

**CARTEN**<sup>®</sup>  
Ultra High Purity Valves

# UNIPLEX SERIES

**Ultra-High Purity Diaphragm Valves (UPC)**

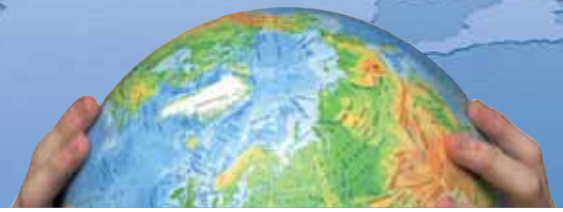
**Ultra-High Purity Bellows Valves (UFC)**

**Ultra-High Purity Bellows Valves (UFCR)**

**Ultra-High Purity Tee Block Bellows Valves (UBC)**



# UNIPLEX SERIES



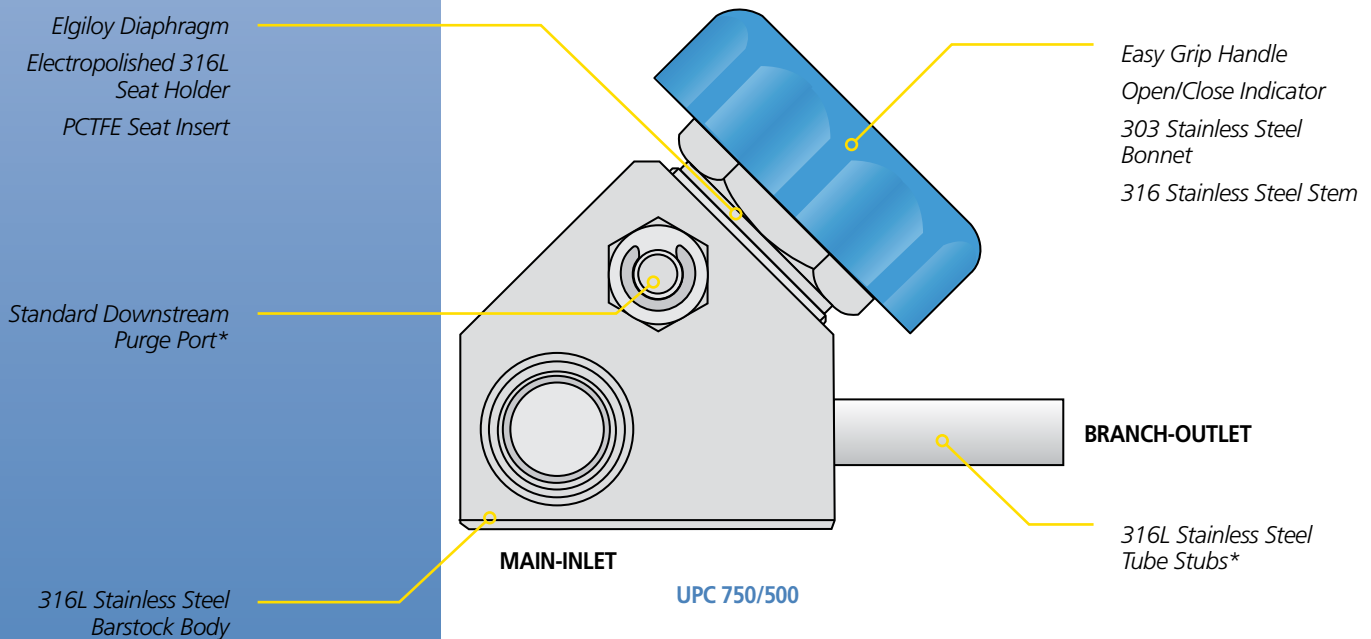
This compact Uniplex (diaphragm design) valve series is intended for bulk gas distribution service where containment, cleanliness and purity are of utmost importance. Applications for this valve include:

- **Ultra-high purity gas system control valves**
- **Ultra-high purity gas control for point-of-use or service for hookups**
- **Superior containment and cleanliness for your most critical valve applications**
- **Suitable for inert and most toxic gases**

## UPC Series Product Features

- Diaphragm Design for Ultra-High Purity and Long Cycle Life
- Elgiloy Tied-Diaphragm for Maximum Flow and High Life Cycle
- Springless, Packless Design
- No Internal Particle Shedding Components
- Electropolished Wetted Surfaces to 10 Ra Max (Optional surface finishes available)
- Industry Leading Design in Ultra-High Purity Gas Containment
- Assembled and Tested in Class 10 Cleanroom
- Valve Bodies and Tube Stubs are Serialized for Material Certification
- Purge Connections and Purge Valves are Integral in Valve Body
- Inboard and Across the Seat Leak Tested with Helium
- Cleaned for Ultra-High Purity Gas Service
- Purged and Final Packaged in Class 1 Cleanroom. Double-Bag Packaging with Ultra-High Purity N<sub>2</sub> Gas Environment

## UPC Construction Materials



\*See corresponding Code Chart for available end connections.

† U.S. Patent # D347,882 and other patents worldwide







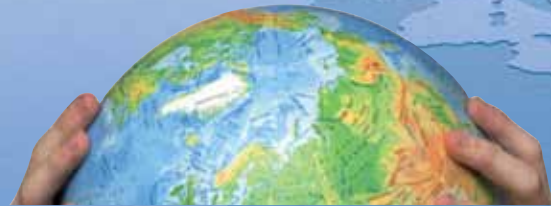


# UNIPLX SERIES

## UFCR Series Technical Data

MATERIAL OF CONSTRUCTION	Wetted Areas	316L Stainless Steel, Nickel, PCTFE
	Non-Wetted Areas	316L Stainless Steel, 17-4 PH Stainless Turcite
MAXIMUM OPERATING PRESSURE	UFCR/UFVR Series	Vacuum to 375 psig (25.8 bar)
OPERATING TEMPERATURE RANGE	UFCR/UFVR Series	-22° F (-30°C) to 180° F (82°C)
FLOW COEFFICIENT (C <sub>v</sub> )	UFCR 750/750	6.08
	UFCR 750/500	3.62
	UFCR 1000/750	8.17
	UFCR 1500/750	8.21
	UFVR 750/500	3.63
	UFVR 750/750	6.71
	UFVR 1000/750	10.00
	UFVR 1500/750	10.05
	UFVR 2000/500	3.97
	UFVR 2000/750	10.05
HELIUM LEAK TEST	Inboard	$1 \times 10^{-11}$ Pa-m 3/s ( $1 \times 10^{-10}$ atm.cc (He) /s)
	Across the Seat	$1 \times 10^{-10}$ Pa-m 3/s ( $1 \times 10^{-9}$ atm.cc (He) /s)
	Outboard Pressure Test	$1 \times 10^{-7}$ Pa-m 3/s ( $1 \times 10^{-6}$ atm.cc (He) /s)
CLEANLINESS AND PACKAGING	Assembled and Tested in Class 10 Cleanroom. Purged and Final Packaged in Class 1 Cleanroom. Double-bag packaging (2 mil nylon inner bag, 6 mil polyethylene outer bag) with Ultra-High Purity N <sub>2</sub> gas environment.	
STANDARD FINISH	Electropolished to 10 Ra Max (0.25 µm) on all wetted surfaces	
OPTIONS	Surface finish – 5 Ra, 20 Ra	Fitting connections available for up to 1.00" size – inlet/outlet
	Particle, moisture, THC and O <sub>2</sub> testing	
	SEM and ESCA testing, AES analysis	Handle colors
	Pneumatic actuators available - types: NC/NO/DA	JIS tube stubs and tube length

# UNIPLUX SERIES



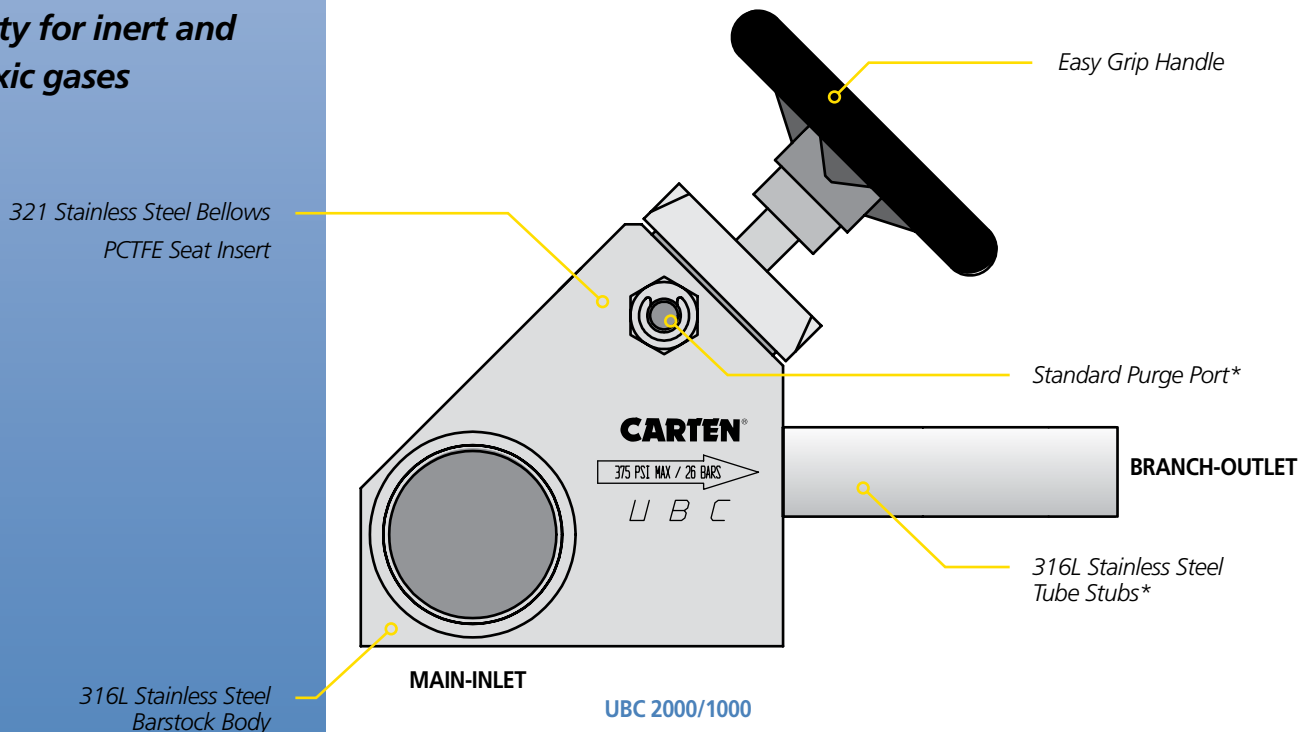
The compact UBC range of these TEE block bellows valves is intended for bulk gas distribution service where containment, cleanliness and purity are of the utmost importance. Our compact valve design minimises the space consideration over the conventional isolation valve and weld TEE option. Applications for this valve include:

- **Ultra-high purity gas system distribution**
- **Ultra-high purity gas control for point-of-use service or hook-up applications**
- **Suitability for inert and most toxic gases**

## UBC Series Product Features

- High Performance, Compact Design
- 321 Stainless Steel Bellows for Maximum Flow
- Electropolished Wetted Surfaces to 10 Ra Max (Optional surface finishes available)
- Industry Leading Design in Ultra-High Purity Gas Containment
- Assembled and Tested in Class 10 Cleanroom
- Inboard and Across the Seat Leak Tested with Helium
- Purge Connections and Purge Valves are Integral in Valve Body
- Valve Body and Tube Stubs Are Serialized for Material Certification
- Purged and Final Packaged in Class 1 Cleanroom. Double-Bag Packaging with Ultra-High Purity N<sub>2</sub> Gas Environment

## UBC Construction Materials



\*See corresponding Code Chart for tube sizes, purge and locations.

# UNIPLIX SERIES

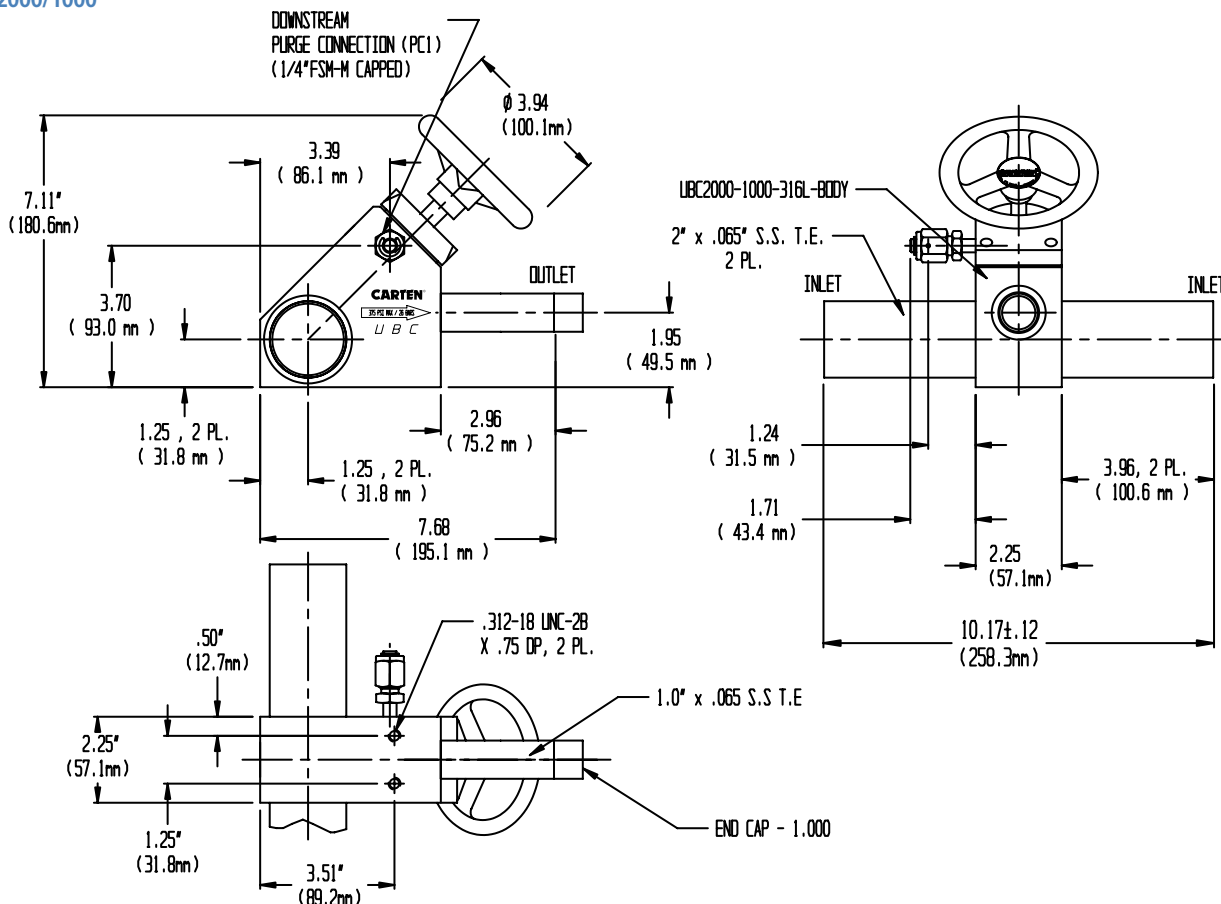
## UBC Series Technical Data

MATERIAL OF CONSTRUCTION	Wetted Areas	321, 316L Stainless Steel, PCTFE
	Non-Wetted Areas	316L Stainless Steel, Nickel Foil, 303 Stainless Steel
MAXIMUM OPERATING PRESSURE	UBC Series	Vacuum to 375 psig (25.8 bar)
MAXIMUM OPERATING TEMPERATURE	UBC Series	-22° F (-30°C) to 180° F (82°C)
FLOW COEFFICIENT (C <sub>v</sub> )	UBC 1000/750	10.20
	UBC 1500/750	10.20
	UBC 1000/1000	14.30
	UBC 1500/1000	14.30
	UBC 2000/1000	14.30
	UBC 2000/1500	16.60
	UBC 3000/1000	14.30
HELIUM LEAK TEST	Inboard	1 x 10 <sup>-11</sup> Pa·m <sup>3</sup> /s (1 x 10 <sup>-10</sup> atm·cc (He)/s)
	Across the Seat	1 x 10 <sup>-10</sup> Pa·m <sup>3</sup> /s (1 x 10 <sup>-9</sup> atm·cc (He)/s)
	Outboard Pressure Test	1 x 10 <sup>-7</sup> Pa·m <sup>3</sup> /s (1 x 10 <sup>-6</sup> atm·cc (He)/s)
CLEANLINESS AND PACKAGING	Assembled and tested in Class 10 Cleanroom. Purged and Final Packaged in Class 1 Cleanroom. Double-bag packaging (2 mil nylon inner bag, 6 mil polyethylene outer bag) with Ultra-High Purity N <sub>2</sub> gas environment.	
STANDARD FINISH	Electropolished to 10 Ra Max (0.25 μm) on all wetted surfaces	
OPTIONS	Surface finish – 5 Ra, 15 Ra, 20 Ra, 30 Ra Testing: Particle, moisture, THC and O <sub>2</sub> Handwheel color options available	Fitting connections available for up to 1.00" size – inlet/outlet Optional seat material available for higher temperature applications

Specifications are subject to change without notice.

## UBC Series Typical Valve Dimensions

### UBC 2000/1000



NOTE 1: All tolerances are  $\pm 0.06$  in. ( $\pm 1.52$ mm) unless otherwise stated.

NOTE 2: Dimensional drawings shown are for reference only. Please contact CARTEN® for customer drawings.



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