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## VERTICAL SPACE MISER PUMPS

### PACO TYPE VSM, VSMS

*This guide is valid for all PACO products beginning with product codes 131 and 132  
See back cover for explanation and identification.*

While PACO Vertical Space Miser Pumps are designed and built to provide maximum life while requiring minimum attention and service, replacement parts may at times be required. **Virtually All Required Parts are Available In Kit Form.**

These kits (easily selected from the charts on the following pages) have been designed to ensure that any parts needed when replacing any top suction / discharge pump component are furnished when you need them, with minimal effort.

#### **GUIDELINES AND SUGGESTIONS:**

The pump nameplate and motor frame size supplies all data required in the selection and ordering of the proper replacement parts kit. The **PUMP MODEL AND SERIAL NUMBER** should be referenced whenever any replacement parts kit is ordered, while the **pump conditions** (GPM/TDH) and **impeller trim** are required data for the ordering of replacement impellers.

#### **TO REPLACE A MECHANICAL SEAL**

Select the correct Seal Kit, which contains the volute and backplate gaskets as appropriate. Shaft sleeve on type VSM or shaft on type VSMS inspection is suggested and replacement made as indicated.

#### **TO REPLACE IMPELLER**

An Impeller Kit is required; a Wear Ring Kit is highly recommended, and a Seal Kit will provide all other normally replaced components.

#### **TO REPLACE WEAR RINGS**

A Wear Ring kit is required. A Seal Kit will provide all other normally replaced components. Shaft sleeve inspection is suggested.

#### **TO REPLACE GASKETS**

Order appropriate individual Gaskets, as needed.

#### **TO REPLACE LOST/DAMAGED HARDWARE**

Hardware Kits are available, for 175 PSI units. (For 250 PSI refer to factory).

#### **TO OVERHAUL THE PUMP**

You will need an Impeller Kit, Wear Ring Kit, Seal Kit and Sleeve (VSM only) or Shaft Kit (VSMS only).

#### **PLACING AN ORDER**

After determining and selecting the required Kit(s), or for selection assistance, contact your local PACO sales office, representative or distributor.

TYPE VSM / VSMS  
PARTS GUIDE



PUMP MODEL NO.	PUMP CONSTR. CODE	IMPELLER KIT (1)	WEAR RING KIT (2)	HARDWARE KIT VSM (3)	HARDWARE KIT VSMS (3)	SEAL KIT VSM (4)	SEAL KIT VSMS (4)
4095-7	X3XXXX	K2371-B	K1207	K1255	K0497	K105-X	K0164-X
	XAXXXX	K2374-B	K1226	K1256	K0529	K127-X	K0166-X
4012-1	X3XXXX	K1067-B	K1215	K1258	K0498	K107-X	K0164-X
	XAXXXX	K1072-B	K1215	K1259	K0541	K141-X	K0166-X
4012-7	XAXXXX	K2248-B	K1215	K1259	K0541	K141-X	K0166-X
4015-7	XAXXXX	K1986-B	K1215	K1261	K0542	K128-X	K0166-X
5095-7	X3XXXX	K1057-B	K1211	K1255	K0497	K105-X	K0164-X
	X4XXXX	K1058-B	K1211	K1256	K0499	K106-X	K0166-X
5095-9	XAXXXX	K1059-B	K1211	K1256	K0529	K127-X	K0166-X
5012-9	XAXXXX	K2244-B	K1216	K1259	K0541	K141-X	K0166-X
5012-A	XAXXXX	K0289-B	K1216	K1259	K0541	K141-X	K0166-X
5015-7	XAXXXX	K1092-B	K1216	K1261	K0542	K128-X	K0166-X
	X5XXXX	K1093-B	K1216	K1261	K0544	K111-X	K0167-X
6095-7	X4XXXX	K1061-B	K1213	K1256	K0499	K106-X	K0166-X
6012-5	XAXXXX	K1081-B	K1218	K1259	K0541	K141-X	K0166-X
6015-7	X5XXXX	K1095-B	K1225	K1261	K0544	K111-X	K0167-X
8095-1	XAXXXX	K1062-B	K1214	K1256	K0529	K127-X	K0166-X
8012-3	XAXXXX	K1085-B	K1220	K1259	K0541	K141-X	K0166-X
	X5XXXX	K1086-B	K1221	K1260	K0543	K141-X	K0167-X
8015-7	X5XXXX	K1098-B	K1228	K1261	K0544	K111-X	K0167-X
	X6XXXX	K0495-B	K0496	NA	K0545	K112-X	K0487-X
1012-3	X5XXXX	K1088-B	K1223	K1260	K0543	K109-X	K0167-X

NOTES:

- (1) Specify Impeller material type and diameter when ordering. Standard silicon bronze material listed.
- (2) Specify wear ring material when ordering. Standard bronze material listed.
- (3) Hardware kits listed are for 125# pump construction with standard seals in black steel material. For others, RTE.
- (4) See pages 4 and 5 for seal selection. Replace "X" with appropriate material code.

**GASKETS** Only components for standard pumps with 125# flanges shown

PUMP SIZE (NOMINAL MAX. IMPELLER DIA.)	CONSTR CODE	SEAL I.D.	GASKET P/N VSM & VSMS	GASKET DESCRIPTION
9-1/2"	X3, X4, XA	1-1/4", 1-3/4"	11012223X006 17021242G 11001259X006	Volute Gasket Seal Cap O-Ring Bracket Gasket
12"	X3, X4, XA	1-1/4", 1-3/4"	11001340X006 17021242G 11001259X006	Volute Gasket Seal Cap O-Ring Bracket Gasket
12"	X5	2-1/4"	11001340X006 17021247G 11010624X006	Volute Gasket Seal Cap O-Ring Bracket Gasket
15"	XA	1-3/4"	11003243X006 17021242G 11001259X006	Volute Gasket Seal Cap O-Ring Bracket Gasket
15"	X5	2-1/4"	11003243X006 17021247G 96837080	Volute Gasket Seal Cap O-Ring Bracket Gasket
15"	*X6	2-3/4"	11003243X006 17021254G 96837080	Volute Gasket Seal Cap O-Ring Bracket Gasket

\* X6 Only available in VSMS

**SHAFT SLEEVES - VSM Only - (See Page 1 prior to making selection)**

Note: Installation of shaft sleeve requires tube of Loctite- PACO Part #34029915.

MOTOR	CONSTR. CODE	MATERIAL	PART NUMBER
JM/CCP	X3XXXX	BRONZE STAINLESS	05017547B 05017547H303
	83XXXX	BRONZE STAINLESS	05017963B 05017963H303
	X4XXXX	BRONZE STAINLESS	05016451B 05016451H303
	84XXXX	BRONZE STAINLESS	05018127B 05018127H303
	XAXXXX	BRONZE STAINLESS	05017901B 05017901H303
JP/CCP	X3XXXX	BRONZE STAINLESS	05002020B 05002020H303
	83XXXX	BRONZE STAINLESS	05017635B 05017635H303
	X4XXXX	BRONZE STAINLESS	05002272B 05002272H303
	84XXXX	BRONZE STAINLESS	05018019B 05018019H303
	XAXXXX	BRONZE STAINLESS	05017069B 05017069H303
CCP	X5XXXX	BRONZE STAINLESS	05012502B 05012502H303

**PACO TYPE VSMS, SPLIT COUPLED REPLACEMENT PARTS**

PUMP SIZE (MAX. IMP. DIA.)	CONSTR CODE	MOTOR FRAME	O-RING	BUSHING	SHAFT	COUPLING	COUPLING KEY KIT
9-1/2"	X3	143/145HP	17021242G	05036041B23	K0190-X	23035986A	K0264-X
9-1/2"	X3	182-215HP	17021242G	05036041B23	K0190-X	23035987A	K0265-X
9-1/2"	X4	213-286HP	17021242G	05036040B23	K0191-X	23035987A	K0265-X
9-1/2"	XA	213-286HP	17021242G	05036040B23	K0194-X	23035987A	K0265-X
12"	X3	182-215HP	17021242G	05036041B23	K0190-X	23035987A	K0265-X
12"	X4	213-286HP	17021242G	05036040B23	K0193-X	23035988A	K0267-X
12"	X4	324/326HP	17021242G	05036040B23	K0193-X	23035988A	K0267-X
12"	XA	213-286HP	17021242G	05036040B23	K0194-X	23035987A	K0265-X
12"	XA	324/326HP	17021242G	05036040B23	K0196-X	23035988A	K0267-X
12"	X5	324-405HP	17021247G	05035992B23	K0195-X	23035988A	K0267-X
12"	X5	444/445HP	17021247G	05035992B23	K0192-X	23035990A	K0266-X
15"	XA	254-286HP	17021242G	05036040B23	K0194-X	23035987A	K0265-X
15"	XA	324/326HP	17021242G	05036040B23	K0196-X	23035988A	K0267-X
15"	X5	324-405HP	17021247G	96834443	K0489-X	23035989A	K0493-X
15"	X5	444/445HP	17021247G	96834443	K0489-X	23035990A	K0266-X
15"	X6	444/445HP	17021254G	96834444	K0490-X	23035990A	K0494-X

**MECHANICAL SEAL KITS - Type VSM Pumps - Product Code 131**

Select appropriate seal kit by matching desired seal code with pump model & construction code.

AVAILABLE SEAL MATERIALS & PROPERTIES						
Seal Code->	1XXXXX	2XXXXX	3XXXXX	6XXXXX	7XXXXX	8XXXXX
Max Temp.	211°F	275°F	180°F	250°F	211°F	211°F
Max Press*.	175 PSI	175 PSI	175 PSI	175 PSI	175 PSI	350 PSI
Type	21S	21S	Double	21S	21S	2B
Elastomer	Buna N	Viton	Buna N	Viton	Buna N	Buna N
Rot. Element	Carbon	Carbon	Carbon	Carbon	Carbon	Carbon
Stationary Seat	Ceramic	Tung Crbd	Ceramic	Ni Resist	Ni Resist	Ceramic
Spring	18-8 S/S	18-8 S/S	18-8 S/S	18-8 S/S	18-8 S/S	18-8 S/S
Hardware	18-8 S/S	18-8 S/S	18-8 S/S	18-8 S/S	18-8 S/S	Brass

PUMP MODEL	CONSTRUCTION CODE	MECHANICAL SEAL KIT PART NUMBERS ( VSM ONLY )					
		K105-1	K105-2	K105-3	K105-6	K105-7	K105-8
4095	X3XXXX	K105-1	K105-2	K105-3	K105-6	K105-7	K105-8
4095	XAXXXX	K127-1	K127-2	K127-3	K127-6	K127-7	K127-8
4012	X3XXXX	K107-1	K107-2	K107-3	K107-6	K107-7	K107-8
4012	XAXXXX	K141-1	K141-2	K141-3	K141-6	K141-7	K141-8
4015	XAXXXX	K128-1	K128-2	K128-3	K128-6	K128-7	K128-8
5095	X3XXXX	K105-1	K105-2	K105-3	K105-6	K105-7	K105-8
5095	X4XXXX	K106-1	K106-2	K106-3	K106-6	K106-7	K106-8
5095	XAXXXX	K127-1	K127-2	K127-3	K127-6	K127-7	K127-8
5012	XAXXXX	K141-1	K141-2	K141-3	K141-6	K141-7	K141-8
5015	XAXXXX	K128-1	K128-2	K128-3	K128-6	K128-7	K128-8
5015	X5XXXX	K111-1	K111-2	K111-3	K111-6	K111-7	K111-8
6095	X4XXXX	K106-1	K106-2	K106-3	K106-6	K106-7	K106-8
6012	XAXXXX	K141-1	K141-2	K141-3	K141-6	K141-7	K141-8
6015	X5XXXX	K111-1	K111-2	K111-3	K111-6	K111-7	K111-8
8095	XAXXXX	K140-1	K140-2	K140-3	K140-6	K140-7	K140-8
8012	XAXXXX	K141-1	K141-2	K141-3	K141-6	K141-7	K141-8
8012	X5XXXX	K109-1	K109-2	K109-3	K109-6	K109-7	K109-8
8015	X5XXXX	K111-1	K111-2	K111-3	K111-6	K111-7	K111-8
8015	X6XXXX	K112-1	K112-2	K112-3	K112-6	K112-7	K112-8
1012	X5XXXX	K109-1	K109-2	K109-3	K109-6	K109-7	K109-8

**TYPE VSMS SEAL KIT  
PARTS GUIDE**



**MECHANICAL SEAL KITS - type VSMS Pumps - Product Code 132**

Select appropriate seal kit by matching desired seal code with pump model & construction code.

AVAILABLE SEAL MATERIALS & PROPERTIES						
Seal Code->	1XXXXX	2XXXXX	3XXXXX	6XXXXX	7XXXXX	8XXXXX
Max Temp.	211°F	275°F	180°F	250°F	211°F	211°F
Max Press*.	175 PSI	175 PSI	175 PSI	175 PSI	175 PSI	350 PSI
Type	21	21	Double	21	21	2B
Elastomer	Buna N	Viton	Buna N	Viton	Buna N	Buna N
Rot. Element	Carbon	Carbon	Carbon	Carbon	Carbon	Carbon
Stationary Seat	Ceramic	Tung Crbd	Ceramic	Ni Resist	Ni Resist	Ceramic
Spring	18-8 S/S	18-8 S/S	18-8 S/S	18-8 S/S	18-8 S/S	18-8 S/S
Hardware	18-8 S/S	18-8 S/S	18-8 S/S	18-8 S/S	18-8 S/S	Brass

PUMP MODEL	CONSTRUCTION CODE	MECHANICAL SEAL KIT PART NUMBERS					
4095	X3XXXX	K0164-1	K0164-2	K0164-3	K0164-6	K0164-7	K0164-8
4095	XAXXXX	K0166-1	K0166-2	K0166-3	K0166-6	K0166-7	K0166-8
4012	X3XXXX	K0164-1	K0164-2	K0164-3	K0164-6	K0164-7	K0164-8
4012	XAXXXX	K0166-1	K0166-2	K0166-3	K0166-6	K0166-7	K0166-8
4015	XAXXXX	K0166-1	K0166-2	K0166-3	K0166-6	K0166-7	K0166-8
5095	X3XXXX	K0164-1	K0164-2	K0164-3	K0164-6	K0164-7	K0164-8
5095	X4XXXX	K0166-1	K0166-2	K0166-3	K0166-6	K0166-7	K0166-8
5095	XAXXXX	K0166-1	K0166-2	K0166-3	K0166-6	K0166-7	K0166-8
5012	XAXXXX	K0166-1	K0166-2	K0166-3	K0166-6	K0166-7	K0166-8
5015	XAXXXX	K0166-1	K0166-2	K0166-3	K0166-6	K0166-7	K0166-8
5015	X5XXXX	K0167-1	K0167-2	K0167-3	K0167-6	K0167-7	K0167-8
6095	X4XXXX	K0166-1	K0166-2	K0166-3	K0166-6	K0166-7	K0166-8
6012	XAXXXX	K0166-1	K0166-2	K0166-3	K0166-6	K0166-7	K0166-8
6015	X5XXXX	K0167-1	K0167-2	K0167-3	K0167-6	K0167-7	K0167-8
8095	XAXXXX	K0166-1	K0166-2	K0166-3	K0166-6	K0166-7	K0166-8
8012	XAXXXX	K0166-1	K0166-2	K0166-3	K0166-6	K0166-7	K0166-8
8012	X5XXXX	K0167-1	K0167-2	K0167-3	K0167-6	K0167-7	K0167-8
8015	X5XXXX	K0167-1	K0167-2	K0167-3	K0167-6	K0167-7	K0167-8
8015	X6XXXX	K0487-1	K0487-2	K0487-3	K0487-8	K0487-7	K0487-8
1012	X5XXXX	K0167-1	K0167-2	K0167-3	K0167-6	K0167-7	K0167-8

**VERTICAL SPLIT COUPLED SHAFT KITS**

Select appropriate shaft kit by matching desired seal code with pump model, construction code & motor frame.  
Standard shaft material is 303 stainless steel.

AVAILABLE SEAL CODES & TYPES			
Seal Codes			
1XXXXX	3XXXXX	8XXXXX	XXXXXX
2XXXXX			
6XXXXX			
7XXXXX			
Types			
21	Double	2B	Chest 440

PUMP MODEL	CONSTRUCTION CODE	MOTOR FRAMES	SHAFT KIT PART NUMBERS			
			21	Double	2B	Chest 440
4095	X3XXXX	143-215HP	K0190-1	K0190-3	K0190-8	K0190-C
4095	XAXXXX	213-286HP	K0194-1	K0194-3	K0194-8	K0194-C
4012	X3XXXX	143-215HP	K0190-1	K0190-3	K0190-8	K0190-C
4012	XAXXXX	213-286HP	K0194-1	K0194-3	K0194-8	K0194-C
4012	XAXXXX	324-326HP	K0196-1	K0196-3	K0196-8	K0196-C
4015	XAXXXX	324-326HP	K0196-1	K0196-3	K0196-8	K0196-C
5095	X3XXXX	143-215HP	K0190-1	K0190-3	K0190-8	K0190-C
5095	X4XXXX	213-286HP	K0191-1	K0191-3	K0191-8	K0191-C
5095	XAXXXX	213-286HP	K0194-1	K0194-3	K0194-8	K0194-C
5012	XAXXXX	213-286HP	K0194-1	K0194-3	K0194-8	K0194-C
5012	XAXXXX	324-326HP	K0196-1	K0196-3	K0196-8	K0196-C
5015	XAXXXX	324-326HP	K0196-1	K0196-3	K0196-8	K0196-C
5015	X5XXXX	324-405HP	K0489-1	K0489-3	K0489-8	K0489-C
6095	X4XXXX	213-286HP	K0191-1	K0191-3	K0191-8	K0191-C
6012	XAXXXX	213-286HP	K0194-1	K0194-3	K0194-8	K0194-C
6012	XAXXXX	324-326HP	K0196-1	K0196-3	K0196-8	K0196-C
6015	X5XXXX	324-445HP	K0489-1	K0489-3	K0489-8	K0489-C
8095	XAXXXX	213-286HP	K0194-1	K0194-3	K0194-8	K0194-C
8012	XAXXXX	213-286HP	K0194-1	K0194-3	K0194-8	K0194-C
8012	XAXXXX	324-326HP	K0196-1	K0196-3	K0196-8	K0196-C
8012	X5XXXX	324-405HP	K0195-1	K0195-3	K0195-8	K0195-C
8015	X5XXXX	324-445HP	K0489-1	K0489-3	K0489-8	K0489-C
8015	X6XXXX	444-445HP	K0489-1	K0489-3	K0489-8	K0489-C
1012	X5XXXX	324-405HP	K0195-1	K0195-3	K0195-8	K0195-C

No official construction code has been designated for the Chesterton 440 cartridge seal.

**VERTICAL SPLIT COUPLED KEY KITS**

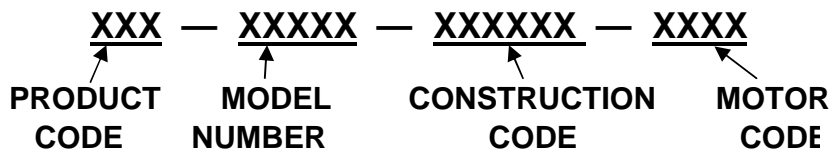
Select appropriate coupling key kit by matching desired seal code with pump model, construction code & motor frame.

AVAILABLE SEAL CODES & TYPES			
Seal Codes			
1XXXXX	3XXXXX	8XXXXX	XXXXXX
2XXXXX			
6XXXXX			
7XXXXX			
Types			
21	Double	2B	Chest 440

PUMP MODEL	CONSTRUCTION CODE	MOTOR FRAMES	COUPLING KEY KIT PART NUMBERS			
			21	Double	2B	Chest 440
4095	X3XXXX	143-215HP	K0264-1	K0264-1	K0264-8	K0264-C
4095	XAXXXX	213-286HP	K0265-1	K0265-1	K0265-8	K0265-C
4012	X3XXXX	143-215HP	K0264-1	K0264-1	K0264-8	K0264-C
4012	XAXXXX	213-286HP	K0265-1	K0265-1	K0265-8	K0265-C
4012	XAXXXX	324-326HP	K0267-1	K0267-1	K0267-8	K0267-C
4015	XAXXXX	213-286HP	K0265-1	K0265-1	K0265-8	K0265-C
4015	XAXXXX	324-326HP	K0267-1	K0267-1	K0267-8	K0267-C
5095	X3XXXX	143-215HP	K0264-1	K0264-1	K0264-8	K0264-C
5095	X4XXXX	213-286HP	K0265-1	K0265-1	K0265-8	K0265-C
5095	XAXXXX	213-286HP	K0265-1	K0265-1	K0265-8	K0265-C
5012	XAXXXX	213-286HP	K0265-1	K0265-1	K0265-8	K0265-C
5012	XAXXXX	324-326HP	K0267-1	K0267-1	K0267-8	K0267-C
5015	XAXXXX	324-326HP	K0267-1	K0267-1	K0267-8	K0267-C
5015	X5XXXX	324-405HP	K0493-1	K0493-1	K0493-8	K0493-C
6095	X4XXXX	213-286HP	K0265-1	K0265-1	K0265-8	K0265-C
6012	XAXXXX	213-286HP	K0265-1	K0265-1	K0265-8	K0265-C
6012	XAXXXX	324-326HP	K0267-1	K0267-1	K0267-8	K0267-C
6015	X5XXXX	324-405HP	K0493-1	K0493-1	K0493-8	K0493-C
6015	X5XXXX	444-445HP	K0266-1	K0266-1	K0266-8	K0266-C
8095	XAXXXX	213-286HP	K0265-1	K0265-1	K0265-8	K0265-C
8012	XAXXXX	213-286HP	K0265-1	K0265-1	K0265-8	K0265-C
8012	XAXXXX	324-326HP	K0267-1	K0267-1	K0267-8	K0267-C
8012	X5XXXX	324-405HP	K0267-1	K0267-1	K0267-8	K0267-C
8015	X5XXXX	324-405HP	K0493-1	K0493-1	K0493-8	K0493-C
8015	X6XXXX	444-445HP	K0494-1	K0494-1	K0494-8	K0494-C
1012	X5XXXX	324-405HP	K0267-1	K0267-1	K0267-8	K0267-C

No official construction code has been designated for the Chesterton 440 cartridge seal.

**EXPLANATION OF PUMP CODING-**  
(REFER TO PUMP NAMEPLATE)



NOTE: This Replacement Parts Guide is valid for all PACO products beginning with product codes 131 and 132 only.  
 Product Code 131= Close coupled Vertical Space Miser, type VSM  
 Product Code 132= Split coupled Vertical Space Miser, type VSMS

**KIT COMPONENTS**

- IMPELLER KIT:**
- Impeller
  - Volute Gasket
  - Backplate Gasket
  - Impeller Cap Screw or Nut
  - Impeller Washer
  - Impeller Key
  - Locktite

- SEAL KIT:**
- Mechanical Seal
  - Volute Gasket
  - Backplate Gasket
  - Seal Cap Oring
  - Impeller Cap Screw or Nut
  - Impeller Washer
  - Impeller Key
  - Locktite

- WEAR RING KIT:**
- Wear Rings, Bronze

- SHAFT KIT: (VSMS Only)**
- Shaft
  - Bushing
  - Seal Cap Oring

- HARDWARE KIT:**
- Cap Screws
  - Nuts
  - Washers

- KEY KIT: (VSMS Only)**
- Annular Keys
  - Standard Square Keys

- NON-KITTED PARTS - VSM**
- Gaskets
  - Seal Cap O-rings
  - Sleeves (in various materials)

- NON-KITTED PARTS - VSMS**
- Gaskets
  - Seal Cap O-rings
  - Bushings
  - Couplings

**NOTES:**

Kits may not contain all parts listed. They are individually selected for each pump, according to the pump construction and design.

Kits contain gaskets wherever gasket replacement is indicated, as noted above. Should "individual" gaskets be required. See Page 3.

Seal Kits are always recommended as spare parts.