

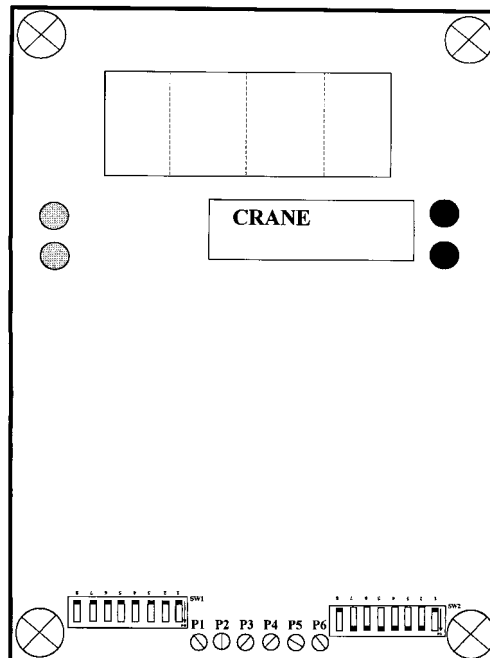
# ***Technical Data Sheet TDS-005,006,007***

## ***IntelliSense Circuit Board Reinstallation & Calibration***

This procedure must be followed when reinstalling new or rebuilt IntelliSense diagnostic computer boards returned from the factory having pre-installed end limits. Chempump highly recommends that prior to performing this calibration procedure new bearings be installed, or the existing bearings be inspected for wear. Once this calibration procedure is performed the IntelliSense diagnostic monitor will reset the radial wear indication to zero.

**Notes:**

- A.) The DM boards should never be removed or installed while the pump is energized.
- B.) No more than one Dipswitch should be in the “ON” position at any time on the SW1 series of Dipswitches.
- C.) See *Figure 1* for location of all Dipswitches and potentiometers.



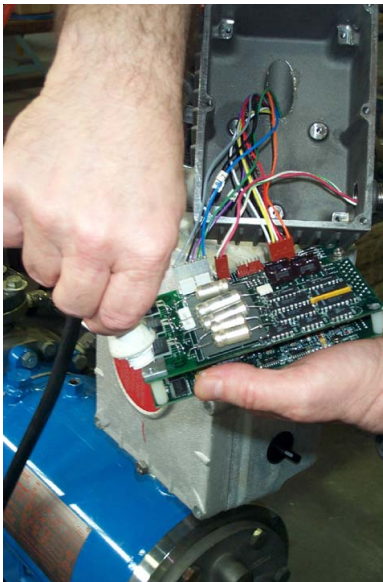
**Figure 1**

1. Remove the trim ring; cover plate and gasket from the DM connection box. See *Photo 1*.

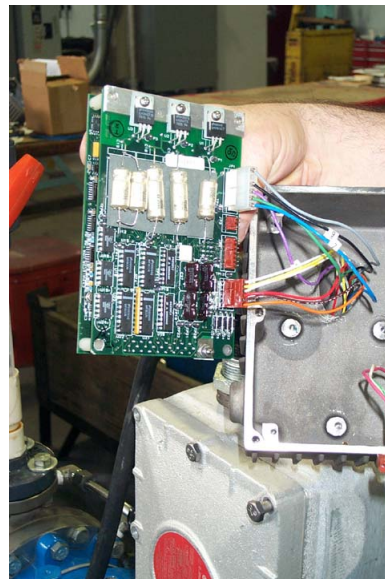


**Photo 1**

2. Apply thermally conductive paste (Radio Shack Part Number 276-1372, or equivalent) to points of contact between the DM connection box (top screw holes) and the heat sink on the circuit boards. See *Photo 2*.
3. Install the connectors to the appropriate DM circuit board pins making certain that the wiring harnesses are tight and locked into place. See *Photo 3*.

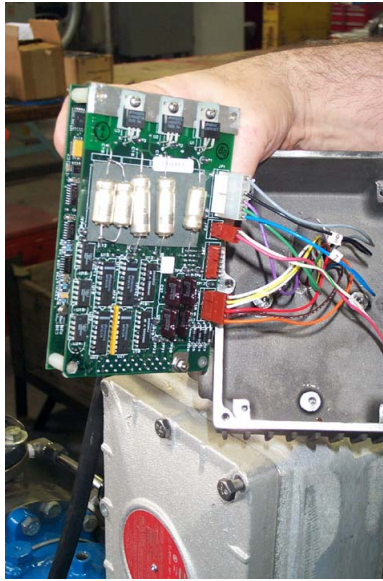


**Photo 2**



**Photo 3**

4. If any remote outputs have been provided these connections should also be made at this time. See *Photo 5*.



**Photo 5**

5. Mount the circuit boards to the connection box with the four (4) mounting screws making sure that the screws are tight. See *Photo 6*. Note that the mounting screws come in two lengths. See *Photo 7*. The longer screws go into the top two mounting holes and the shorter ones go into the bottom two mounting holes.

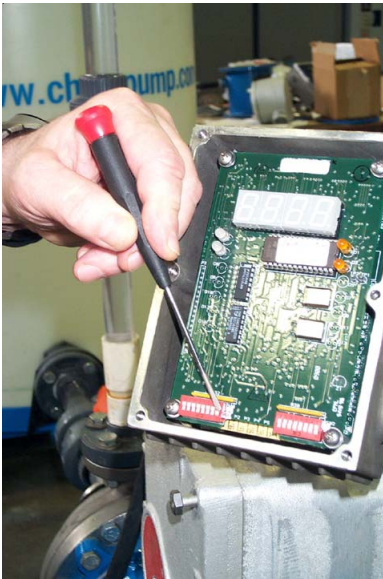


**Photo 6**



**Photo 7**

6. Start pump and allow the IntelliSense system to stabilize temperature for 10 to 15 minutes. Move the left hand side (SW1) Dipswitch #5 to the “ON” (down) position. “CAL” appears momentarily in the display. When “CAL” disappears, return switch#5 to the “OFF” (up) position. See *Photo 8*.
7. For complete recalibration, move the left hand side (SW1) Dipswitch #1 to the “ON” (down) position. Adjust pot #6 to obtain the number closest to zero (0). The sign of the number should change between + and – on the display. Return switch #1 to the “OFF” (up) position. See *Photo 9*.
8. For complete recalibration, move the left hand side (SW1) Dipswitch #2 to the “ON” (down) position. Adjust pot #4 to obtain the number closest to zero (0). The sign of the number should change between + and – on the display. Return switch #2 to the “OFF” (up) position. See *Photo 9*.



**Photo 8**



**Photo 9**

9. Prior to determining the axial position output of the IntelliSense it is recommended that the axial end limits be verified. To check the axial end limits:
  - a.) Forward Limit: Move Dipswitch #8, located on the right hand side (SW2) to the “ON” (down) position. “FUNC” appears in the display. Next move Dipswitch #6 on the left hand side (SW1) to the “ON” (down) position. The number appearing in the display is the forward end limit value. Compare this value to the number preset at the factory. Return Dipswitch #6 to the “OFF” (up) position.

- b.) Rear Limit: With Dipswitch #8, located on the right hand side (SW2), remaining in the “ON” (down) position, move Dipswitch #7 on the left hand side (SW1) to the “ON” (down) position. The number appearing in the display is the rear end limit value. Compare this value to the number preset at the factory. Return Dipswitch #7 to the “OFF” (up) position, then Dipswitch #8 on the right hand side (SW2) to the “OFF” (up) position.

10. To readjust the axial end limits, the following steps must be performed in exact order.

**Note: All Dipswitches are located on the left hand side of the circuit board (SW1).**

- a.) Move Dipswitch #5 to the “ON” (down) position. After “CAL” appears momentarily in the display, and then disappears, return Dipswitch #5 to the “OFF” (up) position.
  - b.) Move Dipswitch #3 to the “ON” (down) position. **Make note of this value.** Adjust pot #5 until the display reads the factory setting for the forward end limit. Return Dipswitch #3 to the “OFF” (up) position. Move Dipswitch #6 to the “ON” (down) position for 3 seconds, and then return Dipswitch #6 to the “OFF” (up) position.
  - c.) Move Dipswitch #3 to the “ON” (down) position. Adjust pot #5 until the display reads the factory setting for the rear end limit. Return Dipswitch #3 to the “OFF” (up) position. Move Dipswitch #7 to the “ON” (down) position for 3 seconds, and then return Dipswitch #7 to the “OFF” (up) position.
  - d.) To verify that the end limits are installed correctly, repeat Step 9 before proceeding.
  - e.) Move Dipswitch #3 to the “ON” (down) position. Adjust pot #5 to the **original value noted in Step 10b** or readjust the value to the output noted in the DM Rundown Sheet. Return Dipswitch #3 to “OFF” (up) position.
  - f.) Move Dipswitch #5 to the “ON” (down) position. After “CAL” appears momentarily in the display, and then disappears, return Dipswitch #5 to the “OFF” (up) position.
  - g.) The IntelliSense monitor will return to the normal operation mode, and the axial indication should read “000”.
11. Move the left hand (SW1) Dipswitch #3 to the “ON” (down) position. The average DM reading is taken from the DM Rundown Data Sheet of the particular pump being calibrated. Adjust pot #5 to DM reading for the approximate flow that the pump is producing. Return Dipswitch #3 to the “OFF” (up) position.



12. Move the left hand side (SW1) Dipswitch #5 to the “ON” (down) position. “CAL” appears momentarily in the display. When “CAL” disappears, return switch #5 to the “OFF” (up) position.

13. Place a new bag of desiccant into the IntelliSense housing. See *Photo 10*.



**Photo 10**

14. Install new gasket. See *Photos 11 & 12*.



**Photo 11**



**Photo 12**

15. Replace the cover plate and trim ring. See *Photo 13*.



***Photo 13***

16. The IntelliSense diagnostic system is now calibrated and ready for service.