

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *VAT 24328-KA41-0001* at our website: *Click HERE*

Vacuum Angle Valve

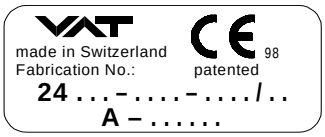
- **with pneumatic actuator**
  single acting with closing spring (NC)



This manual is valid for the valve ordering numbers:

24324-KA11/21/31/41/71/81
24328-KA11/21/31/41/71/81
24332-KA11/21/31/41/71/81
24334-KA11/21/31/41/71/81
24336-QA11/21/31/41/71/81

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



STOP

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

Intended Use of Product

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

Technical data

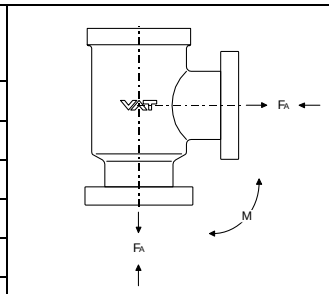
Pressure range: open and closed in closing direction		1 x 10^{-7} mbar to 5 bar (abs)
Differential pressure on the plate in opening direction		≤ 1.5 bar
Differential pressure at opening		≤ 1 bar in either direction
Admissible Temperature	Valve body Actuator Position indicator Solenoid	≤ 150°C ≤ 80°C ≤ 80°C ≤ 80°C
Position indicator	Contact rating	5 A / 250 V AC, 3 A / 50 V DC
Solenoid	Voltage	see tag on solenoid

Further data according to catalogue «VAT Vacuum Valves 2004».

Installation

Admissible forces

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
50	2	150	34	11	8
63	2½	200	45	18	13



A combination of both forces «F_A» and «M» is not allowed. Please contact VAT in this case.

Compressed air connection



Connect compressed air only if
- valve is installed into the vacuum system
- moving parts cannot be touched

Valve is closed by a spring if air pressure is lost.

Connection: internal thread R $^1/_8$“ ($^1/_8$“ NPT for USA)

Compressed air pressure (min. - max. overpressure): 4,5 - 8 bar / 65 - 115 psig

Use only clean, dry or slightly oiled air!

Electrical connection

Do not touch electrical parts under voltage!

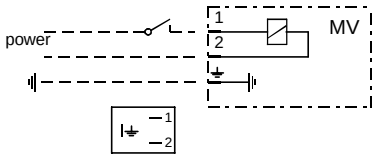
Connect electrical power only if
- valve is installed into the vacuum system
- moving parts cannot be touched

Verify that control voltage matches voltage stated on the solenoid!

Sockets for position indicator and solenoid are supplied with the valve.

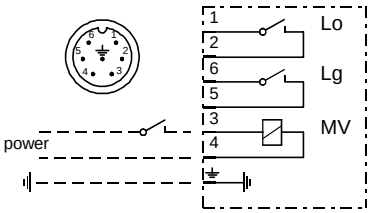
Wiring diagrams:

Solenoid



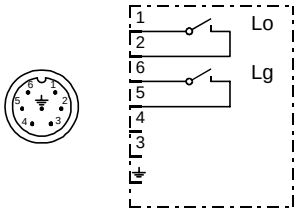
MV = coil of solenoid

Common plug for solenoid and position indicator (option)



Lo = position indicator «open»
Lg = position indicator «closed»
MV = coil of solenoid

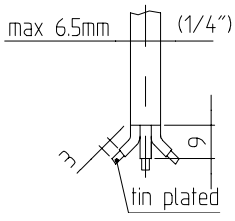
Position indicator «open/closed»



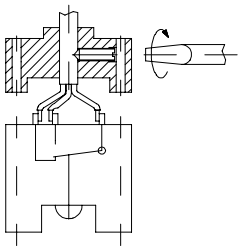
Lo = position indicator «open»
Lg = position indicator «closed»

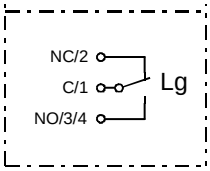
Position indicator «closed»

Prepare cable:



Connect cable:





a) Slide pull relief on cable
b) Join strands by soldering
c) Slide pull relief on position indicator and tighten
d) Screw pull relief with position indicator on valve

Operation

Normal operation

- valve is closed by a spring (NC)
- valve is opened pneumatically

Admissible temperature

See «Technical data»!

Compressed air failure

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

Power failure

Valve is closed leaktight by a spring.

Emergency operation at power failure

Option: Solenoid with an emergency operation (slotted screw)
Compressed air must be available!

To open valve: Turn slotted screw clockwise to its stop

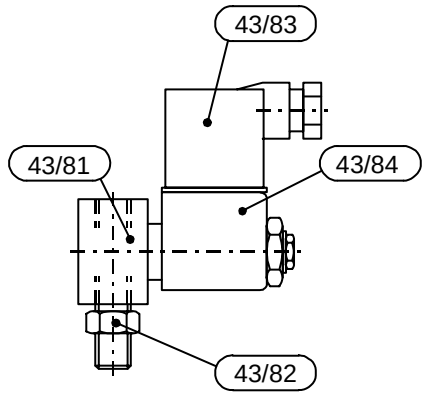
Attention!
Remote operation is only possible if the slotted screw is turned counter-clockwise to its stop

Preventive Maintenance

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

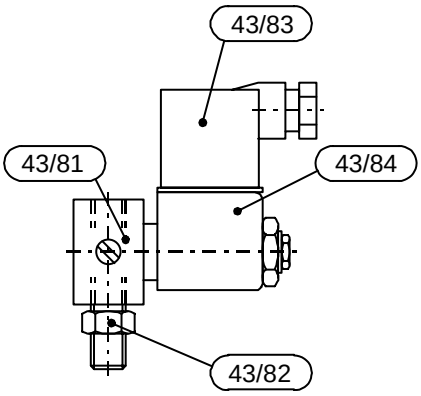
Spare Parts / Accessories

Solenoid kit: **standard**



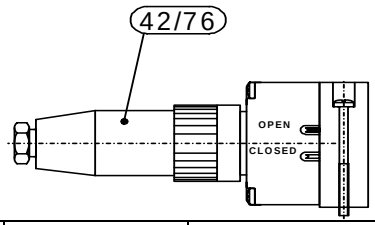
Item	Description	Part No.
	Solenoid kit	81737-R1- . . . . . *)
43/81	Solenoid	N-7501-312- . . . . . *)
43/82	Nipple R 1/8"	N-7604-110
43/83	Plug	N-8501-300
43/84	Coil	N-7510- . . . . . *)

Solenoid kit: **with emergency operation (option)**



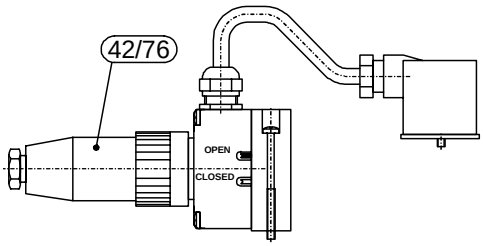
Item	Description	Part No.
	Solenoid kit	83666-R1- . . . . . *)
43/81	Solenoid	N-7501-311- . . . . . *)
43/82	Nipple R 1/8"	N-7604-110
43/83	Plug	N-8501-300
43/84	Coil	N-7510- . . . . . *)

Position indicator kit:
open/closed (standard)



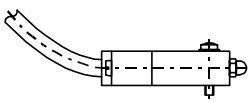
DN	Description	Part No.
16	Kit	80419-R1
25	Kit	80529-R1
40	Kit	80530-R1
50	Kit	80531-R1
63	Kit	80532-R1
all	Plug (42/76)	N-8504-002

Position indicator kit:
open/closed with common connector for position indicator and solenoid (option)



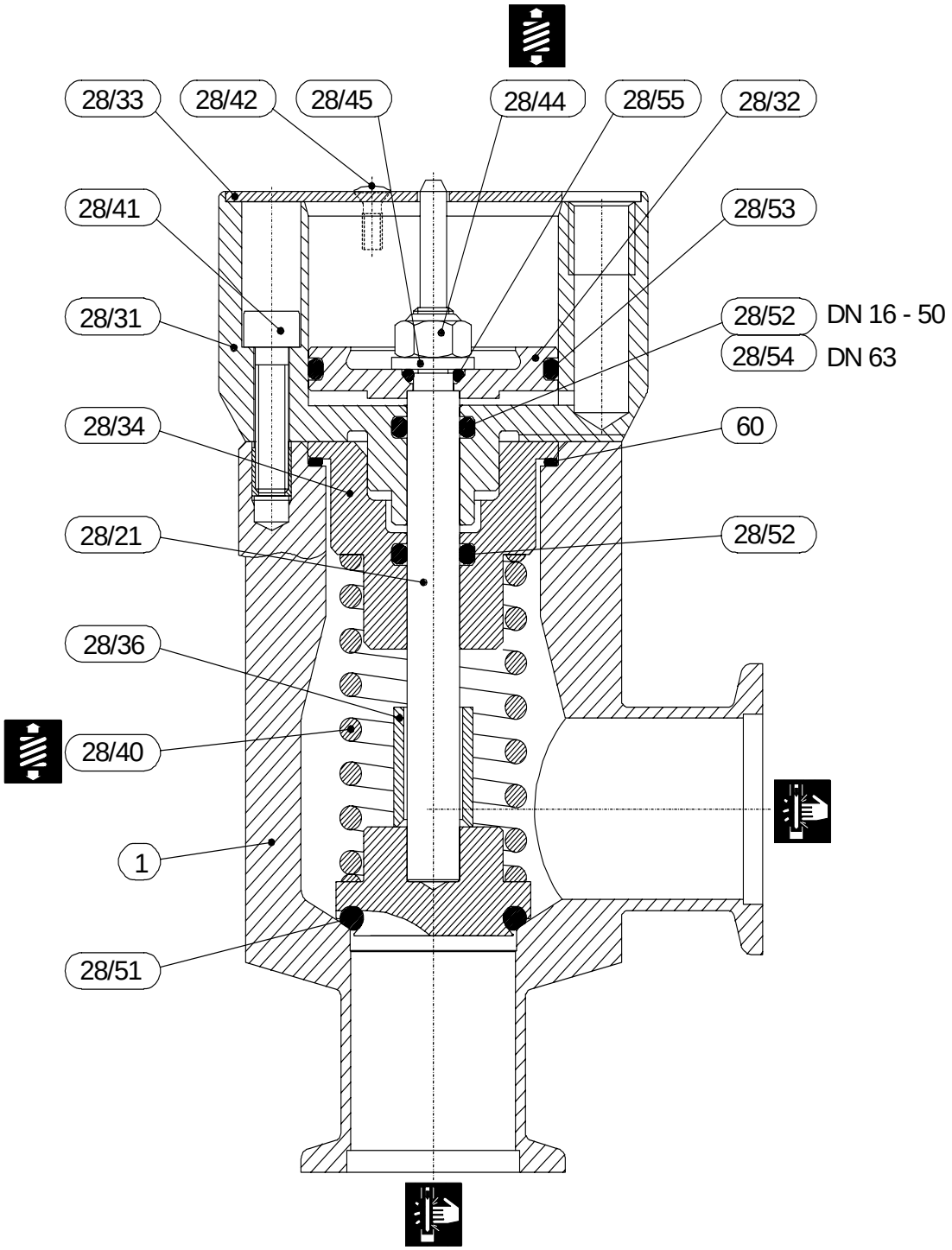
DN	Description	Part No.
16	Kit	82575-R1
25	Kit	82576-R1
40	Kit	82569-R1
50	Kit	82577-R1
63	Kit	82578-R1
all	Plug (42/76)	N-8504-002

Position indicator kit: **closed**



DN	Description	
all	Kit	80591-R1

. . . . . *) **Specify voltage!**
(e.g. 81737-R1-220 V, 50 Hz)


28/33
28/42
28/45
28/44
28/55
28/32
28/41
28/53
28/31
28/52
DN 16 - 50
28/54
DN 63
28/34
60
28/21
28/52
28/36
28/40
1
28/51

The item numbers refer to the drawing on page 6

Item	Qty.	Description	DN	Part No.	Additional information
-		Seal kit, consisting of: - item 28/51, 28/52, 28/53, 28/54, 28/55, 60	16 25 40 50 63	95473-R1 95474-R1 95475-R1 95476-R1 95477-R1	
28/51	1 1 1 1 1	Plate seal (O-ring)	16 25 40 50 63	N-5100-112 N-5100-211 N-5100-220 N-5100-327 N-5100-331	
60	1 1 1 1 1	Bonnet seal (O-ring)	16 25 40 50 63	N-7100-022 N-7100-028 N-7100-033 N-7100-037 N-7100-041	
28/52	2 2 2 2 1	O-ring for shaft	16 25 40 50 63	N-7100-010 N-7100-109 N-7100-112 N-7100-112 N-7100-208	
28/53	1 1 1 1 1	O-ring for pneumatic actuator	16 25 40 50 63	N-7100-119 N-7100-125 N-7100-225 N-7100-228 N-7100-232	
28/54	1	O-ring for pneumatic actuator	63	N-7100-114	
28/55	1 1 1 1 1	O-ring for pneumatic actuator	16 25 40 50 63	N-7100-007 N-7100-010 N-7100-010 N-7100-010 N-7100-010	
		VAT high temperature pneumatic grease		N-6951-403	12 g
		VAT high performance vacuum grease		N-6951-011	10 g

Trouble Shooting

Valve does not open: Power available?
Compressed air available?
Check voltage!
Check air pressure!

Valve does not close: Emergency operation (slotted screw) turned counter-clockwise to its stop?

Replacement of vacuum seals

The item numbers refer to the drawing on page 6

Removal of actuator/plate assembly

- Remove screws (28/42) and cover (28/33)
- Do not loosen the nut (28/44). **!** Loaded spring **!**
- Open the valve by means of compressed air
- Remove screws (28/41)
- Withdraw actuator/plate assembly carefully from the valve body



Do not loosen the nut (28/44). **!** Loaded spring **!**

Replacement of plate seal

Stick a needle in to the O-ring (28/51) at the slot of the groove and withdraw the O-ring from the groove
! Be careful not to damage the sealing surface **!**
Check the sealing surface and clean it with alcohol
Put the new O-ring on to the groove an press it at four places, crosswise into the groove
Press the whole o-ring unifotmly into the groove

Installation of actuator/plate assembly

- Check and clean sealing surfaces of bonnet and seat
- Put bonnet seal (O-ring 60) into the body
- Insert the actuator/plate assembly carefully. **!** Actuator must be in the open position **!**
- Tighten screws (28/41) uniformly in crosswise order in 2 or 3 steps
- Close the valve
- Reassemble cover (28/33) and screws (28/42)
- Perform function and leak test

Repairs

Contact VAT for repairs or maintenance. The serial No. (243 . . - . . . . - . . . . / . . . .) given on the valve has always to be specified. It is individually decided whether the repair can be performed by the customer or has to be carried out by VAT.

Disconnect all supplies (e. g. compressed air, electrical power) for removal/installation of the valve from/into the system before doing any repair.



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



Keep fingers and objects away from the valve openings!

Products returned to VAT for repair have to be free of harmful substances such as e.g. toxical, caustic or microbiological ones. For radioactively contaminated products fill in the VAT form «Contamination and Radiation Report» and 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 Vakuumventile 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.

Furthermore, the «Terms of sale» at the back of the price list are applicable.

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP