vacuubrand

Technology for Vacuum Systems

Instructions for use

VAP 5
DVR 5

Vacuum gauges

LAB Online Exhibition

Operation Manual

knowledge

Action movie

www.1788lab.com E-mail:info@1788lab.com

Dear customer,

Your VACUUBRAND vacuum gauge shall support you at your work for a long time without any trouble and with full load output. Thanks to our large practical experience we attained much information how you could add to an efficient application and to personal safety. Please read these instructions for use prior to the initial start-up of your controller.
VACUUBRAND vacuum gauges are the result of many years of experience in construction and practical operation of these vacuum gauges combined with the latest results in material and manufacturing technology.

Our quality maxim is the ”zero fault principle”:

Every delivered vacuum gauge is tested extensively including an endurance run. Due to this endurance run, also faults, which occur rarely, are reported an can be corrected. Every single vacuum gauge is tested on achievement of the specification after the endurance run.

Every VACUUBRAND controller leaving our factory achieves the specification. We feel obliged to this high quality standard.

We are aware that the controller should not draw a part of the real work and we hope to contribute with our products to an effective and troublefree realisation of your work.

Yours
VACUUBRAND GMBH + CO KG

After sales service: Contact your local dealer or call (++49) 9342/808-193.

Contents

Safety information! 4
Technical data 6
Use and operation 7
Troubleshooting 10
Cleaning the gauge head 11
Readjustment 11
Calibration in the factory 13
Notes on return to the factory 14
Health and safety clearance form 15

Attention! Important notes!

Not permitted! Misuse may cause damage.

Caution! Hot surface!

Isolate equipment from mains.

Note.

Safety information!

Remove all packing materials, remove the equipment from its packing-box, remove the protective covers and inspect the equipment.
If the equipment is damaged, notify the supplier and the carrier in writing within three days; state the item number of the equipment together with the order number and the suppliers´ invoice number. Retain all packing materials for inspection.
Do not use the equipment if it is damaged.

☞ Read this manual before installing or operating the equipment.

Obey **national safety regulations and safety requirements** concerning the use of vacuum and electrical equipment.
☞ Product must be connected only to a suitably fused and protected electrical supply and a suitable earth point. Failure to connect the device to ground may result in deadly electrical shock.
☞ Check that mains voltage and current conform with the product (see rating plate).
☞ Ensure that installation is in compliance with limitations from the degree of protection, see “Technical data“.
☞ The product is equipped with a short circuit proof transformer with an integrated overload protection (no fuses).
Operate the equipment only in combination with VACUUBRAND genuine accessories.
Obey **all other relevant safety requirements** (e. g. accident prevention regulations for working in laboratories and explosion protection guidelines) and provide **protective measures**.

Max. ambient temperature: 40°C
☞ Make sure ventilation is adequate if product is installed in an enclosure or if ambient temperature is elevated.

The devices are **not suitable** when working with **dangerous or explosive gases or explosive or flammable mixtures**. Ensure that the materials of the wetted parts are compatible (see “Technical data“). If necessary adopt suitable measures.
☞ Temperature of the Pirani sensor is about 170°C.
☞ If residues can occur or if aggressive or condensable substances may enter the product, install suitable protection (e. g. gas washing bottle).
☞ Position the product in the vacuum system so as to avoid flow of condensate towards the gauge head.

DVR 5:
Max. permitted pressure: 1.5 bar (absolute).
☞ At a pressure greater than 1060 mbar the digital pressure **display and the warning triangle are flashing**.
Attention: At a pressure greater than 1100 mbar the pressure measurement is incorrect (saturation limit of the pressure transducer).

VAP 5:
Max. permitted pressure: 1.5 bar (absolute).
Exclude sudden pressure changes when gauge head is operated.
☞ Pirani filament can be destroyed.
Ensure that the gauge head is electroconductively connected to an earthing wire when the Pirani sensor is exposed to charged particles (ion-beam, plasma).
☞ Use only electroconductive centring/clamping rings. Do not connect the gauge head via a nonconductive hose.

Ensure that maintenance is done only by suitably trained and supervised technicians.
Ensure that the maintenance technician is familiar with the safety procedures which relate to the equipment processed by the vacuum system and that the equipment if necessary is approximately decontaminated before starting maintenance.
Use only **genuine spare parts and accessories**.

☞ Otherwise safety and performance of the equipment as well as the electromagnetic compatibility of the equipment might be reduced.

Return of the equipment to the factory for repair, the manufacturer accepts warranty only if housing has not been opened.
Repair of the gauge head VSP 5 and VSK 5 is not possible.
In order to comply with law (occupational, health and safety regulations and regulations for environmental protection) products returned to the manufacturer can be **repaired / DKD calibrated** only when following certain procedures (see section "**Notes on return to the factory**").

Technical data

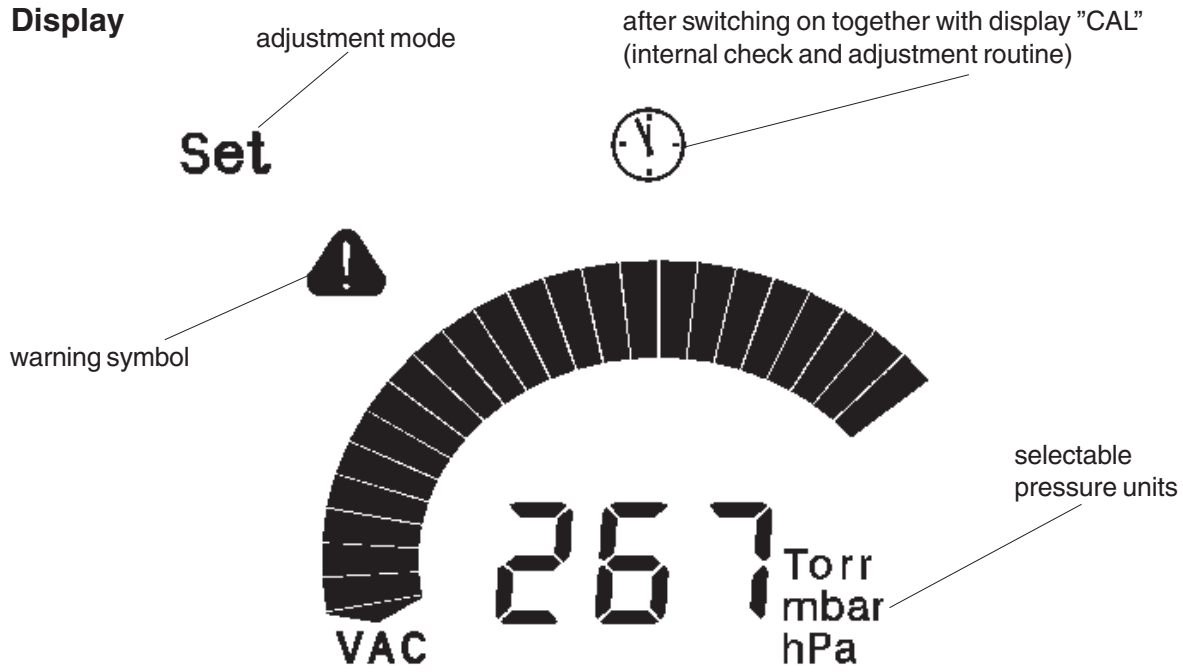
Type	VAP 5	DVR 5
Measuring range	1000 mbar - 10^{-3} mbar	1100 mbar - 0.1 mbar
Measuring principle	thermal conduction, dependent on gas type	capacitive, independent of gas type
Uncertainty (after careful adjustment, at constant temperature and with new, not contaminated gauge head)	+/- 10% (of indicated value, within 100 mbar - 10^{-2} mbar range)	</= +/- 1 mbar (+/- 1 digit)
Temperature coefficient	not specified	< 0.07 mbar / K
Ambient temperature range (operation)	+ 10°C to + 40°C	+ 10°C to + 40°C
Ambient temperature range (storage)	- 10°C to + 60°C	- 10°C to + 60°C
Mains supply (see rating plate)	100-120 V~, +5/-10%, 50-60 Hz or 230 V~, +/-10%, 50-60 Hz	100-120 V~, +5/-10%, 50-60 Hz or 230 V~, +/-10%, 50-60 Hz
Degree of protection IEC 529 Measuring instrument Gauge head	 IP 20 IP 40	 IP 20 IP 54
Power draw	7.5 VA	7.5 VA
Pressure units/scale	mbar, Torr or hPa	mbar, Torr or hPa
Mass Measuring instrument Gauge head	 1.3 kg 0.15 kg	 1.3 kg 0.5 kg
Dimensions L x W x H	197 mm x 132 mm x 87 mm	197 mm x 132 mm x 87 mm
Stand mounting (included)	screw in rod: diameter 1/2" M8 (for standard lab clamps)	screw in rod: diameter 1/2" M8 (for standard lab clamps)
Gauge head	VSP 5	VSK 5
Vacuum connection of the gauge head	small flange NW 10 / hose NW 8 (push on)	small flange NW 16 and screw-in stepped hose nozzle
Length of leads to the gauge head	approx. 2 m	approx. 2.5 m
Interface	-	RS 232C

Components	Wetted parts
VSP 5	
Filament	Tungsten, spiralled
Gauge head, inside	Aluminium (AlMgSi)
Sealing of electrical feed through	FPM
Protective filter	Sintered bronze
VSK 5	
Sealings	chemically resistant fluoroelastomer
Gauge head housing	Duroplastic reinforced PTFE on stainless steel
Pressure transducer	Aluminium oxide ceramic
Hose nozzle	PPS

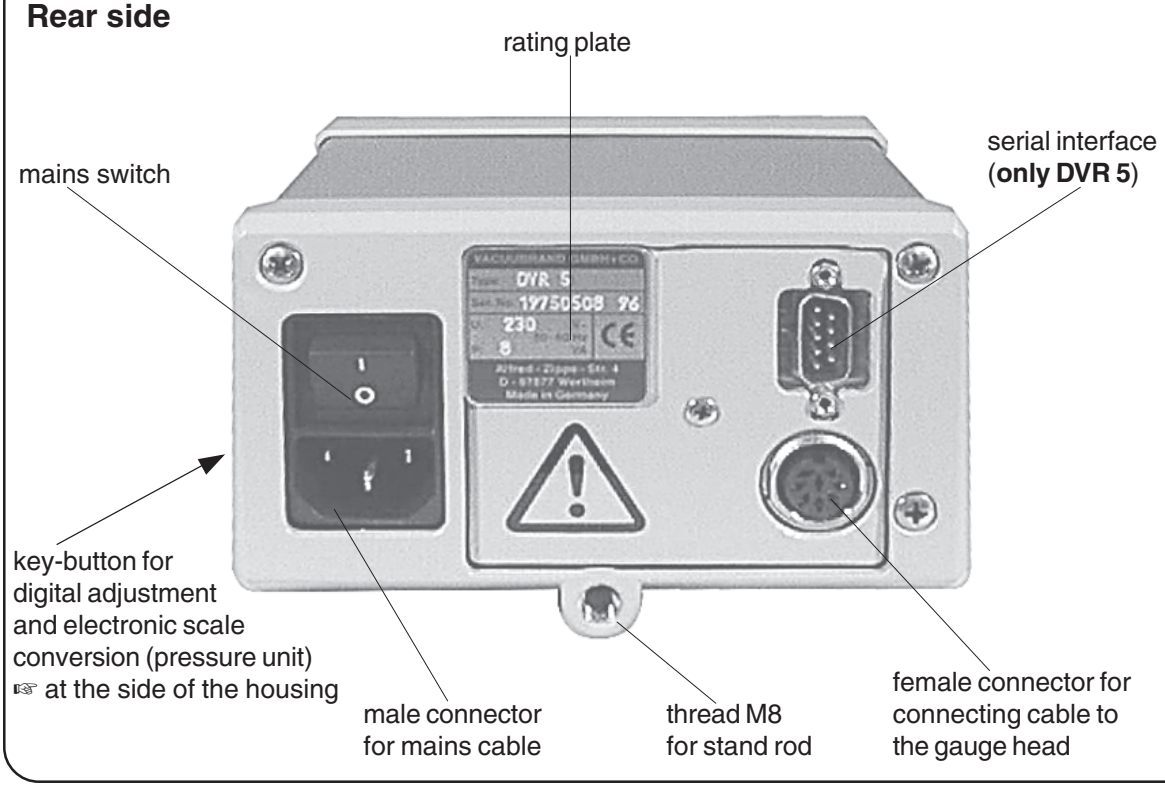
We reserve the right for technical modification without prior notice!

Use and operation

Display



Rear side



Description VAP 5

The vacuum gauge VAP 5 relies on the fact that the thermal conductivity of the residual gas in the vacuum chamber is a measure for the gas pressure. The thermal conductivity of gases is proportional to the pressure within a certain range and is related to the molecular mass.
The thermal conductivity of gases and vapours varies with their molecular mass. The gauge has been adjusted for air (nitrogen) at the factory.

☞ Pressure of gases with similar mass, such as O_2 or CO, can be read off directly within the uncertainty of the measurement.
☞ With gases of lower or higher mass (H_2, He, Ar, CO_2) it is advisable to readjust the gauge head, primarily at atmospheric pressure, using the gas to be measured, see section “Readjusting the gauge head“.

Description DVR 5

The DVR 5 is equipped with a ceramic pressure transducer to measure the actual pressure according to the capacitive principle of measurement independent of the gas type and depending on the vacuum, i. e. absolute. Electrically, the pressure transducer corresponds to a plate capacitor. A change in capacity indicates a pressure change.
The pressure value is displayed with a resolution of 0.1 mbar in the range of 0.1 to 10 mbar and with a resolution of 1 mbar for pressures > 10 mbar.

Preparing for operation

➨ Connect gauge head with connecting cable to the female connector at the rear side of the equipment. Screw the plug into the female connector.
➨ Connect the gauge head to the vacuum chamber via the small flange connection or a hose nozzle. Avoid contamination (oil/oil mist) of the gauge head when generating the vacuum with an oil-filled vacuum pump.
☞ Do not mount the gauge head directly at the pump. The diameter of the pipelines should be as large as possible.
➨ Switch on the equipment.
☞ After switching on the vacuum gauge, an internal check and adjustment routine starts automatically (indicated by the clock symbol and “CAL“ in the display).

How to change the pressure unit

The vacuum gauge comes switched to the mbar-scale (230 V version) or Torr-scale (110 V version). To convert reading to mbar, Torr or hPa:

➨ Press key-button by using a small screwdriver or the tip of a pencil (and hold) during switching on.
➨ “Set“ and the pressure units (mbar, Torr, hPa) are displayed, the pressure unit as from last operation is flashing.
➨ Press key-button to change pressure unit. Approximately 2 sec. after the last tip the mode is terminated.

Serial interface

The vacuum gauge **DVR 5** is equipped with a serial interface at the rear side of the housing.

☞ Respectively plug-into or remove the cable from the interface (cable RS 232C, 9-pole, Sub-D) only if the equipment is switched off.
☞ The interface is not electrically isolated from the measuring circuit.

Interface parameters

Interface parameters at the COM port have to be set as follows (the interface parameters at the DVR 5 cannot be changed):

Interface parameter	
Baud rate	9600
Data bits	8
Start bits	1
Stop bits	1
Parity	none
Handshake	none

Via the interface the actual pressure value can be read out.

Interface command	
"IN_PV_1<CR><LF>"	readout of pressure value

Output	
"XXXX.X [unit]<CR><LF>"	resolution of 0.1 mbar (complete measuring range)
"-1<CR><LF>"	in case of fault (malfunction indicator pressure transducer)

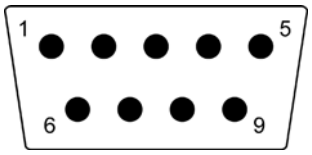
Units: MBAR, TORR, HPA

The single abbreviations of a command are separated by underscores (ASCII 5FH). The string is terminated with <CR><LF> (ASCII 0DH, ASCII 0AH).

Connector assignment:

(nine-pole Sub-D-plug)

2: RxD
3: TxD
4: DTR
5: GND



Troubleshooting

Fault	Possible cause	Remedy
❑ No display.	➔ Mains not plugged in, no power available?	☞ Insert mains plug, check mains fuses.
	➔ Other causes (device defective)?	☞ Return the device to the factory for repair.
❑ Display is alternating on/off, internal overload protection becomes actuated.	➔ Thermal overload, is ambient temperature too high?	☞ Make sure ventilation is adequate.
	➔ Other causes (device defective)?	☞ Return the device to the factory for repair.
❑ Malfunction indicator pressure transducer (warning triangle is flashing, "Err" is displayed).	➔ Gauge head not connected?	☞ Connect gauge head.
	➔ Pressure transducer or connecting cable defective?	☞ Replace gauge head or connecting cable if necessary.
❑ The pressure reading is too high in the low pressure range.	➔ Protective filter in gauge head **VSP 5** clogged?	☞ Clean protective filter or use new one if necessary.
	➔ Gauge head contaminated?	☞ Clean gauge head and readjust.
	➔ Adjustment is wrong?	☞ Readjust gauge head.
	➔ Poor electrical contact between gauge head and measuring instrument?	☞ Clean socket pins of the cable.
❑ The pressure reading is too low at atmospheric pressure.	➔ Misadjusted gauge head?	☞ Readjust gauge head.
	➔ **Only VAP 5**: Gases different from air or nitrogen?	☞ Readjust gauge head at atmospheric pressure with the gas.
❑ Displayed pressure is fluctuating.	➔ Pressure fluctuation due to the set-up of the vacuum system?	☞ No measuring fault, check and change set-up of the vacuum system if necessary.
	➔ Plug from the gauge head not correctly screwed in?	☞ Screw plug into female connector.
	➔ Malfunction due to the interface at the **DVR 5** (too high interference)?	☞ Eliminate source of interference or use interface filter.
	➔ Position of the gauge head **VSK 5** has been changed (e. g. from horizontal to vertical)? Fluctuation of the displayed pressure in the range of 0.2 - 0.4 mbar?	☞ Readjust if necessary (if exact pressure indication is required).

Instructions for repair with directions for repair and spare parts list is available on request.
☞ The instructions are for trained service people.

Cleaning the gauge head

The gauge itself is maintenance-free.

- **Only VSP 5**: Using small screw driver or pencil tip, release locking ring in gauge head connection and remove protective filter with shim, keep locking ring.
- Fill the gauge head chamber with a solvent (e. g. benzene) and allow sufficient cleaning time. Observe all regulations concerning usage and disposal of solvents!
- Drain the solvent and dispose of in accordance with regulations, repeat cleaning if necessary.
- Rinse the gauge head chamber several times with alcohol in order to remove all solvent residues.
- Allow the pressure transducer to dry.
- **Only VSP 5:** Assemble protective filter and locking ring, replace protective filter if necessary.
- Readjust gauge head if necessary.

Note:
The gauge head **VSP 5** can be used without protective filter, if only the protective filter is not compatible with the pumped media (see “Technical data“).

If the vacuum system is contaminated (oil, particles etc.):
☞ Replace the protective filter (cat. no.: 63 87 29) in the gauge head VSP 5 if necessary.
- Using small screw driver or pencil tip, release locking ring in gauge head connection and remove protective filter with shim, keep locking ring.

Readjustment

Readjusting the gauge head VSP 5

Readjustment at atmospheric pressure can be performed easily. Readjustment “vacuum“ at a pressure < 5 x 10^{-4} mbar should only be performed, if that vacuum range can be reached with a vacuum pump available. Readjustment under vacuum is only necessary when, due to aging or contamination of the filament, incorrect readings are observed. Clean a contaminated gauge head prior to readjustment.

Adjustment at atmospheric pressure:

- Vent vacuum system or gauge head, make sure, that gauge head is exposed to atmospheric pressure.
- Push key-button at the side of the housing with a pencil tip or a small screw driver. Status indication adjustment (”Set”) is displayed.
- Push key-button again in order to adjust pressure reading to atmospheric pressure. Status indication adjustment vanishes.

Adjustment under vacuum:

- Evacuate gauge head to a **pressure < 5 x 10^{-4} mbar**. Status indication vacuum is displayed.
  Note: *Adjustment under vacuum with an actual pressure > 5 x 10^{-4} mbar reduces the accuracy of the measurement.*
- Push key-button at the side of the housing with a pencil tip or a small screwdriver. Status indication readjustment is displayed.
- Push key-button again in order to adjust pressure reading to 1 x 10^{-3} mbar. Status indication readjustment vanishes.
  Note: *If the warning triangle flashes three times, the gauge head is exposed to a pressure where readjustment is not possible. Push key-button again to stop readjustment operation. Vent or evacuate the vacuum system in order to adjust required pressure. If due to aging or contamination an old gauge cannot be adjusted, replace gauge head.*

Adjustment to a factory-set reference pressure:

Instead of adjustment under vacuum, adjustment to a factory-set reference pressure is possible.
The reference mark is only valid, if a **new** clean gauge head is used, otherwise readjustment may reduce the accuracy of measurement. Proceed only if a pressure < 5 x 10^{-4} mbar cannot be achieved, i. e. if a suitable vacuum pump is not available.
Note: If due to aging or contamination an old gauge cannot be adjusted under vacuum, replace gauge head.

- Push key-button at the side of the housing with a pencil tip or a small screwdriver. Status indication readjustment (”Set”) is displayed.
- Disconnect leads from housing connector. The warning triangle flashes.
- Push key-button again in order to adjust pressure reading to the factory-set reference mark as adjustment under vacuum. Status indication readjustment vanishes.
- Insert leads into housing connector. The warning triangle vanishes.

Adjustment of the pressure transducer VSK 5

The device has been adjusted at the factory. In general there is no need for readjustment by the user because of the excellent longtime stability.
Depending on operation conditions, type of application and accuracy requirements, an inspection and readjustment may become necessary.

Adjustment at atmospheric pressure:

- Admit air to the vacuum gauge. Make sure that the vacuum connection at the vacuum gauge is at atmospheric pressure
  Note: To determine the exact actual pressure, *use an accurate barometer or get accurate reading from the weather service, e. g. next airport..... (take into account the difference in altitude between e. g. airport and laboratory).*
- Push key-button at the side of the housing by using a pencil tip or a small screwdriver. Status indication readjustment (”Set”) and the actual pressure are displayed.
- With a second tip within two seconds or continuous pressing, a pressure range from 700 to 1060 mbar is running. Use the key-button to adjust the display to actual atmospheric pressure (short tips in steps of 1 mbar). When the key-button is released, the adjustment mode is terminated and the selected pressure value is stored automatically.

Adjustment under vacuum:

- Evacuate the device to a pressure **< 5 x 10^{-2} mbar.**
  Note: *Adjustment under vacuum with an actual pressure higher than 5 x 10^{-2} mbar reduces the accuracy of measurement. If the pressure is significantly higher than 5 x 10^{-2} mbar, adjustment to a reference pressure is recommended.*
- Push key-button at the side of the housing by using a pencil tip or a small screwdriver. The reading is automatically adjusted to “zero“.

Adjustment to a reference pressure:

- Evacuate the vacuum gauge to an exactly known reference pressure within the range of 0.....10 mbar.
  Note: *The **accuracy of the value of the reference pressure** will directly affect the accuracy of the measurement.*
- Push key-button at the side of the housing by using a pencil tip or a small screwdriver. The reading is automatically adjusted to “zero“.
- Use the key-button to adjust the display to the reference pressure at the vacuum line within the range of **0.....10 mbar**.
  Note: *If the nominal ultimate vacuum of a diaphragm pump is used as reference vacuum, the accuracy of adjustment might be doubtful. The diaphragm pump may not achieve the specified value (due to condensate, poor state, failure of the valves or the diaphragm).*

Calibration in the factory

Control of measuring equipment

The **VACUUBRAND DKD calibration laboratory** is accredited by the Physikalisch-Technische Bundesanstalt (PTB; German national institute for science and technology and the highest technical authority of the Federal Republic of Germany for the field of meteorology and certain sectors of safety engineering) for the measurable variable **pressure in the pressure range from 10^{-3} mbar to 1000 mbar** in accordance with the general criteria for the operation of testing laboratories defined in the standard EN ISO/IEC 17025:2000. Calibration in the VACUUBRAND calibration laboratory:

- To meet the requirements of the DIN ISO 9000ff and 10012 series of standards regarding the calibration of inspection, measuring and test equipment at specified intervals.
- To document that the vacuum gauges calibrated are traceable to national standards of the PTB.

Notes on return to the factory

Repair - return - DKD calibration

Safety and health of our staff, laws and regulations regarding the handling of dangerous goods, occupational health and safety regulations and regulations regarding safe disposal of waste require that for all pumps and other products the **"Health and safety clearance form"**
must be send to our office duly completed and signed before any equipment is dispatched to our premises.
Fax or post a completed copy of the health and safety clearance form to us in advance. The declaration must arrive before the equipment. Enclose a second completed copy with the product. If the equipment is contaminated you must notify the carrier.
No repair / DKD calibration is possible unless the correctly completed form is returned. Inevitably, there will be a delay in processing the equipment if information is missing or if this procedure is not obeyed.
If the product has come in contact with chemicals, radioactive substances or other substances dangerous to health or environment, the product must be decontaminated prior to **sending it back to the factory.**

- ☞ Return the product to us **disassembled and cleaned** and accompanied by a certificate verifying decontamination or
- ☞ Contact an industrial cleaning and **decontamination service** directly or
- ☞ Authorize us to send the product to an industrial cleaning facility **at your expense.**

To expedite repair and to reduce costs, please enclose a detailed description of the problem and the product´s operating conditions with every product returned for repair.
We submit **quotations** only on request and always at the customer´s expense. If an order is given, the costs incurred are offset from the costs for repair or from the purchase price, if the customer prefers to buy a new product instead of repairing the defective one.

- ☞ **If you do not wish a repair on the basis of our quotation, the equipment might be returned to you disassembled and at your charge!**

In many cases, the **components must be cleaned in the factory** prior to repair.
For cleaning we use an environmentally responsible water based process. Unfortunately the combined attack of elevated temperature, cleaning agent, ultrasonic treatment and mechanical stress (from pressurised water) may result in damage to the paint. Please mark in the health and safety clearance form if you wish a **repaint at your expense** just in case such a damage should occur.
We also replace parts due to optical aspects upon your request.
Before returning the equipment ensure that (if applicable):

- ☞ Oil has been drained and an adequate quantity of fresh oil has been filled in to protect against corrosion.
- ☞ Equipment has been cleaned and/or decontaminated.
- ☞ All inlet and outlet ports have been sealed.
- ☞ Equipment has been properly packed, if necessary, please order an original packaging (costs will be charged), marked as appropriate and the carrier has been notified.
- ☞ Ensure that the completed health and safety declaration is enclosed.

We hope for your understanding for these measures, which are beyond our control.

Scrapping and waste disposal:
Dispose of the equipment and any components removed from it safely in accordance with all local and national safety and environmental requirements. Particular care must be taken with components and waste oil which have been contaminated with dangerous substances from the process. Do not incinerate fluoroelastomer seals and "O" rings.

- ☞ You may authorize us to dispose of the equipment **at your expense.**

Health and safety clearance form

Declaration concerning safety, potential hazards and safe disposal of waste, e. g. used oil.
Safety and health of our staff, laws and regulations regarding the handling of dangerous goods, occupational health and safety regulations, safety at work laws and regulations regarding safe disposal of waste, e. g. waste oil, require that for all pumps and other products this form must be send to our office duly completed and signed before any equipment is dispatched to our premises. **Products will not be accepted for any procedure and handling and repair / DKD calibration will not start before we have received this declaration.**

a) Fax or post a **completed copy of this form** to us in advance. The declaration must arrive before the equipment. **Enclose a second, completed copy with the product.** If the product is contaminated you must notify the carrier (**GGVE, GGVS, RID, ADR**).
b) Inevitably, the repair process will be delayed considerably, if this information is missing or this procedure is not obeyed. We hope for your understanding for these measures which are beyond our control and that you will assist us in expediting the repair procedure.
c) **Make sure that you know all about the substances which have been in contact with the equipment and that all questions have been answered correctly and in detail.**

1. Product (Model): .....

2. Serial No.: .....

3. List of substances in contact with the equipment or reaction products:

3.1 Chemical/substance name, chemical symbol:

a) .....

b) .....

c) .....

d) .....

3.2 Important informations and precautions, e. g. danger classification:

a) .....

b) .....

c) .....

d) .....

4. Declaration (please mark as applicable):

❑ **4.1 for non dangerous goods:**

We assure for the returned product that
- neither toxic, corrosive, biologically active, explosive, radioactive nor contamination dangerous in any way has occurred.
- the product is free of dangerous substances.
- the oil or residues of pumped media have been drained.

❑ **4.2 for dangerous goods:**

We assure for the returned product that
- all substances, toxic, corrosive, biologically active, explosive, radioactive or dangerous in any way which have pumped or been in contact with the product are listed in 3.1, that the information is complete and that we have not withheld any information.
- the product, in accordance with regulations, has been
  ❑ cleaned ❑ decontaminated ❑ sterilized.

5. Way of transport / carrier:

.....

Day of dispatch to VACUUBRAND:

.....

If the paint is damaged, we wish a repaint or a replacement of parts due to optical aspects at our expense (see "Notes on return to the factory"):

❑ yes ❑ no

We declare that the following measures - where applicable - have been taken:
- The oil has been drained from the product. **Important: Dispose of according to national regulations.**
- The interior of the product has been cleaned.
- All inlet and outlet ports of the product have been sealed.
- The product has been properly packed, if necessary, please order an original packaging (costs will be charged) and marked as appropriate.
- The carrier has been informed about the hazardous nature of the goods (if applicable).

We assure VACUUBRAND that we accept liability for any damage caused by providing incomplete or incorrect information and that we shall indemnify VACUUBRAND from any claims as regards damages from third parties.

We are aware that as expressed in § 823 BGB (Public Law Code of Germany) we are directly liable for injuries or damages suffered by third parties, particularly VACUUBRAND employees occupied with handling/ repairing the product.

Signature: .....

Name (print): .....

Job title (print): .....

Company´s seal: .....

Date: .....

VACUUBRAND GMBH + CO KG
-Technology for Vacuum Systems-

Alfred-Zippe-Str. 4 - 97877 Wertheim
Tel.: +49 9342 808-0 - Fax: +49 9342 808-450
E-Mail: info@vacuubrand.de
Web: www.vacuubrand.com

CE

Konformitätserklärung
Declaration of conformity
Déclaration de conformité

Vakuum-Controller / Vacuum controller / Régulateur de vide

DVR 5 (68 29 10, 68 29 11, 68 29 12) 230V
VAP 5 (68 28 50, 68 28 58, 68 28 81, 68 28 80) 230V

Hiermit erklären wir, dass das oben bezeichnete Gerät in Konzeption und Bauart sowie in der von uns in Verkehr gebrachten Ausführung den grundlegenden Anforderungen der zutreffenden, aufgeführten EU-Richtlinien entspricht. Bei einer mit uns nicht abgestimmten Änderung an dem Gerät verliert diese Erklärung ihre Gültigkeit.
We herewith declare that the product designated above is in compliance with the basic requirements of the applicable EC-directives stated below with regard to design, type and model sold by us. This certificate ceases to be valid if the product is modified without the agreement of the manufacturer.
Par la présente, nous déclarons que le dispositif désigné ci-dessus est conforme aux prescriptions de base des directives EU applicables et indiqués en ci que concerne conception, dessin et modèle vendu par nous-mêmes. Cette déclaration cesse d´être valable si des modifications sont apportées au dispositif sans notre autorisation préalable.

Niederspannungsrichtlinie / Low-Voltage Directive / Directive Basse Tension
2006/95/EG
Richtlinie Elektromagnetische Verträglichkeit / Electromagnetic Compatibility Directive / Directive Compatibilité Electromagnétique
89/336/EWG, 92/31/EWG, 93/68/EWG
Angewandte Harmonisierte Normen / Harmonized Standards applied / Normes Harmonisées utilisées
DIN EN 61010-1, DIN EN 61326
Managementsysteme / Management systems / Systèmes de Management
EN ISO 9001, EN ISO 14001(1997 - 2006)

Wertheim, 20.03.2007
. . . . . .
Ort, Datum / place, date / lieu, date

Dr. Lachenmann
. . . . . .
(Dr. R. Lachenmann)
Geschäftsführer / Managing director / Gérant

VACUUBRAND GMBH + CO KG
-Vakuumtechnik im System-
-Technology for Vacuum Systems-
-Technologie pour système à vide-
D-97866 Wertheim
Postfach / P. O. Box / B. P. 1664
D-97877 Wertheim
Alfred-Zippe-Str. 4

vacuubrand

Dr. Bu

Disclaimer: Our technical literature is only intended to inform our customer. The validity of general empirical values and results obtained under test conditions for specific applications depend on a number of factors beyond our control. It is therefore strictly the users´ responsibility to very carefully check the validity of application to their specific requirements. No claims arising from the information provided in this literature will, consequently, be entertained.

VACUUBRAND GMBH + CO KG
-Technology for Vacuum Systems-

Alfred-Zippe-Str. 4 - 97877 Wertheim
Tel.: +49 9342 808-0 - Fax: +49 9342 808-450
E-Mail: info@vacuubrand.de
Web: www.vacuubrand.com