

# SMP/CMP TESTING AND CALIBRATION PROCEDURES

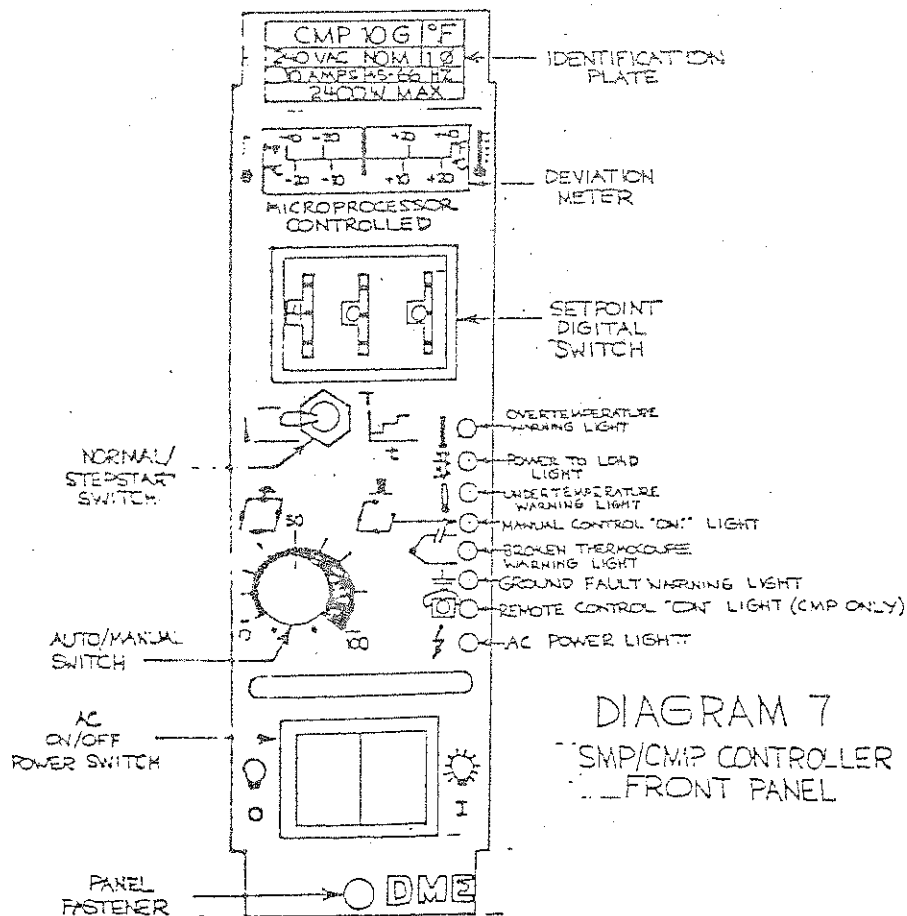
## A. CALIBRATION PROCEDURES

### 1. SET UP

- a) MAIN POWER ON-OFF SWITCH: ON (AMBER INDICATOR ON)
- b) MODULE POWER ON-OFF SWITCH: OFF
- c) INSERT SMP OR CMP CONTROLLER TO BE CALIBRATED INTO THE LEFTHAND TEST SLOT.
- d) MODULE VOLTAGE SELECTOR SWITCH: SET TO INDICATED MODULE LINE OPERATING VOLTAGE.
- e) GFI SWITCH: NORMAL
- f) OPEN TC SWITCH: NORMAL
- g) REV TC SWITCH: NORMAL
- h) TC SIMULATION TEMP SET SELECTOR: F 32°/C 0°
- i) ZONE SELECT: 00

SMP/CMP CONTROLLER SETTINGS (SEE DIAGRAM 7)

- a) NORMAL/STEPSTART SWITCH: NORMAL (LEFTHAND) POSITION
- b) AUTO/MANUAL SWITCH: AUTOMATIC (PUSHED IN) POSITION
- c) SETPOINT DIGITAL SWITCH: 000
- d) AC ON/OFF POWER SWITCH: OFF



## 2. PROCEDURES

a) MODULE POWER ON/OFF SWITCH: ON (RED INDICATOR ON)

SMP/CMP (SEE DIAGRAM 7)

a) AC POWER ON/OFF SWITCH: ON

b) LED INDICATIONS:

"MANUAL CONTROL ON" LED: OFF

"BROKEN THERMOCOUPLE WARNING" LED: OFF

"GROUND FAULT WARNING" LED: OFF

"REMOTE CONTROL ON" LED (CMP ONLY): OFF

"AC POWER" LED: ON

IGNORE ANY BLINKING LED INDICATORS AT THIS TIME.

## 3. METER ZERO ADJUSTMENT

a) CAREFULLY PLACE A TEMPORARY WIRE JUMPER FROM POINT 5 TO POINT 6 ON THE ~~TOP~~ SIDE OF THE SMP/CMP MODULE (SEE DIAGRAM 8)

b) SLOWLY ADJUST POTENTIOMETER R72 ON THE SMP/CMP CIRCUIT BOARD (SEE DIAGRAM 9) TO CENTER THE POINTER ON THE DEVIATION METER.

c) CAREFULLY REMOVE THE JUMPER.

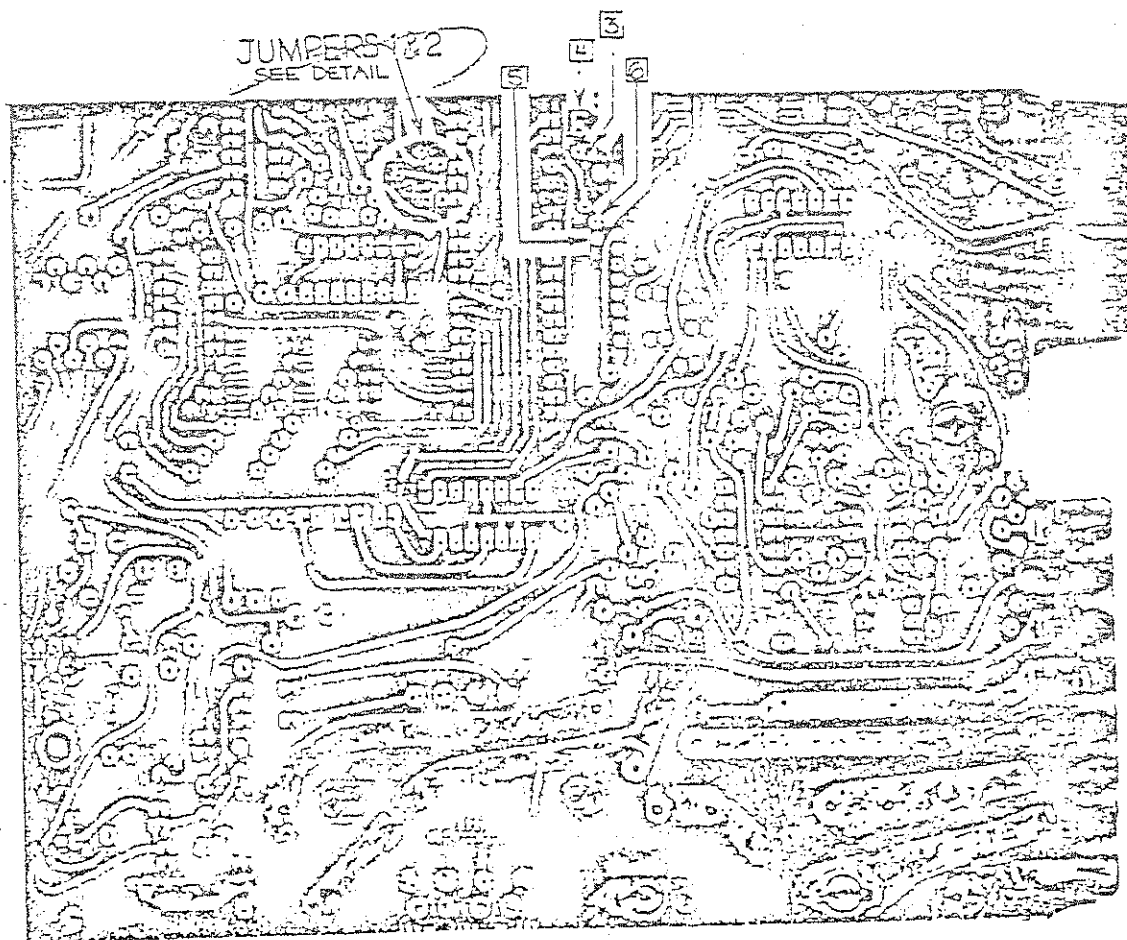


DIAGRAM 8  
SMP/CMP JUMPER LOCATIONS

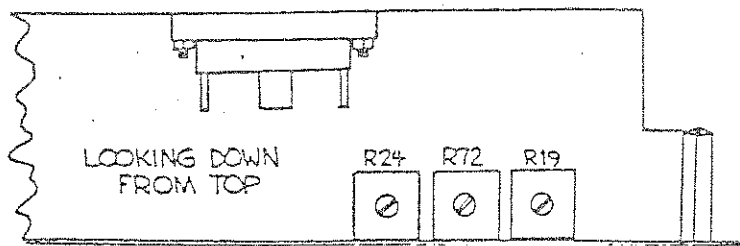


DIAGRAM 9  
SMP/CMP CALIBRATION

#### 4. THERMOCOUPLE AMPLIFIER CALIBRATION

INITIAL SETTINGS:

- a) CENTER POTENTIOMETER R19 AND R24 (SEE DIAGRAM 9) WITHIN THEIR ROTATIONAL RANGE.

LOW TEMPERATURE CALIBRATION

- a) SET SMP/CMP SETPOINT DIGITAL SWITCH TO 200°F (100°C FOR CELSIUS UNITS).
- b) ~~TC~~ TC SIMULATION TEMPERATURE SET TO 200°F (100°C FOR CELSIUS UNITS).
- c) ADJUST POTENTIOMETER R19 (SEE DIAGRAM 9) TO CENTER THE POINTER ON THE SMP/CMP DEVIATION METER.

HIGH TEMPERATURE CALIBRATION

- a) SET SMP/CMP SETPOINT DIGITAL SWITCH TO 800°F (425°C FOR CELSIUS UNITS).
- b) SET ~~TC~~ TC SIMULATION TEMPERATURE SET TO 800°F (425°C FOR CELSIUS UNITS).
- c) ADJUST POTENTIOMETER R24 (SEE DIAGRAM 9) TO CENTER THE POINTER ON THE SMP/CMP DEVIATION METER.

REPEAT STEPS a) - c) in the LOW TEMPERATURE and HIGH TEMPERATURE CALIBRATION areas above until no further adjustments are necessary.

#### 5. METER DEAD BAND TEST

- a) SET SMP/CMP SETPOINT DIGITAL SWITCH TO 400°F (200°C FOR CELSIUS UNITS).
- b) SET ~~TC~~ TC SIMULATION TEMPERATURE SET TO 400°F (200°C FOR CELSIUS UNITS).
- c) INCREASE SMP/CMP SETPOINT DIGITAL SWITCH BY 100° AND RETURN TO THE PREVIOUS SETTING. THE DEVIATION METER SHOULD INDICATE WITHIN 2°F (1°C FOR CELSIUS UNITS) OFF-CENTER.
- d) DECREASE SMP/CMP SETPOINT DIGITAL SWITCH BY 100° AND RETURN TO THE PREVIOUS SETTING. THE DEVIATION METER SHOULD INDICATE WITHIN 2°F (1°C FOR CELSIUS UNITS) OFF-CENTER.