ACCA PUMPS

L10 PROGRESSIVE CAVITY PUMP

Operation, Maintenance, Assembly & Replacement Parts Manual

Applicable frames	1L10, 2L10, 3L10
Compatible drive-end family	L10; source manual also covers 1L10H, 2L10H, 3M8, 3P6, 6P6, 9P6
Document	ACCA-L10-MM-01
Revision	Rev. A - September 2026

IMPORTANT: This ACCA manual is an independent service document for ACCA replacement pumps and parts compatible with the Moyno L10 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, L10 reference identifiers, component descriptions, frame coverage and reference part numbers are derived from the supplied L10 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 L10 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, 2L10 denotes a two-stage L-frame pump using size-2 pumping elements.

Frame	1L10
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 L10 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 L10 drive-end reassembly, the source specifies three packing rings, then the lantern ring, followed by four packing rings. Stagger ring joints during installation.

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 L10 drive end uses ball bearings. The source manual states that factory-lubricated bearings normally require no additional lubrication for at least 1,500 hours of normal operation. When servicing, remove the bearing/shaft assembly, clean out the old grease, and refill only about one-third of the space between the bearings.

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 L10 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. L10 exploded view

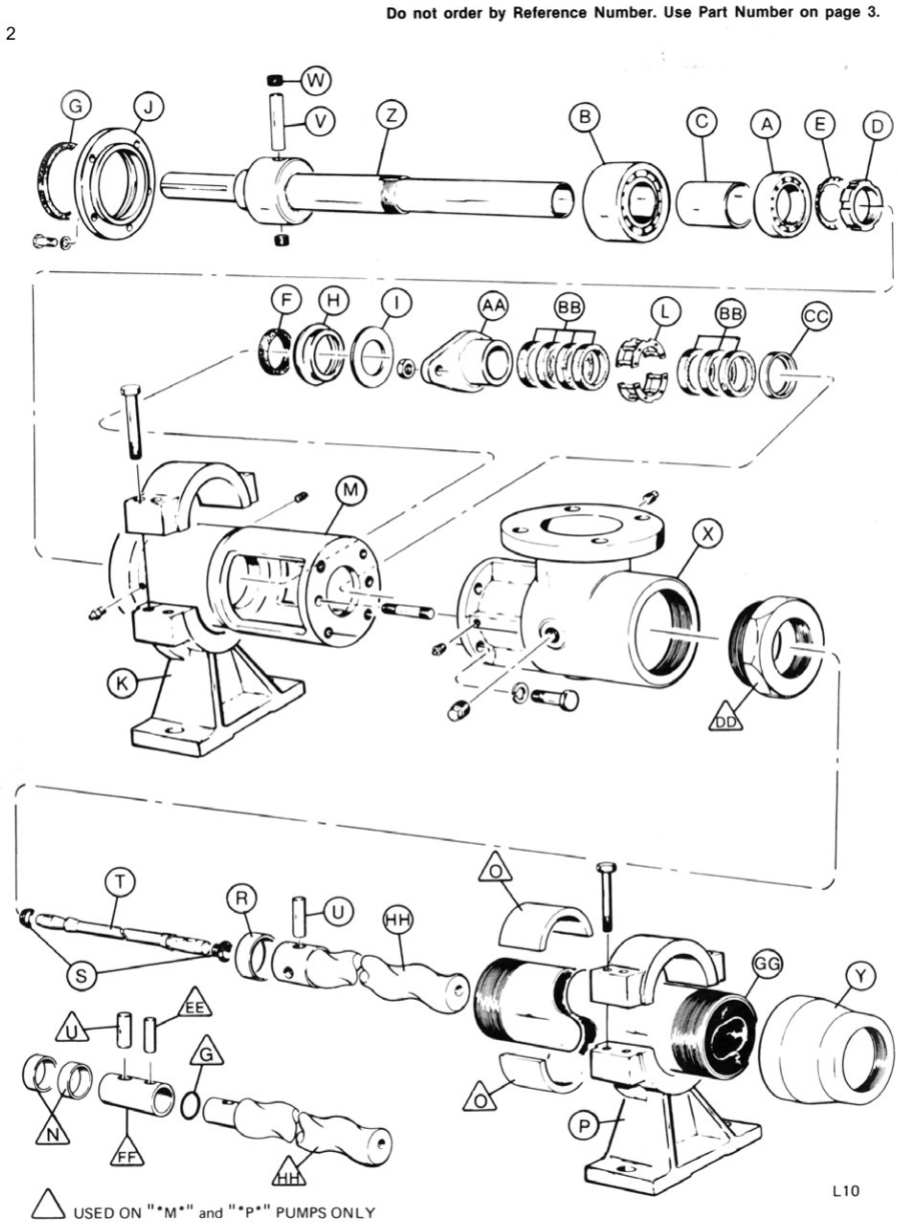

Figure 1. L10 drive-end exploded view used as the reference map for the parts table below. Use the complete part number rather than the reference identifier alone when ordering.

12. L10 parts and replacement references

The following table is specific to the L10 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
A	Ball Bearing (Radial)	A10291	A-A10291
B	Ball Bearing (Thrust)	A10301	A-A10301
C	Bearing Spacer	A10331	A-A10331
D	Bearing Lock Nut	A10581	A-A10581
E	Bearing Lock Washer	A10591	A-A10591
F	Grease Seal (Radial)	A10611	A-A10611
G	Grease Seal (Thrust)	A10621	A-A10621
H	Grease Seal Retainer	A10631	A-A10631
I	Slinger Ring	A10771	A-A10771
J	Bearing Cover Plate	A10341	A-A10341
K	Pump Support	A10371	A-A10371
L	Lantern Ring	A10571	A-A10571
M	Bearing Housing	A10051	A-A10051
P	Stator Support	A10381	A-A10381
R	Pin Retainer	A10501	A-A10501
S	Connecting Rod Washer	A10531	A-A10531
T	Connecting Rod	B1025D / B1025S	A-B1025D / A-B1025S
U	Rotor Pin	B1045D / B1045S	A-B1045D / A-B1045S
V	Shaft Pin	B1046D / B1046S	A-B1046D / A-B1046S
W	Drive Pin Retaining Screw	B1054D / B1054S	A-B1054D / A-B1054S
X	Suction Housing	B10021 / B10026	A-B10021 / A-B10026
Y	Reducer - L10/L10H	B10091 / B10096	A-B10091 / A-B10096
Z	Drive Shaft	B10261 / B10266	A-B10261 / A-B10266
AA	Packing Gland	B1041D / B1041S	A-B1041D / A-B1041S
BB	Packing	B10421 / B10425	A-B10421 / A-B10425
CC	Packing Washer	B1065D / B1065S	A-B1065D / A-B1065S
Kit	Bearing Kit	K10291	A-K10291
Kit	Connecting Rod Kit	K1025D / K1025S	A-K1025D / A-K1025S
Stator	1L10	C4110* / C5110*	See complete stator table
Stator	2L10	C4210* / C5210*	See complete stator table
Stator	3L10	C4310* / C5310*	See complete stator table
Rotor	1L10	C71101 / C81101	A-C71101 / A-C81101
Rotor	2L10	C72101 / C82101	A-C72101 / A-C82101
Rotor	3L10	C73101 / C83101	A-C73101 / A-C83101

** 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. L10 stator identification and complete part numbers

The L10 stator part number identifies two separate construction choices: (1) the stator tube/casing construction and (2) the stator material suffix. For L10 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

L10 frame	Carbon / regular-steel stator tube	Stainless-steel stator tube
1L10	C4110	C5110
2L10	C4210	C5210
3L10	C4310	C5310

The asterisk is replaced by the stator-material suffix from Step 2. Example: C4310Q is the 3L10 carbon/regular-steel-tube construction with Q elastomer; C5310Q 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
C4210Q	Carbon / regular steel	Q - Nitrile 100, 70 duro	C4210Q	A-C4210Q
C5210Q	Stainless steel	Q - Nitrile 100, 70 duro	C5210Q	A-C5210Q

Important: C4310Q and C5310Q 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 L10 stator part numbers - searchable reference

Frame	Tube	Material	Reference P/N	ACCA P/N
1L10	Carbon / regular steel	B - EPDM 300, 70 duro	C4110B	A-C4110B
1L10	Carbon / regular steel	C - Nitrile 103, 50 duro	C4110C	A-C4110C
1L10	Carbon / regular steel	E - Nitrile 110, 70 duro	C4110E	A-C4110E
1L10	Carbon / regular steel	F - Fluoroelastomer 500, 75 duro	C4110F	A-C4110F
1L10	Carbon / regular steel	K - Hypalon 800, 70 duro	C4110K	A-C4110K

1L10	Carbon / regular steel	M - Nitrile 100M, 70 duro	C4110M	A-C4110M
1L10	Carbon / regular steel	P - Thiokol, 70 duro	C4110P	A-C4110P
1L10	Carbon / regular steel	Q - Nitrile 100, 70 duro	C4110Q	A-C4110Q
1L10	Carbon / regular steel	R - Natural Rubber 200, 55 duro	C4110R	A-C4110R
1L10	Carbon / regular steel	U - Urethane, 70 duro	C4110U	A-C4110U
1L10	Carbon / regular steel	Z - White Nitrile 150, 70 duro	C4110Z	A-C4110Z
1L10	Stainless steel	B - EPDM 300, 70 duro	C5110B	A-C5110B
1L10	Stainless steel	C - Nitrile 103, 50 duro	C5110C	A-C5110C
1L10	Stainless steel	E - Nitrile 110, 70 duro	C5110E	A-C5110E
1L10	Stainless steel	F - Fluoroelastomer 500, 75 duro	C5110F	A-C5110F
1L10	Stainless steel	K - Hypalon 800, 70 duro	C5110K	A-C5110K
1L10	Stainless steel	M - Nitrile 100M, 70 duro	C5110M	A-C5110M
1L10	Stainless steel	P - Thiokol, 70 duro	C5110P	A-C5110P
1L10	Stainless steel	Q - Nitrile 100, 70 duro	C5110Q	A-C5110Q
1L10	Stainless steel	R - Natural Rubber 200, 55 duro	C5110R	A-C5110R
1L10	Stainless steel	U - Urethane, 70 duro	C5110U	A-C5110U
1L10	Stainless steel	Z - White Nitrile 150, 70 duro	C5110Z	A-C5110Z
2L10	Carbon / regular steel	B - EPDM 300, 70 duro	C4210B	A-C4210B
2L10	Carbon / regular steel	C - Nitrile 103, 50 duro	C4210C	A-C4210C
2L10	Carbon / regular steel	E - Nitrile 110, 70 duro	C4210E	A-C4210E
2L10	Carbon / regular steel	F - Fluoroelastomer 500, 75 duro	C4210F	A-C4210F
2L10	Carbon / regular steel	K - Hypalon 800, 70 duro	C4210K	A-C4210K
2L10	Carbon / regular steel	M - Nitrile 100M, 70 duro	C4210M	A-C4210M
2L10	Carbon / regular steel	P - Thiokol, 70 duro	C4210P	A-C4210P
2L10	Carbon / regular steel	Q - Nitrile 100, 70 duro	C4210Q	A-C4210Q
2L10	Carbon / regular steel	R - Natural Rubber 200, 55 duro	C4210R	A-C4210R
2L10	Carbon / regular steel	U - Urethane, 70 duro	C4210U	A-C4210U
2L10	Carbon / regular steel	Z - White Nitrile 150, 70 duro	C4210Z	A-C4210Z
2L10	Stainless steel	B - EPDM 300, 70 duro	C5210B	A-C5210B
2L10	Stainless steel	C - Nitrile 103, 50 duro	C5210C	A-C5210C
2L10	Stainless steel	E - Nitrile 110, 70 duro	C5210E	A-C5210E
2L10	Stainless steel	F - Fluoroelastomer	C5210F	A-C5210F

		500, 75 duro		
2L10	Stainless steel	K - Hypalon 800, 70 duro	C5210K	A-C5210K
2L10	Stainless steel	M - Nitrile 100M, 70 duro	C5210M	A-C5210M
2L10	Stainless steel	P - Thiokol, 70 duro	C5210P	A-C5210P
2L10	Stainless steel	Q - Nitrile 100, 70 duro	C5210Q	A-C5210Q
2L10	Stainless steel	R - Natural Rubber 200, 55 duro	C5210R	A-C5210R
2L10	Stainless steel	U - Urethane, 70 duro	C5210U	A-C5210U
2L10	Stainless steel	Z - White Nitrile 150, 70 duro	C5210Z	A-C5210Z
3L10	Carbon / regular steel	B - EPDM 300, 70 duro	C4310B	A-C4310B
3L10	Carbon / regular steel	C - Nitrile 103, 50 duro	C4310C	A-C4310C
3L10	Carbon / regular steel	E - Nitrile 110, 70 duro	C4310E	A-C4310E
3L10	Carbon / regular steel	F - Fluoroelastomer 500, 75 duro	C4310F	A-C4310F
3L10	Carbon / regular steel	K - Hypalon 800, 70 duro	C4310K	A-C4310K
3L10	Carbon / regular steel	M - Nitrile 100M, 70 duro	C4310M	A-C4310M
3L10	Carbon / regular steel	P - Thiokol, 70 duro	C4310P	A-C4310P
3L10	Carbon / regular steel	Q - Nitrile 100, 70 duro	C4310Q	A-C4310Q
3L10	Carbon / regular steel	R - Natural Rubber 200, 55 duro	C4310R	A-C4310R
3L10	Carbon / regular steel	U - Urethane, 70 duro	C4310U	A-C4310U
3L10	Carbon / regular steel	Z - White Nitrile 150, 70 duro	C4310Z	A-C4310Z
3L10	Stainless steel	B - EPDM 300, 70 duro	C5310B	A-C5310B
3L10	Stainless steel	C - Nitrile 103, 50 duro	C5310C	A-C5310C
3L10	Stainless steel	E - Nitrile 110, 70 duro	C5310E	A-C5310E
3L10	Stainless steel	F - Fluoroelastomer 500, 75 duro	C5310F	A-C5310F
3L10	Stainless steel	K - Hypalon 800, 70 duro	C5310K	A-C5310K
3L10	Stainless steel	M - Nitrile 100M, 70 duro	C5310M	A-C5310M
3L10	Stainless steel	P - Thiokol, 70 duro	C5310P	A-C5310P
3L10	Stainless steel	Q - Nitrile 100, 70 duro	C5310Q	A-C5310Q
3L10	Stainless steel	R - Natural Rubber 200, 55 duro	C5310R	A-C5310R
3L10	Stainless steel	U - Urethane, 70 duro	C5310U	A-C5310U
3L10	Stainless steel	Z - White Nitrile 150, 70 duro	C5310Z	A-C5310Z

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

ACCA PARTS & TECHNICAL SUPPORT: 281-576-7722 | info@accapumps.com | accapumps.com

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.