

## FIELD SERVICE TECH MANUAL

## ADJUSTMENTS FOR DECTAPE SYSTEMS (Continued)

- TO USE:
- (1) Plug in skew tester AFTER selecting source of V plus, see NOTES on S3 and TO USE: (5), S3.
  - (2) Calibrate. See NOTES on S1 and TO USE: (5), S3.
  - (3) Select correct split winding, see NOTES on S2 and TO USE: (5), S2.
  - (4) Skew Test
    - A. Zero Skew Tape Available: (Certified DECTapes are not zero skew. They may have a  $1 \mu$  sec skew.) Run tape across head in normal manner. Gain of tester is enough to give clipped sine wave out. About 10V P/P. Go to step 4C. This skew is real.
    - B. No Zero Skew Tape Available. Clean tape head and guides. (4-E) Format Tape. Reverse tape so oxide side is up. (4-F) Now thread this tape from take-up reel across head with oxide up onto original supply reel. Move tape in local mode. Go to step 4C. The skew indicated is twice real skew.
    - C. Skew is measured by measuring the time difference between the two signals crossing a given reference line. Figure 1. To test skew; with tape in motion, depress lightly on the back edge of the tape on the right or left sides of the head. Record which side causes the skew to increase when pressure is applied to one side or the other. If the real skew is greater than  $2 \mu$  sec, the head should be deskewed. This tolerance will apply to both TU55 and TU56 transports to gain an added factor of interchangeability of tapes. If the head is to be deskewed, it should be taken as close to zero as possible. If a non-zero skew is used, it must be formatted after each attempt to deskew.
    - D. To deskew:
      1. Remove head and thoroughly clean back of head and mounting surface of all dirt, glue, skew shims, etc. Remount head and redo 4A or 4B as applicable.
      2. If shimming is necessary, magtape reflective marker (DEC #29-15191) is acceptable. Place the marker on the back of the head on the edge of the side which caused the skew to increase in step 4C. (For TU56 heads, the reflective tape must be placed only below the mounting screw.) Remount head being careful not to curl the ship tape edge and redo step 4A or 4B.

## FIELD SERVICE TECH MANUAL

## ADJUSTMENTS FOR DECTAPE SYSTEMS (Continued)

TO USE: (4) Skew Test (Continued)

E. To Clean:

1. Heads and Guides: Use DECTape cleaning solution generously on the head, wiping dirt with clean, lint free towel (Kimwipe).
2. Guides: Disassemble guide from plate and thoroughly clean with solution all parts including wear plates, studs, springs, spring holes and guides themselves.
3. Tape: Place doubled clean, lint free towel over head; thread tape over towel; place free end of towel over tape.

Run tape from end-to-end at least once in each direction.

F. Reversing Tape: (Oxide side up)

Figure 4-F-1

Mount normally full reel of tape on right hub and empty reel on left. Thread tape from bottom of full spool onto top of empty reel. In local move all tape to left reel. This places oxide side up for skew test.

CAUTION: Maintain manual pressure on the supplying reel to prevent tape runaway.

(5) Switches: NC = DOWN NO = UP

S1 (Middle Switch) Calibrate - NO/Normal - NC

NO Select signal to lower amp to compensate for internal drift and phase shift of op amps. To calibrate, put switch in NO position, scope in Add, tape oxide side up and move tape in local. The two signals are 180° phase and should cancel. ADJ 10KPOT for smallest resultant signal. Return switch to NC position.

NC Signal from other half split winding is applied to lower amp for skew test. Do not adjust pot for any difference in amplitude. This difference is a result of low signal from one half of split winding due to skew.

# FIELD SERVICE TECH MANUAL

## ADJUSTMENTS FOR DECTAPE SYSTEMS (Continued)

TO USE: (5) Switches (continued)

S2 Top Switch: Select split wiring, due to different vendors assigning different pins for head connection. If switch is in wrong position, S1G2 will be twice amplitude of S1G1 in normal position of S1, when oxide side up. If oxide side is down, a phase shift plus skew will result.

S3 Bottom Switch: For compatibility to R series transports NC-- +5V if applied to V plus.

NO-- +10V is divided to +5 for V plus.

CAUTION: This selection is to be made before voltages are applied.

TU55/56 Skew Tester may be placed in any empty slot which has +5 (or +10), -15, and ground in pins A2, B2 and C2 respectively.

Attach female data cable from head to male of tester.

### PARTS LIST:

MC1709CG	19-9344 - E1 through E4
220 OHM 1/4W 5%	13-0271
4.7K 1/4W 5%	13-0447
1.5K 1/4W 5%	13-0391
22K 1/4W 5%	13-1808
10K POT	13-9143-10
470K 1/4W 5%	13-2398
330 OHM 1/2W 5%	13-0296
1N753A	11-2421
22pf 100V 5%	10-0021
10pf 100V 5%	10-0006
.01mf 100V 5%	10-1610
6.8 mf 35V 20%	10-0067
1 PST 6 AT1-T2	12-1168
Amphenol	
133-022-03	12-2909
680 OHM 1/2W 5%	13-0347

- NOTES:
1. Amphenol Pin Assignments
    - Pin A Skew Tap.
    - Pin D Center Tap.
    - Pin B solid winding on Western Magnetic head.  
Split winding on Brush head.
    - Pin C Split winding on Western Magnetic or General Instrument.  
Solid Winding on Brush.  
Split winding for skew measurement.

FIELD SERVICE TECH MANUAL

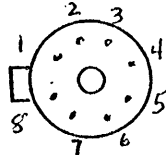
ADJUSTMENTS FOR DECTAPE SYSTEMS (Continued)

Notes: (continued)

- 2. M series use NC position of S3 (+5 applied to A2).  
R series use NO position of S3 (+10 V applied to A).
- 3. E1-E4 MC1709 CG. Pin 4 = V minus Pin 7 = V plus.

Unless otherwise noted resistors are in OHM, 1/4W. 5%

- 4. MC1709 CG.



Pin side.

- 5. S1 = calibrate/normal
- S2 = select split winding
- S3 = select V plus source

FIELD SERVICE TECH MANUAL

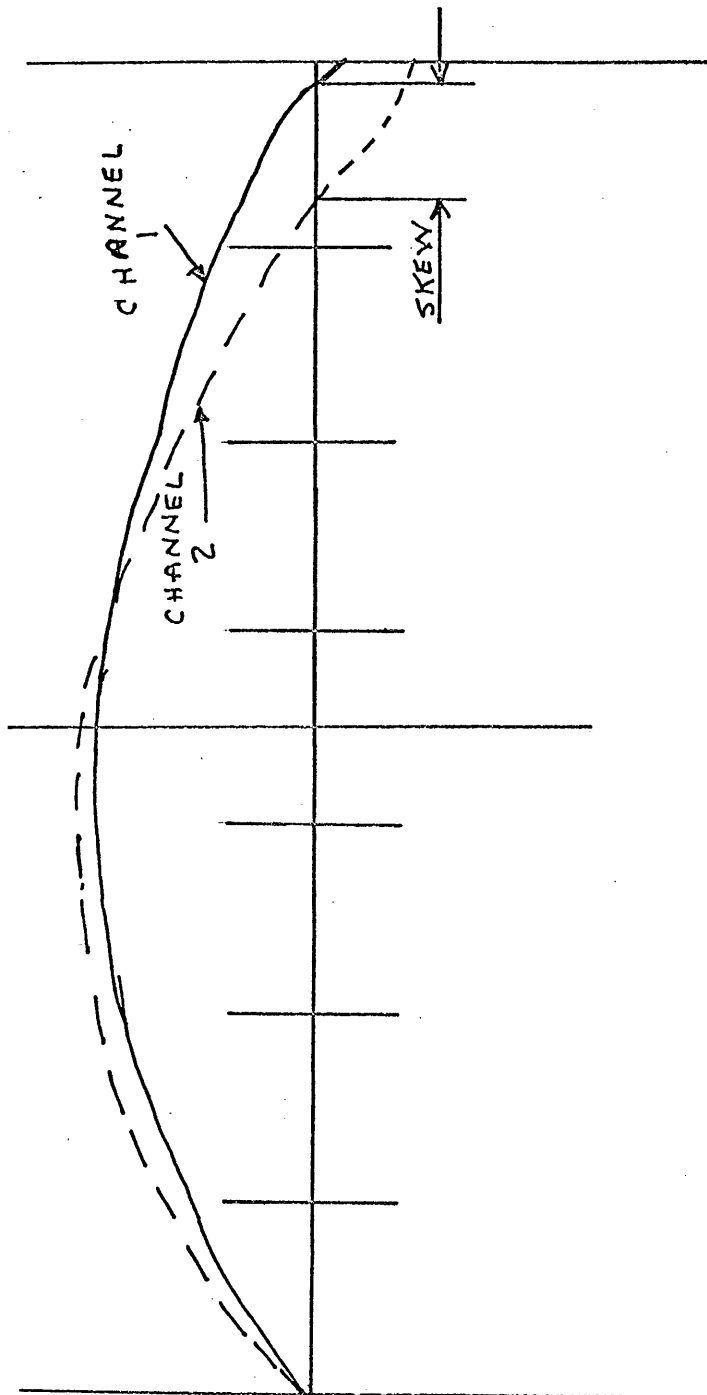


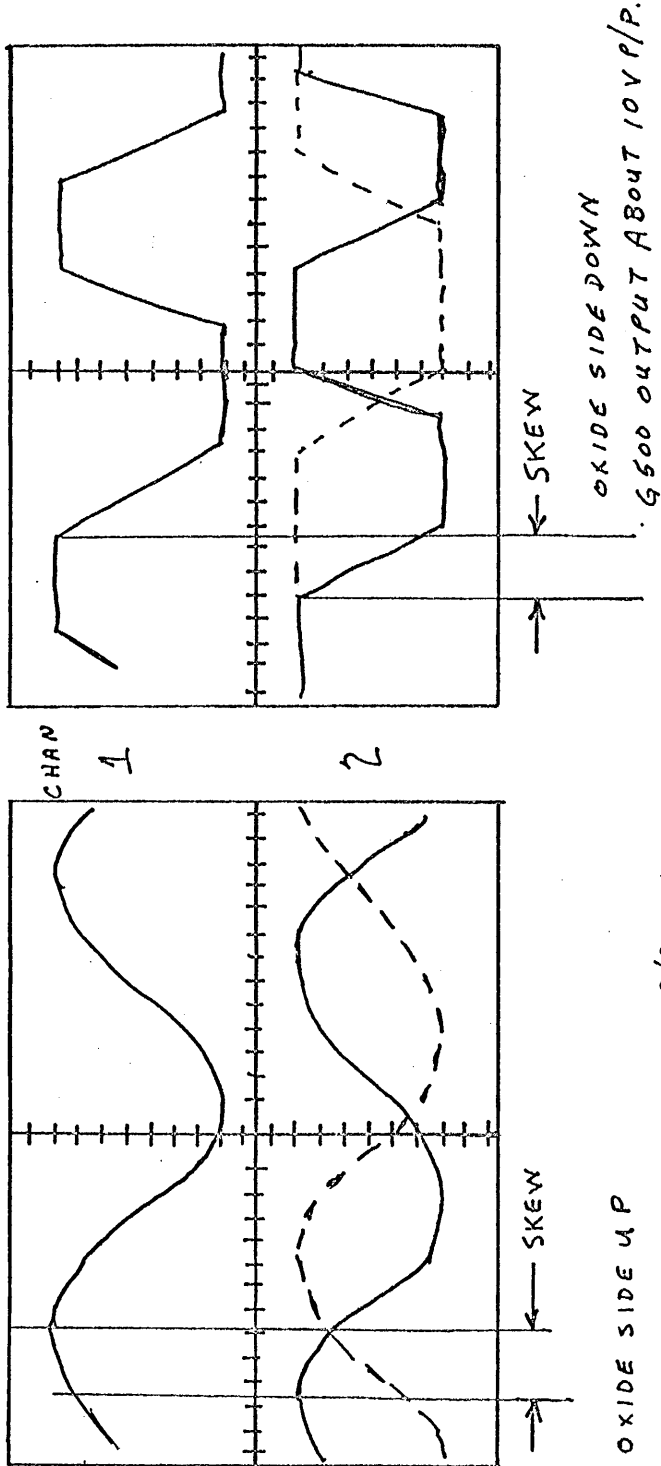
FIGURE 1

Input Coupling: AC; Sync: AC HF REJ; ADJ both CH to  $\emptyset$  level

Sync on channel 1. Put start of sweep at left end of X axis.  
Position seep 2 to start at same point. The difference in time where  
the two sweep across the X axis is the skew.

NOTE: Signals shown are for reference only to show skew measurement.  
They may be square wave (step 4A) or negative portion of this  
signal depending on tape direction (step 4B).

FIELD SERVICE TECH MANUAL



These pictures are for reference only, however can be used to illustrate a point.

Given: Tape: Moving Forward

Channel 2 leads channel 1 as shown.

If tape is reversed, channel 2 should lag channel 1, as shown with dotted lines, the same amount as it leads going forward. If this condition is not met, either amount is different or does not swap from lead to lag, It indicates faulty guides which must be cleaned or replaced.

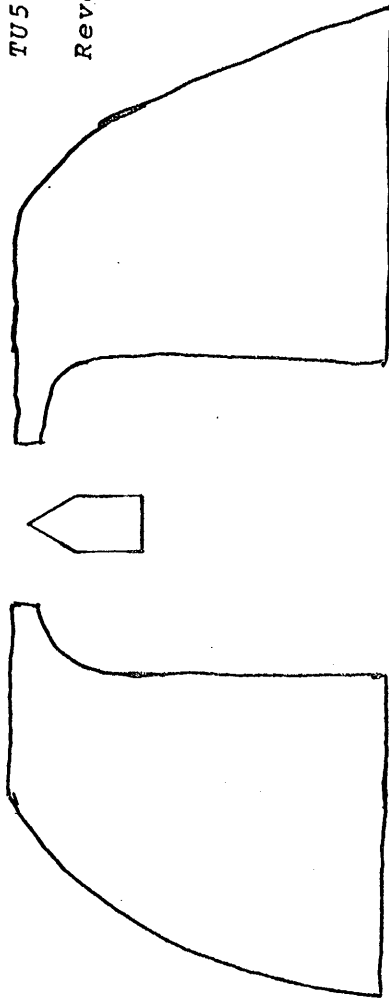
REF. ONLY

FIGURE 1, A

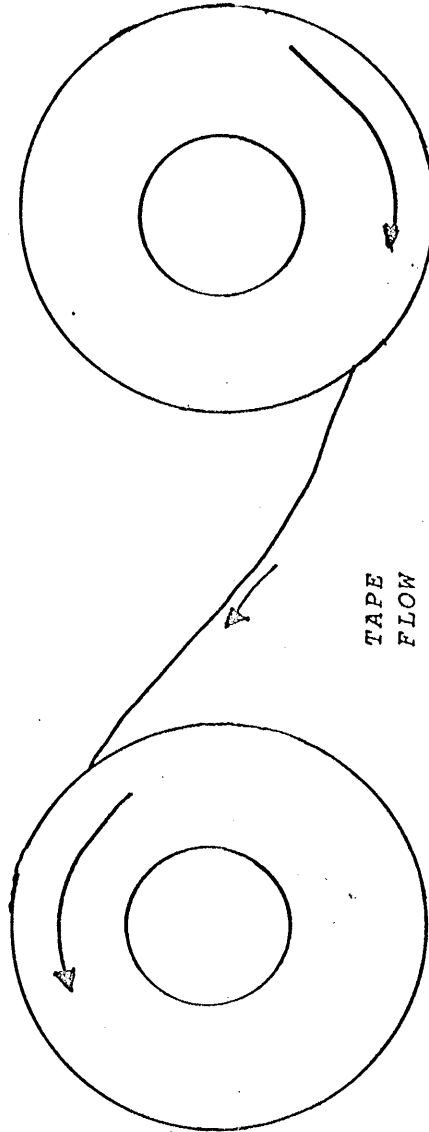
FIELD SERVICE TECH MANUAL

TU55/56

Reverse Tape



NORMAL FULL REEL



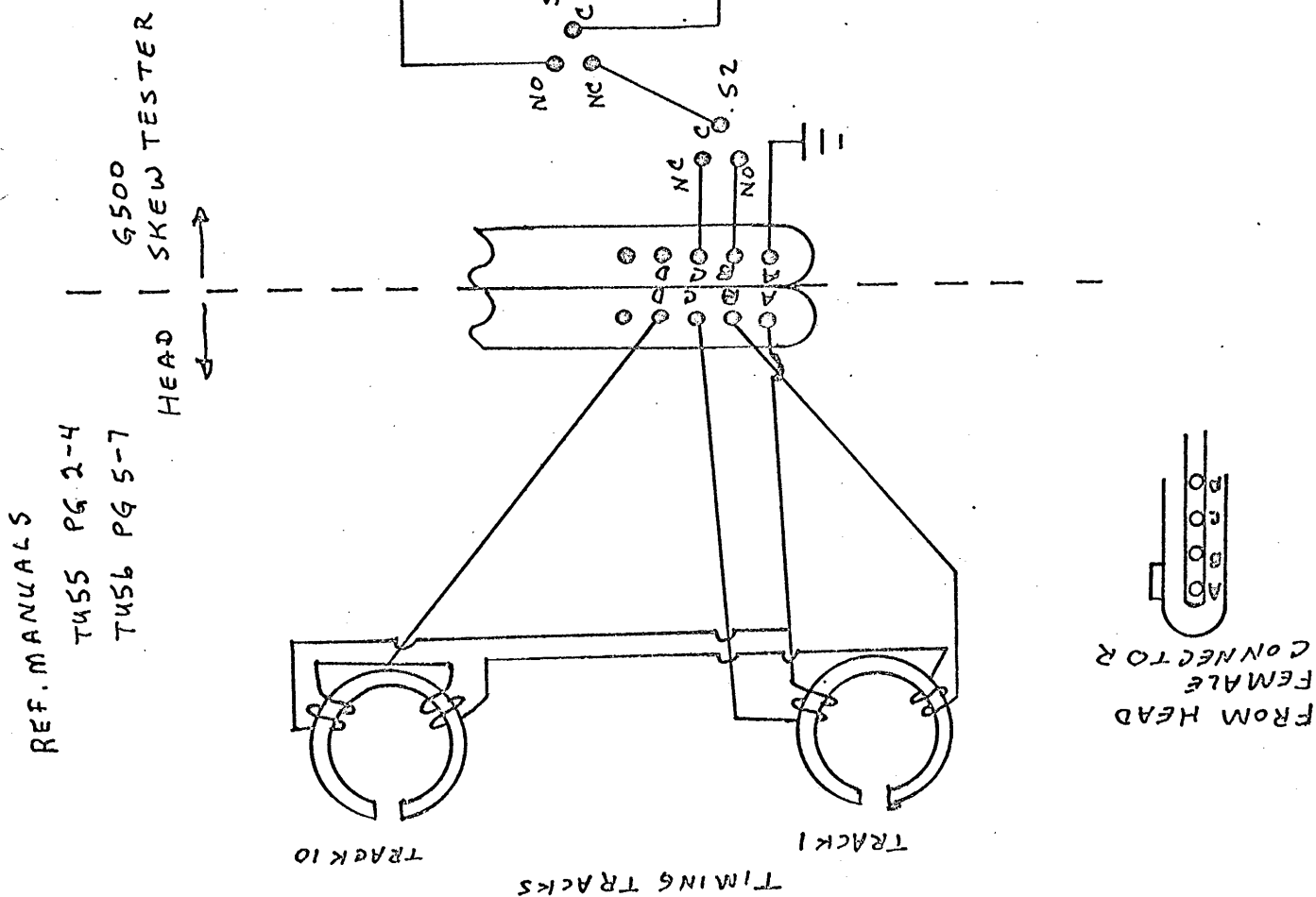
TAPE FLOW

NORMAL EMPTY REEL

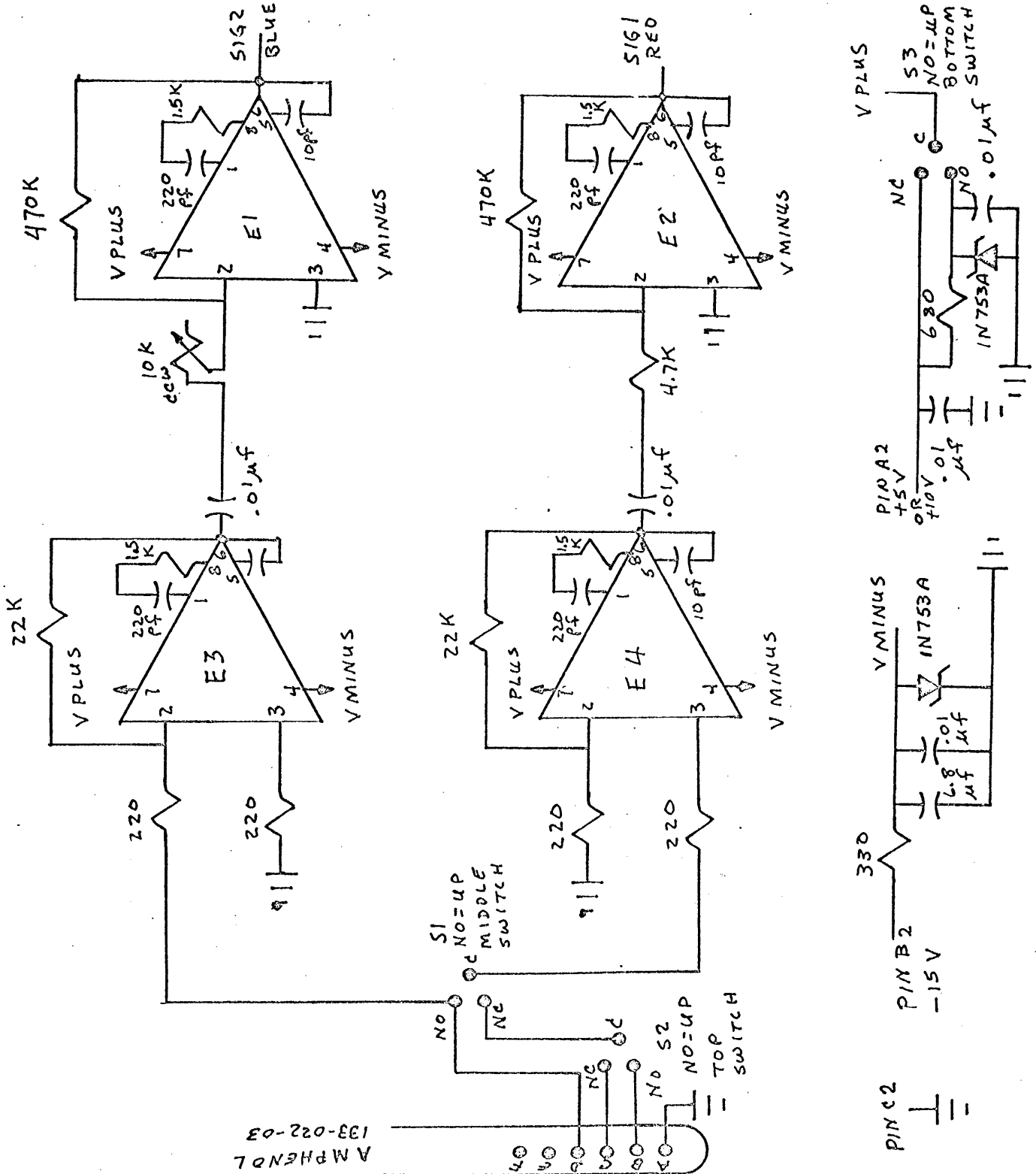
Link Tape: Put normal full reel on left hub, empty on right hub. Thread from bottom of left to top of right. In local wind all tape onto right reel.

FIGURE 4.F.1

FIELD SERVICE TECH MANUAL







G500 SKEW TESTER