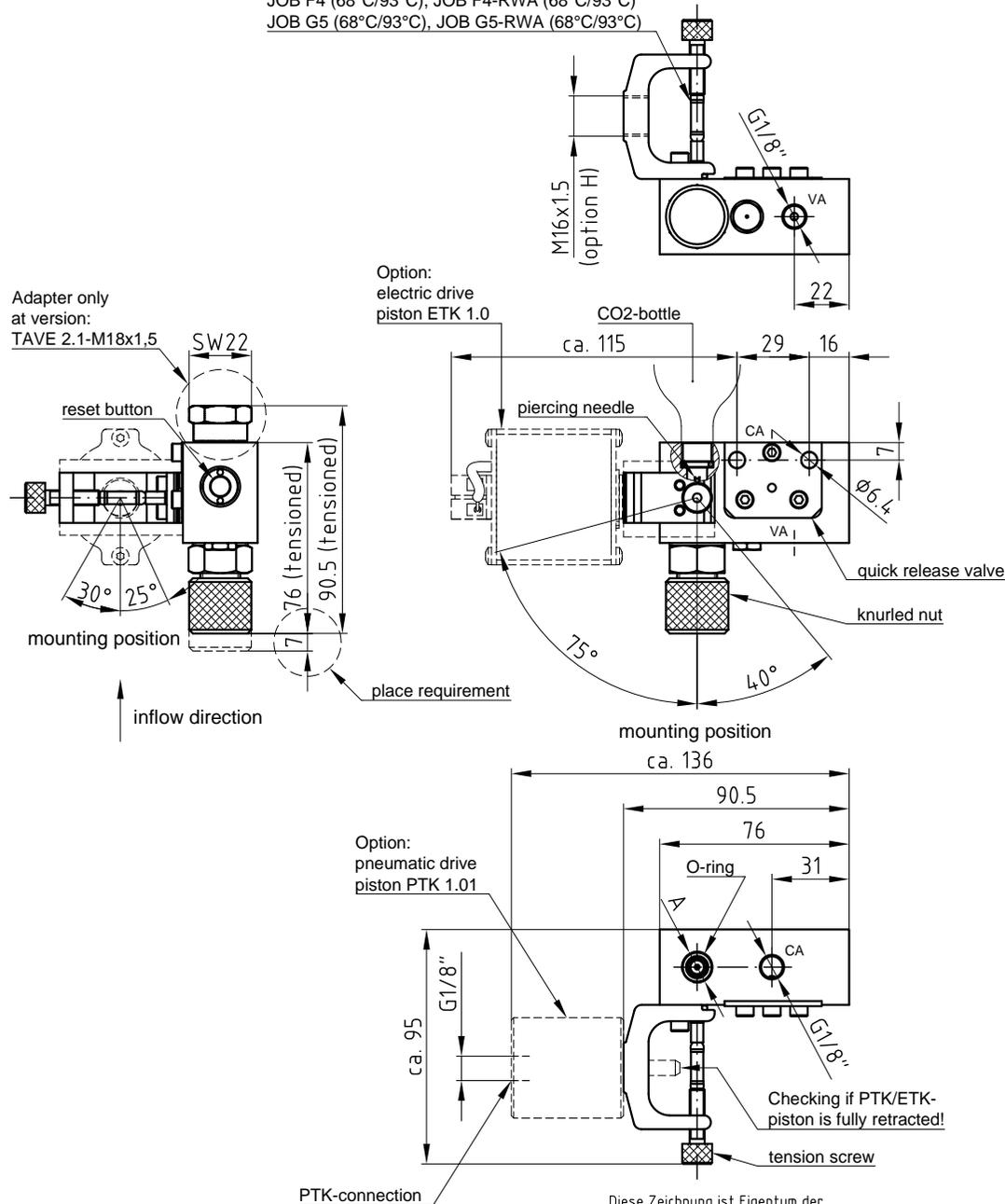


Thermo bulb
 Geißler S5 (68°C/93°C)
 JOB F4 (68°C/93°C), JOB F4-RWA (68°C/93°C)
 JOB G5 (68°C/93°C), JOB G5-RWA (68°C/93°C)



Description of function:

The temperature valve TAVE 2.1 is a release valve, which, on the bursting of a thermo bulb, taps a CO2-bottle and allows the CO2 to flow to the outlet CA. The thermo bulb bursts at the specified rated temperature with a tolerance of -3°C/+8°C. In the non-release position the outlet CA is ventilated by the integrated quick release valve. If there is pressure on the input VA (by ventilation- or alarmbox), the input will connect to the output CA.

Releasing:

- 1) Thermal releasing via bursting of the thermo bulb
- 2) Option: Pneumatic releasing via pneumatic drive piston PTK 1.01 (must be specified with order)
- 3) Option: Electric releasing via electric drive piston ETK 1.0 (must be specified with order)

Mounting:

- 1) Join connections as follows:
 CA cylinder OPEN
 VA vent line or CO2 line OPEN
 PTK Join PTA connection with external releasing device (option)
 ETK join electric connection with external releasing device (option)
- 2) When using a CO2 one-way bottle the TAVE must be installed as drawn adhering to the inflow direction (bottle screwed in from the top)
- 3) For our 1/8" connection threads we recommend to use screw connections with taper thread and to seal these in position using a liquid sealant (e.g. Loctite 243). It must be ensured that the liquid sealant is applied to the external thread.
- 4) We recommend using CO2 one-way bottles according to drawing No. 03.023.00.* and point out that the VdS-recognition is valid only with these bottles.

Commissioning:

- 1) Fully unscrew knurled nut.
- 2) If Option "Pneumatic/electric drive piston" is available, check if PTK /ETK tappet is fully retracted via spring resetting (PTK/ETK-connection must be pressureless/de-energized).
- 3) Insert thermo bulb so that the tip points in the direction of the tension screw.
- 4) Tighten knurled nut while at the end of the clamping travel (noticeable resistance) the knurled nut has to be turned in approximately 1/2 a turn in addition.
- 5) Fully tighten knurled nut.
- 6) Check if the piercing needle is positioned behind the piercing surface of the bottle screw-in thread.
- 7) Lightly grease the O-ring in the bottle screw-in thread.
- 8) Check if the reset button is in the correct position.
- 9) Screw in CO2-bottle.
- 10) After releasing, repeat process.

Caution:

- After thermo valve release, it is absolutely necessary, to unscrew the knurled nut first and CO2 bottle after.
- Check the compatibility of the thermo bulb and CO2 bottle.
- Dirt is built up by common use of the thermo valve. Therefore it must be cleaned free of deposits (dirt, fragments, etc.) in the thermo bulb holder and in the bottle thread.

Technical data:

max. static housing pressure	80bar
max. dynamic operating pressure	80bar
nominal width of valve	2mm
nominal width of piercing needle	2mm
ambient temperature range	-25°C - +110°C
releasing pressure PTK (Option)	10 bar
VdS approval no.	G 597018

Scope of supply:

Screw connections, thermo bulb and CO2-bottle are NOT included in the scope of supply.

Types:

Type	Bottle screw-in threads A	
TAVE 2.1	1/2" UNF (standard)	
TAVE 2.1-M	M18x1.5 (adapter)	no VdS-certificate
TAVE 2.1-F	W21.8x1/14"	
Option		
TAVE 2.1-PTK	1/2" UNF (standard)	
TAVE 2.1-M-PTK	M18x1.5 (adapter)	no VdS-certificate
TAVE 2.1-F-PTK	W21.8x1/14"	

Diagram without PTK 1.01:

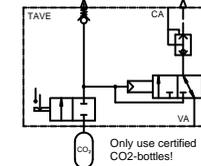
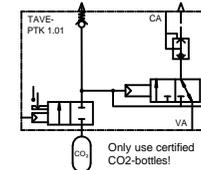
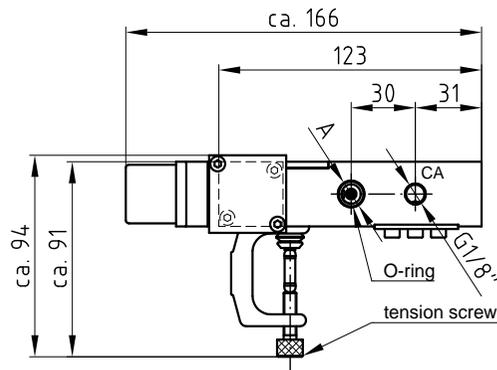
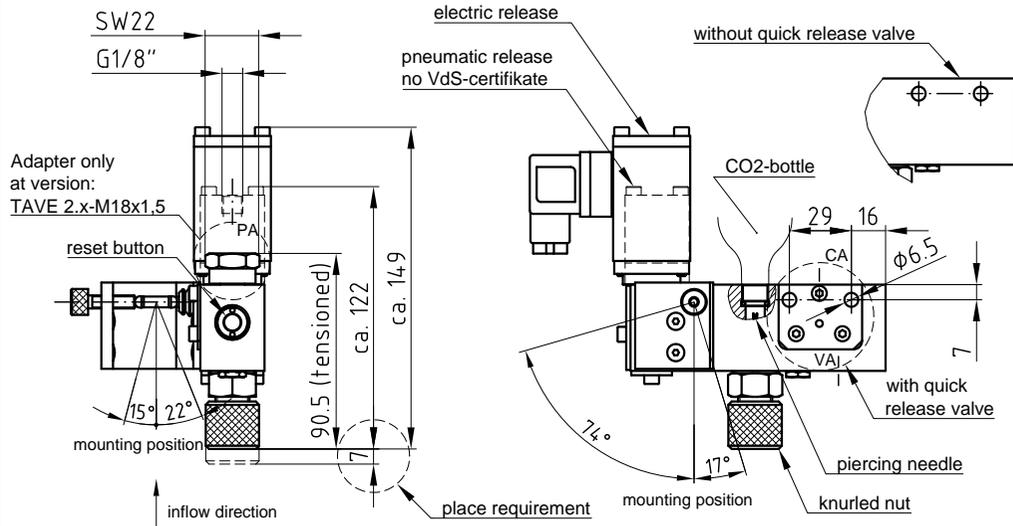
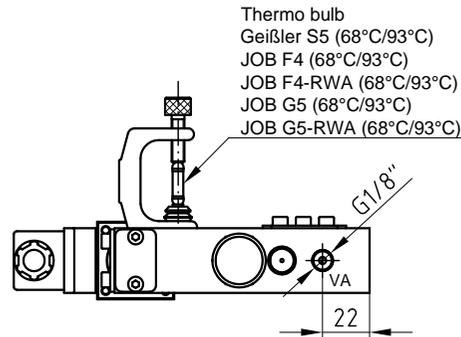


Diagram with PTK 1.01:



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 Die Weiterverwendung oder Vervielfältigung ohne unser schriftliches Einverständnis ist verboten!

GRASL Pneumatic-Mechanik GmbH A-3454 Reidling Europastraße 1		Freimaßtoleranz nach DIN 7168:	Maßstab: 1:1	Werkstoff:
		Datum	ID - Nr.:	
	Bear.	19.11.2008	Bezeichnung:	
	Gepr.	24.08.2017	Data sheet	
	Norm		Thermal release valve (single pipe)	
			TAVE 2.1	
			Zeichnung Nr.:	
02	Text, ETK	04.07.2017	04.016.DAT.00.02-E	
01	Diverse Änderungen	16.02.2010	Blatt	
Zus. Änderung		Datum	Name (Urspr.)	
			TAVE 2	
			Blatt	
			04.016.DAT.00.01	
			(Ers.f.)	
			(Ers.d.)	



Diese Zeichnung ist Eigentum der
Fa. Grasl GmbH A-3454 Reidling, EuropastraÙ 1
Die Weiterverwendung oder Vervielfältigung
ohne unser schriftliches Einverständnis
ist verboten!

Description of function:

The temperature valve TAVE is a releasing valve, which, on the bursting of a thermo bulb or control of the electric releasing (TAVE 2.2, TAVE 2.3) or the pneumatic releasing (TAVE 2.4, TAVE 2.5) taps a CO2-bottle and allows the CO2 to flow to the outlet CA. The thermo bulb bursts at the specified rated temperature with a tolerance of -3°C/+8°C.

In the non-release position the outlet CA is ventilated by the integrated quick release valve. If there is pressure on the input VA (by ventilation- or alarmbox), the input will be connect to the output CA.

Releasing:

- 1) Thermal releasing via bursting of the thermo bulb (all versions)
- 2) Electric releasing via electromagnet (TAVE 2.2, TAVE 2.3)
- 3) Pneumatic releasing: Applying the minimum release pressure on PA (TAVE 2.4, TAVE 2.5 / no VdS-certificate)

Mounting:

- 1) Join connections as follows:
CA ... cylinder OPEN VA ... vent line or CO2 line OPEN
- 2) When using a CO2 one-way bottle the TAVE must be installed as drawn adhering to the inflow direction (screwed in from the top)
- 3) For our 1/8" connection threads we recommend to use screw connections with taper thread and to seal these in position using a liquid sealant (e.g. Loctite 243). It must be ensured that the liquid sealant is applied to the external thread.
- 4) We recommend using CO2 one-way bottles according to drawing No. 03.023.00.* and point out that the VdS-recognition is valid only with these bottles.

Commissioning:

- 1) Fully unscrew knurled nut.
- 2) Insert thermo bulb so that the tip points in the direction of the tension screw (if a thermo bulb is insert, loosen the bulb through the tension screw and afterwards replace it).
- 3) Tighten knurled nut while at the end of the clamping travel (noticeable resistance) the knurled nut has to be turned in approximately 1/2 a turn in addition.
- 3) Fully tighten knurled nut.
- 4) Check if the piercing needle is positioned behind the piercing surface of the bottle screw-in thread.
- 5) Lightly grease the O-ring in the bottle screw-in thread.
- 6) Check if the reset button is in the correct position.
- 7) Screw in CO2-bottle.
- 8) After releasing, repeat process.

Caution:

- After thermo valve release, it is absolutely necessary, to unscrew the knurled nut first and CO2 bottle after.
- Check the compatibility of the thermo bulb and CO2 bottle.
- Dirt is built up by common use of the thermo valve. Therefore it must be cleaned free of deposits (dirt, fragments, etc.) in the thermo bulb holder and in the bottle thread.

Technical data:

max. static housing pressure	80 bar
max. dynamic operating pressure	80 bar
nominal width of valve	2mm
nominal width of piercing needle	2mm
ambient temperature range	-25°C - +110°C
rated voltage	24V (+30% bis -20%) (electric releasing)
current drain at rated voltage	0.29 A (electric releasing)
releasing pressure	min. 6 bar (pneumatic releasing)
VdS approval no. (only by TAVE 2.2/2.3)	G 597018

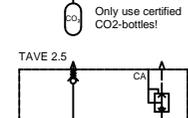
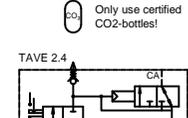
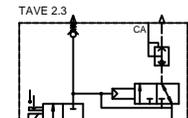
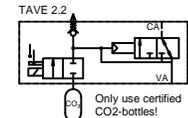
Types:

Type	Bottle screw-in threads A	Quick release valve	Remote control	
TAVE 2.2	1/2" UNF (standard)	no	electric	
TAVE 2.2-M18x1.5	M18x1.5 (adapter)	no	electric	no VdS-certificate
TAVE 2.2-F	W21.8x1/14"	no	electric	
TAVE 2.3	1/2" UNF (standard)	yes	electric	
TAVE 2.3-M18x1.5	M18x1.5 (adapter)	yes	electric	no VdS-certificate
TAVE 2.3-F	W21.8x1/14"	yes	electric	
TAVE 2.4	1/2" UNF (standard)	no	pneumatic	no VdS-certificate
TAVE 2.4-M18x1.5	M18x1.5 (adapter)	no	pneumatic	no VdS-certificate
TAVE 2.4-F	W21.8x1/14"	no	pneumatic	no VdS-certificate
TAVE 2.5	1/2" UNF (standard)	yes	pneumatic	no VdS-certificate
TAVE 2.5-M18x1.5	M18x1.5 (adapter)	yes	pneumatic	no VdS-certificate
TAVE 2.5-F	W21.8x1/14"	yes	pneumatic	no VdS-certificate

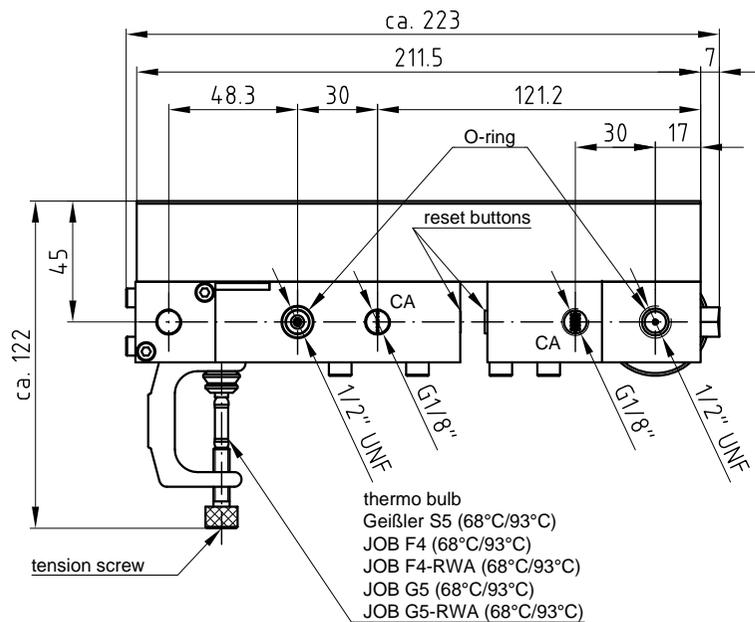
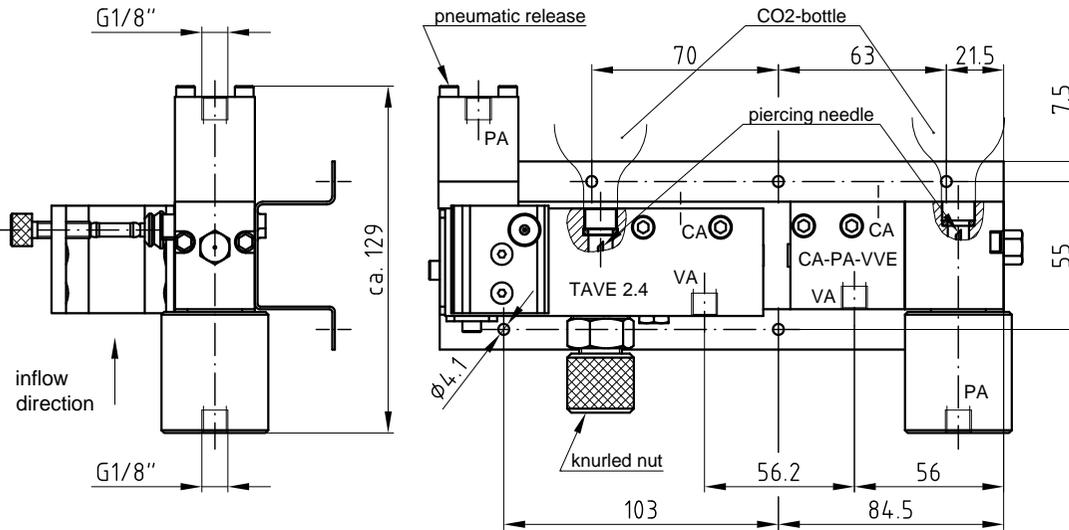
Scope of supply:

Screw connections, thermo bulb and CO2-bottle are NOT included in the scope of supply.

Circuit diagrams:



GRASL Pneumatic-Mechanik GmbH A-3454 Reidling EuropastraÙe 1		Freimaßtoleranz nach DIN 7168:	Maßstab: 1:1	Werkstoff:
			ID - Nr.:	
		Datum	Name	
	Bear.	24.02.2009	Tiefenbacher	
	Gepr.	24.08.2017	HA	
		Norm		
		Type:		Bezeichnung:
		TAVE 2		Data sheet Thermal release valve (single pipe) TAVE 2.2, TAVE 2.3, TAVE 2.4, TAVE 2.5
		Zeichnung Nr.:		Blatt
		04.016.DAT.01.03-E		BL.
Zus.	Änderung	Datum	Name (Urspr.)	(Ers.f.) 04.016.DAT.01.02 (Ers.d.)



Description of function:

The temperature valve TAVE is a releasing valve, which, on the bursting of a thermo bulb or control of the pneumatic releasing taps a CO2-bottle and allows the CO2 to flow to the outlet CA. The thermo bulb bursts at the specified rated temperature with a tolerance of -3°C/+8°C.

In normal state (reset button in drawn position) is a connecting between VA and CA. When the VVE is controlled by the combi release CA-PA (by pressurising the piercing cylinder the screwed in CO2 bottle will be taped and the CO2 flow in the VVE), a connection with CA takes place and the connection VA will be closed.

Releasing:

- 1) Thermal releasing via bursting of the thermo bulb (TAVE)
- 2) Pneumatic releasing via the pneumatic release (PA_TAVE or PA_CA-PA-VVE)

Mounting:

- 1) Join connections as follows:
 CA_TAVE cylinder OPEN VA_TAVE vent line or CO2-line OPEN
 CA_CA-PA-VVE cylinder CLOSE VA_CA-PA vent line or CO2-line CLOSE
- 2) When using a CO2 one-way bottle the assembly must be installed as drawn adhering to the inflow direction (bottle screwed in from the top)
- 3) For our 1/8" connection threads we recommend to use screw connections with taper thread and to seal these in position using a liquid sealant (e.g. Loctite 243). It must be ensured that the liquid sealant is applied to the external thread.
- 4) We recommend using CO2 one-way bottles according to drawing No. 03.023.00.* and point out that the VdS-recognition is valid only with these bottles.

Commissioning TAVE 2.4:

- 1) Fully unscrew knurled nut.
- 2) Insert thermo bulb so that the tip points in the direction of the tension screw (if a thermo bulb is insert, loosen the bulb through the tension screw and afterwards replace it).
- 3) Tighten knurled nut while at the end of the clamping travel (noticeable resistance) the knurled nut has to be turned in approximately 1/2 a turn in addition.
- 4) Fully tighten knurled nut.
- 5) Check if the piercing needle is positioned behind the piercing surface of the bottle screw-in thread.
- 6) Lightly grease the O-ring in the bottle screw-in thread.
- 7) Check if the reset button is in the correct position.
- 8) Screw in CO2-bottle.
- 9) After releasing, repeat process.

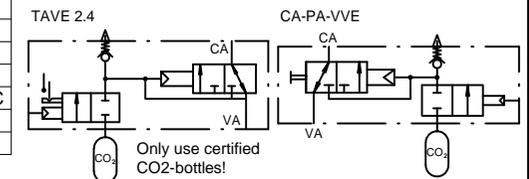
Commissioning CA-PA-VVE:

- 1) Check if the piercing needle is pushed all the way to the stop (make sure that the piercing cylinder is pressureless)
- 2) Lightly grease the O-ring in the bottle screw-in thread.
- 3) Push reset button all the way in. In normal state the reset button stick out approx. 1mm of the housing.
- 4) Screw in CO2-bottle.
- 5) After releasing, repeat process.

Technical data:

max. static housing pressure	80 bar
nominal width TAVE 2.4	2mm
nominal width CA-PA-VVE	4mm
nominal width both piercing needles	2mm
ambient temperature range	-25°C-+110°C
release pressure (pn. release TAVE)	min. 6bar
release pressure (pn. release CA-PA)	8bar

Circuit diagrams:



Scope of supply:

Screw connections, thermo bulb and CO2-bottle are NOT included in the scope of supply.

Tolerance		Scale 1:2		Material	
Created Simetzberger	Sheet 1/2	Format A3	Title TAVE 2.4+CA-PA-VVE		
Approved KW	Issue Date 29.09.2011		Document Style Data sheet		Document State Valid
Grasl Pneumatic Mechanik GmbH			Document Number 04.016.DAT.06.01-E		QM FO 05.24.0