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 CORRESPONDANTE 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 MOISTURE."

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.



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.

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.

TABLE OF CONTENTS

1. SPECIFICATIONS 3
2. CONTROLS, INDICATORS CONNECTORS 5
3. MAINTENANCE 7
4. EXPLODED VIEW, PCB ASSEMBLY AND PARTS LIST 16
5. BLOCK DIAGRAM 29
6. CIRCUIT DIAGRAM ..... ATTACHED SHEET

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 10kΩ	
Input impedance	20kΩ	
Rated input level	HIGH	-10 dBV (0.3V)
	MID	-30 dBV (30mV)
	LOW	-50 dBV (3mV)
INPUT 3, 4: PHONE jack		
Input impedance	10kΩ	
Rated input level	-10 dBV (0.3V)	
AUX RTN 1, 2 (L, R): PHONE jack		
Input impedance	20kΩ	
Rated input level	-20 dBV (0.1V)	
INSERT 1, 2: STEREO PHONE jack		
SEND (tip)		
Output load impedance	10kΩ or higher	
Rated output level	-10 dBV (0.3V)	
RETURN (ring)		
Input impedance	20kΩ	
Rated input level	-10 dBV (0.3V)	
STEREO OUT (L, R): PHONE jack		
Output load impedance	10kΩ or higher	
Rated input level	-10 dBV (0.3V)	
AUX SEND 1, 2: PHONE jack		
Output load impedance	10kΩ or higher	
Rated output level	-10 dBV (0.3V)	
Foldback (FB): RCA pin jack		
Output load impedance	10kΩ or higher	
Rated output level	-10 dBV (0.3V)	
NON OUT L, R: PHONE jack		
Output load impedance	10kΩ or higher	
Rated output level	-10 dBV (0.3V)	
TAPE OUT 1 - 4/SYNC: RCA pin jack		
Output load impedance	10kΩ or higher	
Rated output level	-10 dBV (0.3V)	
PHONES: STEREO PHONE jack		
Output load impedance	40Ω	
Rated output level	20mW	
Equalizer		
HIGH	10kHz ± 10 dB (shelving)	
LOW	100 Hz ± 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 minuites (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) x 321(D) x 105(H)

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

*Dolby nois 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

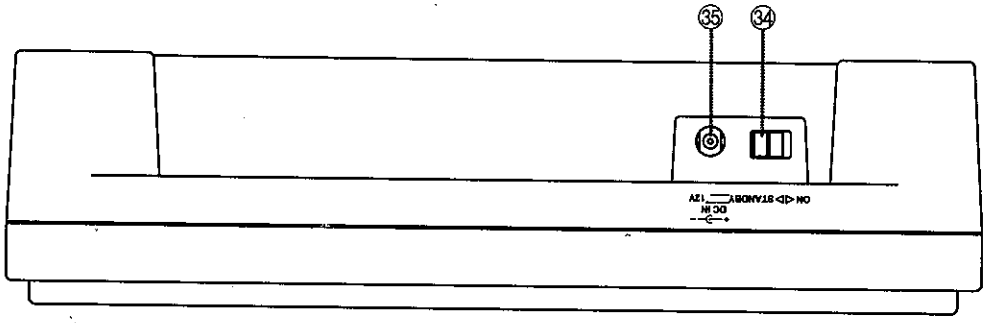
1. INPUT FADER
2. LEVEL SWITCH
3. CHANNEL SELECT SWITCH
4. FOLDBACK LEVEL CONTROL
5. PANPOT
6. LOW EQUALIZER
7. HIGH EQUALIZER
8. AUX SEND LEVEL CONTROL
9. AUX SEND SELECT SWITCH
10. PITCH CONTROL
11. ALX RETURN LEVEL CONTROL
12. MONITOR LEVEL CONTROL
13. MONITOR SELECT SWITCH
14. MASTER FADER
15. RECORD 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

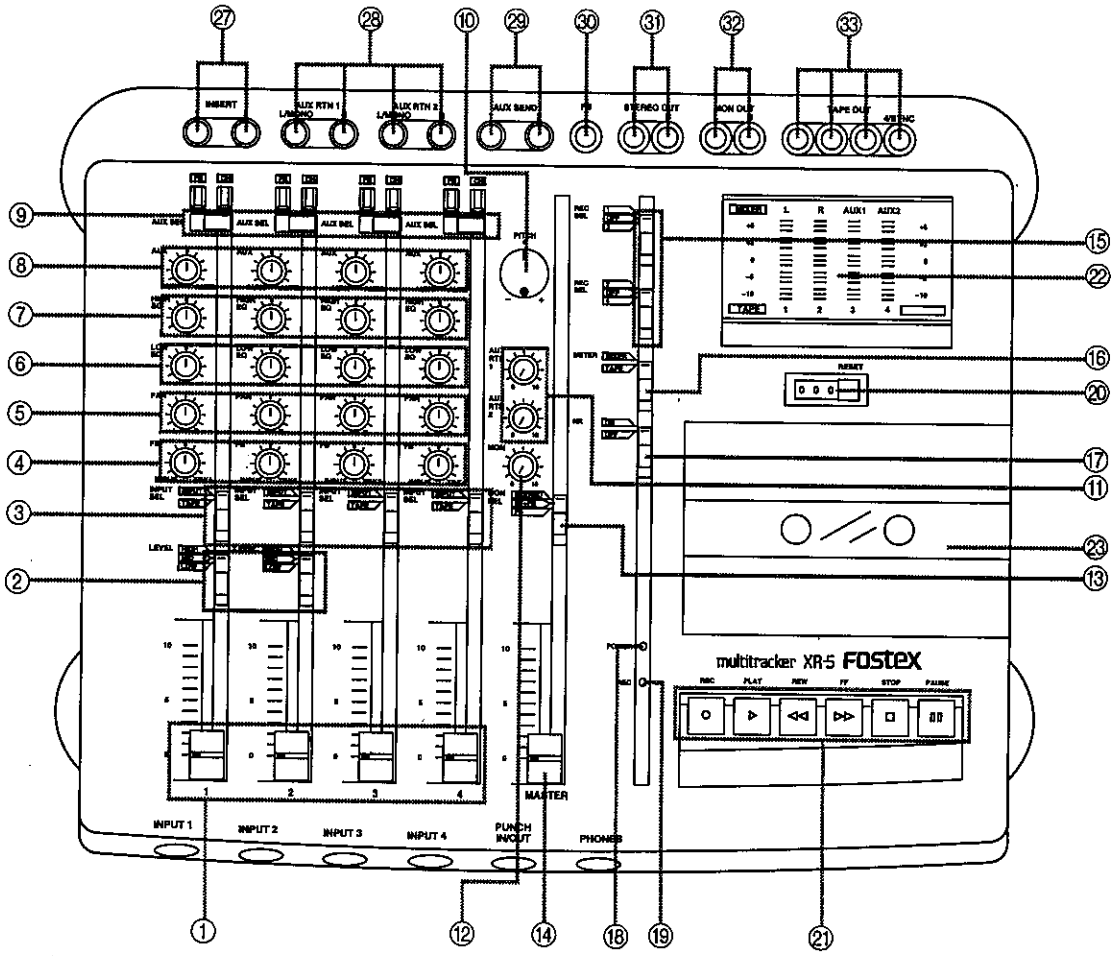
FRONT PANEL

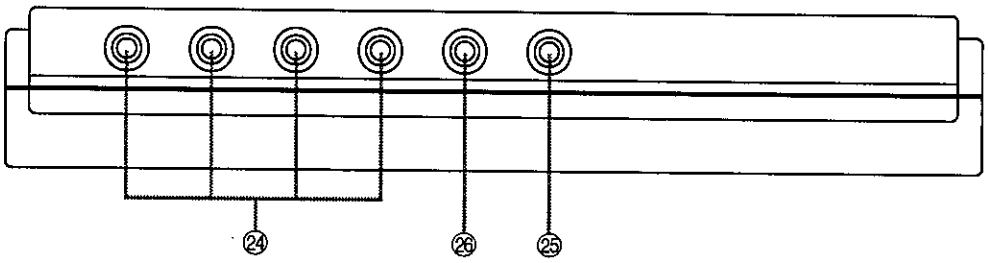
24. INPUT JACK
25. HEADPHONE JACK
26. PUNCH IN/OUT JACK

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


35
34
DC IN 12V
ON STANDBY


27
28
10
29
30
31
32
33
INSERT
AUX RTN 1
AUX RTN 2
AUX SEND
PAN
STEREO OUT
MON OUT
TAPE OUT
MIXING
9
8
7
6
5
4
3
2
15
22
16
20
17
11
23
13
multitracker XR-5 FOSTEX
REC
PLAY
REW
FF
STOP
PAUSE
MASTER
INPUT 1
INPUT 2
INPUT 3
INPUT 4
PUNCH IN/OUT
PHONES
1
12
14
18
19
21


24
26
25

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 3,000Hz ± 45Hz.
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 ±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) ±1dB 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 ± 3dB
		-15dB ± 3dB
10kHz	:	+15dB ± 3dB
		-15dB ± 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) ±1dB 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) ±1dB 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) ±1dB 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)± 1dB reading.
If the reading is not within the spec, adjust V101 through V401 (1kΩB) 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 ± 3dB 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.

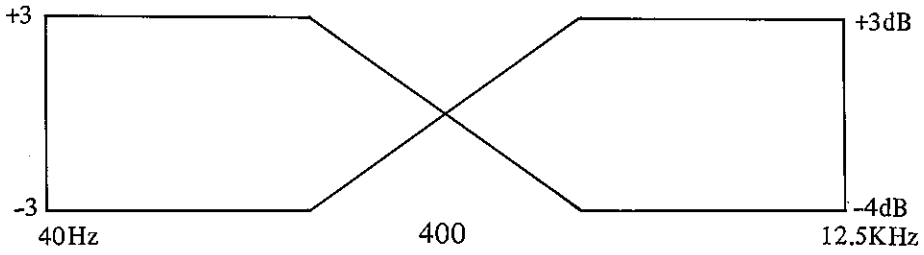
5) Record the signal on the blank tape by depressing PAUSE button.

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) ± 1dB, adjust V102 (47kΩB) on the R/P AMP PCB Assy so that the RECORDING LEVEL will be within the spec.

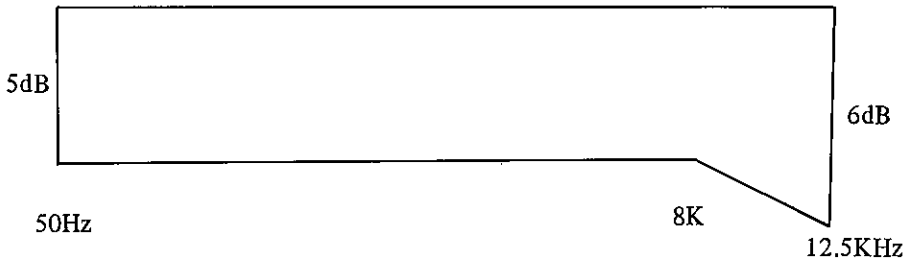
7) Adjust the remaining tracks in the same way.
TRACK 2 : Adjusted by V202 (47kΩB)
TRACK 3 : Adjusted by V302 (47kΩB)
TRACK 4 : Adjusted by V402 (47kΩB)

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) (100kΩB) 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) Desconnect the oscillator from INPUT while recording the signal, and record a length of no-signal part.

3) Rewind the tape to the start point of recording and playback the tape, measure the difference between the no-signal part and the playback reference level at TAPE OUT.

Specification DOLBY NR OFF : 45dB or more UNWTD (DIN AUDIO)
48dB or more A-WTD
DOLBY NR ON : 47dB or more UNWTD (DIN AUDIO)
55dB or more A-WTD

3.9.8 T.H.D. MEASUREMENT

1) Connect a Distortion Meter to TAPE OUT 1 through 4 respectively and set DOLBY NR SW to OFF position.
2) Under the same condition as 3.9.5 RECORDING LEVEL CALIBRATION, RECORD a 1kHz, -10dBV (0.3V) sine wave signal.
3) Playback the recorded part and check the distortion level is it is less than 2%.

3.9.9 ERASURE MEASUREMENT

1) Connect the input terminal of a 1kHz Bandpass Filter to the TAPE OUT 1 through 4 respectively and the output terminal of the filter to a AC volt meter, and set a DOLBY NR SW to OFF position.
2) Under the same condition as 3.9.5 RECORDING LEVEL CALIBRATION, apply a 1kHz, 0dBV (1.0V) signal which is 10dB higher than the reference level, to the INPUT 1 through 4 phone jacks and record on the blank tape.
3) Rewind tape to the start point of recording, advance tape a short length and record a no-signal section on the remaining part of tape.
4) Rewind tape to the start point again and playback the tape.
5) Check the level ratio between the playback level and the no-signal section, erased part, if it is 70dB or more.

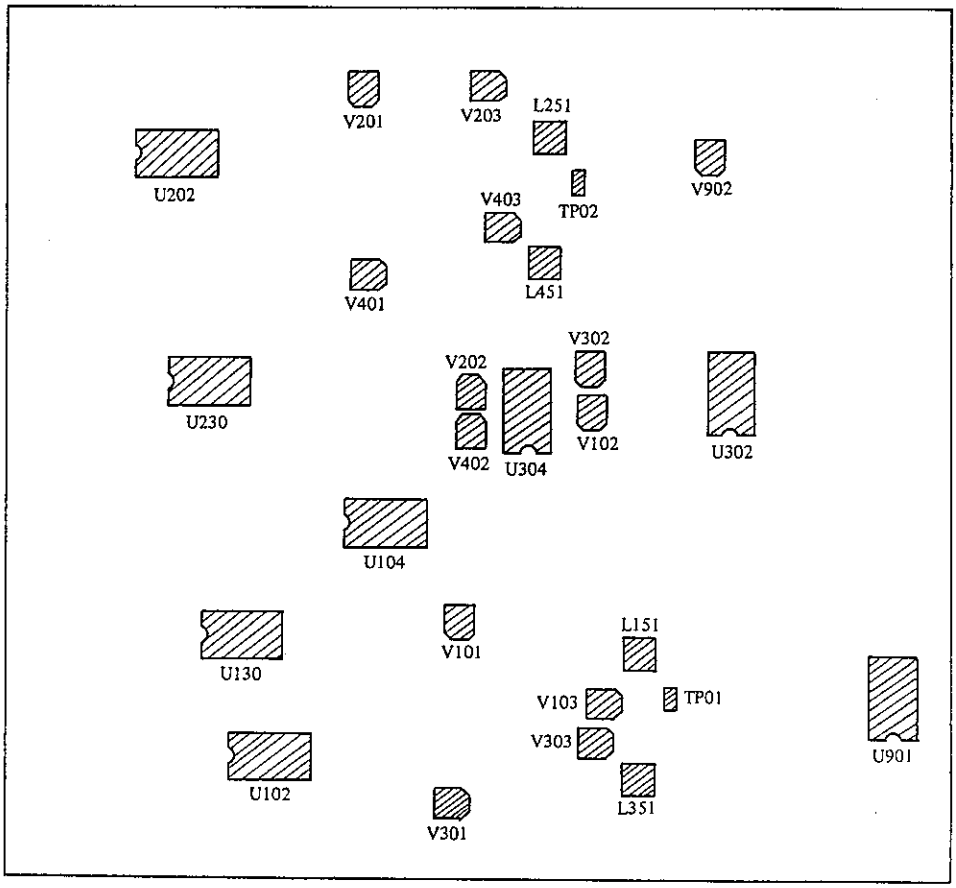
3.9.10 SYNC CROSSTALK MEASUREMENT

Sync crosstalk is the relative figure against the reference level, on how much of the recording signal from track in the recording mode is leaking into the track being reproduced.
When sync crosstalk is excessively high, playback output during overdubbing will sound muddy by effect of the recording signal leakage or cause oscillation at ping-pong recording (where the playback output is transferred to another track).

1) Set the controls as follows.
   AUX RTN POT : 10 (Full CW)
   HI & LO EQ POT : At "0" (center) position
   DOLBY NR SW : ON
2) Set RECORD TRACK SELECT SW of TRACK 2 only to ON [L.R. (right) position].
3) Apply a 1kHz, -20dBV (0.1V) sine wave signal to AUX RTN pin jack.
4) Connect an AC volt meter to TAPE OUT 2 and put XR-5 in the REC mode. Then, adjust MASTER FADER for an output level of -10dBV (0.3V) at TAPE OUT 2.
5) Connect the AC volt meter to TAPE OUT 1 & 3 and confirm that the sync crosstalk level on TRACK 1 & 3 is as follows while sweeping the frequency of the oscillator.
   At 1kHz : less than -30dBV
   1kHz ~ peak : less than -13dBV
6) Check the sync crosstalk level on TRACK 2 ~ 4 in the same way.

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

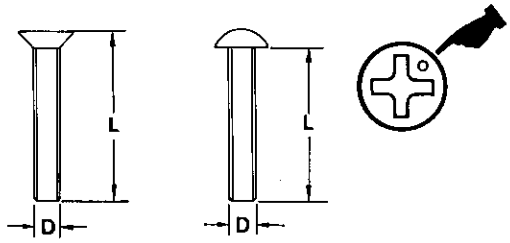
ASSEMBLING HARDWARE CODING LIST

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 M3 x 6 ·

- Length in mm (L)
- Diameter in mm (D) *
- Metric System
- Nomenclature



* Inner dia. for washers and nuts

	CODE	NAME	TYPE
MACHINE SCREW	P	Pan Head Screw	
	T	Stove Head Screw (Truss)	
	B	Binding Head Screw	
	F	Flat Countersunk Head Screw	
	O	Oval Countersunk Head Screw	
	PWH	Pan-Washer Head Screw	
WOOD SCREW	RW	Round Head Wood Screw	
	FW	Flat Countersunk Wood Screw	
	OW	Oval Countersunk Wood Screw	
TAPPING SCREW	PTP	Pan Head Self Tapping Screw (B type)	
	PTPWH	Pan-washer Head Self Tapping Screw (B type)	
	TTP	Stove Head Self Tapping Screw (B type)	
	FTP	Flat Countersunk Head Self Tapping Screw (B type)	
TAPTITE SCREW	PTT	Pan Head Tapping Screw	
	PTTWH	Pan-Washer Head Tapping Screw	
	TTT	Stove Head Tapping Screw	
	FTT	Flat Countersunk Head Tapping Screw	
SEMS SCREW	PS	Pan Head Screw with Spring Washer	
	PSW	Pan Head Screw with Washer and Spring Washer	
WASHER, LUG, NUT	W	Flat Washer	
	LW	Spring Washer	
	LWI	Internal Teeth Lock Washer	
	LWE	External Teeth Lock Washer	

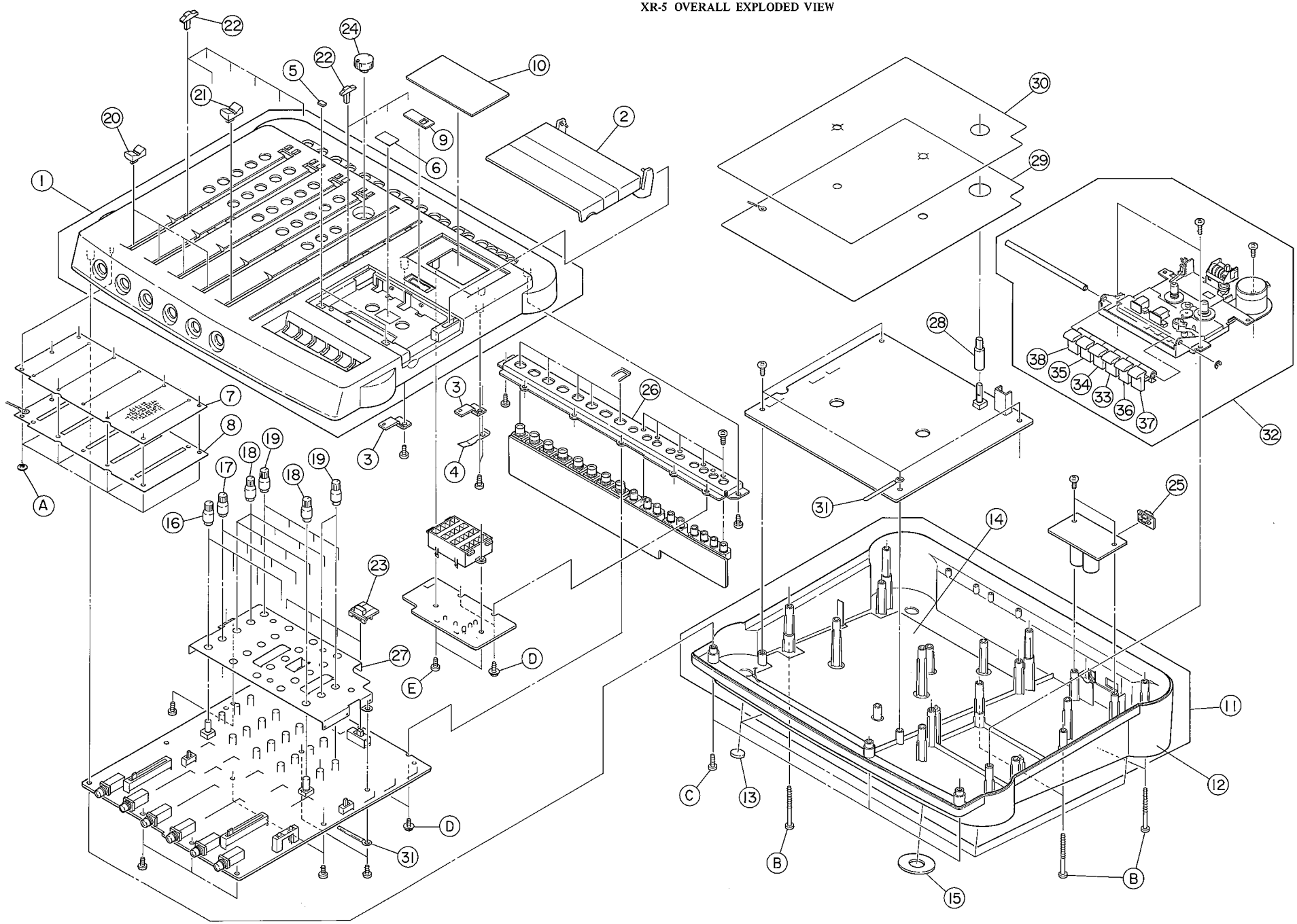
	CODE	NAME	TYPE
WASHER, LUG, NUT	TW	Trim Washer (Countersunk)	
	N	Hex Nut	
	L	Lug	
	THW	Thrust Washer (Poly Washer)	
SETSCREW	HSF	Hex Socket Setscrew (Flat Point)	
	HSC	Hex Socket Setscrew (Cup Point)	
	SSF	Slotted Socket Setscrew (Flat Point)	
	SSC	Slotted Socket Setscrew (Cup Point)	
BOLT	HSB	Hex Soket Head Bolt	
	HB	Hex Head Bolt	
RING, PIN	ER	E-Ring (Retaining Washer)	
	CRR	C-Ring (Inner)	
	CRS	C-Ring (Outer)	
	GR	Seeger Ring	
	SP	Spring Pin	
	SR	Snap Ring	
FINISH	Zn	Zinc plating	
	CZn	Colored zinc plating	
	BZn	Black zinc plating	
	Ni	Nickel plating	
	BNi	Black niekel plating	
	Cr	Chrome plating	
	BCr	Black chrome plating	

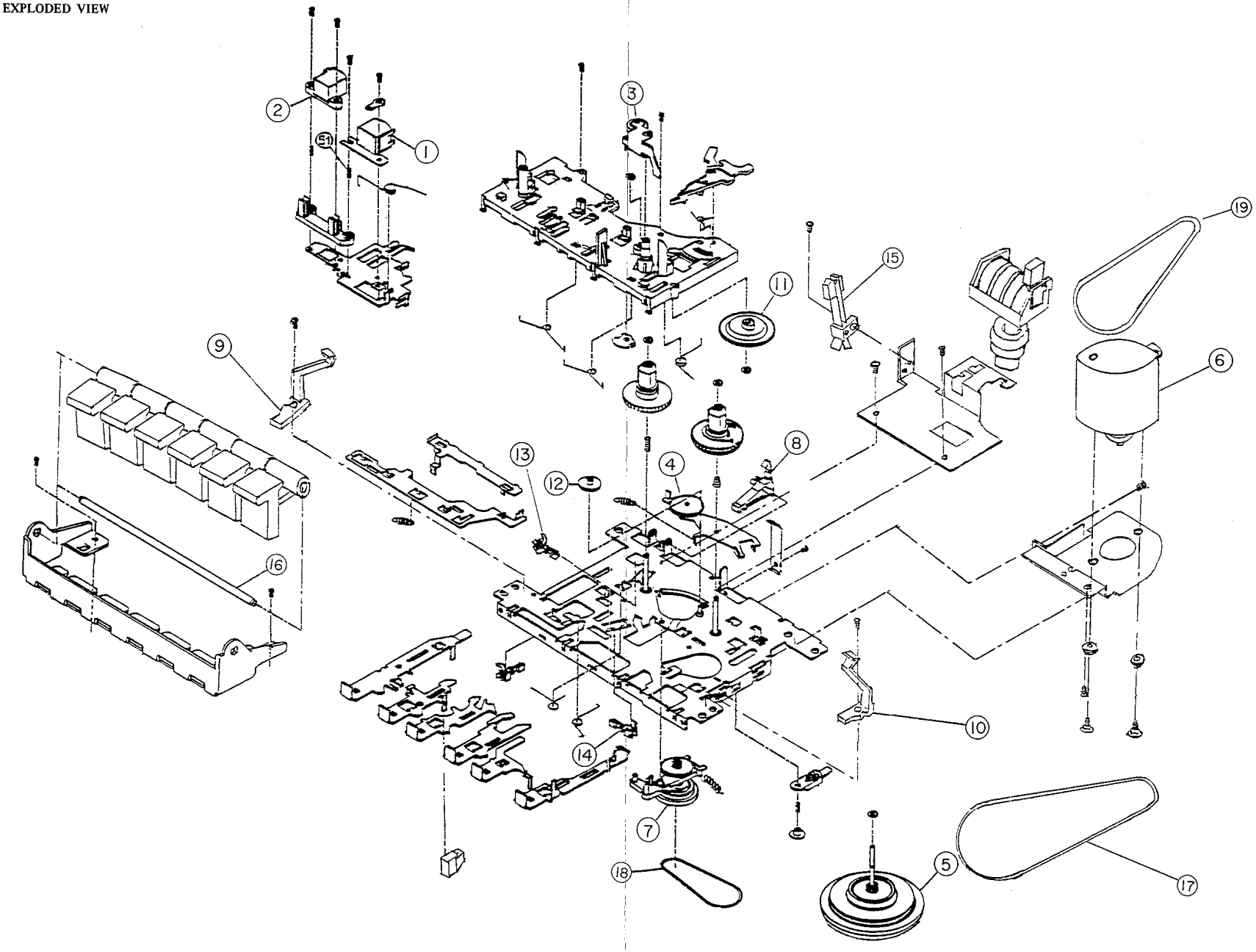
4.1 OVERALL EXPLODED VIEW

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

XR-5 OVERALL EXPLODED VIEW




1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19

4.2 MECHA EXPLODED VIEW

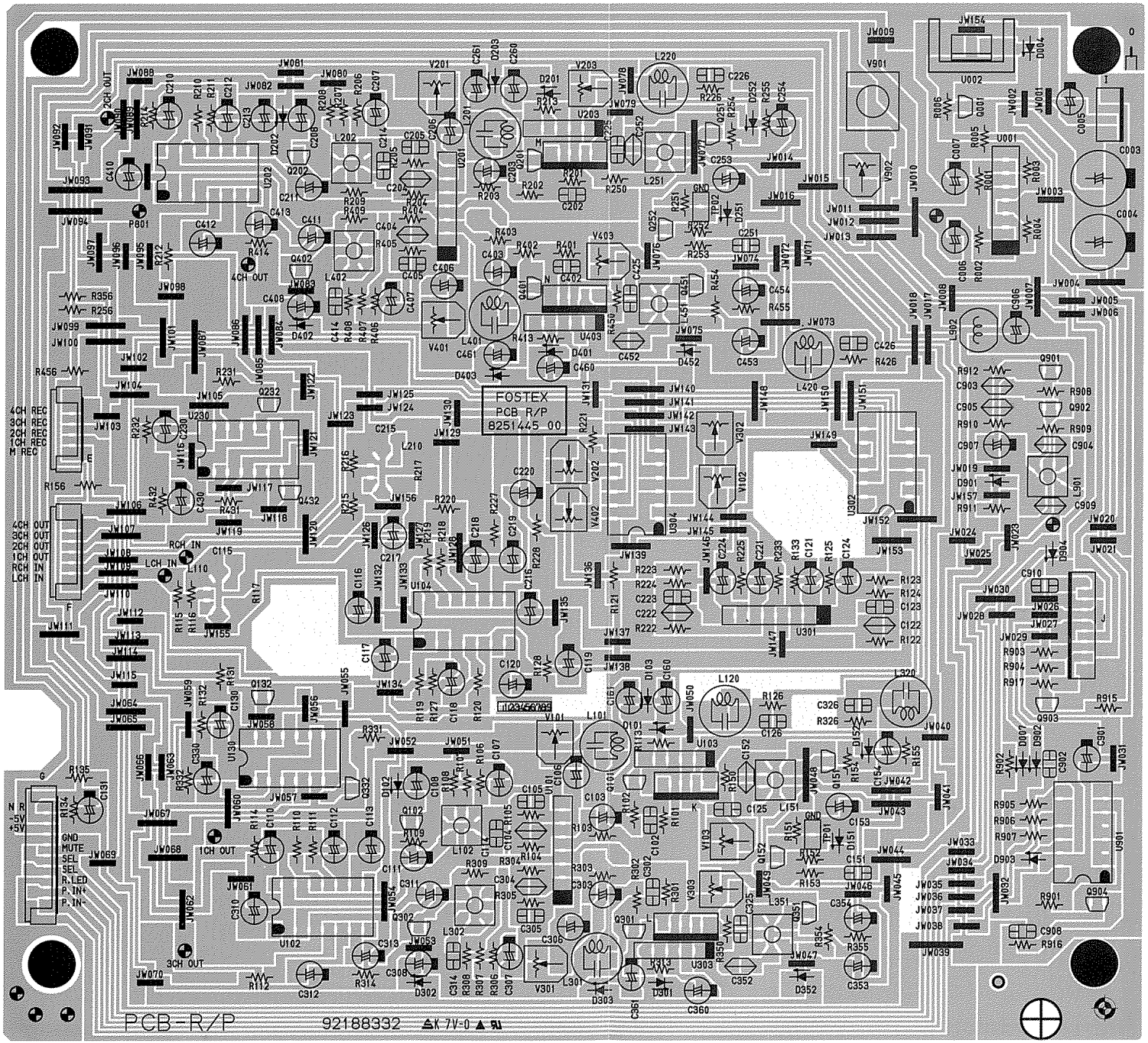
Model XR-5 Parts List (MECHA)

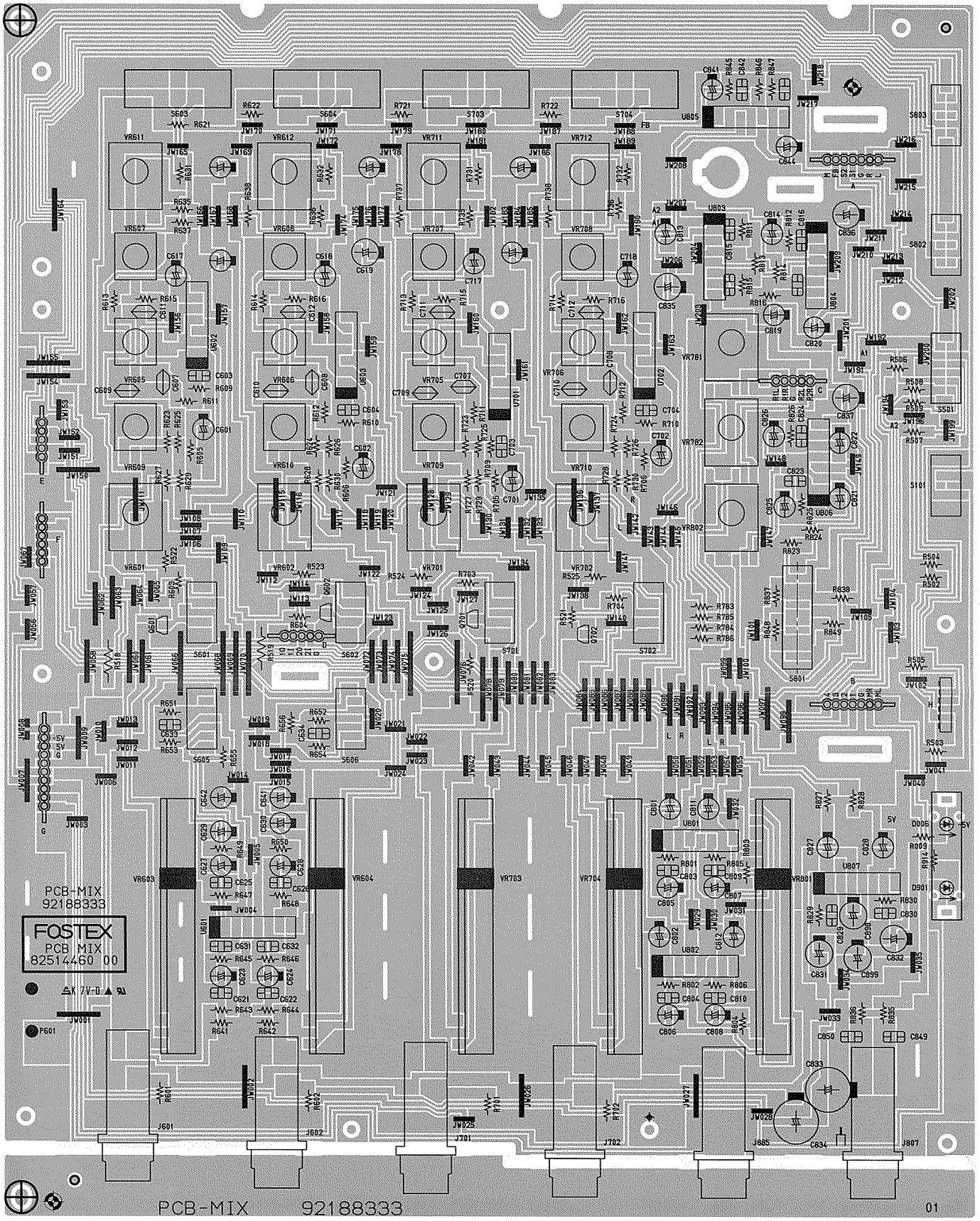
Ref. No.	Parts No.	Description
1	8259 0440 00	Head, R/P, XR-5
2	8259 0450 00	Head, E, XR-5
3	8260 4620 00	Pinch roller assy, XR-5
4	8260 4630 00	Idler arm assy, XR-5
5	8260 4640 00	Fly wheel assy, XR-5
6	8260 4650 00	Motor assy, XR-5
7	8260 4660 00	F.R. arm assy, XR-5
8	8212 4930 00	Lever, REC safety, 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
	8273 9430 00	PCB Assy, R/P AMP, XR-5
	8152 4490 00	Plain PCB, R/P AMP, XR-5
		IC's
U001	8236 0374 00	Analog, M5218AL
U002	8236 0351 00	Analog, NJM7810
U101-301	8236 0366 00	Analog, NJM2068LD
U102,104	8236 4180 00	Analog, HA12136A
U103-403	8236 4190 00	Analog, BA7755A
U130,230	8236 0754 00	Digital, TC4066BP
U202	8236 4180 00	Analog, HA12136A
U302,304	8236 0754 00	Digital, TC4066BP
U901	8236 0757 00	Digital, TC4069BP
		TRANSISTORS
Q001	8236 0552 00	Digital, driver, DTA143TS
Q101-401	8236 0549 00	Digital, driver, DTC343TS
Q102-402	8236 0748 00	Digital, driver, DTC143TS
Q132-432	8236 0749 00	Digital, driver, DTC144WS
Q151-451	8236 0549 00	Digital, driver, DTC343TS
Q152,252	8234 1423 00	Tr, 2SC1740S
Q901	8236 0747 00	Digital, driver, DTC115TS
Q902	8234 1423 00	Tr, 2SC1740S
Q903	8234 1907 00	FET, 2SK373Y
Q904	8236 0746 00	Digital, driver, DTC114TS-TP
		DIODES
D004	8234 1974 00	Diode, 1A2-ES80
D005	8234 0176 00	Diode, 1SS131
D101-401	8234 0176 00	Diode, 1SS131
D102-402	8234 0176 00	Diode, 1SS131
D151-451	8234 0176 00	Diode, 1SS131
D152-452	8234 0176 00	Diode, 1SS131
D901-904	8234 0176 00	Diode, 1SS131
		CARBON RESISTORS
R001,002	8230 1382 20	1/4W, 22Ω, 5%
R003,004	8230 1381 03	1/4W, 10kΩ, 5%
R005	8230 1384 74	1/4W, 470kΩ, 5%
R006	8230 1381 53	1/4W, 15kΩ, 5%
R101-401	8230 1382 24	1/4W, 220kΩ, 5%
R102-402	8230 1381 01	1/4W, 100Ω, 5%
R103-403	8230 1382 24	1/4W, 220kΩ, 5%
R104-404	8230 1384 74	1/4W, 470kΩ, 5%
R105-405	8230 1381 13	1/4W, 11kΩ, 5%
R106-406	8230 1384 73	1/4W, 47kΩ, 5%
R107-407	8230 1382 22	1/4W, 2.2kΩ, 5%
R108-408	8230 1381 04	1/4W, 100kΩ, 5%
R109-409	8230 1383 32	1/4W, 3.3kΩ, 5%
R110,210	8230 1381 83	1/4W, 18kΩ, 5%
R111,211	8230 1382 23	1/4W, 22kΩ, 5%
R112,212	8230 1382 23	1/4W, 22kΩ, 5%
R113-413	8230 1388 22	1/4W, 8.2MΩ, 5%
R114-414	8230 1381 03	1/4W, 10kΩ, 5%
R115,215	8230 1381 53	1/4W, 15kΩ, 5%
R116,216	8230 1389 11	1/4W, 910Ω, 5%
R119,219	8230 1381 03	1/4W, 10kΩ, 5%
R120,220	8230 1382 23	1/4W, 22kΩ, 5%
R121,221	8230 1381 03	1/4W, 10kΩ, 5%
R122,222	8230 r381 04	1/4W, 100kΩ, 5%
R123,223	8230 1384 33	1/4W, 43kΩ, 5%
R124,224	8230 1384 33	1/4W, 43kΩ, 5%
R125,225	8230 1381 04	1/4W, 100kΩ, 5%
R126-426	8230 1381 03	1/4W, 10kΩ, 5%
R127,227	8230 1381 03	1/4W, 10kΩ, 5%
R128,228	8230 1381 03	1/4W, 10kΩ, 5%
R131-431	8230 1384 73	1/4W, 47kΩ, 5%
R132,432	8230 1381 04	1/4W, 100kΩ, 5%
R133,233	8230 1384 72	1/4W, 4.7kΩ, 5%
R134	8230 1384 73	1/4W, 47kΩ, 5%
R135,912	8230 1381 03	1/4W, 10kΩ, 5%
R150-450	8230 1381 09	1/4W, 1Ω, 5%
R151,251	8230 1383 30	1/4W, 33Ω, 5%
R152,252	8230 1384 72	1/4W, 4.7kΩ, 5%
R153,253	8230 1383 92	1/4W, 3.9kΩ, 5%
R154-454	8230 1384 72	1/4W, 4.7kΩ, 5%
R155-455	8230 1384 73	1/4W, 47kΩ, 5%
R156-456	8230 1384 72	1/4W, 4.7kΩ, 5%
R901,902	8230 1381 53	1/4W, 15kΩ, 5%
R903,905	8230 1381 04	1/4W, 100kΩ, 5%
R904	8230 1382 25	1/4W, 2.2MΩ, 5%
R906	8230 1381 05	1/4W, 1MΩ, 5%
R907	8230 1381 04	1/4W, 100kΩ, 5%
R908	8230 1382 20	1/4W, 22Ω, 5%
R909	8230 1383 33	1/4W, 33kΩ, 5%
R910	8230 1384 72	1/4W, 4.7kΩ, 5%
R911	8230 1384 73	1/4W, 47kΩ, 5%
R913	8230 1383 92	1/4W, 3.9kΩ, 5%
R915,917	8230 1388 21	1/4W, 820Ω, 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


FOSTEX
PCB R/P
8251445 00
PCB-R/P
92188332


PCB-MIX
92188333
FOSTEX
PCB MIX
82514460 00
PCB-MIX 92188333 01

Ref. No.	Parts No.	Description

CAPACITORS

ALU = Electrolytic type
CER = Ceramic type
PES = Mylar type
PPR = Polypropylene type

C003,004	8232 1444 77	ALU, 25V, 470μF, 20%, SME-VB
C005	8232 1442 26	ALU, 25V, 22μF, 20%, SME-VB
C006,007	8232 1421 07	ALU, 10V, 100μF, 20%, SME-VB
C102-402	8232 8028 21	CER, 50V, 820pF, 10%, SL
C103-403	8232 1461 05	ALU, 50V, 1μF, 20%, SME-VB
C104-404	8232 9016 82	PES, 50V, 0.0068μF, 5%, AMZV
C105-405	8232 8023 91	CER, 50V, 390pF, 10%, SL
C106-406	8232 1424 76	ALU, 10V, 47μF, 20%, SME-VB
C107-407	8232 1461 05	ALU, 50V, 1μF, 20%, SME-VB
C108-408	8232 1464 75	ALU, 50V, 4.7μF, 20%, SME-VB
C110-410	8232 1421 07	ALU, 10V, 100μF, 20%, SME-VB
C111-411	8232 1461 05	ALU, 50V, 1μF, 20%, SME-VB
C112-412	8232 1431 06	ALU, 16V, 10μF, 20%, SME-VB
C113-413	8232 1462 24	ALU, 50V, 0.22μF, 20%, SME-VB
C114-414	8232 8033 92	CER, 50V, 0.0039μF, 10%, YR
C116,216	8232 1421 07	ALU, 10V, 100μF, 20%, SME-VB
C117,217	8232 1464 75	ALU, 50V, 4.7μF, 20%, SME-VB
C118,218	8232 1431 06	ALU, 16V, 10μF, 20%, SME-VB
C119,219	8232 1462 24	ALU, 50V, 0.22μF, 20%, SME-VB
C120,220	8232 1431 06	ALU, 16V, 10μF, 20%, SME-VB
C121,221	8232 1431 06	ALU, 16V, 10μF, 20%, SME-VB
C122,222	8232 9015 63	PES, 50V, 0.056μF, 5%, AMZV
C123,223	8232 8028 21	CER, 50V, 820pF, 10%, SL
C124,224	8232 1431 06	ALU, 16V, 10μF, 20%, SME-VB
C125-425	8232 8022 21	CER, 50V, 220pF, 10%, SL
C126-426	8232 8026 81	CER, 50V, 680pF, 10%, SL
C130-430	8232 1431 06	ALU, 16V, 10μF, 20%, SME-VB
C131	8232 1432 26	ALU, 16V, 22μF, 20%, SME-VB
C151,251	8232 8031 03	CER, 50V, 0.01μF, +80-20%, YF
C152-452	8232 0306 82	PPR, 100V, 0.0068μF, 2%, APS
C153-453	8232 1431 06	ALU, 16V, 10μF, 20%, SME-VB
C154-454	8232 1431 06	ALU, 16V, 10μF, 20%, SME-VB
C901	8232 1464 74	ALU, 50V, 0.47μF, 20%, SME-VB
C902	8232 8031 03	CER, 50V, 0.01μF, +80-20%, YF
C903	8232 9014 73	PES, 50V, 0.047μF, 5%, AMZV
C904,905	8232 9014 72	PES, 50V 0.0047μF, 5%, AMZV
C906	8232 1431 06	ALU, 16V, 10μF, 20%, SME-VB
C907	8232 142h 76	ALU, 10V, 47μF, 20%, SME-VB
C908,910	8232 8021 04	CER, 50V, 0.1μF, 10%, SL
C909	8232 9012 23	PES, 50V, 0.022μF, 5%, AMZV

MISCELLANEOUS

L101-401	8256 0660 00	Module, trap, AF
L102-402	8256 0990 00	Filter, MPX
L120-420	8256 0660 00	Module, trap, AF
L151-451		Trans, osc, SUB
L901	8242 1250 00	Trans, osc, MAIN
L902	8242 1420 00	Coil, choke, BIAS
	8207 0056 00	Heatsink, XR-5

MIX PCB ASSEMBLY

Ref. No.	Parts No.	Description
	8273 9440 00	PCB Assy, MIX, XR-5
	8251 4500 00	Plain PCB, MIX, XR-5

IC's

U601	8236 0366 00	Analog, NJM2068LD
U602,603	8236 0398 00	Analog, NJM4558L
U701,702	8236 0398 00	Analog, NJM4558L
U801-806	8236 0398 00	Analog, NJM4558L
U807	8236 0398 00	Analog, M5216L

TRANSISTORS

Q601,602	8236 0746 00	Digital, driver, DTC114TS-TP
Q701,702	8236 0746 00	Digital, driver, DTC114TS-TP

DIODES

D006	8234 1044 00	D-SLR-38MG
D901	8234 1045 00	D-SLR-38VR

CARBON RESISTORS

R009,914	8230 1381 52	1/4W,	1.5kΩ, 5%
R502-505	8230 1381 04	1/4W,	100kΩ, 5%
R506-509	8230 1388 22	1/4W,	8.2kΩ, 5%
R518,519	8230 1386 81	1/4W,	680Ω, 5%
R520,521	8230 1386 81	1/4W,	680Ω, 5%
R522-525	8230 1382 72	1/4W,	2.7kΩ, 5%
R601,602	8230 1382 21	1/4W,	220Ω, 5%
R603,604	8230 1386 82	1/4W,	6.8kΩ, 5%
R605,606	8230 1384 73	1/4W,	47kΩ, 5%
R609,610	8230 1381 24	1/4W,	120kΩ, 5%
R611-614	8230 1381 53	1/4W,	15kΩ, 5%
R615,616	8230 1382 72	1/4W,	2.7kΩ, 5%
R621,622	8230 1384 73	1/4W,	47kΩ, 5%
R623-626	8230 1381 83	1/4W,	18kΩ, 5%
R627-630	8230 1382 23	1/4W,	22kΩ, 5%
R631,632	8230 1381 83	1/4W,	18kΩ, 5%
R634,644	8230 1381 01	1/4W,	100Ω, 5%
R635-638	8230 1382 23	1/4W,	22kΩ, 5%
R641,642	8230 1381 04	1/4W,	100kΩ, 5%

Ref. No.	Parts No.	Description
R645,646	8230 1384 73	1/4W, 47kΩ, 5%
R647,648	8230 1381 05	1/4W, 1MΩ, 5%
R649,650	8230 1382 24	1/4W, 220kΩ, 5%
R651,652	8230 1382 03	1/4W, 20kΩ, 5%
R653,654	8230 1382 02	1/4W, 2kΩ, 5%
R655,656	8230 1382 21	1/4W, 220Ω, 5%
R701,702	8230 1382 21	1/4W, 220Ω, 5%
R703,704	8230 1386 82	1/4W, 6.8kΩ, 5%
R705,706	8230 1384 73	1/4W, 47kΩ, 5%
R709,710	8230 1381 24	1/4W, 120kΩ, 5%
R711-714	8230 1381 53	1/4W, 15kΩ, 5%
R715,716	8230 1382 72	1/4W, 2.7kΩ, 5%
R721,722	8230 1384 73	1/4W, 47kΩ, 5%
R723,726	8230 1381 83	1/4W, 18kΩ, 5%
R727-730	8230 1382 23	1/4W, 22kΩ, 5%
R731,732	8230 1381 83	1/4W, 18kΩ, 5%
R735-738	8230 1382 23	1/4W, 22kΩ, 5%
R783-786	8230 1381 53	1/4W, 15kΩ, 5%
R801,802	8230 1384 73	1/4W, 47kΩ, 5%
R803,804	8230 1382 23	1/4W, 22kΩ, 5%
R805,806	8230 1385 63	1/4W, 56kΩ, 5%
R811,812	8230 1384 73	1/4W, 47kΩ, 5%
R813-816	8230 1382 22	1/4W, 2.2kΩ, 5%
R823,824	8230 1382 25	1/4W, 2.2MΩ, 5%
R825,826	8230 1384 73	1/4W, 47kΩ, 5%
R827,828	8230 1382 23	1/4W, 22kΩ, 5%
R829,830	8230 1383 34	1/4W, 330kΩ, 5%
R835,836	8230 1382 20	1/4W, 22Ω, 5%
R837,838	8230 1382 24	1/4W, 220kΩ, 5%
R845	8230 1384 73	1/4W, 47kΩ, 5%
R846,847	8230 1382 22	1/4W, 2.2kΩ, 5%
R848,849	8230 1382 24	1/4W, 220kΩ, 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, 2.2μF, 20%, SME-VB
C603,604	8232 8023 30	CER, 50V, 33pF, 10%, SL
C607-610	8232 9016 82	PES, 50V, 0.0068μF, 5%, AMZV
C611,612	8232 9014 72	PES, 50V, 0.0047μF, 5%, AMZV
C617,618	8232 1434 76	ALU, 16V, 47μF, 20%, SME-VB
C619	8232 1412 27	ALU, 6.3V, 220μF, 20%, SME-VB
C621,622	8232 8024 71	CER, 50V, 470pF, 10%, SL
C623,624	8232 1461 05	ALU, 50V, 1μF, 20%, SME-VB
C625,626	8232 8025 60	CER, 50V, 56pF, 10%, SL
C627,628	8232 1424 76	ALU, 10V, 47μF, 20%, SME-VB
C629,630	8232 1461 06	ALU, 50V, 10μF, 20%, SME-VB
C631-634	8232 8021 01	CER, 50V, 100pF, 10%, SL
C641,642	8232 1424 76	ALU, 10V, 47μF, 20%, SME-VB
C701,702	8232 1462 25	ALU, 50V, 2.2μF, 20%, SME-VB
C703,704	8232 8023 30	CER, 50V, 33pF, 10%, SL
C707-710	8232 9016 82	PES, 50V, 0.0068μF, 5%, AMZV
C711,712	8232 9014 72	PES, 50V, 0.0047μF, 5%, AMZV
C717,718	8232 1434 76	ALU, 16V, 47μF, 20%, SME-VB
C801,802	8232 1461 06	ALU, 50V, 10μF, 20%, SME-VB
C803,804	8232 8021 00	CER, 50V, 10pF, +/-1pF, SL
C805,806	8232 1432 26	ALU, 16V, 22μF, 20%, SME-VB
C807,808	8232 1461 06	ALU, 50V, 10μF, 20%, SME-VB
C809,810	8232 8021 50	CER, 50V, 15pF, 10%, SL
C811,812	8232 1432 26	ALU, 16V, 22μF, 20%, SME-VB
C813,814	8232 1431 06	ALU, 16V, 10μF, 20%, SME-VB
C815,816	8232 8021 00	CER, 50V, 10pF, +/-1pF, SL
C819,820	8232 1432 26	ALU, 16V, 22μF, 20%, SME-VB
C821,822	8232 1431 06	ALU, 16V, 10μF, 20%, SME-VB
C823,824	8232 8021 00	CER, 50V, 10pF, +/-1pF, SL
C825,826	8232 1432 26	ALU, 16V, 22μF, 20%, SME-VB
C827,828	8232 1461 06	ALU, 50V, 10μF, 20%, SME-VB
C829,830	8232 8021 20	CER, 50V, 12pF, 10%, SL
C831,832	8232 1412 27	ALU, 6.3V, 220μF, 20%, SME-VB
C835,836	8232 1412 27	ALU, 6.3V, 220μF, 20%, SME-VB
C837	8232 1412 27	ALU, 6.3V, 220μF, 20%, SME-VB
C841	8232 1461 06	ALU, 50V, 10μF, 20%, SME-VB
C842	8232 8024 70	CER, 50V, 47pF, 10%, SL
C844	8232 1432 26	ALU, 16V, 22μF, 20%, SME-VB
C849,850	8232 8142 23	CER, 50V, 0.022μF, 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

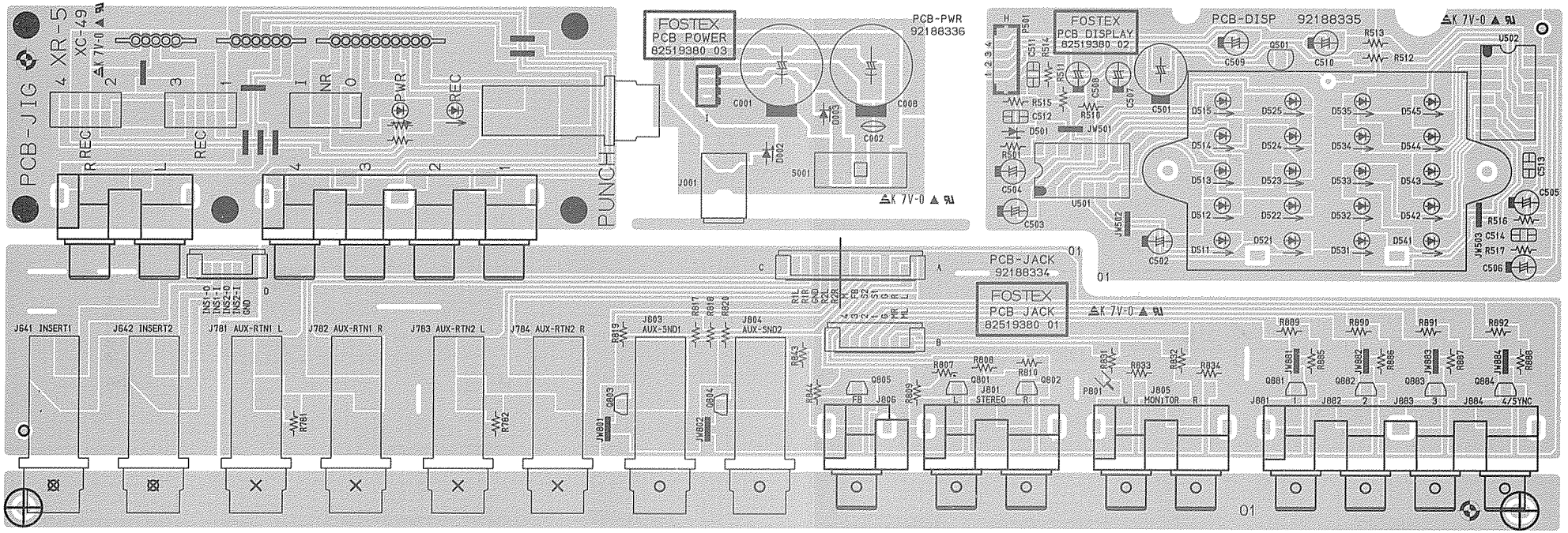
Ref. No.	Parts No.	Description
	8273 9450 00	PCB Assy, JACK, XR-5
	8245 1451 00	Plain PCB, JACK, XR-5
		TRANSISTORS
Q801-805	8236 0746 00	Digital, driver, DTC114TS-TP
Q881-884	8236 0746 00	Digital, driver, DTC114TS-TP
		CARBON RESISTORS
R781,782	8230 1282 21	1/4W, 220Ω, 5%
R807,808	8230 1381 03	1/4W, 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

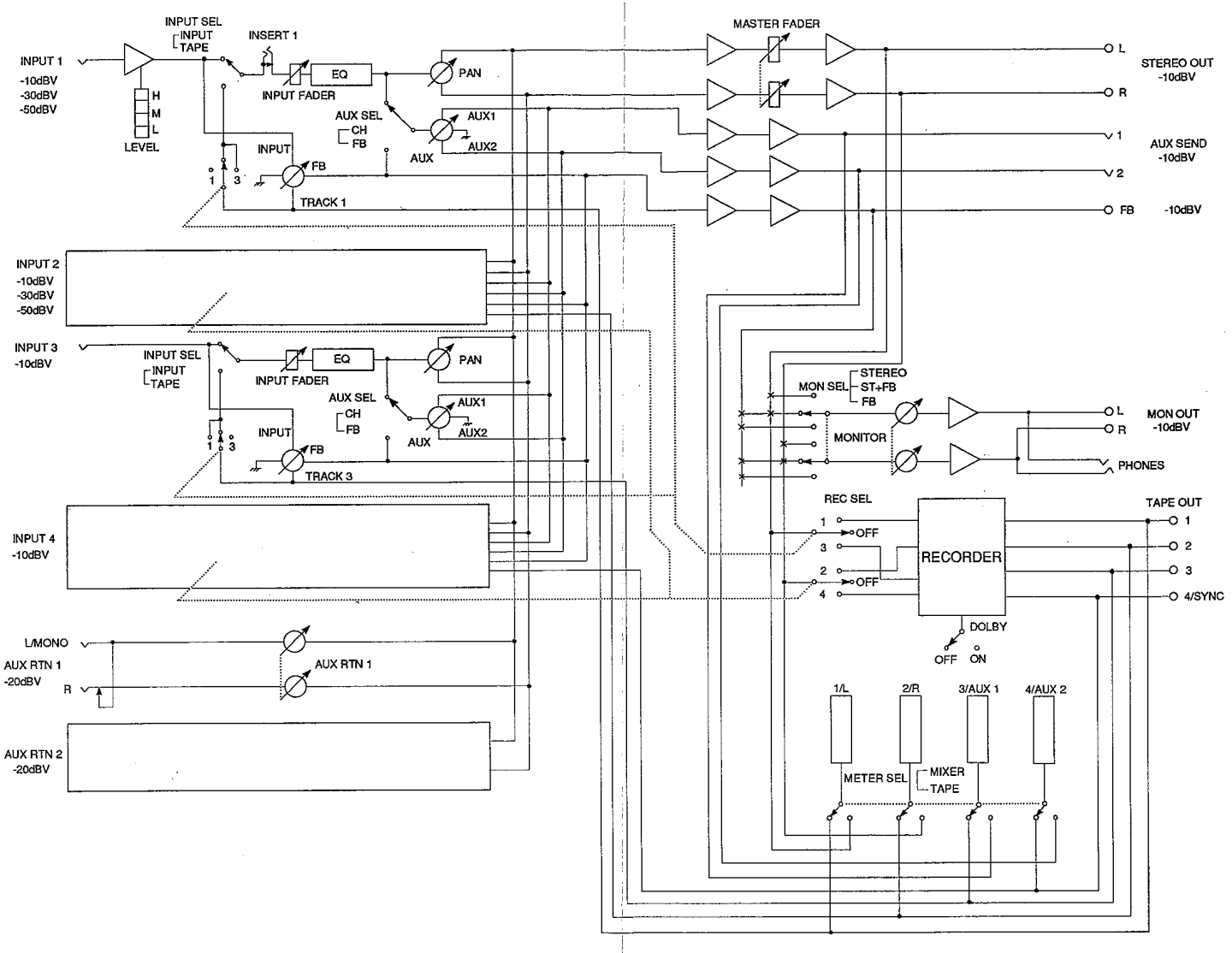
Ref. No.	Parts No.	Description
	8273 9460 00	PCB Assy, DISP, XR-5
	8251 4520 00	Plain PCB, DISP, XR-5
		IC's
U501,502	8236 0389 00	Analog, IR2E27A
		TRANSISTORS
Q501	8234 1002 00	Tr, 2SA1300-BL
		DIODES
D501	8234 1974 00	Diode, 1A2-ES80
D514,515	8234 1046 00	D-SLR-332VC-TB7
D524,525	8234 1046 00	D-SLR-332VC-TB7
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

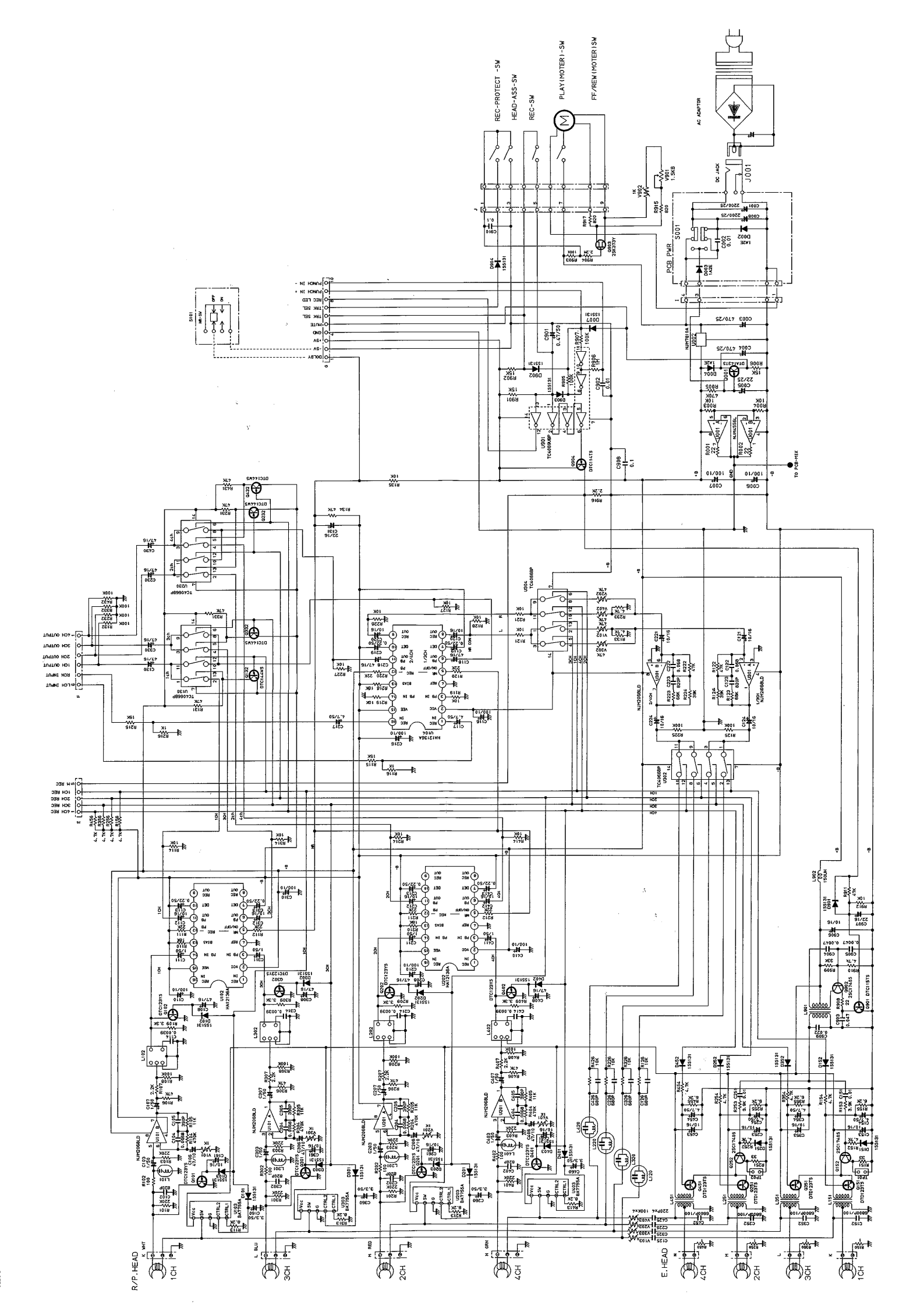
POWER PCB ASSEMBLY

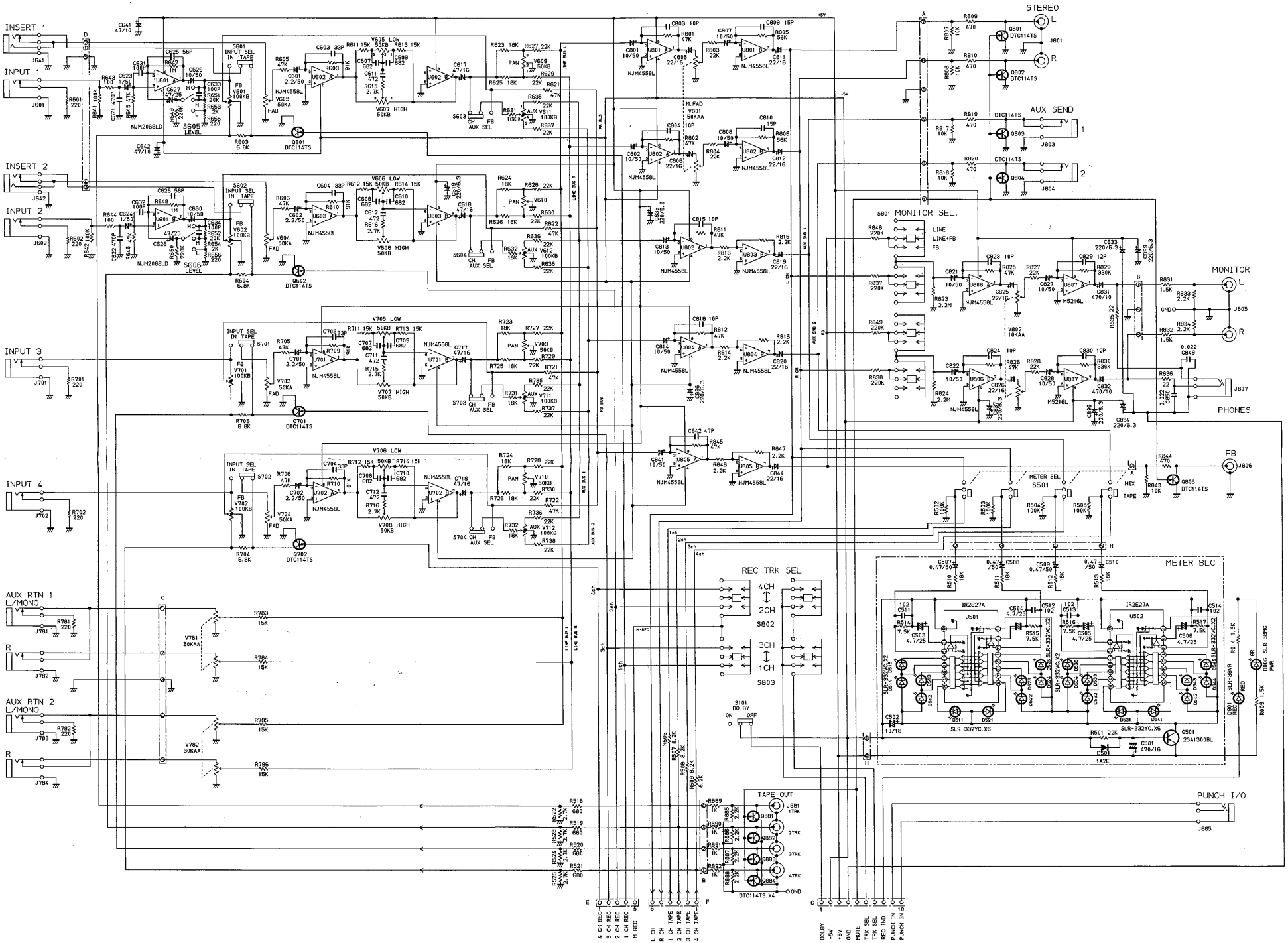
Ref. No.	Parts No.	Description
	8273 9450 00	PCB Assy, PWR, XR-5
	8251 4510 00	Plain PCB, PWR; XR-5
		DIODES
D002,003	8249 1974 00	Diode, 1A2-ES80
		MISCELLANEOUS
S001	8253 6610 00	SW, Slide
J001	8245 5410 00	Connector, jack, DC inlet
		CAPACITORS
C001,008	8232 1442 28	ALU, 25V, 2200μF, 20%, SME-VB
C002	8232 8031 03	CER, 50V, 0.01μF, +80-20%, YF


PCB-JIG
XR-5
XC-49
FOSTEX
PCB POWER
82519380 03
PCB-PWR
92188336
FOSTEX
PCB DISPLAY
82519380 02
PCB-DISP 92188335
PCB-JACK
92188334
FOSTEX
PCB JACK
82519380 01
J641 INSERT1
J642 INSERT2
J781 AUX-RTN1 L
J782 AUX-RTN1 R
J783 AUX-RTN2 L
J784 AUX-RTN2 R
J003 AUX-SND1
J004 AUX-SND2
J601 STEREO
J805 MONITOR
PUNCH

5. BLOCK DIAGRAM




REC-PROTECT-SW
HEAD-ASS-SW
REC-SW
PLAY(MOTER)-SW
FF/REW(MOTER)SW
AC ADAPTOR
DC JACK
J001
PCB PWR
S001
TO PCB-MIX
R/P.HEAD
E.HEAD
1CH
3CH
2CH
4CH


INSERT 1
INPUT 1
INSERT 2
INPUT 2
INPUT 3
INPUT 4
AUX RTN 1 L/MONO
R
AUX RTN 2 L/MONO
R
STEREO
L
R
AUX SEND
1
2
MONITOR SEL.
LINE
LINE+FB
FB
MONITOR
L
R
PHONES
FB
METER SEL
MIX
TAPE
METER BLC
REC TRK SEL
4CH
2CH
3CH
1CH
DOLBY
ON
OFF
TAPE OUT
PUNCH I/O
4 CH REC
3 CH REC
2 CH REC
1 CH REC
M REC
L CH
R CH
1 CH TAPE
2 CH TAPE
3 CH TAPE
4 CH TAPE
DOLBY
-5V
+5V
GND
MUTE
TRK SEL
TRK SEL
REC IND
PUNCH IN
PUNCH IN

FOSTEX

FOSTEX CORPORATION 3-2-35 Musashino, Akishima, Tokyo, Japan 196
FOSTEX CORPORATION OF AMERICA 15431, Blackburn Ave., Norwalk, CA 90650, U.S.A.
©PRINTED IN JAPAN NOV. 1994 8288 7430 00