Plastic Butterfly and Ball Valves

Fitted with Pneumatic / Electric Actuator

1258/1268 SERIES

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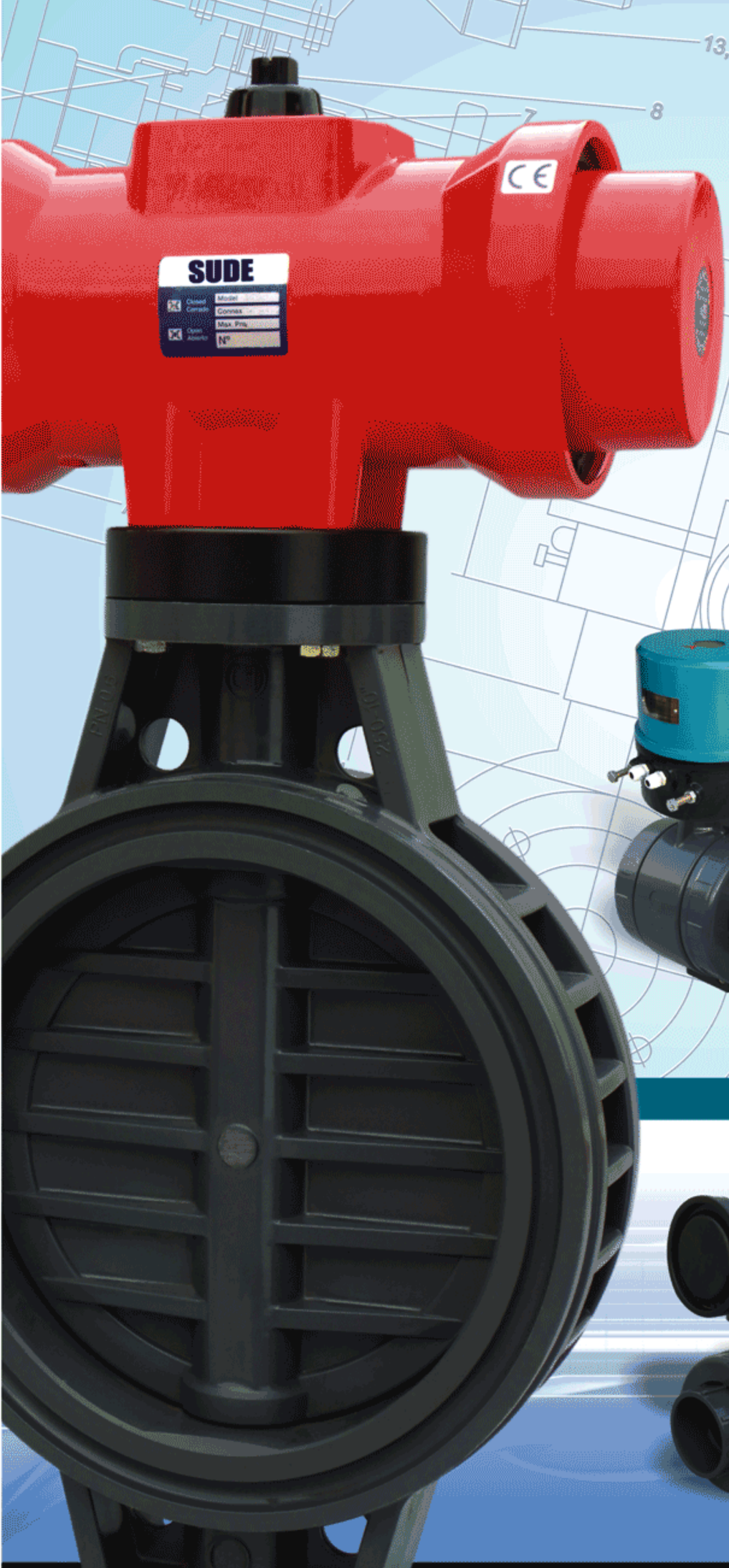


YES. WE CARE...

| Courteously | Attentively | Respectably | Effectively |

SUDE®

An ISO 9001:2008 Certified Company

Plastic Butterfly And Ball Valves

Fitted With Pneumatic And Electric Actuator

Index

Introduction - Butterfly Valves

Sude Offers Plastic Butterfly Valves available in two types or styles, wafer and lug. A different installation procedure is used for each one. Wafer Style is the more common of the two and is less expensive than the lug style. The wafer style butterfly valve is just about the standard. (Refer figure No.1). Wafer butterfly valves are installed between two flanges using bolts or studs and nuts. This type of installation of course, makes it impossible to disconnect just one side of the piping system from the valve. That is where the lug style valve comes in.

Lug style valves have metal inserts installed in the valve's bolt holes. These inserts are threaded on both ends. This allows them to be installed into a system using two sets of bolts and No nuts. The valve is installed between two flanges using a separate set of bolts for each flange. This permits either side of the piping system to be disconnected without distributing the other side.

Lug style butterfly valves used in dead end service generally have a reduced pressure rating. For example most sizes of butterfly valves mounted between two flanges have a 150psi pressure rating. The same valve mounted with on flange in dead end service has a 75 psi rating.

Thermoplastic butterfly valves that are slip in wafer style, compact design, light in weight and easy to install. They are available in size range of 50mm to 400mm, 500 & 600mm available on request.

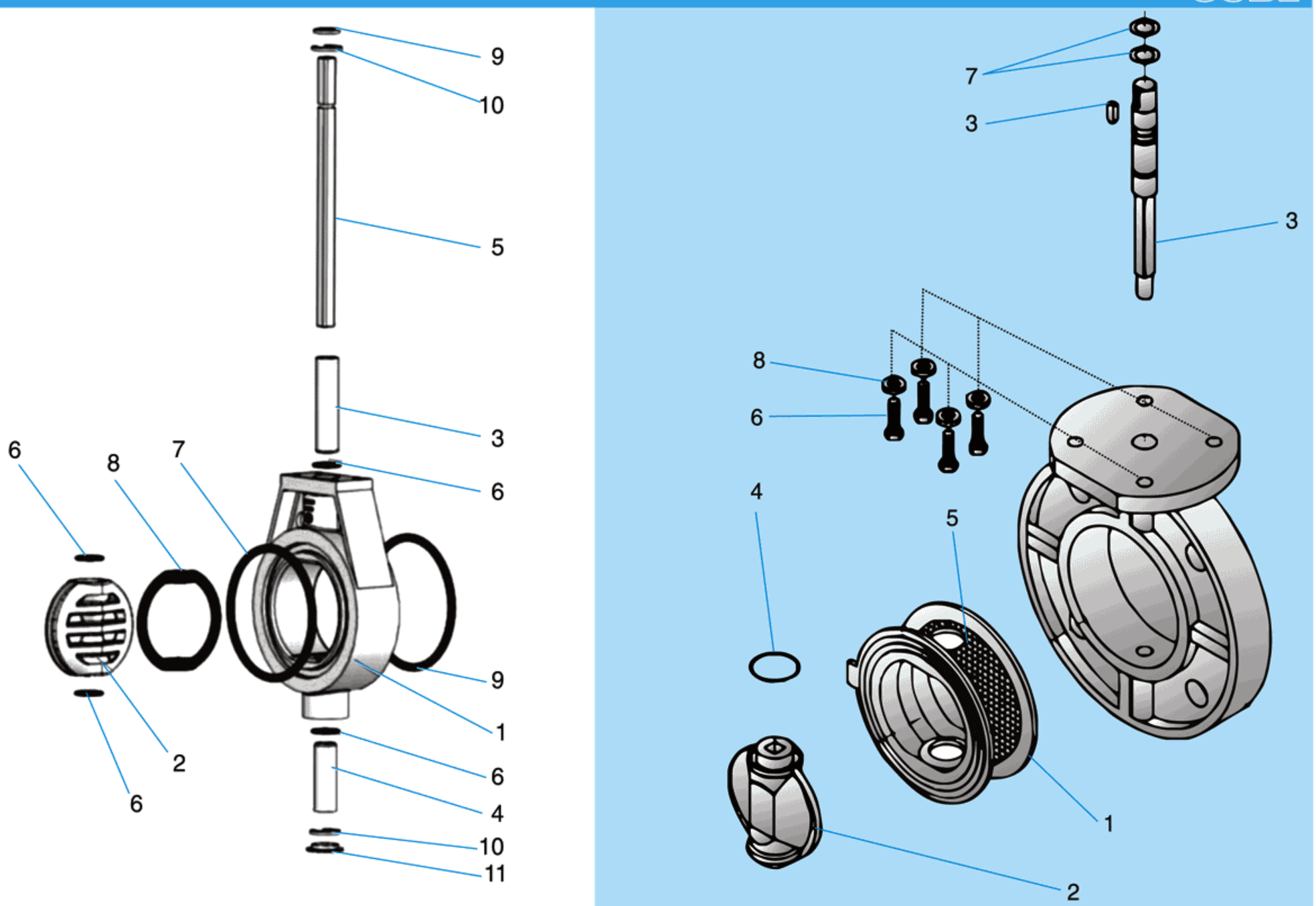
Sude supply Plastic Butterfly Valves which are made from light quality thermoplastic like PP, HDPE-High density Polyethylene and PVDF - Polyvinylidene Fluoride. The valves are tight shut off in both flow directions and recommended for pressure rating of PN10.

These valves offer square section shaft that provide positive engagement between shaft and disc and shaft & lever ensuring positive shut off with quarter turn operation. They are suitable for flow in either directions or can be utilized either vertically or horizontally. The valve disc fitted with seat ring is easily replaceable as well as economical compare to conventional rubber liner. They are also available with double-flanged end connections. The butterfly valves are available having flange with drilling as per BS, ASA, DIN or any other standard.

Butterfly valves offered with PVC & CPVC thermoplastic construction for corrosion resistance in chemical and wastewater applications. One-piece body incorporates fully supported flanged bolt holes to prevent stressing of mating pipe flanges and full body liner with v-notch retention design ensures positive sealing of EPDM or Nitrile to valve body. Valves will not contaminate sensitive fluids

Sude offers a plastic Butterfly valve having a reinforcement blade which includes a valve body of plastic material, having two separately positioned openings for connection in a pipeline: and a blade which is also constructed substantially from plastic material. The blade is journeyed in the housing so as to be rotable to a position wherein it prevents fluid flow between the openings in the housing

Fig.1: Typical Exploded View of the Butterfly Valve



Item	Qty.	Parts
1	1	Body
2	1	Engagement disc
3	1	Bearing bush
4	1	Bearing bush
5	1	Shaft
6	4	Round sealing rings
7	2	Round sealing rings
8	1	sealing element (stirrup)
9	1	Disk ring
10	2	Locking ring
11	1	closing cap

Item	Qty.	Parts
1	1	Body
2	1	Butterfly disc
3	1	Shaft
4	2	Round sealing rings
5	1	Sealing element
6	4	Screws
7	2	Locking ring
8	4	Washer

Elastomer Seated Butterfly Valves :

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Elastomer seated butterfly valves are available up to 24". The designed incorporates molded body gussets to prevent over tightening of the seat, a redesigned spherical disc for better sealing and increased Cv values. It maintains the features of the type standardized actuator mounting.. These valves offer a large range of sizes and selection of body, disc and seat materials. This allows them into a wide range of on/off or throttling control applications.(Refer Figure No.2)

Fig. 2 : Wetted parts of the Butterfly valves

Non- wetted Stainless Steel Retaining Ring

- Provides for effective stem sealing at all working pressures.

Moulded Elastomer Seat

- Easily replaceable
- Flange face has ralsed "O-ring" profile
  - Low flange bolt torques to seal
- Three ribs lock into body
  - Long term stability even under vacuum

Special Sealing Design

- Seals and disc have spherical

Sealing surfaces

- Lower stem torques to seal
- Longer seat life compared to conventional designs.

Streamlined Disc

- High Cv values
- Good flow characteristics. Important for control applications.

Shaft O-Ring

- For vacuum resistance

Stainless Steel Shaft

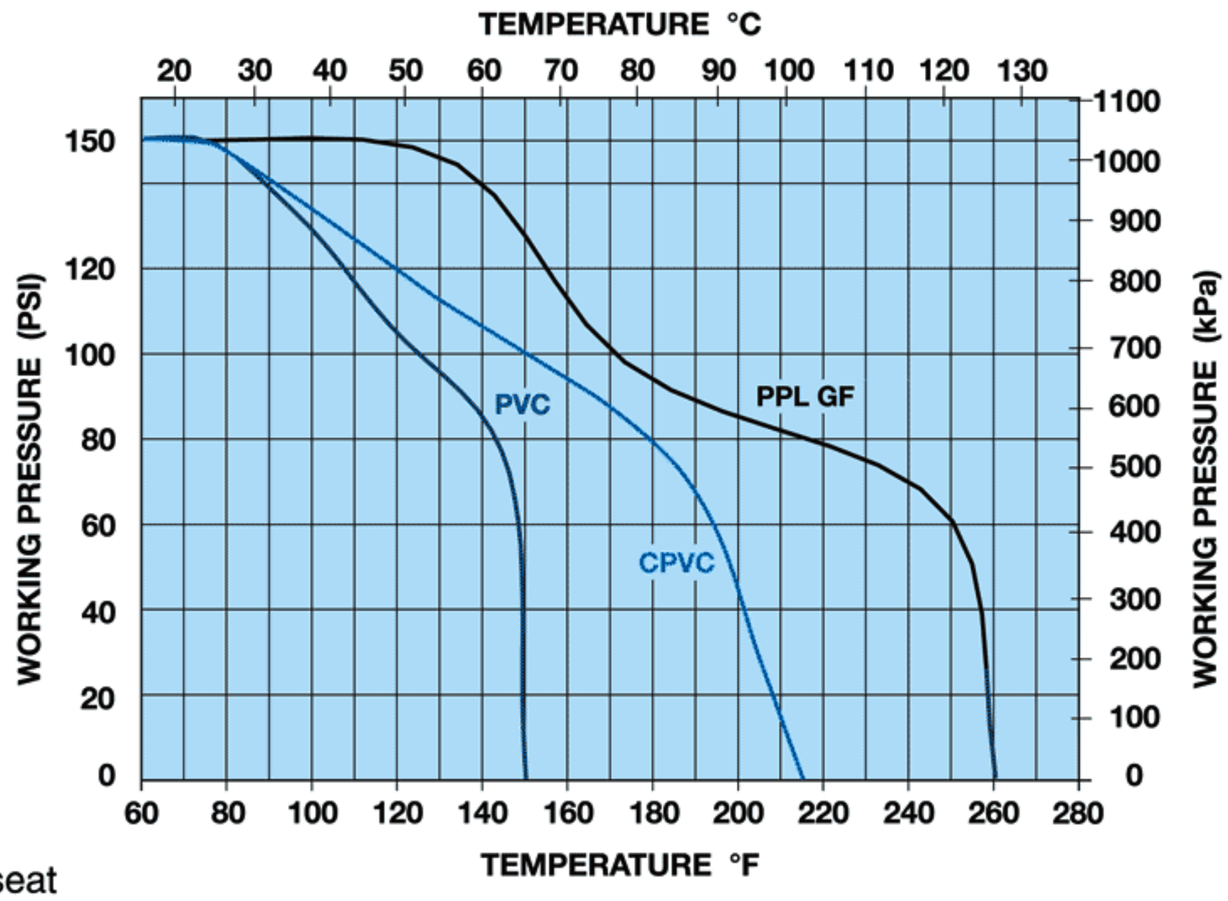
- Not wetted
- Engagement over full length of the disc

SIZES	:	1" to 24"
BODY TYPE	:	Semi lug wafer1
BODY	:	PVC, PP, PVDF
DISC	:	PP, PVC, PVDF
SEAT AND O-RINGS	:	EPDM, VITON

Features :

- Compact and Light Weight
- High Corrosion Resistance
- Solid plastic body-no rust
- Rated at 150 PSI and Temperature Up to 120°C (Refer Figure 3)
- Stainless Steel Shaft
- Fully Supported Flange Bolt Holes
- Full Body, V-Notch Liner
- Blowout-Proof Shaft
- Viton, EPDM OR Nitrile Liners
- Wafer Body Design

Fig. 3 : Temperature/Pressure Characteristics of Different Plastic Valves



Seat over Tightening Protection

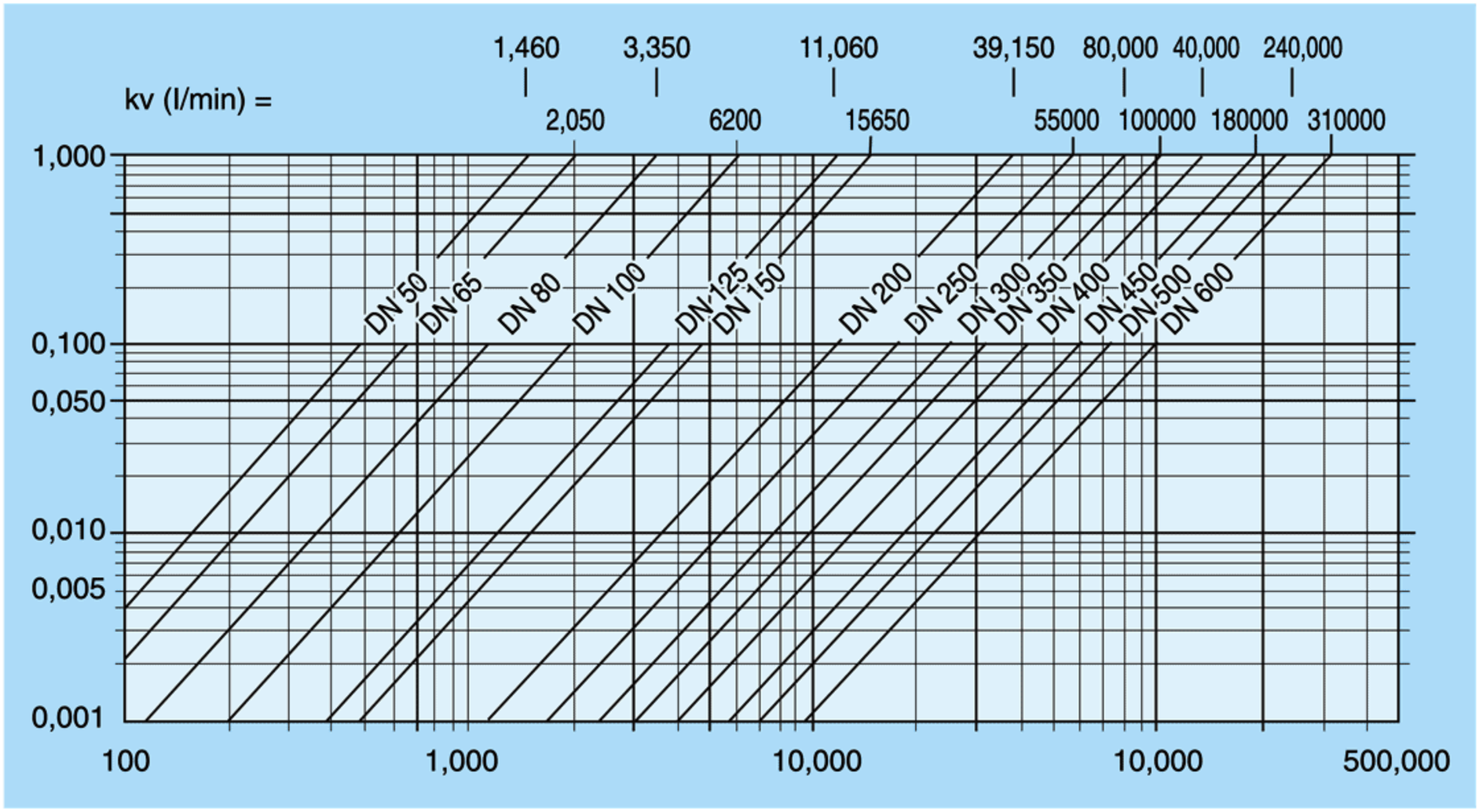
Molded body gaskets prevents over tightening of seat

Increased Cv

Spherical disc design offers increased Cv better sealing and higher cycle life(Refer figure 4)

Fig. 4 : Pressure v/s Flow graph for Different size of butterfly valve

Pressure loss curve (reference values for H_2O, 20°C For Butterfly Valve



Pressure loss and K_v value

The diagram shows pressure loss △p in relation to the flow Q.

For Calculation :

$C_v = K_v \times 0{,}007$

Units :

K_v [l/min]

C_v [gal/min] US

Abrasion Resistant

- Solid plastic disc
- PVDF disc available for high abrasion resistance

ISO Actuator mounting dimensions

- Top flange and shaft have standard ISO dimensions for easy actuator mounting

Easily Installed

- Full bolt hole circle makes installation and alignment easy
- No gaskets are necessary

Easily Maintained

- Full bolt hole circle makes installation and alignment easy Refer(Figure No.5)
- No gaskets are necessary Seat is easily replaceable

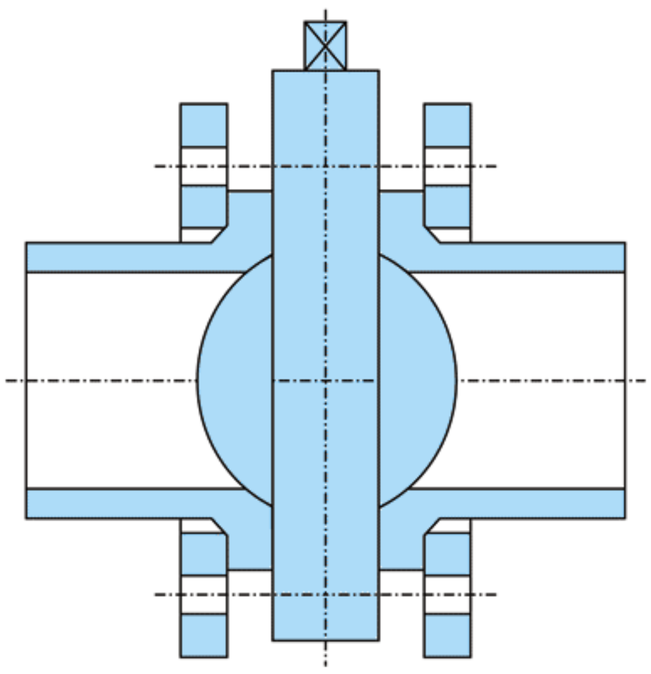


Fig. 5 : Typical Installation Of Butterfly Valves

Full Blot Circle for easy installation
Gussets on body prevents over compression of valve seat.

Elastomer Seat with Stainless Retaining Ring

- Easily replaceable
- Flange face has raised “O-ring” profile
- Lower flange bolt torques required for a leak proof seal

Shaft O-Ring

- For vacuum resistance

Stainless Steel Shaft

- Not wetted
- Engagement Over full length of the disc

Solid Plastic Disc

- No disc screws
- Abrasion resistant
- No problems as associated with coatings or linings.

Double O-Rings at top and bottom of disc

- Provide a primary and secondary seal between seat and disc Shaft is not wetted

Options & Accessories:

- Alternate Elastomer Seats Viton
- Alternate Discs PVC, CPVC, PVDF
- Electric or Pneumatically Actuated
- Municipal Operating Nut for buried service
- Chain Wheel Operator
- Shaft Extensions
- Lug Body Inserts Stainless steel lugs for dead end service

Sude offers Plastic Butterfly valve which has a one piece body that incorporates fully supported flanged bolt holes to prevent stressing of the mating pipe flanges. Their heavy duty construction stands up to the most demanding applications. The rock solid integral mounting pad insures the correct assembly with Actuator.

Butterfly Valves feature a blowout-proof stainless steel stem and unique, full body liner that has a V-notch retention design. This assures positive sealing of the liner to the valve body. An integrally molded face seal provides positive sealing against the mating flange without the need for additional gaskets.

Tight Sealing

Other plastic butterfly valves have only a thin o-ring on the disk to seal the valve, but Sude offers valves which feature a full body liner seal. This means that the process media never contacts the valve body. And you can count on the full liner seal to perform reliably, year after year.

Easy Retrofit

Sude offers Butterfly Valves having ISO pad which make the retrofit very easy at site.

No Metal, No corrosion

These valves have no metal in contact with the process media. They cannot corrode or rust nor will they contaminated sensitive fluids flowing through them.

Application

Plastic Butterfly valves are used in Water Distribution, Chemical Services and Ventilation Applications.

Other Materials Available Upon Request.

End Connections

Socket

Provides a stronger connection than threading and is a permanent installation.

Solvent Cemented

Compatible with PVC and CPVC Valves, using normal solvent cementing techniques. Caution should be taken that cement does not get on the inside face of the end connection or inside the valves. Refer to cement manufacturer's guidelines for bonding temperature limitations and recommended connecting care times.

NOTE: Shelf life of solvent cement is limited to the time advised by the manufacturer. That is approximately one year for CPVC and two years for PVC.

Connections:

Socket Fusion Thermal Bonding:

The superb resistance of PVDF and PP to organic solvents including solvent cements makes it necessary to join those socket connections in ½"through 4" sizes by thermal bonding technique.

Thermal Bonding:

A heat fusion technique necessary for joining PVDF and PP butt end connections to similar materials piping.

Threaded :

Preferred when occasional disconnection of piping system is necessary but limited to a maximum 4 inches in diameter. Thermoplastic pipe of Schedule 80 or heavier should be used because threading reduces the effective wall thickness, resulting in a reduction in pressure rating to one-half that of solvent cemented or thermal bonded socket connections. Threads are American Standard Tapered Pipe Threads.

Preparation for assembly consists of wrapping the pipe threads with Teflon (TFE) tape starting the second thread from the end and wrapping in the direction of threads, with a slight overlap. After a hand tight assembly an additional ½ to 1 ½ turns with a strap wrench will complete the connection. Care must be taken to not over- tighten which can cause distortion or even failure of threads.

Flanged :

Manufactured to ANSI B16.5 (150 class). Available in most all sizes and most widely used throughout the industry for process system that require occasional dismantling. Thermoplastic flanges may be connected to pipe or fitting by the method required by the individual material.

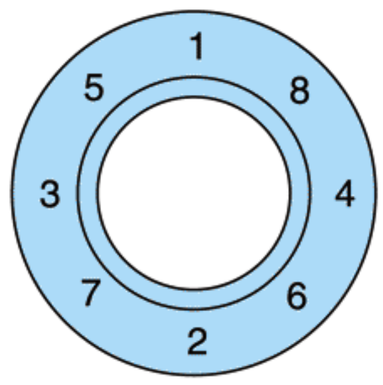
Joining Flanges :

- Carefully observe for proper alignment of bolt holes and also for parallelity and closeness of mating flanges.
- First position the gasket seal. Then inset and lubricate all bolts using flat washers under bolt heads and nut.
- With a wrench on bolt head, tighten each nut with a torque wrench in pattern diametrically opposite each other as shown below (refer figure 6). Do this in increments until finally reaching recommended torque valves charted at right.

FLANGE SIZE (IN)	RECOMMENDED TORQUE (FT-LBS)
½ " 1- ½"	10-15
2-4	20-30
5-8	30-45
10	50-75
12	80-110
14-24	100

Tightening Pattern For Flange Bolts :

Fig. 6 :



Butterfly valve should always be installed between two pipe flanges and never with a gasket seal. The outer rim of the electrometric valve seal acts as the gasket seal.

Operating & Maintenance Guide - Butterfly Valves

SUDE

Operation:

The Butterfly valves are operated with the actuators either pneumatically or electrically and they are operated in On/Off or Regulating mode construction.

Maintenance:

No maintenance required. If valve is to be stored for any length of time, it should be stored in dark and cool condition to lengthen the shelf life of the full faced electrometric liner seat. Also in outside pipe lines exposed to sun light precautions should be taken to eliminate valve failures. Expansion joints in the pipe line are necessary to combat pipe expansion causing crushing and fracturing the flanged portion of the full faced electrometric liner. This will push the rubber into the seating area and bind the operation of the valve. If an outdoor pipe line subject to direct sun light is not normally conveying flow materials the heat can deteriorate the electrometric liner and shorten life of valve seat.

Universal Design **Advantages**

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- Easier installation due to narrow face to face affords lowest installed cost compared to other valve types
- Designed to fit between ANSI D-16.5 Class 150 flat faced flanges.
- Strong one piece molded body design
- One piece standard S.S. through shaft for positive disc rotation and support.
- Standard polypropylene (PP) disc for higher (180^{0}F) temperature service.
- Full body liner seat with integral flanges (eliminates the need for flange gaskets) ribbed for positive flange seating with minimum required torque
- Standard PVC body and S.S. shaft are effectively isolated from the flow media by the full liner seat.
- Standard S.S., Carbon steel plated or epoxy coated external hardware for added corrosion resistance
- Electric and Pneumatic actuation packages available.
- Stem Extensions, Universal joints floor stands available in verity of materials.

Design Specification

Thermoplastic Butterfly valves 2” to 8” are wafer style to fit between ANSI B16.5 class 150 flanges. Disc is contoured for lowest possible drop (highest CV). Shaft is 410 S.S. and of one piece through shaft design, with square drive through entire length of blade. Seat liners shall be full faced with integral ribbed flanges. No auxiliary gaskets shall be required or for installation. Seat liners shall effectively isolate the body and shaft for the flow media. Seat liners shall also thermally insulate the body from the internal operating temperature. Valve liner and seals are replaceable. Materials of construction will be decided based on the process demand.

Not recommended for compressed air or gas service.

Ball Valves

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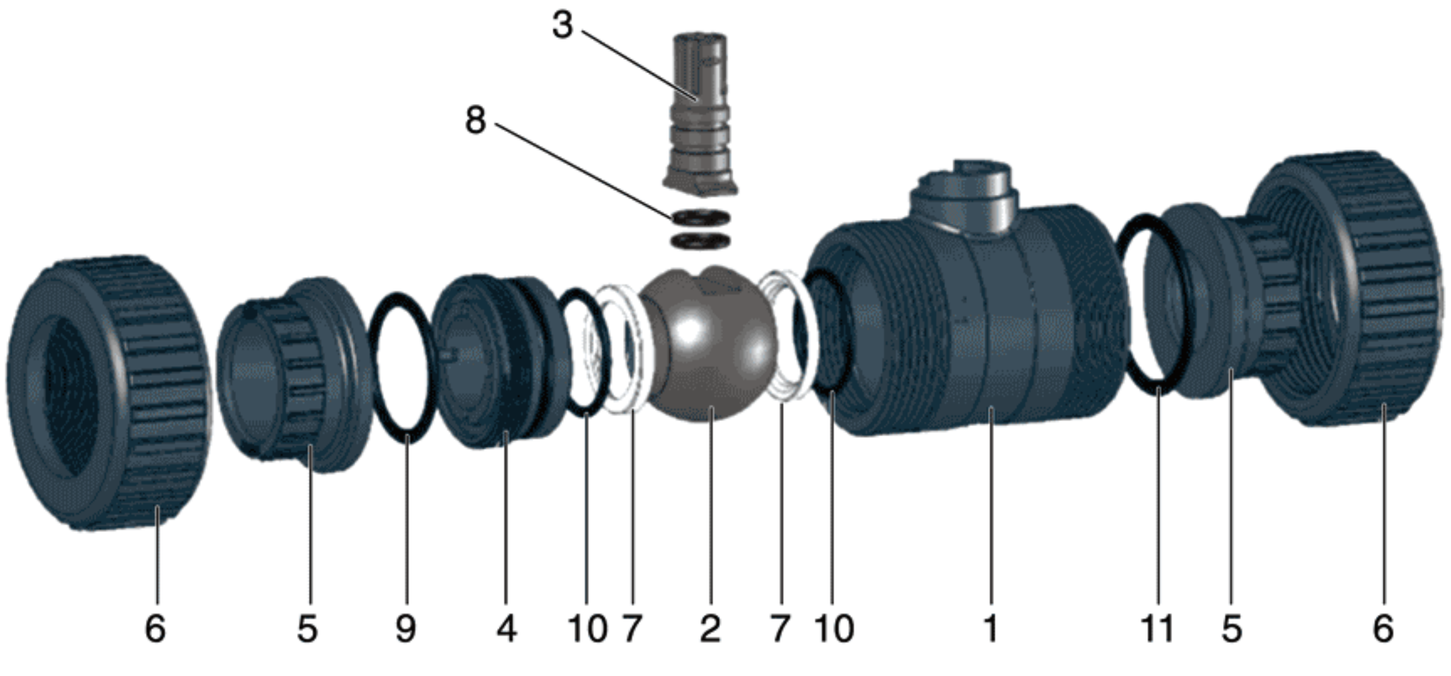
Sude offers cost sensitive application plastic ball valve which is perfect for applications that require a reliable ball valve at an economical price. The plastic valve has been designed and tested to make it certain to perform year in and year out in the most demanding applications without leakage or failure. The internal components of a plastic valve are completely encapsulated within the valve body in a one step manufacturing process. There is absolutely do danger of leakage through assembled parts. This also means that the valve never requires adjustment since all internal the one-piece valve body. The plastic valve is ready to be put into service right out of the box (Refer Figure No. 7)

Fig. 7 : Constructional exploded view of typical Plastic Ball valve.



GENERAL MATERIAL OF CONSTRUCTION

Sl. No.	Qty.	Parts	Material
1	1	Housing/Body	PVC, PP, CPVC, PVDF
2	1	Ball	PVC, PP, CPVC, PVDF
3	1	Shaft	PVC or Stainless steel
4	1	Threaded end bush	PVC, PP, CPVC, PVDF
5	2	Insert	PVC, PP, CPVC, PVDF
6	2	Union	PVC, PP, CPVC, PVDF

Sl. No.	Qty.	Parts	Material
7	2	Ball seat	Teflon
8	2	O-ring (shaft)	NITRILE,EPDM ,VITON
9	1	O-ring (union)	NITRILE, EPDM ,VITON
10	2	O-ring (Ball seat)	NITRILE EPDM ,VITON
11	1	O-ring (union)	NITRILE EPDM ,VITON

Temperature and Pressure:

Pressure rating for both PVC and CPVC is 175 PSI at 75 degrees F (24 C). Maximum temperature for PVC is 140 degrees F (60 C): maximum temperature for CPVC is 180 degrees F (82C) (Refer figure no 7 & 8)

Fig. 8 : **Material Guideline for Pressure & Temperature**

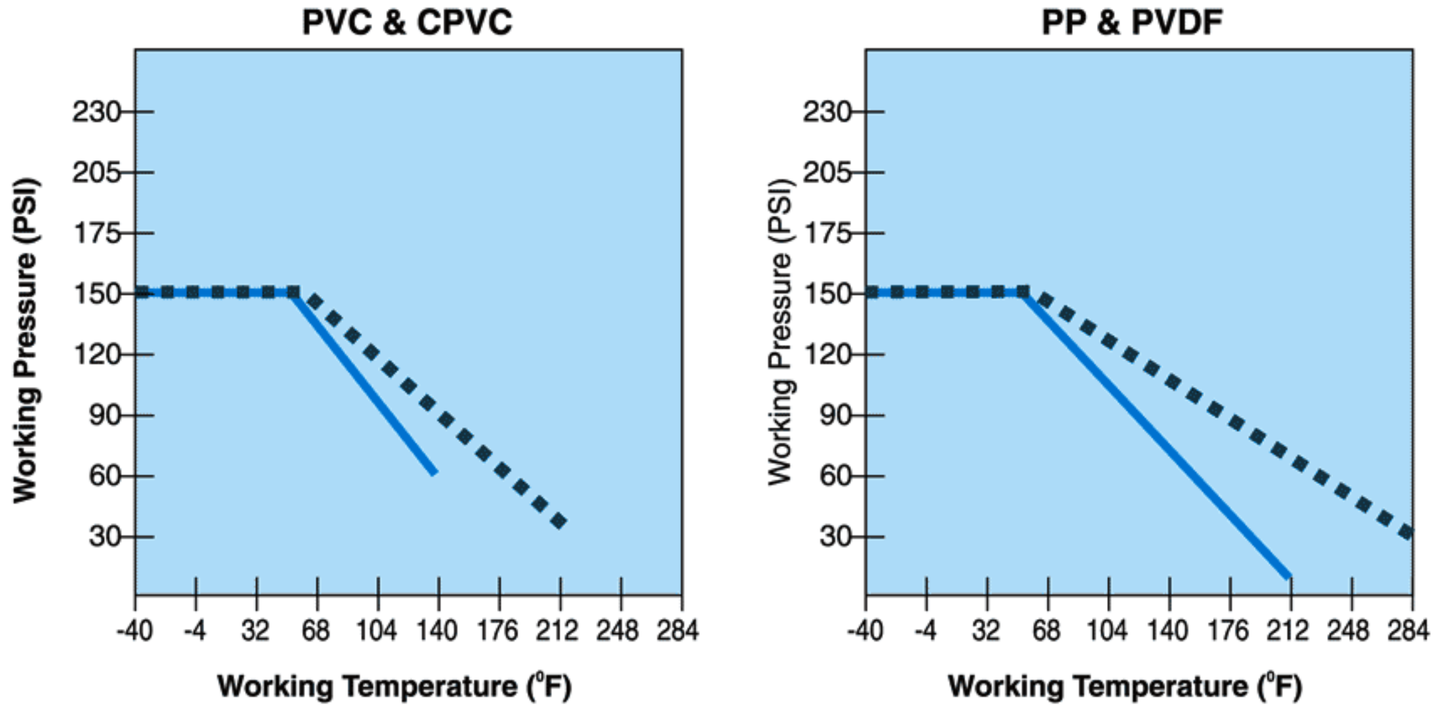
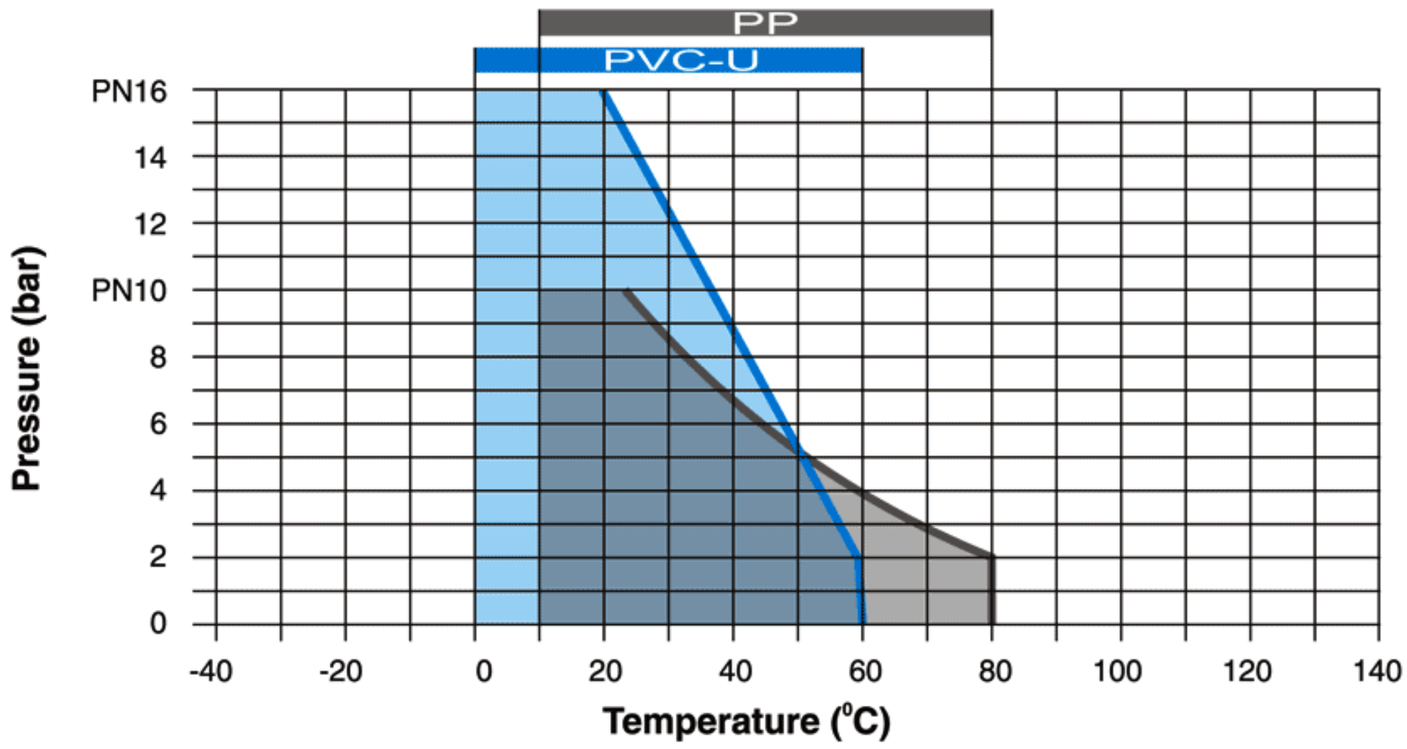


Fig. 9. : Pressure / Temperature diagram



Ball Valve Features:

- Long cycle life with Trunnion design-valve mounts in either direction with no danger of ball “blow put”.
- Dual Shaft seals eliminate leakage
- Reinforced actuating shaft (or stem)
- True union ends-socket or threaded. Flanges, optional
- Self-compensation PTFE seats
- Perfectly round and highly polished ball
- Rugged construction known as “ The Engineered Ball Valve”

Lightweight and Compact

Plastic low cost ball valves are designed to fit into spaces too small for other valves. They are about 1/3 the overall size of a plastic true union valve and they weigh an average of 50% less. This makes the ideal for skid-mounted and other application where space and weight are critical considerations.

Can't Rust, Won't Corrode

All plastic construction means they will never fail stick or jam because of rusted or corroded parts. And they’ll work in places and environments where metals valves must be painted or coated just to survive

Features

- Rated at a Full 150 PSI
- PTFE Seats
- EPDM Seals
- No internal Parts to Replace
- Easy ¼-Turn Operation
- Socket or Threaded Pipe Connections

Design Specifications

Plastic Ball Valves ½” to 4” are designed to safely block full system pressure in either direction to allow on-line system maintenance. Valve stem is of the blow-out Proof design. Valve has full port for lowest possible pressure loss. Seats shall be easily adjustable and replaceable. Stem has an internal pressure sealed land to protect stem and stem seal from contaminants. Every valve is fully pressure and cycle tested before leaving the factory. Materials of construction shall be selected based on service.

Design Advantages

- Safely blocks in both upstream and downstream direction for simple easy, safe system maintenance.
- Double union design permits quick, easy piping system installation, removal maintenance
- Stem has internal land above ball that is pressure seated to the body protecting the stem and the stem seal from contaminants in the fluid media
- Long life self lubricated TFE seats are externally adjustable, fully replaceable
- True full port design has immeasurable pressure drop
- Safety design blow-out proof stem
- Available in socket, threaded or flanged (ANSI B16.5 class 150) end configurations.
- All valves are hydrostatically tested
- Available stem extensions, 2” square nut operation.

SEAT

- PTFE(Poly tetra flouro ethylene)

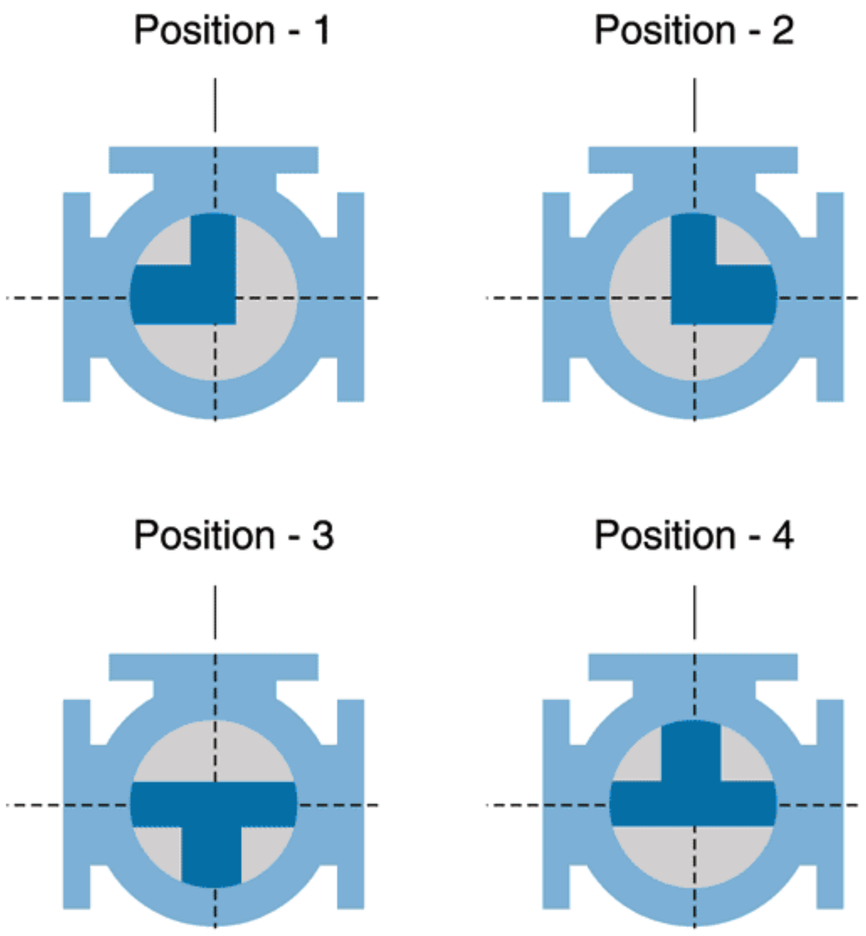
3 Way **Ball Valves**

Flow Patterns

Three-Way Ball Valves come standard with a two port ball allowing for three flow configuration within 180^0 of rotation. With the bottom Port as the inlet, the flow can be directed out the left port or out the right port, or shutoff. Actuated Three-Way Ball Valves come standard with a three port ball also i.e. Allowing of two flow configurations within 90^0 of rotation.

With the bottom port as the inlet, the flow can be directed out the left port and right port there is no shutoff position. An optional ball used with actuated valves, allows flow through all ports at the same time or flow shutoff (Refer figure no 10)

Fig. 10



Features of 3 way Ball valve:

- Rugged plastic construction for corrosive atmospheres
- Simple connections for remote operation and position indication
- All three ports are true union for cost, installation time and space savings
- Pressure rated to 230 psi
- Provides a high factor of safety
- Integrally molded mounting saddle
- PTFE seals and Seats
- True Union end connection

No Metal, No Corrosion

Plastic Three way valves contain no metal parts. The valves will never fail because of corrosion and they do not require painting or epoxy coating to stand up to aggressive environments.

Solid Actuator Mounting Design

A manual valve can be easily automated. Just remove the handle and install the Actuator /Mounting kit. The mounting saddle is integrally molded into the valve body. For rock-solid actuator mounting the valve incorporates a unique design where by the mounting bracket mounts directly to the valve body. This assures proper alignment of the actuator to the valve without creating any damaging side loads to cause premature stem seal failure.

Base mounting Pad

- Permits actuated valves to be securely anchored
- Valves may be used as fixation points in the piping system

Full Port

High capacity and low pressure drops

Fully Blocking

Downstream union nut may be safely disassembled for piping maintenance while valve is closed off under full system pressure.

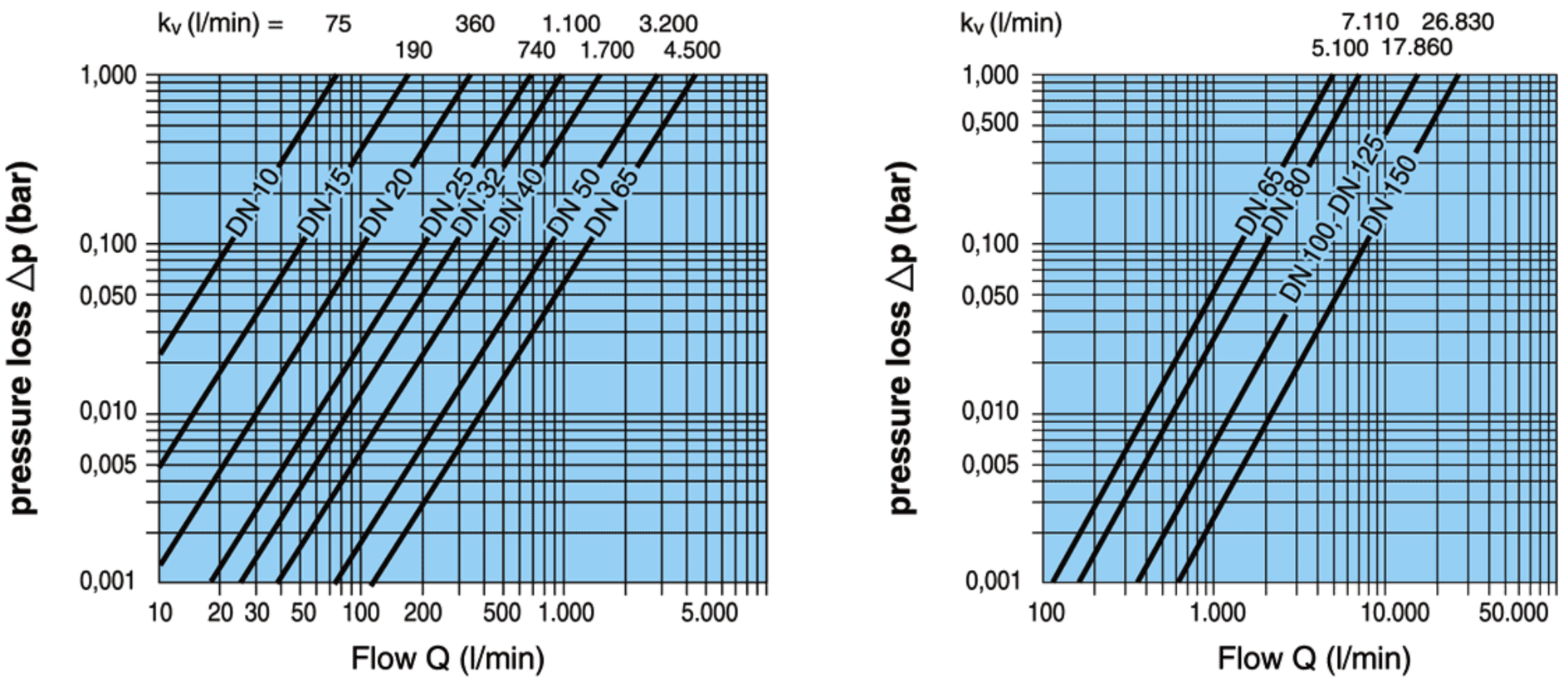
Double Stem O-Rings for Safety

Upper O-ring groove is deeper than lower. In case of excessive stem torque stem will shear at the upper grove, leaving the inner o-ring intact to seal against full line pressure

Teflon R Seats have Elastomer Cushions

- Improved Sealing while lowering stem torques
- Self adjusts for seat wear

Fig 11: Pressure v/s Flow graph for Different size of Ball valve



For Calculation :
$C_v = K_v \times 0,07$

Units :
K_v [1/min], C_v [gal/min]

Pneumatic Actuator

Pneumatic actuators are available in rotary construction in Double and spring return in on/off and modulating duty format. Actuators will be inherently failed safe but fail position (open or closed) should be noted. Pneumatic actuators are supplied with Electro pneumatic positioners which work on continuous pressurized air of 60psi and input signal of 4 to 20 mA with feed back 4 to 20 mA For details refer Actuator catalogue.

Actuator Construction

The piston incorporates racks and end covers are die casted in aluminum alloy. Barrel is extruded. aluminium alloy hardened and treated, further finished with deep anodized process to form a protective layer to resist atmospheric corrosion. The actuators are also available in stainless steel 316 & Nylon plastic construction for food grade and chemical industries application. The internal materials of the aluminum, SS316 & Nylon plastic actuator are having pinion which is made up of steel, precision cut, heat treated and ground & also has a high grade of synthetic seals. The actuators before assembly is lubricated with high temperature resistant smooth grease. The actuators are with compact design operates through 90 degree angle of actuation. The Actuator is also available in 180 degree rotation.

Air Pressure Requirement :

a) For Double Acting Actuator - 3.5 kg / cm^2 (Minimum) & 8.5kg / cm^2 (Maximum)

b) For Spring Return Actuator - 4.0 kg / cm^2 (Minimum) & 8.5 kg / cm^2 (Maximum)

However Air Pressure Requirement is much dependent on size of the valve, working pressure, quality of Butterfly valve and many other factors.

For Double Acting Actuator:

4 way 5 port single Coil / Double Coil solenoid valve in general purpose or Flame proof and explosion coils construction.

For Spring Return Actuator:

3 way Single Coil / Double Coil solenoid valve in General purpose or Flame proof and explosion Coils construction.

Accessories

Accessory Common for Double Acting / Spring Return Actuator :

a) Pressure Regulator
b) Limit Switches
c) Filter Regulator with Lubricator
d) Gear Box with hand wheel for manual operation
e) Valve Positioner for characteristic controlled application.
f) I to P Converter.
g) Electro pneumatic positioners
h) Position Indicator
i) Position Transmitter
j) Cyclic Timer OR Sequential Timer
k) 3 Way / 4 Way Key operated valves
l) Stimulator
m) Travel Stops
n) Flow Restricter
o) Silencers with Flow Control Valve

Optional :

a) PID Controller along with PT - 100 sensor supplied with panel.
b) Pressure Transmitter supplied with panel.

Tests

The valves are tested according to their respective standards for hydrostatic, seat leakage and working pressure tests. Unless and otherwise specified Ball valves are Constructed and tested for10 kg/cm2 working pressure

Notes :

a) Actuator rating is for valve working pressure 10 kg / cm^2
b) Timing given is approximate and is useful as an indicating figure only when solenoid valve is directly coupled with the Actuator. Average time under 50% load condition is 80 PSI working pressure.
c) All data is complied in laboratory test, in actual field, working may differ.
d) Width and weight will change with rating of flanges and accessories. (Refer GA Drawings)

Easier interface with digital control devices. Electrical actuators must have a voltage selection, typical actuators voltages are 24V AC, 110V AC, 240 V AC and 415 Volts. Fail safe electric actuators are also called spring return and the fail positioning (open or closed) should be noted. For detail on the Electric actuator refer Sdtork and asked for detailed literature. The spring return Electrical actuators are available for low torque, for higher values we suggest you to use reversible stay put type actuator

Single Phase

Single phase SDTORK Actuator is provided with Stall duty motor used for quarter turn application. Actuator is suitable for inching operation too and they can be supplied with extra limit switches for remote position indication.

The Actuator are available in general purpose, Dust proof & Flame proof & Explosion proof housing.

Three phases SDTORK Actuator is basically a worm gear type reduction gear box. A single stage grease bath worm gear gives quietness and reliability in operation. The valve can be fully opened, fully closed or adjusted to any intermediate position. The rectory force on the worm shaft which is a 'Floating one' is directly proportional to the out put torque and is absorbed by a set of disc springs. The lateral movement of the worm shaft under load, trips closes the Torque switch. The driving motor is a TEFC squirrel cage class F IP 65 enclosure motor combining low inertia with a high starting and stalling torque.

Three Phase

Three phase Actuator are fitted with torque limit switches & travel limit switches & also they are in built with manual hand wheel used for operating the actuator manually in case of power failure. Actuator is also supplied with various shaft designs to suit rising & non rising stem valve. Three phases are also provided with space heater. This actuator is also available in slow mode operation which is used for multi turn application.

Accessories For Electric Actuator

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a) Travel Limit Switches - 2 nos

b) Auxiliary Limit Switches - 2 nos

c) Hand wheel for Manual operation

d) Local position indicator

e) Potentiometer for feed back

f) Torque limit switches

g) Position Transmitter

The Actuators can be supplied with a panel having Auto Calibration facility.

Actuator can also be supplied with :

Single Phase OR Three phase Panel for switching the valve On / Off through Push Buttons for local operation under manual mode OR through PLC under Auto mode through 4-20 mA, 0 to 10 V DC.

Common Accessory for Single Phase / Three Phase Actuator :

a) Honeywell / any other make PID Controller along with PT 100 sensor with built in panel as an option.

b) Honeywell / any other make pressure Transmitter where based on setting pressure valve will open & close through PID with built in panel as a option.

c) Sequential timer 0 to 30 channel for sequence operation.

d) Cyclic timer having On time - 1 to 60 seconds & Off time - 1 to 60 min for sequencing operation.

e) Stimulatror - panel mounting type having two knobs used for generating 4 to 20 mA with the help of 230 Volt A.C. Supply.

Control Panel Specification :

a) Input : Single Phase 230 V AC OR 3 Phase 415 V AC, 4 wire supply.

b) Output supply: Single Phase 230 V AC OR 3 phase 415 V AC Reversible supply.

c) Auto / Manual selection : Selector switch provided. In Auto mode open & close operation is controlled by 4-20mA Input & under Manual mode operation is through Push buttons.

d) Indications : Zero to a100% valve position display, R, Y, B Phase Indication [applicable only for 3 phase] Open & Close, Fully open & Fully close indication.

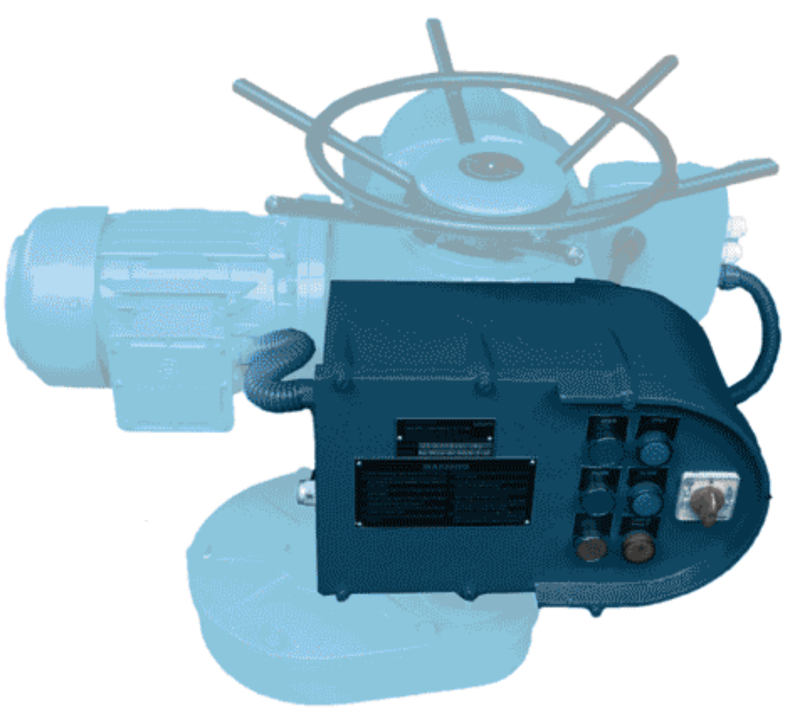
e) Main switch - Single Phase OR 3 Phase MCB for mains On / Off.

f) Phase fail / error protection provided.

g) Fuse protection provided for each phase.

h) Protection from over torque - If Actuator gets over torque the torque switch trips & the system protects the motor. Also provided with 10 metes cable for Motor & Feed back with connectors.

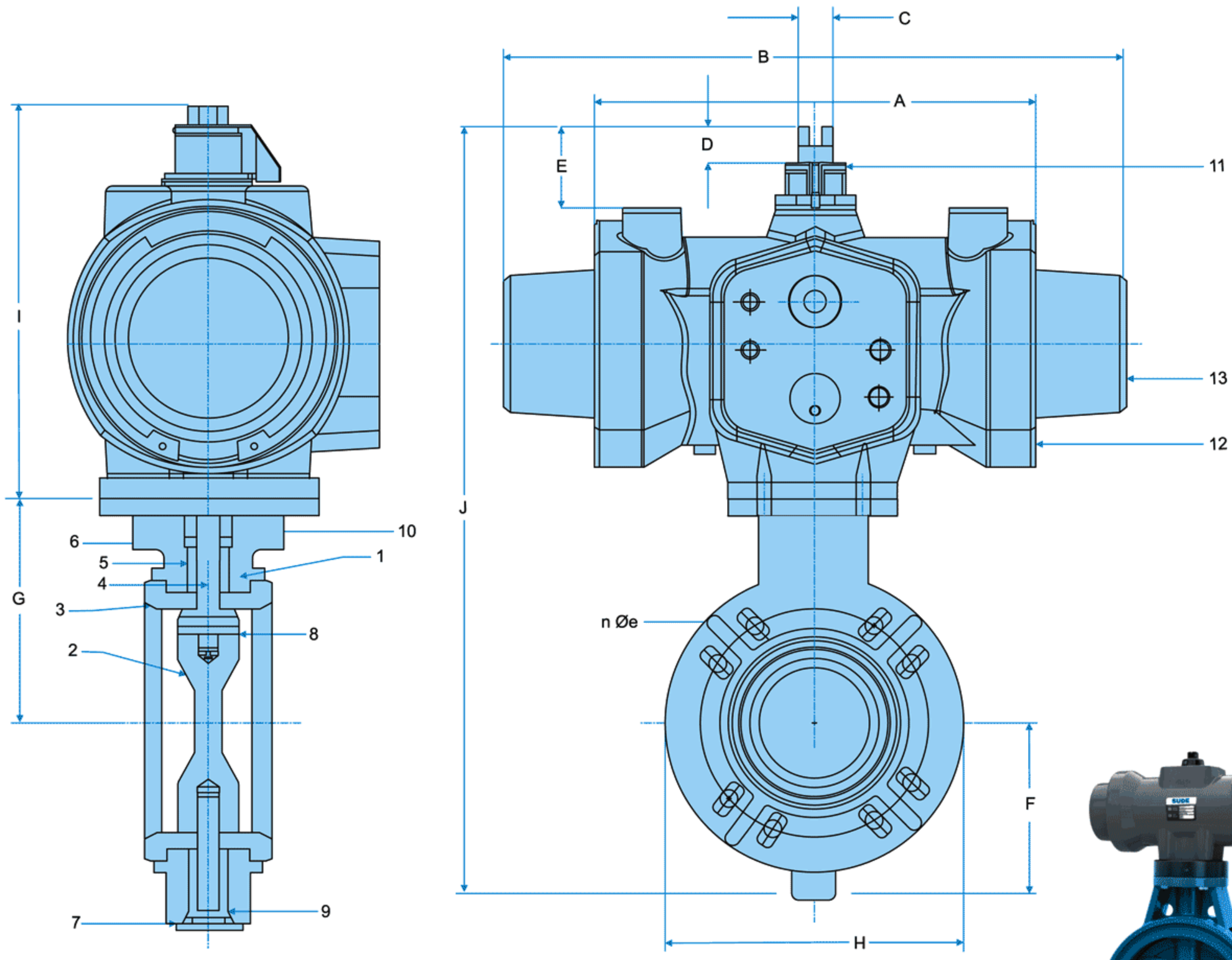
Wall Mounted Construction in sheet metal



Integral Construction

Notes :

- Actuator rating is for valve working pressure 10 kg / cm².
- Timing given is approximate and is useful as an indicating figure.
- All data is complied in laboratory test, in actual field, working may differ.
- Width and weight will change with rating of flanges and accessories.

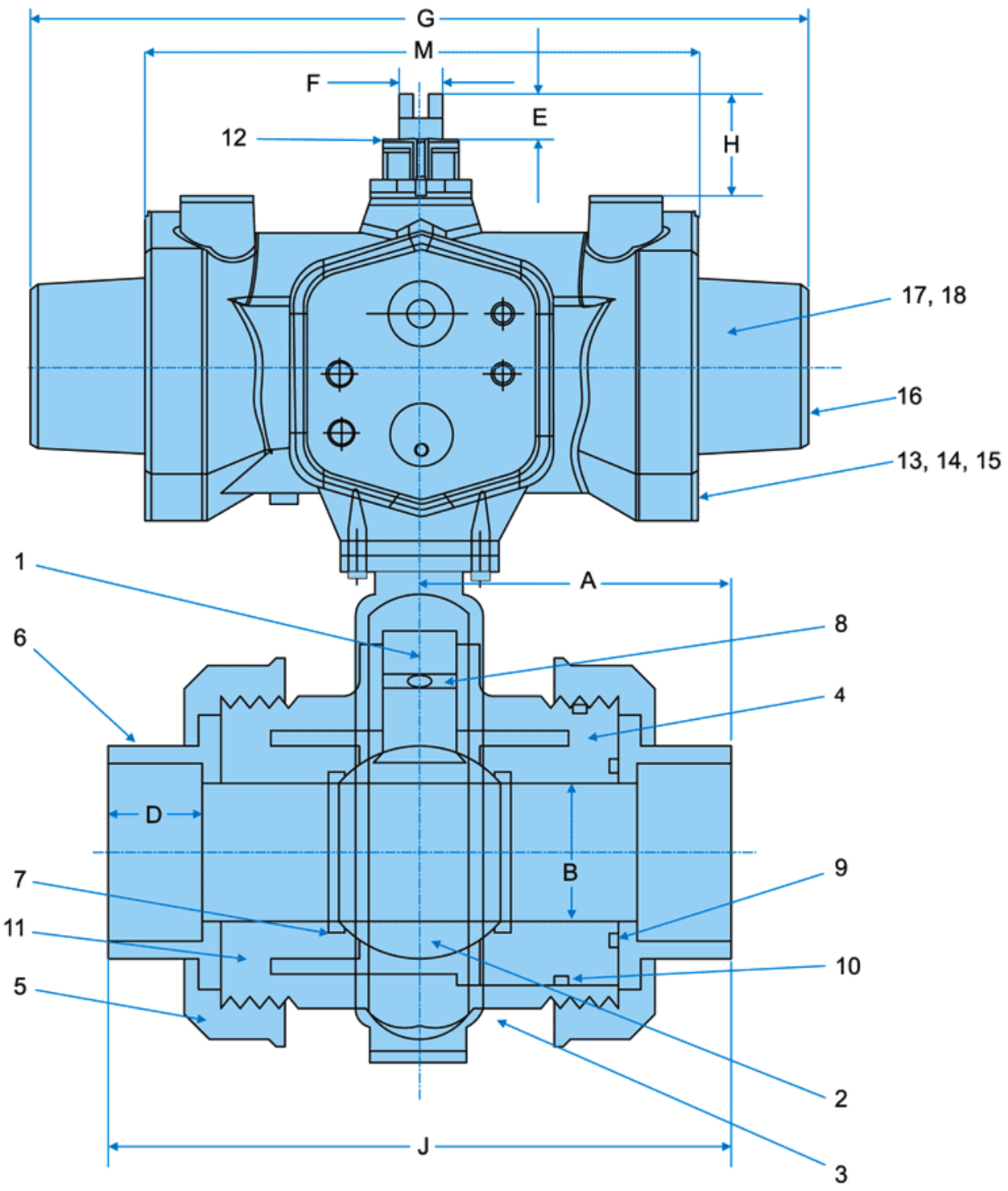


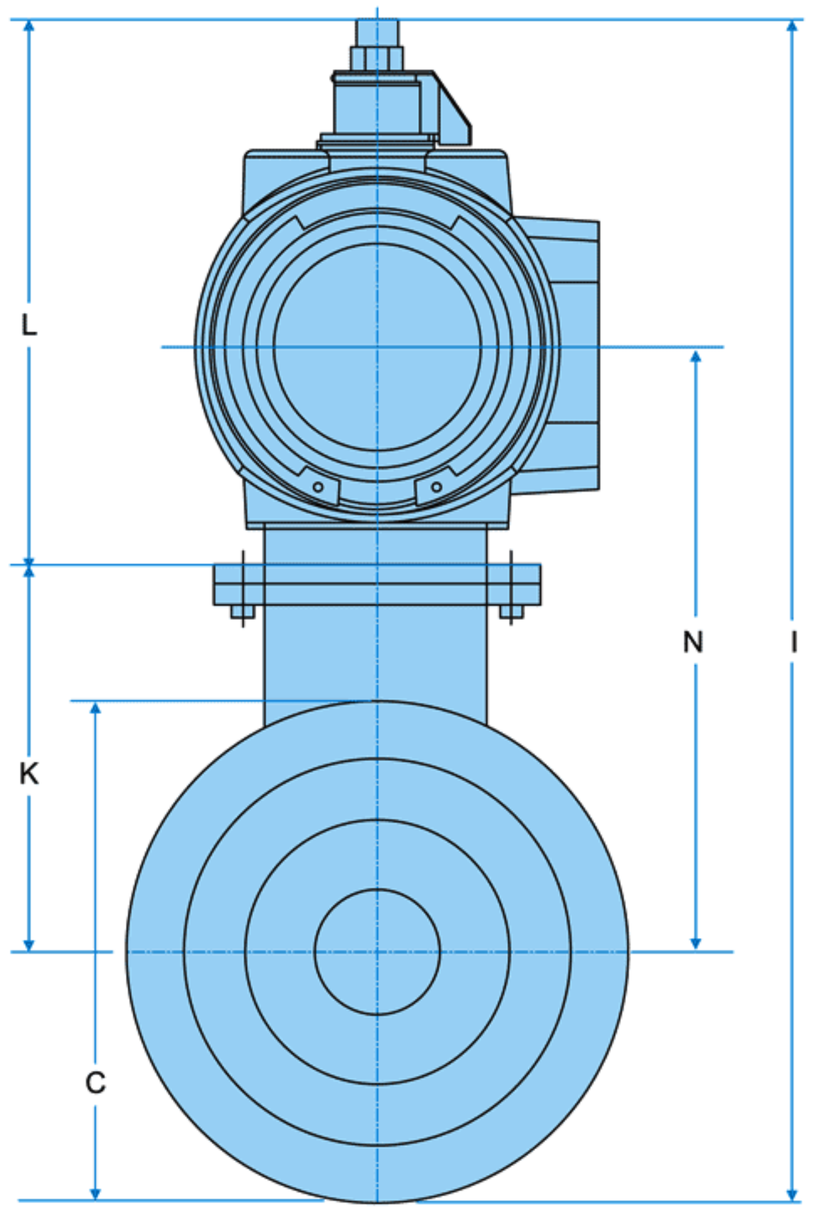
PART LIST

S.No.	DESCRIPTION	MATERIAL
1	BODY	PVC(STANDERED) PP(OPTIONAL) PVDF(OPTIONAL)
2	DISC	PVC(STANDERED) PP(OPTIONAL) PVDF(OPTIONAL)
3	BONDED SEAT	EPDM.Viton
4	SHAFT	403ss
5	BEARING	STEEL +PTFE
6	O-RING SHAFT	EPDM.Viton
7	O-RING PLUG	EPDM.Viton

S.No.	DESCRIPTION	MATERIAL
8	TAPPER PIN	AISI316
9	PLUG	C-15
10	TOP BUSHING	POLYACETAL
11	INDICADOR VISUAL POSITION INDICATOR	SD TORK MAKE
12	CILINDRO CYLINDER	SD TORK MAKE
13	TAPA DOBLEEFECTO DOUBLE ACTING CAP	SD TORK MAKE

VALVE SIZE	ACTUATOR MODEL NUMBER	DIMENSIONS												Cv		Approximate Time		Air Consumption Lts of Free Air		WT. OF ASSY IN KGS.
		A	B	C	D	E	F	G	H	I	J	n	e	60°	90°	for open In Sec.	for close In Sec.	To Open	To Close	
50	1268/50/PVC/PVC/DAW	109		8	7.5	20	83.82	109.22	120.65	85	278.04	4	0.75	65	130	0.2	0.2	0.075	0.05	6.15
	1268/50/PVC/PVC/SAOO		143.5	8	7.5	20	83.82	109.22	120.65	85	278.04	4	0.75	65	130	0.3	0.3	0.15		6.3
65	1268/65/PVC/PVC/DAW	109		8	7.5	20	91.44	119.38	139.7	85	295.82	4	0.75	120	240	0.2	0.2	0.15	0.1	6.65
	1268/65/PVC/PVC/SAOO		143.5	8	7.5	20	91.44	119.38	139.7	85	295.82	4	0.75	120	240	0.4	0.4	0.28		6.8
80	1268/80/PVC/PVC/DAOO	125		10	11	30	106.68	134.62	152.4	110	351.3	4	0.75	160	320	0.3	0.3	0.28	0.25	9
	1268/80/PVC/PVC/SAOO		160	10	11	30	106.68	134.62	152.4	110	351.3	4	0.75	160	320	0.5	0.5	0.28		9.25
100	1268/100/PVC/PVC/DA05	146		10	11	30	119.38	149.86	190.5	122	391.24	8	0.75	280	560	0.4	0.4	0.28	0.25	10.9
	1268/100/PVC/PVC/SA10		194	10	11	30	119.38	149.86	190.5	122	391.24	8	0.75	280	560	0.5	0.5	0.35		11.98
125	1268/125/PVC/PVC/DA05	146		10	11	30	132.08	167.64	215.9	122	421.72	8	0.88	430	860	0.4	0.4	0.35	0.32	17.1
	1268/125/PVC/PVC/SA10		194	10	11	30	132.08	167.64	215.9	122	421.72	8	0.88	430	860	0.6	0.6	0.65		18.18
150	1268/150/PVC/PVC/DA10	182		10	11	30	142.24	182.88	241.55	127	452.12	8	0.88	640	1280	0.5	0.5	0.65	0.55	21.57
	1 268/150/PVC/PVC/SA15		236	10	11	30	142.24	182.88	241.55	127	452.12	8	0.88	640	1280	0.8	0.8	0.8		23.65
200	1268/200/PVC/PVC/DA20	234		16	11	30	170.18	213.36	298.45	161	544.54	8	0.88	1200	2400	0.6	0.6	1.5	1.2	37.17
	1268/200/PVC/PVC/SA20		312	16	11	30	170.18	213.36	298.45	161	544.54	8	0.88	1200	2400	1	1	1.5		37.36
250	1268/250/PVC/PVC/DA20	234		16	11	30	210.82	241.3	361.95	161	613.12	12	1	1850	3700	1	1	2.05	1.9	52.57
	1268/250/PVC/PVC/SA25		312	16	11	30	210.82	241.3	361.95	161	613.12	12	1	1850	3700	1.6	1.6	2.05		58.2
300	1268/300/PVC/PVC/DA25	276		16	11	30	243.84	297.18	431.8	191	732.02	12	1	2700	5400	1.2	1.2	2.05	1.9	92
	1268/300/PVC/PVC/SA25		362	16	11	30	243.84	297.18	431.8	191	732.02	12	1	2700	5400	2.4	2.4	5.3		95.3
350	1268/350/PVC/PVC/DA40	444		32	20	50	269.24	325.12	476.25	272	866.36	12	1.12	3300	6600	1.2	1.2	5.3	5.3	110.7
	1268/350/PVC/PVC/SA40		598	32	20	50	269.24	325.12	476.25	272	866.36	12	1.12	3300	6600	4	4	5.3		129.5
400	1268/400/PVC/PVC/DA40	444		32	20	50	299.72	350.52	539.75	272	922.24	16	1.14	4400	8800	2.4	2.4	5.3	5.3	130.6
	1268/400/PVC/PVC/SA50		598	32	20	50	299.72	350.52	539.75	272	922.24	16	1.14	4400	8800	8	8	10.5		171.4
450	1268/450/PVC/PVC/DA50	524		32	20	50	314.96	370.84	577.85	313	998.8	16	1.26	6250	12500	4	4	10.5	7	272.7
	1268/450/PVC/PVC/SA50		694	32	20	50	314.96	370.84	577.85	313	998.8	16	1.26	6250	12500	8	8	10.5		300.4
500	1268/500/PVC/PVC/DA50	524		32	20	50	350.52	401.32	635	313	1064.8	20	1.26	6900	13800	4	4	10.5	7	318.7
	1 268/500/PVC/PVC/SA50		694	32	20	50	350.52	401.32	635	313	1064.8	20	1.26	6900	13800	8	8	10.5		346.4
600	1268/600/PVC/PVC/DA50	524		32	20	50	406.4	464.82	749.3	313	1184.2	20	1.38	10000	20000	4	4	10.5	7	396.7
	1268/600/PVC/PVC/SA70		694	32	20	50	406.4	464.82	749.3	313	1184.2	20	1.38	10000	20000	14	31	10.5		451.7



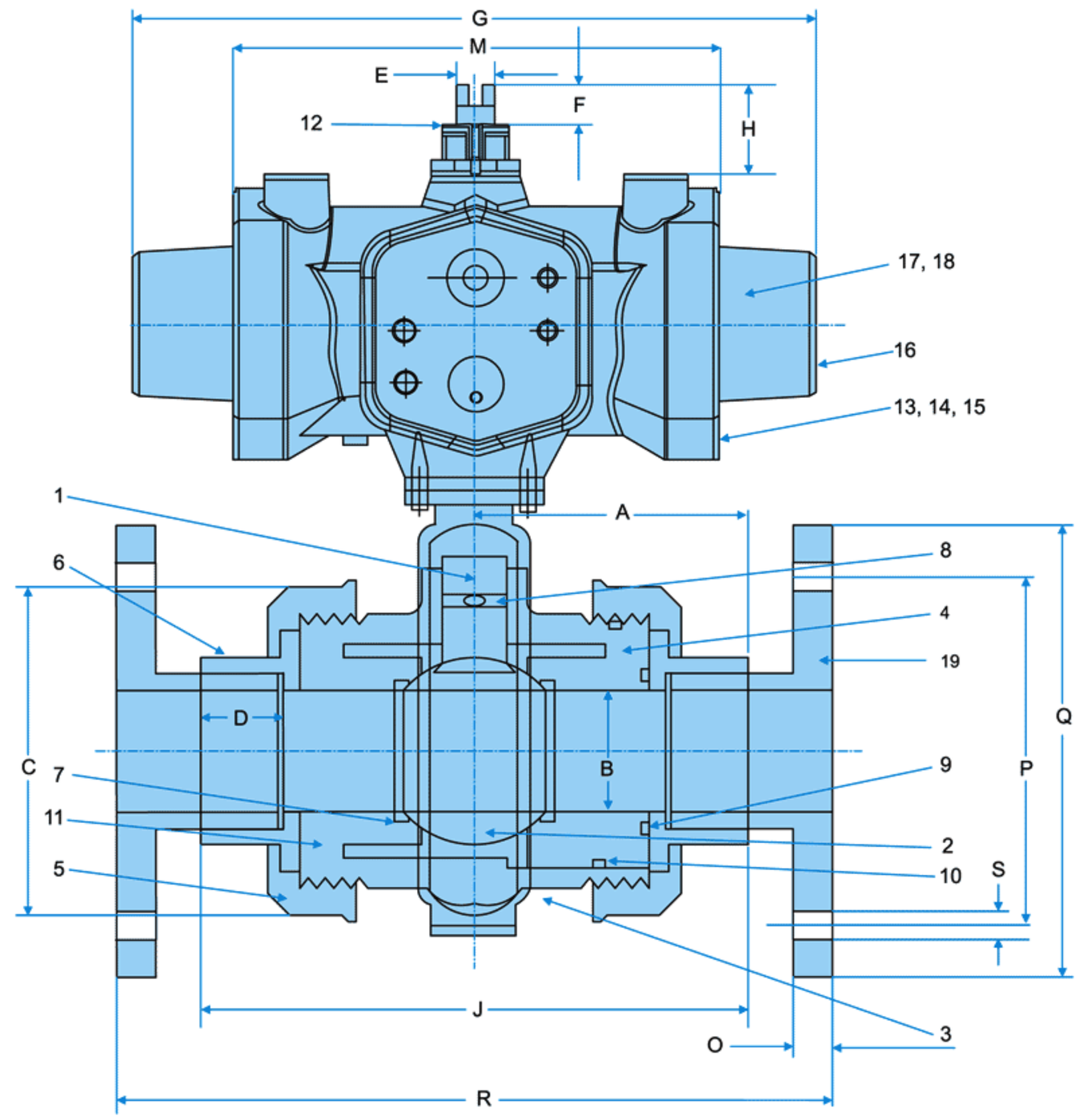


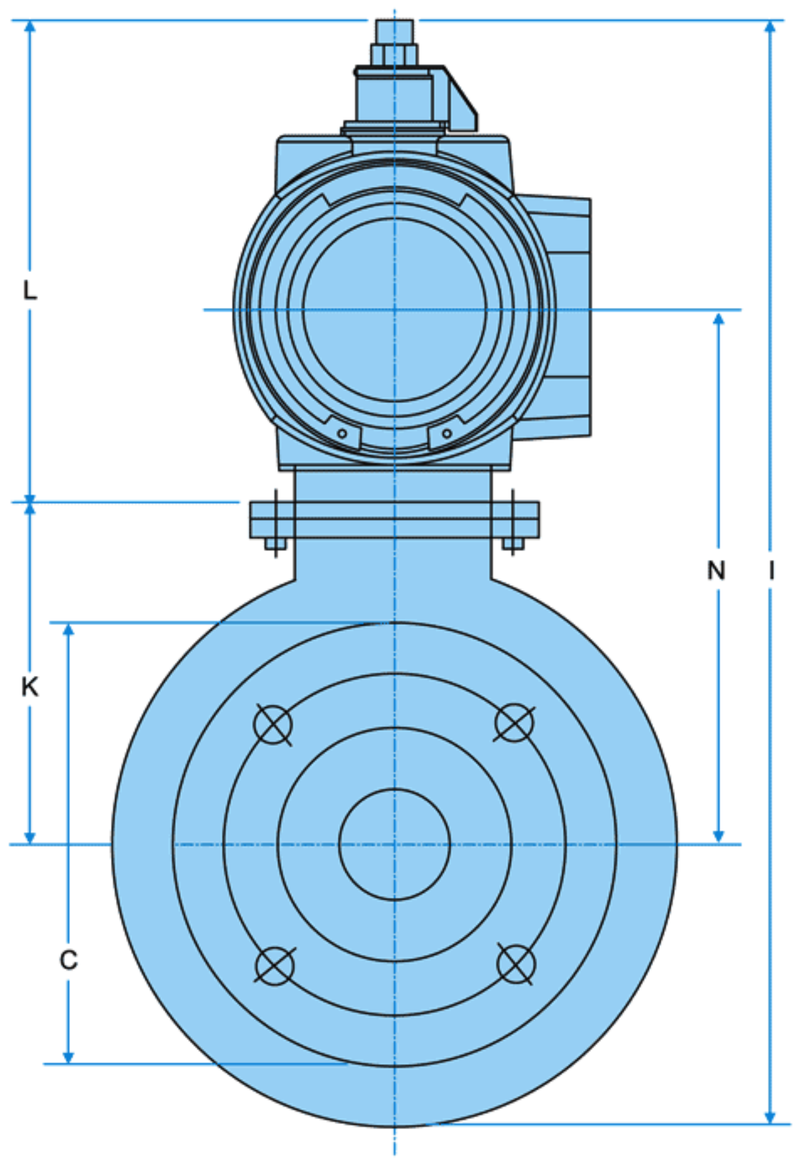
PART LIST

S.No.	DESCRIPTION	MATERIAL
1	STEM	PVC,options,PP,CPVC,PVD
2	BALL	PVC,options,PP,CPVC,PVD
3	BODY	PVC,options,PP,CPVC,PVD
4	SEAT CARRIER	PVC,options,PP,CPVC,PVD
5	UNION NUT	PVC,options,PP,CPVC,PVD
6	END CONNECTOR	PVC,options,PP,CPVC,PVD
7	SEAT	TEFLON
8	STEM O-RING	EPDM.VITON
9	SEAT CARRIER O-RING	EPDM.VITON

S.No.	DESCRIPTION	MATERIAL
10	BODY O-RING	EPDM.VITON
11	SOLID END O-RING	EPDM.VITON
12	INDICADOR VISUAL POSITION INDICATOR	
13	PISTON GUIDE	POLYACETAL
14	GUIDE RING	POLYACETAL
15	PISTON O-RING	NITRILE
16	TAPA DOBLEEFECTO DOUBLE ACTING CAP	
17	SPRING SET	DIN-17223-C
18	SPRING RETURN CAP	ALLUMININUM ALLOY

VALVE SIZE	ACTUATOR MODEL NUMBER	DIMENSIONS														Approximate Time		Air Consumption Lts of Free Air		Cv	WT. OF ASSY IN KGS.
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	for open In Sec.	for close In Sec.	To Open	To Close		
15	1368/15/PVC/PVC/DAW/BSP	51.42	15.01	53.69	22.22	8	7.5		20	160.57	102 84	14.98	51.511		94.01	0.2	0.2	0.075	0.05	10	0.7
	1368/15/PVC/PVC/SAW/BSP	51.42	15.01	53.69	22.22	8	7.5	143.5	20	160.57	102.84	14.98	51.511		94.01	0.3	0.3	0.075		10	0.7
20	1368/20/PVC/PVC/DAW/BSP	61.5	20.29	63.5	25.4	8	7.5		20	180.25	123.01	14.98	67		109.5	0.2	0.2	0.075	0.05	15	0.75
	1368/20/PVC/PVC/SAW/BSP	61.5	20.29	63.5	25.4	8	7.5	143.5	20	180.25	123.01	14.98	67		109.5	0.3	0.3	0.075		15	0.75
25	1368/25/PVC/PVC/DAW/BSP	72.25	26	72.99	28.57	8	7.5		20	185.94	144.5	16	73.66		116.16	0.2	0.2	0.075	0.05	32	0.87
	1368/25/PVC/PVC/SA00/BSP	72.25	26	72.99	28.57	10	11	143.5	20	185.92	144.5	16	73.66		116.16	0.3	0.3	0.075		32	1.02
32	1368/32/PVC/PVC/DAW/BSP	82.8	30.48	81.99	31.75	8	7.5		20	192.35	165.6	16	70.3		112.8	0.3	0.3	0.15	0.1	90	1.07
	1368/32/PVC/PVC/SA00/BSP	82.8	30.48	81.99	31.75	10	11	160	30	192.35	165.6	16	70.3		112.8	0.4	0.4	0.15		90	1.22
40	1368/40/PVC/PVC/DA00/BSP	90.93	38.1	97.79	34.92	10	11		20	238.39	181.86	16	84.83		139.83	0.3	0.3	0.15	0.1	90	1.99
	1368/40/PVC/PVC/SA05/BSP	90.93	38.1	97.79	34.92	10	11	160	30	238.39	181.86	16	84.83		139.83	0.4	0.4	0.15		90	2.49
50	1368/50/PVC/PVC/DA05/BSP	100.96	48	120.21	38.1	10	11		30	274.29	201.93	19.98	97.79		158.79	0.4	0.4	0.28	0.25	126	2.83
	1368/50/PVC/PVC/SA10/BSP	100.96	48	120.21	38.1	10	11	194	30	274.29	201.93	19.98	97.79		158.79	0.5	0.5	0.28		126	3.91
65	1368/65/PVC/PVC/DA10/BSP	112.52	67.05	150.11	44.45	10	11		30	319.96	225.04	19.98	139.95		203.45	0.5	0.5	0.33	0.32	319	4.92
	1368/65/PVC/PVC/SA15/BSP	112.52	67.05	150.11	44.45	10	11	236	30	319.96	225.04	19.98	139.95		203.45	0.6	0.6	0.33		319	7
80	1368/80/PVC/PVC/DA15/BSP	137.54	80.01	182.88	47.62	10	11		30	359.61	275.08	21.99	166.11		229.61	0.8	0.8	0.8	0.7	351	8.53
	1368/80/PVC/PVC/SA20/BSP	137.54	80.01	182.88	47.62	16	11	312	30	359.61	275.08	21.99	166.11		246.61	1	1	0.8		351	8.34
100	1368/100/PVC/PVC/DA20/BSP	162.56	102.1	226.06	57.15	16	11		30	413.1	325.12	21.99	169.92		250.42	1	1	1.5	1.2	589	11.79
	1368/100/PVC/PVC/SA25/BSP	162.56	102.1	226.06	57.15	16	11	362	30	433.92	325.12	21.99	169.92		250.42	1.6	1.6	1.5		589	17.42



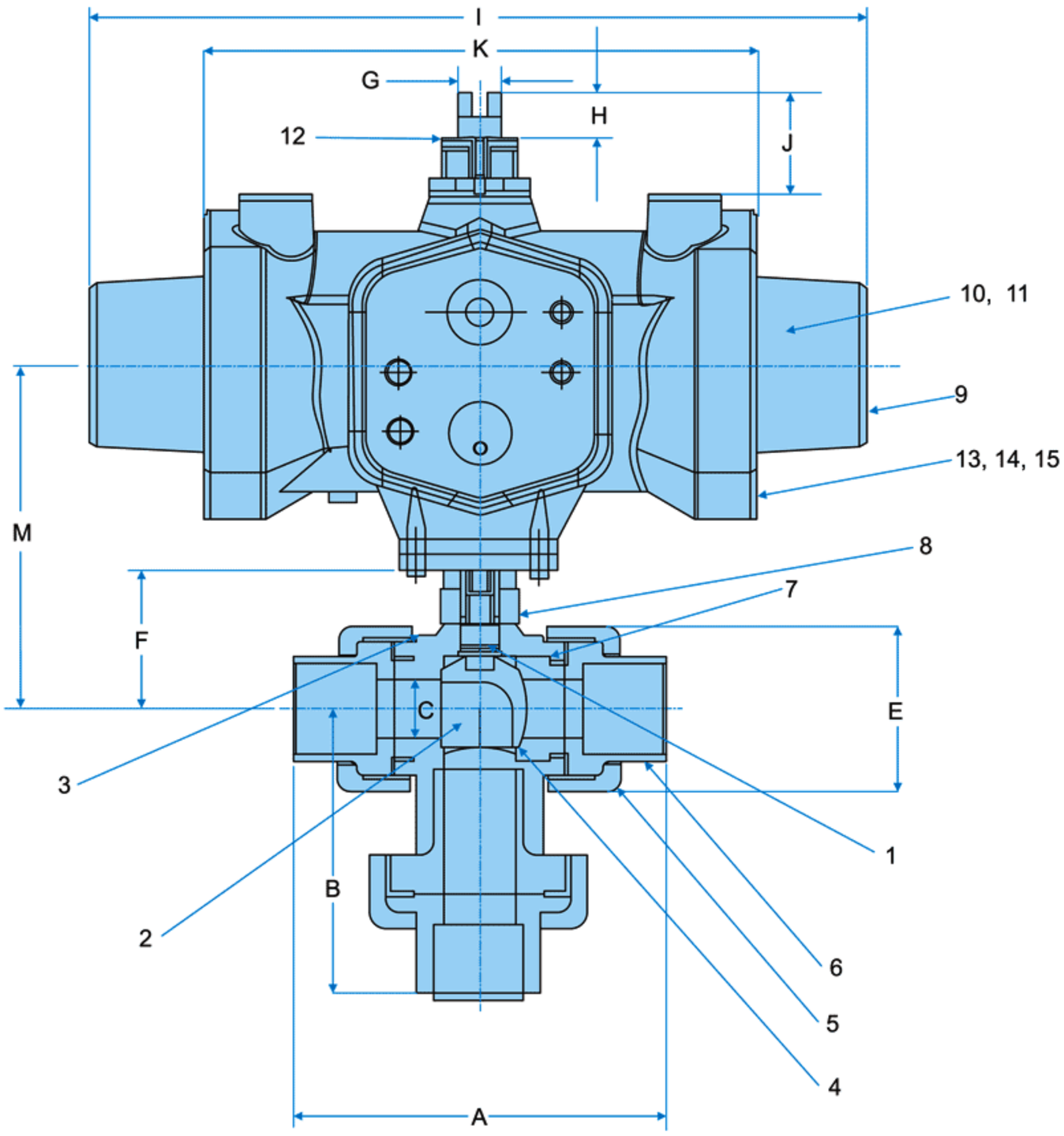


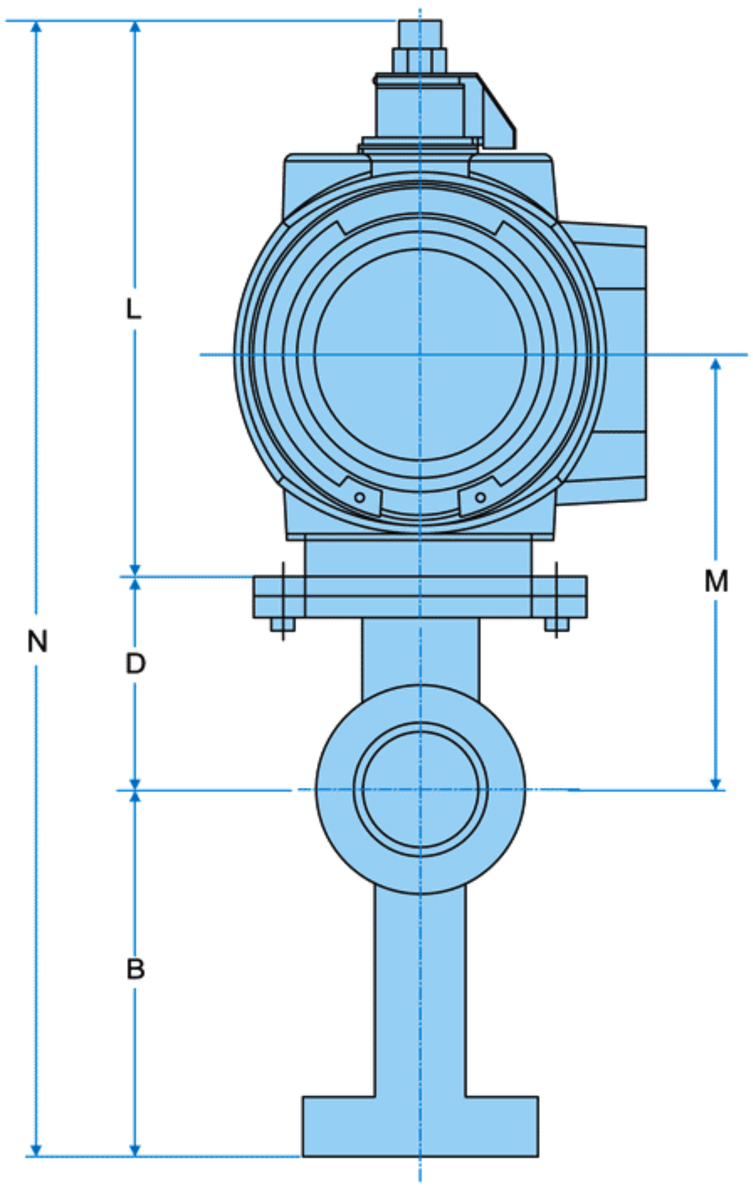
PART LIST

S.No.	DESCRIPTION	MATERIAL
1	STEM	PVC,options,PP,CPVC,PVD
2	BALL	PVC,options,PP,CPVC,PVD
3	BODY	PVC,options,PP,CPVC,PVD
4	SEAT CARRIER	PVC,options,PP,CPVC,PVD
5	UNION NUT	PVC,options,PP,CPVC,PVD
6	END CONNECTOR	PVC,options,PP,CPVC,PVD
7	SEAT	TEFLON
8	STEM O-RING	EPDM.VITON
9	SEAT CARRIER O-RING	EPDM.VITON
10	BODY O-RING	EPDM.VITON

S.No.	DESCRIPTION	MATERIAL
11	SOLID END O-RING	EPDM.VITON
12	INDICADOR VISUAL POSITION INDICATOR	
13	PISTON GUIDE	POLYACETAL
14	GUIDE RING	POLYACETAL
15	PISTON O-RING	NITRILE
16	TAPA DOBLEEFECTO DOUBLE ACTING CAP	
17	SPRING SET	DIN-17223-C
18	SPRING RETURN CAP	ALLUMININUM ALLOY
19	FLANGE	PVC, Options, PP, CPVC, PVDF

VALVE SIZE	ACTUATOR MODEL NUMBER	DIMENSIONS																			Approximate Time		Air Consumption Lts of Free Air		Cv	WT. OF ASSY IN KGS.
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	for open In Sec.	for close In Sec.	To Open	To Close		
15	1368/15/PVC/PVC/DAW/FLG	51.42	15.01	53.69	22.22	8	7.5		20	160.57	102.84	14.98	51.511	109	94.01	16	65	97	130	14	0.2	0.2	0.075	0.05	10	0.7
	1368/15/PVC/PVC/SAW/FLG	51.42	15.01	53.69	22.22	8	7.5	143.5	20	160.57	102.84	14.98	51.511	109	94.01	16	65 00	97	130	14	0.3	0.3	0.075		10	0.7
20	1368/20/PVC/PVC/DAW/FLG	61.5	20.29	63 .5	25.4	8	7.5		20	180.25	123.01	14.98	67	109	109.5	16	75	106	150	14	0.2	0.2	0.075	0.05	15	0.75
	1368/20/PVC/PVC/SAW/FLG	61.5	20.29	63.5	25.4	8	7.5	143.5	20	180.25	123.01	14.98	67	109	109.5	16	75 00	106	150	14	0.3	0.3	0.075		15	0.75
25	1368/25/PVC/PVC/DAW/FLG	72.25	26	72.99	28.57	8	7.5		20	185.94	144.5	16	73.66	109	116.16	16	85	116	160	14	0.2	0.2	0.075	0.05	32	0.87
	1368/25/PVC/PVC/SA00/FLG	72.25	26	72.99	28.57	10	11	143.5	20	185.92	144.5	16	73.66	109	116.16	16	85	116	160	14	0.3	0.3	0.075		32	1.02
32	1368/32/PVC/PVC/DAW/FLG	82.8	30.48	81 99	31.75	a	7.5		20	192.35	165.6	16	70.3	125	112.8	15	100	140	180	17	0.3	0.3	0.15	0.1	90	1.07
	1368/32/PVC/PVC/SA00/FLG	82.8	30.48	81.99	31.75	10	11	160	30	192.35	165.6	16	70.3	125	112.8	15	100	140	180	17	0.4	0.4	0.15		90	1.22
40	1368/40/PVC/PVC/DA00/FLG	90.93	38.1	97.79	34.92	10	11		20	238.39	181.86	16	84.83	125	139.83	15	110	149	200	17	0.3	0.3	0.15	0.1	90	1.99
	1368/40/PVC/PVC/SA05/FLG	90.93	38.1	97.79	34.92	10	11	160	30	238.39	181.86	16	84.83	125	139.83	15	110	149	200	17	0.4	0.4	0.15		90	2.49
50	1368/50/PVC/PVC/DA05/FLG	100.96	48	120.21	38.1	10	11		30	274.29	201.93	19.98	97.79	146	158.79	17	125	164	230	17	0.4	0.4	0.28	0.25	126	2.83
	1368/50/PVC/PVC/SA10/FLG	100.96	48	120.21	38.1	10	11	194	30	274.29	201.93	19.98	97.79	146	158.79	17	125	164	230	17	0.5	0.5	0.28		126	3.91
65	1368/65/PVC/PVC/DA10/FLG	112.52	67.05	150.11	44.45	10	11		30	319.96	225.04	19.98	139.95	182	203.45	17	145	185	290	17	0.5	0.5	0.33	0.32	319	4.92
	1368/65/PVC/PVC/SA15/FLG	112.52	67.05	150.11	44.45	10	11	236	30	319.96	225.04	19.98	139.95	182	203.45	17	145	185	290	17	0.6	0.6	0.33		319	7
80	1368/80/PVC/PVC/DA15/FLG	137.54	80.01	182.88	47.62	10	11		30	359.61	275.08	21.99	166.11	234	229.61	19	160	200	310	17	0.8	0.8	0.8	0.7	351	8.53
	1368/80/PVC/PVC/SA20/FLG	137.54	80.01	182.88	47.62	16	11	312	30	359.61	275.08	21.99	166.11	234	246.61	19	160	200	310	17	1	1	0.8		351	8.34
100	1368/100/PVC/PVC/DA20/FLG	162.56	102.1	226.06	57.15	16	11		30	413.1	325.12	21.99	169.92	276	250.42	22	210	250	400	17	1	1	1.5	1.2	589	11.79
	1368/100/PVC/PVC/SA25/FLG	162.56	102.1	226.06	57.15	16	11	362	30	433.92	325.12	21.99	169.92	276	250.42	22	210	250	400	17	1.6	1.6	1.5		589	17.42

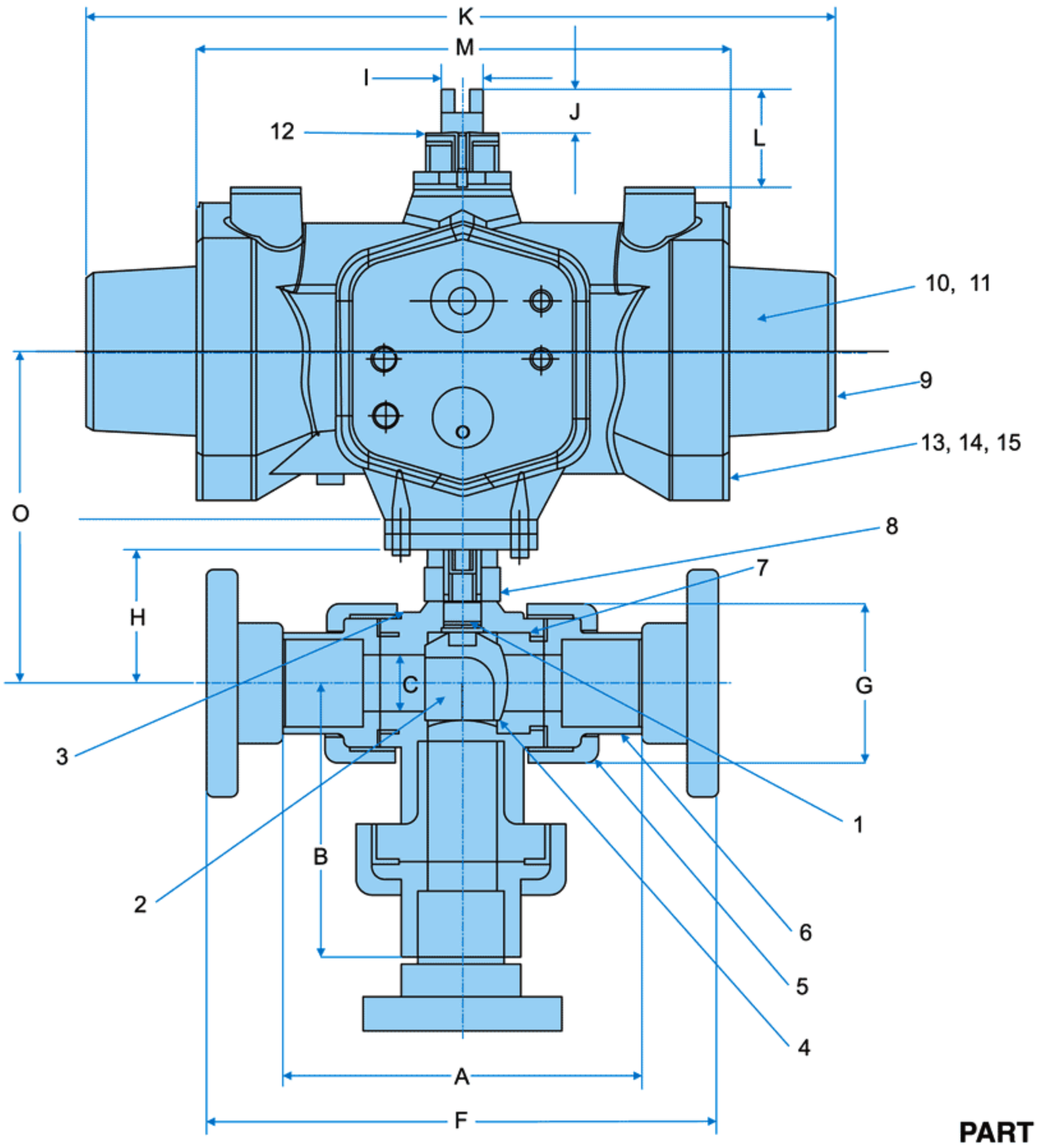


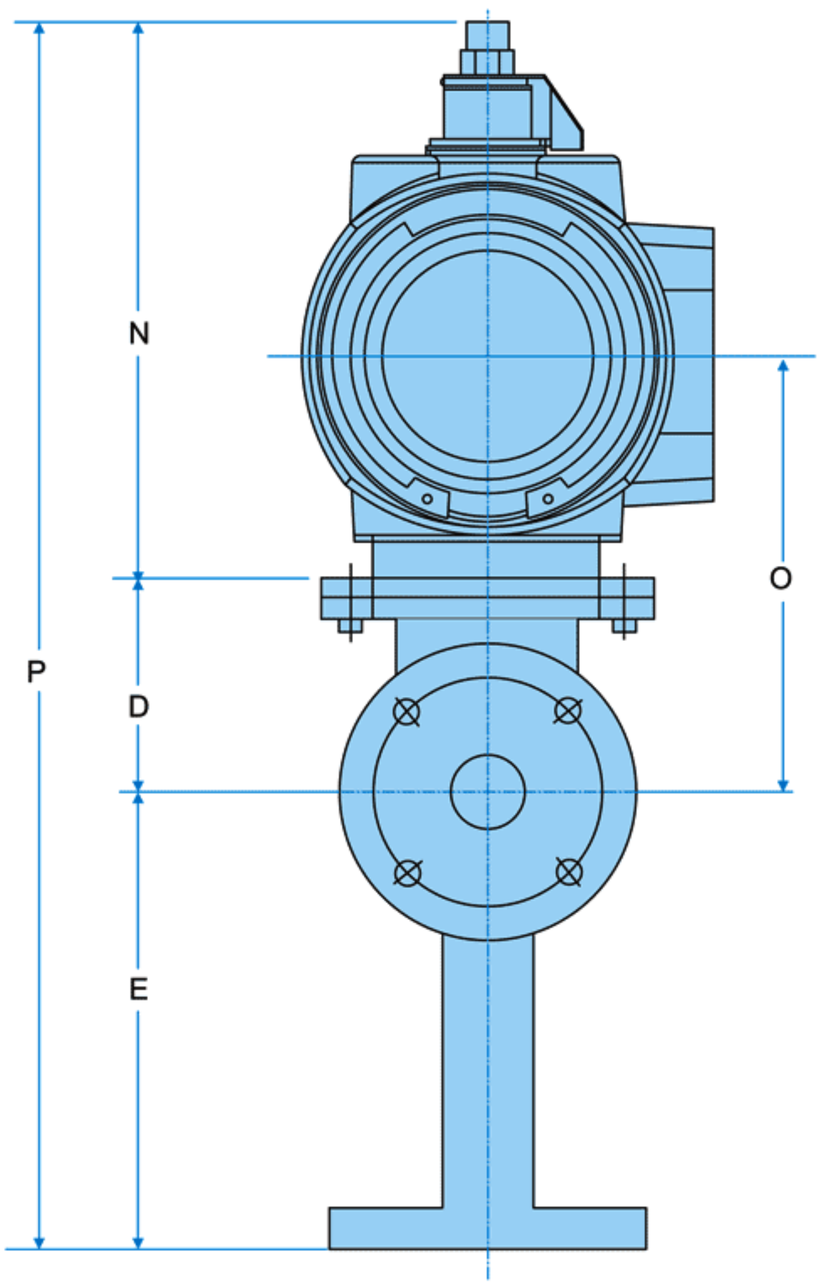


PART LIST

S.No.	DESCRIPTION	MATERIAL
1	STEM	PVC,options,PP,CPVC,PVC
2	BALL	PVC,options,PP,CPVC,PVC
3	BODY	PVC,options,PP,CPVC,PVC
4	SEAT	TEFLON
5	UNION NUT	PVC,options,PP,CPVC,PVC
6	END CONNECTOR	PVC,options,PP,CPVC,PVC
7	O-RING SEALS	EPDM.VITON
8	MOUNTING KIT	PVC,options,PP,CPVC,PVDF
9	TAPA DOBLEEFECTO DOUBLE ACTING CAP	
10	SPRING SET	DIN-17223-C
11	SPRING RETURN CAP	ALLUMININUM ALLOY
12	INDICADOR VISUAL POSITION INDICATOR	
13	PISTON GUIDE	POLYACETAL
14	GUIDE RING	POLYACETAL
15	PISTON O-RING	NITRILE

VALVE SIZE	ACTUATOR MODEL NUMBER	DIMENSIONS														Approximate Time		Air Consumption Lts of Free Air		Cv	WT. OF ASSY IN KGS.
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	for open In Sec.	for close In Sec.	To Open	To Close		
15	1368/15/PVC/PVC/DAW/3W/BSP	58	84	13	75	57	64	8	7.5		20	109	51.51	100.75	210.51	0.2	0.2	0.075	0.05	10	0.72
	1368/15/PVC/PVC/SAW/3W/BSP	58	84	13	75	57	64	8	75	143.5	20	109	51.51	100.75	210.51	0.3	0.3	0.075		10	0.72
20	1368/20/PVC/PVC/DAW/3W/BSP	65	91	19	75	67	72	8	7.5		20	109	67	108.5	233	0.2	0.2	0.075	0.05	15	0.81
	1368/20/PVC/PVC/SAW/3W/BSP	65	91	19	75	67	72	8	7.5	143.5	20	109	67	108.5	233	0.3	0.3	0.075		15	0.81
25	1368/25/PVC/PVC/DAW/3W/BSP	76	105	25	82	76	78	8	7.5		20	109	73.66	118.83	260.66	0.2	0.2	0.075	0.05	32	1
	1368/25/PVC/PVC/SA00/3W/BSP	76	105	25	82	76	78	10	11	143.5	20	109	73.66	118.83	260.66	0.3	0.3	0.075		32	1.15
32	1368/32/PVC/PVC/DAW/3W/BSP	112	151	51	92	102	89	8	7.5		20	125	70.3	127.15	313.3	0.3	0.3	0.15	0.1	90	1.31
	1368/32/PVC/PVC/SA00/3W/BSP	11?	151	51	92	102	89	10	11	160	30	125	70.3	127.15	313.3	0.4	0.4	0.15		90	1.46
40	1368/40/PVC/PVC/DA00/3W/BSP	109	149	51	92	102	89	10	11		20	125	84.83	134.41	325.83	0.3	0.3	0.15	0.1	90	2
	1368/40/PVC/PVC/SA05/3W/BSP	109	149	51	92	102	89	10	11	160	30	125	84.83	134.41	325.83	0.4	0.4	0.15		90	2.9
50	1368/50/PVC/PVC/DA05/3W/BSP	111	151	51	109	121	100	10	11		30	146	97.79	157.89	357.79	0.4	0.4	0.28	0.25	126	3.4
	1368/50/PVC/PVC/SA10/3W/BSP	111	151	51	109	121	100	10	11	194	30	146	97.79	157.89	357.79	0.5	0.5	0.28		126	4.56
65	1368/65/PVC/PVC/DA10/3W/BSP	150	193	76	178	163	149	10	11		30	182	139.95	247.97	210.95	0.5	0.5	0.33	0.32	319	6.53
	1368/65/PVC/PVC/SA15/3W/BSP	150	193	76	178	163	149	10	11	236	30	182	139.95	247.97	210.95	0.6	0.6	0.33		319	8.61
80	1368/80/PVC/PVC/DA15/3W/BSP	150	193	76	178	163	149	10	11		30	234	166.11	261.05	537.11	0.8	0.8	0.8	0.7	351	10.95
	1368/80/PVC/PVC/SA20/3W/BSP	150	193	76	178	163	149	16	11	312	30	234	166.11	261.05	537.11	1	1	0.8		351	10.85
100	1368/100/PVC/PVC/DA20/3W/BSP	178	237	102	204	217	226	16	11		30	276	169.92	288.96	610.92	1	1	1.5	1.2	589	16.72
	1368/100/PVC/PVC/SA25/3W/BSP	178	237	102	204	217	226	16	11	362	30	276	169.92	288.96	610.92	1.6	1.6	1.5		589	22.35

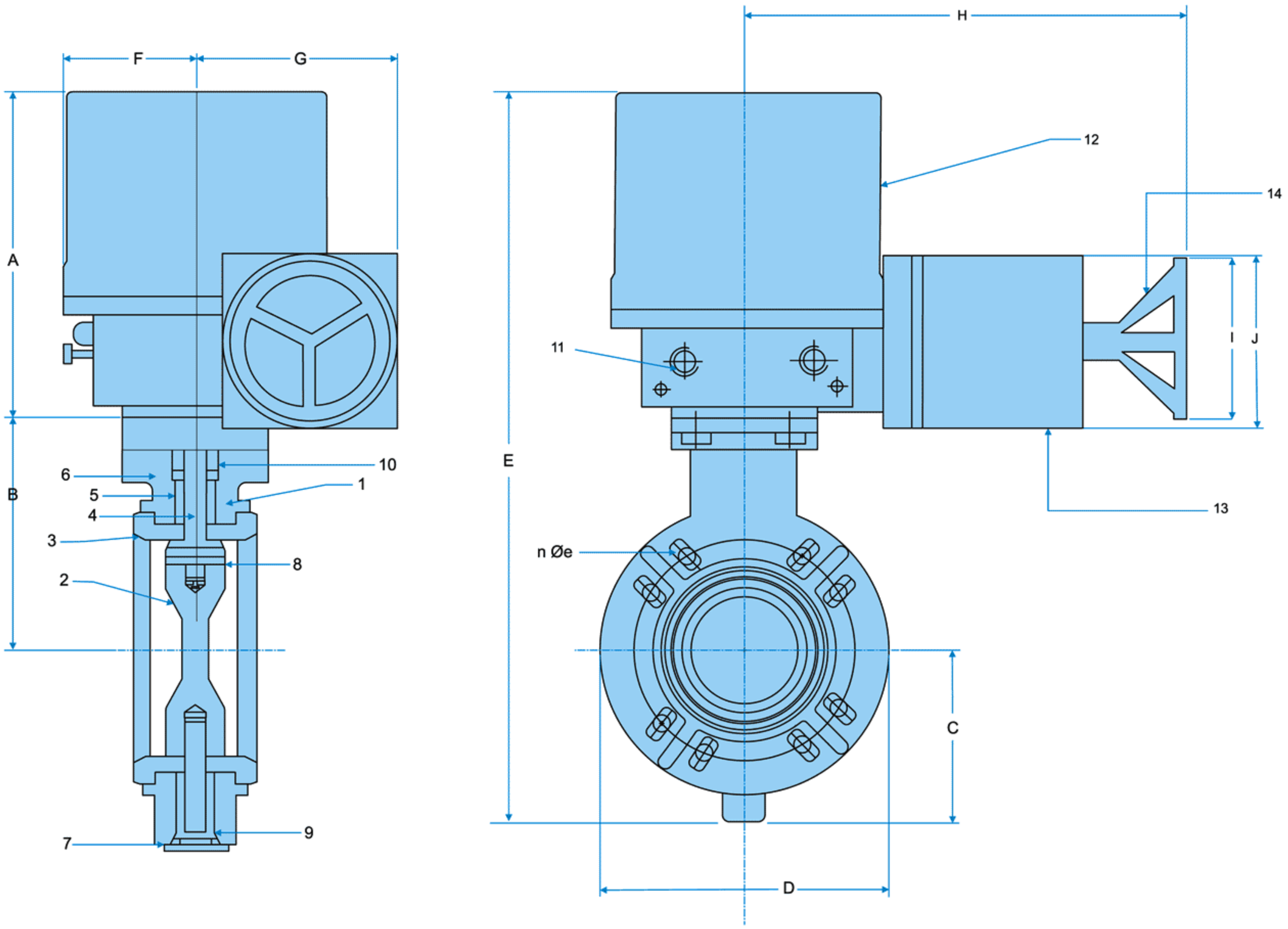




PART LIST

S.No.	DESCRIPTION	MATERIAL
1	STEM	PVC,options,PP,CPVC,PVC
2	BALL	PVC,options,PP,CPVC,PVC
3	BODY	PVC,options,PP,CPVC,PVC
4	SEAT	TEFLON
5	UNION NUT	PVC,options,PP,CPVC,PVC
6	END CONNECTOR	PVC,options,PP,CPVC,PVC
7	O-RING SEALS	EPDM.VITON
8	MOUNTING KIT	PVC,options,PP,CPVC,PVDF
9	TAPA DOBLEEFECTO DOUBLE ACTING CAP	
10	SPRING SET	DIN-17223-C
11	SPRING RETURN CAP	ALLUMININUM ALLOY
12	INDICADOR VISUAL POSITION INDICATOR	
13	PISTON GUIDE	POLYACETAL
14	GUIDE RING	POLYACETAL
15	PISTON O-RING	NITRILE

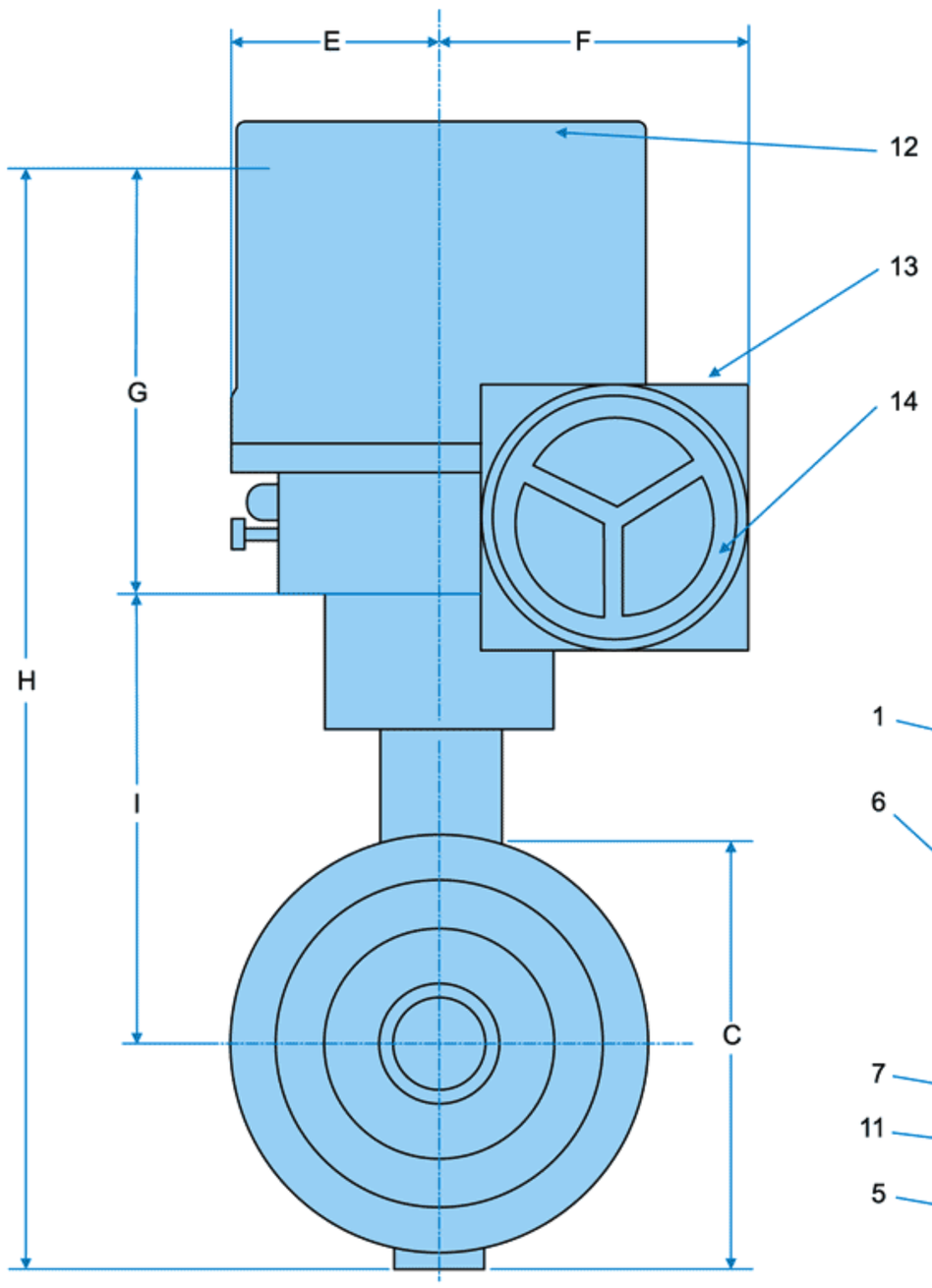
VALVE SIZE	ACTUATOR MODEL NUMBER	DIMENSIONS																Approximate Time		Air Consumption Lts of Free Air		Cv	WT. OF ASSY IN KGS.
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	for open In Sec.	for close In Sec.	To Open	To Close		
15	1368/15/PVC/PVC/DAW/3W/FLG	58	84	13	75	98	171	57	64	8	7.5		20	109	51.51	100.75	224.51	0.2	0.2	0.075	0.05	10	1.26
	1368/15/PVC/PVC/SAW/3W/FLG	58	84	13	75	98	171	57	64	8	7.5	143.5	20		51.51	100.75	224.51	0.3	0.3	0.075		10	1.26
20	1368/20/PVC/PVC/DAW/3W/FLG	65	91	19	75	117	191	67	72	8	7.5		20	109	67	108.5	259	0.2	0.2	0.075	0.05	15	1.49
	1368/20/PVC/PVC/SAW/3W/FLG	65	91	19	75	117	191	67	72	8	7.5	143.5	20		67	108.5	259	0.3	0.3	0.075		15	1.49
25	1368/25/PVC/PVC/DAW/3W/FLG	76	105	25	82	121	216	76	78	8	7.5		20	109	73.66	118.83	276.66	0.2	0.2	0.075	0.05	32	1.87
	1368/25/PVC/PVC/SA00/3W/FLG	76	105	25	82	121	216	76	78	10	11	143.5	20		73.66	118.83	276.66	0.3	0.3	0.075		32	2 02
32	1368/32/PVC/PVC/DAW/3W/FLG	112	151	51	92	132	293	102	89	8	7.5		20	125	70.3	127.15	294.3	0.3	0.3	0.15	0.1	90	2.36
	1368/32/PVC/PVC/SA00/3W/FLG	112	151	51	92	132	293	102	89	10	11	160	30		70.3	127.15	294.3	0.4	0.4	0.15		90	2.56
40	1368/40/PVC/PVC/DA00/3W/FLG	109	149	51	92	152	301	102	89	10	11		20	125	84.83	134.41	328.83	0.3	0.3	0.15	0.1	90	3.39
	1368/40/PVC/PVC/SA05/3W/FLG	109	149	51	92	152	301	102	89	10	11	160	30		84.83	134.41	328.83	0.4	0.4	0.15		90	4.29
50	1368/50/PVC/PVC/DA05/3W/FLG	111	151	51	109	171	311	121	100	10	11		30	146	97.79	157.89	377.79	0.4	0.4	0.28	0.25	126	5.49
	1368/50/PVC/PVC/SA10/3W/FLG	111	151	51	109	171	311	121	100	10	11	194	30		97.79	157.89	377.79	0.5	0.5	0.28		126	6.57
65	1368/65/PVC/PVC/DA10/3W/FLG	150	193	76	178	220	404	163	149	10	11		30	182	139.95	247.97	537.95	0.5	0.5	0.33	0.32	319	9.17
	1368/65/PVC/PVC/SA15/3W/FLG	150	193	76	178	220	404	163	149	10	11	236	30		139.95	247.97	537.95	0.6	0.6	0.33		319	11.25
80	1368/80/PVC/PVC/DA15/3W/FLG	150	193	76	178	221	406	163	149	10	11		30	234	166.11	261.05	565.11	0.8	0.8	0.8	0.7	351	13.81
	1368/80/PVC/PVC/SA20/3W/FLG	150	193	76	178	221	406	163	149	16	11	312	30		166.11	261.05	565.11	1	1	0.8		351	13.62
100	1368/100/PVC/PVC/DA20/3W/FLG	178	237	102	204	265	480	217	226	16	11		30	276	169.92	288.96	638.92	1	1	1.5	1.2	589	21.75
	1368/100/PVC/PVC/SA25/3W/FLG	178	237	102	204	265	480	217	226	16	11	362	30		169.92	288.96	638.92	1.6	1.6	1.5		589	27.38

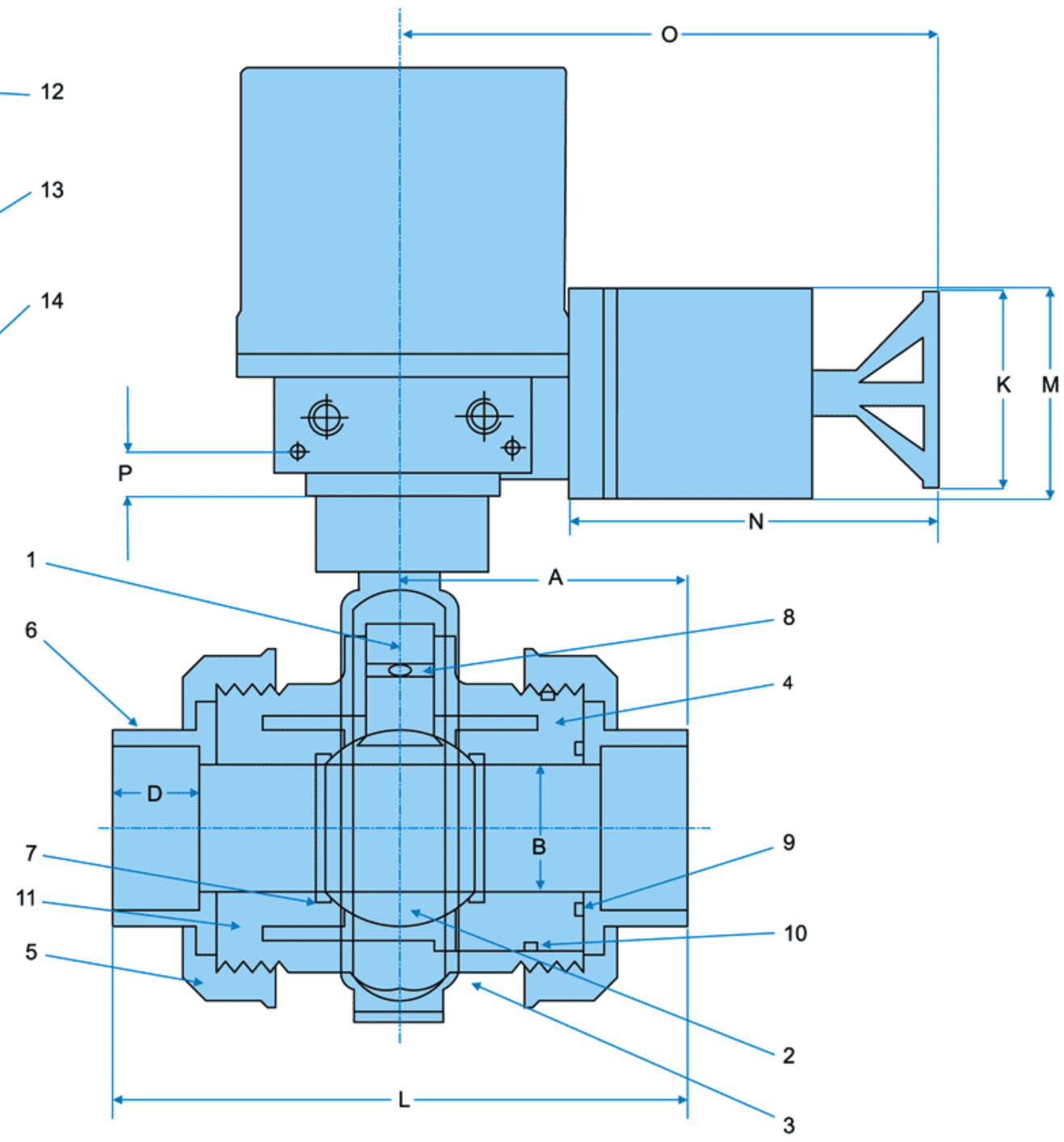


PART LIST

S.No.	DESCRIPTION	MATERIAL
1	BODY	PVC(STANDERED) PP(OPTIONAL) PVDF(OPTIONAL)
2	DISC	PVC(STANDERED) PP(OPTIONAL) PVDF(OPTIONAL)
3	BONDED SEAT	BN,EPDM,VITON
4	SHAFT	403SS
5	BEARING	STEEL + PTFE
6	O-RING SHAFT	EPDM,VITON
7	O-RING PLUG	EPDM.VITON
8	TAPPER PIN	AISI316
9	PLUG	C-15
10	TOP BUSHING	POLYACETAL
11	CABLE GLANDS	SD TORK MAKE
12	ELECTRIC ACTUATOR	SD TORK MAKE
13	MOTOR(TEFC/TESC)	SD TORK MAKE
14	HAND WHEEL	SD TORK MAKE

VALVE SIZE	ACTUATOR MODEL NUMBER	DIMENSIONS												Cv		Operating time/sec	WT. OF ASSY IN KGS.
		A	B	C	D	E	F	G	H	I	J	n	e	60°	90°		
50	1258/50/PVC/PVC/SD03	175	3.3	109	120	182.6	68	117	215	100	110	4	0.75	65	130	17	13.7
65	1258/65/PVC/PVC/SD03	175	3.6	119	139	183.3	68	117	215	100	110	4	0.75	120	240	17	14.2
80	1258/80/PVC/PVC/SD03	175	4.2	134	152	184.5	68	117	215	100	110	4	0.75	160	320	17	16
100	1258/100/PVC/PVC/SD03	175	4.7	149	190	185.6	68	117	215	100	110	8	0.75	280	560	17	17.4
125	1258/125/PVC/PVC/SD05	175	5.2	167	215	186.8	68	117	225	100	110	8	0.88	430	860	17	24.6
150	1258/150/PVC/PVC/SD10	250	5.6	182	241	262.8	95	148	270	100	110	8	0.88	640	1280	20	31.7
200	1258/200/PVC/PVC/SD20	250	6.7	213	298	265.1	95	148	285	100	110	8	0.88	1200	2400	20	46.6
250	1258/250/PVC/PVC/SD20	250	8.3	241	361	267.8	95	148	285	100	110	12	1	1850	3700	20	62
300	1258/300/PVC/PVC/SD30	261	9.6	297	431	282.3	123	182	355	100	110	12	1	2700	5400	26	99.1

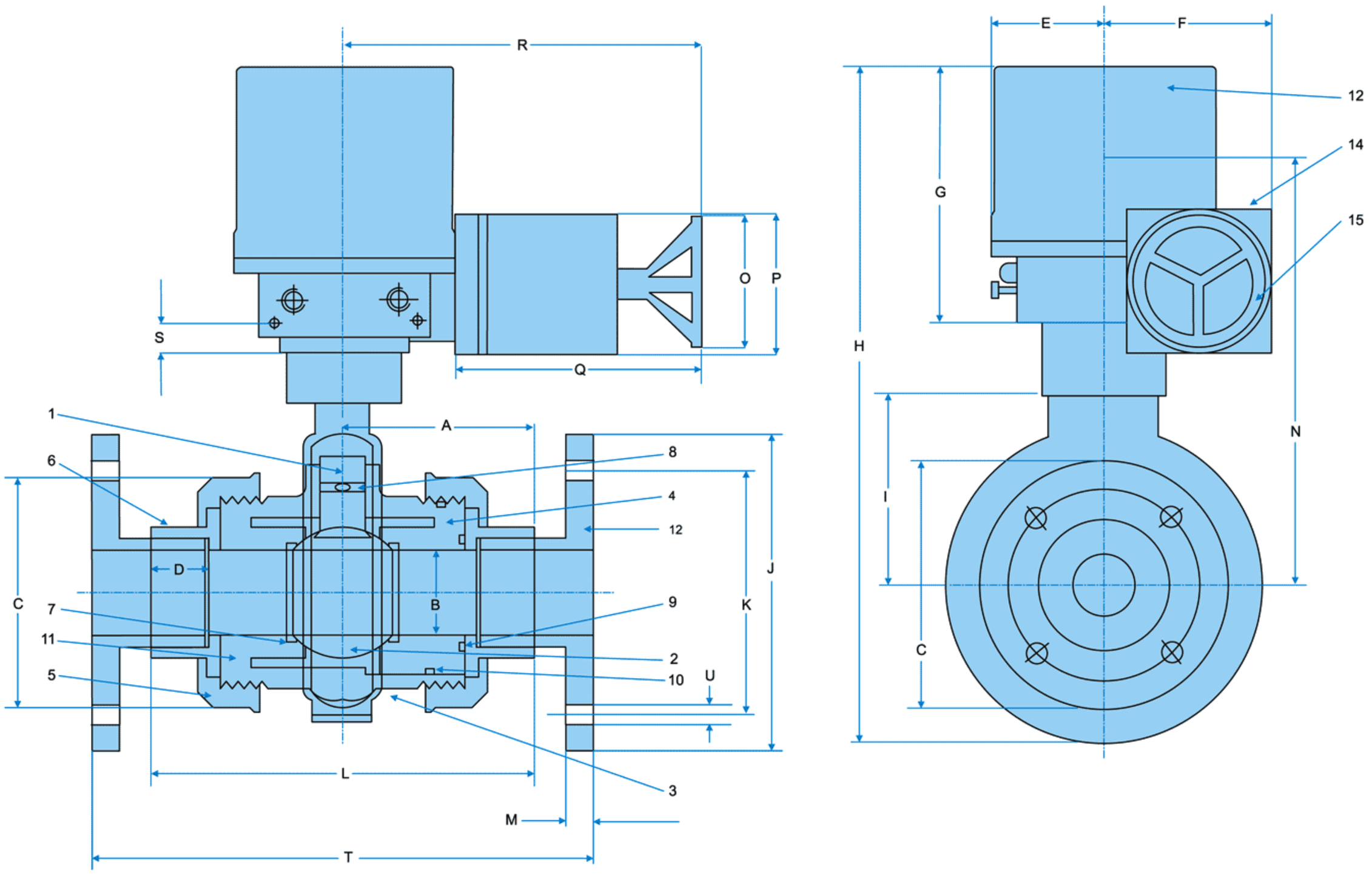




PART LIST

S.No.	DESCRIPTION	MATERIAL
1	STEM	PVC,options,PP,CPVC,PVDF
2	BALL	PVC,options,PP,CPVC,PVDF
3	BODY	PVC,options,PP,CPVC,PVDF
4	SEAT CARRIER	PVC,options,PP,CPVC,PVDF
5	UNION NUT	PVC,options,PP,CPVC,PVDF
6	END CONNECTOR	PVC,options,PP,CPVC,PVDF
7	SEAT	TEFLON
8	STEM O-RING	EPDM,VITON
9	SEAT CARRIER O-RING	EPDM,VITON
10	BODY O-RING	EPDM,VITON
11	SOLID END O-RING	EPDM,VITON
12	ELECTRIC ACTUATOR	SDTORK MAKE
13	MOTOR	SDTORK MAKE
14	HAND WHEEL	SDTORK MAKE

VALVE SIZE	ACTUATOR MODEL NUMBER	DIMENSIONS																Approximate Time		Cv	WT. OF ASSY IN KGS.
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	for open In Sec.	for close In Sec.		
15	1358/15/PVC/PVC/SD03/BSP	51.422	15.0	53.69	22.22	68	117	175	253.35	51.511	139.01	100	102.84	110	145	215	32	17	17	10	8.25
20	1358/20/PVC/PVC/SD03/BSP	61.5	20.29	63.5	25.4	68	117	175	273.75	67	154.5	100	123.01	110	145	215	32	17	17	15	8.3
25	1358/25/PVC/PVC/SD03/BSP	72.25	26	72.99	28.57	68	117	175	285.15	73.66	161.16	100	144.5	110	145	215	32	17	17	32	8.42
32	1358/32/PVC/PVC/SD03/BSP	82.8	30.48	81.99	31.75	68	117	175	286.291	70.3	157.8	100	165.6	110	145	215	32	17	17	90	8.62
40	1358/40/PVC/PVC/SD05/BSP	90.932	38.1	97.79	34.92	68	117	175	308.72	84.83	172.33	100	181.86	110	160	225	32	17	17	90	9.99
50	1358/50/PVC/PVC/SD05/BSP	100.96	48	120.21	38.1	68	117	175	393	97.79	185.29	100	201.93	110	160	225	32	17	17	126	10.33
65	1358/65/PVC/PVC/SD10/BSP	112.52	67.05	150.11	44.45	95	148	250	465.001	139.95	264.95	100	225.04	110	170	215	37	20	20	319	15.05
80	1358/80/PVC/PVC/SD20/BSP	137.54	80.01	182.88	47.62	95	148	250	507.55	166.11	291.11	100	275.08	110	185	285	37	20	20	351	17.58
100	1358/100/PVC/PVC/SD30/BSP	162.56	102.1	226.06	57.15	123	182	261	543.96	169.92	300.42	100	325.12	110	242	355	57	26	26	589	33.22



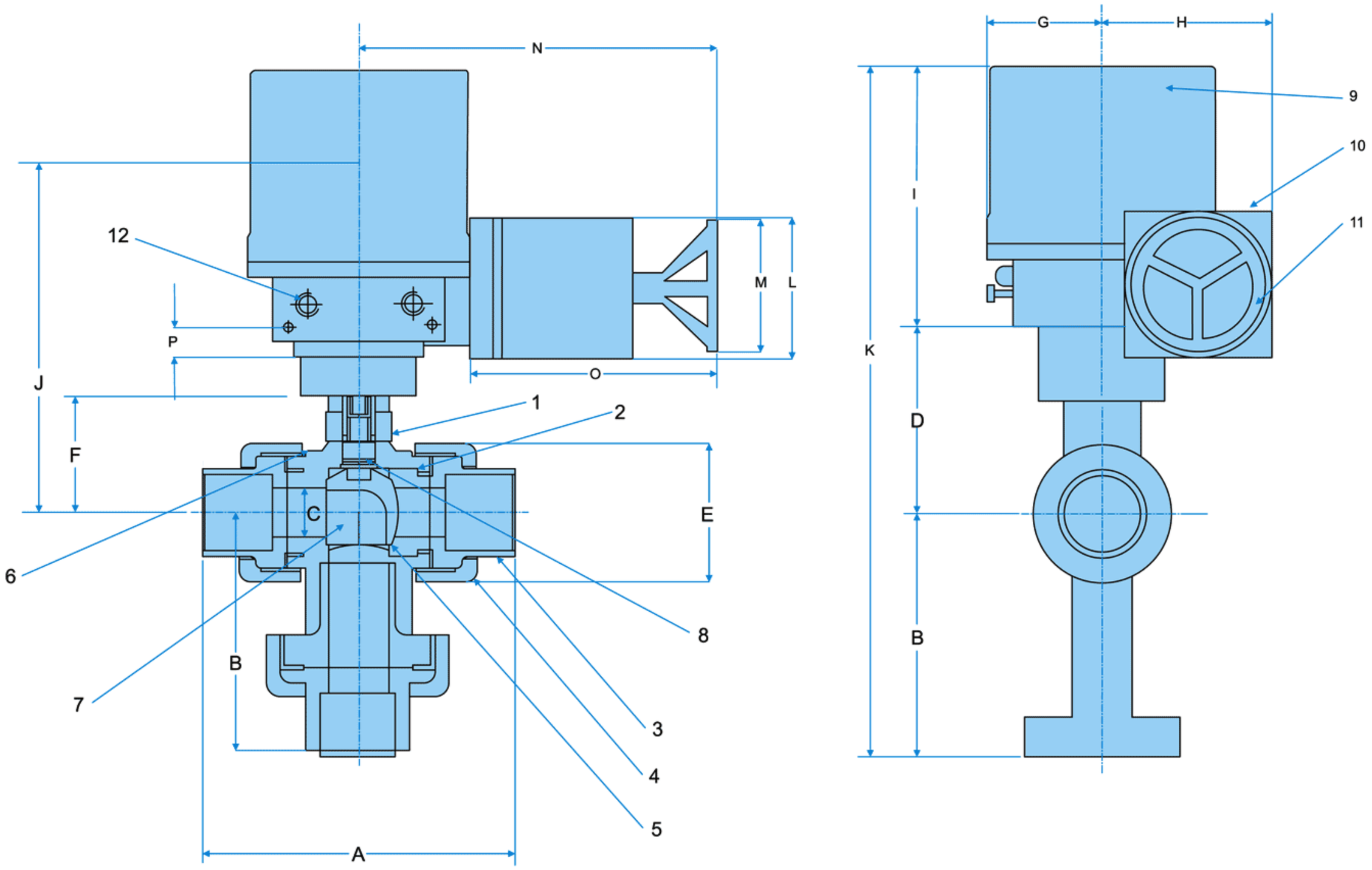
PART LIST

S.No.	DESCRIPTION	MATERIAL
1	STEM	PVC,options,PP,CPVC,PVDF
2	BALL	PVC,options,PP,CPVC,PVDF
3	BODY	PVC,options,PP,CPVC,PVDF
4	SEAT CARRIER	PVC,options,PP,CPVC,PVDF
5	UNION NUT	PVC,options,PP,CPVC,PVDF
6	END CONNECTOR	PVC,options,PP,CPVC,PVDF
7	SEAT	TEFLON
8	STEM O-RING	EPDM.VITON
9	SEAT CARRIER O-RING	EPDM.VITON
10	BODY O-RING	EPDM.VITON
11	SOLID END O-RING	EPDM.VITON
12	FLANGE	PVC,options,PP,CPVC,PVDF
13	ELECTRIC ACTUATOR STAY PUT TYPE SD TORK MALE	SDTORK MAKE
14	MOTOR	SDTORK MAKE
15	HAND WHEEL	SDTORK MAKE

VALVE SIZE	ACTUATOR MODEL NUMBER	DIMENSIONS																					Approximate Time		Cv	WT. OF ASSY IN KGS.
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	for open In Sec.	for close In Sec.		
15	1358/15/PVC/PVC/SD03/FLG	51.422	15.0	53.69	22.22	68	117	175	253.35	51.511	97	65	102.84	16	139.01	100	110	145	215	32	130	14	17	17	10	8.25
20	1358/20/PVC/PVC/SD03/FLG	61.5	20.29	63.5	25.4	68	117	175	273.75	67	106	75	123.01	16	154.5	100	110	145	215	32	150	14	17	17	15	8.3
25	1358/25/PVC/PVC/SD03/FLG	72.25	26	72.99	28.57	68	117	175	285.15	73.66	116	85	144.5	16	161.16	100	110	145	215	32	160	14	17	17	32	8.42
32	1358/32/PVC/PVC/SD03/FLG	82.8	30.48	81.99	31.75	68	117	175	286.291	70.3	140	100	165.6	15	157.8	100	110	145	215	32	180	17	17	17	90	8.62
40	1358/40/PVC/PVC/SD05/FLG	90.932	38.1	97.79	34.92	68	117	175	308.72	84.83	149	110	181.86	15	172.33	100	110	160	225	32	200	17	17	17	90	9.99
50	1358/50/PVC/PVC/SD05/FLG	100.96	48	120.21	38.1	68	117	175	393	97.79	164	125	201.93	17	185.29	100	110	160	225	32	230	17	17	17	126	10.33
65	1358/65/PVC/PVC/SD10/FLG	112.52	67.05	150.11	44.45	95	148	250	465.001	139.95	185	145	225.04	17	264.95	100	110	170	215	37	290	17	20	20	319	15.05
80	1358/80/PVC/PVC/SD20/FLG	137.54	80.01	182.88	47.62	95	148	250	507.55	166.11	200	160	275.08	19	291.11	100	110	185	285	37	310	17	20	20	351	17.58
100	1358/100/PVC/PVC/SD30/FLG	162.56	102.1	226.06	57.15	123	182	261	543.96	169.92	250	210	325.12	22	300.42	100	110	242	355	57	400	17	26	26	589	33.22

Plastic 3 Way Screwed Ball Valve

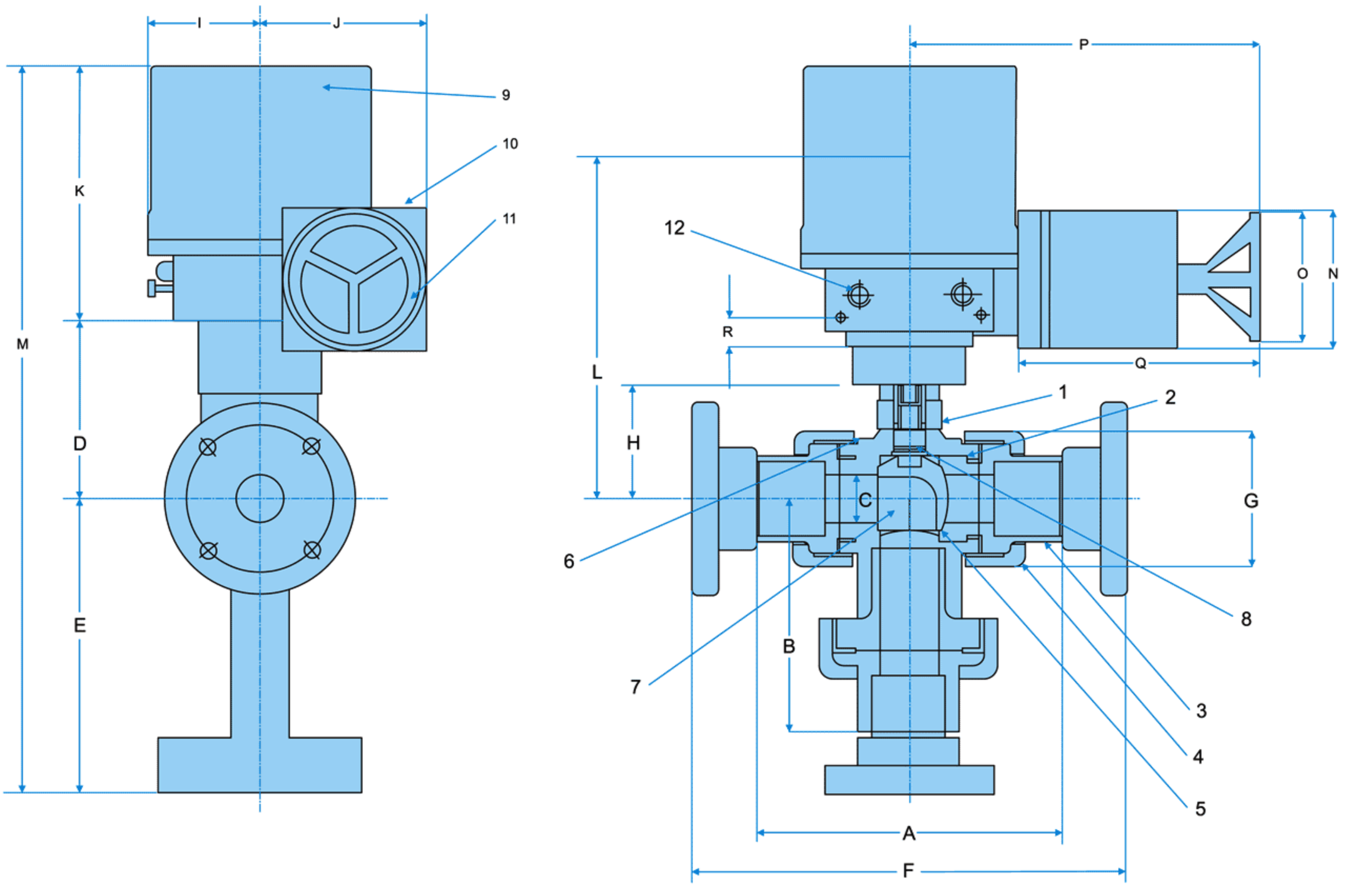
with Single Phase Electric Actuator SUDE 1358



PART LIST

S.No.	DESCRIPTION	MATERIAL
1	MOUNTING KIT(Optional)	PVC,options,PP,CPVC,PVDF
2	O-RING SEALS	EPDM.VITON
3	END CONNECTOR	PVC,options,PP,CPVC,PVDF
4	ASSEMBLY NUT	PVC,options,PP,CPVC,PVDF
5	TEFLON SEATS	PVC,options,PP,CPVC,PVDF
6	BODY	PVC,options,PP,CPVC,PVDF
7	BALL	PVC,options,PP,CPVC,PVDF
8	STEM	PVC,options,PP,CPVC,PVDF
9	ELECTRIC ACTUATOR	SDTORK MAKE
10	MOTOR	SDTORK MAKE
11	HAND WHEEL	SDTORK MAKE
12	CABLE GLANDS	SDTORK MAKE

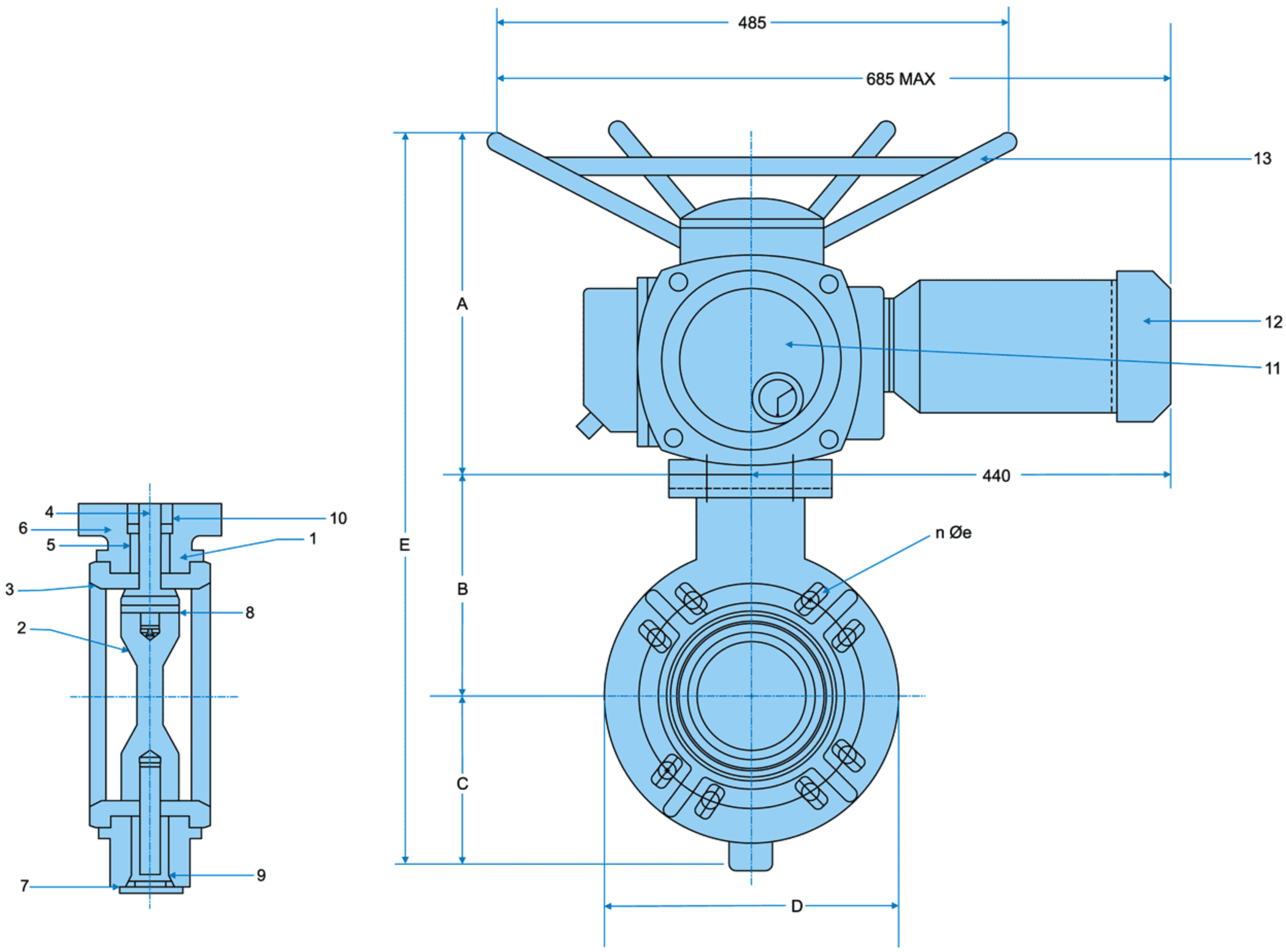
VALVE SIZE	ACTUATOR MODEL NUMBER	DIMENSIONS																Approximate Time for open for close		Cv	WT. OF ASSY IN KGS.
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	In Sec.	In Sec.		
15	1358/15/PVC/PVC/SD03/BSP	58	84	13	75	57	64	68	117	175	162.5	334	110	100	215	145	32	17	17	10	8.27
20	1358/20/PVC/PVC/SD03/BSP	65	91	19	75	67	72	68	117	175	162.5	341	110	100	215	145	32	17	17	15	8.36
25	1358/25/PVC/PVC/SD03/BSP	76	105	25	82	76	78	68	117	175	169.5	362	110	100	215	145	32	17	17	32	8.55
32	1358/32/PVC/PVC/SD03/BSP	112	151	51	92	102	89	68	117	175	179.5	418	110	100	215	145	32	17	17	90	8.86
40	1358/40/PVC/PVC/SD05/BSP	109	149	51	92	102	89	68	117	175	179.5	416	110	100	225	160	32	17	17	90	10.4
50	1358/50/PVC/PVC/SD05/BSP	111	152	51	109	121	100	68	117	175	196.5	436	110	100	225	160	32	17	17	126	10.98
65	1358/65/PVC/PVC/SD10/BSP	150	193	76	178	163	149	95	148	250	265.5	621	110	100	215	170	37	20	20	319	16.66
80	1358/80/PVC/PVC/SD20/BSP	150	193	76	178	163	149	95	148	250	265.5	621	110	100	285	185	37	20	20	351	20.01
100	1358/100/PVC/PVC/SD30/BSP	178	237	102	204	217	226	123	182	261	291.5	702	110	100	355	242	57	26	26	589	38.15



PART LIST

S.No.	DESCRIPTION	MATERIAL
1	MOUNTING KIT(Optional)	PVC,options,PP,CPVC,PVDF
2	O-RING SEALS	EPDM.VITON
3	END CONNECTOR	PVC,options,PP,CPVC,PVDF
4	ASSEMBLY NUT	PVC,options,PP,CPVC,PVDF
5	TEFLON SEATS	PVC,options,PP,CPVC,PVDF
6	BODY	PVC,options,PP,CPVC,PVDF
7	BALL	PVC,options,PP,CPVC,PVDF
8	STEM	PVC,options,PP,CPVC,PVDF
9	ELECTRIC ACTUATOR	SDTORK MAKE
10	MOTOR	SDTORK MAKE
11	HAND WHEEL	SDTORK MAKE
12	CABLE GLANDS	SDTORK MAKE

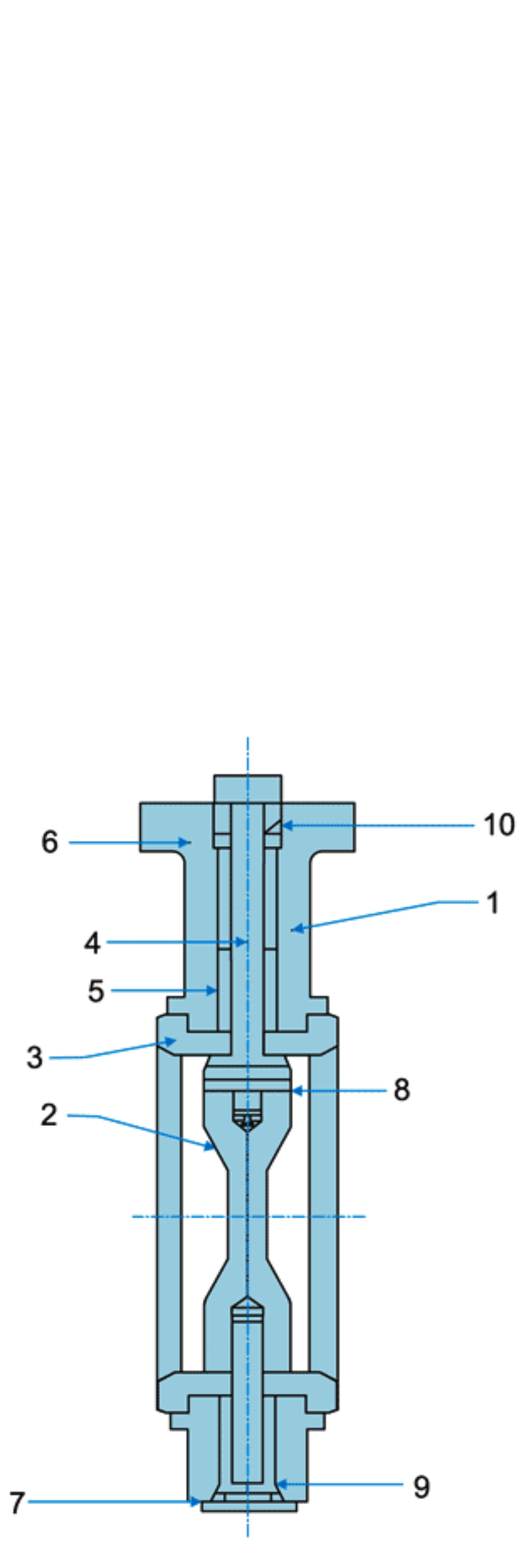
VALVE SIZE	ACTUATOR MODEL NUMBER	DIMENSIONS																		Approximate Time for open for close		Cv	WT. OF ASSY IN KGS.
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	In Sec.	In Sec.		
15	1358/15/PVC/PVC/SD03/FLG	58	84	13	75	98	171	57	64	68	117	175	162.5	348	110	100	215	145	32	17	17	10	8.36
20	1358/20/PVC/PVC/SD03/FLG	65	91	19	75	117	191	67	72	68	117	175	162.5	367	110	100	215	145	32	17	17	15	8.46
25	1358/25/PVC/PVC/SD03/FLG	76	105	25	82	121	216	76	78	68	117	175	169.5	378	110	100	215	145	32	17	17	32	8.79
32	1358/32/PVC/PVC/SD03/FLG	112	151	51	92	132	293	102	89	68	117	175	179.5	399	110	100	215	145	32	17	17	90	9.09
40	1358/40/PVC/PVC/SD05/FLG	109	149	51	92	152	301	102	89	68	117	175	179.5	419	110	100	225	160	32	17	17	90	10.55
50	1358/50/PVC/PVC/SD05/FLG	111	152	51	109	171	311	121	100	68	117	175	196.5	455	110	100	225	160	32	17	17	126	11.22
65	1358/65/PVC/PVC/SD10/FLG	150	193	76	178	220	404	163	149	95	148	250	265.5	648	110	100	215	170	37	20	20	319	16.06
80	1358/80/PVC/PVC/SD20/FLG	150	193	76	178	221	406	163	149	95	148	250	265.5	649	110	100	285	185	37	20	20	351	18.48
100	1358/100/PVC/PVC/SD30/FLG	178	237	102	204	265	480	217	226	123	182	261	291.5	730	110	100	355	242	57	26	26	589	35.26

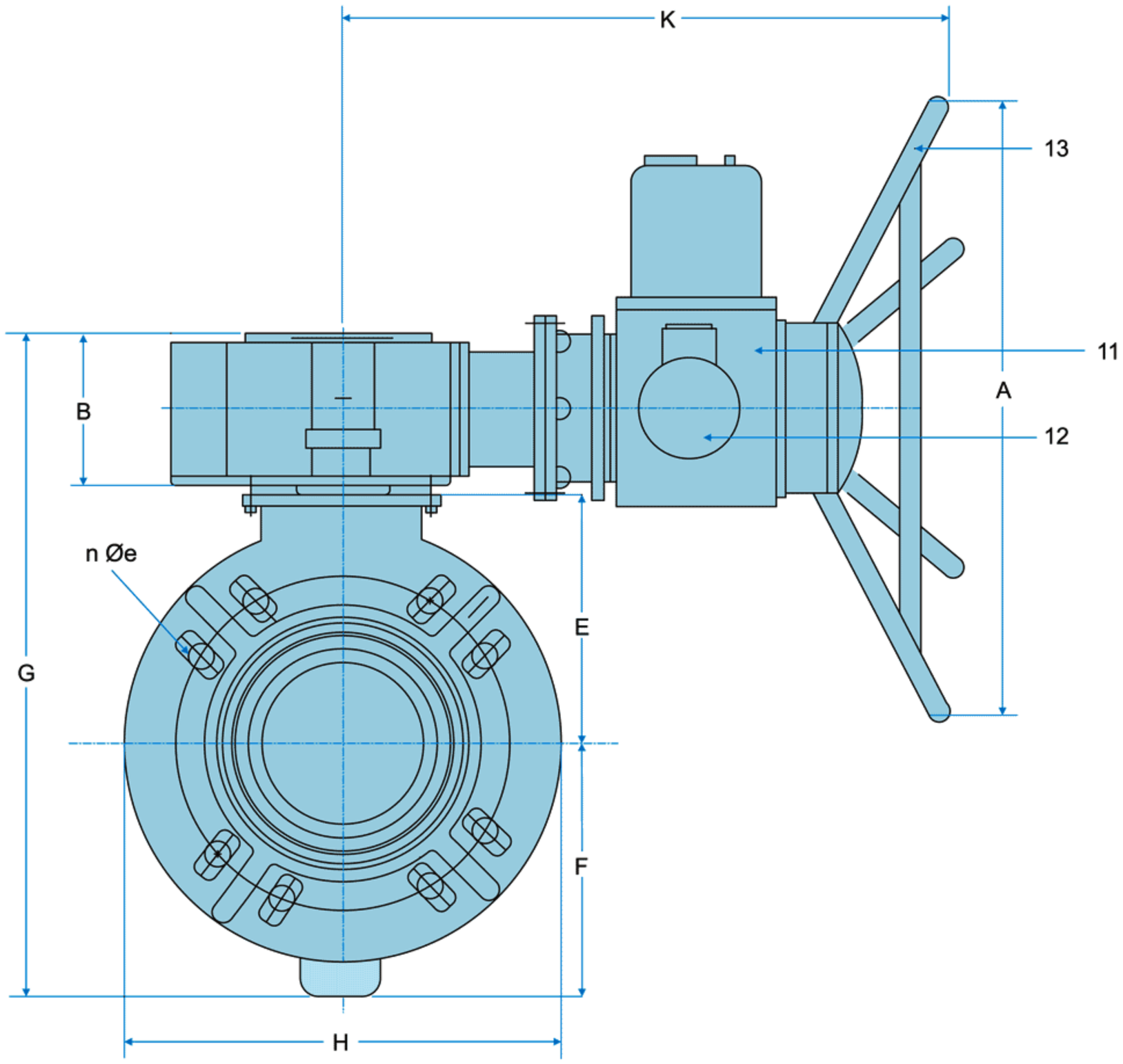


PART LIST

S.No.	DESCRIPTION	MATERIAL
1	BODY	PVC(STANDERED) PP (OPTIONAL) PVDF (OPTIONAL)
2	DISC	PVC(STANDERED) PP (OPTIONAL) PVDF (OPTIONAL)
3	BONDED SEAT	BN,EPDM, VITON
4	SHAFT	403SS
5	BEARING	STEEL + PTEF
6	O-RING SHAFT	EPDM,VITON
7	O-RING PLUG	AISI316
8	TAPPER PIN	C-15
9	PLUG	POLYACETAL
10	TOP BUSHING	SDTORK MAKE
11	ELECTRIC ACTUATOR	SDTORK MAKE
12	MOTOR (TEFC/TESC)	SDTORK MAKE
13	HAND WHEEL	SDTORK MAKE

VALVE SIZE	ACTUATOR MODEL NUMBER	DIMENSIONS							Cv		OPERATING TIME/SEC	WT. OF ASSY IN KGS.
		A	B	C	D	E	n	e	60°	90°		
50	1258/50/PVC/PVC/SD4000-20	340	83	109	120	347,6	4	0,75	65	130	3,5-24	55.7
65	1258/65/PVC/PVC/SD4000-20	340	91	119	139	348,3	4	0,75	120	240	3,5-24	56.2
80	1258/80/PVC/PVC/SD4000-20	340	106	134	152	349,5	4	0,75	160	320	3,5-24	58
100	1258/100/PVC/PVC/SD4000-20	340	119	149	190	350,6	8	0,75	280	560	3,5-24	59.4
125	1258/125/PVC/PVC/SD4000-20	340	132	167	215	351,8	8	0,88	430	860	3,5-24	65.6
150	1258/150/PVC/PVC/SD4000-20	340	142	182	241	352,8	8	0,88	640	1280	3,5-24	69.7
200	1258/200/PVC/PVC/SD4000-20	340	170	213	298	355,1	8	0,88	1200	2400	3,5-24	83.6
250	1258/250/PVC/PVC/SD4000-35	450	210	241	361	357,8	12	1,00	1850	3700	11-75	109
300	1258/300/PVC/PVC/SD4000-35	450	243	297	431	361,3	12	1,00	2700	5400	1,6-60	146.1

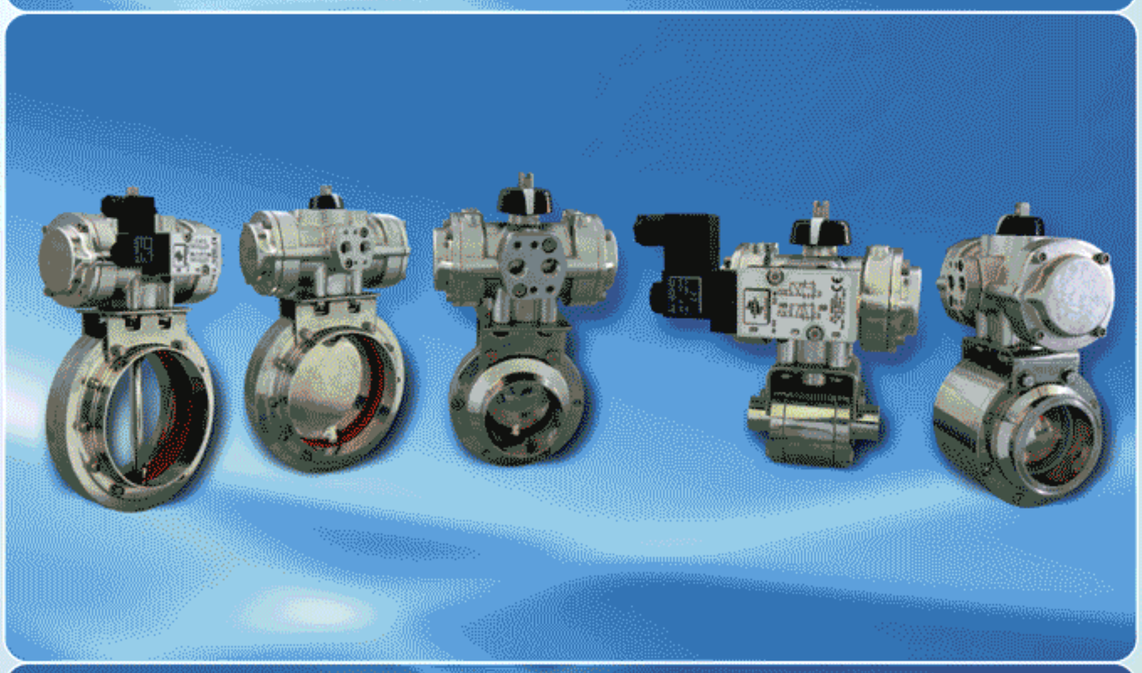




PART LIST

S.No.	DESCRIPTION	MATERIAL
1	BODY	PVC(STANDERED) PP (OPTIONAL) PVDF (OPTIONAL)
2	DISC	PVC(STANDERED) PP (OPTIONAL) PVDF (OPTIONAL)
3	BONDED SEAT	BN,EPDM, VITON
4	SHAFT	403SS
5	BEARING	STEEL + PTEF
6	O-RING SHAFT	EPDM,VITON
7	O-RING PLUG	EPDM,VITON
8	TAPPER PIN	AISI316
9	PLUG	C-15
10	TOP BUSHING	POLYACETAL
11	ELECTRIC ACTUATOR	SDTORK MAKE
12	MOTOR (TEFC/TESC)	SDTORK MAKE
13	HAND WHEEL	SDTORK MAKE

VALVE SIZE	ACTUATOR MODEL NUMBER	DIMENSIONS											Cv		OPERATING TIME/SEC	WT. OF ASSY IN KGS.
		A	B	C	D	E	F	G	H	K	n	e	60°	90°		
350	1258/350/PVC/PVC/SD4000-08-WG40	485	88	315	85	269	325	682	476	450	12	28	3300	6600	1.6-60	153.1
400	1258/400/PVC/PVC/SD4000-20-WG60	485	118	315	85	299	350	767	539	580	16	28	4400	8800	7.5-94	198
450	1258/450/PVC/PVC/SD4000-20-WG60	485	118	315	85	314	370	802	577	580	16	32	6250	12500	7.5-94	327
500	1258/500/PVC/PVC/SD4000-20-WG135	485	148	315	85	350	401	899	635	700	20	32	6900	13800	17-200	403
600	1258/600/PVC/PVC/SD4000-20-WG135	485	148	315	85	406	464	1018	749	700	20	35	10000	20000	17-200	481



OUR OTHER PRODUCTS:

- Solenoid valves.
- Pneumatically operated control valves.
- motorised valves.
- Pneumatic & Electric Operated Ball / Butterfly valves.
- Pneumatic & motorised Dampers.
- Pneumatic & motorised VIV Dampers.
- Heavy duty – Single phase & Three phase actuators for operating Gates & chutes.
- motorised Rising & Non-rising Sluice valve.
- Pneumatic & motorised pinch valve.
- Pneumatic & motorised Flush Bottom valve.
- Entire range of Electrical Actuator.
- And Instrumentation Product likes Pressure Transmitter, PID Controller, Flow meter etc., for System Integration.

NOTE : TECHNICAL SPECIFICATIONS, DETAILS & DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE. DIMENSIONS IN THE TABLE ARE APPROXIMATE SUBJECT TO FINAL CONFIRMATION BY SUDE.

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Head Office, Bangalore

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