

# Simply Unique

## Unique 7000 Series Tank Outlet Valve

### 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

The Unique 7000 is a sanitary air-operated seat valve with a flexible design. It can be configured as a standard or a reverse acting valve (open into the tank) with one or two ports. It's ideal applications include the dairy, beverage, brewery, food, pharmaceutical, biotechnology and personal care industries.

### Working principle

The valve is remote-controlled by means of compressed air. It has few and simple moveable parts which results in a very reliable valve and low maintenance cost.

### Standard design

The Unique 7000 Tank Outlet valve is designed to deliver years of reliability and performance you've come to expect with all Tri-Clover® products. Its flexible design consists of a valve body, seat and tank flange that are clamped together. The TR2 seat ring with enhanced CIP capabilities and hygiene comes standard with all Unique 7000 series valves. For added confidence, the valve can be supplied with a controlled compression elastomer seat ring. The standard actuator comes with a five year warranty. The Unique 7000 Tank Outlet valve sizes range from 2" to 4".

The body can be turned in any position if the clamps are slightly loosened. The tank flange is welded directly into the tank. (Important! Observe welding guideline in instruction manual) The tank flange is supplied with TÜV approval AD 2000 and inspection certificate 3.1 according to EN10204.

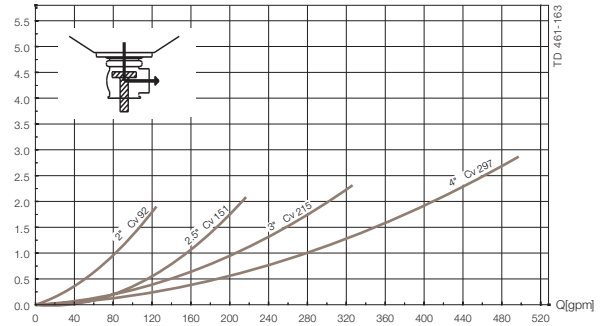
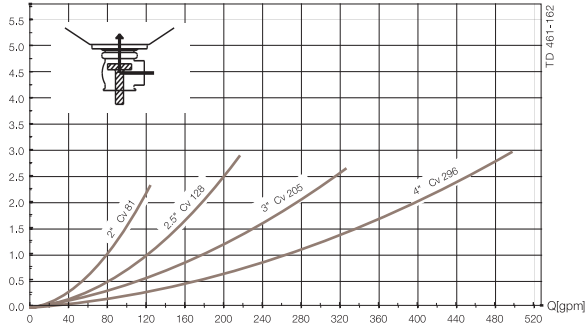
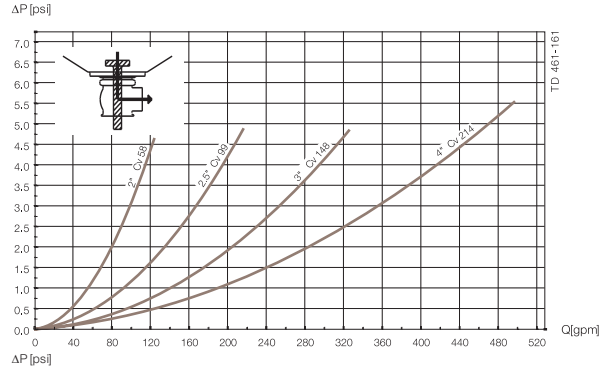
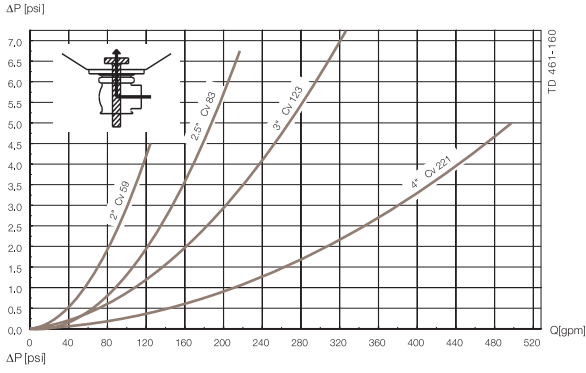
### Other valves in the same basic design

- Single Seat valve.
- Reverse acting valve.
- Long stroke valve.
- Manually operated valve.
- Aseptic valve



Unique 7000 Series Tank Outlet Valve

# Pressure drop/capacity diagrams



**Note!**

For the diagrams the following applies:

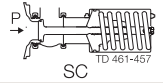
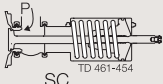
Medium: Water (68° F/20° C)

Measurement: In accordance with VDI2173

**Pressure data for Unique 7000 Series Tank Outlet Valve**

**Table 1**

Max. pressure in psi without leakage at the valve seat

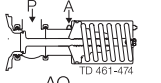
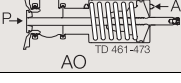
Actuator / Valve body combination and direction of pressure	2"	2½"	3"	4"
 SC TD 461-457	104	61	93	61
 SC TD 461-454	122	65	99	64

P = Product pressure

SC = Spring closes

**Table 2**

Max. pressure in psi against which the valve can open.

Actuator / Valve body combination and direction of pressure	Air pressure (psi)	Valve size			
		2"	2½"	3"	4"
 AO TD 461-474	87	145	131	145	100
 AO TD 461-473	87	145	121	144	96

A = Air

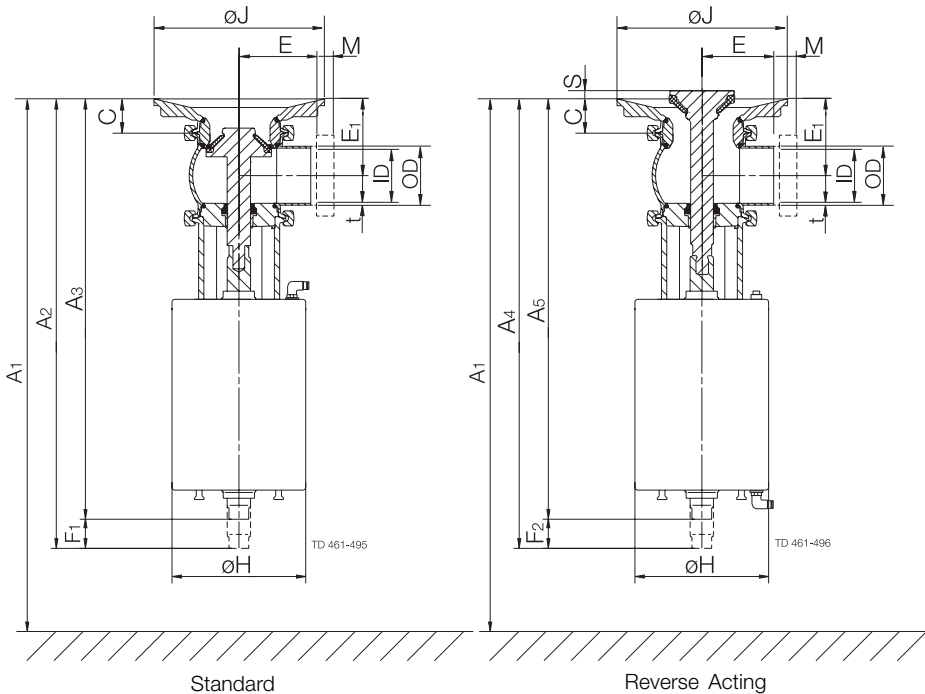
P = Product pressure

AO = Air opens

Dimensions

Size	2"	2½"	3"	4"
A1	16.79	17.28	18.84	19.81
A2	15.49	15.98	17.5	18.51
A3	14.50	15	16.36	17.33
A4	15.37	15.86	17.42	18.39
A5	14.35	14.84	16.20	17.17
C	1.18	1.2	1.18	1.18
OD	2.0	2.5	3	4
ID	1.88	2.37	2.87	3.84
t	0.06	0.06	0.06	0.08
E	2.44	3.23	3.43	4.72
E1	2.63	2.88	3.13	3.61
F1	0.98	0.98	1.18	1.18
F2	1.02	1.02	1.22	1.22
øH	4.52	4.52	6.07	6.07
øJ	5.83	6.42	7.01	7.80
S	0.61	0.61	0.81	0.81
M/ Clamp	0.50	0.50	0.50	0.63
Weight (lb)				
Standard	15.6	18.5	29.7	35.8
Reverse Acting	15.9	18.7	30	36.1

A1= min. Installation measure to allow that valve can be lifted out of the tank flange / valve body (if Indication Unit is mounted, height must be add)



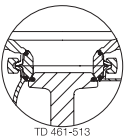
**Caution, opening/closing time:**

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.



Replaceable elastomer plug seal

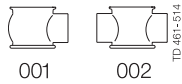
 Authorized to carry the 3A symbol

## Technical Data

Max. product pressure in pipeline (depends on valve specifications): . . . . .145 psi (1000 kPa (10 bar)).  
 Max. product pressure in tank (depends on valve specifications and temperature): . . . . .145 psi (1000 kPa (10 bar)) - max. 68° F.  
 . . . . .123 psi (850 kPa (8.5 bar)) - max 212° F  
 . . . . .109 psi (750 kPa (7.5 bar)) - 302° F  
 Min. product pressure: . . . . .Full vacuum.  
 Temperature range: . . . . .14°F to +284°F (EPDM)  
 Air pressure: . . . . .72.5 to 101.5 psi (500 to 700 kPa (5 - 7 bar)).

## Valve Body Combinations

### Valve Body Combinations



## Actuator

Air consumption (In <sup>3</sup> free air) for one stroke	
2" - 2½"	3" - 4"
2.17 x air pressure [psi]	5.51 x air pressure [psi]

## Materials

Product wetted steel parts: . . . . .AISI 316L (internal Ra < 32 μ inch)  
 Other steel parts . . . . .AISI 304  
 Plug seal: . . . . .PTFE (TR2) (standard)  
 Optional elastomer plug seal: . . . . .EPDM, HNBR or FPM  
 Other product wetted seals: . . . . .EPDM (standard)  
 Optional product wetted seals: . . . . .HNBR and FPM  
 Other seals . . . . .NBR

## Options

- A. Weld ends or connection types other than Tri-Clamp
- B. Control and Indication: IndiTop, ThinkTop and ThinkTop Basic
- C. Aseptic version
- D. Product wetted seals in HNBR or FPM
- E. Replaceable elastomer plug seals
- F. High pressure actuator
- G. Manually operated
- H. NO or A/A actuator
- I. Long stroke actuator
- J. Maintainable actuator
- K. External surface finish blasted

## Ordering

Please state the following when ordering:

- Size.
- Connections.
- Valve body combination.
- Options.

## Note!

For further details, see instruction ESE00364.

# Description Code Unique 7000

Examples:

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

7610-012SNNNNMM1H40-1SSS-TY-S041  
(Combination Ports Weld & Tri-Clamp)

Valve function	Body										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

<b>1</b>	<b>Model</b>	<b>Code</b>	
	-- 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	
<b>2</b>	<b>Body style</b>	<b>Code</b>	
	-- 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	
<b>3</b>	<b>Build in dimension</b>	<b>Code</b>	
	-- Standard	S	
	-- 700 Series Build Dimensions (Center-Face; shut-off only)	C	
<b>4</b>	<b>Connection Ports - all identical</b>	<b>Code</b>	
	-- Weld ends - all ports	W	
	-- Tri-Clamp - all ports	M	
	-- Threaded Bevel Seat - all ports	T	
	<b>Connection Ports - mixed</b>	<b>Code</b>	
	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	
<b>5</b>	<b>Surface Finish</b>	<b>Code</b>	
	-- 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	
<b>6</b>	<b>Size (Port)</b>	<b>Code</b>	
	-- 1-Inch	H10	
	-- 1½-Inch	H15	
	-- 2-Inch	H20	
	-- 2½-Inch	H25	
	-- 3-Inch	H30	
	-- 4-Inch	H40	
<b>7</b>	<b>Actuation Mode</b>	<b>Code</b>	
	-- 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	
<b>8</b>	<b>Actuator Stroke</b>	<b>Code</b>	
	-- Standard	S	
	-- Long Stroke	L	
<b>9</b>	<b>Actuator Type</b>	<b>Code</b>	
	-- Maintainable	R	
	-- Semi maintainable	S	
<b>10</b>	<b>Holding Pressure Capability</b>	<b>Code</b>	
	-- Standard	S	
	-- High pressure	H	
<b>11</b>	<b>Stem Type</b>	<b>Code</b>	
	-- Elastomer Plug Seal	S	
	-- TR2/PTFE Plug Seal	T	
<b>12</b>	<b>Wetted Seal Materials</b>	<b>Code</b>	
	-- EPDM	E	
	-- HNBR	U	
	-- FPM (Fluoroelastomer)	Y	
<b>13</b>	<b>Assembled Valve</b>	<b>Code</b>	
	Assembled valve	S	
<b>14</b>	<b>Top Unit Type</b>	<b>Code</b>	
	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	O4	
	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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