

BECKER PREVENTIVE MAINTENANCE

MODEL VT 4.40

PUMP TAG INFORMATION



Gebr. Becker GmbH & Co KG
Höcker Feld 29-31
D-42779 Wuppertal



Ersatzteilliste
Spare parts list
Liste de pièces de rechange
Listino pezzi di ricambio
Lista de piezas de recambio
Lista de peças sobresselentes
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Reservdeliste
Reservdelislista

Reservdelislista
Varaosuvelto
Wykaz części zamiennych
Seznam náhradních dílů
Tartalékalkatrész lista
Κατάλογος ανταλλακτικών
Перечень запасных частей
备件零件目录
スベアパーツリスト

VT 4.25
VT 4.40

Wartung Maintenance Entretien Manutenzione Mantenimiento					
	Pos.	Menge * Quantity * Quantité * Quantità * Cantidad *	Bestell-Nr. Ident No. No. Identification No. de pedido	Bezeichnung Description Designation Designazione Descripción	
VT 4.25	24	7	901349 00000	Schieber, Rotor Vane, Palette, Silenciador	
	72	1	909505 00000	Filterpatrone, Filter cartridge, Cartouche Filtrante, Cartuccia filtro, Cartucho de filtro	
VT 4.40	24	7	901352 00000	Schieber, Rotor Vane, Palette, Silenciador	
	72	1	909505 00000	Filterpatrone, Filter cartridge, Cartouche Filtrante, Cartuccia filtro, Cartucho de filtro	

* erforderlich / necessary / nécessaire / necessaria / necesaria



2807550000 500 08/2004

Index-A



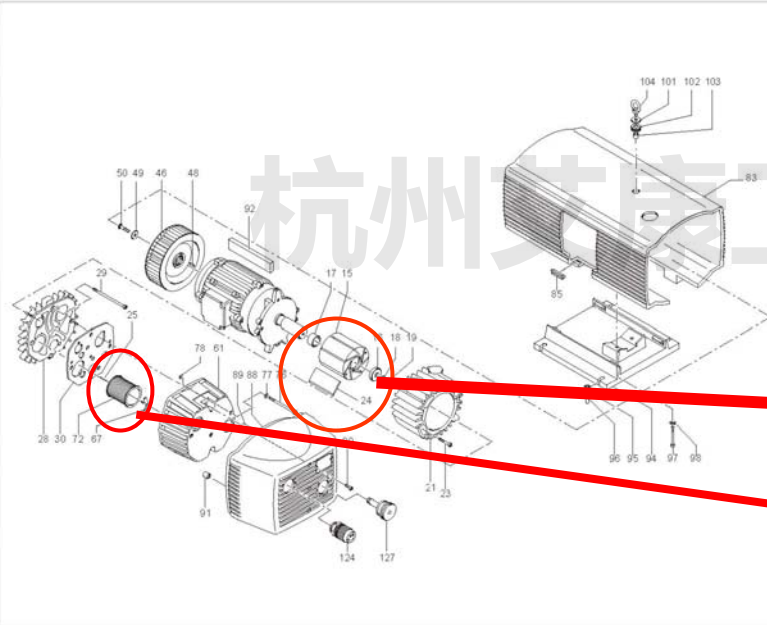
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PARTS IDENTIFICATION



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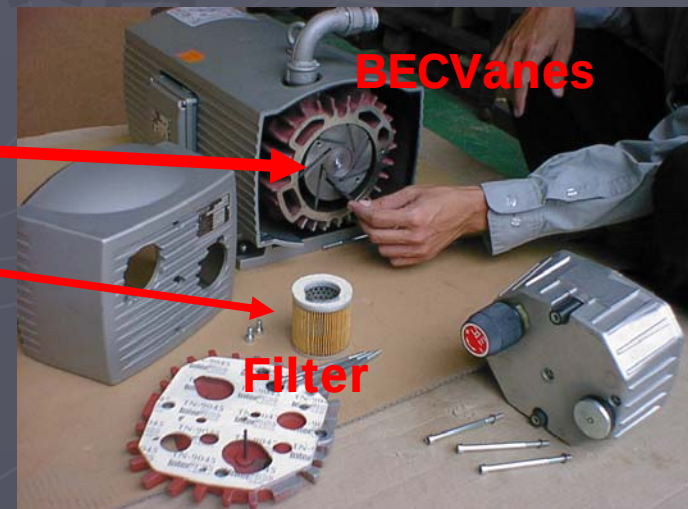
standard

VT 4.25 (3~)
- Index A+B

VT 4.40 (3~)
- Index A

optional
en option
optionale
opcional

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PREVENTIVE MAINTENANCE

WARNINGS:

Hazardous gas

Hazardous process gases can concentrate in the vacuum pump, its vanes and its filters.

If the pump has been used on wet, toxic, corrosive, volatile and other hazardous substances, take the proper safety pre-caution before operate the pump or used optional filters.

Power source

Ensure the incoming power supply to the pump is OFF before starts any maintenance work.

See table 1 for the summary of the maintenance schedule and attached Operating Instructions for detailed instructions and important precautions for the required maintenance. Use the maintenance record to keep track of your maintenance schedule. BECKER OIL FREE Vacuum Pumps required a very simple maintenance whereby the original BECVanes Rotor Vanes and the Filter are the only wear and tear parts that need to be replaced over a period of usage time. The roller bearing are prelubricated for life and will not required maintenance.

In most cases ,periodic checks of the BECVanes wearing width and filter cleaning will ensure trouble free operation.

BEFORE PUTTING INTO SERVICE

The pump operates without oil, therefore it must not allow to suck in water, oil or other liquids. Do not install Apparatus which blows out oil contamination air for instance.

Besides these instruction ,please refer to the safety regulations as stated in the **OPERATING INTRUCTIONS**. The details of the pump are stated on the model plate. The data are valid for mounting heights up to 1000m above sea level.

Overview of parts information

BECKER MODEL VT 4.40

BECVanes Rotor Vanes: Part nos. 901352

Original width : 43mm

Minimum width : 27mm (must replace)

Generally these are the only wear and tear inside the OIL FREE Vacuum Pump.

The usual life span is approximately 9000 – 12000 working hours subject to amount of heat generated as a result of ventilation and closed loop suction operation occurrence.

However the wearing width is greater if it is operate in 60Hz enviroment as the Nominal speed of the motor has increased by 20 – 25%.

SUCTION FILTER

EXTERNAL FILTER :Part nos. 84040105

INTERNAL FILTER :Part nos.909505

This unit is supply with INTERNAL and EXTERNAL filter to ease maintenance works.

Clean the suction filter for the 1st 50 hours and later monitor the condition of the surface as this is very much depends on the dust accumulation.

Replaced blocked, oily and greasy cartridges.

SUMMARY OF THE MAINTENANCE SCHEDULE

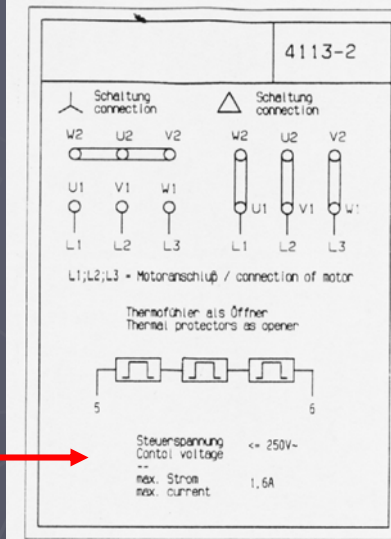
Table 1

OPERATING HOURS	ACTION	PART NOS.
1st 50 hours	Clean suction filter	External Filter:84040105 Internal Filter :909505
Thereafter	Clean filter depends on dust accumulation	Replace once it is blocked
500 hours	Blow out dirt in cooling air channels KK	
3000 hours or annually	Inspection of width of vanes	P/N:901352.Replace when reach min. 27 mm

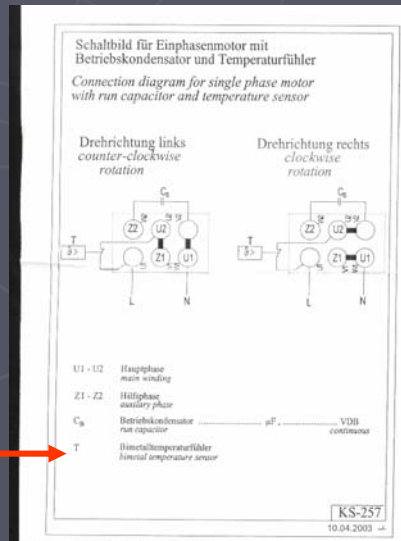
MOTOR TERMINAL COVER DATA



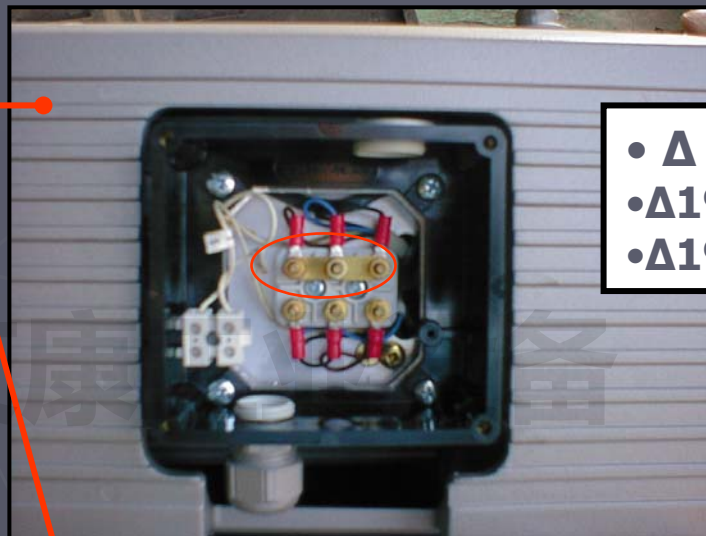
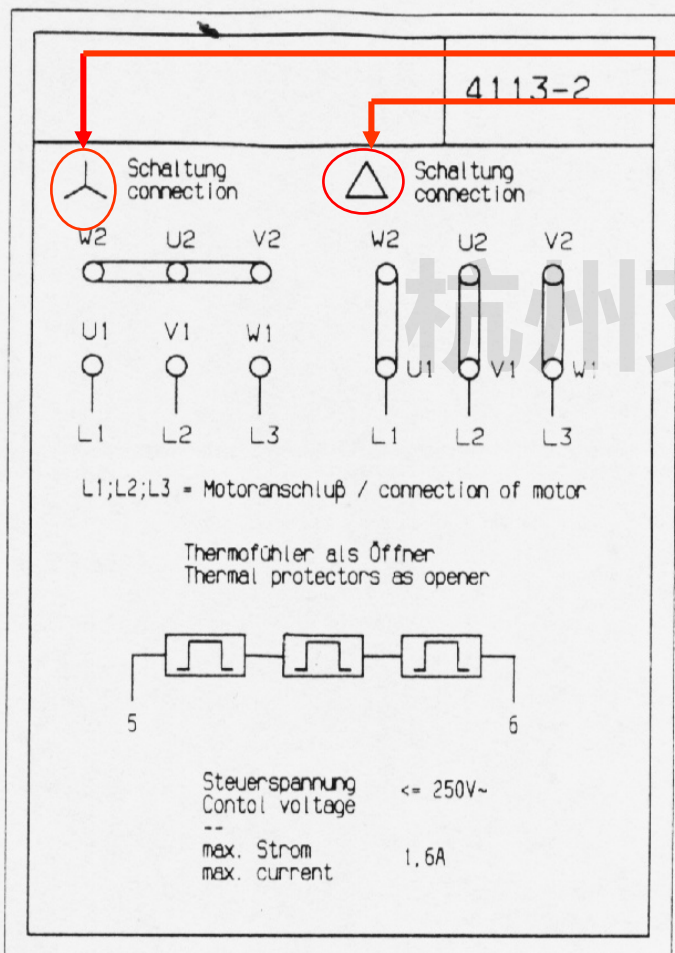
3~Mot-Nr.6637541 **2004** **IP55** **S1**
1.25kw **1.5kw**
1420/min **1680/min**
6.9/4.0A **6.9/4.0A**
 $\Delta 190-255/330-440\lambda V$ **$\Delta 190-290/330-500\lambda V$**
50Hz **60Hz**
Offner 3*155 °C



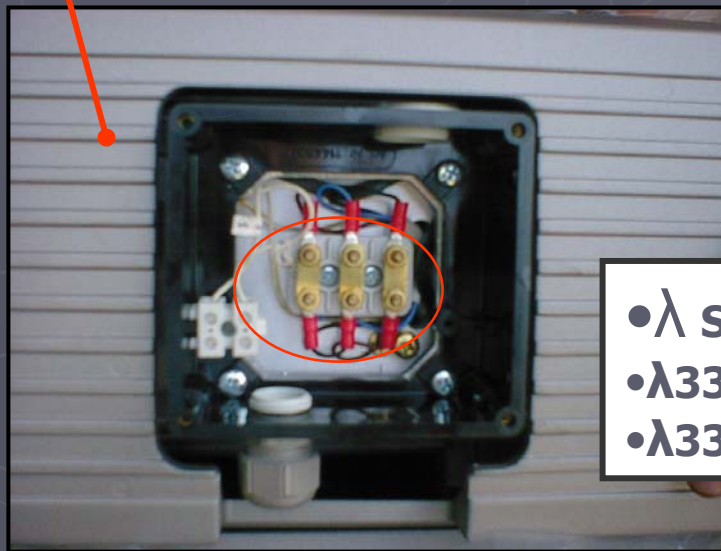
H 1~ Typ FWRB 90S/95/ 4P 41824402276
Nr.268005 131522/10 SO-A3C S I L
 $\downarrow 230 V \pm 10\%$
7.6 / / 7.3 A **50 / / 60Hz**
1350 / / 1620 /min **cos 0.93 / / 0.99**
1.1 / / 1.1 kW **S1**
IP 54 I.CL.-F **1BIMET. 150°C**
VDE0530



3 Phase motor connection



- Δ DELTA Link
- $\Delta 190-255V/50Hz$
- $\Delta 190-290V/60Hz$

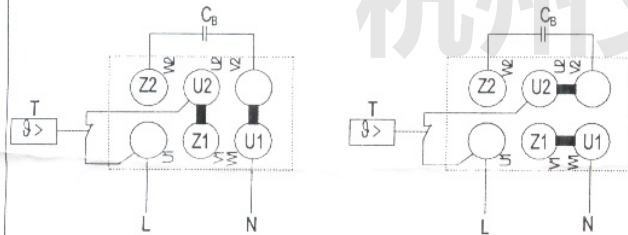


- λ STAR Link
- $\lambda 330-440V/50Hz$
- $\lambda 330-500V/60Hz$

clockwise rotation

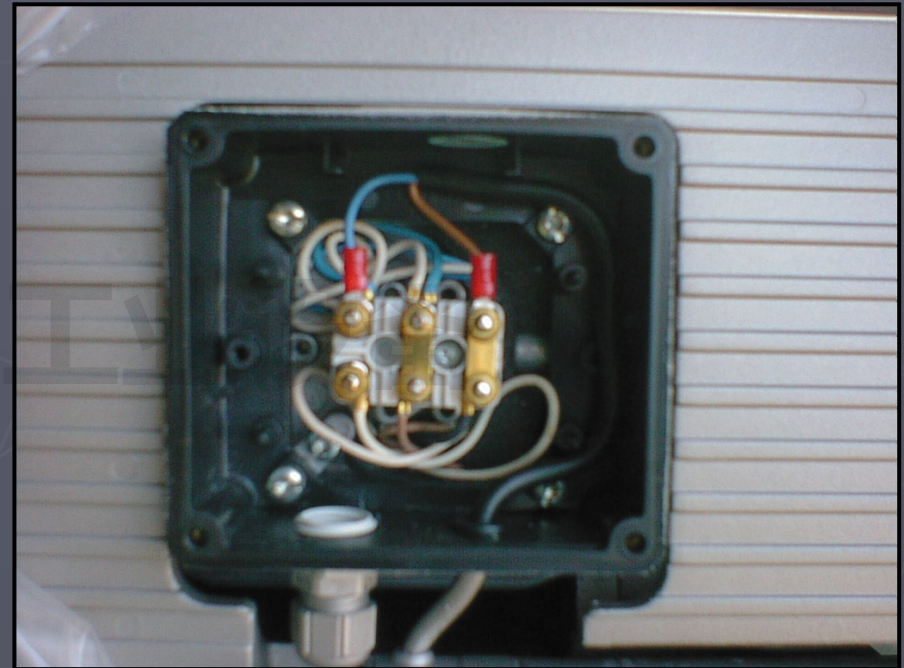
Connection diagram for single phase motor with run capacitor and temperature sensor

Drehrichtung rechts
clockwise
rotation



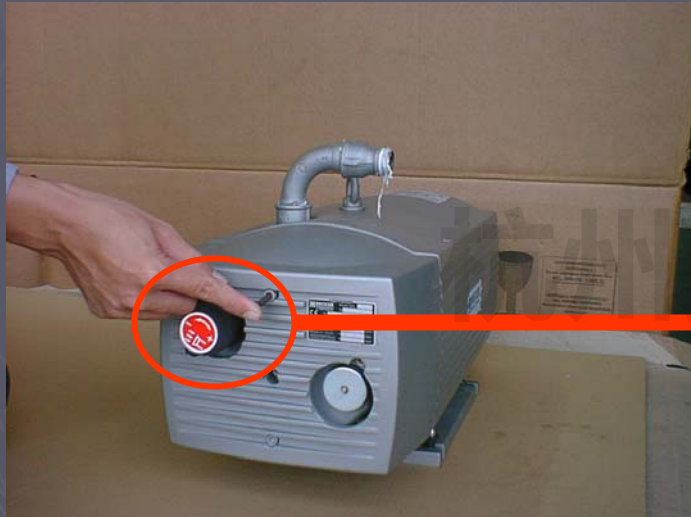
T	Bimetalltemperaturfühler <i>bimetal temperature sensor</i>
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10.04.2003 *sl*



- **207 – 253 V ,50 / 60Hz**
- **Fixed link – one rotation**
- **Others Voltage 189-231V,50Hz/60Hz**

INSTALLATION OF VACUUM VALVE



FUNCTION

- Relief Valve
- Pro long vanes life
- Adjusting vacuum level

Step 1. EXTERNAL FILTER P/N:84040105



1. Open the filter housing clip .
2. First 50 hrs, blow the filter from inside towards out.
3. Thereafter depends on dust accumulation.
4. Replace it once block and greasy.

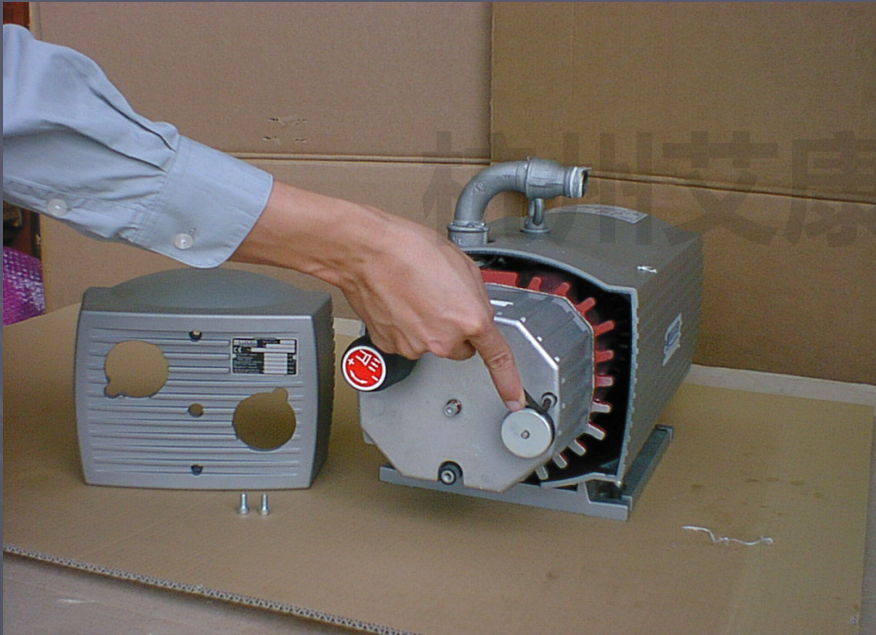
Step 2. PROTECTING HOOD (pos no.88)

1. Unscrew 2 bolts to disassemble the front hood (GD).



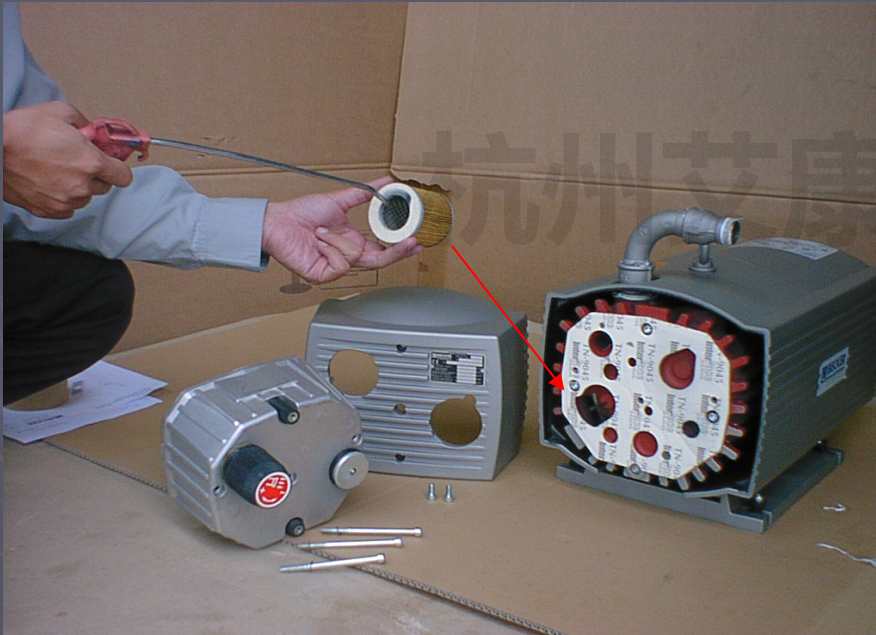
Step 3. FILTER COVER (pos no.61)

1. Unscrew 2 bolts to disassemble the filter housing



Step 4. INTERNAL FILTER (pos no.72)

1. First 50 hrs, blow the filter from inside towards out.
2. Thereafter depends on dust accumulation.
3. Replace it once block and greasy.

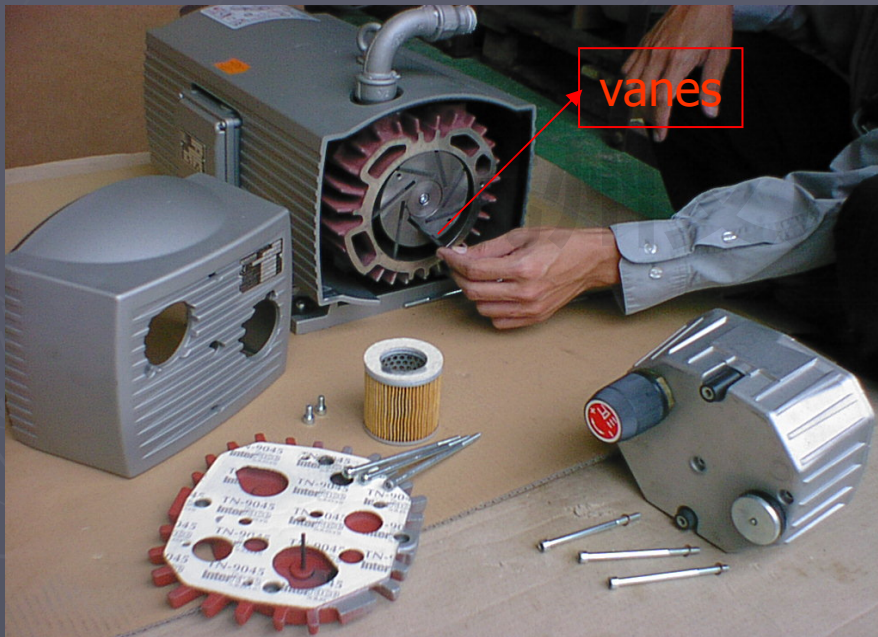


Step 5. LID (pos no.28)

1. Unscrew 4 bolts to disassemble the front hood (SD).

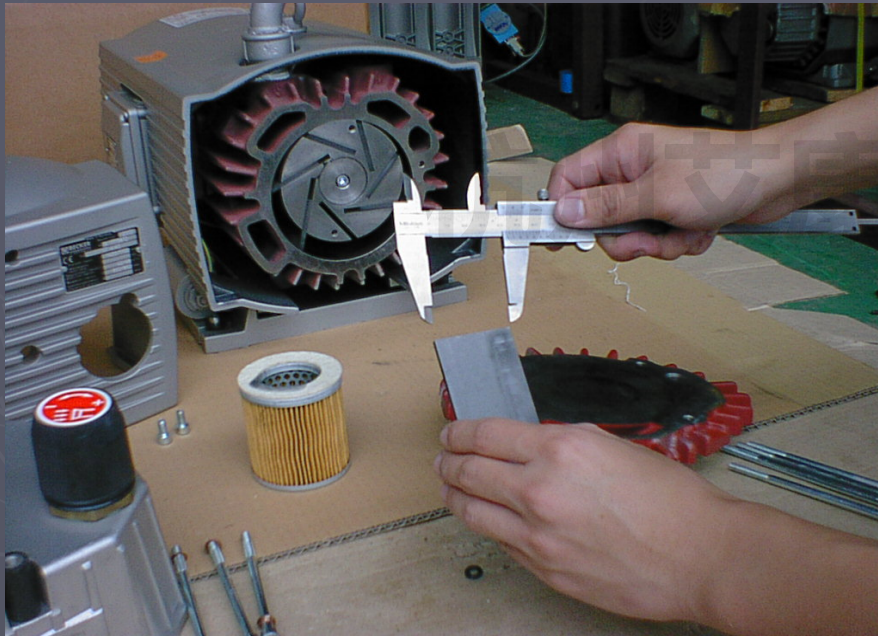


Step 6. BECVanes (pos no.24)



1. Once the lid has disassembled, the vanes can be seen.
2. Withdraw the vanes out from the rotor to measure the width (mm) sizes.

Step 7. MEASURE BECVanes(pos no.24)



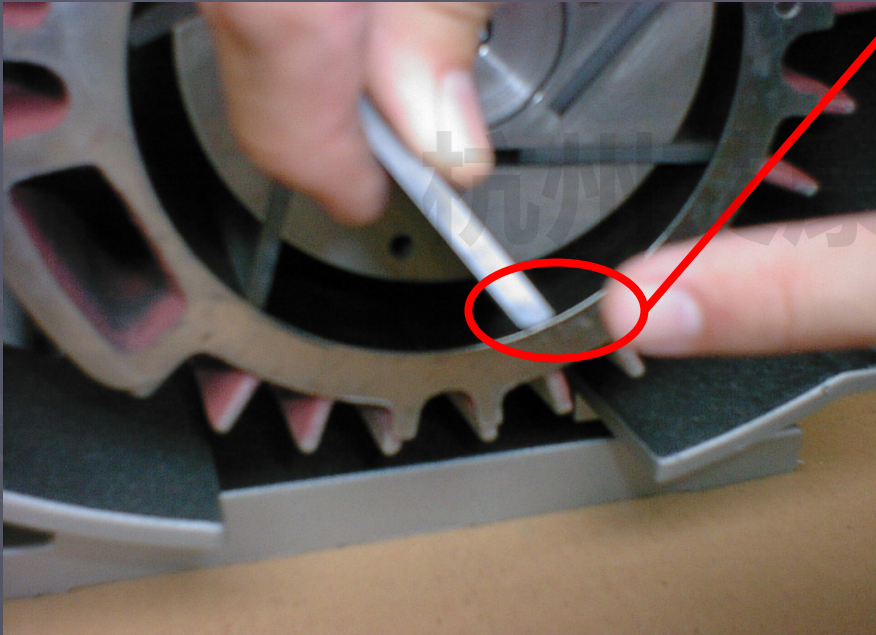
1. Use caliper to measure the width of the vanes.
2. Replace the vanes once it has reach minimum 27mm.
3. This can be done by taking out all used vanes and insert a new set of vanes.

Step 8. REPLACE NEW VANES



1. This can be done by taking out all used vanes and blow clean by using DRY! compress air.
2. Thereafter insert a new set of vanes into the rotor.
3. See step 8. for correct vanes position.

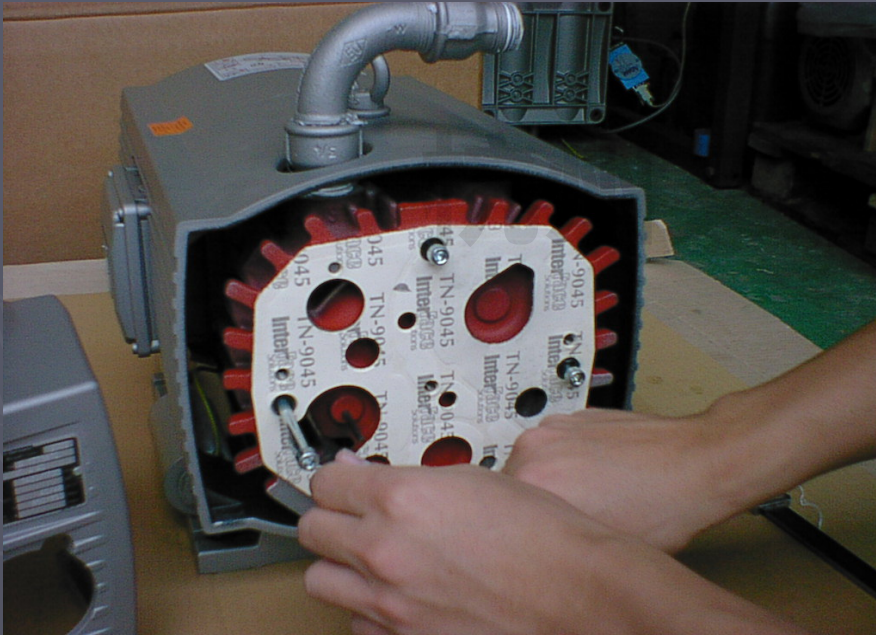
Step 9. BEC Vanes position



1. The tips of the end of the vanes with circular shape **MUST** face outward of the rotor.
2. The circular shapes must follow the rotor curve once inserted.
3. **DO NOT** install backwards.

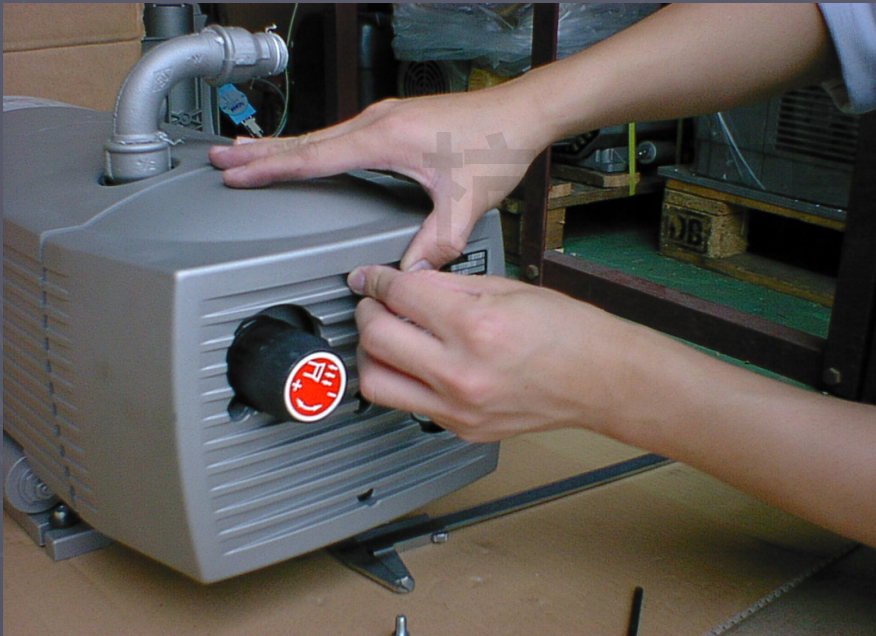
Step 10. RE-ASSEMBLE THE LID(pos28)

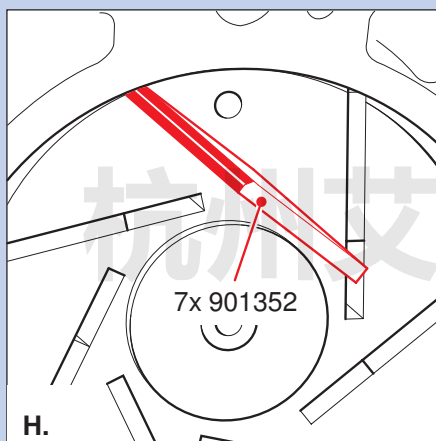
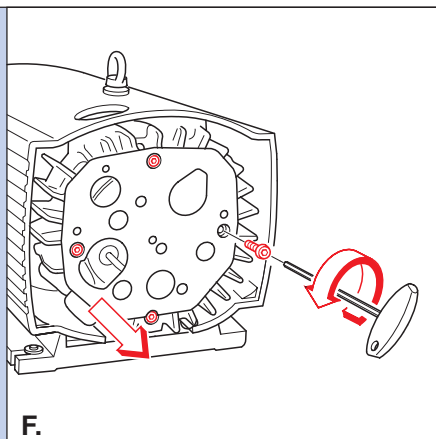
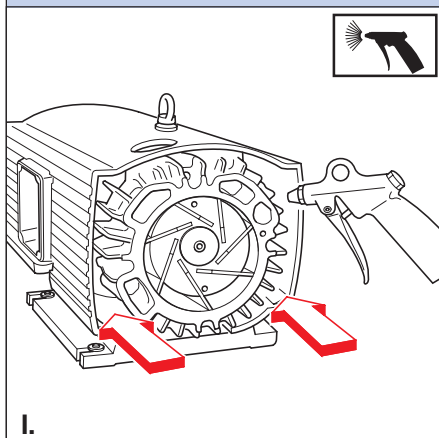
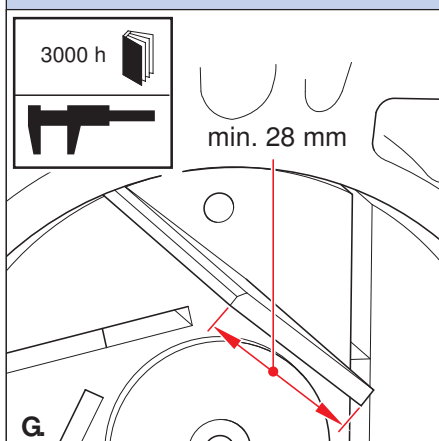
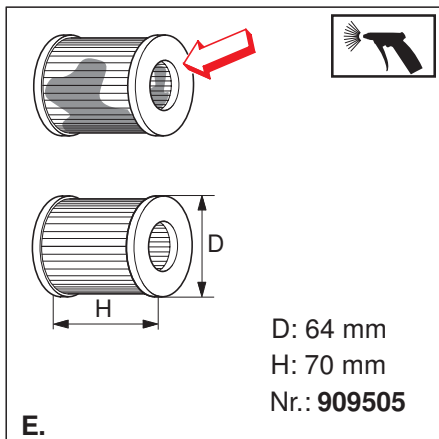
1. Re-assemble the lid SD (pos28) by screw in 4 bolts into the pump casing.



Step 11. FINISHING

1. Follow step no.8 and 7 to assemble the pump.





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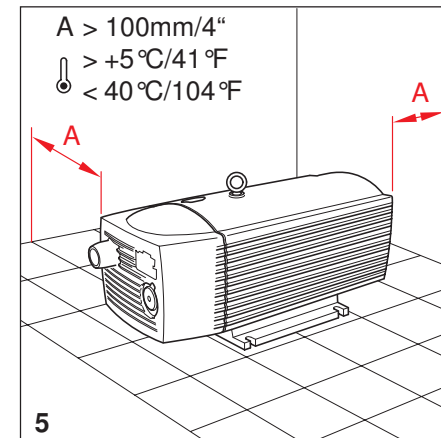
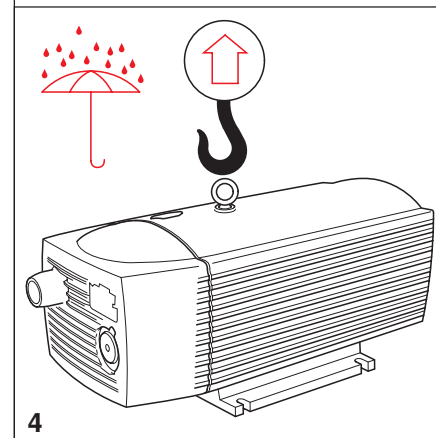
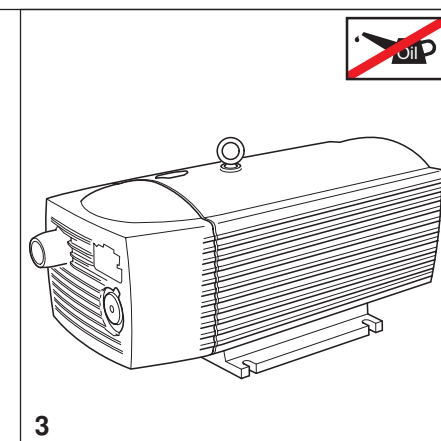
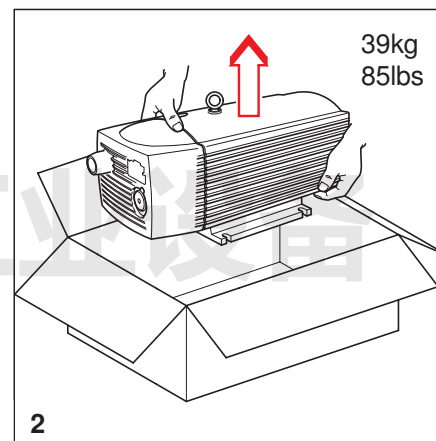
Betriebsanleitung
Operating Instructions
Instructions de service
Istruzioni d'uso
Handleiding
Instrucciones para el manejo
Manual de instruções
Οδηγίες χρήσης
Driftsinstruks

Driftsinstruktioner
Käyttöohje
Driftsvejledning
Instrukcja obsługi
Kezelési útmutató
Návod k obsluze
Инструкция по эксплуатации
使用说明书
取扱説明書

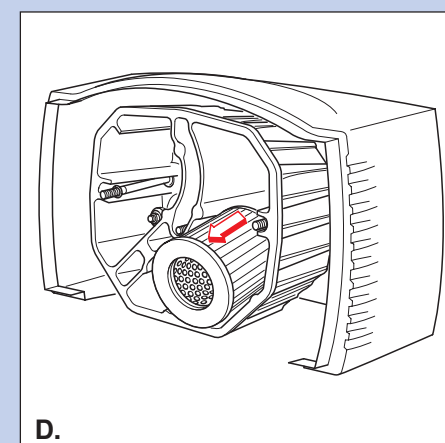
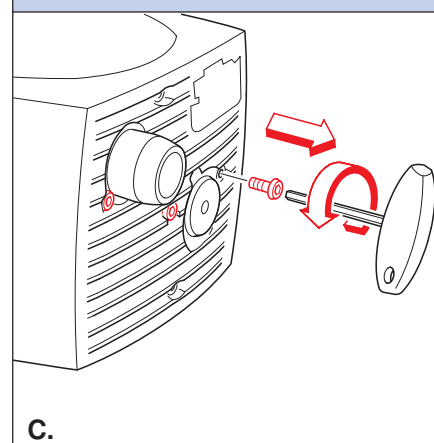
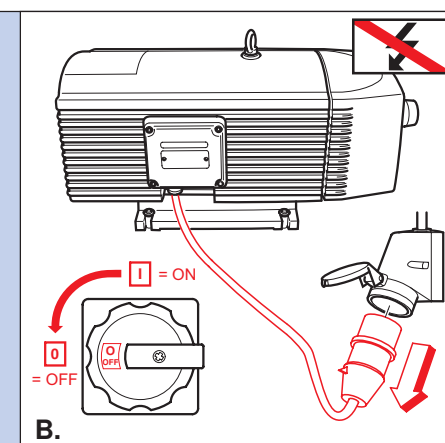
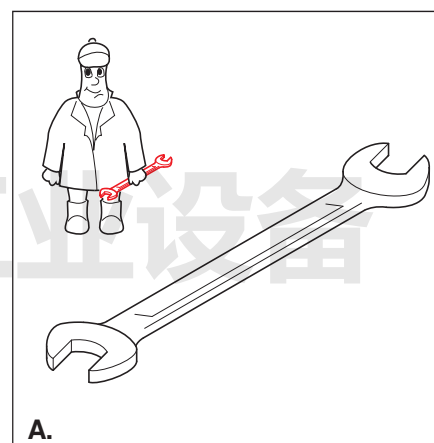
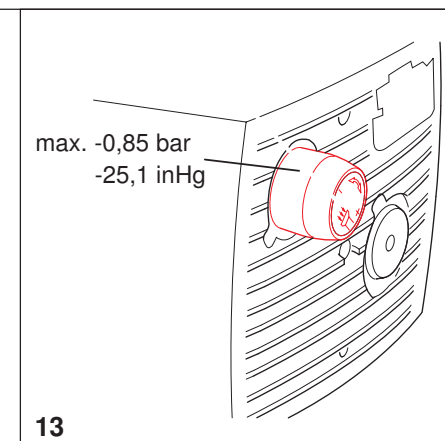
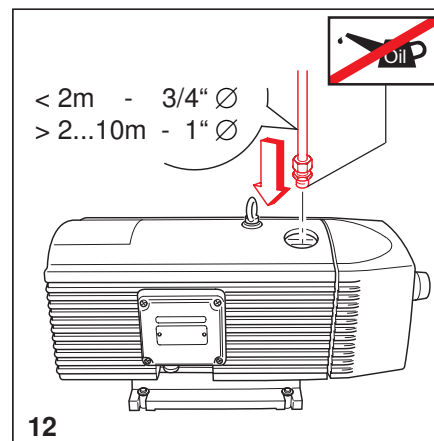
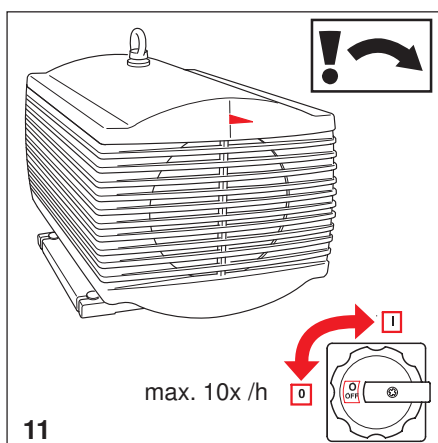
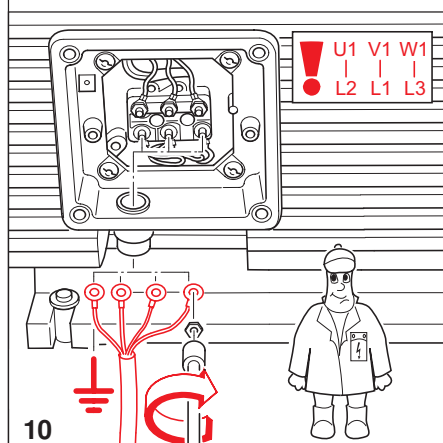
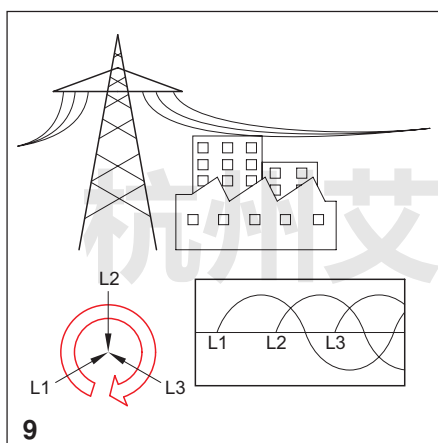
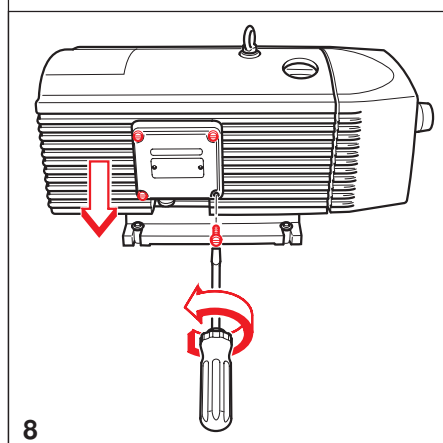
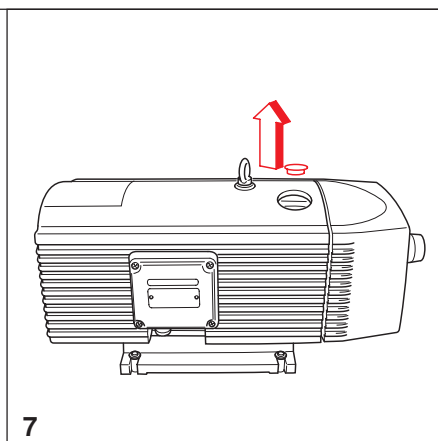
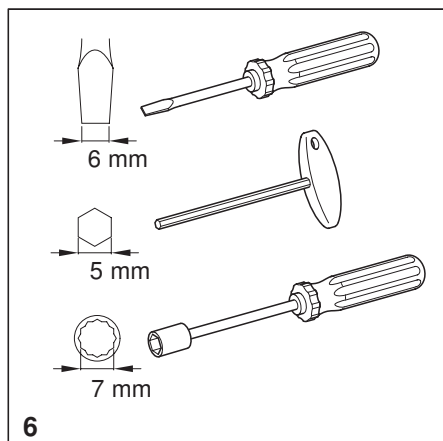
VT 4.40



98/37 EG
73/23 ENG



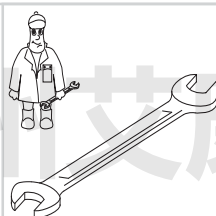
28103740000 05/04





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**Wartung
Maintenance
Entretien
Manutenzione
Mantenimiento**



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VT 4.25
VT 4.40



28007500000 500 08/2004

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 SERVICE	Made in Germany	
	Becker	
D-42279 Wuppertal	No.	A-XXXXXX
	Typ	VT 4.25-XX
Drehzahl / speed	XXXX	min ⁻¹
Leistungsbedarf motor power required	XXXX	kW
Saugvermögen intake capacity	XXXX	m ³ /h
Saugdruck / vacuum	XXXX	mbar

Index
Option

Service:
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 www.becker-international.com

Pos.	Ident No.	Description
15	020000 16400	ROTOR
16	016800 16500	CLAMPING DISC
17	911012 00000	STAR-TOLERANCE-RING
18	949203 00000	TOOTHED SPRING WASHER
19	945320 00000	SOCKET HEAD SCREW
21	000101 16400	PUMP BODY
23	945320 00000	SOCKET HEAD SCREW
24	901349 00000	CARBON VANES (7x) ¹⁾
25	952009 00000	LOCATING PIN
28	000710 16500	LID
29	945373 00000	SOCKET HEAD SCREW
30	008900 16500	GASKET
46	502301 16400	FAN
48	947713 00000	KEY
49	949454 00000	WASHER
50	901804 00000	SHAFT END BOLT
61	004803 27600	FILTER COVER
67	009000 16300	BLADE SPRING
72	909505 00000	FILTER CARTRIDGE (1x) ¹⁾
76	945373 00000	SOCKET HEAD SCREW
77	948021 00000	SEALING RING
78	913161 00000	O-RING
83	006801 27500	PROTECTING HOOD (INDEX A)
83	006805 27500	PROTECTING HOOD (INDEX B)
85	951920 00000	RUBBER ELEMENT
88	006802 27600	PROTECTING HOOD (FRONT)
89	741365 00000	RUBBER BUFFER
90	945318 00000	SOCKET HEAD SCREW
91	951922 00000	RUBBER ELEMENT
92	964110 00000	EDGE PROTECTION
94	015100 27600	FOOT
95	951921 00000	RUBBER ELEMENT
96	068000 27600	SPACING COLLAR
97	945328 00000	SOCKET HEAD SCREW
98	949451 00000	WASHER
101	833903 99597	DISC
102	951906 00000	RUBBER BUSHING
103	068002 16500	SPACER TUBE
104	548800 16300	EYE SCREW
124	736001 99613	VACUUM REGULATING VALVE
127	727502 06000	BLOW-OFF VALVE

¹⁾ necessary order quantity / maintenance

VT 4.25 (1~) Design - single-phase AC

VT 4.25/0-06 (3~) Design - without filter / three phase AC

Items different from standard appliance see appendix (back of drawing)



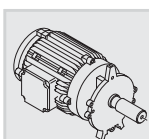
Pos.	Ident No.	Description
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16	016800 16500	CLAMPING DISC
17	911008 00000	STAR-TOLERANCE-RING
18	949203 00000	TOOTHED SPRING WASHER
19	945320 00000	SOCKET HEAD SCREW
21	000102 16500	PUMP BODY
23	945322 00000	SOCKET HEAD SCREW
24	901352 00000	CARBON VANES (7x) ¹⁾
25	952009 00000	LOCATING PIN
28	000710 16500	LID
29	945374 00000	SOCKET HEAD SCREW
30	008900 16500	GASKET
46	902300 26200	FAN
48	947713 00000	KEY
49	949454 00000	WASHER
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127	727502 06000	BLOW-OFF VALVE

¹⁾ necessary order quantity / maintenance

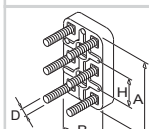
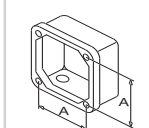
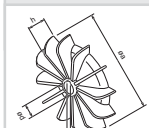
VT 4.40 (1~) Design - single-phase AC

Items different from standard appliance see appendix (back of drawing)



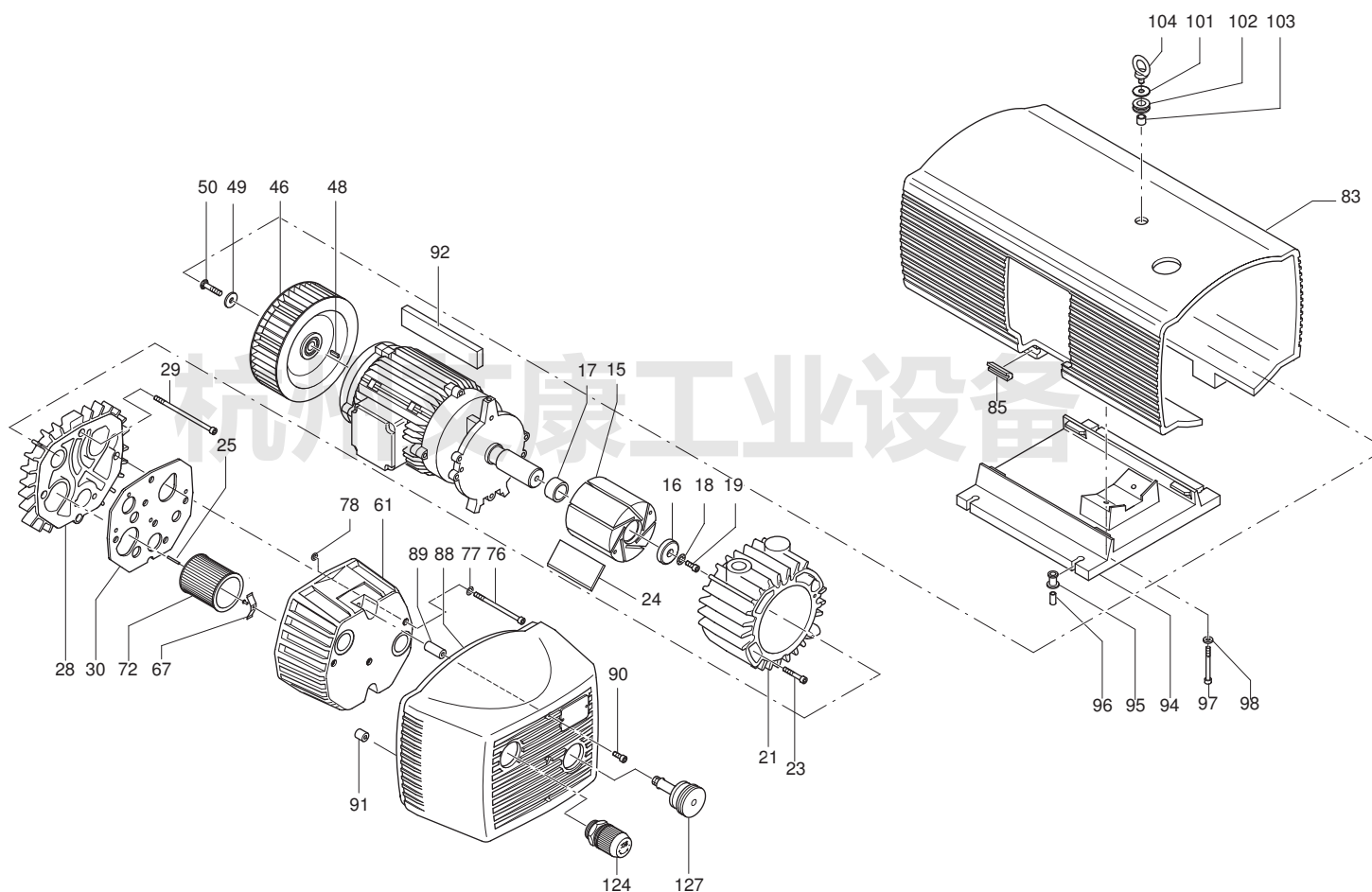
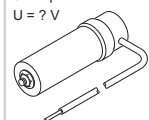


SERVICE ? 



1~

C = ? μ F
U = ? V



 **standard**

VT 4.25 (3~)
- Index A+B

VT 4.40 (3~)
- Index A

optional
en option
optionale
opcional



optional en option optionale opcional	Variante(n) Modifications Variantes	Pos ²⁾	Bestell Nr. / Ident No. / No. Identification / No. Identificazione / No. De pedido		Beschreibung / Description / Designation / Designazione / Desripcion
					
VT 4.25 (1~) - Index A+B VT 4.25/0-06 (3~) VT 4.40 (1~) - Index A	VT 4.25 (1~) VT 4.40 (1~)	8 12 13 83 83 83 94	964233 00000 948766 00000 742002 30000 006803 27500 006806 27500 006805 27600 015101 27600	006801-27500 006805-27500 006801-27600 015100-27600	WINKEL / BRACKET / COUDES / GOMITO / ÁNGULO BLINDNIET / BLIND RIVET / RIVET AVEUGLIE / RIVETTO CIEGO / REMACHE CIEGO KABEL / CABLE / CABLE / CAVO / CABLE VT 4.25 (INDEX A) - HAUBE / PROTECTING HOOD / CARTER PROTECTEUR / CARTER DI PROTEZIONE / CAPERUZA VT 4.25 (INDEX B) - HAUBE / PROTECTING HOOD / CARTER PROTECTEUR / CARTER DI PROTEZIONE / CAPERUZA VT 4.40 - HAUBE / PROTECTING HOOD / CARTER PROTECTEUR / CARTER DI PROTEZIONE / CAPERUZA FUSS / FOOT / PIED / PIEDE / PIE
	VT 4.25/0-06 (3~)	21 28 30 61 67 72 77 78 83 88 89 90 91	000100 16400 000707 16500 000101-16400 000710-16500 008900-16500 004803-27600 009000-16300 009505-00000 948021-00000 913161-00000 006805-27500 006802-27600 741365-00000 945318-00000 951922-00000	000101-16400 000710-16500 008900-16500 004803-27600 009000-16300 009505-00000 948021-00000 913161-00000 006805-27500 006802-27600 741365-00000 945318-00000 951922-00000	GEHÄUSE / PUMP BODY / CORP DE POMPE / CARCASSA / CARCASA SEITENDECKEL / LID / COUVERCLE / COPERCHIO / TAPA LATERAL DICHTUNG / GASKET / JOINT / GUARNIZIONE / JUNTA FILTERDECKEL / FILTER COVER / COUVERCLE DU FILTRE / COPERCHIO FILTRO / TAPA DE FILTRO ANPRESSFEDER / LEAF SPRING / RESSORT-JAME / MOLLA / MUELLE DE PRESIÓN FILTERPATRONE / FILTER CARTRIDGE / CARTOUCHE FILTRANTE / CARTUCCIA FILTRO / CARTUCHO DE FILTRO DICHRING / SEALING RING / JOINT / ANELLO GUARNIZIONE / ANILLO DE JUNTA O-RING / O-RING / ANNEAU-O / ANELLO-O / JUNTA TÓRICA HAUBE / PROTECTING HOOD / CARTER PROTECTEUR / CARTER DI PROTEZIONE / CAPERUZA GERÄTEHAUBE / PROTECTING HOOD / CARTER PROTECTEUR / CARTER DI PROTEZIONE / CAPERUZA GUMMIPUFFER / RUBBER BUFFER / AMORTISSEUR EN CAOUTCHOUC / AMMORTIZZATORE IN GOMMA / AMORTIGUADOR DE GOMA INNENSECHSKANTSCHRAUBE / SOCKET HEAD SCREW / VIS HEXAGONALE INTERNE / VITE ESAGONALE INTERNA / TORNILLO HEXAGONAL INTERIOR GUMMIFORMTEIL / RUBBER ELEMENT / ELEMENT EN CAOUTCHOUC / ELEMENTO IN GOMMA / PIEZA DE ORMA DE GOMA

²⁾ variantenabhängige Bauteile / variant-dependent components / composants variante-dependantes / componenti variante-dispendenti / componentes variante-dependientes


standard