are particularly durable and resistant to aggressive media and it is the right solution for your application.



Chemical  
Industry Plants



Steel  
Manufacturing



Seawater  
Desalination  
Plants



Water  
Treatment  
Services



Food  
Factories



Power  
Plants



Semiconductors  
and  
LCD Factories



Aquaculture



Agricultural  
and Fertilizer



Aquariums



Refineries



Spa and  
Hot Spring  
Facilities



Public  
Facilities

The right product for all your needs

# Butterfly Valves

Asahi Yukizai's ASAHI AV range of butterfly valves provides solutions for every application. From simple shutoff valves to fully automated valves, from the harshest chemicals to the toughest environmental conditions, our fluid flow solutions provide extended life cycle and dependable performance. Our tradition is to never overlook challenges and our priority is to meet your requirements.

DN40 – 350

## Butterfly Valve Type 57

Butterfly Valve Type 57 is a quarter-turn valve with equal percentage type flow characteristics that is ideal for chemical processing and wastewater applications. Its spherical symmetric design of the disc allows smooth operation, reduces flow turbulences, and achieves excellent CV values. The massive sealing design overcomes problems that may occur in case of slurry in the media. The valve provides moderate flow control and therefore can be used in both on/off and modulating services. Plastic construction gives the valve superior corrosion resistance.



DN400 – 600, PN3.5 – 6

## Butterfly Valve Type 56 & 75

Type 56 (DN400) and Type 75 (DN450 – 600) valves are quarter-turn valves with equal percentage type flow characteristics. These valves are ideal for chemical processing and wastewater applications and have the advantage of a robust construction with a one-piece body and a full-plastic gear box. Strong sealing on the elastomer seal in both flow directions is ensured. They provide moderate flow control and therefore can be used for both on/off and modulating service.

**DN400 – 600, PN7.5**

## **Butterfly Valve Type 56D & 75D**

Valve body made of PDCPD (polydicyclopentadiene) ensures the valve to withstand higher pressure rating than the standard Type 56 or 75 for all sizes. These valves are intended for shutting down and controlling aggressive or corrosive liquids.



**DN700**

## **Butterfly Valve Type 58**

Butterfly Valve Type 58 has been developed using the latest technology and production methods which ensure a quality product from design through production resulting in high performance. Weight of the valve has been cut by roughly 60% compared with conventional metal valves. The valve is an excellent choice for seawater applications.

## **Butterfly Valve Type 55IS**

Butterfly Valve Type 55IS features an epoxy powder-coated ductile cast iron body with PTFE disc and liner. It is designed for use in applications where extremely aggressive chemicals are used and conventional rubber liners and thermoplastic discs are not suitable, such as chlorination, steel pickling and other chemical processings.







## Lug Butterfly Valve Type 57L

The Type 57L incorporated a lug function into the design of Butterfly Valve Type 57. The lug style valve has metal threaded inserts at both sides of the valve body and enables easy and uncomplicated maintenance on reservoirs, tanks and pipe systems without extensive emptying and at existing operating pressure. The valve is ideal for water treatment and aquaculture applications.

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## Rotary Damper Valve

Rotary Damper Valve is specifically designed for ventilation and exhaust systems, not for complete shut-off but for controlling the volume of corrosive fumes. It is perfect for applications as diverse as chemical plant, water treatment facilities, electroplating, gas scrubber systems and laboratories.



Small details make big difference

# Butterfly Valve

- Safe, durable and reliable -



## 2 ISO mounting pad interface

The integrated ISO top flange interface for automation allows to convert the manual version into a pneumatic/electric actuated valve easily.

## 1 Lockable handle lever

Handle lever features a lockable hole as standard. Attach a padlock to prevent erroneous operations and ensure safety. Lever colour choices of standard red and blue.



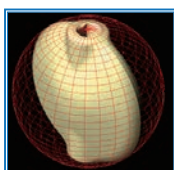
## 3 Placement of O-rings

In order to prevent infiltration from the outside through the lever, O-rings and rubber-attached washers are placed effectively.



## 4 Seat with double ribs

Seat incorporates double ribs and eliminates the need of additional gaskets when installing the valve.



## 5 Symmetric spherical disc

The symmetric spherical disc shape that was designed with the full use of CAE allows an excellent flow rate characteristic and smoother operation and reduces flow turbulences.

This industrial ASAHI AV butterfly valve's optimized design is well suited for large bore lines and is low profile; making it ideal for tight spaces and is suitable for abrasive and aggressive media. Small details are there to offer you unconditional safety. For each and every demand of our customers, we have a solution.



**6 Full-plastic gear box.  
Lockable gear as option**

Alternatively to the lever, our industrial, non-metallic gear box offers superior corrosion resistance. Lockable gear box is also available as option.

**7 PP stem retainer**



PP stem retainer and tapping screws prevent the stem from coming out of the valve accidentally when switching manual/automated operations.

**8 Throttling plate  
for fine opening  
adjustment**



Lever handle features the throttling plate that gives you 19 fine adjustment locking positions.

**9 Flange stopper**

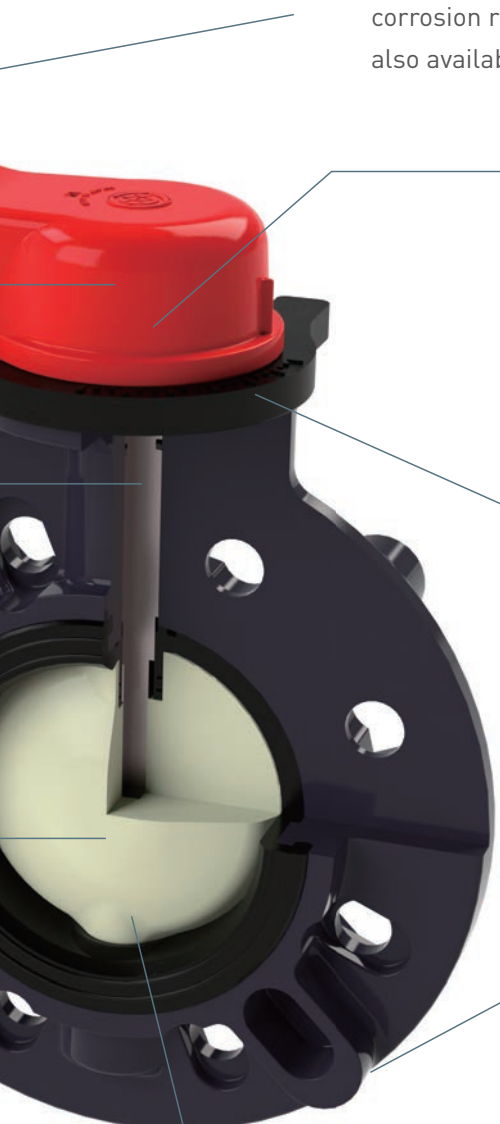


Stopper design to prevent bolt over-tightening and gasket over-compression caused by flanges.

**10 Triple sealing  
barriers**



Triple sealing barriers prevent the stem to directly contact corrosive fluid and guarantee extreme safety for operators.

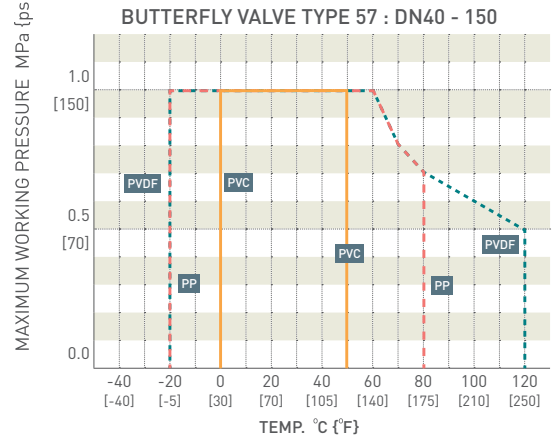


# Butterfly Valve Type 57

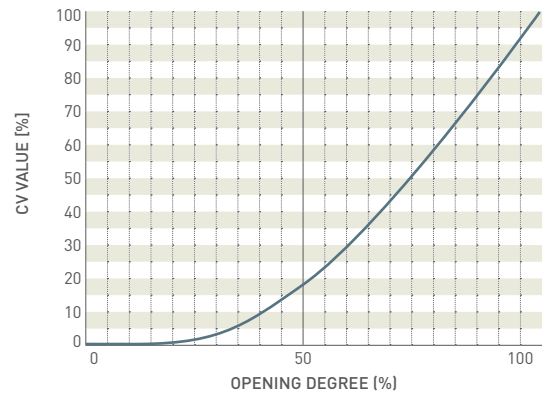
The current version of ASAHI AV's thermoplastic butterfly valve is the result of over 70 years' product development and experience in multiple industrial fields and applications. We provide a dependable way to handle corrosive chemicals, including sulfuric and hydrofluoric acid, nitric acid, oxidizing chemicals, caustics, solvents, halogens, and various other tough fluids.



## Working pressure vs. Temperature



## CV Value



## Superior stem materials for aggressive chemicals

Stainless steel 403 is the standard choice for our butterfly valves stem material as it is a non-wetted part. Upon request, however, stainless steel 316, 316L or Alloy C-276 can be selected for absolute unconditional safety.

## Options and Accessories

From extending the stem to switching manual/automatic operations, ASAHI AV butterfly valve accessories are always there to offer you customized solutions for your special needs.

Stem Extension



Vertical / Horizontal Chain Operator



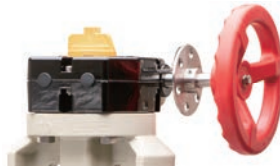
Top Gear



Blue Handle



Locking Device



Limit Switch



## Automations

Thanks to ISO/DIN interface, ASAHI AV valves can be easily converted from manual to actuated. A wide range of actuators and accessories are available. Please contact our local sales office for details.



### Pneumatic Actuator / Type TA

- » Horizontal actuator reduces installation piping space.
- » Reduces costs by mounting and replacing options easily on actuator after installation.
- » Air piping is compatible with NAMUR standard.
- » Reliable sealing performance achievable with Scotch Yoke mechanism, which has high output torque when fully closed.



### Electric Actuator / Type T

- » Light and compact design.
- » Waterproof design protects against rain water or condensation and is equivalent to IP65.
- » Manual override function is equipped and allows you to operate with a standard Allen wrench, when necessary.
- » Equips conspicuous opening display indicator.

Made for the extreme  
For applications with the most aggressive chemicals

# Butterfly Valve Type 55IS

- Long-lasting, flexible and compact -



## Long-lasting

- ›› Powder-coated cast ductile iron body for excellent corrosion resistance
- ›› Highly corrosion-resistant PTFE disc and seat are the only parts in contact with the process media
- ›› Non-wetted stainless steel stem, isolated from process media
- ›› 50% less of gas permeation

## Compact

- ›› High CV value achieved with strong, thin disc
- ›› Reduces costs thanks to 50% weight-cut compared with standard metal valves
- ›› Reduces installation space

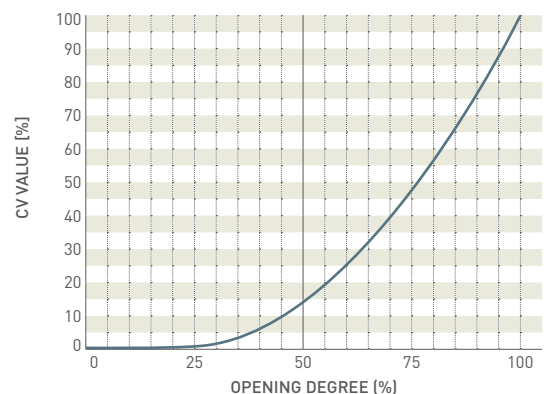
## Flexible

- ›› F-F dimension conforms to ISO 5752 short pattern which allows to directly replace metal valves
- ›› Top flange conforms to ISO 5211 for automation

Dimensions	DN50 – 400 (Gear)
	DN50 – 125 (Lever)
Body	Ductile Cast Iron (FCD-S)
Disc / Seal	PTFE
Temperature	-20°C – 100°C (-5°F – 210°F)
Working Pressure	10 bar (1.0 MPa) / DN50 – 300
	7 bar (0.7 MPa) / DN350 & 400
Standards	DIN, ANSI, JIS
Connection	ISO 5752 short pattern
Top Flange Interface	ISO 5211

See our technical catalogue for more details.

CV Value



### 1 Overtightening prevention structure

Body is designed to prevent excessive deformation of the seat that could happen from overtightening of the flanges, extending the valve's durability.

### 2 Primary and back-up stem seals

There are primary and back-up stem seals to give additional safety, avoiding leakage outside through the stem.

### 3 Bonded PTFE seat with cushion rubber

Because cushion rubber is completely bonded to PTFE seat, the clamping force is properly and stably transferred to the seat, and will prevent of rubber being torn.

### 4 Optimized cushion rubber design

There is a gradual change in thickness of cushion rubber in order to optimize the clamping force.

### 5 Gas barrier

3mm-thick PTFE seat prevents gas permeation by roughly 50% compared with our conventional model, increasing product life time and protecting the actuator.



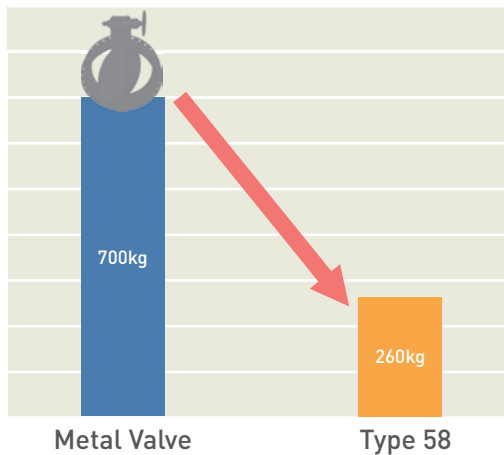
## The large thermoplastic valves

# Butterfly Valves Type 58

With long experience in developing thermoplastic valves, Asahi Yukizai has been offering the large thermoplastic butterfly valves for more than 50 years. The available material selection for body, disc, and sealing makes ASAHI AV valves in big dimensions suitable for different applications from sea water to chemical waste water treatment. In several applications, thermoplastic valves are the ideal solution offering a lot of advantages compared with conventional metal valves.

### Advantages compared to metal valves:

- >> Corrosion-free and Longlasting
- >> Easier and safer installation (Lightweight : 60% less compared to metal valve)
- >> Reduces costs for shipping, installation and anchoring, no cranes needed on site
- >> Maintenance-free

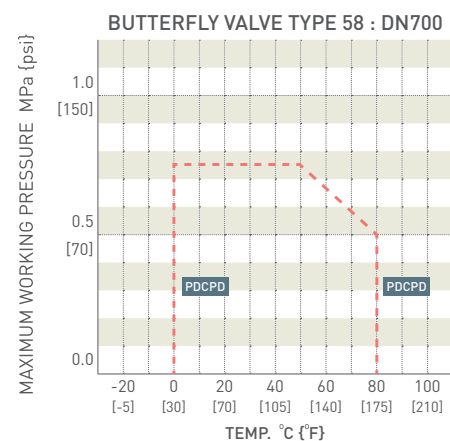


Type 58 (DN700)

Dimensions	DN 700
Operation	Gear
Body	PDCPD
Disc	PP, PVDF
Seal	EPDM, FKM
Temperature	0°C – 80°C (30°F – 175 °F)
Working Pressure	7.5 bar (0.75 MPa)
Standards	DIN, ANSI, JIS
Connection	ISO 5752 short pattern
Top Flange Interface	ISO 5211

See our technical catalogue for more details.

### Working pressure vs. Temperature





## Flawless in desalination

Desalination is a process consists of various steps that removes dissolved salts and minerals from brackish seawater in order to produce clean, fresh drinking or service water.

Due to the considerably corrosive nature of seawater, metallic valves that are being used in desalination facilities get rusted and damaged, which will simply cause more frequent maintenances resulting in increasing costs; Therefore, corrosion resistance is one of the main requirements to be considered in the selection of materials. That's when Asahi Yukizai, the expert in thermoplastics, steps in and solves the problem.



It's common to see metallic butterfly valves installed with plastic piping at desalination plants. These metal butterfly valves tend to corrode and not function properly in a relatively short period of time.

Consider replacing corroded metal valves with thermoplastic butterfly valves. Replacing with Type 58 Butterfly Valve is easy thanks to the same face-to-face dimension as a metal valve, and it offers many years of maintenance-free service going forward.



# Size / Operation Chart

## >> General Info.

Product				
	Butterfly Valve	Butterfly Valve	Butterfly Valve	Butterfly Valve
Type	Type 57	Type 56	Type 75	Type 56D

## >> Operations

DN40 (1 1/2")	L / G / P / E			
DN50 (2")	L / G / P / E			
DN65 (2 1/2")	L / G / P / E			
DN80 (3")	L / G / P / E			
DN100 (4")	L / G / P / E			
DN125 (5")	L / G / P / E			
DN150 (6")	L / G / P / E			
DN200 (8")	L / G / P / E			
DN250 (10")	G / P / E			
DN300 (12")	G / P / E			
DN350 (14")	G / P / E			
DN400 (16")		G / P / E		G / P / E
DN450 (18")			G / P / E	
DN500 (20")			G / P / E	
DN600 (24")			G / P / E	
DN700 (28")				
DN800 (32")				
DN900 (36")				
DN1000 (40")				
DN1100 (44")				
DN1200 (48")				

For more detail, please contact us or refer to our technical datasheets and catalogue.

L = Lever style



G = Gear style



P = Pneumatic actuated



E = Electric actuated





Butterfly Valve

Butterfly Valve

Butterfly Valve

Butterfly Valve

Butterfly Valve

Rotary Damper Valve

Type 75D

Type 58

Type 55IS





Type 57L

Type 57TL

					L/G/P/E
		L/G			L/G/P/E
		L/G			L/G/P/E
		L/G	L/G/P/E	L/G/P/E	L/G/P/E
		L/G	L/G/P/E	L/G/P/E	L/G/P/E
		L/G	L/G/P/E		L/G/P/E
		G	L/G/P/E	L/G/P/E	L/G/P/E
		G	L/G/P/E	L/G/P/E	L/G/P/E
		G	G/P/E	G/P/E	L/G/P/E
		G		G/P/E	L/G/P/E
		G			L/G/P/E
G/P/E					L/G/P/E
G/P/E					L/G/P/E
G/P/E					L/G/P/E
	G				

# System Overview at a Glance

## >> General Info.

Product				
	Butterfly Valve	Butterfly Valve	Butterfly Valve	Butterfly Valve
Type	Type 57	Type 56	Type 75	Type 56D
Dimension: DN (inch)	DN40 - 350 (1 1/2" - 14")	DN400 (16")	DN450 - 600 (18" - 24")	DN400 (16")
Nominal Pressure: PN (MPa)	PN7.5 - 10 (0.75 - 1.0 MPa)	PN6 (0.6 MPa)	PN3.5 - 5 (0.35 - 0.5 MPa)	PN7.5 (0.75 MPa)
Top Flange Interface	ISO 5211	ISO 5211	ISO 5211	ISO 5211

## >> Operations

Lever	•			
Gear	•	•	•	•

## >> Connections

Wafer	•	•	•	•
Lug Wafer				

## >> Body Materials

PVC-U	•			
PP	•	•	•	
PVDF	•	•	•	
PDCPD				•
FCD-S				

## >> Disc Materials

PVC-U	•			
PP	•	•	•	•
PVDF	•	•	•	•
PTFE				
PDCPD				

## >> Seal Materials

EPDM	•	•	•	•
PTFE				
FKM	•	•	•	•
FKM-F	•	•	•	•
FKM-C	•	•	•	•
NBR	•	•	•	•
Others / Special Materials	•	•	•	•

## >> Options & Accessories

Locking Device	•	•	•	•
Label / Chain Tag	•	•	•	•
Special Stem Material	•	•	•	•
Wetted Parts Lubricant Free	•			



Butterfly Valve	Butterfly Valve	Butterfly Valve	Butterfly Valve	Butterfly Valve	Rotary Damper Valve
Type 75D	Type 58	Type 55IS	Type 57L	Type 57TL	
DN450 - 600 (18" - 24")	DN700 (28")	DN50 - 400 (2" - 16")	DN80 - 250 (3" - 10")	DN80 - 300 (3" - 12")	DN40 - 600 (1 1/2" - 24")
PN7.5 (0.75 MPa)	PN7.5 (0.75 MPa)	PN7 - 10 (0.7 - 1.0 MPa)	PN10 (1.0 MPa)	PN7.5 - 10 (0.75 - 1.0 MPa)	PN0.5 - 1 (0.05 - 0.1MPa)
ISO 5211	ISO 5211	ISO 5211	ISO 5211	ISO 5211	ISO 5211
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•	•	•	•	•	•
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For more detail, please contact us or refer to our technical datasheets and catalogue.

## System Overview

Asahi Yukizai's comprehensive product range up to DN1200 offers high product reliability. We are able to provide you complete system solutions for your applications. Customized solutions are also available on request.



### PVDF System

Excellent chemical resistance and thermal stability. Connections choices of socket, spigot, flange and threaded.

Diameters: DN10 – DN700 (3/4" – 28")

Temperature: -40 – 120 °C (-40 – 250 °F)



### PP System

High chemical resistance. Connections choices of socket, spigot, flange and threaded.

Diameters: DN10 – DN700 (3/8" – 28")

Temperature: -20 – 80 °C (-5 – 175 °F)



### PVC-U System

Solvent cementable plastic, universal use, very good chemical resistance, easy to join with adhesives. Connections choices of socket, spigot, flange and threaded.

Diameters: DN10 – DN350 (3/8" – 14")

Temperature: 0 – 60 °C (30 – 140 °F)



### PVC-C System

Solvent cementable plastic, universal use, very good chemical resistance, easy to join with adhesives. In grey or brown colours. Connections choices of socket, spigot, flange and threaded.

Diameters: DN10 – DN100 (3/8" – 4")

Temperature: 0 – 90 °C (30 – 195 °F)



### EL-PVDF System

Unique material for higher chemical resistance and thermal stability. Suitable for electrolysis processes. Flange connection.

Diameters: DN15 – DN150 (3/4" – 6")

Temperature: -40 – 120 °C (-40 – 250 °F)

#### And much more...

##### >> Large diameters

Products are available up to DN1200.

##### >> Raw materials

Variety of materials for valves and seals available.

##### >> Automation

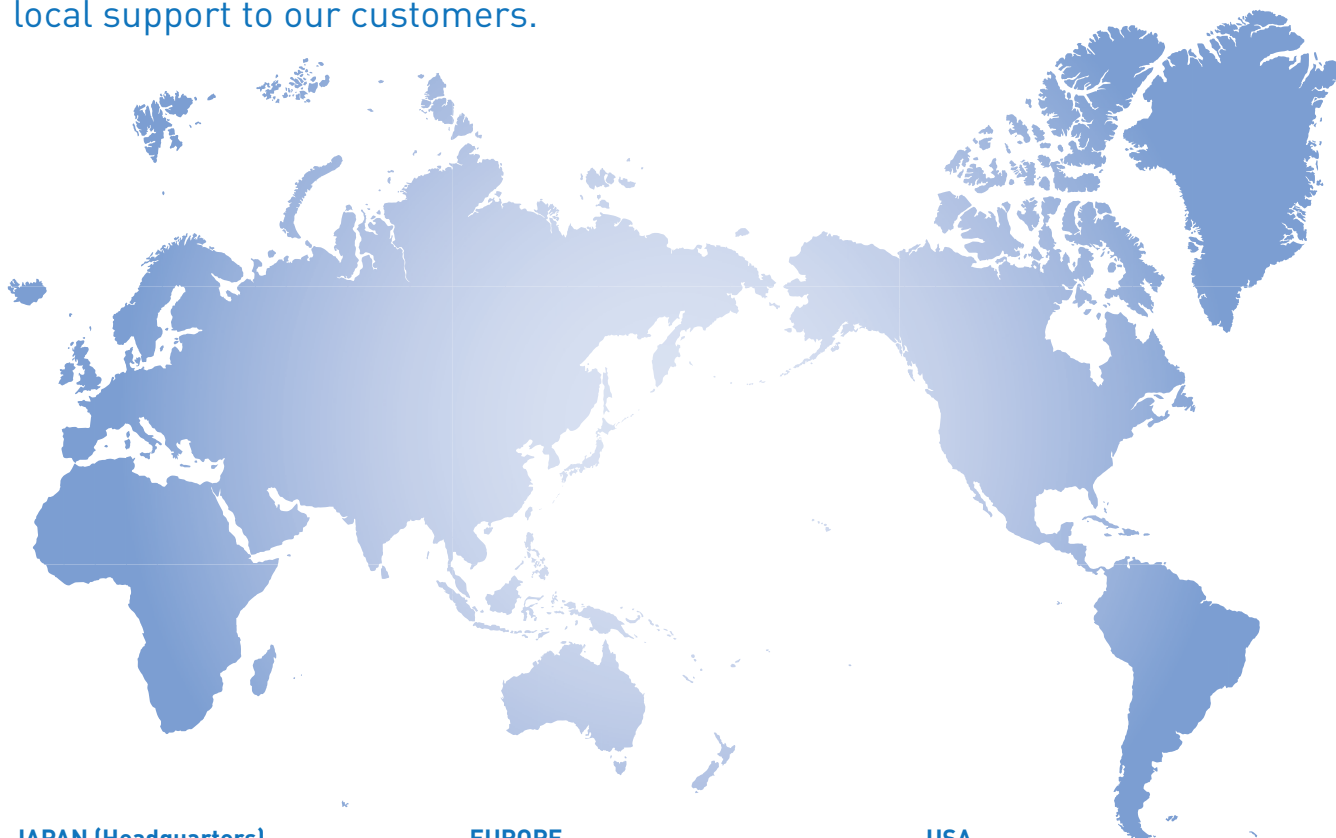
Extensive range of pneumatic and electric actuators.

For more details, please contact us.



## We are close to you

Our branch offices and global sales network guarantee local support to our customers.



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