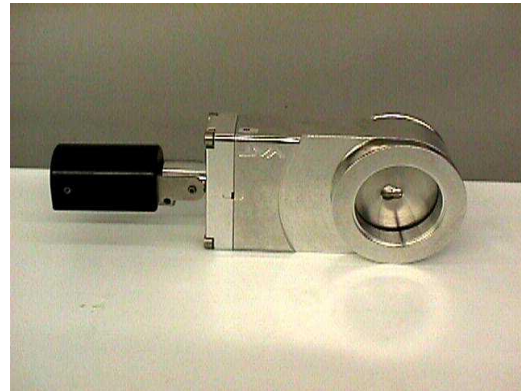
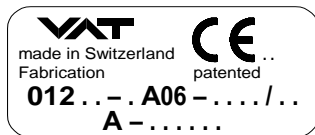


## Mini gate valve with toggle lever

This manual is valid for the valve ordering numbers:  
 012 . . . . A06- . . . .



The respective product identification is given on each valve in the following or in a similar way:



### Explanation of symbols:



Read declaration carefully before you start any other action!



Keep body parts and objects away from the valve opening!



Attention!



Hot surfaces; do not touch!



Product is in conformity with EC guidelines, if applicable!



Loaded springs and/or air cushions are potential hazards!



Disconnect electrical power and compressed air lines. Do not touch parts under voltage!



Wear gloves!



Read these «**Installation, Operating & Maintenance Instructions**» and the enclosed «**General Safety Instructions**» carefully before you start any other action!



## Installation, Operating, and Maintenance Instructions Series 01.2, DN 16 - 50 (5/8" - 2")

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### Imprint:

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## Intended use of product

Use product for vacuum applications under the conditions indicated in the chapter «Technical data» only! Other applications are only allowed with the written permission of VAT.

## Technical data

Pressure range	1 x 10 <sup>-7</sup> mbar to 2 bar (abs)
Differential pressure on the gate	≤ 2 bar in either direction
Max. Differential pressure at opening	≤ 30 mbar
Admissible temperature: -Valve body	≤ 100°C
-Manual actuator	≤ 80°C
-Position indicator	≤ 80°C

The temperatures specified in the technical data are only admissible if the valve is in open or closed position. Operation of the valve during the bakeout cycle is prohibited.

Further data according to VAT catalogue «Vacuum Valves 2000».

## Installation into the vacuum system

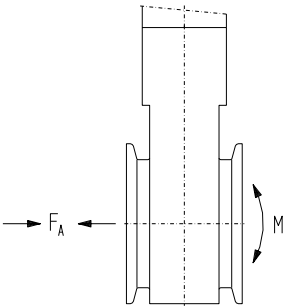
The valve seat side is indicated by the symbol "▽" on the connection flange.

### Admissible forces

Forces from evacuating the system, from the weight of other components, and from baking can lead to deformation of the valve body and to malfunction of the valve. The stress has to be relieved by suitable means, e.g. bellows sections. The following forces are admissible:

DN (nom. I.D.)		Axial tensile or compressive force «FA»		Bending moment «M»	
mm	inch	N	lbf	Nm	lbf · ft
16	5/8	295	66	12	9
25	1	345	77	15	11
40	1½	490	110	23	17
50	2	590	132	29	21

If a combination of both forces («FA» and «M») occurs, the values mentioned above are invalid. Please contact VAT for more information.



## Operation

### Normal operation

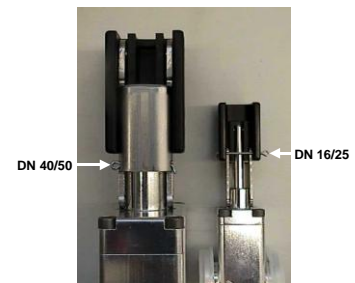
Valve is opened and closed by means of turning the toggle lever by 180°.

### Admissible temperature

See «Technical data»!

### Mechanical locking of the manual actuator

To avoid unintentional opening or closing, the manual actuator can be mechanically locked by inserting a thin split pin (see arrows in the picture).





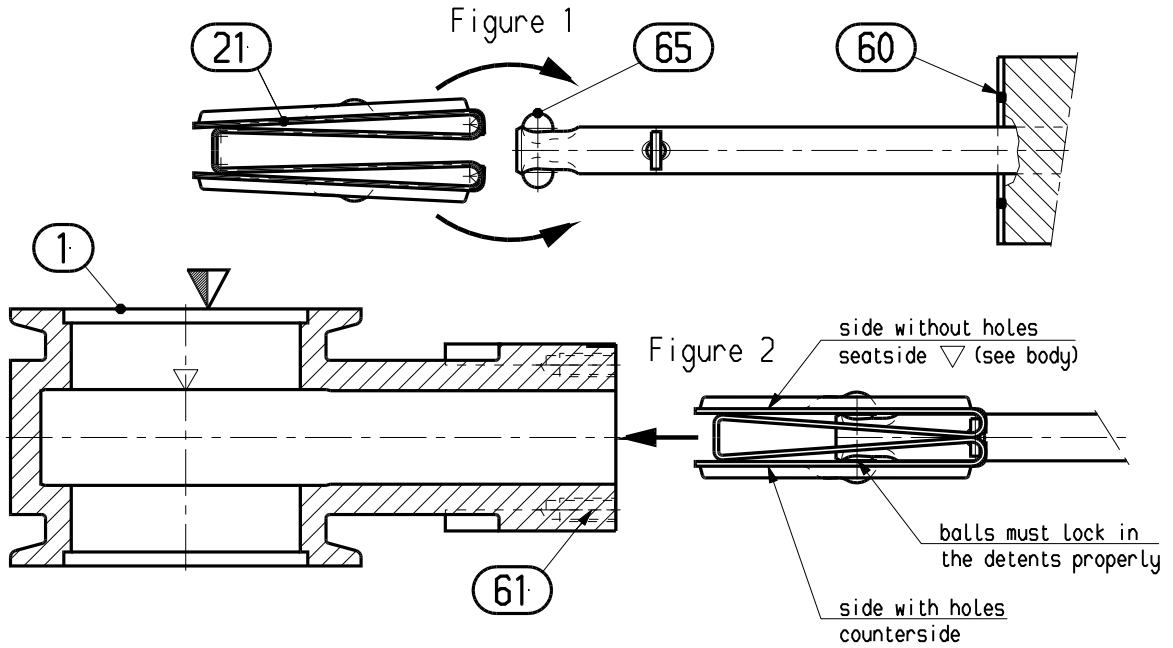
## Preventive maintenance

Under clean operating conditions, the valve does not require any maintenance during the specified cycle life.

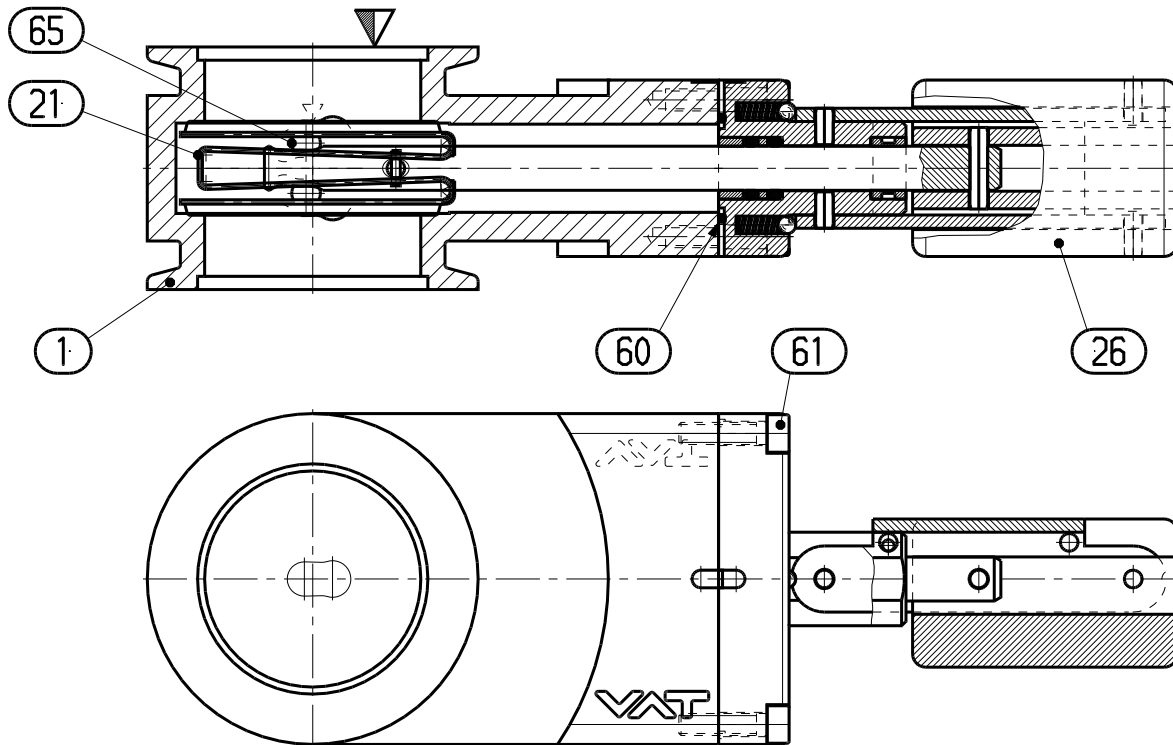
## Maintenance

### Replacement of the gate

1. Vent chambers on either side of valve
2. Open valve by means of manual actuator
3. Remove bonnet screws (61) in crosswise order
4. Withdraw actuator/mechanism assembly carefully from body  
**Attention:** Balls (65) can fall out!
5. Spread old gate (21) and remove it carefully (balls will fall out)
6. Put new balls (65) into detents of piston shaft and hold them with thumb and forefinger
7. Clip on new gate (21) ( see figure 1)  
**Attention:** Check whether balls are inserted correctly in their detents
8. Check whether gate is inserted properly  
**Attention:** Seat side: marking «▽» on body and gate side without holes (see figure 2)
9. Check and clean sealing surfaces of bonnet-O-ring and valve seat
10. Reassemble in reverse order  
**Attention:** Tighten screws (61) in crosswise order!  
Torque: DN 16/25 1 Nm / 0.74 lbf · ft  
DN 40/50 2 Nm / 1.48 lbf · ft



### Spare parts





## Installation, Operating, and Maintenance Instructions Series 01.2, DN 16 - 50 (5/8" - 2")

Item	Description	Qty.	VAT part number			
			DN 16	DN 25	DN 40	DN 50
	<b>Valve ordering number</b>		<b>01224- . A06</b>	<b>01228- . A06</b>	<b>01232- . A06</b>	<b>01234- . A06</b>
21 65	Valve mechanism (stop included) Pair of locking balls	1	202201	202200	202199	202198
60	Bonnet seal O-ring	1	N-5100-019	N-5100-026	N-5100-031	N-5100-033
62	O-ring for ISO-KF quick	2	N-5100-117	N-5100-123	N-5100-224	N-5100-229

Item	Description	Qty.	VAT part number			
			DN 16	DN 25	DN 40	DN 50
	<b>Valve ordering number</b>		<b>01224-KA06</b>	<b>01228-KA06</b>	<b>01232-KA06</b>	<b>01234-KA06</b>
21 60 65	Complete seal kit ISO-KF	1	92578-R1	92554-R1	92485-R1	92523-R1
	<b>Valve ordering number</b>		<b>01224-BA06</b>	<b>01228-BA06</b>	<b>01232-BA06</b>	<b>01234-BA06</b>
21 60 62 65	Complete seal kit ISO-KF Quick	1	96191-R1	96190-R1	96189-R1	96188-R1

## Trouble shooting

Valve does not close/open:	Check mechanism! Is toggle lever defective?
Leak at gate:	Clean valve seat and gate! Replace gate, if damaged! Is toggle lever defective?
Leak at body:	Flanges leaktight? Replace bonnet seal! Screws at bonnet tightened?

## Repairs

Contact VAT for repairs or maintenance. The fabrication No. (012 . . . . A06- . . . . / . . .) marked on the valve body has always to be specified. It has to be individually decided whether the work can be performed by the customer or has to be carried out by VAT.

All supplies (e. g. compressed air, electrical power) have to be disconnected for removal/installation of the valve from/into the system.



Even with disconnected supply, loaded springs and/or air cushions in cylinders can be potential hazards.



Keep fingers and objects away from the valve opening!

Products returned to VAT for repair have to be free of harmful substances such as e.g. toxic, caustic or microbiological ones. For radioactively contaminated products the customer has to fill in the VAT form «Contamination and Radiation Report» and to send it with the product. The form is available at VAT. The maximum permissible values indicated in the form must not be exceeded.





## Warranty

Each product sold by VAT Vakuumentile AG (VAT) is warranted to be free from the manufacturing defects that adversely affect the normal functioning thereof during the one-year period immediately following delivery thereof by VAT, provided that the same is properly operated under conditions of normal use and that regular, periodic maintenance and service is performed or replacements made, in accordance with the instructions provided by VAT. The foregoing warranty shall not apply to any product or component that has been repaired or altered by anyone other than an authorized VAT representative or that has been subject to improper installation or abuse, misuse, negligence or accident. VAT shall not be liable for any damage, loss, or expense, whether consequential, special, incidental, direct or otherwise, caused by, arising out of or connected with the manufacture, delivery (including any delay in or failure to deliver), packaging, storage or use of any product sold or delivered by VAT shall fail to conform to the foregoing warranty or to the description thereof contained herein, the purchaser thereof, as its exclusive remedy, shall upon prompt notice to VAT of any such defect or failure and upon the return of the product, part or component in question to VAT at its factory, with transportation charges prepaid, and upon VAT's inspection confirming the existence of any defect inconsistent with said warranty or any such failure, be entitled to have such defect or failure cured at VAT's factory and at no charge therefor, by replacement or repair of said product, as VAT may elect. VAT MAKES NO WARRANTY OR REPRESENTATION OF ANY KIND, EXPRESS OR IMPLIED, (INCLUDING NO WARRANTY OR MERCHANTABILITY), EXCEPT FOR THE FOREGOING WARRANTY AND THE WARRANTY THAT EACH PRODUCT SHALL CONFORM TO THE DESCRIPTION THEREOF CONTAINED HEREIN, and no warranty shall be implied by law.

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