ACCA PUMPS

L12 PROGRESSIVE CAVITY PUMP

Operation, Maintenance, Assembly & Replacement Parts Manual

Applicable frames	1L12, 2L12, 3L12
Compatible drive-end family	L12 drive end; source manual also covers 1L12H, 2L12H, 2M10H, 3M10, 3P8
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IMPORTANT: This ACCA manual is an independent service document for ACCA replacement pumps and parts compatible with the Moyno L12 drive-end family. Moyno is a registered trademark of its owner. ACCA Pumps is not affiliated with or endorsed by the OEM.

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Source basis

Technical sequence, L12 reference identifiers, component descriptions, frame coverage and reference part numbers are derived from the supplied L12 drive-end service source. Instructions are reorganized and rewritten for an ACCA service format; they are not a reproduction of the source manual.

MODEL CHECK: Before ordering parts, record the pump frame, construction/type code, serial number and any special trim. Verify the actual installed configuration before disassembly.

1. Safety and document scope

- Lock out and tag out the driver and all auxiliary energy sources before opening, adjusting or servicing the pump.
- Close and secure suction and discharge isolation valves. Relieve pressure and drain the pump before loosening any component.
- Guard couplings, belts, pulleys, shafts and other rotating components during operation.
- Never run a progressing cavity pump dry. The pumped liquid lubricates and cools the rotor-stator interface.
- Use lifting and support methods appropriate for the pump, piping and drive. Do not allow unsupported piping loads to distort the pump.
- Use chemical-resistant PPE appropriate to the process fluid. Flush and decontaminate the pump when required by site procedure.

CAUTION: Positive-displacement pumps can generate high discharge pressure against a closed or restricted line. Confirm that the discharge path and pressure-protection system are open and functional before startup.

2. Pump principle and identification

The L12 is a single-rotor progressing cavity pump. A single-helical rotor turns eccentrically inside a double-helical elastomer stator, creating sealed cavities that move continuously from suction to discharge. This produces low-pulsation, positive-displacement flow.

In the frame designation, the first number identifies the number of pumping stages, the letter identifies the drive-end family, and the final number identifies the element size. For example, 2L12 denotes a two-stage L-frame pump using size-2 pumping elements.

Frame	1L12
Type / construction code	_____
Serial number	_____
Service / fluid	_____
Installed date	_____

3. Installation and startup

1. Confirm that the pump and driver are securely mounted and aligned, and that piping is independently supported.

2. Confirm the correct rotation for the installation before coupling the driver for continuous operation.

3. Open the suction valve fully. Confirm that the discharge path is open and that any relief or pressure-limiting device is available.

4. Prime the pump and wet the rotor/stator with the process liquid or another elastomer-compatible liquid.

5. If packing is water-flushed, establish flush flow before startup. Flush pressure should be maintained above suction-housing pressure.

6. Jog the driver and check for abnormal noise, binding or leakage. Then start at the lowest practical speed and verify flow and pressure.

7. During the first operating period, inspect packing leakage, bearing temperature, vibration and motor load frequently.

DO NOT RUN DRY: Dry operation can rapidly damage the stator. Fill the pump with compatible liquid before startup.

4. Routine maintenance

Item	Check	Typical action	Suggested frequency
Packing	Leakage / gland temperature	Adjust evenly; lubricate or verify flush	Startup, then routinely
Bearings	Noise / temperature	Inspect and relubricate at service interval	At least every 1,500 operating hours under normal service
Rotor / stator	Capacity, pressure, slip	Inspect for wear if performance declines	Condition based
Drive train	Noise, vibration, alignment	Inspect coupling/drive and mounting	Routine
Fasteners / piping	Looseness or leakage	Retighten / repair as required	Routine

5. Packing and water flush

The source L12 configuration uses formed packing around the drive shaft with a lantern ring. Packing gland nuts should be adjusted evenly and only tight enough to control leakage without overheating the shaft or gland. New packing normally requires several small adjustments while it seats.

For L12 reassembly, the source specifies one packing ring, then the lantern ring, followed by three packing rings. Stagger the joints of adjacent rings. If the final ring cannot initially be installed, allow the installed packing to seat during brief operation and then install the remaining ring.

Water-flushed packing

For abrasive service, clean flush water may be introduced through the stuffing-box port normally used for packing lubrication. The source manual specifies maintaining stuffing-box flush pressure approximately 10-15 psi above the pressure in the suction housing. Throttle the outlet as required to maintain that differential.

PACKING ADJUSTMENT: Over-tightening can cause premature packing failure and wear of the drive shaft and gland. Adjust both gland nuts evenly.

6. Bearing maintenance

The L12 drive end uses a roller-bearing assembly. The source manual states that factory lubrication is adequate for at least 1,500 hours of normal operation. When relubricating, clean out old grease and fill approximately one-third to one-half of the volume between spacers, with grease also worked between the rollers.

Use an EP lithium-soap-base bearing grease suitable for the operating environment. The source specifically advises against sodium- or calcium-base grease. Avoid over-lubrication.

7. Disassembly

1. De-energize and lock out the driver. Isolate suction and discharge. Shut off any packing flush.

2. Drain the pump body and support the pump body near the drain area to avoid excessive load on the support.

3. Disconnect piping from the stator/discharge end.

4. Remove the discharge reducer (U). Remove the stator-support cap, unscrew the stator (Z) from the pump body/suction housing, and pull it off the rotor.

5. Remove the two drive-pin retaining nuts (N) at the shaft collar (J). Remove the shaft pin, slide the collar toward the packing gland, and remove the retaining washers (O).

6. Withdraw the rotor (AA), connecting rod (Q), and joint hardware as an assembly. Support the connecting rod at its midsection before driving out joint pins.

7. Remove the packing gland (W), packing (X), lantern ring (M), and packing washer (Y) as required.

8. With the rotor assembly removed, remove the bearing cover plate (H). Drive or press the drive-shaft/bearing subassembly out from the suction side using controlled force on the shaft assembly.

9. Remove the bearing lock nut (D) and lock washer (E). Use an arbor press to remove the radial bearing (A), spacer (C), and thrust bearing (B), applying force to the appropriate race.

10. Replace grease seals whenever bearing or drive-shaft condition makes reuse questionable.

8. Inspection and service criteria

Component	Inspection guidance
Rotor	Inspect plating for scoring, corrosion, flaking and localized wear. Measure if loss of capacity suggests excessive slip.
Stator	Inspect for swelling, cracking, chunking, hardening, cuts and loss of interference. Confirm elastomer compatibility with the process.
Connecting rod / pins	Inspect pin bores, pins, retainers and washers for elongation, fretting or deformation.
Drive shaft	Inspect the packing wear area for grooving and the bearing fits for fretting or damage.
Bearings	Replace bearings that feel rough, loose, noisy or show heat discoloration, corrosion or damaged races.
Grease seals	Replace hardened, cut or leaking seals; replacement is recommended during bearing renewal.
Packing components	Inspect gland, lantern ring and stuffing-box bore; replace packing rather than reusing compressed rings.
Housings / threads	Inspect stator threads, reducer threads, drain ports and mounting surfaces for damage.

9. Reassembly

1. Clean all reusable components. Install new packing and replace damaged washers/seals. Replace grease seals when new bearings are installed.

2. Press bearings squarely onto the shaft and seat them fully against their shoulders. Install the lock washer and lock nut; secure the lock washer tab.

3. Install the shaft collar, packing gland and packing washer in the correct sequence as the shaft enters the stuffing-box area. Tighten bearing-cover fasteners evenly.

4. Install the connecting rod and align the rod, drive-shaft and collar holes before inserting the pin. Install retaining washers and retaining hardware securely.

5. Install packing in the L12 sequence: one ring, lantern ring, then three rings. Stagger ring joints.

6. Lubricate the rotor with water or another lubricant compatible with the stator elastomer. Do not use an incompatible petroleum lubricant on elastomers that can be attacked by oil or grease.

7. Install the stator without cross-threading. Apply a thread sealant appropriate to the stator sleeve and process. Tighten near the suction-housing end to reduce the risk of binding.

8. Reinstall stator support, reducer, drains, piping and guards. Prime the pump before startup and perform the startup checks in Section 3.

10. Troubleshooting

Symptom	Possible causes	Checks / corrective action
No or low flow	Dry/unprimed pump; wrong rotation; blocked suction; worn rotor/stator; excessive slip	Prime; verify rotation; inspect suction; inspect rotor/stator and operating pressure.
High power draw	Stator too tight/swollen; high differential pressure; viscous fluid; mechanical binding	Verify fluid compatibility, pressure, speed and free rotation.
Packing overheats	Gland too tight; insufficient lubrication/flush; damaged shaft	Back off gland evenly; restore lubrication/flush; inspect shaft.
Excessive leakage	Packing worn or poorly seated; shaft grooved; flush pressure incorrect	Adjust or repack; inspect shaft; verify flush differential.
Bearing noise/heat	Bearing wear; contamination; excessive grease; misalignment	Inspect bearings and seals; correct grease quantity; verify alignment.
Vibration/noise	Joint wear; rotor/stator damage; piping strain; drive misalignment	Inspect pins/rod, elements, supports and alignment.

11. L12 exploded view

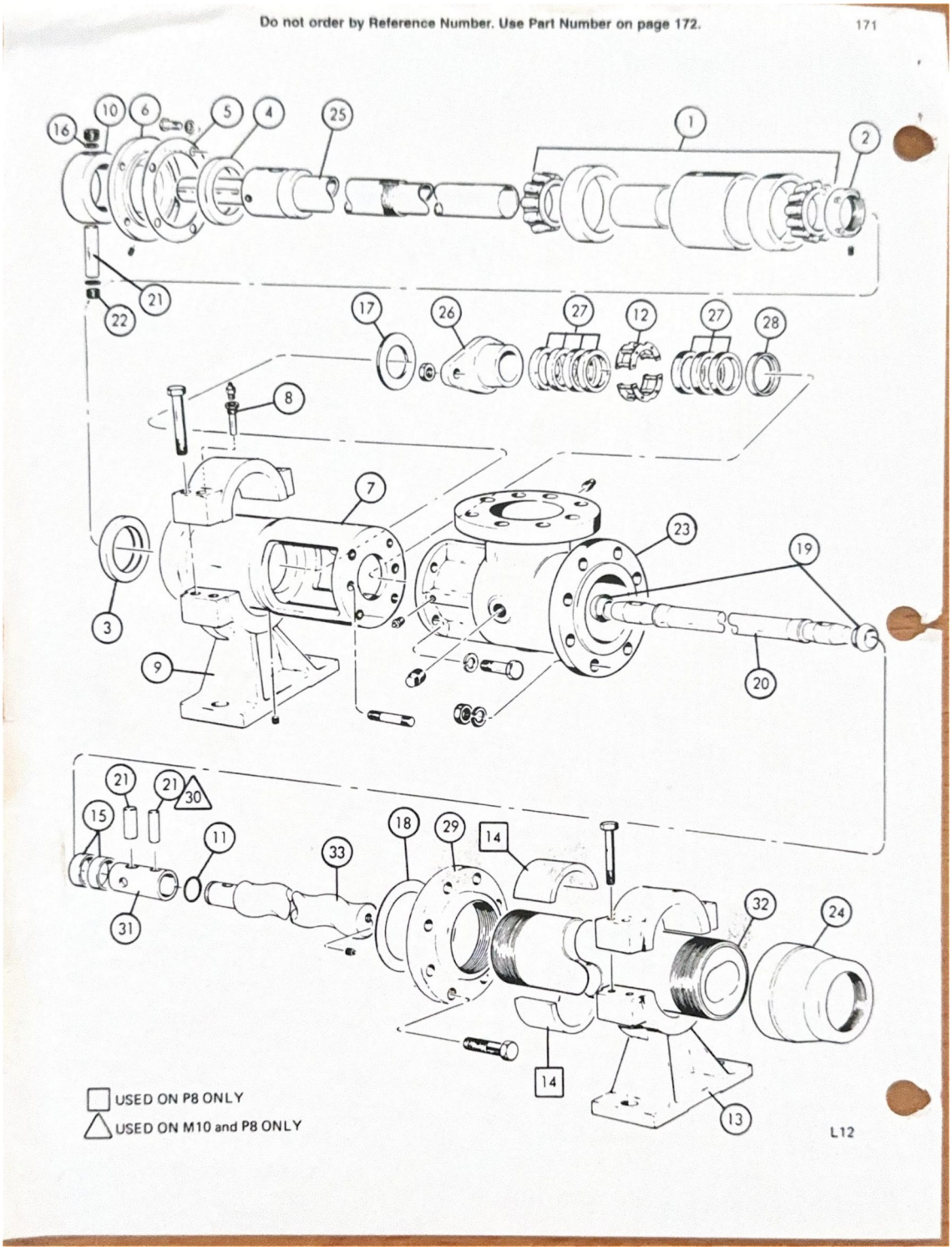

Figure 1. L12 drive-end exploded view used as the reference map for the parts table below. Use the complete part number rather than the reference identifier alone when ordering.

12. L12 parts and replacement references

The following table is specific to the L12 drive-end source. ACCA replacement numbers are shown using the established ACCA cross-reference convention: “A-” + source reference part number. Verify material/type code and frame before ordering.

Ref.	Description	Source reference P/N	ACCA replacement P/N
1	Roller Bearing Assembly	A12311	A-A12311
2	Bearing Lock Nut	A12581	A-A12581
3	Grease Seal (Radial)	A12611	A-A12611
4	Grease Seal (Thrust)	A12611	A-A12611
5	Cover Plate Gasket	A12793	A-A12793
6	Bearing Cover Plate	A12341	A-A12341
7	Bearing Housing	A12051	A-A12051
8	Spud	A12671	A-A12671
9	Pump Support with cap	A12371	A-A12371
10	Shaft Collar	A12491	A-A12491
11	O-Ring (Rotor Head)	A12111	A-A12111
12	Lantern Ring	A12571	A-A12571
13	Stator Support with cap	A12381 / A12382	A-A12381 / A-A12382
15	Pin Retainer	A12501	A-A12501
16	Retaining Screw Washer	A12731	A-A12731
17	Slinger Ring	A12771	A-A12771
19	Connecting Rod Washer	A12531	A-A12531
20	Connecting Rod	B1225D / B1225S	A-B1225D / A-B1225S
21	Pin (Shaft & Rotor)	B1245D / B1245S	A-B1245D / A-B1245S
22	Drive Pin Retaining Screw	B1254D / B1254S	A-B1254D / A-B1254S
23	Suction Housing	B12021 / B12026	A-B12021 / A-B12026
24	Reducer L12/L12H	B12091 / B12096	A-B12091 / A-B12096
25	Drive Shaft	B12261 / B12266	A-B12261 / A-B12266
26	Packing Gland	B1241D / B1241S	A-B1241D / A-B1241S
27	Packing	B12421 / B12425	A-B12421 / A-B12425
28	Packing Washer	B1265D / B1265S	A-B1265D / A-B1265S
29	Adapter Flange L12/L12H	B12121 / B12126	A-B12121 / A-B12126
31	Rotor Head L12/L12H	B12321 / B12326	A-B12321 / A-B12326
Kit	Bearing Kit	L12 roller bearing assembly	A-L12 roller bearing assembly
Kit	Connecting Rod Kit	B1225D / B1225S	A-B1225D / A-B1225S
Stator	1L12	C4112* / C5112*	See complete stator table
Stator	2L12	C4212* / C5212*	See complete stator table
Stator	3L12	C4312* / C5312*	See complete stator table
Rotor	1L12	C71121 / C81121	A-C71121 / A-C81121
Rotor	2L12	C72121 / C82121	A-C72121 / A-C82121
Rotor	3L12	C73121 / C83121	A-C73121 / A-C83121

** For stators, the source manual uses a basic stator number completed by the stator-material/type suffix. Confirm the third construction-code character before ordering.*

12A. L12 stator identification and complete part numbers

The L12 stator part number identifies two separate construction choices: (1) the stator tube/casing construction and (2) the stator material suffix. For L12 pumps, the source parts matrix uses different stator base numbers for carbon/regular-steel and stainless-steel constructions. Identify both before selecting a replacement stator.

Step 1 - Identify the stator tube/casing construction

L12 frame	Carbon / regular-steel stator tube	Stainless-steel stator tube
1L12	C4112	C5112
2L12	C4212	C5212
3L12	C4312	C5312

The asterisk is replaced by the stator-material suffix from Step 2. Example: C4312Q is the 3L12 carbon/regular-steel-tube construction with Q elastomer; C5312Q is the corresponding stainless-steel-tube construction with Q elastomer.

Step 2 - Add the stator material suffix

Code	Material	Durometer
B	EPDM 300	70
C	Nitrile 103	50
D	Tool Steel	-
E	Nitrile 110	70
F	Fluoroelastomer 500	75
G	416 Stainless Steel	-
H	Hastelloy "C"	-
J	17-4 PH Stainless Steel	-
K	Hypalon 800	70
M	Nitrile 100M	70
P	Thiokol	70
Q	Nitrile 100	70
R	Natural Rubber 200	55
T	Teflon 15% glass	-
U	Urethane	70
X	Special to application	-
Z	White Nitrile 150	70

Quick identification examples

Example	Tube construction	Stator material	Reference P/N	ACCA P/N
C4212Q	Carbon / regular steel	Q - Nitrile 100, 70 duro	C4212Q	A-C4212Q
C5212Q	Stainless steel	Q - Nitrile 100, 70 duro	C5212Q	A-C5212Q

Important: C4312Q and C5312Q describe different stator constructions. Both use Q nitrile material, but the C4-series and C5-series base numbers identify different stator tube/casing constructions.

Complete L12 stator part numbers - searchable reference

Frame	Tube	Material	Reference P/N	ACCA P/N
1L12	Carbon / regular steel	B - EPDM 300, 70 duro	C4112B	A-C4112B
1L12	Carbon / regular steel	C - Nitrile 103, 50 duro	C4112C	A-C4112C
1L12	Carbon / regular steel	E - Nitrile 110, 70 duro	C4112E	A-C4112E
1L12	Carbon / regular steel	F - Fluoroelastomer 500, 75 duro	C4112F	A-C4112F
1L12	Carbon / regular steel	K - Hypalon 800, 70 duro	C4112K	A-C4112K

1L12	Carbon / regular steel	M - Nitrile 100M, 70 duro	C4112M	A-C4112M
1L12	Carbon / regular steel	P - Thiokol, 70 duro	C4112P	A-C4112P
1L12	Carbon / regular steel	Q - Nitrile 100, 70 duro	C4112Q	A-C4112Q
1L12	Carbon / regular steel	R - Natural Rubber 200, 55 duro	C4112R	A-C4112R
1L12	Carbon / regular steel	U - Urethane, 70 duro	C4112U	A-C4112U
1L12	Carbon / regular steel	Z - White Nitrile 150, 70 duro	C4112Z	A-C4112Z
1L12	Stainless steel	B - EPDM 300, 70 duro	C5112B	A-C5112B
1L12	Stainless steel	C - Nitrile 103, 50 duro	C5112C	A-C5112C
1L12	Stainless steel	E - Nitrile 110, 70 duro	C5112E	A-C5112E
1L12	Stainless steel	F - Fluoroelastomer 500, 75 duro	C5112F	A-C5112F
1L12	Stainless steel	K - Hypalon 800, 70 duro	C5112K	A-C5112K
1L12	Stainless steel	M - Nitrile 100M, 70 duro	C5112M	A-C5112M
1L12	Stainless steel	P - Thiokol, 70 duro	C5112P	A-C5112P
1L12	Stainless steel	Q - Nitrile 100, 70 duro	C5112Q	A-C5112Q
1L12	Stainless steel	R - Natural Rubber 200, 55 duro	C5112R	A-C5112R
1L12	Stainless steel	U - Urethane, 70 duro	C5112U	A-C5112U
1L12	Stainless steel	Z - White Nitrile 150, 70 duro	C5112Z	A-C5112Z
2L12	Carbon / regular steel	B - EPDM 300, 70 duro	C4212B	A-C4212B
2L12	Carbon / regular steel	C - Nitrile 103, 50 duro	C4212C	A-C4212C
2L12	Carbon / regular steel	E - Nitrile 110, 70 duro	C4212E	A-C4212E
2L12	Carbon / regular steel	F - Fluoroelastomer 500, 75 duro	C4212F	A-C4212F
2L12	Carbon / regular steel	K - Hypalon 800, 70 duro	C4212K	A-C4212K
2L12	Carbon / regular steel	M - Nitrile 100M, 70 duro	C4212M	A-C4212M
2L12	Carbon / regular steel	P - Thiokol, 70 duro	C4212P	A-C4212P
2L12	Carbon / regular steel	Q - Nitrile 100, 70 duro	C4212Q	A-C4212Q
2L12	Carbon / regular steel	R - Natural Rubber 200, 55 duro	C4212R	A-C4212R
2L12	Carbon / regular steel	U - Urethane, 70 duro	C4212U	A-C4212U
2L12	Carbon / regular steel	Z - White Nitrile 150, 70 duro	C4212Z	A-C4212Z
2L12	Stainless steel	B - EPDM 300, 70 duro	C5212B	A-C5212B
2L12	Stainless steel	C - Nitrile 103, 50 duro	C5212C	A-C5212C
2L12	Stainless steel	E - Nitrile 110, 70 duro	C5212E	A-C5212E
2L12	Stainless steel	F - Fluoroelastomer	C5212F	A-C5212F

		500, 75 duro		
2L12	Stainless steel	K - Hypalon 800, 70 duro	C5212K	A-C5212K
2L12	Stainless steel	M - Nitrile 100M, 70 duro	C5212M	A-C5212M
2L12	Stainless steel	P - Thiokol, 70 duro	C5212P	A-C5212P
2L12	Stainless steel	Q - Nitrile 100, 70 duro	C5212Q	A-C5212Q
2L12	Stainless steel	R - Natural Rubber 200, 55 duro	C5212R	A-C5212R
2L12	Stainless steel	U - Urethane, 70 duro	C5212U	A-C5212U
2L12	Stainless steel	Z - White Nitrile 150, 70 duro	C5212Z	A-C5212Z
3L12	Carbon / regular steel	B - EPDM 300, 70 duro	C4312B	A-C4312B
3L12	Carbon / regular steel	C - Nitrile 103, 50 duro	C4312C	A-C4312C
3L12	Carbon / regular steel	E - Nitrile 110, 70 duro	C4312E	A-C4312E
3L12	Carbon / regular steel	F - Fluoroelastomer 500, 75 duro	C4312F	A-C4312F
3L12	Carbon / regular steel	K - Hypalon 800, 70 duro	C4312K	A-C4312K
3L12	Carbon / regular steel	M - Nitrile 100M, 70 duro	C4312M	A-C4312M
3L12	Carbon / regular steel	P - Thiokol, 70 duro	C4312P	A-C4312P
3L12	Carbon / regular steel	Q - Nitrile 100, 70 duro	C4312Q	A-C4312Q
3L12	Carbon / regular steel	R - Natural Rubber 200, 55 duro	C4312R	A-C4312R
3L12	Carbon / regular steel	U - Urethane, 70 duro	C4312U	A-C4312U
3L12	Carbon / regular steel	Z - White Nitrile 150, 70 duro	C4312Z	A-C4312Z
3L12	Stainless steel	B - EPDM 300, 70 duro	C5312B	A-C5312B
3L12	Stainless steel	C - Nitrile 103, 50 duro	C5312C	A-C5312C
3L12	Stainless steel	E - Nitrile 110, 70 duro	C5312E	A-C5312E
3L12	Stainless steel	F - Fluoroelastomer 500, 75 duro	C5312F	A-C5312F
3L12	Stainless steel	K - Hypalon 800, 70 duro	C5312K	A-C5312K
3L12	Stainless steel	M - Nitrile 100M, 70 duro	C5312M	A-C5312M
3L12	Stainless steel	P - Thiokol, 70 duro	C5312P	A-C5312P
3L12	Stainless steel	Q - Nitrile 100, 70 duro	C5312Q	A-C5312Q
3L12	Stainless steel	R - Natural Rubber 200, 55 duro	C5312R	A-C5312R
3L12	Stainless steel	U - Urethane, 70 duro	C5312U	A-C5312U
3L12	Stainless steel	Z - White Nitrile 150, 70 duro	C5312Z	A-C5312Z

13. Recommended spare parts

For equipment where downtime is costly, maintain at least the following model- and material-correct spares:

- 1 rotor
- 1 stator
- 1 connecting rod kit
- 1 bearing kit
- 1 packing set
- Grease seals and common joint-retaining hardware

14. Service record and ACCA support

Date	Hours	Work performed	Parts installed	Technician

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Compatibility statement: References to Moyno model designations and source part numbers are used solely to identify compatibility and service fitment. Moyno is a registered trademark of its respective owner. ACCA Pumps / ACCA Industrial LLC is an independent manufacturer and supplier of replacement pumps and parts.