



Simply Unique

Unique 7000 Series Tangential body/Tank 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. The Tangential body version offers complete drainability of the valve seat body on horizontally mounted valves. 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. The tangential body change-over valve would provide full drainability when this valve is horizontally mounted and ported. 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 with low maintenance cost.

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 seal ring. The standard actuator comes with a five year warranty. The Unique 7000 tangential valve sizes range from 2" to 4".

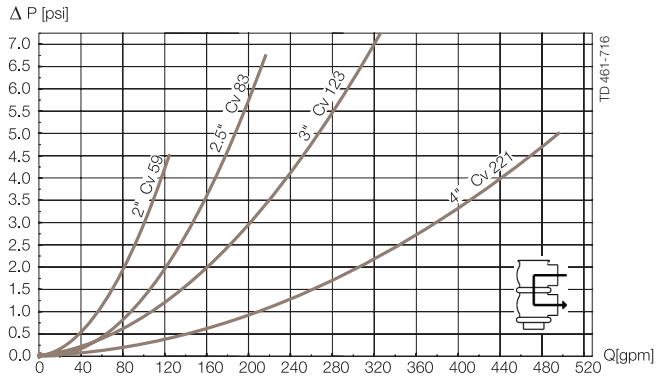
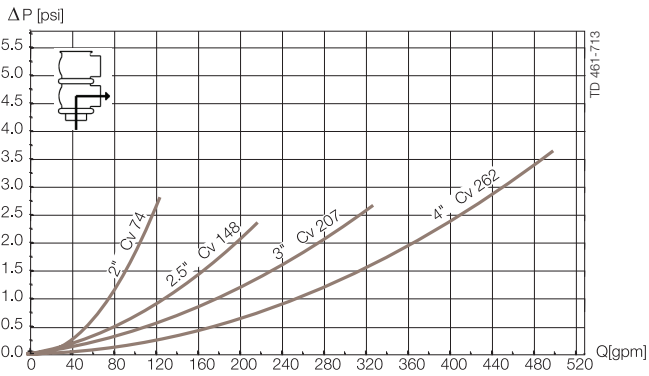
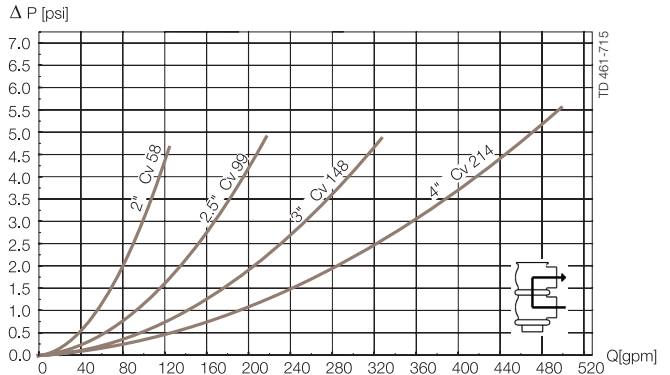
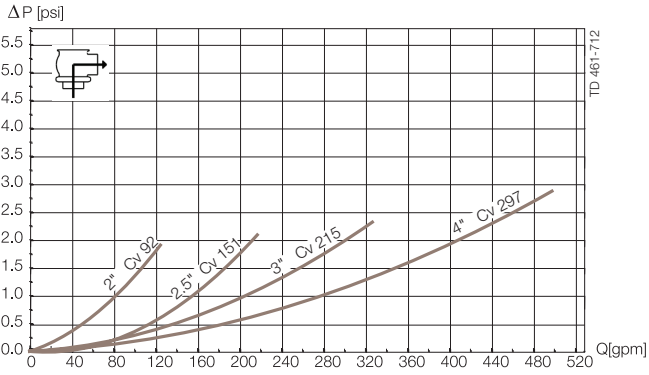
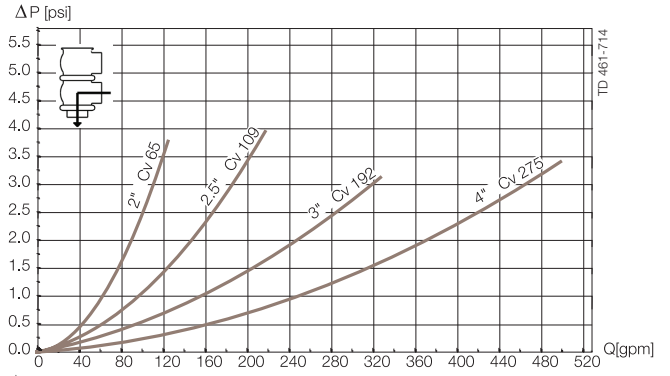
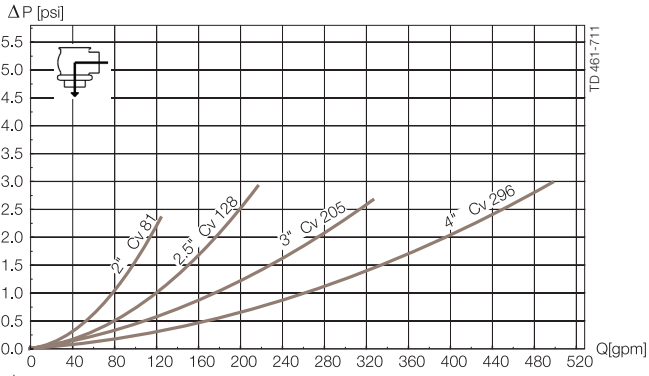
Other valves in the same basic design

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



Unique 7000 Series - Tangential body/Tank valve.

Pressure drop/capacity diagrams



Note!

For the diagrams the following applies:

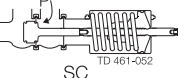
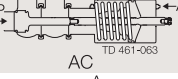
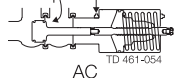
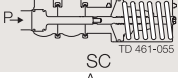
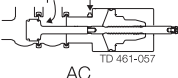
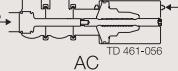
Medium: Water (68° F/20° C)

Measurement: In accordance with VDI2173

Pressure data for Unique 7000 Tangential body/Tank valve

Table 1 - Shut-off and change-over valves

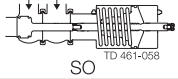
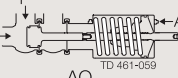
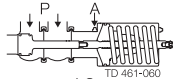
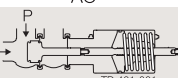
Max. pressure in psi without leakage at the valve seat

Actuator / Valve body combination and direction of pressure	Air pressure [psi]	Plug position	Valve size			
			2"	2½"	3"	4"
 SC TD 461-052		NO	122	65	99	64
 AC TD 461-063	87	NO	139	81	104	70
 AC TD 461-054	87	NC	145	88	112	73
 SC TD 461-055		NC	104	61	93	61
 AC TD 461-057	87	A/A	145	145	145	145
 AC TD 461-056	87	A/A	145	145	145	145

A = Air
P = Product pressure
AC = Air closes
SC = Spring closes

Table 2 - Shut-off and change-over valves

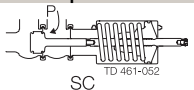
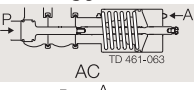
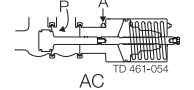
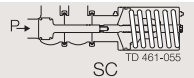
Max. pressure in psi against which the valve can open.

Actuator / Valve body combination and direction of pressure	Air pressure [psi]	Plug position	Valve size			
			2"	2½"	3"	4"
 SO TD 461-058		NO	145	107	141	91
 AO TD 461-059	87	NO	145	120	144	95
 AO TD 461-060	87	NC	145	131	145	100
 SO TD 461-061		NC	145	99	132	88

A = Air
P = Product pressure
AO = Air opens
SO = Spring opens

Table 3 - Shut-off and change-over valves with high pressure actuator option

Max. pressure in psi without leakage at the valve seat

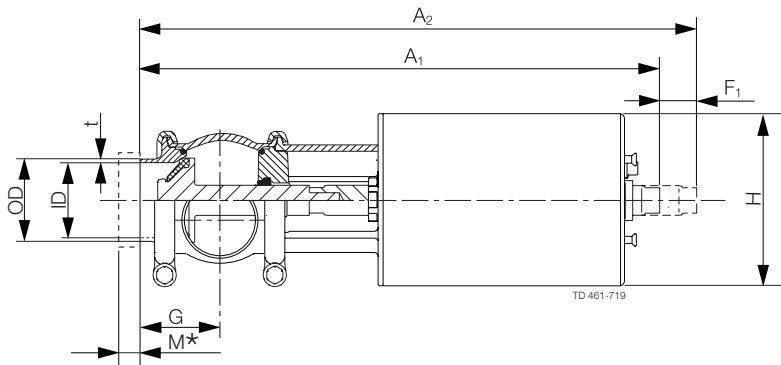
Actuator / Valve body combination and direction of pressure	Air pressure [psi]	Plug position	Valve size			
			2"	2½"	3"	4"
 <p>TD 461-052 SC</p>		NO	145	145	-	-
 <p>TD 461-063 AC</p>	87	NO	145	145	-	-
 <p>TD 461-054 AC</p>	87	NC	145	145	73	44
 <p>TD 461-055 SC</p>		NC	145	139	145	102

- A = Air
- P = Product pressure
- AC = Air closes
- SC = Spring closes

Dimensions

	Nominal Size			
	2"	2.5"	3"	4"
A ₁	14.31	15.34	16.66	18.44
A ₂	15.3	16.33	17.8	19.62
A ₃	17.22	18.74	20.55	23.31
A ₄	18.08	19.61	21.61	24.37
C	2.91	3.4	3.89	4.87
OD	2	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
G	2.44	3.23	3.43	4.72
F ₁	0.98	0.98	1.18	1.18
F ₂	0.87	0.87	1.06	1.06
H	4.52	4.52	6.07	6.07
N	0.56	0.7	0.85	0.98
M/Tri Clamp	0.5	0.5	0.5	0.63
M/SMS male	0.8	0.9	0.9	1.4
Weight (lb)				
Shut-off valve	12.7	15	25.9	31.1
Change-over valve	16.3	19.8	32	41.4

M*: When Tri-Clamp "M" is included in "G"



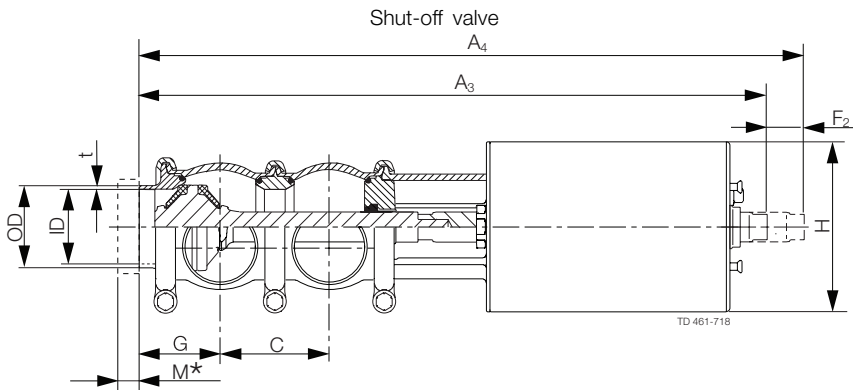
Caution, opening/closing time:

Opening/closing time will be effected by the following:

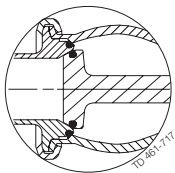
- The air supply (air pressure).
- The length and dimensions of the air hoses.
- Number of valves connected to the same air hose.
- Use of single solenoid valve for serial connected air actuator functions.
- Product pressure.

Air Connections Compressed air:

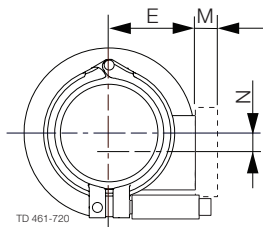
R 1/8" (BSP). Internal thread.



Change-over valve



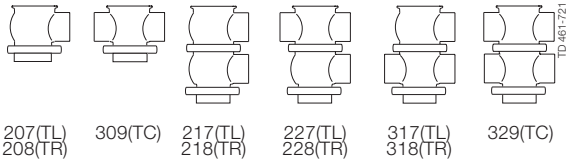
Replaceable elastomer plug seal



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)).

Valve Body Combinations



Actuator function

- Pneumatic downward movement, spring return.
- Pneumatic upward movement, spring return.
- Pneumatic upward and downward movement (A/A).
- Actuator for intermediate position of the valve plug (optional)

Air Consumption (In ³ free air) for one stroke		
Size	2"-2½"	3"-4"
NO and NC	2.17 x air pressure [psi]	5.51 x air pressure [psi]
A/A	4.82 x air pressure [psi]	11.15 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 or FPM
 Other seals:NBR

Options

- a. Weld ends or connection types other than Tri-Clamp.
- b. Control and Indication: IndiTop, ThinkTop, ThinkTop Basic and GreenTop.
- 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.
- Actuator function: NC, NO or A/A.
- Options.

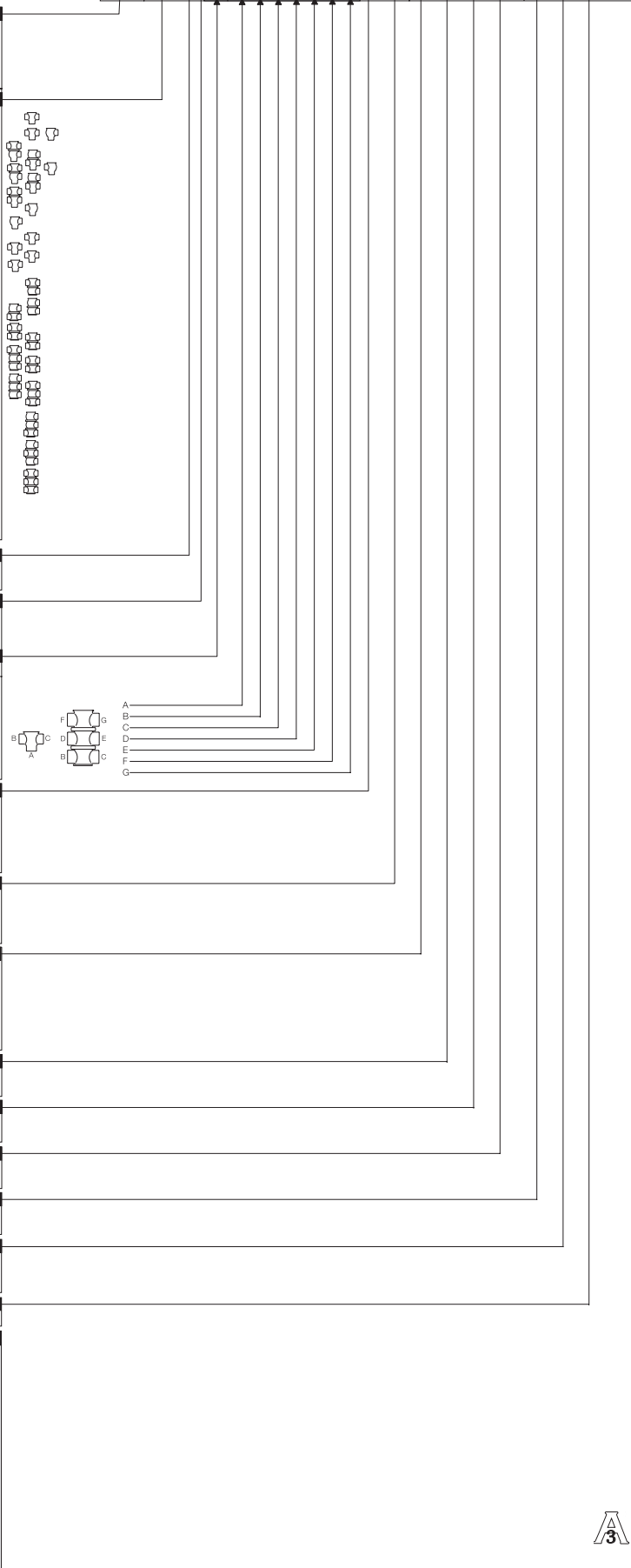
Note!

For further details, see instruction ESE00586.

Description Code Unique 7000

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	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 TR (2 port)	208
--	Shut-off TL (2 port)	207
--	Shut-off TC (3 port)	309
--	Change Over TR (3 port)	218
--	Change Over TL (3 port)	217
--	Change Over TR (4 port)	228
--	Change Over TL (4 port)	227
--	Change Over TR (4 port)	318
--	Change Over TL (4 port)	317
--	Change Over TC (5 port)	329
--	Shut-off RA TR (2 port)	811
--	Shut-off RA TL (2 port)	711
--	Shut-off RA TR (3 port)	821
--	Shut-off RA TL (3 port)	721
--	Shut-off RA TR (3 port)	812
--	Shut-off RA TL (3 port)	712
--	Shut-off RA TC (4 port)	922
--	Change Over RA TR (3 port)	181
--	Change Over RA TL (3 port)	171
--	Change Over RA TR (4 port)	281
--	Change Over RA TL (4 port)	271
--	Change Over RA TR (4 port)	151
--	Change Over RA TL (4 port)	141
--	Change Over RA TR (4 port)	152
--	Change Over RA TL (4 port)	142
--	Change Over RA TR (5 port)	282
--	Change Over RA TL (5 port)	272
--	Change Over RA TR (5 port)	162
--	Change Over RA TL (5 port)	152
--	Change Over RA TR (5 port)	231
--	Change Over RA TL (5 port)	231
--	Change Over RA TC (6 port)	292
--	Tankoutlet TR (1 port)	008
--	Tankoutlet TL (1 port)	007
--	Tankoutlet TC (2 port)	009
--	Tankoutlet RA TR (1 port)	018
--	Tankoutlet RA TL (1 port)	017
--	Tankoutlet RA TC (2 port)	029
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
--	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
--	TR/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
--	ThinkTop digital 0 Solenoid	TA
--	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
--	ThinkTop Basic Digital 0 Solenoid	BA
--	ThinkTop Basic Digital 1 Solenoid	BB
--	ThinkTop Basic Digital 2 Solenoid	BC
--	IndTop digital 0 Solenoid	IT
--	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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