



## 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.

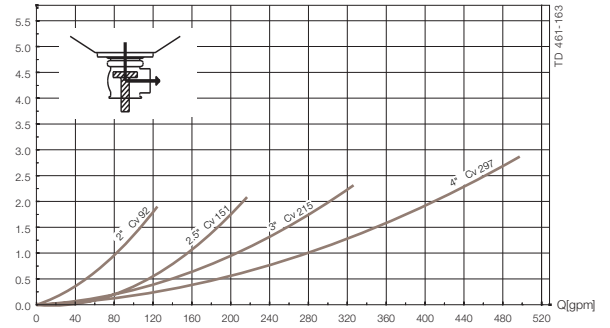
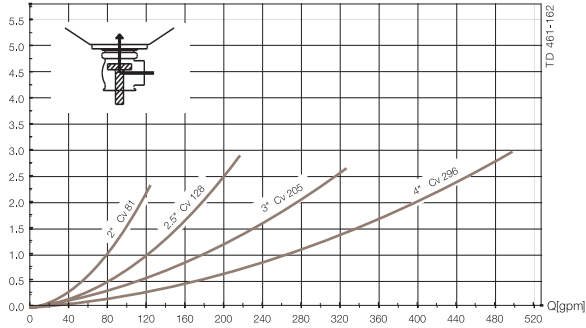
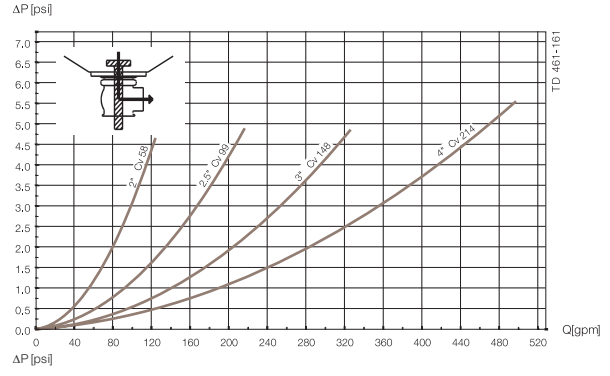
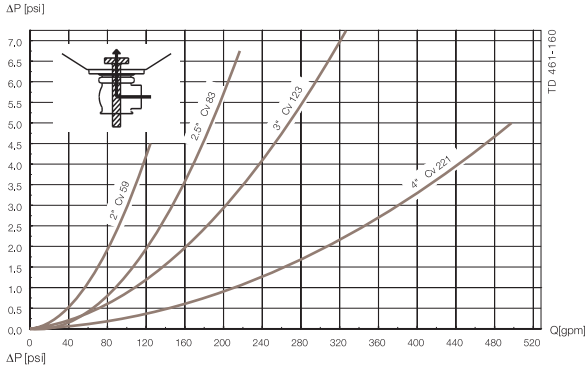
#### Other valves in the same basic design

- 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:

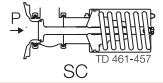
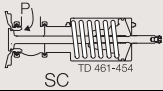
Medium: Water (68° F/20° C)

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

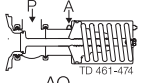
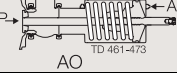
Actuator / Valve body combination and direction of pressure	2"	2½"	3"	4"
 SC TD 461-457	104	61	93	61
 SC TD 461-454	122	65	99	64

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

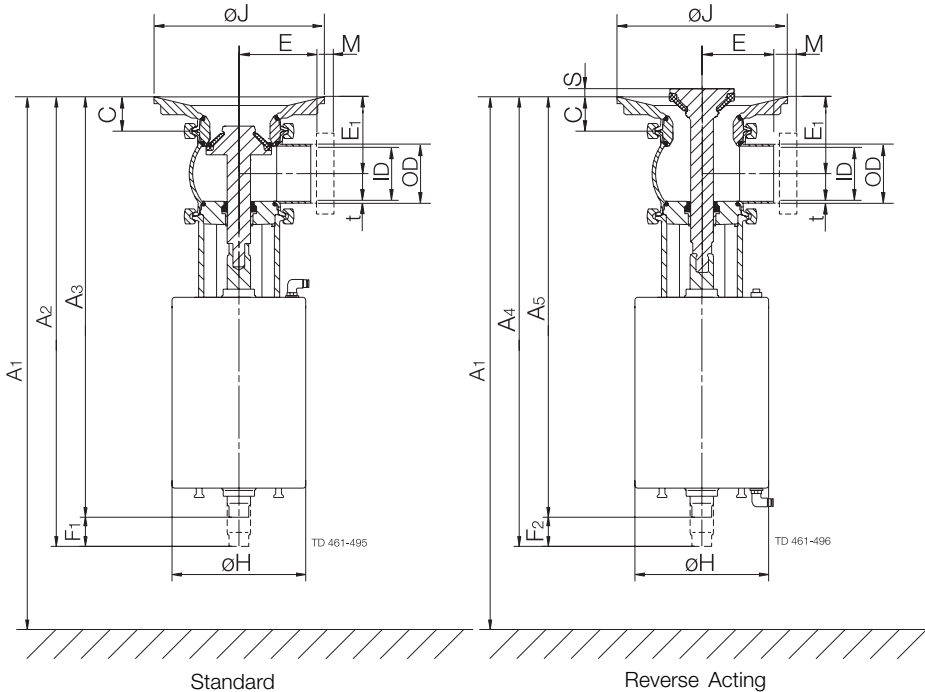
P = Product pressure

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
<b>Weight (lb)</b>				
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)



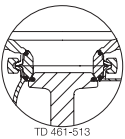
**Caution, opening/closing time:**

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.



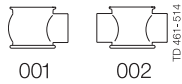
Replaceable elastomer plug seal

## 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							Actuation			Stem/ elastomer		Misc.
1	2	3	4	5	6	7	8	9	10	11	12	13	14		
7610	012	S	M							1	H40				
			S	N	N	N	N	W	M						

- Model**

Code	Description
7610	Unique 7000
8610	Unique 7000 Aseptic
7620	Unique 7000 Tangential Outlet (Horizontal Mounting)
7630	Unique 7000 Tank Outlet (Vertical Mounting)
7710	Unique 7000 Regulating
- Body style**

Code	Description
200	Shut-off (2 port)
300	Shut-off (3 port)
208	Shut-off Tangential Right (2 port)
207	Shut-off Tangential Left (2 port)
309	Shut-off Tangential Cross (3 port)
210	Change Over (3 port)
220	Change Over (4 port)
310	Change Over (4 port)
320	Change Over (5 port)
011	Shut-off RA (Reverse Acting) (2 port)
021	Shut-off RA (3 port)
012	Shut-off RA (3 port)
022	Shut-off RA (4 port)
111	Change Over RA (3 port)
211	Change Over RA (4 port)
121	Change Over RA (4 port)
112	Change Over RA (4 port)
212	Change Over RA (5 port)
222	Change Over RA (6 port)
900	Y-body
- Build in dimension**

Code	Description
S	Standard
C	700 Series Build Dimensions (Center-Face; shut-off only)
- Connection Ports - all identical**

Code	Description
W	Weld ends - all ports
M	Tri-Clamp - all ports
T	Threaded Bevel Seat - all ports

  
**Connection Ports - mixed**

Code	Description
S	Mixed connection types
W	Weld end
M	Tri-Clamp
I	Iso Clamp
C	Union SMS
D	Union DIN
T	Din Clamp
T	Threaded Bevel Seat
N	No port
- Surface Finish**

Code	Description
1	3A (OD = Dust blast; ID = 32Ra)
2	3A Bright (OD = Bright; ID = 32Ra)
3	PC (3A) (OD = Dust blast; ID = 20Ra)
4	PL (3A) (OD = Bright; ID = 20Ra)
5	PP (3A) (OD = Bright; ID = 15Ra)
6	PM (3A) (OD = Bright; ID = 15Ra w/EP)
- Size (Port)**

Code	Description
H10	1-Inch
H15	1½-Inch
H20	2-Inch
H25	2½-Inch
H30	3-Inch
H40	4-Inch
- Actuation Mode**

Code	Description
1	Norm. Open/Spring to open
2	Norm. Open/Spring to open (RA)
2	Norm. Closed/Spring to close
1	Norm. Closed/Spring to close (RA)
3	Air to air
4	Two-step/Three Position
5	Manual
- Actuator Stroke**

Code	Description
S	Standard
L	Long Stroke
- Actuator Type**

Code	Description
R	Maintainable
S	Semi maintainable
- Holding Pressure Capability**

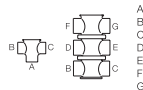
Code	Description
S	Standard
H	High pressure
- Stem Type**

Code	Description
S	Elastomer Plug Seal
T	TR2/PTFE Plug Seal
- Wetted Seal Materials**

Code	Description
E	EPDM
U	HNBR
Y	FPM (Fluoroelastomer)
- Assembled Valve**

Code	Description
S	Assembled valve
- Top Unit Type**

Code	Description
IT	IndiTop digital 0 solenoid
TB	ThinkTop digital 1 solenoid
TC	ThinkTop digital 2 solenoid
TE	ThinkTop ASI 0 solenoid
TF	ThinkTop ASI 1 solenoid
TG	ThinkTop ASI 2 solenoid
TI	ThinkTop DeviceNet 0 solenoid
TJ	ThinkTop DeviceNet 1 solenoid
TK	ThinkTop DeviceNet 2 solenoid
TM	ThinkTop Digital 110V 0 solenoid
TN	ThinkTop Digital 110V 1 solenoid
TO	ThinkTop Digital 110V 2 solenoid
O4	GreenTop 2 Mech Switches 0 Solenoid
12	GreenTop 2 Prox Switches 0 Solenoid
18	GreenTop 24 VDC 2 Mech Switches 1 Solenoid
20	GreenTop 110 VAC 2 Mech Switches 0 Solenoid
34	GreenTop 24 VDC 2 Prox Switches 1 Solenoid
36	GreenTop 110 VAC 2 Prox Switches 1 Solenoid



TD 461-451


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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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