

Sony APR-5000 Course Notes

Cable Colors:

Black: erase and bias

pink: sync

tan: repro

turn off APR-5000's: when not in use - xformers cook

CSL

put in play - it should flash once before locking at 30 ips

top pot: 30 ips

bottom pot: 15, 7.5 ips - won't flash just lock

set pots between 11 and 1

Brakes

power off

full takeup in FF

empty takeup in FF

full supply in FF

empty supply in FF

supposed to smoothly stop the tape

PINCH ROLLER PRESSURE

remove RMD connector from TIB - this defeats reel motors

tape over EOT

put in edit mode

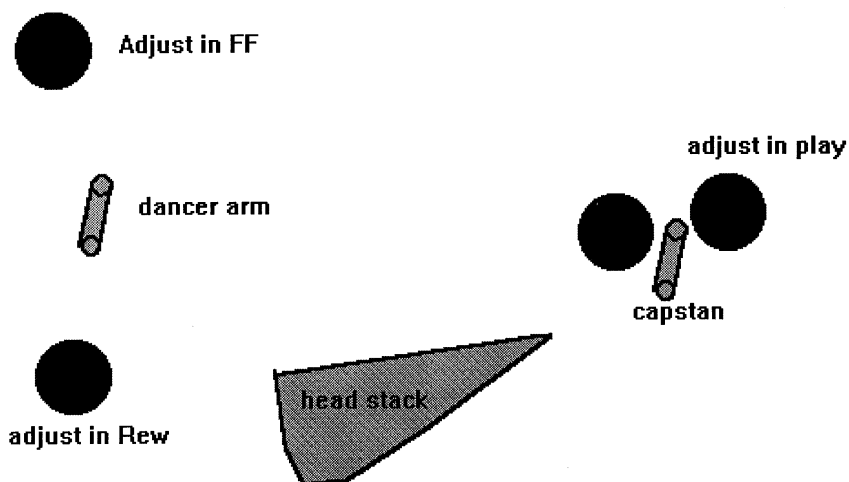
play

pull gauge to the point pinch roller stops turning

2.7 is good

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Guide adjustments (see diagram)



*JRF in NJ for head relapping: John French: 201-579-5773
Fax: 201-579-6021*

shim pads for metal reels not plastic reels

overbias: +2 @ 30 ips
 +3 @ 15, 7.5 ips

weighted flutter is tape path problem
unweighted flutter is capstan problem

Pinch roller assembly - make sure there is space between lever and stop

WOW is most likely a CSL problem
varispeed could be set wrong
on TIB board - reference frequency can be wrong - circuits are on drift side

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store 1 in location 41
see what varispeed is
ips instead of %
between 29.97 and 30.03 is OK

When PE in display: Preset Error

Alignment:

LF: find the peak - bring it up to -5 dB
≈ 65 - 70 Hz at 30, 15 ips
≈ 22 Hz at 7.5

Ctrl - preset 1 - puts defaults in preset 1

turntable - reel height adjustment with guide
scratchy audio - generally bias problem

TIB diagnostics

pull JU 1 (reset CPU)
D/A, A/D reference

TP5
-10
+10 hit stop
0

Adjust RV1 for 10V

freq counter

TP2: 14.4 kHz
press stop until 14.4 kHz
freq → voltage converter
press stop twice
high Z
28.8
adjust RV3
check 14.4
affects varispeed accuracy and startup
reinstall jumper
reset CPU

Dancer Arm Assembly

10.25V swing on TPB
1/4 V window on each side

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TPA: equal voltage swing
from one rest position to the other
Adjust RV1 & RV2 to make correct - they interact

RV4 on TIB
Dancer Arm feedback to CPU
(2) 7" reels
adjust RV4 until dancer arm oscillates
back off RV4 until you can flick Dancer Arm w/out oscillation

KB side pots
1st pot MVC direction
with finger on MVC - no direction
adjust pot - no movement

last pot is EOT sensitivity

Make TC clock recovery if any of the TC signals don't look good
caps in circuit have gone

Rec and PB Tx, Rx

Ext TC Tx, Rx

in CPU -- TC 5 Volt levels

4V p-p is Sony TC standard

TP4, TP5 -- see TC on CPU

TC comes out of ATR with rounded edges
off tape is even funkier
triggered on zero crossings
EQ of tape machines effects TC
Sony cleans up TC before it hits LTC out

TC output adjusted by 2 pots on CNX board

look at diff output on scope Ch1 & Ch2 (add)
adjust for null w/ balance pot RV1
adjust RV2 for 4V p-p level

for TC recovery circuit - tall caps in front of CPU have gone

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CNX - RV3 adjust remote MVC

Brass bearings - lube with light machine oil

lubricate 2 shield shafts

clean 1st - spray alcohol solvent

on TC machine w/ lifters out tape should touch TC head

shield lifters - 1/2 sec to 1 sec should dampen, make smooth

Master audio card - voltage regulator fails

Machine pops going in and out of record

audio mode switching

Master Bias/Erase 12 V p-p should be OK - go no higher than 15V p-p
lower the better while still working

pins 30 A,B on channel card for **Master Bias/Erase**

gravelly audio problem:

1. demag heads
2. check bias signal - smooth after xformer

MCI

get rid of red socket

clean molex pins with Cramolin

analogue torque board

motherboard

Meter adjustment

+4 dBu in

pot in CNL card tweak to 0 VU

CNL card - offset pot

go dim/undim - shield defeat

null out pop

TC

adjust meter level

TC level coming out of audio 3 out (not TC out)

mid speed alignment tape

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ALN Ch 3 Sync
+4 out using ALN
set meter if necessary

Secondary Gap Compensation for TC head -- 30 ips

Sync		Record
LF	FF	
HF	00	FF

Bias	Speed
3.0	30
2.0	15
1.0	7.5

Control - sync level secondary function

RCF

RCB

Time Code Decoder

T-9482-088-1

TC signal should drop \approx -3, -5 when you FF, Rew

set for 0 VU at 1 kHz

@ 16 kHz peak the azimuth (equal silver - top and bottom of head)

put on work tape -- 30 ips -- record time code

2 punches to TC Gen solid LED

if meter deviates greatly - adjust head wrap towards other heads

brute force:

- can push erase head mount back
can push TC head either direction

goal is to make signal steady

make record level $0 \pm 1/2$ dB is best

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adjust input monitor level to 0

@ 30 ips -3 @ 50

Time Code decoder

1 xlr - tc out

1 xlr - audio 1 or audio 2 out

mono tc tape

tc offset ref tape

check time align on scope

adjust wrap

use brute force if necessary to move head for peak level & time align

do repro head

do sync head @ 7.5 ips

use earsable felt tip marker on head - run tape for about 1 minute

check wrap - tape path

Dancer Arm

after tensions are done

in play dancer arm should be in the center

can adjust two screws under dancer arm to put dancer arm in center

2N3055 - H suffix or V suffix - RMD transistors