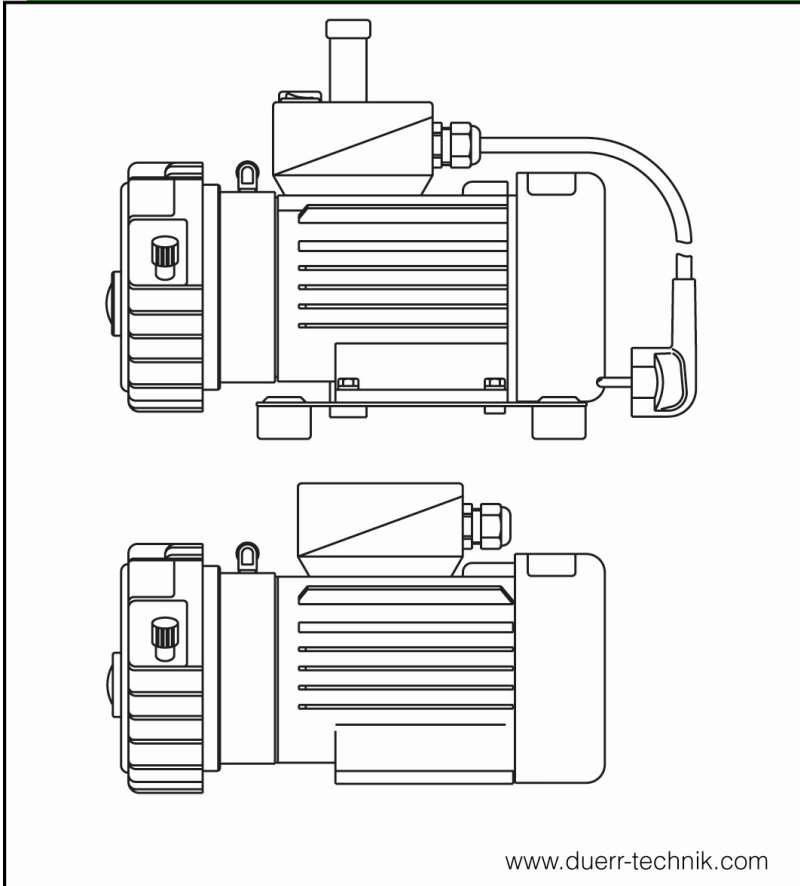


GB

OPERATING INSTRUCTIONS OIL LUBRICATED VACUUM PUMPS RANGE GA



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The use of brand name, trade name, trademark etc. in this manual is covered by trademark protection legislation and must not be assumed to be free use.

These operating instructions correspond with the technical standard of our appliances, subject to alteration and errors accepted.

The present operating instructions give you all the necessary advice for the proper and safe handling of the oil lubricated vacuum pumps range GA.

Please read and carefully observe the operating instructions to avoid mistakes and dangerous situations.

The operating instructions are arranged as follows:

Chapter	Planned purpose	Target group
Chapter 1	Gives you safety advice and important general information for the appliance.	Installer, operator, qualified personnel, user
Chapter 2	Contains detailed instructions and advice for the transport, storage, installation and the initial operation of the appliance.	Operator, installer and qualified personnel
Chapter 3	Contains instruction and advice for safe technical handling of the appliance.	User
Chapter 4-5	Gives detailed instruction for cleaning, maintenance and servicing the appliance.	Operator, qualified personnel
Appendix	In the appendix you will find important technical information.	Qualified personnel

PREFACE

These operating instructions are valid for oil lubricated vacuum pumps range GA hereinafter called product.

The operating manual is only valid so long as your product complies with the status described within.

These instructions contain all details required for the transport, installation, operation, shut-down and maintenance of these products.

Therefore please read the operating instructions carefully prior to the first operation, thus ensuring the safe and economic application of the products.

When a fault occurs or maintenance is required which is not dealt with in the operating manual, you should contact our qualified personnel.

All service and maintenance work must be carried out by qualified personnel. If service and maintenance work is neglected or carried out improperly, our warranty will be invalidated.

Should you have any problems understanding the operating instructions our qualified personnel will be pleased to help you.

Dürr Group

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1. INTRODUCTION AND GENERAL ADVICE


1.1 Symbol explanation and definition


1.1.1 Symbol explanation


In the manual and on the product hand symbols and pictograms are used whose meaning you should memorise. These symbols help you to understand the information in this manual quicker and make you aware of potential danger or important advice.


 Attention! Danger sign. It points out danger as well as rules and bans to prevent personal and /or danger to property.

 Advice! Attention is brought to advise on the handling and economic use of product.

 Warning against electric energy! Your life could be in danger. Make sure that all electrical work is carried out by a qualified electrician.

 Warning advice. The product can start without warning!

 Warning of hot surfaces! There is a danger of burns! Observe especially that these surfaces may still be hot after the product has been switched off. Work near these surfaces only after they have cooled off.

 CE Conformity symbol. It can be recognised by this conformity symbol that the appliance corresponds to the safety guidelines of the European Union.

1.1.2 Definitions

User, Operator: The responsible Person who has the authorisation to use the product. The user must have been given

instructions on the safe handling of the unit from the appropriate authority.

Operator Authority: Responsible for the safe installation, regular servicing and cleaning of the product.


Qualified personnel: Trained by the operating authority or by authorised Dürr Technik personnel who are aware of the dangers of the product and familiar with the technical aspects of the product. Qualified personnel are trained to carry out service and repair on the product.


Product: General term used for the oil-lubricated vacuum pump, range GA. This can be both an product for installation in machines as well as a ready-to-use product.

Product for installation in machines: In these sections of the texts, particular points of products for installation in machines are described.

1.2 General safety advice

During use, care and maintenance of the product, the following fundamental safety measures must be observed for the protection of the operator, maintenance and service engineers as well as the product:

 During the development and manufacture of the product, the recognised regulations of the technical aspects, as well as the recognised valid standards and guide-lines were taken into account and used. In addition the product has been designed and constructed in such a way that endangerment through the agreed use are minimized. Nonetheless we feel obliged to describe the following safety measures so the remaining dangers can also be minimized.

 **Warning!** When electrical equipment is being used, the basic safety precautions must be followed, to prevent risk of fire, electric shock and personal injury.



Therefore please read the manual to hand, prior to starting work. Keep this manual within reach for the engineer and the operator. The information should be passed on to any successor.

During operation of the products the relevant laws and regulations for the place of deployment must be observed! In the interest of safe operation the authorised operator and the supervisory personnel are responsible for keeping within the regulations.

Check during all work on the product for possible dangers. All parts must be correctly fitted and all requirements fulfilled to ensure safe operation. Should the product be damaged in any way, the product should no longer be used. The product should only be repaired by experts. Mark the defect clearly and pull out the mains plug, so that until the repair is effected, no accidents or damage can develop through the defective product.



Take account of environmental influences! Do not operate the product in a wet or damp environment.

Do not use the power connection line for purposes it was not meant for. Do not pull the plug out of the socket by the cable. Only pull the plug from the socket by pulling the plug casing. Protect the cable against heat, oil and sharp edges.



In dangerous situations or during technical problems, separate the product at once from the power supply (pull the plug).

Check regularly the power supply cable and the casings of electrical components and if they are damaged, have them repaired by a qualified electrician.

Check the electrical equipment for external damage before work starts. Check thoroughly whether lines or cables are

damaged. If there is damage, do not operate the product.



If there is damage, do not operate the product. Pull out mains plug!

For all maintenance and repair work the mains plug must be pulled out of the socket.



Attention! Work on electrical equipment must only be carried out by a qualified electrician.

Only original spare parts must be used. Otherwise there may be injury to the user.




Warning! The use of other spare parts and other accessories, as stated in this manual, can cause personal injury. Only use spare parts permitted by the manufacture!

1.3 Equipment description

1.3.1 Agreed application

The product is intended for aspiration of air and non-aggressive gases.

 **The aspiration of fluids, aggressive or explosive gases is forbidden! It will cause danger to health and the possible danger of explosion or fire!**

The products are supplied as portable, ready-to-connect products or as products for installation in machines.

It should only be used if the manufacturer of the equipment or unit, in which the product is to be incorporated, has ensured that all requirements for safe operation has been met.

The product is designed for operation in a dry, well ventilated room.


The product should not be operated in a damp or wet environment. In addition, operating near gases or flammable fluids is forbidden.

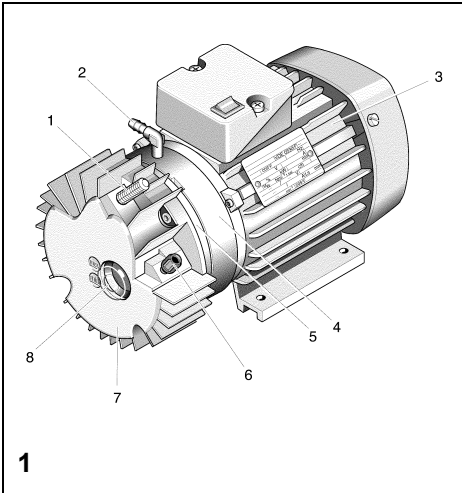
1.3.2 Function description of the products

The product belongs to the group of rotary vane vacuum pumps.

The products are provided with a electric-motor as standard.

With the electric-motor an additional temperature switch is integrated. When the temperature switch is activated, the product switches off automatically.

 **Advice! At unduly high temperatures the product will switch itself off.**



- 1**
- 1 Silencer
 - 2 Suction nozzle
 - 3 Electric motor
 - 4 Pump casing
 - 5 Pump cover
 - 6 Oil filter with sealing cap
 - 7 Oil chamber
 - 8 Oil sight glass


 **Warning advice. After cooling off the product starts automatically.**

The pump part consists of a pump casing (4), a rotor with 2 vanes, pump cover (5), and an oil chamber (7) with silencer (1). The rotor is positioned off centre in a cylindrical casing. The movable vanes are arranged in lines. During rotation they will be pressed against the wall of the pump casing by centrifugal force. The volume between the vanes alters continuously during rotation. The vacuum is created by this volume alteration.

The well conceived interior construction of the oil chamber ensures that only a negligibly amount of oil mist in the exhaust air will reach the surroundings. The greater part of the oil mist is retained successfully in the volume oil chamber equipped with cooling ribs and is dripping back into the oil bath.

1.3.3 Delivery schedule / Accessory

Portable, ready-to-connect products are supplied as follows as a standard: The basic version is mounted onto a baseplate with carrying handle. In addition there is in the motor terminal box an On/Off switch and a mains lead with fitted plug. To reduce vibration the baseplate is fitted with four vibration absorbers.

 **Even for a portable, ready-to-connect product, please read Chapter 3, Operation.**

2. TRANSPORT, STORAGE

2.1 Transport and Storage

The products are sent from the factory in a specially padded transport carton. With this the product is safe against transit damage. Always use the original packaging of the product if necessary.

Transport the product in an upright position.



Protect the product during transport and storage against dampness and extreme temperatures. Take special care that the electrical equipment does not get damp or wet.



Products must only be transported pressureless. Remove air from any fitted pressure containers and lines.

The connections to the oilchamber have to be sealed with stoppers!



After long periods of storage, please read Chapter 7, Servicing / Repairs.



Keep packaging if at all possible.

Environmental rules regarding the disposal of the packaging must be observed and to assist this please note the labels on the packaging.

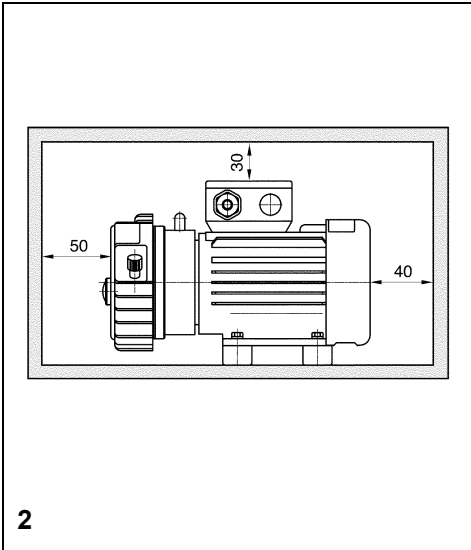
2.2 Storage and transport requirements

Temperature: -25 °C to + 55 °C



The oil must be drained off at temperatures under 0 °C

Relative humidity: 10% to 90%
(without condensation)



Products for installation in machines are designed for immediate installation. The portable, ready-to-connect products are designed for immediate operation. Products in their original packaging can be stored till 3 months in a warm, dry, dust free room. If the products should be stored long term, e.g. as a replacement product then they must be protected with a drying agent. This will prevent corrosion of the inner parts of the product. When the product has been stored for a long time the motor ventilator must be rotated by hand and then started a number of times.


 **The mains supply must be disconnected before rotating the product by hand.**

In the event of corrosion or gumming, clean the product according to Chapter 5.

2.3 Assembly notices and initial operation

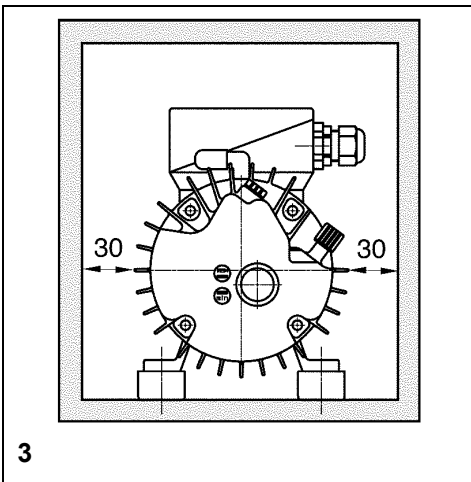
Products for installation in machines may only be installed by qualified personnel who are acquainted with the risks of the product.

2.3.1 Environment conditions


 The product must only be installed and operated in dry, well ventilated and dust free rooms.

Take care when choosing the site for installation that the product is easily accessible for operating, cleaning and maintenance. Especially the connection piece and the operational parts must be easily accessible.

The product should be installed on a level and sufficiently solid surface. To reduce vibration the supplied vibration dampers should be mounted. If the vacuum is built into a machine or housing, it must be noted that the identification plate is visible




and readable, without having to dismantle the product. If necessary, an additional nameplate is to be attached. Also ensure that the connection clamps are easily accessible when taking off or opening the housing.

 **Please make sure that the exhaust airway is clear.**

When fitting into a housing it should be observed that the minimum distance is kept (see fig. 2 and 3). It must also be noted that there is sufficient ventilation. In certain cases an independent ventilation system may be required.

Please make sure that the power line connection and air hoses are not kinked. The room temperature must not fall below 12 °C otherwise problem free operation cannot be guaranteed. If the temperatures are too low, difficulties in starting the product result due to the increasing viscosity of the oil.

The ambient operating temperature must not exceed 40 °C. Operating ambient temperatures above 40 °C will require additional ventilation. The product switches itself off due to overheating when working in too high temperatures.


 Approx. 70% of the product induced electrical energy is converted into heat and is given off to the surrounding area.

The motor ventilator normally ensures an effective pressurised cooling of the product. To do this the air must be able to flow to and for unhindered. Ventilation openings must be large enough to allow this to happen. In unsuitable cases, e.g. when the product is built-in an independent air cooling system might be required.

2.3.2 Vibration damping

The securing of the product takes place via the vibration absorbers at the base of the motor.

The product produces vibrations. To dampen this vibration suitable vibration absorbers must be used. Vibration absorbers specially made for these products can be found in the accessory list. Do not use rigid connections between the product and the pipeline system.

 **The wrong kind of vibration absorbers or the use of rigid connections can damage the product or the equipment into which the unit has been installed.**

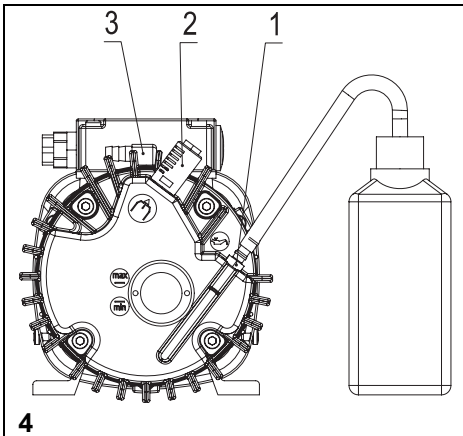
2.3.3 Assembly position

Products should be installed in the horizontal plane (see fig. 2 and 3).

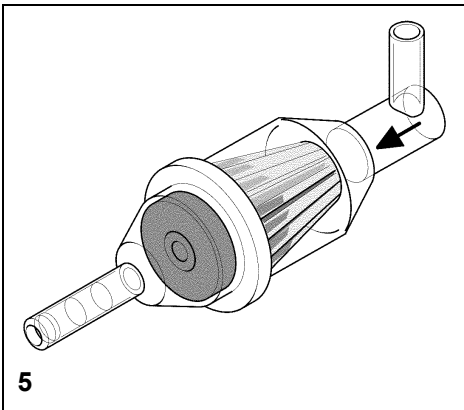
If a non-return valve is used, then it has to be mounted over the pump. This may result in any escaping oil flowing back into the pump.

2.3.4 Noise damping

The sound level of the product (without sound absorber) is 53 dB(A). The sound level will be reduced with our sound absorber to 43 dB(A) or 51 dB(A).




- 4**
- 1 Oil filling socket
 - 2 Sound absorber
 - 3 Suction nozzle




5
Suction filter with non-return valve

2.3.5 Hose connections

Connections for the product:

 A non-return valve is necessary, if before switching off the product the evacuated space cannot be ventilated. The negative pressure will aspirate oil from the product into the line system.


 A suction filter must be built-in otherwise dust particles can be aspirated.

 When fitting the suction filter please note the through flow direction (arrow).

Suction filter with non-return valve hose connection:

Pull off the protective cap from suction nozzle and push a vacuum hose (NW8) onto. Push the suction filter into the hose (NW8). Note the direction of flow. It is marked with an arrow pointed on the filter case.


Assembly of non-return valve is recommended over the pump so that oil mist is returning into the pump.

 A suction filter with a non-return valve is available as an optional extra. It is easy to change as it is only pushed into the suction hose.

Connection of sound absorber:

Unscrew plug and fit in attached sound absorber (2). The evacuated air will be sucked through the sound absorber (2) into the surrounding. If the product is built into a housing and the exhaust air shall be led out from there a nozzle have to be mounted instead of a sound absorber.

2.3.6 Electro installation

 **Work on electrical equipment must only be carried out by qualified electricians!**

The portable product is supplied ready for installation with on/off switch and power cable. Please observe implicitly the regulations of the local power supplier.


The voltage and frequency has to correspond to the details indicated on the type plate. The motors are constructed for 10% over- and undervoltage. Permitted tolerance for the capacitor: $\pm 10\%$ deviation from the nominal capacity. Please make sure no connection cable is placed across the product. The hot surface of the product could damage the insulation of the cable.


The electrical connection can be seen on the circuit diagram (fig. 6).


Products for installation in machines must be connected according to the following instructions:


The mains voltage and frequency must comply with the details on the model label. The motors are designed for $\pm 10\%$

fluctuation. The capacitor is allowed to vary $\pm 10\%$ from the rated capacity. The electrical connection can be seen on the circuit diagram (fig. 7).

 **Please note the direction of rotation (Clockwise when looking at the motor ventilator from the back).**

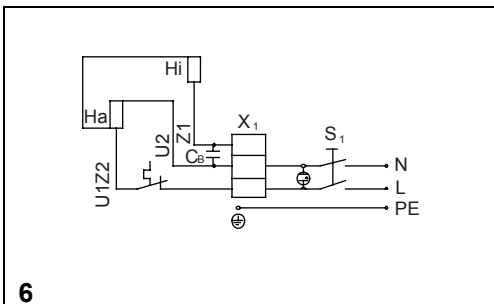
 **The motor can additionally be protected by a safety fuse.**

 Because of the small difference between the starting and nominal current of small motors and the greater tolerance of safety fuses, surges of power are not easy to control. Only a short circuit can be protected against.

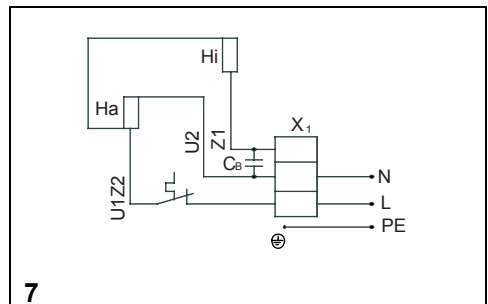
 **During the motor has to be fitted with an overcurrent protection against short circuit.**

2.3.7 Protection type

The machine must only be assembled or used according to their protection type. The electric motors conform to protection type IP 54.



6
Circuit diagram portable, ready to connect product



7
Circuit diagram product for installation in machines

3. OPERATION

3.1 Initial Operation



Before initial operation check the oil level at the window.

If required, top up with oil as follows:

1. Unscrew cap at oil filling socket (fig. 4)
2. Fill in pump oil up to mark “max” (see optional extra).
3. Screw-on cap again

Make sure that installation/mounting is carried out according to chapter 2.

3.2. Operation



Please note whether the oil-free product has a hot surface. There is a danger of burns, if these surfaces are touched when hot.

Before daily start of operation, check the oil level and make a visual check of the product (e.g. state of the suction filter).



The product must not be working without vacuum longer than 20 min. In order to ensure safe lubrication of all parts of the pump, a minimum operational pressure of pabs ≤ 50mbar is necessary.

Start the product for installation in machines via the apparatus.

For the portable product insert mains plug and activate the on/off switch.

Using the product for short periods the product will remain cold. There is the risk of condensation forming in the product.

In order to ensure reliable operation the product should have continued run for about 15 minutes or once a week let it run hot (at least 1 hour).

If these actions aren't possible the oil change interval has to be in shorter times.

4. SHUT DOWN

Portable product

Switch off the product at on/off switch.

Product for installation in machines

Switch off the product at the separate switch (customer specification) or else through overriding automatic system.

If the product is not used over a lengthy period of time, disconnect all power to the product and note the instructions under chapter 2.

5. CLEANING

To maintain faultless function, it is recommended to keep the product clean.



The product has hot surfaces. Let the product cool off before starting any cleaning work.

Clean the surfaces of the product with a fluff free cloth, special attention particularly the cooling fins and the motor ventilator kept free from dust and pollutants.

If there is hardened oil or dirt inside the product, the product can be cleaned inside by a cleaning process.

1. Drain of the oil. (Chapter 6.1)
2. Fill in test-(cleaning-)petrol to the marking „min“.
3. Run the product without vacuum, i.e. with the intake open, for about 30 sec., while closing off the intake opening briefly several times.
4. Switch off the product and leave it at a standstill for approx. 30 min.
5. Drain off the test-(cleaning-) petrol and fill in oil.
6. Run the product with full vacuum for approx. 30 min.



In use of test-(cleaning-) petrol or similar cleaning agents, please observe the instructions on the matching safety data sheet.



For work with cleaning agents appropriate protective clothing has be worn. Please observe to the corresponding safety data sheets.

6. MAINTENANCE



The product has hot surfaces. Let the product cool off before starting any maintenance work.



Switch the product off and plug out mains before any maintenance and upkeep work.

The stated maintenance intervals are guidelines for normal operational conditions. With extreme operational conditions (e.g. long working times under full load, high ambient temperatures, very dusty ambient air, high humidity) the maintenance intervals must be shortened. When carrying out maintenance work the mains plug must be pulled out. Alternatively the product must be voltage free.



Vent the suction lines.

6.1 Oil Change (see fig. 4)

We recommend to do the oil change with Dürr-Special pump oil.

1. Switch-off product.
2. Screw-off sealing cap from oil filling nozzle (1). Remove gasket.
3. Push hose (NW9) onto oil filling nozzle and hold over oil collecting basin.



Collect the used oil in appropriate container and dispose off under observation of regulations.

4. Switch-on the product; if necessary close an air exit opening (2). The used oil is forced out of the oil filling nozzle.
5. Switch-off product.



Refill with oil quantity as stated (see technical data). Too much or too little oil leads to damage.

6. Refill with new oil up to marking "max" at the oil level indicator.
7. Screw on sealing cap on oil filling nozzle.
8. Renew sound absorber.



A quick clean and troublefree oil change is possible with the help of our oil changing kit. The oil changing kit 1100-002-00 comprises: 1/4 l special pump oil (for two oil fillings), 1/4 l empty bottle to collect the used oil, 2 hoses to pump out the used oil (the hose in use is simply put into the empty bottle), 2 sound absorbers, 2 screw-off sealing caps and 2 sealing gaskets.

Operating time	Activity	Measures to be taken
daily	Sight check suction filter	Change dirty filter
daily	Check oil	Oil level has to be between „min“ – „max“ in case fill up oil or make oil change
6 months	Oil change	Execution of oil change

Maintenance plan

7. SERVICING / REPAIRS

If the product is not functioning properly after long periods of storing or stand still because there is dirt inside, remove the product and clean it (see chapter 5 Cleaning).

If the product is leaking or there are damaged parts remove and disassemble.

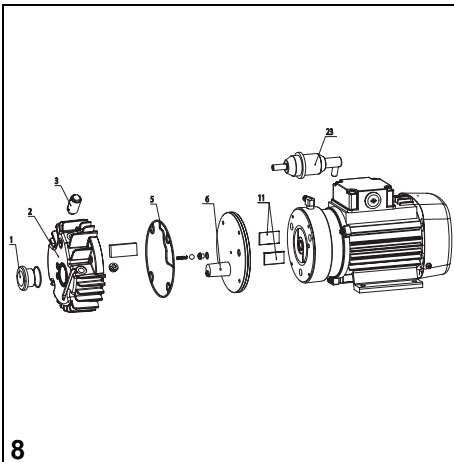
! **Separate product from power supply. Lines must be pressure free.**

! **All repair work must only be carried out by qualified personnel.**

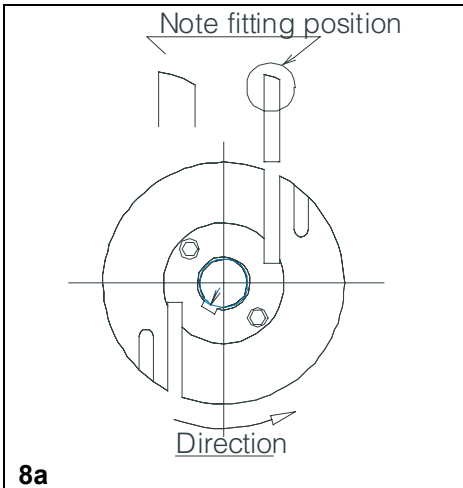
1. Execution of oil change. (Chapter 6.1)
2. Disconnect all hose lines
3. Disconnect electrical connections and remove product if necessary.
4. Disassemble the product (see fig. 8) loosen the screws in the pumpcover (2) and pull off the sealing (5). Pull off the vanes from the rotor.
5. Clean all component parts and blow through with compressed air.

! **The pump housing and the rotor must not be loosened from the electricmotor as they have been factory set.**

! **Before starting work with cleaning agents, eye protection, breathing protection and relevant protective clothing should be worn. Observe the instructions on the matching safety data sheet.**



- 1 sight glass
- 2 Oil chamber
- 3 Silencer
- 5 Gasket
- 11 Vane
- 23 Filter



 **No liquid and humidity must get into the product!**

All component parts should be given a visual inspection. Change any damaged parts.

Any parts which have to be returned to the manufacture for repair should be carefully packaged and noted. Reassembling of the product is made in the opposite order.

Assemble vane (see fig. 8a).

8. APPENDIX

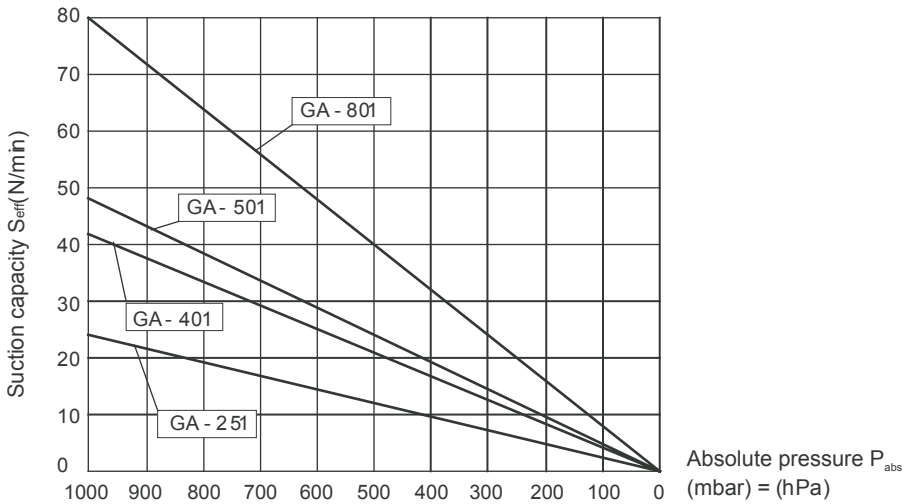
Appendix 1: Technical Data

Type	Art.-No.	max. suction capacity S_{eff}	max. suction capacity	Endpressure P	Noise pressure level	Nominal data of the motor					Wweight	Protection type
						Motor output	Current ¹⁾	r.p.m.	Voltage	Frequency		
		m ³ /h	l/min	mbar	dB(A)	P1(W)	A	min ⁻¹	V	Hz	kg	IP
GA-401	1188-11EB	2,4	40	5	43	148 170	0,76 0,74	1430 1700	230	50 60	9,6	54
GA-401T	1188-11TB	2,4	40	5	43	148 170	0,76 0,74	1430 1700	230	50 60	10,7	54
GA-401	1188-12EB	2,8	48	5	43	175 190	2 1,7	1430 1700	230	50 60	10	54
GA-501	1245-04EB	3	50	3	51	295 320	1,6 1,4	2820 3330	230	50 60	9,6	54
GA-501T	1245-04TB	3	50	3	51	295 320	1,6 1,4	2820 3330	230	50 60	10,7	54
GA-801	1225-04EB	4,8	80	3	51	295 320	1,6 1,4	2820 3330	230	50 60	9,6	54
GA-801T	1225-04TB	4,8	80	3	51	295 320	1,6 1,4	2820 3330	230	50 60	10,7	54

- 1) current at nominal voltage
- All models duty rated S1 = 100% duty rated.
 - The max. allowable ambient temperature is 40°C.
 - The model designation for products for installation in machines is completed with EB, and the portable, ready-to-connect appliance with TB.
for example: GA-251 / 1207 – 11 TB



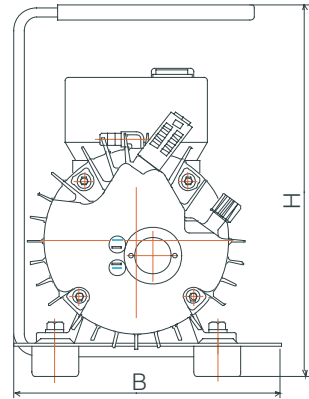
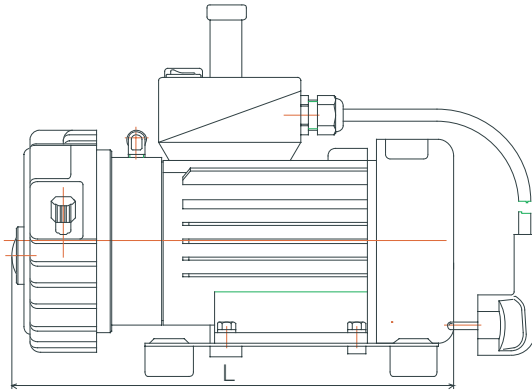
As our products are constantly being updated, they can be at variance with the listed technical data. Should you use this Operating Manual for outline planning, please clarify with us the current technical data of the product required.



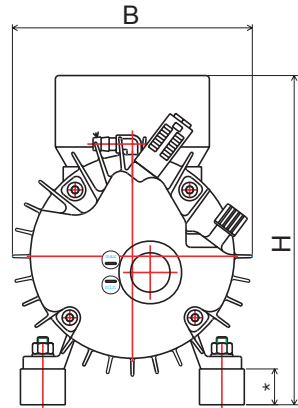
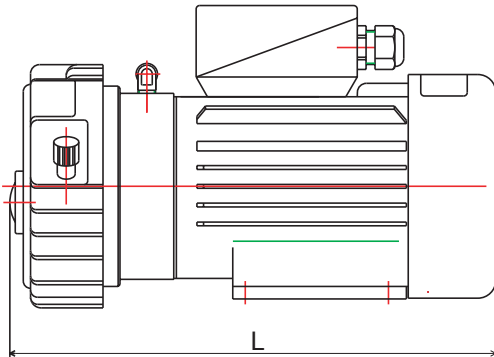
Suction capacity S_{eff} as a function of the suction pressure

Appendix 2: Dimensions

Type	Article-No.	l	b	h
GA-401	1188-11EB	272	135	185
GA-401T	1188-11EB	272	170	230
GA-401	1188-12EB	270	135	145
GA-501	1245-04EB	272	135	185
GA-501T	1245-04TB	272	170	230
GA-801	1225-04EB	272	135	185
GA-801T	1225-04TB	272	170	230



Portable product (TB)



* Vibration absorber height= 20mm

Product for installation in machines (EB)



As motors from different suppliers are used the dimensions and the technical data can differ.

Appendix 3: Declaration of Conformity



Declaration of Conformity for Machines 2006/42/EEC

Manufacturer: Dürr Technik GmbH & Co. KG
Adresse: Pleidelsheimer Str.30
D-74321 Bietigheim- Bissingen
Reference number: **GA**
Product name: **vacuum pump**
starting with serial number: **A 000100**

Herewith we declare that prior to initial operation, it must be determined that the machine in which this machine is to be installed, conforms to the stipulations of the applicable machine directive, 2006/42/EEC

Directive electromagnetic compatibility 2004/108/EEC

Following harmonized standards are applied:

DIN EN 1012-2:1996-07
DIN EN 60335-1:2007-02
DIN EN 60034-1:2007-09
DIN EN 60034-5:2007-09
DIN EN 60034-7:2001-12
DIN EN 60034-8:2008-04
DIN EN 61000-6-2:2006-03
DIN EN 61000-6-3:2007-09
DIN EN 60204-1:2007-06

Bietigheim-Bissingen, date 08.02.2010

Andreas Ripsam
General manager Dürr Technik

Signatures registered with original document
Dürr Technik archive

Appendix 4: Trouble Shooting

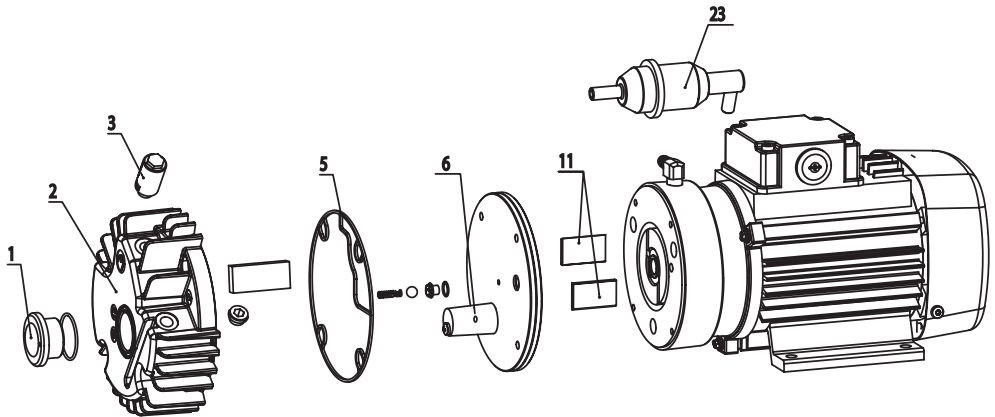


The following description for trouble shooting is only meant for qualified personnel. Repairs must only be carried out by qualified personnel!

Failure	Cause	Remedy
Appliance does not start	<ul style="list-style-type: none"> No voltage Appliance too cold (<12°C) therefore oil too thick Appliance too hot, thermostat switching off Fuse blown Motor fails Pump rotor is blocked, e.g. by dirt in the appliance Rotation direction incorrect Fan cowl pressing on motor 	<ul style="list-style-type: none"> Check mains and equipment fuse, if necessary call electrician Warm up appliance, use recommended oil Let appliance cool down, if necessary allow for better ventilation Replace Replace appliance Have the appliance repaired, install suction filter Check electrical connection Assemble fan cowl correctly
Appliance does not reach performance	<ul style="list-style-type: none"> Connecting hoses or connections leaking Insufficient oil lubrication and oil seal unsatisfactory Oil contaminated (condensed water solvent ect.) Wear in the appliance, or shaft seal defective Appliance out of action for a long time, oil gums Rotation direction incorrect Wrong oil Sinter filter in oil chamber is restricted Gasket unleaking 	<ul style="list-style-type: none"> Check them (seal for replace) Refill oil Change oil, install suction filter Factory repair Clean appliance (see chapter 5) Check electrical connection Use recommended oil (see chapter 6.1) Clean filter (dismantle oil chamber), install new oil chamber seal Change gasket

Failure	Cause	Remedy
Appliance too noisy	<ul style="list-style-type: none"> • Not enough oil, lubrication unsatisfactory • Appliance out of action for a long time, oil gums • Bearing damaged • Vibrations are transmitted onto the casing • Dirt in the appliance • Ventilator touches ventilator cap • Rotation direction incorrect • Wrong oil 	<ul style="list-style-type: none"> • Fill up oil • Clean appliance • Have motor repaired • Suitable vibration dampers • Clean appliance, install suction • Reposition ventilator cap • Check electrical connection • use recommended oil (see chapter 6.1)
Oil in the suction conduit	<ul style="list-style-type: none"> • Operation executed without check valve • Check valve leaking • Rotation direction incorrect 	<ul style="list-style-type: none"> • Install check valve in suction conduit • Replace it • Check electrical connection
Oil consumption too high	<ul style="list-style-type: none"> • Ambient temperature too high (>40°C) • Wrong oil 	<ul style="list-style-type: none"> • Care for better ventilation • Use recommended oil (see chapter 6.1)
Appliance loses oil	<ul style="list-style-type: none"> • Oil trickles out of motor (shaft seal defective) • Oil chamber surface damaged • Oil chamber seal damaged • Seal between pump cover and casing, or seal between casing and motor not in order 	<ul style="list-style-type: none"> • Factory repair • Replace oil chamber and seal • Replace seal • Factory repair

Appendix 5: Exploded diagramme



Appendix 6: Spare parts list

item No.	Article description	GA-251 1207-11	GA-401 1188-11	GA-401 1188-12
1	Level indicator with sealing		9000-322-03 9000-401-0002	
2	oil chamber		1100-011-50	
3	sound absorber (contents oil-kit)		9000-416-01	
5	gasket		0569 0010	
6	sinter metalfilter		0354-000-03	
11	vane		2x 1185-000-06	
23	suction filter with non-return valve (3 pcs.)		1100-040-00	
	oil change kit (incl. sound-absorber)		1100-002-00	

Valid for pumps from year of production 06/2006.

Capaciton on request.

Further space parts on request.

Accessories on request under www.duerr-technik.com

GA-501 1245-04	GA-801 1225-04
	9000-322-03 9000-401-0002
	1100-011-50
	9000-416-01
	0569 0010
	0354-000-03
	2x 1185-000-06
	1100-040-00
	1100-002-00

Appendix 7: Accessories list

Article description	GA-251 1207-11	GA-401 1188-11	GA-401 1188-12	GA-501 1245-04	GA-801 1225-04
anti-vibration-set			1225-991-00		
Vacuum hose per meter			9000-318-87		
1 l Dürr Special pump oil			1075-004-00		

Appendix 8: Addresses

Technical advice

Dürr Technik GmbH + Co. KG
74301 Bietigheim-Bissingen
Telephone 0 71 42 / 90 22 - 0
Fax 0 71 42 / 90 22 - 99
www.duerr-technik.de

Dürr Technik (UK) Ltd.
Unit 5 Ashmead Business centre
Ashmead Road
Keynsham
Bistol
BS31-1SX
Telephone 0117 9860414
Fax 0117 9860416
office@durrtechnik.co.uk

Dürr Technik Sverige AB
Box 302
S-571 24 Nässjov
Telephone 0380 - 55 49 80
Fax 0380 - 743 15

Spare parts service

Spare part orders to be sent in accordance with the existing spare parts list, written to the above address or by telephone to the following number:
Telephone 0 71 42 / 9022 - 19
Fax 0 71 42 / 9022 - 99
office@duerr-technik.de

For ordering spare parts the following details are required:

- **Model no. and article no.**
- **Order no. as per parts list**
- **How many of each item required**
- **Exact address to dispatch to**
- **Dispatch details**

Repairs / return delivery

When returning appliances, if possible, use the original packing. Always pack the equipment in synthetic packaging material. If possible use recyclable packing material.

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