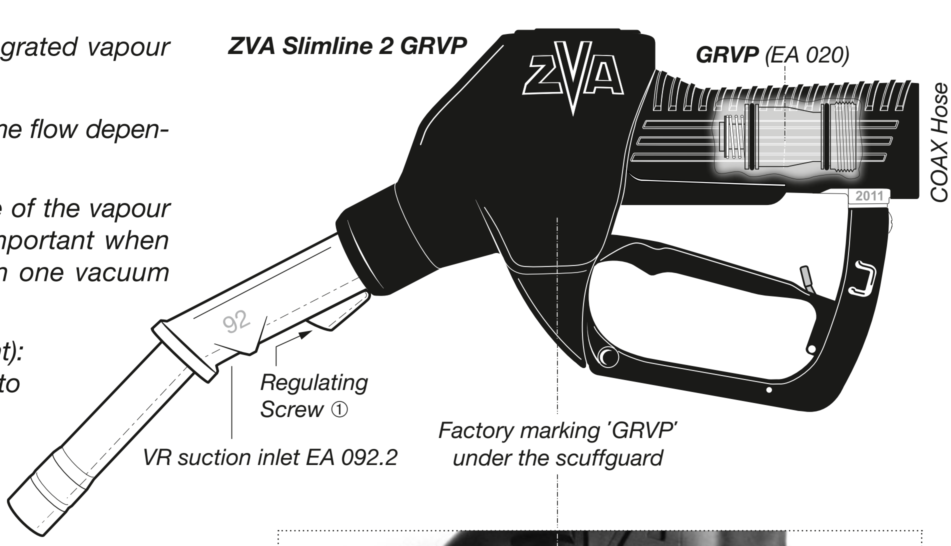
TECHNISCHE ÄNDERUNGEN VORBEHALTEN · NACHDRUCK UND KOPIEN NUR MIT UNSEREM EINVERSTÄNDNIS · *Specifications subject to change without notice · Copyright ELAFLEX*

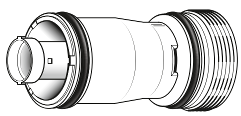
***ZVA Slimline 2 GRVP** with fully integrated vapour regulating valve (proportional valve):*

- *Variable control of the vapour volume flow depending on the fuel flow delivery.*
- *ON/OFF - function: Secure closure of the vapour line when there is no fuel flow. Important when operating two or more hoses with one vacuum pump.*
- *Simple dry test (A/L ratio adjustment): manual opening of the GRVP valve to simulate a 40 l/min fuel delivery. Wet test also possible if required.*
- *No need for additional regulators inside the dispenser. Only a vacuum pump has to be connected. Therefore the GRVP provides an ideal low cost option for retrofitting existing dispensers.*
- *The valve adds only 40 g to the nozzle compared to a standard ZVA Slimline 2 GR. Due to the full integration of the GRVP into the nozzle body the hose length does not have to be corrected.*

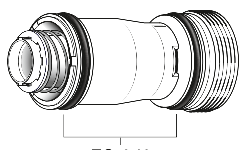


*The **GRVP** (EA 020) replaces the standard vapour valve insert **EK 096**, see left hand side.*

Vapour Valve Insert
(EK 096)



GRVP
(EA 020)



EO 048

*The **GRVP** (EA 020) is supplied ready for installation, pre-adjusted and tested for vapour tightness.*

Only the O-rings are supplied as spare parts. In the case of a malfunction the whole GRVP unit is to be replaced.

MODIFICATION OF ZVA SLIMLINE 2 GR:

If you want to modify an existing ZVA Slimline 2 GR to type GRVP:

*Change the standard vapour recovery suction inlet **EA 092.1** with the GRVP vapour recovery suction inlet **EA 092.2**.*

Remove the strainer from the nozzle and unscrew the vapour valve insert (EK 096) with the tool EW 19-22. After greasing the O-Rings EO 048, screw in the GRVP valve (EA 020) hand-tight into the nozzle body (torque: 8 to 9 Nm). Fit strainer ES 102.4 before connecting to the COAX hose.

Before use check that the fuel area is tight (no dripping from the vapour spout). Leaks may be caused by dirt during assembly or damaged O-rings.

This work should be done in a suitable workshop facility and not in the field.

COMMISSIONING / PUTTING INTO USE:

***ZVA Slimline 2 GRVP** is supplied ready for use and can be directly connected to COAX VR hoses. The vacuum pump manufacturers instructions for the required pump speed to achieve the necessary vapour performance must be observed, as laid down by the TÜV certificate.*

The fuel performance of the dispenser is controlled by using the high latch position on the nozzle and if necessary, reduced to 40 l/min (for example using a bypass valve). Afterwards, the fine tuning of the system is effected by adjustment of the regulating screw ①.

TÜV STAGE II CERTIFICATES:

New system approvals for ZVA Slimline 2 GRVP by the TÜV Süd in use with the following vacuum pumps:

Dürr Typ MEX 0831-11, MEX 0544,
***EN 16321** Certificate No. VR2-1401-141 EU.*

Gardner Denver Thomas 8014-6.0,
***EN 16321** Certificate No. VR2-1401-141 EU.*

All previous approval certificates for ZVA 200 GRVP remain valid also for ZVA Slimline 2 GRVP, by using the supplementary certificate TÜV Süd No. 85-2.xxx.

DRY TEST:

Take the ZVA Slimline 2 GRVP from the nozzle boot. The vacuum pump starts.

*Tightly connect the Elaflex universal connector UMAX 2 onto the vapour spout and connect its hose to the gas meter [**fig.1**].*

Connnect the signal cable of the gas meter to the handheld control. Switch on handheld control. If possible, enter the correction factor of the vapour recovery system (see relevant TÜV certificate).

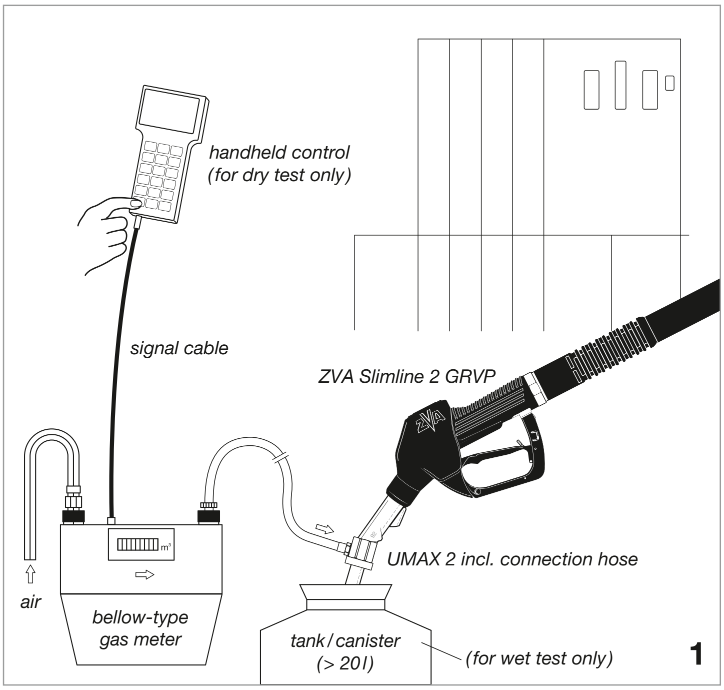
The handheld control is set to simulate the max. volumetric flow authorized for the vapour recovery system (see certificate). After checking the connections to the gas meter and the UMAX 2 connector (visual inspection of the sealing surfaces), the simulation of the petrol flow is started on the handheld control.

*To open the GRVP valve, let the nozzle hang down vertically and make a vertical impact downwards. The valve opens due to gravity [**fig.2**]. In this position, turn the regulation screw with the hexagonal spanner EW SK 3 to adjust the vapour volume rate [**fig.3**].*

***Correction factor** '**k**': As ambient air is sucked in during the dry test, the calculated air volumetric flow must be divided by the correction factor. If this is not already done automatically by the handheld control, the vapour recovery rate is calculated using the following equation:*

$$R = \frac{\bar{Q}_a}{k \cdot \bar{Q}_K}$$

R	*is the pertol vapour/petrol ratio*
$\bar{Q}_a$	*is the calculated air volume flow during the measurement (average value), in l min* $^{-1}$
$\bar{Q}_K$	*is the simulated volume flow, in l min* $^{-1}$
k	*is the correction factor (as specified in the certificate)*



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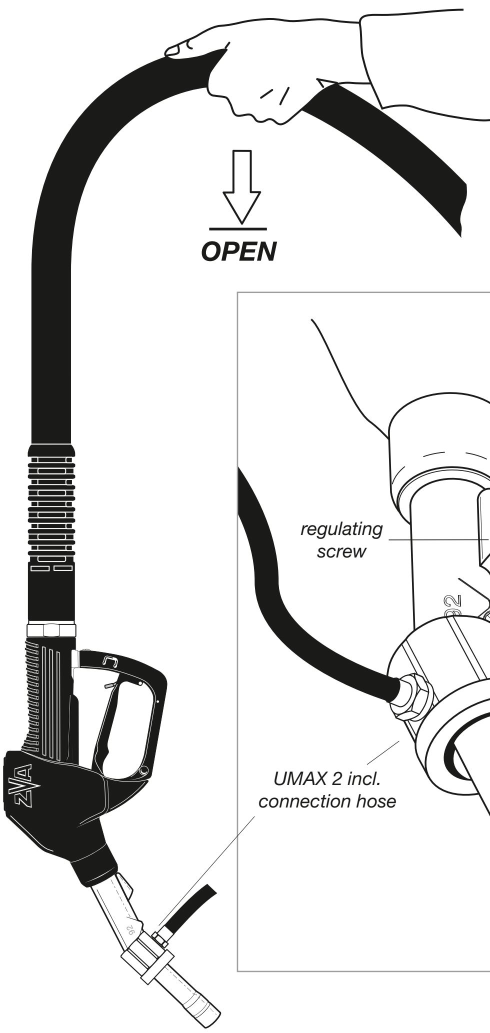

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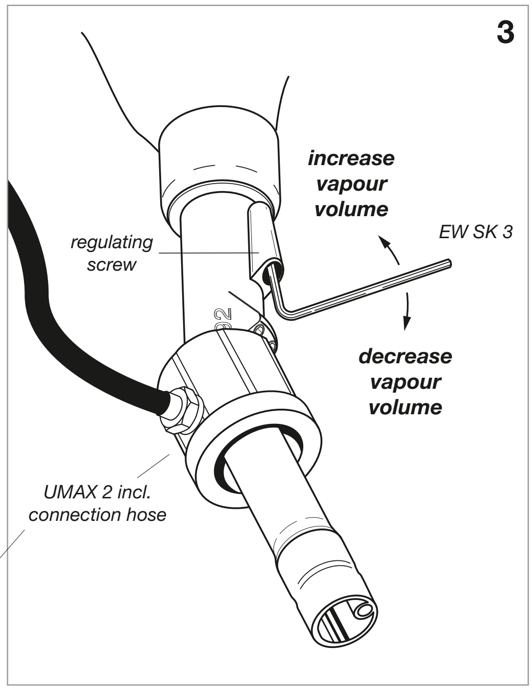

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WET TEST:

Take the ZVA Slimline 2 GRVP from the nozzle boot. The vacuum pump starts.

*Tightly connect the Elaflex universal connector UMAX 2 onto the vapour spout and connect its hose to the gas meter [**fig.1**]. Prevent the vapour recovery from being influenced by the measurement accumulation of liquids in the connecting hose. Please check the connections to the gas meter and the UMAX 2 connector (visual inspection of the sealing surfaces).*

Start measurement with dispensing approx. 20 litres of petrol into a canister.

*The GRVP vapour valve opens due to fuel flow [**fig. 1**]. In this position, turn the regulation screw with the hexagonal spanner EW SK 3 to adjust the vapour volume rate [**fig. 3**].*

*For the **volume measurement method** the display of the gas meter has to be recorded at the start and at the end of the petrol flow. The difference yields the recovered vapour volume. The petrol volume is read out on the calibrated dispenser.*

***Correction factor** '**k**': As ambient air is sucked in during the wet test, the calculated air volumetric flow must be divided by the correction factor. If this is not already done automatically by the handheld control, the vapour recovery rate is calculated using one of the following equations:*

(1) $$R = \frac{V_a}{k \cdot V_K}$$

(2) $$R = \frac{\bar{Q}_a}{k \cdot V_K} \cdot \frac{t}{60}$$

R	*is the petrol vapour/petrol ratio*
V_a	*is the determined air volume in l*
V_K	*is the volume of dispensed petrol during the mearuement in l*
k	*is the correction factor (as specified in the certificate)*
$\bar{Q}_a$	*is the determined air volume flow rate in l min* $^{-1}$ *(mean value)*
t	*is measuring time in s*

For further details please refer to:

VDI 4205 Part 1-3:2003 (German / English)
VdTÜV-Merkblatt Tankanlagen 908 Part 2
and EN 16321-2