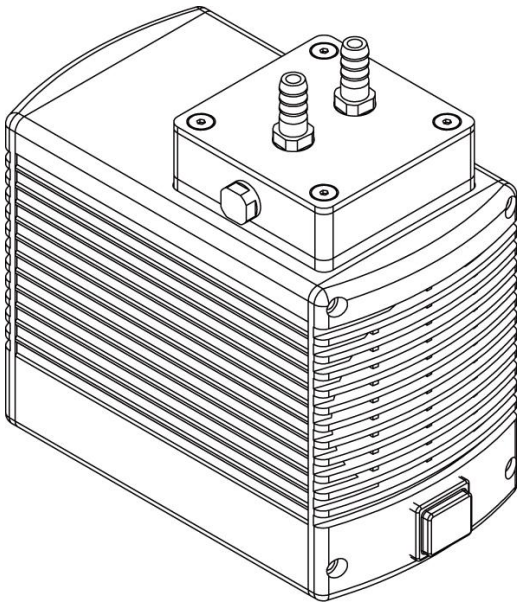
ROCKER

Service Manual

Chemker Series Chemical Resistant Vacuum Pump



Model No.

Chemker 300
Chemker 400
Chemker 410
Chemker 411
Chemker 600
Chemker 610
Chemker 611

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Instruction

- Important notice before troubleshooting:
  1. Ensure the power cord is plugged into power outlet securely.
  2. Ensure the on/off switch is turned on.
  3. Ensure the power supply specifications are applicable before plugging in the power cord.
  4. Make sure to unplug the power cord before disassembling the pump.
  5. Make sure to use the right tools for disassembly to avoid damage to parts.

- Applicable Models:

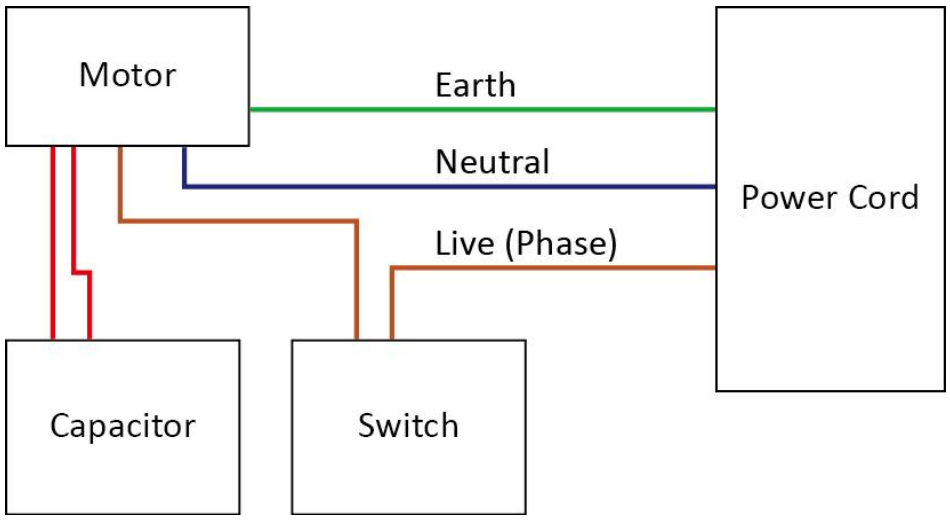
  Chemker 300、Chemker 400、Chemker 410、Chemker 411、

  Chemker 600、Chemker 610、Chemker 611

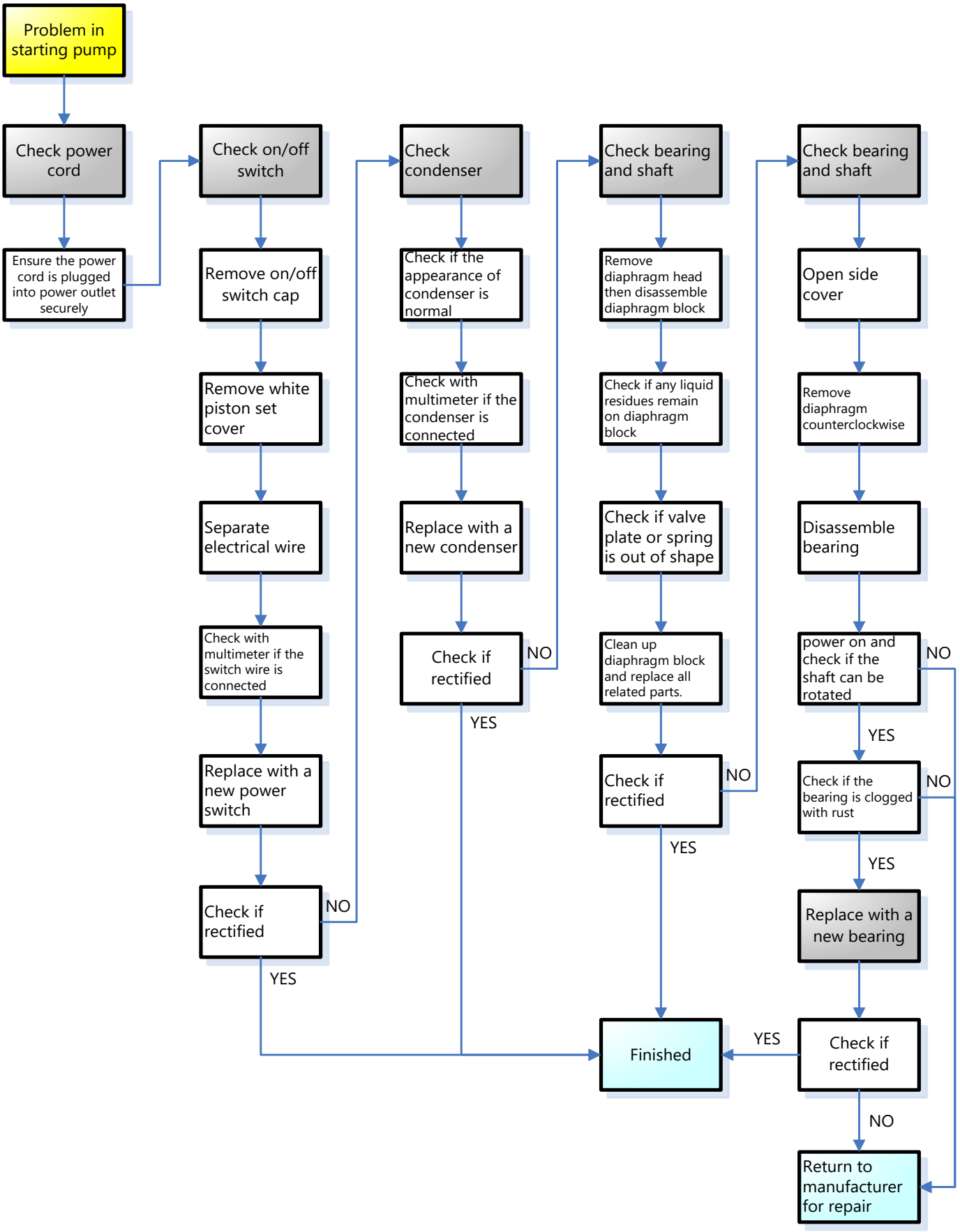
  Tools Preparation:

  Screwdriver, Allen key, Gear puller, Lubricant, Sand paper

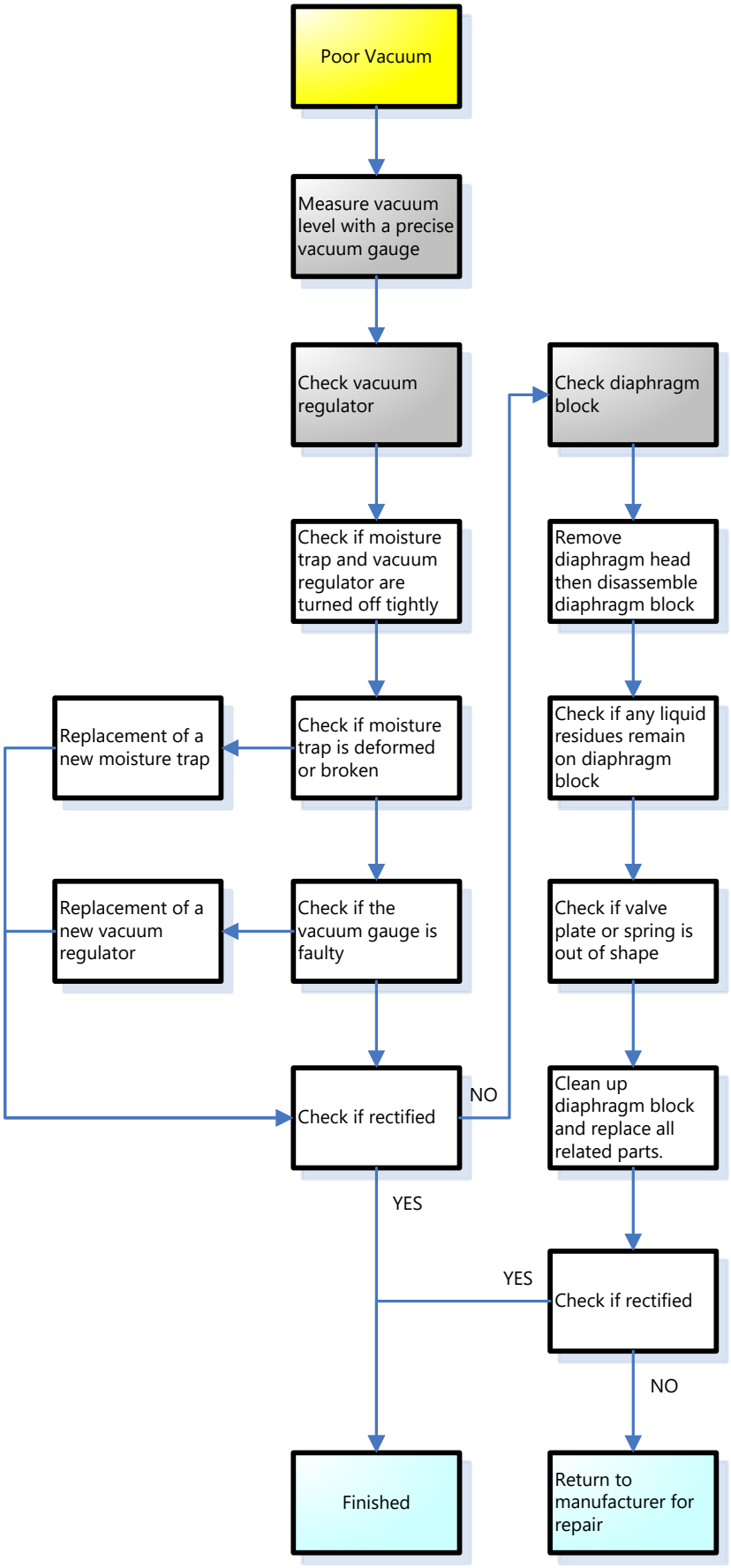
- Circuit Diagram:



Failure to start – Maintenance SOP



Poor / No Vacuum - Maintenance SOP



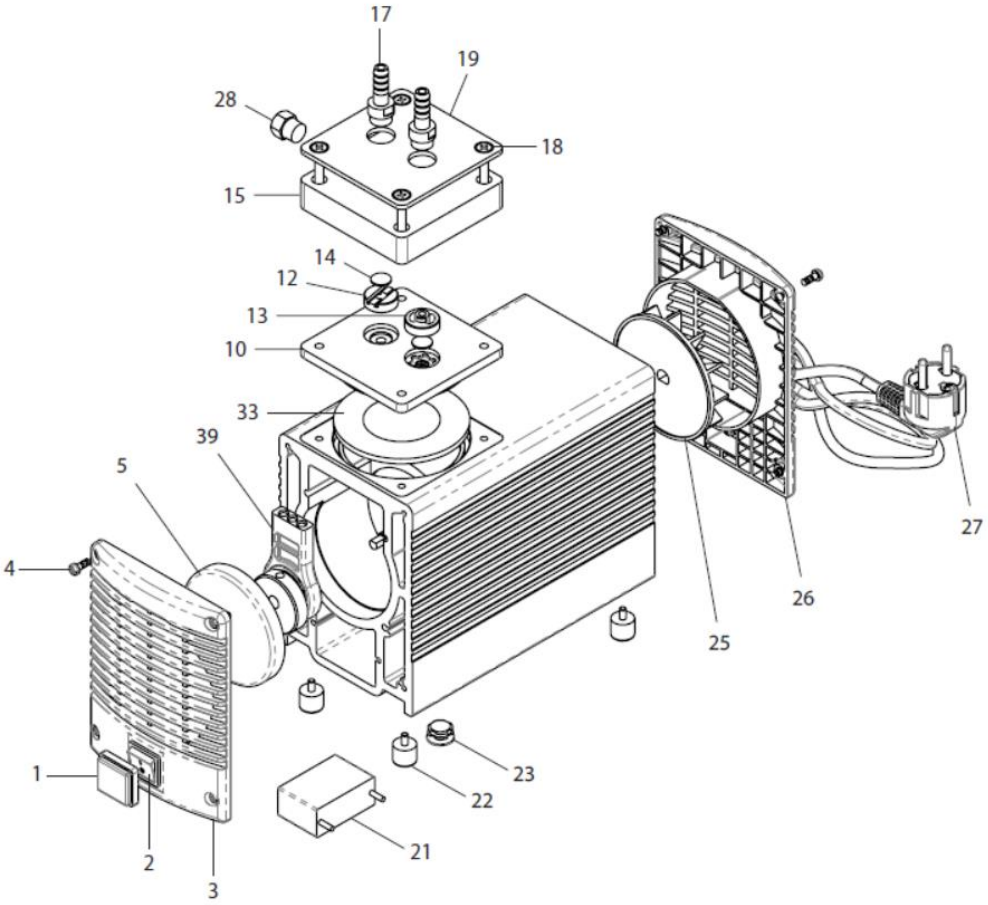
Most Common Problems

<table>
<tr><th>Common Problem</th><th>Cause</th><th>Solution</th></tr>
<tr><td rowspan="4">Failure to start</td><td>1. Power cord</td><td>a) Check with multimeter if the socket is powered on.
b) The power cord is plugged in power socket securely.
c) The power cord often gets bent → check with multimeter if the power cord is powered on.</td></tr>
<tr><td>2. On/off switch</td><td>a) Replace with a new on/off switch if it is not powered on after being tested with multimeter.</td></tr>
<tr><td>3. Condenser</td><td>a) Please replace with a new condenser if the capacitance value doesn't meet the corresponding value below.
b) Capacitor specs & applicable models:
<table>
<tr><th>Model</th><th>110V</th><th>220V</th></tr>
<tr><td>Chemker 300</td><td>6uf/350V</td><td>2uf/400V</td></tr>
<tr><td>Chemker 400</td><td>10uf/300V</td><td>6uf/400V</td></tr>
<tr><td>Chemker 410</td><td>10uf/300V</td><td>6uf/400V</td></tr>
<tr><td>Chemker 411</td><td>10uf/300V</td><td>6uf/400V</td></tr>
<tr><td>Chemker 600</td><td>30uf/250V</td><td>14μF/350V</td></tr>
<tr><td>Chemker 610</td><td>30uf/250V</td><td>14μF/350V</td></tr>
<tr><td>Chemker 611</td><td>30uf/250V</td><td>14μF/350V</td></tr>
</table></td></tr>
<tr><td>4. Bearing & Shaft</td><td>a) Check if the shaft can be rotated by hand.
b) Bearing is stuck → replace with new part.
c) Shaft is stuck→ return to manufacturer for repair.
d) Both bearing & shaft are not stuck →motor is broken (return to manufacturer for repair if within warranty period)</td></tr>
<tr><td rowspan="3">Poor / No vacuum</td><td>1. Vacuum gauge
(Chemker 411)</td><td>a) If there is a bigger difference in vacuum reading as compared with another calibrated gauge=> replace with a new vacuum gauge.</td></tr>
<tr><td>2. Spring</td><td>a) Remove the diaphragm head and check if spring is damaged=> Replace with a new spring.</td></tr>
<tr><td>3. Valve plate</td><td>a) Remove the cylinder head and check if valve plate is damaged or become harder → Replace with a new valve plate
b) Check if any powders left under valve plate which make valve plate poorly sealed=> Clean</td></tr>
</table>

		powder.
	4. Diaphragm	a) Check if the Diaphragm is damaged → replace with new part.
	5. Connecting rod	a) Remove the diaphragm and check if connected with connecting rod tightly=> Replace with a new connecting rod.
	6. Tier connector & Interflow tube	b) Remove interflow and check if O-ring is damaged or becoming harder=> Replace with new O-ring. c) Remove tier connector and check if O-ring is damaged or becoming harder=> Replace with new O-ring.

Exploded Part List

Chemker 300

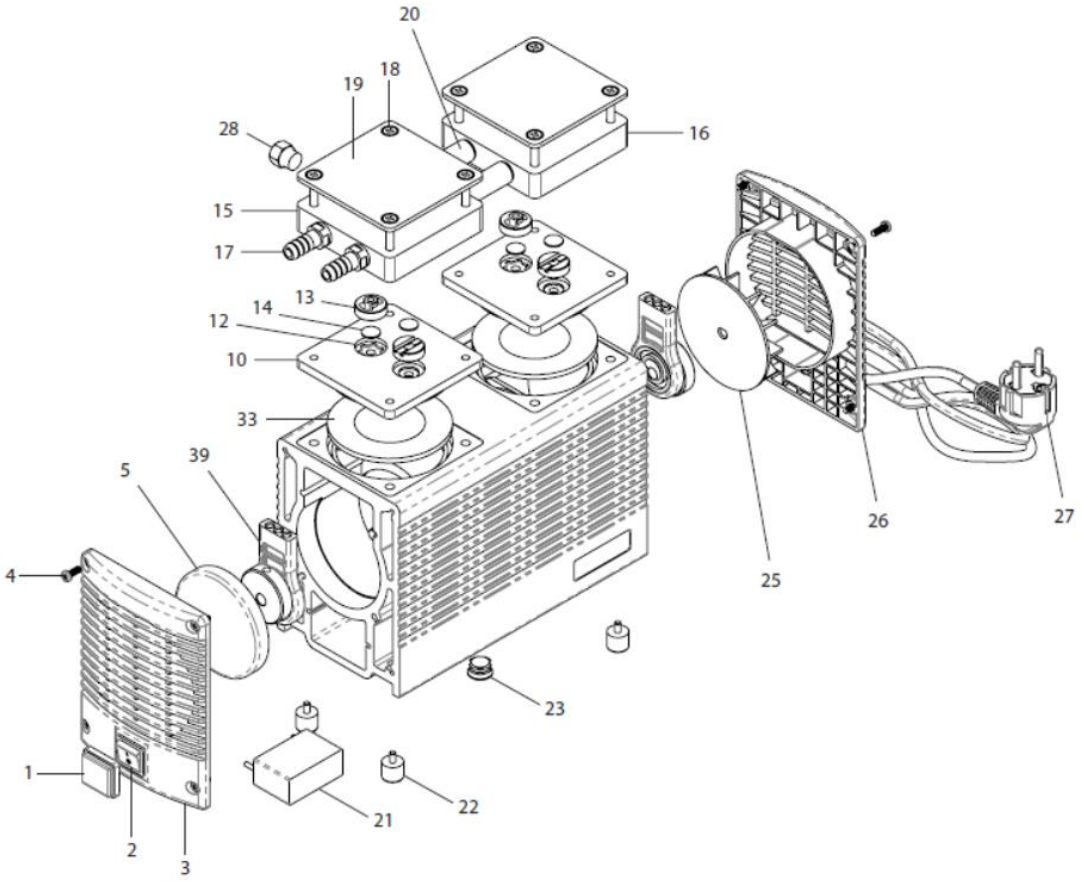


Index	Description	Quantity	Index	Description	Quantity	Index	Description	Quantity
1	On/off Switch Cap	1	14	Valve plate	2	25	Cooling fan	1
2	On/off Switch	1	15	Diaphragm head	1	26	Rear body lid	1
3	Front body lid	1	17	Hose barb	2	27	Plug	1
4	Lid Set screw	8	18	Set screw	4	28	Set screw	1
5	Piston set cover	1	19	Stainless plate	1	33	Diaphragm	1
10	Diaphragm block	1	21	Condenser	1	39	Piston set	1
12	Valve plate lock(1)	1	22	Rubber stand	4			
13	Valve plate lock(2)	1	23	Clog	1			

Note: (17) Hose barb O-ring : OR-AS013-FP *2

(28) Set screw O-ring : OR-AS013-FP *1

Chemker 400



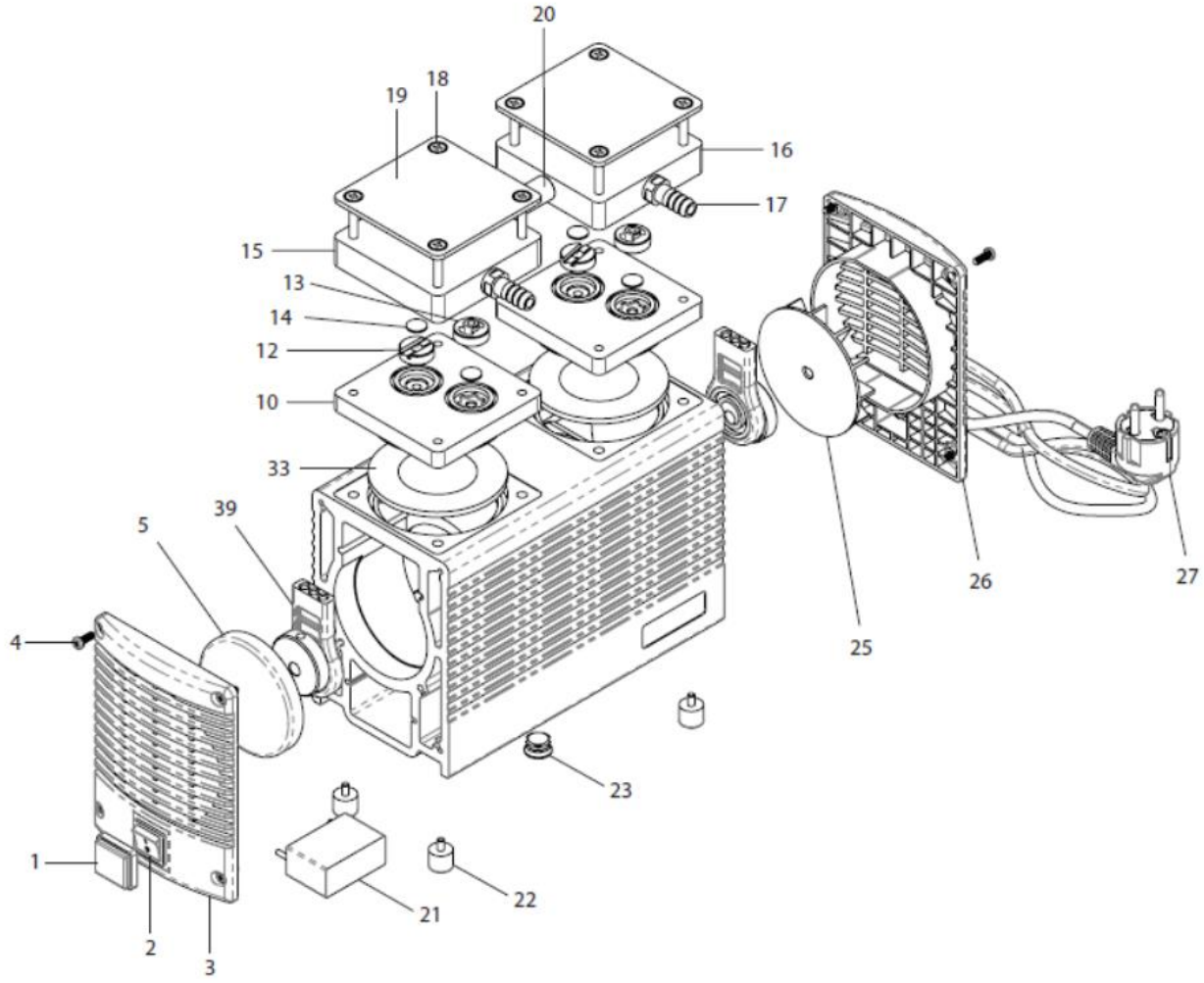
Index	Description	Quantity	Index	Description	Quantity	Index	Description	Quantity
1	On/off Switch Cap	1	14	Valve plate	4	22	Rubber stand	4
2	On/off Switch	1	15	Front Diaphragm head	1	23	Clog	1
3	Front body lid	1	16	Back Diaphragm head	1	25	Cooling fan	1
4	Lid Set screw	8	17	Hose barb	2	26	Rear body lid	1
5	Piston set cover	1	18	Set screw	8	27	Plug	1
10	Diaphragm block	2	19	Stainless plate	2	28	Set screw	1
12	Valve plate lock(1)	2	20	Interflow tube	2	33	Diaphragm	2
13	Valve plate lock(2)	2	21	Condenser	1	39	Piston set	2

Note: (17) Hose barb O-ring : OR-AS013-FP *2

(28) Set screw O-ring : OR-AS013-FP *1

(20) Interflow tube O-ring : OR-AS013-FP * 8

Chemker 410

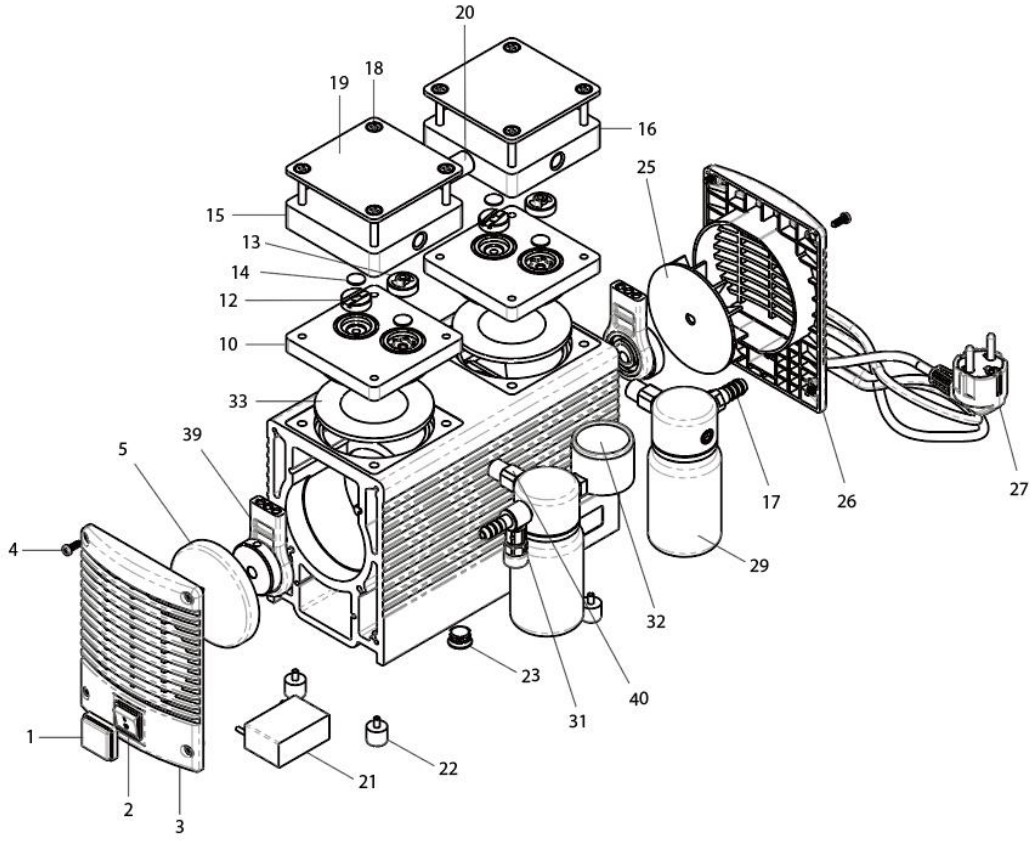


Index	Description	Quantity	Index	Description	Quantity	Index	Description	Quantity
1	On/off Switch Cap	1	14	Valve plate	4	22	Rubber stand	4
2	On/off Switch	1	15	Front Diaphragm head	1	23	Clog	1
3	Front body lid	1	16	Back Diaphragm head	1	25	Cooling fan	1
4	Lid Set screw	8	17	Hose barb	2	26	Rear body lid	1
5	Piston set cover	1	18	Set screw	8	27	Plug	1
10	Diaphragm block	2	19	Stainless plate	2	33	Diaphragm	2
12	Valve plate lock(1)	2	20	Interflow tube	1	39	Piston set	2
13	Valve plate lock(2)	2	21	Condenser	1			

Note: (17) Hose barb O-ring : OR-AS013-FP *2

(20) Interflow tube O-ring : OR-AS013-FP * 4

Chemker 411



Index	Description	Quantity	Index	Description	Quantity	Index	Description	Quantity
1	On/off Switch Cap	1	14	Valve plate	4	25	Cooling fan	1
2	On/off Switch	1	15	Front Diaphragm head	1	26	Rear body lid	1
3	Front body lid	1	16	Back Diaphragm head	1	27	Plug	1
4	Lid Set screw	8	17	Hose barb	2	33	Diaphragm	2
5	Piston set cover	2	18	Set screw	8	39	Piston set	2
10	Diaphragm block	2	21	Condenser	1	40	Connector	2
12	Valve plate lock(1)	2	22	Rubber stand	4			
13	Valve plate lock(2)	2	23	Clog	1			

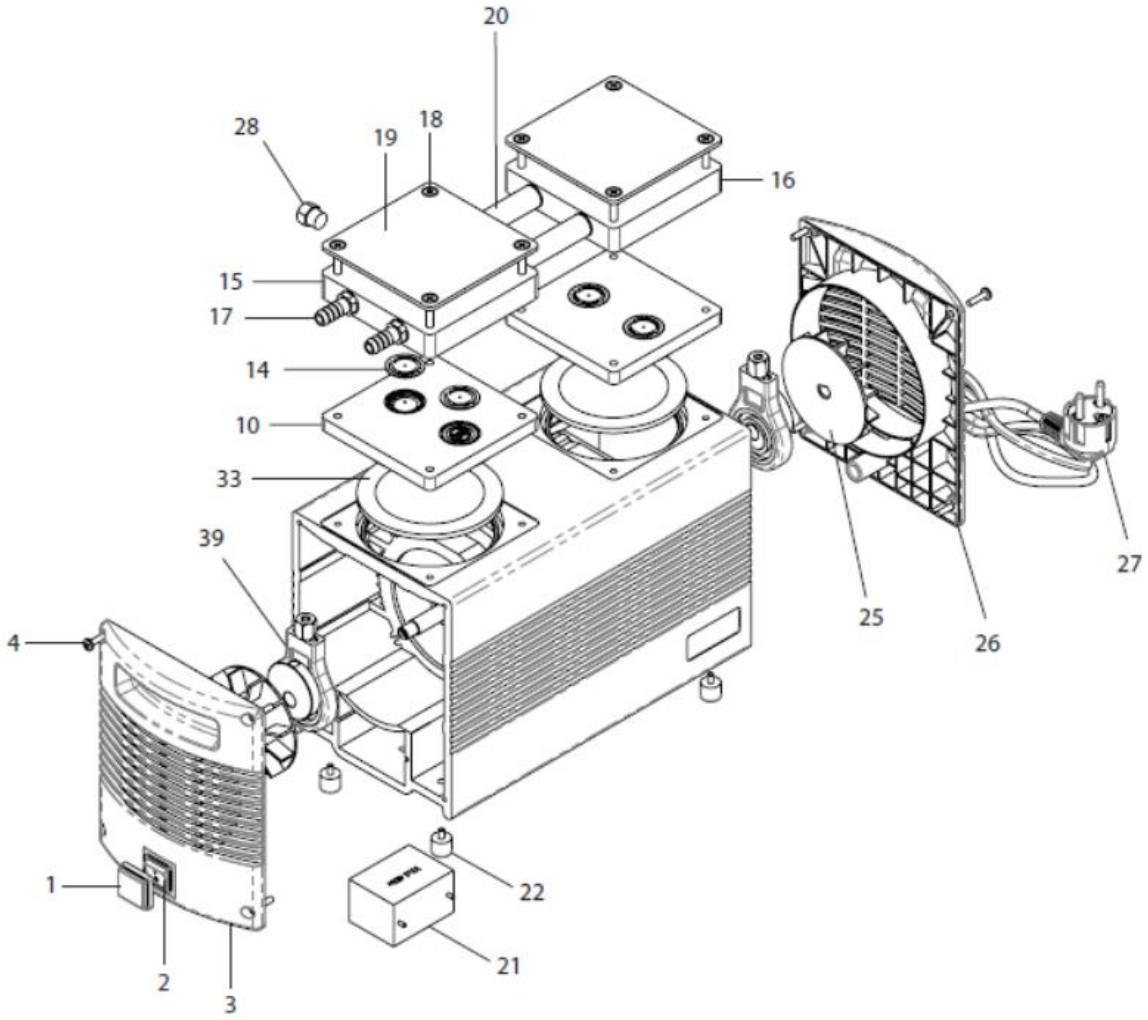
Note: (17) Hose barb O-ring : OR-AS013-FP *2

(20) Interflow tube O-ring : OR-AS013-FP * 4

Glass Vapor Trap / Vacuum Regulator for Chemker 411 : 169411-06

Glass Vapor Trap for Chemker 411 : 169401-06

Chemker 600



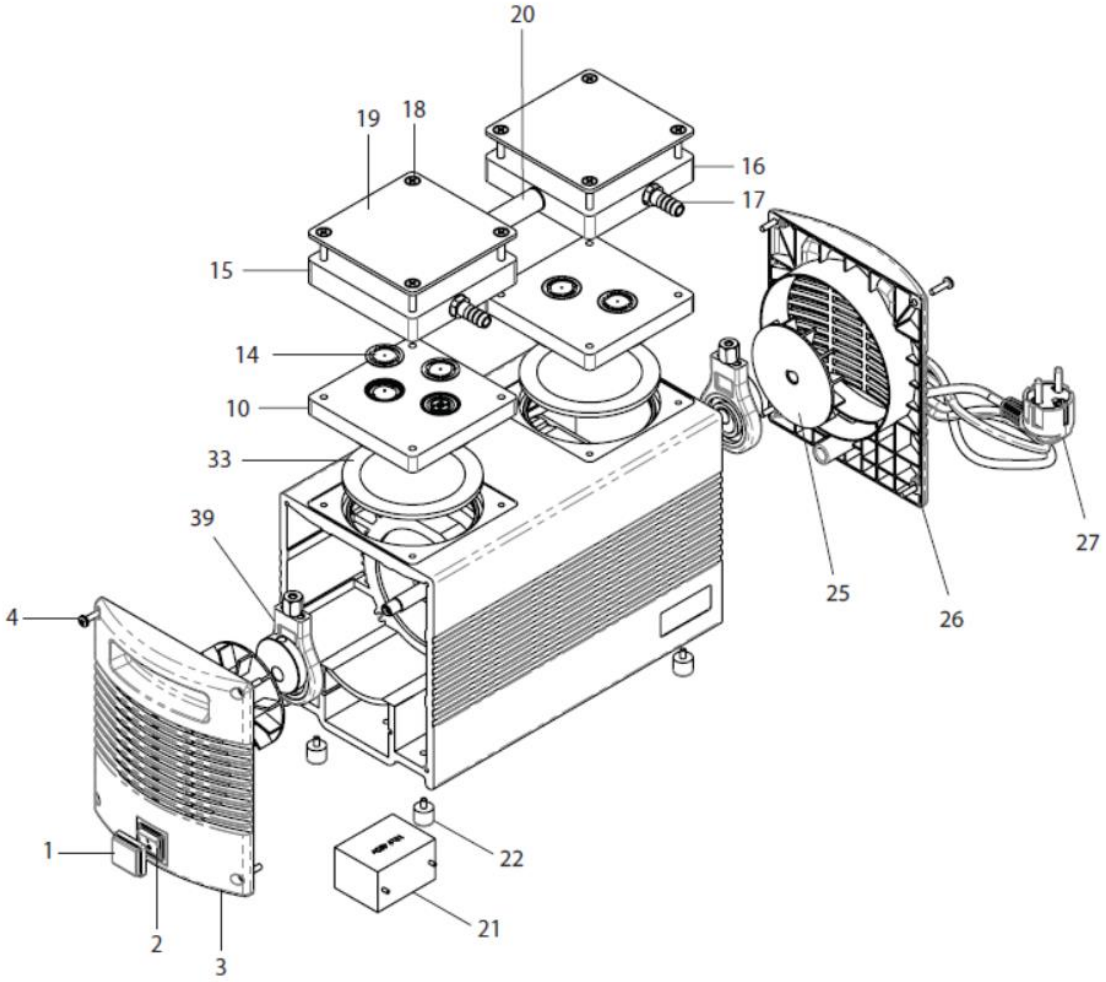
Index	Description	Quantity	Index	Description	Quantity	Index	Description	Quantity
1	On/off Switch Cap	1	16	Back diaphragm head	1	25	Cooling fan	2
2	On/off Switch	1	17	Hose barb	2	26	Rear body lid	1
3	Front body lid	1	18	Set screw	8	27	Plug	1
4	Lid Set screw	8	19	Stainless plate	2	28	Set screw	2
10	Diaphragm block	2	20	Interflow tube	2	33	Diaphragm	2
14	Valve plate	4	21	Condenser	1	39	Piston Set	2
15	Front diaphragm head	1	22	Rubber stand	4			

Note: (17) Hose barb O-ring : OR-AS013-FP *2

(28) Set screw O-ring : OR-AS013-FP *1

(20) Interflow tube O-ring : OR-AS014-FP * 8

Chemker 610

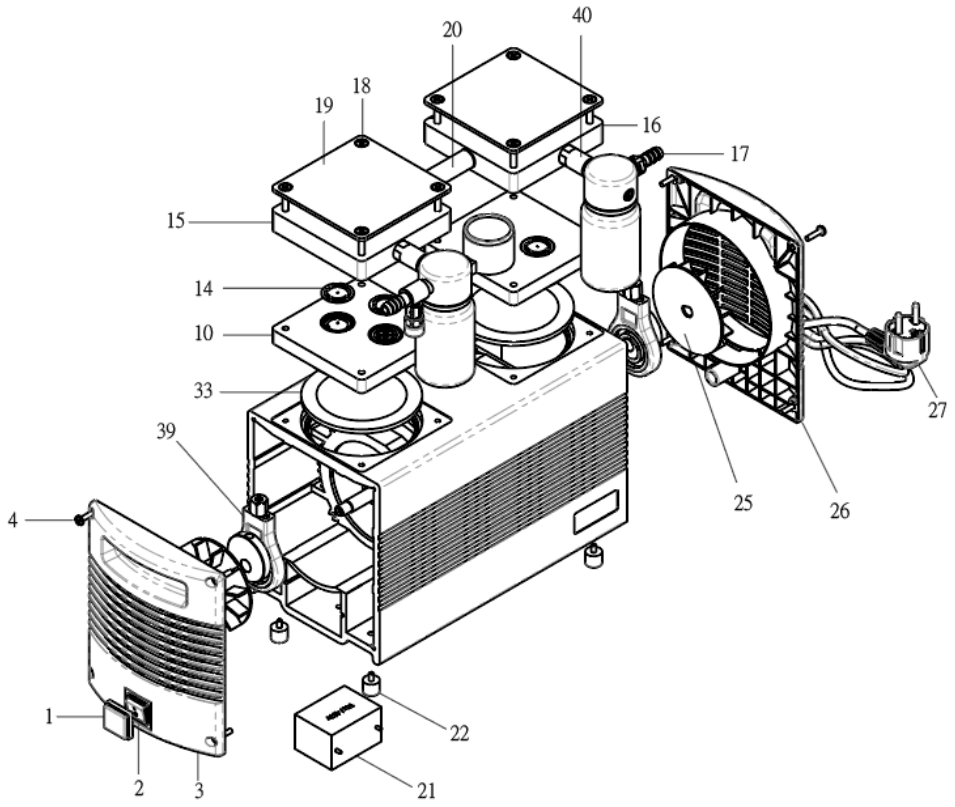


Index	Description	Quantity	Index	Description	Quantity	Index	Description	Quantity
1	On/off Switch Cap	1	16	Back diaphragm head	1	22	Rubber stand	4
2	On/off Switch	1	17	Hose Barb	2	25	Cooling fan	2
3	Front body lid	1	18	Set screw	8	26	Rear body lid	1
4	Set screw	8	19	Stainless plate	2	27	Plug	1
10	Diaphragm block	2	20	Interflow tube	1	33	Diaphragm	2
14	Valve plate	4	21	Condenser	1	39	Piston Set	2
15	Front diaphragm head	1						

Note: (17) Hose barb O-ring : OR-AS013-FP *2

(20) Interflow tube O-ring : OR-AS014-FP * 4

Chemker 611



Index	Description	Quantity	Index	Description	Quantity	Index	Description	Quantity
1	On/off Switch Cap	1	17	Tier connector	2	27	Plug	1
2	On/off Switch	1	18	Set screw	8	29	Moisture trap	2
3	Front body lid	1	19	Stainless plate	2	30	Hose barb	1
4	Set screw	8	20	Interflow tube	1	31	Regulator	1
10	Diaphragm block	2	21	Condenser	1	32	Vacuum gauge	1
14	Valve plate	4	22	Rubber stand	4	33	Diaphragm	2
15	Front diaphragm head	1	25	Cooling fan	2	39	Piston Set	2
16	Back diaphragm head	1	26	Rear body lid	1	40	Connector	2

Note: (17) Hose barb O-ring : OR-AS013-FP *2

(20) Interflow tube O-ring : OR-AS014-FP * 4

Glass Vapor Trap / Vacuum Regulator for Chemker 611 : 169611-06

Glass Vapor Trap for Chemker 611 : 169601-06

Service Video Links

Model No.	Subject	Video Link
Chemker series	Disassembly	https://drive.google.com/open?id=0BzRYE6bIAS-rUWZrUFlXT09JUEU
Chemker series	Assembly	https://drive.google.com/open?id=0BzRYE6bIAS-rU1A1WXljbm1DZWc
Chemker Series	Replacement of valve plate	https://drive.google.com/open?id=0BzRYE6bIAS-rMGkyVm9DZnN6cEk
Chemker series	Replacement of condenser and on/off switch	https://drive.google.com/open?id=0BzRYE6bIAS-rRTh0aDQ0ckE1Yzg
Chemker 300	Installation of moisture trap / vacuum regulator	https://drive.google.com/open?id=0BzRYE6bIAS-rV2xtNm5udldmaTA
Chemker 400/410 Chemker 600/610	Installation of moisture trap / vacuum regulator	https://drive.google.com/open?id=0BzRYE6bIAS-rUDNOSFdnR3J5ekE