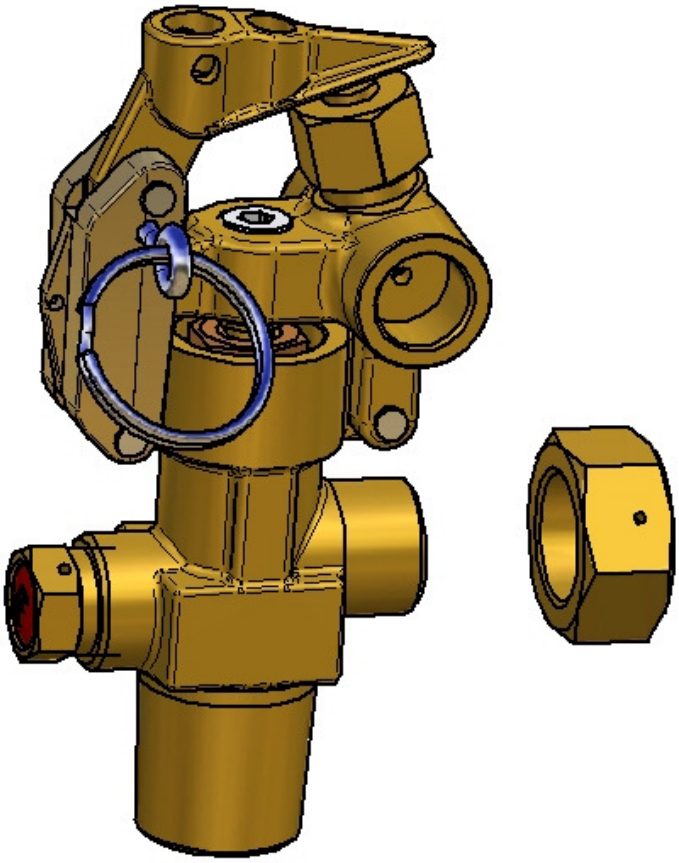
Ventil Technik International

Manual of Instruction

VTI Quick Release Valve
Series K85-13.0/K85-50.0
For transportable and stationary fire fighting installations



Contents

1 Declaration of Property

1. VTI Ventil Technik GmbH designs and manufactures high-pressure valves for technical and aggressive gases and for transportable and stationary fire fighting installations and pressure regulators as well as complete valve systems on customers' requests.

2. The customer commits himself to retain all protective notes enclosed to this Operation Manual as copyright notes and other legal reservations unmodified as well as to assume all by the customers produced complete or partial copies of machine-readable document material unchanged.

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2 Mandatory operating conditions

2.1 General

The quick release valve type K85-50.0 is suitable for pressure cylinders in stationary or transportable extinguishing installations.
Extinguishing gases according to CPD : CO_2, Argon, Inergen 52.40.08
Extinguishing gases according to TPED: CO_2, Argon, Inergen 52.40.08
FM200, Novec 1230

Operating temperature: -20°C / +50°C

Conformity according to European regulations:
89/106/EEC- Construction Products Directive (CPD)
Testing Standard EN 12094-4
Marking: CE-0786
VdS-Certificate

1999/36/EC-Transportable Pressure Equipment Directive (TPED)
Testing Standard ISO 10297
Marking: π -0589
BAM-certificate

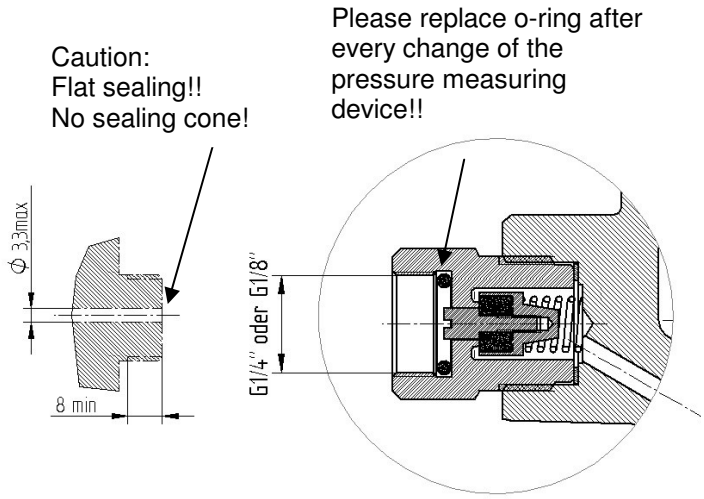
2.2 Valve description

The spindle valve (non-rotating) can be opened by pneumatic and manual release mechanism. The release pressure of the pneumatic release mechanism has to be min. 30 bar up to max. 240 bar.

When using a stick-on lever (to be secured with a safety pin), the valve can be activated manually.

The valve is equipped with a bursting device (burst pressure acc. to customers' specification). When using inert gases, the bursting device can be replaced by a closing plug.

Option for installing pressure gauges or pressure switches with flat-sealing thread (torque10-15 Nm)



Material: brass, nickel or chrome plating on request

Flow area: 110mm^2 (nominal diameter ø12mm)
Cv value : 3,5m^3/h (standard flow rate Qn acc. to ISO 6358)

Cylinder thread: 25E acc. to EN 629-1 or 1“ – 11 ½“ NGT

Outlet: W21,8 x 1/14“ acc. to DIN 477-1 No. 6 for type K85-50.0
W24,32 x 1/14“ acc. to DIN 477 No. 10 for type K85-13.0

Pneumatic cylinder: 2 X G3/8“ (on both sides)

2.3 Working pressure / Test pressure

The nominal working pressure for the extinguishing gases Argon, Argonite, FM200, Novec 1230 and Inergen 52.40.08 is 200 bar at an ambient temperature of 15°C .
The test pressure of the valves for the mentioned inert gases is 240 bar.
The test pressure of valves for CO2 is depending on the mounted bursting device, it is max. 250 bar.

2.4 Life cycle

The valves are not subjected to constructive restrictions in their life cycle.
A leak test should be effected at least twice a year.
After each release (in case of fire or test release) the setting screw must be calibrated with 10 to 11 Nm.

2.5 Handling

Before the valves will be installed on pressure gas cylinders, they have to be handled and transported with care. Reason for this is to avoid damages of the lever group and threads (inlet and outlet). A falling down of the valve, that would cause a damage of the material or even an injury to persons, has to be prevented.

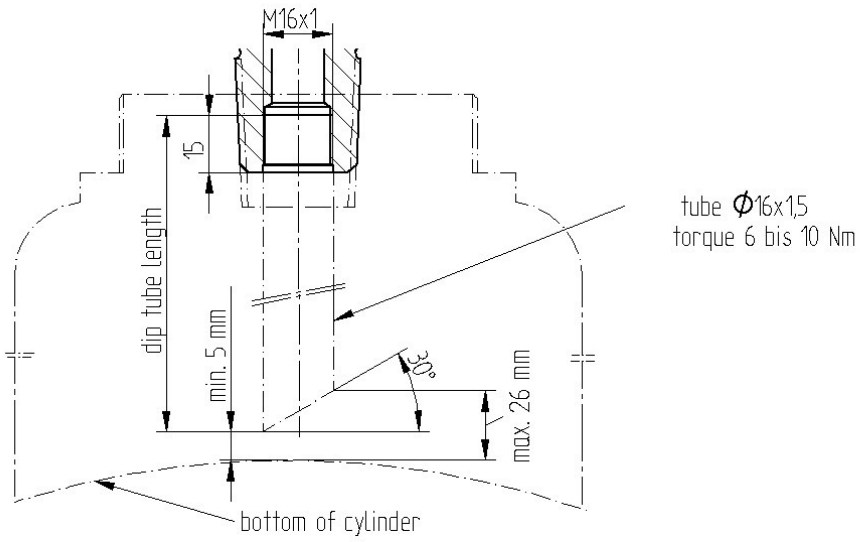
3 Mounting Instruction

3.1 General

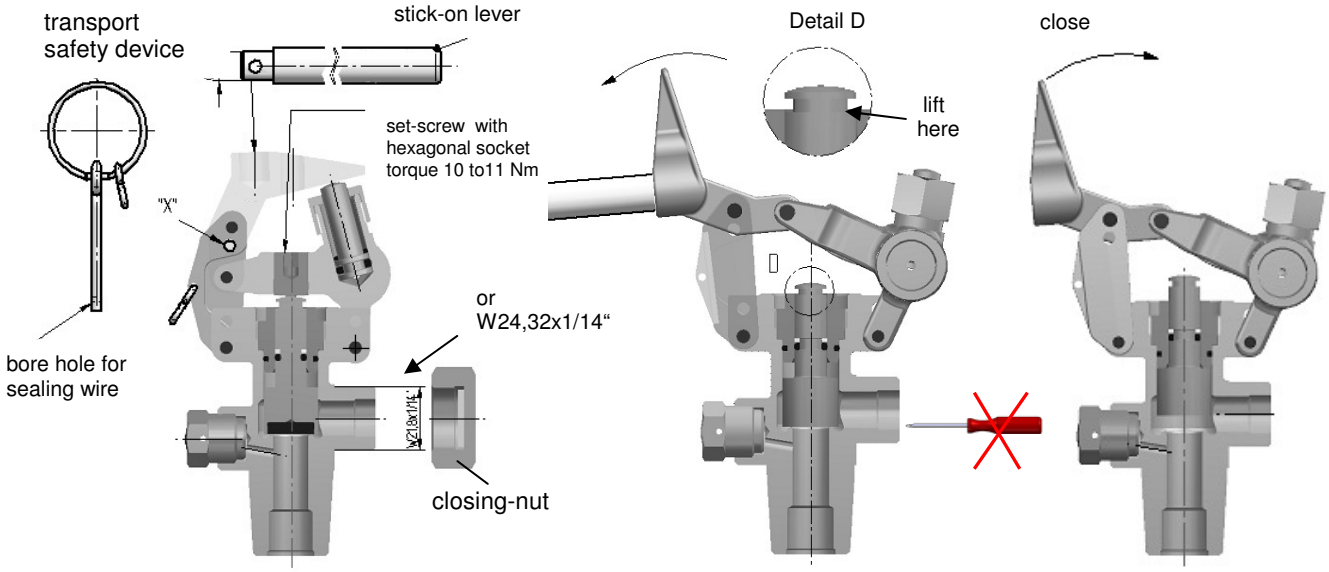
Screw the valves into approved steel cylinders with a torque of:

160 to 180 Nm	into	25E acc. to EN 629-1
160 to 180 Nm	into	1“ – 11 ½“ NGT

3.2 Mounting Instruction for dip tubes



3.3 Filling Instruction



picture „A“
valve closed

picture „B“
release unit open

picture „C“
valve open

1) After the cylinder has been safeguarded against falling down, remove the closing nut and apply the filling adapter to the outlet thread of the valve. Only now remove the transport safety device. Slowly open the valve by using the stick-on lever.
Caution: A cylinder in use still might be filled or might contain residual pressure.

Lift the spindle with a suitable tool slightly from valve seat (picture "B", detail "D")

Attention: **do not lift the spindle through the valve outlet! The valve seat might get damaged, risk of leakage!**

2) Start the filling procedure

3) After finishing the filling procedure close the valve (pic. "C"). Do not adjust the hexagonal setting-screw unless the valve is completely closed!

4) Put the transport safety device into the bore hole “X” and secure it against slipping out. This can be done e.g. by using a plombing wire (max.ø 0,5/0,3 DIN1367): insert plombing wire through bore hole of safety pin, recurve and where appropriate seal.

5) Calibrate the hexagonal setting-screw with **10 – 11 Nm** by using a calibrated torque wrench.

6) Leakage test in closed position, as shown in pic. "A" (e.g. by means of a leakage detection spray).

7) Screw on a closing nut (is not necessarily included in the delivery of valves)

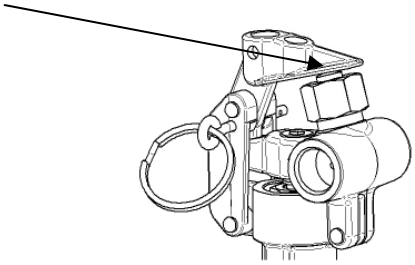
Attention: Please make sure that the filled cylinder is equipped with a closing nut at the valve outlet and a suitable “protection cap for transport” !

3.4 Initial operation

Secure the filled cylinders in an upright position with an adequate fixing device. The fixation can be coupled with a weight controlling system.

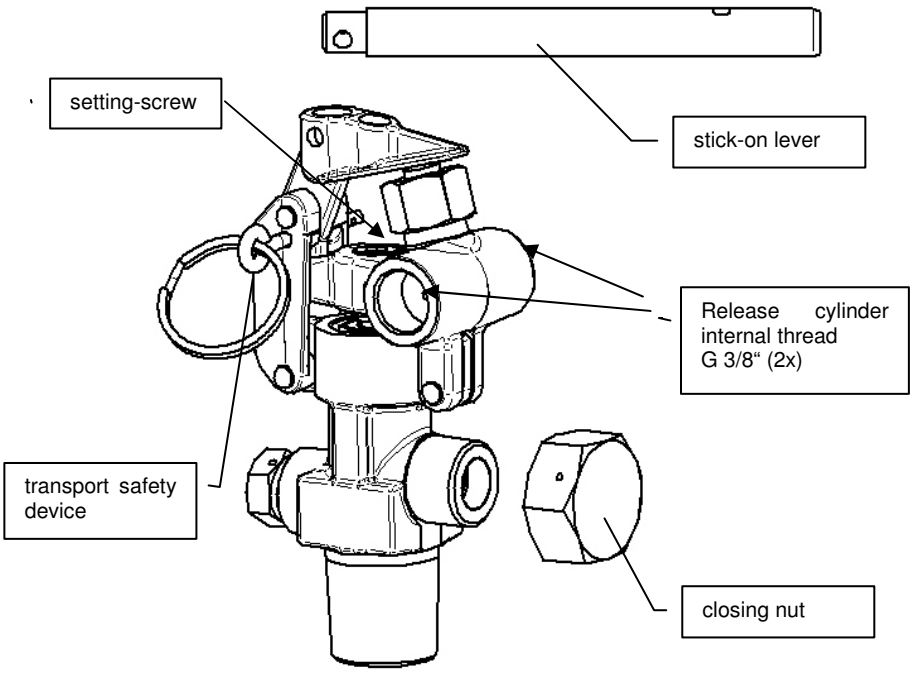
Attach the outlet tube for the extinguishing agent onto the valve outlet thread.

Attention: the lever must seat on the piston.
If it does not, press down the lever.
Pull out the transport safety pin. In case the safety pin cannot be pulled out easily (because it is bent) an incorrect effort to open the valve with mounted safety device has occurred priliminary.



3.5 Test release

Recommended execution:
Secure the valve type K85-50.0 against accidental opening by a transport safety device. Remove the outlet tube from the valve outlet connection, close the outlet connection (thread W21,8 x 1/14") with a suitable closing nut.
Remove the transport safety device.
Charge the pneumatic release device with pressure. Effect the release by the operation centre or by external pressure.



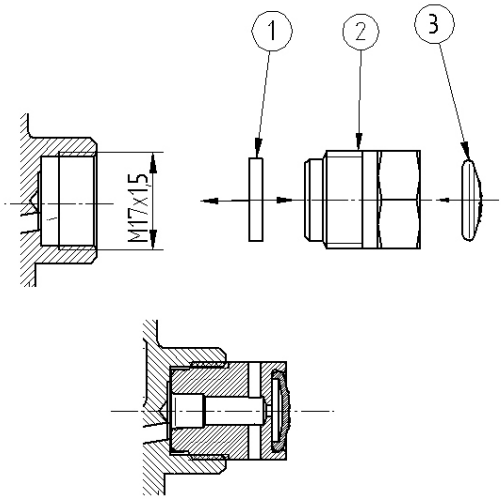
Attention:
Do not carry out the test release when the transport safety device is inserted!
Please make sure to pull it out before starting the test release!

After the test release and the leak control re-connect the tubes to the valve outlet.

A test release should not be effected more than twice a year.

Calibrate the setting screw after each release with a torque of 10 to 11 Nm.

3.6 Replacement of bursting device



Attention:

Only qualified personnel is allowed to replace the bursting device.
Only use original parts. In case of replacement the new bursting device has to show the same burst pressure as the previous one.

Mounting instruction:

1) Fit bursting cap (pos. 1) to housing (pos. 2)

2) Screw the housing (pos.2) into the mounting hole of the valve body until it blocks

3) Tighten the screw connection with a torque of 30 – 35 Nm

4) Mount indication disc (pos. 3)