
VERTICAL SPACE MISER PUMPS**VSM, VSMS**

This guide is valid for all PACO products beginning with product codes 131 and 132

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 Grundfos sales office, representative or distributor.

PUMP MODEL NO.	PUMP CONSTR CODE	IMPELLER KIT	WEAR RING KIT	HARDWARE KIT * VSM	HARDWARE KIT * VSMS	SEAL KIT VSM	SEAL KIT VSMS																
4095-7	X3	91911630	91910543	91910595	K0497	See page 4 for VSM seal kit selections	See page 5 for VSMS seal kit selections																
	XA	91911637	91910567	91910596	K0529																		
4012-1	X3	#N/A	91910555	91910598	K0498			See page 4 for VSM seal kit selections	See page 5 for VSMS seal kit selections														
	XA	91909919	91910555	91910599	K0541																		
4012-7	XA	91911375	91910555	91910599	K0541					See page 4 for VSM seal kit selections	See page 5 for VSMS seal kit selections												
4015-7	XA	91911029	91910555	91910601	K0542																		
5095-7	X3	91909863	91910549	91910595	K0497							See page 4 for VSM seal kit selections	See page 5 for VSMS seal kit selections										
	X4	91909867	91910549	91910596	K0499																		
5095-9	XA	91909872	91910549	91910596	K0529									See page 4 for VSM seal kit selections	See page 5 for VSMS seal kit selections								
5012-9	XA	91911367	91910556	91910599	K0541																		
5012-A	XA	91909218	91910556	91910599	K0541											See page 4 for VSM seal kit selections	See page 5 for VSMS seal kit selections						
5015-7	XA	91910083	91910556	91910601	K0542																		
	X5	91910093	91910556	91910601	K0544																		
6095-7	X4	91909887	91910551	91910596	K0499													See page 4 for VSM seal kit selections	See page 5 for VSMS seal kit selections				
6012-5	XA	91909957	91910558	91910599	K0541																		
6015-7	X5	91910113	91910566	91910601	K0544															See page 4 for VSM seal kit selections	See page 5 for VSMS seal kit selections		
8095-1	XA	91909898	91910554	91910596	K0529																		
8012-3	XA	91909965	91910561	91910599	K0541																	See page 4 for VSM seal kit selections	See page 5 for VSMS seal kit selections
	X5	91909969	91910562	91910600	K0543																		
8015-7	X5	91910130	91910568	91910601	K0544																		
	X6	96937405	#N/A	#N/A	K0545																		
1012-3	X5	91910024	91910564	91910600	K0543	See page 4 for VSM seal kit selections	See page 5 for VSMS seal kit selections																

* Hardware kits listed are for 125# pump construction with standard seals in black steel material. For others, RTF.

GASKETS Only components for standard pumps with 125# flanges shown

PUMP SIZE (NOMINAL MAX IMPELLER DIAMETER)	CONSTR CODE	SEAL I.D.	GASKET PART NUMBER VSM & VSMS	GASKET DESCRIPTION	
9-1/2"	X3, X4, XA	1-1/4", 1-3/4"	91849028	Volute Gasket	
			91869106	Seal Cap O-Ring	
			91848837	Bracket Gasket	
12"	X3, X4, XA	1-1/4", 1-3/4"	91848843	Volute Gasket	
			91869106	Seal Cap O-Ring	
			91848837	Bracket Gasket	
	X5	2-1/4"	91848843	Volute Gasket	
			91869110	Seal Cap O-Ring	
			91849000	Bracket Gasket	
15"	XA	1-3/4"	91848882	Volute Gasket	
			91869106	Seal Cap O-Ring	
				91848837	Bracket Gasket
	X5	2-1/4"	91848882	Volute Gasket	
			91869110	Seal Cap O-Ring	
			96837080	Bracket Gasket	
*X6	2-3/4"	91848882	Volute Gasket		
			91869113	Seal Cap O-Ring	
			96837080	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 Locktite - Part #91893784

MOTOR	CONSTR CODE	MATERIAL	PART NUMBER
JM/CCP	X3	BRONZE	91843842
		STAINLESS	91843844
	83	BRONZE	91843861
		STAINLESS	91843862
	X4	BRONZE	91843803
		STAINLESS	91843804
	84	BRONZE	91843868
		STAINLESS	91843869
	XA	BRONZE	91843858
		STAINLESS	91843859
JP/CCP	X3	BRONZE	91843618
		STAINLESS	91843625
	83	BRONZE	91843850
		STAINLESS	96769942
	X4	BRONZE	91843632
		STAINLESS	91843636
	84	BRONZE	91843863
		STAINLESS	91843864
	XA	BRONZE	91843812
		STAINLESS	91843814
CCP	X5	BRONZE	91843739
		STAINLESS	91843740

VSMS ONLY (HP MOTOR FRAMES)

PUMP SIZE (MAX IMPELLER DIAMETER)	CONSTR CODE	MOTOR FRAME	O-RING PART NUMBER	BUSHING PART NUMBER	COUPLING		
					SHAFT P/N	COUPLING P/N	KEY KIT P/N
9-1/2"	X3	143/145HP	91869106	91844356	91909179	91871057	91909191
		182-215HP	91869106	91844356	91909179	91871058	K0265-X
	X4	213-286HP	91869106	91844335	91909180	91871058	K0265-X
	XA	213-286HP	91869106	91844335	K0194-X	91871058	K0265-X
12"	X3	182-215HP	91869106	91844356	91909179	91871058	K0265-X
		213-286HP	91869106	91844335	91909182	91871059	K0267-X
	X4	324/326HP	91869106	91844335	91909182	91871059	K0267-X
		213-286HP	91869106	91844335	K0194-X	91871058	K0265-X
	XA	324/326HP	91869106	91844335	K0196-X	91871059	K0267-X
		324-405HP	91869110	91844353	91909184	91871059	K0267-X
	X5	444/445HP	91869110	91844353	K0192-X	91871061	91909193
15"	XA	254-286HP	91869106	91844355	K0194-X	91871058	K0265-X
		324/326HP	91869106	91844355	K0196-X	91871059	K0267-X
	X5	324-405HP	91869110	96834443	K0489-X	91871060	96937403
		444/445HP	91869110	96834443	K0489-X	91871061	91909193
	X6	444/445HP	91869113	96834444	K0490-X	91871061	96937404

MECHANICAL SEAL KITS - VSM Pumps - Product Code 131

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

SEAL MATERIALS & PROPERTIES						
Seal Code->	1XXXXX	2XXXXX	3XXXXX	6XXXXX	7XXXXX	8XXXXX
Max Temperature	211°F	275°F	180°F	250°F	211°F	211°F
Max Pressure	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
Rotating 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)					
		1XXXXX	2XXXXX	3XXXXX	6XXXXX	7XXXXX	8XXXXX
4095	X3	91909832	91909834	91909836	91909837	91909838	91909840
	XA	91910609	91910610	K127-3	91910611	91910612	91910613
4012	X3	91909909	91909910	91909911	91909912	91909913	91909914
	XA	91910715	91910716	K141-3	91910717	91910718	91910719
4015	XA	91910629	91910630	K128-3	91910631	91910632	96781243
5095	X3	91909832	91909834	91909836	91909837	91909838	91909840
	X4	91909874	91909875	91909876	91909878	91909879	91909880
5095	XA	91910609	91910610	K127-3	91910611	91910612	91910613
5012	XA	91910715	91910716	K141-3	91910717	91910718	91910719
5015	XA	91910629	91910630	K128-3	91910631	91910632	96781243
	X5	91910192	91910193	91910194	91910195	91910196	91910197
6095	X4	91909874	91909875	91909876	91909878	91909879	91909880
6012	XA	91910715	91910716	K141-3	91910717	91910718	91910719
6015	X5	91910192	91910193	91910194	91910195	91910196	91910197
8095	XA	91910609	91910610	K127-3	91910611	91910612	91910613
8012	XA	91910715	91910716	K141-3	91910717	91910718	91910719
	X5	91910061	91910063	91910064	91910065	91910066	96779375
8015	X5	91910192	91910193	91910194	91910195	91910196	91910197
	X6	91910246	91910247	91910248	K112-6	91910250	96886261
1012	X5	91910061	91910063	91910064	91910065	91910066	96779375

MECHANICAL SEAL KITS - VSMS Pumps - Product Code 132

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

SEAL MATERIALS & PROPERTIES						
Seal Code->	1XXXXX	2XXXXX	3XXXXX	6XXXXX	7XXXXX	8XXXXX
Max Temperature	211°F	275°F	180°F	250°F	211°F	211°F
Max Pressure	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
Rotating 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 (VSMS ONLY)					
		1XXXXX	2XXXXX	3XXXXX	6XXXXX	7XXXXX	8XXXXX
4095	X3	91909162	91909163	K0164-3	91909164	91909165	96869395
	XA	91909166	91909167	K0166-3	91909169	91909170	96869886
4012	X3	91909162	91909163	K0164-3	91909164	91909165	96869395
	XA	91909166	91909167	K0166-3	91909169	91909170	96869886
4015	XA	91909166	91909167	K0166-3	91909169	91909170	96869886
5095	X3	91909162	91909163	K0164-3	91909164	91909165	96869395
	X4	91909166	91909167	K0166-3	91909169	91909170	96869886
5095	XA	91909166	91909167	K0166-3	91909169	91909170	96869886
5012	XA	91909166	91909167	K0166-3	91909169	91909170	96869886
5015	XA	91909166	91909167	K0166-3	91909169	91909170	96869886
	X5	91909171	91909172	K0167-3	91909173	91909174	96936795
6095	X4	91909166	91909167	K0166-3	91909169	91909170	96869886
6012	XA	91909166	91909167	K0166-3	91909169	91909170	96869886
6015	X5	91909171	91909172	K0167-3	91909173	91909174	96936795
8095	XA	91909166	91909167	K0166-3	91909169	91909170	96869886
8012	XA	91909166	91909167	K0166-3	91909169	91909170	96869886
	X5	91909171	91909172	K0167-3	91909173	91909174	96936795
8015	X5	91909171	91909172	K0167-3	91909173	91909174	96936795
	X6	96869393	96869394	K0487-3	96869398	96869397	96869398
1012	X5	91909171	91909172	K0167-3	91909173	91909174	96936795

VERTICAL SPLIT COUPLED SHAFT KITS (HP MOTOR FRAMES)

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

Seal Codes		
1XXXXX	3XXXXX	8XXXXX
2XXXXX		
6XXXXX		
7XXXXX		
Types		
21	Double	2B

PUMP MODEL	CONSTRUCTION CODE	MOTOR FRAMES	SHAFT KIT PART NUMBERS (HP MOTOR FRAMES)		
			21	Double	2B
4095	X3	143-215HP	91909179	K0190-3	K0190-8
	XA	213-286HP	91909183	96872297	K0194-8
4012	X3	143-215HP	91909179	K0190-3	K0190-8
	XA	213-286HP	91909183	96872297	K0194-8
	XA	324-326HP	91909185	96872298	K0196-8
4015	XA	324-326HP	91909185	96872298	K0196-8
5095	X3	143-215HP	91909179	K0190-3	K0190-8
	X4	213-286HP	91909180	K0191-3	K0191-8
	XA	213-286HP	91909183	96872297	K0194-8
5012	XA	213-286HP	91909183	96872297	K0194-8
	XA	324-326HP	91909185	96872298	K0196-8
5015	XA	324-326HP	91909185	96872298	K0196-8
	X5	324-405HP	96872299	K0489-3	K0489-8
6095	X4	213-286HP	91909180	K0191-3	K0191-8
6012	XA	213-286HP	91909183	96872297	K0194-8
	XA	324-326HP	91909185	96872298	K0196-8
6015	X5	324-445HP	96872299	K0489-3	K0489-8
8095	XA	213-286HP	91909183	96872297	K0194-8
8012	XA	213-286HP	91909183	96872297	K0194-8
	XA	324-326HP	91909185	96872298	K0196-8
	X5	324-405HP	91909184	K0195-3	K0195-8
8015	X5	324-445HP	96872299	K0489-3	K0489-8
	X6	444-445HP	96872299	K0489-3	K0489-8
1012	X5	324-405HP	91909184	K0195-3	K0195-8

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

VERTICAL SPLIT COUPLED KEY KITS (HP MOTOR FRAMES)

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

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 (HP MOTOR FRAMES)			
			21	Double	2B	Chest 440
4095	X3	143-215HP	91909191	91909191	K0264-8	K0264-C
	XA	213-286HP	91909192	91909192	K0265-8	K0265-C
4012	X3	143-215HP	91909191	91909191	K0264-8	K0264-C
	XA	213-286HP	91909192	91909192	K0265-8	K0265-C
	XA	324-326HP	91909194	91909194	K0267-8	K0267-C
4015	XA	213-286HP	91909192	91909192	K0265-8	K0265-C
	XA	324-326HP	91909194	91909194	K0267-8	K0267-C
5095	X3	143-215HP	91909191	91909191	K0264-8	K0264-C
	X4	213-286HP	91909192	91909192	K0265-8	K0265-C
	XA	213-286HP	91909192	91909192	K0265-8	K0265-C
5012	XA	213-286HP	91909192	91909192	K0265-8	K0265-C
	XA	324-326HP	91909194	91909194	K0267-8	K0267-C
5015	XA	324-326HP	91909194	91909194	K0267-8	K0267-C
	X5	324-405HP	96937403	96937403	K0493-8	K0493-C
6095	X4	213-286HP	91909192	91909192	K0265-8	K0265-C
6012	XA	213-286HP	91909192	91909192	K0265-8	K0265-C
	XA	324-326HP	91909194	91909194	K0267-8	K0267-C
6015	X5	324-405HP	96937403	96937403	K0493-8	K0493-C
	X5	444-445HP	91909193	91909193	K0266-8	K0266-C
8095	XA	213-286HP	91909192	91909192	K0265-8	K0265-C
8012	XA	213-286HP	91909192	91909192	K0265-8	K0265-C
	XA	324-326HP	91909194	91909194	K0267-8	K0267-C
	X5	324-405HP	91909194	91909194	K0267-8	K0267-C
8015	X5	324-405HP	96937403	96937403	K0493-8	K0493-C
	X6	444-445HP	K0494-1	K0494-1	K0494-8	K0494-C
1012	X5	324-405HP	91909194	91909194	K0267-8	K0267-C

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

TC MOTOR FRAMES

Motor Frame Size	Construction Code	Pump Size	Shaft Kits
182/184TC	7", 9.5"	X3XXXX	98571486
	12"	X3XXXX	98571497
	12"	XAXXXX	98571498
213/215TC	7", 9.5"	X3XXXX	98571478
	12"	X3XXXX	98571487
	9.5"	X4XXXX	98571485
	9.5"	XAXXXX	98571482
	12", 15"	XAXXXX	98571480*
	12"	XAXXXX	98571499**
	15"	XAXXXX	98571481***
254/256TC	12"	X5XXXX	98571513
	7", 9.5"	X3XXXX	98571488
	12"	X3XXXX	98571478
	7", 9.5"	X4XXXX	98571485
	7"	XAXXXX	98571518
	9.5"	XAXXXX	98571515
284/286TSC	12", 15"	XAXXXX	98571482
	9.5"	X4XXXX	98571489
284/286TC	9.5"	XAXXXX	98571480
	7"	X4XXXX	98571490
	9.5", 12"	XAXXXX	98571482
	15"	XAXXXX	98571480
324/326TSC	12"	X5XXXX	98571513
	7", 9.5"	X4XXXX	98571490
	7"	XAXXXX	98571519
	9.5"	XAXXXX	98571495
	12"	XAXXXX	98571484
324/326TC	15"	XAXXXX	98571483
	9.5"	X4XXXX	98571516
	9.5"	XAXXXX	98571517
	12"	X5XXXX	98571492
364/365TSC	15"	X5XXXX	98571512
	7"	X4XXXX	98571490
	12"	X5XXXX	98571493
	15"	XAXXXX	98571483
364/365TC	15"	X5XXXX	98571512^
	15"	X5XXXX	98571511^^
	9.5"	X4XXXX	98571516
	9.5"	XAXXXX	98571517
404/405TSC	12"	XAXXXX	98571495
	12"	X5XXXX	98571491
	15"	X5XXXX	98571511^^
	15"	X5XXXX	98571479^
444/445TC	15"	X5XXXX	98571511

* 8012 only

** all 12" except 8012

*** 4015 only

^ all 15" except 8015

^^ 8015 only

TC MOTOR FRAMES

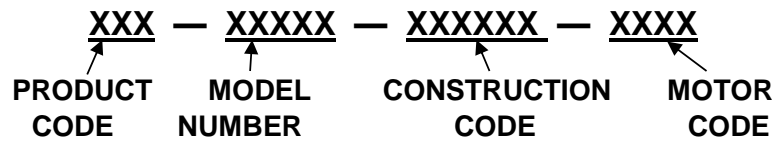
Motor Frame Size	Construction Code	Pump Size	Coupling Kits	O-Rings	Bushings
182/184TC	X3	7", 9.5", 12"	98681226	91869106	91844356
	XA	12"			91844355
213/215TC	X3	7", 9.5", 12"	98681227	91869106	91844356
	XA	7", 9.5", 15"			91844355
	X4	9.5"			91844353
	X5	12"			91844353
254/256TC	X3	7", 9.5", 12"	98681228	91869106	91844356
	XA	7", 9.5", 12", 15"			91844355
	X4	7", 9.5"			91844353
	X5	12"			91844353
284/286TSC	XA	9.5"	98681228	91869106	91844355
	X4	9.5"			91844355
284/286TC	XA	9.5", 12", 15"	98681230	91869106	91844355
	X5	12", 15"	98681229		91844353
	X4	7"	98681229		91844355
	XA	7"	98681229		91844355
324/326TC	X4	7"	98681229	91869106	91844355
324/326TSC	X4	7", 9.5"	98681251	91869106	91844355
	XA	9.5"			91844355
324/326TC	XA	12", 15"	98681252	91869106	91844355
	X4	9.5"	98681253		91844353
	X5	12", 15"	98681253		91844353
364/365TSC	X5	9.5"	98681251	91869106	91844355
364/365TC	XA	12"	98681252	91869106	91844355
	XA	15"	98682567		91844353
	X5	12", 15"	98682569		91844353
404/405TSC	X4	9.5"	98681252	91869106	91844355
	XA	9.5"			91844355
404/405TC	XA	12"	98682568	91869106	91844355
	X5	12", 15"	98682591		91844353
	X5	15"	98694579		91844353

TC MOTOR FRAMES

Motor Frame Size	Construction Code	Pump Size	Hardware Kits
184-405TC	X3	7"	98467976
	X4		
182-405TC	X4	9.5"	98468694
	X3		
	XA		
	X3	12"	98468716
	XA		
324TSC-405TC	X5	12"	98468720
	XA	15"	98468727
	X5		
284/286TC	X3	7"	98468729
	X4		
	X3	9.5"	98468751
	X4		
	X3	12"	98468753
	XA		
182-256TC	XA	15"	98468754
284/286TC	XA	15"	98468756
324/326TC	XA	12"	RTF
444/445TC	X5	15"	RTF

Construction Code	Pump Size	Gasket Part Number	Gasket Description
X3XXXX X4XXXX	7"	91848837	Volute Gasket
X3XXXX X4XXXX XAXXXX	9.5"	91849028 91848837	Volute Gasket Backplate Gasket
X3XXXX XAXXXX	12"	91848843 91848837	Volute Gasket Backplate Gasket

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 for HP motor frame and Page 10 for TC motor frame.

Seal Kits are always recommended as spare parts.