Rack & Pinion/Manual High Performance Butterfly Valves

Stainless Steel Wafer Body ANSI/ASME 150 3" to 8" Sizes

SERIES
5595
5596

Features

- Double offset design reduces torque and seal wear
- High quality, passivated 316SS (CF8M) construction for superior corrosion protection
- Multiple RPTFE V-type rings for superior shaft sealing
- One piece, reinforced Teflon (RPTFE) seal
- Bolted seat retainer keeps seat stable and allows easy changeout
- Belleville washers for consistent, self-adjusting stem seal pressure
- Bi-directional seal design ensures increased sealing force in either flow direction
- Rack and pinion quarter turn (90°) rotation
- Spring Return or Double Acting Actuators
- Type IP67 weatherproof actuator
- Variable open/close stroke setting
- ATEX approved
- Highly visible valve position indicator
- Actuator factory lubricated for normal lifetime

Applications

Rack & Pinion/ manual actuated butterfly valves for control of water and other media compatible with the materials of construction. The de-clutch option can be used for manual operation or to set a stop limit for opening or closing. Cycle times approx. 1 to 4 seconds per 90° rotation. Valve can be mounted in any orientation. High performance wafer butterfly valves are used to control the flow of waters, oils, air, certain caustics, and other media compatible with the materials of construction for general service and where an expanded temperature range or higher pressure is required. Available in either failsafe spring return or double acting designs.

Operation

Double acting actuators require air pressure to open and air pressure to close. Spring return actuators require air pressure to open and utilize springs to close for failsafe operation. Pulling the handwheel détente pin allows manual operation of the valve via the handwheel. Re-engaging the détente pin mid-stroke creates a partial stroke position, ie the automatic stroke begins/ends at the locked handwheel position. Rotating the handwheel counterclockwise rotates the output drive counterclockwise when viewed from the top.

Construction

Valve Body	316 stainless steel CF8M
Disc	316 stainless steel CF8M
Disc Seat/Liner	RPTFE
Stem/Stem Seals	17-4PH SS
Actuator Seals	NBR (Buna-N)
Actuator Body	Extruded aluminium– 35 micron anodizing, 40 micron polyester coated end covers
Position Indicator	Glass filled Polyamide
Fasteners	Stainless Steel

Description

Valworx heavy duty pneumatic/manual combination actuator features hard anodized aluminum enclosure, type IP67. Actuators are available in double acting and spring return models. High performance butterfly valves with 316 stainless steel wafer body are designed for commercial and industrial applications. Valve mounts between two standard ANSI/ASME Class 125/ 150 flanges. Disc is spherically machined 316SS. Flange gaskets required. Double offset design to reduce seal wear.

Standard Namur mounting pads for optional accessory confirmation switches, pilot valves and valve positioners. Rotation adjustment +5° at the 0° and 90° positions. The integral handwheel is used for manual operation and setting a limit stop.

Approvals/Standards

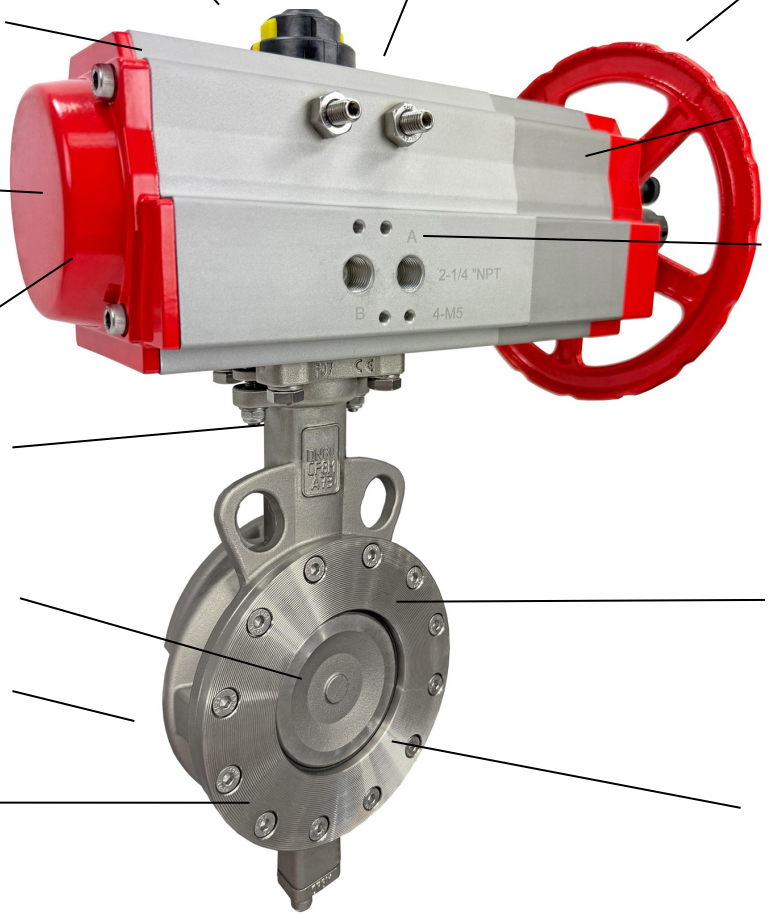
Actuator

- CE Declaration of conformity
- EN ISO 12100:2010
- EN ISO 4414:2010
- ISO5211/ DIN3337 valve mounting
- Namur VDI/VDE 3845 accessory mounting
- ATEX- Ex II 2 G Ex h IIC T6 Gb; Ex II 2 D Ex H IIIB T85°C Db
- SIL3 per IEC 61508:2010

Valve

- Pressure- ANSI/ASME B16.5 CLASS150
- JIS B 2239 10K, 16K
- Top Flange– ISO 5211
- Face– API 609 Class B
- Leakage- ISO 5208 Category 3, API 598 Table 5
- CE Conformance– PED 2014/68/EU Annex

Construction



Visual valve position indicator

Standard Namur top mounting for optional switches and positioners

Integral handwheel for manual operation

Heavy duty rugged rack and pinion actuators, spring return or double acting

Hard anodized aluminum body, Type IP67

Anodized aluminum alloy covers with 40 micron polyester powder coating

NPT threaded ports with Namur VDI/VDE-3845 solenoid mounting pad

Spring return models use multiple pre-compressed spring cartridges with polyester coating

Stem packing adjustment below ISO mount eliminates additional bracket

Single piece cast & machined disc with integral shaft

Bolted faceplate ensures consistent seat position

Integrally-cast heavy duty mounting stop

316 stainless steel valve body & disc

Bi-directional, one piece self-energized RTPFE Seat

Pressure Rating

Pressure Rating: 285 PSI (19.7 Bar)

Pilot Media: Filtered, dry or lubricated compressed air

Pilot Air Pressure– Double Acting: 43-120 PSI (3-8 Bar)

Pilot Air Pressure– Spring Return: 87-120 PSI (6-8 Bar)

Temperature Range

Actuator Temperature Rating: -4 to 176°F (-20 to 80°C)

Valve Temperature Rating: RPTFE Seals: -40 to 450°F (-40 to 230°C)

Options

DMS: Direct Mount Solenoid
- pilot to electrically operate the ball valve

VPS: Valve Position Switches
- limit switches to confirm valve position

PVP: Pneumatic Valve Positioner
- position the ball with 4-20mA

Lock out/Tag out device

Inline mounting

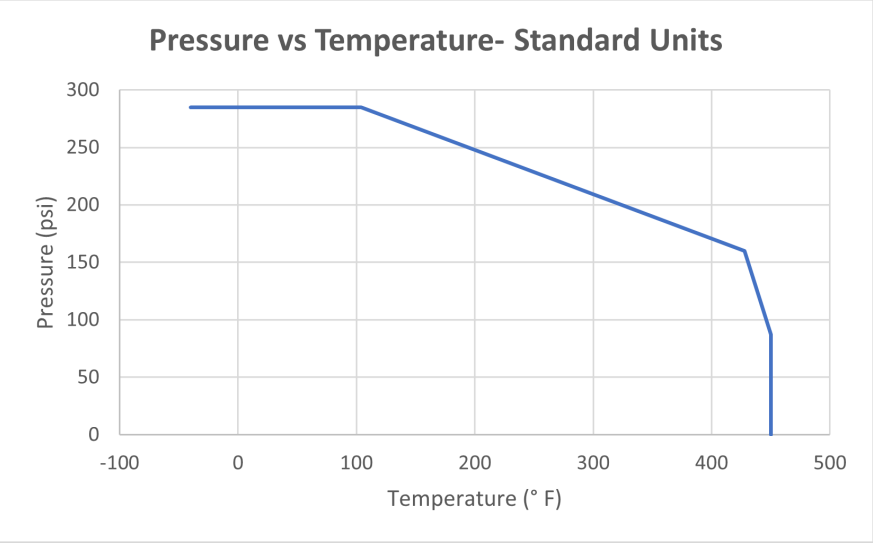
Specifications (English units)

Stock Number	Pipe Size (inch)	Orifice Diam. (inch)	Cv Flow Factor	Pressure Max. (PSI)	Fluid Media*	Air Volume/ 90° (cubic inches)	Cycle Time/90° (seconds)	Pilot Air Port (NPT)
Wafer Body RPTFE Seals: SPRING RETURN								
559603	3	2.87	180	285	Air, oil and other fluids compatible with materials of construction	128.1	2-1	1/4
559604	4	3.78	375	285	Air, oil and other fluids compatible with materials of construction	201.4	2-1	1/4
559606	6	5.70	1350	285	Air, oil and other fluids compatible with materials of construction	341.7	4-1	1/4
Wafer Body RPTFE Seals: DOUBLE ACTING								
559503	3	2.87	180	285	Air, oil and other fluids compatible with materials of construction	54.9	1-1	1/4
559504	4	3.78	375	285	Air, oil and other fluids compatible with materials of construction	91.5	1-1	1/4
559506	6	5.70	1350	285	Air, oil and other fluids compatible with materials of construction	201.4	1-1	1/4
559508	8	7.60	2800	285	Air, oil and other fluids compatible with materials of construction	341.7	1-1	1/4

Cv is the GPM of water at 60° F that will pass through the valve with 1 PSI pressure drop

* Consult compatibility chart for other fluid media. Suitable for vacuum up to 29 inHg

Pressure vs Temperature					
Temp °F	-40	104	428	450	450
Pressure– PSI	285	285	160	87	0



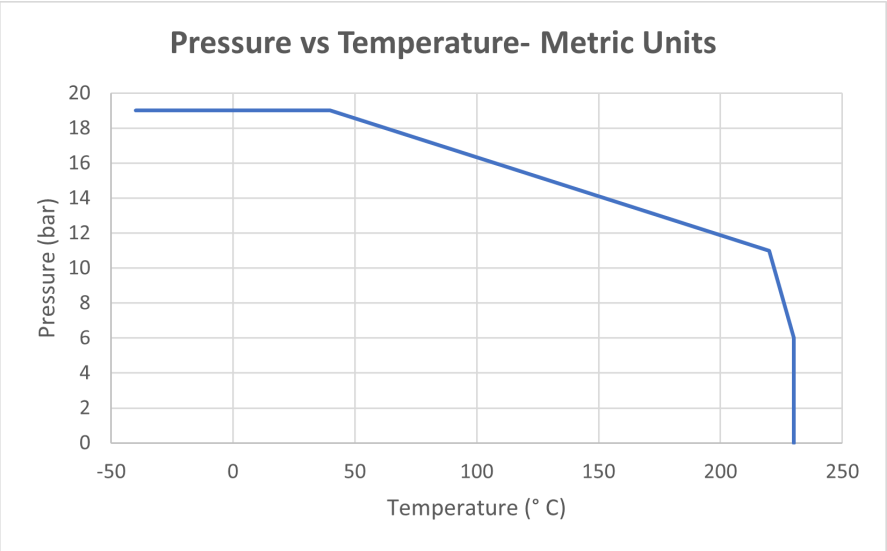
Specifications (Metric units)

Stock Number	Pipe Size (DN)	Orifice Diam. (mm)	Kv Flow Factor	Pressure Max. (Bar)	Fluid Media*	Air Volume/90° (cubic liters)	Cycle Time/90° (seconds)	Pilot Air Port (NPT)
Wafer Body RPTFE Seals: SPRING RETURN								
559603	80	72.0	155.7	16	Air, oil and other fluids compatible with materials	2.1	2-1	1/4
559604	100	91.0	324.4	16	Air, oil and other fluids compatible with materials	3.3	2-1	1/4
559606	150	145.0	1167.8	16	Air, oil and other fluids compatible with materials	5.6	4-1	1/4
Wafer Body RPTFE Seals: DOUBLE ACTING								
559503	80	72.0	155.7	16	Air, oil and other fluids compatible with materials of construction	0.9	1-1	1/4
559504	100	91.0	324.4	16	Air, oil and other fluids compatible with materials of construction	1.5	1-1	1/4
559506	150	145.0	1167.8	16	Air, oil and other fluids compatible with materials	3.3	1-1	1/4
559508	200	188.0	2422.0	16	Air, oil and other fluids compatible with materials	5.6	1-1	1/4

Kv = The number of m^3 per hour of 20° C water at 1 bar pressure drop

* Consult compatibility chart for other fluid media. Suitable for vacuum up to 29 inHg

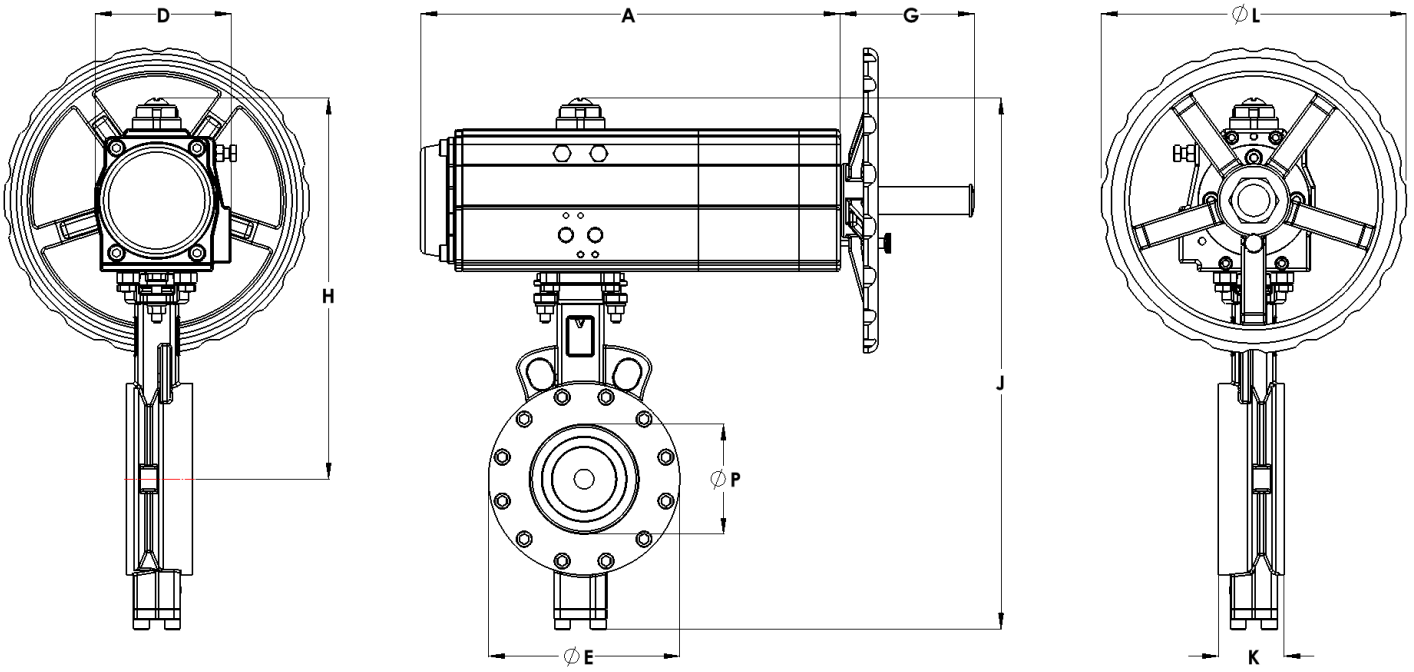
Pressure vs Temperature					
Temp °C	-40	40	220	230	230
Pressure– Bar	19	19	11	6	0



Dimensions: Spring Return

Suitable between flanges:

- ANSI/ASME B16.5 CLASS150
- ANSI/ASME B16.1 CLASS125
- EN1092 PN10, PN16
- JIS B 2239 10K, 16K
- BS 10 Table D, Table E

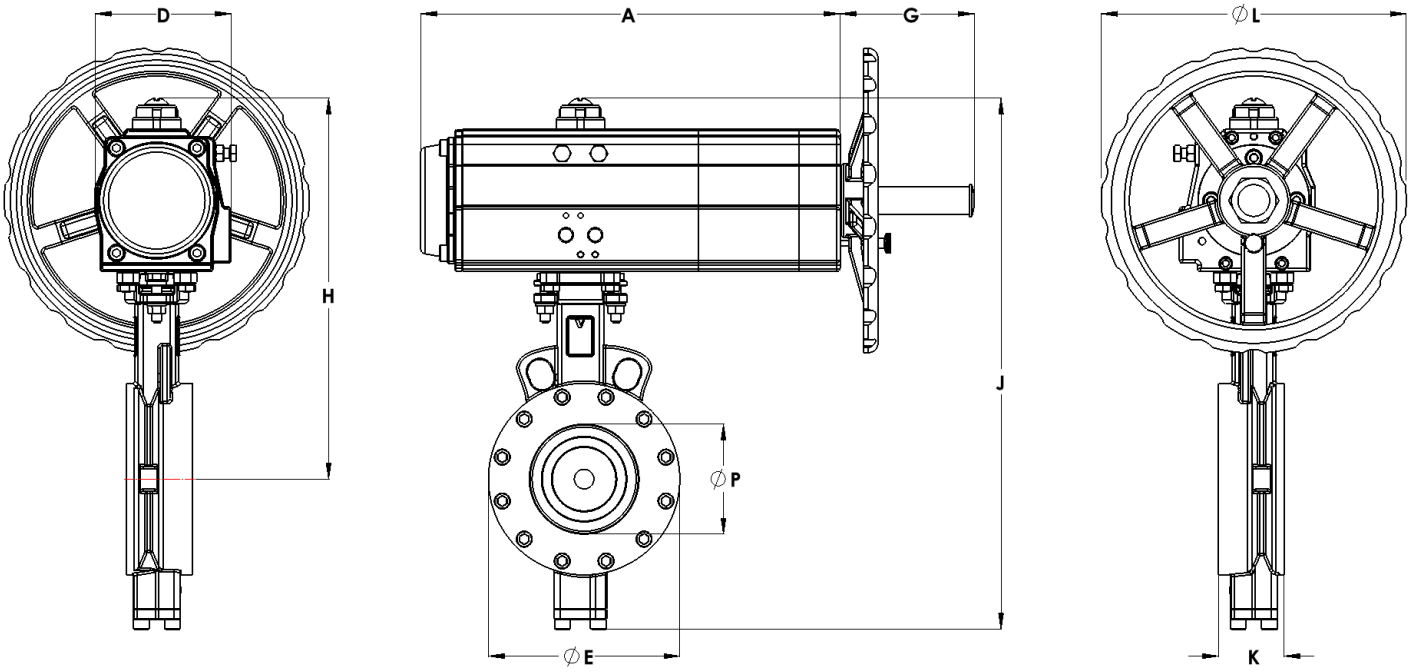


Pipe Size		A	D	E	G	H	J	K	L	P	Weight lbs (kg)
3	inch	13.6	4.3	6.0	4.9	11.7	15.6	1.9	9.8	2.8	35.9 lbs
DN80	mm	345.4	109.2	130.0	124.5	297.2	396.2	48.0	25.0	72.0	16.3 kg
4	inch	15.8	5.0	6.2	5.2	13.6	18.5	2.1	5.7	3.6	61.5 lbs
DN100	mm	401.3	127.0	157.0	132.1	345.4	469.9	54.0	400.0	91.0	27.9 kg
6	inch	20.1	5.4	8.5	6.3	15.5	21.5	2.2	19.7	5.7	95.3 lbs
DN150	mm	510.5	137.2	216.0	160.0	393.7	546.1	57.0	500.0	145.0	43.3 kg

Dimensions: Double Acting

Suitable between flanges:

- ANSI/ASME B16.5 CLASS150
- ANSI/ASME B16.1 CLASS125
- EN1092 PN10, PN16
- JIS B 2239 10K, 16K
- BS 10 Table D, Table E



Pipe Size		A	D	E	G	H	J	K	L	P	Weight lbs (kg)
3	inch	10.7	3.6	6.0	4.0	10.8	14.7	1.9	7.7	2.8	22.5 lbs
DN80	mm	271.8	91.4	130.0	101.6	274.3	373.4	48.0	195.0	72.0	10.2 kg
4	inch	13.4	3.9	6.2	4.3	12.1	17.0	2.1	9.8	3.6	36.1 lbs
DN100	mm	340.4	99.1	157.0	109.2	307.3	431.8	54.0	250.0	91.0	16.4 kg
6	inch	15.8	5.0	8.5	5.2	14.8	20.8	2.2	15.7	5.7	68.8 lbs
DN150	mm	401.3	127.0	216.0	132.1	375.9	528.3	57.0	400.0	145.0	31.3 kg
8	inch	20.1	5.4	10.6	6.3	17.0	24.3	2.5	19.7	7.6	104.4 lbs
DN200	mm	510.5	137.2	270.0	160.0	431.8	617.2	64.0	500.0	192.0	47.5 kg