1.0 Two-pressure control or vent option:
   (If pre-mounted on pump ignore 1.1 thru 1.6)

1.1 Unpack the 2-pressure control sandwich and check for the following:
   Three 1/4-20 UNC x 3” long socket head cap screws
   Three O-rings, 1/16” cross section

Solenoid unloading module:
   N.O. 2-way for Normally Low pressure
   (PSV-S xxx-xxxx)
   N.C. 2-way for Normally High pressure
   (PSV-H xxx-xxxx)
   N.O. vent for Normally Vented pressure
   (PSV-V xxx-xxxx)

1.2 Remove the second stage from the 2-stage compensator. Save the O-rings and second stage but discard the bolts (1/4-20 UNC x 1-1/4 long).

1.3 Place the sandwich on the first stage, taking care that the O-rings are in their counterbores.

1.4 Place the original second stage on top of the sandwich, taking care that the O-rings are in their counterbores. During this step, carefully examine the O-rings that are being re-used from the original pump supply. If the O-rings are stiff, brittle, or damaged, please replace these O-rings prior to installing the second stage.

1.5 Install new bolts, three 1/4-20 UNC x 3 long (included).

1.6 Torque bolts to 200 in/lbs.

1.7 Wire solenoid to control panel.

1.8 Check solenoid for electrical operation.

1.9 Start pump and check for leaks.

1.10 Put pump into dead head and adjust high pressure at second stage with the solenoid:
    Energized if Normally Low pressure.
    De-energized if Normally High pressure.

1.11 Energize or de-energize solenoid and adjust low pressure at sandwich.

1.12 Energize and de-energize solenoid and observe operation, repeatability and stability.

1.13 Put pump into partial flow.

1.14 Energize and de-energize solenoid and observe operation, repeatability and stability.

1.15 Operate machine and check for proper operation and leaks.

1.16 Installation complete.

2.0 Three-pressure control:
   2.1 Repeat section 1.0, except as follows.

2.2 Install two sandwich sections in steps 1.3 and 1.4.
2.3 Use three each 1/4 x 20 UNC x 4 3/4” long bolts in step 1.5 (not included), repeat 1.6, 1.7, 1.8, and 1.9.

2.4 Energize or de-energize both solenoids per 1.10 and adjust high pressure per 1.10.

2.5 Energize and de-energize each solenoid as necessary and adjust low and intermediate pressure per 1.11 1.12, 1.13, and 1.14.

2.6 Operate machine per 1.15 and also check for proper pressure sequencing.

2.7 Installation complete.

3.0 Four-pressure control:
   Same as 2.0 for three-pressure, except install three sandwich sections using three each 1/4 x 2- UNC x 6-1/2” long bolts (not included).

---

**Multi-control circuit for pressure or flow**

![Multi-control circuit diagram]

**Varistor ordering and wiring data for coils with flying leads**

Transient Overvoltage Protection – Varistors

R978709123 110/115 VAC 50/60 Hz  
CKE Z150 LA 10A  
GE V150 LA 10A or equivalent

R978709124 220/230 VAC 50/60 Hz  
CKE Z250 LA 40A  
GE V250 LA 40A or equivalent

Use of the Varistor is recommended to prevent solenoid damage from voltage surges or spikes.

**NOTE:** Wire Varistor in parallel with coil at the control panel or at the solenoid.

---

**Quick connect with built-in Varistor and light**

R978703790 Compression Fitting 110/115 VAC

R978703799 1/2” NPT 110/115 VAC

R978703800 1/2” NPT 220/230 VAC

R978703788 1/2” NPT 24 VDC