

# WELCH®

## *Service Catalog*

**Oil and  
Accessories**

**Complete  
Pump Servicing**

**Rebuild Kits  
and Components**

**WELCH-ILMVAC**  
APPLIED VACUUM TECHNOLOGY

[www.welchvacuum.com](http://www.welchvacuum.com)

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## Getting the Most from Your Vacuum Pump

With proper care and maintenance, you can maximize the return on your investment in vacuum technology. Use this Catalog to find everything you need for your vacuum pump.

- Operation
- Maintenance
- Repair
- Repair Services



## 5 Key Elements to Top Pump Performance and Long Life

1

Change oil frequently. Certified Welch® Oil protects your pump for efficient operation and long life.



8995G-11



1407K-11

Page 2

2

Protect your pump from damaging fumes and particulates. Use cold traps and in-line filters to limit contaminants that reduce vacuum efficiency and pump life.



1420H-14



1475K-21

Page 10-11

3

Changing exhaust filters periodically maximizes air flow, minimizes noise, and reduces airborne oil and particulates.



1417P-10

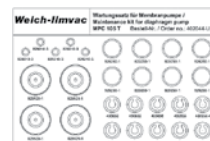


1412C

Page 12-13

4

Buying Certified Welch-Ilmvac Rebuild Kits provides original parts for repair - enables a return to your pump's original performance specifications.



402044-US

Page 37

5

Economically restore your pump to top condition through Welch-Ilmvac warrantied repair service. See how our pump maintenance pays off - better performance and fewer repairs using original equipment replacement components.



Page 14-17

## CHANGE YOUR PUMP OIL, Extend Your Pump Life!

### VACUUM PUMP OIL CONDITION COLOR

We recommend that you always have a supply of certified Welch® Oil on hand to keep routine maintenance on schedule. Keeping Welch® Oil readily available will enable you to respond quickly to accidental oil contamination or degradation and avoid costly pump repairs or pump replacement. **Check the condition and level of your pump oil daily.**



Good



Vacuum pump oil can become contaminated with ingested fluids and vapors. Use recommended pump oil and change your pump oil regularly. Cloudy and discolored oil will lead to premature pump failure.



Bad (Possible Pump Damage)



**Make the clear choice and change your oil regularly.**

## Pumps and Integrated Pumping Systems Standard Warranty

### WELCH WARRANTY

This Welch product is warranted to be free from defects in material and workmanship. The liability of Gardner Denver Thomas, Inc. under this warranty is limited to servicing, adjusting, repairing or replacing any unit or component part which in the judgment of Gardner Denver Thomas, Inc. has not been misused, abused or altered in any way causing impaired performance or rendering it inoperative. No other warranties are expressed or implied. The method of executing this warranty: servicing, adjusting, repairing or replacing shall be at the discretion of Gardner Denver Thomas, Inc. Vacuum pumps that have been used for any period, however short, will be repaired under this warranty rather than replaced.



### NEW PUMPS - STANDARD ONE YEAR WARRANTY

The warranty is effective for one year from the date of original purchase when:

1. The warranty card has been completed and returned or registered online.
2. The product is returned to the factory or other designated service centers, freight prepaid.
3. The product in our judgment is defective through no action or fault of the user.



### REPAIRED PUMPS - STANDARD 6 MONTH WARRANTY

The warranty is effective for 6 months from the date of repair when:

1. The product is returned to the factory or other designated service centers, freight prepaid.
2. The product in our judgment is defective through no action or fault of the user.
3. Product registration is automatic with repair.

If the product has become defective through misuse, abuse, or alteration, repairs will be billed regardless of the age of the product. In this event, an estimate of the repair costs will be submitted and authorization of these charges will be required before the product is repaired and returned. To reduce additional charges and delays either within or outside of the warranty period, contact Welch for a return authorization number by going on-line at [www.welchvacuum.com/welch\\_vacuum\\_suport/repair\\_request\\_form.html](http://www.welchvacuum.com/welch_vacuum_suport/repair_request_form.html) or call (847) 676-8800. Products without a return authorization number will be refused by our receiving department. Before shipping, properly pack the pump, insure it against loss or damage, and on the outside of the pump packaging and the packing slip write in the return authorization number. Pumps damaged due to improper packaging are the customer's responsibility.



## How to Select Welch Oil

Pump Type	Oil Grade	
	Standard Duty	Aggressive Applications (Corrosive Fumes)
ChemStar®	Gold	Gold
Direct-Drive	Premium	Gold
DuoSEAL	DuoSeal	Gold

### Gold Vacuum Pump Oil



- Exceptionally low vapor pressure
- High stability in chemical environments
- No additives or inhibitors
- Recommended for Welch belt-drive and direct-drive pumps

A double distilled synthetic hydrocarbon oil designed for excellent resistance when pumping corrosive gases or vapors. A synthetic base stock that has no aromatic compounds or sulfur which accelerate varnishing, sludging and carbon build-up when pumps are used to pump corrosives. Gold Oil will give a longer service life and superior protection for the internal metal components of a pump in corrosive pumping applications compared to DuoSEAL and Premium Oil. Gold Oil offers excellent vacuum pressure in both belt-driven and direct-driven vacuum pumps over time. Gold Oil is miscible with conventional hydrocarbon oils and can be used without rebuilding the pump. The oil is clear and colorless.

CAT. No.	8995G-11	8995G-15	8995G-20
Size	Liter	Gallon	5 Gallon

### Premium Vacuum Pump Oil



- Low vapor pressure
- Designated for high RPM Direct-Drive vacuum pumps
- No additives or inhibitors
- Recommended for Welch direct-drive vacuum pumps

A triple-distilled hydrocarbon oil using severely hydrotreated base stock is designed to resist breakdown at higher RPMs and operating temperatures of direct-drive vacuum pumps. The hydrotreating virtually eliminates aromatics and sulfur to give good resistance to sludge and varnish formation overtime in corrosive environments. Premium Oil enables direct-drive vacuum pumps to maintain the highest vacuum performance over time. The oil is light yellow.

CAT. No.	8995P-11	8995P-15	8995P-20
Size	Quart	Gallon	5 Gallon

### DuoSEAL® Vacuum Oil



- Low vapor pressure
- Ideal viscosity for belt-drive vacuum pumps
- High consistency
- Recommended for DuoSEAL belt-drive pumps

A specially fractionated oil for DuoSEAL® belt-driven pumps is designed to ensure the highest vacuum performance. The oil is tested to high vacuum levels to meet rigid requirements for vapor pressure, vacuum level stability, and viscosity. DuoSEAL® Oil is famous for its quality and consistency.

CAT. No.	1407K-11	1407K-15	1407K-20
Size	Quart	Gallon	5 Gallon

### GELMASTER™ Trapping Fluid



- High stability in chemical environments
- Low vapor pressure
- Recommended for GELMASTER™

Welch GEM® Pumping and Trapping Fluid is a specially formulated paraffin based hydrocarbon oil for use in the GELMASTER™ gel-drying system. The blue color of the trapping fluid makes it easy to distinguish from the trapped condensate when draining the system. The trapping fluid can be used repeatedly since it does not mix with the condensate. It will appear greenish in color when contaminated.

CAT. No.	8995C	8995C-15
Size	Liter	Gallon

## Handheld General Range Vacuum Gauge



Model 1520 in optional frame case



Kit 1520K-10

- Accurate vacuum measurement from 1 to 760torr
- Portable unit connects quickly to any vacuum source

Take fast, easy vacuum measurements at multiple locations with this portable vacuum gauge. The internal piezoelectric sensor reads results to a large LCD. Stands upright using optional protective frame case. Use standard 3/8" I.D. vacuum hosing to connect to vacuum source. Operates on standard 9V battery or using AC adapter. Meter dimensions: 3.625"Wx1.25"Dx5.75"H. Available as standalone unit or in convenient carrying case kit with frame case/stand, battery, AC adapter, and vacuum hosing length.

CAT. No.		Range	Description
Meter	Meter with Kit		
1520B-01	1520K-10 <sup>1</sup>	1 to 760torr	Handheld Vacuum Gauge, 9V, torr
1520C-02	1520K-11 <sup>2</sup>	1 to 1013mBar	Handheld Vacuum Gauge, 9V, mBar

Notes: 1. 120 VAC adapter  
2. 220 VAC Euro adapter

## Handheld Mid-High Vacuum Gauge



- Accurate vacuum measurement from 0.1 to 1999 millitorr
- Portable unit connects quickly to any vacuum source

Take accurate vacuum readings at multiple sites using this portable vacuum gauge. The external thermocouple sensor reads results to a large LCD. Stands upright using optional protective frame case. Sensor coil cord extends from 1 to 4 feet to connect vacuum source using 1/8" NPT fitting. Operates on standard 9V battery or using AC adapter. Meter dimensions: 3.625"Wx1.25"Dx5.75"H. Available as standalone unit with thermocouple tube sensor or in convenient carrying case kit with frame case/stand, battery, AC adapter, and thermocouple tube sensor<sup>1</sup>.

CAT. No.		Range	Display	Description
Meter	Meter w/ Kit			
1525B-01	1525K-10 <sup>2</sup>	0.001 to 1.0torr	1 to 1000 x 10 <sup>-3</sup> torr	Handheld Vacuum Gauge
1525C-02	1525K-11 <sup>3</sup>	0.001 to 1.3mbar	1 to 1300 x 10 <sup>-3</sup> mbar	Handheld Vacuum Gauge

Notes: 1. For replacement sensor, order 1516A  
2. 120 VAC adapter.  
3. 220 VAC Euro adapter

## Thermocouple Vacuum Gauge

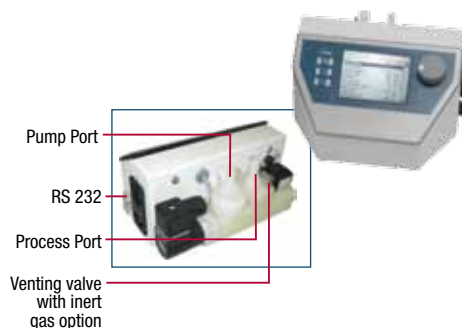


- Vacuum measurement to low millitorr (micron) range
- Rugged, reliable thermocouple gauge sensor tube

Gauges provide an accurate, reliable measurement of vacuum. Self-contained gauges with solid-state electronics for rapid response time, long life and low maintenance. Comes with a 0 to 10 VDC recorder output. The gauge sensor tubes are designed to assure maximum sensitivity over the entire vacuum range. Gauge sensor tube connected to system via 1/8" NPT thread. Each gauge comes with one sensor tube and one cable. Meter dimensions: 7"Lx5"Wx5.6"H (17.8x12.7x14.1cm); Weight 2 lbs. (0.9kg).

Gauge CAT. No.	Range (millitorr)	Voltage	Protective Trap CAT. No.	Replacement Sensor Tube CAT. No.
1515	0 to 5000	115V, 60Hz, 1Ph	1515B	1515A

## Vacuum Control Box



Programmable vacuum controller VCB 521 cv with a built-in highly resistant ceramic diaphragm sensor for absolute pressure determination. Uses a chemically resistant solenoid valve to control the process vacuum while the pump runs continually. The user defined vacuum and hysteresis levels are used to open and close the control valve thus maintaining vacuum at the process between the high and low control points with easy 8mm hose barb pump and process port connections. Meter dimensions: 7.6"Lx7"Wx4.1"H (19.5x17.8x10.5cm).

Model	Measuring Range	Voltage	CAT. No.
VCB 521 cv	1100 - 1mbar	90-260V, 50/60 Hz	600053-US



2585K-50/2565K-50

## Vacuum Regulator with Inlet Separator Jar

The 2585K-50 and 2565K-50 include an inlet trap to help prevent ingestion of fluids into the pump, a dial gauge for continuous vacuum level monitoring and a regulator bleed valve to adjust vacuum levels. Both models have a 3/8" I.D. hose barb connection, 2585K-50 has a 3/8" NPT male mount and 2565K-50 has a 1/4" NPT male mount.

Pump Model	Connection	CAT. No.
2585, 2581, 2580	3/8" I.D. hose barb, 3/8" NPT male mount	2585K-50
2567, 2563, 2562, 2561	3/8" I.D. hose barb, 1/4" NPT male mount	2565K-50

## Vacuum & Pressure Regulator for WOB-L® Vacuum Pressure Station



2522K-05



2522K-06

The 2522K-05 vacuum regulator is designed to run from slightly below atmospheric to the maximum vacuum level of the pump.

The 2522K-06 pressure regulator is designed to control from atmospheric to the maximum rated pressure of the pump.

Pump Model	Connection	CAT. No.
2522, 2534, 2546	1/4" male NPT, to vacuum side inlet	2522K-05
2522, 2534, 2546	1/4" male NPT, to pressure side inlet	2522K-06

## Vacuum Regulator



1421



1421D

Model 1421 replaces inlet barb on pump model 8890 and allows easy regulation of vacuum level. Includes an easy to read dial gauge. CAT. No. 1421D all stainless steel construction.

Pump Model	CAT. No.
8890, 1/4" NPT male mount	1421
Generic, 1/4" NPT male Mount	1421D

Caution: Do not use with DUOSEAL®, CHEMSTAR® or Direct-Drive pumps.

## Vacuum Gauge



726023

Inexpensive gauge for measuring vacuum level. Not an absolute pressure gauge. Gauge uses atmospheric pressure as reference.

Dial Diameter	Units of Measure	Connection	CAT. No.
2" O.D.	in. Hg, cm Hg (Brass)	1/8" male NPT	726021
2.5" O.D.	in. Hg, mm Hg (Brass)	1/4" male NPT	726020
2" O.D.	in. Hg (Stainless)	1/8" male NPT	726023
2" O.D.	mbar/kPa (Brass)	1/8" male NPT	726024
2" O.D.	psi/kgsm	1/8" male NPT	726025



726130

## Oil Drain Valve

Drain valve 1/4" NPT male, black zinc coated brass.

Pump Model	CAT. No.
8907, 8912, 8917, 1399, 1400, 1402, 1405, 1376, 1374, 1397, 142601, 142602, 142604, 142606	726130

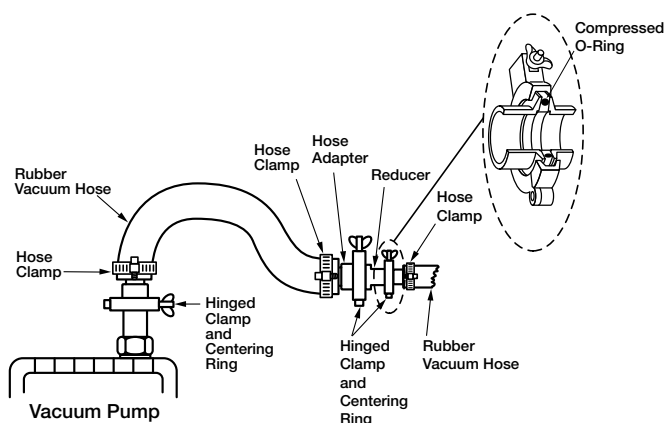
## Vacuum Regulator for MP/MPC Diaphragm Pumps



Wetted parts constructed of fluorinated plastic for chemical resistance. Dial gauge for continuous vacuum level monitoring and regulator bleed valve to control from slightly below atmospheric pressure to the maximum vacuum level of the pump.

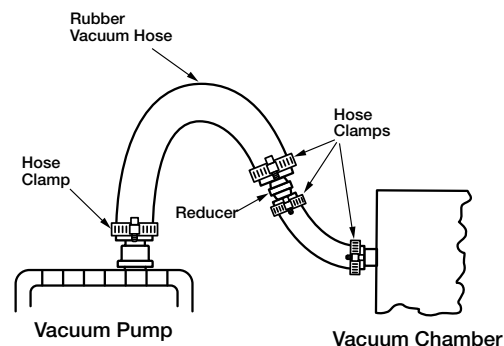
Pump Model	CAT. No.
MP/MPC 301Z, 601E	700458

## Vacuum Hose & Connectors



### Hose To ISO Connections

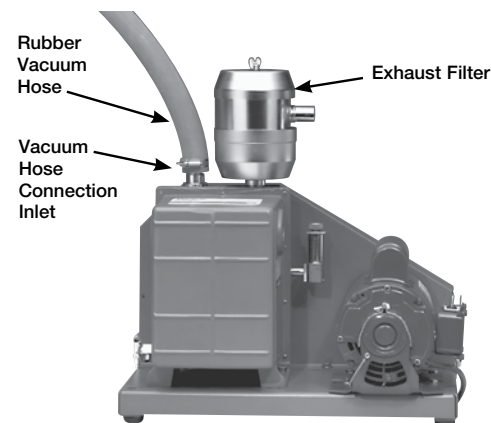
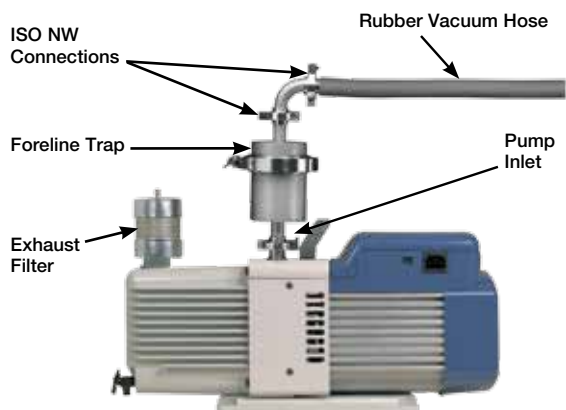
- Combines flexibility and frequent detachment ability
- Recommended for vacuum to  $10^{-3}$  torr



### Hose Nipple Connections

- Inexpensive
- Flexible
- For vacuum systems where the need for disassembly is infrequent
- Recommended for vacuum to  $10^{-3}$  torr

## Vacuum Accessories

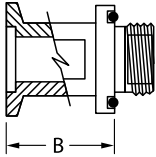


- **Exhaust Filter** - Connects to pump's outlet. Filters oil mist from the pump's exhaust to keep your working area clean and air quality healthful. A second option is an exhaust line to a vapor hood or other outside exhaust vent. This requires an adapter and air tight connections (see p. 12).
- **Vacuum Oil** - Use of high quality vacuum oil is necessary for both vacuum performance and pump lifetime. With lesser quality oil the vacuum is degraded and pump lifetime is shortened. Welch offers three grades of vacuum oil designed especially for use in DuoSEAL and Direct-Drive vacuum pumps (see p. 3).
- **Foreline Trap** - Protects the vacuum pump from harmful substances present in the vacuum system and/or formed during the vacuum process. Can also block vacuum pump oil from back streaming into the system and contaminating samples (see p. 10 for Trap Selection chart)\*. Failure to use a foreline trap, when recommended, can result in serious damage to the vacuum pump. **For trap selection advice, see your Welch-Illvac representative at [www.welchvacuum.com](http://www.welchvacuum.com).**

\* Dry ice/Isopropanol - Liquid Nitrogen trap recommended to protect pump from condensable vapors.



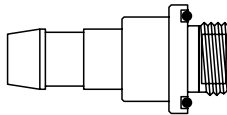
## ISO NW Inlet Connectors for High Vacuum Pumps



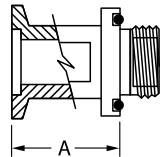
- Stainless steel with o-ring
- No sealant required for installation
- For pumps greater than listed serial number
- 8907K-05 is aluminum with o-ring

ISO	Thread Size	Pump Model	Serial No.	B	CAT. No.
NW 16	3/4-20"	1399	>26461	1.12"	1393F
NW 16	3/4-20"	1400, 1400N	>18069	1.12"	1393F
NW 25	1-20"	1405	>77703	1.2"	1393G
NW 25	1-20"	1380	>2114	1.2"	1393G
NW 25	1-20"	1402, 1402N	>133218	1.2"	1393G
NW 25	1-20"	1376, 1376N	>14594	1.2"	1393G
NW 40	1.75-20"	1374	>73519	1.4"	1393H
NW 40	1.75-20"	1397	>51217	1.4"	1393H
NW 16	3/4-20"	8905	ALL	1.12"	8905K-05
NW 25	1 1/8-20"	8907, 8912, 8917, 8920, 8925	ALL	1.4"	8907K-05

## Exhaust Connectors for High Vacuum Pumps



Hose Connector



ISO Connector

Pump Model	Hose Connector		ISO Connector			
	Hose I.D.	CAT. No.	Thread Size	ISO NW	A	CAT. No.
1399, 1400, 8905, 8890	7/16"	1393J	3/4-20"	NW 16	1.12"	1393F
1402, 1380, 1376, 8920, 8925, 8907, 8912, 8917, 1405	13/16"	1393K	1-20"	NW 25	1.2"	1393G
1374, 1397	1-5/8"	1393L	1 3/4-20"	NW 40	1.4"	1393H
1405, 1402	7/16"	1393M	1-20"	NW 25	1.2"	1393G

- For adding an exhaust line to a pump
- Connectors for vacuum hose and ISO NW
- Stainless steel with o-ring

## Unibarb™ Inlet Connectors for High Vacuum Pumps



- Accepts two sets of tubing I.D.
- Aluminum
- With inlet screen

Thread Size	Pump Model	Hose I.D.	CAT. No.
3/4-20"	1400, 1399, 8905	3/16" & 7/16"	8905K-06
1 1/8-20"	8907, 8912, 8917	7/16" & 13/16"	8907K-06
1 1/8-20"	8920, 8925, 8917	9/16" & 13/16"	8920K-06

## Brass Hose Barb

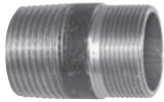


- Brass
- For use with ISO to female pipe adaptors

Hose Barb	Thread	Hose I.D.	CAT. No.
3/4-20"	1/4" NPT	3/16" & 3/8"	1393X

# Vacuum System Connectors & Accessories

## Male NPT Pipe Inlet & Exhaust Adapters



- Black Pipe
- Adapt inlet and exhaust to NPT Thread

Pump Model	Machine Thread	NPT Male Thread	CAT. No.
1400, 1399	3/4-20"	1/2"	1393N
1380, 1402, 1376, 1405	1-20"	3/4"	1393P

## Red Vacuum Hose / Hose Clamps

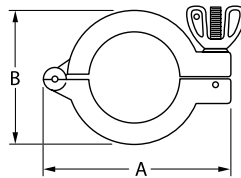


- Very thick walled hose for vacuum or pressure applications
- Quick-acting clamp tightened by a thumbscrew actuated worm screw
- Hose comes in 5 ft. (1.5m) lengths

Specifications			Hose Kit CAT. No.				Clamps CAT. No.
I.D.	Wall Thickness	O.D.	5 Ft. Only	10 Ft. Only	15 Ft. Only	20 Ft. Only	10/Pkg.
3/16"	5/16"	13/16"	331020-5	331020-10	----	----	305320
1/4"	1/4"	3/4"	331030-5	----	----	----	305320
7/16"	5/16"	1-1/16"	331040-5	331040-10	----	----	305340
5/8"	3/8"	1-3/8"	331050-5	331050-10	----	----	305350
13/16"	3/8"	1-9/16"	331060-5	331060-10	331060-15	331060-20	305360
1-5/8"	11/16"	3"	331080-5	331080-10	----	----	305380

\*Hose works with pumps that accept 3/8" I.D. hose.

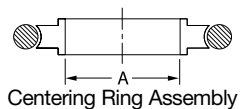
## Hinged Clamps



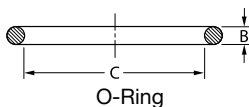
- Aluminum
- Closure by wing nut and bolt

ISO	A	B	Clamp Width	CAT. No.
NW 16	2.612"	1.625"	0.612"	302201
NW 25	2.965"	1.950"	0.612"	302202
NW 40	3.735"	2.600"	0.625"	302203

## Centering Assemblies / Replacement O-Rings



Centering Ring Assembly

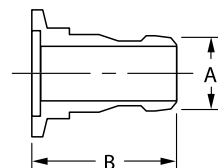


O-Ring

- Stainless steel centering ring with o-ring
- Replaceable fluoropolymer elastomer o-ring seal

ISO	Centering Ring Assembly		Replacement O-Ring		
	A	CAT. No.	B	C	CAT. No.
NW 16	0.630"	303101	0.210"	0.725"	304801
NW 25	0.984"	303101	0.210"	1.100"	304802
NW 40	1.575"	303103	0.210"	1.600"	304803

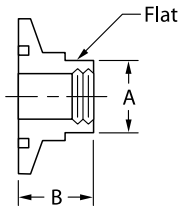
## Rubber Hose Adapters



- ISO NW to rubber vacuum hose
- Aluminum

ISO	Hose I.D.	A	B	CAT. No.
NW 16	7/16"	0.625"	1.65"	501241
NW 16	5/8"	0.750"	1.65"	501251
NW 25	13/16"	0.875"	1.73"	501262
NW 40	1-5/8"	1.63"	2.17"	501283

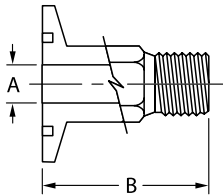
## Female Pipe Adaptors



- Female threads have 1/4" to 1/2" NPT
- Stainless steel
- Can be used with brass hose barbs (see p. 7)

ISO	NPT	A	B	CAT. No.
NW 16	1/4"	0.62"	0.50"	506121
NW 24	1/4"	0.88"	0.50"	506122
NW 25	1/2"	0.88"	0.50"	506142

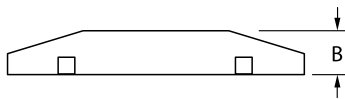
## Male Pipe Adaptors



- Male stub has 1/4" NPT
- Hex shank
- Stainless steel

ISO	NPT	A	B	CAT. No.
NW 16	1/4"	0.28"	1.57"	505121
NW 25	1/4"	0.36"	1.97"	505122

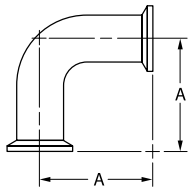
## Blank-Off Flanges



- Stainless steel
- To close off unused ports

ISO	B	CAT. No.
NW 16	0.20"	388101
NW 25	0.20"	388102

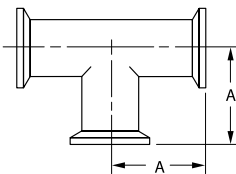
## 90° Elbows



- Stainless steel
- Same size flange on both ports

ISO	A	CAT. No.
NW 16	1.50"	383101
NW 25	2.04"	383102

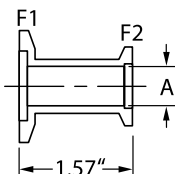
## Tees



- Stainless steel
- Same size flange on all ports

ISO	A	CAT. No.
NW 16	1.50"	384101
NW 25	2.04"	384102

## Reducers



- Makes differing sizes of ISO flanges
- Stainless steel

ISO F1	ISO F2	A	CAT. No.
NW 25	NW 16	0.555"	387121
NW 40	NW 25	0.900"	387132

## Protect Your Vacuum System

Foreline traps are used to prevent harmful substances generated or resident in vacuum systems from damaging vacuum pumps and/or your work:

### Pump Damage

Liquid, water, solvents, and acids can cause serious damage to a vacuum pump:

- Vapors can condense to liquids within vacuum pump as a natural result of gas compression
- Liquid can be accidentally aspirated into the pump
- Particulates can become lodged in a pump mechanism

TRAP SELECTION TABLE			
Potential Pump Contaminants	Acid Neutralization Trap <sup>1</sup>	Cold Traps	
		Dry Ice Slurry (-79°C)	Liquid Nitrogen (-198°C)
Water			
Organics			
Acidic			
Oil Backstreaming <sup>2</sup>			

#### Key

Excellent
Fair
Not Recommended

#### Notes:

1. Limits Pressure to 10<sup>-2</sup> torr
2. Prevents pump oil from contaminating Application during prolonged deep vacuum or pump shutoff.

## Protect, Improve Your Vacuum Application

### Oil Back Streaming

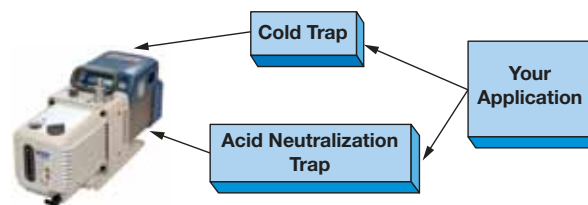
Oil molecules can migrate from an oil lubricated vacuum pump back into the vacuum system when operated at sustained vacuum levels of 1x10<sup>-2</sup> torr (1.33x10<sup>-2</sup> mbar) or deeper for long periods.

### Pump Shutoff Back Migration

When a vacuum pump is shut off, contamination (oil, line substances) can back up into your work if unprotected by pump/system anti-suckback devices and traps.

### Pump Efficiency

Cold traps lower vapor pressure, enabling higher vacuum with the same work from the pump.



## Dry Ice / Isopropanol Trap (-79°)



- Recommended for freeze dryers, vacuum manifolds, concentrators, etc.
- Uses dry ice or liquid nitrogen as refrigerant
- Removable center make trapping surface easy to clean

**DRY ICE/LIQUID NITROGEN COLD TRAP** is an effective foreline cold trap for vacuum manifolds or Schlenk Lines. The trap has a large 3 quart (2.8 liters) center well for the dry ice/isopropyl alcohol slurry or liquid nitrogen; traps up to 1.5 liter condensate. With dry ice cold temperature may be maintained for up to 12 hours depending upon the vapor load. With liquid nitrogen cold temperature can be maintained for up to 2 hours depending upon the vapor load.

Tubing Needed	Diam.	Height	Diameter	In/Out Offset	Trap CAT. No.
7/16"	10	8.25"	10.75"	3.5	1420H-14

Tubing CAT. No. 331040-5

## Acid Neutralization Trap



- ISO NW flange connection
- Calcium Hydroxide element
- Element changes from white to bluish-transparent when spent
- Configure with prior cold trap to reduce loading

ISO Size	Capacity	Trap	Replacement Element CAT. No.	Pump Connector Kit for Trap CAT. No. <sup>1</sup>
NW 16	To 2 cfm (57 l/min.)	1420H-21	1420E-02	302201
NW 25	To 12 cfm (340 l/min.)	1420H-20	1420E-01	302202

Note: 1. Includes hinge clamp, centering ring and elbow. Use with CHEMSTAR® vacuum pumps.

### Application Note for Cold Traps

Cold traps employing a dry ice slurry or liquid nitrogen are effective as long as the refrigerant level is maintained. If the trap warms up while the pump is running, all of the trapped condensables will be ingested by the vacuum pump, contaminating the oil.

Cold traps must be cleaned out at the end of each day. If the pump is run overnight, the trapped condensables will ultimately be ingested by the pump as the trap warms up. Cleaning a Dry Ice Slurry/Liquid Nitrogen trap is easy. The steps are: 1. Turn off the pump. 2. Leak air into the trap from the application side. 3. Remove the center well and polypropylene ring to a hood. The center well can be washed off into a beaker or the condensables can be allowed to evaporate in the hood or added to the laboratory waste.



## Particulate, Hydrophobic In-line Filters

The filters are an economical solution to protect your piston vacuum pump from fine particulates and aerosols to 0.2 microns in diameter.



1475K-21



1475K-22



1475K-23

Pump Model	Housing Material	Fits Hose Size	Pore Size	CAT. No.
2511, 2515, 2522, 2534, 2546	Polypropylene	1/4" to 3/8"	0.8 micron	1475K-21
2561, 2562, 2563, 2567, 2580, 2581, 2585	SBS Resin	3/8" to 7/16"	0.8 micron	1475K-22
2561, 2562, 2563, 2567	Polypropylene	1/4" I.D.	0.2 micron	1475K-23

## CAPTURE™ Recovery System

Protect your pump and lab atmosphere with an integrated CAPTURE recovery system. Connect this convenient condenser to your tap or chiller water to prevent pump fume ingestion and release into the environment.



Description	CAT. No.
Complete condenser with flask / support / clamps	1420H-18
Condenser with fittings	1420H-19
Support / clamp kit	1420H-17

## Hose Adapter Kits



- Kits ensure proper sized tubing adaptors, and clamps for vacuum tight connections
- Kits include at least 5 ft.(1.5m) of thick walled rubber vacuum hose

For Pump Model	Pump Inlet O.D.	Appliance Connector O.D.	CAT. No.
8890 (GEM)	3/8"	7/16" and 1/2"	1420H-01
1400, 1405, 1399, 8905	7/16"	1/4" and 3/8"	1420H-01
1402, 1380, 8907, 8912, 8917, 8920, 8925	13/16"	1/4" and 3/8"	1420H-02

## On/Off Foot Switch



1430A



1430B



1430C

- Hands free On/Off pump operations
- No adapters or special connections needed
- Plugs directly into the power source outlet

On/Off foot switches are compatible with selected dry vacuum pump models. Switches handle up to 15 amps. Cat. No. 1430A & 1430B come with a 3-prong U.S. Standard plug with 8 Ft. Cord, CSA, NEMA & UL Enclosure Type 1. CAT. No. 1430C comes with a male and female IEC connections, 8 Ft. Cord, CE and plugs directly into the IEC connection on the pump.

Pump Model	CAT. No.
2014, 2034, 2044, 2037, 2047, 2032,	1430A (115V/60Hz only, maintained On/Off)
2042, 2511, 2515, 2522, 2534,	1430B (115V/60Hz only, momentary On/Off)
2546, 2561, 2567, 2581, 2585	1430C (90-230V with IEC connections, momentary On/Off)

# Exhaust Filters & Mufflers

## Standard Exhaust Filters & Directional Exhaust Filters



1417P-10

- Filters oil mist from pump exhaust
- Easy replacement of element
- Reduces pump noise
- Filters to 0.3 micron particle size
- Screw-in type

Standard Exhaust Filters				
Use with Pump Model	Dimensions, inches		Filter CAT. No.	Replacement Element CAT. No.
	Diameter	Height		
8890 <sup>1</sup> , 8905, 1399, 1400, 1400N	2.5"	2.5"	1417	1417L (2 pk)
8907, 8912, 8917	2.5"	4.5"	1417P-7	1417R
8920, 8925, 1376, 1402, 1405, 1402N, 1376N	5.0"	6.25"	1417P-10	1417G
1397, 1374	5.0"	9.0"	1417P-20	1417H-01
8917A-80, 8947C-80	2.5"	4.5"	1417P-7	1417R

Note: 1. GEM® (8890) includes 1417 as standard equipment.



1417A

- Large, high capacity
- 360° Swivel outlet with tubing connector
- Screw-in type
- Continuously separates oil mist from the vacuum pump exhaust and by gravity returns the oil to the pump.

Directional Exhaust Filters						
Use with Pump Model	Dimensions, inches			Filter CAT. No.	Element CAT. No.	Gasket Replacement CAT. No.
	Diameter	Height	Outlet Tube O.D.			
8907, 8912, 8917, 8920, 8925, 1376, 1380, 1402, 1405, 1402N, 1376N	5.0"	7.5"	1.0"	1417A	1417G	1417A-01
8907, 8912, 8917	6.5"	10.0"	2.0"	1417B	1417H	1417B-01

## Exhaust Oil Recycler



Exhaust Mist Eliminator shown installed on pump with oil return line.

Exhaust oil recyclers are recommended for vacuum systems with continuous pressure of 1 torr (1mm Hg) or higher.<sup>1</sup> At these pressures, conventional exhaust filters quickly saturate. The Mist Eliminator System continuously separates oil mist from the vacuum pump exhaust and actively returns the oil to the pump.

CAT. No.	Vacuum Pump Model No.
1416B	8890 (GEM®)
1416H	8905
1416C	8907, 8912, 8917, 8920, 8925
1416H-01	1400, 1400N
1416C-01	1376, 1376N, 1402, 1402N, 1405

Note: 1. CAUTION: Two stage vane vacuum pumps such as models 8905, 8907, 8912, 8920, 8917, 8925, 1400, 1402, 1376, 1405, 1400N, 1402N and 1376N should not be operated continuously at pressures above 10torr.

## Hermetically Sealed Oil Mist Eliminators



When attached to an effective exhaust line, the hermetically sealed oil mist eliminator prevents corrosive vacuum pump exhaust gases from escaping into the room. It also coalesces oil mist from the pump exhaust and allows it to drain back into the pump. Coalescing the oil mist prevents loss of oil and the frequent need to add expensive vacuum fluids. Stainless steel construction with borosilicate microfiber element and fluoroelastomer gaskets. Requires, but does not include pump adaptor kit. Dimensions of CAT. No. 1416D: 5"Wx7-3/4"H; 1416F, 5"Wx13-3/8"H. 1416D exhaust port accepts 13/16" I.D. hose.

Use with Pump Model	Mist Eliminator CAT. No.	Pump Adaptor CAT. No.	Replacement Element CAT. No.
1400N	1416D	1416E-01	1417Y-05
1402N, 1376N	1416D	1416E-02	1417Y-05

## Exhaust Silencer

Exhaust silencers are installed in the exhaust port of the pump to reduce pump noise.



1412C



1412D / 1412E

WELCH Pump Model	CAT. No.
2562, 2565, 2567, 2580, 2585	1412C
2561	1412D
2581	1412E



ILMVAC Pump Model	CAT. No.
MP 301 E	400941
MP 301 Z, MP 301 V	400956
MP 601 E	829901
MP 601 T, MP 901 Z, MP 1201 E	829901

These exhaust filters are for non-chemical applications only.

## Inlet/Exhaust Separator Jars

230 ml glass jar assembly attaches to pump intake or exhaust to capture ingested liquids.



1423B



1415B



1415C

Pump Model	CAT. No.
2012, all models of DryFAST	1423B
Replacement Jars	1415B
Glass, for pumps with 1423B assembly, models 2561, 2565, 2581, 2585 and Self-Cleaning Dry Vacuum Systems™.	
1415D is a polypropylene version of the 1415B glass jar.	1415D
Plastic vacuum jar, for pumps 2522, 2546, 2534	1415C

## Direct-Drive Vacuum Pump Oil Filter

Acid neutralization and oil filtration replacement element oil sump.



8917A-80

Pump Model	CAT. No.
8917A-80, 8917C-80, 8917Z-01	1420E-03

# WELCH® Repair Service

## BASIC PUMP REPAIR

Restore your vacuum pump to original operational specifications. Let our state-of-the-art repair facility fix and refurbish your pump – even many of the decades-old models!



## REPAIRED PUMPS



### SAFETY FIRST

Without perfect vacuum system configuration and maintenance, vacuum pumps readily ingest contaminants. Beginning with a handy on-line repair submission form, we work with you to ensure safety for all personnel during transportation and repair operations.



### ORIGINAL PARTS

We repair your pump using only certified original equipment components. We restore your pump to original specification – new efficiency for your Application and your Budget.



### TIMELY, QUALITY REPAIRS

Our repair process provides a perfect service mix – personalized, professional attention to every detail of your pump repair, while leveraging all the advantages of a sophisticated manufacturing operation.

### ENVIRONMENTALLY RESPONSIBLE

The material flow and waste stream generated by our process is carefully controlled, with ecologically correct handling used in all operations.



## Scheduled Pump Refurbishment Programs

Consult with your Welch-Ilmvac Representative to establish a comprehensive service regimen for all your vacuum pumps.



### ALL RETURNS - WARRANTY AND NON-WARRANTY

A Return Authorization (RA) number is required for all returns.

Product returns without an RA will be refused at dock.

1. To fill out and submit a Repair Request form online, go to [www.welchvacuum.com](http://www.welchvacuum.com)

    ↳ Service and Support

        ↳ Repair Request Form

This form lists chemicals that could be equipment contaminants and is required for the safety of repair personnel. **To facilitate a safe shipping of your pump, please order Welch-Ilmvac product packaging and packing material specifically designed for your pump model.**

2. After reviewing your Safety Service form, the Welch Repair Department will provide you with the RA number and shipping instructions.
3. Decontaminate the equipment as needed and package properly. Damage caused by improper equipment packaging is the Customer's responsibility. Insure the equipment against loss or damage. Prominently write the RA number on the outside of the packaging and again on the packing slip inside. Ship the equipment to the address provided by the Repair Department. Contact the Repair Department at 847-676-8800 with any questions you may have.



### NON-WARRANTY RETURNS AND REPAIRS

The Customer pays for freight charges to and from Welch; freight charges to Welch must be prepaid. In addition to an RA, all paid repairs must come with a purchase order (P.O.) or a credit card number. All paid repairs come with a 6 month warranty. A nominal fee is assessed for equipment that is inspected but not repaired at the Customer's discretion.

Warranty Returns and Repairs Freight charges to Welch are prepaid by the Customer; Welch pays for return freight charges.

#### For Repair Service Inquiry:

Email: [gdwelchvacuum@gardnerdenver.com](mailto:gdwelchvacuum@gardnerdenver.com)

Fax: 847-677-8606

Call: 847-676-8800

Business Hours: 8:00 a.m. to 4:30 p.m. Central Time

**Please see pages 16 and 17 for the repair service process.**

# WELCH® Repair Service Process

## Restores Your Vacuum Pump to Original Specifications

- **New Welch-Ilmvac Service Center**

Welch-Ilmvac's new state-of-the-art repair facility incorporates safe and environmentally responsible processes and advanced technology to provide fast, professional and warranted repair service for your vacuum needs.

- **Safety First**

Welch-Ilmvac is committed to protecting the safety and health of our employees by providing and maintaining safety equipment with regularly scheduled safety inspections and safety training.

- **Protect the Environment**

EPA licensed and regulated for handling and disposal of hazardous waste.

- **New 6-Month Warranty on paid repairs.**

- **All service repairs made using original manufacturer's parts.**

### Step 1 - Starting the Process



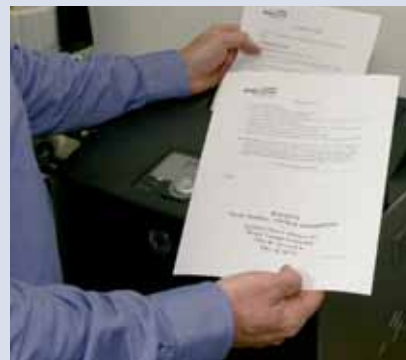
#### Fill In Online Safety Form

[www.welchvacuum.com/service](http://www.welchvacuum.com/service)



#### Contamination Evaluation

Consultation with degreed Chemists



#### Return Authorization Number

Receive by e-mail and print

### Step 2 - Sending Your Pump



#### Prepare for Shipment

Drain oil / purge contaminants / clean exterior



#### Packaging - Immobilize & Protect

Optionally order materials from Welch-Ilmvac



#### Display Return Authorization Number and Ship

Send prepaid with prominent label

## Easily Initiate The Repair Process On-line @

[www.welchvacuum.com/welch\\_vacuum\\_service\\_support/repair\\_request\\_form.html](http://www.welchvacuum.com/welch_vacuum_service_support/repair_request_form.html)

### Step 3 - Evaluation and Preparation



#### Initial Performance Test

Confirm observed status



#### Ventilated Disassembly

Worker safety is paramount



#### Clean of all Contaminants

Commercial parts washing

### Step 4 - Repair and Refurbish



#### Expert Reassembly

New pump wear and sealing parts



#### Paint as Needed

Restore damaged exterior surfaces



#### Performance Test and QC

Operation to original specification

### Step 5 - Return and Start Fresh



#### Package for Safe Shipment

Prepaid returns



#### Proper Waste Disposal

Environmentally responsible process  
follows EPA regulations

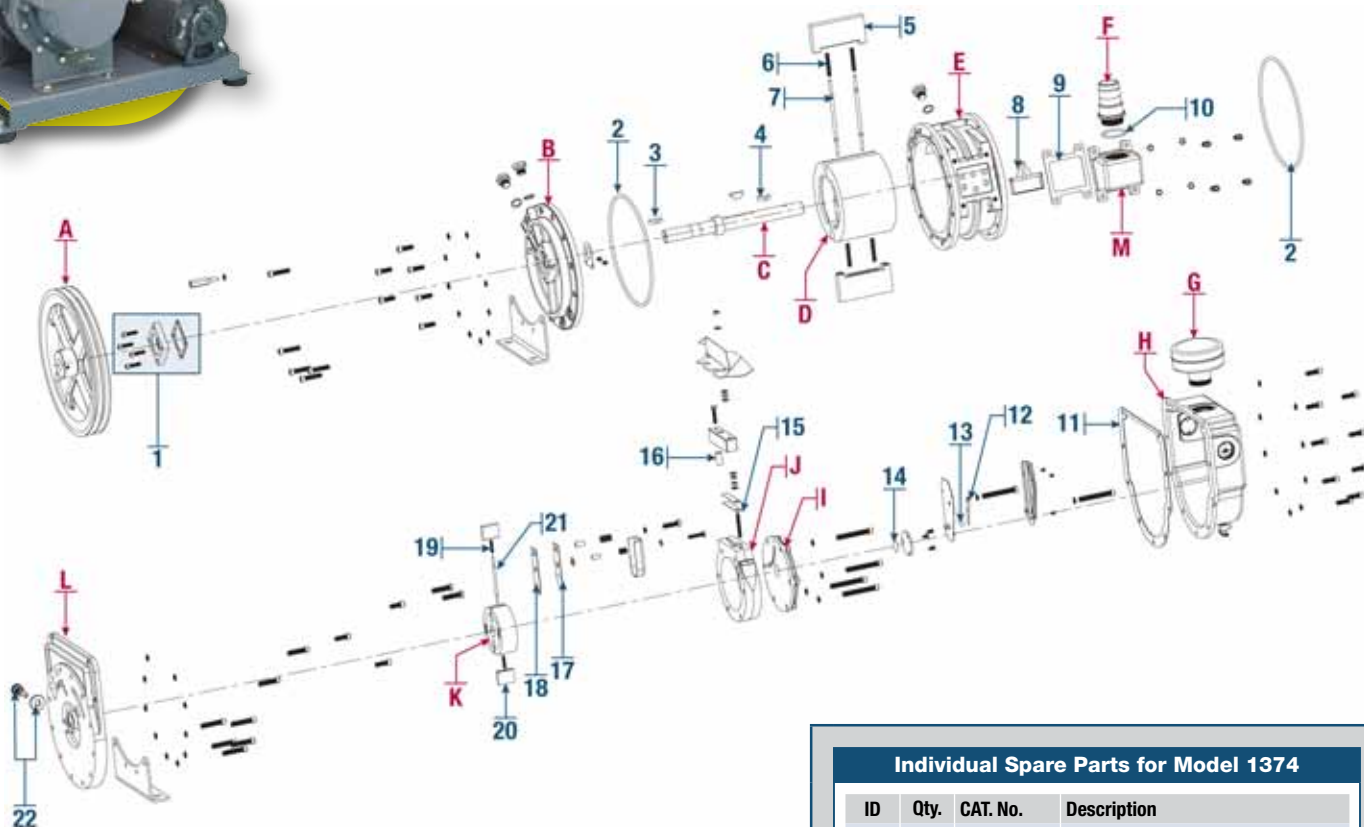


#### Pump Ready for Use

With new warranty

# DuoSEAL® Belt-Drive Vacuum Pumps

## Model 1374



### Major Repair Kit CAT. No. 1397K-08 for Model 1374

ID	Qty.	Description	ID	Qty.	Description
Major Repair Kit 1397K-08			12	1	Pressure Relief Valve
1	1	Mechanical Shaft Seal Kit, 1" CAT. No. 1401F	13	1	Ball Bearing
2	2	O-Ring	14	1	Spacer Disk
3	2	Woodruff Key	15	1	Pressure Release Exhaust Valve
4	1	Key for Small Rotor	16	1	Spacer
5	2	Large Vane Metal	17	1	Valve Backer
6	4	Large Vane Spring	18	1	Valve Flapper
7	2	Large Spring Holder	19	2	Small Vane Spring
8	1	Screen Filter	20	2	Small Vane Metal
9	1	Intake Chamber Gasket	21	1	Small Spring Holder
10	1	O-Ring	Minor Repair Kit CAT. No. 1397K-07		
11	1	Oil Case Gasket			
			Contains same as Major Kit 1397K-08 except vane ID No. 5 and 20.		

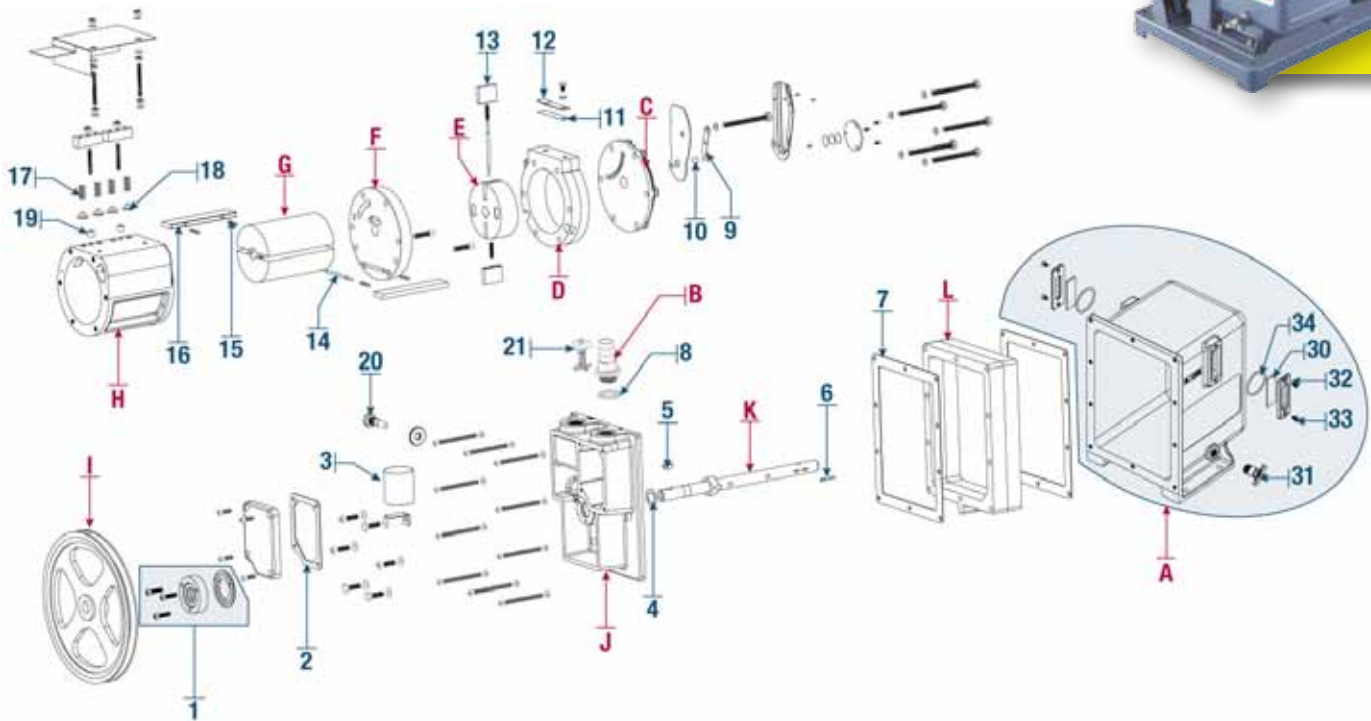
### Individual Spare Parts for Model 1374

ID	Qty.	CAT. No.	Description
A	1	41-1492	Pulley with Set Screw
B	1	61-8770	Large End Plate
C	1	41-1484	Shaft and Collar
D	1	41-1478	Large Rotor
E	1	61-8691	Large Ring
F	1	1393L	Intake Nipple 1-5/8" I.D. Hose
G	1	41-1501	Dust Cap
H	1	41-1482	Oil Case Assembly
I	1	41-1500	Small End Plate
J	1	41-1497	Exhaust Ring
K	1	41-1499	Exhaust Rotor
L	1	61-8689	Center Plate
M	1	61-8693	Intake Chamber
1	1	★1401F	Mechanical Shaft Seal Kit, 1"
1	1	★1374A	V-Belt - 1374
		★1417P-20	Standard Exhaust Filter
		★1417H-01	Replacement Exhaust Filter Element
		★1407K-11	DuoSeal Vacuum Pump Oil -1 Qt.
		★1407K-15	DuoSeal Vacuum Pump Oil -1 Ga.
		★331080-5	5' x 1-5/8" I.D. Vacuum Hose
5	1	41-1477	Large Vane Metal (Requires 2)
20	1	41-1487	Small Vane Metal (Requires 2)
1	1	1371F-01	Belt Guard & Base Kit
1	1	41-2814	Front Cover/Belt Guard
22	1	41-1736	Gas Ballast Valve
1	1	41-1010	Motor Pulley with Set Screw
1	1	41-3753	Oil Case Window (Requires 2)
1	1	726130	Oil Drain Valve
1	1	41-1925	Motor 1-1/2 HP, 115/230V, 60Hz, 1Ph

★ - Suggested Spare and Consumable Parts



## Model 1376



### Major Repair Kit CAT. No. 1376K-06 for Model 1376

ID	Qty.	Description
<b>Major Repair Kit 1376K-06</b>		
1	1	Mechanical Shaft Seal Kit, 3/4" CAT. No. 1401D
2	1	Gasket, Intake Chamber Cover
3	1	Intake Screen
4	1	Thrust Washer
5	2	Woodruff Key
6	2	Woodruff Key
7	2	Gasket, Oil Case
8	1	O-Ring
9	1	Pressure Release Valve
10	1	Ball Bearing
11	1	Exhaust Valve, Lower
12	1	Exhaust Valve, Upper
13	2	Vane, Small
14	3	Spring Holder
15	6	Spring for Vanes
16	2	Vane, Large
17	4	Valve Spring
18	4	Valve for Block
19	2	Spacer for Valve Block

#### Minor Repair Kit CAT. No. 1376K-05

Contains same as Major Kit 1376K-06 except vane ID No. 13 and 16.

### Individual Spare Parts for Model 1376

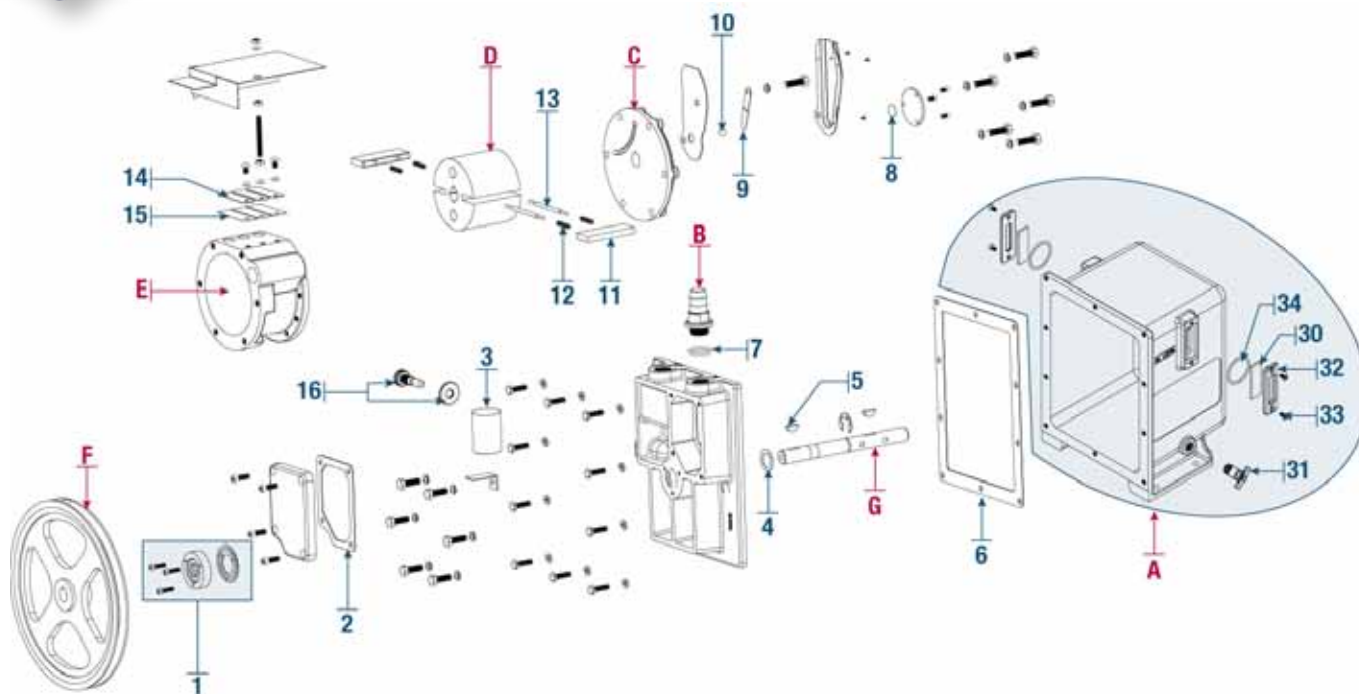
ID	Qty.	CAT. No.	Description	ID	Qty.	CAT. No.	Description
A	1	61-8101	Oil Case Assembly			★1407K-11	DuoSeal Vacuum Pump Oil -1 Qt.
B	1	1393K	Intake Hose Adapter Kit for 13/16" I.D. Hose			★1407K-15	DuoSeal Vacuum Pump Oil -1 Ga.
C	1	41-2045	Small End Plate			★331060-5	5' x 13/16" I.D. Vacuum Hose
D	1	61-8108D	Exhaust Ring	13	1	41-1487	Vane, Small (Requires 2)
E	1	41-1518	Small Rotor	16	1	41-1684	Vane, Large (Requires 2)
F	1	61-8250C	Center Plate		1	1371A-01	Belt Guard & Base Kit
G	1	41-1682	Large Rotor		1	61-8803	Belt Guard/Cover
H	1	41-1688	Large Ring	20	1	41-1736	Gas Ballast Valve
I	1	41-2074	Pump Pulley with Set Screw		1	41-0668	Motor Pulley with Set Screw
J	1	61-8685	Large End Plate	21	1	61-8912	Exhaust Plug/Cover
K	1	41-1683	Shaft		1	1401D-01	Shaft Lip Seal Kit, 3/4"
L	1	61-8687	Oil Case Spacer		1	61-8698	Pump Base
					1	41-1940A	1 HP Motor, 115/230V, 60Hz, 1Ph
					1	61-2229A	Oil Case Window (Requires 2)
1	1	★1401D	Mechanical Shaft Seal Kit, 3/4"	31	1	726130	Drain Valve
	1	★1405A	V-Belt	32	1	61-2370	Oil Window Cover (Requires 2)
		★1417P-10	Standard Exhaust Filter	33	1	61-1014	Screw (Requires 4)
		★1417G	Replacement Exhaust Filter Element	34	1	66-0304	O-Ring (Requires 4)

★ - Suggested Spare and Consumable Parts

# DuoSEAL® Belt-Drive Vacuum Pumps



**Model 1380**



## Major Repair Kit CAT. No. 1380K-04 for Model 1380

ID	Qty.	Description
<b>Major Repair Kit 1380K-04</b>		
1	1	Mechanical Shaft Seal Kit, 3/4" CAT. No. 1401D
2	1	Gasket, Intake Chamber Cover
3	1	Intake Screen
4	1	Washer, Thrust
5	2	Woodruff Key
6	1	Gasket, Oil Case
7	1	O-Ring
8	3	Thrust Disk
9	1	Pressure Release Valve
10	1	Ball Bearing
11	2	Vane, Large
12	4	Vane, Spring
13	2	Spring Holder
14	3	Exhaust Valve, Upper
15	3	Exhaust Valve, Lower
16	1	Gas Ballast Valve
34	2	O-Ring

### Minor Repair Kit CAT. No. 1380K-03

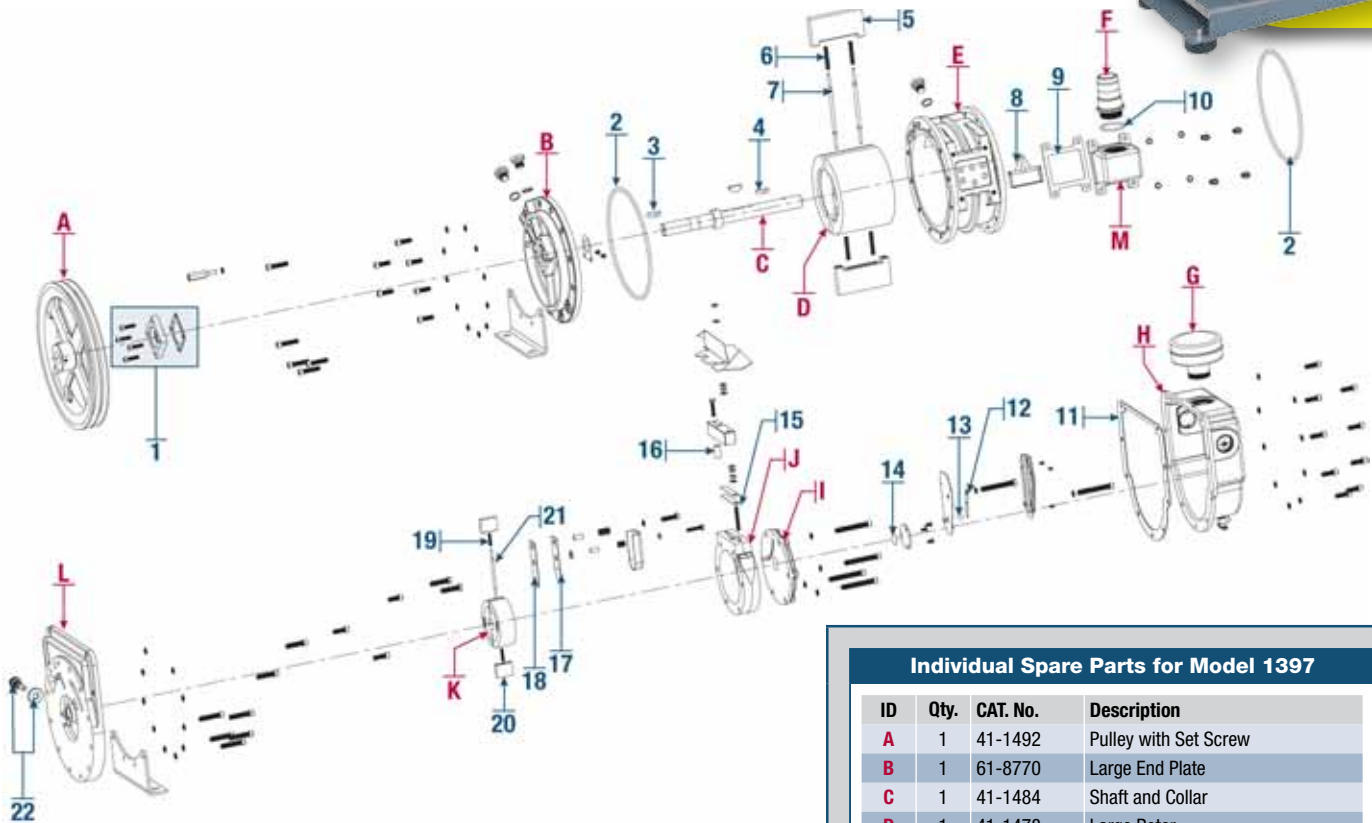
Contains same as Major Repair Kit 1380K-04 except vane ID No. 11.

## Individual Spare Parts for Model 1380

ID	Qty.	CAT. No.	Description	ID	Qty.	CAT. No.	Description
A	1	61-8101	Oil Case Assembly			★331060-5	5' x 13/16" I.D. Vacuum Hose
B	1	1393K	Intake Hose Adapter Kit for 13/16" I.D. Hose	11	1	41-0959	Vane, Large
C	1	41-2045	Small End Plate		1	1371A-01	Belt Guard & Base Kit
D	1	41-1771	Rotor		1	61-8803	Belt Guard/Cover
E	1	41-1772	Ring		1	41-0668	Motor Pulley with Set Screw
F	1	41-2074	Pump Pulley 'with Set Screw		1	61-8912	Exhaust Plug/Cover
G	1	41-1773	Shaft		1	1401D-01	Shaft Lip Seal Kit, 3/4"
					1	61-8698	Pump Base
1	1	★1401D	Mechanical Shaft Seal Kit, 3/4"		1	41-1907A	1/2 HP Motor, 115/230V, 60Hz, 1Ph
	1	★1405A	V-Belt	30	1	61-2229A	Oil Window Glass (Requires 2)
		★1417P-10	Standard Exhaust Filter	31	1	726130	Drain Valve
		★1417G	Replacement Exhaust Filter Element	32	1	61-2370	Oil Window Cover (Requires 2)
		★1407K-11	DuoSeal Vacuum Pump Oil -1 Qt.	33	1	61-1014	Screw (Requires 4)
		★1407K-15	DuoSeal Vacuum Pump Oil -1 Ga.	34	1	66-0304	O-Ring (Requires 2)

★ - Suggested Spare and Consumable Parts

## Model 1397



### Major Repair Kit CAT. No. 1397K-08 for Model 1397

ID	Qty.	Description	ID	Qty.	Description
Major Repair Kit 1397K-08			12	1	Pressure Relief Valve
1	1	Mechanical Shaft Seal, 1" CAT. No. 1401F	13	1	Ball Bearing
2	2	O-Ring	14	1	Spacer Disk
3	2	Woodruff Key	15	1	Pressure Release Exhaust Valve
4	1	Key for Small Rotor	16	1	Spacer
5	2	Large Vane Metal	17	1	Valve Backer
6	4	Large Vane Spring	18	1	Valve Flapper
7	2	Large Spring Holder	19	2	Small Vane Spring
8	1	Screen Filter	20	2	Small Vane Metal
9	1	Intake Chamber Gasket	21	1	Small Spring Holder
10	1	O-Ring			
11	1	Oil Case Gasket	Minor Repair Kit CAT. No. 1397K-07		
			Contains same as Major Kit 1397K-08 except vane ID No. 5 and 20.		

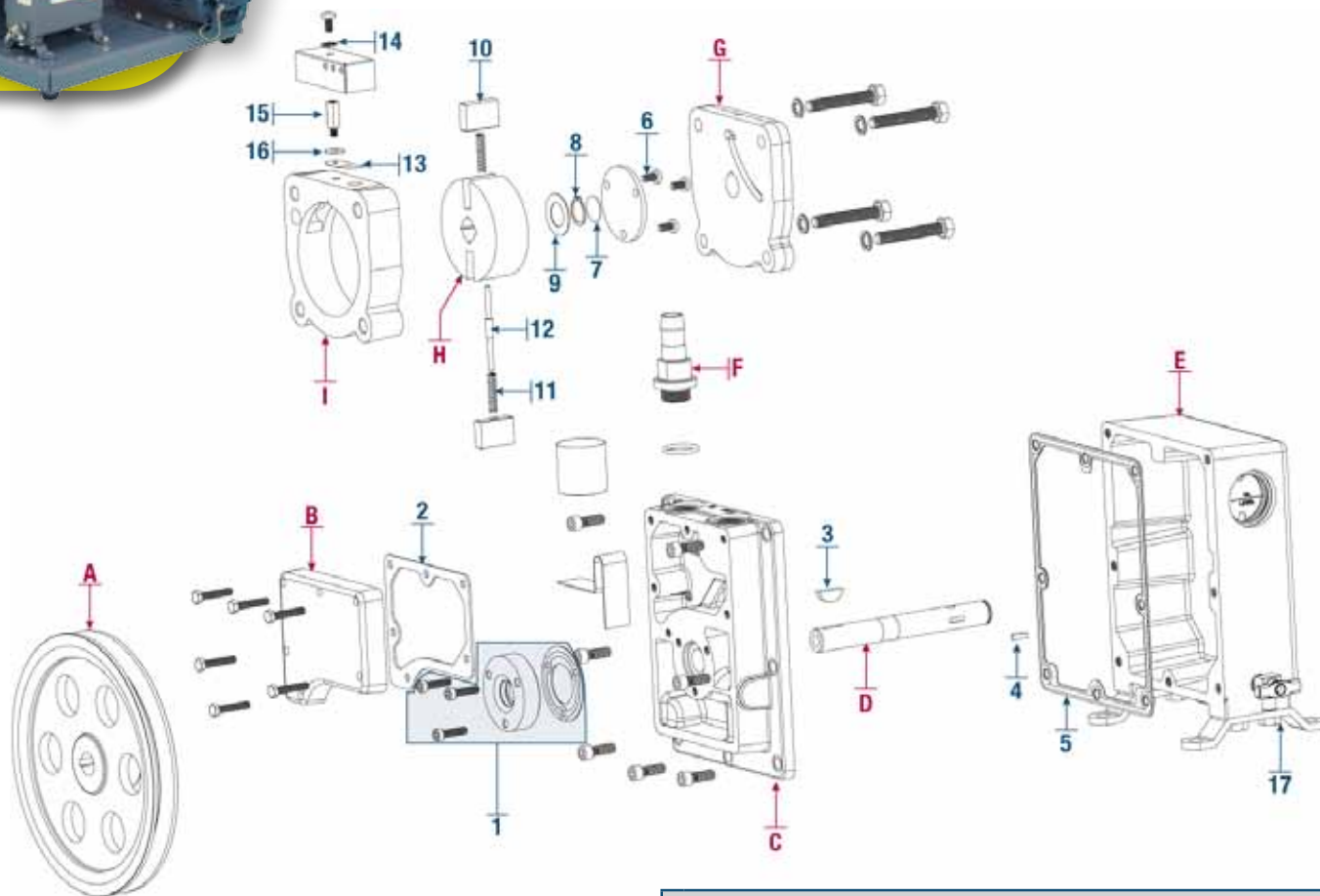
### Individual Spare Parts for Model 1397

ID	Qty.	CAT. No.	Description
A	1	41-1492	Pulley with Set Screw
B	1	61-8770	Large End Plate
C	1	41-1484	Shaft and Collar
D	1	41-1478	Large Rotor
E	1	61-8691	Large Ring
F	1	1393L	Intake Nipple 1-5/8" I.D. Hose
G	1	41-1501	Dust Cap
H	1	41-1482	Oil Case Assembly
I	1	41-1500	Small End Plate
J	1	41-1497	Exhaust Ring
K	1	41-1499	Exhaust Rotor
L	1	61-8689	Center Plate
M	1	61-8693	Intake Chamber
1	1	★1401F	Mechanical Shaft Seal Kit, 1"
1	1	★1397A	V-Belt - 1397
		★1417P-20	Standard Exhaust Filter
		★1417H-01	Replacement Exhaust Filter Element
		★1407K-11	DuoSeal Vacuum Pump Oil - 1 Qt.
		★1407K-15	DuoSeal Vacuum Pump Oil - 1 Ga.
		★331080-5	5' x 1-5/8" I.D. Vacuum Hose
5	1	41-1477	Large Vane Metal (Requires 2)
20	1	41-1487	Small Vane Metal (Requires 2)
	1	1371F-01	Belt Guard/Base Kit
	1	41-2814	Front Cover/Belt Guard
22	1	41-1736	Gas Ballast Valve
	1	41-0995	Motor Pulley
	1	41-3753	Oil Case Window (Requires 2)
	1	726130	Oil Drain Valve
	1	41-1940A	1 HP Motor, 115/230V, 60Hz, 1Ph

★ - Suggested Spare and Consumable Parts

# DuoSEAL® Belt-Drive Vacuum Pumps

## Model 1399



### Major Repair Kit CAT. No. 1399K-04 for Model 1399

ID	Qty.	Description	ID	Qty.	Description
<b>Major Repair Kit 1399K-04</b>					
1	1	Mechanical Shaft Seal Kit, 5/8" CAT. No. 1401E	10	2	Vane
2	1	Gasket, Intake Chamber Cover	11	2	Vane Spring
3	1	Woodruff Key	12	1	Spring Holder for Vane
4	1	Woodruff Key	13	1	Exhaust Valve
5	1	Gasket Oil Case	14	1	Lock Washer
6	1	Screw	15	1	Stud for Valve Cover
7	1	Thrust Disk	16	1	Flat Washer Brass
8	1	Retaining Ring	<b>Minor Repair Kit CAT. No. 1399K-03</b>		
9	1	Washer for Shaft Collar	Contains same as Major Kit 1399K-04 except vane ID No. 10.		

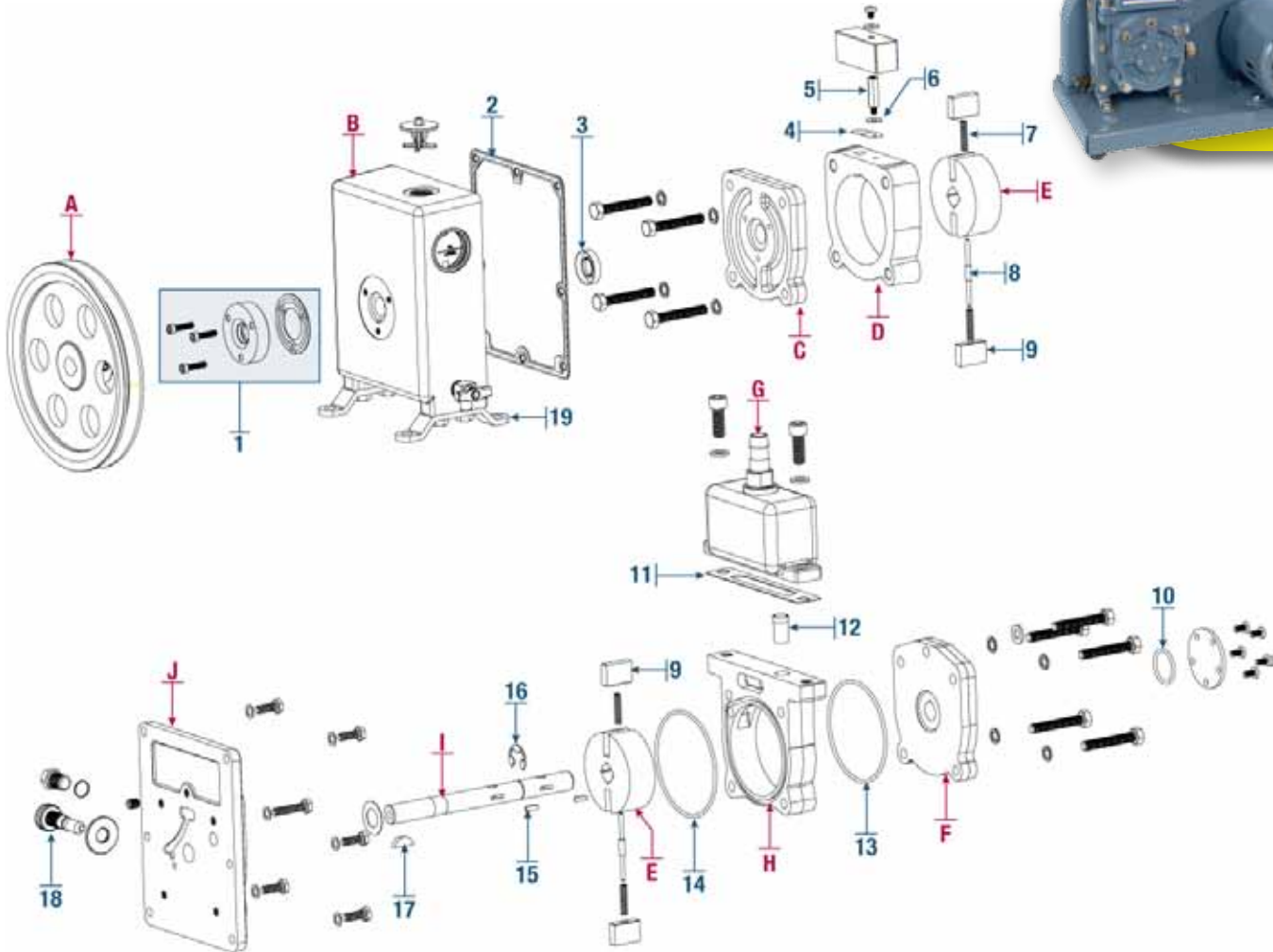
### Individual Spare Parts for Model 1399

ID	Qty.	CAT. No.	Description	ID	Qty.	CAT. No.	Description
A	1	41-2191	Pump Pulley w/ Set Screw			★1417	Standard Exhaust Filter
B	1	41-2369	Intake Chamber Cover			★1417L	Replacement Exhaust Filter Element (2 pk.)
C	1	61-8476C	End Plate			★1407K-11	DuoSeal Vacuum Pump Oil -1 Qt.
D	1	41-2374	Shaft			★1407K-15	DuoSeal Vacuum Pump Oil -1 Ga.
E	1	41-2378	Oil Case Assembly			★331040-5	5' x 7/16" I.D. Vacuum Hose
F	1	1393J	Hose Adapter for 7/16" I.D. Hose	10	1	41-1059	Vane
G	1	41-1045	Front Plate		1	61-8901	Belt Guard
H	1	41-1040	Rotor		1	61-8916	Pump Base
I	1	41-1042	Inner Ring		1	41-2377	Motor Pulley with Set Screw
				17	1	726130	Oil Drain Valve
1	1	★1401E	Mechanical Shaft Seal Kit, 5/8"		1	41-3753	Oil Case Window
	1	★1401E-01	Lip Shaft Seal Kit, 5/8"		1	61-8622	1/3 HP Motor, 115V, 60Hz, 1Ph
	1	★1399A	V-Belt				

★ - Suggested Spare and Consumable Parts



## Model 1400



### Major Repair Kit CAT. No. 1400K-04 for Model 1400

ID	Qty.	Description	ID	Qty.	Description
<b>Major Repair Kit 1400K-04</b>					
1	1	Mechanical Shaft Seal Kit, 5/8" CAT. No. 1401E	12	1	Intake Screen
2	1	Gasket Oil Case	13	1	O-Ring
3	1	Lip Seal	14	1	O-Ring
4	1	Exhaust Valve	15	2	Woodruff Key
5	1	Stud for Valve Cover	16	1	Retaining Ring
6	1	Flat Washer Brass	17	1	Woodruff Key
7	4	Vane Spring			
8	2	Spring Holder for Vane			
9	4	Vane			
10	1	O-Ring	<b>Minor Repair Kit 1400K-03</b>		
11	1	Gasket, Intake Chamber Cover	Contains same as Major Kit 1400K-04 except vane ID No. 9.		

### Individual Spare Parts for Model 1400

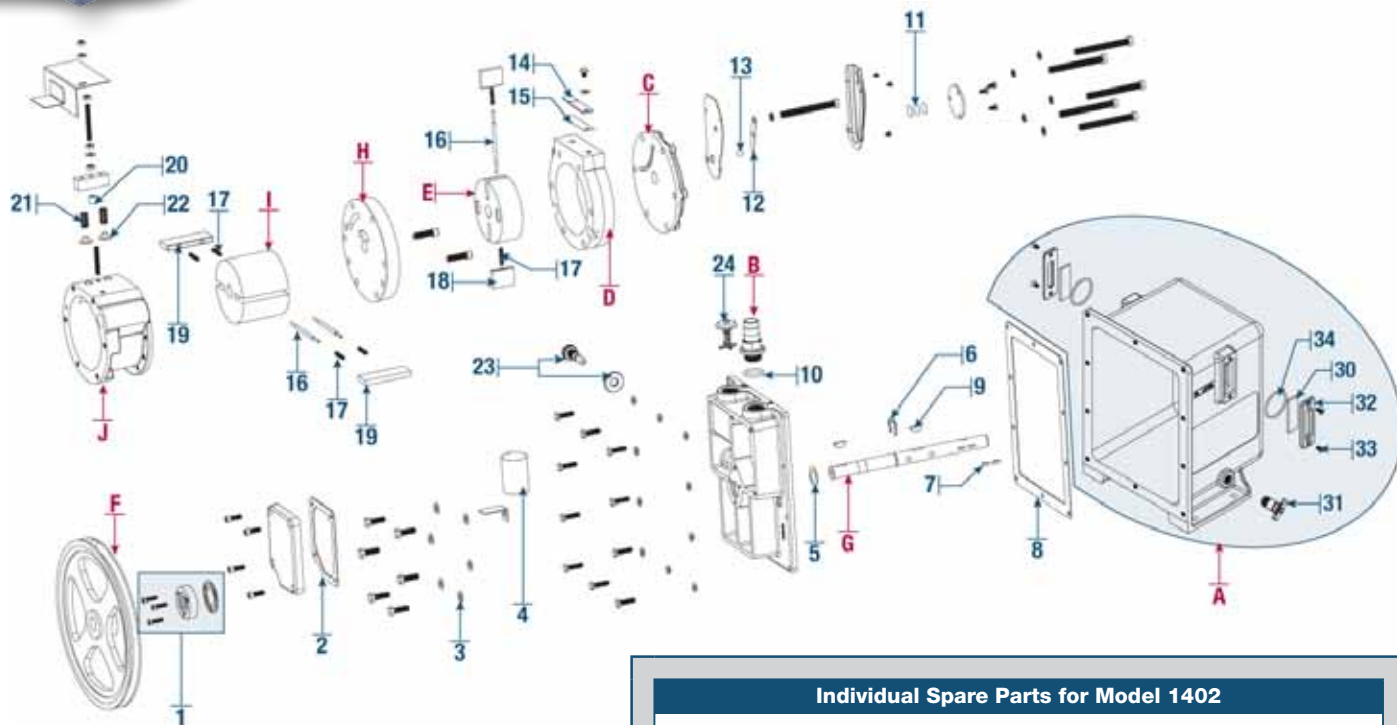
ID	Qty.	CAT. No.	Description	ID	Qty.	CAT. No.	Description
A	1	41-2191	Pump Pulley with Set Screw			★1417	Standard Exhaust Filter
B	1	61-8540	Oil Case Assembly			★1417L	Replacement Exhaust Filter Element (2 pk.)
C	1	41-1045	Front Plate			★1407K-11	DuoSeal Vacuum Pump Oil -1 Qt.
D	1	41-1042	Inner Ring			★1407K-15	DuoSeal Vacuum Pump Oil -1 Ga.
E	1	41-1040	Rotor			★331040-5	5' x 7/16" I.D. Vacuum Hose
F	1	61-8702	Back End Plate	9	1	41-1059	Vane
G	1	1393J	Hose Adapter for 7/16" I.D. Hose		1	61-8901	Belt Guard
H	1	61-8675	Intake Ring		1	61-8916	Pump Base
I	1	41-1060	Shaft	18	1	41-1736	Gas Ballast Valve
					1	41-0551	Motor Pulley with Set Screw
1	1	★1401E	Mechanical Shaft Seal Kit, 5/8"	19	1	726130	Oil Drain Valve
	1	★1401E-01	Lip Shaft Seal Kit, 5/8"		1	61-8622	1/3 HP Motor, 115V, 60Hz, 1Ph
	1	★1400A	V-Belt				

★ - Suggested Spare and Consumable Parts

# DuoSEAL® Belt-Drive Vacuum Pumps



**Model 1402**



## Major Repair Kit CAT. No. 1402K-06 for Model 1402

ID	Qty.	Description	ID	Qty.	Description
<b>Major Repair Kit 1402K-06</b>					
1	1	Mechanical Shaft Seal Kit, 3/4" CAT. No. 1401D	13	1	Ball Bearing
2	1	Gasket Intake Chamber Cover	14	1	Exhaust Valve, Upper
3	6	Copper Washer	15	1	Exhaust Valve, Lower
4	1	Intake Screen	16	3	Spring Holder
5	1	Thrust Washer	17	6	Vane Spring
6	1	Rotor Clip for Shaft	18	2	Vane, Small
7	2	Woodruff Key	19	2	Vane, Large
8	1	Gasket, Oil Case	20	1	Spacer for Valve Block
9	2	Woodruff Key	21	2	Valve Spring
10	1	O-Ring	22	2	Valve for Block
11	3	Thrust Disk	<b>Minor Repair Kit CAT. No. 1402K-05</b>		
12	1	Pressure Release Valve			
			Contains same as Major Repair Kit 1402K-06 except vane ID No. 18 and 19.		

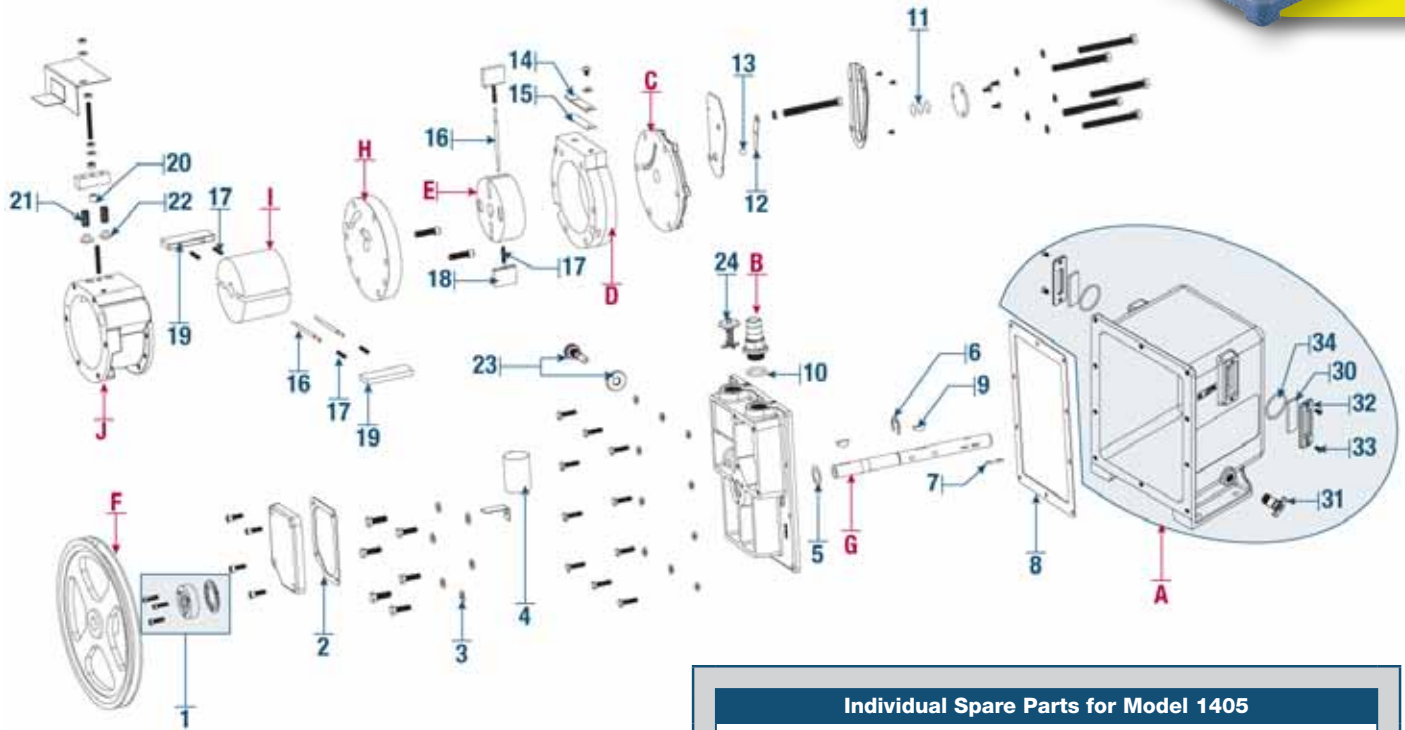
## Individual Spare Parts for Model 1402

ID	Qty.	CAT. No.	Description	ID	Qty.	CAT. No.	Description
A	1	61-8101	Oil Case Assembly	18	1	41-1487	Vane, Small (Requires 2)
B	1	1393K	Intake Adapter for 13/16" I.D. Hose	19	1	41-0959	Vane, Large (Requires 2)
C	1	41-2045	Small End Plate		1	1371A-01	Belt Guard & Base Kit
D	1	61-8108D	Exhaust Ring		1	61-8803	Belt Guard/Cover
E	1	41-1518	Exhaust Rotor	23	1	41-1736	Gas Ballast Valve
F	1	41-2074	Pump Pulley with Set Screw		1	41-0668	Motor Pulley with Set Screw
G	1	41-2093	Shaft	24	1	61-8912	Exhaust Plug/Cover
H	1	61-8250C	Center Plate		1	1401D-01	Shaft Lip Seal Kit, 3/4"
I	1	41-2092	Intake Rotor		1	61-8698	Pump Base
J	1	61-8113C	Intake Ring		1	41-1907A	1/2 HP Motor, 115/230V, 60Hz, 1Ph
				30	2	61-2229A	Oil Window Glass (Requires 2)
1	1	★1401D	Mechanical Shaft Seal Kit, 3/4"	31	1	726130	Drain Valve
	1	★1405A	V-Belt	32	2	61-2370	Oil Window Cover (Requires 2)
		★1417P-10	Standard Exhaust Filter	33	4	61-1014	Screw (Requires 4)
		★1417G	Replacement Exhaust Filter Element	34	2	66-0304	O-Ring (Requires 2)
		★1407K-11	DuoSeal Vacuum Pump Oil -1 Qt.				
		★1407K-15	DuoSeal Vacuum Pump Oil -1 Ga.				
		★331060-5	5' x 13/16" I.D. Vacuum Hose				

★ - Suggested Spare and Consumable Parts



## Model 1405



### Major Repair Kit CAT. No. 1402K-06 for Model 1405

ID	Qty.	Description	ID	Qty.	Description
<b>Major Repair Kit 1402K-06</b>					
1	1	Mechanical Shaft Seal Kit, 3/4" CAT. No. 1401D	13	1	Ball Bearing
2	1	Gasket Intake Chamber Cover	14	1	Exhaust Valve, Upper
3	6	Copper Washer	15	1	Exhaust Valve, Lower
4	1	Intake Screen	16	3	Spring Holder
5	1	Thrust Washer	17	6	Vane Spring
6	1	Rotor Clip for Shaft	18	2	Vane, Small
7	2	Woodruff Key	19	2	Vane, Large
8	1	Gasket, Oil Case	20	1	Spacer for Valve Block
9	2	Woodruff Key	21	2	Valve Spring
10	1	O-Ring	22	2	Valve for Block
11	3	Thrust Disk	<b>Minor Repair Kit CAT. No. 1402K-05</b>		
12	1	Pressure Release Valve	Contains same as Major Repair Kit 1402K-06 except vane ID No. 18 and 19.		

### Individual Spare Parts for Model 1405

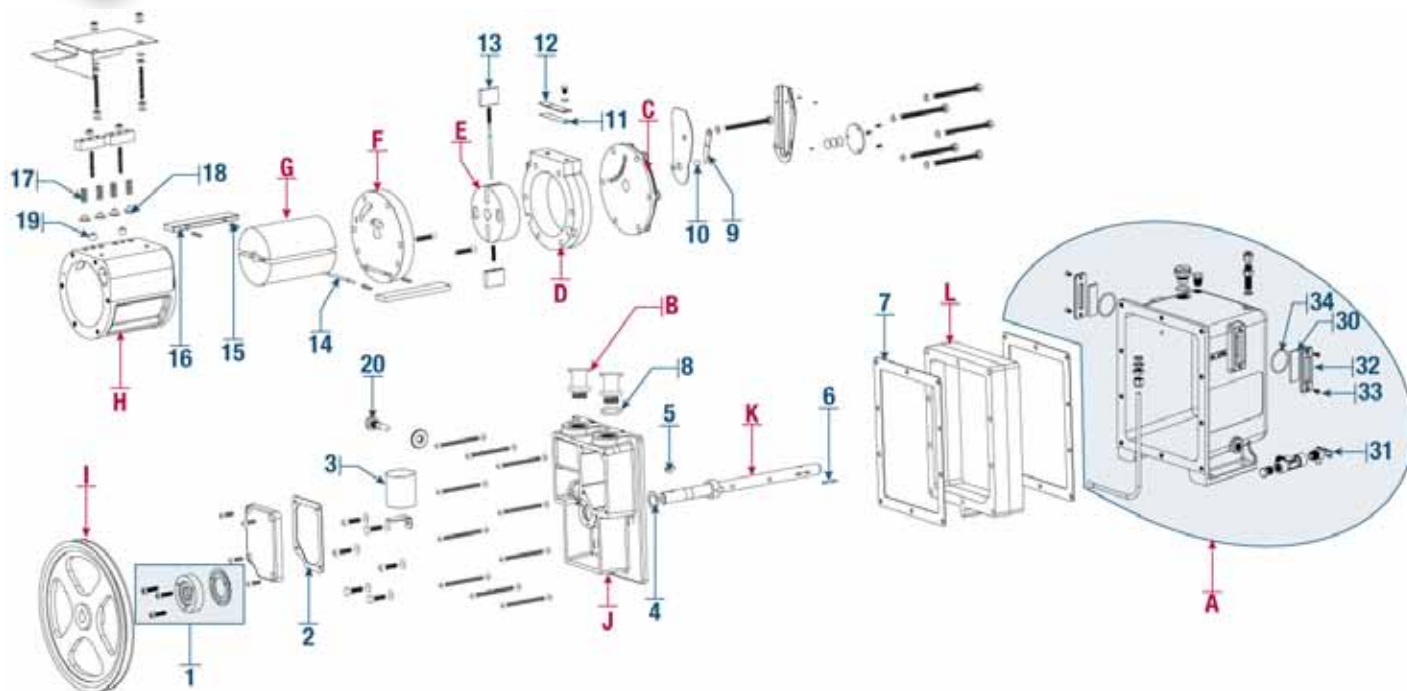
ID	Qty.	CAT. No.	Description	ID	Qty.	CAT. No.	Description
A	1	61-8101	Oil Case Assembly			★1407K-15	DuoSeal Vacuum Pump Oil -1 Ga.
B	1	1393K	Intake Hose Adapter Kit for 13/16" I.D. Hose			★331040-5	5' x 7/16" I.D. Vacuum Hose
C	1	41-2045	Small End Plate	18	1	41-1487	Vane, Small (Requires 2)
D	1	61-8108D	Exhaust Ring	19	1	41-0959	Vane, Large (Requires 2)
E	1	41-1518	Exhaust Rotor		1	1371A-01	Belt Guard & Base Kit
F	1	41-2074	Pump Pulley with Set Screw		1	61-8803	Belt Guard/Cover
G	1	41-2093	Shaft		1	41-0668	Motor Pulley with Set Screw
H	1	61-8250C	Center Plate		1	61-8912	Exhaust Plug/Cover
I	1	41-2092	Intake Rotor		1	1401D-01	Shaft Lip Seal Kit, 3/4"
J	1	61-8651	Intake Ring		1	61-8698	Pump Base
					1	41-1907A	1/2 HP Motor, 115/230V, 60Hz, 1Ph
1	1	★1401D	Mechanical Shaft Seal Kit, 3/4"	30	1	61-2229A	Oil Window Glass (Requires 2)
	1	★1405A	V-Belt	31	1	726130	Drain Valve
		★1417P-10	Standard Exhaust Filter	32	1	61-2370	Oil Window Cover (Requires 2)
		★1417G	Replacement Exhaust Filter Element	33	1	61-1014	Screw (Requires 4)
		★1407K-11	DuoSeal Vacuum Pump Oil -1 Qt.	34	1	66-0304	O-Ring (Requires 2)

★ - Suggested Spare and Consumable Parts

# CHEMSTAR® Pumps for Corrosive Gases



**Model 1376N**



## Major Repair Kit CAT. No. 1376K-10 for Model 1376N

ID	Qty.	Description
<b>Major Repair Kit 1376K-10</b>		
1	1	Shaft Lip Seal Kit, 3/4" <b>CAT. NO. 1401D-01</b>
2	1	Gasket, Intake Chamber Cover
3	1	Intake Screen
4	1	Thrust Washer
5	2	Woodruff Key
6	2	Woodruff Key
7	2	Gasket, Oil Case
8	1	O-Ring
9	1	Pressure Release Valve
10	1	Ball Bearing
11	1	Exhaust Valve, Lower
12	1	Exhaust Valve, Upper
13	2	Vane, Small
14	3	Spring Holder
15	6	Spring for Vanes
16	2	Vane, Large
17	4	Valve Spring
18	4	Valve for Block
19	2	Spacer for Valve Block

### Minor Repair Kit CAT. No. 1376K-09

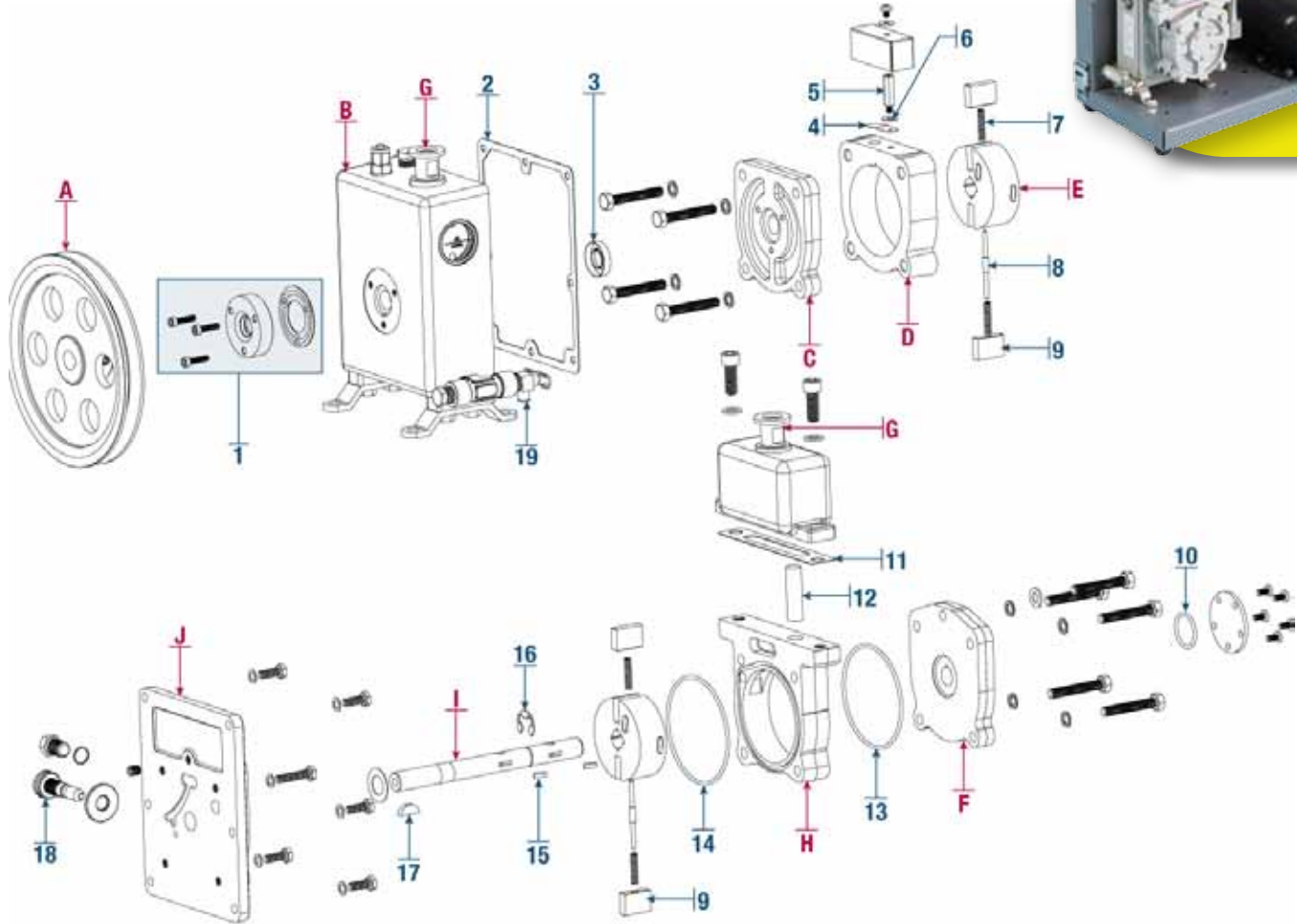
Contains same as Major Repair Kit 1376K-10 except vane ID No. 13 and 16.

## Individual Spare Parts for Model 1376N

ID	Qty.	CAT. No.	Description	ID	Qty.	CAT. No.	Description
A	1	61-8319B	Oil Case Assembly			★1417P-10	Standard Exhaust Filter
B	1	1393G	ISO NW 25 Adapter 1-20"			★1417G	Replacement Exhaust Filter Element
C	1	41-2045	Small End Plate			★8995G-11	Gold Vacuum Pump Oil -1 L.
D	1	61-8108D	Exhaust Ring			★8995G-15	Gold Vacuum Pump Oil -1 Ga.
E	1	41-1518	Small Rotor			★331060-5	5' x 13/16" I.D. Vacuum Hose
F	1	61-8250C	Center Plate		1	61-8803	Belt Guard/Cover
G	1	41-1682	Large Rotor		1	61-8698	Pump Base
H	1	41-1688	Large Ring		1	1371A-01	Belt Guard & Base Kit
I	1	41-2074	Pump Pulley with Set Screw	20	1	41-1736	Gas Ballast Valve
J	1	61-8684	Large End Plate		1	41-0668	Motor Pulley with Set Screw
K	1	41-1683	Shaft		1	41-1940A	1 HP Motor, 115/230V, 60Hz, 1Ph
L	1	61-8687	Oil Case Spacer	30	1	61-2229A	Oil Window Glass (Requires 2)
				31	1	726130	Drain Valve
1	1	★1401D-01	Shaft Lip Seal Kit, 3/4"	32	1	61-2370	Oil Window Cover (Requires 2)
	1	★1401D	Shaft Mechanical Seal Kit	33	1	61-1014	Screw (Requires 4)
	1	★1405A	V-Belt	34	1	66-0304	O-Ring (Requires 2)

★ - Suggested Spare and Consumable Parts

## Model 1400N



### Major Repair Kit CAT. No. 1400K-10 for Model 1400N

ID	Qty.	Description	ID	Qty.	Description
<b>Major Repair Kit 1400K-10</b>					
1	1	Shaft Lip Seal Kit, 5/8" CAT. NO. 1401E-01	11	1	Gasket, Intake Chamber Cover
2	1	Gasket Oil Case	12	1	Intake Screen
3	1	Lip Seal	13	1	O-Ring
4	1	Exhaust Valve	14	1	O-Ring
5	1	Stud Baffle	15	2	Woodruff Key
6	1	Flat Washer Brass	16	1	Retaining Ring
7	4	Vane Spring	17	1	Woodruff Key
8	2	Spring Holder for Vane			
9	4	Vane	<b>Minor Repair Kit CAT. No. 1400K-09</b>		
10	1	O-Ring	Contains same as Major Repair Kit 1400K-10 except vane I.D. No. 9.		

### Individual Spare Parts for Model 1400N

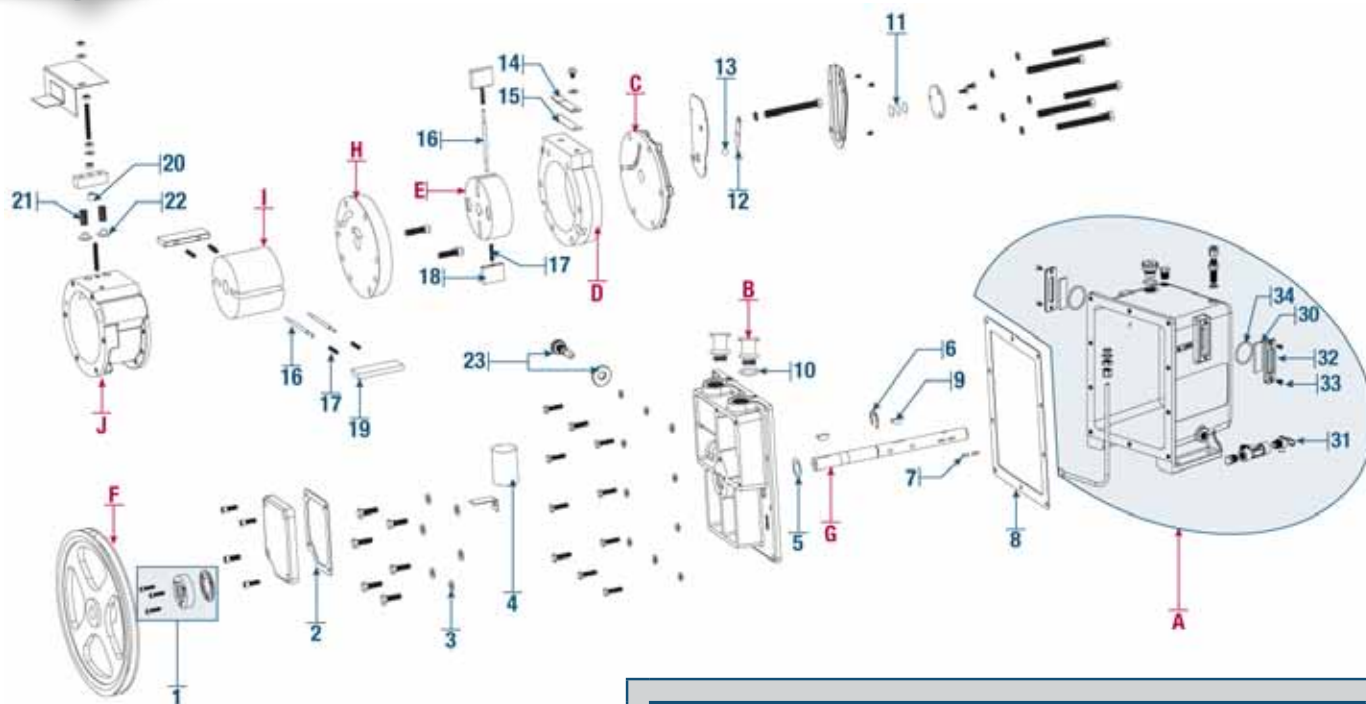
ID	Qty.	CAT. No.	Description	ID	Qty.	CAT. No.	Description
A	1	41-2191	Pump Pulley with Set Screw			★1417	Standard Exhaust Filter
B	1	61-8548C	Oil Case Assembly			★1417L	Replacement Exhaust Filter Element (2 pk.)
C	1	41-1045	Front Plate			★8995G-11	Gold Vacuum Pump Oil -1 L.
D	1	41-1042	Inner Ring			★8995G-15	Gold Vacuum Pump Oil -1 Ga.
E	1	41-1040	Rotor			★331040-5	5' x 7/16" I.D. Vacuum Hose
F	1	61-8701	Back End Plate	9	1	41-1059	Vane
G	1	1393F	ISO NW 16 Adapter to 3/4"-20	1	1	61-8901	Belt Guard
H	1	61-8674	Intake Ring		1	61-8916	Pump Base
I	1	41-1060	Shaft	18	1	41-1736	Gas Ballast Valve
J	1	61-8678	Center Plate		1	41-0551	Motor Pulley with Set Screw
				19	1	726130	Oil Drain Valve
1	1	★1401E-01	Shaft Lip Seal Kit, 5/8"		1	41-3753	Oil Case Window
	1	★1401E	Mechanical Shaft Seal Kit, 5/8"		1	61-8622	1/3 HP Motor, 115V, 60Hz, 1Ph
	1	★1400A	V-Belt				

★ - Suggested Spare and Consumable Parts

# CHEMSTAR® Pumps for Corrosive Gases



**Model 1402N**



## Major Repair Kit CAT. No. 1402K-10 for Model 1402N

ID	Qty.	Description	ID	Qty.	Description
<b>Major Repair Kit 1402K-10</b>					
1	1	Shaft Lip Seal Kit, 3/4" CAT. No. 1401D-01	14	1	Exhaust Valve, Upper
2	1	Gasket Intake Chamber Cover	15	1	Exhaust Valve, Lower
3	6	Copper Washer	16	3	Spring Holder
4	1	Intake Screen	17	6	Vane Spring
5	1	Thrust Washer	18	2	Vane, Small
6	1	Rotor Clip for Shaft	19	2	Vane, Large
7	2	Woodruff Key	20	1	Spacer for Valve Block
8	1	Gasket, Oil Case	21	2	Valve Spring
9	2	Woodruff Key	22	2	Valve for Block
10	1	O-Ring	<b>Minor Repair Kit CAT. No. 1402K-09</b>		
11	3	Thrust Disk			
12	1	Pressure Release Valve	Contains same as Major Repair Kit 1402K-10 except vane I.D. No. 18 and 19.		
13	1	Ball Bearing			

## Individual Spare Parts for Model 1402N

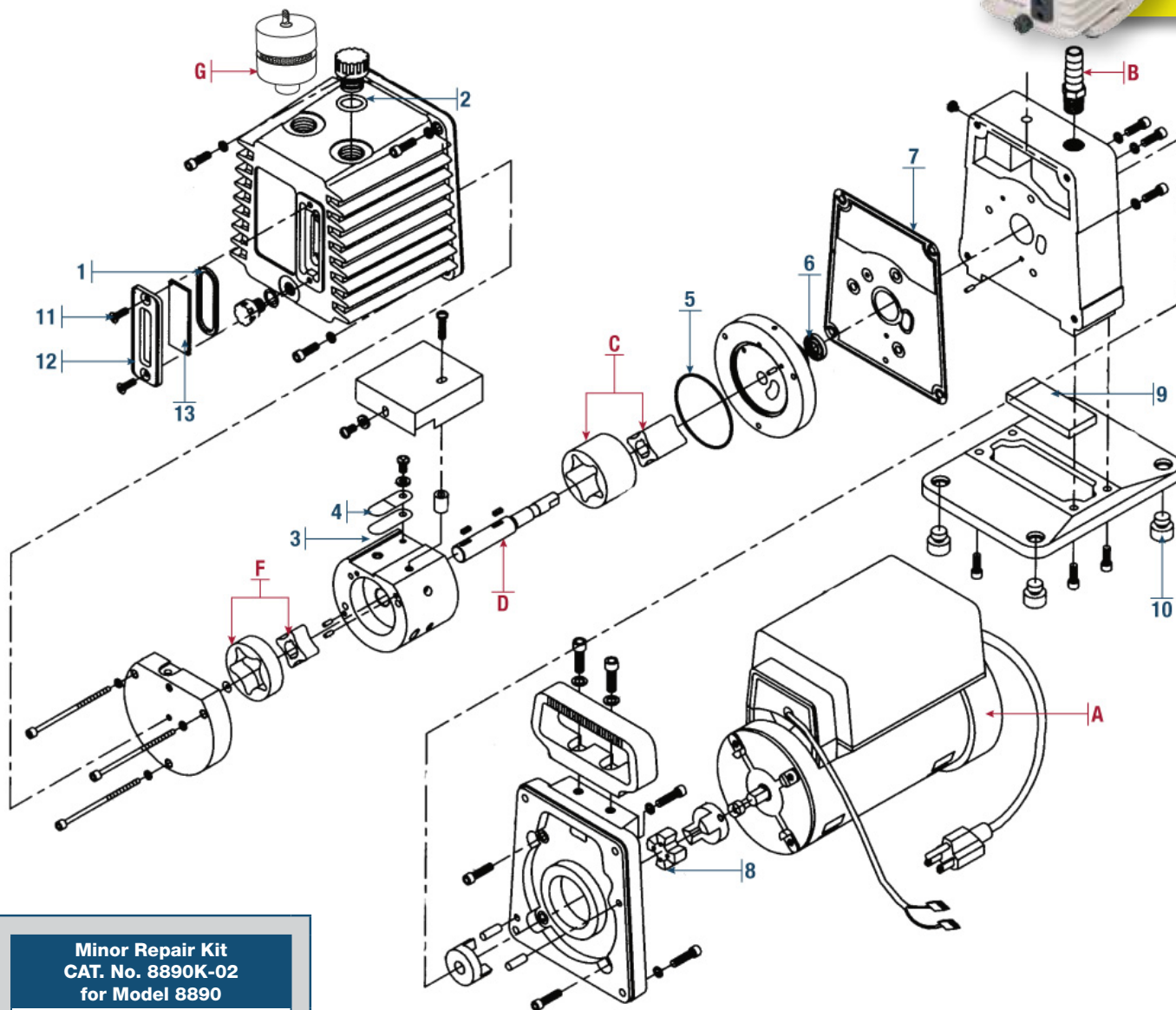
ID	Qty.	CAT. No.	Description	ID	Qty.	CAT. No.	Description
A	1	61-8319B	Oil Case Assembly			★8995G-11	Gold Vacuum Pump Oil -1 L.
B	1	1393G	ISO NW 25 Adapter 1-20"			★8995G-15	Gold Vacuum Pump Oil -1 Ga.
C	1	41-2045	Small End Plate			★331060-5	5' x 13/16" I.D. Vacuum Hose
D	1	61-8108D	Exhaust Ring	18	1	41-1487	Vane, Small (Requires 2)
E	1	41-1518	Exhaust Rotor	19	1	41-0959	Vane, Large (Requires 2)
F	1	41-2074	Pump Pulley with Set Screw		1	1371A-01	Belt Guard & Base Kit
G	1	41-2093	Shaft		1	61-8803	Belt Guard/Cover
H	1	61-8250C	Center Plate	23	1	41-1736	Gas Ballast Valve
I	1	41-2092	Intake Rotor		1	41-0668	Motor Pulley with Set Screw
J	1	61-8113C	Intake Ring		1	61-8698	Pump Base
					1	41-1907A	1/2 HP Motor, 115/230V, 60Hz, 1Ph
1	1	★1401D-01	Shaft Lip Seal Kit, 3/4"	30	1	61-2229A	Oil Window Glass (Requires 2)
	1	★1401D	Shaft Mechanical Seal Kit	31	1	726130	Drain Valve
	1	★1405A	V-Belt	32	1	61-2370	Oil Window Cover (Requires 2)
		★1417P-10	Standard Exhaust Filter	33	1	61-1014	Screw (Requires 4)
		★1417G	Replacement Exhaust Filter Element	34	1	66-0304	O-Ring (Requires 2)

★ - Suggested Spare and Consumable Parts



# Direct-Drive Compact Vacuum Pumps

GEM® Model 8890



## Minor Repair Kit CAT. No. 8890K-02 for Model 8890

ID	Qty.	Description
<b>Minor Repair Kit 8890K-02</b>		
1	1	O-Ring
2	1	O-Ring
3	1	Intake Valve
4	2	Backer Valve
5	1	O-Ring
6	1	Lip Seal 3/8
7	1	Gasket
8	1	Coupling Rubber
9	1	Drip Pad
10	4	Rubber Bumper
11	1	Screw
12	1	Window Cover
13	1	Sight Glass Window

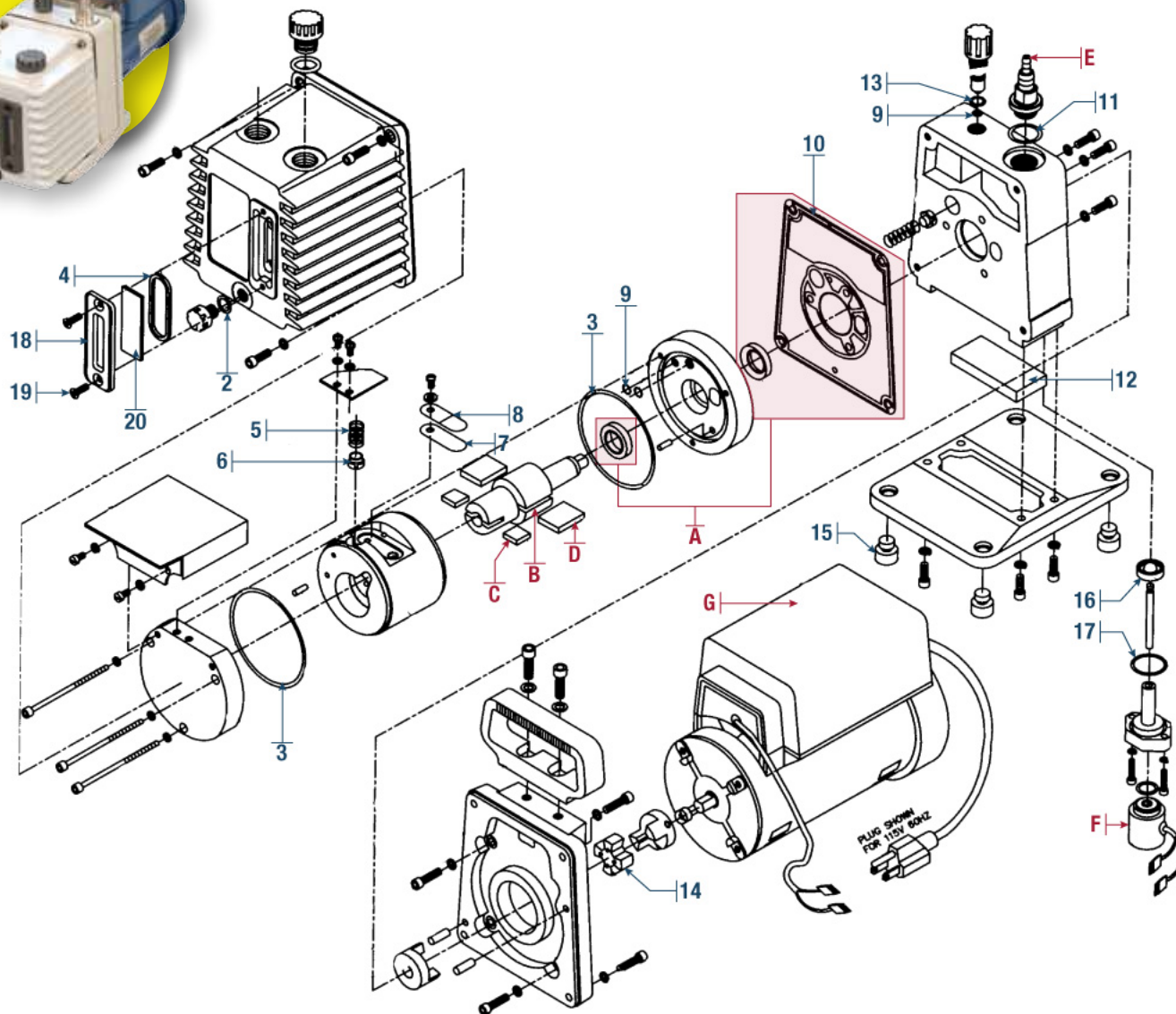
## Individual Spare Parts for Model 8890

ID	Qty.	CAT. No.	Description	ID	Qty.	CAT. No.	Description
A	1	61-5356	Motor 1/4 HP, 115/230V, 60 Hz, 1Ph			★8995P-11	Premium Vacuum Pump Oil -1 Qt.
B	1	1393X	Intake fitting			★8995P-15	Premium Vacuum Pump Oil -1 Ga.
C	1	61-0006A	Intake Rotor Set			★331040-5	5' x 7/16" I.D. Vacuum Hose
D	1	61-1124B	Rotor Shaft	1	1	66-0304	Window O-Ring
E	1	61-1121A	Key for Rotor Shaft (Requires 2)	11	2	62-1014	Screw
F	1	61-0007A	Exhaust Rotor Set	12	1	61-2370	Window Holder
G	1	★1417	Exhaust Filter	13	1	61-2229A	Window Glass
		★1417L	Replacement Exhaust Filter Element (2 pk.)				

★ - Suggested Spare and Consumable Parts

# Direct-Drive Compact Vacuum Pumps

## Model 8905



### Minor Repair Kit CAT. No. 8905K-02 for Model 8905

ID	Qty.	Description	ID	Qty.	Description
2	1	O-Ring	11	1	O-Ring
3	1	O-Ring	12	1	Drip Pad
4	2	Window O-Ring	13	1	O-Ring
5	2	Valve Spring	14	1	Coupling Rubber
6	1	Valve	15	4	Rubber Bumper
7	1	Intake Valve	16	1	Disc Assembly, Isolator Valve
8	2	Backer Valve	17	1	O-Ring
9	2	O-Ring	18	2	Screw
10	1	Gasket	19	1	Window Cover
			20	1	Glass Window

### Individual Spare Parts for Model 8905

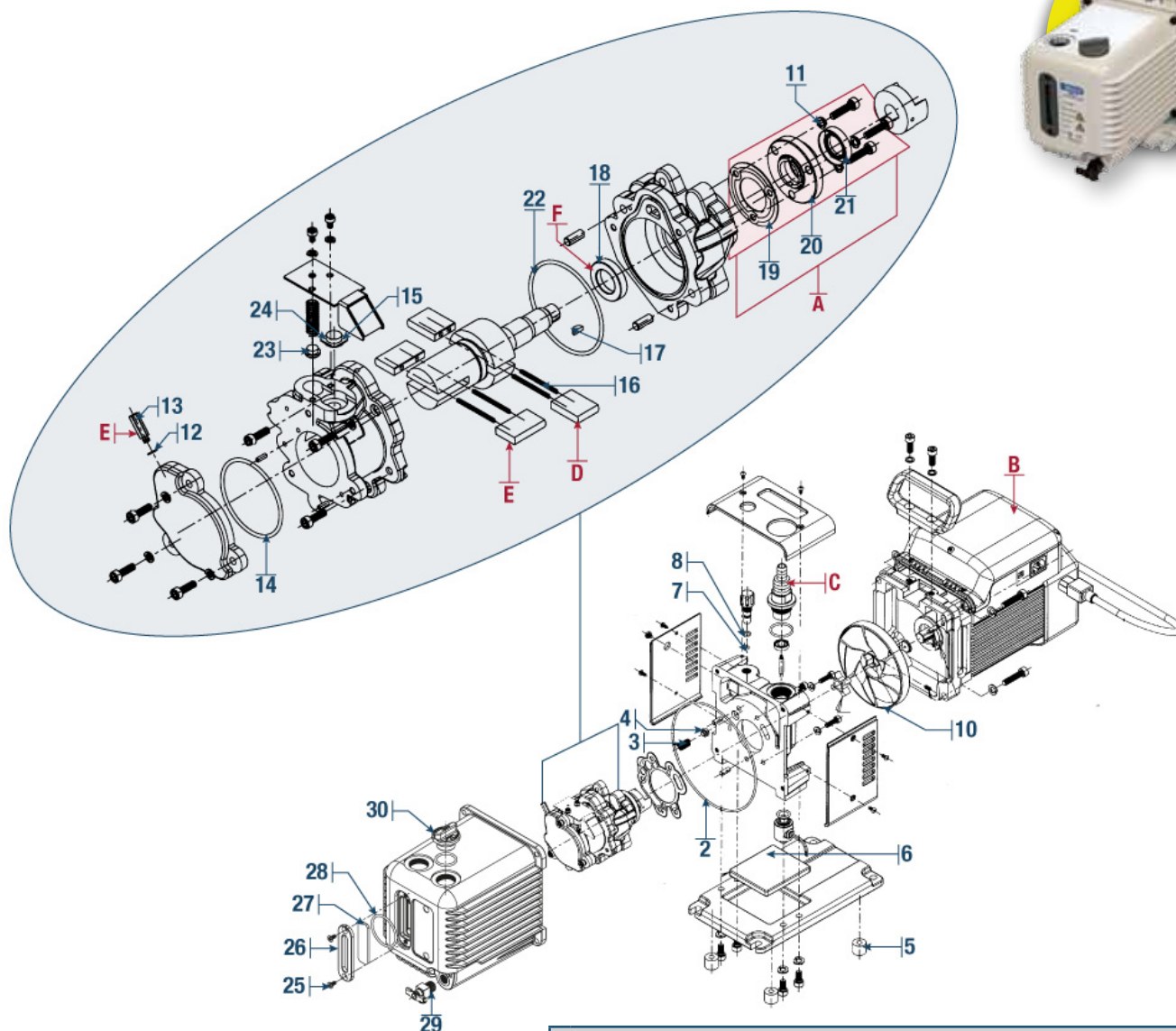
ID	Qty.	CAT. No.	Description	ID	Qty.	CAT. No.	Description
A	1	★ 8905K-03	Lip Shaft Seal Kit CAT. No. 8905K-03			★ 1417	Standard Exhaust Filter
B	1	61-2177B	Rotor			★ 1417L	Replacement Exhaust Filter Element (2 pk.)
C	1	61-2179A	Exhaust Vane (Requires 2)			★ 8995P-11	Premium Vacuum Pump Oil -1 Qt.
D	1	61-2178A	Intake Vane (Requires 2)			★ 8995P-15	Premium Vacuum Pump Oil -1 Ga.
E	1	8905K-06	Unibarb™ 3/16" & 7/16" ID Hose			★ 331040-5	5' x 7/16" I.D. Vacuum Hose
F	1	61-2308	Solenoid Coil Assembly				
G	1	61-5356	Motor 1/4 HP, 115/230V, 60Hz, 1Ph				

★ - Suggested Spare and Consumable Parts



# Direct-Drive Compact Vacuum Pumps

## Model 8907



### Minor Repair Kit CAT. No. 8917K-04 for Model 8907

ID	Qty.	Description	ID	Qty.	Description
1	1	Gasket	13	1	Orifice .014
2	1	O-Ring	14	1	O-Ring
3	1	Gas Ballast Spring	15	1	Bypass Valve
4	1	Gas Ballast Valve	16	4	Vane Spring
5	4	Rubber Feet	17	1	Key Coupling
6	1	Drip Pad	18	1	Lip Seal, 3/4
7	1	O-Ring	19	1	Gasket
8	1	O-Ring	20	1	Lip Seal Housing
9	1	O-Ring	21	1	Lip Seal
10	1	Rubber Coupling	22	1	O-Ring
11	3	Lock Washer	23	1	Exhaust Valve
12	1	Nylon Gasket	24	1	Exhaust Valve Spring
			24A	1	Oil Plug O-Ring

### Individual Spare Parts for Model 8907

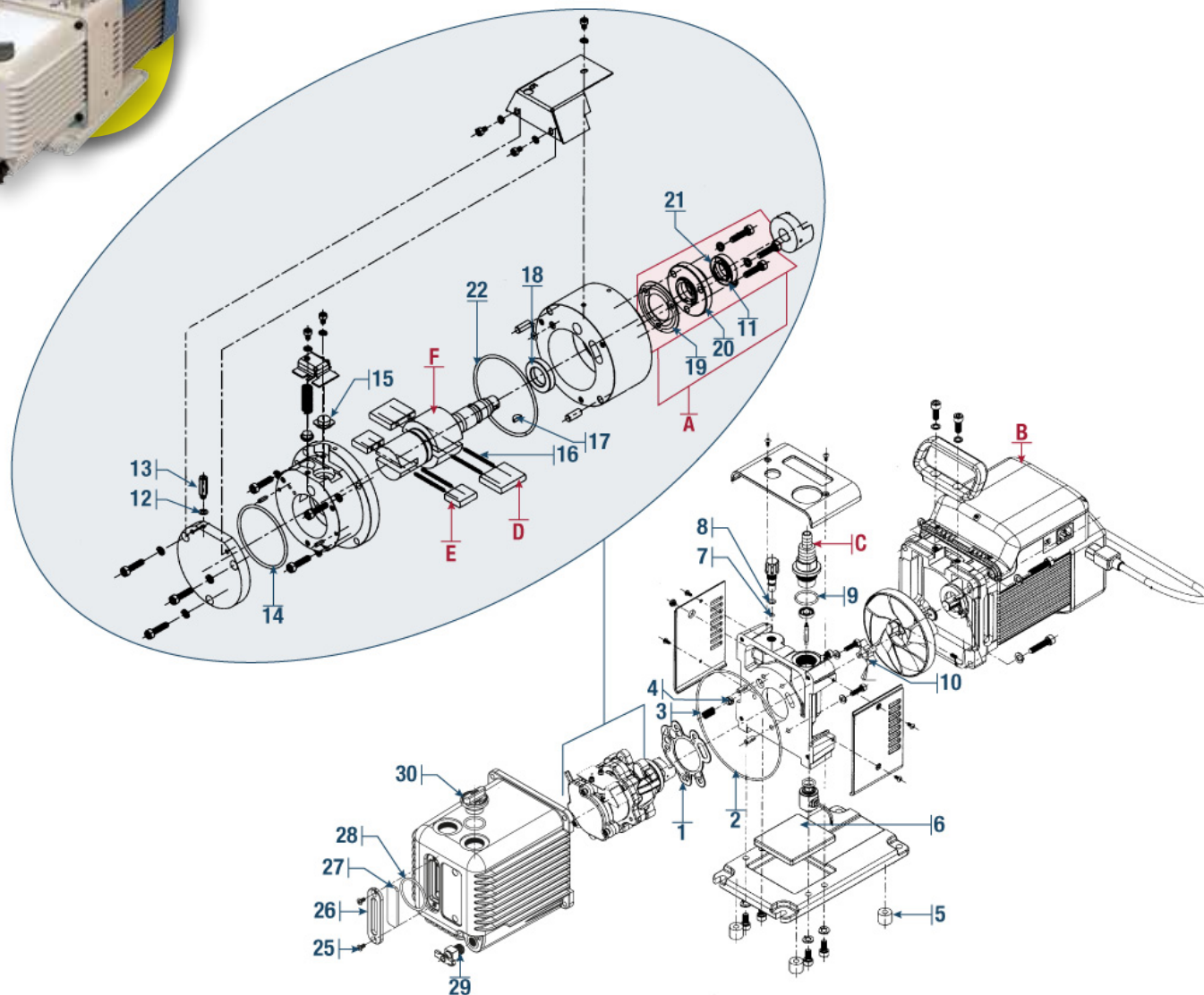
ID	Qty.	CAT. No.	Description	ID	Qty.	CAT. No.	Description
A	1	★ 8917K-05	Lip Shaft Seal Kit CAT. No. 8917K-05			★ 331040-5	5' x 7/16" I.D. Vacuum Hose
B	1	61-6460	Motor 1/2 HP, 115/230V, 60Hz, 1Ph			★ 331060-5	5' x 13/16" I.D. Vacuum Hose
C	1	8907K-06	Unibarb™ 13/16" & 7/16" I.D. Hose	25	2	62-1014	Screw
D	1	61-6051	Intake Vane (Requires 2)	26	1	61-6009	Window Holder
E	1	61-6052	Exhaust Vane (Requires 2)	27	1	61-6027	Window Glass
F	1	61-6464	Rotor	28	1	66-0305	Window O-Ring
		★ 1417P-7	Standard Exhaust Filter	29	1	726130	Oil Drain Valve
		★ 1417R	Replacement Exhaust Filter Element	30	1	61-6020	Oil Fill Plug
		★ 8995P-11	Premium Vacuum Pump Oil - 1 Qt.				
		★ 8995P-15	Premium Vacuum Pump Oil - 1 Ga.				

★ - Suggested Spare and Consumable Parts

# Direct-Drive Compact Vacuum Pumps



**Model 8912**



**Minor Repair Kit CAT. No. 8917K-04  
for Model 8912**

ID	Qty.	Description	ID	Qty.	Description
1	1	Gasket	13	1	Orifice .014
2	1	O-Ring	14	1	O-Ring
3	1	Gas Ballast Spring	15	1	Bypass Valve
4	1	Gas Ballast Valve	16	4	Vane Spring
5	4	Rubber Feet	17	1	Key Coupling
6	1	Drip Pad	18	1	Lip Seal 3/4
7	1	O-Ring	19	1	Gasket
8	1	O-Ring	20	1	Lip Seal Housing
9	1	O-Ring	21	1	Lip Seal
10	1	Rubber Coupling	22	1	O-Ring
11	3	Lock Washer	23	1	Exhaust Valve
12	1	Nylon Gasket	24	1	Exhaust Valve Spring
			24A	1	Oil Plug O-Ring

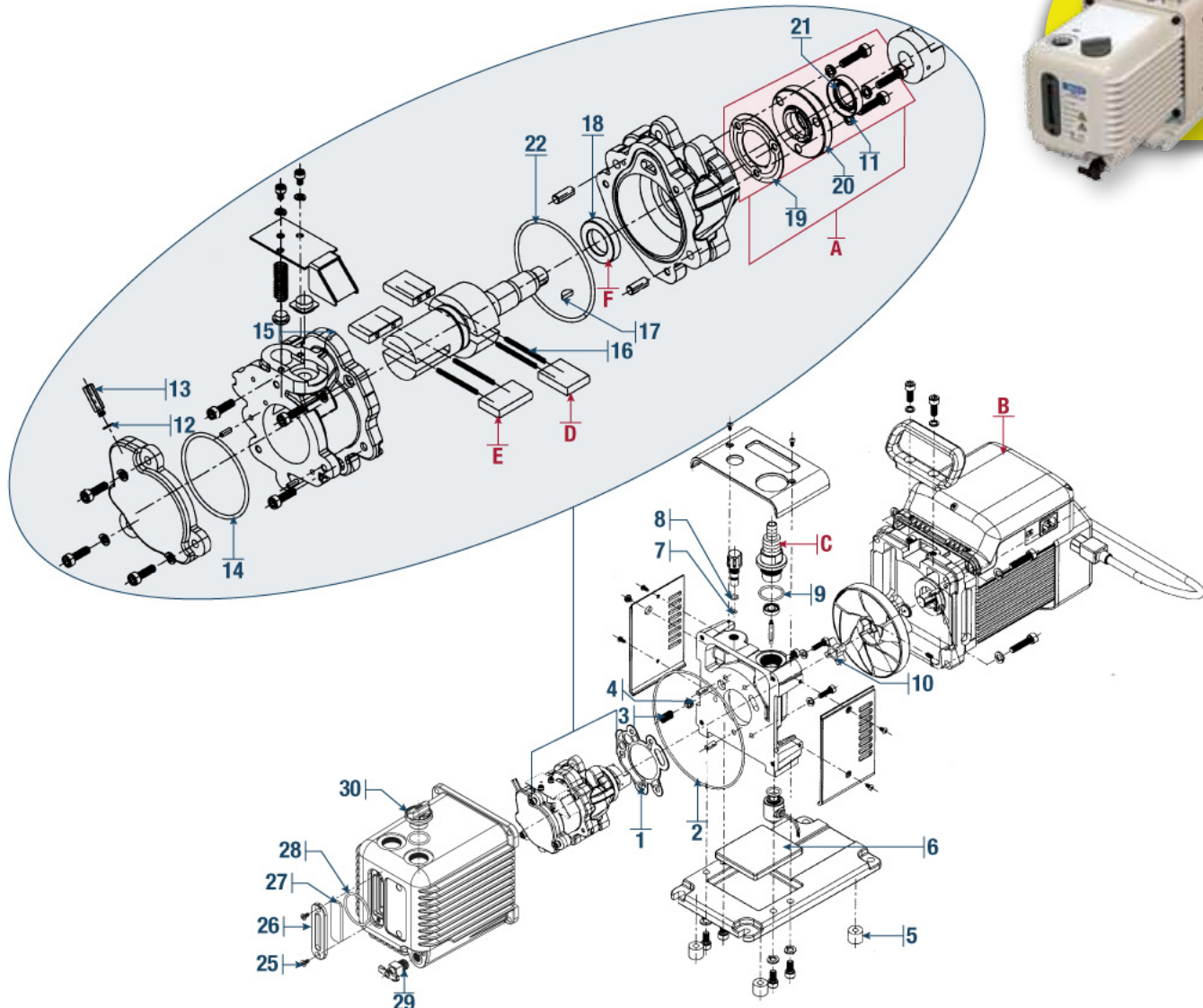
**Individual Spare Parts for Model 8912**

ID	Qty.	CAT. No.	Description	ID	Qty.	CAT. No.	Description
A	1	★8917K-05	Lip Shaft Seal Kit <b>CAT. No. 8917K-05</b>			★8995P-11	Premium Vacuum Pump Oil - 1 Qt.
B	1	61-6460	Motor 1/2 HP, 115/230V, 60Hz, 1Ph			★8995P-15	Premium Vacuum Pump Oil - 1 Ga.
C	1	8907K-06	Unibarb™ 13/16" & 7/16" I.D. Hose			★331040-5	5' x 7/16" I.D. Vacuum Hose
D	1	61-6050	Intake Vane (Requires 2)			★331060-5	5' x 13/16" I.D. Vacuum Hose
E	1	61-6053	Exhaust Vane (Requires 2)	25	2	62-1014	Screw
F	1	61-6464	Rotor	26	1	61-6009	Window Holder
	1	8907K-05	ISO NW 25 to 1-1/8" Intake Adapter	27	1	61-6027	Window Glass
		★1417P-7	Standard Exhaust Filter	28	1	66-0305	Window O-Ring
		★1417R	Replacement Exhaust Filter Element	29	1	726130	Oil Drain Valve
				30	1	61-6020	Oil Fill Plug

★ - Suggested Spare and Consumable Parts

# Direct-Drive Compact Vacuum Pumps

## Model 8917



### Minor Repair Kit CAT. No. 8917K-04 for Model 8917

ID	Qty.	Description	ID	Qty.	Description
1	1	Gasket	13	1	Orifice .014
2	1	O-Ring	14	1	O-Ring
3	1	Gas Ballast Spring	15	1	Bypass Valve
4	1	Gas Ballast Valve	16	4	Vane Spring
5	4	Rubber Feet	17	1	Key Coupling
6	1	Drip Pad	18	1	Lip Seal, 3/4
7	1	O-Ring	19	1	Gasket
8	1	O-Ring	20	1	Lip Seal Housing
9	1	O-Ring	21	1	Lip Seal
10	1	Rubber Coupling	22	1	O-Ring
11	3	Lock Washer	23	1	Exhaust Valve
12	1	Nylon Gasket	24	1	Exhaust Valve Spring
			24A	1	Oil Plug O-Ring

### Individual Spare Parts for Model 8917

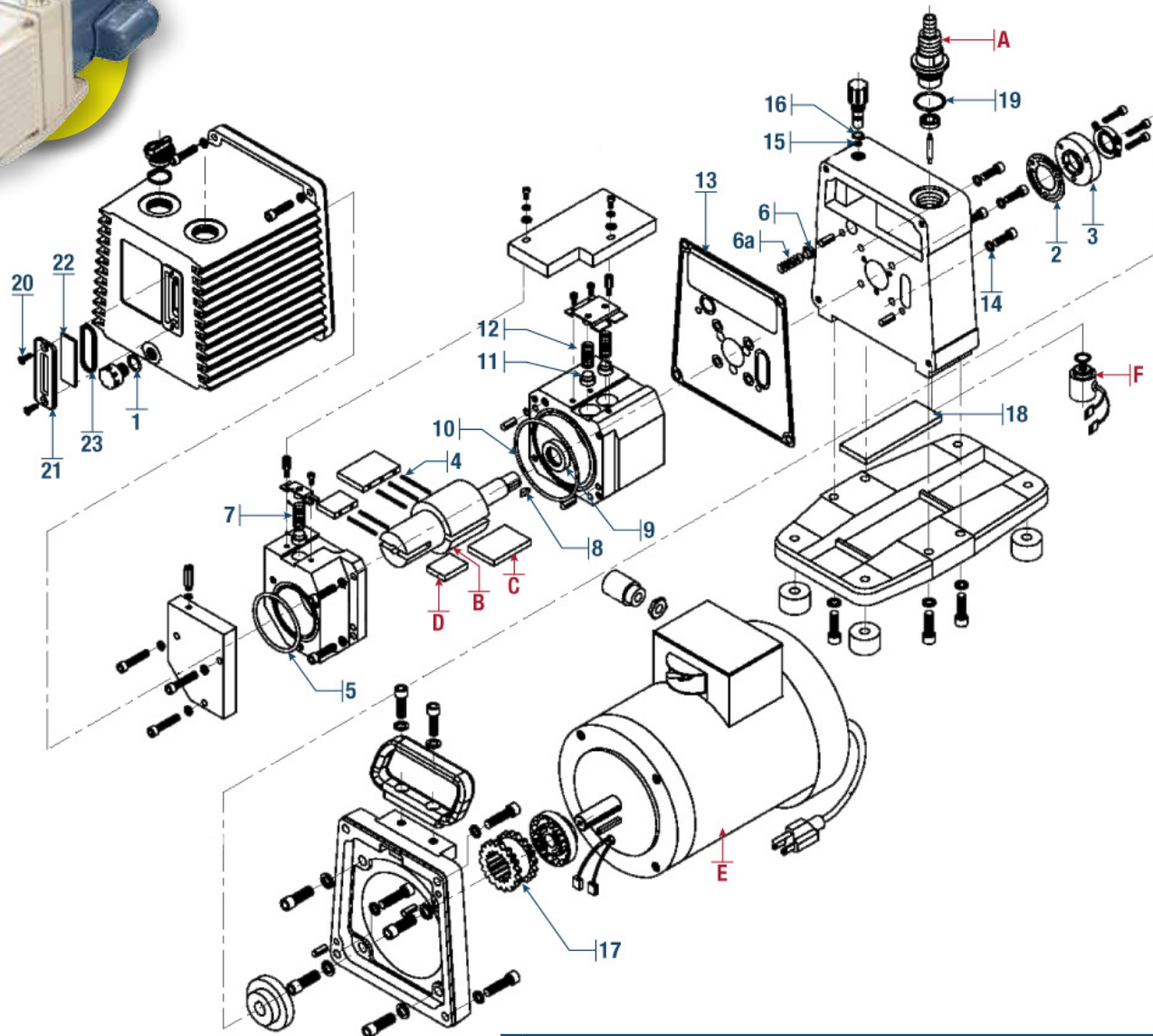
ID	Qty.	CAT. No.	Description	ID	Qty.	CAT. No.	Description
A	1	★ 8917K-05	Lip Shaft Seal Kit CAT. No. 8917K-05			★ 8995P-11	Premium Vacuum Pump Oil -1 Qt.
B	1	61-6460	Motor 1/2 HP, 115/230V, 60Hz, 1Ph			★ 8995P-15	Premium Vacuum Pump Oil -1 Ga.
C	1	8907K-06	Unibarb™ 13/16" & 7/16" I.D. Hose			★ 331040-5	5' x 7/16" I.D. Vacuum Hose
D	1	61-6049	Intake Vane (Requires 2)			★ 331060-5	5' x 13/16" I.D. Vacuum Hose
E	1	61-6052	Exhaust Vane (Requires 2)	25	2	62-1014	Screw
F	1	61-6464	Rotor	26	1	61-6009	Window Holder
	1	8907K-05	ISO NW 25 to 1-1/8" Intake Adapter	27	1	61-6027	Window Glass
		★ 1417P-7	Standard Exhaust Filter	28	1	66-0305	Window O-Ring
		★ 1417R	Replacement Exhaust Filter Element	29	1	726130	Oil Drain Valve
				30	1	61-6020	Oil Fill Plug

★ - Suggested Spare and Consumable Parts



# Direct-Drive Compact Vacuum Pumps

## Model 8920



### Minor Repair Kit CAT. No. 8915K-02 for Model 8920

ID	Qty.	Description	ID	Qty.	Description
1	1	O-Ring	12	2	Bypass Valve Spring
2	1	Gasket	13	1	Gasket
3	1	Shaft Seal Housing	14	1	Gas Ballast Spring
4	4	Vane Spring	15	1	O-Ring
5	1	O-Ring	16	1	O-Ring
6	1	Gas Ballast Valve	17	1	Coupling Sleeve
6a	1	Gas Ballast Valve Spring	18	1	Drip Pad
7	1	Exhaust Valve Spring	19	1	O-Ring
8	1	Woodruff Key	20	2	Screw
9	1	Lip Seal, 3/4	21	1	Window Cover
10	1	O-Ring	22	1	Window Cover
11	3	Bypass Valve	23	1	O-Ring

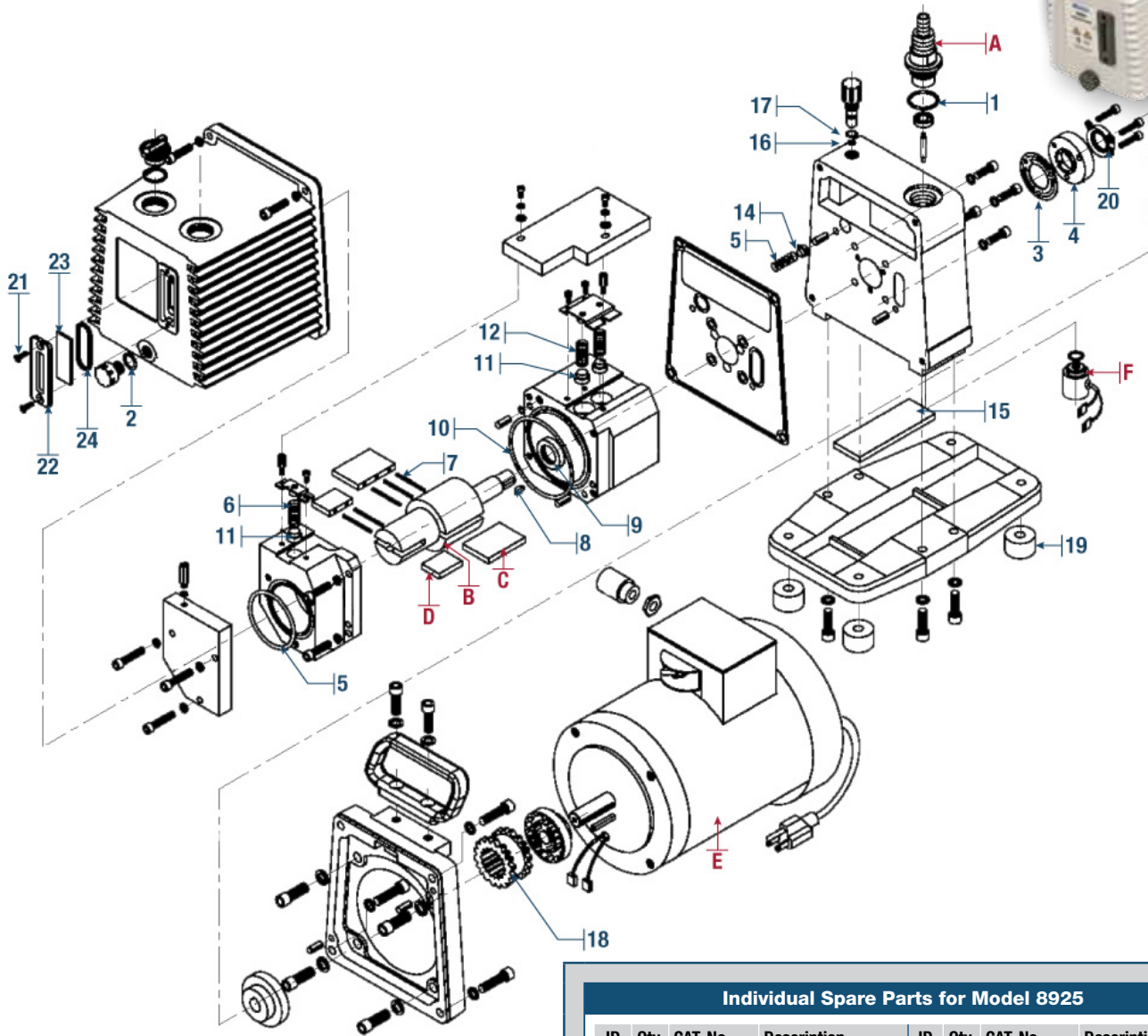
### Individual Spare Parts for Model 8920

ID	Qty.	CAT. No.	Description	ID	Qty.	CAT. No.	Description
A	1	8920K-06	Unibarb™ 9/16" & 13/16" I.D. Hose			★8995P-11	Premium Vacuum Pump Oil -1 Qt.
B	1	61-9595C	Rotor			★8995P-15	Premium Vacuum Pump Oil -1 Ga.
C	1	61-9616B	Intake Vane (Requires 2)			★331060-5	5' x 13/16" I.D. Vacuum Hose
D	1	61-9615A	Exhaust Vane (Requires 2)			★331060-5	5' x 13/16" I.D. Vacuum Hose
E	1	61-5359	Motor 3/4 HP 115/230V, 50/60Hz, 1Ph	20	2	62-1014	Screw
F	1	61-9935	Solenoid Coil Assembly	21	1	61-2370	Window Holder
	1	8907K-05	ISO NW 25 to 1-1/8" Intake Adapter	22	1	61-2229A	Window Glass
		★1417P-10	Standard Exhaust Filter	23	1	66-0304	Window O-Ring
		★1417G	Replacement Exhaust Filter Element				

★ - Suggested Spare and Consumable Parts

# Direct-Drive Compact Vacuum Pumps

## Model 8925



### Minor Repair Kit CAT. No. 8925K-02 for Model 8925

ID	Qty.	Description	ID	Qty.	Description
1	1	O-Ring	13	1	Gasket
2	1	O-Ring	14	1	Gas Ballast Valve
3	1	Gasket	15	1	Drip Pad
4	1	Shaft Seal Housing	16	1	O-Ring
5	1	Gas Ballast Spring	17	1	O-Ring
6	1	Exhaust Valve Spring	18	1	Coupling Sleeve
7	5	Vane Spring	19	4	Rubber Bumper
8	1	Woodruff Key	20	3	Lock Washer
9	1	Lip Seal	21	2	Screw
10	1	O-Ring	22	1	Window Cover
11	3	Bypass Valve	23	1	Window Cover
12	2	Bypass Valve Spring	24	1	O-Ring

### Individual Spare Parts for Model 8925

ID	Qty.	CAT. No.	Description	ID	Qty.	CAT. No.	Description
A	1	8920K-06	Unibarb™ 9/16" & 13/16" I.D. Hose			★8995P-11	Premium Vacuum Pump Oil - 1 Qt.
B	1	61-5304	Rotor			★8995P-15	Premium Vacuum Pump Oil - 1 Ga.
C	1	61-9571B	Intake Vane (Requires 2)			★331060-5	5' x 13/16" I.D. Vacuum Hose
D	1	61-9570A	Exhaust Vane (Requires 2)			★331060-5	5' x 13/16" I.D. Vacuum Hose
E	1	61-5359	Motor 3/4 HP 115/230V, 50/60Hz, 1Ph	20	2	62-1014	Screw
F	1	61-9935	Solenoid Coil Assembly	21	1	61-2370	Window Holder
	1	8907K-05	ISO NW 25 to 1-1/8" Intake Adapter	22	1	61-2229A	Window Glass
		★1417P-10	Standard Exhaust Filter	23	1	66-0304	Window O-Ring
		★1417G	Replacement Exhaust Filter Element				

★ - Suggested Spare and Consumable Parts

# Refrigeration Commercial Duty HVAC Pumps

## Models 1402B-46/1376B-46/1397B-46/CRR-1/CRR-1A/CRR-1C

### DuoSEAL® Belt-Drive Pumps

- Low pump RPM insures long service life.
- Large oil reservoir dilutes contaminants.



1402B-46



1376B-46



1397B-46

### Capture® Pump



CRR-1A

Pump Model	Major Repair Kit CAT. No.	Minor Repair Kit CAT. No.	Intake Fitting & O-Ring CAT. No.	Motor CAT. No.	Motor HP	Mechanical Shaft Seal Kit CAT. No.
1402B-46	1402K-47	1402K-46	41-2984, 61-8581	41-1907A	1/2 HP	1401D
1376B-46	1376K-47	1376K-46	41-2984, 61-8581	41-1940A	1 HP	1401D
1397B-46	1397K-47	1397K-46	61-8274B, 41-0961	41-1940A	1 HP	1401D
CRR-1	1373K-06	1373K-05	1" NPT Intake Thread	-		1401D
CRR-1A	1373K-06	1373K-05	1" NPT Intake Thread	41-1940A	1 HP	1401D
CRR-1C	1373K-06	1373K-05	1" NPT Intake Thread	-		1401D

## Models 8920A-46/8925A-46

### Direct-Drive Pumps

- Lightweight with high volume capacity

Pump Model	Minor Repair Kit CAT. No.	Shaft Seal Kit CAT. No.	Intake Fitting & O-Ring CAT. No.	Motor CAT. No.	Motor HP
8920A-46	8915K-02	61-9589A	61-5350, 66-0250	61-5359	3/4 HP
8925A-46	8925K-02	61-9589A	61-5350, 66-0250	61-5359	3/4 HP



8920A-46/8925A-46

See pages 35-36 for parts views and additional individual spare parts.



## Chemvac Model P6Z-101/P12Z-101/P23Z-301



P 6 Z-101

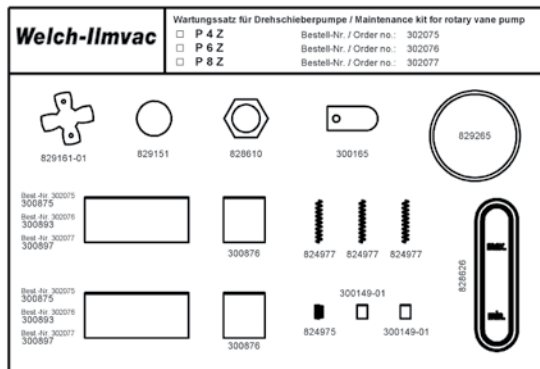


P 12 Z-101 / P 23 Z-301

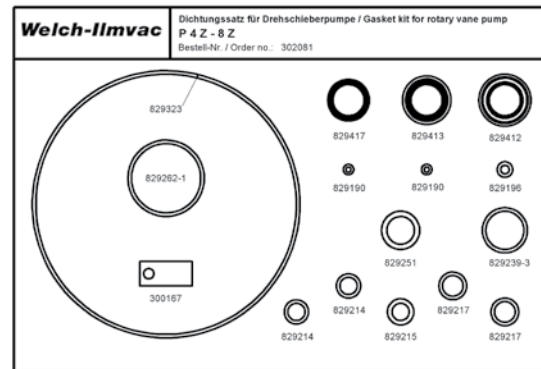
### Rotary Vane Kits for Chemvac Systems

- Minor kit includes all necessary seals (shaft seal, O-Rings, valves, ...)
- Major kit includes minor kit plus vanes, springs, oil glass

For Pump Model	Minor Kit CAT. No.	Major Kit CAT. No.
P 6 Z-101	302081	302076
P 12 Z-101	302082	302079
P 23 Z-301	302082	302080



Major Kit

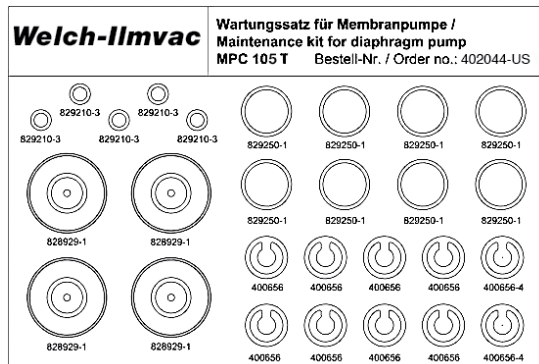


Minor Kit

### Diaphragm Pump Kits for Chemvac Systems

- Service kit includes diaphragm, valves and O-Rings.

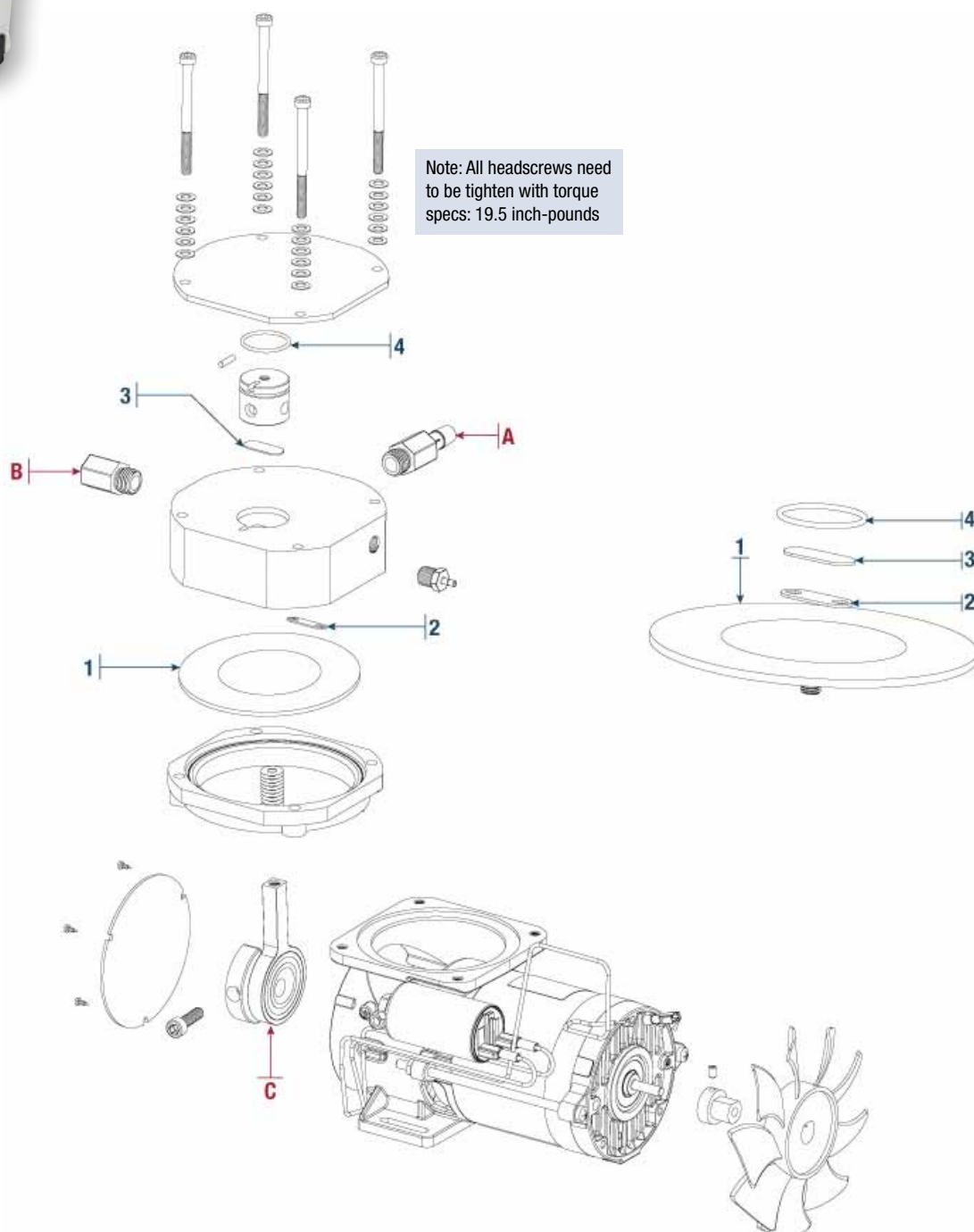
Pump Model (MP/MPC)	Kit CAT. No.
P 6 z-101	402008-01
P 12 Z-101	402008-01
P 23 Z-301	402041-02



# Chemical Duty PTFE Dry Vacuum Pumps



## DRYFAST® Model 2014



### Single Head Service Kit CAT. No. 2047K-01 for Model 2014

ID	Qty.	Description
<b>Single Head Service Kit 2047K-01</b>		
1	1	Diaphragm, PTFE
2	1	Intake Valve
3	1	Exhaust Valve, perfluoroelastomer
4	1	O-Ring

### Individual Spare Parts for Model 2014

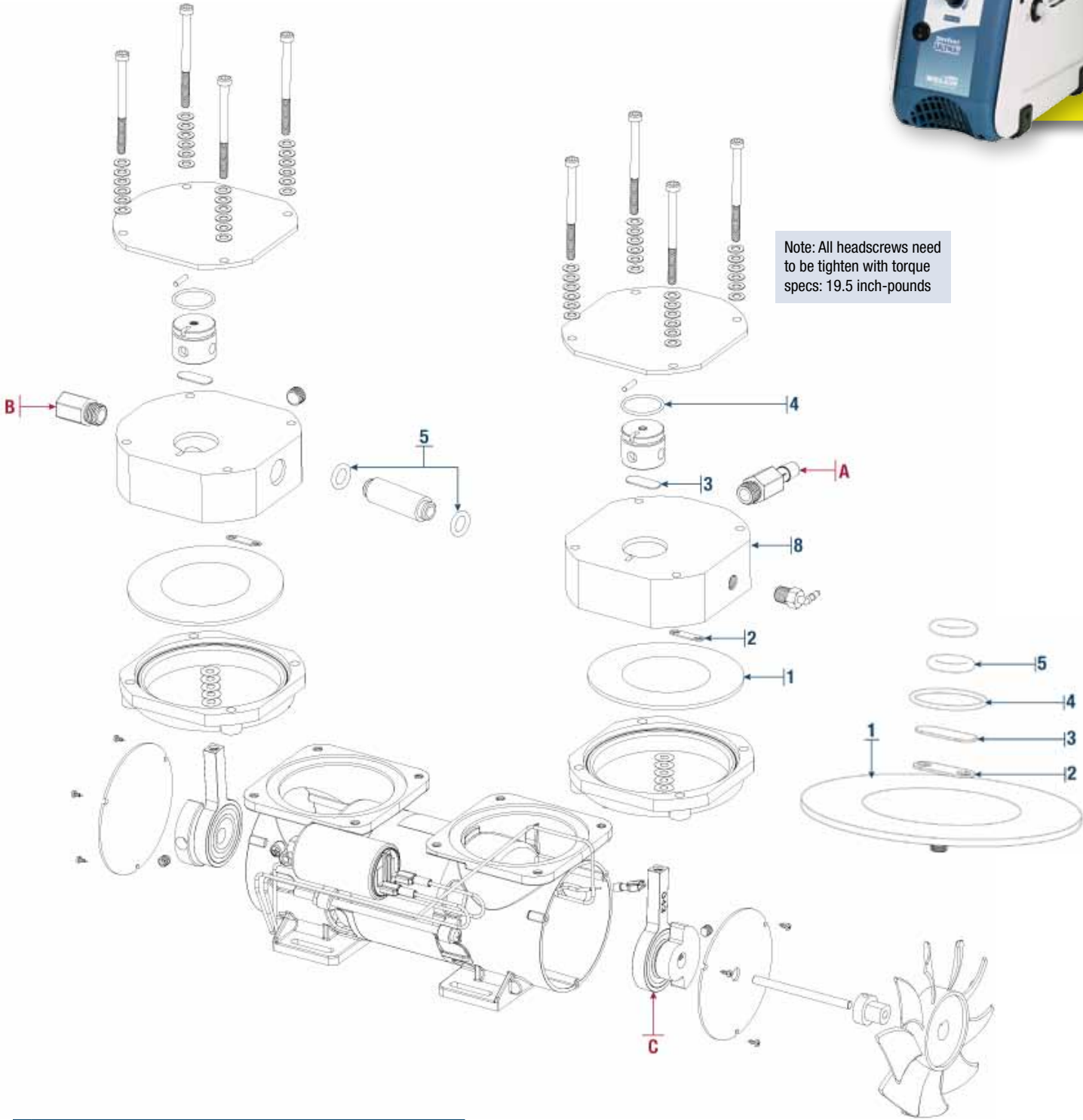
ID	Qty.	CAT. No.	Description
A	1	61-3904	Intake Adapter, 14M x 3/8" Barb
B	1	61-3901	Exhaust adapter, 14M x 1/8" FPT
C	1	2014K-01	Con Rod Assembly

# Chemical Duty PTFE Dry Vacuum Pumps

## DRYFAST ULTRA® Models 2032/2042



Note: All headscrews need to be tighten with torque specs: 19.5 inch-pounds



### Single Head Service Kit CAT. No. 2047K-01 for Models 2032/2042

ID	Qty.	Description
Single Head Service Kit 2047K-01		
1	1	Diaphragm, PTFE
2	1	Intake Valve
3	1	Exhaust Valve
4	1	O-Ring
5	2	O-Ring

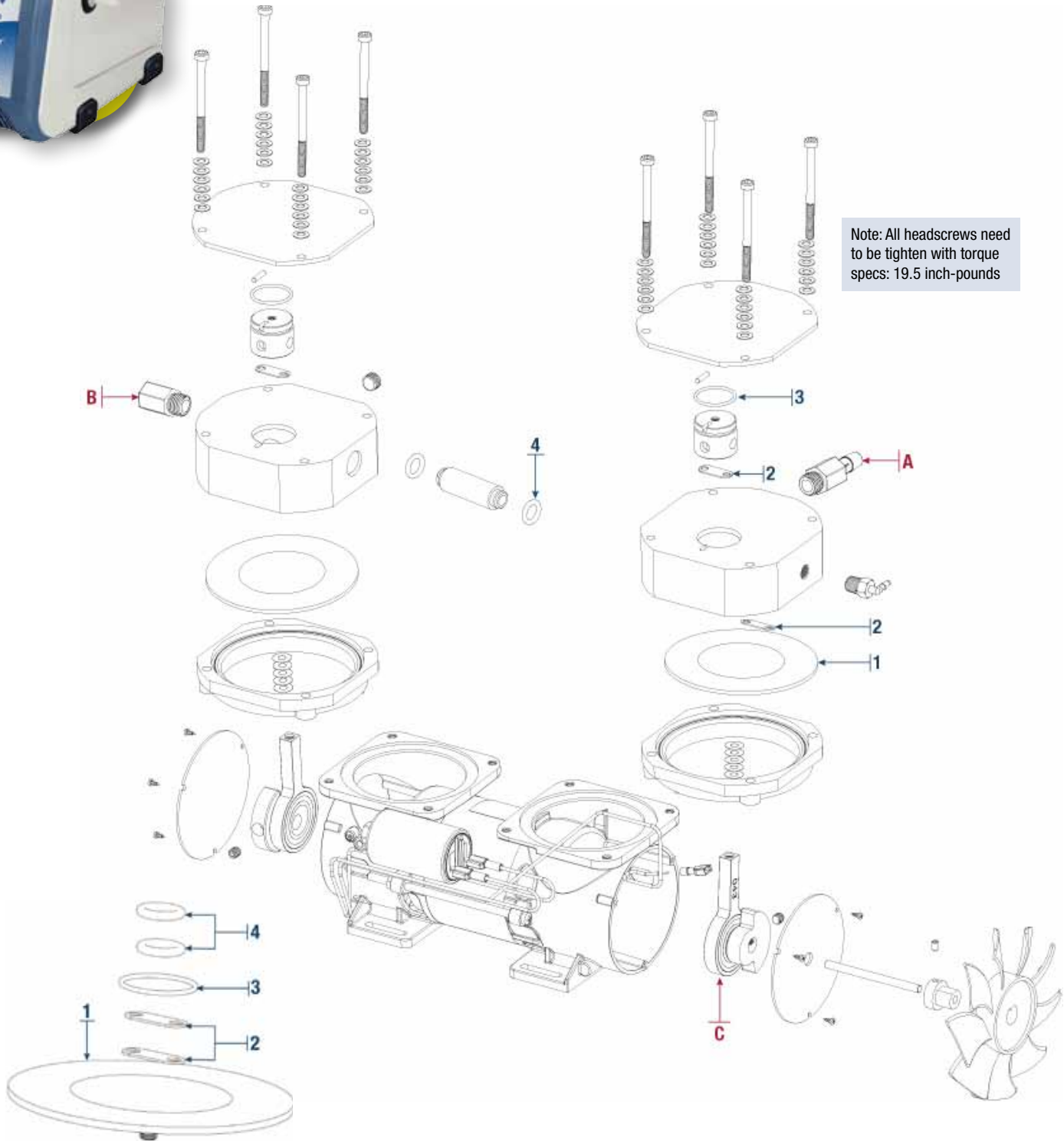
### Individual Spare Parts for Models 2032/2042

ID	Qty.	CAT. No.	Description
A	1	61-3904	Intake Adapter, 14M x 3/8" Barb
B	1	61-3901	Exhaust adapter, 14M x 1/8" FPT
C	1	2014K-01	Con Rod Assembly

# Chemical Duty PTFE Dry Vacuum Pumps



## DRYFAST® Models 2034/2044



### Single Head Service Kit CAT. No. 2037K-01 for Models 2034/2044

ID	Qty.	Description
Single Head Service Kit 2037K-01		
1	1	Diaphragm, PTFE
2	1	Intake/Exhaust Valve
3	1	O-Ring
4	1	O-Ring

### Individual Spare Parts for Models 2034/2044

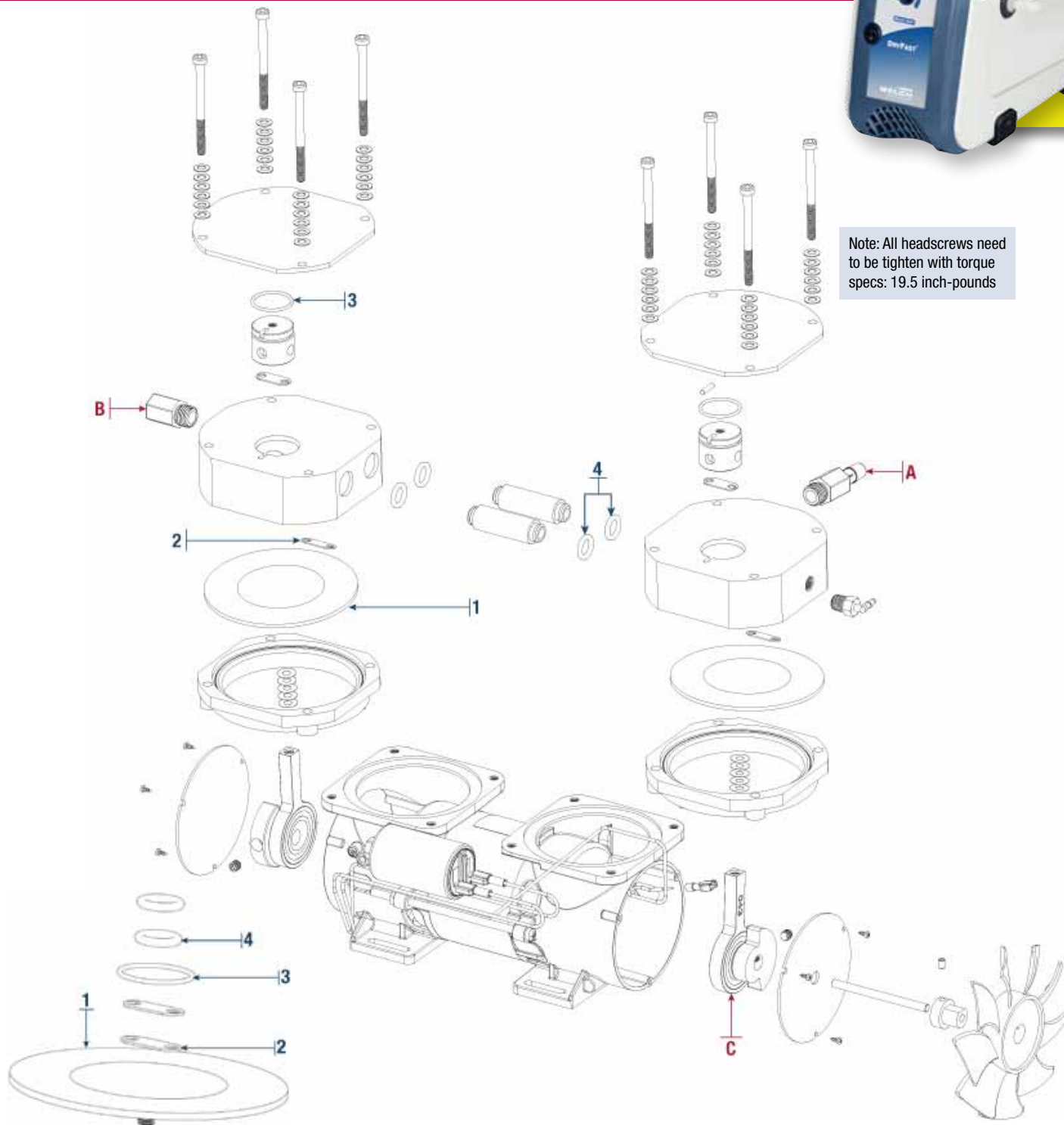
ID	Qty.	CAT. No.	Description
A	1	61-3904	Intake Adapter, 14M x 3/8" Barb
B	1	61-3901	Exhaust adapter, 14M x 1/8" FPT
C	1	2014K-01	Con Rod Assembly

# Chemical Duty PTFE Dry Vacuum Pumps

DRYFAST® Models 2037/2047



Note: All headscrews need to be tightened with torque specs: 19.5 inch-pounds



**Single Head Service Kit**  
CAT. No. 2037K-01 for Models 2037/2047

ID	Qty.	Description
<b>Single Head Service Kit 2037K-01</b>		
1	1	Diaphragm, PTFE
2	2	Intake Valve, perfluoroelastomer
3	1	O-Ring
4	2	O-Ring

**Individual Spare Parts for Models 2037/2047**

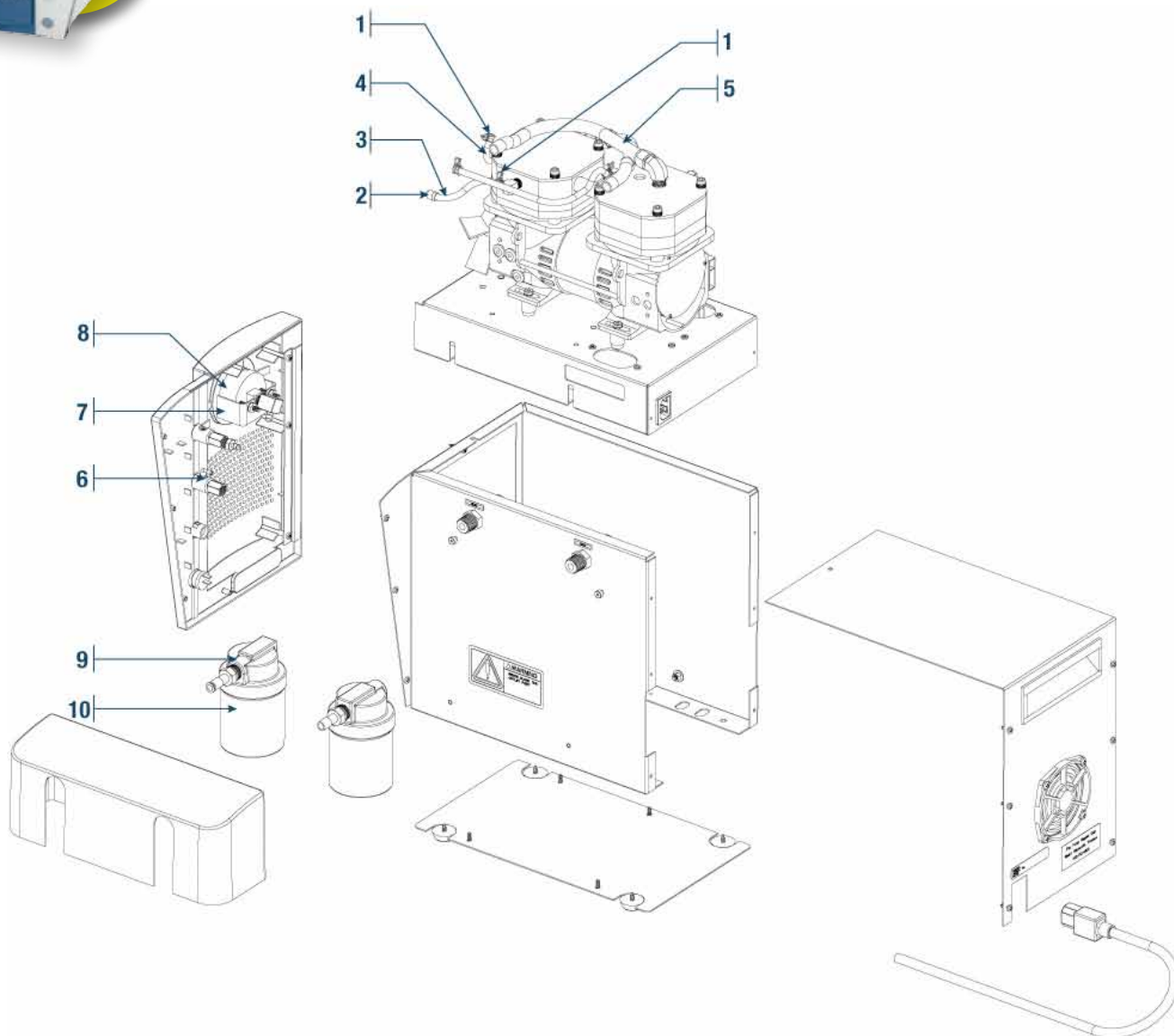
ID	Qty.	CAT. No.	Description
A	1	61-3904	Intake Adapter, 14M x 3/8" Barb
B	1	61-3901	Exhaust adapter, 14M x 1/8" FPT
C	1	2014K-01	Con Rod Assembly



# Chemical Duty PTFE Dry Vacuum Pumps



## Self-Cleaning Dry Vacuum Systems™ Models 2025/2026/2027/2028



### Tubing Service Kit CAT. No. 2025K-06 for Models 2025/2026/2027/2028

ID	Qty.	Description
<b>Tubing Service Kit 2025K-06</b>		
1	4	Hose Clamp 5/16"
2	2	Hose Clamp 1/8"
3	0.35 ft.	Tubing
4	1.60 ft.	Tubing
5	1.30 ft.	Tubing
6	1	Gasket
7	1	U-Clamp

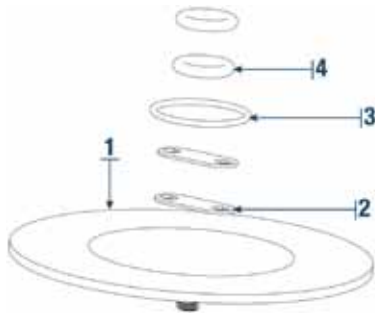
### Individual Spare Parts for Models 2025/2026/2027/2028

ID	Qty.	CAT. No.	Description
8 <sup>1</sup>	1	726123	Analog Vacuum Gauge 2" Dial (mbar/kPa)
8 <sup>1</sup>	1	726125	Analog Vacuum Gauge 2" Dial (in Hg/cm Hg)
9	2	1423B	Glass Jar Assembly
10	2	1415B	Replacement Glass Jar

1. For models 2025 and 2026

# Chemical Duty PTFE Dry Vacuum Pumps

## Self-Cleaning Dry Vacuum Systems™ Models 2025/2026/2027/2028

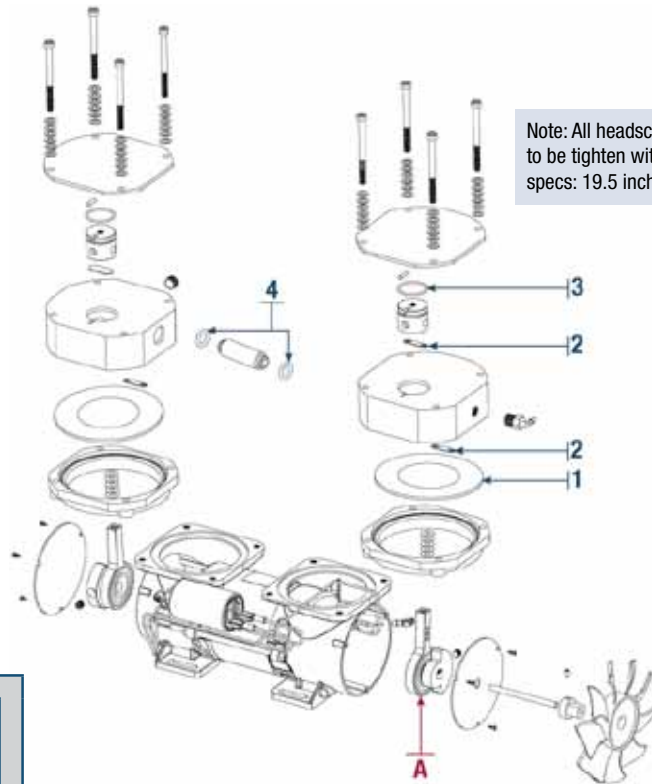


### Single Head Service Kit CAT. No. 2037K-01 for Model 2025

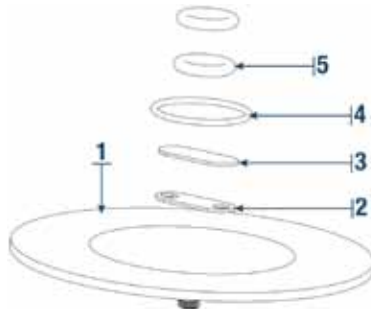
ID	Qty.	Description
1	1	Diaphragm, PTFE
2	2	Intake Valve
3	1	O-Ring
4	2	O-Ring

### Individual Spare Parts for Models 2025

ID	Qty.	CAT. No.	Description
A	1	2014K-01	Con Rod Assembly



Note: All headscrews need to be tightened with torque specs: 19.5 inch-pounds

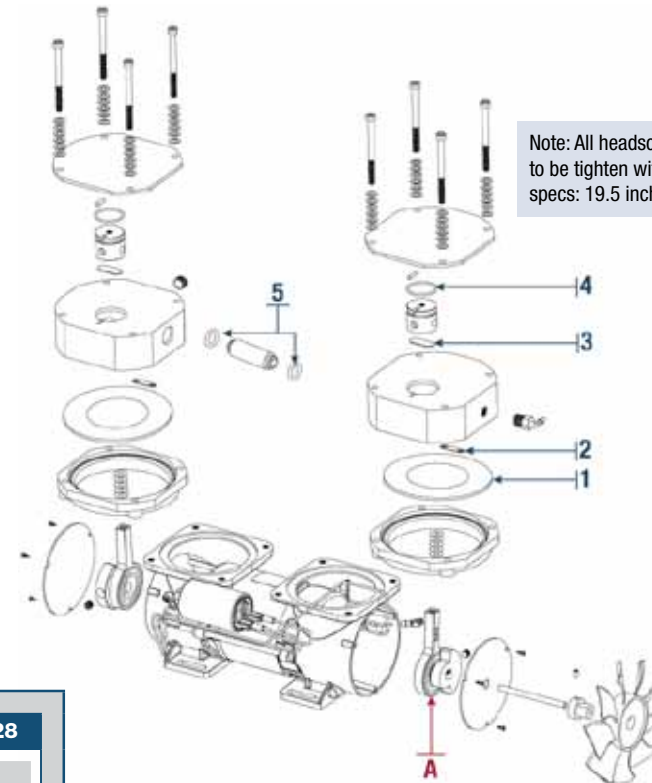


### Single Head Service Kit CAT. No. 2047K-01 for Models 2026/2027/2028

ID	Qty.	Description
1	1	Diaphragm, PTFE
2	2	Intake Valve
3	1	Exhaust Valve
4	1	O-Ring
5	2	O-Ring

### Individual Spare Parts for Models 2026/2027/2028

ID	Qty.	CAT. No.	Description
A	1	2014K-01	Con Rod Assembly

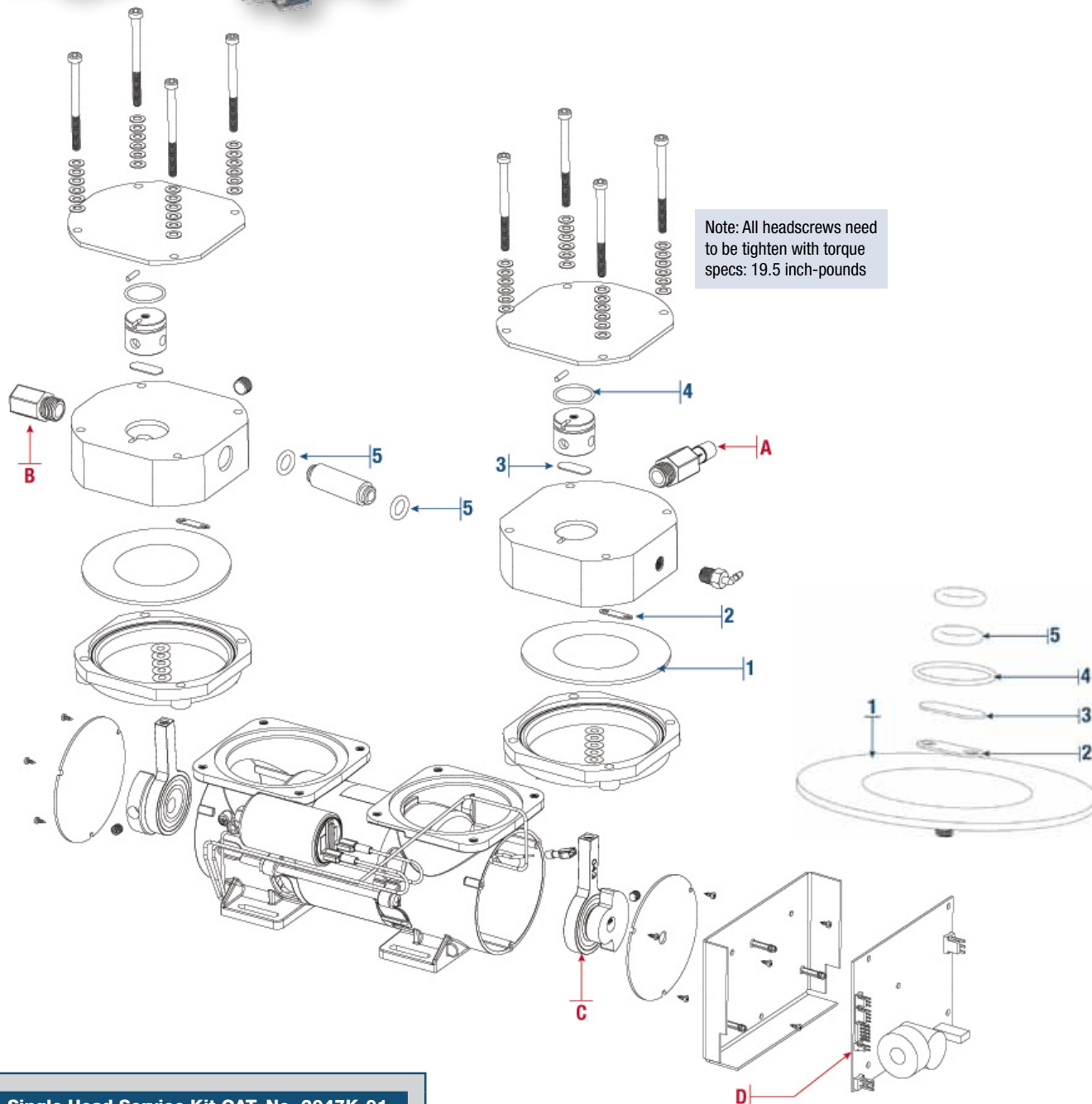


Note: All headscrews need to be tightened with torque specs: 19.5 inch-pounds

# Chemical Duty PTFE Dry Vacuum Pumps



## VARIFlow Models 8115D-20/2042D-20



Note: All headscrews need to be tighten with torque specs: 19.5 inch-pounds

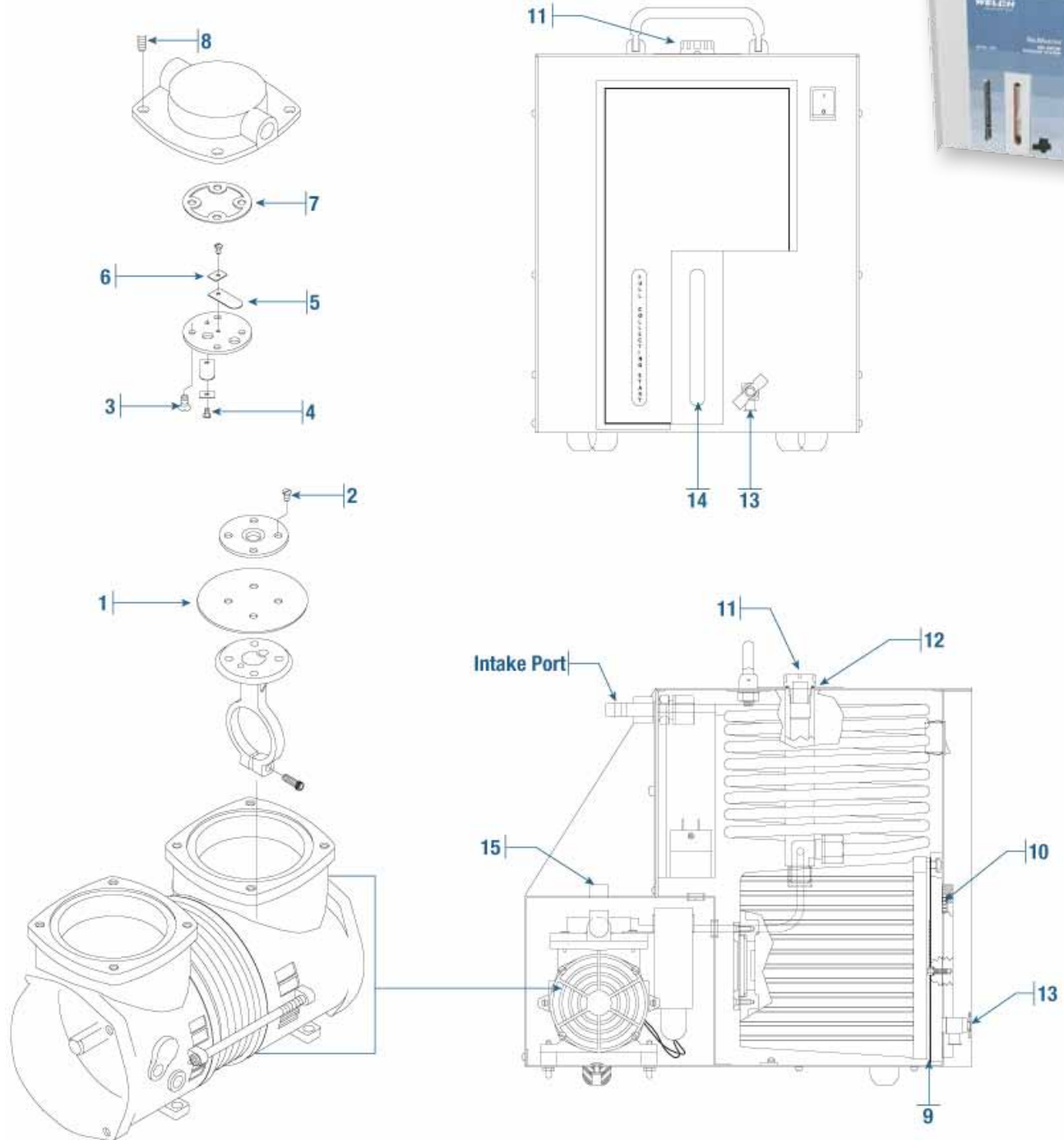
### Single Head Service Kit CAT. No. 2047K-01 for Models 8115D/2042D-20

ID	Qty.	Description
<b>Single Head Service Kit 2047K-01</b>		
1	1	Diaphragm, PTFE
2	2	Intake Valve
3	1	Exhaust Valve
4	1	O-Ring
5	2	O-Ring

### Individual Spare Parts for Models 8115D/2042D-20

ID	Qty.	CAT. No.	Description
A	1	61-3904	Intake Adapter, 14M x 3/8" Barb
B	1	61-3901	Exhaust adapter, 14M x 1/8" FPT
C	1	2014K-01	Con Rod Assembly
D	1	51-4329	Controller Board

## GELMASTER™ Model 1426



### GELMASTER™ Two Head Service Kit CAT. No 1426K-01 for Model 1426

ID	Qty.	Description	ID	Qty.	Description
<b>GELMASTER™ Two Head Service Kit 1426K-01</b>					
1	2	Diaphragm	8	8	Screw
2	8	Screw	9	1	Vapor Collector Gasket
3	8	Screw	10	2	Window Holder O-Ring
4	4	Screw	11	1	Fillers Plug
5	4	Flapper Valve	12	1	Filler Plug O-Ring
6	4	Flapper Valve Keeper Strip	13	1	Drain Valve
7	2	Valve Plate Gasket	14	1	Vapor Collector Window
			15	1	Exhaust Silencer



# MP/MPC High Flow Dry Vacuum Pumps

Models 301E/301T/601E/301Z/601T/901Z/1201E/1201T/1801Z/2401E



MPC 301 E



MPC 301Z / MPC 601 E



MPC 601 T / MPC 901 Z / MPC 1201 E



MPC 1201 T / MPC 1801 Z / MPC 2401 E

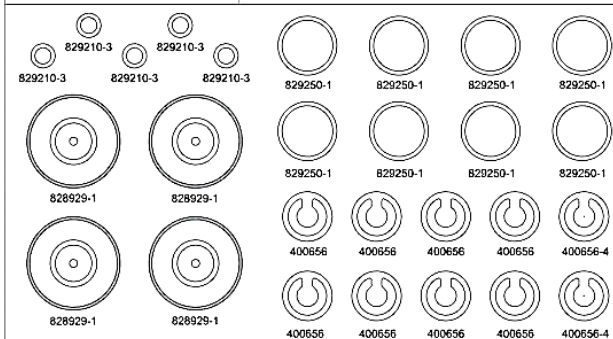


LVS 105 T-10 ef

## Chemical and Standard Duty Diaphragm Pumps & Laboratory Vacuum Systems (LVS)

**Welch-Illvac**

Wartungssatz für Membranpumpe /  
Maintenance kit for diaphragm pump  
MPC 105 T Bestell-Nr. / Order no.: 402044-US



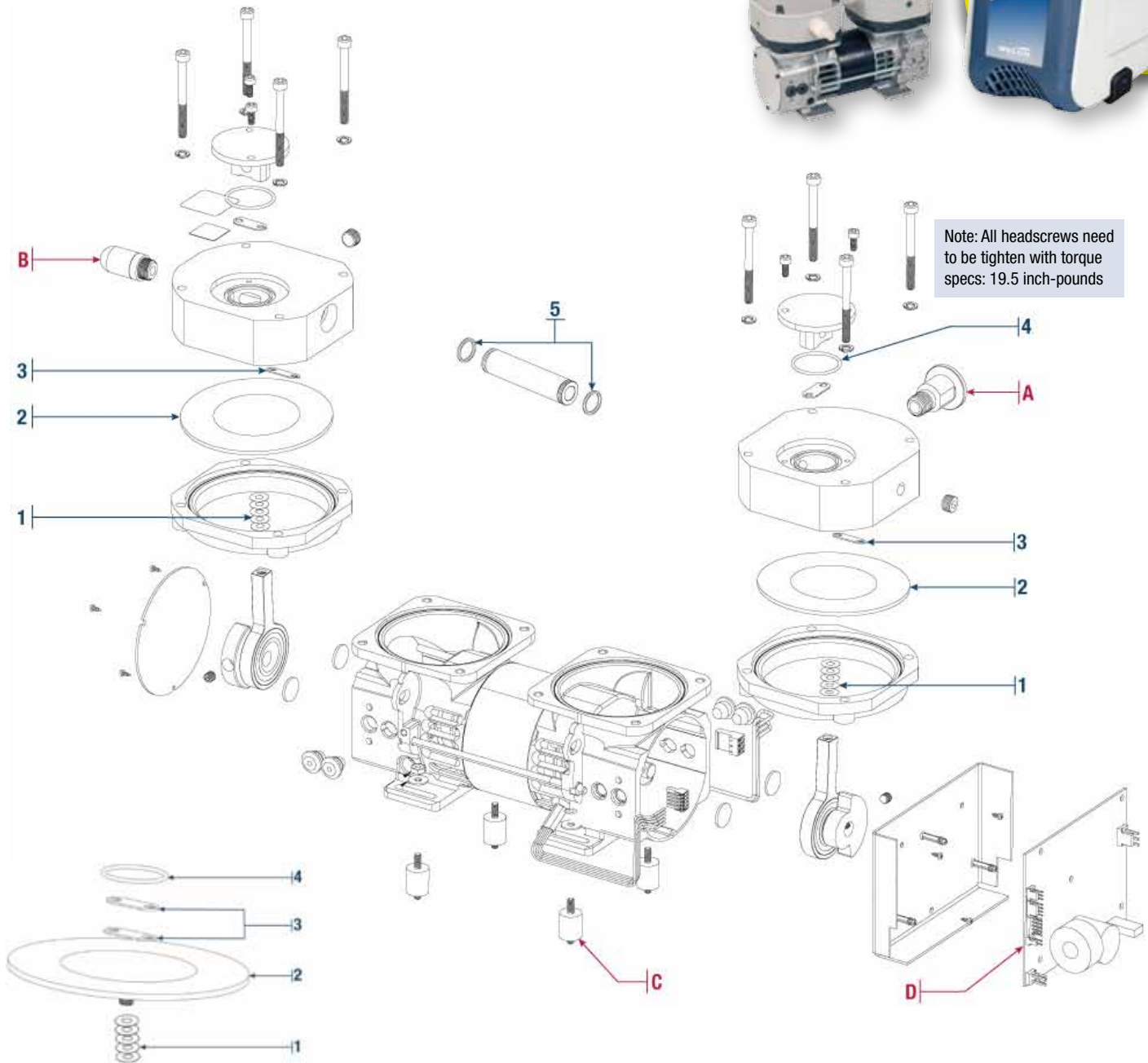
Pump Model (MP/MPC)	CAT. Kit No.	Description
301 E	402046-US	Complete diaphragm, valve and o-ring replacement kit
601 E, 301 Z, 301 Z ef	402041-US	Complete diaphragm, valve and o-ring replacement kit
1201 E, 901 Z, 601 T, 601 T ef, 301 V	402042-US	Complete diaphragm, valve and o-ring replacement kit
2401 E, 1801 Z, 1201 T, 1201 T ef	402043-US	Complete diaphragm, valve and o-ring replacement kit
LVS 105 T-10 ef	402044-US	Complete diaphragm, valve and o-ring replacement kit
301 E, 301 Z ef, 601 E, 301 E, 301 Z ef, 601 E, 1201 T ef, 2401 E	402106-US	MP/MPC Tool Kit, 19mm wrench, Allen key and adjustable spanner wrench.

# Standard Duty Dry Vacuum Pumps

## VARIFlow Models 8111D-25/8113D-25



Note: All headscrews need to be tighten with torque specs: 19.5 inch-pounds



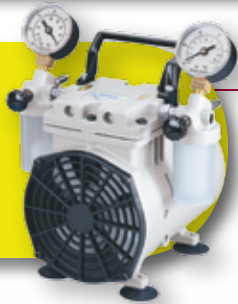
### Two Head Service Kit CAT. No. 8111K-01 for Models 8111D-25/8113D-25

ID	Qty.	Description
<b>Service Kit 8111K-01</b>		
1	12	Shims
2	2	Diaphragm, EPDM
3	4	Valves
4	2	O-Ring, cover
5	2	O-Ring, cont-tube

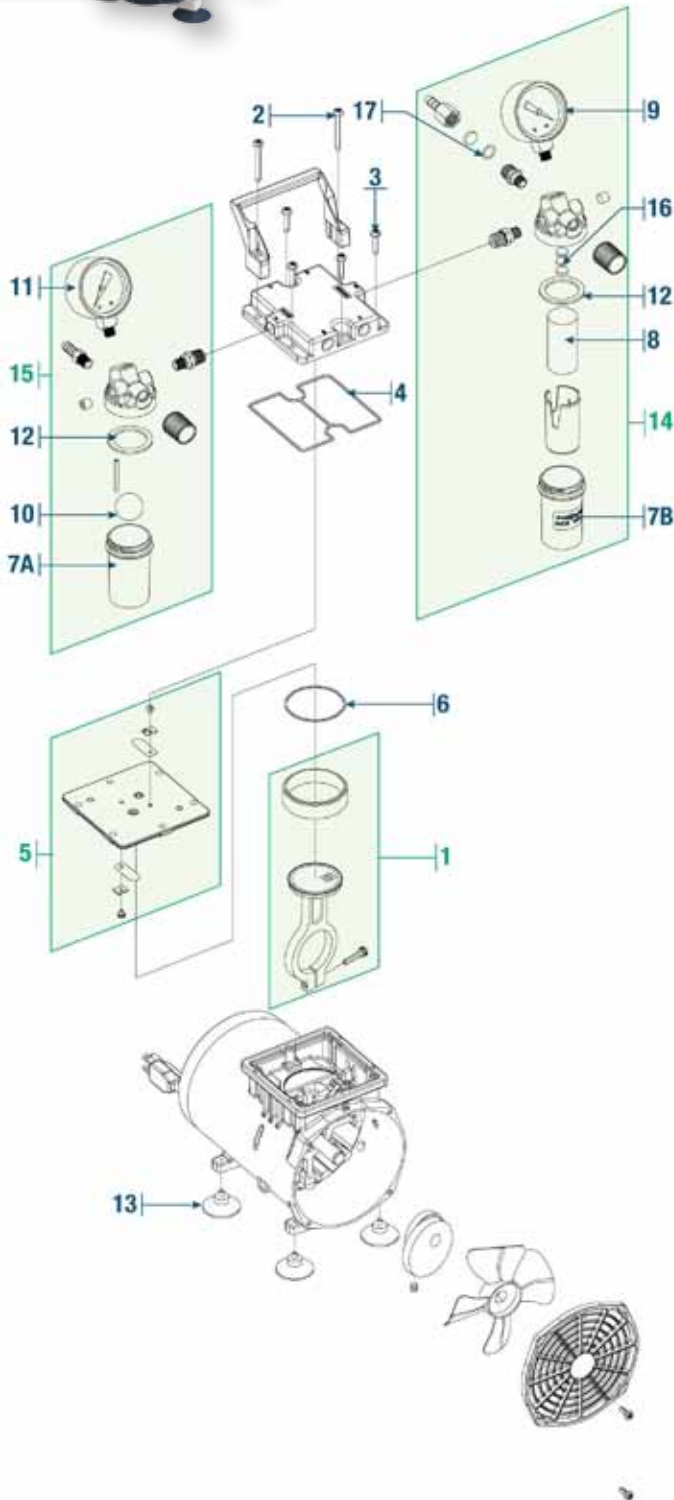
### Individual Spare Parts for Models 8111D-25/8113D-25

ID	Qty.	CAT. No.	Description
A	1	51-4354	Intake Fitting NW16 x 1/4 NPT
B	1	1412C	Exhaust Silencer
C	1	66-0314	Vibration Mount
D	1	51-4329	Controller Board

# Standard Duty Dry Vacuum Pumps



## WOB-L® Models 2522B-01/2522C-02/2534B-01



### Comprehensive Service Kits for Models 2522B-01/2522C-02/2534B-01

ID	Qty.	CAT. No.	Description	Service Kit CAT. No. 2522K-03	Service Kit CAT. No. 2534K-03	Seal Service Kit CAT. No. 2522K-04	Feet Service Kit CAT. No. 2500K-04
1	1	2522K-01 2534K-01	Connecting Rod Ass'y	1	----	----	----
2	1	Note 1	Handle Screw	2	2	----	----
3	1	Note 1	Head Screw	4	4	----	----
4	1	Note 1	Gasket Seal	1	1	1	----
5	1	2565K-02	Valve Plate Assembly <sup>2</sup>	1	1	----	----
6	1	Note 1	O-Ring	1	1	1	----
7A	1	Note 1	Jar Plastic	1	1	1	----
7B	1	Note 1	Jar Plastic	1	1	1	----
8	1	Note 1	Filter Element	1	1	1	----
10	2	Note 1	Ball	1	1	1	----
12	2	Note 1	Gasket	2	2	2	----
13	1	Note 1	Rubber Suction Feet	----	----	----	4
16	1	Note 1	Replacement Filters	3	3	3	----
17	1	Note 1	O-Ring	1	1	1	----

### Individual Spare Parts for Model 2522B-01 (115V 60Hz)

ID	Qty.	CAT. No.	Description
9	1	726025	Pressure Gauge
11	1	726021	Vacuum Gauge
14	1	2522K-06	Pressure Regulator Assembly
15	1	2522K-05	Vacuum Regulator Assembly

### Individual Spare Parts for Model 2522C-02 (230V 50Hz USA)

ID	Qty.	CAT. No.	Description
9	1	726025	Pressure Gauge
11	1	726024	Vacuum Gauge
14	1	2522K-06	Pressure Regulator Assembly
15	1	2522K-05	Vacuum Regulator Assembly

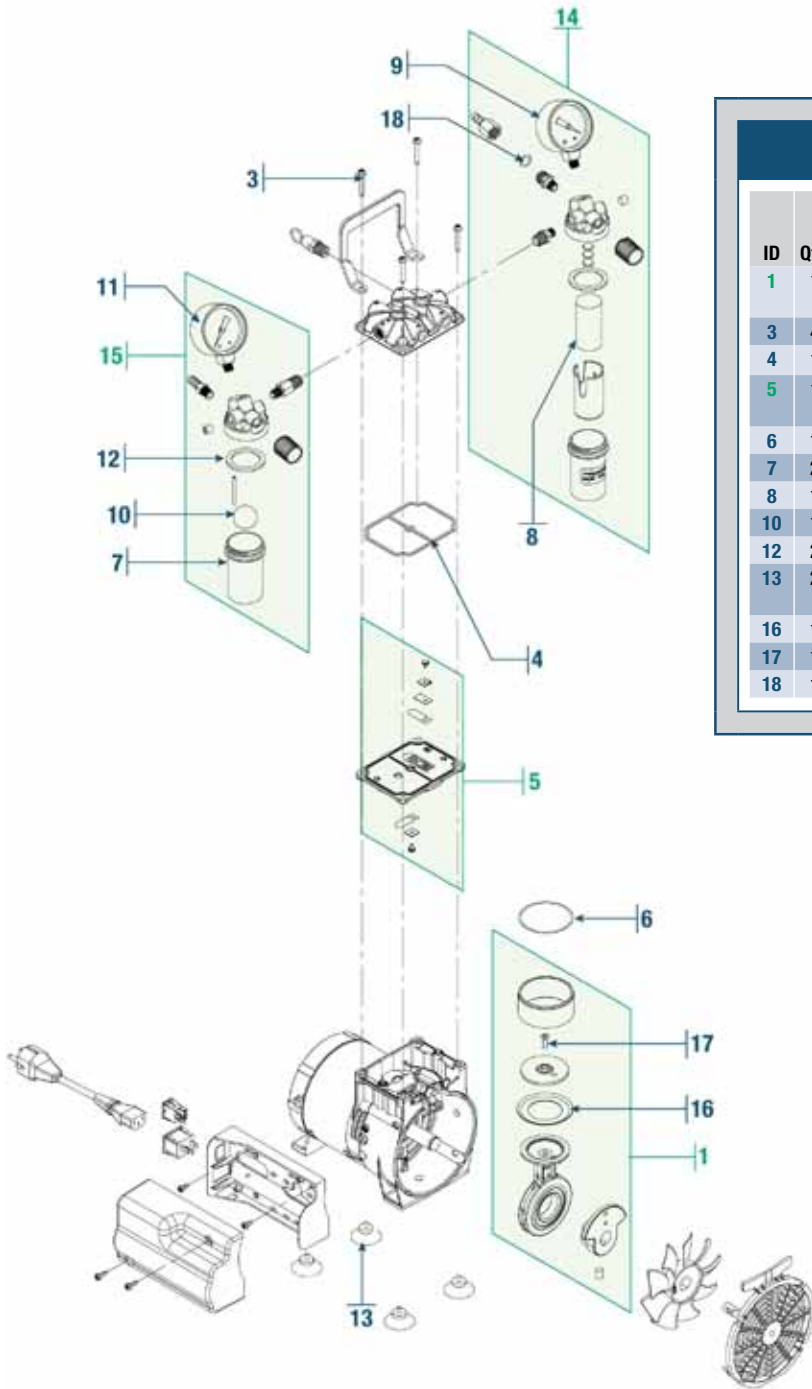
### Individual Spare Parts for Model 2534B-01 (115V 60Hz)

ID	Qty.	CAT. No.	Description
9	1	726025	Pressure Gauge
11	1	726021	Vacuum Gauge
14	1	2522K-06	Pressure Regulator Assembly
15	1	2522K-05	Vacuum Regulator Assembly

Note 1. These parts are not available separately, but are supplied in the repair kits.  
2. 2565K-02 Valve Plate Assembly also includes O-Rings #4 and #6.

# Standard Duty Dry Vacuum Pumps

WOB-L® Models 2522C-05/2534C-02



## Comprehensive Service Kits for Models 2522C-05/2534C-02

ID	Qty.	CAT. No.	Description	Service Kit CAT. No. 2546K-03	Seal Service Kit CAT. No. 2546K-04	Feet Service Kit CAT. No. 2500K-04
1	1	2534K-10	Connecting Rod Assembly	1	----	----
3	4	Note 1	Head Screw	4	----	----
4	1	Note 1	Gasket Seal	1	1	----
5	1	2567K-02	Valve Plate Assembly <sup>2</sup>	1	----	----
6	1	Note 1	O-Ring	1	1	----
7	2	Note 1	Jar Plastic	1	1	----
8	1	Note 1	Filter Element	1	1	----
10	1	Note 1	Ball	1	1	----
12	2	Note 1	Gasket	1	1	----
13	2	Note 1	Rubber Suction Feet	1	1	4
16	1	Note 1	Piston Cup Seal	----	1	----
17	1	Note 1	Retainer Screw	----	1	----
18	1	Note 1	O-Ring	1	1	----

## Individual Spare Parts for Models 2522C-05 (100V 50/60Hz)

ID	Qty.	CAT. No.	Description
9	1	726025	Pressure Gauge
11	1	726022	Vacuum Gauge
14	1	2522K-06	Pressure Regulator Assembly
15	1	2522K-05	Vacuum Regulator Assembly

## Individual Spare Parts for Model 2534C-01 (230V 50/60Hz USA)

ID	Qty.	CAT. No.	Description
9	1	726025	Pressure Gauge
11	1	726022	Vacuum Gauge
14	1	2522K-06	Pressure Regulator Assembly
15	1	2522K-05	Vacuum Regulator Assembly

## Individual Spare Parts for Model 2534C-02 (230V 50/60Hz EU)

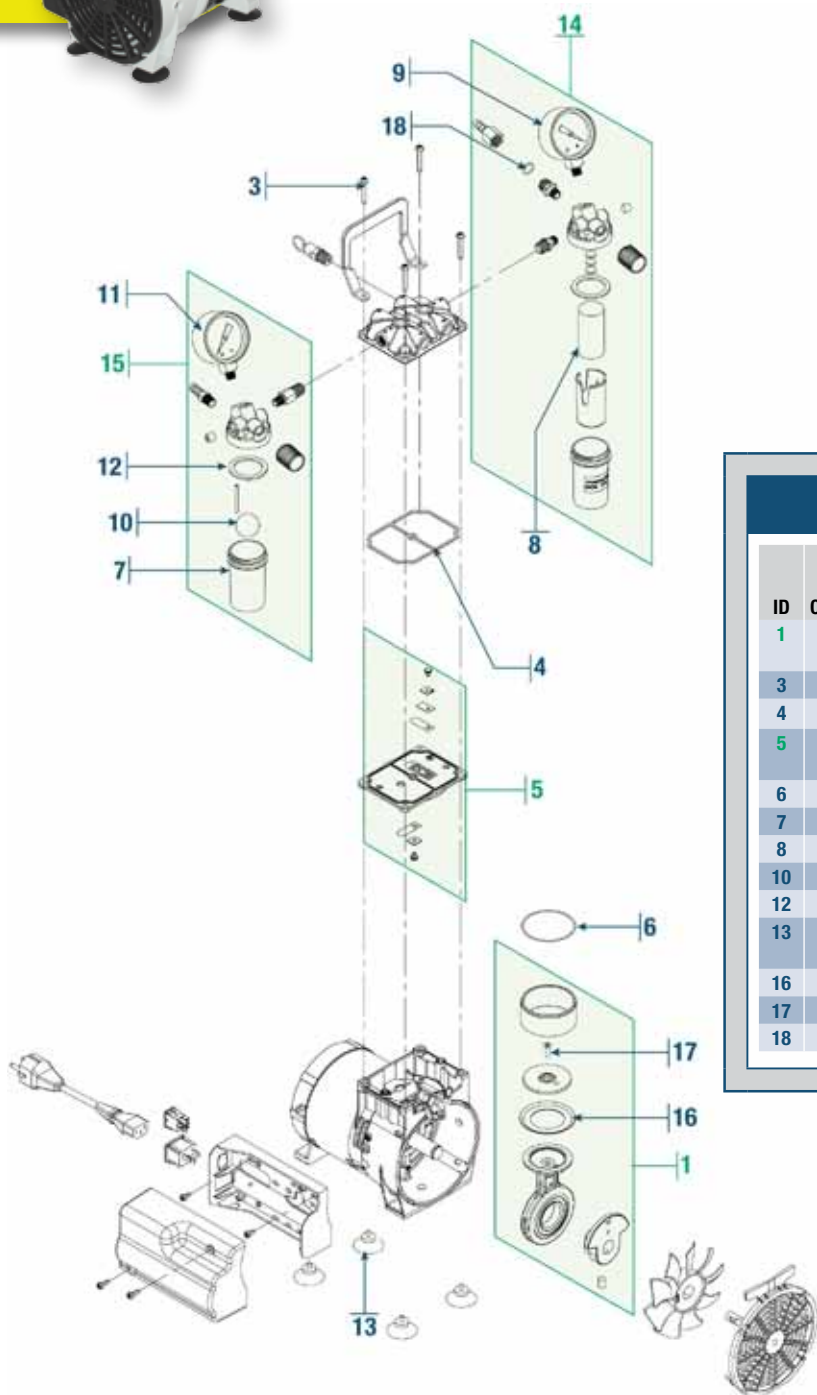
ID	Qty.	CAT. No.	Description
9	1	726025	Pressure Gauge
11	1	726024	Vacuum Gauge
14	1	2522K-06	Pressure Regulator Assembly
15	1	2522K-05	Vacuum Regulator Assembly

Note 1. These parts are not available separately, but are supplied in the repair kits.  
 2. 2565K-02 Valve Plate Assembly also includes O-Rings #4 and #6.



# Standard Duty Dry Vacuum Pumps

## WOB-L® Models 2546B-01/2546C-01/2546C-02



**Comprehensive Service Kits for Models  
2546B-01/2546C-01/2546C-02**

ID	Qty.	Part Number	Description	Service Kit CAT. No. 2546K-03	Seal Service Kit CAT. No. 2546K-04	Feet Service Kit CAT. No. 2500K-04
1	1	2546K-01	Connecting Rod Assembly	1	----	----
3	4	Note 1	Head Screw	4	----	----
4	1	Note 1	Gasket Seal	1	1	----
5	1	2567K-02	Valve Plate Ass'y Kit <sup>2</sup>	1	----	----
6	1	Note 1	O-Ring Cylinder	1	1	----
7	2	Note 1	Jar Plastic	1	1	----
8	1	Note 1	Filter Element	1	1	----
10	1	Note 1	Ball	1	1	----
12	2	Note 1	Gasket	1	1	----
13	2	Note 1	Rubber Suction Feet	1	1	4
16	1	Note 1	Piston Cup Seal	----	1	----
17	1	Note 1	Retainer Screw	----	1	----
18	1	Note 1	O-Ring	1	1	----

**Individual Spare Parts for Models  
2546B-01 (115V 60Hz) 2546C-01 (230V 50/60Hz)**

ID	Qty.	CAT. No.	Description
9	1	726025	Pressure Gauge
11	1	726021	Vacuum Gauge
14	1	2522K-06	Pressure Regulator Assembly
15	1	2522K-05	Vacuum Regulator Assembly

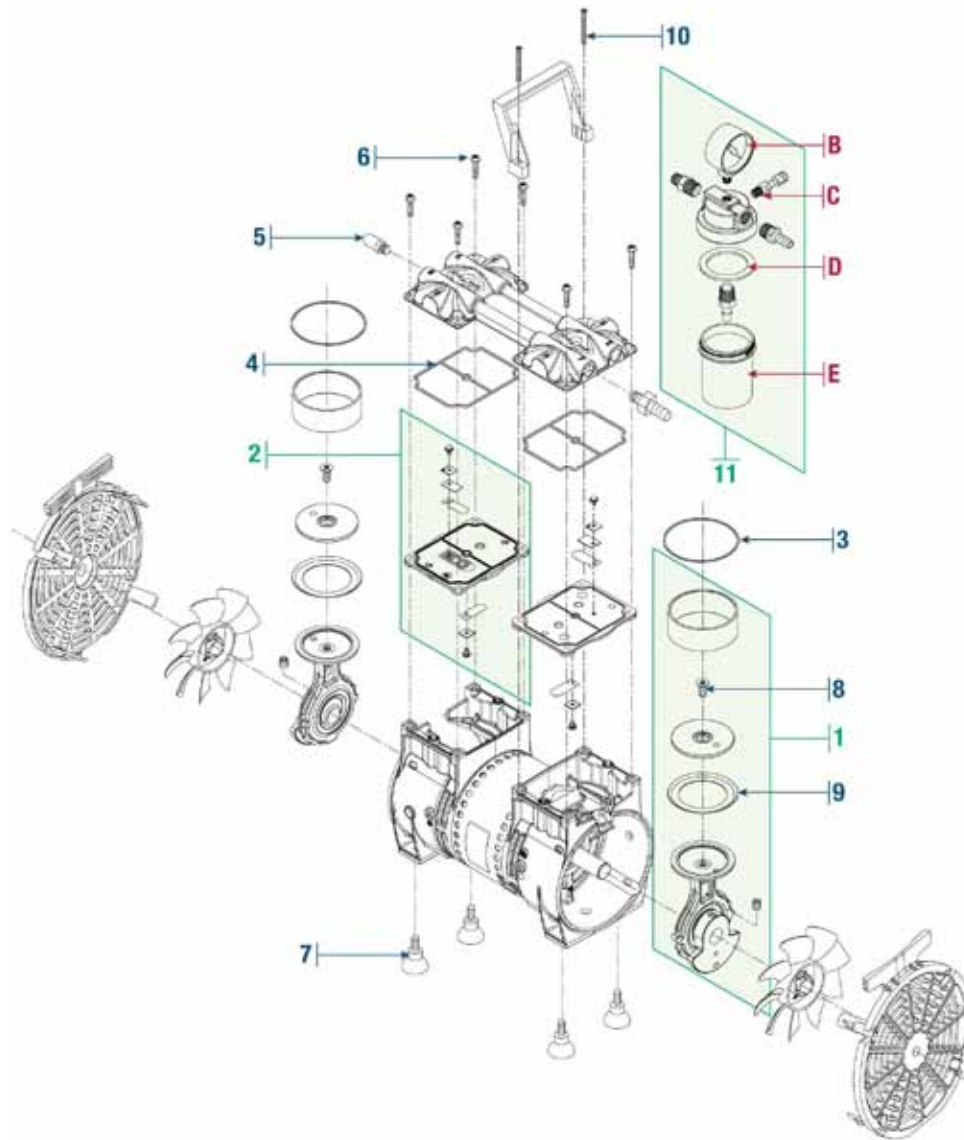
**Individual Spare Parts for Model  
2546C-02 (230V 50/60Hz)**

ID	Qty.	CAT. No.	Description
9	1	726025	Pressure Gauge
11	1	726024	Vacuum Gauge
14	1	2522K-06	Pressure Regulator Assembly
15	1	2522K-05	Vacuum Regulator Assembly

Note 1. These parts are not available separately, but are supplied in the repair kits.  
2. 2565K-02 Valve Plate Assembly also includes O-Rings #4 and #6.

# Standard Duty Dry Vacuum Pumps

WOB-L® Models 2562/2567



## Comprehensive Repair Kits for Models 2562/2567

ID	Qty.	CAT. No.	Description	Service Kit CAT. No. 2567K-03	Seal Service Kit CAT. No. 2567K-04	Feet Service Kit CAT. No. 2500K-04
1	2	2567K-01	Connecting Rod Assembly	2	----	----
2	2	2567K-02	Valve Plate Ass'y Kit	2	----	----
3	2	Note 1	O-Ring Cylinder	2	2	----
4	2	Note 1	Gasket Seal	2	2	----
5	1	1412C	Exhaust Muffler	1	----	----
6	6	Note 1	Head Screw	6	----	----
7	4	2500K-04	Rubber Suction Feet	----	----	4
8	2	Note 1	Retainer Screw	2	----	----
9	2	Note 1	Piston Cup	2	2	----
10	2	Note 1	Handle Screw	2	2	----

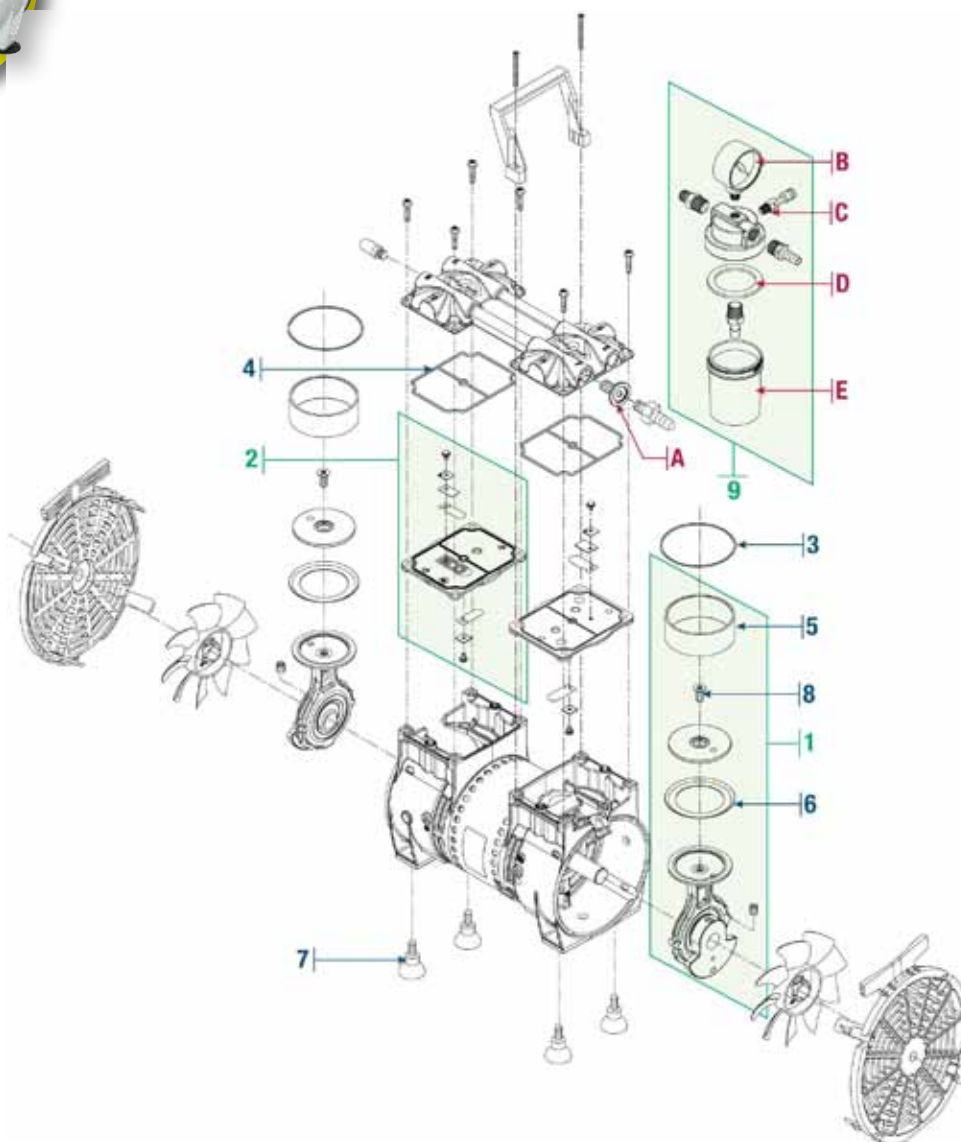
## Individual Spare Parts for Models 2567B-50 /2567C-50

ID	Qty.	Part Number	Description
5	1	1412C	Exhaust Muffler
11	1	2565K-50	Vacuum Regulator Kit with Inlet Separator Jar
B	1	726021	Vacuum Gauge, in. Hg, cm Hg
B	1	726024	Vacuum Gauge - mbar/kPa
C	1	61-5142	Regulating Valve (without Knob #61-5148)
D	1	61-9772	Jar Gasket - PTFE Fluoroelastomer
E	1	1415B	Glass Jar, Inlet Trap
E	1	1415C	Plastic Jar, Inlet Trap

Note 1. These parts are not available separately, but are supplied in the repair kits.

# Standard Duty Dry Vacuum Pumps

## WOB-L® Models 2561/2563



### Comprehensive Repair Kits for Models 2561/2563

ID	Qty.	CAT. No.	Description	Service Kit CAT. No. 2563K-03	Gasket Kit CAT. No. 2567K-04	Feet Service Kit CAT No. 2500K-04
1	2	2563K-01	Connecting Rod Assembly	----	----	----
2	2	2567K-02	Valve Plate Ass'y Kit	2	----	----
3	2	Note 1	O-Ring Cylinder	2	2	----
4	2	Note 1	Gasket Seal	2	2	----
5	2	Note 1	Cylinder Sleeve	2	----	----
6	6	Note 1	Piston Cup	2	2	----
7	4	Note 1	Rubber Suction Feet	----	----	4
8	2	Note 1	Retainer Screw	2	2	----

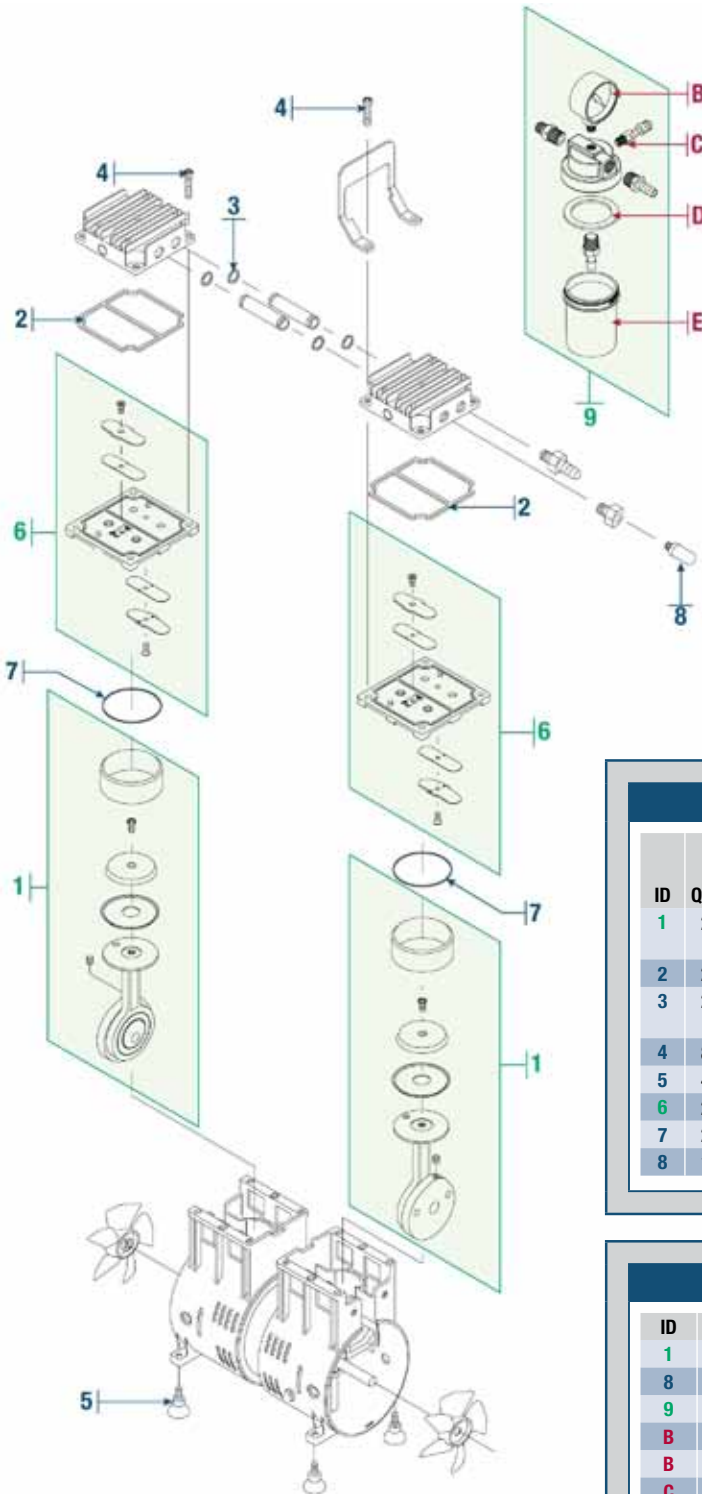
### Individual Spare Parts for Models 2561B-50 /2561C-50/2561C-56

ID	Qty.	Part Number	Description
A	1	51-4354	NW 25 x 1/4" NPT with I.D. 1/4" NPT thread, aluminum
9	1	2565K-50	Vacuum Regulator Kit with Inlet Separator Jar
B	1	726021	Vacuum Gauge, in. Hg, cm Hg
B	1	726024	Vacuum Gauge - mbar/kPa
C	1	61-5142	Regulating Valve (without Knob #61-5148)
D	1	61-9772	Jar Gasket - PTFE Fluoroelastomer
E	1	1415B	Glass Jar, Inlet Trap
E	1	1415C	Plastic Jar, Inlet Trap

Note 1. These parts are not available separately, but are supplied in the repair kits.

# Standard Duty Dry Vacuum Pumps

## WOB-L® Models 2580/2585



### Comprehensive Repair Kits for Models 2580/2585

ID	Qty.	CAT. No.	Description	Service Kit CAT. No. 2585K-03	Gasket Kit CAT. No. 2585K-04	Feet Service Kit CAT No. 2500K-04
1	2	2585K-01	Connecting Rod Assembly Kit	2	-	-
2	2	Note 1	Gasket Seal	2	2	-
3	2	Note 1	O-Ring, Connector Tube	4	4	-
4	8	Note 1	Head Screw	8	-	-
5	4	Note 1	Rubber Suction Feet	-	-	4
6	2	2585K-02	Valve Plate Ass'y Kit	2	-	-
7	2	Note 1	O-Ring Cylinder	2	2	-
8	1	1412C	Muffler	1	-	-

### Individual Spare Parts for Models 2580/2585

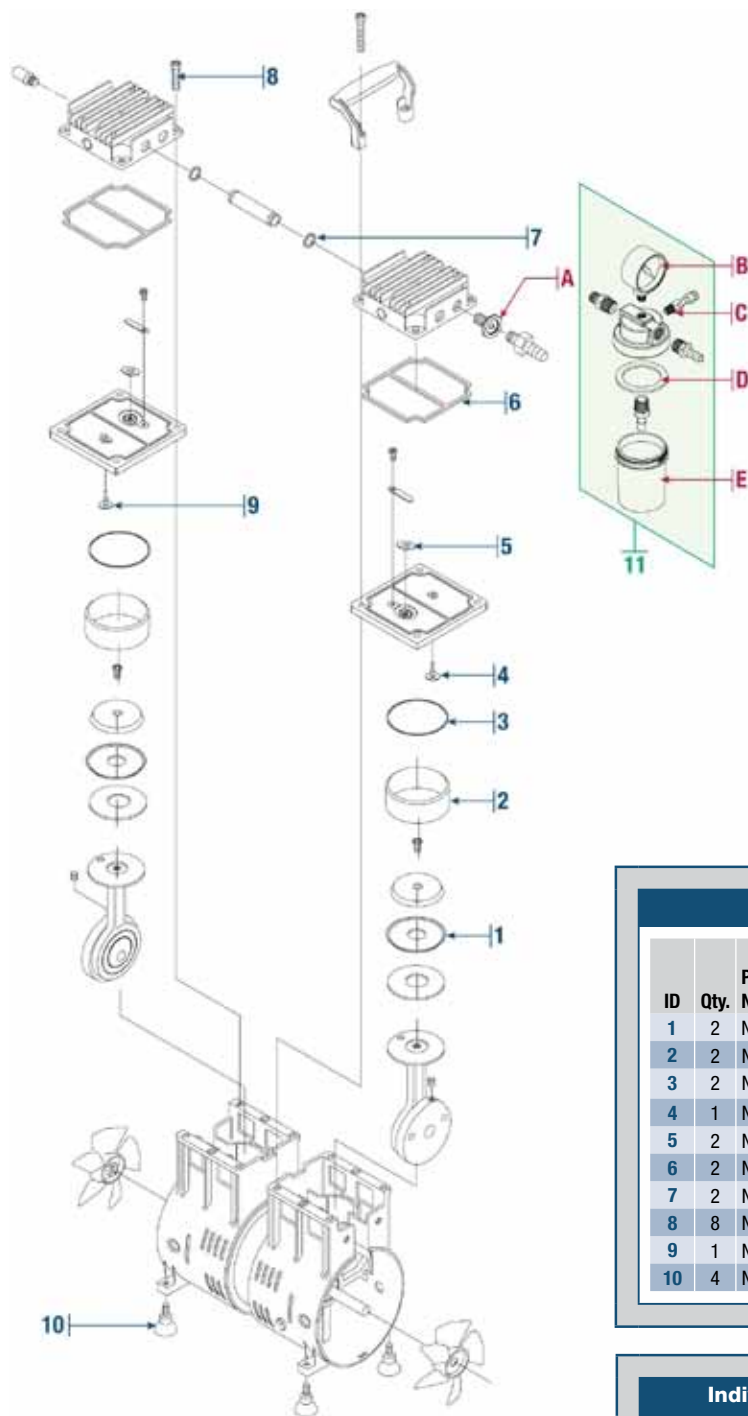
ID	Qty.	Part Number	Description
1	1	2585K-01	Connecting Rod Assembly Kit
8	1	1412C	Muffler
9	1	2585K-50	Vacuum Regulator Kit with Inlet Separator Jar
B	1	726021	Vacuum Gauge, in. Hg, cm Hg
B	1	726024	Vacuum Gauge - mbar/kPa
C	1	61-5142	Regulating Valve (without Knob #61-5148)
D	1	61-9772	Jar Gasket - PTFE Fluoroelastomer
E	1	1415B	Glass Jar, Inlet Trap
E	1	1415C	Plastic Jar, Inlet Trap

Note 1. These parts are not available separately, but are supplied in the repair kits.



# Standard Duty Dry Vacuum Pumps

## WOB-L® Models 2581B-24/50, 2581C-24/50



2581B-24



2581B-50

### Comprehensive Repair Kits for Model 2581

ID	Qty.	Part Number	Description	Service Kit CAT. No. 2581K-03	Gasket Kit CAT. No. 2581K-04	Feet Service Kit CAT. No. 2500K-04
1	2	Note 1	Piston Cup	2	----	----
2	2	Note 1	Cylinder Sleeve	2	----	----
3	2	Note 1	O-Ring Cylinder	2	----	----
4	1	Note 1	Valve Intake / Intake Stage	1	1	----
5	2	Note 1	Valve Exhaust	2	2	----
6	2	Note 1	O-Ring Valve Plate	2	2	----
7	2	Note 1	O-Ring Connector Tube	2	2	----
8	8	Note 1	Head Screw	6	----	----
9	1	Note 1	Valve Intake/Exhaust Stage	1	1	----
10	4	Note 1	Rubber Suction Feet	----	----	4

### Individual Spare Parts for Models 2581B-50 /2581C-50

ID	Qty.	Part Number	Description
A	1	624473	NW 25 x 3/8" NPT with I.D. 3/8" NPT thread
11	1	2585K-50	Vacuum Regulator Kit with Inlet Separator Jar
B	1	726021	Vacuum Gauge, in. Hg, cm Hg
B	1	726024	Vacuum Gauge - mbar/kPa
C	1	61-5142	Regulating Valve (without Knob #61-5148)
D	1	61-9772	Jar Gasket - PTFE Fluoroelastomer
E	1	1415B	Glass Jar, Inlet Trap
E	1	1415C	Plastic Jar, Inlet Trap

Note 1. These parts are not available separately, but are supplied in the repair kits.

## Aspiration System Model 2515

### Replacement Jars for Aspiration Stations

Spare receiver kit (1475K-20) includes a 1.2 liter autoclavable jar, 6ft. of tubing, jar lid gasket and two hydrophobic filters.

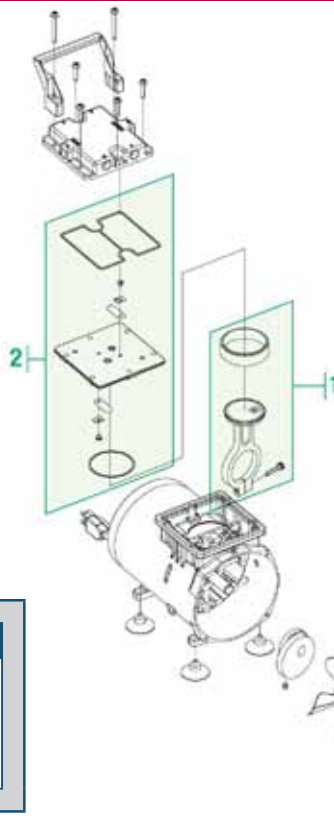
Pump Model	CAT. No.
2511B-75, 2511C-75	1475K-20
2515B-75, 2515C-75	



2511

### Repair Kits for Model 2515

ID	Description	Model 2515B-75 Kit CAT. No.	Models 2515C-75/2515C-76 Kit CAT. No.
1	Connecting Rod Assembly	----	----
2	Valve Plate Assembly	2515K-02B	2515K-02C



## Cell Culture - Hand Held Pipettor for Aspiration Stations Model 1475K-10

### CONTROL YOUR ASPIRATION APPLICATION WITH EASE.

The handheld pipettor system (1475K-10) provides pressure sensitive button control and enables quick conversion for aspiration from a tight residual suction to prevent drippage during pipette use; closing the adjustment screw stops all residual vacuum. Single channel and four and eight channel stainless steel manifold adapters work well with a wide range of liquid media. The single and eight channel disposable tip adapters include a convenient tip ejector. Also for use with standard volumetric pipettes. The entire unit is autoclavable and disassembles easily for cleaning.

- Quick pipette / manifold adaptation
- Precise vacuum control button
- Ergonomic design lessens strain
- Solution contact surfaces autoclavable



1475K-10

### Ordering Information

Description	CAT. No.	Image
Handheld pipettor with 1 channel stainless steel 40mm aspiration adapter and Pasteur pipette adapter	1475K-10	A
Adapter, stainless steel tip, 40mm	1475K-01	B
8-channel adapter, stainless steel	1475K-02	C
1-channel adapter for disposable tips, without ejector	1475K-03	D
Rubber adapter for Pasteur pipettes	1475K-04	E
8-channel adapter for disposable tips, with ejector	1475K-05	F
Adapter, stainless steel tip, 150mm	1475K-06	H
4-channel adapter, stainless steel tips, 40mm	1475K-07	I
Adapter, stainless steel tip, 280mm	1475K-08	J
1-channel adapter for disposable tips, with injector	1475K-09	K
Spare receiver kit-Includes: 6 ft. tubing, 1.2 liter autoclavable jar with lid and two hydrophobic filters	1475K-20	L
Replacement hydrophobic filters (10)	1475K-21	M

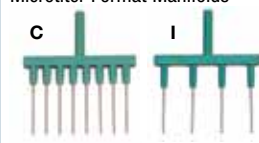
### A - Base Package



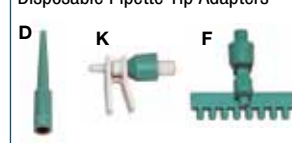
### E - Pasteur Pipette Adapter

Adapter

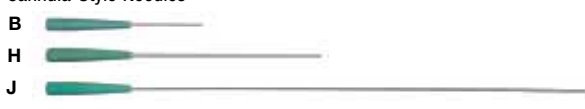
### Microtiter Format Manifolds



### Disposable Pipette Tip Adapters



### Cannula-Style Needles



# Peristaltic - Fluid Transfer Pumps

## Models 3100/3200

### Replacement Cartridges for Models 3100/3200

Material Applications	Silicone Biofluids / Food	PVC General Lab, Viscous Fluids
Tubing I.D. (Flow Rate Range)	Tubing Cartridges (5 each) CAT. No.	Tubing Cartridges (5 each) CAT. No.
1.6mm (3-30 ml/min) - 5 pack	3432K-01	3434K-01
3.2mm (10-130 ml/min) - 5 pack	3432K-02	3434K-02
4.8mm (30-300 ml/min) - 5 pack	3432K-04	3434K-04



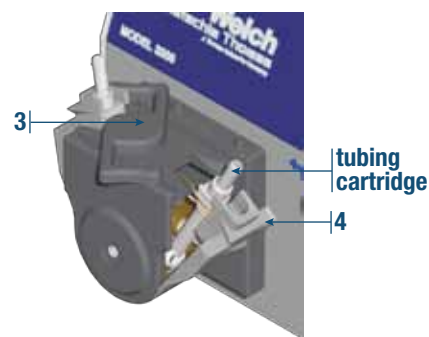
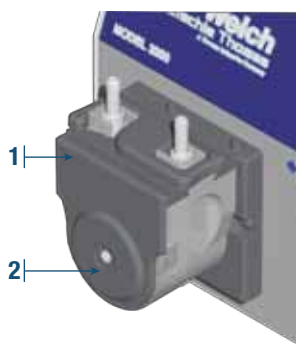
3100



3200

### Service Kit CAT. No. 3200K-02 for Models 3100/3200

ID	Qty.	Description
1	1	Pump Head
2	1	Roller Carrier
3	1	Lock
4	1	Rolling Band



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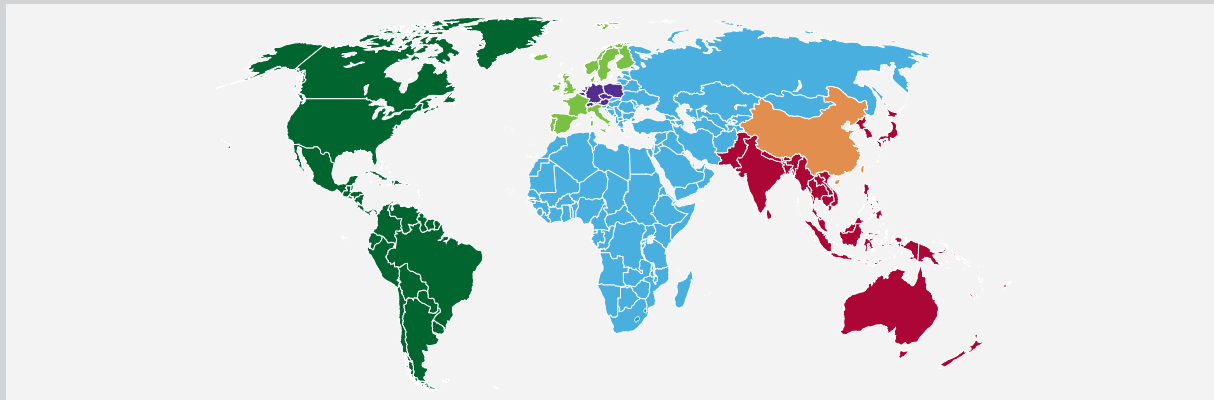
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