

**Agilent Valves
by VAT**

**Aluminum Block
Valves**

Series 26

Instruction Manual

Agilent Valves by VAT

Introduction to the

Aluminum Block Valves Series 26

Thank you for choosing *Agilent Valves by VAT*. With the combination of these two well-known names in the vacuum industry, we are confident that you will find *Agilent Valves by VAT* to meet your most demanding vacuum control needs.

The following pages will provide you with information about VAT's stringent technical specifications for these valves. You will also find details about Agilent's commercial and technical support for these products, and how it enhances VAT's offering.

Warranty

Products manufactured by Seller are warranted against defects in materials and workmanship for twelve (12) months from date of shipment thereof to Customer, and Seller's liability under valid warranty claims is limited, at the option of Seller, to repair, to replace, or refund of an equitable portion of the purchase price of the Product. Items expendable in normal use are not covered by this warranty. All warranty replacement or repair of parts shall be limited to equipment malfunctions which, in the sole opinion of Seller, are due or traceable to defects in original materials or workmanship. All obligations of Seller under this warranty shall cease in the event of abuse, accident, alteration, misuse, or neglect of the equipment. In-warranty repaired or replaced parts are warranted only for the remaining unexpired portion of the original warranty period applicable to the repaired or replaced parts. After expiration of the applicable warranty period, Customer shall be charged at the then current prices for parts, labor, and transportation.

Reasonable care must be used to avoid hazards. Seller expressly disclaims responsibility for loss or damage caused by use of its Products other than in accordance with proper operating procedures.

Except as stated herein, Seller makes no warranty, express or implied (either in fact or by operation of law), statutory or otherwise; and, except as stated herein, Seller shall have no liability under any warranty, express or implied (either in fact or by operation of law), statutory or otherwise. Statements made by any person, including representatives of Seller, which are inconsistent or in conflict with the terms of this warranty shall not be binding upon Seller unless reduced to writing and approved by an officer of Seller.

Warranty Replacement and Adjustment

All claims under warranty must be made promptly after occurrence of circumstances giving rise thereto, and must be received within the applicable warranty period by Seller or its authorized representative. Such claims should include the Product serial number, the date of shipment, and a full description of the circumstances giving rise to the claim. Before any Products are returned for repair and/or adjustment, written authorization from Seller or its authorized representative for the return and instructions as to how and where these Products should be returned must be obtained. Any Product returned to Seller for examination shall be prepaid via the means of transportation indicated as acceptable by Seller. Seller reserves the right to reject any warranty claim not promptly reported and any warranty claim on any item that has been altered or has been returned by non-acceptable means of transportation. When any Product is returned for examination and inspection, or for any other reason, Customer shall be responsible for all damage resulting from improper packing or handling, and for loss in transit, notwithstanding any defect or non-conformity in the Product. In all cases, Seller has the sole responsibility for determining the cause and nature of failure, and Seller's determination with regard thereto shall be final.

If it is found that Seller's Product has been returned without cause and is still serviceable, Customer will be notified and the Product returned at Customer's expense; in addition, a charge for testing and examination may be made on Products so returned.

Voiding the Warranty

The valves described in this manual are designed to be used in a clean system. Minute particles such as a piece of lint can seriously affect the ability of the valve to produce a vacuum-tight seal. Therefore, opening the valve before it is to be used, storing it, or operating it in any environment other than as a clean system is considered by Agilent, Inc. as misuse of the equipment and will render the warranty null and void.

When a valve is used with toxic chemicals, or in an atmosphere that is dangerous to the health of humans, or is environmentally unsafe, it will be the responsibility of the Customer to have the valve cleaned by an independent agency skilled and approved in handling and cleaning contaminated materials before the valve will be accepted by Agilent, Inc. for repair.

Therefore, all details of the Agilent, Inc. "Request for Return Health and Safety Certification" (attached) must be complied with including the requirement that a notarized certificate from the cleaning agency certifying that the valve has been cleaned and is harmless to humans and environmentally safe before Agilent, Inc. will accept the returned valve. The certificate must accompany all other shipping papers, including the completed Request for Return Health and Safety Certification, and be attached securely to the outside of the box containing the valve. Improper and/or incomplete documentation will result in the unopened, unrepaired valve being returned to the Customer at the Customer's expense.

Agilent, Inc. will ship a replacement valve at no charge to assist the Customer and to minimize downtime. However, if the malfunctioning valve is not returned to Agilent, Inc. within 30 days and meeting all of the requirements of paragraphs 2 and 3 above, the Customer will be billed for the replacement valve at the then current rate plus shipping charges.

Installation, Operating & Maintenance Instructions

Aluminum Block Valves Series 26

Right angle valves

NW16-40

Hand Operated

Pneumatically Operated

Inline valves

NW16-40

Hand Operated

Pneumatically Operated



Sample picture

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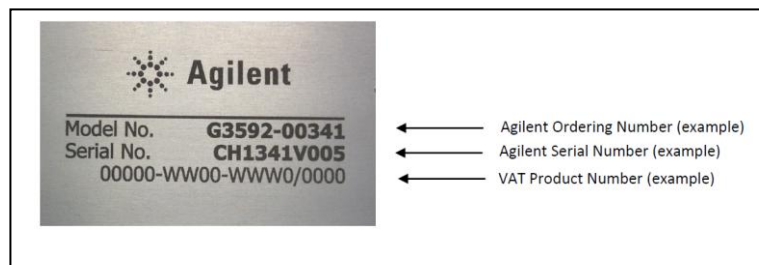


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1 Description of product

1.1 Identification of product

The fabrication number and order number are fixed on the product directly or by means of an identification plate.



1.2 Use of product

Use product for clean and dry vacuum applications only. Other applications are only allowed with the written permission of Agilent.

1.3 Related documents

- Product data sheet
- Dimensional drawing

1.4 Important information



This symbol points to a very important statement that requires particular attention.

Example:



Agilent disclaims any liability for damages resulting from inappropriate packaging.

1.5 Technical data

See Section 3 of this manual.

2 Safety

This product must only be operated and maintained by trained personnel.

Before operating or servicing equipment, read and thoroughly understand all operation/ maintenance manuals provided by Agilent. Be aware of the hazards associated with this equipment; know how to recognize potentially hazardous conditions, and how to avoid them. Read carefully and strictly observe all cautions and warnings. The consequences of unskilled, improper, or careless operation of the equipment can be serious.

In addition, consult local, state, and national agencies regarding specific requirements and regulations. Address any safety, operation, and/or maintenance questions to your nearest Agilent office.

2.1 Compulsory reading material

Read this chapter prior to performing any work with or on the product. It contains important information that is significant for your own personal safety. This chapter must have been read and understood by all persons who perform any kind of work with or on the product during any stage of its serviceable life.

	NOTICE
	Lack of knowledge Failing to read this manual may result in property damage. Firstly, read manual.



These Installation, Operating & Maintenance Instructions are an integral part of a comprehensive documentation belonging to a complete technical system. They must be stored together with the other documentation and accessible for anybody who is authorized to work with the system at any time.

2.2 Danger levels

	⚠ DANGER
	High risk Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

	WARNING
	Medium risk Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

**CAUTION****Low risk**

Indicates a hazardous situation which, if not avoided, may result in minor or moderate injury.

**NOTICE****Command**

Indicates a hazardous situation which, if not avoided, may result in property damage.

2.3 Personnel qualifications

	WARNING
	Unqualified personnel Inappropriate handling may cause serious injury or property damage. Only qualified personnel are allowed to carry out the described work.

2.4 Safety labels

Label	Location on valve
	On protective covers of flanges
	On valve body or actuators

Table 2-1

3 Design and Function

3.1 Design

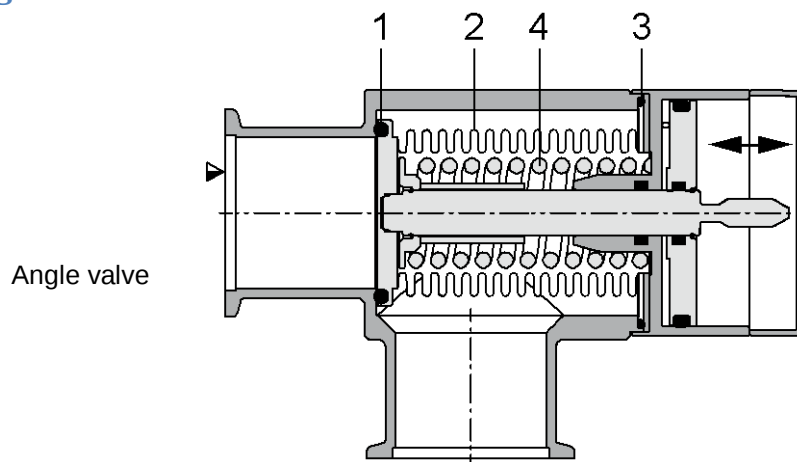


Figure 3-1

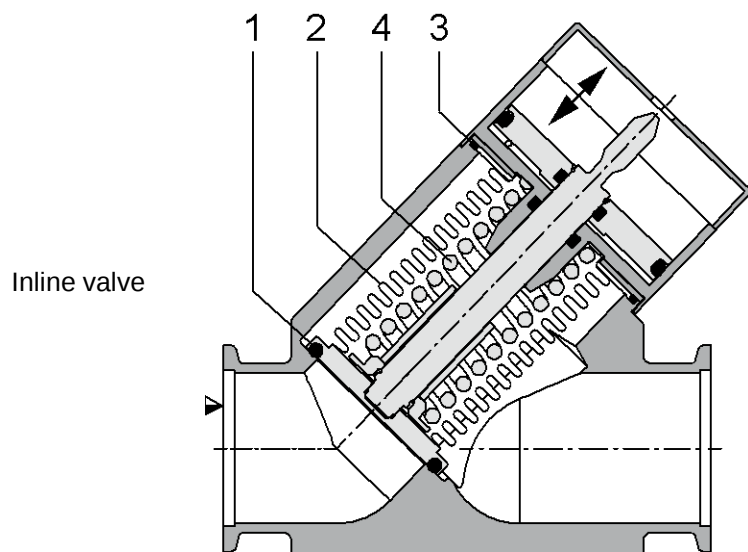


Figure 3-2

- 1 Plate seal
- 2 Bellows
- 3 Bonnet seal
- 4 Closing spring

▼ Valve seat side

■ Valve body
■ Actuator / plate assembly

3.2 Function

Valve closes by a spring (NC) and opens pneumatically.

3.3 Specifications

Cycles until first service	with manual actuator 10 000	with closing spring 3 million
Maximum temperature		
– Valve body	≤ 150 °C	
– Manual and pneumatic actuator	≤ 120 °C	
– Solenoid valve, position indicator	≤ 80 °C	
Material		
– Valve body – aluminum	EN AW-6060 (3.3206)	
– Plate	AISI 316L (1.4404, 1.4435)	
– Bellows	AISI 316L (1.4404, 1.4435), AISI 316 Ti (1.4571)	
Seal: bonnet, plate	FKM (Viton)	
Mounting orientation	any	
Solenoid valve	24 VDC, 115 VAC, 220 VAC; 2.5 W	
Position indicator: contact rating		
– Voltage	5–50 VAC / DC	
– Current	5–100 mA	
Valve position indication	visual (mechanical)	

Leak rate: valve body, valve seat	< 1 · 10 ⁻⁹ mbar ls ⁻¹
Pressure range, series 26 (bellows)	1 · 10 ⁻⁸ mbar to 5 bar (abs)
Differential pressure on the plate	
– In opening direction	≤ 2.0 bar
– In closing direction	≤ 5.0 bar
Differential pressure at opening	≤ 1 bar

Angle valves

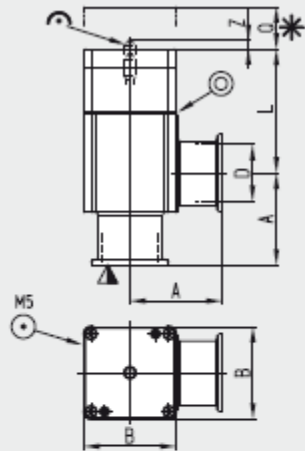
			Valve with manual actuator			Valve with pneumatic actuator, single acting with closing spring (NC)						
NW (nominal I.D.)		Conductance (molecular flow)	Turns per stroke		Weight Aluminum body	Compressed air min. – max. overpressure		Volume of pneumatic actuator		Closing time	Weight Aluminum body	
mm	inch	ls ⁻¹	n	kg	lbs	bar	psi	l	ft ³	s	kg	lbs
16	5/8	5	3.6	0.20	0.44	4–8	58–116	0.004	0.0001	0.10	0.28	0.62
25	1	14	3.8	0.27	0.60	4–8	58–116	0.011	0.0004	0.20	0.41	0.90
40	1 1/2	45	4.5	0.60	1.32	4–8	58–116	0.035	0.0012	0.55	0.97	2.14

Inline valves

			Valve with manual actuator			Valve with pneumatic actuator, single acting with closing spring (NC)						
NW (nominal I.D.)		Conductance (molecular flow)	Turns per stroke		Weight Aluminum body	Compressed air min. – max. overpressure		Volume of pneumatic actuator		Closing time	Weight Aluminum body	
mm	inch	ls ⁻¹	n	kg	lbs	bar	psi	l	ft ³	s	kg	lbs
16	5/8	5	3.6	0.28	0.62	4–8	58–116	0.004	0.0001	0.10	0.50	1.10
25	1	14	3.8	0.42	0.93	4–8	58–116	0.011	0.0004	0.20	0.60	1.32
40	1 1/2	45	4.5	1.00	2.20	4–8	58–116	0.035	0.0012	0.55	1.40	3.09

3.4 Dimensions

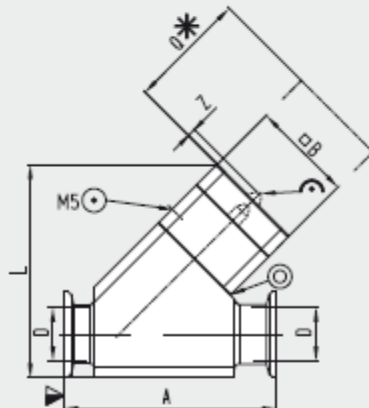
Angle valve with pneumatic actuator, single acting with closing spring
NW 16–40 (½"–1 ½") ISO-KF



NW	mm inch	16 %	25 1	40 1 ½
A	mm inch	40 1.57	50 1.97	65 2.56
B	mm inch	40 1.57	48 1.89	65 2.56
D	mm inch	16 0.63	25 0.98	40 1.57
L	mm inch	with closing spring 65.20 2.57	60.60 2.39	87.70 3.45
Q	mm inch	46 1.81	44 1.73	73.50 2.89
Z	mm inch	2 0.08	4 0.16	9.50 0.37

- V Valve seat side
 * Required for dismantling
 ⊙ Compressed air connection
 V Mechanical position indication
 ⊙ Leak detection hole

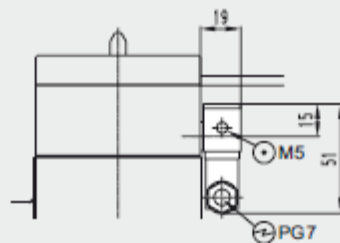
Inline valve with pneumatic actuator, single acting with closing spring
NW 16–40 (½"–1 ½") ISO-KF



NW	mm inch	16 %	25 1	40 1 ½
A	mm inch	80 3.15	100 3.94	130 5.12
B	mm inch	40 1.57	48 1.89	65 2.56
D	mm inch	16 0.63	25 0.98	40 1.57
L	mm inch	with closing spring 91.50 3.60	100.30 3.95	140.90 5.55
Q	mm inch	46 1.81	44 1.73	73.50 2.89
Z	mm inch	2 0.08	4 0.16	9.50 0.37

Solenoid valve

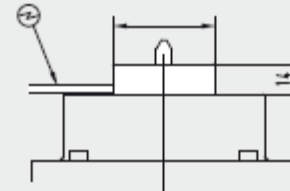
Solenoid valve
NW 16–40 (½"–1 ½")



Position indicator

Position indicator
NW 16–40 (½"–1 ½")

Cable approx. 500 mm (20")
 NW 16 □ 40 mm
 NW 25 □ 48 mm
 NW 40 □ 65 mm



One closing contact each for the open and closed valve positions

4 Installation



WARNING

Unqualified personnel

Inappropriate handling may cause serious injury or property damage. Only qualified personnel are allowed to carry out the described work.

4.1 Unpacking



- Make sure that the supplied products are in accordance with your order.
- Inspect the quality of the supplied products visually. If it does not meet your requirements, please contact Agilent immediately.
- Store the original packaging material. It may be useful if products must be returned to Agilent.



Remove the protective covers from the valve only at the moment when the valve is being installed into the system. Keep unprotected sealing surfaces clean and do not damage them.

4.2 Installation into the system

	CAUTION Valve openings Human body parts may get jammed and severely injured. Do not connect or supply electrical power and compressed air before the product is completely mounted in the system.
	CAUTION Hot surfaces Risk of burning when touching hot surfaces. Take safety measures in order that the valve cannot be touched during operation. Ensure air circulation of coil.
	NOTICE Contamination Product may get contaminated. Always wear cleanroom gloves when handling the product.
	NOTICE Inappropriate tools Sealing surfaces may get damaged. Do not use sharp-edged tools.

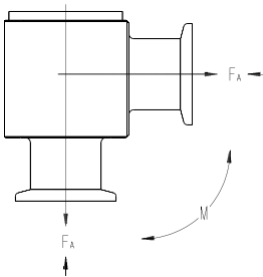
1. Check and carefully clean sealing surfaces of valve flanges and counter flanges.
2. Install valve with connection components appropriate for ISO-KF flanges according the specification of Table 4-1 on page 18 into account.

4.2.1 Admissible forces and bending moments

DN (nom. I. D.)		Axial tensile or compressive force «F _A »		Bending moment «M»	
mm	inch	N	lbf	Nm	lbf · ft
16	5/8	25	6	1	0.8
25	1	70	16	3	2.2
40	1½	100	22	6	4.5

A combination of both forces «F_A» and «M» is not allowed. Please contact Agilent.

Angle valve



Inline valve

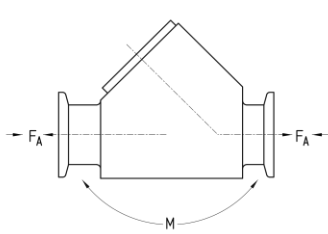


Table 4-1

4.3 Compressed air connection



CAUTION

Valve in open position
 Risk of injury when connecting compressed air to the valve.
 Connect compressed air only when:

- valve is installed in the vacuum system
- moving parts cannot be touched



Use clean, dry or slightly oiled air only.



Admissible air pressure range, see product data sheet.

1. Compressed air connection.

NW16 – 40 ISO KF	
Volume of pneumatic actuator	NW16 – 0.0041/0.0001 ft ³ NW25 – 0.011/0.0004 ft ³ NW25 – 0.0351/0.0012 ft ³
Compressed air min- - max. overpressure	4 – 8 bar/ 58 – 116 psi
Compressed air connection	M5 female (10-32 UNF suitable)

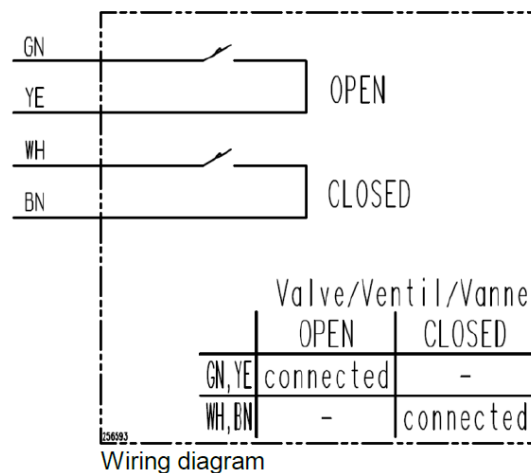
4.4 Electrical connection

	⚠ DANGER Electric shock Parts being under voltage will result in serious injury or death. Do not touch parts being under voltage.
	CAUTION Valve in open position Risk of injury when connecting electrical power to the valve. Connect electrical power only when: – valve is installed in the vacuum system – moving parts cannot be touched.
	NOTICE Wrong voltage Electrical components may get damaged. Supply electrical components with the correct voltage.

1. Connect solenoid valve according to the product data sheet and dimensional drawing.
2. Connect position indicator according to the product data sheet and dimensional drawing.
3. Connect heater (option) according to the product data sheet and dimensional drawing.

Position indicator

Type	Micro switch
Voltage	≤ 50 V AC / DC
Current	5...100 mA
Short circuit protected	No
Connection	cable, 4 wire
Cable length	500 mm
Wire cross section	0,25 mm ²

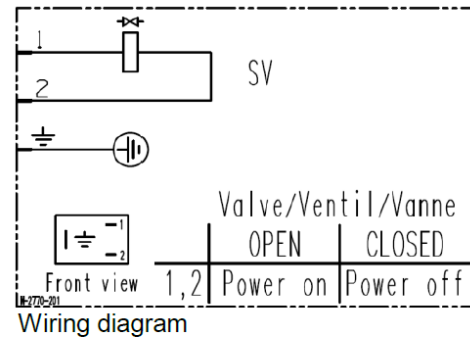


Solenoid valve

Type	3/2 way	
Voltage / Power	24 V DC	2.5 W
	24 V AC, 50/60 Hz	3.6 W
	110-115 V AC, 50/60 Hz	4.8 W
	220-230 V AC, 50/60 Hz	4.8 W

Connection type Rectangle plug, Type B
(DIN standard)

Cable diameter 6 - 8 mm



5 Operation

	WARNING Unqualified personnel Inappropriate handling may cause serious injury or property damage. Only qualified personnel are allowed to carry out the described work.
	CAUTION Valve openings Human body parts may get jammed and severely injured. Do not operate before product is installed completely into the vacuum system.
	CAUTION Hot surfaces Risk of burning at valve with heater. Do not touch hot surfaces.

5.1 Normal operation

Valve closes by a spring (NC) and opens pneumatically.

5.2 Operation under increased temperature

Maximum allowed temperature, see specifications page.

5.3 Behavior in case of compressed air pressure drop

Valve open: Valve closes leaktight
Valve closed: Valve remains closed and leaktight

5.4 Behavior in case of power failure

Valve closes leaktight by a spring (only monostable solenoid valve).

5.5 Trouble shooting

Failure	Check	Action	See
Valve does not close / open	Compressed air connected correctly?	Check air pressure	Product data sheet
	Solenoid valve connected correctly?	Check electrical power supply and wiring	Product data sheet
No or wrong position indicator signal	Position indicator connected correctly?	Check electrical power supply and wiring	Product data sheet
Leak at plate or body	Contamination?	Clean or replace seals	Chapter «6.3 Replacement of vacuum seals»

Table 5-1

If you need any further information, please contact one of our contact/business centers. You will find the addresses on our website www.agilent.com.

6 Maintenance

	WARNING Unqualified personnel Inappropriate handling may cause serious injury or property damage. Only qualified personnel are allowed to carry out the described work.
	CAUTION Hazardous components Human body parts may get jammed and easily injured. Before starting maintenance: – disconnect compressed air supply – disconnect electrical power supply
	CAUTION Valve openings Human body parts may get jammed or easily injured. Keep human body parts away from valve openings.
	CAUTION Hot surfaces Risk of burning at valve with heater. Touch hot surfaces only if the valve has cooled down.
	NOTICE Contamination Product may get contaminated. Always wear cleanroom gloves when handling the product.
	NOTICE Inappropriate tools Sealing surfaces and valve plate may get damaged. Do not use sharp-edged tools.

6.1 Maintenance intervals

Under clean operating conditions the valve does not require any maintenance during the specified cycles.

For more information or a general overhaul please contact one of our business centers. You will find the addresses on our website www.agilent.com or on the back cover.



Contamination resulting from the process may impair the function of the valve and require more frequent maintenance.

6.2 Required tools

- Allen wrench size 2.5, 3 and 5 depending on valve size
- Cleanroom wiper soaked with alcohol (2% methyl ethyl ketone)
- O-Ring removal tool; see Table 11-1 on page 31

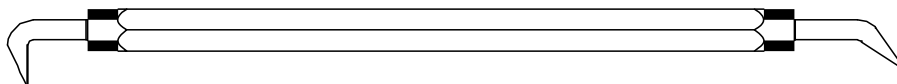


Figure 6-1

6.3 Replacement of vacuum seals

This illustration shows an angle valve. The inline valve has a different body; see Figure 3-2 on page 13.

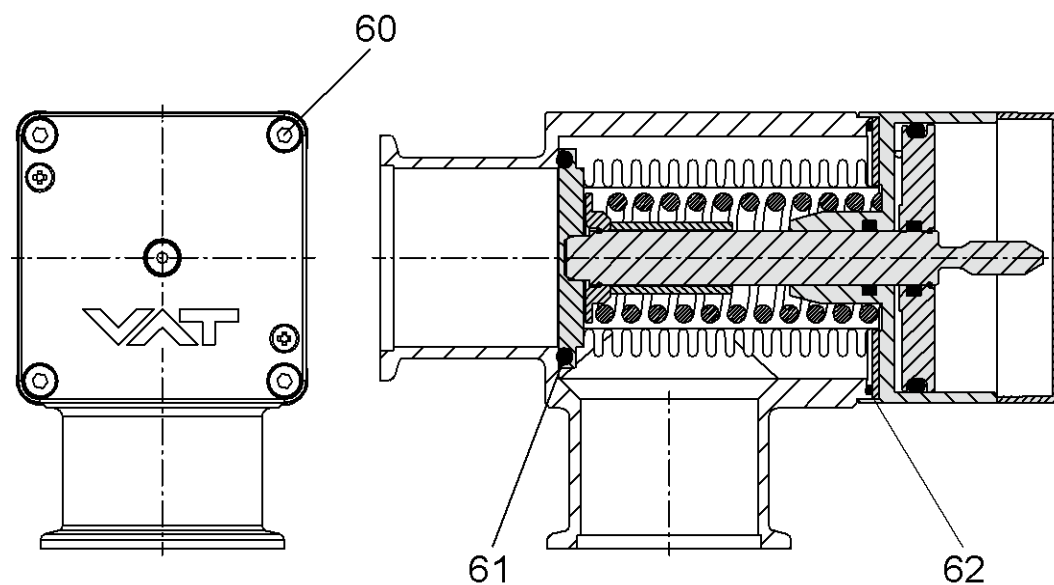


Figure 6-2

60 Screw

61 Plate seal (contained in seal kits)

62 Bonnet seal (contained in seal kits)

 Actuator / plate assembly

6.3.1 Dismount actuator / plate assembly

	CAUTION
	Valve openings Human body parts may get jammed or easily injured. Keep human body parts away from valve openings.

The item numbers in brackets refer to Figure 6-2 on page 25.

1. Loosen and remove screws (60) uniformly and in crosswise order.
2. Withdraw actuator / plate assembly carefully from body.
3. Remove bonnet seal (62) from groove by using an O-ring removal tool.

6.3.2 Replacement of plate seal

1. Remove plate seal (61) from groove by using an O-ring removal tool.
2. Check sealing surface and clean it with a cleanroom wiper.
3. Put new plate seal (61) on groove and press it into groove at 4 opposite spots.
4. Press remaining sections uniformly into groove.

6.3.3 Mount actuator / plate assembly

1. Check sealing surfaces of bonnet flange / valve seat and clean it with a cleanroom wiper.
2. Put bonnet seal (62) into body.
3. Insert actuator / plate assembly carefully.



Do not tilt.

4. Fasten screws (60) uniformly and in crosswise order, in 2 to 3 rounds.

	DN 16	DN 25	DN 40
Torque [Nm]	1	1.7	1.7

Table 6-1

Valve is ready for use.

7 Repairs

Please contact Agilent for more information. You will find the addresses on our website www.agilent.com.

8 Dismounting and Storage

	WARNING Unqualified personnel Inappropriate handling may cause serious injury or property damage. Only qualified personnel are allowed to carry out the described work.
	CAUTION Hazardous components Human body parts may get jammed and easily injured. Before dismounting the product: – disconnect compressed air supply – disconnect electrical power supply
	CAUTION Valve openings Human body parts may get jammed or easily injured. Keep human body parts away from valve openings.
	CAUTION Hot surfaces Risk of burning at valve with heater. Touch hot surfaces only if the valve has cooled down.
	NOTICE Contamination Product may get contaminated. Always wear cleanroom gloves when handling the product.

8.1 Dismounting

	NOTICE Valve in open position Valve body and plate may get damaged if valve is in open position. Close the valve before dismantling the valve from the system.
---	--

1. Disconnect compressed air supply.
2. Disconnect electrical power supply.
3. Dismount valve from system.

8.2 Storage

	NOTICE Wrong storage Inappropriate temperatures and humidity may cause damage to the product. Valve must be stored at: – relative humidity between 10% and 70% – temperature between +10 °C and +50 °C – non-condensing environment
---	--

	NOTICE Inappropriate packaging Product may get damaged if inappropriate packaging material is used. Always use the original packaging material and handle product with care.
---	--

1. Clean / decontaminate valve.
2. Cover all valve openings with protective covers or foils.
3. Pack valve appropriately, by using the original packaging material.

9 Packaging and Shipment

	WARNING
	Unqualified personnel Inappropriate handling may cause serious injury or property damage. Only qualified personnel are allowed to carry out the described work.

	WARNING
	Harmful substances Risk of injury in case of contact with harmful substances. Remove harmful substances (e. g. toxic, caustic or microbiological ones) from valve before you return the valve to Agilent.

	NOTICE
	Inappropriate packaging Product may get damaged if inappropriate packaging material is used. Always use the original packaging material and handle product with care.



- When returning products to Agilent, please fill out the Agilent form «Declaration of Chemical Contamination» and send it to Agilent in advance. The form can be downloaded from our website www.agilent.com.
- If products are radioactively contaminated, the Agilent form «Contamination and Radiation Report» must be filled out. Please contact Agilent in advance.
- If products are sent to Agilent in contaminated condition, Agilent will carry out the decontamination procedure at the customer's expense.

9.1 Packaging and Shipment

	NOTICE
	Valve in open position Valve body and plate may get damaged if valve is in open position.
	Make sure that the valve is closed

	NOTICE
	Inappropriate packaging Product may get damaged if inappropriate packaging material is used. Always use the original packaging material and handle product with care.

1. Cover all valve openings with protective covers or foils.
2. Pack valve appropriately, by using the original packaging material.

10 Spare parts



Non-original spare parts

Non-original spare parts may cause damage to the product.
Use original spare parts from Agilent only.



- Agilent makes a difference between spare parts that may be replaced by the customer and those that need to be replaced by the Agilent service staff.
- Table 11-1 only contains spare parts that may be replaced by the customer. For more information, contact one of our contact one of our contact centers. You will find the addresses on our website. www.agilent.com.

Item	Description	Part No.	Quantity per valve	Maintenance procedure see section
61 + 62	Seal kit NW16	X3202-60103	1	6.3 Replacement of vacuum seals
61 + 62	Seal kit NW25	X3202-60104	1	
61 + 62	Seal kit NW40	X3202-60105	1	
–	O-ring removal tool	X3302-60106	1	

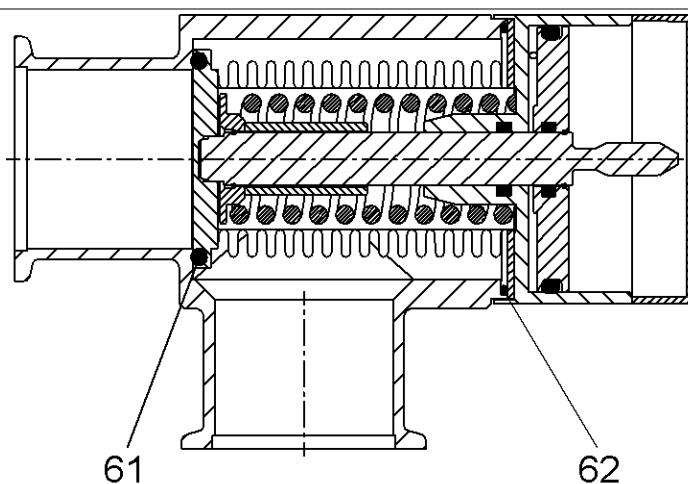


Table 11-1

Ordering Instructions

This manual is valid for the following part numbers.

<i>Description Right Angle Block Valve Series 26</i>	<i>Ordering Part Number</i>
Valve, Block, Aluminum, Right Angle, Hand-operated, NW16	X3202-60031
Valve, Block, Aluminum, Right Angle, Hand-operated, NW25	X3202-60032
Valve, Block, Aluminum, Right Angle, Hand-operated, NW40	X3202-60033
Valve, Block, Aluminum, Right Angle, Air-operated, NW16, without Solenoid	X3202-60034
Valve, Block, Aluminum, Right Angle, Air-operated, NW25, without Solenoid	X3202-60035
Valve, Block, Aluminum, Right Angle, Air-operated, NW40, without Solenoid	X3202-60036
Valve, Block, Aluminum, Right Angle, Air-operated, NW16, 115VAC	X3202-60037
Valve, Block, Aluminum, Right Angle, Air-operated, NW25, 115VAC	X3202-60038
Valve, Block, Aluminum, Right Angle, Air-operated, NW40, 115VAC	X3202-60039
Valve, Block, Aluminum, Right Angle, Air-operated, NW16, 220VAC	X3202-60040
Valve, Block, Aluminum, Right Angle, Air-operated, NW25, 220VAC	X3202-60041
Valve, Block, Aluminum, Right Angle, Air-operated, NW40, 220VAC	X3202-60042
Valve, Block, Aluminum, Right Angle, Air-operated, NW16, 24VDC	X3202-60043
Valve, Block, Aluminum, Right Angle, Air-operated, NW25, 24VDC	X3202-60044
Valve, Block, Aluminum, Right Angle, Air-operated, NW40, 24VDC	X3202-60045
Valve, Block, Aluminum, Right Angle, Air-operated, Position Indicator, NW16, without Solenoid	X3202-60051
Valve, Block, Aluminum, Right Angle, Air-operated, Position Indicator, NW25, without Solenoid	X3202-60052
Valve, Block, Aluminum, Right Angle, Air-operated, Position Indicator, NW40, without Solenoid	X3202-60053
Valve, Block, Aluminum, Right Angle, Air-operated, Position Indicator, NW16, 115VAC	X3202-60054
Valve, Block, Aluminum, Right Angle, Air-operated, Position Indicator, NW25, 115VAC	X3202-60055
Valve, Block, Aluminum, Right Angle, Air-operated, Position Indicator, NW40, 115VAC	X3202-60056
Valve, Block, Aluminum, Right Angle, Air-operated, Position Indicator, NW16, 220VAC	X3202-60057
Valve, Block, Aluminum, Right Angle, Air-operated, Position Indicator, NW25, 220VAC	X3202-60058
Valve, Block, Aluminum, Right Angle, Air-operated, Position Indicator, NW40, 220VAC	X3202-60059
Valve, Block, Aluminum, Right Angle, Air-operated, Position Indicator, NW16, 24VDC	X3202-60060
Valve, Block, Aluminum, Right Angle, Air-operated, Position Indicator, NW25, 24VDC	X3202-60061
Valve, Block, Aluminum, Right Angle, Air-operated, Position Indicator, NW40, 24VDC	X3202-60062

<i>Description: Aluminum In-Line Valves Series 26</i>	<i>Ordering Part Number</i>
Valve, Block, Aluminum, In-line, Hand-operated, NW16	X3202-60063
Valve, Block, Aluminum, In-line, Hand-operated, NW25	X3202-60064
Valve, Block, Aluminum, In-line, Hand-operated, NW40	X3202-60065
Valve, Block, Aluminum, In-line, Air-operated, NW16, without Solenoid	X3202-60066
Valve, Block, Aluminum, In-line, Air-operated, NW25, without Solenoid	X3202-60067
Valve, Block, Aluminum, In-line, Air-operated, NW40, without Solenoid	X3202-60068
Valve, Block, Aluminum, In-line, Air-operated, NW16, 115VAC	X3202-60069
Valve, Block, Aluminum, In-line, Air-operated, NW25, 115VAC	X3202-60070
Valve, Block, Aluminum, In-line, Air-operated, NW40, 115VAC	X3202-60071
Valve, Block, Aluminum, In-line, Air-operated, NW16, 220VAC	X3202-60072
Valve, Block, Aluminum, In-line, Air-operated, NW25, 220VAC	X3202-60073
Valve, Block, Aluminum, In-line, Air-operated, NW40, 220VAC	X3202-60074
Valve, Block, Aluminum, In-line, Air-operated, NW16, 24VDC	X3202-60075
Valve, Block, Aluminum, In-line, Air-operated, NW25, 24VDC	X3202-60076
Valve, Block, Aluminum, In-line, Air-operated, NW40, 24VDC	X3202-60077
Valve, Block, Aluminum, In-line, Air-operated, Position Indicator, NW16, without Solenoid	X3202-60078
Valve, Block, Aluminum, In-line, Air-operated, Position Indicator, NW25, without Solenoid	X3202-60079
Valve, Block, Aluminum, In-line, Air-operated, Position Indicator, NW40, without Solenoid	X3202-60080
Valve, Block, Aluminum, In-line, Air-operated, Position Indicator, NW16, 115VAC	X3202-60081
Valve, Block, Aluminum, In-line, Air-operated, Position Indicator, NW25, 115VAC	X3202-60082
Valve, Block, Aluminum, In-line, Air-operated, Position Indicator, NW40, 115VAC	X3202-60083
Valve, Block, Aluminum, In-line, Air-operated, Position Indicator, NW16, 220VAC	X3202-60084
Valve, Block, Aluminum, In-line, Air-operated, Position Indicator, NW25, 220VAC	X3202-60085
Valve, Block, Aluminum, In-line, Air-operated, Position Indicator, NW40, 220VAC	X3202-60086
Valve, Block, Aluminum, In-line, Air-operated, Position Indicator, NW16, 24VDC	X3202-60087
Valve, Block, Aluminum, In-line, Air-operated, Position Indicator, NW25, 24VDC	X3202-60088
Valve, Block, Aluminum, In-line, Air-operated, Position Indicator, NW40, 24VDC	X3202-60089



Vacuum Products Division Instructions for returning products

Dear Customer:

Please follow these instructions whenever one of our products needs to be returned.

- 1) Complete the attached Request for Return form and send it to Agilent Technologies (see below), taking particular care to identify all products that have pumped or been exposed to any toxic or hazardous materials.
- 2) After evaluating the information, Agilent Technologies will provide you with a Return Authorization (RA) number via email or fax, as requested.

Note: Depending on the type of return, a Purchase Order may be required at the time the Request for Return is submitted. We will quote any necessary services (evaluation, repair, special cleaning, eg).

3) Important steps for the shipment of returning product:

- Remove all accessories from the core product (e.g. inlet screens, vent valves).
- Prior to shipment, drain any oils or other liquids, purge or flush all gasses, and wipe off any excess residue.
- If ordering an Advance Exchange product, **please use the packaging from the Advance Exchange to return the defective product.**
- Seal the product in a plastic bag, and package product carefully to avoid damage in transit. You are responsible for loss or damage in transit.
- Agilent Technologies is not responsible for returning customer provided packaging or containers.
- **Clearly label package with RA number.** Using the shipping label provided will ensure the proper address and RA number are on the package. Packages shipped to Agilent without a RA clearly written on the outside cannot be accepted and will be returned.

- 4) Return only products for which the RA was issued.
- 5) **Product being returned under a RA must be received within 15 business days.**
- 6) **Ship to the location specified on the printable label, which will be sent, along with the RA number, as soon as we have received all of the required information.** Customer is responsible for freight charges on returning product.
- 7) Return shipments must comply with all applicable **Shipping Regulations** (IATA, DOT, etc.) and carrier requirements.

RETURN THE COMPLETED **REQUEST FOR RETURN** FORM TO YOUR NEAREST LOCATION:

EUROPE:

Fax: 00 39 011 9979 330
Fax Free: 00 800 345 345 00
Toll Free: 00 800 234 234 00
vpt-customer care@agilent.com

NORTH AMERICA:

Fax: 1 781 860 9252
Toll Free: 800 882 7426, Option 3
vpl-ra@agilent.com

PACIFIC RIM:

please visit our website for individual
office information
<http://www.agilent.com>



Vacuum Products Division
Request for Return Form
(Health and Safety Certification)

Please read important policy information on Page 3 that applies to all returns.

1) CUSTOMER INFORMATION

Company Name:		Contact Name:	
Tel:	Email:	Fax:	
Customer Ship To:		Customer Bill To:	
Europe only: VAT reg. Number:		USA/Canada only: ☐ Taxable ☐ Non-taxable	

2) PRODUCT IDENTIFICATION

Product Description	Agilent P/N	Agilent S/N	Original Purchasing Reference

3) TYPE OF RETURN (Choose one from each row and supply Purchase Order if requesting a billable service)

- 3A. ☐ Non-Billable ☐ Billable ➡ New PO # (hard copy must be submitted with this form):
- 3B. ☐ Exchange ☐ Repair ☐ Upgrade ☐ Consignment/Demo ☐ Calibration ☐ Evaluation ☐ Return for Credit

4) HEALTH and SAFETY CERTIFICATION

AGILENT TECHNOLOGIES CANNOT ACCEPT ANY PRODUCTS CONTAMINATED WITH BIOLOGICAL OR EXPLOSIVE HAZARDS, RADIOACTIVE MATERIAL, OR MERCURY AT ITS FACILITY.

Call Agilent Technologies to discuss alternatives if this requirement presents a problem.

The equipment listed above (check one):

- ☐ **HAS NOT** pumped or been exposed to any toxic or hazardous materials. OR
- ☐ **HAS** pumped or been exposed to the following toxic or hazardous materials. If this box is checked, the following information must also be filled out. Check boxes for all materials to which product(s) pumped or was exposed:

☐ Toxic ☐ Corrosive ☐ Reactive ☐ Flammable ☐ Explosive ☐ Biological ☐ Radioactive

List all toxic/hazardous materials. Include product name, chemical name, and chemical symbol or formula:

NOTE: If a product is received at Agilent which is contaminated with a toxic or hazardous material that was not disclosed, **the customer will be held responsible** for all costs incurred to ensure the safe handling of the product, and **is liable** for any harm or injury to Agilent employees as well as to any third party occurring as a result of exposure to toxic or hazardous materials present in the product.

Print Name: _____ **Authorized Signature:** _____ **Date:** _____

5) FAILURE INFORMATION:

Failure Mode (REQUIRED FIELD. See next page for suggestions of failure terms):

Detailed Description of Malfunction: (Please provide the error message)

Application (system and model):

I understand and agree to the terms of Section 6, Page 3/3.

Print Name: _____ **Authorized Signature:** _____ **Date:** _____

**Vacuum Products Division
Request for Return Form
(Health and Safety Certification)**

Please use these Failure Mode to describe the concern about the product on Page 2.

TURBO PUMPS and TURBO CONTROLLERS

APPARENT DEFECT/MALFUNCTION	POSITION	PARAMETERS
- Does not start - Does not spin freely - Does not reach full speed - Mechanical Contact - Cooling defective	- Noise - Vibrations - Leak - Overtemperature - Clogging	- Vertical - Horizontal - Upside-down - Other:
		Power: Rotational Speed: Current: Inlet Pressure: Temp 1: Foreline Pressure: Temp 2: Purge flow: OPERATING TIME:

ION PUMPS/CONTROLLERS

- Bad feedthrough - Vacuum leak - Error code on display	- Poor vacuum - High voltage problem - Other
---	--

VALVES/COMPONENTS

- Main seal leak - Solenoid failure - Damaged sealing area	- Bellows leak - Damaged flange - Other
--	---

LEAK DETECTORS

- Cannot calibrate - Vacuum system unstable - Failed to start	- No zero/high background - Cannot reach test mode - Other
---	--

INSTRUMENTS

- Gauge tube not working - Communication failure - Error code on display	- Display problem - Degas not working - Other
--	---

SCROLL AND ROTARY VANE PUMPS

- Pump doesn't start - Doesn't reach vacuum - Pump seized	- Noisy pump (describe) - Over temperature - Other
---	--

DIFFUSION PUMPS

- Heater failure - Doesn't reach vacuum - Vacuum leak	- Electrical problem - Cooling coil damage - Other
---	--

Section 6) **ADDITIONAL TERMS**

Please read the terms and conditions below as they apply to all returns and are in addition to the Agilent Technologies Vacuum Product Division – Products and Services Terms of Sale.

- Customer is responsible for the freight charges for the returning product. Return shipments must comply with all applicable **Shipping Regulations** (IATA, DOT, etc.) and carrier requirements.
- Customers receiving an Advance Exchange product agree to return the defective, rebuildable part to Agilent Technologies **within 15 business days**. Failure to do so, or returning a non-rebuildable part (crashed), will result in an invoice for the non-returned/non-rebuildable part.
- Returns for credit toward the purchase of new or refurbished Products are subject to prior Agilent approval and may incur a restocking fee. Please reference the original purchase order number.
- Units returned for evaluation will be evaluated, and a quote for repair will be issued. If you choose to have the unit repaired, the cost of the evaluation will be deducted from the final repair pricing. A Purchase Order for the final repair price should be issued within 3 weeks of quotation date. Units without a Purchase Order for repair will be returned to the customer, and the evaluation fee will be invoiced.
- A Special Cleaning fee will apply to all exposed products per Section 4 of this document.
- If requesting a calibration service, units must be functionally capable of being calibrated.

Service & Support

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