

Cleaners: fantastik (face plate), puck (rubber), brass (ceramic), alcohol (heads and guides), paper towels, swabs, sanding stick, vacuum cleaner

Demagnetiser and gause meter
spring scales 400-500 gr and 100-150 gr, and tentelometer
portable soldering iron (for hours meter)
hand tools, tweeker, Allen wrenches

Scope and probe collection, 14 pin IC dip clip
extender card, digital and analog multimeter
work, blank and test tapes

XLR F / BAND AND
OR BAY TO BAND AND

F BAND / BNC M

- 1 Clean
- 2 Demag
- 3 Brake Tension

Supply	CCW 360 gr +/- 80 gr
	CW 80 GR +/- 40 GR
Take-up	CCW 80 gr +/- 40 gr
	CW 360 gr +/- 80 gr
- 4 Hours meter rotate connector CNJ-464 180 degrees
- 5 Shield clean and adjust dash-pot if necessary
- 6 Tape Tach Sensor (TTS) pg 6-19 IC Dip Clip to IC13 on TIB board fig 6-9
Scope ground to TP1, pos to pin 8 of IC13 adj RV1 on TTS to 50% duty cycle
place scope pos to pin 10 adj RV2 for 50% duty cycle
- 7 Supply Reel Motor Tach (RTS) Sensor scope pos to pin 2 adj RV1 on supply RTS
for 50% duty cycle. Scope pos to pin 4 adjust RV2 for a 50% duty cycle.
- 8 Take-up Reel Motor Tach (RTS) Sensor Oscope pos to pin 6 adj RV1 on take-up
RTS for 50% duty cycle. Scope pos to pin 12 adj RV2 for a 50% duty cycle.
- 9 DC Offset Back door, Reel Motor Drive (RMD) board fig 6-12. Block EOT sensor
hit Edit, volt meter across R22 ground to outside, adj Rv2 for -1 millivolt, across
R44 adj RV4 for -1 millivolts
- 10 Tension Load tape, Tentelometer between timer roller and headstack, adj RV1 for
70 grams +/- 5 gr. Tent between puck and take-up reel, adj RV3 for 120
Grams +/- 5 gr
- 11 Flutter Dampener Locate Hall Effect Sensor (HES) board under dancer arm. Connect
Voltmeter neg to TP1 on TIB board, pos to TPA on HES board. Move dancer
arm to extreme right minimum reading should be +5vDC, move arm to the
extreme left, reading should be -5vDC. If lower check bar magnet, IC1 and IC2.
Values should be complementary +/- whatever, if not physically move the HES
board and recheck until symmetrical readings occur.
pos to TPB note reading from left to right extremes if not 10vDC +/- .25v adj RV1
load tape and play, arm should ride in center of travel if not adj spring and
stopper as per pg 6-31

- 12 End of Tape (EOT) adj. RV2 under keyboard
- 13 Vari Speed Check MRL 1 KHz check output for 1KHz
 Press vari key (light flashes) press 5,0,0 and vari again (light on)
 MRL 1 kHz check for 1.5 kHz
 Press vari twice (flashes) press +/- key once, display = -50.0 press
 vari (on) MRL 1 kHz check for 500 Hz
- 14 Vari Speed Adjustment voltmeter neg to TP1 on TIB board, pos to TP3 on TIB, adj
 RV1 for -10.24vDc
 See pg 6-39 Power down, remove jumper block JU-1 on TIB, power up
 Press stop key =TIB test mode #1, 14 pin dip clip to IC 24 see fig 6-21
 Frequency counter to pin #17 adj RV2 for 14.4 kHz.
 Press stop key again for TIB test mode #2 adj RV3 for 28.8 kHz at pin 7
 Replace JU-1.
 Re-do # 13 Vari Speed Check procedure.

BIAS and ERASE CLOCK ADJUSTMENT

- 15 CNL card on extender, pin 30B should read 8.5v p-p for glass D25 (7-13 or 14) or 11.5
 for silver epoxy D25. Adjust **RV1**(right hand) **on MST** card
- 16 load blank tape, scope to output Cal. (Time/div = 5msec, volt/div = 50mV) record ready
 channel one, punch in and out, adjust **RV4 on CNL** for minimum low frequency artifact
 repeat for channel two.
- 17 Record 1 kHz at +10 dB on channels 1+2, rewind and place channel 2 to input mode (no
 signal) and out of record ready. Hit record on cnl 1 adjust **RV1 on MST** card for 75 dB
 or more down. Check channel # 2
- 18 Repeat # 16 and recheck # 15.(low freq artifact =/less than 75 mV)
- 19 **BIAS AND ERASE ENVELOPE RAMP SYMMETRY**
 CNL card on extender, work tape, record ready, scope to 6A of extender (1v/div + 20
 mSec/div).
 Punch in and out of record the ramp on and off waveform and duration should be equal.
 Adj **RV4 on CNL** card for on/off symmetry. Scope to pin 5A (bias) adjust **RV5 on CNL**
 card for equal waveform and symmetry. Repeat for channel 2.
- 20 **CNL OFFSET VOLTAGE**
 Channel card on extender, Analog meter to output, hit shield on and off (dim + undim
 modes) adjust **RV1 on CNL** (hole through heatsink plate) for minimum meter deflection.
- 21 **HEAD WRAP (rearmost screw) and AZIMUTH (left screw) ADJUSTMENTS**
 Analog meter to CAL OUT connector and press ALL key on ALN panel then peak adj
 1kHz. course and 10kHz fine \ repro and sync \ wrap and azimuth

- 22 INPUT LEVEL CALIBRATION
 Connect test equipment as per **figure 6-22** (pg 6-41) **with operating load connected.**
 Frequency generator to 1kHz +4 dB to cal input on rear panel.
 Front fold down panel, press IND once (cnl # 1) and MON LVL, adj for +4dB on
 EXTERNAL volt meter, repeat for other channels.
- 23 METER CALIBRATION
 Store above input levels, power down, cnl card on extender, adjust **RV3 on CNL** card for
 0 VU on channel meter. Repeat for remaining channels.
- 24 RECORD Comp FEEDBACK (RCB) and FEEDFORWARD (RCF) settings:
 30 ips 15 ips 7.5 ips
 RCF C0 CB C4
 RCB C2 C7 C4
 Hold control key, press RCF (level) in rec section, display=RCF setting, adj for all speeds
 Hold control key, press RCB (hi freq) key in rec section, display=RCB setting, adj for all
 speeds.
- 25 REPRO HEAD GAP (RGC) and SYNC HEAD GAP (SGC) COMPENSATION
 30 ips 15 ips 7.5 ips
 RGC C1 CA CA
 SGC C1 CC CE
- 26 REPRO/SYNC LEVEL ADJ 1Khz (load beginning location 28 and end loc 29 and repeat)
- 27 REPRO/SYNC HIGH FREQ ADJ 10 kHz (load repeat)
- 28 RECORD and BIAS LEVEL generator to 10 kHz, -3, dB adj Bias Level to peak, then
 overbias 2 dB @ 15 and 7.5 ips (1.5 dB @ 30 ips).
 Generator to 1 kHz +4 dB, adj rec level to 0 VU.
- 29 RECORD HIGH FREQ generator to 10 kHz, +4dB, adj H.Freq to 0 VU.
- 30 Low freq REPRO response A. Generator to 40 hz sweep gen for peak, record and adj low
 freq to 0.5 VU. B. Generator to 100 Hz record and adjust to 0 VU.
- 31 SYNC LOW FRQ REPRO, Gen to 40 Hz sweep slightly for peak, record 4 min. at 0 VU
 playback tone and adj low freq sync repro to 0 VU. Check at 100 Hz.

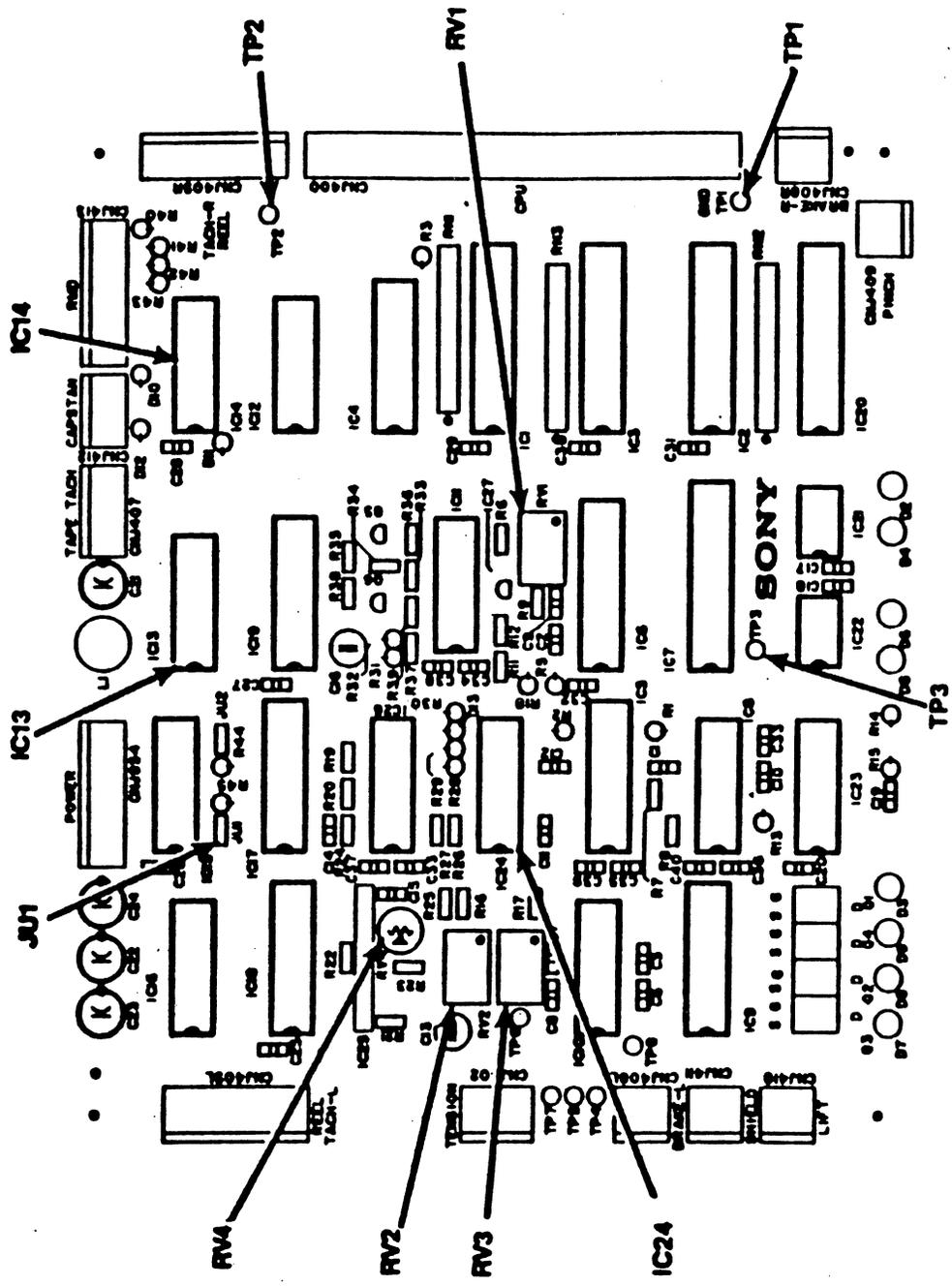


Figure 6-9. TIB Board Layout

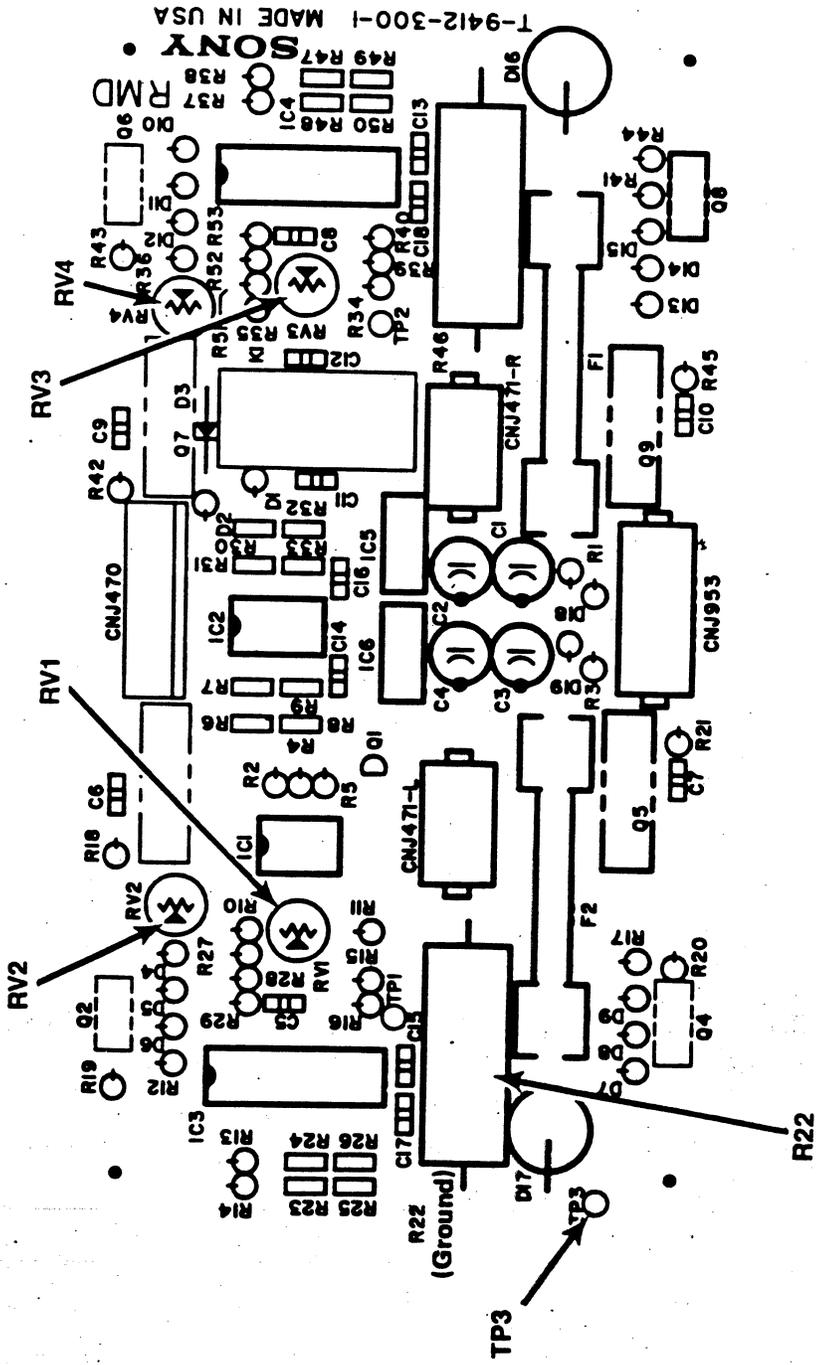


Figure 6-18. RMD Adjustments

OFFSET

open back door / block end of tape sensor / edit mode

R # 22 (ground to outside)
adjust RV # 2 for 1 millivolt DC

R # 46
Adjust RV # 4 for 1 millivolt DC

TENSION

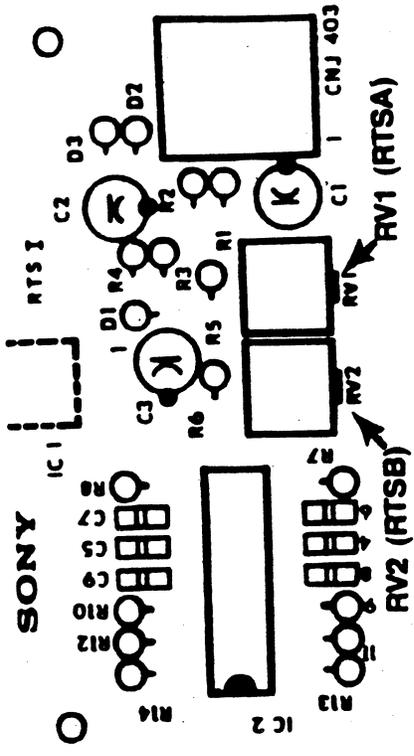
out of edit mode / remove end of tape block / load tape and bring to center / play

SUPPLY

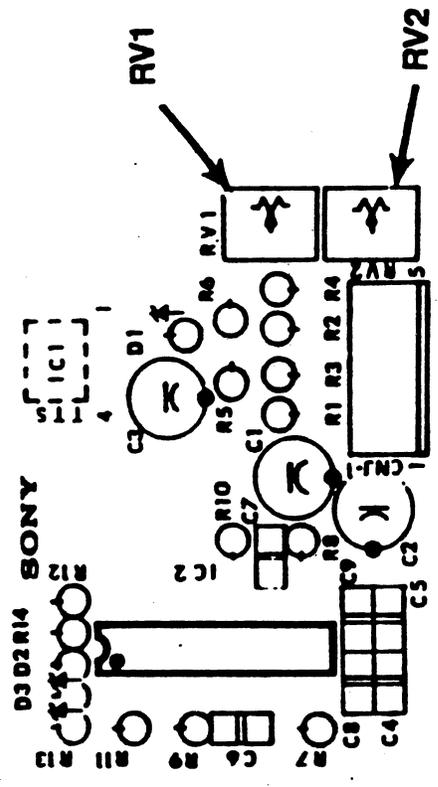
RV # 1 to 75g +/- 5g w/ tentelometer
between tach roller and headstach

TAKEUP

RV # 3 to 120g +/- 5g w/tentelometer
Between last guide and takeup reel



RTS PC Board



TTS PC Board

REEL TENSION

(IC 13)
 SUPPLY
 pin # 2 -- RV 1
 Pin # 4 -- RV 2

TAKE UP
 Pin # 6 -- RV 1
 Pin # 12 -- RV 2

TAPE TACH (TTS)

(IC 13)
 pin # 8 -- RV 1
 pin # 10 -- RV 2

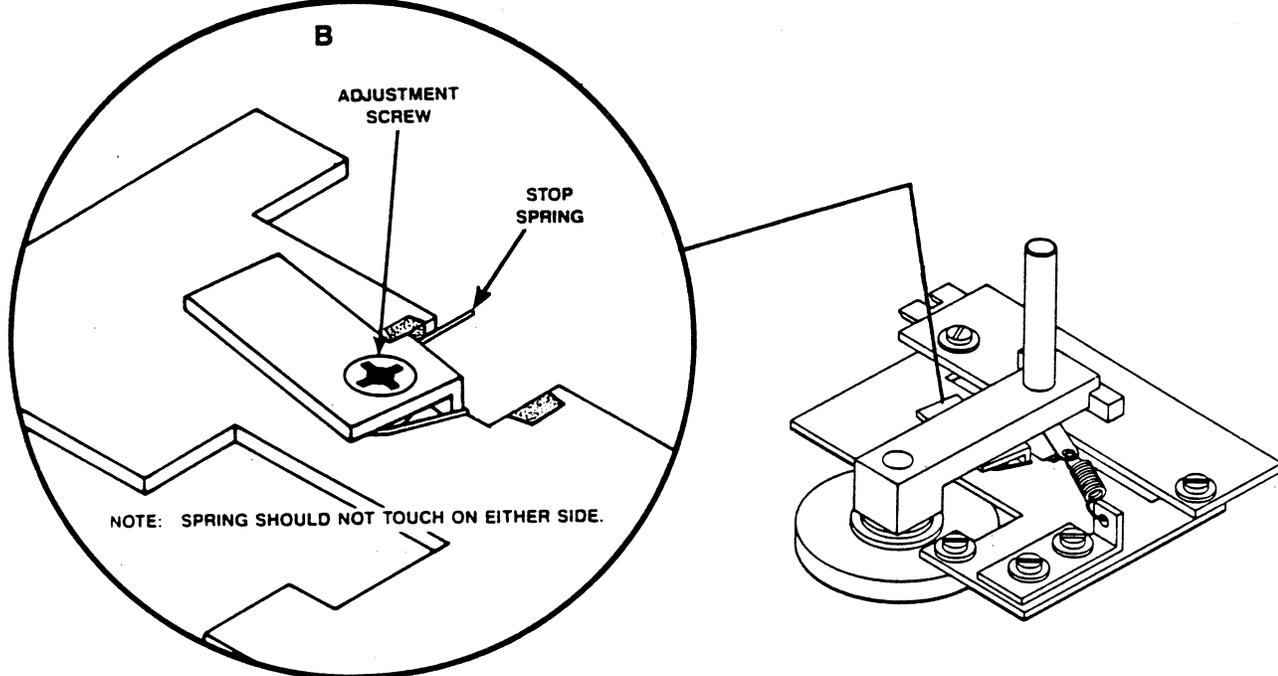


Figure 6-17. Flutter Dampener Stopper Spring Assembly

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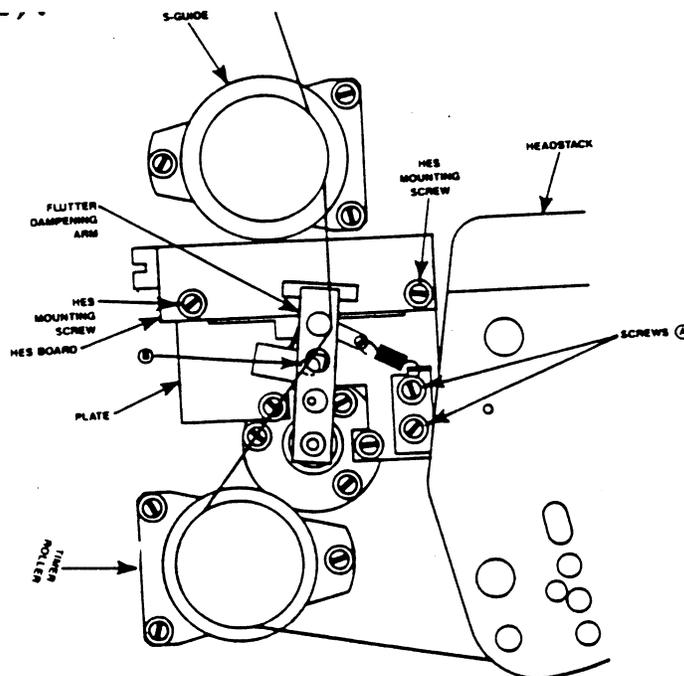


Figure 6-16. Flutter Dampening Arm Assembly

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