Operating Instructions

Rietschle

Vacuum pumps

VTE

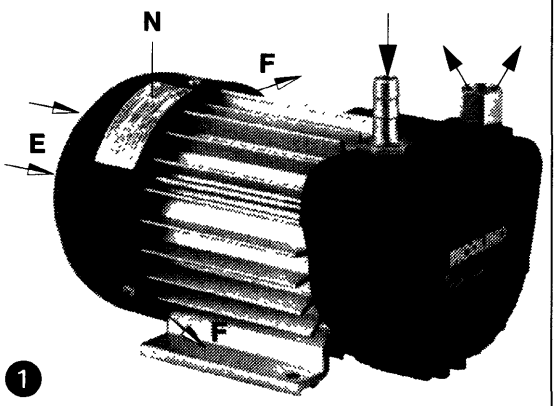
PICCOLINO

VTE 3
VTE 6
VTE 8

Pump ranges
These operating instructions concern the following dry running rotary vane vacuum pumps: Models VTE 3, VTE 6 and VTE 8. The vacuum capacities at atmosphere are 3.5, 6 and 8 m³/hr operating on 50 cycles. The pumping curves showing capacity against pressure can be found in data sheet D 187.

Description
All models are complete with a pipe connection on the inlet and an exhaust silencer on the outlet. All the air handled is filtered by a built-in micro-fine filter. The motor fan cools the motor and pump housing. Both the motor and pump have a common shaft.
Optional extras: As required, vacuum regulating valve (ZRV), non return valve (ZRK) and motor starter (ZMS).

Suitability
The VTE can be used for the evacuation of a closed system or for a permanent vacuum from: 150 to 1000 mbar (abs.)
⚠ **The ambient and suction temperatures must be between 5 and 40° C. For temperatures outside this range please contact your supplier.**
These dry running vacuum pumps are suitable for use with air of a relative humidity of 30 to 90%.
⚠ **No dangerous mixtures (i.e. flammable or explosive gases or vapours) extremely humid air, water vapour, aggressive gases or traces of oil and grease can be handled.**
The standard versions may not be handled in explosion areas.
⚠ **All applications where an unplanned shut down of the vacuum pump could possibly cause harm to persons or installations, then the corresponding safety backup system must be installed.**



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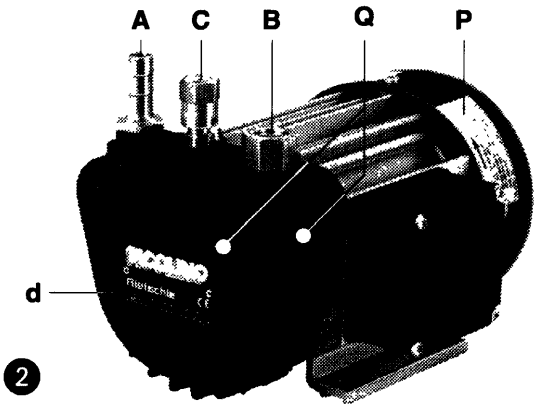

2

Handling and Setting up (pictures 1 and 2)
⚠ **Pumps that have reached their operating temperature, may have on the VTE 6 and VTE 8 a surface temperature, at position (Q) of more than 70° C. WARNING! Do Not Touch.**
There must be a minimum space of 20 cm in front of the housing cover (d) for servicing. The cooling air entries (E) and the cooling air exits (F) must have a minimum distance of 8 cm from any obstruction. The discharged cooling air must not be recirculated.
The VTE pumps can only be operated reliably if they are installed horizontally. Other built-in positions on request.
⚠ **For installations that are higher than 1000 m above sea level there will be a loss in capacity. For further advice please contact your supplier.**
Installed on a solid base these pumps may be installed without fixing down. If the pumps are installed on a base plate we would recommend fitting anti-vibration mounts. This range of vacuum pumps are almost vibration free in operation.

Installation (pictures 1 and 2)
⚠ **For operating and installation follow any relevant national standards that are in operation.**
1. Vacuum connection at (A).
   The air handled can be exhausted into the atmosphere through the exhaust port (B) or by utilising a pipe connection and pipeline.
   ⚠ **Long and/or small bore pipework should be avoided as this tends to reduce the capacity of the pump.**
2. The electrical data can be found on the motor data plate (P). The motors correspond to DIN/VDE 0530 and have IP 54 protection and insulation class B. The connection diagram can be found in the terminal box on the motor (unless a special plug connection is fitted). Check the electrical data of the motor for compatibility with your available supply (voltage, frequency, permissible current etc.).
3. Connect the motor via a motor starter. It is advisable to use thermal overload motor starters to protect the motor and wiring. All cabling used on starters should be secured with good quality cable clamps.
   We recommend that motor starters should be used that are fitted with a time delayed trip resulting from running beyond the amperage setting. When the unit is started cold overamperage may occur for a short time.

⚠ **The electrical installation may only be made by a qualified electrician under the observance of EN 60204. The main switch must be planned through the operator.**

BE 187
1.10.96

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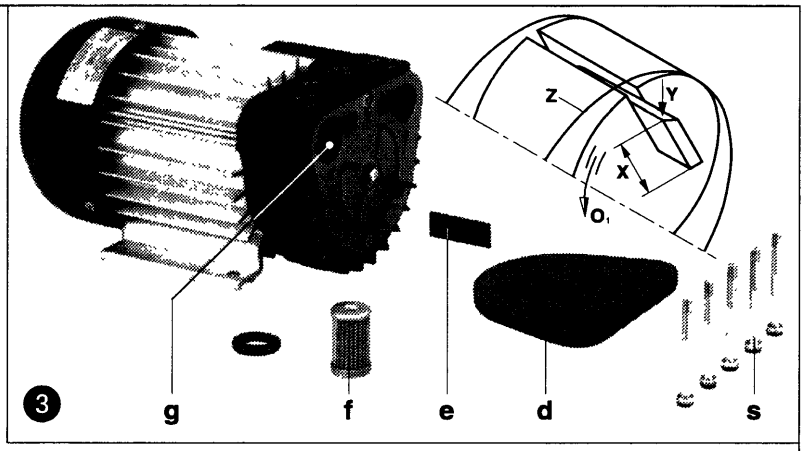
Initial Operation (picture ❶)

1. Initially switch the pump on and off for a few seconds to check the direction of rotation against the direction arrow (see motor data plate (P)).
   Note: The suction pipework should not be connected. If the pump runs backwards this could result in damaged rotor blades.
2. Connect the suction pipe at (A).
3. Vacuum regulating valve (optional extra):
   The vacuum can be adjusted by turning the regulating valve (C) according to the symbols on the top of the regulating valve.



❸

Potential risks for operating personnel

Noise Emission: The worst noise levels considering direction and intensity measured according to DIN 45635 part 3 (as per 3. GSGV) are shown in the table at the back. When working permanently in the vicinity of an operating pump we recommend wearing ear protection to avoid any damage to hearing.

Maintenance and Servicing

When maintaining these units and having such situations where personnel could be hurt by moving parts or by live electrical parts the pump must be isolated by totally disconnecting the electrical supply. It is imperative that the unit cannot be re-started during the maintenance operation. Do not maintain a pump that is at its normal operating temperature as there is a danger from hot parts.

1. Lubrication

The VTE pumps have bearings that are greased for life. They need not be serviced

Productinfo

Rietschle

Compact dry running vacuum pumps

VTE

PICOLINO

VTE 3
VTE 6
VTE 8

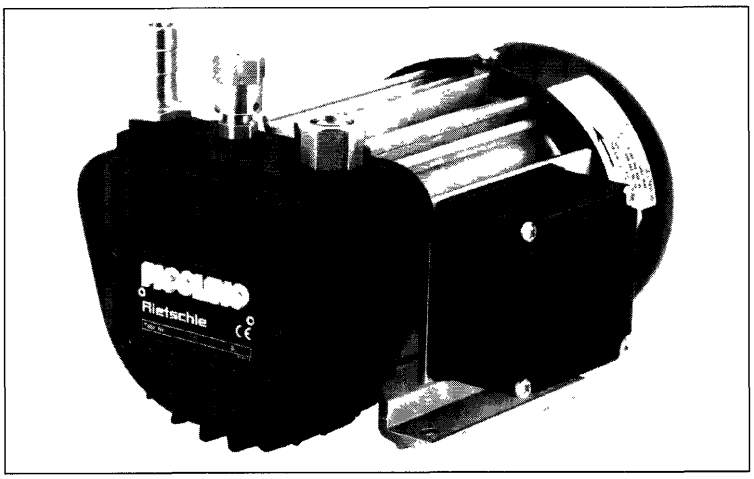
For modern applications which require a capacity of less than 10 m³/hr combined with a good vacuum level, dry running vacuum pumps are used almost exclusively due to their compact size, high efficiency and low noise level.

Rietschle has improved their performance through extensive applications experience and has therefore retained leadership in this field.

The pump range VTE includes the sizes 3, 6 and 8 m³/hr and achieves an ultimate vacuum of 150 mbar (abs). The VTE is distinctive due to its compact construction, which makes it easy to build into end user equipment.

A paper inlet filter, exhaust silencer and hose connection are fitted as standard, with the option of a vacuum regulating valve if required.

This vacuum pump model is also available in three electrical versions to meet virtually any voltage and frequency requirements:



1. Three phase application
   200-255/346-440 V, 50/60 Hz
2. Single phase operation
   230 V ± 10%, 50/60 Hz
3 Single phase operation
   100 V ± 10%, 50/60 Hz
   115 V ± 10%, 60 Hz

Plug and cable can easily be fitted on request.

The TEFV motor conforms to protection IP 54.
Models with a single phase motor have a thermo bi-metal contact in the winding, which enables the motor to automatically switch off if it becomes too hot due to overload or insufficient cooling. The motor will automatically re-start when the temperature decreases.
UL approved motors can be obtained

Noise levels from the VTE are minimised by the use of cast iron for the housing and end cover, making it ideal for applications in quiet areas such as offices and laboratories.

The rotor is corrosion resistant so that a long stand still period, even at high humidity, is no problem.

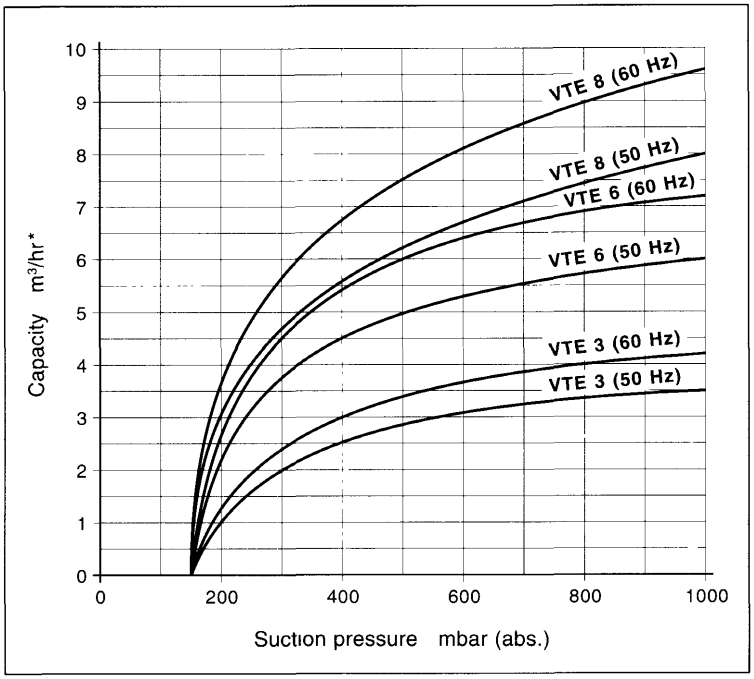
The main dimensions are:

Length:
- VTE 3 → 209 mm
- VTE 6 → 224 mm
- VTE 8 → 249 mm

Width:
- VTE 3-8 → 154 mm

Hight incl. hose connection:
- VTE 3 → 151 mm
- VTE 6 → 157 mm
- VTE 8 → 157 mm

Please do not hesitate to contact us for more detailed information!



* related to suction conditions at inlet connection. Curves and specifications refer to vacuum pump at normal operating temperature.

PE 187

1.8.96

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Daten

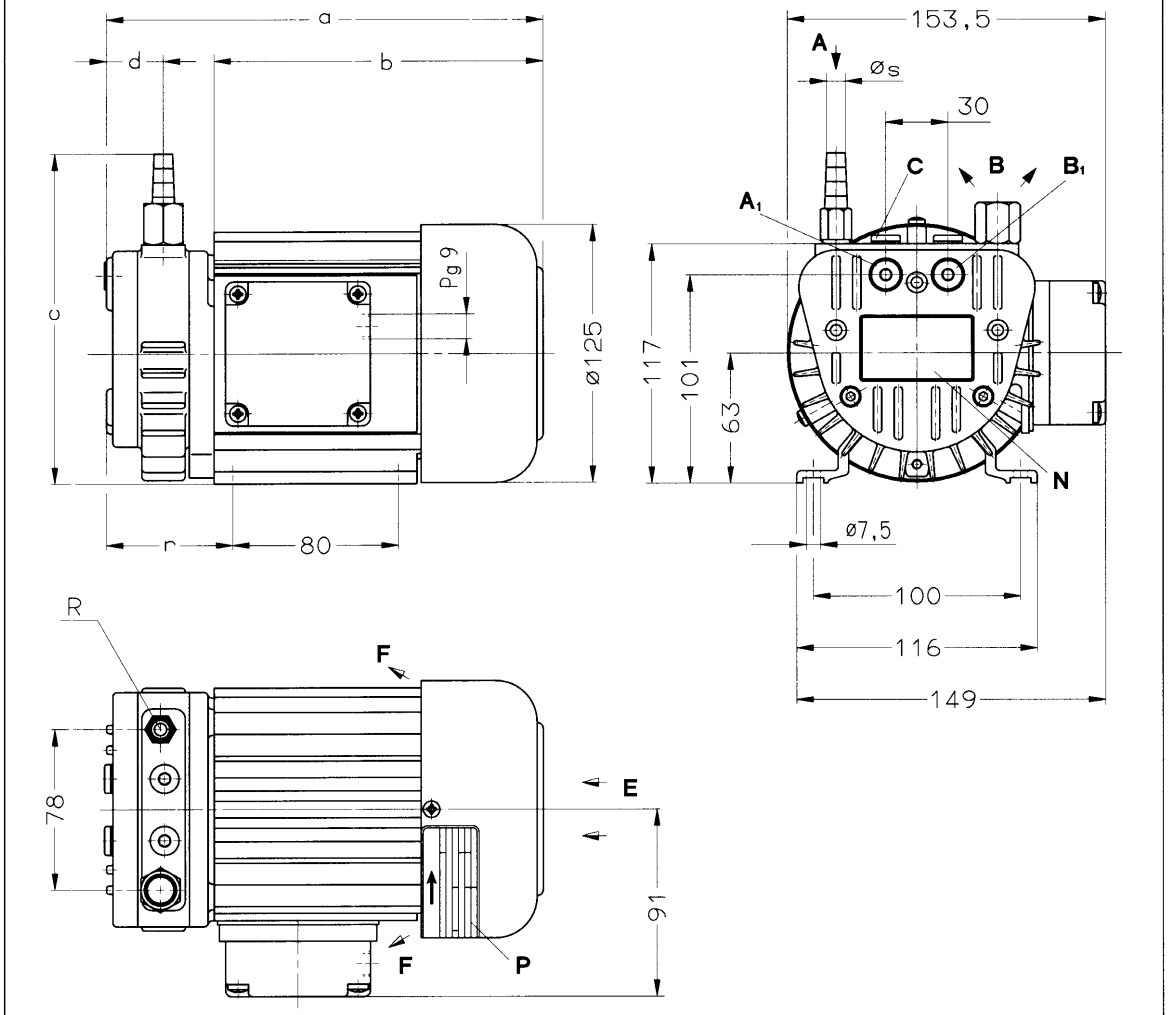
Rietschle

Vakuum-pumpen	Vacuum Pumps	Pompes à vide	Pompe per vuoto

VTE

PICCOLINO

VTE 3
VTE 6
VTE 8



[mm]

A	Vakuum-Anschluß	Vacuum connection	Raccord du vide	Attacco vuoto
A_1	Alternativer Vakuum-Anschluß	Vacuum connection alternative	Raccord alternatif du vide	Attacco vuoto alternativo
B	Abluft-Austritt	Exhaust	Refoulement	Scarico aria
B_1	Alternativer Abluft-Austritt	Exhaust alternative	Refoulement alternatif	Scarico aria alternativo
C	Anschlußmoglichkeit fur Vakuum-Regulierventil	Connection possibility for vacuum regulating valve	Possibilité de raccordement pour valve réglage vide	Possibilita di allacciamento per valvola regolazione vuoto
E	Kuhlluft-Eintritt	Cooling air entry	Entrée air refroidissement	Entrata aria di raffreddamento
F	Kuhlluft-Austritt	Cooling air exit	Sortie air refroidissement	Uscita aria di raffreddamento
N	Datenschild	Data plate	Etiquette caractéristique	Targhetta dati
P	Motordatenschild	Motor data label	Etiquette caractérist. moteur	Targhetta dati del motore

VTE		3	6	8
[mm]	a	209	224	249
	b	158	158	179
	c	152	158	158
	d	24	38	27
	r	59	74	79
	Øs	9	12	12
	R	G 1/8	G 3/8	G 3/8

D 187

2.6.94

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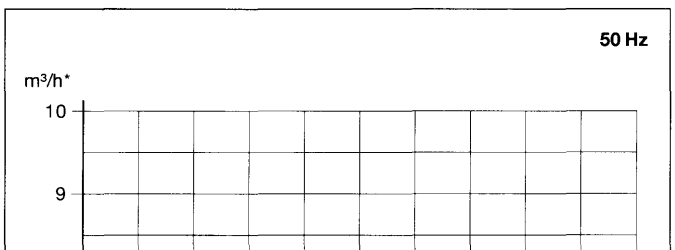
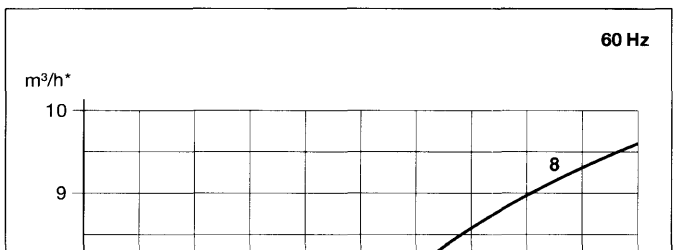
VTE		3	6	8
m^3/h	50 Hz	3,5	6,0	8,0
	60 Hz	4,2	7,2	9,6
mbar (abs.)•		150		
3 ~		200–255/346–440 V (50/60 Hz)		
1 ~		230 V ± 10% (50/60 Hz)		
kW (50 Hz)	3 ~	0,12	0,25	0,37
	1 ~	0,12	0,25	0,35
kW (60 Hz)	3 ~	0,145	0,30	0,44
	1 ~	0,145	0,30	0,42
A (50 Hz)	3 ~	1,1/0,63	1,4/0,81	2,42/1,4
	1 ~	1,3	2,3	3,9
A (60 Hz)	3 ~	0,9/0,52	1,44/0,83	2,25/1,3
	1 ~	1,4	2,5	3,4

ZRV		6/0	6/0	12/0
ZRK		6 (03)	12 (03)	12 (03)
ZMS (50 Hz)	3 ~	16/10	16/10	40/60
	1 ~	16	24	40
ZMS (60 Hz)	3 ~	10/10	16/10	24/16
	1 ~	16	40	40

m^3/h	Saugvermogen	Capacity	Débit	Portata
mbar (abs.)•	Enddruck	Ultimate vacuum	Pression limite	Pressione finale
mbar (abs.)	Ansaugdruck	Suction pressure	Pression d'aspiration	Pressione di aspirazione
3 ~/1 ~	Motorausfuhrung	Motor version	Exécution moteur	Esecuzione motore
kW	Motorleistung	Motor rating	Puissance moteur	Potenza motore
A	Stromaufnahme	Current drawn	Intensité absorbée	Corrente nominale
min^{-1}	Drehzahl	Speed	Vitesse rotation	Numero giri
dB(A)	mittlerer Schallpegel	Average noise level	Niveau sonore moyen	Rumorosità media
kg	max. Gewicht	Weight max.	Poids maxi.	Peso massimo
	Zubehor	Optional extras	Accessoires	Accessori
ZRV	Vakuum-Regulierventil	Vacuum regulating valve	Valve de règlage vide	Valvola regolazione vuoto
ZRK	Ruckschlagventil	Non return valve	Clapet anti-retour	Valvola di non ritorno
ZMS	Motorschutzschalter	Motor starter	Disjoncteur moteur	Interruttore magnetotermico





nbauteile	Assembly parts	Eléments de montage	Elementi di montaggio
chlauchanschluß	Hose connection	Raccord tuyau	Allacciamento flessibile
ichtring	Sealing ring	Anneau d'étanchéité	Anello guarnizione
erschlußschraube	Plug	Bouche obturateur	Vite di chiusura
erschlußschraube	Plug	Bouche obturateur	Vite di chiusura
1/8	G 1/8	G 1/8	G 1/8
ichtring	Sealing ring	Anneau d'étanchéité	Anello guarnizione
usblasschalldämpfer	Exhaust silencer	Silencieux refoulement	Silenziatore allo scarico
ubehör	**Optional extra**	**Accessoires**	**Accessori**
akuum-Regulierventil RV	Vacuum regulating valve ZRV	Valve réglage vide ZRV	Valvola regolazione vuoto ZRV
childer	**Labels**	**Plaque signalétiques**	**Targhette**
atenschild	Data plate	Etiquette caractéristique	Targhetta dati
otordatenschild	Motor data label	Etiquette caractérist. moteur	Targhetta dati del motore
chraube	Screw	Vis	Vite
chraube	Screw	Vis	Vite

htungen als nts arnizioni

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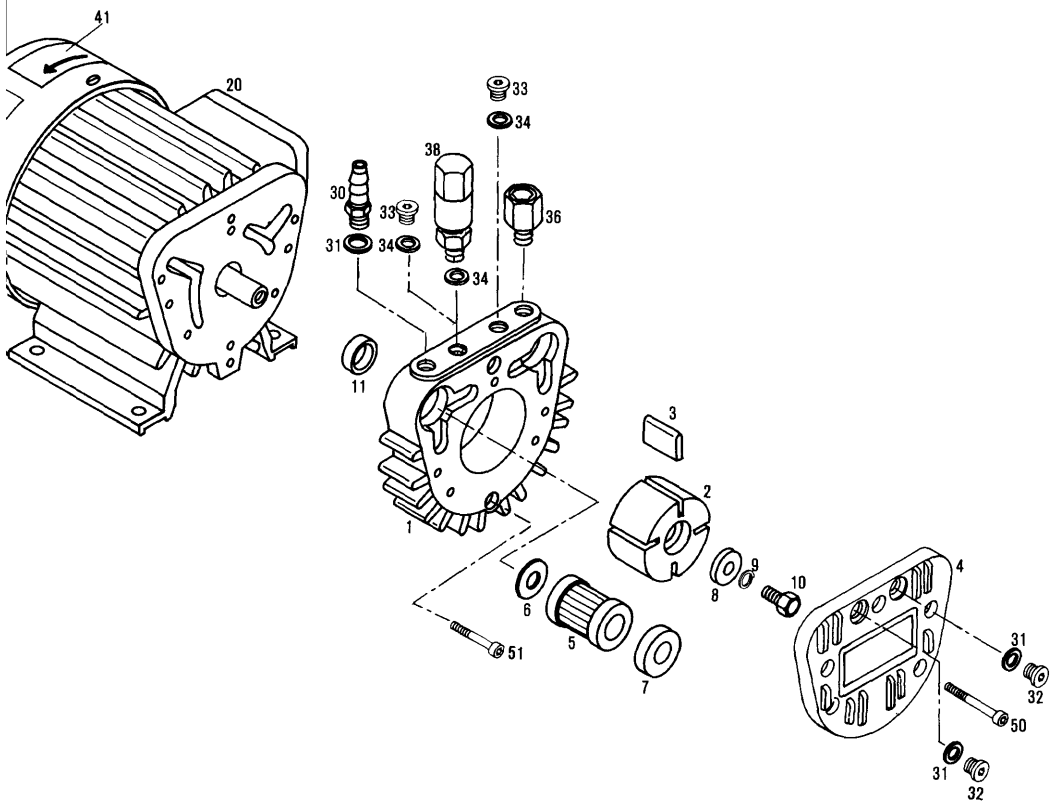

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