

Check-Mate[®] Elite Series Displacement Pumps

3A8564C

EN

Pump with priming piston and Elite Series rod and cylinder. For professional use only.

Model L100CE and L200CE

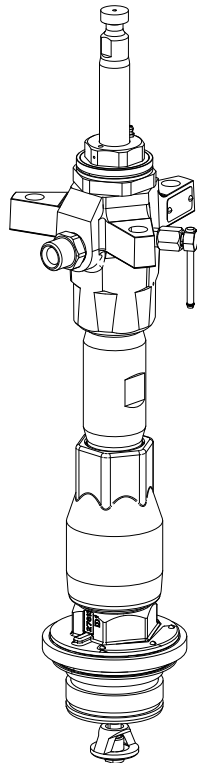
See **Models** page 3 for model information,

4200 psi (28.96 MPa, 289.58bar) Maximum Working Pressure.

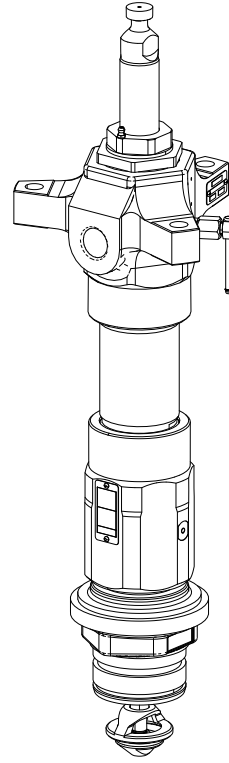


Important Safety Instructions

Read all warnings and instructions in this manual before using the equipment.
Save these instructions.



Model L100CE



Model L200CE

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Related Manuals

English Manuals	Description
312376	Check-Mate® Pump Packages Instruction-Parts
313526	Supply Units Operation
313527	Supply Units Repair-Parts
313528	Tandem Supply Units Operation
313529	Tandem Supply Units Repair-Parts
3A6331	E-Flo® SP Supply Systems
333586	E-Flo® IQ Dispense Systems

Models

Check your displacement pump's identification plate (ID) for the 6-digit part number of your displacement pump. Use the following matrix to define the construction of your displacement pump, based on the six digits. For example, displacement pump Part No. **L200CE** represents the displacement pump (**L**), output volume in cc per cycle (**200**), carbon steel construction (**C**), and Elite series (**E**).

To order replacement parts, see **Parts** section starting on page 22. The digits in the matrix do not correspond to the Ref. Nos. in the **Parts** drawings and lists page 22.

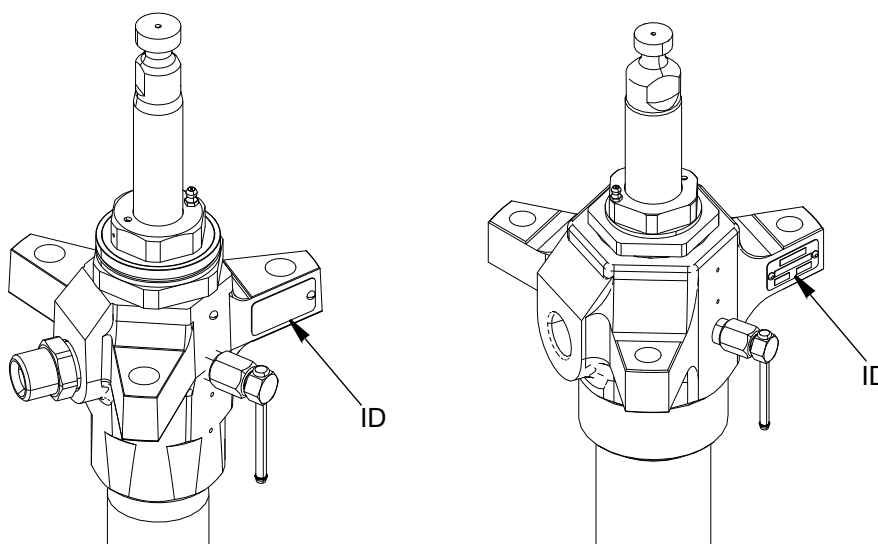





FIG. 1

L	100/200	C		E	
First Digit	Second, Third, and Fourth Digits	Fifth Digit		Sixth Digit	
	Displacement Pump Volume per cycle (cc)		Material		Coatings, Packings
L	100	C	Carbon Steel	E	Elite
(Displacement pump)	200				

Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

 <h1 style="margin: 0;">WARNING</h1>	
	<p>SKIN INJECTION HAZARD</p> <p>High-pressure fluid from dispensing device, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. Get immediate surgical treatment.</p> <ul style="list-style-type: none"> • Do not point dispensing device at anyone or at any part of the body. • Do not put your hand over the spray tip. • Do not stop or deflect leaks with your hand, body, glove, or rag. • Engage trigger lock when not spraying. • Follow the Pressure Relief Procedure when you stop dispensing and before cleaning, checking, or servicing equipment. • Tighten all fluid connections before operating the equipment. • Check hoses and couplings daily. Replace worn or damaged parts immediately.
	<p>MOVING PARTS HAZARD</p> <p>Moving parts can pinch, cut or amputate fingers and other body parts.</p> <ul style="list-style-type: none"> • Keep clear of moving parts. • Do not operate equipment with protective guards or covers removed. • Equipment can start without warning. Before checking, moving, or servicing equipment, follow the Pressure Relief Procedure and disconnect all power sources.

WARNING



FIRE AND EXPLOSION HAZARD

Flammable fumes, such as solvent and paint fumes, in **work area** can ignite or explode. Paint or solvent flowing through the equipment can cause static sparking. To help prevent fire and explosion:



- Use equipment only in well-ventilated area.
- Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static sparking).
- Ground all equipment in the work area.
- Never spray or flush solvent at high pressure.
- Keep work area free of debris, including solvent, rags and gasoline.
- Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.
- Use only grounded hoses.
- Hold gun firmly to side of grounded pail when triggering into pail. Do not use pail liners unless they are anti-static or conductive.
- **Stop operation immediately** if static sparking occurs or you feel a shock. Do not use equipment until you identify and correct the problem.
- Keep a working fire extinguisher in the work area.



EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.



- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Specifications** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Specifications** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request Safety Data Sheets (SDSs) from distributor or retailer.
- Do not leave the work area while equipment is energized or under pressure.
- Turn off all equipment and follow the **Pressure Relief Procedure** when equipment is not in use.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.
- Make sure all equipment is rated and approved for the environment in which you are using it.
- Use equipment only for its intended purpose. Call your distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.

WARNING



TOXIC FLUID OR FUMES HAZARD

Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled or swallowed.

- Read Safety Data Sheets (SDSs) for handling instructions and to know the specific hazards of the fluids you are using, including the effects of long-term exposure.
- When spraying, servicing equipment, or when in the work area, always keep work area well-ventilated and always wear appropriate personal protective equipment. See **Personal Protective Equipment** warnings in this manual.
- Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.



PERSONAL PROTECTIVE EQUIPMENT

Always wear appropriate personal protective equipment and cover all skin when spraying, servicing equipment, or when in the work area. Protective equipment helps prevent serious injury, including long-term exposure; inhalation of toxic fumes, mists or vapors; allergic reaction; burns; eye injury and hearing loss. This protective equipment includes but is not limited to:

- A properly fitting respirator, which may include a supplied-air respirator, chemically impermeable gloves, protective clothing and foot coverings as recommended by the fluid manufacturer and local regulatory authority.
- Protective eyewear and hearing protection.

Important Isocyanate (ISO) Information

Isocyanates (ISO) are catalysts used in two component materials.

Isocyanate Conditions



Spraying or dispensing fluids that contain isocyanates creates potentially harmful mists, vapors, and atomized particulates.

- Read and understand the fluid manufacturer's warnings and Safety Data Sheets (SDSs) to know specific hazards and precautions related to isocyanates.
- Use of isocyanates involves potentially hazardous procedures. Do not spray with this equipment unless you are trained, qualified, and have read and understood the information in this manual and in the fluid manufacturer's application instructions and SDSs.
- Use of incorrectly maintained or mis-adjusted equipment may result in improperly cured material. Equipment must be carefully maintained and adjusted according to instructions in the manual.
- To prevent inhalation of isocyanate mists, vapors, and atomized particulates, everyone in the work area must wear appropriate respiratory protection. Always wear a properly fitting respirator, which may include a supplied-air respirator. Ventilate the work area according to instructions in the fluid manufacturer's SDSs.
- Avoid all skin contact with isocyanates. Everyone in the work area must wear chemically impermeable gloves, protective clothing and foot coverings as recommended by the fluid manufacturer and local regulatory authority. Follow all fluid manufacturer recommendations, including those regarding handling of contaminated clothing. After spraying, wash hands and face before eating or drinking.

Moisture Sensitivity of Isocyanates

Exposure to moisture (such as humidity) will cause ISO to partially cure, forming small, hard, abrasive crystal that become suspended in the fluid. Eventually a film will form on the surface and the ISO will begin to gel, increasing in viscosity.

NOTICE

Partially cured ISO will reduce performance and the life of all wetted parts.

- Always use a sealed container with a desiccant dryer in the vent, or a nitrogen atmosphere. **Never** store ISO in an open container.
- Keep the ISO pump wet cup or reservoir (if installed) filled with appropriate lubricant. The lubricant creates a barrier between the ISO and the atmosphere.
- Use only moisture-proof hoses compatible with ISO.
- Never use reclaimed solvents, which may contain moisture. Always keep solvent containers closed when not in use.
- Always lubricate threaded parts with an appropriate lubricant when reassembling.

NOTE: The amount of film formation and rate of crystallization varies depending on the blend of ISO, the humidity, and the temperature.

Changing Materials

NOTICE

Changing the material types used in your equipment requires special attention to avoid equipment damage and downtime.

- When changing materials, flush the equipment multiple times to ensure it is thoroughly clean.
- Always clean the fluid inlet strainers after flushing.
- Check with your material manufacturer for chemical compatibility.
- When changing between epoxies and urethanes or polyureas, disassemble and clean all fluid components and change hoses. Epoxies often have amines on the B (hardener) side. Polyureas often have amines on the B (resin) side.

Component Identification

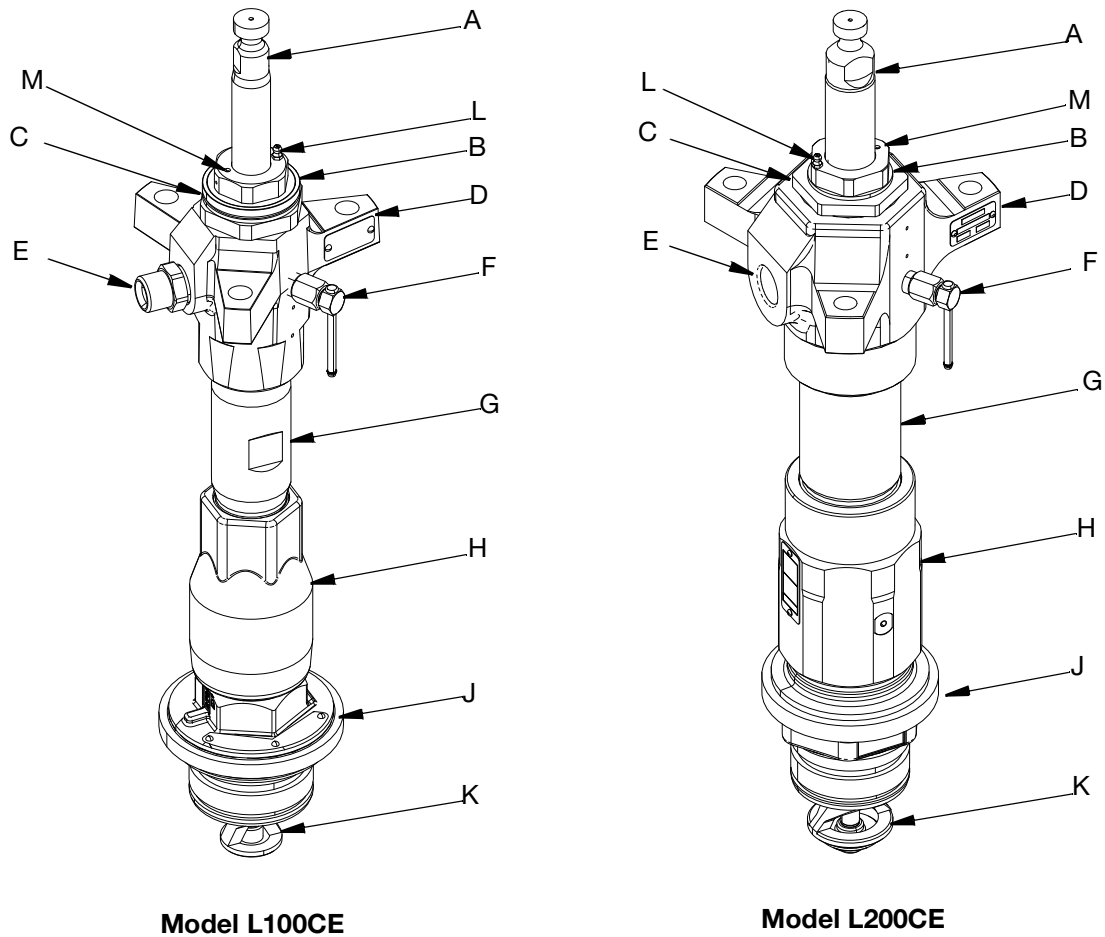


FIG. 2:

Key:

- A Displacement Rod
- B Seal Retainer
- C Throat Packing Cartridge
- D Outlet Housing
- E Fluid Outlet
- F Pump Bleed Valve
- G Pump Cylinder

- H Intake valve Housing
- J Intake Cylinder
- K Priming Piston Assembly
- L Grease Fitting
- M Grease fitting vent

Operation

Pressure Relief Procedure



Follow the Pressure Relief Procedure whenever you see this symbol.



This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashing fluid and moving parts, follow the Pressure Relief Procedure when you stop spraying and before cleaning, checking, or servicing the equipment.

1. Engage the gun/valve trigger.
2. **For D200s, D200, D60 and S20 Air Controls:** See FIG. 3.
 - a. Close the air motor slider valve and the main air slider valve.
 - b. Set the ram director valve to DOWN. The ram will slowly drop.
 - c. Jog the director valve up and down to bleed air from ram cylinders. See FIG. 3.

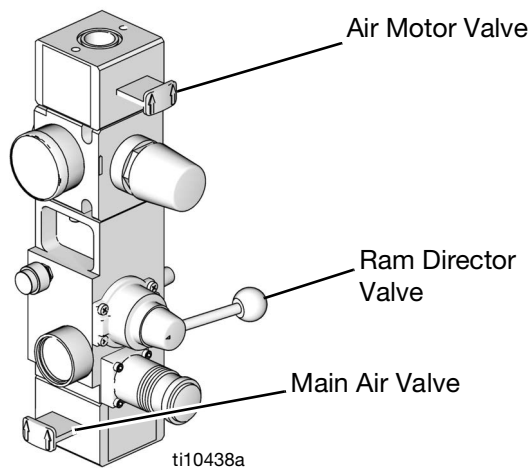


FIG. 3

3. **For L20c Air Controls:** See FIG. 4.
 - a. Close the bleed type air motor valve and the elevator director valve. The ram will slowly drop. See FIG. 4.

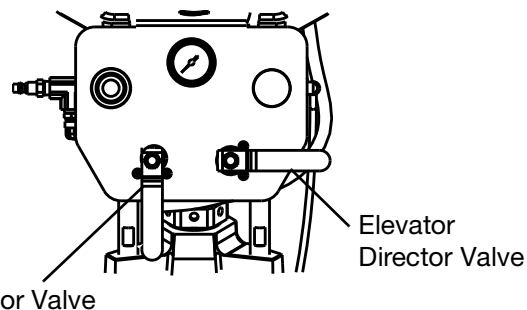


FIG. 4

4. Engage the gun/valve trigger lock.
5. Hold a metal part of the gun/valve firmly to the side of a grounded metal pail, and trigger the gun/valve to relieve pressure.
6. Engage the gun/valve trigger.
7. Open the fluid line drain valve and the pump bleed valve (P). Have a container ready to catch the drainage.
8. Leave the pump bleed valve open until ready to spray again. See FIG. 5.

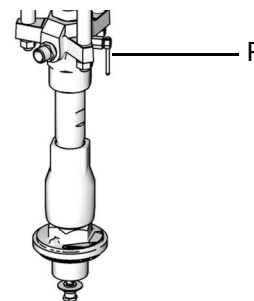


FIG. 5

If you suspect that the spray tip/nozzle or hose is completely clogged, or that pressure has not been fully relieved after following the steps above, very slowly loosen the tip guard retaining nut, nozzle, or hose end coupling and relieve pressure gradually, then loosen completely. Now clear the tip/nozzle or hose.

Maintenance

Pump Lubrication

Frequency of greasing intervals is dependent on material being pumped. As a basic schedule lubricate pump with grease after 250 gallons of product (five drums or fifty, five gallon pails) has been passed through pump.

If the grease has become hardened, remove the seal retainer (B) and remove the hardened materials or grease. Shorten the intervals between greasing the pump.

If the grease remains a clear and clean liquid the intervals between greasing the pump can be extended.

Use Graco 0553-6 grease (138) or equivalent to lubricate pump.

To grease the pump

1. Loosen M5 SHS EXT screw (102) two turns to permit grease to circulate through pump correctly.

2. Attach grease gun to grease fitting (101) until fresh grease is observed to come out grease relief hole below the M5 SHS EXT screw (102). See FIG. 6.

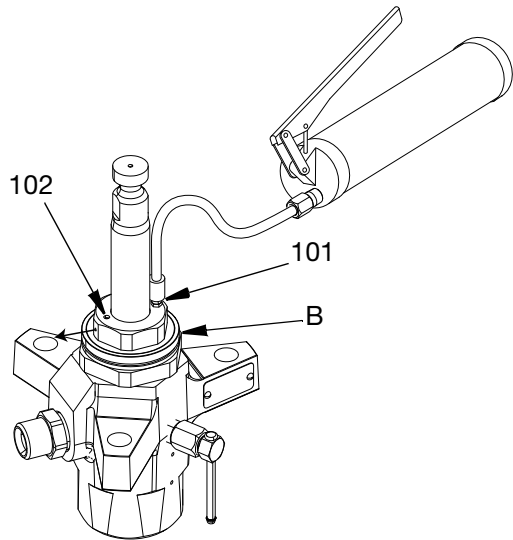


FIG. 6

Recycling and Disposal

End of Product Life

At the end of the product's useful life, dismantle and recycle it in a responsible manner.

- Perform the **Pressure Relief Procedure** page 9.

- Drain and dispose of fluids according to applicable regulations. Refer to the material manufacturer's Safety Data Sheet.
- Deliver remaining product to a recycling facility.

Troubleshooting



1. Follow **Pressure Relief Procedure**, page 9.
2. Check all possible problems and causes before disassembling pump.

Problem	Cause	Solution
Pump fails to operate.	Restricted line or inadequate air supply; closed or clogged valves.	Clear; increase air supply. Ensure that all valves are open.
	Obstructed fluid hose or gun/valve; fluid hose ID is too small.	Open, clear*; use a hose with a larger ID.
	Fluid dried on displacement rod.	Clean. Always stop pump at bottom of stroke. Keep enclosed grease cup filled with a compatible grease.
	Dirty, worn, or damaged motor parts.	Clean or repair; see separate motor manual.
	Runaway occurred.	See runaway section of Supply Units Operation manual 313526.
Pump operates but output is low on both strokes.	Restricted line or inadequate air supply; closed or clogged valves.	Clear; increase air supply. Ensure all valves are open.
		Increase air pressure to ram for better loading.
	Obstructed fluid hose or gun/valve; fluid hose ID is too small.	Open, clear*; use a hose with a larger ID.
	Bleed-type air valve is partially open.	Close bleed-type air valve.
	Air is leaking into supply container.	Check ram plate seal.
	Fluid is too heavy for pump priming.	Use drain/purge valve. Use a ram. See Supply Units Operation manual 313526.
	Held open or worn intake valve or seals.	Clear valve; replace seals.
Pump operates, but output is low on downstroke.	Fluid is too heavy for pump priming.	Use drain/purge valve. Use a ram. See Supply Units Operation manual 313526.
	Held open or worn intake valve or seals.	Clear valve. Replace seals.
Pump operates, but output is low on upstroke.	Held open or worn intake valve or seals.	Clear valve. Replace seals.

Problem	Cause	Solution
Erratic or accelerated pump speed.	Exhausted fluid supply.	Refill and prime.
	Fluid is too heavy for pump priming.	Use drain/purge valve. Use a ram. See Supply Units Operation manual 313526.
		Increase ram air pressure.
	Held open or worn intake valve or seals.	Clear valve. Replace seals.
	Held open or worn priming piston.	Clear; service.
	Worn packings in displacement pump.	Replace packings.

* To determine if fluid hose or gun is obstructed, follow **Pressure Relief Procedure**, page 9. Disconnect fluid hose and place a container at pump fluid outlet to catch any fluid. Turn on air just enough to start pump. If pump starts when air is turned on, the obstruction is in the fluid hose or gun.

Repair

Required Tools

- Torque wrench
- Bench vise, with soft jaws
- Rubber mallet
- Hammer
- 400 mm (15.8 in.) adjustable wrench
- O-ring pick
- Flat head screwdriver
- 13 mm (1/2 in.) Dia. brass rod
- Set of socket wrenches
- Set of adjustable wrenches
- 24 in. (610 mm) adjustable wrench
- M4 hex key wrench
- Thread lubricant
- Thread sealant
- Loctite® 2760™ or equivalent

Disassembly

NOTE: When disassembling displacement pump, lay out all removed parts in sequence to ease reassembly. Clean all parts with a compatible solvent and inspect them for wear or damage.



1. Relieve pressure see **Pressure Relief Procedure**, page 9.
2. Disconnect displacement pump from air motor as illustrated in your Check-Mate Pump Package manual 312376, 3A6331 or 333586.

NOTE: 100 cc Displacement Pump L100CE, shown in the disassembly illustrations. Both 100 cc Displacement Pump L100CE and 200 cc Displacement Pump L200CE procedures are the same.

3. Place displacement pump in a vise, with jaws placed on the section that is needed to be secure while removing other parts in each step.
4. Push on the upper displacement rod (118) to expose flats of the lower shaft assembly (125). Hold flats of the lower shaft assembly (125) with an adjustable wrench, and use a second wrench to unscrew shovel nut (133) from lower shaft assembly. Slide shovel piston (132) off rod. Inspect surfaces of shovel nut and lower shaft assembly for scoring, wear, or other damage. See FIG. 7.

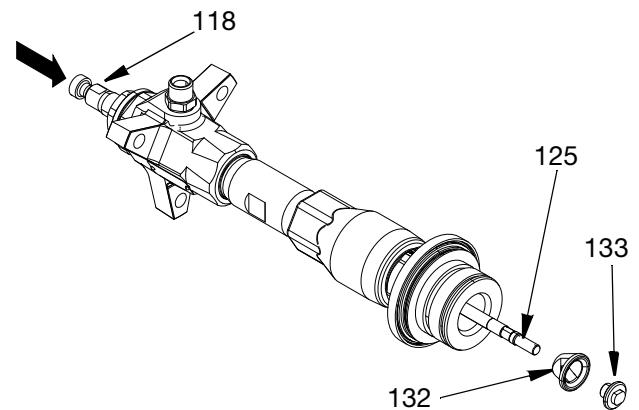


FIG. 7

5. Use an adjustable wrench on the hex of the intake cylinder (131) and unscrew it from the valve housing (117). See FIG. 8.

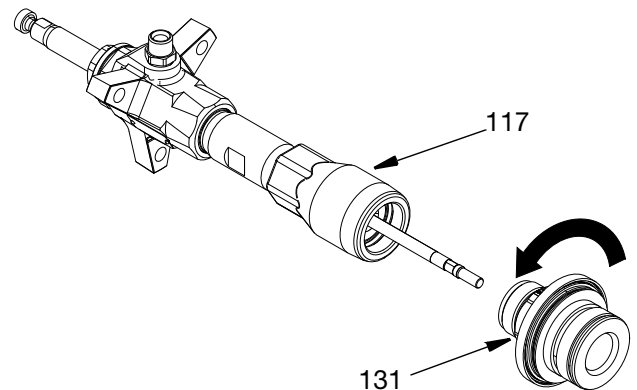


FIG. 8

6. Remove remaining assembly using an adjustable wrench to unscrew valve housing (117) from cylinder (116). While the bench vice is secured on the cylinder, pull the valve housing off of the cylinder. Poppet inlet check valve (128), and inlet seat check valve (129) should slide down the lower shaft assembly (125) inside the valve housing as you remove the valve housing.
7. Use an O-ring pick to remove seal (130) from valve housing (117). Discard seal and use a new one for reassembly.
8. Pull the inlet seat check valve (129) out of the bottom of the valve housing (117). Remove the poppet inlet check valve (128) carefully making sure that it does not get damaged as it can freely fall out after the inlet seat check valve is removed. See FIG. 9. For seal removal from poppet inlet check valve see step 14 page 15.

NOTE: If seat check in valve (129) is difficult to remove, insert a hammer and brass rod through the hex side of the valve housing (117) and drive seat out. Do not strike the seating surface at the center of the seat inlet check valve (129). See FIG. 9. .

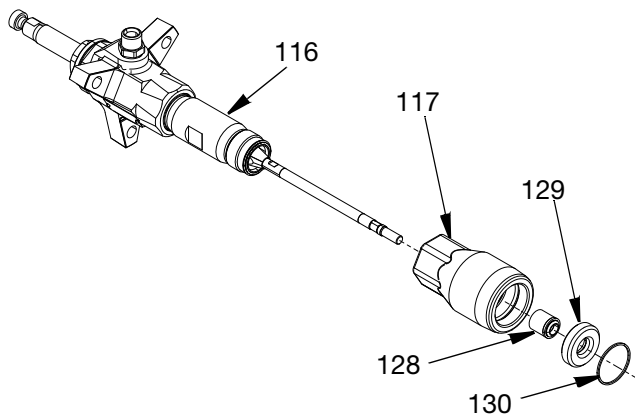


FIG. 9

9. Use an adjustable wrench on the flats of the cylinder (116) while the bench vice is secured to the outlet housing (109). Unscrew the cylinder from the outlet housing. Remove O-rings (105) from the cylinder. Inspect inside surface of cylinder for wear, scoring, or other damage by holding it up to a light at an angle or running a finger over the surface. See FIG. 10.

NOTE: Model L200CE does not have flats on the CM200 cylinder (208). .

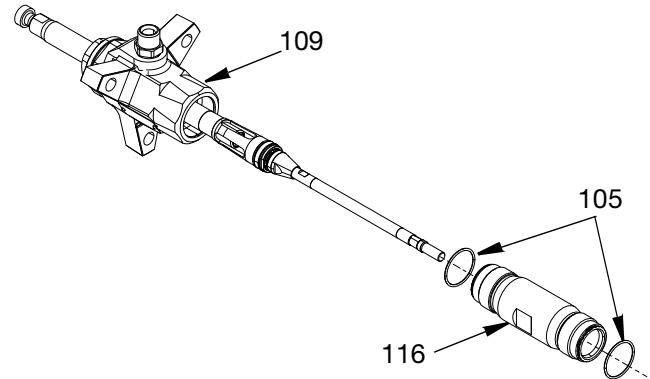


FIG. 10

10. Use a rubber mallet to drive the upper displacement rod (118) and lower shaft assembly (125) out of the outlet housing (109). Inspect shaft surfaces by running a finger over the surface of the shafts and checking for wear or scoring. See FIG. 11.

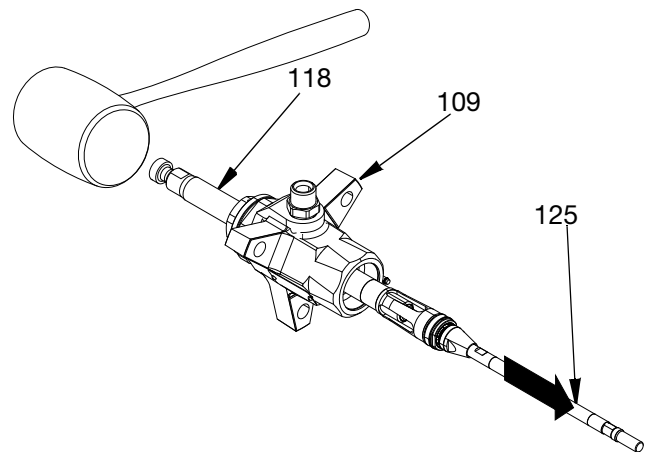


FIG. 11

- Place flats of the upper displacement rod (118) in a bench vice. Unscrew the lower shaft assembly (125) from the outlet check valve seat (124). Unscrew the outlet check valve seat from the upper displacement rod. Remove the piston guide and seal assembly (121, 122, 123, and 124) and the pump rod spacer (119).
- Inspect the outer surfaces of the upper displacement rod (118) and the lower shaft assembly (125) for wear, scoring or any other damage by holding them up to the light at an angle or running a finger across the surface. See FIG. 12.

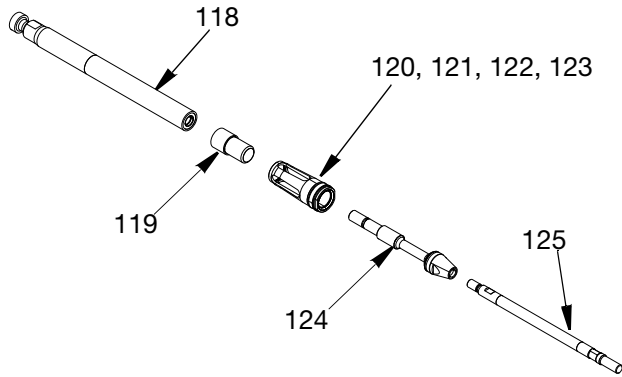


FIG. 12

- Place the flats of the poppet outlet check valve (123) and the piston guide (121) in a bench vice. Slide a 0.5 In. (12.7 mm) brass rod through the openings of the piston guide and unscrew it from the poppet outlet check valve. Remove the piston seal (122) and the piston guide bearing (120).

NOTE: Piston guide bearing (120) is press fit into the piston guide (121), and may require cutting to ease removal. See FIG. 13.

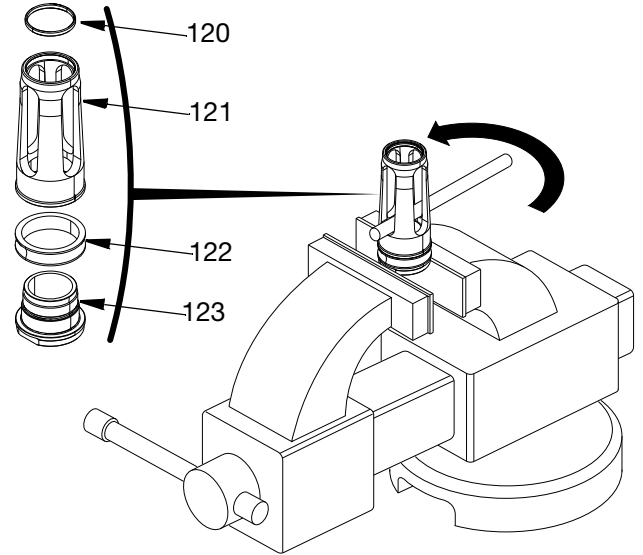


FIG. 13

- To disassemble the intake check valve assembly, remove the internal retaining ring (126) from the poppet inlet check valve (128). Using a small screwdriver or O-ring pick remove the lower shaft seals (127). Inspect the poppet inlet check valve for wear or damage. See FIG. 14.

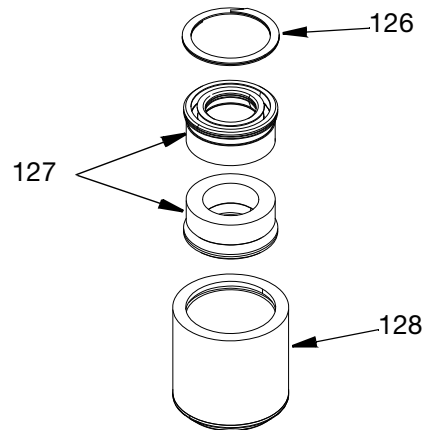


FIG. 14

- Unscrew plug (113) completely from valve housing (112). Clean valve threads and bleed hole. it is not necessary to remove the valve housing from the outlet housing (109). See FIG. 15.

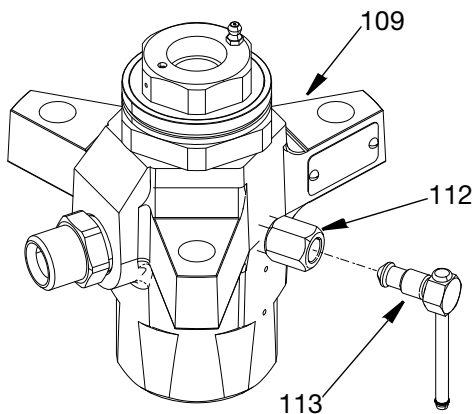


FIG. 15

- Secure the outlet housing (109) in a bench vise and remove the shaft seals retainer (103). Remove packing O-ring (104) from the inside of the shaft seals retainer and packing O-ring (105) from the bottom of the shaft seals retainer. Note: packing O-ring (105) is not used in L200CE pumps. Using a small screw driver or O-ring pick remove both upper shaft seals (106). Use caution to avoid scoring the inside diameter of the seal cartridge (107). Remove the seal cartridge and packing O-ring (108) from the outlet housing. See FIG. 16.

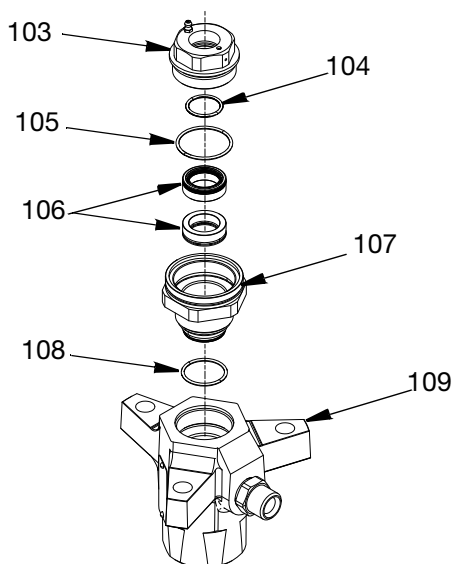


FIG. 16

Reassembly

NOTE: All individual parts being reused from any disassembly must be thoroughly cleaned in a compatible solvent and inspected for damage.

L100CE Pump Inlet Check Assembly

- Lubricate the inside diameter of the poppet inlet check valve (128) body, the seal guide tool (135) and if used the seal insertion tool (134). Also lubricate the outside diameter of the lower shaft seals (127).
- Place the seal guide tool (135) on top of the poppet inlet check valve (128). Place the first lower shaft seal (127) with the seal face (spring side), face down into the seal guide tool.

NOTICE

Failure to use the seal guide tool (135) on the L100CE pump will result in damage to the seal.

- Using the smaller heel side of the seal insertion tool (134), or a suitable size socket or dowel, press the seal to the bottom of the poppet inlet check valve (128). See FIG. 17.

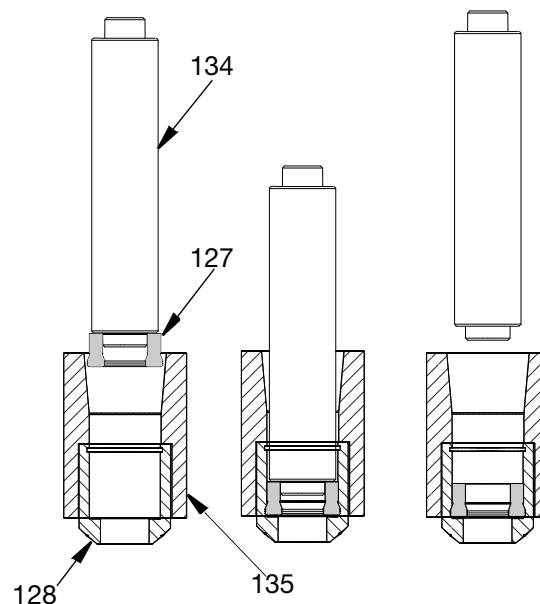


FIG. 17

- Place the second lower shaft seal (127) face up into the seal guide tool (135). Insert the lower shaft seal

using the larger face side of the seal insertion tool (134), or a suitable size socket or dowel.

5. Press the seal into the poppet inlet check valve (128) against the first lower shaft seal (127). See FIG. 18.

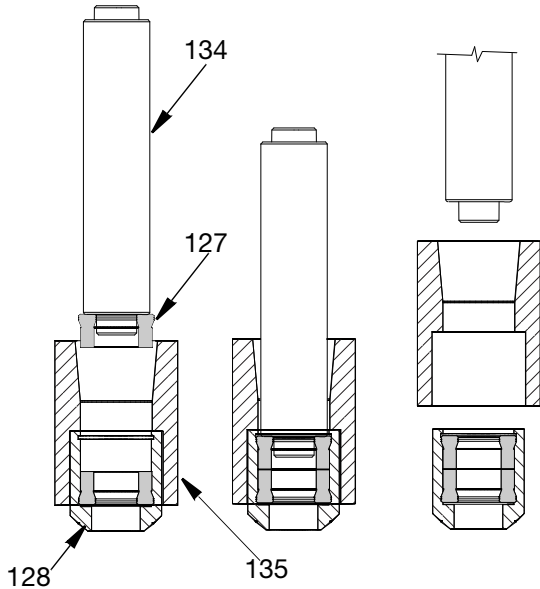


FIG. 18

6. Place the internal retaining ring (126) into the groove at the top of the poppet inlet check valve (128). See FIG. 19.

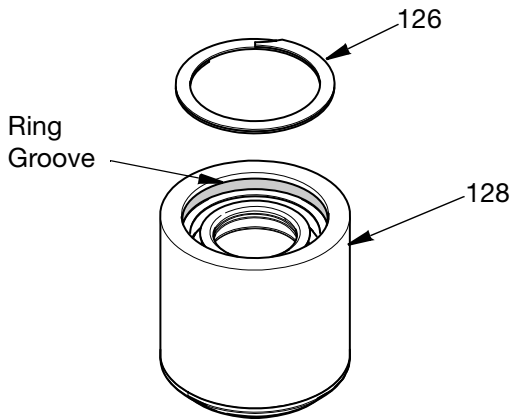


FIG. 19

L200CE Pump Inlet Check Assembly

1. Lubricate the inside diameter of the poppet inlet check valve (221) body and the outside diameter of

the lower shaft seals (220). Also lubricate a suitable size socket or dowel that will be used to insert the seals.

2. Using a suitable size socket or dowel, insert the lower shaft seals (220) with the seal face (spring side) facing down press the seal to the bottom of the poppet inlet check valve (221).
3. Place the second lower shaft seal (220) face up into the poppet inlet check valve (221). Insert using a suitable size socket or dowel. See FIG. 20.

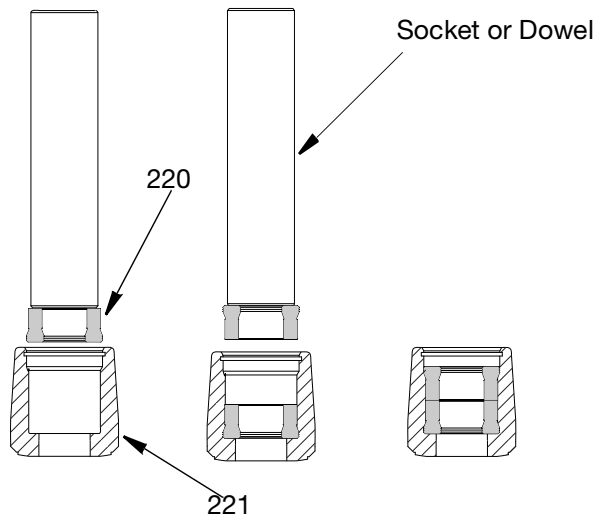


FIG. 20

4. Place the lower steel spacer (219) on top of the second lower shaft seal (220). Next snap the internal retaining ring (218) into the groove at the top of the poppet inlet check valve (221). See FIG. 21.

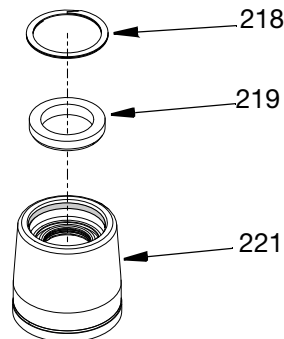


FIG. 21

Outlet Check Assembly L100CE and L200CE

NOTE: Model shown in the following steps is for model L100CE. Model L200CE has similar parts and the assembly steps are identical. For model L200CE, see **200 cc Displacement Pump L200CE** on page 25 for correct find numbers.

1. Place poppet outlet check valve (123) in a vice. Install a new piston seal (122) and apply a bead of thread locker to the threads on the poppet outlet check valve. Thread the piston guide (121) into the poppet outlet check valve. Remove assembly from vice.
2. Insert an 0.5 In. (12.7 mm) brass rod through the openings of the piston guide. Clamp the rod into a bench vice making sure the assembly is not in the vice. Use a torque wrench and a crows foot end, 1.25 In. for L100 CE, and 1.62 In. for L200CE placed on the flats of the poppet outlet check valve (123). Torque to 30 Ft-lb (40.67 N•m).
3. Install the piston guide bearing (120) into the groove in the top of the piston guide (121). See FIG. 22.

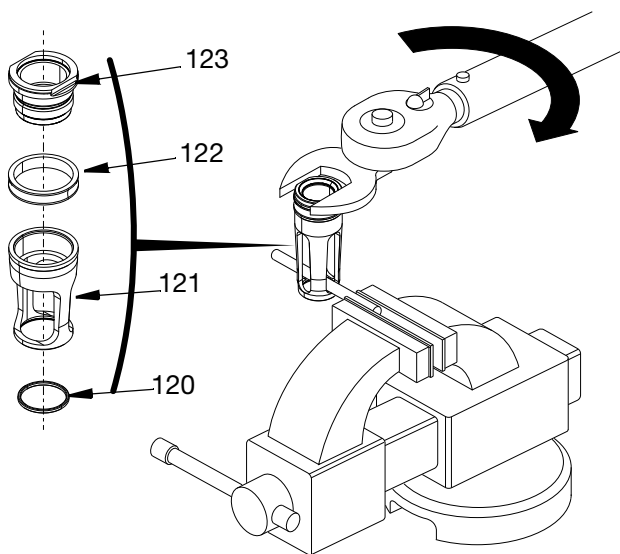


FIG. 22

4. Place the flats of the upper displacement rod (118) into a bench vice. Clean any residual thread locker from the threads of the outlet check valve seat (124) and reapply a bead of thread locker to the threads. Place the pump rod spacer (119) into the outlet check assembly (120,121,122, and 123). Insert the

upper check valve seat through the outlet check assembly and thread into the upper displacement rod (118). Torque to 50 Ft-lb (67.79 N•m). See FIG. 23.

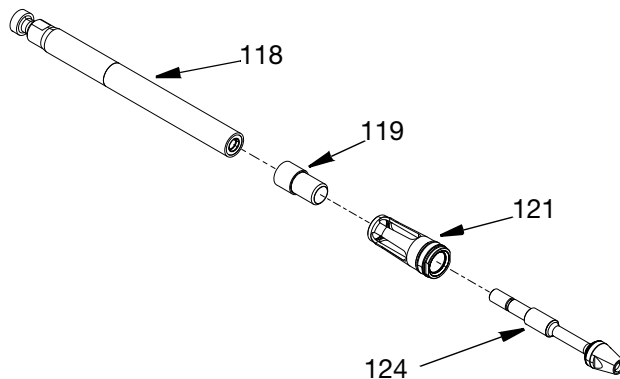


FIG. 23

Lower Displacement Rod Assembly L100CE and L200CE

1. Clean any residual thread locker from the lower shaft assembly (125) and reapply thread locker to threads. Thread the lower shaft assembly into the outlet check valve seat (124). Torque to 36 Ft-lb (48.81 N•m). See FIG. 24.

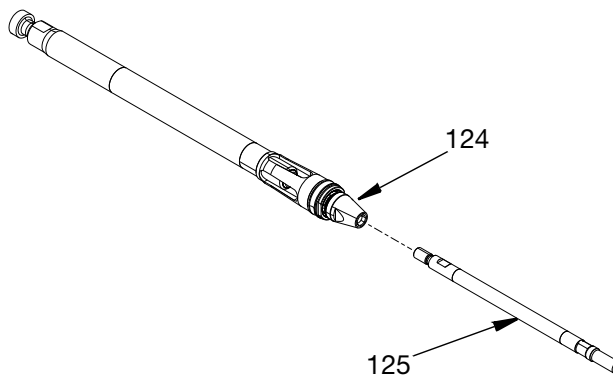


FIG. 24

Cylinder installation L100CE and L200CE

1. Lubricate the O-ring packing (105) and install them onto both ends of the cylinder (116).
2. Mount the outlet housing (109) into a bench vice.

3. Apply anti-seize to the threads on both ends of the cylinder (116) and screw the cylinder into the outlet housing (109). Note the cylinder is symmetrical so either end can be used. See FIG. 25. Torque to the following specifications:

Displacement Pump	Torque
100 cc	250 Ft-lbs (339 N•m)
200 cc	390 Ft-lbs (529 N•m)

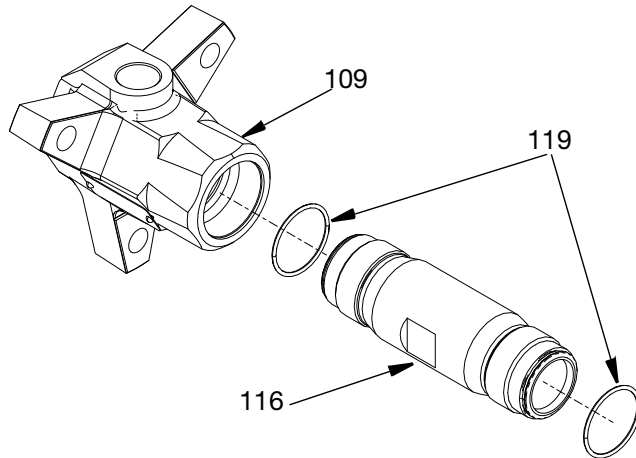


FIG. 25

Throat Seal Installation L100CE and L200CE

1. Lubricate the O-ring (108), install onto the seal cartridge (107) and apply anti-seize to the seal cartridge threads. Install the seal cartridge into the outlet housing (109). See FIG. 26. Torque to the following specifications:

Displacement Pump	Torque
100 cc	250 Ft-lbs (339 N•m)
200 cc	390 Ft-lbs (529 N•m)

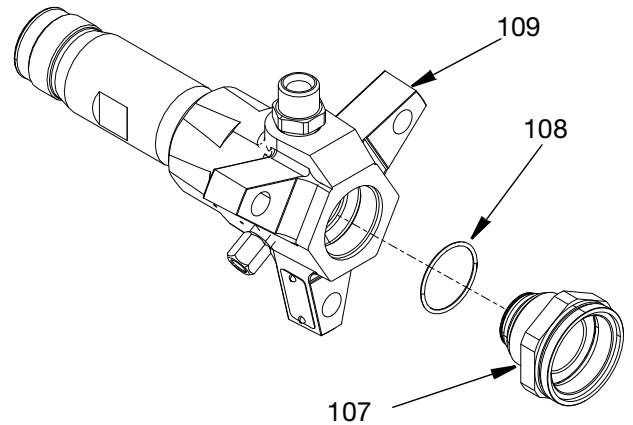


FIG. 26

2. Lubricate the upper shaft seals (106) and inside diameter of the seal cartridge (107). Install the first upper shaft seal with the spring side facing the seal cartridge. Using a suitable size socket or dowel press the upper shaft seal down into the seal cartridge until it seats into the bottom of the seal cartridge.
3. Place the second upper shaft seal (106) into the seal cartridge (107) with the spring side facing outwards. Press the shaft seal into the seal cartridge until it seats against the first upper shaft seal. See FIG. 27.

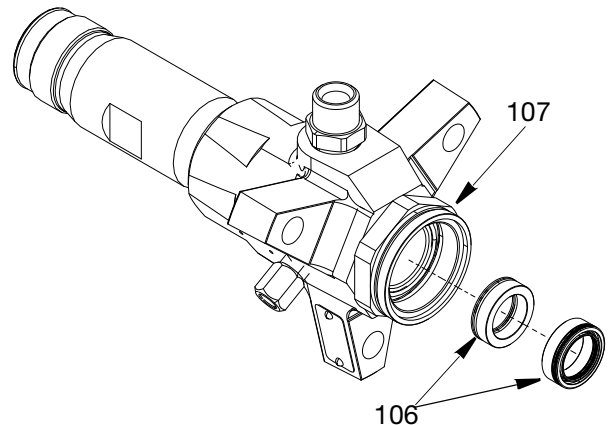


FIG. 27

4. Install the O-Ring packing (104) into the upper groove of the shaft seal retainer (103).

NOTE: For L100CE pump, install the packing O-ring (105) into the groove on the bottom of the retainer.

- Apply anti-seize to threads and screw the seal retainer (103) into the outlet housing (109). See FIG. 28. Torque to the following specifications:

Displacement Pump	Torque
100 cc	53 Ft-lbs (72 N•m)
200 cc	60 Ft-lbs (81 N•m)

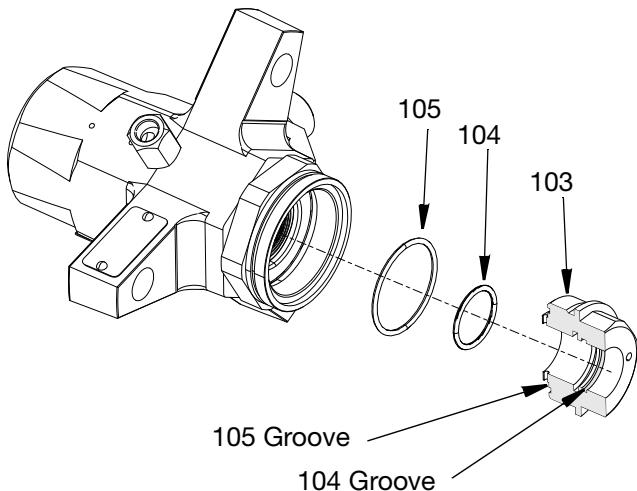


FIG. 28

Upper Displacement Rod Installation L100CE and L200CE

- To protect the threads of the lower shaft assembly (125) install the shovel nut (133) onto the lower shaft assembly. Lubricate the upper displacement rod (118) and piston seal (122). Carefully insert the lower shaft assembly into the cylinder (116) until the upper displacement rod contacts the upper shaft seals (106). To fully assemble upper displacement rod use a soft face hammer and tap on the shovel nut end to drive the upper displacement rod through the piston seals. Stop when the outlet

check assembly is completely inside of the cylinder. See FIG. 29.

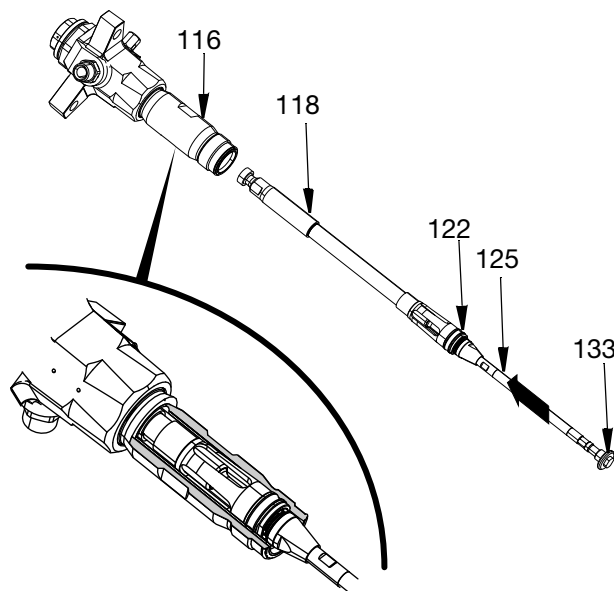


FIG. 29

Inlet Check Valve Installation L100CE and L200CE

- Remove the shovel nut (133) from the lower shaft assembly (125). Install the valve housing (117) onto the cylinder (116). Torque to the following specifications:

Displacement Pump	Torque
100 cc	250 Ft-lbs (339 N•m)
200 cc	390 Ft-lbs (529 N•m)

- Lubricate the lower shaft assembly (125) and the inside diameters of the lower shaft seals (127) inside the poppet inlet check valve (128). Orient the poppet inlet check valve with bevel side away from the valve housing (117). Carefully press the poppet inlet check valve poppet onto the lower shaft assembly to prevent damage to the seals from the threads. Press the poppet inlet check valve up to the stop in the valve housing.
- Orient the bevel side of the check valve inlet seat (129) towards the intake cylinder(131) and place it onto the shoulder in the cylinder intake. Place the seal (130) onto the cylinder intake.
- Apply anti-seize to the threads of the intake cylinder(131) and thread it into the valve housing

(117). See FIG. 30. Torque to the following specifications:

Displacement Pump	Torque
100 cc	250 Ft-lbs (339 N•m)
200 cc	390 Ft-lbs (529 N•m)

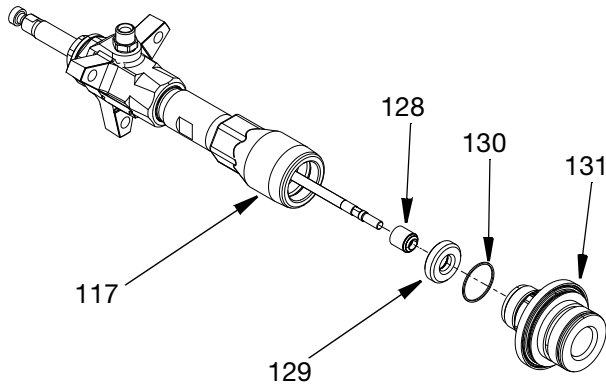


FIG. 30

Install Priming Piston L100CE and L200CE

- Slide the shovel piston (132) onto the lower shaft assembly (125). Apply thread sealant to the threads on the lower shaft assembly and screw on the shovel nut (133). See FIG. 31. Torque to the following specifications:

Displacement Pump	Torque
100 cc	53 Ft-lbs (72 N•m)
200 cc	75 Ft-lbs (102 N•m)

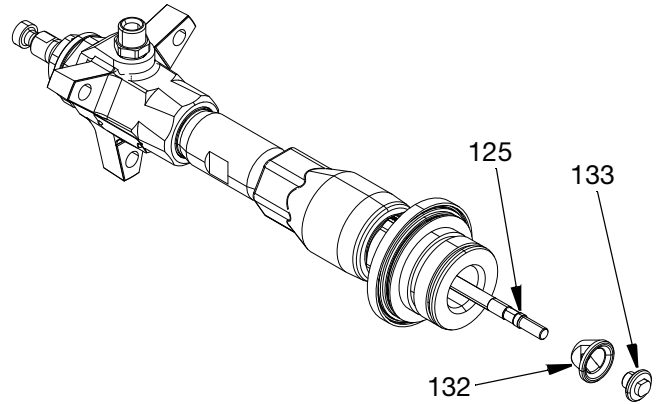


FIG. 31

- Install the plug (113) into the valve body (112). Torque to 10 Ft-lb (48.81 N•m). See FIG. 32.

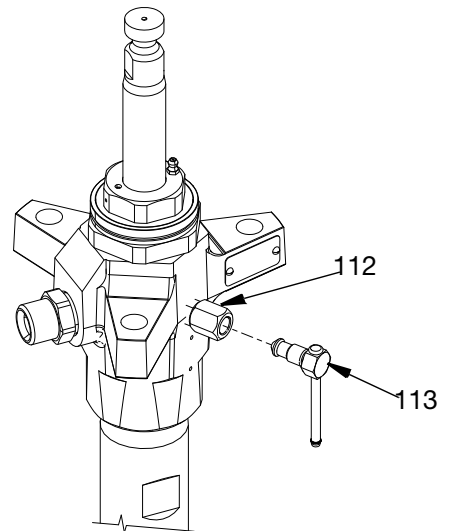
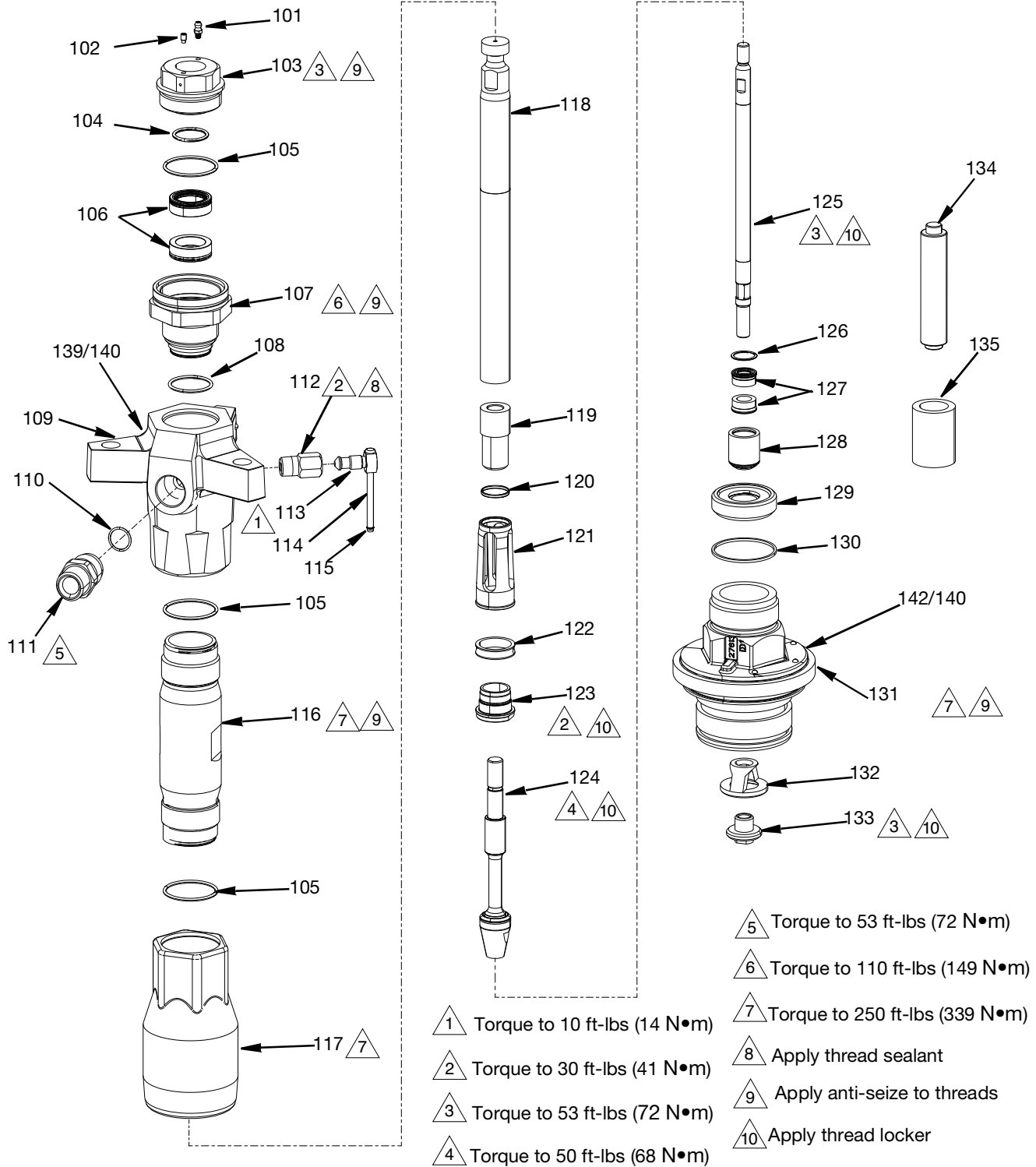


FIG. 32

Parts

100 cc Displacement Pump L100CE



100 cc Displacement Pump L100CE Assembly Parts List.

Ref.	Kit No. and Part No.	Description	Qty	Kit Number															
				Kit #1 26B924★	Kit #2 26B925◆	Kit #3 26B926√	Kit #4 26S927♣	Kit #5 26B928†	Kit #6 26B929•	Kit #7 26B930✱	Kit #8 26B938*	Kit #9 26D212+	Kit #10 26D213❖	Kit #11 26D214‡					
101	130883	FITTING, grease, M5	1																
102	136249	SCREW, SHS, EXT tip, M5x8	1																
103	-----	RETAINER, shaft seals, C100, ES1	1																
104	Kit #1/ #3 15K234	PACKING, O-ring	1	1		1													
105	Kit #1/ #3/ #11 166623	PACKING, O-ring	1	3		3													2
106	Kit #2/#3	SEAL, shaft upper, C100, ES1	2		2	2													
107	-----	CARTRIDGE, seal, C100, ES1	1																
108	Kit #1/ #3 104361	PACKING, O-ring	1	1		1													
109	Kit #10	HOUSING , outlet,C100CE	1																1
110	Kit #1/ #3 110135	PACKING, O-ring PTFE	1	1		1													
111	184037	FITTING, outlet (6 cm)	1																
112	165702	HOUSING, valve	1																
113	190128	PLUG	1																
114	121133	HANDLE, outlet, bleed	1																
115	121134	CLIP, outlet, bleed	1																
116	Kit #11	CYLINDER, C100, ES1	1																1
117	Kit #9	HOUSING, valve, C100CE	1															1	
118	Kit #6	ROD, displacement, upper, CM100	1							1									
119	-----	SPACER, pump, rod, C100, ES1	1																
120	Kit #2/#3	BEARING, piston, guide, CM100	1		1	1													
121	-----	GUIDE, piston, 100 SST	1																
122	Kit #2/#3	SEAL, piston, C100, ES1	1		1	1													
123	Kit #5	VALVE, check, out, poppet, C100, ES1	1						1										
124	Kit #5	VALVE, check, out, seat, C100, ES1	1						1										
125	Kit #7	SHAFT, assy, lower, C100, ES1	1								1								
126	Kit #2/#3/#4	RING, retaining, int, 0.875 in. OD	1		1	1	1												
127	Kit #2/#3	SEAL, shaft, lower, CM100 XL	2		2	2													
128	Kit #4	VALVE, check, in, poppet, C100, ES1	1					1											
129	Kit #4	VALVE, check in, seat, C100, ES1	1					1											
130	Kit #1/ #3 187860	SEAL		1		1													
131	15U935	CYLINDER, intake (4.5)	1																
132	Kit #8	PISTON, shovel, C100, ES1	1															1	

Ref .	Kit No. and Part No.	Description	Qty	Kit Number											
				Kit #1 26B924★	Kit #2 26B925◆	Kit #3 26B926✓	Kit #4 26S927✿	Kit #5 26B928†	Kit #6 26B929•	Kit #7 26B930✘	Kit #8 26B938*	Kit #9 26D212+	Kit #10 26D213❖	Kit #11 26D214‡	
133	Kit #8	NUT, shovel, C100, ES1	1									1			
134	15N358	TOOL insert, L100 elite	1												
135	Kit #2	TOOL, seal, guide, L100 ELITE	1		1										
136	All kits 113500	SEALANT, anaerobic, 5 cc pack	1	1	1	1	1	1	1	1	1				
137	All Kits	LUBRICANT, anti-seize, 7g pack	1	1	1	1	1	1	1	1	1				
138	0553-6	LUBRICANT, synthetic, hi-temp, grease	1												
139	184090 ▲	LABEL, warning	1												
140	100508	SCREW, drive	5												
141	172479 ▲	TAG, warning	1												
142	184151 ▲	LABEL, warning	1												

★ O-ring kit, 26B924

◆ Rod Seals and Piston Kit, 26B925.

✓ Complete Seal Kit, 26B926

✿ Inlet Check Kit, 26B927

† Outlet Check Kit, 26B928

• Upper Rod Kit, 26B929

✘ Lower Rod Kit, 26B930

* Inlet Shovel Kit, 26B938

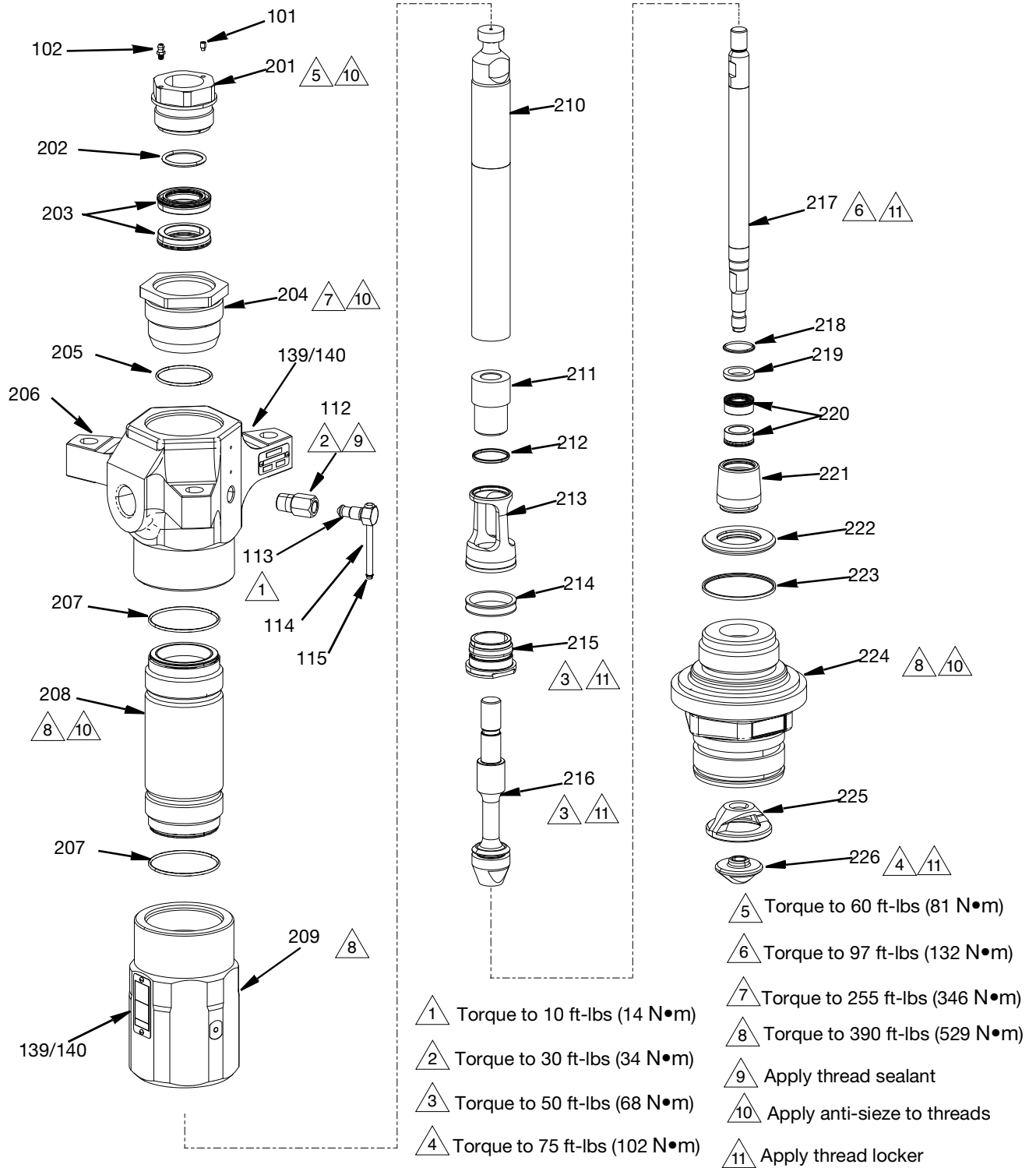
+ Inlet Housing Kit, 26D212

❖ Outlet Housing Kit, 26D213

‡ Cylinder Kit, 26D214

▲ Replacement safety labels, tags, cards are available at no cost.

200 cc Displacement Pump L200CE



200 cc Displacement Pump L200CE Assembly Parts List.

Ref .	Kit No. and Part No.	Description	Qty	Kit Number																
				Kit #1 26B931★	Kit #2 26B932◆	Kit #3 26B933√	Kit #4 26B934✿	Kit #5 26B935†	Kit #6 26B936 •	Kit #7 26B937✘	Kit #8 255605*	Kit #9 255611+	Kit #10 26D215❖							
101	130883	FITTING, grease, M5	1																	
102	136249	SCREW, SHS, EXT tip, M5x8	1																	
112	165702	HOUSING, valve	1																	
113	190128	PLUG	1																	
114	121133	HANDLE, outlet, bleed	1																	
115	121134	CLIP, outlet, bleed	1																	
201	-----	RETAINER, shaft, sealsCM200,XL	1																	
202	Kit #1/ #3 108785	PACKING, O-ring	1	1		1														
203	Kit #2/ #3	SEAL, shaft, upper,CM200,XL	2		2	2														
204	-----	CARTRIDGE, shaft, seals ,CM200,XL	1			1														
205	Kit #1/ #3 166073	PACKING, O-ring	1	1		1														
206	Kit #8	HOUSING, outlet	1										1							
207	Kit #1/#3/#8 109499	PACKING, O-ring	2	2		2							1						2	
208	Kit #10	CYLINDER, CM200, WC, ES1	1																1	
209	189442	HOUSING, valve, CM200	1																	
210	Kit #9	ROD, displacement, upper	1							1										
211	-----	SPACER, pump, rod, CM200, ES1	1																	
212	Kit #2/ #3	BEARING, piston, guide, CM200	1			1														
213	15M520	GUIDE, piston, 200	1																	
214	Kit #2/ #3	SEAL, piston, CM200, XL	1		1	1														
215	Kit #5	VALVE, check, out, seat, CM200, ES1	1						1											
216	Kit #5	VALVE, check out, poppet, CM200, ES1	1						1											
217	Kit #7	SHAFT, assy, lower, CM200, XL	1									1								
218	Kit #2/#3/#4	RING, retaining, intl, 1-3/16, SS	1		1	1	1													
219	Kit #4	SPACER, seal, lower, CM200, XL	1				1													
220	Kit #2/ #3	SEAL, shaft, lower, CM200, XL	2		2	2														
221	Kit #1	VALVE, check, in, poppet, CM200, ES1	1				1													
222	Kit #4	VALVE, check, in, seat,. CM200, XL	1				1													
223	Kit #1/#3/#8/#9	SEAL, (8,10 cm)	1	1		1							1		1					
224	Kit #9 189447	CYLINDER, intake	1															1		
225	276378	PISTON	1																	
226	190241	SEAT, piston	1																	
136	All kits 113500	SEALANT, anaerobic, 5 cc pack	1	1	1	1	1	1	1	1	1									

Ref	Kit No. and Part No.	Description	Qty	Kit Number										
				Kit #1 26B931★	Kit #2 26B932◆	Kit #3 26B933✓	Kit #4 26B934✿	Kit #5 26B935†	Kit #6 26B936•	Kit #7 26B937✘	Kit #8 255605*	Kit #9 255611+	Kit #10 26D215❖	
137	All Kits	LUBRICANT, anti-seize, 7g pack	1	1	1	1	1	1	1	1				
138	0553-6	LUBRICANT, synthetic, hi-temp, grease	1											
139	184090 ▲	LABEL, warning	1											
140	100508	SCREW, drive	4											
141	172479 ▲	TAG, warning	1											

★ O-ring kit, 26B931

◆ Rod Seals and Piston Kit, 26B932

✓ Complete Seal Kit, 26B933

✿ Inlet Check Kit, 26B934

† Outlet Check Kit, 26B935

• Upper Rod Kit, 26B936

✘ Lower Rod Kit, 26B937

* Outlet L200 / L250 Carbon Kit, 255605

+ Intake L200 / L250 Carbon Kit, 255611

❖ Cylinder Kit, 26D215

▲ Replacement safety labels, tags, cards are available at no cost.

Dimensions

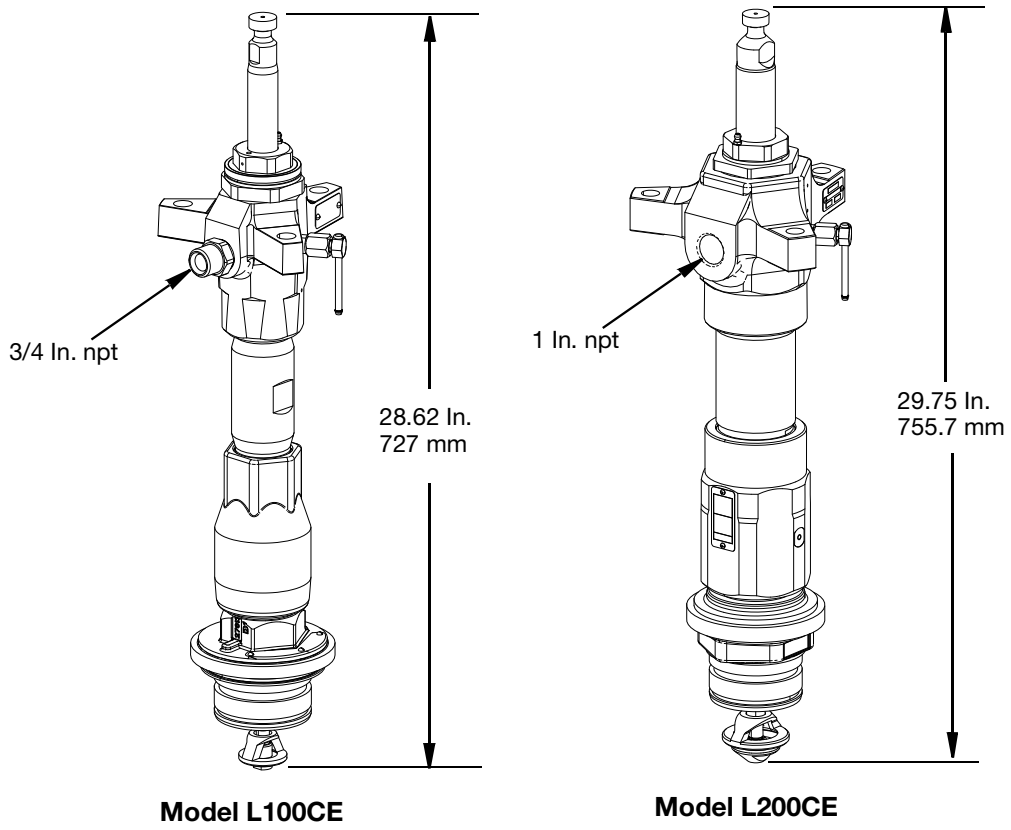


FIG. 33

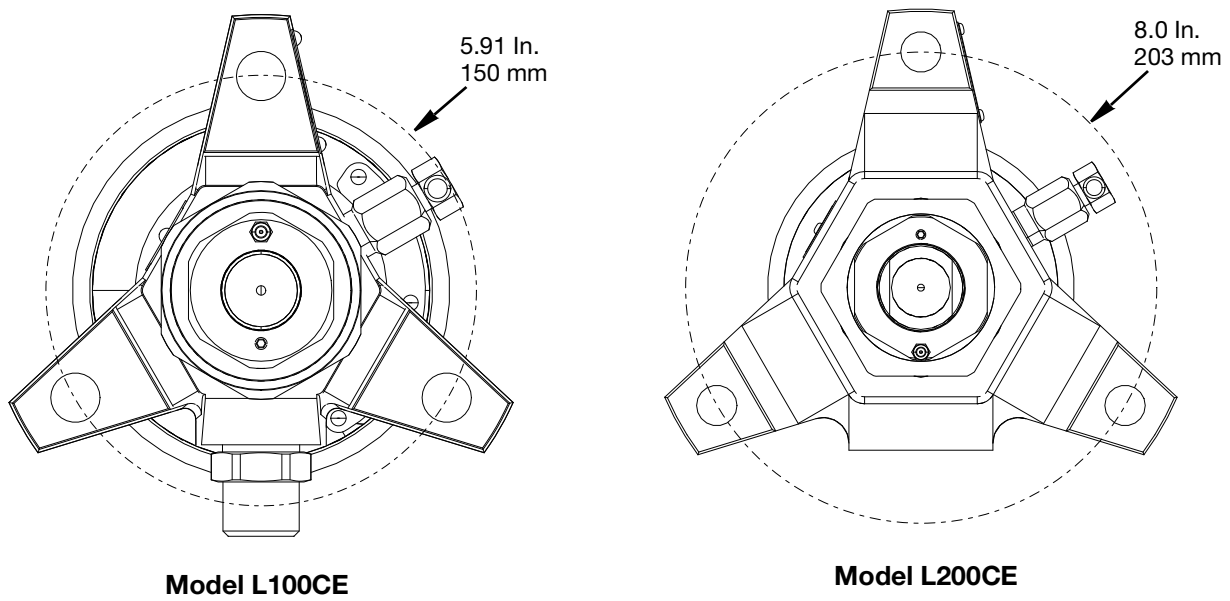


FIG. 34

Technical Specifications

Check-Mate® Elite Series Displacement Pumps		
	US	Metric
Maximum operating temperature	180° F	80° C
.....Maximum fluid working pressure		
100cc	4200 psi	28.9 MPa, 289.6 bar
200cc	4200 psi	28.9 MPa, 289.6 bar
Stroke length		
NXT2200, NXT3400, and NXT6500 NXT air motors	4.75 in.	120 mm
Wetted parts		
L100CE / L200CE	304, 316, and 17-4PH grades of stainless steel; PTFE; ductile iron; carbon steel; electroless nickel, zinc; high molecular weight polyethylene; tungsten carbide.	
Notes		
All trademarks or registered trademarks are the property of their respective owners.		

California Proposition 65

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Original instructions. This manual contains English. MM

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International Offices: Belgium, China, Japan, Korea

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Revision C, September 2021