TROUBLE SHOOTING “CHECK SCR” DIAGNOSTIC ON UNITROL 9280 SERIES SOLUTION-2 CONTROLS

HOW SYSTEM WORKS: The SOLUTION-2 control gets its line voltage synchronization by monitoring voltage across the SCR contactor. Without this precise signal, the control will not operate properly or not operate at all.

CHECK SCR: This display will be shown when the microprocessor is not getting this synchronization signal. The control will not operate in any way when this fault is displayed.

TROUBLE SHOOTING: Follow the flow chart below to identify the problem. Before starting, check to be sure that the ribbon cable between boards on 9280M, 9280L, and 9280D is pushed in on both ends, and that the cable to the remote console on 9280 controls is fully seated on the back of the remote and the back of the power supply board.

Measurements are made on back of the power supply/IO board unless otherwise noted.

**CHECK SCR!**
Display is shown and control will not operate

- Voltage measured at terminals K1 (#31) and K2 (#33) is line voltage
  - **YES**
  - Voltage measured across large terminals on SCR is line voltage
    - **YES**
    - **TURN POWER OFF FIRST**
      1. Check that red cathode wire K1 is securely in terminal K1
      2. Check that the red cathode wire marked K2 is securely in terminal K2
    - **NO**
    - Voltage measured at test points Z/CR-A to GND is 2.5 – 2.8 VDC
      - **YES**
      - **TIMER POWER OFF FIRST**
        1. Be sure welder transformer tap switch is on a number and not on OFF or between numbers. Move tap switch handle from highest to lowest number a few times in an attempt to clean this switch.
        2. Remove transformer wire from output of SCR contactor and measure continuity to the other transformer wire that is going to L2. The value should be under 5Ω. If not, transformer tap switch is bad, or primary winding on welding transformer is open.
  - **NO**
  - Voltage measured at terminals K1 (#31) and K2 (#33) is line voltage
    - **YES**
    - Replace chip U112 on microprocessor board.
      - If chip is not available, install chip from socket U142, and put the bad chip into the U142 socket.
      - If this does not solve the problem, contact the Unitrol service department at 847-480-0115.
    - **NO**
    - Voltage at test points #14 (+15VVL) to #13 (-15VFL) is 29 - 30 VDC
      - **YES**
      - Replace U14 (DB103).
      - 1. Replace U14 (DB103).
      - 2. If that does not solve the problem, the balance of parts are soldered in. Consult the Unitrol service department at 847-480-0115.
      - **NO**
      - Voltage at test points Z/CR-A to GND is 2.5 – 2.8 VDC
        - **YES**
        - **TURN POWER OFF FIRST**
          1. Check fuses F7 and F8. Replace if blown or missing
          2. Replace U9 (AD711JN) or U10 (H111)
          3. Replace U112 on microprocessor board
          3. If this does not solve the problem, contact the Unitrol service department at 847-480-0115.