
Service Manual

Model

XR-5

MULTITRACKER

Fostex®



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER(OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

CAUTION:

TO PREVENT ELECTRIC SHOCK, MATCH
WIDE BLADE OF PLUG TO WIDE SLOT,
FULLY INSERT.

ATTENTION:

POUR ÉVITER LES CHOCs ÉLECTRIQUES,
INTRODUIRE LA LAME LA PLUS LARGE
DE LA FICHE DANS LA BORNE CORRE-
SPONDANTE DE LA PRISE ET POUSSER
JUSQU'AU FOND.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

"WARNING"

"TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK,
DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOIS-
TURE."

SAFETY INSTRUCTIONS

1. Read Instructions — All the safety and operating instructions should be read before the appliance is operated.
2. Retain Instructions — The safety and operating instructions should be retained for future reference.
3. Heed Warnings — All warnings on the appliance and in the operating instructions should be adhered to.
4. Follow Instructions — All operating and use instructions should be followed.
5. Water and Moisture — The appliance should not be used near water — for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, and the like.
6. Carts and Stands — The appliance should be used only with a cart or stand that is recommended by the manufacturer.
7. Wall or Ceiling Mounting — The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
8. Ventilation — The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
9. Heat — The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
10. Power Sources — The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
11. Grounding or Polarization — The precautions that should be taken so that the grounding or polarization means of an appliance is not defeated.
12. Power Cord Protection — Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
13. Cleaning — The appliance should be cleaned only as recommended by the manufacturer.
14. Nonuse Periods — The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
15. Object and Liquid Entry — Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
16. Damage Requiring Service — The appliance should be serviced by qualified service personnel when:
 - A. The power supply cord or the plug has been damaged; or
 - B. Objects have fallen, or liquid has been spilled into the appliance; or
 - C. The appliance has been exposed to rain; or
 - D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
 - E. The appliance has been dropped, or the enclosure damaged.
17. Servicing — The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.



An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

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NOTES

- * Adjustment procedures are given in this manual which also includes a Parts List and schematic diagrams to assist the service technician in maintaining the Model XR-5.
Please feel free to contact the nearest Fostex Dealer and Distributor.

- * The following accessory is supplied with XR-5 as the standard accessory.

Owner's manual: 1 copy (P/N 8288342000 for domestic model)
(P/N 8288341100 for export model)

△ AC Adaptor AD-12A 1 pc (P/N 8270727003 USA/CND)
(P/N 8270727006 EUR)
(P/N 8270727007 UK)
(P/N 8270727010 JPN)

CAUTION

△ Parts marked with this sign are safety critical components. They must always be replaced with identical components. Refer to the Fostex Parts List and ensure exact replacement.

1. SPECIFICATIONS

Mixer section

INPUT (x 4)

INPUT 1,2: PHONE jack

| | |
|-------------------|--|
| MIC impedance | Less than 10k Ω |
| Input impedance | 20k Ω |
| Rated input level | HIGH -10 dBV (0.3V) MID -30 dBV (30mV) LOW -50 dBV (3mV) |

INPUT 3, 4: PHONE jack

| | |
|-------------------|----------------|
| Input impedance | 10k Ω |
| Rated input level | -10 dBV (0.3V) |

AUX RTN 1, 2 (L, R): PHONE jack

| | |
|-------------------|----------------|
| Input impedance | 20k Ω |
| Rated input level | -20 dBV (0.1V) |

INSERT 1, 2: STEREO PHONE jack

SEND (tip)

| | |
|-----------------------|------------------------|
| Output load impedance | 10k Ω or higher |
| Rated output level | -10 dBV (0.3V) |

RETURN (ring)

| | |
|-------------------|----------------|
| Input impedance | 20k Ω |
| Rated input level | -10 dBV (0.3V) |

STEREO OUT (L, R): PHONE jack

| | |
|-----------------------|------------------------|
| Output load impedance | 10k Ω or higher |
| Rated input level | -10 dBV (0.3V) |

AUX SEND 1, 2: PHONE jack

| | |
|-----------------------|------------------------|
| Output load impedance | 10k Ω or higher |
| Rated output level | -10 dBV (0.3V) |

Foldback (FB): RCA pin jack

| | |
|-----------------------|------------------------|
| Output load impedance | 10k Ω or higher |
| Rated output level | -10 dBV (0.3V) |

NON OUT L, R: PHONE jack

| | |
|-----------------------|------------------------|
| Output load impedance | 10k Ω or higher |
| Rated output level | -10 dBV (0.3V) |

TAPE OUT 1 - 4/SYNC: RCA pin jack

| | |
|-----------------------|------------------------|
| Output load impedance | 10k Ω or higher |
| Rated output level | -10 dBV (0.3V) |

PHONES: STEREO PHONE jack

| | |
|-----------------------|-------------|
| Output load impedance | 40 Ω |
| Rated output level | 20mW |

Equalizer

| | |
|------|-------------------------------|
| HIGH | 10kHz \pm 10 dB (shelving) |
| LOW | 100 Hz \pm 10 dB (shelving) |

| | |
|--------------------------------|--|
| S/N | |
| MIC | 68dB (IHF-A) |
| LINE | 75dB (IHF-A) |
| Frequency response | 20Hz ~ 20kHz |
| Crosstalk | 60dB (1kHz) |
| Distortion | Less than 0.05% |
| Recorder section | |
| Recording tape | C-60, C-90 (TYPE II/HIGH (CrO ₂) position) TDK SA, MAXELL XL II equivalent |
| Recording track | 4 track one way recording (4 channel simultaneous recording) |
| Noise reduction | *Dolby B NR (internal switchable on/off) |
| Tape speed | 9.5 cm/s |
| Wow flutter | ±0.25% WTD, PEAK (IEC/ANSI) |
| Fast wind time | 120 seconds (C-60 tape) |
| Pitch control | ± 12% or higher |
| Recording time | 22.5 minutes (C-90, 9.5cm/s) |
| Frequency response | 40Hz ~ 12.5kHz ± 3dB |
| S/N | 55dB (IHF-A) |
| Crosstalk | 50dB (1kHz) |
| Distortion | Less than 2.0% (1kHz, 0dB) |
| Head | 4-channel recording/playback (Hard permalloy) 4-channel erase (Ferrite) |
| General | |
| Power supply/power consumption | 120VAC 60Hz 12W 230VAC 50/60Hz 12W 240VAC 50Hz 12W |
| Weight | 2.6kg |
| Dimensions | 405(W) × 321(D) × 105(H) |

Specifications and appearance of this product subject to change without notice.

*Dolby noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.

Dolby and the double-D symbol are trademarks of Dolby Laboratories licensing corporation.

2. CONTROLS, INDICATORS & CONNECTORS

CONTROL PANEL SECTION

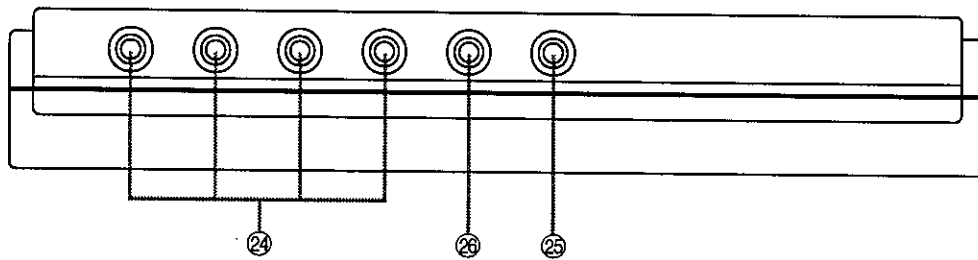
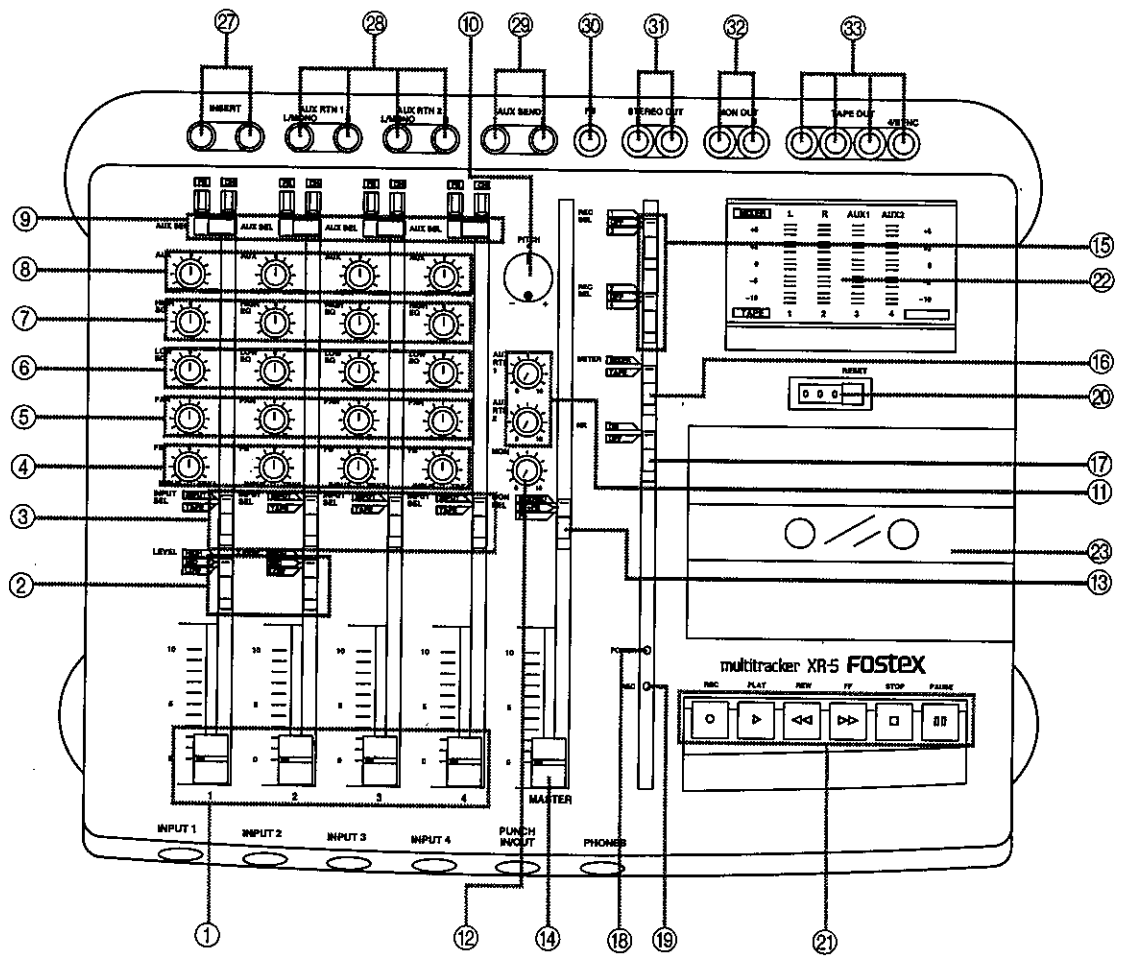
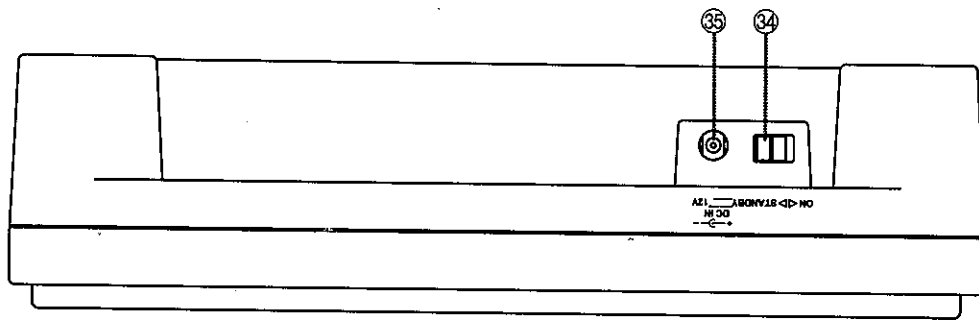
1. INPUT FADER
2. LEVEL SWITCH
3. CHANNEL SELECT SWITCH
4. FOLDBACK LEVEL CONTROL
5. PANPOT
6. LOW EQUALIZER
7. HIGH EQUALIZER
8. AUX SEND LEVEL CONTROL
9. AUX SEND SELECT SWITCH
10. PITCH CONTROL
11. ALX RETURN LEVEL CONTROL
12. MONITOR LEVEL CONTROL
13. MONITOR SELECT SWITCH
14. MASTER FADER
15. RECORD TRACK SELECT SWITCH
16. METER SELECT SWITCH
17. DOLBY B NR SWITCH
18. POWER INDICATOR
19. RECORDING INDICATOR
20. TAPE COUNTER/RESET BUTTON
21. TRANSPORT CONTROL SECTION
22. METER DISPLAY
23. DECK TRANSPORT

FRONT PANEL

24. INPUT JACK
25. HEADPHONE JACK
26. PUNCH IN/OUT JACK

REAR PANEL

27. INSERT JACK
28. AUX RETURN JACK
29. AUX SEND JACK
30. FOLDBACK JACK
31. STEREO OUT JACK
32. MONITOR OUT JACK
33. TAPE OUT JACK
34. POWER SWITCH
35. AC ADAPTOR CONNECTOR



3. MAINTENANCE

3.1 ROUTINE MAINTENANCE

3.1.1 CLEANING

1) Head

With constant use, the head surface becomes soiled with magnetic particles from the tape, dirt and dust. Under such conditions, the tape will not always be in smooth contact with the head and thus result in poor performance.

Less output in the high region and dropout (some parts of the sound not being reproduced) are typical symptoms. It is therefore recommended to clean the heads periodically before recording and playback to avoid such troubles.

2) Capstan and pinch roller

Build-up of magnetic particles and dust on these parts will cause increase of wow, flutter and wrapping of tape on the capstan. Thus, these parts must also be kept clean.

Cleaning is done with cotton buds moistened with fluids prescribed or recommended for tape recorders and especially the heads. Never use lacquer thinners, acetone or other organic solvents.

3.1.2 DEMAGNETIZING

The Rec/Play head becomes magnetized by extended use or when the head is touched with a magnetized object. As a result, frequency response (especially in the high region) will deteriorate, noise level increases, and in some cases may transfer noise to valuable prerecorded tapes. For this reason, do not touch the head with magnetized screwdrivers and scissors or allow DC current to flow through the head winding such as when testing continuity with a circuit tester. Should the head become magnetized, demagnetize it with a head eraser designed for this purpose.

3.1.3 DEMAGNETIZING PROCEDURE

- 1) After turning off power to the Model XR-5, open the cassette door and if a cassette is loaded, remove it and place far away from the deck.
- 2) Switch on the head eraser while holding it about one meter away from the Model XR-5, slowly move the eraser tip to the head and slowly wave the tip up and down several times close to the head surface.
- 3) On completing the above procedure, slowly draw the demagnetizer away from the head and switch off the demagnetizer when it is more than one meter away from the head. As demagnetism in the head cannot be seen, unlike a soiled head, routine demagnetizing is necessary. It is recommended to do so at the same time the head is cleaned.

3.2 ADJUSTING TOOLS AND EQUIPMENT

The following tools and equipment are required for adjusting the Model XR-5.

1) Head height and tape contact

| | |
|---------------|-----------------------|
| Adjusting jig | Fostex P/N 8286001000 |
|---------------|-----------------------|

2) Torque meter

| | |
|-----------------------|--|
| Cassette torque meter | 0 ~ 200 g-cm (0 ~ 2.8 Oz-In.) SONY TW-2231, Fostex P/N 8286 0080 00 |
|-----------------------|--|

| | |
|-------------------------|---|
| Cassette torque meter | 0 ~ 100 g-cm (0 ~ 1.4 Oz-In.) SONY TW-2111, Fostex P/N 8286 0090 00 |
| 3) Mirror type cassette | Fostex P/N 8286 0020 00, MC112C |
| 4) Test tapes | |
| Flutter/speed (3kHz) | A-BEX, TCC-211 Also 3150 Hz test tape for Wow/Flutter measurement is recommended. |
| Ref. playback level | A-BEX, TCW-231 |
| Frequency response | A-BEX, TCW-284F |
| 5) Blank tape | Maxell XL-II or TDK SA |
| 6) Audio oscillator | General type |
| 7) Frequency counter | General type |
| 8) Bandpass filter | General type |
| 9) AC voltmeter | Stereo type is recommended. |
| 10) Oscilloscope | General type |
| 11) Wow & flutter meter | General type |
| 12) Distortion meter | General type |
| 13) Frequency Counter | General type |

3.3 THE TAPE TRANSPORT MECHANICAL DATA

3.3.1 REEL TORQUE

| | | |
|------------------|---------|---------------|
| 1) Play mode: | Supply | 1.5 ~ 6 g-cm |
| | Take up | 20 ~ 70 g-cm |
| 2) FWD/REW mode: | FF | 60 ~ 120 g-cm |
| | RWD | 60 ~ 120 g-cm |

3.3.2 PINCH ROLLER PRESSURE: pull force 300 ~ 500 g

3.4 TAPE TRAVEL CHECK AND ADJUSTMENT

Using the mirror type cassette, check to see that tape is running stable between the Erase and Rec/Play heads tape guides without weaving.

If tape is not running stable between the guides, erasure and frequency response will be affected or the tape will be damaged by curling. It then becomes necessary to check the head guide height, perpendicularity of the head face, and alignment of the pinch roller in relation to the capstan.

In addition to the mirror type cassette, the Head Height and Tape Contact Jig is required.

To check the head guide height, the cassette tape is removed and the above jig is placed on the head mount base plate.

While firmly seating the jig on the base plate surface, slide the jig past each head guide to see that it goes through without hitting them. Also check perpendicularity of each head face, using the rear check bar of the jig. If the guide is low, insert the required amount of 0.1mm or 0.2mm thick washers under the head mounting legs, or vice versa, if it is high.

NOTE: Always adjust the head azimuth and phase when the head height is adjusted.

3.5 CHECK AND ADJUSTING OF HEAD AZIMUTH AND PHASE

- 1) Playback the A-BEX TCW-284F test tape.
- 2) Connect a AC volt meter to TAPE OUT 1, roughly adjust azimuth of the R/P head by 400Hz signal, then accurately adjust by the 10kHz signal to get a maximum output level.
- 3) At the same time, check the phase between TAPE OUT 1 and TAPE OUT 4. The two outputs are respectively applied to the vertical and horizontal inputs of an oscilloscope and the R/P head should be adjusted so that the phase difference observed by the lissajous pattern is less than 90° at 6.3kHz.

3.6 TAPE SPEED CHECK AND ADJUSTMENT

- 1) Connect a Frequency Counter or Wow/Flutter meter with a frequency counter to the TAPE OUT 2 or 3.
- 2) Playback the A-BEX TCW-211 WOW/FLUTTER & SPEED test tape with the PITCH CONTROL knob on the XR-5 at "0" (center) position.
- 3) Check the tape speed if it is within $3,000\text{Hz} \pm 45\text{Hz}$.
- 4) If it is not within the specification, adjust the pot V902 on the R/P AMP PCB Assy so that the tape speed will be within the specification.

3.7 CHECK OF WOW/FLUTTER

- 1) Connect a Wow/Flutter meter to the TAPE OUT 2 or 3.
- 2) Playback the A-BEX TCW-211 WOW/FLUTTER & SPEED test tape and check if the WOW/FLUTTER is less than $\pm 0.25\%$ IEC/ANSI (WTD, peak).

3.8 CHECK AND MEASUREMENT ON THE MIXER SECTION

(Refer to the Block Diagram)

The following is in regards to the XR-5 Multitracker basic function check. Function checks for other signal routes can be made in this same way. A 1kHz sine wave signal is used for the function check in this manual. Change the frequency and level accordingly for the frequency response check and signal to noise ratio check etc.

The response you measure should be compared to the specifications on page 3.

Please proceed with the function check referring to the top panel layout drawing. The reference numbers at the parameters of the function check are related to the reference number appearing on the panel layout drawing.

3.8.1 INPUT → TAPE OUT

- 1) Apply a 1kHz, -10dBV (0.3V) reference signal to each INPUT 1 through 4 phone jack.
- 2) Connect an AC volt meter to the TAPE OUT 1 through 4 pin jacks respectively.
- 3) Set the controls as follows.

| | |
|-------------------|---|
| INPUT SELECTOR SW | : INPUT |
| INPUT FADER | : Between 7 and 9 in the scale |
| EQ | : All gain pots to 0dB (center) position |
| MASTER FADER | : Between 7 and 9 in the scale |
| CHAN PAN POT | : L (Applied to LINE OUT L) or R (Applied to LINE OUT R) |

- 4) Set the RECORD TRACK SELECT SW for the TRACK required.
Adjust INPUT FADER for the output level at TAPE OUT1 through 4 for -10dBV (0.3V) reading.
Then, adjust MASTER FADER for the output level at LINE OUT (L, R) for -10dBV (0.3V) reading.

- 5) Check the LED LEVEL METERS of TAPE OUT1 through 4 and LINE OUT (L, R)

3.8.2 INPUT → STEREO OUT

- 1) Apply a 1kHz, -10dBV (0.3V) reference signal to each INPUT 1 through 4 phone jack.
- 2) Connect an AC volt meter to the STEREO OUT (L, R) phone jack respectively.
- 3) Set the controls as follows.

| | |
|-------------------|---|
| INPUT SELECTOR SW | : INPUT |
| INPUT FADER | : Between 7 and 9 in the scale |
| EQ | : All gain pots to 0dB (center) position |
| LEVEL SW | : High position |
| CHAN PAN POT | : L (Applied to STEREO OUT L) or R (Applied to STEREO OUT R) |
| MASTER FADER | : Between 7 and 9 in the scale |

- 4) Check each STEREO OUT(L,R)level if it is -10dBV (0.3V) ± 1 dB reading.

- 5) Check for EQ

Change the input signal frequency from 1kHz to 100Hz and 10kHz. Check if the EQ HIGH, LOW corresponds the following specifications.

| | |
|-------|--------------------------------------|
| 100Hz | : +15dB \pm 3dB -15dB \pm 3dB |
| 10kHz | : +15dB \pm 3dB -15dB \pm 3dB |

3.8.3 INPUT (LINE) → MON OUT

- 1) Apply a 1kHz, -10dBV (0.3V) reference signal to each INPUT 1 through 4 phone jacks.
- 2) Connect an AC volt meter to the MON OUT L, R phone jack respectively and connect headphones to PHONES jack.
- 3) Set the controls as follows.

| | |
|-------------------|---|
| INPUT SELECTOR SW | : INPUT |
| INPUT FADER | : Between 7 and 9 in the scale |
| EQ | : All gain pots to 0dB (center) position |
| LEVEL SW | : HIGH position |
| PAN POT | : L (Applied to MON OUT L) or R (Applied to MON OUT R) |
| MASTER FADER | : Between 7 and 9 in the scale |
| MON SELECT SW | : STEREO |
| MON LEVEL POT | : Between 7 and 9 in the scale |

- 4) Check each MON OUT(L, R) level if it is -10dBV (0.3V) ± 1 dB reading and also if the signal can be heard through the headphones.

3.8.4 INPUT (LINE) → AUX SEND

- 1) Apply a 1kHz, -10dBV (0.3V) reference signal to each INPUT 1 through 4 phone jack.
- 2) Connect an AC volt meter to the MON OUT (L, R) phone jack respectively.
- 3) Set the controls as follows.

| | |
|-------------------|--|
| INPUT SELECTOR SW | : INPUT |
| INPUT FADER | : Between 7 and 9 in the scale |
| EQ | : All gain pots to 0dB (center) position |
| LEVEL SW | : HIGH position |
| AUX 1,2 SEND POT | : 1 (full CW) position or 2 (full CCW) position |

- 4) Check the AUX SEND 1, 2 level if it is -10dBV (0.3V) ± 1 dB reading.

3.8.5 INPUT → FB (Foldback)

- 1) Apply a 1kHz, -10dBV (0.3V) reference signal to each INPUT 1 through 4 phone jack.
- 2) Connect an AC volt meter to the FB OUT pin jack respectively.
- 3) Set the controls as follows.

| | |
|-------------------|--------------------------------|
| INPUT SELECTOR SW | : INPUT |
| INPUT FADER | : Between 7 and 9 in the scale |
| LEVEL SW | : HIGH position |
| FB LEVEL POT | : Between 7 and 9 in the scale |

- 4) Check the FB OUT level if it is -10dBV (0.3V) ± 1 dB reading.

3.9 CHECK AND ADJUSTMENT FOR THE RECORD/PLAYBACK AMP

3.9.1 INPUT MONITOR CALIBRATION AND METER CALIBRATION

- 1) Apply a 1kHz, -10dBV (0.3V) sine wave signal to each INPUT 1 through 4 phone jack.
- 2) Set the controls as follows.

| | |
|----------------|---|
| LEVEL SW | : HIGH position |
| INPUT FADER | : Between 7 and 9 in the scale |
| HI & LO EQ POT | : "0" (center) position |
| MASTER FADER | : Between 7 and 9 in the scale |
| CHAN PAN POT | : L (Applied to LINE OUT L) or R (Applied to LINE OUT R) |

- 3) Connect an AC volt meter to the TAPE OUT 1 through 4 respectively.
- 4) Set the RECORD TRACK SELECT SW for the TRACK required.
Adjust INPUT FADER for the output level at TAPE OUT 1 through 4 for -10dBV (0.3V) reading.
Then, adjust MASTER FADER for the output level at LINE OUT (L,R) for -10dBV (0.3V) reading.
- 5) Check the LED LEVEL METERS of TAPE OUT 1 through 4 and LINE OUT (L,R).

3.9.2 PLAYBACK LEVEL CALIBRATION

- 1) Set the controls as follows.
RECORD TRACK SELECT SW : SAFE mode (center position)

DOLBY NR SW : OFF position

- 2) Connect an AC volt meter to the TAPE OUT 1 through 4 respectively.
- 3) Playback the A-BEX TCW-231 test tape and check the output level at TAPE OUT 1 through 4 if it is -10dBV (0.3V) $\pm 1\text{dB}$ reading.

If the reading is not within the spec, adjust V101 through V401 ($1\text{k}\Omega$ B) on the R/P AMP PCB Assy for -10dBV reading.

3.9.3 PLAYBACK FREQUENCY RESPONSE CHECK

There is no adjustment pot for playback frequency response provided on XR-5. Therefore, check on the playback frequency only should be proceeded.

- 1) Set the controls as follows.

RECORD TRACK SELECT SW : SAFE mode (center position)

DOLBY NR SW : OFF position

- 2) Connect an AC volt meter to the TAPE OUT 1 through 4 respectively.
- 3) Playback the A-BEX TCW-284F FREQUENCY RESPONSE test tape and check if the response is within $\pm 3\text{dB}$ at 12.5kHz comparing to the 400Hz reference level.

3.9.4 ERASE CURRENT ADJUSTMENT

At adjusting the ERASE CURRENT, the track to be adjusted is put in the REC mode. Assuming TRACK 1 is to be adjusted, the oscilloscope probe is connected to the test point TP01 on the R/P AMP PCB Assy and rotate the L151 core CW or CCW. Then, fix the L151 core to get the minimum voltage point at the test point TP01.

NOTE: If the voltage at TP01 is adjusted at minimum, the ERASE CURRENT flowing the ERASE head is set to be maximum. Please check the voltage at the test point TP02 when the voltage at TP01 is adjusted to the minimum. The voltage at the test point TP02 should be more than 30mV r.m.s. .

Adjust the remaining tracks in the same way.

TRACK 2 : Adjusted by L251

TRACK 3 : Adjusted by L351

TRACK 4 : Adjusted by L451

3.9.5 RECORDING LEVEL CALIBRATION

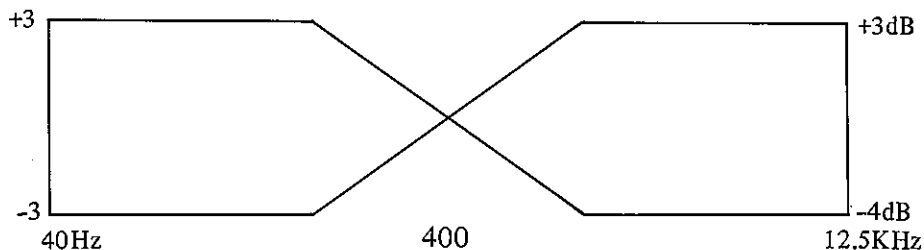
*The procedure up to 3.9.5 must be completed before proceeding to this adjustment.

- 1) Put a blank cassette to the transport and apply a 400Hz , -10dBV (0.3V) sine wave signal to each INPUT 1 through 4 phone jack.
- 2) Set the controls as follows.
 - LEVEL SW : At HIGH position
 - INPUT FADER : Between 7 and 9 in the scale
 - DOLBY NR SW : OFF position
- 3) Connect a AC volt meter to the TAPE OUT 1 through 4 respectively.
- 4) Set the RECORD TRACK SELECTOR SW for the TRACK required to ON [TRACK position] and put XR-5 in the INPUT MONITOR mode by depressing the REC and PAUSE button only. Then, adjust INPUT FADER for the output level at TAPE OUT 1 through 4 as -10dBV (0.3V) reading.
- 5) Record the signal on the blank tape by depressing PAUSE button.

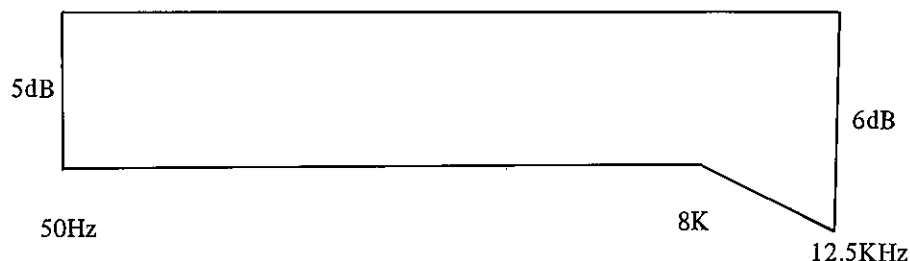
- 6) After recording a certain length of the signal, rewind the tape to the start point of recording and playback the tape and check the level at TAPE OUT 1 through 4.
If the AC volt meter reading is not within -10dBV (0.3V) $\pm 1\text{dB}$, adjust V102 ($47\text{k}\Omega\text{B}$) on the R/P AMP PCB Assy so that the RECORDING LEVEL will be within the spec.
- 7) Adjust the remaining tracks in the same way.
 TRACK 2 : Adjusted by V202 ($47\text{k}\Omega\text{B}$)
 TRACK 3 : Adjusted by V302 ($47\text{k}\Omega\text{B}$)
 TRACK 4 : Adjusted by V402 ($47\text{k}\Omega\text{B}$)

3.9.6 OVERALL FREQUENCY RESPONSE ADJUSTMENT

- 1) Under the same condition of the controls as 3.9.5.
- 2) Set NR SW to OFF position and record a signal from 40Hz through 12.5kHz . Then, rewind and playback the tape. Check if the frequency response is within the region as illustrated below.



- 3) If it is not within the spec in the higher frequency region, adjust V103 through V403 (BIAS POT) ($100\text{k}\Omega\text{B}$) on the R/P AMP PCB Assy so that the response will be within the spec.
- 4) Set the DOLBY NR SW to ON position and change the input level applied to INPUT 1 through 4 to -32dBV (25mV) (25dB below Dolby level). Then, record a signal from 50Hz through 10kHz and rewind and playback the tape.
Check if the frequency response is within the region as illustrated below.



- 5) After adjusting the bias pot, the RECORDING LEVEL CALIBRATION as per clause 3.8.5 must be checked again.

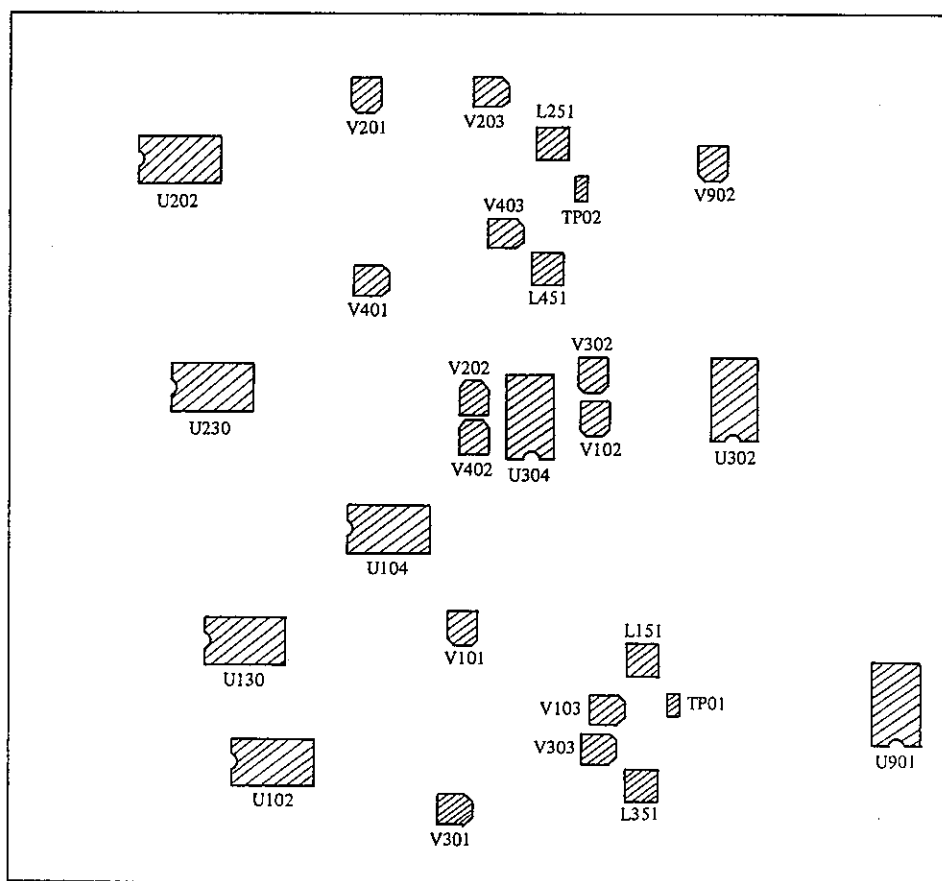
3.9.7 OVERALL S/N MEASUREMENT

*The procedure up to 3.9.6 must be completed before proceeding to this adjustment.

- 1) Under the same condition as 3.9.5 RECORDING LEVEL CALIBRATION, record a 400Hz , -10dBV (0.3V) sine wave signal to the blank tape.
- 2) Disconnect the oscillator from INPUT while recording the signal, and record a length of no-signal part.

3.10 TABLE OF ADJUSTMENT ITEM

| ADJUSTING ITEM | MEASURING POINT | ADJUSTING POT | LOCATION |
|----------------------------|-----------------|---------------|----------|
| Tape speed | Tape out | V902 | R/P PCB |
| P.B. Level Cal. | Tape out 1 | V101 | R/P PCB |
| | 2 | V201 | |
| | 3 | V301 | |
| | 4 | V401 | |
| Erast current | Test point TP01 | L151 | R/P PCB |
| | TP02 | L251 | |
| | TP01 | L351 | |
| | TP02 | L451 | |
| Rec level Cal. | Tape out 1 | V102 | R/P PCB |
| | 2 | V202 | |
| | 3 | V302 | |
| | 4 | V402 | |
| Overall frequency Response | Tape out 1 | V103 | R/P PCB |
| | 2 | V203 | |
| | 3 | V303 | |
| | 4 | V403 | |



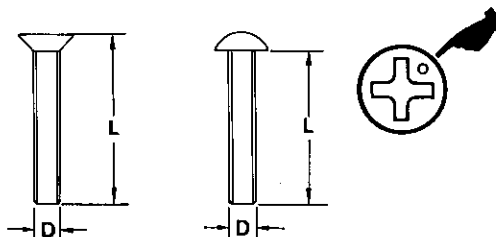
4. EXPLODED VIEW, PCB ASSEMBLY AND PART LIST

ASSEMBLING HARDWARE CODING LIST

All screws conform to ISO standards, and have crossrecessed heads, unless otherwise noted.
ISO screws have the head inscribed with a point as in the figure to the right.

FOR EXAMPLE:

B M 3 x 6
 ----- Length in mm (L)
 ----- Diameter in mm (D) *
 ----- Metric System
 ----- Nomenclature



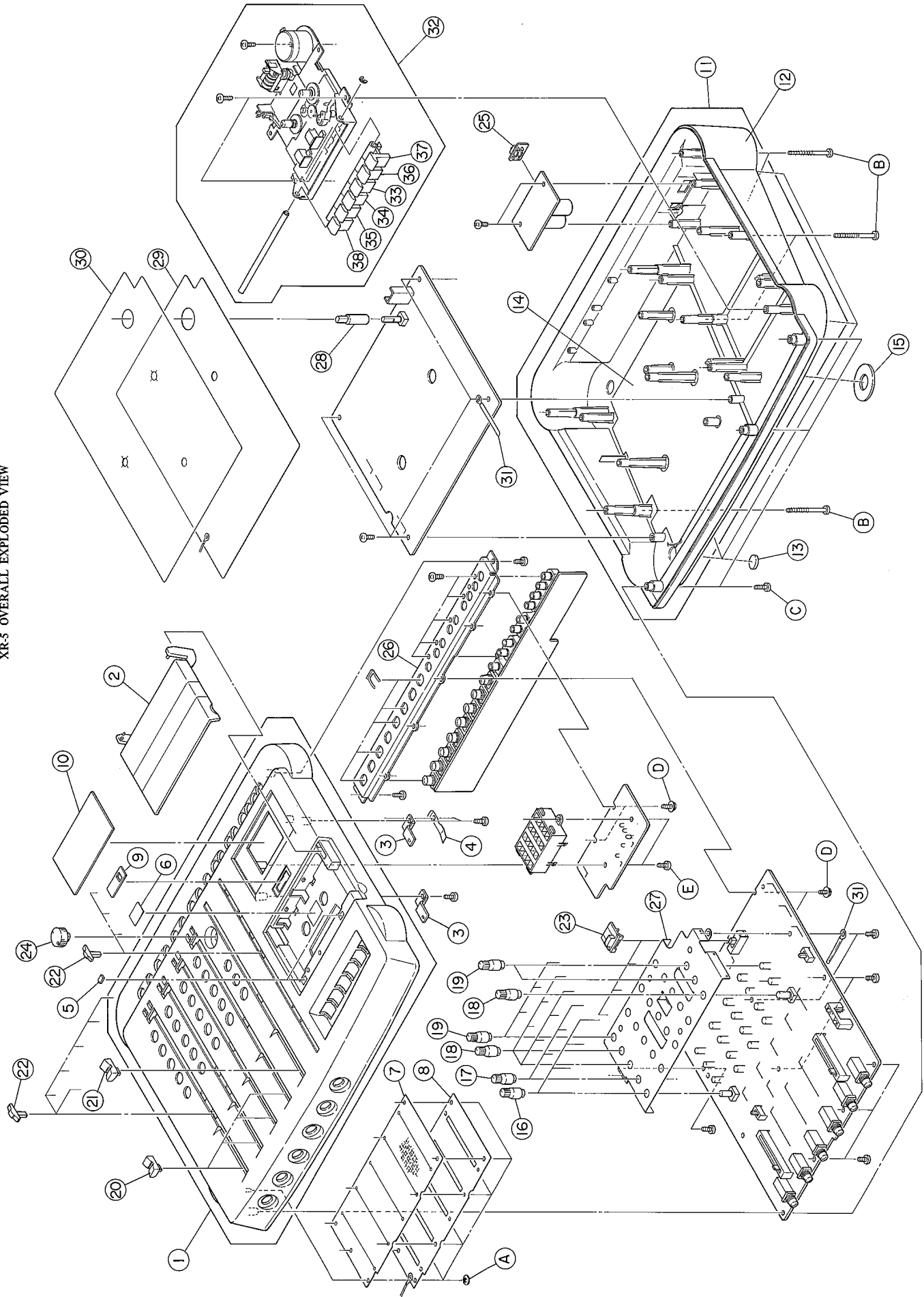
* Inner dia. for washers and nuts

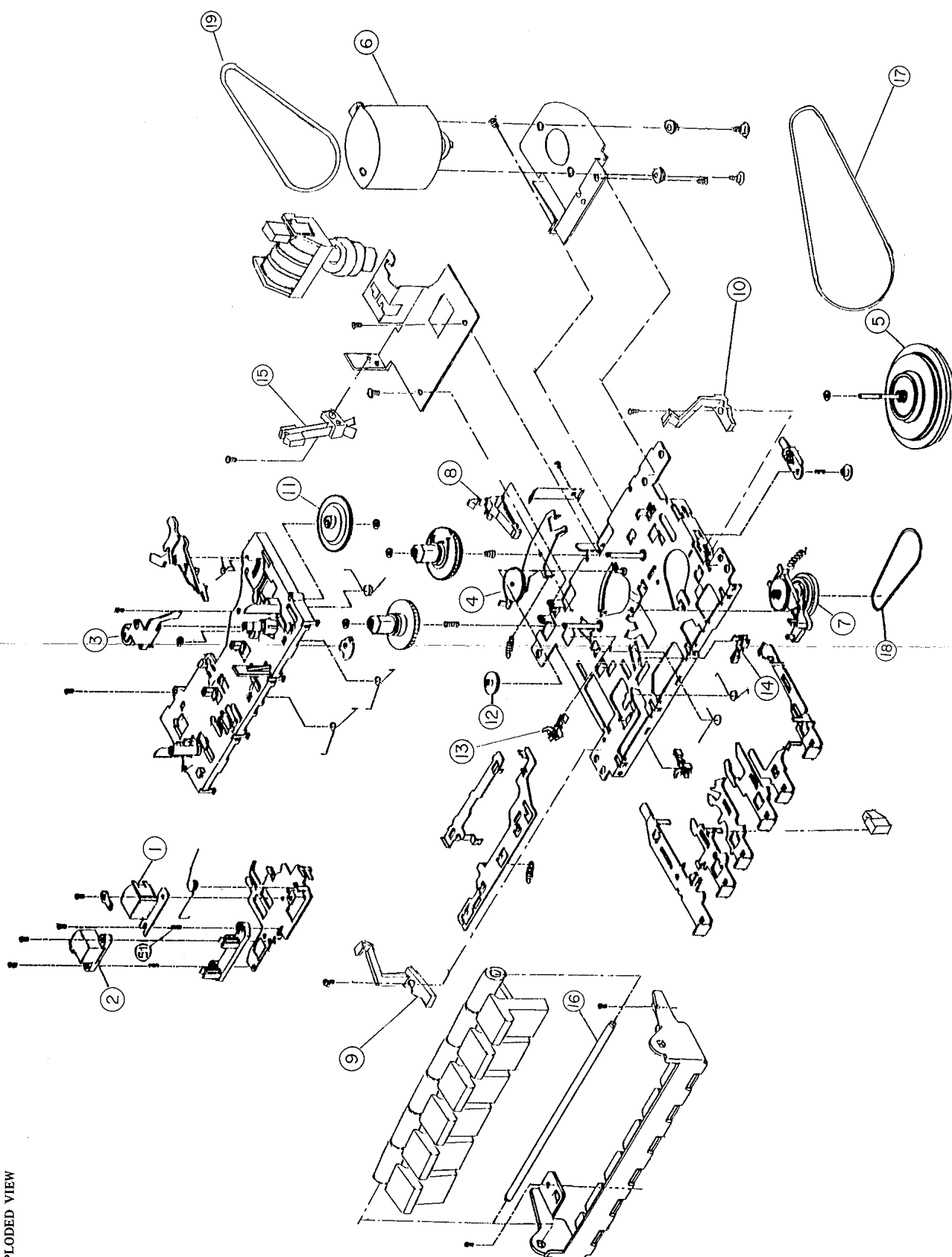
| | CODE | NAME | TYPE | | CODE | NAME | TYPE |
|------------------|-------|---|------|------------------|------|--|------|
| MACHINE SCREW | P | Pan Head Screw | | WASHER, LUG, NUT | TW | Trim Washer (Countersunk) | |
| | T | Stove Head Screw (Truss) | | | N | Hex Nut | |
| | B | Binding Head Screw | | | L | Lug | |
| | F | Flat Countersunk Head Screw | | | THW | Thrust Washer (Poly Washer) | |
| | O | Oval Countersunk Head Screw | | SETSCREW | HSF | Hex Socket Setscrew (Flat Point) | |
| | PWH | Pan-Washer Head Screw | | | HSC | Hex Socket Setscrew (Cup Point) | |
| WOOD SCREW | RW | Round Head Wood Screw | | | SSF | Slotted Socket Setscrew (Flat Point) | |
| | FW | Flat Countersunk Wood Screw | | | SSC | Slotted Socket Setscrew (Cup Point) | |
| | OW | Oval Countersunk Wood Screw | | BOLT | HSB | Hex Scket Head Bolt | |
| TAPPING SCREW | PTP | Pan Head Self Tapping Screw (B type) | | | HB | Hex Head Bolt | |
| | PTPWH | Pan-washer Head Self Tapping Screw (B type) | | RING, PIN | ER | E-Ring (Retaining Washer) | |
| | TTP | Stove Head Self Tapping Screw (B type) | | | CRR | C-Ring (Inner) | |
| | FTP | Flat Countersunk Head Self Tapping Screw (B type) | | | CRS | C-Ring (Outer) | |
| TAPTITE SCREW | PTT | Pan Head Tapping Screw | | | GR | Seeger Ring | |
| | PTTWH | Pan-Washer Head Tapping Screw | | | SP | Spring Pin | |
| | TTT | Stove Head Tapping Screw | | | SR | Snap Ring | |
| | FTT | Flat Countersunk Head Tapping Screw | | FINISH | Zn | Zinc plating | |
| SEMS SCREW | PS | Pan Head Screw with Spring Washer | | | CZn | Colored zinc plating | |
| | PSW | Pan Head Screw with Washer and Spring Washer | | | BZn | Black zinc plating | |
| WASHER, LUG, NUT | W | Flat Washer | | | Ni | Nickel plating | |
| | LW | Spring Washer | | | BNi | Black niekel plating | |
| | LWI | Internal Teeth Lock Washer | | | Cr | Chrome plating | |
| | LWE | External Teeth Lock Washer | | | BCr | Black chroma plating | |

4.1 OVERALL EXPLODED VIEW

Model XR-5 Parts List (OVERALL)

| Ref. No. | Parts No. | Description |
|----------|--------------|-----------------------------|
| 1 | 8260 4590 00 | Case assy, top, XR-5 |
| 2 | 8212 4840 00 | Cover, cassette, XR-5 |
| 3 | 8221 0730 00 | Bracket, cassette, XR-5 |
| 4 | 8221 0740 00 | Spring, P |
| 5 | 8216 5230 00 | Cushion |
| 6 | 8216 4230 00 | Reflector, cassette |
| 7 | 8216 5240 00 | Screen, fader, XR-5 |
| 8 | 8216 5250 00 | Shield, fader, XR-5 |
| 9 | 8216 5260 00 | Decolation, counter, XR-5 |
| 10 | 8216 5270 00 | Decolation, meter, XR-5 |
| 11 | 8260 4600 00 | Case assy, bottom, XR-5 |
| 12 | 8212 4850 00 | Case, bottom, XR-5 |
| 13 | 8216 3210 00 | Foot, NF, XR-5 |
| 14 | 8216 5280 00 | Shield, bottom, XR-5 |
| 15 | 8207 0054 00 | Foot, XR-5 |
| 16 | 8226 1990 00 | Knob, volume, R, XR-5 |
| 17 | 8226 2000 00 | Knob, volume, OR, XR-5 |
| 18 | 8226 2010 00 | Knob, volume, GY, XR-5 |
| 19 | 8226 2020 00 | Knob, volume, GR, XR-5 |
| 20 | 8226 2030 00 | Knob, fader, XR-5 |
| 21 | 8226 2040 00 | Knob, fader, R, XR-5 |
| 22 | 8226 2050 00 | Knob, slide, XR-5 |
| 23 | 8226 2060 00 | Knob, slide, L, XR-5 |
| 24 | 8226 2070 00 | Knob, pitch, XR-5 |
| 25 | 8226 1040 00 | Knob, power, XR-5 |
| 26 | 8221 0750 00 | Bracket, jack, XR-5 |
| 27 | 8221 0760 00 | Bracket, volume, XR-5 |
| 28 | 8212 4880 00 | Joint, volume, XR-5 |
| 29 | 8216 5290 00 | Shield, M, XR-5 |
| 30 | 8216 5300 00 | Sheet, M, XR-5 |
| 31 | 8221 0770 00 | Lug, clamp, XR-5 |
| 32 | 8260 4610 00 | Transport assy, XR-5 |
| 33 | 8226 2080 00 | Knob, cassette, FF, XR-5 |
| 34 | 8226 2090 00 | Knob, cassette, REW, XR-5 |
| 35 | 8226 2100 00 | Knob, cassette, PLAY, XR-5 |
| 36 | 8226 2110 00 | Knob, cassette, STOP, XR-5 |
| 37 | 8226 2120 00 | Knob, cassette, PAUSE, XR-5 |
| 38 | 8226 2130 00 | Knob, cassette, REC, XR-5 |
| A | 8204 0680 00 | Ring, stopper, CS20 |
| B | 8204 0890 00 | 2DTBID3045ZN3K |
| C | 8204 1190 00 | 2DTBID3016ZN3K |
| D | 8204 0860 00 | 2DTBID3010ZN3A |
| E | 8204 1200 00 | 2DTBID3010ZN3K |
| F | 8204 0620 01 | 2DTBID3008ZN3A |





4.2 MECHA EXPLODED VIEW

Model XR-5 Parts List (MECHA)

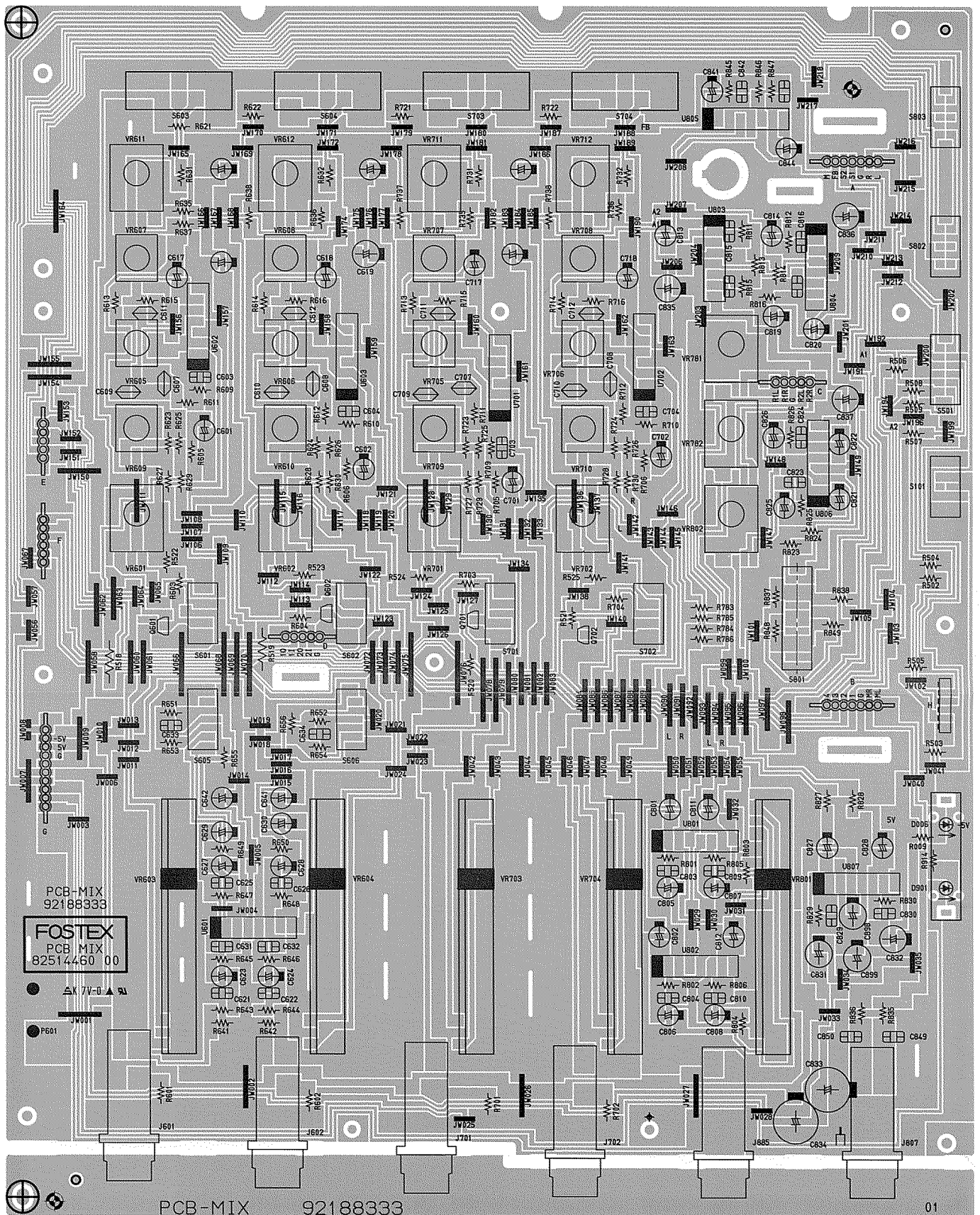
| Ref. No. | Parts No. | Description |
|----------|--------------|-------------------------|
| 1 | 8259 0440 00 | Head, R/P, XR-5 |
| 2 | 8259 0450 00 | Head, E, XR-5 |
| 3 | 8260 4620 00 | Pinch roller assy, XR-5 |
| 4 | 8260 4630 00 | Idler arm assy, XR-5 |
| 5 | 8260 4640 00 | Fly wheel assy, XR-5 |
| 6 | 8260 4650 00 | Motor assy, XR-5 |
| 7 | 8260 4660 00 | F.R. arm assy, XR-5 |
| 8 | 8212 4930 00 | Lever, REC safety, XR-5 |
| 9 | 8212 4890 00 | Guide, cassette, L |
| 10 | 8212 4900 00 | Guide, cassette, R |
| 11 | 8212 4910 00 | Gear, cam, XR-5 |
| 12 | 8212 4920 00 | Gear, FF, XR-5 |
| 13 | 8253 4280 00 | SW, leaf, MSW-1541XACV |
| 14 | 8253 4290 00 | SW, leaf, MSW-1716CV |
| 15 | 8253 4300 00 | SW, leaf, LSA-1120Y |
| 16 | 8223 2770 00 | Shaft, button, XR-5 |
| 17 | 8216 5310 00 | Belt, main, XR-5 |
| 18 | 8216 5320 00 | Belt, sub, XR-5 |
| 19 | 8216 5330 00 | Belt, counter, XR-5 |

4.3 PARTS LIST PCB ASSEMBLY

R/P AMP PCB ASSEMBLY

| Ref. No. | Parts No. | Description | Ref. No. | Parts No. | Description |
|----------|--------------|------------------------------|----------|--------------|------------------------|
| | 8273 9430 00 | PCB Assy, R/P AMP, XR-5 | R108-408 | 8230 1381 04 | 1/4W, 100kΩ, 5% |
| | 8152 4490 00 | Plain PCB, R/P AMP, XR-5 | R109-409 | 8230 1383 32 | 1/4W, 3.3kΩ, 5% |
| | | IC's | R110,210 | 8230 1381 83 | 1/4W, 18kΩ, 5% |
| U001 | 8236 0374 00 | Analog, M5218AL | R111,211 | 8230 1382 23 | 1/4W, 22kΩ, 5% |
| U002 | 8236 0351 00 | Analog, NJM7810 | R112,212 | 8230 1382 23 | 1/4W, 22kΩ, 5% |
| U101-301 | 8236 0366 00 | Analog, NJM2068LD | R113-413 | 8230 1388 22 | 1/4W, 8.2MΩ, 5% |
| U102,104 | 8236 4180 00 | Analog, HA12136A | R114-414 | 8230 1381 03 | 1/4W, 10kΩ, 5% |
| U103-403 | 8236 4190 00 | Analog, BA7755A | R115,215 | 8230 1381 53 | 1/4W, 15kΩ, 5% |
| U130,230 | 8236 0754 00 | Digital, TC4066BP | R116,216 | 8230 1389 11 | 1/4W, 910Ω, 5% |
| U202 | 8236 4180 00 | Analog, HA12136A | R119,219 | 8230 1381 03 | 1/4W, 10kΩ, 5% |
| U302,304 | 8236 0754 00 | Digital, TC4066BP | R120,220 | 8230 1382 23 | 1/4W, 22kΩ, 5% |
| U901 | 8236 0757 00 | Digital, TC4069BP | R121,221 | 8230 1381 03 | 1/4W, 10kΩ, 5% |
| | | TRANSISTORS | R122,222 | 8230 r381 04 | 1/4W, 100kΩ, 5% |
| Q001 | 8236 0552 00 | Digital, driver, DTA143TS | R123,223 | 8230 1384 33 | 1/4W, 43kΩ, 5% |
| Q101-401 | 8236 0549 00 | Digital, driver, DTC343TS | R124,224 | 8230 1384 33 | 1/4W, 43kΩ, 5% |
| Q102-402 | 8236 0748 00 | Digital, driver, DTC143TS | R125,225 | 8230 1381 04 | 1/4W, 100kΩ, 5% |
| Q132-432 | 8236 0749 00 | Digital, driver, DTC144WS | R126-426 | 8230 1381 03 | 1/4W, 10kΩ, 5% |
| Q151-451 | 8236 0549 00 | Digital, driver, DTC343TS | R127,227 | 8230 1381 03 | 1/4W, 10kΩ, 5% |
| Q152,252 | 8234 1423 00 | Tr, 2SC1740S | R128,228 | 8230 1381 03 | 1/4W, 10kΩ, 5% |
| Q901 | 8236 0747 00 | Digital, driver, DTC115TS | R131-431 | 8230 1384 73 | 1/4W, 47kΩ, 5% |
| Q902 | 8234 1423 00 | Tr, 2SC1740S | R132,432 | 8230 1381 04 | 1/4W, 100kΩ, 5% |
| Q903 | 8234 1907 00 | FET, 2SK373Y | R133,233 | 8230 1384 72 | 1/4W, 4.7kΩ, 5% |
| Q904 | 8236 0746 00 | Digital, driver, DTC114TS-TP | R134 | 8230 1384 73 | 1/4W, 47kΩ, 5% |
| | | DIODES | R135,912 | 8230 1381 03 | 1/4W, 10kΩ, 5% |
| D004 | 8234 1974 00 | Diode, 1A2-ES80 | R150-450 | 8230 1381 09 | 1/4W, 1Ω, 5% |
| D005 | 8234 0176 00 | Diode, 1SS131 | R151,251 | 8230 1383 30 | 1/4W, 33Ω, 5% |
| D101-401 | 8234 0176 00 | Diode, 1SS131 | R152,252 | 8230 1384 72 | 1/4W, 4.7kΩ, 5% |
| D102-402 | 8234 0176 00 | Diode, 1SS131 | R153,253 | 8230 1383 92 | 1/4W, 3.9kΩ, 5% |
| D151-451 | 8234 0176 00 | Diode, 1SS131 | R154-454 | 8230 1384 72 | 1/4W, 4.7kΩ, 5% |
| D152-452 | 8234 0176 00 | Diode, 1SS131 | R155-455 | 8230 1384 73 | 1/4W, 47kΩ, 5% |
| D901-904 | 8234 0176 00 | Diode, 1SS131 | R156-456 | 8230 1384 72 | 1/4W, 4.7kΩ, 5% |
| | | CARBON RESISTORS | R901,902 | 8230 1381 53 | 1/4W, 15kΩ, 5% |
| R001,002 | 8230 1382 20 | 1/4W, 22Ω, 5% | R903,905 | 8230 1381 04 | 1/4W, 100kΩ, 5% |
| R003,004 | 8230 1381 03 | 1/4W, 10kΩ, 5% | R904 | 8230 1382 25 | 1/4W, 2.2MΩ, 5% |
| R005 | 8230 1384 74 | 1/4W, 470kΩ, 5% | R906 | 8230 1381 05 | 1/4W, 1MΩ, 5% |
| R006 | 8230 1381 53 | 1/4W, 15kΩ, 5% | R907 | 8230 1381 04 | 1/4W, 100kΩ, 5% |
| R101-401 | 8230 1382 24 | 1/4W, 220kΩ, 5% | R908 | 8230 1382 20 | 1/4W, 22Ω, 5% |
| R102-402 | 8230 1381 01 | 1/4W, 100Ω, 5% | R909 | 8230 1383 33 | 1/4W, 33kΩ, 5% |
| R103-403 | 8230 1382 24 | 1/4W, 220kΩ, 5% | R910 | 8230 1384 72 | 1/4W, 4.7kΩ, 5% |
| R104-404 | 8230 1384 74 | 1/4W, 470kΩ, 5% | R911 | 8230 1384 73 | 1/4W, 47kΩ, 5% |
| R105-405 | 8230 1381 13 | 1/4W, 11kΩ, 5% | R913 | 8230 1383 92 | 1/4W, 3.9kΩ, 5% |
| R106-406 | 8230 1384 73 | 1/4W, 47kΩ, 5% | R915,917 | 8230 1388 21 | 1/4W, 820Ω, 5% |
| R107-407 | 8230 1382 22 | 1/4W, 2.2kΩ, 5% | R916 | 8230 1382 22 | 1/4W, 2.2kΩ, 5% |
| | | CARBON POTS | | | |
| | | | V101-401 | 8240 2470 00 | Pot, semi-fixed, 1KB |
| | | | V102-402 | 8231 0230 00 | Pot, semi-fixed, 470KB |
| | | | V103-403 | 8231 0180 00 | Pot, semi-fixed, 100KB |
| | | | V901 | 8240 2480 00 | VR9B-1.5KC |
| | | | V902 | 8240 2470 00 | Pot, semi-fixed, 1KB |





| Ref. No. | Parts No. | Description | Ref. No. | Parts No. | Description |
|------------|--------------|-------------------------------------|------------------|--------------|------------------------------|
| CAPACITORS | | | | | |
| | | ALU = Electrolytic type | L102-402 | 8256 0990 00 | Filter, MPX |
| | | CER = Ceramic type | L120-420 | 8256 0660 00 | Module, trap, AF |
| | | PES = Mylar type | L151-451 | | Trans, osc, SUB |
| | | PPR = Polypropylene type | L901 | 8242 1250 00 | Trans, osc, MAIN |
| | | | L902 | 8242 1420 00 | Coil, choke, BIAS |
| | | | | 8207 0056 00 | Heatsink, XR-5 |
| C003,004 | 8232 1444 77 | ALU, 25V, 470 μ F, 20%, SME-VB | MIX PCB ASSEMBLY | | |
| C005 | 8232 1442 26 | ALU, 25V, 22 μ F, 20%, SME-VB | Ref. No. | Parts No. | Description |
| C006,007 | 8232 1421 07 | ALU, 10V, 100 μ F, 20%, SME-VB | | 8273 9440 00 | PCB Assy, MIX, XR-5 |
| C102-402 | 8232 8028 21 | CER, 50V, 820pF, 10%, SL | | 8251 4500 00 | Plain PCB, MIX, XR-5 |
| C103-403 | 8232 1461 05 | ALU, 50V, 1 μ F, 20%, SME-VB | | | IC's |
| C104-404 | 8232 9016 82 | PES, 50V, 0.0068 μ F, 5%, AMZV | U601 | 8236 0366 00 | Analog, NJM2068LD |
| C105-405 | 8232 8023 91 | CER, 50V, 390pF, 10%, SL | U602,603 | 8236 0398 00 | Analog, NJM4558L |
| C106-406 | 8232 1424 76 | ALU, 10V, 47 μ F, 20%, SME-VB | U701,702 | 8236 0398 00 | Analog, NJM4558L |
| C107-407 | 8232 1461 05 | ALU, 50V, 1 μ F, 20%, SME-VB | U801-806 | 8236 0398 00 | Analog, NJM4558L |
| C108-408 | 8232 1464 75 | ALU, 50V, 4.7 μ F, 20%, SME-VB | U807 | 8236 0398 00 | Analog, M5216L |
| C110-410 | 8232 1421 07 | ALU, 10V, 100 μ F, 20%, SME-VB | TRANSISTORS | | |
| C111-411 | 8232 1461 05 | ALU, 50V, 1 μ F, 20%, SME-VB | Q601,602 | 8236 0746 00 | Digital, driver, DTC114TS-TP |
| C112-412 | 8232 1431 06 | ALU, 16V, 10 μ F, 20%, SME-VB | Q701,702 | 8236 0746 00 | Digital, driver, DTC114TS-TP |
| C113-413 | 8232 1462 24 | ALU, 50V, 0.22 μ F, 20%, SME-VB | DIODES | | |
| C114-414 | 8232 8033 92 | CER, 50V, 0.0039 μ F, 10%, YR | D006 | 8234 1044 00 | D-SLR-38MG |
| C116,216 | 8232 1421 07 | ALU, 10V, 100 μ F, 20%, SME-VB | D901 | 8234 1045 00 | D-SLR-38VR |
| C117,217 | 8232 1464 75 | ALU, 50V, 4.7 μ F, 20%, SME-VB | CARBON RESISTORS | | |
| C118,218 | 8232 1431 06 | ALU, 16V, 10 μ F, 20%, SME-VB | R009,914 | 8230 1381 52 | 1/4W, 1.5k Ω , 5% |
| C119,219 | 8232 1462 24 | ALU, 50V, 0.22 μ F, 20%, SME-VB | R502-505 | 8230 1381 04 | 1/4W, 100k Ω , 5% |
| C120,220 | 8232 1431 06 | ALU, 16V, 10 μ F, 20%, SME-VB | R506-509 | 8230 1388 22 | 1/4W, 8.2k Ω , 5% |
| C121,221 | 8232 1431 06 | ALU, 16V, 10 μ F, 20%, SME-VB | R518,519 | 8230 1386 81 | 1/4W, 680 Ω , 5% |
| C122,222 | 8232 9015 63 | PES, 50V, 0.056 μ F, 5%, AMZV | R520,521 | 8230 1386 81 | 1/4W, 680 Ω , 5% |
| C123,223 | 8232 8028 21 | CER, 50V, 820pF, 10%, SL | R522-525 | 8230 1382 72 | 1/4W, 2.7k Ω , 5% |
| C124,224 | 8232 1431 06 | ALU, 16V, 10 μ F, 20%, SME-VB | R601,602 | 8230 1382 21 | 1/4W, 220 Ω , 5% |
| C125-425 | 8232 8022 21 | CER, 50V, 220pF, 10%, SL | R603,604 | 8230 1386 82 | 1/4W, 6.8k Ω , 5% |
| C126-426 | 8232 8026 81 | CER, 50V, 680pF, 10%, SL | R605,606 | 8230 1384 73 | 1/4W, 47k Ω , 5% |
| C130-430 | 8232 1431 06 | ALU, 16V, 10 μ F, 20%, SME-VB | R609,610 | 8230 1381 24 | 1/4W, 120k Ω , 5% |
| C131 | 8232 1432 26 | ALU, 16V, 22 μ F, 20%, SME-VB | R611-614 | 8230 1381 53 | 1/4W, 15k Ω , 5% |
| C151,251 | 8232 8031 03 | CER, 50V, 0.01 μ F, +80-20%, YF | R615,616 | 8230 1382 72 | 1/4W, 2.7k Ω , 5% |
| C152-452 | 8232 0306 82 | PPR, 100V, 0.0068 μ F, 2%, APS | R621,622 | 8230 1384 73 | 1/4W, 47k Ω , 5% |
| C153-453 | 8232 1431 06 | ALU, 16V, 10 μ F, 20%, SME-VB | R623-626 | 8230 1381 83 | 1/4W, 18k Ω , 5% |
| C154-454 | 8232 1431 06 | ALU, 16V, 10 μ F, 20%, SME-VB | R627-630 | 8230 1382 23 | 1/4W, 22k Ω , 5% |
| C901 | 8232 1464 74 | ALU, 50V, 0.47 μ F, 20%, SME-VB | R631,632 | 8230 1381 83 | 1/4W, 18k Ω , 5% |
| C902 | 8232 8031 03 | CER, 50V, 0.01 μ F, +80-20%, YF | R634,644 | 8230 1381 01 | 1/4W, 100 Ω , 5% |
| C903 | 8232 9014 73 | PES, 50V, 0.047 μ F, 5%, AMZV | R635-638 | 8230 1382 23 | 1/4W, 22k Ω , 5% |
| C904,905 | 8232 9014 72 | PES, 50V, 0.0047 μ F, 5%, AMZV | R641,642 | 8230 1381 04 | 1/4W, 100k Ω , 5% |
| C906 | 8232 1431 06 | ALU, 16V, 10 μ F, 20%, SME-VB | MISCELLANEOUS | | |
| C907 | 8232 142h 76 | ALU, 10V, 47 μ F, 20%, SME-VB | L101-401 | 8256 0660 00 | Module, trap, AF |
| C908,910 | 8232 8021 04 | CER, 50V, 0.1 μ F, 10%, SL | | | |
| C909 | 8232 9012 23 | PES, 50V, 0.022 μ F, 5%, AMZV | | | |

| Ref. No. | Parts No. | Description |
|----------|--------------|--------------------------|
| R645,646 | 8230 1384 73 | 1/4W, 47k Ω , 5% |
| R647,648 | 8230 1381 05 | 1/4W, 1M Ω , 5% |
| R649,650 | 8230 1382 24 | 1/4W, 220k Ω , 5% |
| R651,652 | 8230 1382 03 | 1/4W, 20k Ω , 5% |
| R653,654 | 8230 1382 02 | 1/4W, 2k Ω , 5% |
| R655,656 | 8230 1382 21 | 1/4W, 220 Ω , 5% |
| R701,702 | 8230 1382 21 | 1/4W, 220 Ω , 5% |
| R703,704 | 8230 1386 82 | 1/4W, 6.8k Ω , 5% |
| R705,706 | 8230 1384 73 | 1/4W, 47k Ω , 5% |
| R709,710 | 8230 1381 24 | 1/4W, 120k Ω , 5% |
| R711,714 | 8230 1381 53 | 1/4W, 15k Ω , 5% |
| R715,716 | 8230 1382 72 | 1/4W, 2.7k Ω , 5% |
| R721,722 | 8230 1384 73 | 1/4W, 47k Ω , 5% |
| R723,726 | 8230 1381 83 | 1/4W, 18k Ω , 5% |
| R727,730 | 8230 1382 23 | 1/4W, 22k Ω , 5% |
| R731,732 | 8230 1381 83 | 1/4W, 18k Ω , 5% |
| R735,738 | 8230 1382 23 | 1/4W, 22k Ω , 5% |
| R783,786 | 8230 1381 53 | 1/4W, 15k Ω , 5% |
| R801,802 | 8230 1384 73 | 1/4W, 47k Ω , 5% |
| R803,804 | 8230 1382 23 | 1/4W, 22k Ω , 5% |
| R805,806 | 8230 1385 63 | 1/4W, 56k Ω , 5% |
| R811,812 | 8230 1384 73 | 1/4W, 47k Ω , 5% |
| R813,816 | 8230 1382 22 | 1/4W, 2.2k Ω , 5% |
| R823,824 | 8230 1382 25 | 1/4W, 2.2M Ω , 5% |
| R825,826 | 8230 1384 73 | 1/4W, 47k Ω , 5% |
| R827,828 | 8230 1382 23 | 1/4W, 22k Ω , 5% |
| R829,830 | 8230 1383 34 | 1/4W, 330k Ω , 5% |
| R835,836 | 8230 1382 20 | 1/4W, 22 Ω , 5% |
| R837,838 | 8230 1382 24 | 1/4W, 220k Ω , 5% |
| R845 | 8230 1384 73 | 1/4W, 47k Ω , 5% |
| R846,847 | 8230 1382 22 | 1/4W, 2.2k Ω , 5% |
| R848,849 | 8230 1382 24 | 1/4W, 220k Ω , 5% |

CARBON POTS

| | | |
|----------|--------------|---------------|
| V601,602 | 8240 2490 00 | VR12B-100K-CT |
| V603,604 | 8240 2500 00 | VR545A-50K |
| V605,608 | 8240 2510 00 | VR9B-50K-C |
| V609,610 | 8240 2520 00 | VR9B-50K |
| V611,612 | 8240 2490 00 | VR12B-100K-CT |
| V701,702 | 8240 2490 00 | VR12B-100K-CT |
| V703,704 | 8240 2500 00 | VR545A-50K |
| V705,708 | 8240 2510 00 | VR9B-50K-C |
| V709,710 | 8240 2520 00 | VR9B-50K |
| V711,712 | 8240 2490 00 | VR12B-100K-CT |
| V781,782 | 8240 2530 00 | VR12A-30KD |
| V801 | 8240 2540 00 | VR545A-50KD |
| V802 | 8240 2550 00 | VR12A-10KD |

| Ref. No. | Parts No. | Description |
|----------|-----------|-------------|
|----------|-----------|-------------|

CAPACITORS

ALU = Electrolytic type

CER = Ceramic type

PES = Mylar type

PPR = Polypropylene type

| | | |
|----------|--------------|-------------------------------------|
| C601,602 | 8232 1462 25 | ALU, 50V, 2.2 μ F, 20%, SME-VB |
| C603,604 | 8232 8023 30 | CER, 50V, 33pF, 10%, SL |
| C607,610 | 8232 9016 82 | PES, 50V, 0.0068 μ F, 5%, AMZV |
| C611,612 | 8232 9014 72 | PES, 50V, 0.0047 μ F, 5%, AMZV |
| C617,618 | 8232 1434 76 | ALU, 16V, 47 μ F, 20%, SME-VB |
| C619 | 8232 1412 27 | ALU, 6.3V, 220 μ F, 20%, SME-VB |
| C621,622 | 8232 8024 71 | CER, 50V, 470pF, 10%, SL |
| C623,624 | 8232 1461 05 | ALU, 50V, 1 μ F, 20%, SME-VB |
| C625,626 | 8232 8025 60 | CER, 50V, 56pF, 10%, SL |
| C627,628 | 8232 1424 76 | ALU, 10V, 47 μ F, 20%, SME-VB |
| C629,630 | 8232 1461 06 | ALU, 50V, 10 μ F, 20%, SME-VB |
| C631,634 | 8232 8021 01 | CER, 50V, 100pF, 10%, SL |
| C641,642 | 8232 1424 76 | ALU, 10V, 47 μ F, 20%, SME-VB |
| C701,702 | 8232 1462 25 | ALU, 50V, 2.2 μ F, 20%, SME-VB |
| C703,704 | 8232 8023 30 | CER, 50V, 33pF, 10%, SL |
| C707,710 | 8232 9016 82 | PES, 50V, 0.0068 μ F, 5%, AMZV |
| C711,712 | 8232 9014 72 | PES, 50V, 0.0047 μ F, 5%, AMZV |
| C717,718 | 8232 1434 76 | ALU, 16V, 47 μ F, 20%, SME-VB |
| C801,802 | 8232 1461 06 | ALU, 50V, 10 μ F, 20%, SME-VB |
| C803,804 | 8232 8021 00 | CER, 50V, 10pF, +/-1pF, SL |
| C805,806 | 8232 1432 26 | ALU, 16V, 22 μ F, 20%, SME-VB |
| C807,808 | 8232 1461 06 | ALU, 50V, 10 μ F, 20%, SME-VB |
| C809,810 | 8232 8021 50 | CER, 50V, 15pF, 10%, SL |
| C811,812 | 8232 1432 26 | ALU, 16V, 22 μ F, 20%, SME-VB |
| C813,814 | 8232 1431 06 | ALU, 16V, 10 μ F, 20%, SME-VB |
| C815,816 | 8232 8021 00 | CER, 50V, 10pF, +/-1pF, SL |
| C819,820 | 8232 1432 26 | ALU, 16V, 22 μ F, 20%, SME-VB |
| C821,822 | 8232 1431 06 | ALU, 16V, 10 μ F, 20%, SME-VB |
| C823,824 | 8232 8021 00 | CER, 50V, 10pF, +/-1pF, SL |
| C825,826 | 8232 1432 26 | ALU, 16V, 22 μ F, 20%, SME-VB |
| C827,828 | 8232 1461 06 | ALU, 50V, 10 μ F, 20%, SME-VB |
| C829,830 | 8232 8021 20 | CER, 50V, 12pF, 10%, SL |
| C831,832 | 8232 1412 27 | ALU, 6.3V, 220 μ F, 20%, SME-VB |
| C835,836 | 8232 1412 27 | ALU, 6.3V, 220 μ F, 20%, SME-VB |
| C837 | 8232 1412 27 | ALU, 6.3V, 220 μ F, 20%, SME-VB |
| C841 | 8232 1461 06 | ALU, 50V, 10 μ F, 20%, SME-VB |
| C842 | 8232 8024 70 | CER, 50V, 47pF, 10%, SL |
| C844 | 8232 1432 26 | ALU, 16V, 22 μ F, 20%, SME-VB |
| C849,850 | 8232 8142 23 | CER, 50V, 0.022 μ F, 10%, SL |

MISCELLANEOUS

| | | |
|------|--------------|-----------|
| S101 | 8253 6740 00 | SW, slide |
| S501 | 8253 6720 00 | SW, slide |

| Ref. No. | Parts No. | Description |
|----------|--------------|-------------------------------|
| S601,602 | 8253 6720 00 | SW, slide |
| S603,604 | 8253 4270 00 | SW, Slide, 2C2P |
| S605,606 | 8253 6730 00 | SW, slide |
| S701,702 | 8253 6730 00 | SW, slide |
| S703,704 | 8253 6730 00 | SW, slide |
| S801 | 8253 4180 00 | SW, slide |
| S802,803 | 8253 6750 00 | SW, slide |
| J601,602 | 8245 3510 00 | Connector, phone jack |
| J701,702 | | |
| J807,885 | 8245 2610 00 | Connector, phone jack, stereo |
| | 8212 4870 00 | Holder, LED, 2P, XR-5 |

JACK PCB ASSEMBLY

| Ref. No. | Parts No. | Description |
|----------|--------------|-----------------------|
| | 8273 9450 00 | PCB Assy, JACK, XR-5 |
| | 8245 1451 00 | Plain PCB, JACK, XR-5 |

TRANSISTORS

| | | |
|----------|--------------|------------------------------|
| Q801-805 | 8236 0746 00 | Digital, driver, DTC114TS-TP |
| Q881-884 | 8236 0746 00 | Digital, driver, DTC114TS-TP |

CARBON RESISTORS

| | | |
|----------|--------------|-----------------|
| R781,782 | 8230 1282 21 | 1/4W, 220Ω, 5% |
| R807,808 | 8230 1381 03 | 1/4W, 10kΩ, 5% |
| R809,810 | 8230 1384 71 | 1/4W, 470Ω, 5% |
| R817,818 | 8230 1381 03 | 1/4W, 10kΩ, 5% |
| R819,820 | 8230 1384 71 | 1/4W, 470Ω, 5% |
| R831,832 | 8230 1381 52 | 1/4W, 1.5kΩ, 5% |
| R833,834 | 8230 1382 22 | 1/4W, 2.2kΩ, 5% |
| R843 | 8230 1381 03 | 1/4W, 10kΩ, 5% |
| R844 | 8230 1384 71 | 1/4W, 470Ω, 5% |
| R811-884 | 8230 1384 71 | 1/4W, 470Ω, 5% |
| R885-888 | 8230 1381 03 | 1/4W, 10kΩ, 5% |
| R889-892 | 8230 1384 72 | 1/4W, 4.7kΩ, 5% |

MISCELLANEOUS

| | | |
|----------|--------------|-------------------------------|
| J641,642 | 8245 2290 00 | Connector, phone jack, stereo |
| J781 | 8245 2320 00 | Connector, phone jack |
| J782-784 | 8245 3510 00 | Connector, phone jack |
| J801,805 | 8245 2610 00 | Connector, RCA jack, US2P |
| J803,804 | 8245 3510 00 | Connector, phone jack |
| J806 | 8245 2630 00 | Connector, RCA jack, US1P |
| J881 | 8245 2260 00 | Connector, RCA jack, US4P |

DISP PCB ASSEMBLY

| Ref. No. | Parts No. | Description |
|----------|--------------|-----------------------|
| | 8273 9460 00 | PCB Assy, DISP, XR-5 |
| | 8251 4520 00 | Plain PCB, DISP, XR-5 |

IC's

| | | |
|----------|--------------|-----------------|
| U501,502 | 8236 0389 00 | Analog, IR2E27A |
|----------|--------------|-----------------|

TRANSISTORS

| | | |
|------|--------------|----------------|
| Q501 | 8234 1002 00 | Tr, 2SA1300-BL |
|------|--------------|----------------|

DIODES

| | | |
|----------|--------------|-----------------|
| D501 | 8234 1974 00 | Diode, 1A2-ES80 |
| D514,515 | 8234 1046 00 | D-SLR-332VC-TB7 |
| D524,525 | 8234 1046 00 | D-SLR-332VC-TB7 |
| D534,535 | 8234 1046 00 | D-SLR-332VC-TB7 |
| D544,545 | 8134 1046 00 | D-SLR-332VC-TB7 |
| D511-513 | 8234 1046 00 | D-SLR-332YC-TB7 |
| D521-523 | 8234 1046 00 | D-SLR-332YC-TB7 |
| D531-533 | 8234 1046 00 | D-SLR-332YC-TB7 |
| D541-543 | 8234 1046 00 | D-SLR-332YC-TB7 |

CARBON RESISTOR

| | | |
|----------|--------------|-----------------|
| R514-517 | 8230 1387 52 | 1/4W, 7.5kΩ, 5% |
| R510-513 | 8230 1381 83 | 1/4W, 18kΩ, 5% |
| R501 | 8230 1382 23 | 1/4W, 22kΩ, 5% |

CAPACITORS

ALU = Electrolytic type

CER = Ceramic type

| | | |
|----------|--------------|-------------------------------|
| C501 | 8232 1434 77 | ALU, 16V, 470μF, 20%, SME-VB |
| C502 | 8232 1431 06 | ALU, 16V, 10μF, 20%, SME-VB |
| C503-506 | 8232 1444 75 | ALU, 25V, 4.7μF, 20%, SME-VB |
| C507-510 | 8232 1464 74 | ALU, 50V, 0.47μF, 20%, SME-VB |
| C511-514 | 8232 8021 02 | CER, 50V, 1000pF, 10%, SL |

MISCELLANEOUS

| | |
|--------------|--------------------------------|
| 8245 1990 00 | Connector, jack, B6B-PH-K-S, 6 |
| 8212 4860 00 | Holder, LED, XR-5 |

POWER PCB ASSEMBLY

| Ref. No. | Parts No. | Description |
|----------|--------------|----------------------|
| | 8273 9450 00 | PCB Assy, PWR, XR-5 |
| | 8251 4510 00 | Plain PCB, PWR; XR-5 |

DIODES

| | | |
|----------|--------------|-----------------|
| D002,003 | 8249 1974 00 | Diode, 1A2-ES80 |
|----------|--------------|-----------------|

MISCELLANEOUS

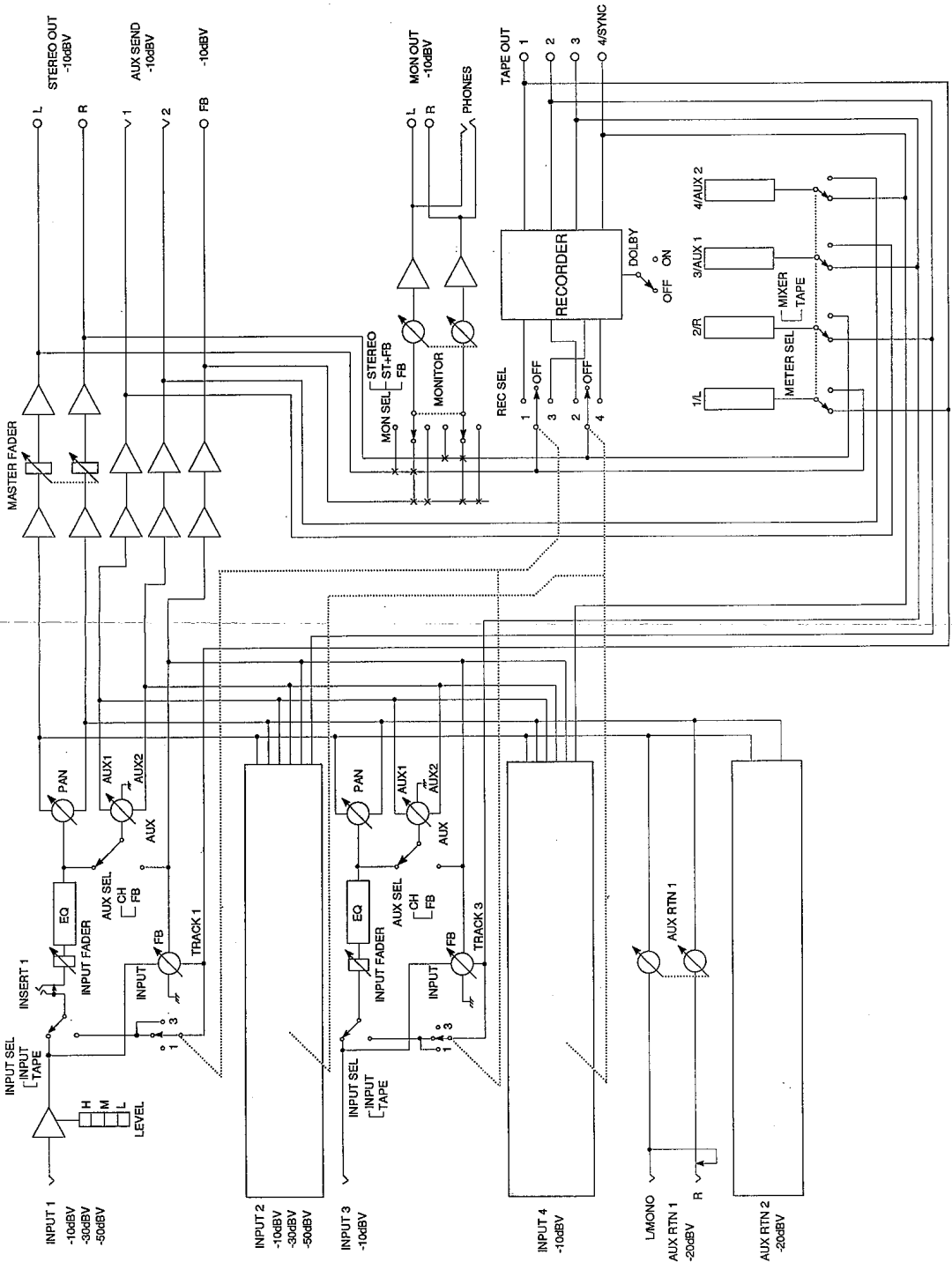
| | | |
|------|--------------|---------------------------|
| S001 | 8253 6610 00 | SW, Slide |
| J001 | 8245 5410 00 | Connector, jack, DC inlet |

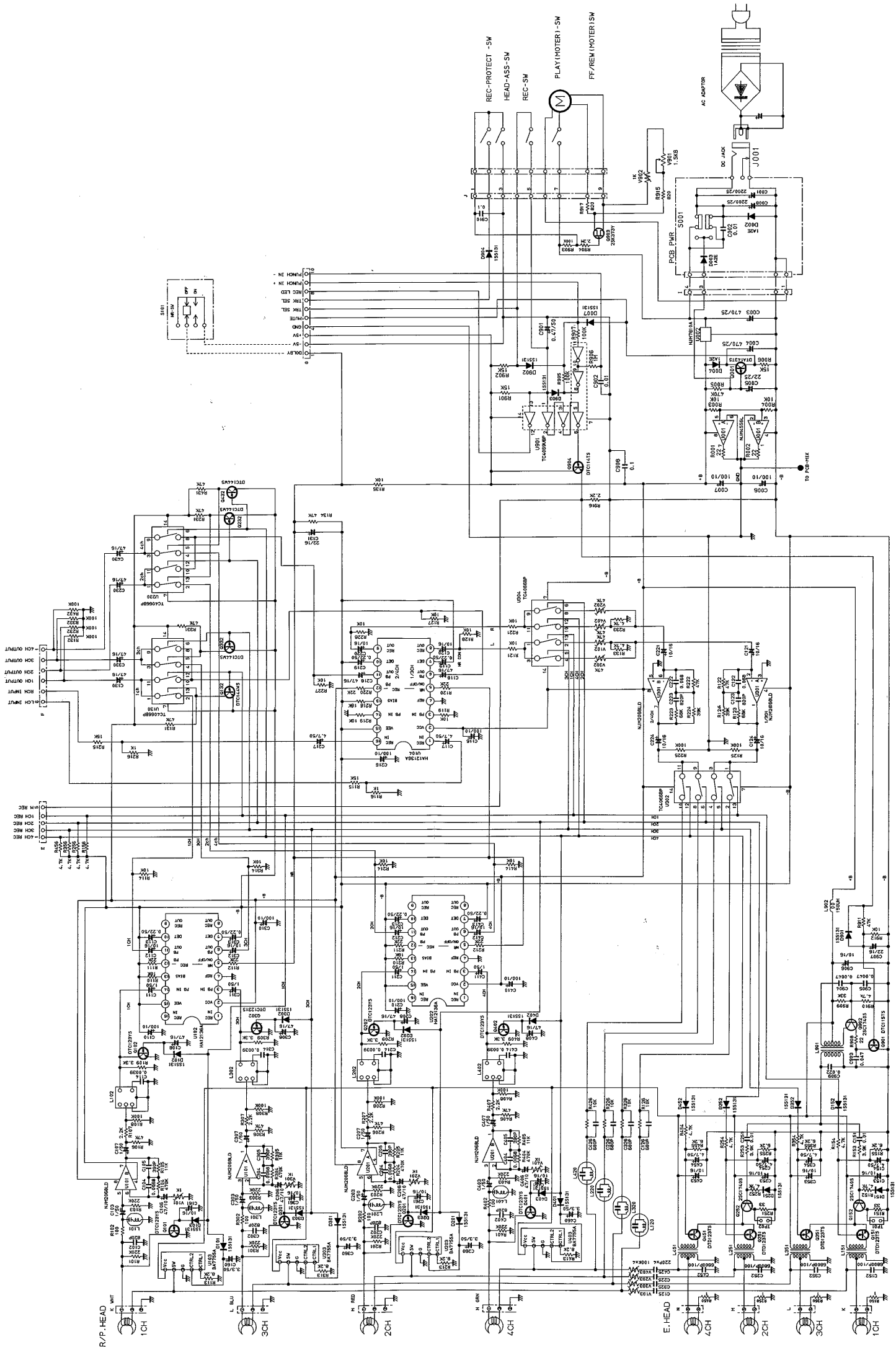
CAPACITORS

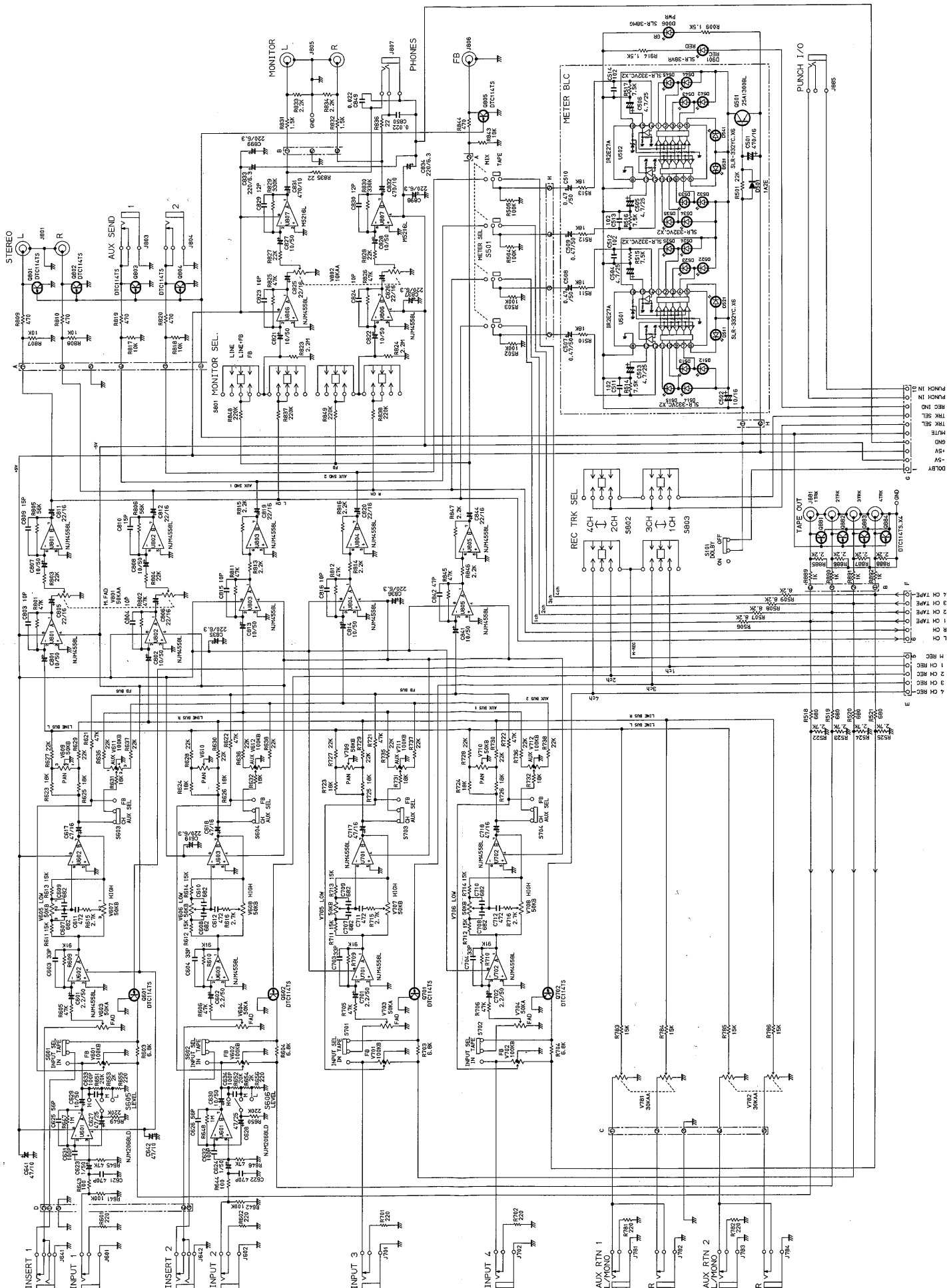
| | | |
|----------|--------------|-------------------------------------|
| C001,008 | 8232 1442 28 | ALU, 25V, 2200 μ F, 20%, SME-VB |
| C002 | 8232 8031 03 | CER, 50V, 0.01 μ F, +80-20%, YF |



5. BLOCK DIAGRAM







Fostex®

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