

## Pump/Manifold Kits

311611 rev.A

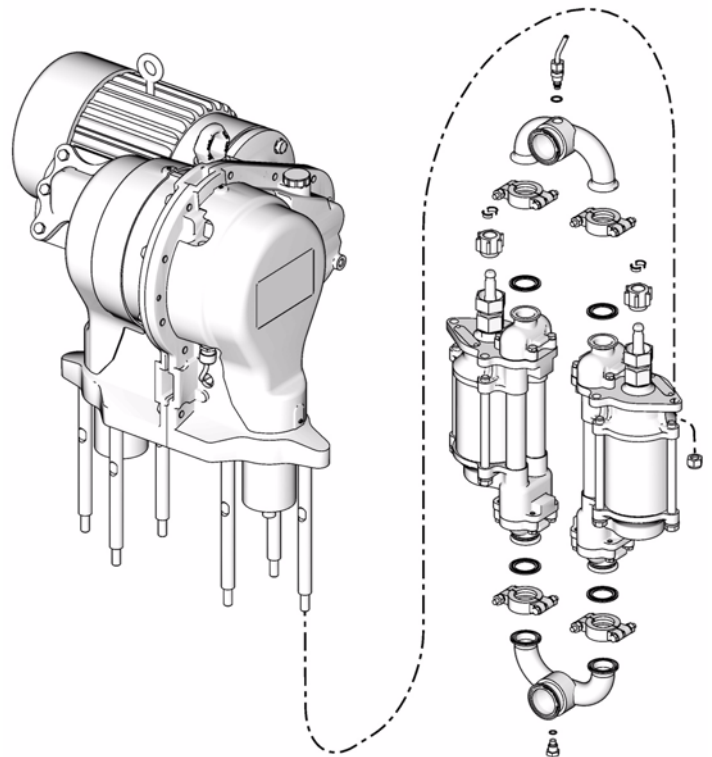
**To convert E-Flo™ Plus Electric Circulation Pumps to a different size lower.**

See page 3 for a list of available kits.



### **Important Safety Instructions**

Read all warnings and instructions in this manual and in E-Flo Plus Repair-Parts manual 311594. Save these instructions.



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## Kit Parts

Complete kits are available to convert from one size lower to another. See the table below for available kits.




Kit Part No.	Lower Part No.	Description
15J747	253520	1000 cc, Chromex
15J748	253521	1500 cc, Chromex
15J749	253522	2000 cc, Chromex
15J750	253523	1000 cc, Maxlife
15J751	253524	1500 cc, Maxlife
15J752	253525	2000 cc, Maxlife

 The kits include the following parts. Parts included in the kit are marked with an asterisk, for example (13\*). Use all the new parts in the kit.

Ref. No.	Part No.	Description	Qty
13*	184128	COLLAR, coupling	4
14*	184059	NUT, coupling	2
15*	108683	NUT, lock, hex	6
16*	120351	GASKET, sanitary	4
17*	n/a	MANIFOLD	2
18*	120350	CLAMP, sanitary, 1.5	4
22*	253520	LOWER, 1000 cc, Chromex cylinder; used in kit 15J747; see 311690 for lower parts information	2
	253521	LOWER, 1500 cc, Chromex cylinder; used in kit 15J748; see 311690 for lower parts information	2
	253522	LOWER, 2000 cc, Chromex cylinder; used in kit 15J749; see 311690 for lower parts information	2
	253523	LOWER, 1000 cc, Maxlife cylinder; used in kit 15J750; see 311690 for lower parts information	2
	253524	LOWER, 1500 cc, Maxlife cylinder; used in kit 15J751; see 311690 for lower parts information	2
	253525	LOWER, 2000 cc, Maxlife cylinder; used in kit 15J752; see 311690 for lower parts information	2
41*	111316	O-RING; chemically resistant fluoroelastomer	2
45*	n/a	PLUG, manifold	1

Parts designated n/a are not available separately.

## Pressure Relief Procedure

						
System pressure can cause the pump to cycle unexpectedly, which could result in serious injury from splashing or moving parts.						

1. Set START/STOP switch to STOP.
2. Push in SECURE DISABLE switch.
3. Open the back pressure regulator and all fluid drain valves in the system, having a waste container ready to catch drainage. Leave open until you are ready to pressurize system again.
4. Check that pressure gauges on fluid supply and return lines read zero. If gauges do not read zero, determine cause and carefully relieve pressure by VERY SLOWLY loosening a fitting. Clear obstruction before pressurizing system again.

## Flushing

						
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
1. Follow **Pressure Relief Procedure**, page 3.
2. Supply the appropriate flushing material to the system.
3. Set pump to lowest possible fluid pressure, and start the pump.
4. Flush long enough to thoroughly clean the system.
5. Follow **Pressure Relief Procedure**, page 3.

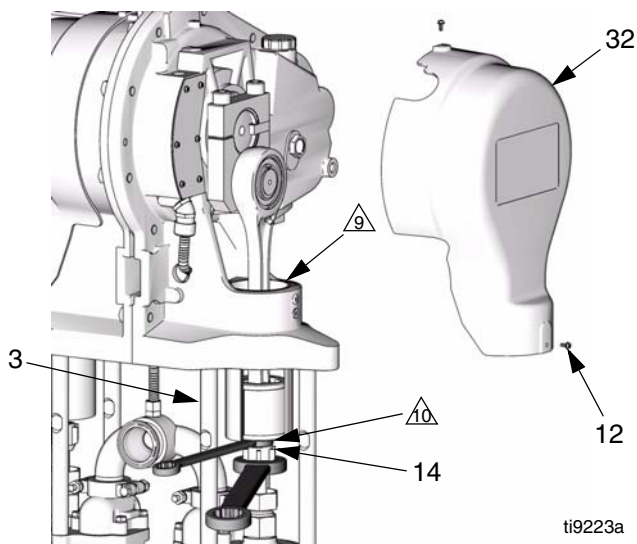
# Kit Installation

## Disassembly



1. Flush the pump, see page 3.
2. Jog the motor to bring the lower on the side being repaired to the bottom of its stroke. This provides access to the coupling nut (14).
3. Relieve the pressure, see page 3.
4. See FIG. 1. Place a 3/4 in. wrench on the slider piston (9) flats (just above the coupling nut), to keep the slider piston/connecting rod from turning when you are loosening the coupling nut (14). Orient the wrench so it is braced against one of the tie rods (3). Applying excessive force to the slider piston/connecting rod can shorten the life of the lower pin bearing.
5. Using a 1-5/8 in. open-end wrench, unscrew the coupling nut (14) from the slider piston (9) and let it slide down onto the pump piston rod. Be careful not to lose the collars (13).
6. Repeat steps 2-5 for the other lower.
7. Shut off electrical power and allow the unit to cool.

 Hold slider piston (9) flats with 3/4 in. wrench, and brace against tie rod (3).




**FIG. 1. Remove Coupling Nut**





8. Disconnect the fluid inlet and outlet lines from the pump. Plug the ends to prevent fluid contamination.
9. See FIG. 2. At the pump outlet manifold (17), loosen the transducer nut (43) and unscrew the adapter (42) from the manifold. Remove the transducer (25a) from the manifold port. Remove the existing o-ring (41) and discard.
10. Loosen the clamps (18) at the inlet and outlet manifolds (17). Remove the manifolds and gaskets (16).
11. Remove the coupling nut (14) and collars (13) from the piston rods (PR).
12. Unscrew the locknuts (15). Remove the lower (22). To repair the lower, see manual 311690.

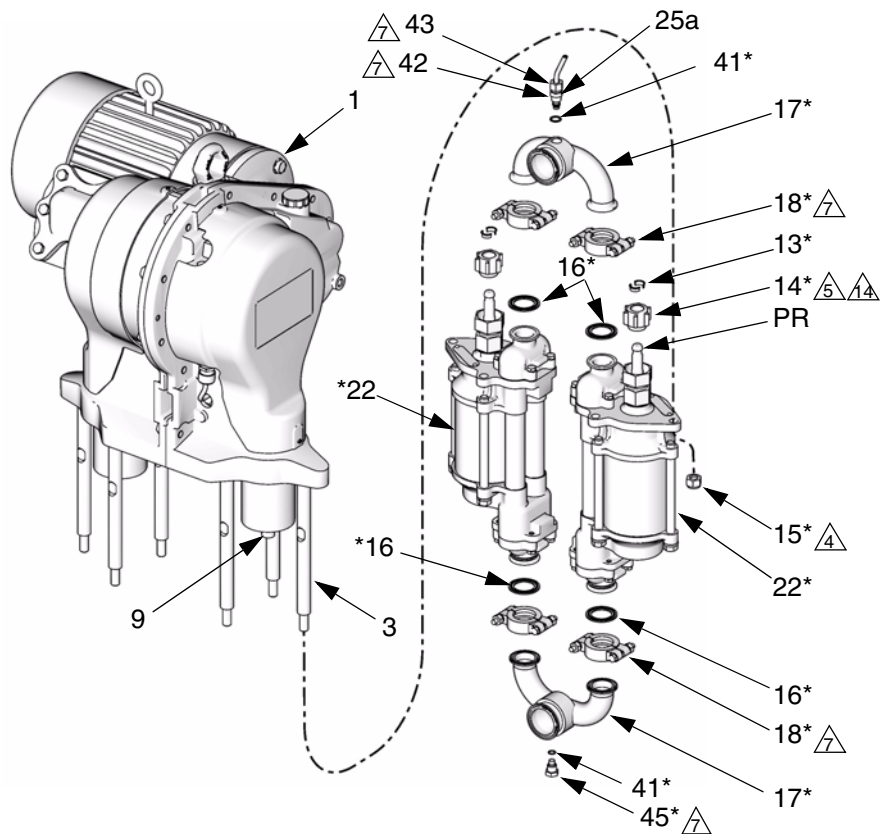
## Reassembly

1. See FIG. 2. Install the coupling nut (14) on the lower's piston rod (PR).
2. Orient the lower (22) to the gear reducer (GR) as shown. Position the lower on the tie rods (3). Screw the tie rod locknuts (15) onto the tie rods handtight.
3. Assemble the inlet and outlet manifolds (17) to the lower, using new gaskets (16). Torque the clamps (18) to 15-20 ft-lb (21-27 N•m).
4. Torque the locknuts (15) to 50-60 ft-lb (68-80 N•m).
5. Install a new black o-ring (41) on the transducer (25a).
6. Insert the transducer into the outlet manifold (17). Torque the adapter (42) first, then the nut (43) to 15-20 ft-lb (21-27 N•m).
7. Install a black o-ring (41) on the plug (45). Screw the plug into the inlet manifold (17) and torque to 15-20 ft-lb (21-27 N•m).
8. Ensure that the collars (13) are in place in the coupling nut (14).
9. Place a 3/4 in. wrench on the flats of the slider piston (9), to keep it from turning when you are tightening the coupling nut (14). Orient the wrench so it is braced against one of the tie rods (3) or pump stand. Tighten the coupling nut (14) onto the slider piston (9) and torque to 75-80 ft-lb (102-108 N•m).
10. Turn on power and jog the motor to bring the other drive to the bottom of its stroke. Repeat procedure to connect the other lower.

 Update the drive software to reflect the change in size of the lowers. See manual 311596.

11. Flush and test the pump before reinstalling it in the system. Connect hoses and flush the pump. While it is pressurized, check for smooth operation and leaks. Adjust or repair as necessary before reinstalling in the system.

-  Torque to 50-60 ft-lb (68-80 N•m).
-  Torque to 75-80 ft-lb (102-108 N•m).
-  Torque to 15-20 ft-lb (21-27 N•m).
-  Apply lithium grease.



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**FIG. 2: Fluid Section**

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