Kinney<sup>®</sup> Dry Claw Vacuum Pumps

Manual 1866 Rev B p/n 1866

WARNING: Do Not Operate Before Reading Manual

### KVC Series Operator's manual

#### Models

KVC-60	KVC-62	KVC-100
KVC-122	KVC-150	KVC-251
KVC-301	KVC-401	KVC-501
KVC-1000		





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## **01** INTRODUCTION

# **CONGRATULATIONS** on the purchase of a new **Kinney**<sup>®</sup> **KVC Series** dry claw vacuum pump. Please examine the pump for shipping damage, and if any damage is found, report it immediately to the carrier. If the pump is to be installed at a later date, make sure it is stored in a clean, dry location and rotated regularly. Make sure covers are kept on all openings. If pump is stored outdoors, be sure to protect it from weather and corrosion.

This manual applies to Kinney Vacuum models KVC Series. Become thoroughly familiar with these instructions before attempting to install, operate or repair this unit. Consult Kinney when problems arise that cannot be resolved after reading this manual. Always include pump nameplate information when ordering parts or components.

**Kinney KVC Series** vacuum pumps are built to exacting standards and, if properly installed and maintained, will provide many years of reliable service. Read and follow every step of these instructions when installing and maintaining the pump.

#### <u> WARNING</u>

Serious injury can result from operating or repairing this machine without first reading the service manual and taking adequate safety precautions.

NOTE: Record the pump model and serial numbers in the OPERATING DATA form on the inside back cover of this manual. Use this identification on any replacement part orders, or if service or application assistance is required.

#### **SCOPE OF MANUAL**

The scope of this manual includes the KVC Series dry claw vacuum pumps.

1

02

### **CONVENTIONS AND DATA PLATE**

#### GRAPHIC CONVENTIONS IN THIS MANUAL

The following are hazard levels referenced within this manual:

#### \Lambda DANGER

Indicates a hazardous situation that, if not avoided, will result in death or serious injury.

#### 

Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

#### 

Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

#### NOTICE

Indicates a situation that can cause damage to the engine, personal property, and/or the environment or cause the equipment to operate improperly.

NOTE: Indicates a procedure, practice, or condition that should be followed in order for the equipment to function in the manner intended.



#### 

Read manual before operation or bodily harm may result. Attention should be given to the safety related sections of this manual.

#### <u> WARNING</u>

Keep body & clothing away from machine.

During operation, keep body and clothing away from inlet and outlet of the pump.

#### <u> WARNING</u>



Do not operate without guards in place. Assure that the guards are in place and secure prior to operation.

*02* 

#### 

Hearing protection is required while the pump is in operation. At ultimate pressure noise levels are 80 dBA at 60 Hz, however due to process or installation conditions noise levels may be higher.

#### 



Do not touch hot surfaces.

Do not touch the vacuum pump while it is in operation and assure that the pump is cool before touching, when not in operation.

#### **Conventions and Data Plate**



The following information is contained on the data plate:

MODEL NUMBER:	The specific model of the pump
SERIAL NUMBER:	Unique to each pump. Use with any service issues and with any contact with the manufacturer.
YEAR:	Year of manufacture
MAX RPM:	Maximum RPM at which the pump can be operated
	This manual describes instructions and precautions to be observed in the handling and maintenance of Kinney <sup>®</sup> KVC Series dry claw vacuum pumps.

handling and maintenance of Kinney<sup>®</sup> KVC Series dry claw vacuum pumps It is strongly recommended that those who operate or maintain the pump, read this manual carefully prior to pump operation, to ensure personal safety and pump life.

<b>KINNEY</b> ®	SN: SC10430502001 BJ: 2021		
vacuum pump		<u> 20027</u> 2	
KVC 150 CD Model	ID: 102	681K001	
75 torr Ultimate Pressure			
106 cfm Maximum Capacity			
3490 rpm Speed at 6	0 Hz		
Kinney, 4840 W Kearney St, Springfield, M +1(417)865 8715	IO 65803		

## **03** LIFTING

#### 

The vacuum pump must be handled using an appropriate device such as a fork truck or appropriate lifting device. See Table 4-1 on page 7 for approximate weights. Care should be taken to assure pump does not over-turn during handling and installation.

#### 

DO NOT LIFT THE VACUUM PUMP BY THE MOTOR.

#### NOTICE

Lift the vacuum pump using eye bolts directly attached to the top of the pump housing, or with both fork truck forks underneath the pump.

#### LIFTING CONFIGURATION

Refer to *Figure 3-1 – Lifting Configuration* for further details on how to properly lift KVC Series vacuum pump.

- 1. Eyebolts
- 2. Transport shackle



Figure 3-1 – Lifting Configuration

04

### DESCRIPTION

The KVC Series model range has a connecting thread on the suction side and an exhaust silencer on the pressure side. With the KVC Series, the incoming air is cleaned by a filter cartridge.

The KVC Series is a double-shaft rotary piston vacuum pump which the claws roll off against each other contact free and dry. The counter-rotating claw rotors are synchronized by a gear pair in the gearbox. The synchronous gears and the bearings on the motor side are lubricated with oil. These components are in a gearbox that also contains the oil supply. Oil slingers always ensure that the bearings and the gears are sufficiently supplied with oil at all permissible speeds.

The pumping chamber has no sealants or

#### **DESIGNATED USE**

The machine must only be operated in such areas as described in the operating instructions:

- Only operate the machine in a technically perfect condition.
- Do not operate the machine when it is only partially assembled.
- The machine must only be operated at an ambient temperature and suction temperature of between 40 and 104°F (40°C). Please contact MD-Kinney for temperatures outside this range.
- The machine may convey, compress, or extract the following media:
  - All non-explosive, non-inflammable, nonaggressive, and non-poisonous dry gases and gas air mixtures.

lubricants. The gearbox and the compression chamber are separated from each other by special seals. The gearbox is sealed from the outside with shaft seals and O-rings, and the compressor chamber with piston rings. Between the piston ring and lip seals, there is an atmospherically ventilated area that can be loaded with sealing gas (special version).

The KVC Series is driven by an IEC (KVC 60, 62 and 122 only) or NEMA flanged three phase motors via a coupling (with an elastomer component). A vacuum regulating valve is used to set the vacuum to the required values. This regulating valve is pre-set at the factory and should not be adjusted without consulting the factory.

### UNACCEPTABLE OPERATING MODES

- Extracting, conveying, and compressing explosive, inflammable, aggressive or poisonous media, solvents as well as gaseous oxygen and other oxidants, water vapor, liquids, or solid materials.
- Using the machine in non-commercial plants if the necessary precautions and protective measures have not been taken in the plant.
- Installing in environments that are at risk of explosions.
- Using the machine in areas with ionizing radiation.
- Modifications to the machine and accessories.

#### **SPECIFICATIONS**

	UNIT	KVC-60	KVC-62	KVC-100	KVC-122	KVC-150	KVC-251	KVC-301	KVC-401	KVC-501	KVC-1000
Nominal Displacement	cfm (m³/h)	42.4 (72)	43.5 (74)	70.6 (120)	84.8 (144)	106 (180)	150 (255)	205 (348)	285 (484)	355 (603)	671 (1140)
Motor Power	HP	2	2.4	3	4	5	7.5	7.5	12	15	30
Rotation Speed	RPM	3600	1800	3600	3600	3600	3600	3600	3600	3600	3600
Oil Capacity (Total/Refill)	U.S. gal (L)	.1 (.38)	.11 (.43)	.14 (.53)	.11 (.43)	.15 (.57)	.15 (.57)	.38 (1.44)	.45 (1.7)	.45 (1.7)	.7 (2.65)
Suction Connection		1" FNPT	1-1/2" FBSP	1 ½" FNPT	1-1/2" FBSP	1 ½" FNPT	2" FNPT	2" FNPT	3" FNPT	3" FNPT	4" FNPT
Discharge Connection		1" MBSP	1-1/2" FBSP	1 1/2" FNPT	1-1/2" FBSP	1 ½" FNPT	2" FNPT	2" FNPT	3" FNPT	3" FNPT	4" FNPT
Height	Inches (mm)	16.2 (411)	19.7 (500)	14.53 (369)	19.7 (500)	15.31 (389)	17.1 (434)	23.62 (567)	37.91 (963)	37.91 (963)	44.21 (1123)
Floor Space Required	Inches (mm)	16.7×24.4 (424×620)	29.1x14.7 (739x372)	23.07×29.7 (586×755)	30.3x14.7 (770x372)	22.99×35.9 (584×912)	25×40.1 (635×1019)	18.82×45.98 (478×1168)	23.54×48.98 (598×1244)	23.54×48.98 (598×1244)	29.52×64.45 (750×1637)
Weight	lb (kg)	136 (62)	251 (114)	254 (115)	265 (120)	309 (140)	327 (149)	612 (278)	930 (423)	1118 (508)	1803 (820)
Ultimate Pressure	mbar	100	100	150	100	100	200	150	200	200	200
Noise Level*	dBA	80	63	82	73	82	78	77	81	81	83

\* Noise level may vary based upon motor selection.

Table 4-1 – Specifications

#### 

Do not exceed maximum rotation speed (RPM) as stated in *Table 4-1*.

#### **MATERIALS OF CONSTRUCTION**

HOUSINGS AND CYLINDER:	Cast iron
ROTORS:	Cast iron
SHAFT:	Carbon Steel
SHAFT SEALS:	Carbon/Viton®





#### **KVC-60 FEATURE SETUP**



- A Vacuum connection
- B Exhaust air outlet
- **C** Vacuum regulating valve
- E Cooling air inlet
- **F** Cooling air outlet
- H Oil filling point
- I Oil sight glass
- K Oil discharge point

- M Oil recommendation plate
- N Data plate
- **O** Direction of rotation arrow
- P Drive motor
- **P**<sub>1</sub> Motor data plate
- **Q** hot surfaces > 70 °C
- S Mesh filter
- Z Outlet silencer

#### KVC-100 / KVC-150 / KVC-251 FEATURE SETUP



- A Vacuum connection
- B Exhaust air outlet
- C Vacuum Regulating valve
- E Cooling air inlet
- F Cooling air outlet
- H Oil filling point
- I Oil sight glass
- K Oil discharge point

- M Oil recommendation plate
- N Data plate
- **O** Rotation direction plate
- P Drive motor
- $\mathbf{P}_{1}$  Motor data plate
- **Q** hot surfaces > 70 ° C
- **S**<sub>1</sub> Junction box
- Z Outlet silencer



#### KVC-62 / KVC-122 / KVC-301 / KVC-401 / KVC-501 / KVC-1000 FEATURE SETUP



- A Vacuum connection
- **B** Air outlet connection
- **B**<sub>1</sub> Exhaust silencer
- **B**<sub>2</sub> Condensate drain (only with "XD")
- E Cooling air inlet
- F Cooling air outlet
- H Oil filling point
- I Oil sight glass

- K Oil discharge point
- M Oil recommendation plate
- N Data plate
- O Direction of rotation arrow
- P Drive motor
- **P**<sub>1</sub> Motor data plate
- **Q** hot surfaces > 70 °C
- S Mesh filter

## *05*

### **INSTALLATION**

#### SAFETY



#### 🚹 DANGER

Internal and external rotating parts of the pump and driving equipment can produce serious physical injuries. The pump should never be run with the inlet or discharge piping removed. If it becomes necessary to inspect the rotating parts of the pump or to change the belt, be absolutely sure that all power to the motor controls has been shut off, the motor controls are locked out, and properly tagged before proceeding.



#### WARNING

Vacuum pump housing and associated piping or accessories may become hot enough to cause major skin burns on contact as a result of process conditions.

#### <u> WARNING</u>

Use lockout / tagout procedures to disable the electrical energy source before any service or work is done on the vacuum pumps.

### 

Avoid extended exposure in close proximity to machinery with high intensity noise levels. Wear adequate ear protection.

#### 

Other potential hazards to safety may also be associated with operation of this equipment. All personnel working in or passing through the area should be warned by signs and trained to exercise adequate general safety precautions.

#### NOTICE

Use proper care and good procedures in handling, lifting, installing, operating, and maintaining the equipment.

#### Installation

### KINNEY®

#### 

Never attempt to change or add lubrication while the pump is running. Failure to heed this warning could result in damage to the equipment or personal injury.

#### 

Properly dispose of spent lubricants. Refer to the manufacturer of the lubricant and any applicable regulations to ensure proper and safe disposal.

#### NOTICE

*If the oil level is too low, bearings and seals will be damaged as a result of improper lubrication.* 

#### NOTICE

The machine may only be operated when it is set up horizontally.

#### NOTICE

Material damage resulting from the machine tipping over and falling.

#### NOTICE

When installed at more than 3280 feet (1000 meters) above sea level, a reduction in power is noticeable. In this case, we would ask you to contact Kinney directly for guidance.

#### FILLING THE PUMP WITH OIL

Use oil recommended by Kinney and see the specifications for the quantity of oil required to fill the pump. Remove the oil fill plug at the top of the housing and add oil until the level reaches mid-center of the gauge. With the pump shut off, add or drain oil as necessary to keep the oil level.

#### 

Do not overfill the pump as excess oil will be blown out the discharge during the high pressure operation of the pump.

#### LOCATION

The pump should be mounted on a flat, level surface. There should be enough space around the pump to allow for safe maintenance work and periodic inspections. This includes, at a minimum, the ability to access oil fill and drain locations, view the oil level glass and the oil temperature and pressure gauges.

#### Foundation

The foundation for the pump assembly should be flat and level, and have adequate load-bearing capacity. The pump and its base frame, peripheral equipment and piping should be installed after the foundation concrete has been cured. It is possible to install the machine on a firm base without anchoring. When installing on a sub-structure, Kinney recommends fixing with flexible buffers.

#### **PIPING CONNECTIONS**

#### 🕂 WARNING

Pipe loading on the pump should be negligible as pipe loading can cause distortion of the pump. Use proper supports and pipe hangers to assure that there is no loading.

#### **VACUUM CONNECTION**

The pumping capacity of the vacuum pump is reduced if the suction pipe is too narrow and/or long. Discharged air can be blow out through the exhaust silencer conducted away using a hose or a pipe.

#### Installation

#### **Length of the Connection Pipes**

With connection pipes that have the same pipe cross section as the machine connection and area more than 3m long, a non-return valve must be installed in order to avoid reverse operation when the machine has stopped.

#### Exhaust Air Must Not be Restricted

Do not block the exhaust pipe of the pump (maximum discharge pressure is 22.5 Torr or 30 mbars). When the exhaust air pipe is connected, it must be checked regularly for impurities.

#### NOTICE

Material damage resulting from the forces and torques of the pipes on the unit being too high. Only screw pipes in by hand.

#### NOTICE

**Do not operate without the standard regulating and relief valve.** If the permissible vacuum is exceeded (see data plate) the machine may be damaged.

#### **CONNECTING THE MOTOR**



Danger of death if the electrical installation is not professionally completed. The electrical installation must be completed by a qualified electrician observing EN 60204. The operating company is required to provide the main switch.

The motor's electrical data is given on the data plate or on the motor data plate. The motors comply with DIN EN 60034 and are in protection class IP55 and insulation class F. The appropriate connection diagram is located in the motor's terminal box (not for the plug connection version). The motor data must be compared with the data of the existing mains network (current type, voltage, network frequency, and permitted current value).

Connect the motor via the plug connection or the motor overload. For safety reasons, a motor overload is required and the connecting cable must be installed via a cable fitting to provide strain relief. Kinney recommends using motor protection switches with delayed switch off, depending on possible excess current. Temporary excess current may occur when the machine is started cold.

#### **Power Supply**

The conditions at the installation location must match the information on the motor data plate. Without derating the following is permissible:

- ± 5% Voltage deviation
- ± 2% Frequency deviation



Figure 5-1 – Connection Diagrams for KVC-60 Motor

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### **OPERATION**

#### 

It is important to follow safety instructions to avoid any potential harm to oneself or others, as improper use may lead to severe or fatal injuries

#### 



Hot surfaces. When the machine is at operating temperature the surface temperature on the components may go above 158°F (70°C).You must avoid touching the hot surfaces. These areas are marked with warning plates.

#### 



Noise emission. The highest noise pressure levels measured as per EN ISO 3744. When spending a long time in the vicinity of the running machine, use ear protection to avoid permanent damage to your hearing.

#### NOTICE

Wait until the machine stops. The machine must only be switched on again after it stops.

#### CHECKING ROTOR ROTATION DIRECTION

Operating in the wrong direction of rotation leads to damage to the machine. Use a phase sequence indicator to check the direction of rotation (clockwise rotating field).

The intended direction of rotation of the drive shaft is shown by the rotary direction arrow on the motor flange. Start the motor briefly (maximum of 2 seconds) to check the direction of rotation. When looking at the motor fan, it must rotate counterclockwise.

## **07** MAINTENANCE

#### **ENSURING OPERATIONAL SAFETY**



#### 

Danger of death from touching live parts. Before maintenance work, disconnect the machine by pressing the main switch or unplugging it and ensure it cannot be turned on again.

#### 



Hot surfaces and equipment. During maintenance work, there is the danger of getting burnt on hot components and by machine lubricating oil. Allow ample time for the machine to cool down prior to maintenance work.

Regular maintenance work must be carried out in order to ensure operational safety. Maintenance intervals also depend on the operational demands on the machine. Observe the safety instructions described in the section labeled **"Safety" on page 11.** The entire unit should always be kept in a clean condition.

#### **SPECIFICATIONS**

INTERVAL	MAINTENANCE TO BE CARRIED OUT
Monthly	Check the pipes and screws for leaks and to ensure they are seated properly and if necessary seal again or tighten up.
Monthly	Check the terminal box and cable inlet holes for leaks and if necessary re-seal.
Monthly	Clean the regulating valve, the ventilation slots on the machine, and the motor cooling ribs.
Monthly	Check oil level.
5,000 – 20,000 Hours	Change oil. KVC-60, 100, 150 and 251: 5,000 Hours KVC-62*, 122*, 301, 401 and 501: 20,000 Hours KVC-1000: 8,000 Hours
Monthly / Every 6 Months	KVC Series: Clean or replace filter cartridge.
Dependent Discharged Media Cleanliness	KVC-100 – KVC-251: Clean micro filter.
Yearly (at least once yearly)	Check for coupling wear.

\* Extreme load can reduce the oil life to 5,000 hours.

Table 7-1 – Maintenance Interval Schedule

#### **CHANGING THE OIL**

The oil level in the sight glasses must be checked every month. The machine must be switched off and vented to atmospheric pressure to top up the oil. Oil must be changed according to the intervals listed in table 7-1. The oil viscosity must comply with ISO VG 150.

Designation as per DIN 51502: CLP HC 150. We recommend the following oil brand: Kinney KV150.

#### NOTICE

Always change the oil when the machine is at operating temperature and in an atmospherically ventilated area. If it is not completely emptied, the amount that can be refilled is reduced.

#### NOTICE

The waste oil must be disposed of in compliance with the local environmental protection regulations. If you are going to use another oil type, empty the oil removing device housing and oil cooler completely.

#### **KVC SERIES OIL DIAGRAMS**

#### **KVC-60 Oil Diagram**



- H Oil filling point
- I Oil sight glass
- K Oil discharge point
- M Oil recommendation plate

#### KVC-100 / KVC-150 / KVC-251 Oil Diagram





- H Oil filling point
- I Oil sight glass
- K Oil discharge point
- M Oil recommendation plate



- H Oil filling point
- I Oil sight glass
- K Oil discharge point
- M Oil recommendation plate

#### FILTER CLEANING

The filter cartridge (KVC Series) for the suction filter must be cleaned monthly or more often depending on the level of contamination by purging from the inside outwards. In spite of cleaning the filter, it's separation efficiency will continue to deteriorate. Therefore the filter should be replaced every six months. The filter cartridge can be removed after undoing the tension clamps.

#### NOTICE

Insufficient maintenance on the air filter may cause power of the machine to lessen, which may damage the machine.

#### NOTICE

Do not damage the filter cartridge when cleaning.

#### 

Danger of injury when dealing with compressed air. When blowing through with compressed air, solid particles may be carried along or powder dust swirling around may cause injury to the eyes. Therefore, when cleaning with compressed air, always wear safety goggles and a dusty mask.

#### COUPLING

The coupling sleeve is subject to wear and must be checked regularly (at least once a year).

#### 

A defective coupling sleeve may lead to the rotor shaft breaking.

To check the coupling sleeve, switch the motor off and ensure that is cannot be switched on again. Undo the screws on the housing flange. Remove the motor axially with half of the coupling on the motor side and suspend with a lifting device. If the sleeve is damaged or worn, then replace the sleeve.

#### **REPLACEMENT PARTS**

Replacement parts for the KVC Series dry claw vacuum pump shown in "**KVC-60 Series Parts List**" on page 22. Maintenance kits are available for the KVC line of pumps. Contact the factory with serial number information for kit part numbers. Delivery can be provided at that time.

#### FACTORY SERVICE AND REPAIR

With proper care, Kinney vacuum pumps and systems will provide years of reliable service. Should adjustments or parts replacement eventually be needed, these can often be performed locally as described in this book after obtaining required parts. Personnel should have a good background of mechanical experience and be thoroughly familiar with the procedures outlined in this manual.

For major repairs not covered in this manual, contact the nearest Kinney Authorized Service Center. Pump repair services are also available at our factory in Springfield, MO, or through our international network of Authorized Service Centers. Call (800) 825-6937 for the location nearest you for more information. Units that are still under warranty must be returned to the factory, freight prepaid, for service. Please contact Customer Service or visit us online for additional instructions on how to receive a Return Authorization number.

## *08*

### TROUBLESHOOTING

Although Kinney vacuum pumps are well-designed and manufactured, problems may occur due to normal wear and the need for readjustment. The following chart lists symptoms that may occur along with probable causes and remedies.

SYMPTOM	PROBABLE CAUSE	REMEDIES		
	Mains voltage/frequency does not correspond with the motor data			
	Connection to motor terminal board is not correct	Check by qualified electrician		
Machine is	Motor overload is not set correctly			
switched off by the motor overload	Motor overload is triggered too quickly	Use motor protection switch with an overload- dependent delayed switch off that takes into consideration the short-term excess current at start up (version with short circuit) and overload trigger as per VDE 0660 Part 2 or IEC 947-4)		
	The regulating valve is dirty so that the permissible vacuum value is exceeded	Clean or replace the regulating valve		
	The suction filter is dirty	Clean or replace the suction filter		
capacity is	The suction pipe is too long or too narrow	Check the hose or the pipe		
insufficient	Machine or system leaking	Check the pipework and screw connections for leaks and to ensure that they are firmly seated		
Final pressure (maximum vacuum) is not reached	Machine or system leaking	Check the pipework and screw connections for leaks and to ensure that they are firmly seated		
	Ambient or intake temperature is too high	Ensure it is being used properly		
Machine gets		Check to ensure ventilation air intake is not blocked		
too hot	Cooling air supply is obstructed	Clean ventilation slots		
	The regulating valve is dirty so that the permissible vacuum value is exceeded	Clean or replace the regulating valve		
The machine	Deposits on the rotary piston	Clean the working space and the rotary piston		
abnormal noise	The regulating valve is vibrating	Replace the valve		

#### PART NUMBER DESIGNATIONS

#### EXAMPLE: MODEL KVC60CD-BDD

#### Position #:



#### Position 1

#### PUMP MODEL NUMBER:

Position 1		
	KVC-60	
	KVC-62	
	KVC-100	
SIZE	KVC-122	
	KVC-150	
	KVC-251	
	KVC-301	
	KVC-401	
	KVC-501	
	KVC-1000	

#### Position 2:

#### PUMP VERSION

Position 2					
	CD	Standard duty			
VERSION	XD	Extreme duty for heavy duty applications			

#### Position 4:

#### MOTOR HP

Positon 4					
	2hp	В			
	3hp	С			
	4hp	Y			
	5hp	V			
HP	7.5hp	E			
	10hp	F			
	12hp	Х			
	15hp	G			
	30hp	J			

#### Position 5:

#### MOTOR SUPPLIED

Position 5				
IEC	NEMA xp VOLTAGES			
DD	V	3/50-60/190/380//230/460		
		Н	3/60/230-460	
BB	9		3/60/200	
CC	E		3/60/575	
Ι			3/60/380	
ZZ			1/60/230	

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#### **KVC-60 SERIES EXPLODED VIEW DRAWING**



#### **Exploded Views and Parts Lists**

ITEM NO.	PART TYPE	DESCRIPTION	QTY	
1		Rotor 1	1	EA
2		Rotor 2	1	EA
3		Cover	2	EA
5		Housing cover B	1	EA
6		Shaft driving	1	EA
7		Shaft driven	1	EA
8		Housing	1	EA
10		Conical-clamping element	2	EA
12	D	O-Ring	2	EA
13		Spacer ring	3	EA
14		Lifting eye	1	EA
16		Rubber foot	2	EA
		Gear		
20	D	Shaft seal	1	EA
21	V	Sleeve	1	EA
22	D	O-Ring	1	EA
23	V	Deep groove ball bearing	2	EA
24		Sleeve	2	EA
25		Gear wheel pair	2	EA
26		Flinger	1	EA
28	V	Angular ball bearing	2	EA
29		Ball bearing shim	2	EA
30		Gear cover	1	EA
31		Lock plug	1	EA
32	D	Sealing ring	1	EA
34		Кеу	2	EA
35	D	O-Ring	2	EA
36	D	Shaft seal	2	EA
37	V	Sleeve	2	EA
39		Bearing cover	3	EA
40		Threaded pin	4	EA
41	D	O-Ring	2	EA
42		De-aeration screw	1	EA
43	V	Piston ring	4	EA
45		Lock cap	1	EA
46	V	Hex-oil sight glass	1	EA
		Drive		
50		Motor	1	EA
51		Кеу	1	EA
52		Coupling cpl.	1	EA
53		Coupling element	1	EA

ITEM NO.	PART TYPE	DESCRIPTION	QTY	
		Fan		
60		Axial fan	1	EA
61		Protection grill	1	EA
		Silencer		
64	D	Silencer	1	EA
65		Gasket	2	EA
66		Threaded pin	4	EA
67		Disc	4	EA
68		Hexhead nut	4	EA
		Vacuum side		
75		Flange	1	EA
76		Bend	1	EA
77		Double nipple	1	EA
78	V	Air filter	1	EA
79		Filter cartridge	1	EA
80		Reducer	2	EA
81		T-piece	1	EA
82		Reducer	1	EA
83		Regulation valve	1	EA

Key	
V	Wearing Parts
D	Seals

Repair kits available consisting of V- and D- parts

*09* 



#### **KVC-62 SERIES EXPLODED VIEW DRAWING**



ITEM NO.	PART TYPE	DESCRIPTION	QTY	
		Gear		
1		Housing	1	EA
2	V	Angular ball bearing	2	EA
3	D	Shaft seal	2	EA
4		Bearing cover	2	EA
5		Shaft driving	1	EA
6		Shaft driven	1	EA
7		Slinger	1	EA
8	V	Piston ring sleeve	2	EA
9	V	Piston ring	4	EA
10	D	O-Ring	1	EA
11	D	O-Ring	1	EA
12	D	Shaft seal	1	EA
13	V	Deep groove ball bearing	2	EA
14		Cover	1	EA
15	D	O-Ring	3	EA
16	V	Sleeve	1	EA
17	V	Hex-oil sight glass with sealing ring	1	EA
18 / 19		Lock plug with magnet / Sealing ring	1	EA
20		Fitting	1	EA
21		Vented oil fill cap	1	EA
		Compressor part		
30		Cover B	1	EA
31		Rotor driving	1	EA
32		Rotor driven	1	EA
33	V	Conical-clamping element	2	EA
34		Pressing cylinder	2	EA
35		Spacer ring	2	EA
		Drive		
43		Lifting eye	1	EA
44		Кеу	1	EA
45		Fan housing	1	EA
46		Dowel pin	2	EA
47		Coupling motor half	1	EA
48	V	Coupling element	1	EA
49		Coupling gear half	1	EA
50		Fan	1	EA
51		Disc	1	EA
52		Motor	1	EA
		Suction limitation valve		
60		Suction limitation valve	1	EA

ITEM NO.	PART TYPE	DESCRIPTION	QTY	
		Cover		
64		Base plate with acoustic mat	1	EA
65		Base rail, right	1	EA
66		Base rail, left	1	EA
67	V	Support isolator	4	EA
68		Rubber foot	4	EA
69	V	Rubber foot	2	EA
70		Support plate with acoustic mat	1	EA
71		Support plate with acoustic mat	1	EA
72	V	Rubber foot	4	EA
74		Cover with acoustic mat	1	EA
75		Cover plate Silencer	1	EA
76		Cover plate with acoustic mat	1	EA
77		Front plate	1	EA
78		Edge protection	1	EA
		Suction side		
80		Vacuum connection port	1	EA
81	D	O-Ring	1	EA
82		Valve housing	1	EA
83		Valve plate	1	EA
84		spring	1	EA
85		Valve star	2	EA
86	V	Mesh disc	1	EA
87	V	Lock Ring	1	EA
88	D	O-Ring	1	EA
89	D	O-Ring	1	EA
		Silencer		
90		Silencer	1	EA
91	D	Gasket	1	EA
92		Connection flange	1	EA
		Labels		
110		Data plate	1	EA
111		Warning label hot surface, 50 mm	2	EA
112		Oil type plate	1	EA
113		Warning label max. back pres- sure	1	EA
114		Label Observe Manual	1	EA

Кеу			
V	Wearing Parts		
D	Seals		

Repair kits available consisting of V- and D- parts

**09** 

#### **KVC-100 SERIES EXPLODED VIEW DRAWING**



#### **KVC-100 SERIES PARTS LIST**

ITEM NO.	PART TYPE	DESCRIPTION	QTY	
2		Dowel pin	6	EA
3		Spacer ring	2	EA
4		Rotor 1	1	EA
5		Rotor 2	1	EA
6		Кеу	2	EA
7		Compressor housing	1	EA
9	D	O-Ring	1	EA
12	V	Piston ring	4	EA
13	D	O-Ring	2	EA
		Gear		
30		Gearbox	1	EA
31	V	Angular ball bearing	2	EA
32	D	Shaft seal	2	EA
33		Bearing cover	2	EA
34		Sleeve	2	EA
35		Shaft driven	1	EA
36		Shaft driving	1	EA
37		Gear wheel	1	EA
38		Кеу	1	EA
39		Gear wheel	1	EA
40		Flinger	1	EA
41		Disc	2	EA
42		Sleeve	2	EA
43	V	Sleeve	2	EA
44		Conical-clamping element	1	EA
45		Cover	1	EA
46	D	O-Ring	1	EA
47	D	Shaft seal	1	EA
48	V	INA-sleeve	1	EA
49	D	O-Ring	1	EA
50		Cover	1	EA
51		Fitting	2	EA
52	D	Sealing ring	2	EA
53		Fitting	2	EA
54		De-aeration screw	1	EA
55	V	Hex-oil sight glass	2	EA
56	D	Sealing ring	2	EA
57		Lock plug	2	EA
58	D	Sealing ring	4	EA
59	V	Deep groove ball bearing	2	EA
60		Gear wheel pair	1	EA

ITEM NO.	PART TYPE	DESCRIPTION	QTY	
		Drive		
69		Кеу	1	EA
70		Fan housing	1	EA
71		Air guiding plate	2	EA
72		Hexagon head screw	4	EA
74		Coupling cpl.	1	EA
75	V	Coupling element	1	EA
76		Fan	1	EA
77		Disc	1	EA
78		Disc	1	EA
79		Motor	1	EA
		Cover cap		
85		Cover	1	EA
86		Front part	1	EA
87		Foot right	1	EA
88		Foot left	1	EA
89		Ground plate	1	EA
90		Disc	5	EA
91		Lifting eye	1	EA
92		Rubber foot	4	EA
93		Square plug	4	EA
94		Acoustic mat complete	3	EA
		Vacuum side		
100		Intermediate plate	3	EA
101		Gasket	3	EA
102	D	Mesh	1	EA
103		Connection housing Reducer	2	EA
104		Reducer	1	EA
105		Barrel nipple	1	EA
106		Vacuum regulating valve cpl	1	EA
107		Silencer	1	EA
		Pressure Side		
117	D	Silencer Pressure	1	EA

Key	
V	Wearing Parts
D	Seals

Repair kits available consisting of V- and D- parts

*09* 



#### **KVC-122 SERIES EXPLODED VIEW DRAWING**



KVC-122 SERIES PARTS LIST	KVC-122	<b>SERIES</b>	<b>PARTS</b>	LIST
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ITEM NO.	PART TYPE	DESCRIPTION	QTY	
		Gear		
1		Housing	1	EA
2	V	Angular ball bearing	2	EA
3	D	Shaft seal	2	EA
4		Bearing cover	2	EA
5		Shaft driving	1	EA
6		Shaft driven	1	EA
7		Slinger	1	EA
8	V	Piston ring sleeve	2	EA
9	V	Piston ring	4	EA
10	D	O-Ring	1	EA
11	D	O-Ring	1	EA
12	D	Shaft seal	1	EA
13	V	Deep groove ball bearing	2	EA
14		Cover	1	EA
15	D	O-Ring	3	EA
16	V	Sleeve	1	EA
17	V	Hex-oil sight glass with sealing ring	1	EA
18 / 19		Lock plug with magnet / Seal- ing ring	1	EA
20		Fitting	1	EA
21		Vented oil fill cap	1	EA
		Compressor part		
30		Cover B	1	EA
31		Rotor driving	1	EA
32		Rotor driven	1	EA
33	V	Conical-clamping element	2	EA
34		Pressing cylinder	2	EA
35		Spacer ring	2	EA
		Drive		
43		Lifting eye	1	EA
44		Кеу	1	EA
45		Fan housing	1	EA
46		Dowel pin	2	EA
47		Coupling motor half	1	EA
48	V	Coupling element	1	EA
49		Coupling gear half	1	EA
50		Fan	1	EA
51		Disc	1	EA
52		Motor	1	EA
		Suction limitation valve		
60		Suction limitation valve	1	EA

ITEM NO.	PART TYPE	DESCRIPTION	QTY	
		Cover		
64		Base plate with acoustic mat	1	EA
65		Base rail, right	1	EA
66		Base rail, left	1	EA
67	V	Support isolator	4	EA
68		Rubber foot	4	EA
69	V	Rubber foot	2	EA
70		Support plate with acoustic mat	1	EA
71		Support plate with acoustic mat	1	EA
72	V	Rubber foot	4	EA
74		Cover with acoustic mat	1	EA
75		Cover plate Silencer	1	EA
76		Cover plate with acoustic mat	1	EA
77		Front plate	1	EA
78		Edge protection	1	EA
		Suction side		
80		Vacuum connection port	1	EA
81	D	O-Ring	1	EA
82		Valve housing	1	EA
83		Valve plate	1	EA
84		Spring	1	EA
85		Valve star	1	EA
86	V	Mesh disc	1	EA
87	V	Lock ring	1	EA
88	D	O-Ring	1	EA
89	D	O-Ring	1	EA
		Silencer		
90		Silencer	1	EA
91	D	Gasket	1	EA
92		Connection flange	1	EA
		Labels		
110		Data plate	1	EA
111		Warning label hot surface, 50 mm	2	EA
112		Oil type plate	1	EA
113		Warning label max. back pres- sure	1	EA
114		Label Observe Manual	1	EA

Key	
V	Wearing Parts
D	Seals

Repair kits available consisting of V- and D- parts

**09** 

#### **KVC-150 SERIES EXPLODED VIEW DRAWING**



*09* 

#### **KVC-150 SERIES PARTS LIST**

ITEM NO.	PART TYPE	DESCRIPTION	QTY	
1		Rotor 1	1	EA
2		Rotor 2	1	EA
3		Cover	2	EA
4		Cover-B	1	EA
7		Housing	1	EA
8	D	O-Ring	2	EA
9	V	Sleeve	2	EA
10	V	Piston ring	4	EA
12	D	Shaft seal	2	EA
13		Threaded pin	2	EA
14		Flange	2	EA
15	D	O-Ring	2	EA
16		Conical-clamping element	2	EA
17		Spacer ring	2	EA
18	D	O-Ring	1	EA
		Gear		
20		Cover	1	EA
21	D	O-Ring	1	EA
22		Shaft driving	1	EA
23		Shaft driven	1	EA
24	V	Angular ball bearing 2		EA
25		Ball bearing shim 2		EA
26		Key 2		EA
28		Gear wheel pair	2	EA
29		Flinger	1	EA
31		Spacer	2	EA
32	V	Deep groove ball bearing	2	EA
34	V	INA-sleeve	1	EA
35	D	O-Ring	1	EA
36		Ring	1	EA
37	D	O-Ring	1	EA
38	D	Shaft seal	1	EA
40		De-aeration screw	1	EA
42	V	Hex-oil sight glass	1	EA
44		Lock plug	1	EA
45	D	Sealing ring	1	EA
46		Disc	1	EA
48		Lock cap	1	EA

ITEM NO.	PART TYPE	DESCRIPTION	QTY	
		Drive		
50		Fan housing	1	EA
52		Dowel pin	2	EA
53		Air guiding plate	2	EA
54		Hexagon head screw	14	EA
56		Coupling cpl.	1	EA
57	V	Coupling element	1	EA
59		Кеу	1	EA
60		Fan wheel	1	EA
61		Disc	1	EA
64		Motor	1	EA
		Cover cap		
70		Cover	1	EA
71		Front part	1	EA
72		Ground plate	1	EA
74		Rubber foot	4	EA
75		Hexhead nut	4	EA
77		Lifting eye	1	EA
		Pressure side		
80		Silencer	1	EA
81		Gasket	2	EA
83	D	Threaded pin	4	EA
84		Hexhead nut	4	EA
86		Plug	1	EA
		Suction		
90		Intermediate plate	1	EA
91		Gasket with mesh	1	EA
92	D	Connection housing	1	EA
94		Regulation valve	1	EA
96		Elbow	1	EA
97		Reducer	1	EA

Key		
V	Wearing Parts	
D	Seals	
Repair kits available consisting of		

Repair kits available consisting of V- and D- parts

*09* 

#### **KVC-251 SERIES EXPLODED VIEW DRAWING**



NO.	PART TYPE	DESCRIPTION	QTY	
1		Rotor ' 1	1	EA
2		Rotor ' 2	1	EA
3		Cover	2	EA
4		Cover-B	1	EA
7		Housing	1	EA
8	D	O-Ring	2	EA
9	V	Sleeve	2	EA
10	V	Piston ring	4	EA
12	D	Shaft seal	2	EA
13		Threaded pin	2	EA
14		Flange	2	EA
15	D	O-Ring	2	EA
16		Conical-clamping element	2	EA
17		Spacer ring	2	EA
18	D	O-Ring	1	EA
		Gear		
20		Cover	1	EA
21	D	O-Ring	1	EA
22		Shaft ' driving	1	EA
23		Shaft ' driven	1	EA
24	V	Angular ball bearing	2	EA
25		Ball bearing shim	2	EA
26		Кеу	2	EA
28		Gear wheel pair	2	EA
29		Flinger	1	EA
31		Spacer	2	EA
32	V	Deep groove ball bearing	2	EA
34	V	INA-sleeve	1	EA
35	D	O-Ring	1	EA
36		Ring	1	EA
37	D	O-Ring	1	EA
38	D	Shaft seal	1	EA
40		De-aeration screw	1	EA
42	V	Hex-oil sight glass	1	EA
44		Lock plug	1	EA
45	D	Sealing ring	1	EA
46		Disc	1	EA
48		Lock cap	1	EA
		Drive		
50		Fan housing	1	EA
52		Dowel pin	2	EA

ITEM NO.	PART TYPE	DESCRIPTION	QTY	
53		Air guiding plate	2	EA
54		Hexagon head screw	4	EA
56		Coupling cpl.	1	EA
57	V	Coupling element	1	EA
59		Кеу	1	EA
60		Fan wheel	1	EA
61		Disc	1	EA
64		Motor	1	EA
		Cover cap		
70		Cover complete	1	EA
71		Front part	1	EA
72		Foot complete	1	EA
74		Rubber foot	4	EA
75		Hexhead nut	4	EA
77		Lifting eye	1	EA
		Pressure side		
80		Silencer	1	EA
81	D	Gasket	3	EA
83		Threaded pin	4	EA
84		Hexhead nut	4	EA
		Vacuum side		
90		Intermediate plate	3	EA
91	D	Gasket	1	EA
92		Mesh	1	EA
93		Connection housing	1	EA
94		Reducer	1	EA
95		Barrel nipple	1	EA
96		Vacuum limitation valve	1	EA
97		Silencer	1	EA

Key		
V	Wearing Parts	
D	Seals	
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Repair kits available consisting of V- and D- parts

*09* 



#### **KVC-301 SERIES EXPLODED VIEW DRAWING**



ITEM NO.	PART TYPE	DESCRIPTION	QTY	
1		Housing	1	EA
2	V	Angular ball bearing	2	EA
3	D	Shaft seal	2	EA
4		Bearing cover	2	EA
5		Shaft ' driving	1	EA
6		Shaft ' driven	Shaft ' driven 1	
7		Slinger	1	EA
8	V	Piston ring sleeve	2	EA
9	V	Piston ring	4	EA
10	D	O-Ring	2	EA
11	D	O-Ring	1	EA
12	D	Shaft seal	1	EA
13	V	Deep groove ball bearing	2	EA
14		Cover	1	EA
15	D	O-Ring	1	EA
16	V	Sleeve	1	EA
17	V	Hex-oil sight glass with sealing	1	EA
18		Lock plug with magnet 1		EA
19	D	Sealing ring 1		EA
20		Fitting 1		EA
21		Vented oil fill cap 1		EA
22		Lifting eye 1		EA
23		Кеу	2	EA
		Compressor part		
30		Cover B	1	EA
31		Rotor 'driving	1	EA
32		Rotor 'driven	1	EA
33		Conical-clamping element	2	EA
34		Disc	2	EA
35		Spacer ring	2	EA
36	V	Support isolator	4	EA
		Drive		
45		Fan housing	1	EA
46		Dowel pin	2	EA
47		Coupling complete	1	EA
48	V	Coupling element	1	EA
50		Fan	1	EA
52		Motor	1	EA
54		Transport flap 1		EA
59		Elbow 1		EA
60		Suction limitation valve 1		EA

ITEM NO.	PART TYPE	DESCRIPTION	QTY	
		Cover		
65		Base plate with acoustic mat	1	EA
66		Base rail	2	EA
67	V	Support isolator	4	EA
68		Rubber foot	4	EA
70		Intermediate sheet	1	EA
71	V	Support isolator	4	EA
72		Acoustic mat	1	EA
73		Cover complete	1	EA
75		Cover plate		EA
77		Front plate	1	EA
		Suction side		
80		Vacuum connection port	1	EA
81		O-Ring	1	EA
82		Mesh disc	1	EA
83		Lock ring	1	EA
84		Valve complete	1	EA
		Silencer		
90	D	Silencer	1	EA
91	V	Threaded pin	4	EA
92	V	Washer	4	EA
93		Hexhead nut	4	EA
94		Gasket	1	EA

Кеу		
V	Wearing Parts	
D Seals		
Densis lite eveileble sensisting of		

Repair kits available consisting of V- and D- parts



#### **KVC-401-501 SERIES EXPLODED VIEW DRAWING**



#### **KVC-401-501 SERIES PARTS LIST**

ITEM NO.	PART TYPE	DESCRIPTION	QTY	
1		Housing	1	EA
2	V	Angular ball bearing	2	EA
3	D	Shaft seal	2	EA
4		Bearing cover	2	EA
5		Shaft ' driving	1	EA
6		Shaft ' driven	1	EA
7		Slinger	1	EA
8	V	Piston ring sleeve	2	EA
9	V	Piston ring	4	EA
10	D	O-Ring	2	EA
11	D	O-Ring	1	EA
12	D	Shaft seal	1	EA
13	V	Deep groove ball bearing	2	EA
14		Disc	1	EA
15	D	O-Ring	1	EA
16	V	Sleeve	1	EA
17	V	Hex-oil sight glass with sealing ring	1	EA
18		Lock plug with magnet	1	EA
19	D	Sealing ring	1	EA
20		Fitting	1	EA
21		Vented oil fill cap	1	EA
22		Lifting eye	1	EA
23		Кеу	1	EA
24	V	Allen screw, self-locking	2	EA
		Compressor part		
30		Cover B	1	EA
31		Rotor 'driving	1	EA
32		Rotor 'driven	1	EA
33	V	Conical-clamping element	2	EA
34		Pressing cylinder	2	EA
35		Spacer ring	2	EA
36	V	Rubber foot	4	EA
		Drive		
45		Fan housing	1	EA
46		Dowel pin	2	EA
47		Coupling complete	1	EA
48	V	Coupling element	1	EA
50		Fan	1	EA
52		Motor	1	EA
54		Transport flap	1	EA

ITEM NO.	PART TYPE	DESCRIPTION	QTY	
		Suction limitation valve		
60		Suction limitation valve	1	EA
		Cover		
65		Base plate with acoustic mat 1		EA
66	V	Base rail	1	EA
68	V	Rubber foot	4	EA
71		Rubber foot	4	EA
72		Acoustic mat	1	EA
73		Cover complete	1	EA
75		Cover plate	1	EA
77		Front plate	1	EA
78		Edge protection section 1		EA
79		Edge protection section	1	EA
		Suction side		
80		Connection piece	1	EA
81		Double nipple	1	EA
		Silencer		
90		Silencer	1	EA
91		Threaded pin	4	EA
92		Washer 4		EA
93		Hexhead nut 4		EA
94	D	Gasket	1	EA

Key	
V	Wearing Parts
D	Seals

Repair kits available consisting of V- and D- parts

**09** 

#### **KVC-1000 SERIES EXPLODED VIEW DRAWING**



#### **KVC-1000 SERIES PARTS LIST**

ITEM NO.	PART TYPE	DESCRIPTION	QTY	
1		Compressor housing	1	EA
2	V	Angular ball bearing	2	EA
3		Shaft ' driving	1	EA
4		Shaft ' driven	1	EA
5		Кеу	2	EA
6		Sleeve	2	EA
7		Gear wheel	2	EA
8		Flinger	2	EA
9		Sleeve	2	EA
10	V	Deep groove ball bearing	2	EA
11		Ball bearing shim	4	EA
12		Disc	1	EA
13	D	O-Ring	1	EA
14		Cover	1	EA
15	D	Shaft seal	1	EA
16		Ring	1	EA
17	V	Lock washer	2	EA
18	D	O-Ring	2	EA
19	V	Sleeve	1	EA
20		Lock plug 2		EA
21	V	Hex-oil sight glass with sealing ring	2	EA
22		Gear cover 1		EA
23	D	O-Ring 1		EA
24	D	Sealing ring 1		EA
25		Fitting 1		EA
26		De-aeration screw 1		EA
27	D	O-Ring 2		EA
28	V	Piston ring sleeve	2	EA
29	V	Piston ring	4	EA
30	D	O-Ring	2	EA
31		Bearing cover	2	EA
32	D	Shaft seal	2	EA
33		Flange	2	EA
34	D	O-Ring	2	EA
35	V	Rubber foot	13	EA
37		Lifting eye	2	EA
		Compressor part		
43		Spacer ring	2	EA
44		Rotor ' 1	1	EA
45		Rotor ' 2	1	EA
46		Conical-clamping element 2		EA
47		Cover B	Cover B 1	
48	D	O-Ring 1		EA
		Drive		
55		Fan housing	1	EA
56		Dowel pin 2		EA

ITEM NO.	PART TYPE	DESCRIPTION	QTY	
57		Кеу	1	EA
59		Coupling cpl. with fan	1	EA
60		Coupling element 1 (elastomer part)		EA
61		Fan	1	EA
62		Disc	1	EA
64		Rubber foot	5	EA
65		Foot	1	EA
67		Motor	1	EA
68		Transport flap	1	EA
		Cover cap		
70		Cover cpl.	1	EA
71		Cover	1	EA
72		Acoustic mat	1	EA
73		Cover front part cpl.	1	EA
74		Cover front part	1	EA
75		Acoustic mat	1	EA
76		Acoustic mat	1	EA
77		Cover rear part cpl. 1		EA
78		Cover rear part	1	EA
79		Acoustic mat	1	EA
		Foot complete		
81		Foot	1	EA
82		Foot cover front	1	EA
84		Foot cover back	1	EA
86		Ground plate complete	1	EA
87		Ground plate	1	EA
88		Acoustic mat	1	EA
90		Edge protection section	2	EA
91		Edge protection section	1	EA
92		Edge protection section	1	EA
93		Rubber foot	4	EA
		Pressure side		
95		Silencer	1	EA
96		Gasket	1	EA
97	D	Threaded pin	4	EA
98		Fixation	1	EA
		Vacuum side		
100		Mesh filter	1	EA
101		Suction limitation valve	1	EA

Кеу	
V	Wearing Parts
D	Seals

Repair kits available consisting of V- and D- parts

*09* 

#### **REBUILD KITS**

KIT PART NUMBER	REPLACEMENT KIT
203101 0000	OIL, GEAR, KV 150, QUART
203102 0000	OIL, GEAR, KV 150, 5 GALLON
210001 0100	REBUILD KIT, KVC 100
210001 0150	REBUILD KIT, KVC 150
210001 0060	REBUILD KIT, KVC 60
210001 0062	REBUILD KIT, KVC 62/122
210001 0301	REBUILD KIT, KVC 301
210001 0401	REBUILD KIT, KVC 401
210001 0501	REBUILD KIT, KVC 501
210001 1000	REBUILD KIT, KVC 1000
210001 0251	REBUILD KIT, KVC 251
	NOTE: Rebuild kit includes bearings, sealing elements, sleeves and coupling spider

#### WARRANTY - VACUUM PRODUCTS

Subject to the terms and conditions hereinafter set forth and set forth in General Terms of Sale, Kinney (the Seller) warrants products and parts of its manufacture, when shipped, and its work (including installation and start-up) when performed, will be of good quality and will be free from defects in material and workmanship. This warranty applies only to Seller's equipment, under use and service in accordance with Seller's written instructions, recommendations and ratings for installation, operating, maintenance and service of products, for a period as stated in the table below. Because of varying conditions of installation and operation, all guarantees of performance are subject to plus or minus 5% variation. (Non-standard materials and KVC Claw pumps are subject to a plus or minus 10% variation).

PRODUCT TYPE	WARRANTY DURATION
New (Non-Piston Pumps)	15 months after date of shipment or 12 months after initial startup date, whichever occurs first
New (Piston Pumps)	30 months after date of shipment, on all units sold after June 1, 2014.
KVC Claw Pumps	24 months after date of shipment.
Repair	6 months after date of shipment or remaining warranty period, whichever is greater
Remanufactured	9 months after date of shipment or 6 months after initial startup date, whichever occurs first

THIS WARRANTY EXTENDS ONLY TO BUYER AND/OR ORIGINAL END USER, AND IN NO EVENT SHALL THE SELLER BE LIABLE FOR PROPERTY DAMAGE SUSTAINED BY A PERSON DESIGNATED BY THE LAW OF ANY JURISDICTION AS A THIRD PARTY BENEFICIARY OF THIS WARRANTY OR ANY OTHER WARRANTY HELD TO SURVIVE SELLER'S DISCLAIMER.

All accessories furnished by Seller but manufactured by others bear only that manufacturer's standard warranty.

All claims for defective products, parts, or work under this warranty must be made in writing immediately upon discovery and, in any event within one (1) year from date of shipment of the applicable item and all claims for defective work must be made in writing immediately upon discovery and in any event within one (1) year from date of completion thereof by Seller. Unless done with prior written consent of Seller, any repairs, alterations or disassembly of Seller's equipment shall void warranty. Installation and transportation costs are not included and defective items must be held for Seller's inspection and returned to Seller's Ex-works point upon request.

THERE ARE NO WARRANTIES, EXPRESSED, IMPLIED OR STATUTORY WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF, INCLUDING WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS OF PURPOSE.

After Buyer's submission of a claim as provided above and its approval, Seller shall at its option either repair or replace its product, part, or work at the original Ex-works point of shipment, or refund an equitable portion of the purchase price.

The products and parts sold hereunder are not warranted for operation with erosive or corrosive material or those which may lead to build up of material within the product supplied, nor those which are incompatible with the materials of construction. The Buyer shall have no claim whatsoever and no product or part shall be deemed to be defective by reason of failure to resist erosive or corrosive action nor for problems resulting from build-up of material within the unit nor for problems due to incompatibility with the materials of construction.

Any improper use, operation beyond capacity, substitution of parts not approved by Seller, or any alteration or repair by others in such manner as in Seller's judgment affects the product materially and adversely shall void this warranty.

No employee or representative of Seller other than an Officer of the Company is authorized to change this warranty in any way or grant any other warranty. Any such change by an Officer of the Company must be in writing.

The foregoing is Seller's only obligation and Buyer's only remedy for breach of warranty, and except for gross negligence, willful misconduct and remedies permitted under the General Terms of Sale in the sections on CONTRACT PERFORMANCE, INSPECTION AND ACCEPTANCE and the PATENTS Clause hereof, the foregoing is BUYER'S ONLY REMEDY HEREUNDER BY WAY OF BREACH OF CONTRACT, TORT OR OTHERWISE, WITHOUT REGARD TO WHETHER ANY DEFECT WAS DISCOVERED OR LATENT AT THE TIME OF DELIVERY OF THE PRODUCT OR WORK. In no event shall Buyer be entitled to incidental or consequential damages. Any action for breach of this agreement must commence within one (1) year after the cause of action has occurred.

#### **OPERATING DATA FORM / PRODUCT REGISTRATION**

It is to the user's advantage to have the requested data filled in below and available in the event a problem should develop in the vacuum booster, vacuum pump or the system. This information is also helpful when ordering spare parts.

Model No.		Serial No.
Startup Date		Type of Lubrication
Pump RPM		Operating Vacuum
Pump Sheave Diameter		Any other Special Accessories Supplied or in use:
Motor RPM	HP	
NOTES:		

#### **IMPORTANT**

All vacuum boosters and vacuum pumps manufactured by Kinney are date coded at time of shipment. In order to assure you of the full benefits of the product warranty, please complete, tear out and return the product registration card. You may also register your product online at www.kinneyvacuum.com or contact Customer Service.



www.md-kinney.com

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