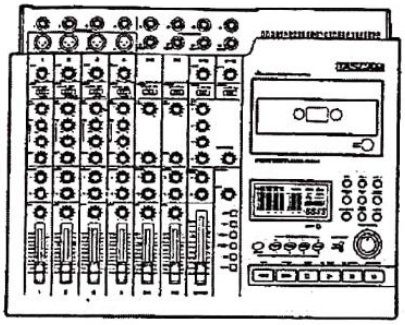

TASCAM
TEAC Professional Division

SERVICE MANUAL

464
PORTASTUDIO

NOTES

As regards the resistors and capacitors, refer to the circuit diagrams and the PCB ass'y drawings contained in this manual.

* Parts marked with * require longer delivery time.
* Resistor values are in ohms (k = 1,000 ohms, M = 1,000,000 ohms).
* All capacitor values are in microfarads (p = picofarads).
* ⚠Parts marked with this sign are safety critical components. They must always be replaced with identical components — refer to the TEAC Parts List and ensure exact replacement.
* 0 dB is referenced to 1V in this manual unless otherwise specified.
* PC boards shown viewed from parts side.
* Parts not shown in the parts lists, or parts, though listed, having no parts numbers, are not general "ready-to-supply" parts.

注意

標準の抵抗：コンデンサーは省略してあります。回路図及び基板図を参照してください。

1．プリント基板図は部品面が示されています。
2．＊印の部品は納期が若干かかります。あらかじめご了承ください。
3．⚠印は安全規格重要部品です。交換するときは必ずティアック指定の部品を使用して下さい。
4．レベルは0dB＝1Vを基準にしています。
5．コンデンサの単位はμF.p＝pF(1μF＝1,000,000pF)
6．製品が改善されているために、製品と回路図が一部異っている場合があります。
7．リストされていない部品は原則としてサービス供給部品として取扱っていません

INSTRUCTIONS FOR SERVICE PERSONNEL

BEFORE RETURNING APPLICANCE TO THE CUSTOMER, MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT.

Effective: JANUARY, 1992 941193

5704059205

1. SPECIFICATIONS

仕　様

Mechanical Characteristics

Tape:	Compact Cassette (C-30 to 90), High- Bias (Type II, CrO2)
Track Format:	4-track/4-channel, single directional record/play
Head Configuration:	4-channel record/play (Permalloy) x1
	4-channel erase (ferrite) x1
Motor:	DC servo capstan motor x1
	DC reel motor x1
	DC ancillary motor x1
Tape Speed:	HIGH: 9.5 cm/sec.(3-3/4 ips)
	NORM: 4.8 cm/sec.(1-7/8 ips)
Tape Speed Accuracy:	Within +/–2% (at both HIGH and NORM)
Pitch Control:	+/–12 % (approx.)
Wow and Flutter:	0.05% or less WRMS at HIGH
	0.06% or less WRMS at NORM
Fast Winding Time:	80 sec. (approx.) with C-60
Dimension (WxHxD):	441 x 115 x 359 mm (17-3/8" x 4-1/2" x 14")
Weight:	5 kg (11 lbs)

Electrical Characteristics

Mixer Section

MIC/LINE IN

(XLR type connector x4)

Input Impedance:	2.8k ohms
Nominal Input Level:	–60 dBV (1mV) (Mic In) to -20 dBV (0.1 V)
Maximum Input Level:	+5 dBV (1.8 V) at Trim Min.

(1/4" phone jack x4)

Input Impedance:	50k ohms
Nominal Input Level:	–50 dBV (3mV) (Mic In) to -10 dBV (0.3 V) (Line In)
Maximum Input Level:	+5 dBV (1.8 V) at Trim Min.

STEREO INPUTS (1/4" phone jack x4)

Ch.5-8

Input Impedance:	20k ohms
Nominal Input Level:	–10 dBV (0.3 V)
Minimum Input Level:	–18 dBV (0.13 V)
Maximum Input Level:	+5 dBV (1.8 V)

Ch.9-12

Input Impedance:	10k ohms
Nominal Input Level:	–10 dBV (0.3 V)
Minimum Input Level:	–18 dBV (0.13 V)
Maximum Input Level:	+5 dBV (1.8 V)

INSERT

INPUT

Input Impedance:	10k ohms
Nominal Input Level:	–10 dBV (0.3 V)
Maximum Input Level:	+5 dBV (1.8 V)

OUTPUT

Output Impedance:	100 ohms
Nominal Output Level:	–10 dBV (0.3 V)
Minimum Load Impedance:	2k ohms

2TR IN (RCA jack x2)	
Input Impedance:	47k ohms
Nominal Input Level:	–10 dBV (0.3 V)
LINE OUT (RCA jack x2)	
Output Impedance:	100 ohms
Nominal Output Level:	–10 dBV (0.3 V)
Minimum Load Impedance :	2.0k ohms
EFFECT OUT (1/4" phone jack x2)	
Output Impedance :	100 ohms
Nominal Output Level:	–10 dBV (0.3 V)
Minimum Load Impedance :	2.0k ohms
TAPE OUT (1/4" phone jack x4)	
Output Impedance :	100 ohms
Nominal Output Level:	–10 dBV (0.3 V)
Minimum Load Impedance :	2.0k ohms
CUE OUT (RCA jack x1)	
Output Impedance :	100 ohms
Nominal Output Level:	–10 dBV (0.3 V)
Minimum Load Impedance :	2.0k ohms
SYNC IN (RCA jack x1)	
Input Impedance:	40k ohms
Nominal Input Level:	–10 dBV (0.3 V)
SYNC OUT (RCA jack x1)	
Output Impedance:	100 ohms
Nominal Output Level:	–10 dBV (0.3 V)
MONITOR OUT	
Output Impedance:	100 ohms
Nominal Output Level:	–10 dBV (0.3 V)
Minimum Load Impedance :	2k ohms
PHONES (1/4" stereo phone jack x1)	
Nominal Load Impedance:	8 ohms
Maximum Output Level:	100 mW
Equalizer	
HIGH (Shelving):	10 kHz, +/–12 dB
MID (Sweep):	250 Hz to 5 kHz, +/–14 dB
LOW (Shelving):	100 Hz, +/–12 dB
Frequency Response:	
MIC IN to LINE OUT:	20 Hz to 20 kHz, +/–3 dB
LINE IN to LINE OUT:	20 Hz to 20 kHz, +/–2 dB
LINE IN to EFFECT OUT :	20 Hz to 20 kHz, +/–2 dB
LINE IN to PHONES:	40 Hz to 20 kHz, +/–3 dB
Signal-to-Noise Ratio (20 Hz-20 kHz, BPF inserted)	
1 MIC IN to LINE OUT:	65 dB (at nominal –60 dBV)
4 MIC INs to LINE OUT:	60 dB (at nominal –60 dBV)
1 LINE IN to LINE OUT:	76 dB
8 LINE INs to LINE OUT:	70 dB
Distortion	
1 MIC IN to LINE OUT:	0.05% (at 1 kHz, 15 dB above nominal input level, 30 kHz low-pass filter inserted)
1 LINE IN to LINE OUT:	0.05% (at 1 kHz, nominal input level, 30 kHz low-pass filter inserted)
Crosstalk:	55 dB (at 1 kHz, nominal input level, 30 kHz low-pass filter inserted)

Recorder Section

Record/Playback Channel:	4 in number (4 channel simultaneous)
Noise Reduction:	dbx* Type II
Frequency Response (overall):	40 Hz to 16 kHz, +/–3 dB (at HIGH speed) 40 Hz to 12.5 kHz, +/–3 dB (at NORM speed)
Signal-to-Noise Ratio (overall)	UNWTD (20 Hz to 20 kHz)/IHF A WTD
HIGH :	55 dB/58 dB (without dbx) 90 dB/95 dB (with dbx)
NORM:	54 dB/56 dB (without dbx) 88 dB/93 dB (with dbx)
Distortion :	1.0% or less (at 1 kHz)
Crosstalk :	50 dB (at 1 kHz, 0 dB, NR OUT) 70 dB (at 1 kHz, 0 dB, NR IN)
Erasure:	70 dB or greater (at 1 kHz, BPF inserted)

Others

Power Requirements :	
USA/CANADA :	120 V AC, 60 Hz
EUROPE :	230 V AC, 50 Hz
U.K./AUSTRALIA :	240 V AC, 50 Hz
JAPAN :	100 V AC, 50/60 Hz
Power Consumption:	25 W

In these specifications, 0 dBV is referenced to 1 Volt. Actual voltage levels are also given in parenthesis (0.316 V for –10 dBV rounded off to 0.3 V).

* dbx is a registered trademark of dbx Incorporated.

Changes in specifications and features may be made without notice or obligation.

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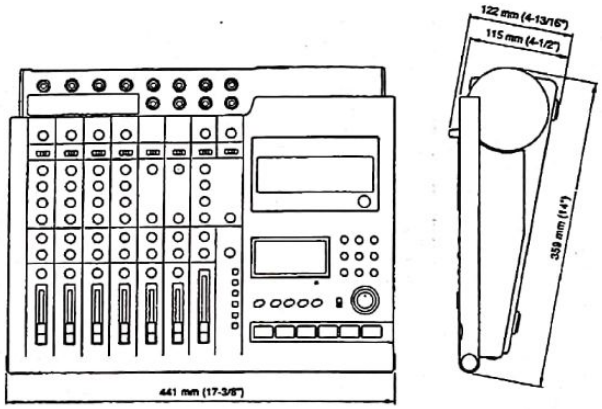
＊BBEシステムはBBE SOUND, INC. の実施権に基づいて製造されています。



2. OPENING THE UNIT
本体ケースの開け方

Caution : When opening and closing the unit, be careful not to cut or pinch wires coming out from the PC Boards.

1. Refer to Figure 2-1 and remove the ten "a" screws from the bottom panel.
2. Refer to Figure 2-2 and remove the two "b" screws.
3. Raise the rear end of the upper cover to open it.

1．ボトム・ケースのネジ(a) １０本（図2-1)を外す．
2．図2-2 のネジ(b) ２本を外す．
3．以上のネジを外した後，上ケースの後方を持ち上げるようにしてケースを開けます．
注．開閉のときは，ＰＣＢからの線材を切断しないように充分に注意して下さい．

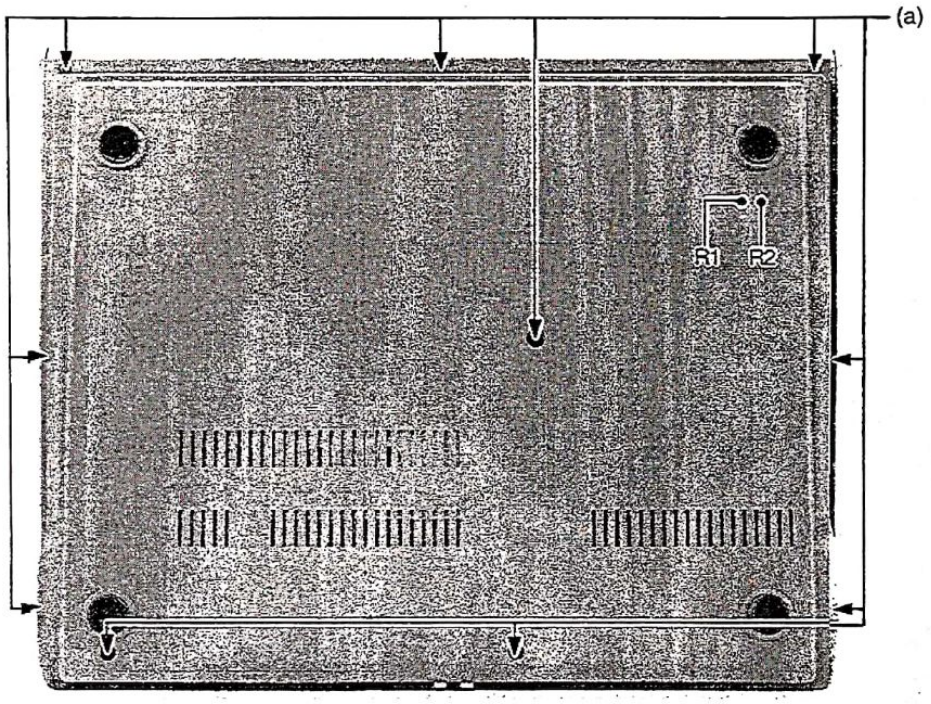


Fig. 2-1 図２－１

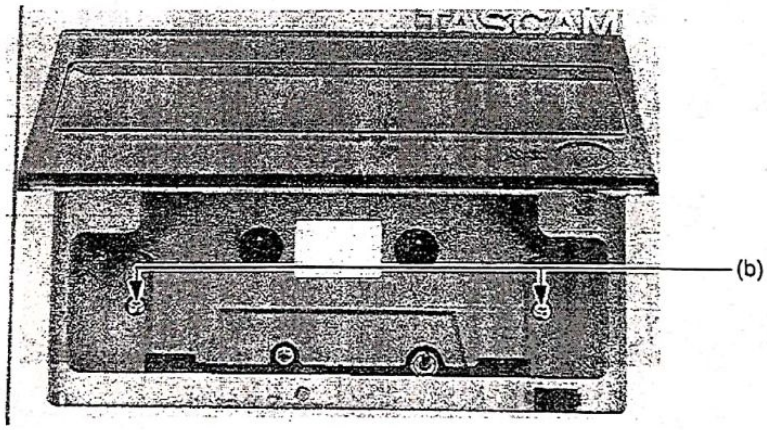


Fig. 2-2 図２－２

3. PARTS LOCATIONS

部品配置図

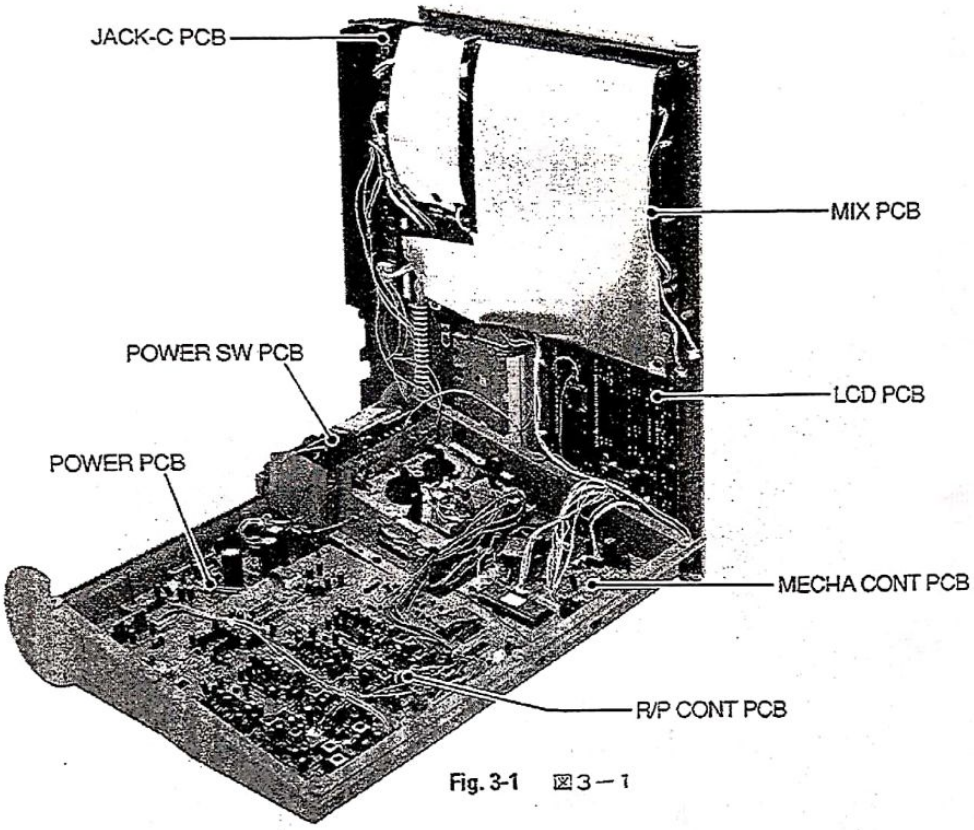


Fig. 3-1 図3－1

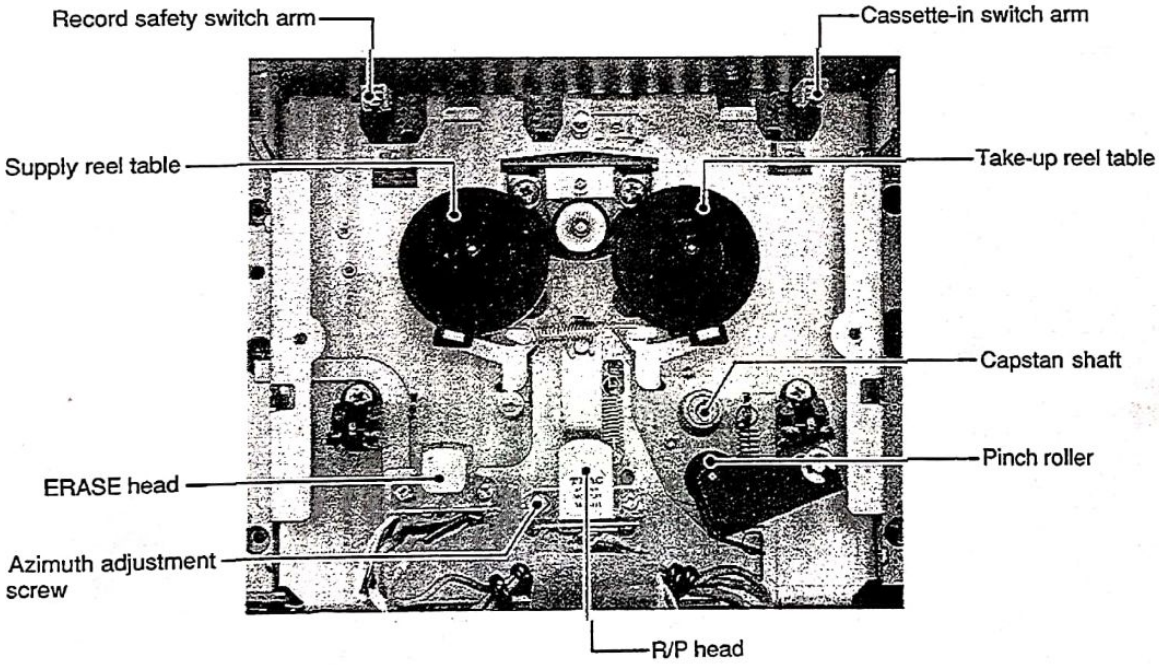


Fig. 3-2 図3－2

4. MECHANICAL CHECKS AND ADJUSTMENTS

機構部の確認と調整

4-1. Test Tape/Equipment

1. Cassette Torque Meter
   - Sony model TW-2111A — for checking takeup tension and back tension
   - Sony model TW-2231 — for checking F.FWD/REW torque
2. Mirror Tape
   - TEAC model MTT-902 — for checking tape path
3. Test Tape
   - TEAC model MXT-111 (High Speed)
   - TEAC model MTT-111N (Normal Speed)
     – for checking tape speed and wow and flutter (repro method)
   - TEAC model MTT-5561 (blank tape, chrome type)

4-2. Pinch Roller Pressure

1. Hold PLAY down and turn POWER on to activate the CLEANING mode (PLAY, PAUSE and RECORD LEDs flashing).
2. Press PLAY to put the transport into Play mode.
3. Attach a spring scale to the pinch arm.
4. Pull the spring scale in direction indicated in Figure 4-1 until the pinch roller fully loses contact with the capstan shaft ; then slowly ease the scale so the pinch roller moves back toward the capstan shaft.
5. Note the reading on the spring scale the moment the pinch roller again starts rotating. The scale should read 380 to 500 g.
6. Press RESET to exit the CLEANING mode.

4－1．テスト・テープ

1．カセット・トルク・メータ
- ソニー製　TW-2111A
  テイクアップ，バックテンション・トルク　チェック
- ソニー製　TW-2231
  F.FWD，REW トルク・チェック

2．ミラー・テープ
- TEAC MTT-902
  テープ・パス　チェック

3．テスト・テープ
- TEAC MXT-111(HIGH SPEED)
- TEAC MTT-111N(NORMAL SPEED)
  テープ・スピード・チェック用
  ワウ・フラッタ（再生法）チェック用
- TEAC MTT-5561
  ブランク・テープ（クロム・タイプ）

4－2．ピンチローラ圧着力

1．PLAYボタンを押しながら，POWER スイッチを ON にし，CLEANINGモードにする．（PLAY.PAUSEおよび.RECORD LED 点滅）
2．PLAYボタンを押して，PLAYモードにする．
3．ピンチ・アームにバネ秤を掛ける．
4．ピンチ・ローラが，キャプスタン・シャフトから完全に離れるように秤を矢印の方向（図4-1)に引張った後，ピンチ・ローラがキャプスタン・シャフトに接触するように徐々に戻す．
5．ピンチローラが回り始めるときの値を読む．
   規格：380 ～500g
6．RESET ボタンを押して，CLEANINGモードを解除する．

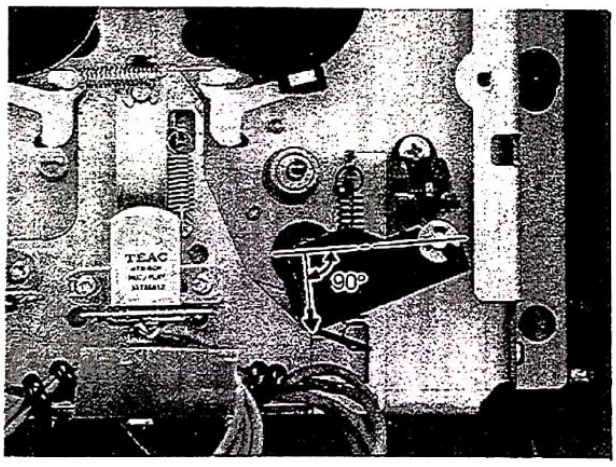


Fig. 4-1　図4－1

4-3. Tape Positioning

Adjustment Tools :
- Head adjustment jig "A" : Part No. 5736006600
- Head adjustment jig "B" : Part No. 5736006700
- Repro/play head spacer ; 0.1 mm : Part No. 5800595000
  0.2 mm : Part No. 5800595100
- Erase head spacer ; 0.1 mm : Part No. 5800556200
  0.2 mm : Part No. 5801197800

1. Erase head height

1. Set jig "A" as shown in Figure 4-2, and activate PLAY mode.
2. Place jig "B" so its end comes in between the upper and lower tape guides on the erase head and check that the jig snugly fits between the guides. If necessary, raise or lower the head height by increasing or decreasing the number of spacers between the erase head and head base.

2. Repro/play head height

3. Check and adjust the repro/play head height in a similar way you did for the erase head.

3. Repro/play head azimuth

4. Refer to Figure 4-3 and connect the channel 1 TAPE OUT to the vertical input of an oscilloscope, and connect the channel 2 TAPE OUT to the horizontal input of the scope.
5. Set tape speed to HIGH, play the 315 Hz and 6.3 kHz signals on test tape MXT-1161 and adjust azimuth screw (Figure 3-2) for 0 degree phase shift between channels 1 and 2.
6. Check for 45 degrees or less of phase shift between channels 2 and 3, as well as between channels 2 and 4.

4. Rechecking erase head height

7. Run mirror tape MTT-902 and check that an equal amount of the erase head core for channels 1 and 4 is seen in the mirror. Check also for parallelism of the tape to the head.

5. Tape running position

8. Run the mirror tape and check to see that the tape does not rub on any tape guide edge.

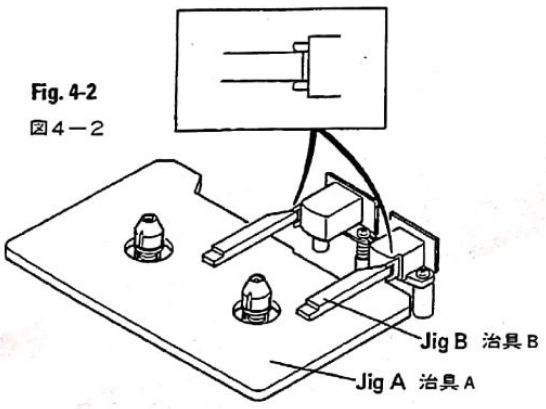


Fig. 4-2
図4－2

4－3．テープ走行

調整治具
- ヘッド調整治具A：品番 5736006600
- ヘッド調整治具B：品番 5736006700
- R/P ヘッド・スペーサ 0.1mm：品番 5800595000
  0.2mm：品番 5800595100
- 消去ヘッド・スペーサ 0.1mm：品番 5800556200
  0.2mm：品番 5801197800

1．消去ヘッドの高さ調整
  1)．図4-2 のように治具Aをセットし，PLAYモードにする．
  2)．治具Bを消去ヘッドのテープ・ガイドに挿入したとき，治具Bがスムーズに動くことを確認する．そうでない場合は，消去ヘッドとヘッド・ベースの間にあるスペーサを追加または削除することにより調整する．
2．R/P ヘッド高さ調整
  3)．消去ヘッドの高さ調整と同様に確認または調整する．
3．R/P ヘッドのアジマス調整
  4)．図4-3 のように CH1の TAPE OUT をオシロ・スコープの VER側に，CH2 の TAPE OUT を HOR側に接続する．
  5)．テープ・スピードを HIGH にし，テスト・テープ MXT-1161の 315Hzと 6.3kHz を再生して，CH1 とCH2 の位相が0° になるようにアジマス調整ネジ (図3-2) を調整する．

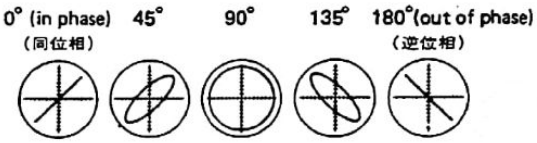


Fig. 4-4 Confirming phase relationship
図4－4 位相

  6)．CH2-CH3 ，CH2-CH4 の位相が４５° 以内であることを確認する．
4．消去ヘッドの高さ確認
  7)．ミラー・テープ MTT-902を走行させたとき，消去ヘッドのコアが CH1と CH4で同量見えていることを確認する．また，テープとヘッドがほぼ平行であることを確認する．

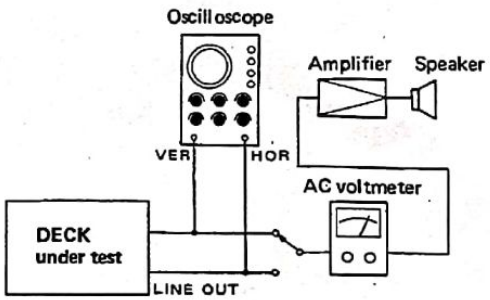


Fig. 4-3 Test setup for azimuth check
図4－3 位相測定接続図

4-4. Reel Torque

1. **Takeup torque and back tension**
   Load a cassette torque meter (TW-2111A), activate play mode and take a reading from the torque meter. If the reading seesaws, take the mean reading. Specs are as follows :
   Takeup torque (right reel table side) : 25 to 55 g.cm
   Back tension (left reel table side) : 2 to 6 g.cm

2. **F.FWD/REW torque**
   Load cassette torque meter TW-2321 and measure starting torque as read on the torque meter the instant F.FWD/REW is pressed. Specs are as follows :
   F.F torque (right reel table side) : 80 g.cm or more
   REW torque (left reel table side) : 80 g.cm or more

4-5. Tape Speed

1. Connect a frequency counter to any TAPE OUT jack whatever.
2. Set the pitch control dial to its center position.
3. Turn POWER on.
4. Load a test tape and play it for 1 minute or more for the capstan motor to warm up.
5. Play the half way of the tape and adjust potentiometer R1 (at normal speed)/R2 (at high speed) on the MECHA CONT PCB (Figure 2-1) for 3000 +/–10 Hz as read on the frequency counter.
6. After adjustment, check the following at both the beginning and the end of tape :
   Frequency reading : 3000 +/–60 Hz
   Speed fluctuation : less than 30 Hz

4-6. Wow and Flutter

Note : Measurement shall be repeated at the beginning of tape, at its half way and at its end. (When taking measurement at the beginning of tape, wind the tape until tape pack on the right reel exceeds the first mark on the scale on the cassette shell ; similarly, wind the tape until tape pack on the left reel exceeds the first mark on the scale for measurement at the tape end.)

1. Connect a wow and flutter meter to the 464.
2. Load a test tape and play it.
3. Note the reading on the meter. Specs are as follows :
   0.05 % or less at HIGH speed (weighted)
   0.06 % or less at Normal speed (weighted)

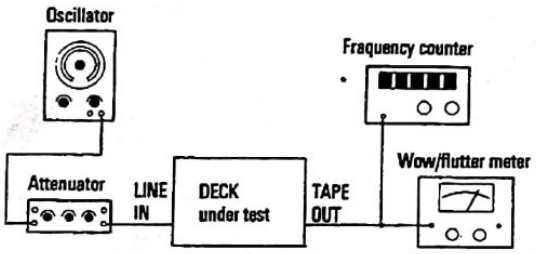


Fig. 4-5　　図4－5

5．テープ走行の確認
8)．ミラー・テープを走行させ，各ガイド部でテープのカールが無いことを確認する．

4－4．リール・トルク

1．テイク・アップ・トルク／バック・テンション
カセット・トルク・メータ(TW-2111A)を装填後，プレイ・モードにし，トルク・メータの値を読む．（振れのある場合は中心値とする．）　規格値は次の通り．
テイク・アップ・トルク（右リール台）：25～55 g・cm
バック・テンション　（左リール台）：2～ 6 g・cm
2．F．F／REW トルク
カセット・トルク・メータ(TW-2321) を装填し，F.F.動作および REW動作の起動トルクをそれぞれ測定する．
規格値は次の通り．
F.F.トルク（右リール台）：80 g・cm以上
REW トルク（左リール台）：80 g・cm以上

4－5．テープ速度

1．周波数カウンタを TAPE OUT ジャックのいずれかに接続する．
2．ピッチ・コントロール・ダイヤルを中央にセットする．
3．POWER スイッチを ON にする．
4．キャプスタン・モータを回転させ，ウォーミング・アップするためにテスト・テープを装填し，少なくとも1分間そのままにしておく．
5．テスト・テープの中間部を再生させて，周波数カウンタの値が 3000 ±10Hzとなるように MECHA CONT PCB の半固定抵抗（図2-1)を調整する．
NORMAL SPEED　：R1
HIGH SPEED　：R2
6．調整後，テープの巻始めと巻終わりにて，下記の値が得られるかを確認する．
速度偏差：3000±60Hz
変動幅　：30Hz以内

4－6．ワウ・フラッタ

注意：測定は再生法により，テープの巻始め，中間部，巻終わりでそれぞれ行なってください．（但し，カセット・ハーフの巻始めと巻終わりの1目盛りは除く．）

1．ワウ・フラッタ・メータをデッキに接続する．
2．テスト・テープを装填し，再生する．
3．ワウ・フラッタ値を測定する．規格値は次の通りです．
HIGH SPEED　：0.05%以内（JIS 聴感補正値）
NORMAL SPEED：0.06%以内（JIS 聴感補正値）

5. MIXER CHECKS
ミキサー部の信号チェック

Notes
1. The nominal level at inputs and outputs is -10 dBV, 1 kHz.
2. Unless otherwise specified, turn all TRIM controls all the way to the LINE side and set all EQ knobs to their center position.

5-1. MASTER Fader (Fig.5-1)

1. Set the INPUT switch for channel 1 to its MIC/LINE>L position.
2. Push the MASTER fader all the way up, apply a nominal level signal to LINE IN in channel 1 and check for –2 +/–2 dBV at LINE "L" OUT.
3. Pull the MASTER fader until the level reading at LINE "L" OUT decreases by about 8 dB and is -10 dBV. When you did so, check to see that the MASTER fader is in the shaded area between 7 and 8 on the scale.
4. Set the INPUT switch for channel 2 to its MIC/LINE>R position, apply a nominal level signal to LINE IN in channel 2 and check for –10 dBV +/–2 dB at LINE "R" OUT.
5. In a similar way, check for correct output reading when a nominal level signal is fed into channels 3 and 4.

注意：
1．各入出力に於ける基準レベル信号は，1kHz,-10dBV とする．
2．注記の無い限り，TRIMつまみは LINE 側，ＥＱつまみはセンターの位置にセットしておくこと．

５－１．MASTERフェーダー：図5-1

1．CH1 の INPUTスイッチを MIC/LINE>L にセットする．
2．MASTERフェーダーを最大の位置にセットし，CH1 の LINE INに基準レベル信号を入力したとき，LINE L OUTの出力レベルは -2 ±2dBVであること．
3．MASTERフェーダーを 8dB程絞り，LINE L OUTの出力レベルが -10dBV になるようにセットする．
このとき，MASTERフェーダーが網目の位置（7 ～8 目盛り）にあること．
4．CH2 の INPUTスイッチを MIC/LINE>R にセットし，CH2 の LINE IN に基準レベル信号を入力したとき，LINE R OUTの出力レベルが -10dBV ±2dB であること．
5．同様に，CH3,4 に基準レベル信号を入力したときの出力レベルを確認する．

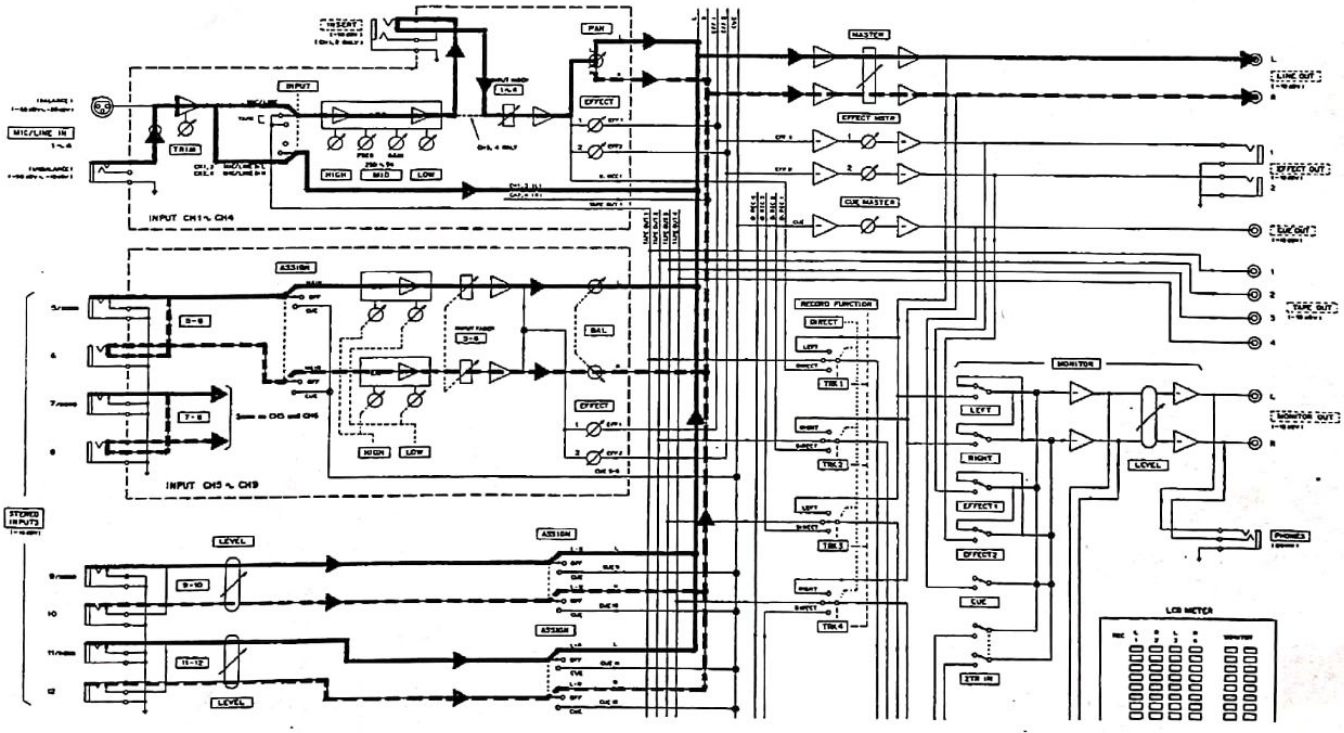


Fig. 5-1　図５－１

5-2. INPUT Fader on Channels 1 thru 4 (Fig.5-1)

1. With the MASTER fader set to its nominal position, set the INPUT switch for channel under test to its MIC/LINE position.
2. Turn the PAN all the way to the L position and push the channel fader all the way up.
3. Apply a nominal level signal to LINE IN in the channel and check for -3 +/-2 dBV at LINE "L" OUT.
4. Pull the channel fader until the level reading at LINE "L" OUT decreases by about 7 dB and is -10 dBV. When you did so, check to see that the channel fader is in the shaded area between 7 and 8 on the scale.
5. Turn the PAN all the way to the R position and check for –10 dBV +/–2 dB at LINE "R" OUT.

5-3. INPUT Fader on Channels 5-6 and 7-8 (Fig.5-1)

1. With the MASTER fader set to its nominal position, set the ASSIGN switch on stereo pair channel 5-6 to its MAIN position.
2. Turn the BAL control all the way to its L position and push the channel fader all the way up.
3. Apply a nominal level signal to the 5/MONO jack and check for –4 +/–2 dBV at LINE "L" OUT.
4. Pull the channel fader until the level reading at LINE "L" OUT decreases by about 6 dB and is -10 dBV. When you did so, check to see that the channel fader is in the shaded area between 7 and 8 on the scale.
5. Turn the BAL control all the way to its R position and check for –10 +/–2 dBV at LINE "R" OUT.
6. In a similar way, set the fader for the 7-8 channel to check for correct output level.

5-4. LEVEL Control on Channels 9-10 and 11-12 (Fig.5-1)

1. With the MASTER fader set to its nominal position, set the ASSIGN switch on stereo pair channel 9-10 to its L-R position.
2. Connect a dummy plug to input jack #10 to electronically disconnect the jack.
3. Apply a nominal level signal to MONO jack #9 and check for –2 +/–2 dBV at LINE "L" OUT.
4. Turn down the LEVEL control until the level reading at LINE "L" OUT decreases by about 8 dB and is –10 dBV. When you did so, check to see that the LEVEL control is at about the 2 o'clock position.
5. In a similar way, set the LEVEL control on the 11-12 channel and check for correct output level.

5－2．INPUT フェーダー(CH1～4)：図5-1

1．MASTERフェーダーが基準位置にセットされた状態で，INPUT スイッチを MIC/LINE にセットする．
2．PAN つまみを L側，INPUT フェーダーを最大にセットする．
3．LINE IN に基準レベル信号を入力したとき，LINE L OUTの出力レベルは -3 ±2dBVであること．
4．INPUT フェーダーを 7dB程絞り，LINE L OUTの出力レベルが -10dBV になるようにセットする．
このとき，INPUT フェーダーが網目の位置(7～8 目盛り)にあること．
5．PAN つまみを R側にセットしたとき，LINE R OUTの出力レベルは -10±2dBVであるこおと．

5－3．INPUT フェーダー(CH5-6,7-8) ：図5-1

1．MASTERフェーダーが基準位置にセットされた状態で，ASSIGNスイッチを MAIN にセットする．
2．BAL つまみを L側，INPUT フェーダーを最大にセットする．
3．LINE 5/MONO INに基準レベル信号を入力したとき，LINE L OUTの出力レベルは -4 ±2dBVであること．
4．INPUT フェーダーを 6dB程絞り，LINE L OUTの出力レベルが -10dBV になるようにセットする．
このとき，INPUT 5-6 フェーダーが網目の位置(7～8 目盛り) にあること．
5．BAL つまみを R側にセットしたとき，LINE R OUTの出力レベルは -10±2dBVであること．
6．同様に，INPUT 7-8 フェーダーをセットし，出力レベルを確認する．

5－4．LEVEL つまみ(CH9-10.11-12)：図5-1

1．MASTERフェーダーが基準位置にセットされた状態で，ASSIGNスイッチを L-Rにセットする．
2．LINE 10 INにダミーのジャックを挿入し，LINE 10 INの入力を切る．
3．LINE 9/MONO INに基準レベル信号を入力したとき，LINE L OUTの出力レベルは -2 ±2dBVであること．
4．LEVEL 9-10つまみを 8dB程絞り，LINE L OUTの出力レベルが -10dBV になるようにセットする．
このとき，LEVEL つまみが2時位の位置にあること．
5．LINE 10 INに基準レベル信号を入力したとき，LINE R OUTの出力レベルは -10±2dBVであること．
6．同様に，LEVEL 11-12 つまみをセットし，出力を確認する．

5-5. MONO Input in Channels 9-10 and 11-12

1. With the LEVEL control set to its nominal position, apply a nominal level signal to MONO jack #9 (with its companion #10 jack empty) and check for –10 +/–2 dBV at both L and R LINE OUTs.

2. In a similar way, apply a nominal level signal to MONO jack #11 (with its companion jack #12 empty) and check for correct output reading.

5-6. CUE MASTER Control (Fig.5-2)

1. Set the ASSIGN switch on channel 5-6 to its CUE position.

2. Connect a dummy plug to input jack #6 to electronically disconnect the jack.

3. Turn the CUE MASTER control all the way to the right, apply a nominal level signal to MONO jack #5 and check for –2 +/–2 dBV at CUE OUT.

4. Turn down the CUE MASTER control until the level reading at CUE OUT decreases by about 8 dB and is -10 dBV. When you did so, check to see that the control is at about the 2 o'clock position.

5. Apply a nominal level signal to input jack #6 and check for –10 +/–2 dBV at CUE OUT.

5-7. EFFECT MSTR Controls (Fig.5-2)

1. Turn the EFFECT send controls and the EFFECT MSTR controls all the way to the right.

2. With the channel fader set to its nominal position, apply a nominal level signal to LINE IN in channel under test and check for –1 +/–2 dBV at EFFECT 1 OUT.

3. Turn down the EFFECT 1 MSTR control until the level reading at EFFECT 1 OUT decreases by about 9 dB and is –10 dBV. When you did so, check to see that the MSTR control is at about the 2 o'clock position.

4. In a similar way, set the EFFECT 2 MSTR control.

5 － 5．L/MONOチェック(CH9-10.11-12)

1．LEVEL つまみがセットされた状態で，LINE 9/MONO INのみに基準レベル信号を入力したとき，LINE L.R OUTの出力レベルが -10±2dBVであることを確認する．
2．同様に，LINE 11/MONO IN のみに基準レベル信号を入力したときの出力レベルを確認する．

5 － 6．CUE MASTERつまみ：図5-2

1．CH5-6 の ASSIGN スイッチを CUEにセットする．
2．LINE 6 IN にダミーのジャックを挿入し，LINE 6 IN の入力を切る．
3．CUE MASTERつまみを最大にセットし，LINE 5/MONO INに基準レベル信号を入力したとき，CUE OUT の出力レベルは -2±2dBVであること．
4．CUE MASTERつまみを 8dB程絞り，CUE OUT の出力レベルが -10dBVになるようにセットする．
このとき，CUE MASTERつまみが2時位の位置にあること．
5．LINE 6 IN のみに基準レベル信号を入力したとき，CUE OUT の出力レベルは -10±2dBVであること．

5 － 7．EFFECT MASTER つまみ：図5-2

1．EFFECTつまみ，EFFECT MASTER つまみを最大にセットする．
2．INPUT フェーダーが基準位置にセットされた状態で，LINE IN に基準レベル信号を入力したとき，EEFECT 1 OUT の出力レベルが -1 ±2dBVであることを確認する．
3．EFFECT 1 MASTER を 9dB程絞り，EFFECT 1 OUTの出力レベルが -10dBV になるようにセットする．
このとき，EFFECT 1 MASTER が2時位の位置にあること．
4．同様に，EFFECT 2 MASTER をセットする．

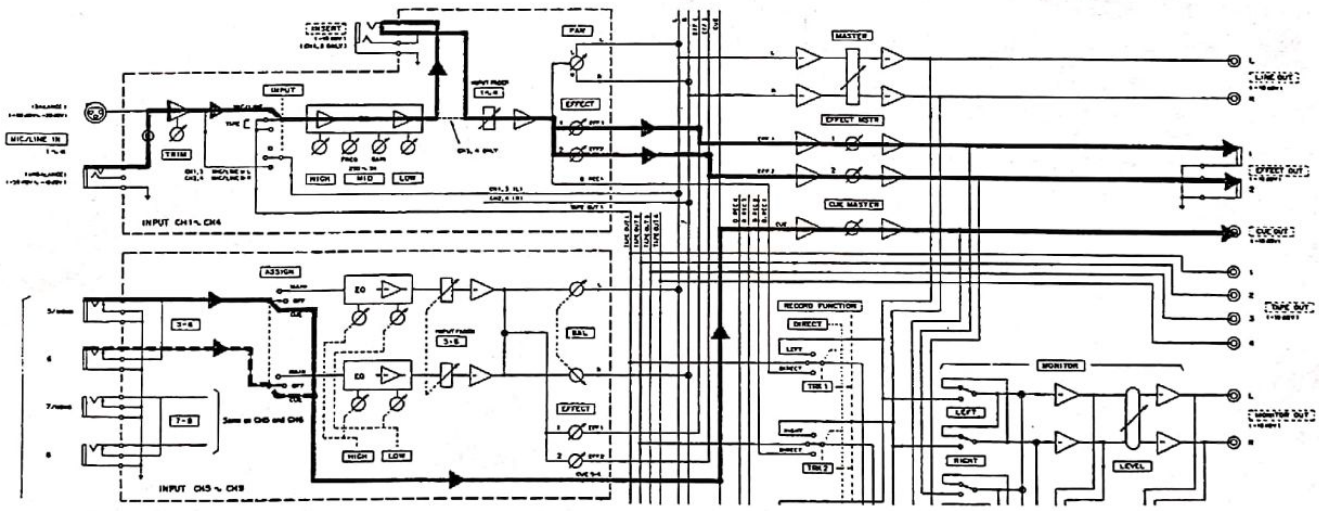


Fig. 5-2　図5－2

5-8. MONITOR LEVEL Control

1. Engage only the MONITOR LEFT switch (all other MONITOR switches should be Off/Up).
2. Feed LINE "L" OUT with –10 dBV signal, turn the MONITOR LEVEL control all the way to the right and check for –3 +/–2 dBV at MONITOR L and R OUTs.
3. Turn down the MONITOR LEVEL control until the level reading at MONITOR L and R OUTs decreases by about 7 dB and is –10 dBV. When you did so, check to see that the MONITOR LEVEL control is at about the 2 o'clock position.
4. Engage only the MONITOR RIGHT switch, feed LINE "R" OUT with –10 dBV signal and check for –10 +/–1 dBV at MONITOR L and R OUTs.
5. Engage both the LEFT and RIGHT select switches (all other MONITOR switches should be Off/Up), feed LINE L and R OUTs with –10 dBV signal and check for –10 +/–1 dBV at MONITOR L and R OUTs.
6. Similarly, engage only the EFFECT 1 switch, feed EFFECT 1 OUT with –10 dBV signal and check for –10 +/–1 dBV at MONITOR L and R OUTs.
7. Engage only the EFFECT 2 switch, feed EFFECT 2 OUT with –10 dBV signal and check for –10 +/–1 dBV at MONITOR L and R OUTs.
8. Engage both the EFFECT 1 and EFFECT 2 switches (all others should be Off/Up), feed EFFECT 1 and 2 OUTs with –10 dBV signal and check for –10 +/–1 dBV at MONITOR L and R OUTs.
9. Engage only the CUE switch, feed CUE OUT with –10 dBV signal and check for –10+/–1 dBV at MONITOR L and R OUTs.
10. Engage only the 2TR IN switch, apply a nominal level signal to 2TR IN L and R and check for –10 +/–1 dBV at MONITOR L and R OUTs.

5-9. PHONES Output Level

With all input and output controls set to their nominal positions, turn the PHONES control all the way to the right and check for 80 mW or more at PHONES OUT under 8 ohm load.

5-10. TAPE OUT

Play test tape MXT-112 and check for –10 +/–1.5 dBV at TAPE OUT 1 through 4.

5-11. TAPE CUE

Play test tape MXT-112 and check that CUE OUT is fed with playback signal as you turn up the TAPE CUE control for each track in sequence.

5－8．MONITOR LEVEL つまみ

1．MONITOR 切り換えの LEFT スイッチのみを ON にする．
2．LINE L OUTに -10dBV の信号が出力されているとき，MONITOR LEVEL つまみを最大にセットしたとき，MONITOR L.R OUT の出力レベルが -3 ±2dBVであること．
3．MONITOR LEVEL つまみを 7dB程絞り，MONITOR L.R OUT の出力レベルが -10dBV になるようにセットする．
このとき，MONITOR LEVEL つまみが2時位の位置にあること．
4．MONITOR 切り換えの RIGHTスイッチのみを ON にする．
LINE R OUTに -10dBV の信号が出力されているとき，MONITOR L.R OUT の出力レベルが -10±1dBVであること．
5．MONITOR 切り換えの LEFT.RIGHT スイッチのみを ON にする．
LINE L.R OUTに -10dBV の出力が出力されているとき，MONITOR L.R OUT の出力レベルが -10±1dBVであること．
6．MONITOR 切り換えの EFFECT 1 スイッチのみを ON にする．
EFFECT 1 OUTに -10dBV の信号が出力されているとき，MONITOR L.R の出力レベルが -10±1dBVであること．
7．MONITOR 切り換えの EFFECT 2 のみを ON にする．
EFFECT 2 OUTに -10dBV の信号が出力されているとき，MONITOR L.R OUT の出力レベルが -10±1dBVであること．
8．MONITOR 切り換えの EFFECT 1.2 スイッチのみを ON にする．
EFFECT 1.2 OUTに -10dBV の信号が出力されているとき，MONITOR L.R OUT の出力レベルが -10±1dBVであること．
9．MONITOR 切り換えの CUEスイッチのみを ON にする．
CUE OUT に -10dBV の信号が出力されているとき，MONITOR L.R OUT の出力レベルが -10±1dBVであること．
10．MONITOR 切り換えの 2TR IN スイッチのみを ON にする．
2TR L.R INにそれぞれ基準レベル信号を入力したとき，MONITOR L.R OUT の出力レベルが -10±1dBVであること．

5－9．PHONES出力のチェック

基準入出力状態で，MONITOR LEVEL つまみを最大にしたとき，PHONES OUTに 8Ω負荷で 80mW 以上の出力があること．

5－10．TAPE OUTチェック

テスト・テープ MXT-112を再生したとき，TAPE 1～4 OUT に，それぞれ -10±1.5dBVの信号が出力されること．

5－11．TAPE CUEチェック

テスト・テープ MXT-112を再生し，TAPE CUEつまみを 1CHずつ回したとき，それぞれ CUE OUTに信号が出力されること．

5－12．MIC 入力チェック

基準入出力状態から，MIC INに 1kHz.-50dBVの信号を入力し，TRIMつまみを MIC側にセットしたとき，LINE OUTの出力レベルが-10dBV以上あること．

5-12. MIC IN

With all input and output controls set to their nominal positions, apply a 1 kHz, –50 dBV signal to MIC IN, turn the TRIM all the way to the MIC side and check for –10 dBV or more at LINE OUT.

5-13. Frequency Response

With all input and output controls set to their nominal positions, check that the frequency response for the following signal paths is within the limits :

MIC IN — LINE OUT : 20 Hz to 20 kHz +/–3 dB
LINE IN — LINE OUT : 20 Hz to 20 kHz +/–2 dB
LINE IN — EFFECT OUT : 20 Hz to 20 kHz +/–2 dB
LINE IN — PHONES OUT : 40 Hz to 20 kHz +/–3 dB

5-14. Distortion

With all input and output controls set to their nominal positions, check for : (30 kHz L.P.F. inserted)

1 LINE IN — LINE OUT : 0.05% or less
(at 1 kHz, nominal level input)
1 MIC IN — LINE OUT : 0.05% or less
(at 1 kHz, 15 dB above nominal input level)

5-15. Signal-to-Noise Ratio

With all input and out controls set to their nominal positions, check for : (DIN AUDIO)

1 MIC IN — LINE OUT : 65 dB or better
4 MIC INs — LINE OUT : 60 dB or better
1 LINE IN — LINE OUT : 76 dB or better
8 LINE INs — LINE OUT : 70 dB or better

5－13．周波数特性

基準入出力状態に於いて，下記の INPUTから OUTPUT の周波数特性は以下の通りです．

MIC	－ LINE OUT	20Hz ～20kHz ±3dB
LINE IN	－ LINE OUT	20Hz ～20kHz ±2dB
LINE IN	－ EFFECT OUT	20Hz ～20kHz ±2dB
LINE IN	－ PHONES OUT	40Hz ～20kHz ±3dB

5－14．歪率

各系統の入出力つまみが基準位置にセットされた状態で測定します．（30kHz L.P.F を使用して測定）

1 LINE IN － LINE OUT 0.05% 以下
(1kHz.基準入力レベルを入力)
1 MIC IN － LINE OUT 0.05% 以下
(1kHz.基準入力より 15dB 高いレベルを入力)

5－15．S／N

各系統の入出力つまみが基準位置にセットされた状態で測定します．(DIN AUDIO)

1 MIC IN	－ LINE OUT	65dB以上
4 MIC IN	－ LINE OUT	60db以上
1 LINE IN	－ LINE OUT	76dB以上
8 LINE IN	－ LINE OUT	70dB以上

6. AMPLIFIER CHECKS AND ADJUSTMENTS
録音・再生アンプのチェックと調整

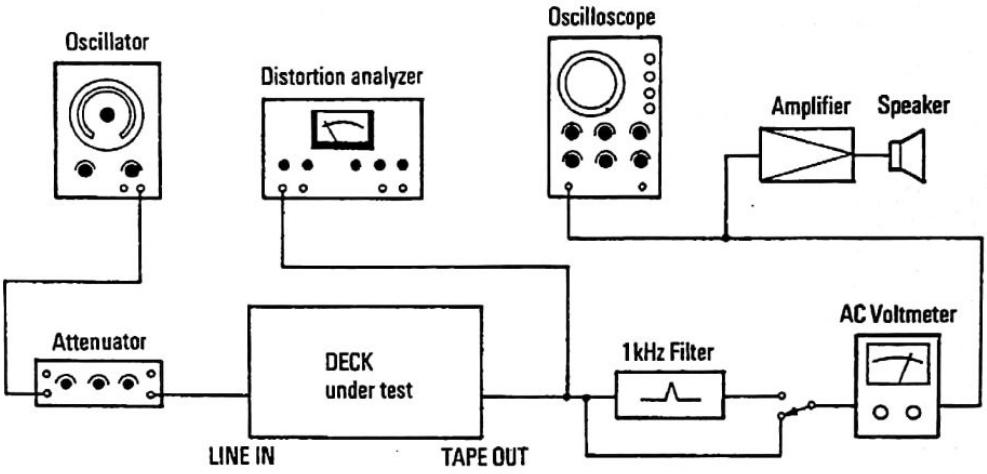


Fig. 6 – 1 **Basic test setup**
図6 – 1 基本測定接続図

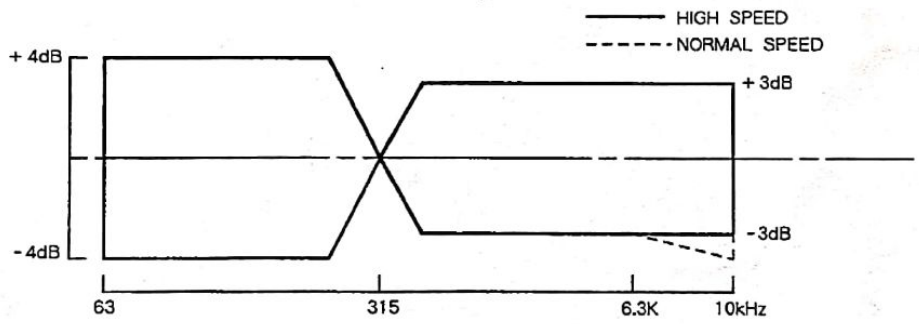
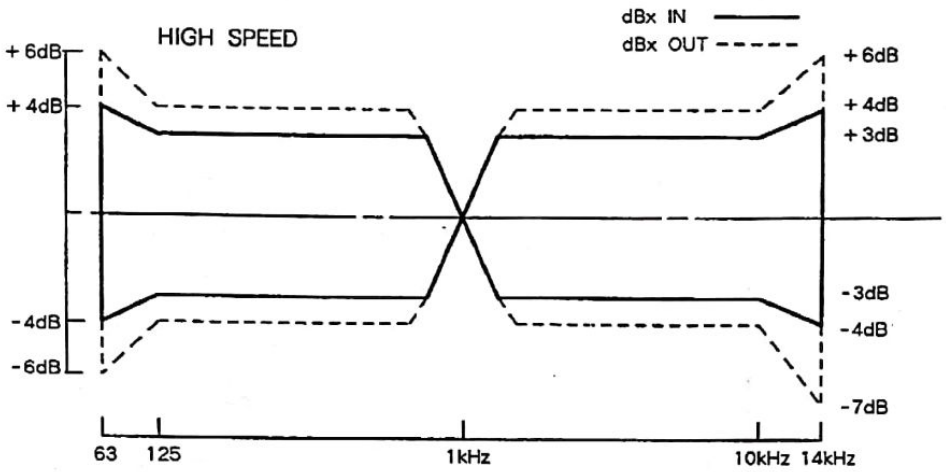


Fig. 6 – 2 **Playback frequency response**
図6 – 2 再生周波数特性



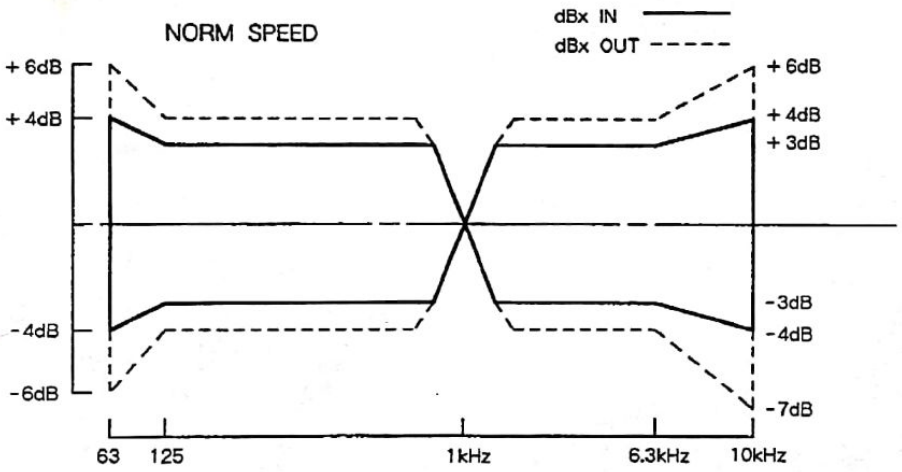
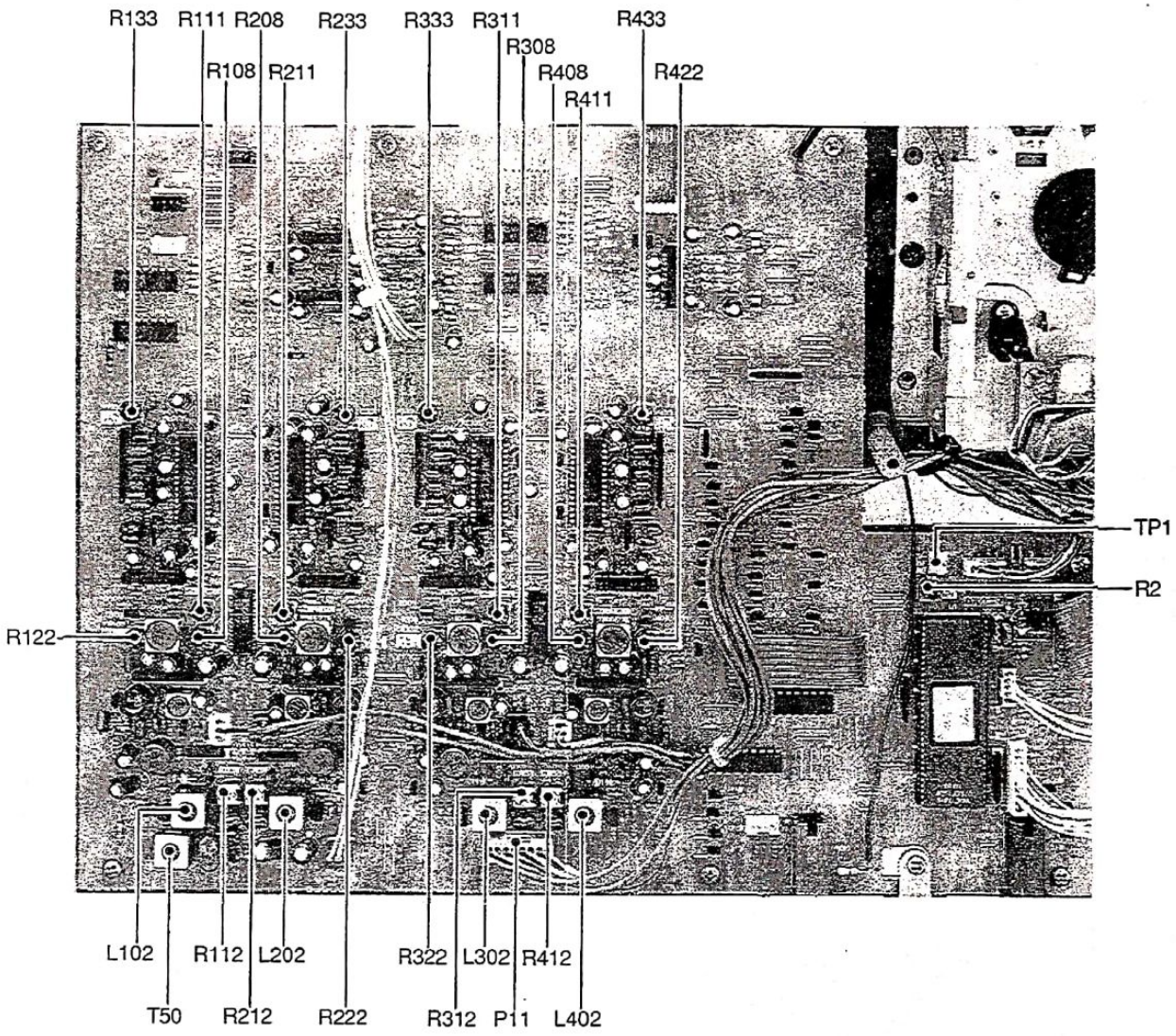


Fig. 6 – 3 **Overall frequency response**
図6 – 3 録再周波数特性



R111~R411	Reproduce Reference Level	再生基準レベル
R2	Meter Level	メータ・レベル
R108~R408	Reproduce Reference Response	再生周波数特性
T50	Bias OSC. Frequency	バイアス発振周波数
L102~L402	Bias Amp. (Erase)	バイアス・アンプ (消去)
R133~R433	dBx Timing	dBx タイミング
R112~R412	Record Bias	録音バイアス
R122~R422	Record Level	録音レベル

Fig. 6-4 Adjustments and Test Points

図6－4　調整とテストポイント箇所

6-1. General Notes

1. Before adjusting amplifiers, thoroughly clean and demagnetize the heads and tape path.
2. Use a level meter with an input impedance of 1 Mohms or higher.
3. 0 dBV corresponds to 1 V.
4. For blank tape use TEAC MTT-5561 or equivalent tapes.
5. Indication, for example, "R111 (R211 to R411)" means that R111 is for channel 1, R211 for channel 2, R311 for channel 3 and so on.

6-2. Playback System

Test Mode : PLAY
Measurement Point : TAPE OUT (unless otherwise specified)

Adjustment Item	Preliminary Setting	Input Signal	Adjustment Point	Measurement Point/Value Adjusted For	Remarks
1. Repro Reference Level	Connection : Fig.6-1 Tape speed : HIGH	MXT-112	R111 (R211 to R411)	–10 dBV at output Specs : –10 +/–1.5 dBV	
2. Meter Calibration	Voltmeter connected between terminals of TP1	—	R2	3.4 V at TP1	
3. Repro Frequency Response	Connection : Fig.6-1 Tape speed : HIGH	MXT-1161	R108 (R208 to R408	0 dB at 10 kHz (same level as at 315 Hz) Specs : Fig.6-2	
	Connection : Fig.6-1 Tape speed : NORMAL	MTT-356	Check only	Specs : Fig.6-2	
4. Level Difference between Channels	Connection : Fig.6-1	MXT-1161	Check only	63 Hz to 10 kHz, within 3 dB	
5. Level Fluctuation	Same as above	Same as above	Check only	63 Hz to 6.3 kHz, within 2 dB 6.3 kHz to 10 kHz, within 3 dB	
6. Repro S/N Ratio	Connection : Fig.6-1 dbx NR : OFF DIN AUDIO	—	Check only	Measure output when leader tape is played back with the unit set for nominal output level, and compare this reading with nominal output level number. Difference : 48 dB or more at HIGH ; 46 dB or more at NORMAL. Deference between channels : 4 dB or less	

6-3. Recording System

Test Mode : REC/PLAY (unless otherwise specified)
Signal Input : LINE IN jack
Measurement Point : TAPE OUT (unless otherwise specified)

Adjustment Item	Preliminary Setting	Input Signal	Adjustment Point	Measurement Point/Value Adjusted For	Remarks
1. Bias Oscillator Frequency	Frequency counter connected between terminals #1 and GND of P11 REC FUNCTION sw. : ON for all channels ; Transport : REC/PAUSE mode	—	T50	85 +/–2 kHz as read on frequency counter	
2. Bias Amp (Erase)	Oscilloscope connected between terminals #1 (3,5,7) and GND of P11 (with the scope's probe set to X10) REC FUNCTION sw. : ON for all channels ; Transport : REC/PAUSE	—	L102 (L202 to L402)	Maximum output as read on the scope connected between the specified terminals of P11 : Terminals #7 and GND — for Ch.1 #5 and GND — for Ch.2 #3 and GND — for Ch.3 #1 and GND — for Ch.4	

Adjustment Item	Preliminary Setting	Input Signal	Adjustment Point	Measurement Point/Value Adjusted For	Remarks
3. dbx Timing	DC voltmeter connected between terminal #13 of U107 (U207 to U407) and terminal #1 of R133 (R233 to R433)	—	R133 (R233 to R433)	18.4 mV as read on DC voltmeter	
4. Bias Set	Connection : Fig.6-1 ; Tape speed : NORMAL ; dbx NR : ON	–30 dBV (20 dB below nominal input level)	R112 (R212 to R412)	Same output level at 1 kHz and 10 kHz signals as read off tape during recording them one after another	
5. Record Reference Level	Connection : Fig.6-1 ; Tape speed : NORMAL ; dbx NR : ON	1 kHz, –10 dBV (nominal input)	R122 (R222 to R422)	–10 dBV output as read off tape during recording ; Tolerance : -10 dBV +/–3 dBV (whether tape speed is at HIGH or at NORMAL, or dbx NR is ON or OFF)	
6. Record Distortion	Connection : Fig.6-1 ; dbx NR : OFF	Same as above	Check only	Specs : 1.6 % or less	
7. Rec/Repro Frequency Response	Connection : Fig. 6-1 ; dbx : ON/OFF alternately	63 Hz to 14 kHz, -30 dBV (20 dB below nominal input level)	Check only	Specs : Fig.6-3	
8. Level Difference between Channels	Connection : Fig.6-1 ; dbx NR : OFF	63 Hz to 10 kHz, -30 dBV (20 dB below nominal input level)	Check only	3 dB or less over 63 Hz to 6.3 kHz 4 dB or less over 6.3 kHz to 10 kHz	
9. Rec/Repro Level Fluctuation	Connection : Fig.6-1 ; dbx NR : OFF	63 Hz to 14 kHz, -30 dBV (20 dB below nominal input level)	Check only	1 dB at 1 kHz 2 dB over 63 Hz to 6.3 kHz 3 dB over 6.3 kHz to 14 kHz	
10. Crosstalk between Tracks	Connection : Fig.6-1 ; dbx NR : OFF ; REC FUNCTION sw. : ON for Ch.1 and 3	125 Hz, –10 dBV into Ch.1 and 3 ; No signal into Ch.2 and 4	Check only	Record the input signal, then rewind the tape and play the recording. Compare the output from Ch.1 and 3 with that from Ch.2 and 4. Level difference : 35 dB or greater In a similar way, check also the reverse : leakage from Ch.2 and 4 into Ch.1 and 3.	
11. Channel Separation	Connection : Fig.6-1 (1 kHz B.P.F. inserted) ; REC FUNCTION sw. : ON for all channels ; dbx NR : OFF	1 kHz, –10 dBV into Ch.1 and 3 ; No signal into Ch.2 and 4	Check only	Compare the output level from Ch.1 and 3 with that from Ch.2 and 4 as read off tape during recording. Level difference : 45 dB or greater In a similar way, check also the reverse : leakage from Ch.2 and 4 into Ch.1 and 3.	
12. Cross-erase	Connection : Fig.6-1 ; dbx NR : OFF	10 kHz, –10 dBV into Ch.1 and 3	Check only	Record tracks 1 and 3 and play the recording to measure their playback level, then erase tracks 2 and 4 to check for level drop of 1.5 dB or less in output from tracks 1 and 3. In a similar way, check also the reverse : recording track 2 and 4, erasing tracks 1 and 3, and checking level drop in output from tracks 2 and 4.	
13. Erasing Coefficient	Connection : Fig.6-1 (1 kHz B.P.F. inserted) ; dbx NR : OFF	1 kHz, 0 dBV (10 dB above nominal input level)	Check only	Erase a part of a recorded section and play the tape to compare the level from the remaining recorded section with that from the erased section. Level difference between them : 65 dB or greater	
14. Rec/Repro S/N Ratio	Connection : Fig.6-1 ; dbx NR : OFF	No input	Check only	Compare the output from the "no-signal" recording with nominal output level. Level difference between them : 45 dB or greater at HIGH ; 43 dB or greater at NORMAL. Difference in S/N ratio between channels : 4 dB or less	

6－1. 注意

1. アンプ部の調整の前に、消去ヘッド，録・再ヘッド，テープ走行部分をそれぞれ充分消磁し、クリーナー液で清掃して下さい。
2. レベル計は、入力インピーダンス1MΩ以上のものを使用して下さい。
3. 0dBV＝1Vで表示してあります。
4. ブランク・テープは、TEAC MTT－5561又は相当品を使用して下さい。
5. R111（R211～R411）と記されているボリュームの部番は、CH1（CH2～CH4）を示します。

6－2. 再生系

モード：PLAY
測定個所：TAPE OUT（特に指示のある場合を除く）

調整項目	準備・設定	入力信号	調整個所	測定個所・調整値	備考
1. 再生レベル	接続：図6－1 テープ・スピード：HIGH	MXT－112	R111（R211～R411）	出力が－10dBVになるように調整 規格：－10±1.5dBV	
2. メータ・レベル	TP1の端子間に電圧計を接続	——	R2	TP1の電圧が3.4Vになるように調整	
3. 再生周波数特性	接続：図6－1 テープ・スピード：HIGH	MXT－1161	R108（R208～R408）	10kHzのレベルが0dB（315Hzと同レベル）になるように調整 規格：図6－2	
	接続：図6－1 テープ・スピード：NORMAL	MTT－356	チェック	規格：図6－2	
4. チャンネル間レベル差	接続：図6－1	MXT－1161	チェック	63Hz～10kHz：3dB以内	
5. レベル変動	同上	同上	チェック	63Hz～6.3kHz：2dB以内 6.3kHz～10kHz：3dB以内	
6. 再生S/N	接続：図6－1 dBX NR：OFF DIN AUDIO	——	チェック	基準出力状態で、リーダー・テープ部を再生した時のノイズレベルと基準出力との比 テープ・スピード HIGH：48dB以上 NORMAL：46dB以上 チャンネル差：4dB以内	

6－3.録音系

モード：REC／PLAY（特に指示のある場合を除く）
信号入力：LINE IN端子
測定個所：TAPE OUT（特に指示のある場合を除く）

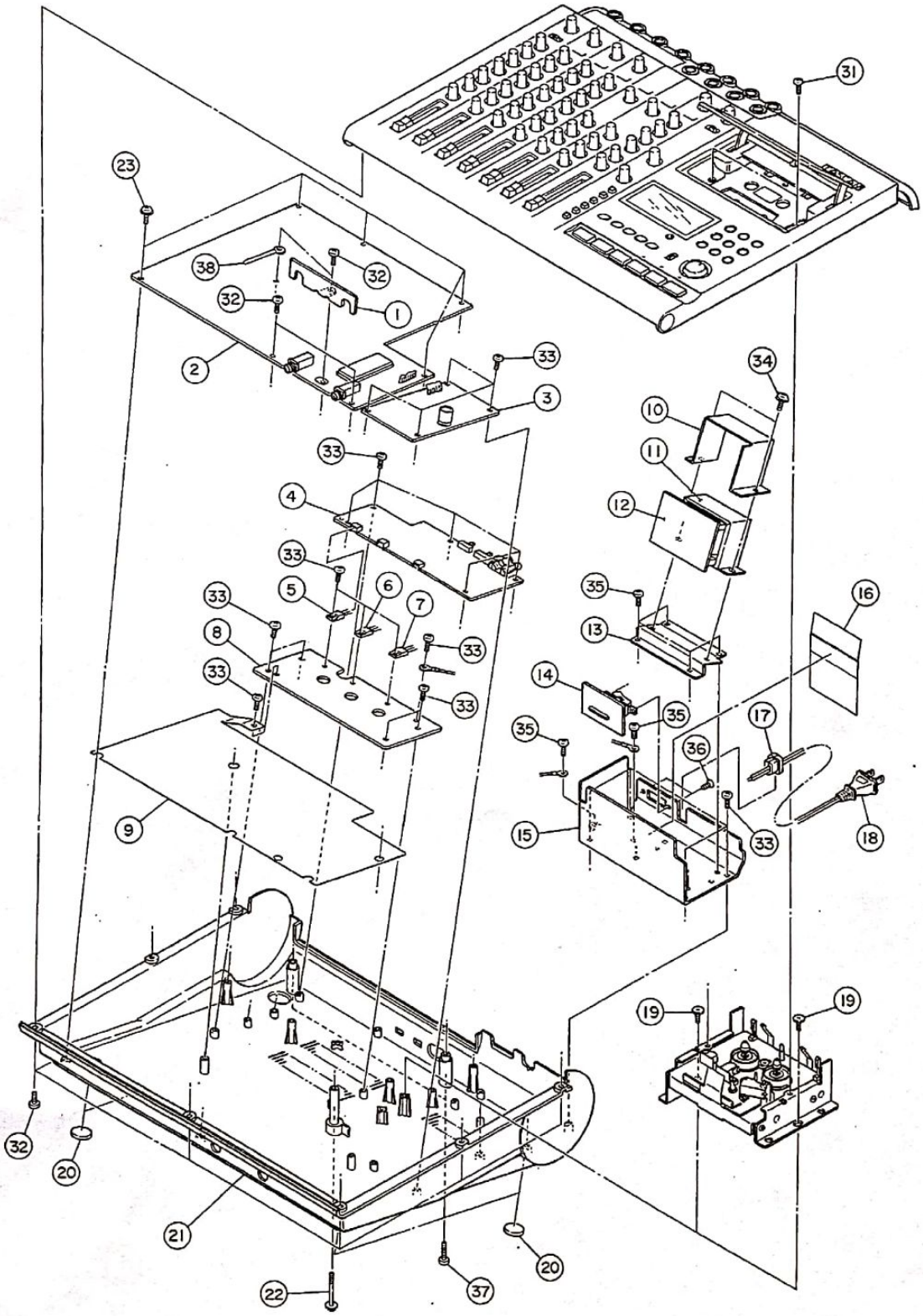
調整項目	準備・設定	入力信号	調整個所	測定個所・調整値	備考
1. バイアス発振周波数	P11の1番端子とGND間に周波数カウンタを接続 REC FUNC. SW：全ch ON REC／PAUSE状態	——	T50	周波数が85±2kHzになるように調整	
2. バイアス・アンプ（消去）	P11の1（3, 5, 7）番端子とGND間にオシロスコープを接続 （＊プローブはX10にして使用） REC FUNC. SW：全ch ON REC／PAUSE状態	——	L102（L202～L402）	下記の端子間の出力が最大になるように調整 1ch：P11の1番端子－GND間 2ch：P11の3番端子－GND間 3ch：P11の5番端子－GND間 4ch：P11の7番端子－GND間	

調整項目	準備・設定	入力信号	調整個所	測定個所・調整値	備考
3. dBxタイミング	U107 (U207～U407) 13番ピンとR133 (R233～R433) 1番ピンに直流電圧計を接続	——	R133(R233～R433)	直流電圧が18.4mVになるように調整	
4. バイアス・セット	接続：図6－1 テープ・スピード：NORMAL dBx NR：ON	－30dBV (基準入力に対して－20dB)	R112(R212～R412)	録音・再生したとき、1kHzと10kHzが同レベルになるように調整	
5. 録音基準レベル	接続：図6－1 テープ・スピード：NORMAL dBx NR：ON	1kHz／－10dBV (基準入力)	R122(R222～R422)	録音・再生したとき、出力が－10dBVになるように調整 規格：－10±3dBV (テープ・スピード HIGH, NORMAL、dBx NR：ON,OFF共)	
6. 録音歪率	接続：図6－1 dBx NR：OFF	同上	チェック	規格：1.6 %以下	
7. 録再周波数特性	接続：図6－1 dBx NR：ON,OFF	63Hz～14kHz／－30dBV (基準入力に対して－20dB)	チェック	規格：図6－3	
8. チャンネル間レベル差	接続：図6－1 dBx NR：OFF	63Hz～10kHz／－30dBV (基準入力に対して－20dB)	チェック	録再周波数特性規格内におけるch間のレベル差 63Hz～6.3kHz：3dB以内 6.3kHz～10kHz：4dB以内	
9. 録再レベル変動	接続：図6－1 dBx NR：OFF	63Hz～14kHz／－30dBV (基準入力に対して－20dB)	チェック	録再周波数特性規格内におけるレベル変動 1kHz：1dB 63Hz～6.3kHz：2dB 6.3kHz～14kHz：3dB	
10. トラック間クロストーク	接続：図6－1 dBx NR：OFF REC FUNC. SW：1,3ch ON	1,3ch：125Hz／－10dBV 2,4cH：無信号	チェック	録音し、巻き戻して再生したときの、1,3chの再生出力と2,4chの再生出力の比 35dB以上 2,4ch→1,3chの場合も同様	
11. チャンネルセパレーション	接続：図6－1 (1kHz B.P.F.使用) REC FUNC. SW：全ch ON dBx NR：OFF	1,3ch：1kHz／－10dBV 他ch：無信号	チェック	録音・再生したとき、1,3chの再生出力と2,4chの再生出力との比 45dB以上 2,4ch→1,3chの場合も同様	
12. クロス消去	接続：図6－1 dBx NR：OFF	1,3ch：10kHz／－10dBV	チェック	1,3chを録音し、再生してレベルを確認後、2,4chを消去したとき、1,3chの再生レベルの低下 1.5dB以内 2,4ch→1,3chの場合も同様	
13. 消去率	接続：図6－1 (1kHz B.P.F.使用) dBx NR：OFF	1kHz／0dBV (基準入力に対して＋10dB)	チェック	録音部分の一部を残して消去したあと、再生したときの未消去部分との比 65dB以上	
14. 録再S／N	接続：図6－1 dBx NR：OFF	無信号	チェック	基準出力と無信号録再出力レベルとの比 テープ・スピード HIGH：45dB以上 NORMAL：43dB以上 チャンネル差：4dB以内	

7. EXPLODED VIEWS AND PARTS LISTS

分解図とパーツ・リスト

EXPLODED VIEW-1



EXPLODED VIEW-1

REF.NO.	PARTS NO.	DESCRIPTION	REMARKS
1- 1	*5801469200	BRACKET,JACK	
1- 2	*5200334500	R/P CONT PCB ASSY	Refer to pages 29 & 35
1- 3	*5200334600	MECHA CONT PCB ASSY	Refer to pages 33 & 37
1- 4	*5200335400	POWER PCB ASSY [J,US,C]	Refer to pages 32 & 36
	*5200335440	POWER PCB ASSY [E,UK,A]	Refer to pages 32 & 36
1- 5	⚠ 5231762800	TR.,2SD1913	
1- 6	⚠ 5230509700	TR.,2SB1274R	
1- 7	⚠ 13447956	IC.,LINEAR NJM7812FA	
1- 8	*5801469600	HEATSINK	
1- 9	*5801471200	SHIELD SHEET,R/P	
1-10	*5801493700	COVER,TRANS. SHIELD	
1-11	⚠*5320061300	TRANS.,POWER	
1-12	*5210335300	TR PCB	
1-13	*5801493300	BRACKET(S),TRANS.	Refer to page 34
1-14	*5200335500	POWER SW PCB ASSY [J,US,C]	Refer to pages 33 & 36
	*5200335540	POWER SW PCB ASSY [E,UK,A]	Refer to pages 33 & 36
1-15	*5801470100	BRACKET,TRANS.	
1-16	*5801493400	SHEET,INSULATION	
1-17	⚠*5317003400	BUSSING,2271	
1-18	⚠*5350015200	CORD,AC [J]	
	⚠*5350010700	CORD,AC [US,C]	
	⚠*5350017500	CORD,AC [E]	
	⚠*5128047000	CORD,AC [UK]	
	⚠*5350008300	CORD,AC [A]	
1-19	*5801276700	SCREW,STEP	
1-20	*5800620400	FOOT,FELT	
1-21	*5801470300	CASE,BOTTOM	
1-22	*5800628500	SCREW,CASE	
1-23	*5801447300	SCREW,3X8	
1-31	*5780012608	SCREW,BIND M2.6X8(NI)	
1-32	*5783543010	SCREW,BIND P-TITE M3X10(BLK NI)	
1-33	*5783603008	SCREW,BIND P-TITE M3X8	
1-34	*5783074008	SCREW,PAN CAP S-TITE M4X8	
1-35	*5783033006	SCREW,BIND S-TITE M3X6	
1-36	*5780203006	SCREW,FLAT M3X6	
1-37	*5780003012	SCREW,BIND M3X12	
1-38	*5786713400	CLIP,HARNESS 3.2X6.0X47	

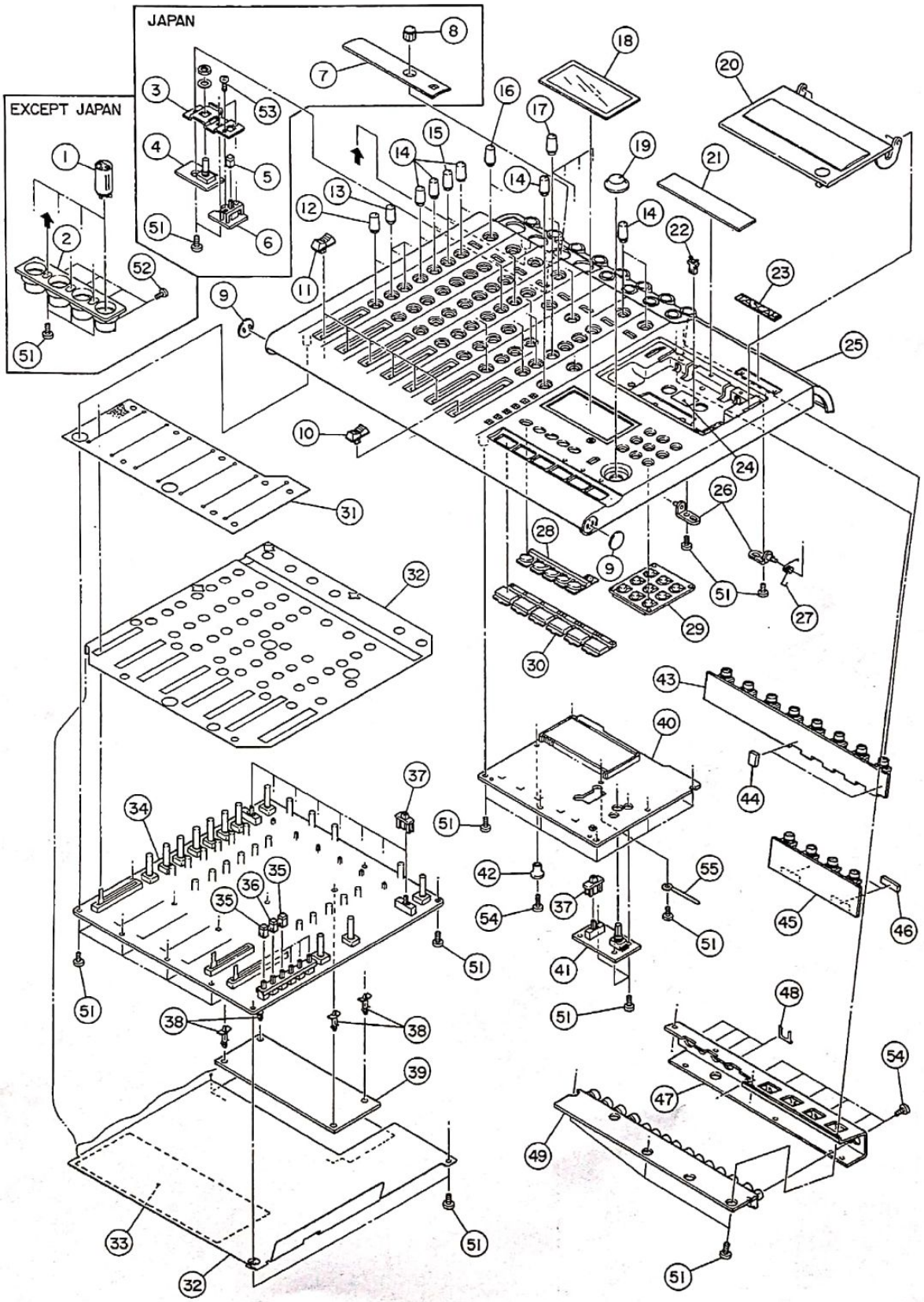
INCLUDED ACCESSORIES

REF.NO.	PARTS NO.	DESCRIPTION	REMARKS
	*5700132100	OWNER'S MANUAL [J]	
	*5700132200	OWNER'S MANUAL [EXCEPT J]	
	*5700132300	OWNER'S MANUAL [C,E]	
	*5700129500	SAFETY INSTRUCTIONS [C,E]	

[US]:U.S.A. [E]:EUROPE [UK]:U.K. [C]:CANADA [J]:JAPAN
[A]:AUSTRALIA

Parts marked with * require longer delivery time.

EXPLODED VIEW-2



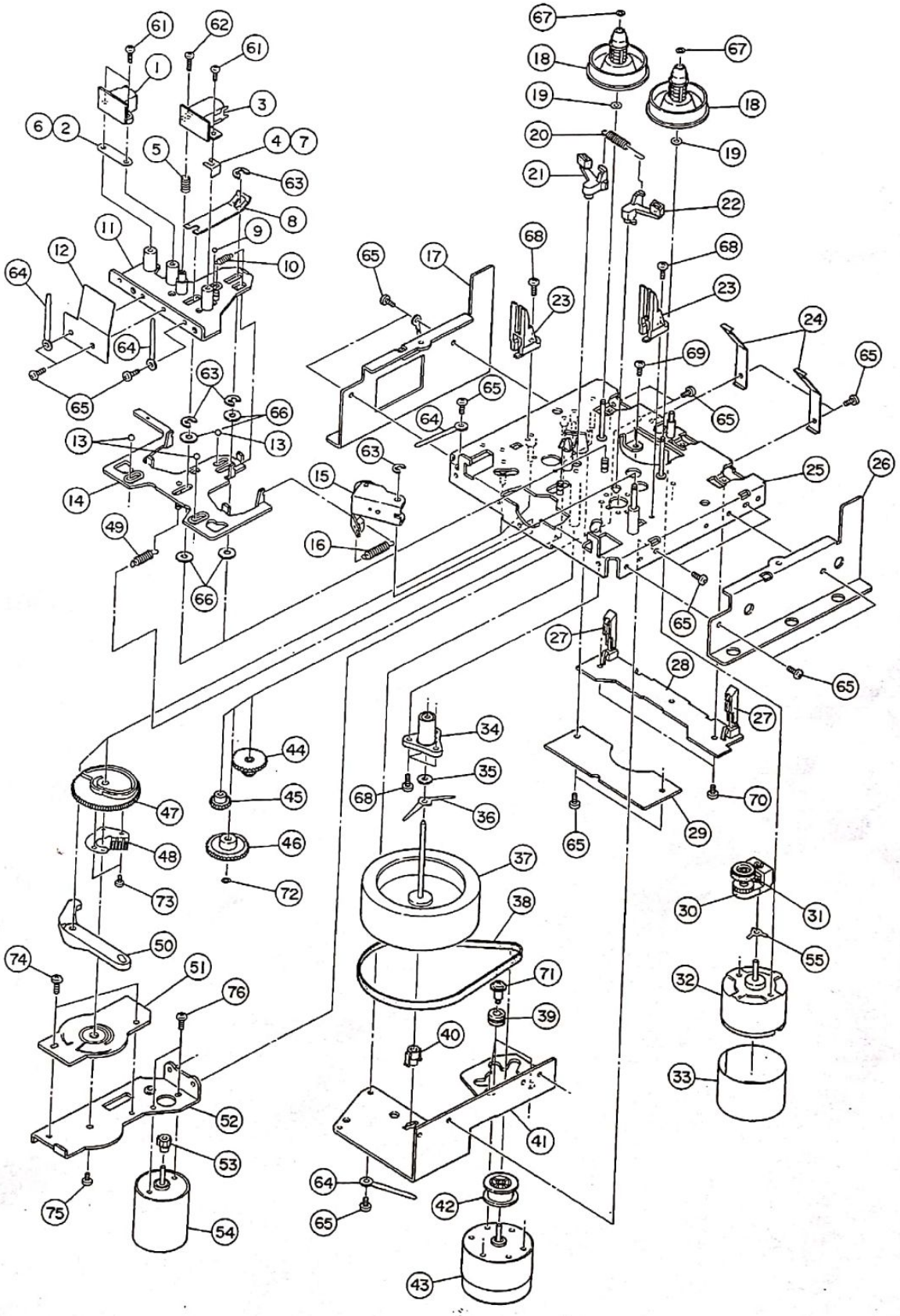
EXPLODED VIEW-2

REF.NO.	PARTS NO.	DESCRIPTION	REMARKS
2- 1	*5334078200	SOCKET,XLR CONN. [EXCEPT J]	
2- 2	*5801469900	HOLDER,SOCKET [EXCEPT J]	
2- 3	*5801475900	BRACKET,BBE [J]	
2- 4	*5200336100	BBE VR PCB ASSY [J]	Refer to pages 34 & 38
2- 5	5801442900	BUTTON,GRY [J]	
2- 6	*5200335900	BBE SW PCB ASSY [J]	Refer to pages 34 & 37
2- 7	*5801476000	PLATE,BBE [J]	
2- 8	5801485300	VR KNOB ASSY [J]	
2- 9	*5801392601	CAP	
2-10	5801395201	KNOB,FADER RED	
2-11	5801395101	KNOB,FADER ORG	
2-12	5801395500	KNOB,GRY	
2-13	5801395300	KNOB,BLU	
2-14	5801395600	KNOB,ORG	
2-15	5801395800	KNOB,YLW	
2-16	5801395700	KNOB,RED	
2-17	5801395400	KNOB,GRN	
2-18	*5801469401	WINDOW,DISPLAY	
2-19	5801395000	KNOB,PITCH CONT.	
2-20	*5801393600	COVER,CASSETTE	
2-21	*5801394700	ADAPTOR,CASE	
2-22	*5801277700	LATCH	
2-23	*5720227800	BADGE,TASCAM	
2-24	*5800602901	REFLECTING MIRROR	
2-25	*5801470200	CASE,TOP	
2-26	*5801400200	METAL ASSY,CASSETTE COVER	
2-27	*5801393000	SPRING,UP	
2-28	5801469800	BUTTON,FUNCTION	
2-29	5801469700	BUTTON,DISPLAY	
2-30	5801395900	BUTTON,OPERATION	
2-31	*5801470000	MASK,VR	
2-32	*5801471300	SHIELD SHEET,MIXER	
2-33	*5801494700	SEAL,INSULATION	
2-34	*5200334200	MIX PCB ASSY [J]	Refer to pages 31 & 35, 36
	*5200334210	MIX PCB ASSY [EXCEPT J]	Refer to pages 31 & 35, 36
2-35	5801442900	BUTTON,GRY	
2-36	5801443000	BUTTON,GRN	
2-37	5801392500	KNOB,SLIDE	
2-38	*5787000600	SUPPORT,PCB SPLS-6	
2-39	*5200334300	BAL PCB ASSY [EXCEPT J]	Refer to pages 34 & 37
	*5200335800	BBE PCB ASSY [J]	Refer to pages 34 & 37
2-40	*5200334800	LCD PCB ASSY	Refer to pages 32 & 36
2-41	*5200334900	PITCH CONT PCB ASSY	Refer to pages 34 & 38
2-42	*5801495600	HOLDER,PCB	
2-43	*5200335000	JACK-A PCB ASSY [J]	Refer to pages 33 & 37
	*5200335010	JACK-A PCB ASSY [EXCEPT J]	Refer to pages 33 & 37
2-44	*5801385700	STOPPER	
2-45	*5200335100	JACK-B PCB ASSY	Refer to pages 33 & 37
2-46	*5801497700	CUSHION 6X6X25	
2-47	*5801469500	CHASSIS,REAR	
2-48	*5317005800	PLATE(S),MOUNT	
2-49	*5200335200	JACK-C PCB ASSY	Refer to pages 33 & 37
2-51	*5783603008	SCREW,BIND P-TITE M3X8	
2-52	*5780002006	SCREW,BIND M2X6 [EXCEPT J]	
2-53	*5780003006	SCREW,BIND M3X6 [J]	
2-54	*5783543010	SCREW,BIND P-TITE M3X10(BLK NI)	
2-55	*5786713400	CLIP,HARNESS 3.2X6.0X47	

[US]:U.S.A. [E]:EUROPE [UK]:U.K. [C]:CANADA [J]:JAPAN
[A]:AUSTRALIA

Parts marked with * require longer delivery time.

EXPLODED VIEW-3



EXPLODED VIEW-3

REF.NO.	PARTS NO.	DESCRIPTION	REMARKS
3- 1	5378600901	HEAD,ERASE 4T4CH	
3- 2	*5800556200	SPACER,EH 0.1MM	For adjustment
3- 3	5378601200	HEAD,R/P 4T4CH	
3- 4	*5800595000	SPACER,A 0.1MM	For adjustment
3- 5	*5800931300	SPRING,HEAD	
3- 6	*5801197800	SPACER,EH 0.2MM	For adjustment
	*5801357800	SPACER,EH 0.05MM	For adjustment
3- 7	*5800595100	SPACER,B 0.2MM	For adjustment
	*5801357700	SPACER,H R/P 0.05MM	For adjustment
3- 8	*5801481400	SPRING,PRESSURE	
3- 9	5540055000	STEEL BALL,2.0	
3-10	*5801005700	SPRING,HEAD BASE	
3-11	*5801472400	HEAD BASE(4) ASSY	
3-12	*5801476100	SHEET,HEAD SHIELD	
3-13	5540056000	STEEL BALL,3.0	
3-14	*5801475000	SLIDER ASSY	
3-15	5800955400	P.ROLLER ARM ASSY(R)	
3-16	*5800955800	SPRING(R),P.ROLLER	
3-17	*5801470900	BRACKET(L),MECHA.	
3-18	5801480700	REEL TABLE S ASSY	
3-19	*5800539800	WASHER,1.7X4X0.3T	
3-20	*5801475700	SPRING,BRAKE	
3-21	*5801475300	BRAKE ARM(L) ASSY	
3-22	*5801475500	BRAKE ARM(R) ASSY	
3-23	*5801197100	GUIDE(U),CASSETTE	
3-24	*5801197200	SPRING(U),PRESSURE	
3-25	*5801471400	MECHA. CHASSIS S4 ASSY	
3-26	*5801471000	BRACKET(R),MECHA.	
3-27	5301754500	SW.,LEAF MTS1016IMVJ0	
3-28	*5210333900	SW PCB	
3-29	*5200333800	SENSOR PCB ASSY	Refer to pages 34 & 38
3-30	*5801473000	DRIVING PULLY ASSY	
3-31	5801474500	GEAR,REEL MOTOR	
3-32	5370002502	MOTOR,REEL DC	
3-33	*5800235900	PLATE,SHIELD	
3-34	*5800106200	HOUSING ASSY,CAPSTAN	
3-35	*5800729400	WASHER A,TEFLON	
3-36	*5801197900	SPRING(U),THRUST	
3-37	5800735101	CAPSTAN ASSY	
3-38	5800735500	BELT,CAPSTAN	
3-39	*5534537001	GOM,NON VIBRATION	
3-40	*5801198100	THRUST PLATE(F)	
3-41	*5801198000	FW PLATE(P)	
3-42	5801198200	PULLEY,CAPSTAN 12.7	
3-43	5370008700	MOTOR,CAP. DC EG-530KD-2B	
3-44	5801474300	GEAR C	
3-45	5801474101	GEAR A	
3-46	5801474200	GEAR B	
3-47	5801474600	CAM,CONTROL	
3-48	*5801474700	PLATE,CONTACT	
3-49	*5801476200	SPRING,BASE ARM	
3-50	*5801474800	ARM,BASE	
3-51	*5210334000	CAM PCB	
3-52	*5801474000	BRACKET,ASSIST MOTOR	
3-53	5801474400	GEAR,MOTOR	
3-54	5370010300	DC MOTOR,ASSIST MXN-13FB12F	
3-55	*5801494600	SPRING,THRUST	

Parts marked with * require longer delivery time.

EXPLODED VIEW-3

REF.NO.	PARTS NO.	DESCRIPTION	REMARKS
3-61	*5780012006	SCREW,BIND M2X6(NI)	
3-62	*5730029400	SCREW,PWA2*8FNI	
3-63	*5786002000	E-RING,E-2	
3-64	*5786713400	CLIP,HARNESS 3.2X6.0X47	
3-65	*5783002605	SCREW,PAN S-TITE M2.6X5	
3-66	*5785313000	WASHER,POLYS. 3X6X0.5T	
3-67	*5785331200	WASHER,POLYS. 1.2X3.0X0.5T	
3-68	*5783032606	SCREW,BIND S-TITE M2.6X6	
3-69	*5780002603	SCREW,BIND M2.6X3	
3-70	*5783032005	SCREW,BIND S-TITE M2X5	
3-71	*5730033100	SCREW,SHOULDER M2.6X5-2	
3-72	*5785331500	WASHER,POLYS. 1.5X4X0.5T	
3-73	*5781112004	SCREW,BIND TAP M2X4	
3-74	*5783032605	SCREW,BIND S-TITE M2.6X5	
3-75	*5780002004	SCREW,BIND M2X4	
3-76	*5780003003	SCREW,BIND M3X3	

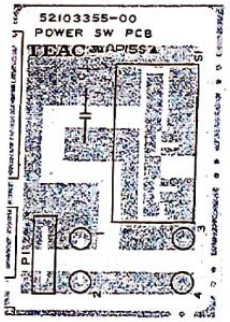
Parts marked with * require longer delivery time.

R/P CONT PCB ASSY

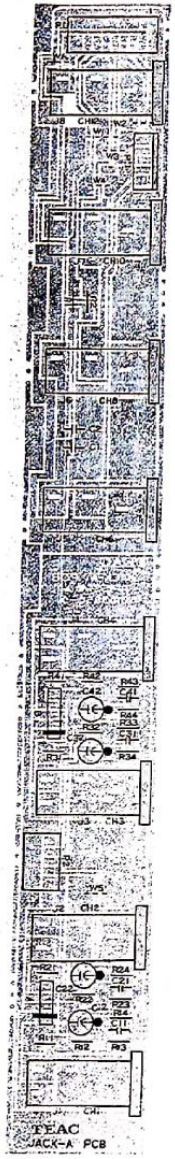
8. P.C. BOARDS AND PARTS LISTS

Pages 29, 30

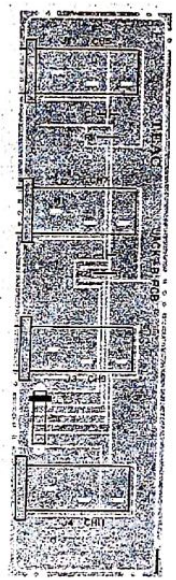
POWER SW PCB ASSY



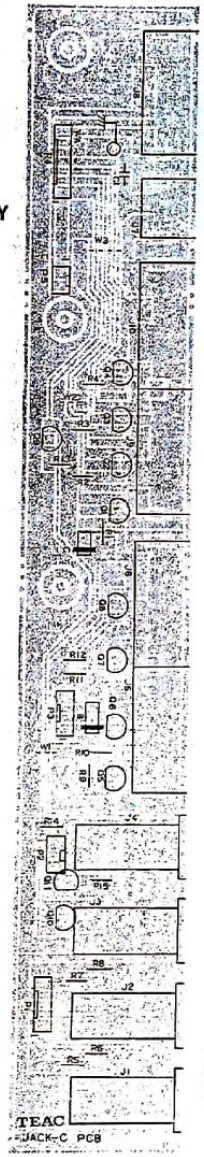
JACK-A PCB ASSY



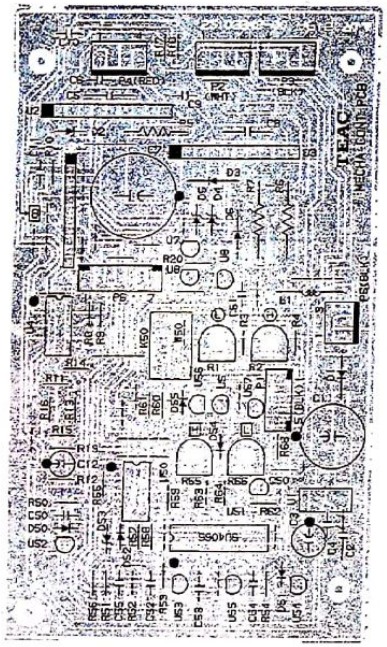
JACK-B PCB ASSY



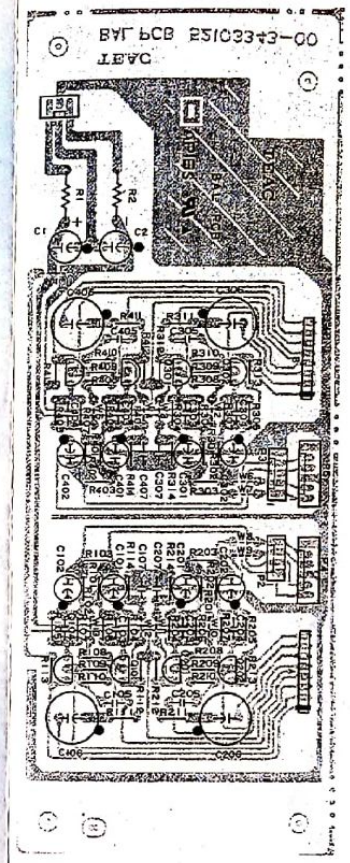
JACK-C PCB ASSY



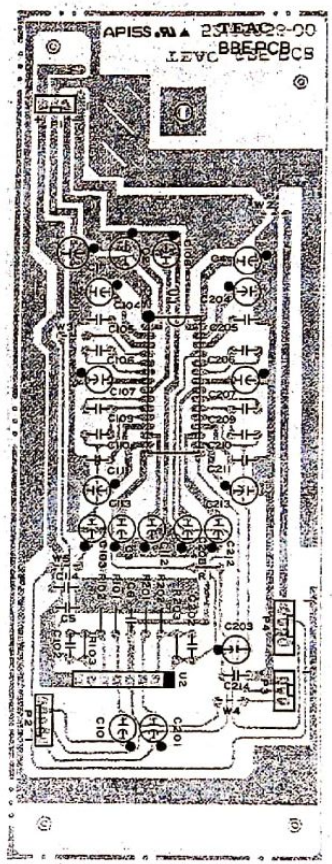
MECHA CONT PCB ASSY



BAL PCB ASSY

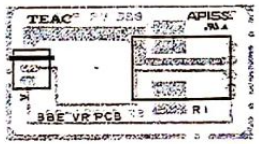


BBE PCB ASSY

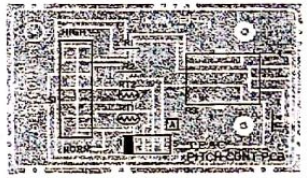


BBE SW PCB ASSY

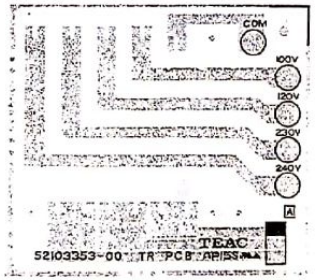
BBE VR PCB ASSY



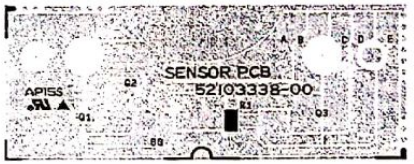
PITCH CONT PCB ASSY



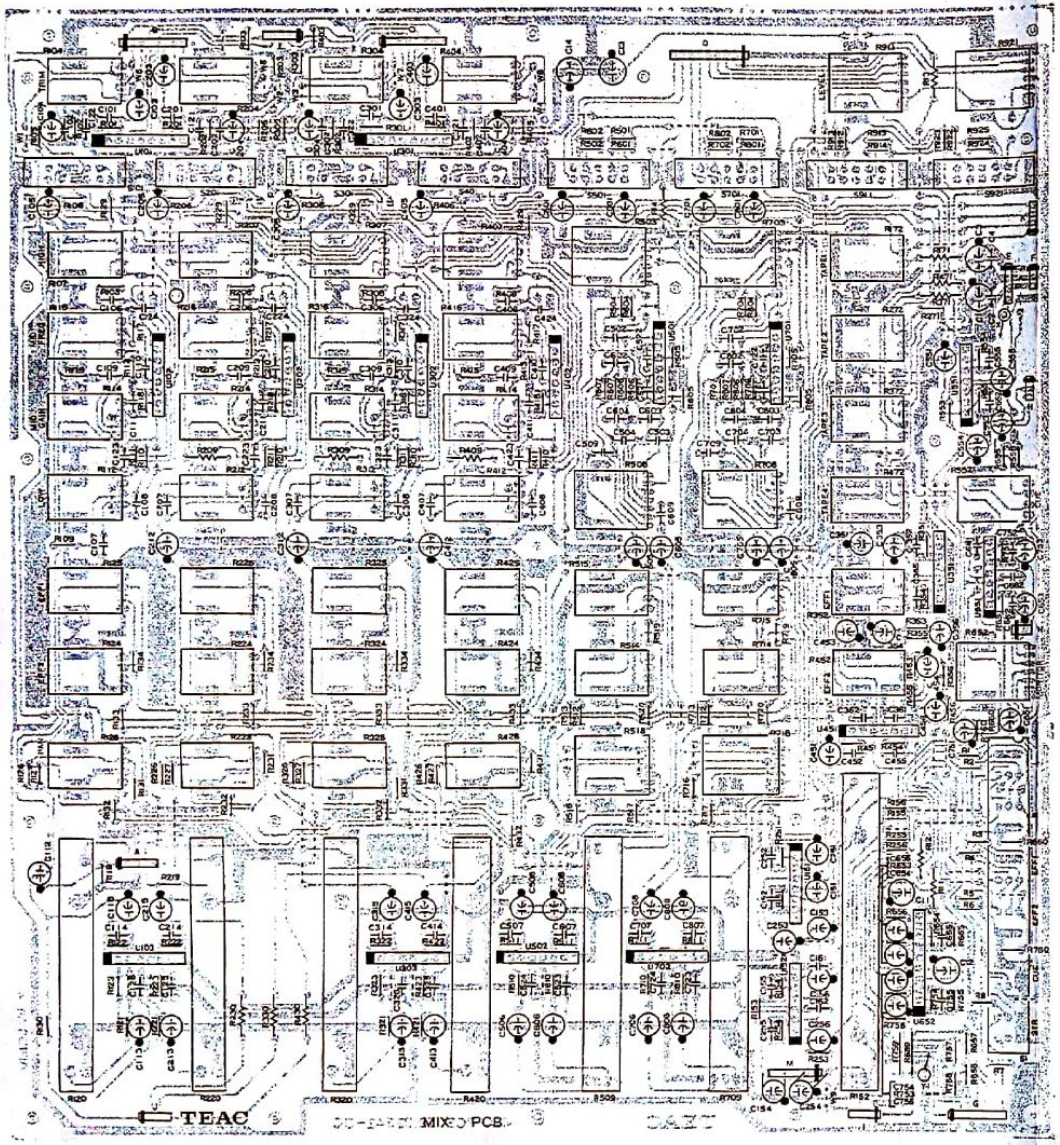
TR PCB



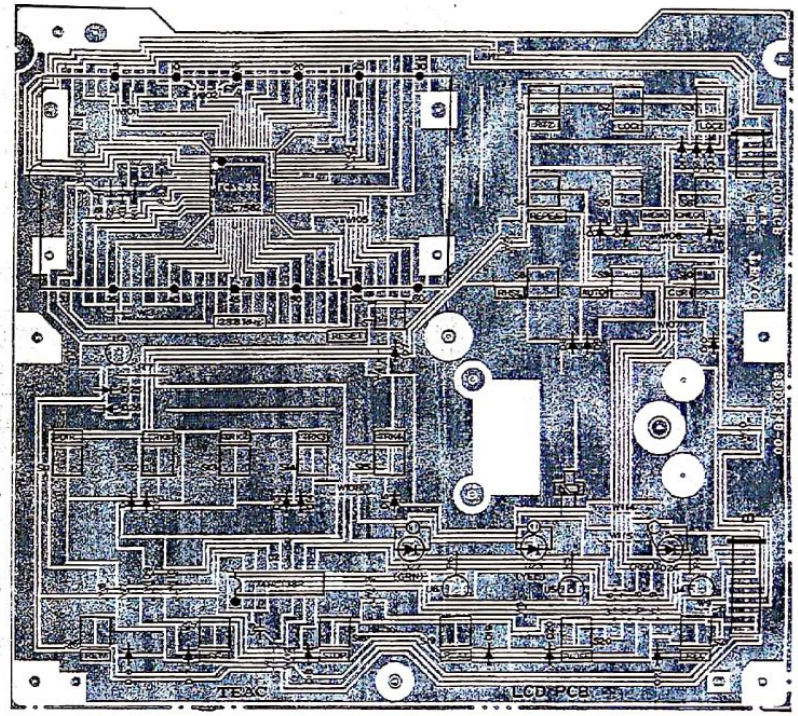
SENSOR PCB ASSY



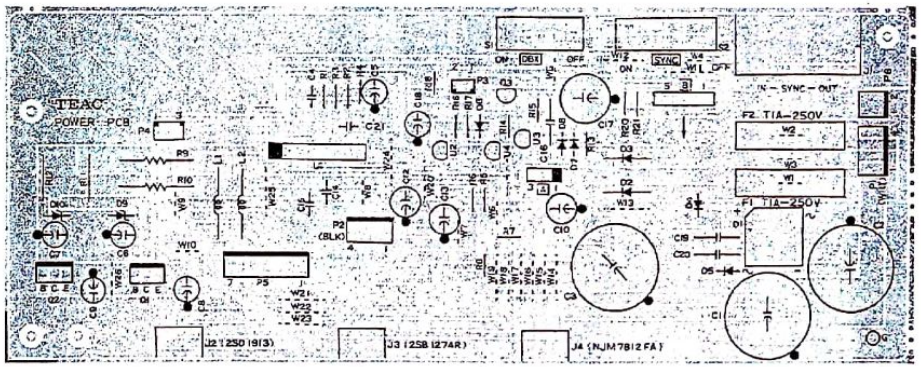
MIX PCB ASSY



LCD PCB ASSY



POWER PCB ASSY



R/P CONT PCB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
	*5200334500	R/P CONT PCB ASSY
	*5210334500	R/P CONT PCB
	5336340100	HOLDER,CABLE 11P P=2
	5555590000	PLATE(A),EARTH
	5730018200	CLIP,COATING CP-2S
CR1	5347022400	OSC.,CERAMIC CST11.00MTW020
D1-8	5224017820	DIODE,MA165P-TA5
D13,14	5224017820	DIODE,MA165P-TA5
D101-401	5224012920	DIODE,1S2473
D102-402	5224017820	DIODE,MA165P-TA5
D103-403	5224012920	DIODE,1S2473
D105-405	5224017820	DIODE,MA165P-TA5
D106-406	5224017820	DIODE,MA165P-TA5
D107-407	5224012800	DIODE,0A90R
D108-408	5224012800	DIODE,0A90R
D109-409	5224572001	DIODE,ZENER RD3.3EL2 FR
D507,607	5224012800	DIODE,0A90R
D508,608	5224012800	DIODE,0A90R
D509,609	5224572001	DIODE,ZENER RD3.3EL2 FR
J1	5330017200	JACK,3 POLE YKB21-5154(GRY)
J2	5330015500	JACK,3 POLE YKB21-5155(RED)
L101-401	5286010200	COIL,CHOKE 36MH
L102-402	5320061400	BIAS ERASE TRANS.,P-ST464
L103-403	5286029400	COIL,CHOKE 10UH LAL04KB
P1	5336251500	PLUG,CONN. B05B-PH-K-R(RED)
P2	5336250000	PLUG,CONN. B10B-PH-K-S(WHT)
P3	5336249300	PLUG,CONN. B03B-PH-K-S(WHT)
P4	5336249500	PLUG,CONN. B05B-PH-K-S(WHT)
P5	5336353500	SOCKET,WIRE 5P P=2
P8	5336255400	PLUG,CONN. B04B-PH-K-K(BLK)
P9	5336251400	PLUG,CONN. B04B-PH-K-R(RED)
P10	5336249400	PLUG,CONN. B04B-PH-K-S(WHT)
P11	5336126800	PLUG,CONN. 8263-0812(WHT)
P12	5336249400	PLUG,CONN. B04B-PH-K-S(WHT)
P101	5336126300	PLUG,CONN. 8263-0312(WHT)
P201	5336135300	PLUG,CONN. 8263-0312(RED)
P301	5336137300	PLUG,CONN. 8263-0312(BLK)
P401	5336145300	PLUG,CONN. 8263-0312(YEL)
Q50	5230780920	TR.,2SC2603F
Q101-401	5231762020	TR.,2SD1450S/T
Q102-402	5231762020	TR.,2SD1450S/T
Q103-403	5231762020	TR.,2SD1450S/T
Q104-404	5230782200	TR.,2SC2002L
Q105-405	5231762020	TR.,2SD1450S/T
R2	5280021300	R.,TRIMMER 10KB
R108-408	5280021200	R.,TRIMMER 6.8KB
R111-411	5280021300	R.,TRIMMER 10KB
R112-412	5280021900	R.,TRIMMER 100KB
R122-422	5280021300	R.,TRIMMER 10KB
R133-433	5280021100	R.,TRIMMER 4.7KB
T50	5320054800	OSC TRANS.
TP1	5336126200	PLUG,CONN. 8263-0212(WHT)
U1	5220827700	IC.,UPD78C12ACW-675
U2,3	5220096100	IC.,DIGI. HD74LS373P
U4	5242131500	R.,ARRAY EXB Z09E103J

R/P CONT PCB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
U5	5242131400	R.,ARRAY EXB Z08E103J
U6	5232257920	TR.,DIGI. UN4212(TA)
U7	5232257920	TR.,DIGI. UN4212(TA)
U8	5232257920	TR.,DIGI. UN4212(TA)
U11	5232257920	TR.,DIGI. UN4212(TA)
U101-401	5220435100	IC.,BA7755A
U102-402	5286023100	COIL,TRAP 85KHZ
U103-403	5220439500	IC.,UPC4570HA
U104-404	5286037700	FILTER,LOW PASS 20D4 20KHZ
U105-405	5292805000	FILTER,LOW PASS 85KHZ
U106-406	5220444000	IC.,NJM4565LD
U107-407	5220445800	IC.,AN7367K
U108-408	5232259320	TR.,DIGI. UN4112(TA)
U109-409	5232257920	TR.,DIGI. UN4212(TA)
U110-410	5232256820	TR.,DIGI. DTB143ES
U111-411	5242128800	R.,ARRAY EXB Z5L045G DBX
U112-412	5242128900	R.,ARRAY EXB Z13L046G DBX
U113,313	5220041100	IC.,DIGITAL BU4066B
U114,314	5220041100	IC.,DIGITAL BU4066B
U115,315	5220041100	IC.,DIGITAL BU4066B
U116,316	5220444000	IC.,NJM4565LD
U117	5232259320	TR.,DIGI. UN4112(TA)
U118-418	5232259320	TR.,DIGI. UN4112(TA)
U119-419	5232257920	TR.,DIGI. UN4212(TA)
U120-420	5232257920	TR.,DIGI. UN4212(TA)
U121-421	5232259320	TR.,DIGI. UN4112(TA)
U122-422	5232257920	TR.,DIGI. UN4212(TA)
U123-423	5232259320	TR.,DIGI. UN4112(TA)
U124-424	5232257920	TR.,DIGI. UN4212(TA)
U125-425	5232259320	TR.,DIGI. UN4112(TA)
U126	5242133100	R.,ARRAY EXB Z05E473J
U127	5242133500	R.,ARRAY EXB Z09E473J
U516	5220444000	IC.,NJM4565LD

MIX PCB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
	*5200334200	MIX PCB ASSY [J]
	*5200334210	MIX PCB ASSY [EXCEPT J]
	*5210334200	MIX PCB
	5730018200	CLIP,COATING CP-2S
	5336339800	HOLDER,CABLE 8P [EXCEPT J]
R11,12	⚠5241274810	R.,INCOMB. 1W 62 OHM FF
R13,14	⚠5183572000	R.,INCOMB. 56 OHM
R104-404	5282023000	VR.,10K(RD) 1S1UVR 11
R107-407	5282023300	VR.,100KB 1S1UVR 11
R112-412	5282023300	VR.,100KB 1S1UVR 11
R114-414	5282024500	VR.,10KB 1S1UVR11
R116-416	5282418900	VR.,200KC X2 1S2UVR11
R120-420	5284017100	VR.,SLIDE 10KA
R124-424	5282023800	VR.,10KA 1S1UVR11
R125-425	5282023800	VR.,10KA 1S1UVR11

[US]:U.S.A. [E]:EUROPE [UK]:U.K. [C]:CANADA [J]:JAPAN
[A]:AUSTRALIA

Parts marked with * require longer delivery time.

MIX PCB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
R128-428	5282023100	VR.,10KB 1S1UVR 11
R152	5284018400	VR.,SLIDE S=60 10K(A)X2
R172-472	5282023800	VR.,10KA 1S1UVR11
R352,452	5282023800	VR.,10KA 1S1UVR11
R503,703	5282419000	VR.,100KBX2 1S2UVR14
R508,708	5282419000	VR.,100KBX2 1S2UVR14
R509,709	5284018300	VR.,SLIDE S=45 10K(A)X2
R514,714	5282023800	VR.,10KA 1S1UVR11
R515,715	5282023800	VR.,10KA 1S1UVR11
R518,718	5282419100	VR.,5K(A,C) 1S2UVR14
R552	5282023800	VR.,10KA 1S1UVR11
R652	5282418500	VR.,10KAX2 1S2UVR14
R911,921	5282418500	VR.,10KAX2 1S2UVR14
S1	5300058700	SW.,PUSH SPEC61
S101-401	5300919200	SW.,SLIDE 2-3
S501,701	5300919200	SW.,SLIDE 2-3
S911,921	5300919200	SW.,SLIDE 2-3
U101,301	5220439500	IC.,UPC4570HA
U102-402	5220444000	IC.,NJM4565LD
U103,303	5220444000	IC.,NJM4565LD
U151,152	5220444000	IC.,NJM4565LD
U351	5220444000	IC.,NJM4565LD
U451	5220444000	IC.,NJM4565LD
U501,701	5220444000	IC.,NJM4565LD
U502,702	5220444000	IC.,NJM4565LD
U551	5220444000	IC.,NJM4565LD
U651	5220444000	IC.,NJM4565LD
U652	5220446000	IC.,LA6515

LCD PCB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
	*5200334800	LCD PCB ASSY
	*5210334800	LCD PCB
	5347022100	METER,LCD
	5801469300	SPACER,LCD
D1-21	5224015020	DIODE,1SS133T-77
D22	5225021600	LED,SLP277B-50
D23	5225021700	LED,SLP477B-50
D24	5225021500	LED,SLP177B-50
D25,26	5224015020	DIODE,1SS133T-77
S1-21	5302110900	SW.,EVQ 215 05R
U1	5220075000	IC.,DIGI. LC7582A
U2	5220055900	IC.,DIGI. TC74HC138AP
U3	5232254820	TR.,DIGI. DTA124ES
U4-6	5232255720	TR.,DIGI. DTC124ES

POWER PCB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
	*5200335400	POWER PCB ASSY [J,US,C]
	*5200335440	POWER PCB ASSY [E,UK,A]
	*5210335400	POWER PCB
	5336339500	HOLDER,CABLE 5P P=2
	5332015800	HOLDER,FUSE [E,UK,A]
C1-3	⚠ 5260466810	C.,ELEC. 3300UF/25V
C19,20	⚠ 5267020620	C.,CERAMIC 0.10UF/25V
D1	⚠ 5228010800	SILICON STACK,S2VB10
D2,3	⚠ 5224017120	DIODE,1SR139-200
D4,5	⚠ 5224017820	DIODE,MA165P-TA5
D6-8	5224017820	DIODE,MA165P-TA5
D9,10	5224574101	DIODE,ZENER RD6.8EL2 FR
F1,2	⚠ 5041140000	FUSE,1A-250V(T) [E,UK,A]
J1	5330514500	JACK,PIN 2P(BLK)
J2-4	5122374000	SOCKET,CONN. 3024-03AH
L1,2	5286029400	COIL,CHOKE 10UH LAL04KB
P1	5336126400	PLUG,CONN. 8263-0412(WHT)
P2	5336137400	PLUG,CONN. 8263-0412(BLK)
P3	5336249200	PLUG,CONN. B02B-PH-K-S(WHT)
P5	5336126700	PLUG,CONN. 8263-0712(WHT)
P6	5336126200	PLUG,CONN. 8263-0212(WHT)
Q1	⚠ 5231762800	TR.,2SD1913R
Q2	⚠ 5230509700	TR.,2SB1274R
Q3	5230012920	TR.,2SA1015GR
R9,10	⚠ 5241282910	R.,INCOMB. 10 OHM 2W J FF
S1	5300917000	SW.,SLIDE 2-2
S2	5300916800	SW.,SLIDE 4-2 SSSU14
U1	5220425800	IC.,M5230LA
U2	5232257920	TR.,DIGITAL UN4212
U3	5232257920	TR.,DIGITAL UN4212
U4	5232257920	TR.,DIGITAL UN4212

POWER SW PCB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
	*5200335500	POWER SW PCB ASSY [J,US,C]
	*5200335540	POWER SW PCB ASSY [E,UK,A]
	*5210335500	POWER SW PCB
	5730007500	COVER,CAPASITOR [E,UK,A]
C1	⚠ 5267703800	SPARK KILLER,4700PF/400V M
P1	5327007200	TERMINAL,2P [E,UK,A]
S1	⚠ 5302108100	SW.,SEESAW SDDTA1-A-2

[US]:U.S.A. [E]:EUROPE [UK]:U.K. [C]:CANADA [J]:JAPAN
[A]:AUSTRALIA

Parts marked with * require longer delivery time.

MECHA CONT PCB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
	*5200334600	MECHA CONT PCB ASSY
	*5210334600	MECHA CONT PCB
	5336340100	HOLDER,CABLE 11P P=2
C1	⚠5262015700	C.,ELEC. 2200UF/16V
C7	⚠5260466710	C.,ELEC. 3300UF/16V
D1	⚠5224017120	DIODE,ISR139-200
D2	5224575001	DIODE,ZENER RD9.1EL2 FR
D3	⚠5224017120	DIODE,ISR139-200
D4	5224574201	DIODE,ZENER RD6.8EL3 FR
D5	5224572001	DIODE,ZENER RD3.3EL2 FR
D6	⚠5224017120	DIODE,ISR139-200
L1	5286027400	COIL,CHOKE 0.22UH LAL04NA
P1	5336255500	PLUG,CONN. B05B-PH-K-K(BLK)
P2	5336126400	PLUG,CONN. 8263-0412(WHT)
P3	5336137400	PLUG,CONN. 8263-0412(BLK)
P4	5336135400	PLUG,CONN. 8263-0412(RED)
P5	5336137300	PLUG,CONN. 8263-0312(BLK)
R1	5280020700	R.,TRIMMER 1KB
R2	5280020700	R.,TRIMMER 1KB
R5	⚠5241270510	R.,INCOMB. 1 OHM 1W J FF
R6	⚠5241283710	R.,INCOMB. 22 OHM 2W J FF
R7	⚠5241282910	R.,INCOMB. 10 OHM 2W J FF
U1	⚠5220430300	IC.,L78MR05
U2	5220427800	IC.,BA6209
U3	5220427800	IC.,BA6209
U4	5220426300	IC.,BA6993
U5	5232259320	TR.,DIGI. UN4112(TA)
U6	5232256820	TR.,DIGI. DTB143ES
U7	5232257920	TR.,DIGI. UN4212(TA)
U8	5232257920	TR.,DIGI. UN4212(TA)

JACK-A PCB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
	*5200335000	JACK-A PCB ASSY [J]
	*5200335010	JACK-A PCB ASSY [EXCEPT J]
	5210335001	JACK-A PCB
J1-4	5330016900	JACK,YKB21-5058(GRY) [J]
	5330017000	JACK,(GRY) [EXCEPT J]
J5-8	5330016900	JACK,3 POLE YKB21-5058(GRY)
P1	5336287900	PLUG,CONN. S9B-PH-K-S(WHT)
P2	5336291500	PLUG,CONN. (RED) [J]
P3	5336353500	SOCKET,WIRE 5P P=2

JACK-B PCB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
	*5200335100	JACK-B PCB ASSY
	*5210335100	JACK-B PCB
	5336339500	HOLDER,CABLE 5P P=2
J1-4	5330016900	JACK,YKB21-5058(GRY)

JACK-C PCB ASSY

REF.NO.	PARTS NO.	DESCRIPTION
	*5200335200	JACK-C PCB ASSY
	*5210335200	JACK-C PCB
J1,2	5330017100	JACK,YKB21-5216(GRY)
J3,4	5330017200	JACK,YKB21-5154(GRY)
J5,6	5330514500	JACK,PIN 2P(BLK)
J7	5330514400	JACK,PIN 1P(BLK)
J8-10	5330514500	JACK,PIN 2P(BLK)
P1	5336249500	PLUG,CONN. B05B-PH-K-S(WHT)
P2	5336249300	PLUG,CONN. B03B-PH-K-S(WHT)
P3	5336249400	PLUG,CONN. B04B-PH-K-S(WHT)
P4	5336249700	PLUG,CONN. B07B-PH-K-S(WHT)
P5	5336249200	PLUG,CONNECT.WHT PD-450
Q1-11	5231762020	TR.,2SD1450S/T

BAL PCB ASSY [EXCEPT J]

REF.NO.	PARTS NO.	DESCRIPTION
	*5200334300	BAL PCB ASSY
	*5210334300	BAL PCB
	5336339800	HOLDER,CABLE 8P P=2
	5730018200	CLIP,COATING CP-2S
P1	5336249300	PLUG,CONN. B03B-PH-K-S(WHT)
P2	5336249400	PLUG,CONN. B04B-PH-K-S(WHT)
P3	5336249500	PLUG,CONN. B05B-PH-K-S(WHT)
P4,5	5336249600	PLUG,CONN. B06B-PH-K-S(WHT)
Q101-401	5145119000	TR.,2SC-1844F
Q102-402	5145119000	TR.,2SC-1844F
R1 R2	⚠5183572000	R.,INCOMB. 56 OHM

BBE SW PCB ASSY [J]

REF.NO.	PARTS NO.	DESCRIPTION
	*5200335900	BBE SW PCB ASSY
	5210335900	BBE SW PCB
S1	5300058800	SW.,PUSH SPEC12

BBE PCB ASSY [J]

REF.NO.	PARTS NO.	DESCRIPTION
	*5200335800	BBE PCB ASSY
	*5210335800	BBE PCB
	5730018200	CLIP,COATING CP-2S
P1	5336249300	PLUG,CONN. B03B-PH-K-S(WHT)
P2	5336255500	PLUG,CONN. B05B-PH-K-K(BLK)
P3	5336249300	PLUG,CONN. B03B-PH-K-S(WHT)
P4	5336249400	PLUG,CONN. B04B-PH-K-S(WHT)
U1	5220447700	IC.,XRC5451
U2	5220444000	IC.,NJM4565LD

[US]:U.S.A. [E]:EUROPE [UK]:U.K. [C]:CANADA [J]:JAPAN
[A]:AUSTRALIA

Parts marked with * require longer delivery time.

BBE VR PCB ASSY [J]

REF NO.	PARTS NO.	DESCRIPTION
	*5200336100	BBE VR PCB ASSY
	*5210336100	BBE VR PCB
R1	5282024800	VR.,5KB 1S1UVR11

PITCH CONT PCB ASSY

REF NO.	PARTS NO.	DESCRIPTION
	*5200334900	PITCH CONT PCB ASSY
	*5210334901	PITCH CONT PCB
R3	5282024600	VR.,1.5KB 1S1UVR11
RT1	5228015400	THERMISTOR,SDT-02 20 OHM
RT2	5228015700	THERMISTOR,SDT-09 90 OHM
S1	5300918000	SW.,SLIDE SSSU04-2

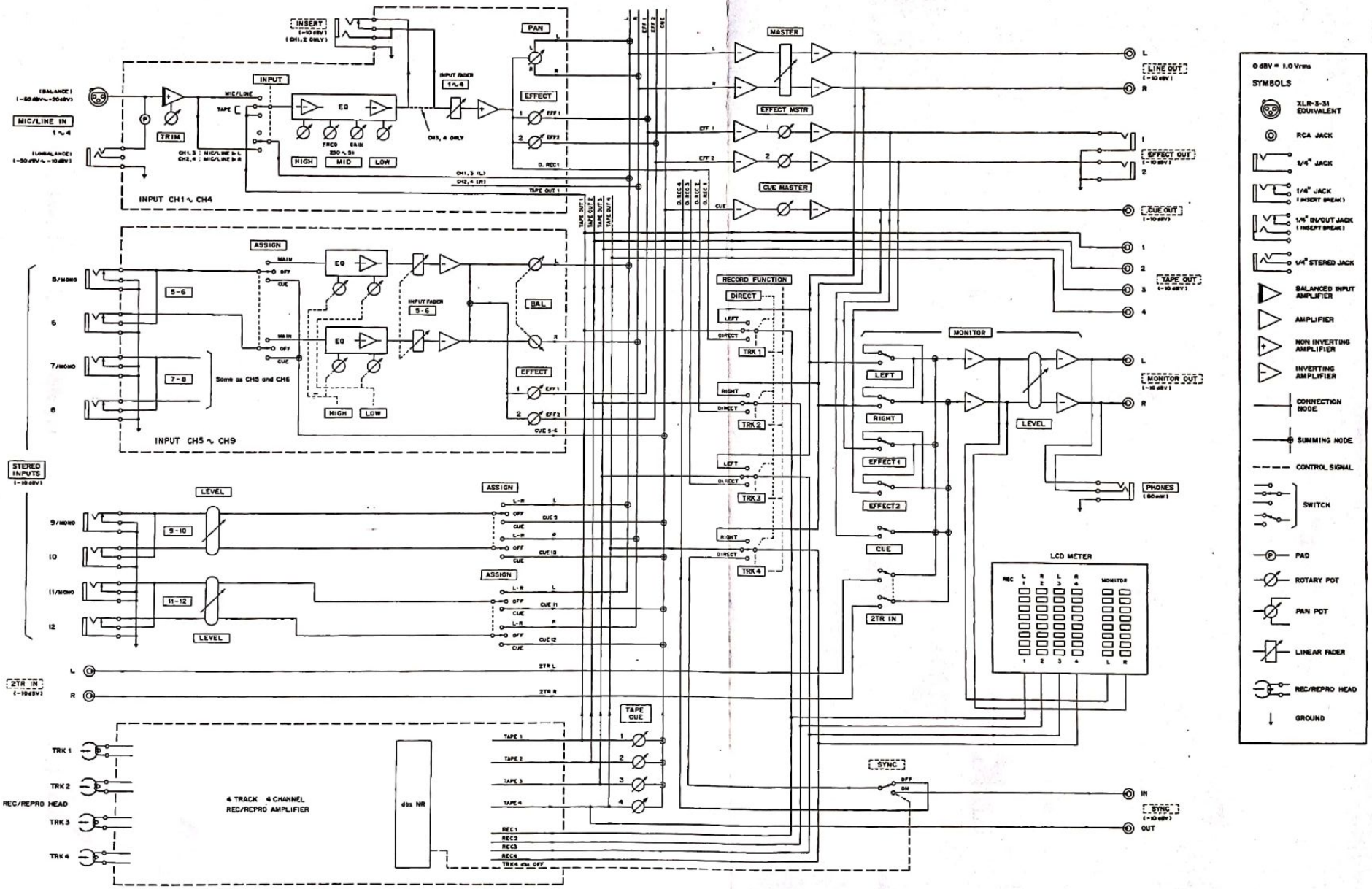
SENSOR PCB ASSY

REF NO.	PARTS NO.	DESCRIPTION
	*5200333800	SENSOR PCB ASSY
Q2	5228017200	REFLECTOR,PHOTO NJL5161KF1-B
Q3	5228017200	REFLECTOR,PHOTO NJL5161KF1-B
R1	5240027220	R.,CARBON 390 OHM R20 T.

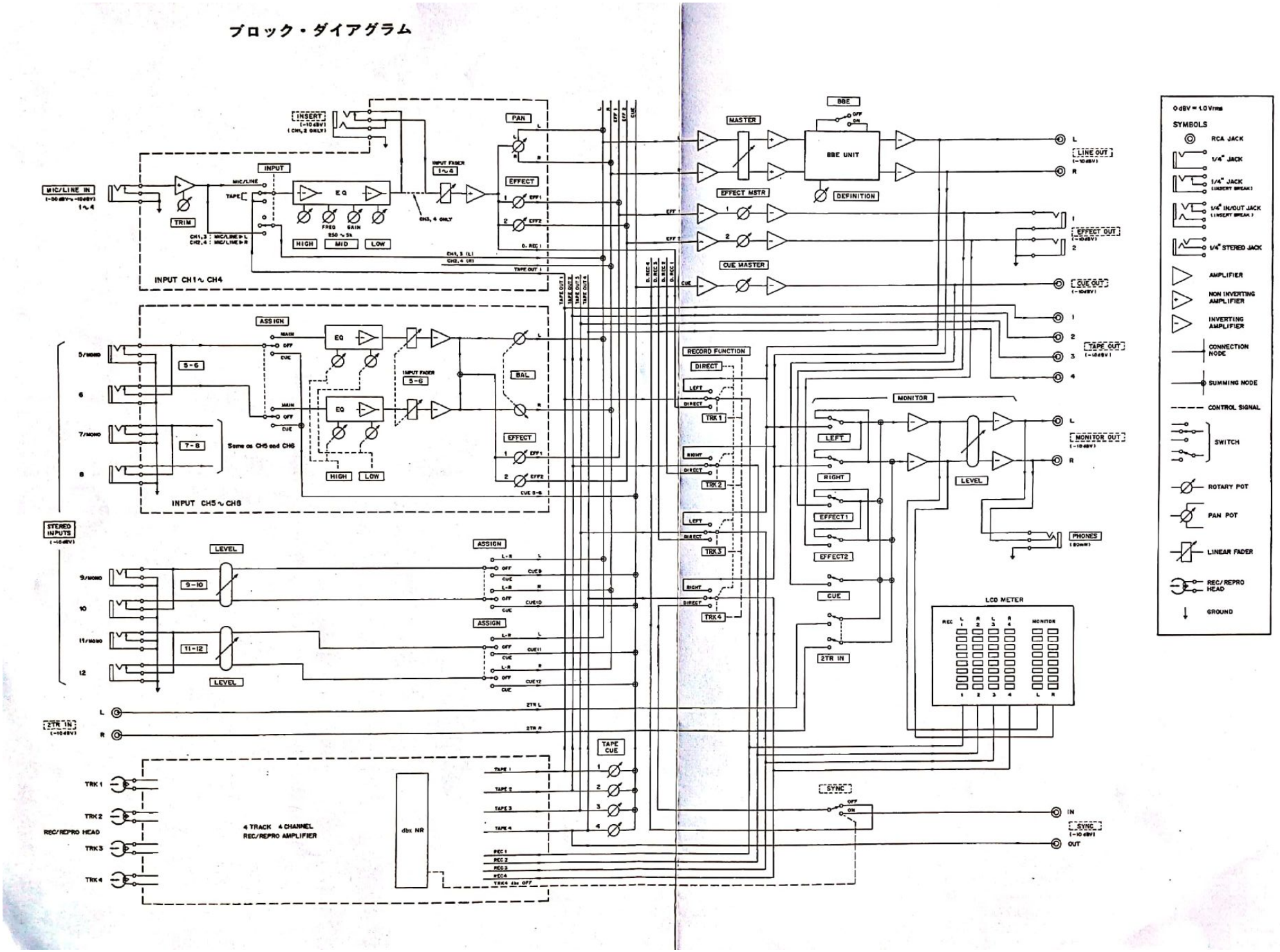
[US]:U.S.A. [E]:EUROPE [UK]:U.K. [C]:CANADA [J]:JAPAN
[A]:AUSTRALIA

Parts marked with * require longer delivery time.

9. BLOCK DIAGRAM (Export Models)

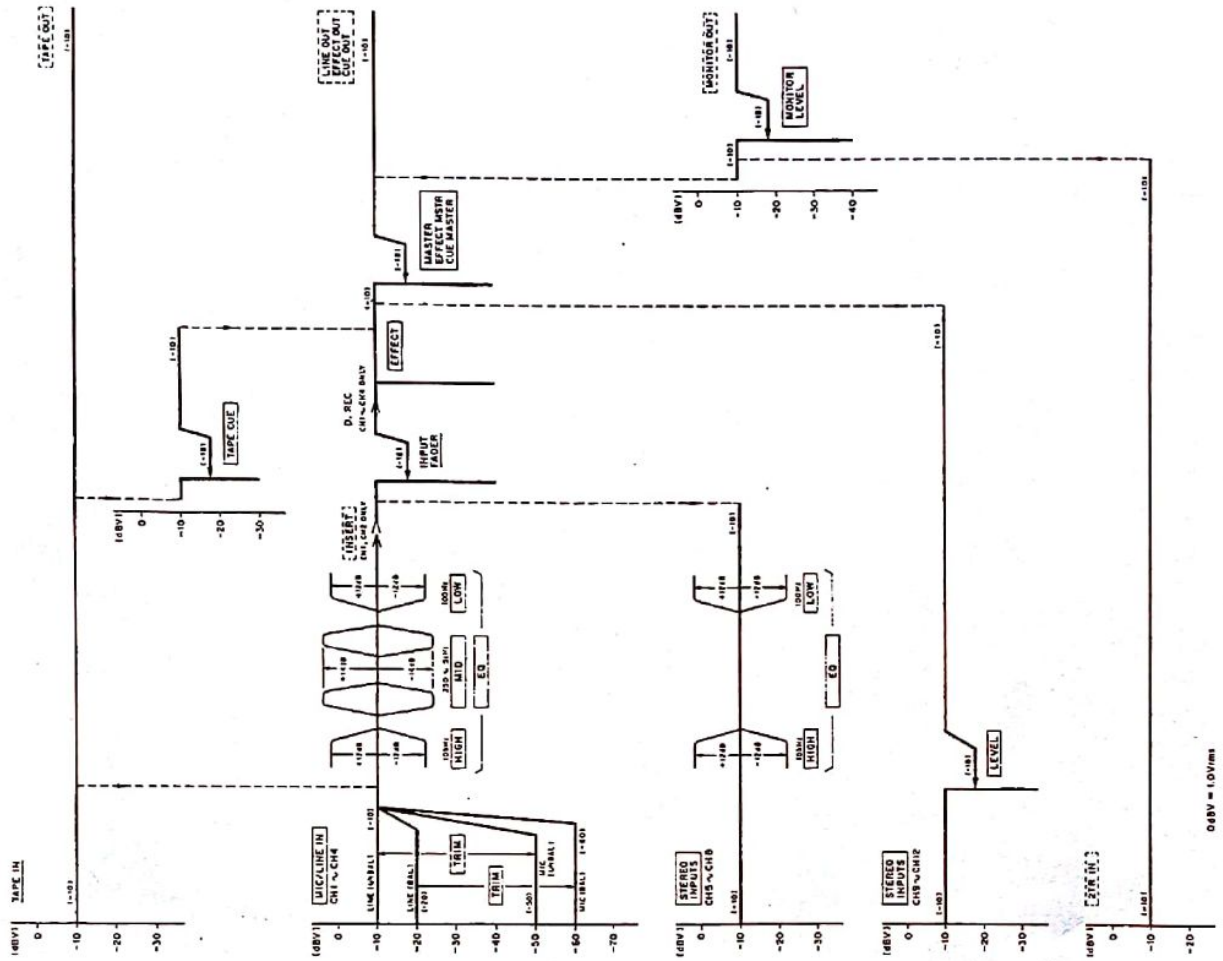


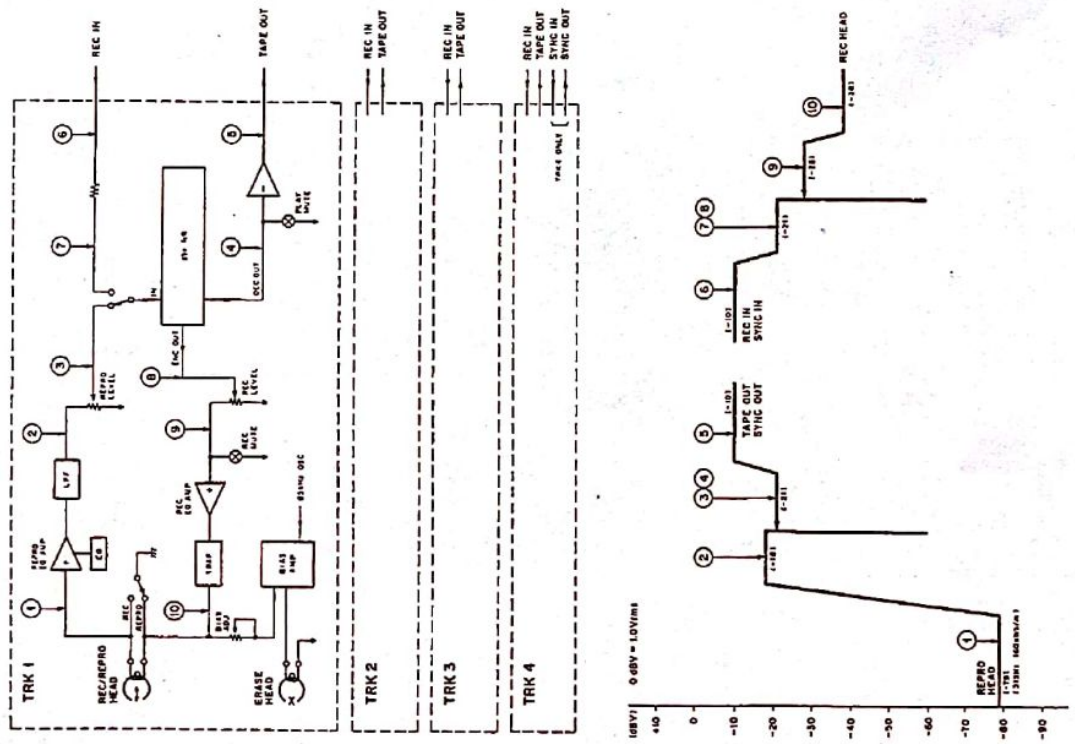
ブロック・ダイアグラム



10. LEVEL DIAGRAM

レベル・ダイアグラム



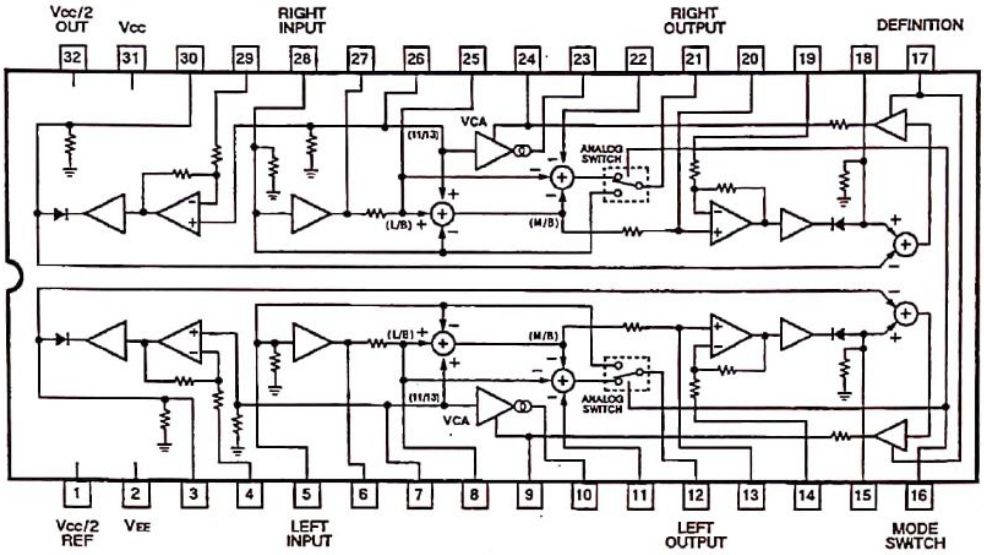


11. IC BLOCK DIAGRAMS

ICブロック・ダイアグラム

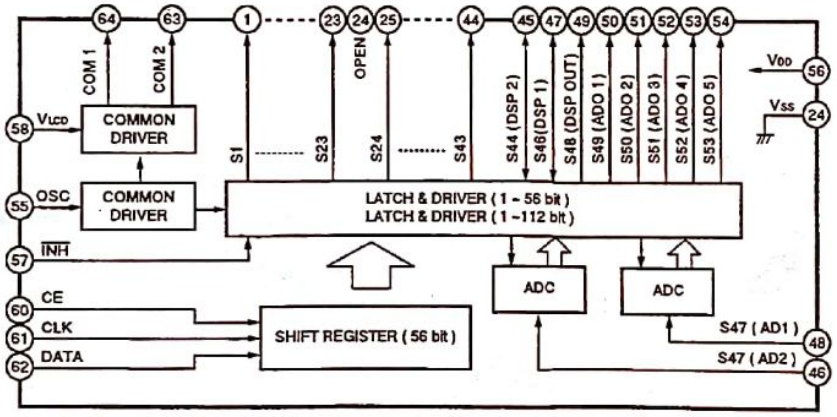
XRC5451

HIGH PERFORMANCE STEREO BBE



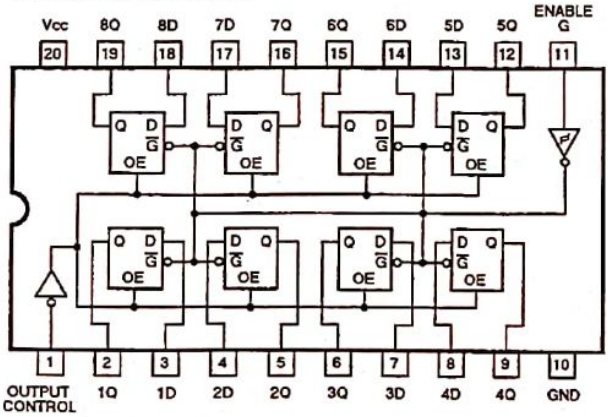
LC7582A

LCD DISPLAY DRIVER



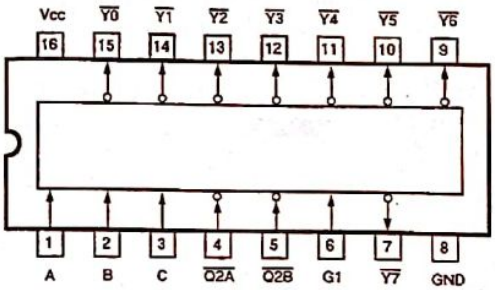
HD74LS373P

OCTAL D-TYPE TRANSPARENT LATCHES WITH 3-STATE OUTPUT



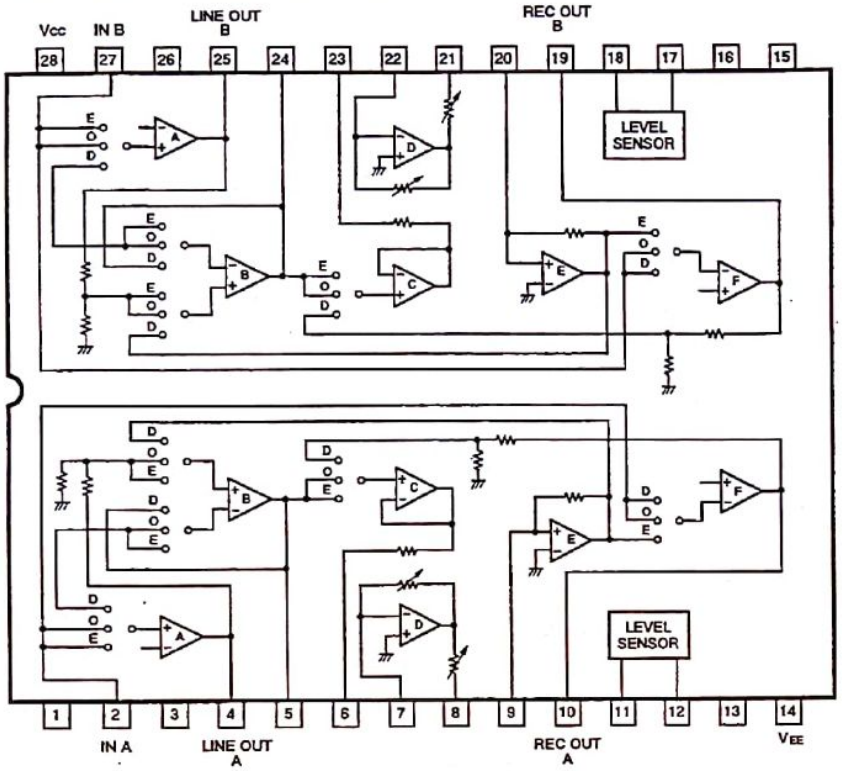
HD74HC138P

3-TO-8 LINE DECODER



AN7367K

DUAL dbx NOISE REDUCTION PROCESSOR

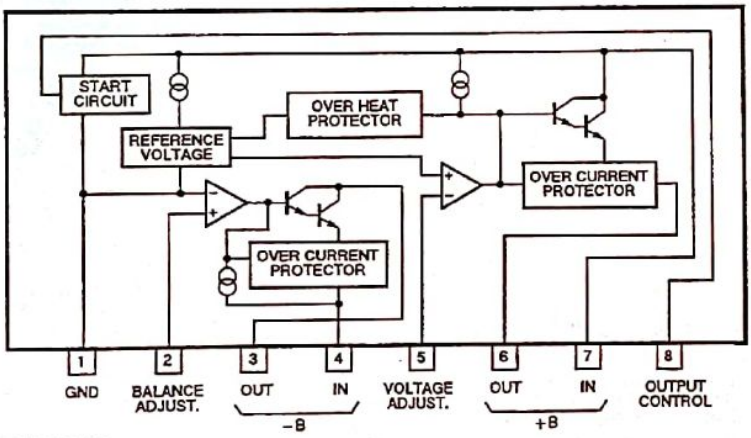


PIN FUNCTIONS

1	GND
2	Ach REC/PLAY SIGNAL INPUT
3	Ach EMPHASIS
4	Ach LINE AMP OUTPUT
5	Ach EMPHASIS AMP OUTPUT
6	Ach BUFFER OUTPUT
7	Ach CCA INPUT
8	Ach CCA OUTPUT
9	Ach CCA AMP INPUT
10	Ach REC OUT OUTPUT
11	Ach LEVEL SENSOR INPUT
12	Ach TIMING CAPACITOR
13	TIMING CURRENT ADJUSTMENT
14	− VEE
15	dbx ON/OFF SELECT
16	ENCODE/DECODE SELECT
17	Bch TIMING CAPACITOR
18	Bch LEVEL SENSOR INPUT
19	Bch REC OUT OUTPUT
20	Bch CCA AMP INPUT
21	Bch CCA OUTPUT
22	Bch CCA INPUT
23	Bch BUFFER OUTPUT
24	Bch EMPHASIS AMP OUTPUT
25	Bch LINE AMP OUTPUT
26	Bch EMPHASIS
27	Bch REC/PLAY SIGNAL INPUT
28	+Vcc

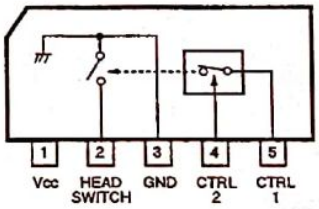
M5230LA

VOLTAGE REGULATOR



BA7755A

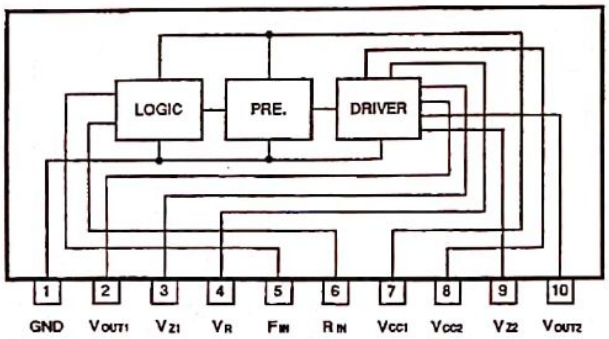
AUDIO HEAD SWITCHER



CTRL 1	CTRL 2	HEAD SW
H	L	ON
	H	OFF

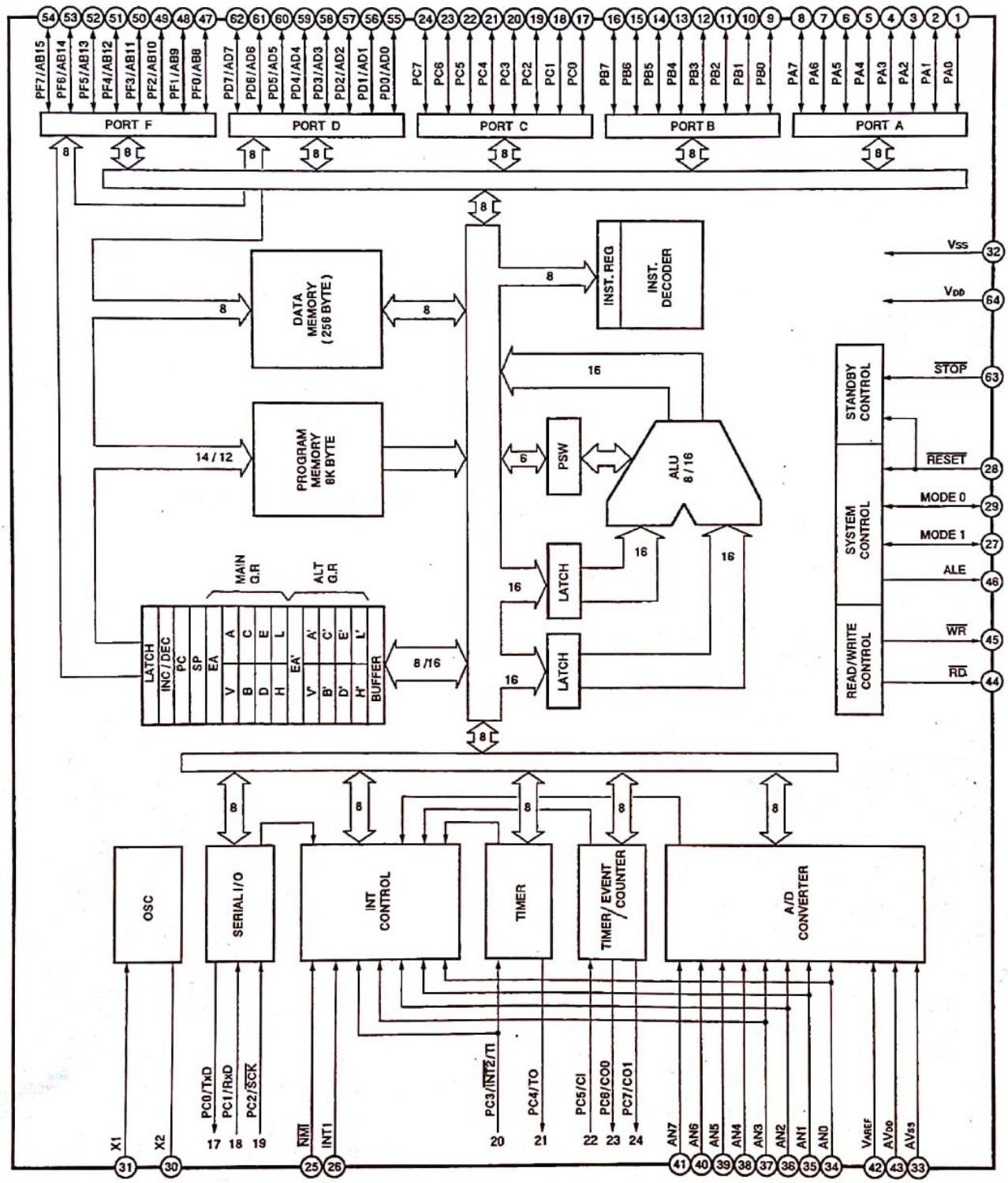
BA6209

MOTOR INVERTING IC

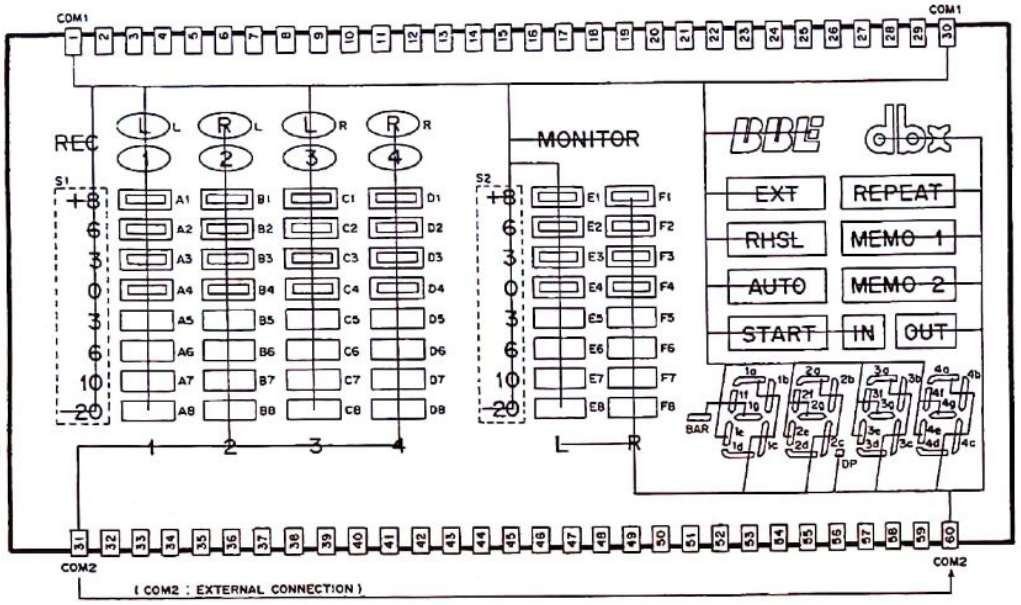


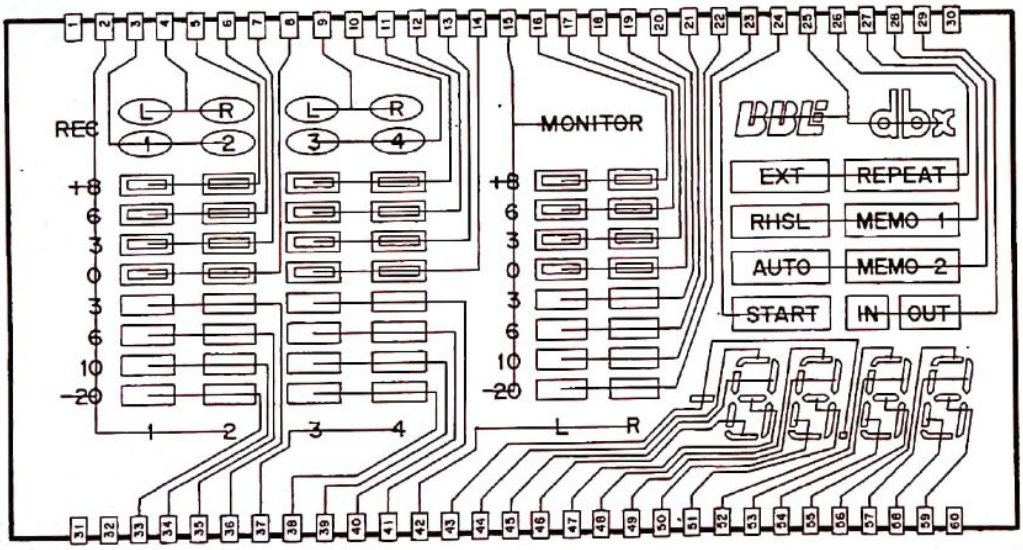
FIN	RIN	VOUT1	VOUT2
H	H	L	L
L	H	L	H
H	L	H	L
L	L	L	L

µPD78C12ACW-675



LCD METER





Pin	COM 1	COM 2
1	COM	—
2	REC S1 (+8~-20)	1, 2
3	①	②
4	Ⓛ L	Ⓡ L
5	A1	B1
6	A2	B2
7	A3	B3
8	A4	B4
9	Ⓛ R	Ⓡ R
10	③	④
11	C1	D1
12	C2	D2
13	C3	D3
14	C4	D4
15	MONITOR S2 (+8~-20)	—
16	E1	F1
17	E2	F2
18	E3	F3
19	E4	F4
20	E5	F5
21	E6	F6
22	E7	F7
23	E8	F8
24	START	—
25	BBE	dbx
26	EXT	REPEAT
27	RHSL	MEMO 1
28	AUTO	MEMO 2
29	IN	OUT
30	COM	—
31	—	COM
32	—	—
33	A8	B8
34	A7	B7
35	A6	B6
36	A5	B5
37	—	3, 4
38	C8	D8
39	C7	D7
40	C6	D6
41	C5	D5
42	—	L, R
43	BAR	DP
44	—	1a
45	1f	1b
46	1e	1d
47	1g	1c
48	—	2a
49	2f	2b
50	2e	2d
51	2g	2c
52	—	3a
53	3f	3b
54	3e	3d
55	3g	3c
56	—	4a
57	4f	4b
58	4e	4d
59	4g	4c
60	—	COM

464 PORTASTUDIO

TASCAM
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