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September, 2014

Supersedes October, 2013



INLINE CENTRIFUGAL PUMPS REPLACEMENT PARTS GUIDE

VL, VLC, VLS, VLSC

This guide is valid for all PACO brand products beginning with product codes 16, 17 and Grundfos product codes 26 and 27 only.

See back cover for explanation and identification.

In-Line 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 Inline 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 VL/VLC and shaft (type VLS/VLSC) inspection is suggested, and replacement made as indicated.

TO REPLACE SHAFT SLEEVES (Type VL and VLC)

You will need a shaft sleeve Kit. A Seal or Packing Kit will provide other normally needed parts.

TO REPLACE IMPELLER

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

TO REPLACE WEAR RINGS

A Wear Ring Kit is required. A Seal/Packing 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, a Wear Ring Kit, Sleeve or Shaft Kit, and a Seal kit.

PLACING AN ORDER

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

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PUMP MODEL NO.	PUMP CONST. CODE	IMPELLER KIT (1)			WEAR RING KIT	HARDWARE KIT	SLEEVE	SEAL KIT
		BRONZE	N.A. Bronze	IRON				
1270-5 (2)	X0XXXX	91911003		91911004	91910538	91910592		
1270-5 (2)	X3XXXX	91911005		96647857	91910538	91910593		
1270-7	X0XXXX	91911003		91911004	91910538	91910592		
1270-7	X3XXXX	91911005		96647857	91910538	91910593		
1570-5	X0XXXX	91909723		97686155	91910539	91910592		
1570-5	X3XXXX	91909724		91909725	91910539	91910593		
1570-7 (3)	X0XXXX	91910999		91915361	91910539	91910592		
1570-7 (3)	X3XXXX	91911000		91911001	91910539	91910593		
1570-9	X0XXXX	91910999		91915361	91910539	91910592		
1570-9	X3XXXX	91911000		91911001	91910539	91910593		
2070-1	X0XXXX	91909734		-	91910540	91910592		
2070-1	X3XXXX	91909735		91909736	91910540	91910593		
2070-5	X0XXXX	91909737		91909738	91910540	91910592		
2070-5	X3XXXX	91909739		91909740	91910540	91910593		
2570-5	X0XXXX	91909741		-	91910541	91910592		
2570-5	X3XXXX	91909742		91909743	91910541	91910593		
2570-7	X0XXXX	91909748		-	91910541	91910592		
2570-7	X3XXXX	91909749		91909750	91910541	91910593		
2570-7	X4XXXX	91909754		91909755	91910541	91910594		
2570-9	X0XXXX	91911589		91911590	91910541	91910592		
2570-9	X3XXXX	91911595		91911596	91910541	91910593		
2570-9	X4XXXX	91911601		91911602	91910541	91910594		
3070-5	X3XXXX	91909758		91909759	91910542	91910593		
3070-5	X4XXXX	91909760		91909761	91910542	91910594		
3070-7	X3XXXX	91909762		91909763	91910542	91910593		
3070-7	X4XXXX	91909765		91909766	91910542	91910594		
4070-5	X3XXXX	91909768		91909769	91910543	91910593		
4070-5	X4XXXX	91909770		91909771	91910543	91910594		
4070-7	X3XXXX	91909772		91909773	91910544	91910593		
4070-7	X4XXXX	91909777		91909778	91910544	91910594		
5070-5	X3XXXX	91909779		91909780	91910546	91910593		
5070-5	X4XXXX	91909781		91909782	91910580	91910594		
5070-7	X3XXXX	91909783		91909784	91910548	91910593		
5070-7	X4XXXX	91909788		91909789	91910583	91910594		
2095-1	X3XXXX	91909791		91909792	91910540	91910595		
2095-5	X3XXXX	91909793		91909795	91910540	91910595		
2095-5	X4XXXX	91909796		91909797	91910540	91910596		
2095-7	X3XXXX	91909798		91909799	91910540	91910595		
2095-7	X4XXXX	91909800		-	91910540	91910596		
2095-9	X3XXXX	91911017		91911018	91910540	91910595		
2095-9	X4XXXX	91911019		91911020	91910540	91910596		
2595-1	X3XXXX	91909810		91909812	91910541	91910595		
2595-1	X4XXXX	91909813		91909814	91910541	91910596		
2595-3	X3XXXX	91909815		91909816	91910541	91910595		
2595-3	X4XXXX	91909819		91909820	91910541	91910596		
3095-1	X3XXXX	91909821		91909822	91910542	91910595		
3095-1	X4XXXX	91916836		-	91910542	91910596		
3095-3	X3XXXX	91909823		91909824	91910542	91910595		
3095-3	X4XXXX	91909825		91909826	91910542	91910596		
3095-5	X3XXXX	91909827		91909829	91910542	91910596		
3095-5	X4XXXX	91909830		97665079	91910542	91910596		
3095-7	X3XXXX	91911369		91911370	91910542	91910595		
3095-7	X4XXXX	91911371		91911372	91910542	91910596		
4095-3	X3XXXX	91909850		-	91910543	91910595		
4095-3	X4XXXX	91909852		-	91910543	91910596		
4095-5	X3XXXX	91909853		91909854	91910543	91910595		
4095-5	X4XXXX	91909855		91909856	91910567	91910596		
4095-7	X3XXXX	91911630	97642561	91911633	91910543	91910595		
4095-7	X4XXXX	91911637	96762426	91911638	91910567	91910596		
5095-5	X3XXXX	91909857		91909858	91910549	91910595		
5095-5	X4XXXX	91909859		91909860	91910549	91910596		
5095-B	X4XXXX	91909861		91909862	91910549	91910596		
5095-7	X3XXXX	91909863	97920032	91909865	91910549	91910595		
5095-7	X4XXXX	91909867	97684756	91909870	91910549	91910596		
5095-9	X4XXXX	91909872	97549902	91909873	91910549	91910596		
6095-5	X4XXXX	91909885		91909886	91910550	91910596		
6095-7	X4XXXX	91909187	98090499	91909188	91910551	91910596		
8095-1	X4XXXX	91909898		96769173	91910554	91910596		

See page 4 for sleeve selection

See page 5 for seal selection

See page 3 for key to footnotes indicated on this page

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PUMP MODEL NO.	PUMP CONST. CODE	IMPELLER KIT (1)			WEAR RING KIT	HARDWARE KIT	SLEEVE	SEAL KIT
		BRONZE	N.A. Bronze	IRON				
2512-1	X3XXXX	91909901		91909902	91910541	91910598	See page 4 for sleeve selection	See page 5 for seal selection
2512-1	X4XXXX	91909903		K1065-C	91910541	91910599		
2512-1	XAXXXX	91909904		91909905	91910541	91910599		
3012-1	X4XXXX	91909906		K1068-C	91910542	91910599		
3012-3	X3XXXX	91909908		K1069-C	91910542	91910598		
3012-3	XAXXXX	91909915		91909916	91910542	91910599		
4012-1	X3XXXX	K1067-B		K1067-C	91910555	91910598		
4012-1	X4XXXX	91909917		91909918	91910555	91910599		
4012-1	XAXXXX	91909919	97793607	97529187	91910555	91910599		
4012-5	X4XXXX	91909921		91909922	91910555	91910599		
4012-5	XAXXXX	91909923		91909924	91910555	91910599		
4012-7	X4XXXX	91911373		91909922	91910555	91910599		
4012-7	XAXXXX	91911375	97767356	91909924	91910555	91910599		
5012-5	X4XXXX	91909925		91909926	91910556	91910599		
5012-7	XAXXXX	91909928		91909931	91910556	91910599		
5012-9	XAXXXX	91911367	97692846	91911368	91910556	91910599		
5012A	XAXXXX	91909218	98382920	-	91910556	91910559		
6012-1	X4XXXX	91909932		K1078-C	91910557	91910599		
6012-3	X4XXXX	91909951		91909952	91910558	91910599		
6012-3	XAXXXX	91909957	97951786	91909958	91910558	91910599		
6012-5	XAXXXX	91909957	97951786	91909958	91910558	91910599		
8012-1	X4XXXX	91909959		K1082-C	91910561	91910599		
8012-1	X5XXXX	91909961		91909963	91910562	91910600		
8012-3	X4XXXX	91909963		K1084-C	91910561	91910599		
8012-3	XAXXXX	91909965	97767354	91909967	91910561	91910599		
8012-3	X5XXXX	91909969		91909970	91910562	91910600		
1012-3	X5XXXX	91910024		91910026	91910564	91910600		
40157	XAXXXX	91911029	98134905	91911030	91910555	91910601		
50157	XAXXXX	91910083	98366001	97563170	91910566	91910601		
50157	X5XXXX	91910093		-	91910556	91910601		
60157	X5XXXX	91910113	97749052	91910114	91910566	91910601		
80157	X5XXXX	91910130	97790399	-	91910568	91910569		

NOTES:

- (1) Specify Impeller diameter when ordering.
- (2) Model 1270-5 is obsolete. Verify trim diameter and conditions and refer to model 12707-7.
- (3) Model 1570-7 is obsolete. Verify trim diameter and conditions and refer to model 15707-9.

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GASKETS For Volute and Backplate.(For Type VLS/VLSC, seal cap gasket is indicated below.)

PUMP SIZE (NOMINAL MAX. IMPELLER DIA.)	CONSTRUCTION CODE	SEAL I.D.	GASKET P/N	GASKET DESCRIPTION
7"	X0, X3, X4	5/8", 1-1/4", 1-3/4"	91869180	Volute O-Ring
9-1/2"	X3, X4, XA	1-1/4", 1-3/4"	91849028 91869180	Volute Gasket Backplate O-Ring
9-1/2"	X5	2-1/4"	91849028	Volute Gasket
12"	X3, X4	1-1/4", 1-3/4"	91848843 91869180	Volute Gasket Backplate O-Ring
12"	X5	2-1/4"	91848843 91849000	Volute Gasket Backplate Gasket

SHAFT SLEEVES (See Page 1 prior to making selection)

Note: Installation of shaft sleeve requires tube of Locktite- PACO Part Number 91893784

MOTOR	CONSTR. CODE	MATERIAL	PART NUMBER
Fractional (56, 56J)	X0	—	Not Applicable
	X1	—	Not Applicable
Gyropoise (TG)	X3	BRONZE STAINLESS	91843687 91843690
	83	BRONZE STAINLESS	91843784 91843785
JM/CCP	X3	BRONZE STAINLESS	91843842 91843844
	83	BRONZE STAINLESS	91843861 91843862
	X4	BRONZE STAINLESS	91843803 91843804
	84	BRONZE STAINLESS	91843868 91843869
	XA	BRONZE STAINLESS	91843858 91843859
JP/CCP	X3	BRONZE STAINLESS	91843618 91843625
	83	BRONZE STAINLESS	91843850 96769942
	X4	BRONZE STAINLESS	91843632 91843636
	84	BRONZE	91843863
	XA	BRONZE STAINLESS	91843812 91843814
CCP	X5	BRONZE STAINLESS	91843739 91843740

PACO TYPE VLS (HP Motor Frames), SPLIT COUPLED INLINE REPLACEMENT PARTS

CONSTRUCTION CODE	MOTOR FRAME	O-RING	BUSHING	SHAFT KIT	COUPLING	COUPLING KEY KIT
X3	143/145HP	91869106	91844356	91909179	91871057	91909191
	182-215HP	91869106	91844356	91909179	91871058	91909192
X4	213-286HP	91869106	91844355	91909180	91871058	91909192
	324/326HP	91869106	91844355	91909182	91871059	91909194
XA	213-286HP	91869106	91844355	91909183	91871058	91909192
	324/326HP	91869106	91844355	91909185	91871059	91909194
X5	324-405HP	91869110	91844353	91909184	91871059	91909194
	444/445HP	91869110	91844353	91909181	91871061	91909193

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TYPE VLS/VLSC, SPLIT COUPLED INLINE REPLACEMENT PARTS

MECHANICAL SEAL KITS

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

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

CONSTRUCTION CODE	MECHANICAL SEAL KIT PART NUMBER				
	1XXXXX	7XXXXX	6XXXXX	2XXXXX	8XXXXX
X3	91909162	91909165	91909164	91909163	96869395
X4	91909166	91909170	91909169	91909167	96869886
XA	91909166	91909170	91909169	91909167	96869886
X5	91909171	91909174	91909173	91909172	96936795

VLS/VLSC (C-Face Motors)

Motor Frame Size	Pump Size	Construction Code	Shaft Kits
182/184TC	X3	7", 9.5"	98571486
		12"	98571497
	XA		98571498
213/215TC	X3	7", 9.5"	98571478
		12"	98571487
	X4	9.5"	98571485
			98571482
	XA	12", 15"	98571480*
			98571499**
			98571481***
X5	12"	98571513	
254/256TC	X3	7", 9.5"	98571488
		12"	98571478
	X4	7", 9.5"	98571485
		7"	98571518
	XA	9.5"	98571515
12", 15"		98571482	
284/286TSC	X4	9.5"	98571489
	XA		98571480
284/286TC	X4	7"	98571490
	XA	9.5", 12"	98571482
		15"	98571480
	X5	12"	98571513
324/326TSC	X4	7", 9.5"	98571490
		7"	98571519
	XA	9.5"	98571495
		12"	98571484
		15"	98571483
324/326TC	X4	9.5"	98571516
			98571517
	X5	12"	98571492
		15"	98571512
364/365TSC	X4	7"	98571490
364/365TC	X5	12"	98571493
	XA	15"	98571483
			98571512^
	X5	15"	98571511^^
404/405TSC	X4	9.5"	98571516
	XA		98571517
404/405TC	XA	12"	98571495
			98571491
	X5	15"	98571511^^
			98571479^
444/445TC	X5	15"	98571511

* 8012 only

** all 12" except 8012

*** 4015 only

^ all 15" except 8015

^^ 8015 only

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VLS/VLSC (C-Face Motors)

Motor Frame Size	Construction Code	Pump Size	Couplings	O-Rings	Bushings
182/184TC	X3	7", 9.5", 12"	98681226	91869106	91844356
182/184TC	XA	12"	98681226	91869106	91844355
213/215TC	X3	7", 9.5", 12"	98681227	91869106	91844356
213/215TC	XA	7", 9.5", 15"	98681227	91869106	91844355
213/215TC	X4	9.5"	98681227	91869106	91844355
213/215TC	X5	12"	98681227	91869106	91844353
254/256TC	X3	7", 9.5", 12"	98681228	91869106	91844356
254/256TC	XA	7", 9.5", 12", 15"	98681228	91869106	91844355
254/256TC	X4	7", 9.5"	98681228	91869106	91844355
254/256TC	X5	12"	98681228	91869106	91844353
284/286TSC	XA	9.5"	98681228	91869106	91844355
284/286TSC	X4	9.5"	98681228	91869106	91844355
284/286TC	XA	9.5", 12", 15"	98681230	91869106	91844355
284/286TC	X5	12", 15"	98681230	91869106	91844353
284/286TC	X4	7"	98681229	91869106	91844355
284/286TC	XA	7"	98681229	91869106	91844355
324/326TC	X4	7"	98681229	91869106	91844355
324/326TSC	X4	7", 9.5"	98681251	91869106	91844355
324/326TSC	XA	9.5"	98681251	91869106	91844355
324/326TC	XA	12", 15"	98681252	91869106	91844355
324/326TC	X4	9.5"	98681252	91869106	91844355
324/326TC	X5	12", 15"	98681253	91869106	91844353
364/365TSC	X4	9.5"	98681251	91869106	91844355
364/365TC	XA	12"	98681252	91869106	91844355
364/365TC	XA	15"	98682567	91869106	91844355
364/365TC	X5	12", 15"	98682569	91869106	91844353
404/405TSC	X4	9.5"	98681252	91869106	91844355
404/405TSC	XA	9.5"	98681252	91869106	91844355
404/405TC	XA	12"	98682568	91869106	91844355
404/405TC	X5	12", 15"	98682591	91869106	91844353
444/445TC	X5	15"	98694579	91869106	91844353

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VLS/VLSC (C-Face Motors)

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
	X4	9.5"	
	XA	12"	
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
X3 X4	7"	91848837	Volute Gasket
X3 X4 XA	9.5"	91849028 91848837	Volute Gasket Backplate Gasket
X3 XA	12"	91848843 91848837	Volute Gasket Backplate Gasket

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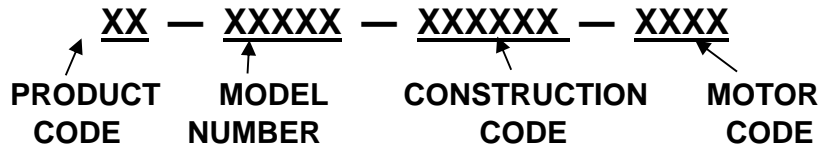
MECHANICAL SEAL KITS

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

AVAILABLE SEAL MATERIALS & PROPERTIES						
Seal Code->	1XXXXX	7XXXXX	6XXXXX	2XXXXX	3XXXXX	8XXXXX
Max Temp.	211°F	211°F	250°F	275°F	180°F	211°F
Max Press*.	175 PSI	175 PSI	175 PSI	175 PSI	175 PSI	350 PSI
Refer to Note #	-	-	1	1	5	3, 6
Type	21	21	21	21	Double	1B
Elastomer	Buna N	Buna N	Viton	Viton	Buna N	Buna N
Rot. Element	Carbon	Carbon	Carbon	Carbon	Carbon	Carbon
Stationary Seat	Ceramic	Ni Resist	Ni Resist	Tung Crbd	Ceramic	Ni Resist
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 NUMBER					
		1XXXXX	7XXXXX	6XXXXX	2XXXXX	3XXXXX	8XXXXX
1270 1570 2070 2570	X0	91909744	91909747	91909746	91909745	K102-3	K102-8
1270 1570 2070 2570 3070 4070 5070	X3	91909832	91909838	91909837	91909834	91909836	91909840
2570 3070 4070 5070	X4	91909802	91909806	91909805	91909803	91909804	K104-8
2095 2595 3095 4095 5095	X3	91909832	91909838	91909837	91909834	91909836	91909840
2095 2595 3095 4095 5095 6095	X4	91909874	91909879	91909878	91909875	91909876	91909880
4095 5095 6095	XA	91910609	91910612	91910611	91910610	—	—
2512 3012 4012	X3	91909909	91909913	91909912	91909910	91909911	91909914
2512 3012 4012 5012 6012 8012	X4	91909944	91909948	91909947	91909945	—	—
2512 3012 4012 5012 6012 8012	XA	91910715	91910718	91910717	91910716	—	—
8012 1012	X5	91910061	91910066	91910065	91910063	91910064	—
50157	XA	91910629	91910632	91910631	91910630	-	-
60157	X5	91910192	91910196	91910195	91910193	91910194	-
80157	X6XXXX	91910246	91910250	K112-6	91910247	91910248	-

EXPLANATION OF PUMP CODING-
(REFER TO PUMP NAMEPLATE)



NOTE: This Replacement Parts Guide is valid for products beginning with product codes 16, 17, 26, and 27 only.
 Product Code 16= Close coupled Vertical Inline Centrifugal, type VL
 Product Code 17= Split coupled Vertical Inline Centrifugal, type VLS
 Product Code 26= Vertical Inline Centrifugal with Variable Frequency Drive, type VLC
 Product Code 27= Split coupled Vertical Inline Centrifugal with Variable Frequency Drive, type VLSC

KIT COMPONENTS

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

- SEAL KIT:**
- Mechanical Seal
 - Volute Gasket
 - Backplate Gasket
 - Seal Cap Gasket *(except type VLS/VLSC)*
 - Impeller Cap Screw
 - Impeller Washer
 - Impeller Key
 - Impeller Nut

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

- TYPE VLS/VLSC *(Non-kitted parts)***
- Seal Cap O-rings
 - Bushings
 - Couplings
 - Key Sets for Couplings

- HARDWARE KIT:**
- Cap Screws

- GASKETS: *(non-kitted)***
- Individual

- SHAFT KIT: *(Type VLS/VLSC)***
- Shaft
 - Bushing
 - Seal Cap Gasket

- SLEEVES: *(Not used on Type VLS/VLSC)***
(Non-Kitted)
- Bronze
 - Stainless Steel

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.

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