

# SERVICE MANUAL

MONITOR SERIES

# 6300

CASSETTE DECK

## ALIGNMENT METHOD

### IMPORTANT

The tape path (heads, tape guides, capstan, pinch roller) should be cleaned and degaussed before alignment.

This tape recorder is designed to work well with a variety of tapes, however, maximum performance will be obtained with recommended tapes or similar tape formulations.

Recommended tapes	For North America	For Europe-DIN
Type I	Maxell UDS-I	Maxell UD-I, BASF TP18 no, R723DG
Type II	Maxell XL-II	Maxell XL-II, Teac MTT-5561
Type IV	Maxell MX	Maxell MX, Maxell MX 422

All adjustments done with Dolby NR OFF, MPX filter (on back panel) OFF and BIAS FINE ADJUST in center position.

DOLBY NR level 200 nWb/m = 245 mV RMS on testpoints TP001(L) and TP002(R)/TP003(L) and TP004(R) (PLAYBACK/RECORDING) on Main PCB; approximately 505 mV at line outputs.

#### 1. TAPE SPEED

Connect one output to Wow and Flutter Meter or Frequency Counter, Play speed test tape TEAC MTT-111 = 3 kHz or TEAC MTT-211 = 3.15 kHz and adjust SVR851, for correct reading on Wow and Flutter Meter or Frequency Counter. (See Fig. A)

Tolerance:  $\pm 1\%$

#### 2. AZIMUTH

Connect VTVM's and/or Oscilloscope to outputs. Set tape selector to normal and start playing Azimuth tape TEAC MTT-113 or MTT-114. Rotate azimuth screw for maximum output and/or maximum and in phase on Oscilloscope. Reseal adjustment screw with nail polish or similar (do not use glue). (See Fig. B)

#### 3. PLAYBACK EQ

THIS ADJUSTMENT IS NOT NEEDED UNLESS THE HEAD HAS BEEN REPLACED OR REPAIR HAS BEEN DONE IN HEADAMP CIRCUIT.

Play level/azimuth tape TEAC MTT-256 and adjust SVR001(L) and SVR002(R) for identical output at 315/6300 Hz (MTT-255) or 250/6300 Hz (MTT-256).

Tolerance:  $\pm 0.5$  dB

#### 4. PLAYBACK HIGH FREQUENCY EQ

THIS ADJUSTMENT SHOULD BE DONE ONLY WHEN HEAD HAS BEEN REPLACED.

Play frequency response tape TEAC MTT-256 or MTT-256U and check playback level at 14 kHz.

Before adjust, cut the center of jumper leads E001(L) and E002(R). Adjust by disconnecting R001(L) and R002(R) if 14 kHz is too low and connecting E001(L) and E002(R) if 14 kHz is too high. Leave same component values in both channels.

Tolerance:  $\pm 1$  dB

#### 5. PLAYBACK LEVEL

Connect VTVM to testpoints. Play Dolby NR level tape TEAC MTT-150 and adjust SVR003(L) and SVR004(R) for 245 mV RMS at testpoint TP001(L) and TP002(R) on Main PCB.

Tolerance:  $\pm 2.5$  mV RMS

Output should be approximately 505 mV RMS.

#### 6. METER LEVEL

Play Dolby NR level tape MTT-150 and adjust SVR501(L) and SVR502(R) so that 0 dB LED's just turn on.

#### 7. BIAS TRAP

Insert a blank type I tape and start recording. Turn record level all the way down and set tape selector to type IV position. Connect VTVM's and/or oscilloscope probe to testpoint MP201-3(L) and adjust F301 for minimum. Connect probe to MP201-1 and adjust F302 for minimum.

Tolerance: Less than 300 mV RMS.

#### 8. RECORD LEVEL

Set tape selector to type IV tape. Connect audio oscillator to line inputs, turn record levels to maximum (clockwise). Adjust audio oscillator frequency to 400 Hz and output so that VTVM's read 30 ~ 40 mV. (Use a convenient reference point on the VTVM's).

Reset tape counter to 0 and release pause to start recording. Record for approximately 5 seconds, rewind to 0 on tape counter and play back while observing the VTVM's. The VTVM's should indicate the same level as when the tape was recorded. Adjust SVR005(L) and SVR006(R) if necessary and repeat the record / play procedure until the readings are the same.

Tolerance:  $\pm 0.5$  dB from record level. Less than 0.5 dB difference between channels.

#### 9. BIAS ADJUST TYPE I TAPE (NORMAL)

Set audio generator to 1.2 kHz without changing output level. Reset tape counter to 0 and start recording. After 5 seconds change audio generator frequency to 12 kHz (do not stop the machine or change levels) and continue recording for another 5 seconds. Stop and rewind to 0 on tape counter. Play back while observing VTVM's. There should be no level difference between the 1.2 kHz and the 12 kHz tone when played back. If 12 kHz is different in level for 1.2 kHz, adjust SVR301(L) and SVR302(R) and repeat the record / play procedure until both frequencies play back at same level.

Tolerance:  $\pm 0.5$  dB

**WARNING:** Greater tolerance will grossly affect the Dolby NR tracking and especially the Dolby C tracking.

Record level (step 8) should be checked and if necessary adjusted.

**10. PEAKING CIRCUIT TYPE I TAPE (NORMAL)**

Adjust audio generator to 18 kHz while maintaining the same output level. Record and play back the 18 kHz tone and adjust SVR201(L) and SVR202(R) to the same level as the 1.2 kHz signal.

Tolerance:  $\pm 1$  dB

**WARNING:** If the R/P head is worn, the tape may not have adequate contact with the head, resulting in severe drop outs. A worn head will make this adjustment very difficult or impossible. DO NOT try to adjust the worn R/P head. Leave SVR201 and SVR202 in the factory preset condition, or if they have already been adjusted, readjust them to their approximate midposition.

**11. FREQUENCY RESPONSE TYPE II TAPE (CrO2)**

Insert a type II tape and set selector to type II position. Adjust audio generator to 1.2 kHz and 12 kHz and repeat process described in step 9 using SVR303(L) and SVR304(R) to adjust both channel simultaneously. After 1.2 kHz and 12 kHz are adjusted properly, set audio generator to 20 kHz and repeat same process as described in step 10 while adjusting SVR203(L) and SVR204(R) to obtain correct reading.

**12. FREQUENCY RESPONSE TYPE IV TAPE (METAL)**

Insert a type IV tape and set selector to type IV position. Repeat procedure as in step 9 while adjusting SVR305(L) and SVR306(R) for correct 12 kHz level in both channels. Set audio generator to 20 kHz and repeat process as in step 10 while adjusting SVR205(L) and SVR206(R) for correct 20 kHz record level.

**13. DYNEQ**

Engage record and pause mode. Adjust audio generator to 14 kHz and output so that tape recorder output is  $-5$  dB from Dolby NR level (approximately 280 mV RMS). Set tape selector to type I position and connect VTVM probe to test point MP201-3(L) (nearest rear panel) and adjust SVR207 from fully counter-clockwise position until the output on the probe decreases 1 dB.

Connect VTVM probe to test point MP201-1(R) (nearest to front panel) and adjust SVR208 from fully counter-clockwise position until the output probe decreases 1 dB.

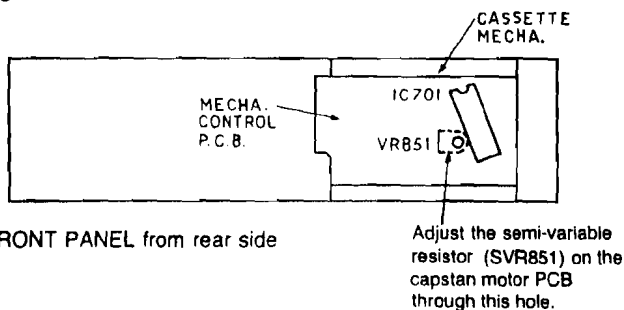
**14. CAR**

INPUT MONITOR is in position, frequency 1 kHz SIGNAL to LINE INPUT. Adjust S.G. output so that voltage at TP003, TP004 are 22 mV. CAR is IN position, adjust SVR101 and SVR102 to increase 6.0 dB at TP003, TP004.

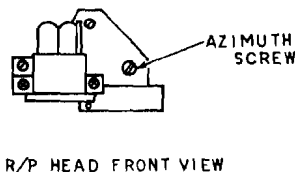
Tolerance:  $\pm 0.5$  dB

**ALIGNMENT COMPONENTS LAYOUT**

**Fig. A FOR ADJUSTING TAPE SPEED**



**Fig. B FOR ADJUSTING AZIMUTH**



**Fig. C MAIN PCB**

