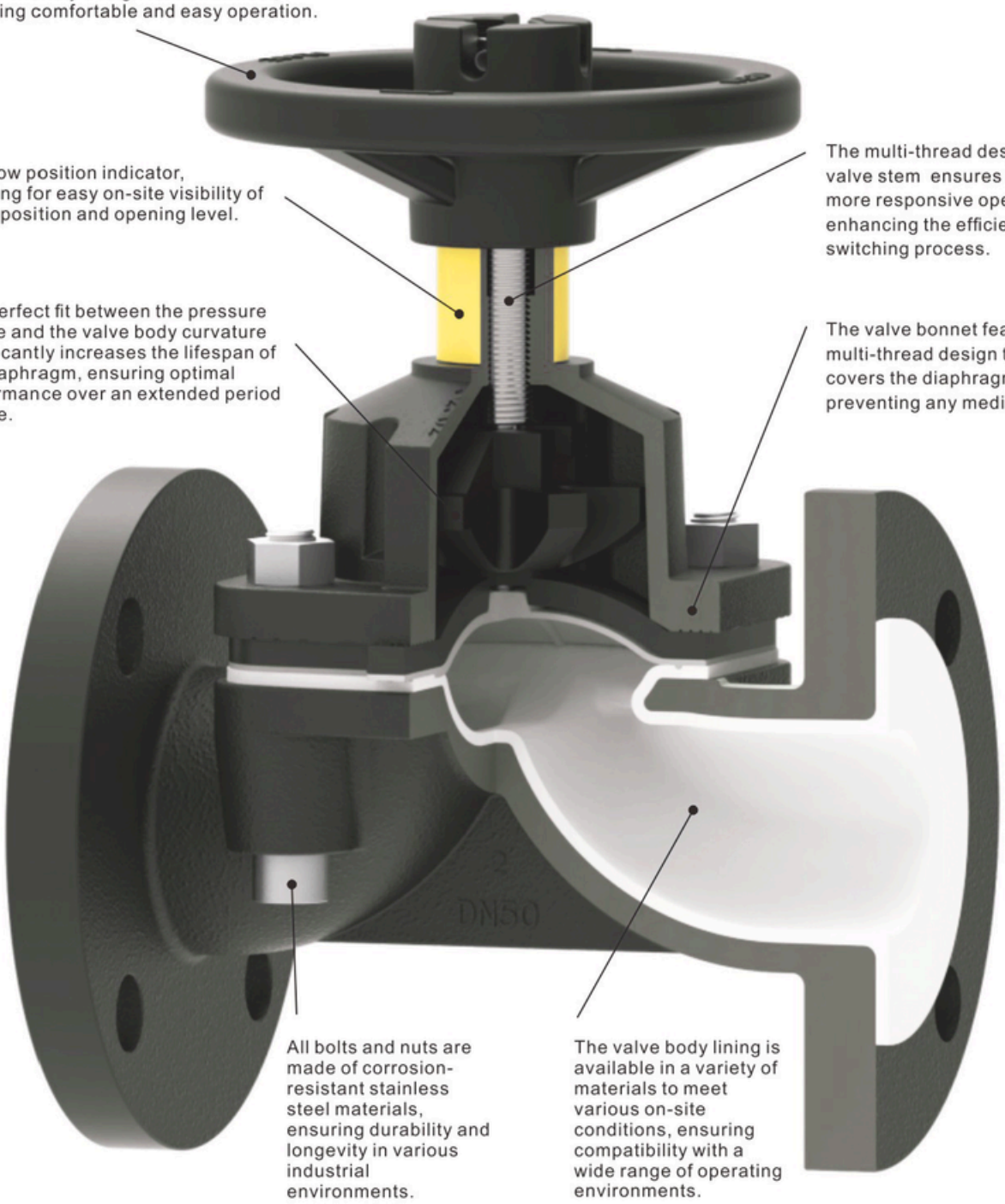
KPI GROUP

https://www.kpivalves.com

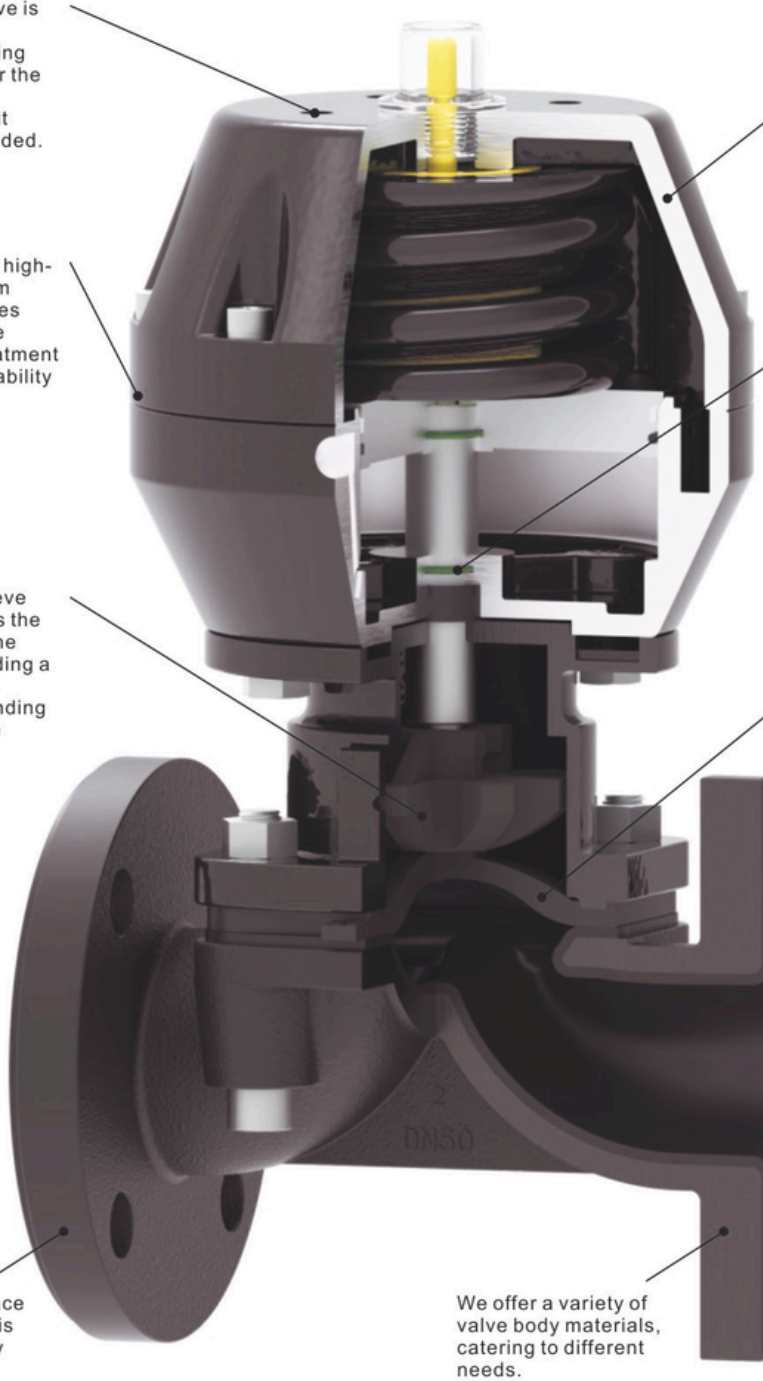
Introducing our hight cost-effective product

Drawing on our extensive experience in anti-corrosion chemical, water treatment, and other fields, we have developed a new generation of diaphragm valves. Our goal is to reduce production costs and increase the lifespan of fluid processing equipment for our customers. Whether you require fluid control solutions for chemical processing, water treatment, or any other industry, our new generation of diaphragm valves is among the most reliable products you can find.



Pneumatic Diaphragm Valve

Suitable for industries such as chemical, electrical, water treatment, food and beverage, etc. The pneumatic cylinder is suitable for various corrosive environments.



The top of the valve is equipped with pre-drilled mounting holes, allowing for the installation of positioners or limit switch box as needed.

Constructed from high-strength aluminum material, our valves undergo a surface spray coating treatment for enhanced durability and resistance to environmental corrosion.

The pressure sleeve precisely matches the 1:1 curvature of the valve body, providing a stronger seal and significantly extending the lifespan of the diaphragm.

The exterior surface of the valve body is coated with epoxy paint, providing excellent resistance to environmental corrosion.

The cylinder with piston design ensures high strength and minimizes the risk of leakage.

The sealing ring is made of wear-resistant and oil-resistant rubber, ensuring a long lifespan and minimizing the risk of leakage.

The diaphragm is made of reinforced material, ensuring a longer lifespan and stronger sealing performance.

The hole spacing of flange can be customized according to requirements, facilitating easy installation.

The valve body is designed without grooves, ensuring smoother fluid flow.

We offer a variety of valve body materials, catering to different needs.

Types and Specifications of Diaphragm Valve

Weir type flanged diaphragm valve ⌀ DN15—DN350

Valve Body Material:
- Cast Iron
- Cast Steel
- Stainless Steel

Lining Material:
- Rubber lining
- PTFE lining

These options make the diaphragm valve suitable for a wide range of corrosive and abrasive industrial applications.

Threaded Diaphragm Valve ⌀ DN15—DN50

Body Material:
-cast iron
-stainless steel

Applications:
-water treatment
-fire protection
-others

Type:
-weir type
-straight-through

Sanitary Diaphragm Valve ⌀ DN8—DN100

Weir Type,
made of stainless steel.
The interior is polished for use in industries such as food, pharmaceuticals, and biotechnology.

Straight-through flanged diaphragm valve ⌀ DN25-DN300

Suitable for viscous or abrasive media
The lining material and diaphragm material are primarily made of EPDM,which is a kind of wear-resistant rubber.

Plastic Diaphragm Valve with double union ⌀ DN15—DN80

Body Material:
-UPVC, PPH, CPVC, and PVDF

Connection:
-solvent bonding,socket fusion,heat fusion

Mainly used for high corrosive and high salinity media in water treatment.

Flanged Plastic Diaphragm Valve ⌀ DN15-DN150

Body Material:
UPVC, CPVC,PPH, CPVC, and PVDF,etc.
The valve can opertate in highly corrosivs environments.

Body Material and Lining Material

Lining Material Test

All lined valves must undergo individual tests for the integrity
Lined Rubber, Butyl Rubber, Spark test: 14kV AC/DC
Lined Rubber, HRL, Spark test: 17kV AC/DC
Lined Plastic, Spark test: 20kV AC/DC

Body Material

Cast Iron **BS EN 1561**	Flange Connection	**DN15-DN350**
Ductile Iron * **BS EN 1563** **BS EN 1563**	Thread Connection Flange Connection	**DN15-DN50** **DN15-DN150**
Cast Steel	Flange Connection	**DN15-DN300**
Bronze# **BS EN 1982** **BS EN 1982**	Thread Connection Flange Connection	**DN15-DN50** **DN15-DN100**
Stainless Steel **BS 3100** **BS 3100**	Thread Connection Flange Connection	**DN15-DN50** **DN15-DN150**

Note: Materials marked with * are commonly used, while materials marked with # are non-standard and require customization.

Specifications for rubber-lined valve

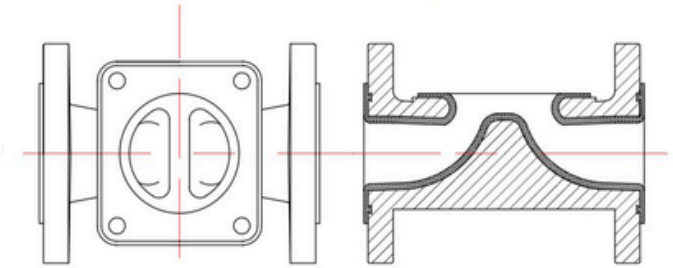
Size Range: DN20-DN350
Soft Rubber Lining: EPDM
Hardness: 60-66° IRHD (International Rubber Hardness Degrees)
Hard Rubber Lining (HRL)
Hardness: 75-85° Shore D
Lining Thickness Range: 2-4.5 mm

Plastic-lined valve body characteristics

Ductile Iron Valve Body - High mechanical strength
Ductile Iron Valve Body - Provides mechanical support for plastic lining
Lining prevents ultraviolet rays from entering valves
Smooth valve weir, conducive to diaphragm sealing and achieving zero leakage
Lining thickness range: 3-4 millimeters (DN20-DN150)

Fluorine Lined Valve Body

Rubber Lined Valve Body



Lined Valve Weir Plan View

Cross-Sectional Diagram of a Lined Valve Body

Valve Body Material and Lining Material

Protective Layer and Lining Material

External Protective Coating: For corrosion resistance, all valve bodies are coated with epoxy resin paint. Acutators and handwheels can be coated with electrostatic powder spraying for special operating conditions, covering the entire surface. These valves are suitable for extremely corrosive process environments.
Existing Specifications:
- Valves lined with FEP, DN20-DN150
- Valves lined with PFA, DN20-DN150

Lining Material

◆Hard Rubber (NR/HRL)
Used for:Salt-containing water,
Dilute mineral acids,Chlorinated water,Deionized water,
Electroplating (stripping) solution,Drinking water.

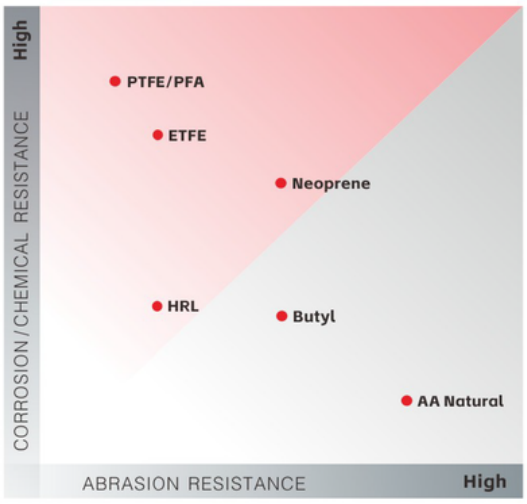
◆EPDM (Ethylene Propylene Diene Monomer)
Suitable for corrosive and abrasive slurries,
mineral acids, and acidic slurries.

◆ETFE (Ethylene Tetrafluoroethylene)
Suitable for strong acids operating at high
temperatures and solvents operating at moderate
temperatures in salt-containing water.

PFA (Perfluoroalkoxy)
Best suited for concentrated mineral acids, aromatic
hydrocarbons, aliphatic hydrocarbons, and chloride solvents
operating at high temperatures.

◆Natural Rubber (AA/SRL)
Offers excellent abrasion resistance, suitable
for powders, abrasive slurries, clay, coal dust,
dry fertilizers, and gypsum

Lining Materials for Valve Bodies - Corrosion and Wear Resistance Diagram



Diaphragm Structure and Material

Diaphragm Structure and Materials

As the core component of the diaphragm valve, the diaphragm directly affects the service life of the valve. For years, we have been dedicated to improving and investing in diaphragm technology, providing our customers with a range of safe and reliable diaphragms.

Key Factors:

1. Flexibility Performance
2. Compression Performance
3. Corrosion Resistance
4. Wear Resistance
5. Aging Resistance:

Rubber Diaphragm

Our independently designed rubber diaphragms are precisely matched with the valve body height to ensure maximum strength and durability of the diaphragm.

PTFE Diaphragm

Our PTFE diaphragms feature a dual-layer structure consisting of a PTFE face membrane and a rubber backing, enhancing pressure resistance and extending the diaphragm's lifespan.
The viscosity of PTFE particles is stronger and more suitable for diaphragm materials, significantly enhancing the diaphragm's fatigue resistance. Compared to ordinary diaphragms, PTFE diaphragms excel in temperature resistance, chemical resistance, and overall lifespan.
The diaphragm is composed of multiple layers of rubber and reinforcement mesh. The fastening head bolts are mechanically and adhesively fixed to the diaphragm. The raised ribs on the sealing surface ensure a tight seal and reduce closing torque.
The diaphragm perfectly matches the valve body and pressure support arc, extending the diaphragm's lifespan.

Pneumatic Actuators

Our company has independently developed aluminum and plastic pneumatic actuators, which are compact and highly corrosion-resistant. These actuators are an integral part of the control system, enabling remote control.All actuators have three operating modes:
1. Spring-close (air-open)
2. Spring-open (air-close)
3. Double-acting (air-open and air-close)

Among these, the air-open mode is the most common.
In the air-open mode:- All actuators with rubber diaphragms are designed for a 5bar air supply. - All actuators with PTFE diaphragms are designed for a 6bar air supply. If a specific air supply is required, please specify.

Plastic pneumatic actuators

⌀ DN15—DN50

The plastic pneumatic actuators are injection molded from PES (Polyethersulfone) material, making them highly suitable for high-corrosion environments. These actuators are compact in size, making them ideal for installation in tight spaces.

large diameter actuators

⌀ DN150—DN200

Our large diameter actuators use aluminum alloy material with a surface powder coating for corrosion resistance. Despite their large size, they feature a compact design, with a maximum outer diameter not exceeding 500mm.

Aluminum Alloy Pneumatic Actuators

⌀ DN15—DN125

Our aluminum alloy pneumatic actuators are cast from high-pressure aluminum, ensuring high strength and resistance to deformation. They are coated with corrosion-resistant and salt spray-resistant paint. These actuators are suitable for various diameters and come with different size platforms, making them suitable for low air supply environments.

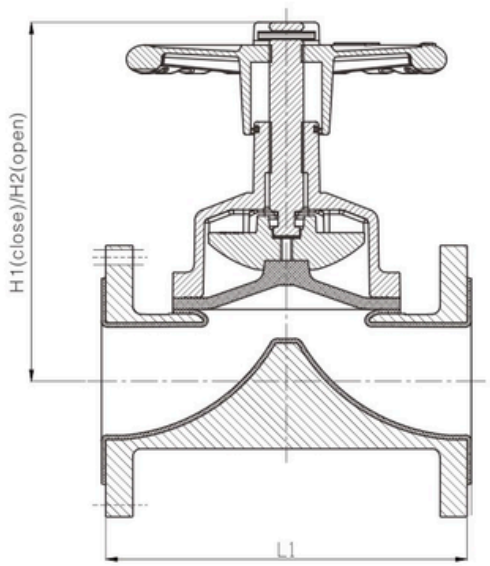
Stainless Steel Actuators

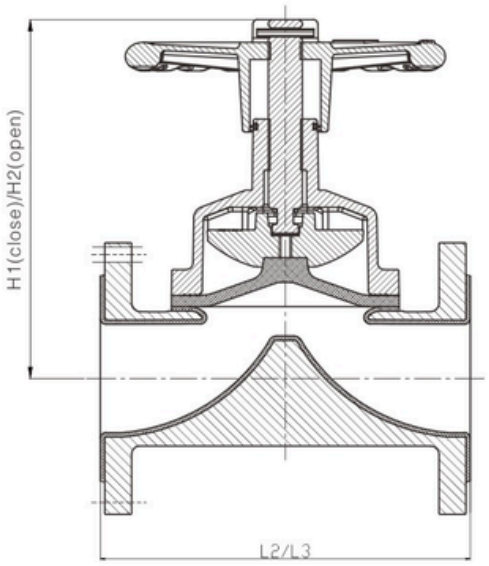
⌀ DN25—DN200

Paired with sanitary diaphragm valves, our stainless steel pneumatic actuators are ideal for sterile industrial applications. Their compact design makes installation easier, and they offer excellent chemical corrosion resistance and steam resistance.

Dimensions and Weight

Connection Size for Flange (MM)





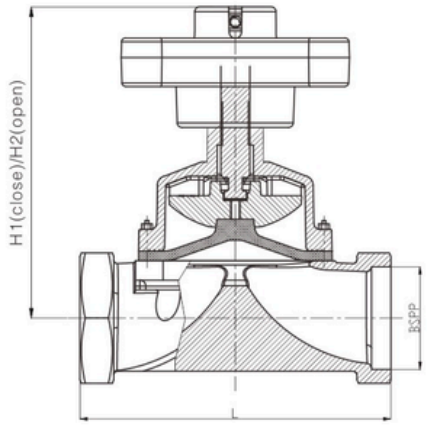
Specifications	DN25	DN32	DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200
H1	100	127	136	151	183	198	266	319	380	506
H2	112	144	156	177	213	273	320	386	453	626
L1	127	146	159	190	216	254	305	356	406	521
L2	145	160	180	210	250	300	350	400	460	570
L3	160	180	200	230	290	310	350	400	480	600
W(kg)	3.56	6.00	6.64	9.00	14.40	20.36	32.20	54.00	74.00	141.00

Notes:

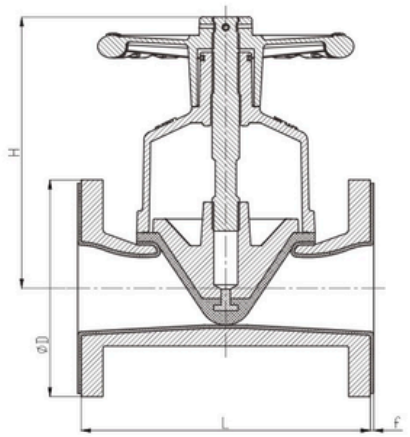
1. For rubber-lined valve bodies, the flange face is FF. For fluorine-lined valve bodies, the flange face is RF.
   The structural length can be adjusted to meet L1, L2, L3 requirements as on-site specifications.
2. Side flange connection hole sizes comply with PN10/PN16/Table D/Table E/10K/ANSI 150# standards.
3. For sizes DN50 and below, square handwheels are provided.

Size of Threaded and Straight-trough Diaphragm Valve

Threaded Diaphragm Valve ⌀ DN15—DN50



Straight-through Flanged Diaphragm Valve ⌀ DN25—DN300



Threaded Diaphragm Valve (mm)

Specifications	DN15	DN20	DN25	DN40	DN50
H1	96	98	100	136	151
H2	106	110	112	156	177
L	64	83	111	143	168

Flanged Diaphragm Valve (mm)

Specifications	DN25	DN32	DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200
H	152	152	152	163	205	220	262	290	368	410
ϕD	117	140	150	165	185	200	220	250	280	340
L	127	146	159	190	216	254	305	356	406	521
F	3	3	3	3	3	3	3	4	4	4

1. Diaphragms and valve bodies are manufactured according to the ordering requirements.
2. Side flange connection sizes comply with PN10/PN16/Table D/Table E/10K/ANSI 150# standards.

Actuators and accessories

Handwheel

To ensure safety, our company offers an optional handwheel that can be added to pneumatic actuator.

This allows for manual operation of the valve in case of power or air failure, enabling on-site personnel to operate the valve manually and prevent material waste in special circumstances.

limit device

According to the specific requirements of different customers, adjustable limit devices can be installed on the actuator to control the valve opening. It is convenient to adjust and easy to operate.

limit switch box AMY-10

It's suitable for DN15-DN50, making the valve body more coordinated. The shell material is plastic.

limit switch box ALS-10

Suitable for DN15-DN200, the shell material is aluminum alloy. Suitable for low-temperature or harsh conditions.

limit switch box AMY-20

Suitable for DN15-DN200, the shell material is plastic. The internal micro switch can be selected as mechanical or inductive type to match the site conditions.

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