Procedure # P3K-AL-0328-Salem3

1.0 APPLICABLE DOCUMENTS: (Reference Only)

Elementary Diagram 716E698
Material List

2.0 Equipment:

Power Supplies (Qty. 3) +30 VDC
-22 VDC
0-5 VDC (Vi)
DMM (Qty. 4) 1- across Vi (set for VDC)
1- across Vout (set for VDC)
1 - "M" on 2ma scale
1- "MA" set on 2ma scale
Oscilloscope
Wavetek
Rservo valve resistor: If G0001: 125 Ω
If G0003: 62.5 Ω
GM1027 LVDT

3.0 VISUAL:

3.1 Visually verify that no shorts exist between etching runs.

3.2 Verify that all components are properly mounted and soldered.

3.3 Verify value of R10: If G0001: 30.9 Ω
If G0003: 16.2 Ω

3.4 Verify CR4 is assembled correctly:
If CR4 is 1N1606 ---- device has cathode to stud polarity
If CR4 is 1N2979A ---- device has anode to stud polarity

3.5 Verify that R26 is 500 Ω.

4.0 PROCEDURE:

4.1 Connect card to equipment per FIG .#1.

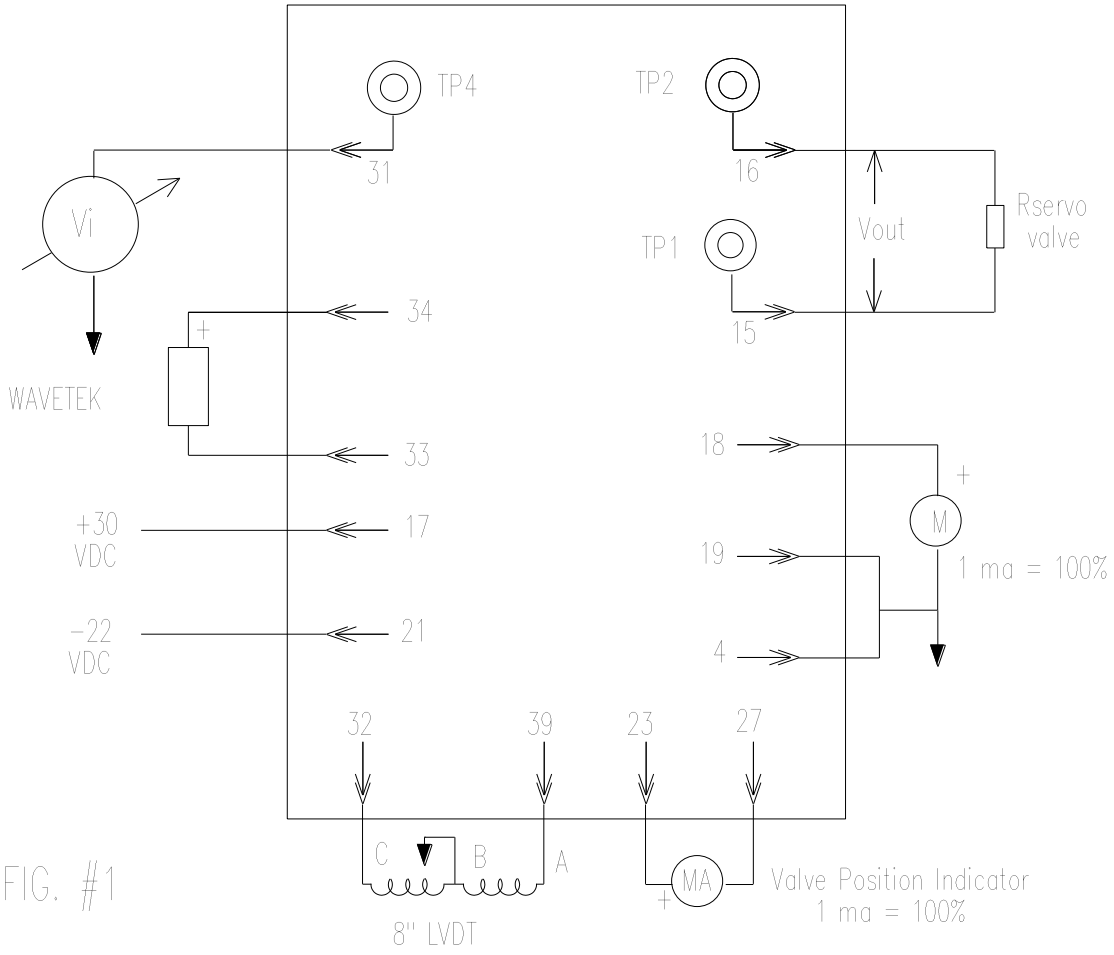

FIG. #1

4.2 Check power supply voltages to see that they are +30 ± 0.010 VDC and -22 ± 0.010 VDC.

4.3 Monitor voltage between TP2 and TP1. This will be called Vout.

4.4 Turn R23 to midtravel.

4.5 Apply Vi = zero volts. Adjust R24 for Vout = zero volts. Meter M should read zero.

4.6 Apply Vi = -5.000 VDC. If G0001: Adjust R22 for Vout = +2.000 VDC.
If G0003: Adjust R22 for Vout = +2.156 VDC.
Meter M should read approx. 0.4 ma.

4.6A Repeat steps 5 & 6 until limits are met. (0 ± 2 mv for step 5)

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4.7 Apply Vi = +5.000 VDC. If G0001: Vout should be -2.000 ± 0.020 VDC. M = -0.35 ma.
If G0003: Vout should be -2.156 ± 0.020 VDC. M = -0.35 ma.

4.8 Apply Vi = zero volts. When Vout is well stabilized (approx. 5 min.) reset R24 for Vout = zero volts (exactly).

4.9 Verify that R26 is a 500 ohm pot, then set it CW.
Apply 3KHZ 6Vrms to pins 34 and 33.

4.10 With 3KHZ 6Vrms still applied and valve open , 8 inches, set R25 for zero volts at TP3.
Set R28 for 100% on valve position meter (ma meter)(1ma = 100).

4.11 With 3KHZ 6Vrms still applied and valve open, 3 inches, set R27 for zero on ma meter. TP3 must be >3.0 VDC. If unable to set TP3, adjust R26 untill TP3 is within limits.
Remove 3KHz 6V rms signal; TP3 should be < 10 mv p-p (use scope)

4.12 Repeat steps 10 & 11 until at the 8" position the meter = 100% and TP3 = zero; also at the 3" position the meter = 0 and TP3 = > 3VDC.

4.13 R30 should adjust pin 36 from o to approx. -11 volts.

4.14 If card passes all the above steps place acceptance stamp on it.

5.0 SCOPE:

5.1 GENERAL:

The SADI-DC AMPLIFIER receives its input from the VALVE FCT. BOARD or VALVE PREAMP BOARD. The valve control signal is amplified to drive the torque motor of the servo. valve.

The demodulator indicator receives its signal from the LVDT mounted on the valve. This signal is demodulated, filtered and appears at output pin 30 as a linear D.C. Voltage proportional to valve stem lift. A meter amplifier crt. used to drive VALVE POSITION METER is also included.

5.2 TEST ARRANGEMENT:

For the gain adjustment, the servo valve coils are simulated by an equivalent resistor, whose resistance equals the resistance of the servo valve coils. These resistances are:

If G0001: 25 GPM -- SADI (R10 = 30.9 ohms): R servo valve = 125 ohm
If G0003: 50 GPM -- SADI (R10 = 16.2 ohms): R servo valve = 62.5 ohm

The equivalent resistor R servo valve (1/2 watt) should be connected between Pin 16 and 15 on the SADI BD. to provide proper loading of the servo amp (see FIG. 1).

REV.	INIT.	DESCRIPTION OF CHANGE	DATE
1	awe	Retyped from Schenectady spec. for clarification	08/15/96
2	awe	Added value check to step 4.9	01/30/97
3	awe	Reworded steps 4.2, 4.7, 4.9, 4.10, 4.11 and 4.12 for further clarity	06/20/97

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