

# 15H876 Pressure Transducer Kit

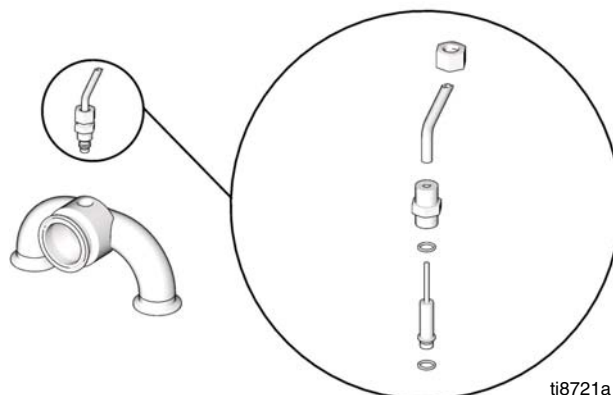
311600 rev.A

To replace pressure transducer on E-Flo™ Plus Electric Circulation Pumps.



## Important Safety Instructions




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



Kit also includes circuit board and label.

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# 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.



## Kit Parts

 Pressure Transducer Kit 15H876 includes parts to replace the pressure transducer. Parts included in the kit are marked with an asterisk, for example (12\*). Use all the new parts in the kit.

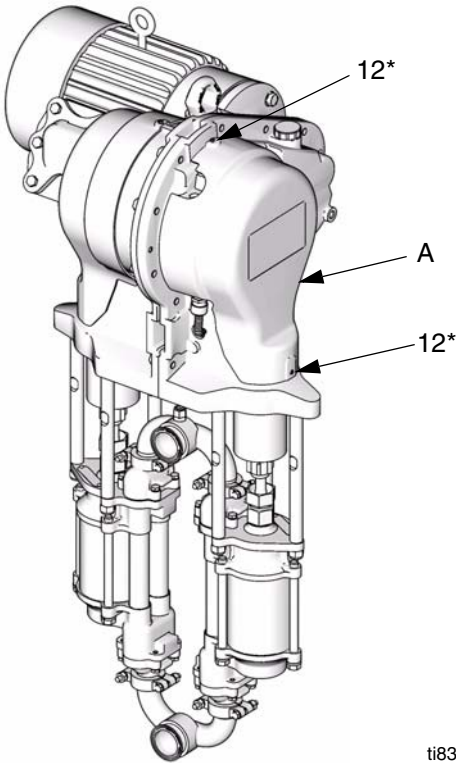
Ref. No.	Part No.	Description	Qty
12*	116719	SCREW, 8-32 hex washer head	12
25a*	n/a	PRESSURE TRANSDUCER	1
25c*	n/a	CIRCUIT BOARD	1
33*	n/a	GASKET, circuit board	1
36*	n/a	LABEL, calibration	1
41*	111316	O-RING; chemically resistant fluoroelastomer	2
58*	n/a	SPACER; brass	1

Parts designated n/a are not available separately.

# Kit Installation



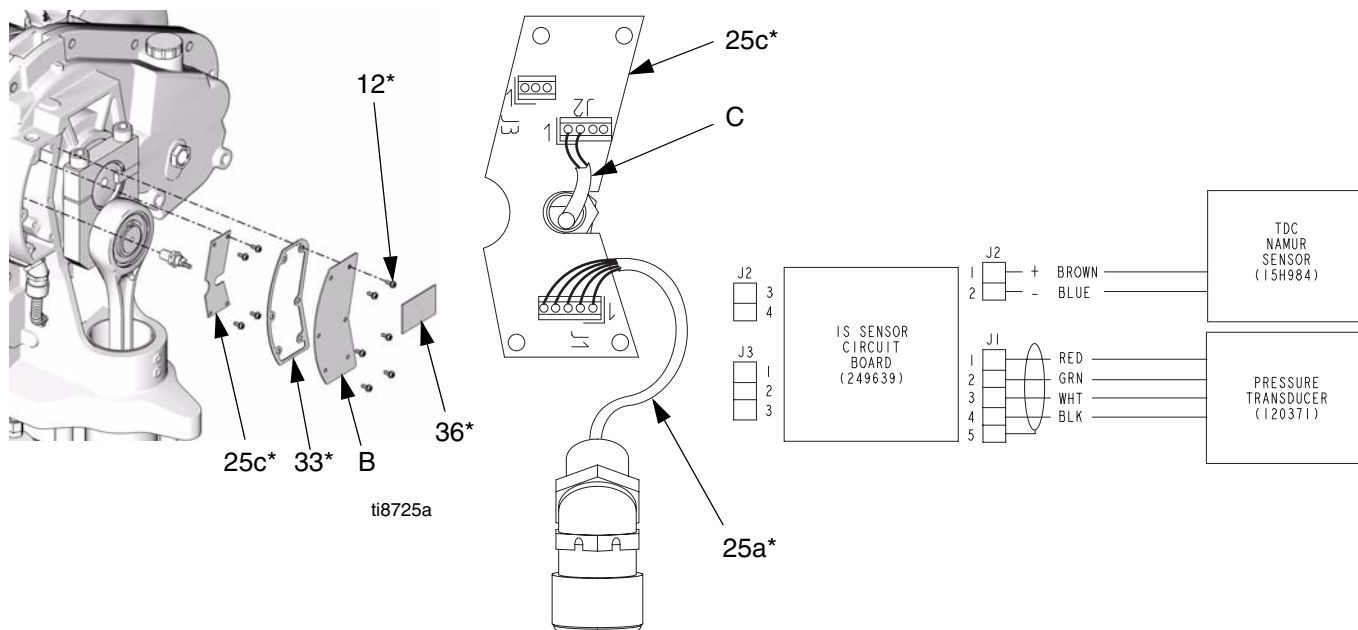
1. Jog the motor to bring the stand side lower to the bottom of its stroke.
2. Relieve pressure, page 2.
3. Shut off electrical power to the unit.
4. See FIG. 1. Remove two screws (12) and the cover (A).



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FIG. 1. Remove Cover

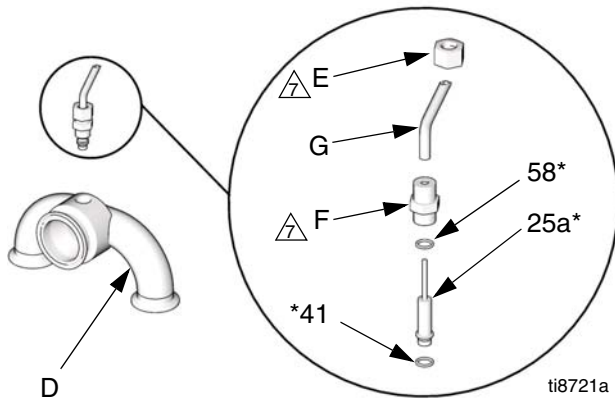
5. See FIG. 2. Remove six screws (12), the circuit board cover (B), and the gasket (33).
6. Disconnect the transducer cable (25a) from J1 on the circuit board (25c). See the Electrical Schematic in the E-Flo Plus Repair-Parts Manual 311594.
7. Disconnect the TDC cable (C) from J2 on the circuit board (25c).
8. Disconnect the IS circuit field wire from J2 and J3.
9. Remove four screws (12) and the circuit board (25c).
10. Install the new circuit board (25c\*) using four screws (12\*).



**FIG. 2. Circuit Board**

11. See FIG. 3. At the pump outlet manifold (D), loosen the transducer nut (E) and unscrew the adapter (F) from the manifold. Remove the transducer (25a) from the manifold port and pull its cable out of the conduit (G). Remove the existing o-rings (41, 58) and discard.
12. Install one new black o-ring (41\*) and the new brass spacer (58\*) on the new transducer (25a\*).

 Torque to 15-20 ft-lb (21-27 N•m).



**FIG. 3. Pressure Transducer**

13. Thread the transducer's cable (25a\*) through the adapter (F) and conduit (G). Reconnect the cable to J1 on the circuit board (25c\*). See FIG. 2.
14. Insert the transducer into the outlet manifold (D). Torque the adapter (F) first, then the nut (E) to 15-20 ft-lb (21-27 N•m).
15. See FIG. 2. Connect the TDC cable (C) to J2 on the circuit board (25c\*).
16. Connect the IS circuit field wire to J2 and J3. See the Electrical Schematic in the E-Flo Plus Repair-Parts Manual 311594.
17. Install the new gasket (33\*), the circuit board cover (B), and six screws (12\*).
18. Remove the old label from the circuit board cover (B). Attach the new label (36\*) to the cover.
19. Enter calibration information found on the new label (36\*) into the VFD. See page **Pressure Transducer Calibration Procedure**.
20. See FIG. 1. Reinstall the cover (A) with two screws (12\*).

## Pressure Sensor Calibration Information

**Pressure sensor information (Pr 20.34, 20.35, and 20.36) for your system must be keyed into the Variable Frequency Drive before system start-up.**

To prevent accidental change of pressure sensor calibration parameters, they are locked by Pr 20.16. To enter calibration parameters, perform the following steps:

- a. Set Pr 20.16 to 777, to unlock pressure sensor parameters.
- b. Enter calibration parameters Pr 20.34, 20.35, and 20.36.
- c. Set Pr 20.16 to 0 to lock pressure sensor parameters.

Calibration Parameters from the label:

Pr 20.34 – Zero Calibration



Pr 20.35 – Calibration Pressure

Pr 20.36 – High Calibration

# Pressure Transducer Calibration Procedure

E-Flo Plus pressure sensor must be calibrated against an instrument grade High Precision Pressure Transducer, which should be installed near the E-Flo Plus pressure sensor.

1. Ensure that the High Precision Pressure Transducer calibration is up to date.
2. Set Pr **20.11** to 777, to unlock pressure sensor parameters.
3. Calibrate Low Pressure Point as follows:
  - a. Ensure that system is not pressurized. Calibration instrument pressure reading should be 0 psi.
  - b. Use Keypad to navigate to Pr **20.33**; monitor its reading for 5 – 10 seconds to determine its average value. Make a record of it.
  - c. Navigate to Pr **20.34** and enter the recorded average value of Pr **20.33**.
4. Calibrate the High Pressure Point as follows:
  - a. Pressurize the system to 250 – 275 psi.

						
Do not exceed pressure rating of the system! If system is rated to a pressure lower than 250 psi, use maximum allowable rated pressure. Refer to Operation Manual 311593.						

- b. Keep the system pressurized and ensure that pressure does not fluctuate.
  - c. Take a pressure reading from the calibration instrument and make a record of it.
  - d. Navigate to Pr **20.35** and enter the recorded system pressure.
  - e. Navigate to Pr **20.33**; monitor its reading for 5-10 seconds to determine its average value. Make a record of it.
  - f. Navigate to Pr **20.36** and enter the recorded value of Pr **20.33**.
5. Set Pr **20.11** to 0 to lock pressure sensor parameters.
6. Verify pressure calibration.
  - a. Relieve system pressure.
  - b. Navigate to Pr **20.31** and verify that its reading is within the range of 0-3 psi.
  - c. Pressurize the system to about 100 psi. Verify that reading of Pr **20.31** is within +/- 2.5 psi of the system pressure.
  - d. Pressurize system to about 250 psi. Verify that reading of Pr **20.31** is within +/- 2.5 psi of the system pressure.

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This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

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# Graco Information

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**Phone:** 612-623-6921 **or Toll Free:** 1-800-328-0211 **Fax:** 612-378-3505

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MM 311600

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1/2007