



## Simply Unique

### Unique 7000 Series - Long Stroke

#### 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 shut-off valve with two or three ports or as a change-over valve with three to five ports. It's ideal applications include the dairy, beverage, brewery, food, pharmaceutical, biotechnology and personal care industries. This long stroke version is specially designed for applications where suspended solids or high viscosity products are processed.

#### 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 costs.

#### Standard Design

The Unique 7000 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 either one or two bodies 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 actuator comes with a five year warranty. The Unique 7000 Long Stroke valve sizes range from 1½" to 4".

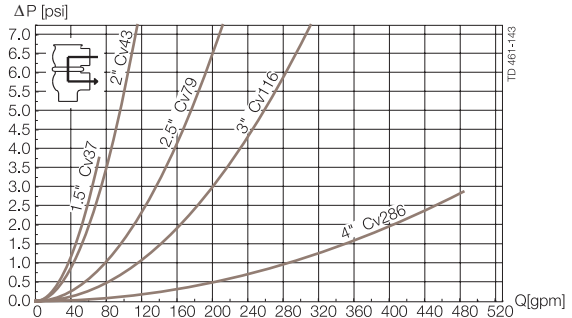
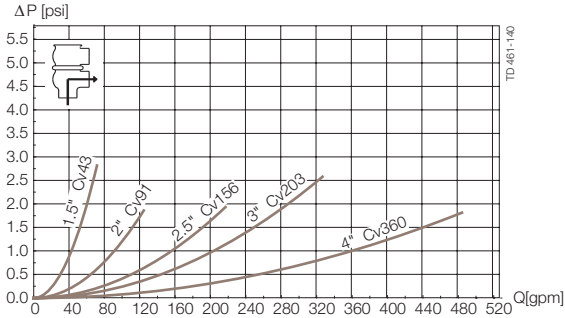
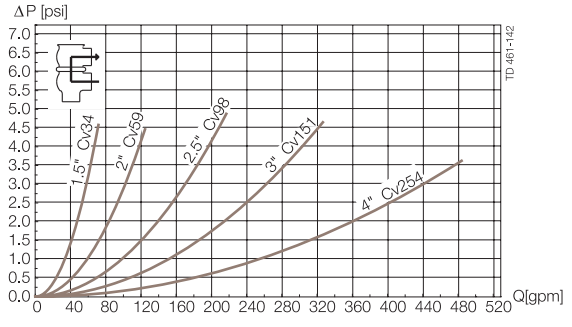
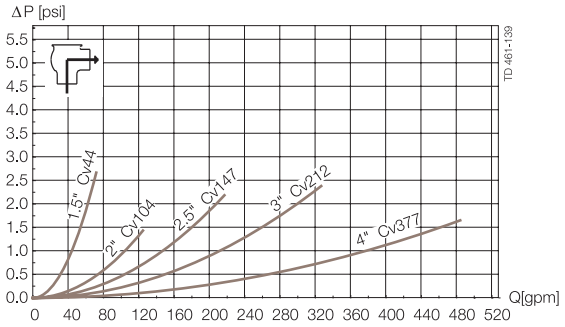
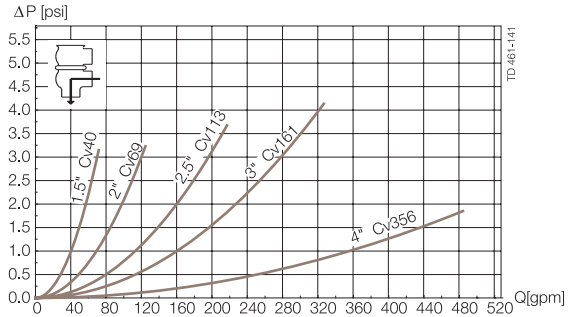
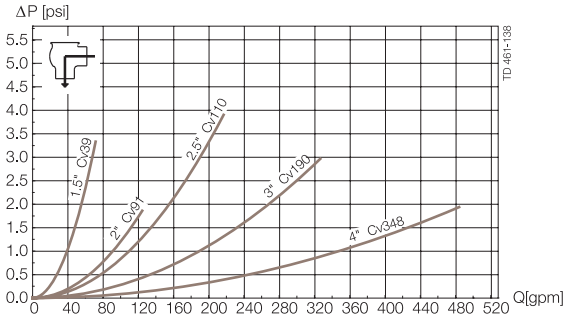
#### Other valves in the same basic design

- Standard single seat valve
- Reverse acting valve
- Aseptic valve
- Manually operated valve



Unique 7000 Series - Long Stroke

## Pressure drop/capacity diagrams



### Note!

For the diagrams the following applies:

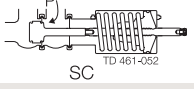
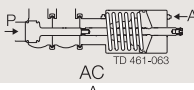
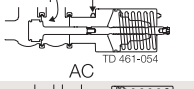
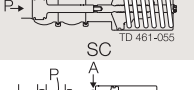
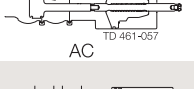
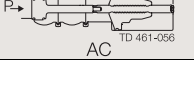
Medium: Water (68° F/20° C)

Measurement: In accordance with VDI2173

## Pressure data for Unique 7000 Series - Long Stroke

Table 1 - Stop and Change-over valves.

Max. Pressure in psi without leakage at the valve seat

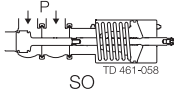
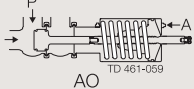
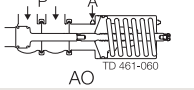
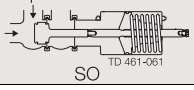
Actuator / Valve body combination and direction of pressure	Air Pressure psi	Actuator type/function	Valve size				
			1½"	2"	2½"	3"	4"
 SC		NO	145	128	70	103	66
 AC	87	NO	145	124	72	98	64
 AC	87	NC	145	144	78	104	67
 SC		NC	145	111	64	97	64
 AC	87	A/A	145	145	145	145	145
 AC	87	A/A	145	145	145	145	145

A = Air  
P = Product pressure

AC = Air closes  
SC = Spring closes

Table 2 - Stop and Change-over valves.

The table shows the approx. Static pressure (P) in bar against which the valve can open.

Actuator / Valve body combination and direction of pressure	Air Pressure psi	Actuator type/function	Valve size				
			1½"	2"	2½"	3"	4"
 SO		NO	145	145	118	145	97
 AO	87	NO	145	145	116	140	94
 AO	87	NC	145	145	126	145	97
 SO		NC	145	145	108	139	93

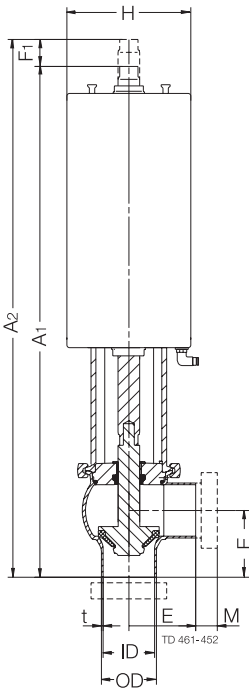
A = Air  
P = Product pressure

AO = Air opens  
SO = Spring opens

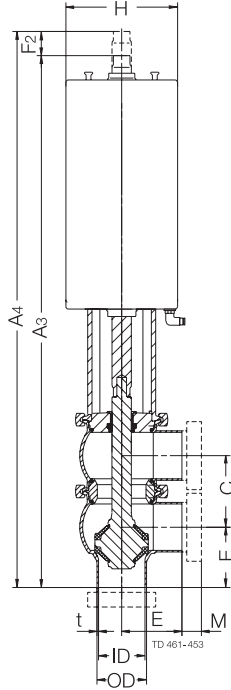
Dimensions

Nominal Size	1½"	2"	Inch 2½"	3"	4"
A <sub>1</sub>	16.37	16.76	17.36	21.23	23.32
A <sub>2</sub>	17.31	18.06	19.09	23.5	25.84
A <sub>3</sub>	17.8	19.02	20.55	24.76	28.07
A <sub>4</sub>	18.75	20.32	22.32	27	30.59
C	2.39	2.91	3.4	3.89	4.87
OD	1.5	2	2.5	3	4
ID	1.37	1.88	2.37	2.87	3.84
t	0.06	0.06	0.06	0.06	0.08
E	1.95	2.44	3.23	3.43	4.72
F <sub>1</sub>	0.94	1.30	1.73	2.24	2.52
F <sub>2</sub>	0.98	1.30	1.77	2.24	2.52
H	3.35	4.52	4.52	6.07	6.07
M (Tri-Clamp)	0.50	0.50	0.50	0.50	0.63
<b>Weight (lb)</b>					
Shut-off valve	13.4	14.7	16.8	33.2	38.8
Change-over valve	15	17.4	21	38.8	49.5

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Shut-off valve



Change-over valve

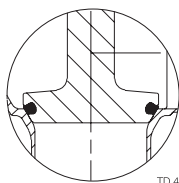
**Caution, opening/closing time:**

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.



Replaceable elastomer plug seal

## Technical data

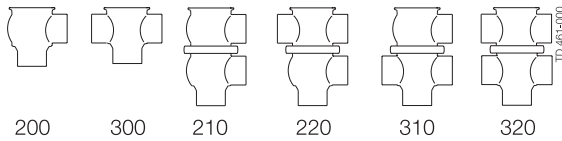
Max. product pressure (depending on valve specifications): . . . . .145 psi (1000 kPa (10 bar)).  
 Min. product pressure: . . . . .Full vacuum.  
 Temperature range: . . . . .14°F to +284°F (EPDM)  
 Air pressure: . . . . .72.5 to 101.5 psi (500 to 700 kPa (5 - 7 bar)).

Max. size of solids (inch)	Valve size (DN/OD)				
	1½"	2"	2½"	3"	4"
Shut-off valve	0.51	0.94	1.30	1.77	2.05
Change-over valve (plug up/lower body)	0.51	0.94	1.34	1.77	2.05
Change-over valve (plug down)	0.47	0.59	0.91	1.18	1.57

## Actuator function

- Pneumatic downward movement, spring return.
- Pneumatic upward movement, spring return.
- Pneumatic upward and downward movement (AA).

## Valve body combinations



Air consumption (In <sup>3</sup> free air) for one stroke		
Size	1½" - 2½"	3" - 4"
NO and NC	3.39 x air pressure [PSI]	8.52 x air pressure [PSI]
A/A	5.79 x air pressure [PSI]	16.2 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 productwetted seals: . . . . .EPDM (standard)  
 Optional productwetted seals: . . . . .HNBR or FPM.  
 Other seals: . . . . .NBR

## Options

- A. Weld ends or connection types other than Tri-Clamp.
- B. Control and Indication: ThinkTop, ThinkTop Basic and GreenTop.
- C. Product wetted seals in HNBR or FPM.
- D. Replaceable elastomer plug seals.
- E. External surface finish blasted.

## Ordering

Please state the following when ordering:

- Size.
- Connections
- Valve body combination.
- Actuator function: NC, NO or A/A.
- Options.

## Note!

For further details, see instruction ESE00220

# 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	S	N	N	N	N	W	M	1	H40	1	S	S	S	T	Y	S	04

- 1 **Model**

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

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

**Connection Ports - mixed**

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

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

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

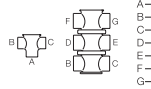
Code	Code
-- Standard	S
-- High pressure	H
- 11 **Stem Type**

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

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

Code	Code
Assembled valve	S
- 14 **Top Unit Type**

Code	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	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



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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