Agilent UHV All Metal Valves - Series 54



Thank you for choosing Agilent's High Performance Valves. These valves are designed with the highest international vacuum standards and manufactured with uncompromising quality. We are confident that you will find these valves meet your most demanding vacuum control needs.

The valves are manually operated with a standard Hex wrench, so no Torque Wrench is required. Thanks to the "hard-on-hard" metal seals, these valves can operated thousands of times before requiring maintenance.

Technical Specifications

Leak rate: valve body, valve seat	$< 1 \cdot 10^{-10}$ mbar ls^{-1}
Pressure range	XHV to 2 bar (abs)
Differential pressure on the gate	≤ 2 bar
Differential pressure at opening	≤ 1 bar*
Lifetime	≥ 1000 cycles
Bake-out temperature**	≤ 300 °C open and closed
Heating and cooling rate	≤ 60 °C h^{-1}
Material	
valve body, mechanism, bellows	AISI 316L (1.4404, 1.4435)
Seal: bonnet, plate	metal
Feedthrough	bellows
Mounting orientation	any
Valve position indication	visual (mechanical)
Conductance (molecular flow)	NW 16: 5 ls^{-1} / NW 40: 50 ls^{-1}
Closing force	closes at a mechanical stop
Weight: NW 16 / 40 kg (lbs)	0.4 (0.9) / 1.9 (4.2)

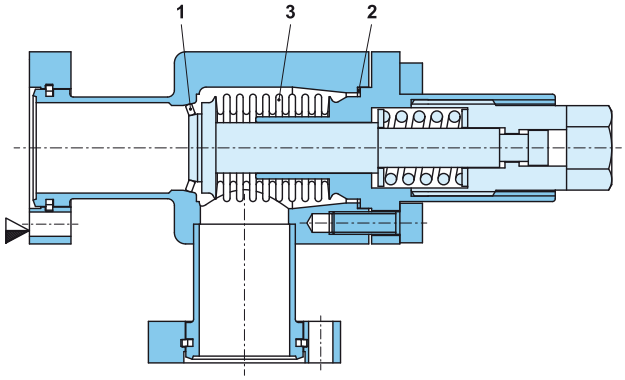
* *> 1 bar with reduced number of cycles*

** *Maximum values: depending on operating conditions and sealing materials*

Features

- Body material: stainless steel
- FLEX VATRING configuration: see below
- Sealing surfaces are only elastically deformed
- Convenient operation with a standard hexagon wrench – no torque wrench required
- High conductance
- FLEX VATRING exchangeable twice

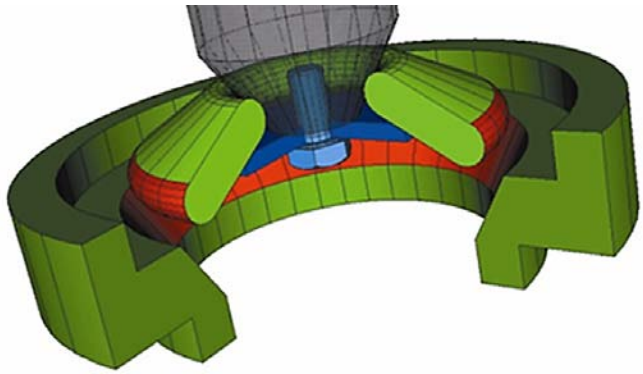
UHV All Metal Valves Functional Principle



1 FLEX VATRING
2 Bonnet seal
3 Bellows
▼ Valve seat side

FLEX VATRING

This dynamic, all-metal sealing system is characterized by consistent sealing and closing forces. It enables achieving high sealing forces with comparably low axial forces.
The seal mating surfaces are in stainless steel, and deformed elastically only.
The FLEX VATRING system is suitable for extreme UHV. It may be baked to 300 °C in open and closed position and reaches a lifetime of > 1 000 cycles if operated under clean conditions.



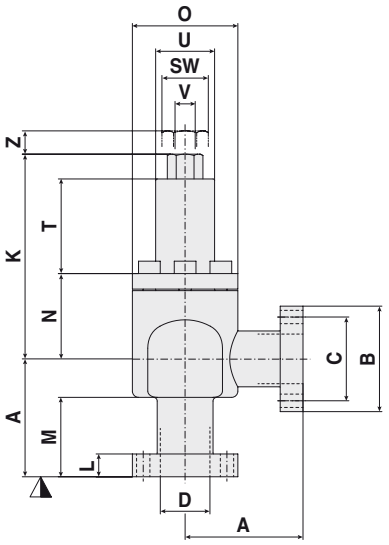
Ordering Information

Description UHV All Metal Valves	Part Number
Valve, ¾ Metal/Mini CFF	X3202-60097
Valve, All-Metal, 1 ½", RT-Angle	X3202-60098

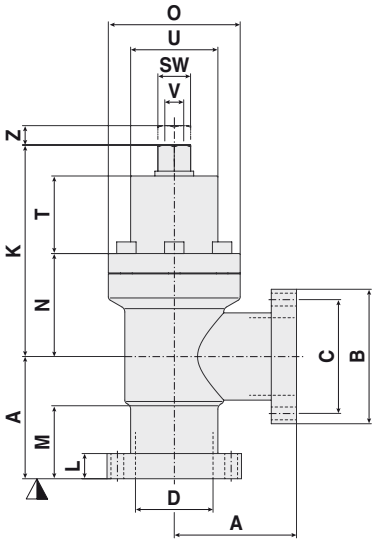
Spare Parts	Part Number
Seal Kit, 1st Replacement, UHV Series 54, ¾"	X3202-60107
Seal Kit, 2nd Replacement, UHV Series 54, ¾"	X3202-60109
Seal Kit, 1st Replacement, UHV Series 54, 1½"	X3202-60108
Seal Kit, 2nd Replacement, UHV Series 54, 1½"	X3202-60110

Dimensions

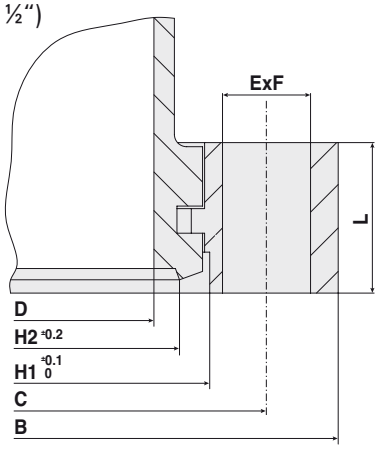
Valve NW 16 (⅝")



Valve NW 40 (1 ½")



Flange NW 16–63 (⅝"–2 ½")



Models	DN 16	DN 40
	(⅝)	(1 ½)
A	38	63
	(1.50)	(2.48)
B	34	69.35
	(1.34)	(2.73)
C	27	58.70
	(1.06)	(2.31)
D	16	40
	(0.63)	(1.57)
E x F	6 x 4.30	6 x 6.60
	6 x 0.17	6 x 0.26
H1	21.40	48.30
	(0.84)	(1.90)
H2	18.50	42
	(0.73)	(1.65)
K	66	109.10
	(2.60)	(4.30)
L	7.35	13
	(0.29)	(0.51)
M	25.60	37.60
	(1.01)	(1.48)
N	27.50	53.10
	(1.08)	(2.09)
O	34	68
	(1.34)	(2.68)
SW	10	17
	(0.39)	(0.67)
T	30.50	40
	(1.20)	(1.57)
U	19	45
	(0.75)	(1.77)
V	6.35	9.53
	(0.25)	(0.38)
Z	8.50	20
	(0.33)	(0.79)

▽ Valve seat side

Dimensions: millimeters (inches)