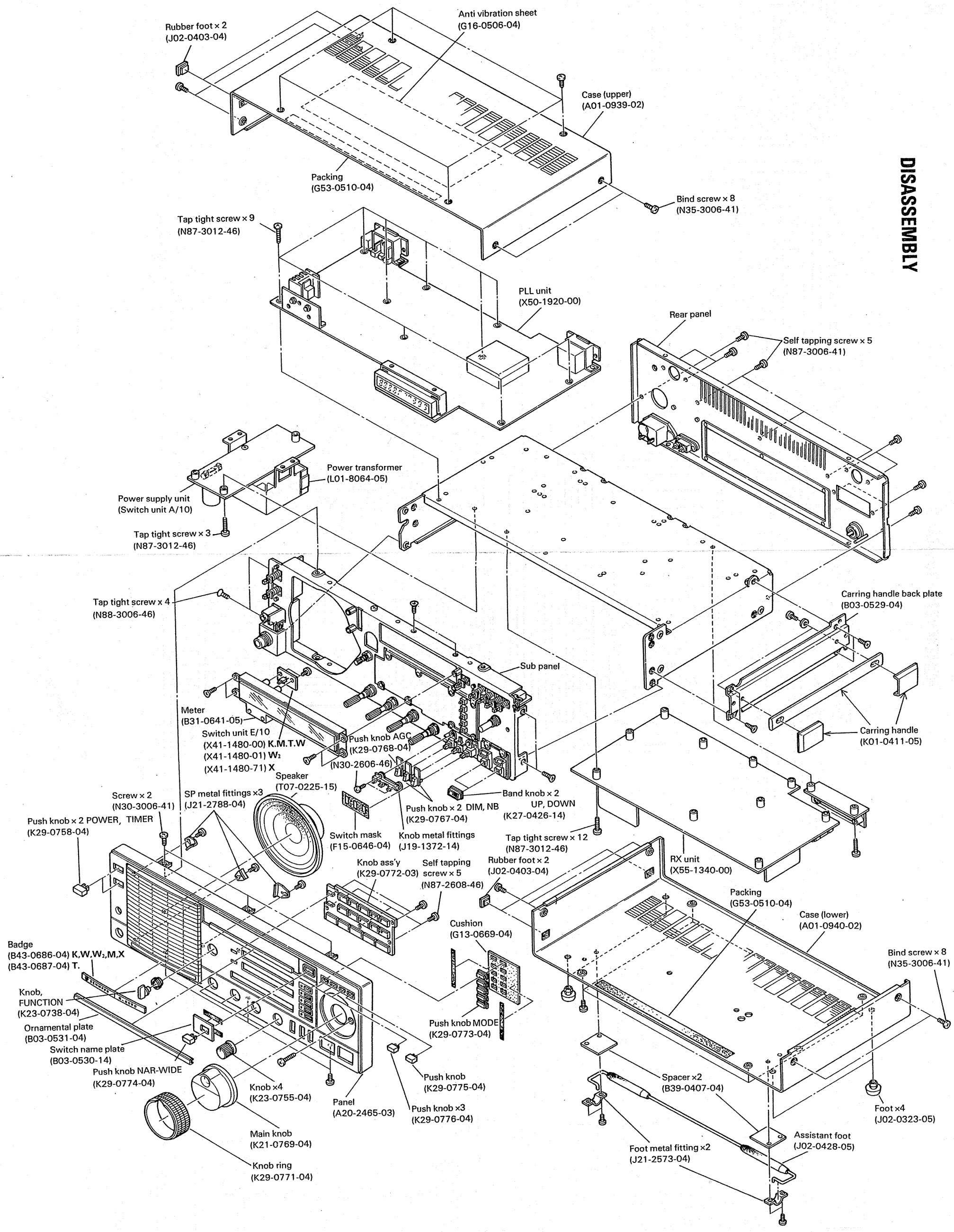
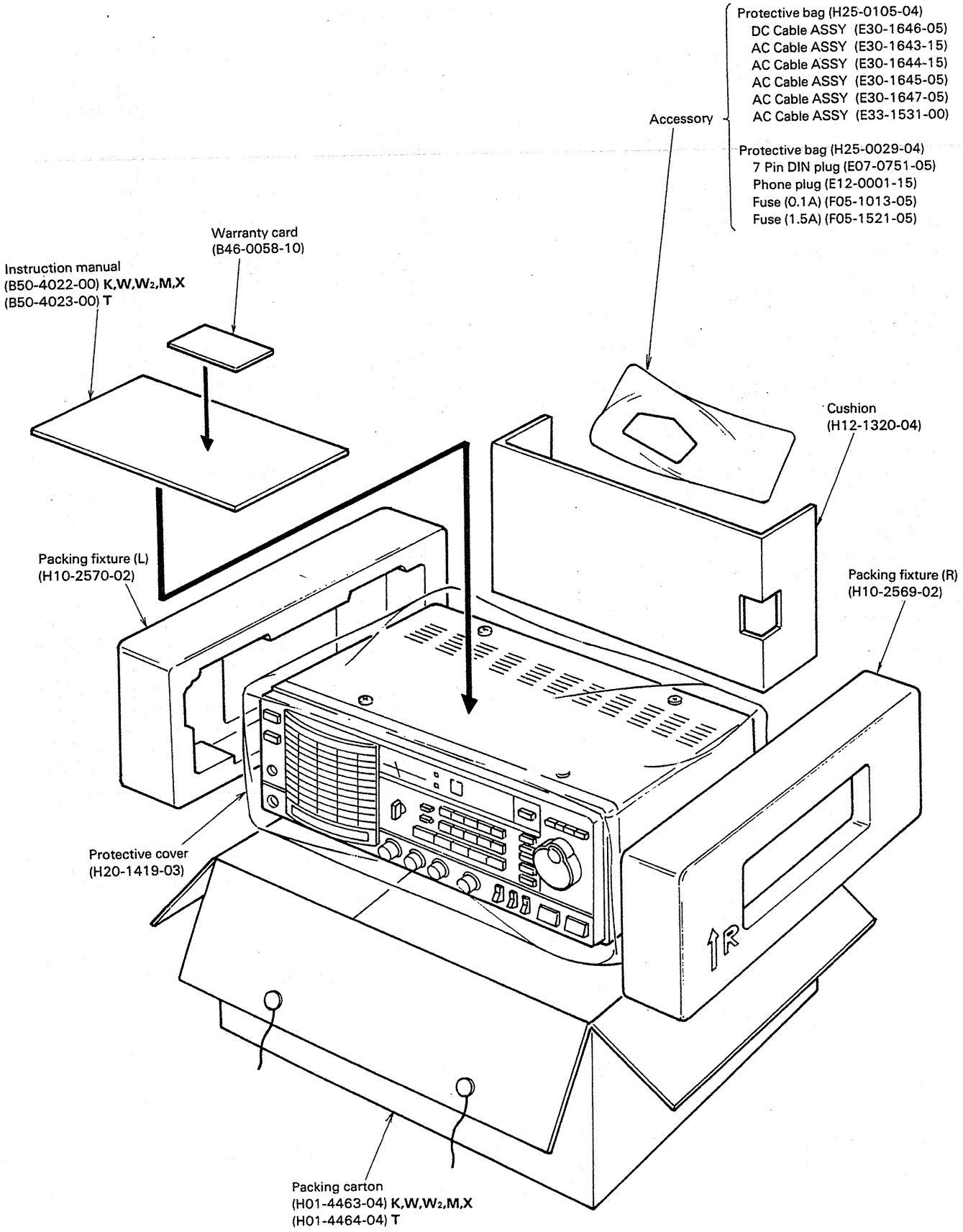

Rubber foot × 2
(J02-0403-04)
Anti vibration sheet
(G16-0506-04)
Case (upper)
(A01-0939-02)
Packing
(G53-0510-04)
Bind screw × 8
(N35-3006-41)
Tap tight screw × 9
(N87-3012-46)
PLL unit
(X50-1920-00)
Rear panel
Self tapping screw × 5
(N87-3006-41)
Power transformer
(L01-8064-05)
Power supply unit
(Switch unit A/10)
Tap tight screw × 3
(N87-3012-46)
Tap tight screw × 4
(N88-3006-46)
Carring handle back plate
(B03-0529-04)
Sub panel
Meter
(B31-0641-05)
Switch unit E/10
(X41-1480-00) K.M.T.W
(X41-1480-01) W2
(X41-1480-71) X
Push knob AGC
(K29-0768-04)
(N30-2606-46)
Carring handle
(K01-0411-05)
Speaker
(T07-0225-15)
Band knob × 2
Push knob × 2 DIM, NB
(K29-0767-04)
UP, DOWN
(K27-0426-14)
Screw × 2
(N30-3006-41)
SP metal fittings ×3
(J21-2788-04)
Push knob × 2 POWER, TIMER
(K29-0758-04)
Switch mask
(F15-0646-04)
Knob metal fittings
(J19-1372-14)
Tap tight screw × 12
(N87-3012-46)
RX unit
(X55-1340-00)
Knob ass'y
(K29-0772-03)
Self tapping
screw × 5
(N87-2608-46)
Rubber foot × 2
(J02-0403-04)
Packing
(G53-0510-04)
Case (lower)
(A01-0940-02)
Cushion
(G13-0669-04)
Bind screw × 8
(N35-3006-41)
Badge
(B43-0686-04) K,W,W2,M,X
(B43-0687-04) T.
Knob,
FUNCTION
(K23-0738-04)
Push knob MODE
(K29-0773-04)
Ornamental plate
(B03-0531-04)
Switch name plate
(B03-0530-14)
Push knob NAR-WIDE
(K29-0774-04)
Push knob
(K29-0775-04)
Spacer ×2
(B39-0407-04)
Foot ×4
(J02-0323-05)
Knob ×4
(K23-0755-04)
Panel
(A20-2465-03)
Push knob ×3
(K29-0776-04)
Assistant foot
(J02-0428-05)
Main knob
(K21-0769-04)
Foot metal fitting ×2
(J21-2573-04)
Knob ring
(K29-0771-04)

PACKING


Protective bag (H25-0105-04)
DC Cable ASSY (E30-1646-05)
AC Cable ASSY (E30-1643-15)
AC Cable ASSY (E30-1644-15)
AC Cable ASSY (E30-1645-05)
AC Cable ASSY (E30-1647-05)
AC Cable ASSY (E33-1531-00)
Accessory
Protective bag (H25-0029-04)
7 Pin DIN plug (E07-0751-05)
Phone plug (E12-0001-15)
Fuse (0.1A) (F05-1013-05)
Fuse (1.5A) (F05-1521-05)
Warranty card
(B46-0058-10)
Instruction manual
(B50-4022-00) K,W,W2,M,X
(B50-4023-00) T
Cushion
(H12-1320-04)
Packing fixture (L)
(H10-2570-02)
Packing fixture (R)
(H10-2569-02)
Protective cover
(H20-1419-03)
Packing carton
(H01-4463-04) K,W,W2,M,X
(H01-4464-04) T

ADJUSTMENT

REQUIRED TEST EQUIPMENT

1. VTVM or DVM (DC VM)

1) Input resistance: More than 1 MΩ
2) Voltage range: 1.5 to 1000V DC

NOTE: A high-precision voltmeter may be used. However, accurate readings can not be obtained for high-impedance circuits.

2. AF VTVM (AF VM)

1) Frequency range: 50 Hz to 10 kHz
2) Input impedance: 1 MΩ or greater
3) Voltage range: 10 mV to 30V

3. AF DUMMY LOAD

1) Impedance: 8Ω
2) Dissipation: 3W or greater

4. OSCILLOSCOPE

Requires high sensitivity and external synchronization capability.

5. STANDARD SIGNAL GENERATOR (SSG)

1) Frequency range: 100 kHz to 80 MHz
2) Output: –20 dB/0.1 μV to 120 dB/1V
3) Output Z = 50 Ω
4) Should have AM modulation capability. Generator must be frequency stable.

6. FREQUENCY COUNTER

1) Minimum input voltage: 50 mV
2) Frequency range: Greater than 80 MHz

7. NOISE GENERATOR

Must generate ignition-like nose containing harmonics beyond 30 MHz.

PREPARATION

Unless otherwise specified, set the controls as follows.

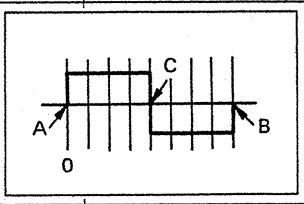
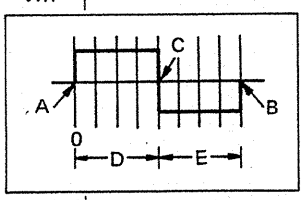
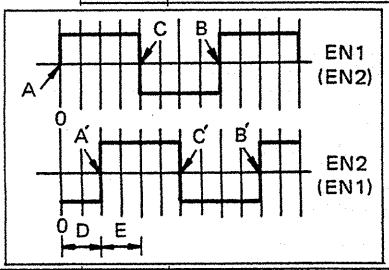
POWER	ON
TIMER	OFF
FUNCTION	FREQUENCY
NARROW/WIDE	WIDE
TUNING SPEED	SLOW
F. LOCK	OFF
MODE	AM
AGC FAST	OFF
NB	OFF
DIMMER	OFF
AF GAIN	MIN
TONE	CENTER
SQUELCH	MIN
RF ATT	0
M.SCAN	OFF
PG.SCAN	OFF
AUTO.M	OFF

REFERENCE

Japanese "SSG"	American "SG"
–6 dB	0.25 μV
0 dB	0.5 μV
6 dB	1 μV
12 dB	2 μV
24 dB	8 μV
30 dB	15.8 μV
40 dB	50 μV
50 dB	158 μV
60 dB	500 μV
70 dB	1.58 mV
80 dB	5 mV
90 dB	15.8 mV
100 dB	50 mV
120 dB	0.5 V

ADJUSTMENT

Adjusting PLL Section

Item	Condition	Measurement			Adjustment			Specifications
		Test equipment	Unit	Terminal	Unit	Part	Method	
1. Reference oscillator frequency	1) POWER: ON	Frequency counter	PLL	TP4	PLL	TC1	36,000,000 Hz	±20 Hz
2. VCO	1) MODE: AM f: 17,000.0 kHz	DC VM	PLL	TP7	PLL	T3	7.5V	±0.05V
	2) f: 16,999.9 kHz						Check	2.3V or more
3. VCO-H	1) MODE: AM f: 29,999.9 kHz (W2 type) f: 25,999.9 kHz	DC VM	PLL	TP13	PLL	T8	7.8V 5.6V	±0.05V
	2) f: 17,000.0 kHz						Check	2.0V or more
4. VCO-M	1) MODE: AM f: 16,999.9 kHz	DC VM	PLL	TP13	PLL	T7	7.8V	±0.05V
	2) f: 8,000.0 kHz						Check	2.0V or more
5. VCO-L	1) MODE: AM f: 7,999.9 kHz	DC VM	PLL	TP13	PLL	T6	7.8V	±0.05V
	2) f: 100.0 kHz						Check	2.0V or more
	(W2 type) f: 150.0 kHz							
	(X type) f: 2,000.0 kHz						Check	3.0V or more
6. Encoder	1) Remove the MAIN knob and motor-drive the encoder at approx. 300 rpm.	Oscilloscope	PLL	Connector ④-EN1				Point C may be located anywhere. When motor drive is not available, manually turn the MAIN control to check the duty ratio.
	2) EN1 duty ratio adjustment: Turn a motor clockwise and counterclockwise.				Encoder	VR1		After adjusting with the MAIN control turned CW, check that intervals D and E are also identical when the MAIN control is turned CCW.
	3) EN2 duty ratio adjustment: Turn a motor in the both direction.			Connector ④-EN2		VR2	Adjust until intervals D and E are equal to each other with point C placed at the center.	
	4) EN1, EN2 phase difference adjustment: Same as above.			Connector ④-EN1 and EN2				EN1 (EN2): Within 90° ±20% (The difference between CW and CCW rotation must also be within this specification.) The phases of EN1 and EN2 may be replaced with each other as indicated in the brackets.
7. PG SCAN SPEED	1) f: 15,000.0 kHz MEMORY CH: 9 Write in with M. IN switch.							
	2) f: 15,010.0 kHz MEMORY CH: 0 Write in with M. IN switch.							
	3) PG SCAN: ON				PLL	VR1	Turn clockwise/counterclockwise to check scan speed change. Set to mechanical center.	