



The Latest Seat Valve Design

Unique 7000 Series - Aseptic

General Information

The Unique 7000 Series is an innovative new generation of Tri-Clover® single seat valves that are designed to meet the highest process demands of hygiene and safety. They're built on a well-proven, platform from an installed base of more than one million valves.

Application

This aseptic version of the Tri-Clover Unique 7000 series features a one-piece PTFE diaphragm which eliminates the need for a steam barrier. In addition, this one-piece EPDM-backed diaphragm means you'll need fewer spare parts which translates into a low parts inventory and ultimately lower cost of valve ownership.

This PTFE constructed diaphragm offers improved cleanability and extended diaphragm life. Available as a shut-off or change-over valve, it's built for aseptic operating conditions such as high sterilisation temperatures.

Working principle

Operated by means of compressed air, it can be supplied with or without spring return. Sterile stem sealing towards the atmosphere is ensured by a special designed PTFE/EPDM diaphragm and since the product-wetted part of the stem (below the diaphragm seal) never travels outside the product zone, there is no need for a steam barrier.

Standard Design

This aseptic Tri-Clover Unique 7000 valve features the same one-piece body with no weld design benefits shared by the entire series. It consists of actuator, valve bonnet, stem with diaphragm unit and valve bodies. While the bonnet and stem configurations can vary, the body(s), actuator, clamps, stem guide bushing are all standard and common interchangeable components. The change-over version is a two-body design. The valve is assembled by means of clamps and a stem clip system for easy maintenance.

Other valves in the same basic design

- Shut-off valve
- Change-over valve
- Reverse acting valve
- Long stroke version
- Manual operated valve
- Small single seat valve (SSSV)

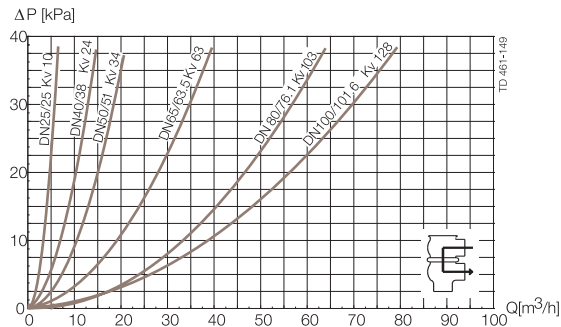
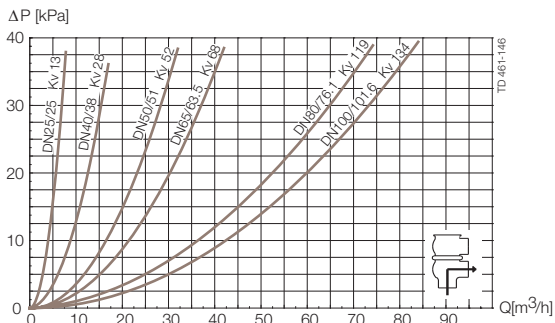
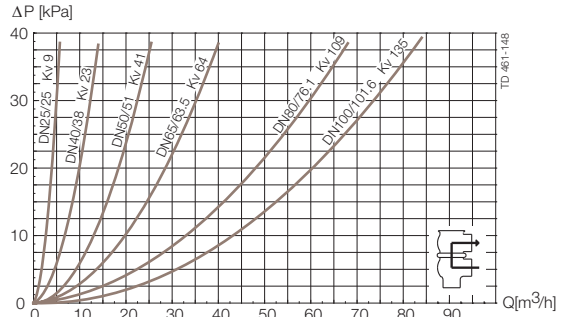
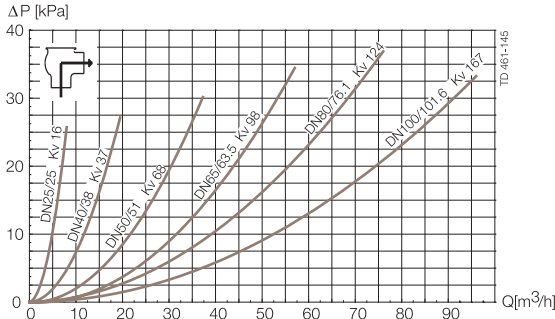
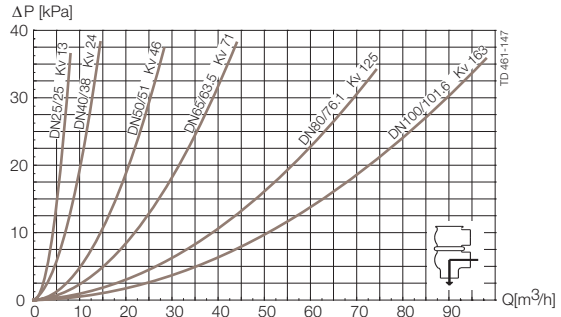
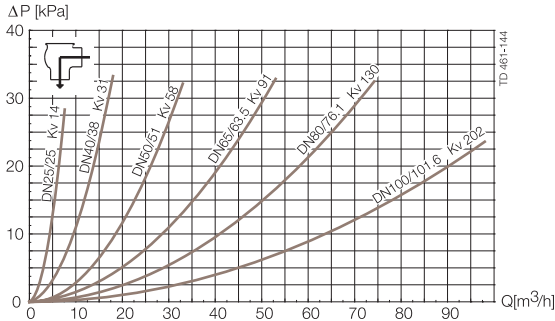
Actuator function

- Pneumatic downward movement, spring return (NO)
- Pneumatic upward movement, spring return (NC)
- Pneumatic upward and downward movement (A/A)



Unique 7000 Series - Aseptic Change-over valve and Shut-off valve

Pressure drop/capacity diagrams



Note!

For the diagrams the following applies:

Medium: Water (68° F)

Measurement: In accordance with VDI2173

$K_v = m^3/h$ at a pressure drop of 1 bar.

For other pressure drops than 1 bar the flow can be calculated with the following formula:

$$Q = K_v \times \sqrt{\Delta p}$$

Where

Q = Flow in m³/h.

Kv = See above.

Δ p = Pressure drop in bar over the valve.

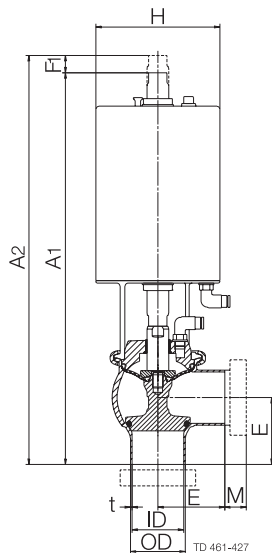
Pressure data for Unique 7000 Series - Aseptic

Actuator type / function

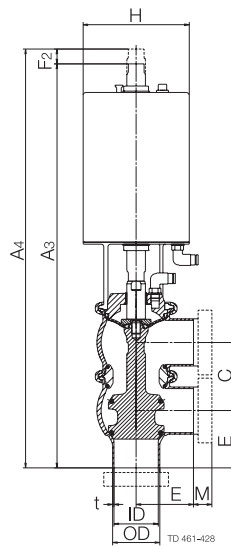
Dimensions (inch)

Nominal size	DN/OD						DIN					
	1"	1.5"	2"	2.5"	3"	4"	1"	1.5"	2"	2.5"	3"	4"
A ₁	12.30	12.40	14.30	15.40	16.70	18.40	12.40	12.40	14.40	15.30	16.80	18.50
A ₂	12.90	13.10	15.30	16.30	17.80	19.60	13.00	13.20	15.40	16.30	18.00	19.70
A ₃	14.20	14.70	17.20	18.70	20.60	23.30	14.40	14.90	17.30	18.90	21.00	23.50
A ₄	14.60	15.40	18.10	19.60	21.60	24.40	14.90	15.60	18.20	19.80	22.10	24.50
C	1.88	2.39	29.10	3.40	3.89	4.87	2.05	2.52	2.99	3.62	4.21	4.96
OD	0.98	1.50	2.01	2.50	3.00	4.00	1.14	1.61	2.09	2.76	3.35	4.09
ID	0.86	13.70	18.80	2.37	2.87	3.84	1.02	1.50	1.97	2.60	3.19	3.94
t	0.06	0.06	0.06	0.06	0.06	0.08	0.06	0.06	0.06	0.08	0.08	0.08
E ₁	1.97	19.50	2.44	3.23	3.43	4.72	1.97	1.95	2.44	3.07	3.43	120
E ₂	197	19.50	2.44	3.23	3.43	4.72	1.97	1.95	2.44	3.07	3.43	120
F ₁	0.59	0.79	0.98	0.98	1.18	1.18	0.59	0.79	0.98	0.98	1.18	1.18
F ₂	0.47	0.67	0.87	0.87	1.06	1.06	0.47	0.67	0.87	0.87	1.06	1.06
H	3.35	3.35	4.52	4.52	6.07	6.07	3.35	3.35	4.52	4.52	6.07	6.07
M (ISO clamp)	0.83	0.83	0.83	0.83	0.83	0.83	-	-	-	-	-	-
M (DIN clamp)	-	-	-	-	-	-	0.83	0.83	0.83	1.10	1.10	1.10
M (DIN male)	-	-	-	-	-	-	0.87	0.87	0.91	0.98	0.98	1.18
M (SMS male)	0.79	0.79	0.79	0.95	0.95	1.38	-	-	-	-	-	-
Weight (kg)												
Shut-off valve	3,1	3,3	5,6	6,6	11,5	14	3,2	3,4	5,6	6,8	11,9	13,9
Change-over valve	3,9	4,2	7,2	8,7	14,2	18,4	4,1	4,5	7,1	9	15,1	18,3

1/2



Shut-off valve



Change-over valve

Caution, opening/closing time:

Opening/closing time will be effected by the following:

- The air supply (air pressure).
- The length and dimensions of the air hoses.
- Number of valves connected to the same air hose.
- Use of single solenoid valve for serial connected air actuator functions.
- Product pressure.

Air Connections Compressed air:

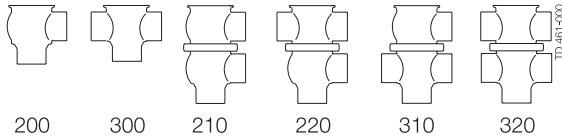
R 1/8" (BSP), internal thread.

Technical data

Pressure range:0-116 psig (0-8 bar)
 Temperature range:15 °F to 285 °F (EPDM)
 Optimum process conditions:>7 psi (0.5 bar), > 68 °F
 Max. sterilization temperature (steam - short time):302 °F/55 psi (3.8 bar)
 Air pressure:72-116 psi (5-8 bar)

Note! Vacuum is not recommended in aseptic applications

Valve body combinations



Actuator function

- Pneumatic downward movement, spring return (NO).
- Pneumatic upward movement, spring return (NC).
- Pneumatic upward and downward movement (A/A).

Air consumption (litres free air) for one stroke			
Size	DN25-40	DN50-65	DN80-100
	DN/OD 1" - 1.5"	DN/OD 2" - 2.5"	DN/OD 3" - 4"
NO and NC	0.2 x air pressure [bar]	0.5 x air pressure [bar]	1.3 x air pressure [bar]
A/A	0.5 x air pressure [bar]	1.1 x air pressure [bar]	2.7 x air pressure [bar]

Materials

Product wetted steel parts:Stainless steel AISI 316L
 Other steel parts:Stainless steel AISI 304
 Surface quality product wetted parts:Polished Ra 32 microinches
 Outside surface finishBright
 Product wetted seals:EPDM, PTFE
 Other Seals:NBR, EPDM

Options

- a. Control and Indication: IndiTop, ThinkTop and ThinkTop Basic.
- b. Valve house with tangential side port.
- c. Product wetted seals in EPDM, HNBR, Fluorinated rubber (FPM) or PTFE.
- d. High pressure actuator for DN/ON 38-63.5, DN 40-65.
- e. Maintainable actuator.
- f. Outside surface blasted.

Materials grades

- Product wetted seals of Nitrile (NBR) or fluorinated rubber (FPM).

Tools

- Service tool for actuator.

Ordering

Please state the following when ordering:

- Connections if not Tri-Clamp.
- Size.
- Valve body combination Actuator mode.
- NC, NO or A/A.
- Options.

Description Code Unique 7000

Examples:

7610-012M1H40-1SSS-TY-S041 (All Ports Tri-Clamp)

7610-012SNNNNWMM1H40-1SSS-TY-S041
(Combination Ports Weld & Tri-Clamp)

Valve function	Body						Actuation				Stem/elastomer		Misc.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14					
7610	012	S	M						1	H40	1	S	S	S	T	Y	S	04

1 Model	Code
-- Unique 7000	7610
-- Unique 7000 Aseptic	8610
-- Unique 7000 Tangential Outlet (Horizontal Mounting)	7620
-- Unique 7000 Tank Outlet (Vertical Mounting)	7630
-- Unique 7000 Regulating	7710
2 Body style	Code
-- Shut-off (2 port)	200
-- Shut-off (3 port)	300
-- Shut-off Tangential Right (2 port)	208
-- Shut-off Tangential Left (2 port)	207
-- Shut-off Tangential Cross (3 port)	309
-- Change Over (3 port)	210
-- Change Over (4 port)	220
-- Change Over (4 port)	310
-- Change Over (5 port)	320
-- Shut-off RA (Reverse Acting) (2 port)	011
-- Shut-off RA (3 port)	021
-- Shut-off RA (3 port)	012
-- Shut-off RA (4 port)	022
-- Change Over RA (3 port)	111
-- Change Over RA (4 port)	211
-- Change Over RA (4 port)	121
-- Change Over RA (4 port)	112
-- Change Over RA (5 port)	212
-- Change Over RA (6 port)	222
-- Y-body	900
3 Build in dimension	Code
-- Standard	S
-- 700 Series Build Dimensions (Center-Face; shut-off only)	C
4 Connection Ports - all identical	Code
-- Weld ends - all ports	W
-- Tri-Clamp - all ports	M
-- Threaded Bevel Seat - all ports	T
Connection Ports - mixed	Code
-- Mixed connection types	S
-- Weld end	W
-- Tri-Clamp	M
-- Iso Clamp	I
-- Union SMS	S
-- Union DIN	C
-- Din Clamp	D
-- Threaded Bevel Seat	T
-- No port	N
5 Surface Finish	Code
-- 3A (OD = Dust blast; ID = 32Ra)	1
-- 3A Bright (OD = Bright; ID = 32Ra)	2
-- PC (3A) (OD = Dust blast; ID = 20Ra)	3
-- PL (3A) (OD = Bright; ID = 20Ra)	4
-- PP (3A) (OD = Bright; ID = 15Ra)	5
-- PM (3A) (OD = Bright; ID = 15Ra w/EP)	6
6 Size (Port)	Code
-- 1-Inch	H10
-- 1½-Inch	H15
-- 2-Inch	H20
-- 2½-Inch	H25
-- 3-Inch	H30
-- 4-Inch	H40
7 Actuation Mode	Code
-- Norm. Open/Spring to open	1
-- Norm. Open/Spring to open (RA)	2
-- Norm. Closed/Spring to close	2
-- Norm. Closed/Spring to close (RA)	1
-- Air to air	3
-- Two-step/Three Position	4
-- Manual	5
8 Actuator Stroke	Code
-- Standard	S
-- Long Stroke	L
9 Actuator Type	Code
-- Maintainable	R
-- Semi maintainable	S
10 Holding Pressure Capability	Code
-- Standard	S
-- High pressure	H
11 Stem Type	Code
-- Elastomer Plug Seal	S
-- TR2/PTFE Plug Seal	T
12 Wetted Seal Materials	Code
-- EPDM	E
-- HNBR	U
-- FPM (Fluoroelastomer)	Y
13 Assembled Valve	Code
-- Assembled valve	S
14 Top Unit Type	Code
IndiTop digital 0 solenoid	IT
ThinkTop digital 1 solenoid	TB
ThinkTop digital 2 solenoid	TC
ThinkTop ASI 0 solenoid	TE
ThinkTop ASI 1 solenoid	TF
ThinkTop ASI 2 solenoid	TG
ThinkTop DeviceNet 0 solenoid	TI
ThinkTop DeviceNet 1 solenoid	TJ
ThinkTop DeviceNet 2 solenoid	TK
ThinkTop Digital 110V 0 solenoid	TM
ThinkTop Digital 110V 1 solenoid	TN
ThinkTop Digital 110V 2 solenoid	TO
GreenTop 2 Mech Switches 0 Solenoid	04
GreenTop 2 Prox Switches 0 Solenoid	12
GreenTop 24 VDC 2 Mech Switches 1 Solenoid	18
GreenTop 110 VAC 2 Mech Switches 0 Solenoid	20
GreenTop 24 VDC 2 Prox Switches 1 Solenoid	34
GreenTop 110 VAC 2 Prox Switches 1 Solenoid	36




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The information contained herein is correct at the time of issue,
but may be subject to change without prior notice.

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