



DATASHEET

PINCH VALVE (PV)

ARTeSYN[®]

About the Pinch Valve

The ARTeSYN pinch valves enable reliable fluid control of tubing flow paths, regardless of their materials of construction. Applications range from simple transfer line control up to complex automated unit operations using either manual or pneumatic pinch valves. Intuitive tool-free clamp-on installation enables quick and reliable operation. The unique central pinch point in its specific encapsulated valve seat offers the highest closure reliability and consistency in flow output, even after multiple pinch cycles.

The ARTeSYN valves are available in a variety of sizes with specific valve seats which allow the fitting of regular and braided tubing from 6.4 mm ($\frac{1}{4}$ in.), up to 25.4 mm (1 in.) internal diameter (ID). With a wide range of pinch valve sizes the product is suitable for various applications from upstream and downstream processing down to formulation and filling. The valve bodies are manufactured from high end 316L stainless steel ensuring it complies with the highest industry standards.



Features & Benefits

Features

Intuitive, tool free installation

Hemispherical closure

Stem position visibility

One hardware size, multiple tube materials

Clamp over existing single-use tube

Re-use valve body

Manual or pneumatic valve options*

Optional supportive bracket

Benefits

Operator ease of use

Safe & reliable processing

Highest closure resistance & reliability

Consistent flow over pinching cycle

Minimized tubing wear

Easy verification of valve position for operators

Versatility to use variety of tubing materials

Eliminate unnecessary junctions

Reduced validation effort

Reduce consumable complexity & cost

Reduced operator errors with automated fluid control

Integration onto existing hardware

*Further actuator options can be found on the ARTeSYN Pneumatic Actuator Assemblies for Pinch Valves Datasheet

Applications

Upstream



MEDIA AND BUFFER
PREPARATION



CELL CLARIFICATION
HARVEST



PERFUSION



FILTRATION



MIXING

Downstream



FILTRATION



CHROMATOGRAPHY



BUFFER EXCHANGE



VIRUS
INACTIVATION



CONCENTRATION



FRACTIONATION

A → B

TRANSFER



FINISH FILLING

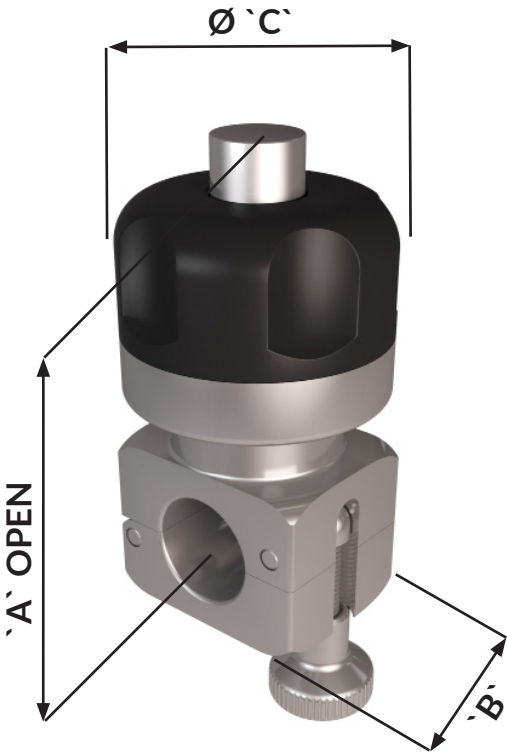


MIXING

Critical Parameters

Manual

Valve size	A	B	C	Weight
1/4 in. (6.4mm) x 7/16 in. (11.1mm)	2.3 in (59mm)	1 in (25mm)	1.5 in (38mm)	0.3 kg
1/4 in. (6.4mm) x 1/2 in. (12.7mm)	2.3 in (59mm)	1 in (25mm)	1.5 in (38mm)	0.3 kg
3/8 in. (9.5mm) x 5/8 in. (15.9mm)	2.4 in (61mm)	1 in (25mm)	1.5 in (38mm)	0.3 kg
1/2 in. (12.7mm) x 3/4 in. (19.1mm)	2.8 in (71mm)	1 in (25mm)	1.5 in (38mm)	0.3 kg
1/2 in. (12.7mm) x 7/8 in. (22.2mm)	2.8in (71mm)	1 in (25mm)	1.5 in (38mm)	0.4 kg
3/4 in. (19.1mm) x 1 in. (25.4mm)	4.1 in (104mm)	1.5 in (38mm)	2.4 in (60mm)	0.9 kg
3/4 in. (19.1mm) x 1 1/8 in. (28.6mm)	4.1 in (105mm)	1.5 in (38mm)	2.4 in (60mm)	1.2 kg
1 in. (25.4 mm) x 1 3/8 in. (34.9mm)	5.2 in (132mm)	2.0 in (51mm)	3.0 in (76mm)	1.8 kg



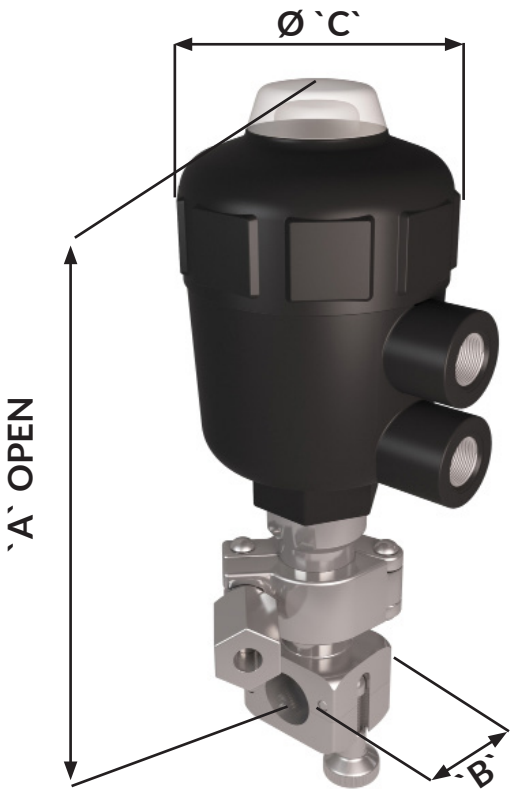
Critical Parameters

Pneumatic

Valve size	A	B	C*	Weight
1/4 in. (6.4mm) x 7/16 in. (11.1mm)	6.3 in (160mm)	1 in (25mm)	2.0 in (50mm)	0.8 kg
1/4 in. (6.4mm) x 1/2 in. (12.7mm)	6.3 in (160mm)	1 in (25mm)	2.0 in (50mm)	0.8 kg
3/8 in. (9.5mm) x 5/8 in. (15.9mm)	6.3 in (160mm)	1 in (25mm)	2.0 in (50mm)	0.8 kg
1/2 in. (12.7mm) x 3/4 in. (19.1mm)	6.3 in (160mm)	1 in (25mm)	2.4 in (63mm)	0.9 kg
1/2 in. (12.7mm) x 7/8 in. (22.2mm)	6.3 in (160mm)	1 in (25mm)	2.4 in (63mm)	0.9 kg
3/4 in. (19.1mm) x 1 in. (25.4mm)	7.5 in (190mm)	1.5 in (38mm)	3.1 in (63mm)	1.9 kg
3/4 in. (19.1mm) x 1 1/8 in.(28.6mm)	7.5 in (190mm)	1.5 in (38mm)	3.1 in (63mm)	1.9 kg
1 in. (25.4 mm) x 1 3/8 in. (34.9mm)	8.9 in (227mm)	2.0 in (51mm)	4.0 in (80mm)	3.0 kg

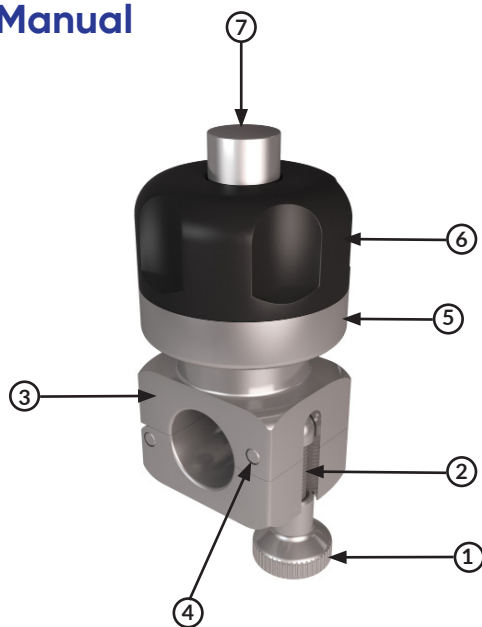
***Actuator size**

Input	Position Feedback	Actuator Operating Pressure	Actuator Max Pressure	Air Port
Air	Position Indicator only	6 bar/85-90 psi	10 bar/ 150 psi	G ¼" for all sizes



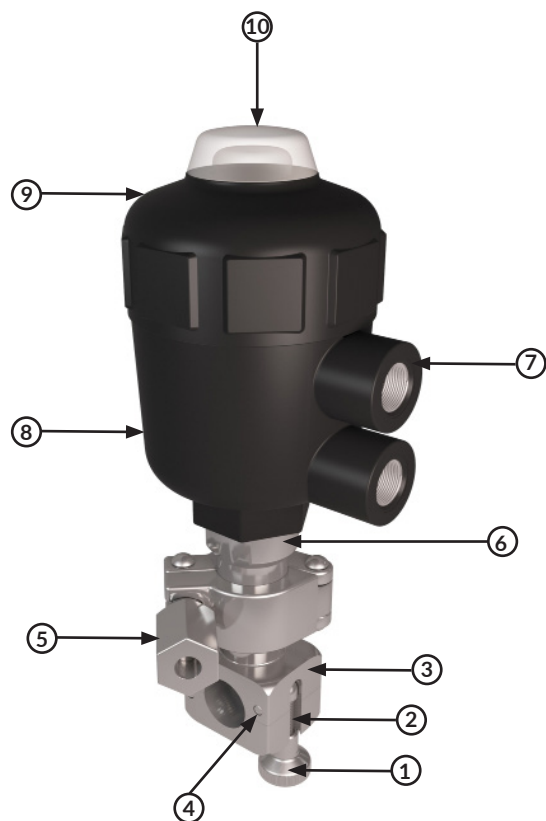
Materials of Construction

Manual



Item no.	Description	Material
1	Lock knob	Stainless steel 316 L
2	Swing arm	Stainless steel 18-8
3	Valve body	Stainless steel 316 L
4	Body pins	Stainless steel 316 L
5	Lower handle	Stainless steel 316 L
6	Handle	Polyetherimide (PEI)
7	Stem	Stainless steel 316 L

Pneumatic



Item no.	Description	Material
1	Lock knob	Stainless steel 316 L
2	Swing arm	Stainless steel 18-8
3	Valve body	Stainless steel 316 L
4	Body pins	Stainless steel 316 L
5	Assembly Clamp	Stainless steel 304
6	Actuator Body	Stainless steel 316 L
7	Air Ports	Stainless steel 304
8	Actuator housing	Polyamide(PA)
9	Actuator cap	Polyamide(PA)
10	Indicator lens	Polycarbonate (PC)

Ordering Information

Valves Hardware

Tubing Type (ID x OD)	Manual Valve Part Number	Pneumatic Valve Part Number*
1/4 in. (6.4mm) x 7/16 in. (11.1mm)	PVS0250X043716	PVS0250X043719
1/4 in. (6.4mm) x 1/2 in. (12.7mm)	PVS0250X050016	PVS0250X050019
3/8 in. (9.5mm) x 5/8 in. (15.9mm)	PVS0375X062516	PVS0375X062519
1/2 in. (12.7mm) x 3/4 in. (19.1mm)	PVS0500X075016	PVS0500X075019
1/2 in. (12.7mm) x 7/8 in. (22.2mm)	PVS0500X087516	PVS0500X087519
3/4 in. (19.1mm) x 1 in. (25.4mm)	PVS0750X100016	PVS0750X100019
3/4 in. (19.1mm) x 1 1/8 in. (28.6mm)	PVS0750X112516	PVS0750X112519
1 in. (25.4 mm) x 1 3/8 in. (34.9mm)	PVS1000X137516	PVS1000X137519

*Further actuator options can be found on the ARTeSYN Pneumatic Actuator Assemblies for Pinch Valves Datasheet

Accessories

Brackets

Additional bracket's purpose is to simplify integration onto existing hardware.

Description	Matching Valve Size	Valve Version	Part Number
Mini sanitary 1/2 in. clamp with rod bracket	1/4 in., 3/8 in., 1/2 in., 3/4 in.	Pneumatic Only	ARTD001031
Sanitary 1 1/2 in. clamp with rod bracket	1 in.	Pneumatic Only	ARTD001030
Universal bracket	All	All	ARTGA005515



Handles

Optional handle is to ease operating open & close state of the manual valve.

Description	Matching Valve Size	Valve Version	Part Number
PEI 38 Series Manual Pinch Valve Handle Adapter	1/4 in., 3/8 in., 1/2 in.	Manual Only	PVU38HA
PEI 60 Series Manual Pinch Valve Handle Adapter	3/4 in.,	Manual Only	PVU60HA
PEI 76 Series Manual Pinch Valve Handle Adapter	1 in.	Manual Only	PVU76HA



ARTeSYN® Biosolutions Ireland Ltd

Head Quarters

Six Cross Roads, Kilbarry, Waterford, X91 YR27, Ireland
T: +353 51 508 431

ARTeSYN® Biosolutions Estonia OÜ

Subsidiary

Kesk tee 10a, Jüri alevik, Harju maakond, 75301, Estonia
info@artesybio.com
T: +372 5350 2901

ARTeSYN® Biosolutions USA LLC

Subsidiary

9525 Owensmouth Ave, Unit E, Chatsworth, CA 91311, United States
T: +1 775-235-5200

Subsidiary

6951 Buckeye St, Chino, CA 91710, United States
T: +1 775-235-5200

Subsidiary

3750 Oceanic Way Oceanside, CA 92056, United States
T: +1 818-350-0423

Registered @

1771 South Sutro Terrace, Carson City, NV 89706-0364, United States
T: 818-350-0423

info@artesybio.com

www.artesybiosolutions.com



ARTeSYN



DATASHEET

DIAPHRAGM REPLACEMENT VALVE (DRV)

ARTeSYN[®]

About the Diaphragm Replacement Valve (DRV)

The ARTeSYN DRV is a direct drop-in replacement for your existing stainless steel diaphragm valves, enabling the customer to switch over easily and adopt single-use processing practices.

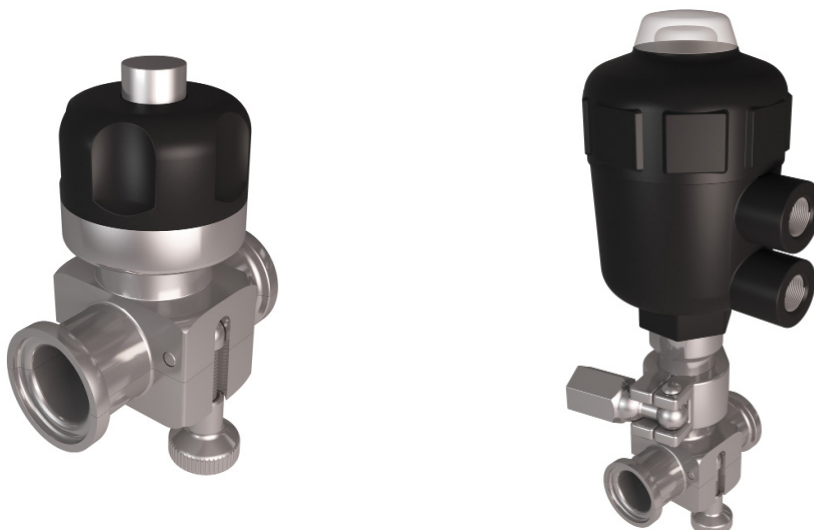
The DRV brings process improvement by offering a design free of shear, hold-ups and flow restrictions when in an open state. The complete single-use contact layer benefits the user by eliminating the need for cleaning and ensures functional reliability of critical valves at point of use.

The simple and secure fluid contact layer set up allows for quick and reliable fluid control at a predictable operating cost. Available in manual and pneumatic actuation options, in a variety of sanitary connections sizes, enables seamless valve replacement in existing processes. The engineered full bore, encapsulated design allows for downsized process equipment and increased closure resistance, enabling higher level of process safety and drug yields in bioprocessing.

These valves are available with sanitary to sanitary end connections with $\frac{1}{2}$ in., $\frac{3}{4}$ in., 1 in., and $1\frac{1}{2}$, 2 in. clamp size depending on the valve seat size. The single-use liner internal diameters range from 9.4 mm (0.37 in.) up to 34.8 mm (1.37 in.), in close alignment to the ASME BPE standard widely used for fixed piping systems allowing for seamless equipment integration. The liners come with integrated gaskets, thereby minimizing the connection sealing surface and reducing the number of additional parts.

With a range of sizes, the Artesyn valves are suitable for use in liquid or gas fluid streams from upstream processing, downstream processing through to formulation and filling.

The DRVs are also designed for use in both traditional and hybrid facilities. The valve bodies are manufactured from high end 316L stainless steel ensuring they meet the highest quality standards.



Features & Benefits

Features

Benefits

	Reduced down time
	No cleaning validation
Single-use flowpath silicone only	No batch-to-batch cross contamination risk
	Highest reliability for critical valves
Tool free installation	Safe, reliable and simplified processing
	Highest closure resistance and reliability
Seal free hemispherical closure	No entrapment areas
	No product loss
	No shear stress on cells and proteins compared to traditional diaphragm valves
Full bore flow path	Lower pressure drop, reduced process equipment size
	Suits both pressurized and unpressurized applications
Liner encapsulation	Liner shape restoration, ensures flow consistency after closure cycle
Sterilization options	No changes in heat sterilization method of choice
Visual indicator	Simple verification of valve open or close position for operators
Manual or pneumatic actuation	Align to operation preference

Applications

Upstream



MEDIA AND BUFFER
PREPARATION



CELL CLARIFICATION
HARVEST



PERFUSION



FILTRATION



MIXING

Downstream



FILTRATION



CHROMATOGRAPHY



BUFFER EXCHANGE



VIRUS
INACTVATION



CONCENTRATION



FRACTIONATION

A → B

TRANSFER



FINISH FILLING



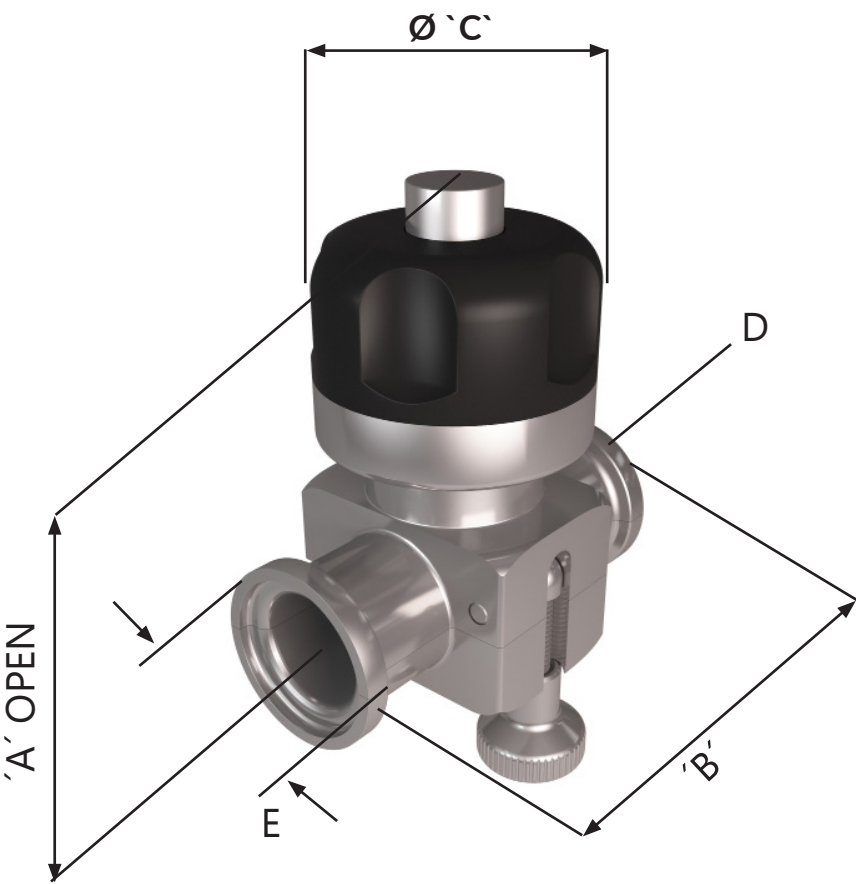
MIXING

Critical Parameters

Manual

Valve description	A	B	C	E	D	Weight
AC - Mini sanitary clamp x 0.37 in. internal diameter (ID)	2.4 in (62mm)	2.5 in (64mm)	1.5 in (38mm)	1 in (25mm)	1/2 in. (DN15)	0.3 kg
AD- Mini sanitary clamp x 0.62 in. taper ID to 0.37 in. bore ID	2.4 in (62mm)	2.5 in (64mm)	1.5 in (38mm)	1 in (25mm)	3/4 in. (DN20)	0.3 kg
AE - 1 in. sanitary clamp x 0.87 in. ID	4.3 in (110mm)	4 in (101mm)	2.4 in (60mm)	2 in (51mm)	1 in. (DN25)	1.3 kg
AG - 1 1/2 in. sanitary clamp x 1.37 in. ID	6.3 in (159mm)	5.7in (145.7)	3.4 in (86mm)	2 in (51mm)	1 1/2 in. (DN40)	2.2 kg

Note: Sanitary liner connections have an integrated male gasket profile

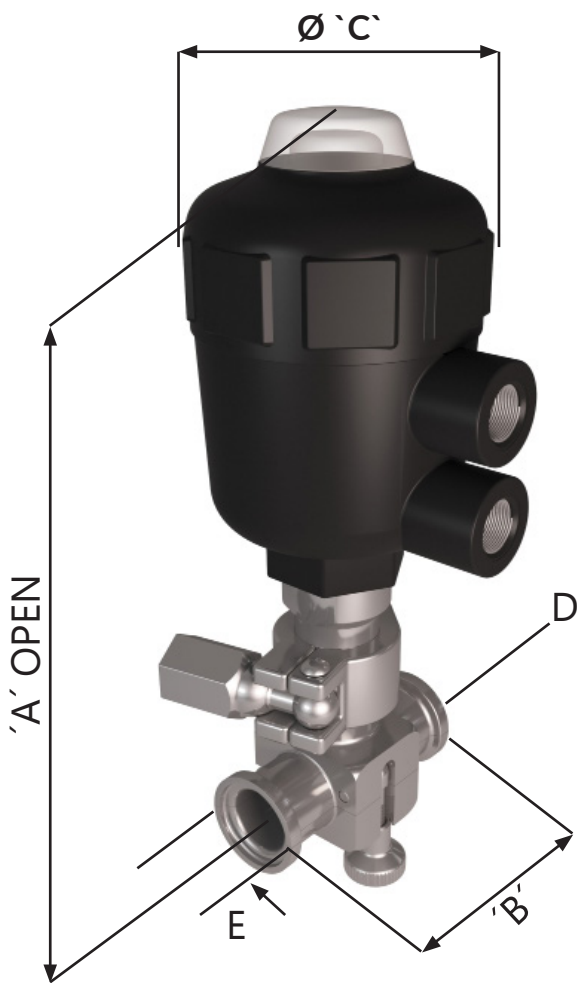


Critical Parameters

Pneumatic

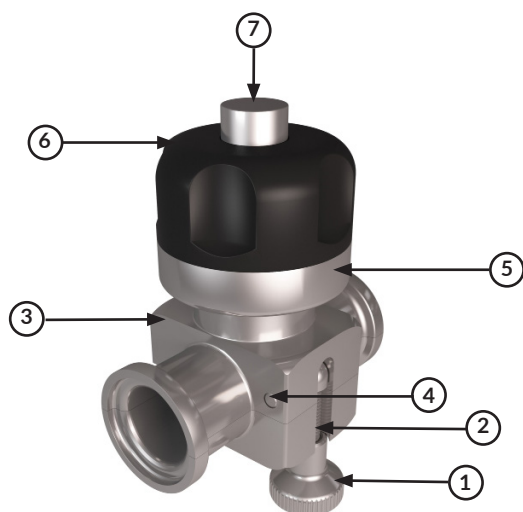
Valve description	A	B	C	E	D	Weight
AC - Mini sanitary clamp x 0.37 in. internal diameter (ID)	6.3 in (159mm)	2.5 in (64mm)	2.5 in (63mm)	1 in (25mm)	1/2 in. (DN15)	0.9 kg
AD- Mini sanitary clamp x 0.62 in. taper ID to 0.37 in. bore ID	6.3 in (159mm)	2.5 in (64mm)	2.5 in (63mm)	1 in (25mm)	3/4 in. (DN20)	0.9 kg
AE - 1 in. sanitary clamp x 0.87 in. ID	7.5 in (190mm)	4 in (101mm)	2.4 in (79mm)	2 in (51mm)	1 in. (DN25)	3.1 kg
AG - 1 1/2 in. sanitary clamp x 1.37 in. ID	11.8 in (298.7 mm)	5.7 in (145.7 mm)	3.4 in (97mm)	2 in (51mm)	1 1/2 in. (DN40)	5.5 kg

Note: Sanitary liner connections have an integrated male gasket profile



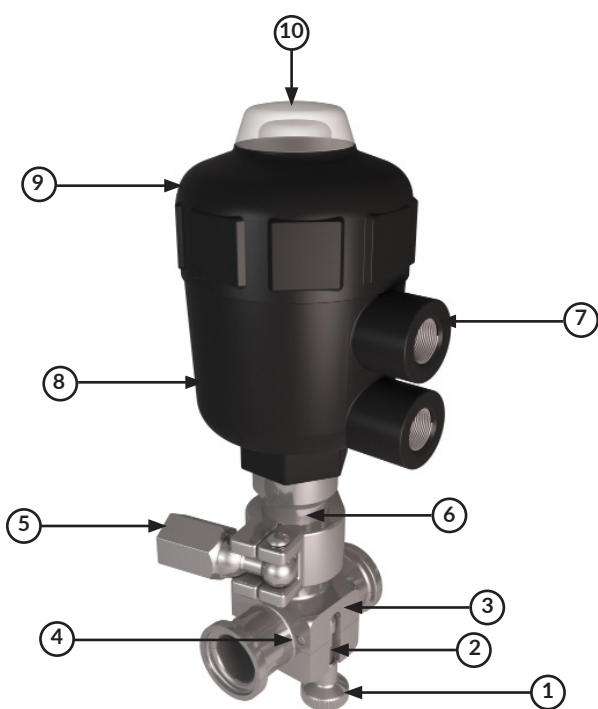
Materials of Construction

Manual



Item no.	Description	Material
1	Lock knob	Stainless steel 316 L
2	Swing arm	Stainless steel 18-8
3	Valve body	Stainless steel 316 L
4	Body pins	Stainless steel 316 L
5	Lower handle	Stainless steel 316 L
6	Handle	Polyetherimide (PEI)
7	Stem	Stainless steel 316 L

Pneumatic



Item no.	Description	Material
1	Lock knob	Stainless steel 316 L
2	Swing arm	Stainless steel 18-8
3	Valve body	Stainless steel 316 L
4	Body pins	Stainless steel 316 L
5	Assembly clamp	Stainless steel 304
6	Actuator body	Stainless steel 316 L
7	Air Ports 1/4 in BSP	Stainless steel 304
8	Actuator housing	Polyamide(PA)
9	Actuator cap	Polyamide(PA)
10	Indicator lens	Polycarbonate (PC)

ARTeSIL[®] DRV Replacement Liners

ARTeSYN[®] ARTeSIL[®] Diaphragm Replacement Valve (DRV) Liners are made of platinum cured silicone material, which is developed to significantly improve installation time, increase flow rates and reduce the risk of cross-contamination for ARTeSYN[®] DRVs.

Developed as a result of 20 years of manufacturing experience, this ARTeSIL[®] DRV Liner is specifically designed for the ARTeSYN[®] DRV to be flexible yet durable and with limited product contact only with silicone liner.

These Class 7 clean room produced and double-packaged ARTeSIL[®] DRV Liners conform to several USP and ISO requirements, along with using Animal Derived Content Free (ADCF) raw material.



Features

60 Durometer, Shore A hardness material

Eliminates entrapment issues, reduces chance of cross-contamination

Zero dead legs

High quality and cost effective

Reduces assembly times

Unique DRV design limits product contact exclusively to silicone liner

Gamma sterilization available

Applications

Sterile filling and protection

Filtration and fermentation

Drug delivery and discovery systems

Media dispensing

Biocompatibility and Regulatory Info*

USP 87

EP 3.1.9

USP 88

CFR 177.2600

USP 661

ADCF

ISO 10993-6

USP Class VI

ISO 10993-10

NO DEHP or BPA

ISO 10993-11

*NOTE: Validation Summary and Regulatory Information Guide (RIG) available upon request

Specifications

Quality Standards

Manufacturing in ISO Class 7 clean room
Double-bagged in cleanroom
Animal derived components free (ADCF) material (including BSE/TSE risk free)

Operating Conditions

Maximum pressure	Temperature range	Normal Pneumatic valve state
4 barg at 60 °C	From 2 to 60 °C	Normally closed

Sterilization

Autoclave	In situ steam
One 75-minute cycle at 130 °C	One 75-minute cycle at 130 °C

Extractables

Full BPOG standardized extractables test protocol in progress.

Ordering Information

Valves and Liners

Sizes	Manual	Pneumatic	Liner Part Number	Liner Gamma Irradiation
AC - Mini sanitary clamp, 0.37 in. (9.4mm) ID	DRVSAC16	DRVSAC19	DRVACS	- G - Gamma Irradiated
AD - Mini sanitary clamp, 0.62 in. (15.7mm) taper ID	DRVSAD16	DRVSAD19	DRVADS	- Non-Gamma Irradiated
AE - 1 in. sanitary clamp (M), 0.87 in. (22.1mm) ID	DRVSAE16	DRVSAE19	DRVAES	
AF - 1 in. sanitary clamp, 0.750 in. (19.1mm) ID	DRVSAF16	DRVSAF19	DRVAFS	
AJ - 1 in. sanitary clamp, 1.000 in. (25.4mm) ID	DRVSAJ16	DRVSAJ19	DRVAJS	
AG - 1 1/2 in. sanitary clamp (M), 1.37 in. (34.8mm) ID	DRVSAG16	DRVSAG19	DRVAGS	
AH - 2 in. sanitary clamp With 1.870in. (47.5mm) ID	DRVSAH16	DRVSAH19	DRVAHS	

Accessories

Description	Part Number	Matching Valve	Valve Version
Mini sanitary ½ in. clamp rod bracket	ARTD001031	DRVSAC19 DRVSAD19	Pneumatic Only
Sanitary 1½ in. clamp with rod bracket	ARTD001030	DRVSAE19 DRVSAG19	Pneumatic Only



ARTeSYN[®] Biosolutions Ireland Ltd

Headquarters

Six Cross Roads, Kilbarry, Waterford, X91 YR27, Ireland

T: +353 51 508 431

ARTeSYN[®] Biosolutions Estonia OÜ

Subsidiary

Kesk tee 10a, Jüri alevik, Harju maakond, 75301, Estonia

info@artesybio.com

T: +372 5350 2901

ARTeSYN[®] Biosolutions USA LLC

Subsidiary

9525 Owensmouth Ave, Unit E, Chatsworth, CA 91311, United States

T: +1 775-235-5200

Subsidiary

6951 Buckeye St, Chino, CA 91710, United States

T: +1 775-235-5200

Subsidiary

3750 Oceanic Way Oceanside, CA 92056, United States

T: +1 818-350-0423

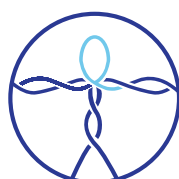
Registered @

1771 South Sutro Terrace, Carson City, NV 89706-0364, United States

T: 818-350-0423

info@artesybio.com

www.artesybiosolutions.com



ARTeSYN