



PREMIER FLUID SYSTEMS INC.

Dry Vane Vacuum Pumps

PFS DVV / KVE / KDT / BVT 60-80-100-140-160 Operating Manual



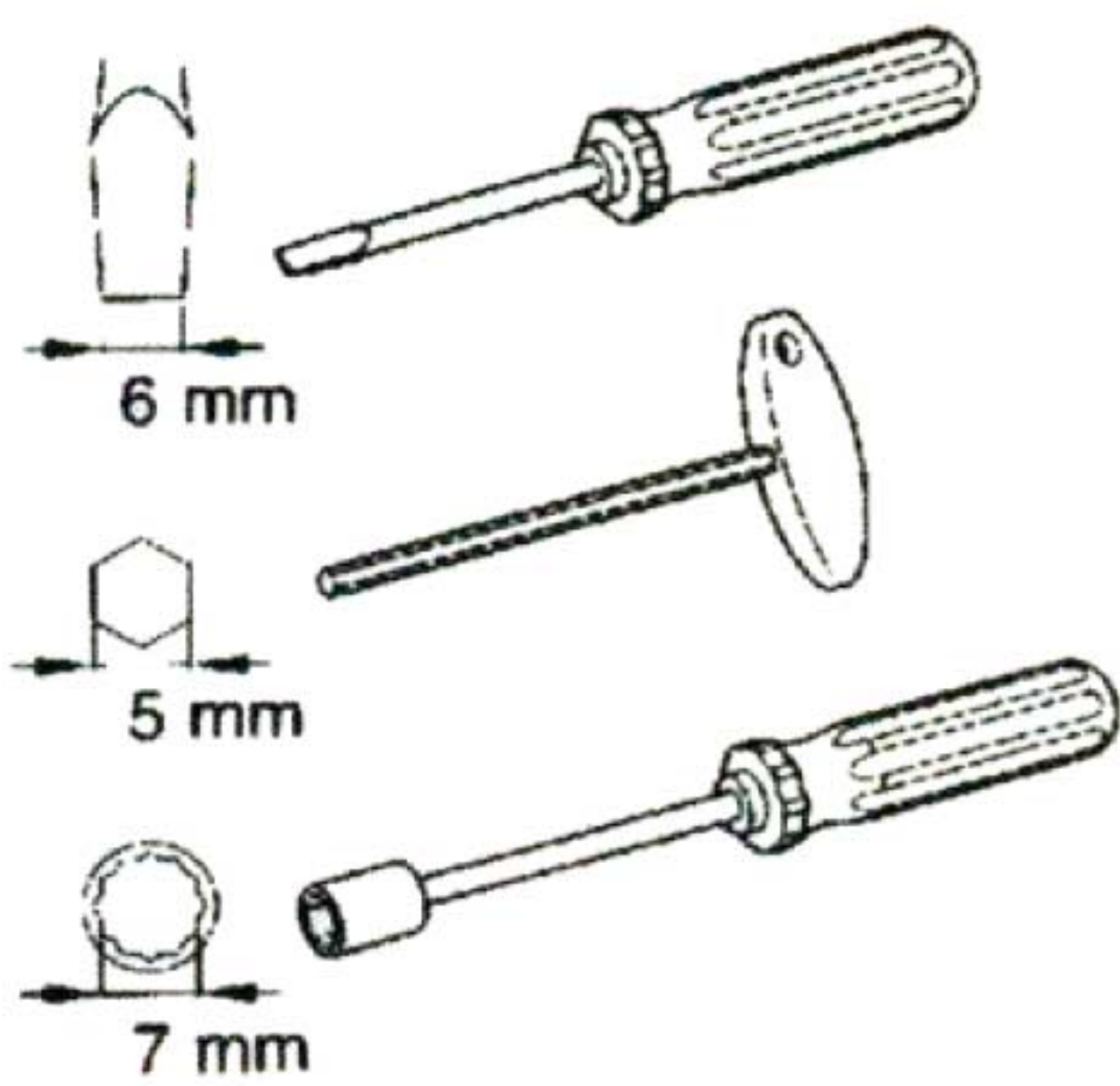
DVV SERIES

BVT SERIES



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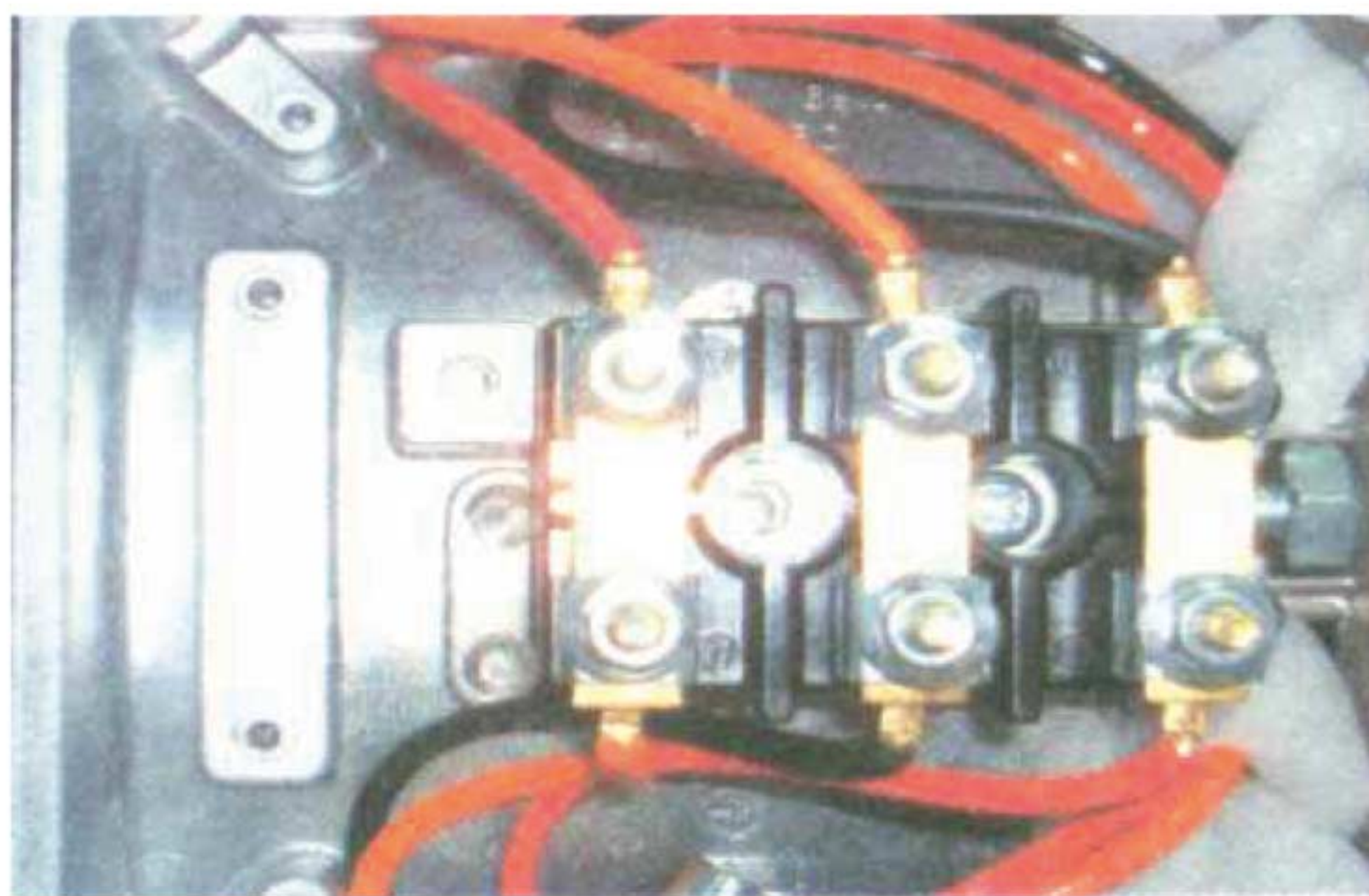
1. Tools :



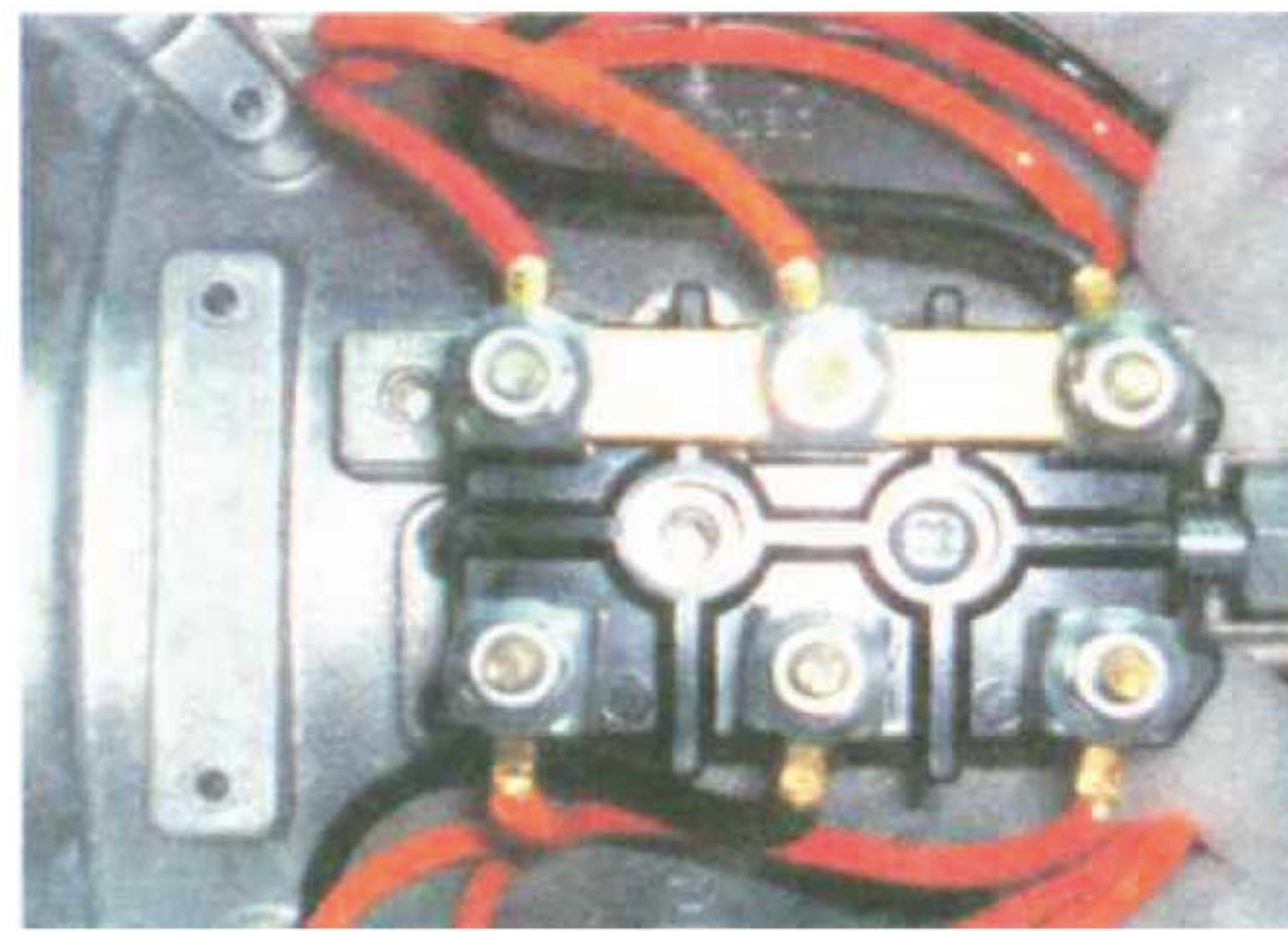
Grease gun



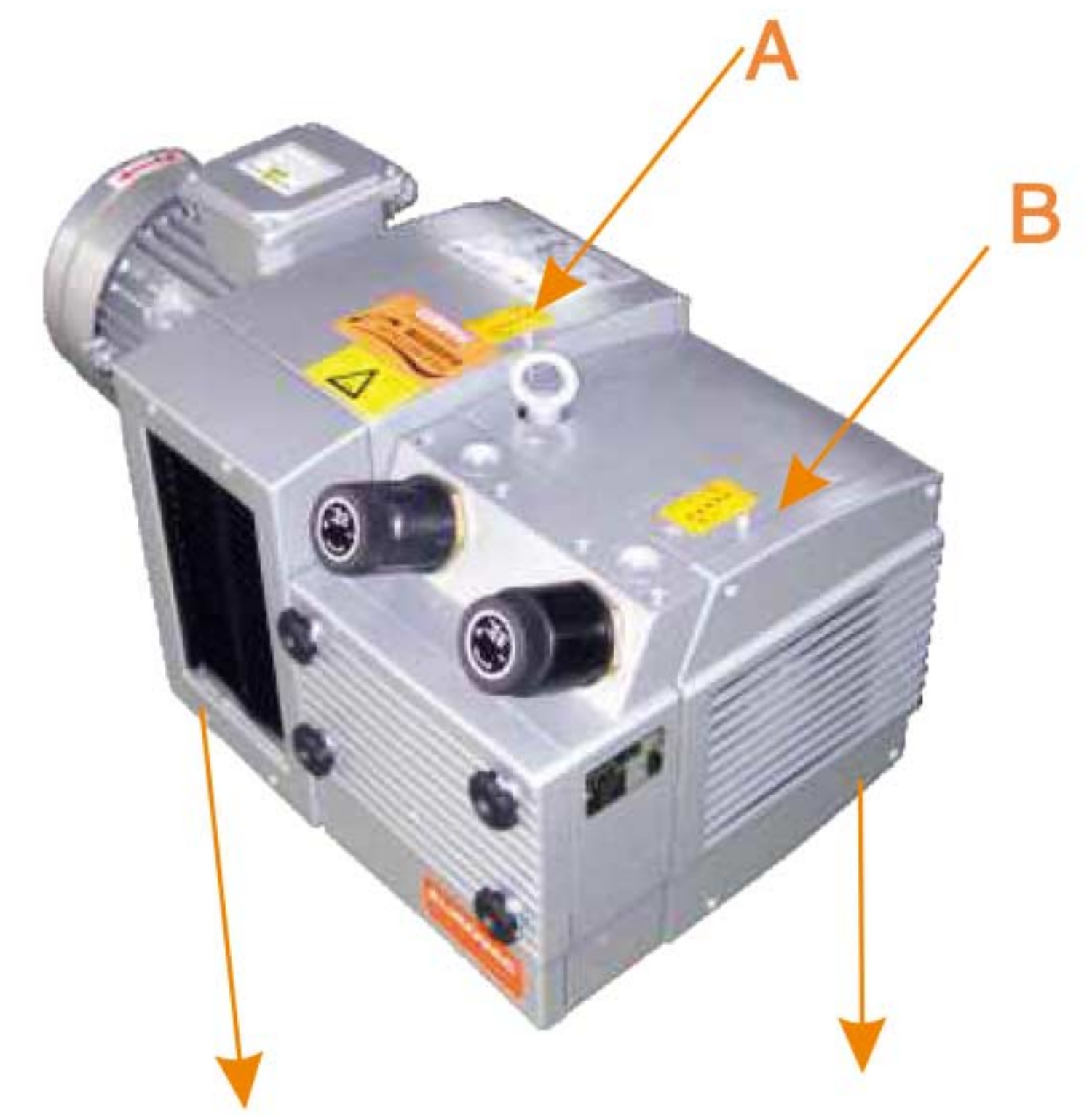
2. Installation & Motor Connection :



Low Voltage: 3Φ 220V



High Voltage: 3Φ 380V



Ambient temperatures must not exceed 45°C

It is recommended to install the pumps with easy access for maintenance. Clearance between compressors and adjacent walls should be no less than 10cm of free space in order to ensure sufficient air flow for cooling. Contact manufacturer prior to installation under noise insulation canopies. Ambient temperatures must not exceed 45°C.

Connect the Vacuum pump to the electricity supply observing all applicable safety regulation. Comply with En60204 T1. Connect motor based on connecting diagram(in terminal box) or ready-made plugs. This work should be carried out by an experienced electrician only. Check for connecting voltage and frequency. The switch for the motor protection and the main switch have to be installed. Adjust the motor protection switch to the nominal output of the motor(the data can be found on the motor type plate). Avoid more than 10 switches per hour.



Briefly start motor and check rotation(arrow on casing). Exchange phases if rotation is incorrect.




When in operation, an automatic start is possible.

Ensure correct dimensions(see Table) and clean pipelines. Keep connections free from oil \ grease \ water and any other contamination. With pipelines exceeding 2m in length we recommend the installation of non-return valves. Keep connections free from oil \ grease \ water and other contaminants. Remove end caps at DA and SA. Do not connect to pipeline yet.

Connect pressure line at DA and inlet line at SA. Set vacuum control valve VR or pressure control valve DR to operating valve(for valve see table). Do not operate the compressor without safety equipment against excessive pressure(for maximum values see rating plate). In case of permitted compression end pressures of more than 1 bar additionally connect a pressure meter and mark end pressure.

3. Application :



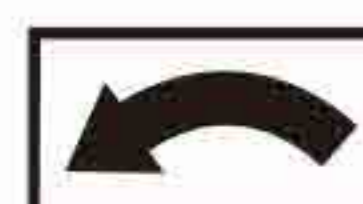
 The pump can be used to generate vacuum (DVV) or overpressure (BVT\KDE) .Inlet air must be standard dry atmospheric air. The pumps are dry–running. Avoid intake or oil mist. The specification is valid up to a height of 800m above sea level.

4. Maintenance :

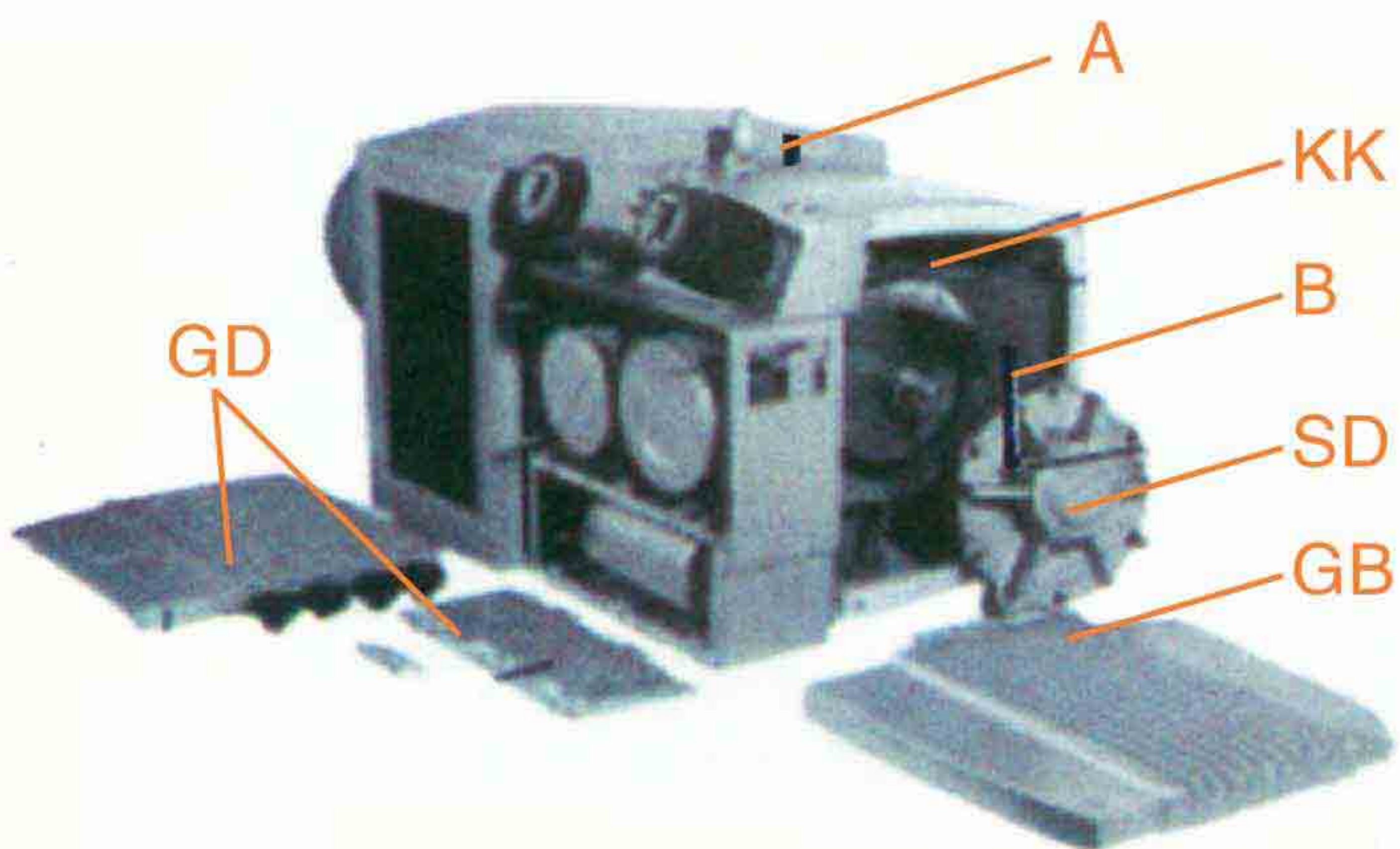
Maintain pump regularly to achieve the best operating results. Maintenance intervals will depend on the pump’s use and ambient conditions.

 Before commencing maintenance, remove main plug from socket to avoid unintentional restarting.

 Air pressure will generate high temperature at the compressors, Allow the pump parts to cool before disassembly.

 DVV / KVE / KDE60~160: Grease Roller bearings at A and B both of the grease nipples while the vacuum pump is running within every 2 or 3 weeks please fill with oil grease(60~100:5g and 140–160:7g). after 5.000 hrs replace by original roller bearings only.

5. Code and name of parts :

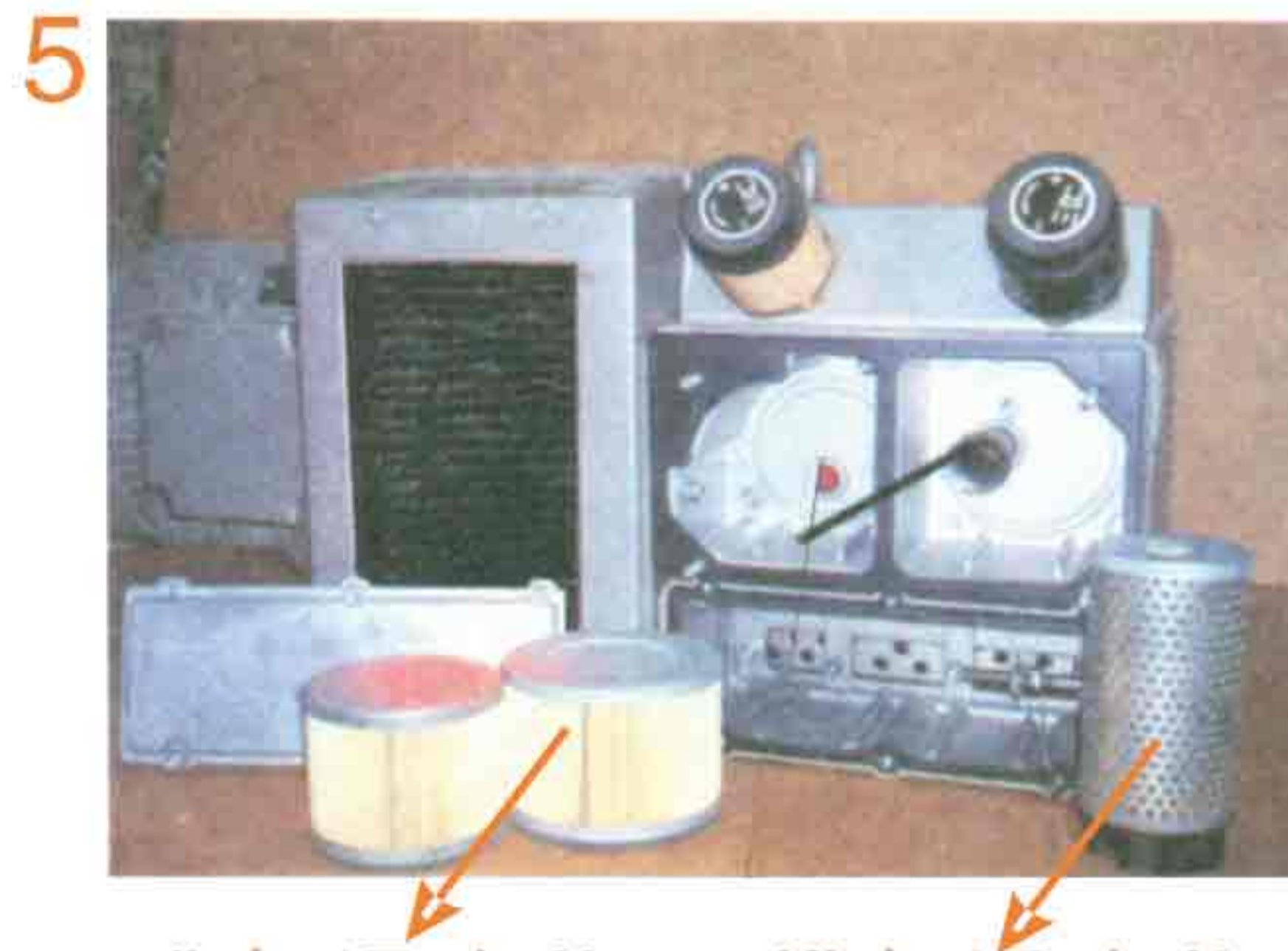


- A: End oil filter hole
- KK: Pump body
- B: Front oil filler hole
- SD: Lid
- GB: Protect hood
- GD: Protecting hood of filter



- VR: Vacuum regulator valve
- SA: Intake of vacuum
- DA: Outlet port
- DR: Pressure regulator valve

5. The procedure for how to replace the filter and fill with grease oil :



★Remark :

Please don't forget within every 2 or 3 weeks fill with 5~7g oil grease, or 1-2 months if under 40 hours/week usage (while the vacuum pump is running)

Picture 1. (Pos.No.110);
Loosen 4 handles(Pos.No.110)in the reverse direction;

Picture 2. Remove the filter cover(Pos.No.73);

Picture 3. Remove the air filter;

Picture 4. Loosen the dust separator of socket head screw (Pos.No.105) by 5mm hexagon wrench key and remove socket head screws of the dust separator(Pos.No.103);

Picture 5. Remove the filter cartridge (Pos.No.91) and Blow out dirt in cooling air channel (pump body) A and B suction filter;

Picture 6. Install new filter cartridges in pump body as well as the dust separator;

Picture 7. Install new filter cartridges in pump body as well as tighten socket head screw (Pos.No.105) of the dust separator in the clockwise direction;

Picture 8. Install the filter cover (Pos.No.73) and the tighten handles (Pos.No.110) in the clockwise direction.

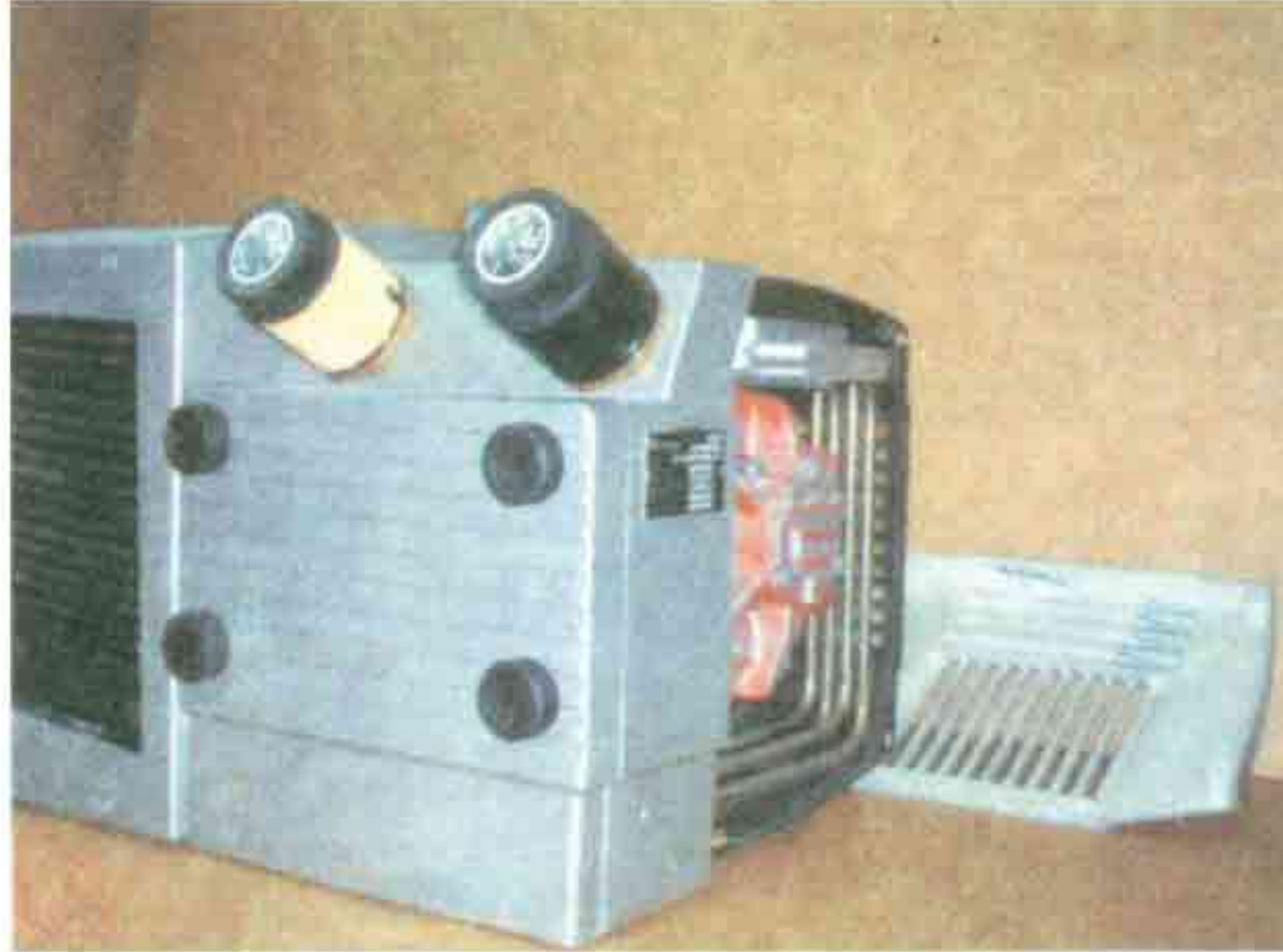
★Please don't forget within every 2 or 3 weeks fill with oil grease (while the vacuum pump is running) or 1-2 months if under 40 hours/week usage

6. The procedure for how to replace the carbon vanes :

1



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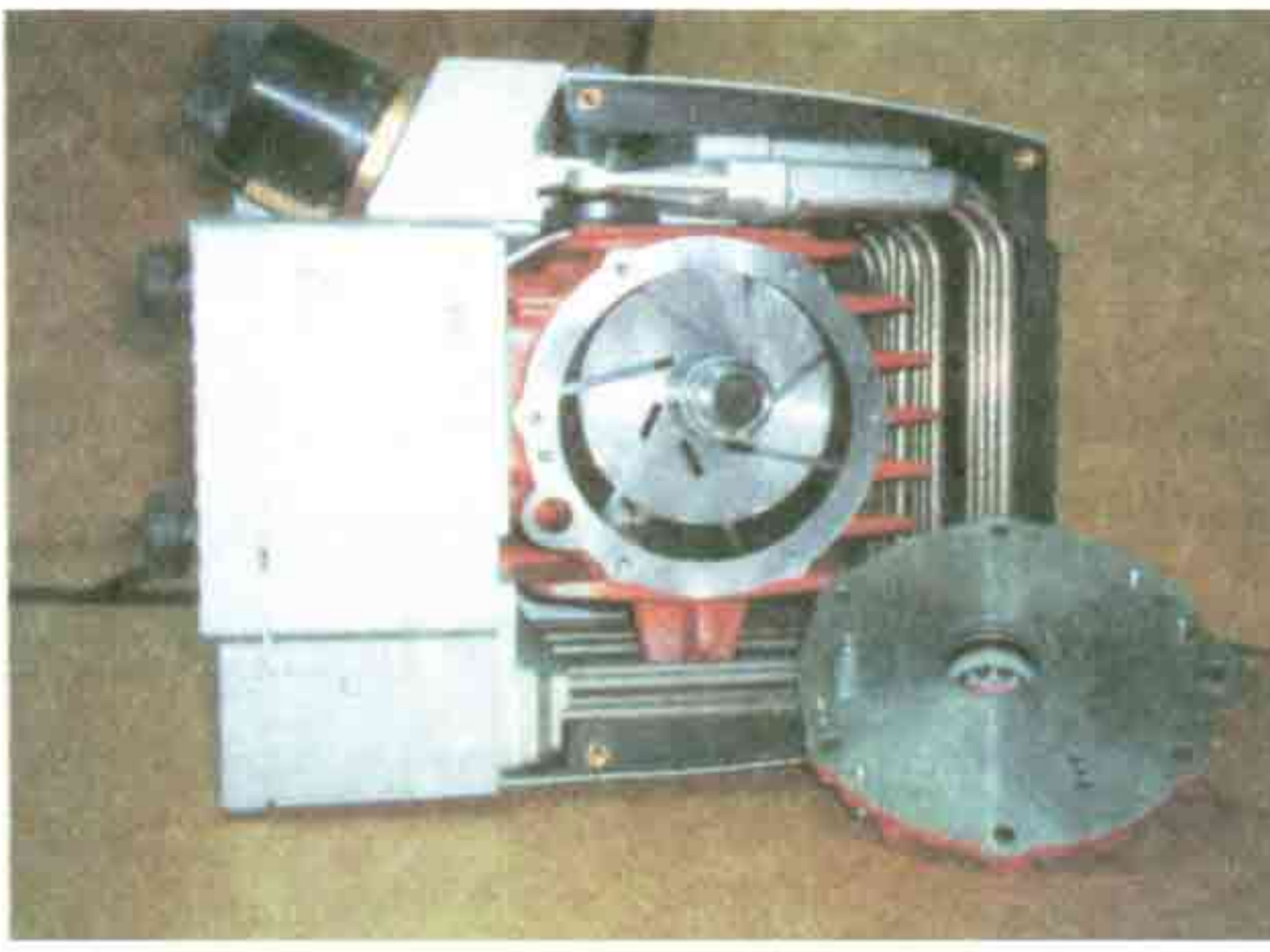
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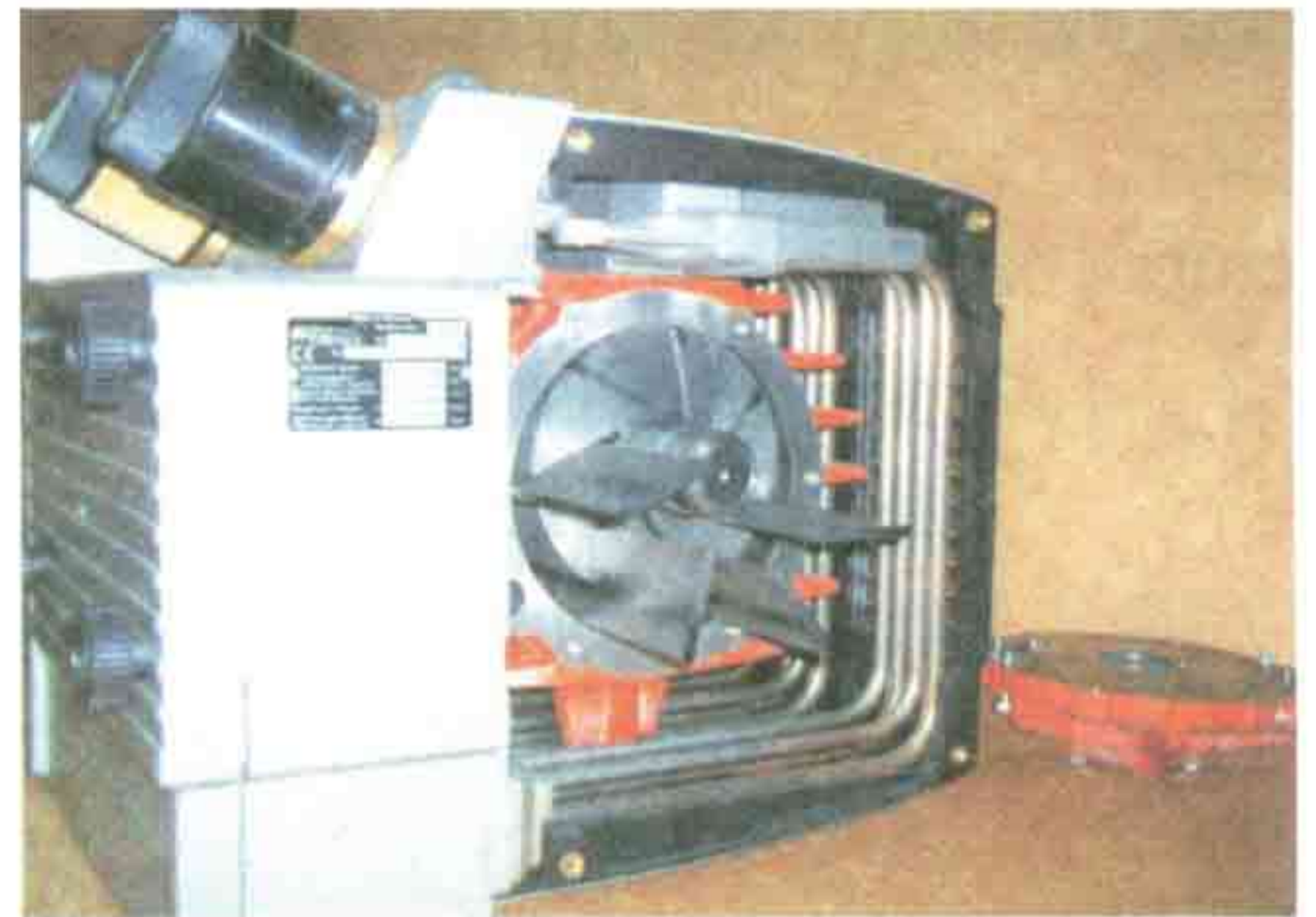
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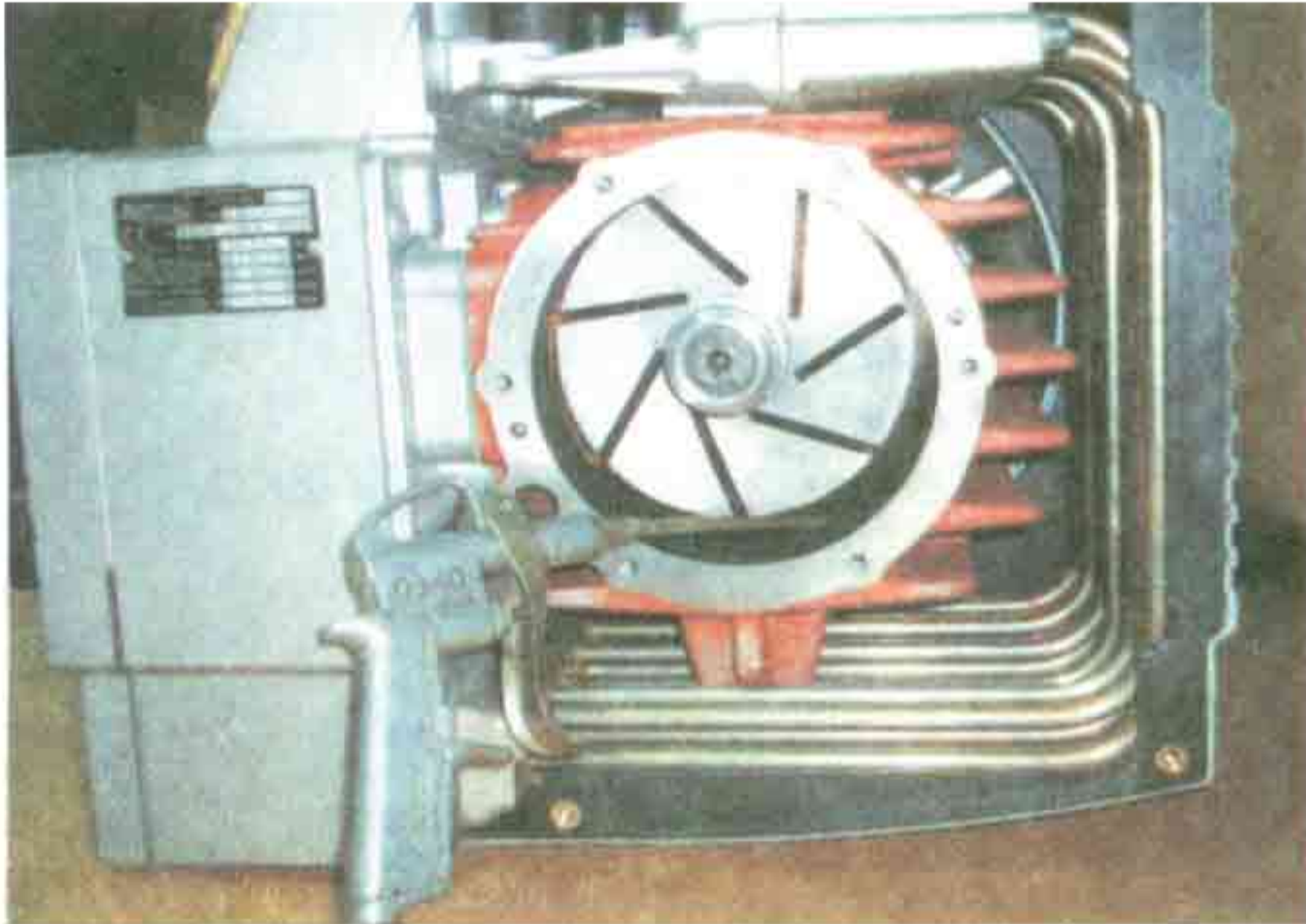
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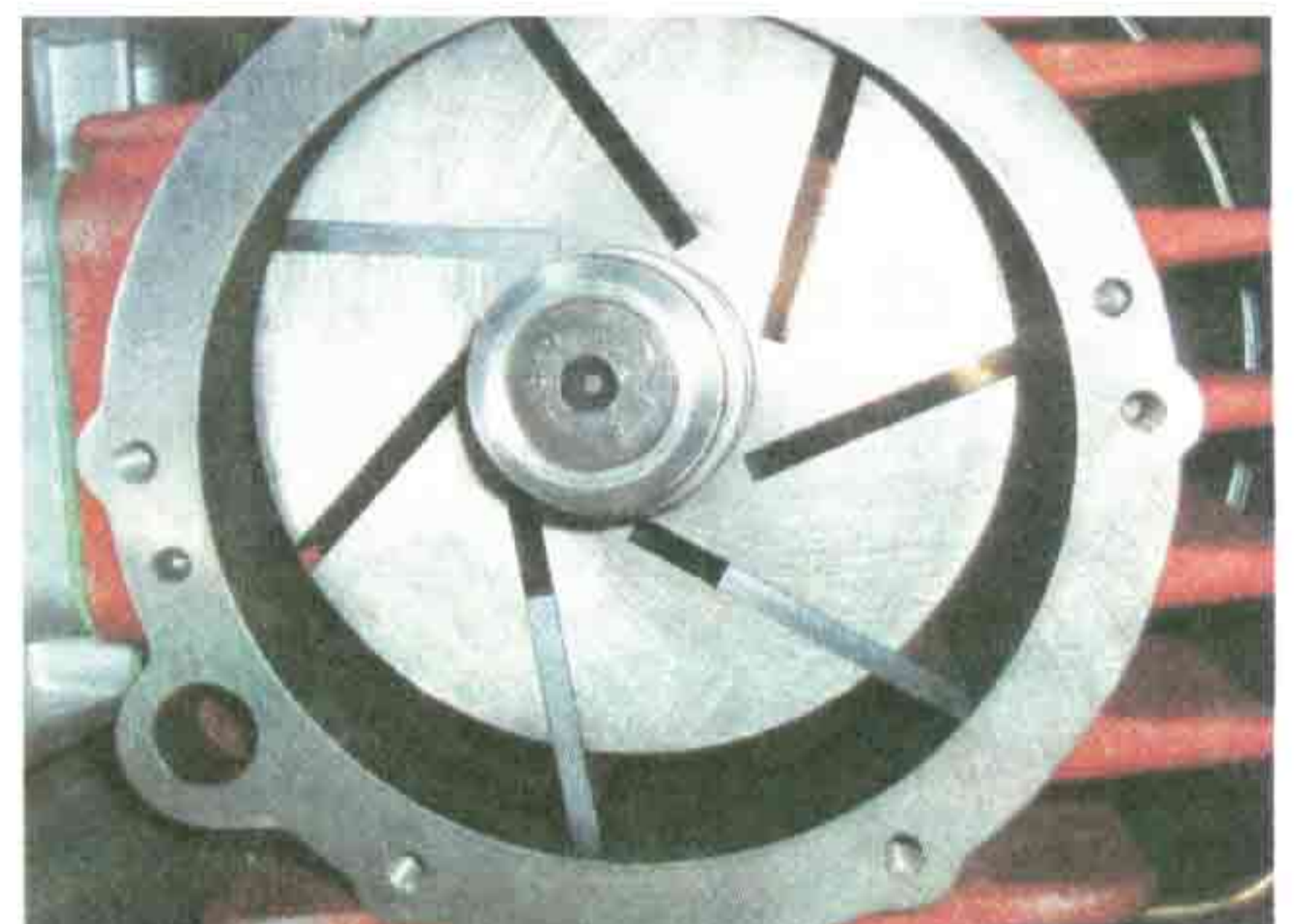
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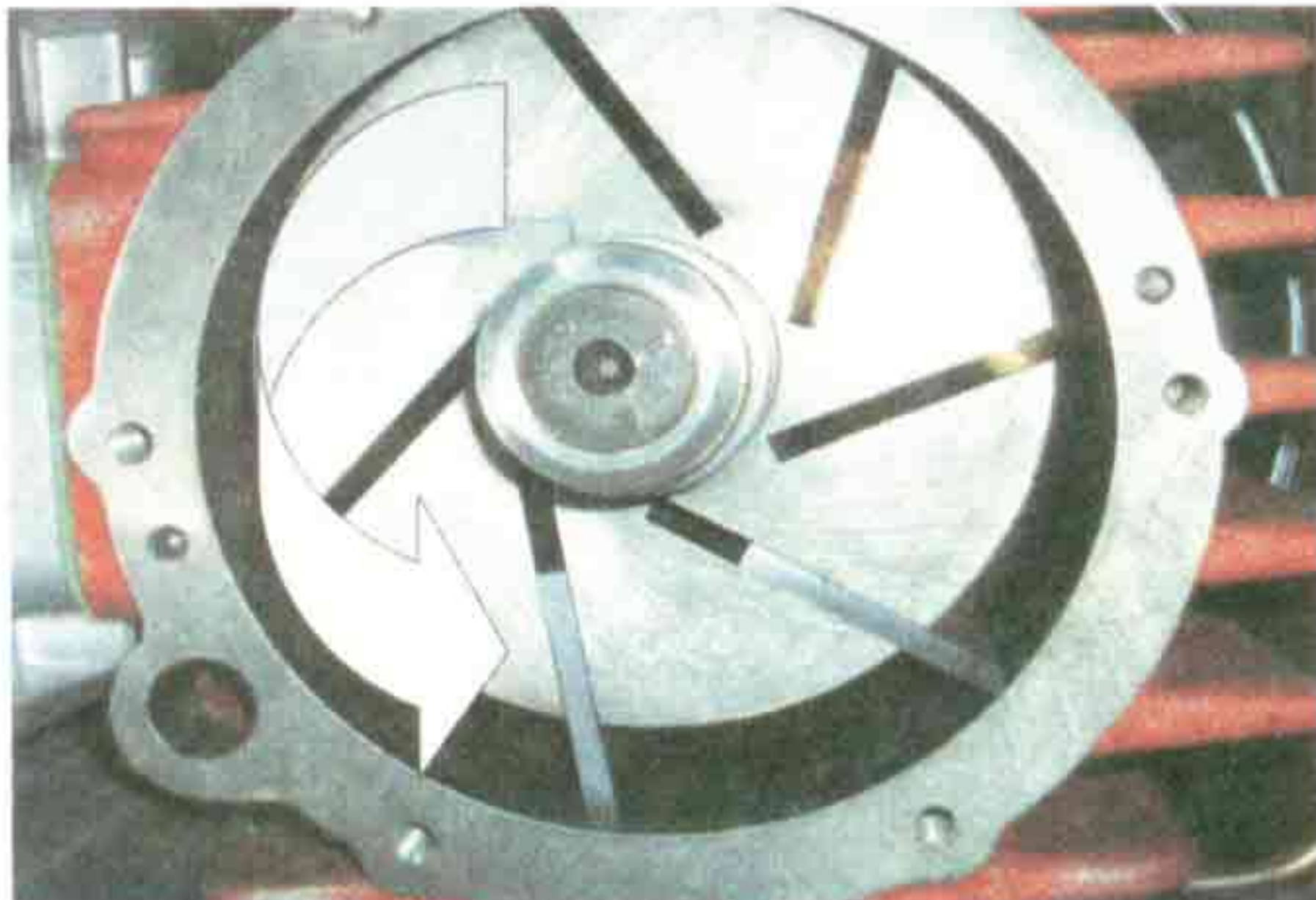
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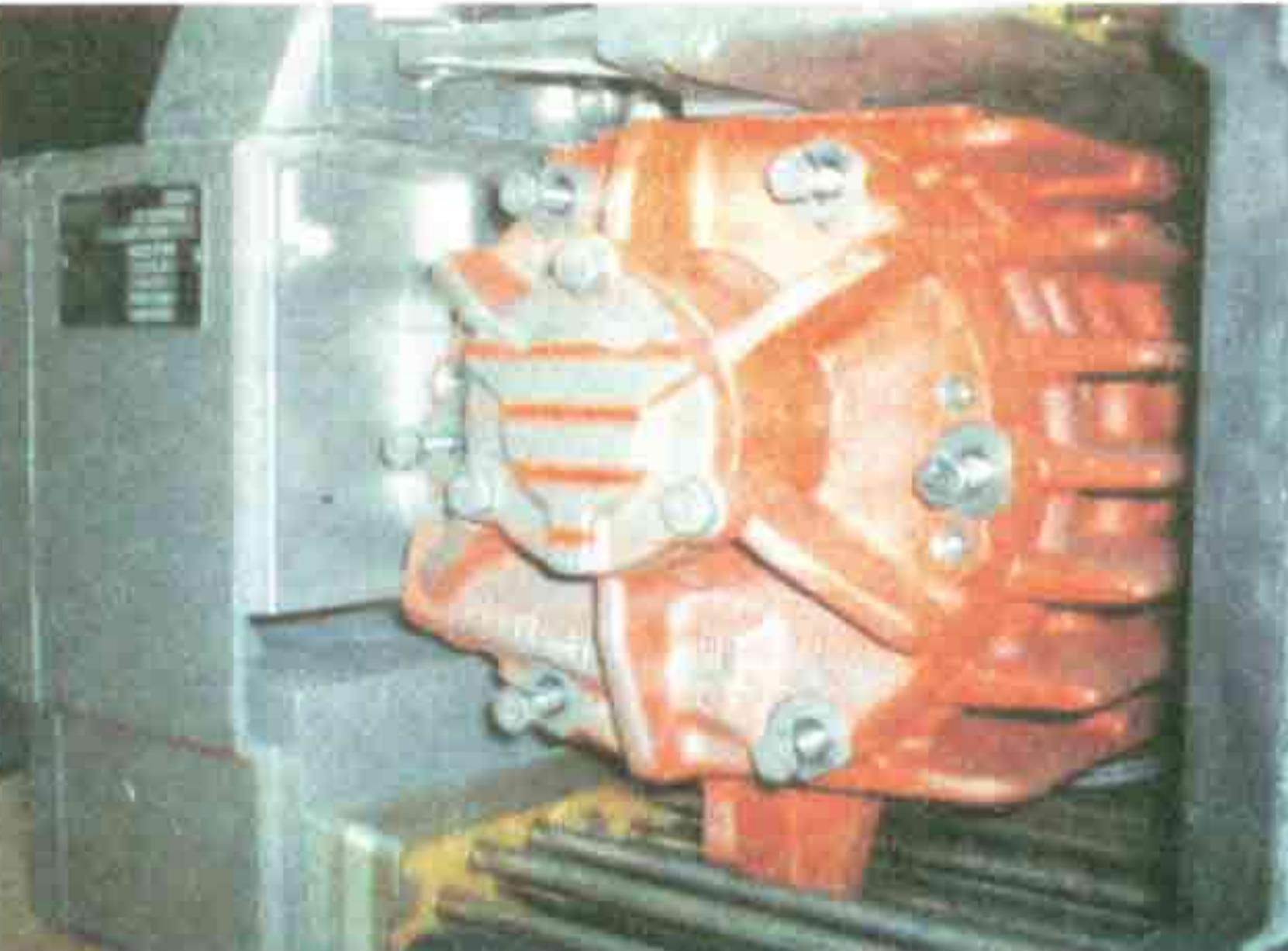
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12



Picture 1. Loosen 4 socket head screws (Pos.No.170) by 5 mm hexagon wrench key in the reverse direction;

Picture 2. Remove the air guide cover ring (Pos. No.163);

Picture 3. Loosen 6 hex head screws of lid(Pos.No.14)by sockets in the reverse direction;

Picture 4. Tighten 2 hex head screws into lockhole of lid and two sides shall be tightened horizontally in the clockwise direction; (Note: Do not disassemble the SD during high temperature phase);

Picture 5. Remove the lid(Pos.No.14);

Picture 6. Remove the carbon vanes(Pos.No.11);

Picture 7. Blow our dirt cooling air channel KK (pump body) by compressed air;

Picture 8. Install the new carbon vanes in the rotors; (DVV.P type 7 pieces of 1 groups, DVV & DVP type 4 pieces of 1 groups)

Picture 9. Install the new carbon vanes in the rotor.(Please notice the direction of carbon vanes)

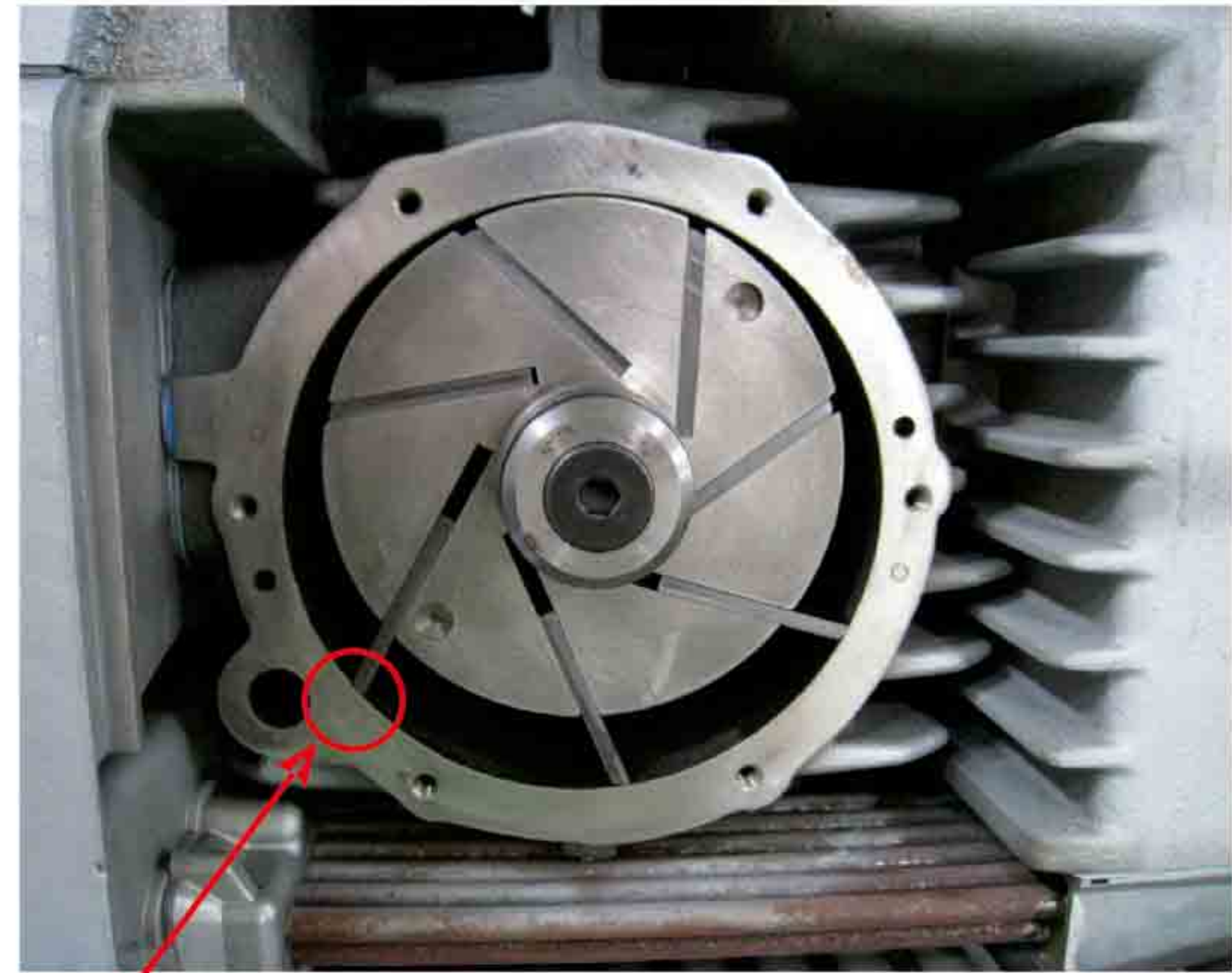
Picture 10. After installing the carbon vanes, turn the rotor in the reverse direction and assure the carbon vanes to fall from the rotor smoothly in the horizontal position.(If it does not fall smoothly in the horizontal position, please grind the channel of rotor by abrasive paper and then blow out dirt in cooling air channels of rotor);

Picture 11. Install the lid and tighten 6 hex head screws;

Picture 12. Install the air guide cover ring (Pos.No.163) and tighten socket head screws of ventilator hood. Please dont forget to fill with oil grease (while the vacuum pump is running) every 1-2 months for pump operating 40 hours per week or less, greater than that grease ever 2-3 weeks

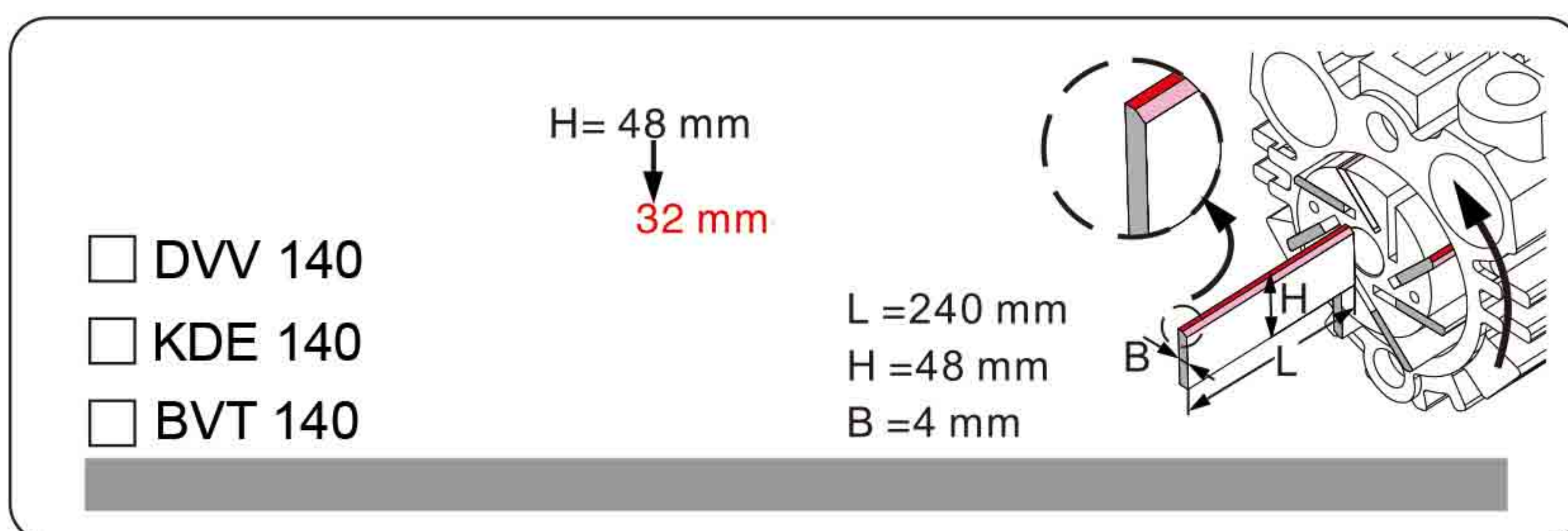
★ Before commencing switch off electricity to ensure safety.

2. Do not disassemble or maintain the pump to avoid any hurt during high temperature phase.



The carbon vanes are installed by incorrect direction.

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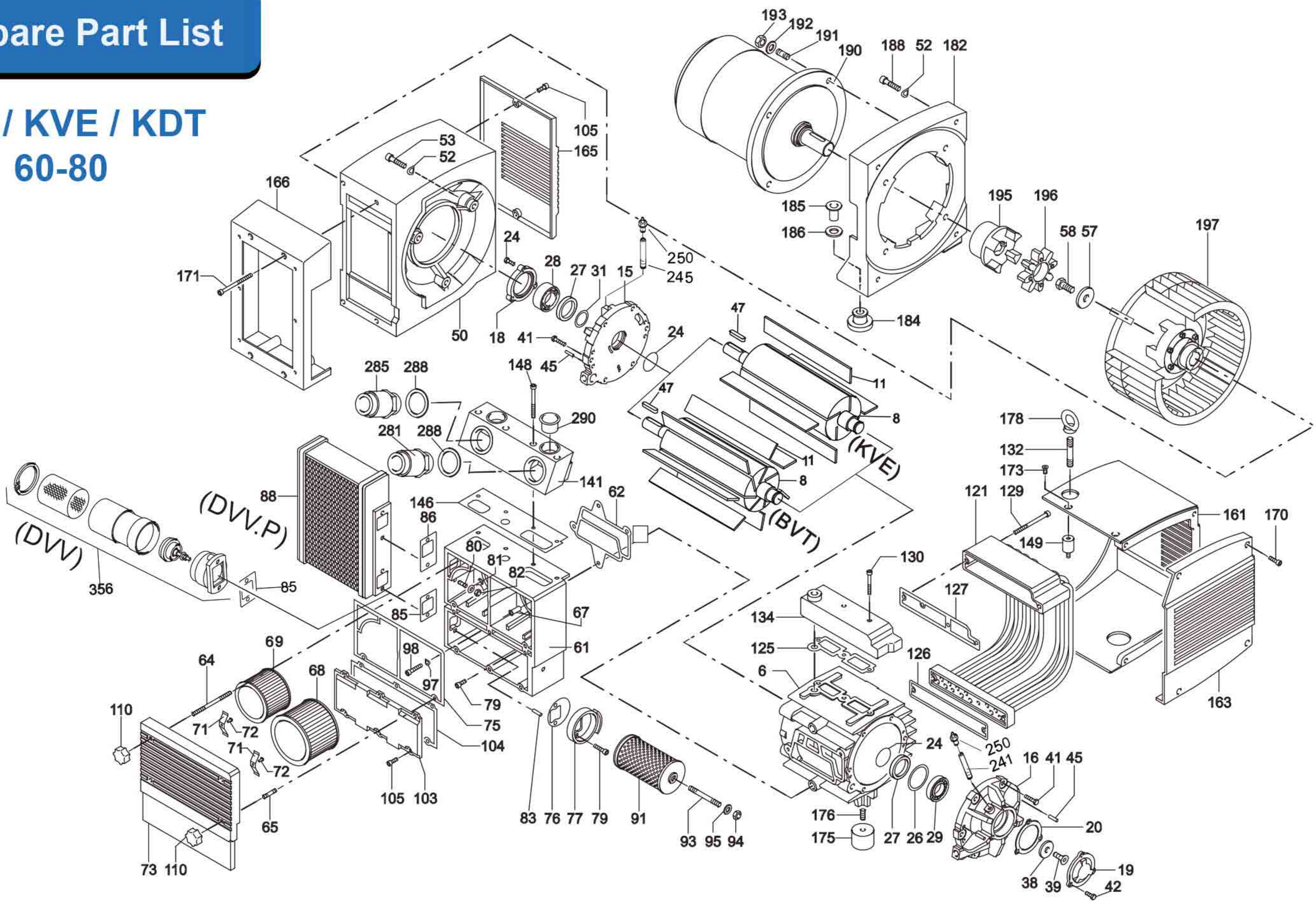


Check vane width every 3.000 operating hours or annually.(The minimum width see table)

DVV-KVE-BVT 60	39 mm	26 mm
DVV-KVE-BVT 80	39 mm	26 mm
DVV-KVE-BVT 140	39 mm	26 mm
DVV-KVE-BVT 160	48 mm	32 mm

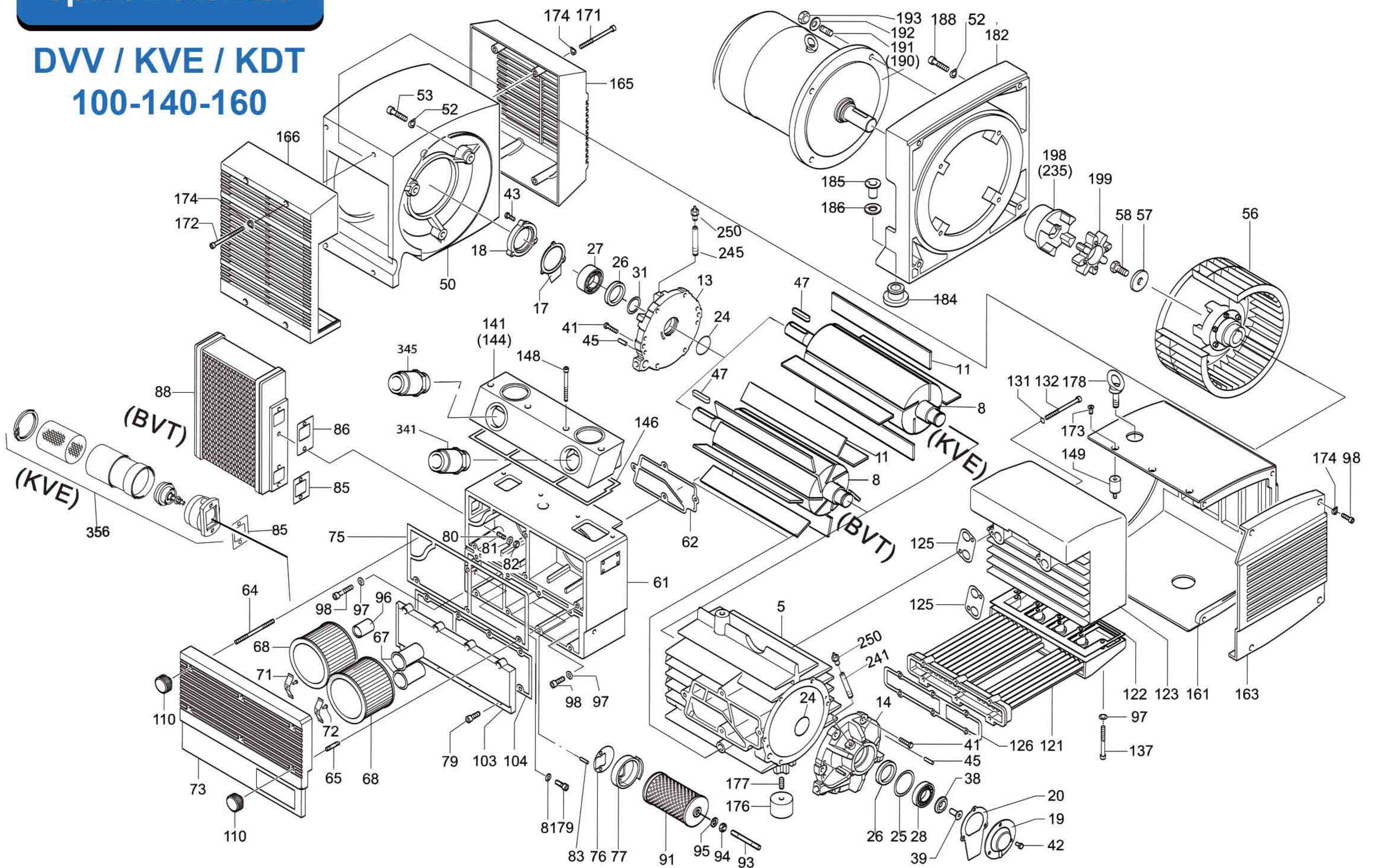
Spare Part List

DVV / KVE / KDT
60-80



Spare Part List

DVV / KVE / KDT
100-140-160



DVV/KVE/KDE/BVT 60-80-100-140-160

Pos. Nr.	Description	Pos. Nr.	Description
5	Pump Body	94	Hex. Nut
8	Rotor	95	Washer
11	Carbon Vanes	96	Silencer Tube
13	Lid Left	97	Washer
14	Lid Right	98	Socket Head Screw
17	Gasket	103	Dust separator Cover
18	Bearing Cover	104	Gasket
19	Bearing Cover	110	Handle
20	Gasket	121	Cooler
24	Seal	122	Gasket
25	Compensating Disc	123	Pressure Connection Box
26	Shaft-Sealing Ring	125	Gasket
27	Ball Bearing	126	Gasket
28	Ball Bearing	131	Sealing Ring
31	Set Distance Disc	132	Socket Head Screw
38	Clamping Disc	137	Socket Head Screw
39	Screw	141	Connecting Plece
41	Hex-Head Screw	146	Gasket
42	Hex-Head Screw	148	Socket Head Screw
43	Hex-Head Screw	149	Rubber Buffer
45	Straight Pin	161	Covering Hood
47	Key	163	Air Guide Covering
50	Connection Flange	165	Ventilator Hood
52	Washer	166	Ventilator Hood
53	Socket head Screw	171	Socket Head Screw
56	Coupling With Fan	172	Socket Head Screw
57	Washer	173	Screw
58	Shaft End Bold	174	Spring Disc
61	Filter Housing	176	Rubber Buffer
62	Gasket	177	Threaded Pin
64	Stud	178	Ring Screw
65	Stud	182	Flange
67	Silencer Tube	184	Rubber Bushing
68	Filter Cartridge	185	Pipe River
71	Leaf Spring	186	Washer
72	Blind Rivet	188	Socket Head Screw
73	Filter Cover	190	Motor
75	Gasket	191	Stud
76	Gasket	192	Washer
77	Filter Holder	193	Hex. Nut
79	Socket Head Screw	198	Coupling
80	Stud	199	Coupling Disc
81	Washer	241	Oil Pipe
82	Hex. Nut	245	Oil Pipe
83	Locating Peg	250	Grease Nipple
85	Gasket	341	Vacuum Regulation Valve
86	Gasket	345	Pressure Regulation Valve
88	Cooler	356	Silencer
91	Filter Cartridge		
93	Stud		

7.0 Special Notes:

1. The customer must follow the grease oil procedure strictly, using oil type GY 193. If operating 40 hours per week or less grease bearings every 4-6 weeks while vacuum pump is running in order to maintain long pump life. If operating more than 40 hours per week, grease bearings every 3 weeks.
2. Change filter regularly to maintain intake and exhaust air flow. (Do not use the the same filter past 30 days).
3. Guarantee will be void if above maintenance schedule and instructions are not followed.
4. Guarantee period: One year from start-up or 13 months from shipment date on pump, not including vanes which have a guarantee of 2,500 hours or 6 months - Void if damage results from improper installation or operating in excess of nameplate specifications, Damage from improper maitenance, misuse, improper eletrical supply or wiring, Damage from foreign materials (dirt, dust, metal, plastic, water, etc.) ingested by the unit. Warranty void if excessively high temperatures used then original specifiied by customer, or gases not specifiied before purchased have been pumped.
5. To return pump for warranty inspection an RGA form must be included for pump or parts, which if shown above conditions are broken customer is responsible for repair costs.