

**INSTRUCTION  
MANUAL  
FL-2100Z**

**YAESU MUSEN CO., LTD.**

C.P.O. BOX 1500  
TOKYO, JAPAN

# YAESU FL-2100Z LINEAR AMPLIFIER



The FL-2100Z is a high performance linear amplifier designed for all Yaesu HF SSB transceivers. This amplifier uses two 572B/T160 transmitting triodes in a Class AB<sub>2</sub> grounded-grid configuration. Operation on the 160 through 10 meter bands is provided.

Two quiet internal fans provide forced air cooling for the final tubes. An internal change-over circuit biases the tubes to cutoff during receive operation, thereby eliminating unnecessary heat and diode noise generation. A unique safety feature incorporated in the design of the FL-2100Z is a momentary bias delay circuit, which protects the tank circuitry from damage by delaying the activation of the final tubes until the T/R relay is firmly seated.

An internal relay connects the antenna directly through to the exciter during standby operation, or when the amplifier is turned off. A built-in SWR meter is also included, for monitoring of the feedline SWR during either amplifier or exciter-only operation.

The power supply for the FL-2100Z is built in. It requires no warmup time, and its heavy-duty construction provides excellent regulation.

We recommend that you read this manual in its entirety before commencing operation. Operation of the FL-2100Z is extremely straightforward, but improper adjustment of the controls and switches could cause reduced power output or damage to the amplifier components. With proper care, the FL-2100Z will provide many years of reliable operation.

## SPECIFICATIONS

**Circuit type:**

Class AB<sub>2</sub> grounded grid

**Tube complement:**

2 x 572B/T160

**Frequency coverage:**

160-10 meter amateur bands

**Cooling system:**

Forced air

**Plate input power:**

1200 watts PEP SSB, 1000 watts CW, 400  
watts AM/FM/FSK

**Power requirements:**

AC 100/110/117/200/220/234 volts, 50/60  
Hz

**Plate voltage:**

2400 VDC (no load)

**Current consumption:**

AC 100-117 volts: 18 amps  
AC 200-234 volts: 9 amps

**Drive requirements:**

100 watts PEP for full output

**Dimensions:**

157(H) x 345(W) x 326(D) mm

**Input impedance:**

50 ohms, unbalanced

**Weight:**

Approximately 20 kg

**Output impedance:**

50-75 ohms, unbalanced

Specifications subject to change without notice or  
obligation.

**3rd order distortion products:**

-31 dB or better @ 1 KW PEP

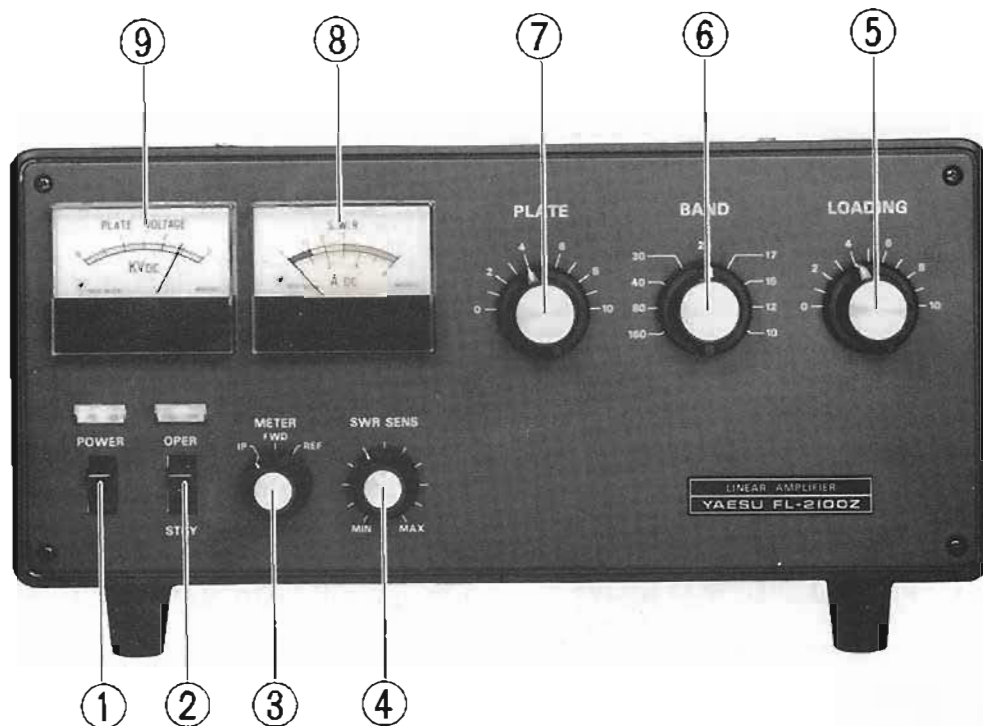
### CAUTION

HIGH VOLTAGES ARE PRESENT WITHIN THE CABINET OF THIS APPARATUS. HARMFUL OR FATAL ELECTRIC SHOCK WILL RESULT IF HIGH VOLTAGE CIRCUITS ARE TOUCHED BY THE USER. REFER ALL SERVICE WORK TO AN EXPERIENCED TECHNICIAN.

SAFETY INTERLOCK SWITCHES ARE INCLUDED IN THE FL-2100Z TO DISCONNECT POWER IF THE TOP COVER IS REMOVED. DO NOT ATTEMPT TO DEFEAT THESE SWITCHES, AND ALWAYS DISCONNECT THE AC LINE BEFORE OPENING THE CABINET.



## FRONT PANEL CONTROLS AND SWITCHES



### (1) POWER

This is the main power on/off switch for the amplifier.

### (2) OPER/STBY

This switch applies bias to the final tubes during standby (STBY) operation, cutting them off. The relay is also disengaged in this condition.

### (3) METER

The METER switch selects indication on the SWR/ammeter of plate current, relative forward power, and relative reflected power.

### (4) SWR SENS

This control sets the SWR meter sensitivity level.

### (5) LOADING

This control adjusts the tuning of the loading capacitor.

### (6) BAND

This knob selects the band of operation for the amplifier, which must be the same as that of the transmitter.

### (7) PLATE

This control adjusts the tuning of the plate tank capacitor.

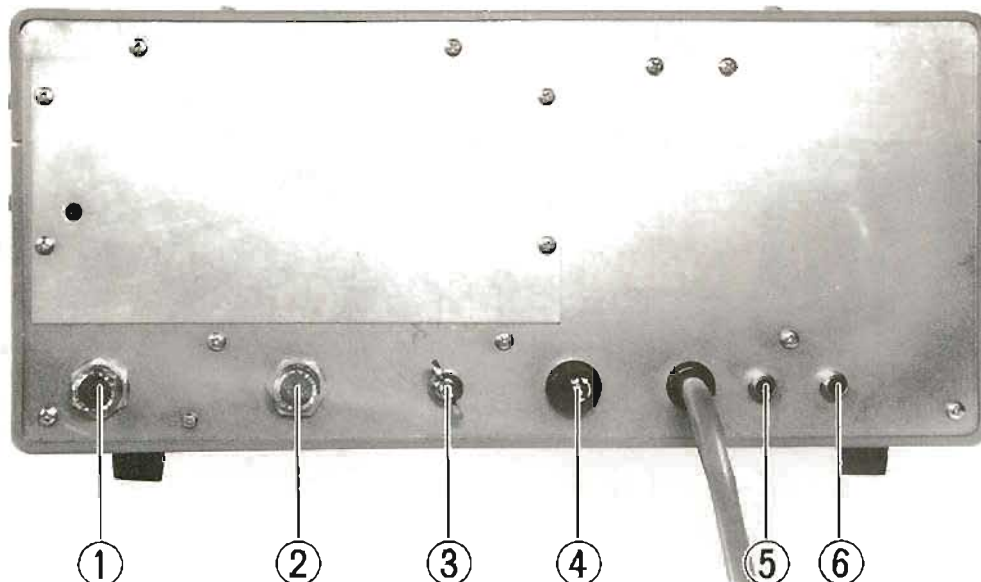
### (8) SWR/AMMETER

This meter displays either the feedline SWR or amplifier plate current, depending on the position of the METER switch.

### (9) PLATE VOLTAGE METER

The amplifier plate voltage is displayed on this meter, in thousands of volts.

## REAR APRON CONNECTIONS



### (1) RF OUT

This coaxial jack provides the RF output to the antenna.

### (2) RF IN

The RF input from the transceiver should be connected here.

### (3) GND

Connect the amplifier to the station ground bus at this point.

### (4) FUSE

For AC 100/110/117 volts, use a 20 amp fuse. For AC 200/220/234 volts, use a 15 amp fuse. Do not use a fuse of the improper rating.

### (5) ALC

This RCA jack is used for connection to the transceiver ALC line.

### (6) RY

This RCA jack is used for connection to the transceiver relay (make-on-transmit) contacts.

### CAUTION

NEVER OPERATE THIS EQUIPMENT WITHOUT CONNECTING IT TO A GOOD EARTH GROUND. LIKEWISE, NEVER OPERATE THE AMPLIFIER WITHOUT HAVING AN ANTENNA OR DUMMY LOAD CONNECTED TO THE REAR PANEL RF OUT JACK.

# INSTALLATION

## UNPACKING AND INSPECTION

Carefully remove the FL-2100Z from its packing carton, and examine the unit for any signs of visible damage. Check the controls and switches for normal, positive action. If any damage has been sustained, document the damage completely, and notify the shipping company at once. Save the packing carton and foam packing material for possible use at a later date.

## INSTALLATION PROCEDURE

In general, the amplifier should be situated in such a way as to allow free air circulation around the cabinet. Do not place books, papers, or other equipment on top of the FL-2100Z, and do not obstruct the free flow of air from the top and bottom covers.

Refer to the following page for interconnection details of a typical installation using the FL-2100Z. The ALC input to the transceiver should be connected to the FL-2100Z ALC jack. The make-on-transmit contact of the relay used for T-R switching must be connected to the FL-2100Z RY jack, with a common lead (to the outer contact of RCA jack).

Use a short length of RG-58A/U or RG8A/U coax cable for the interconnection between the transceiver ANT jack and the FL-2100Z RF IN jack. For the output lead from the FL-2100Z RF OUT jack, do not use the small RG-58A/U type of cable, as its power rating is insufficient for the power level produced by the FL-2100Z.

The transceiver used to excite the FL-2100Z, should be capable of producing 100 watts PEP SSB output for full output from the amplifier.

## POWER CONNECTIONS

The FL-2100Z includes a built-in power supply capable of operation from AC 100/110/117/200/220/234 volts, 50/60 Hz. Before connecting the amplifier power cord to the AC supply mains, be absolutely certain that the voltage specification

marked on the rear apron of the amplifier matches your local supply voltage. Refer to the power transformer primary connection diagram when changing voltages.

It is essential that a fuse of the proper rating be used with this equipment. For AC 100/110/117 volts, use only a 20 amp fuse. For AC 200/220/234 volts, use only a 15 amp fuse.

### WARNING

PERMANENT DAMAGE WILL RESULT IF IMPROPER AC SUPPLY VOLTAGE IS APPLIED TO THIS EQUIPMENT. OUR WARRANTY DOES NOT COVER DAMAGE CAUSED BY IMPROPER SUPPLY VOLTAGE OR USE OF AN IMPROPER FUSE.

If at all possible, the FL-2100Z should be operated from an independent 220-volt AC line. The line should be fused for 10 amperes, and no other equipment should be run off the same circuit. If a 117-volt circuit is all that is available, it should be fused for 20 amperes, and circuit conductors should be no smaller than #10 AWG. UNDER NO CIRCUMSTANCES should the FL-2100Z be operated from a 117-volt house lighting circuit, as the circuit conductors may not be large enough to carry this current load.

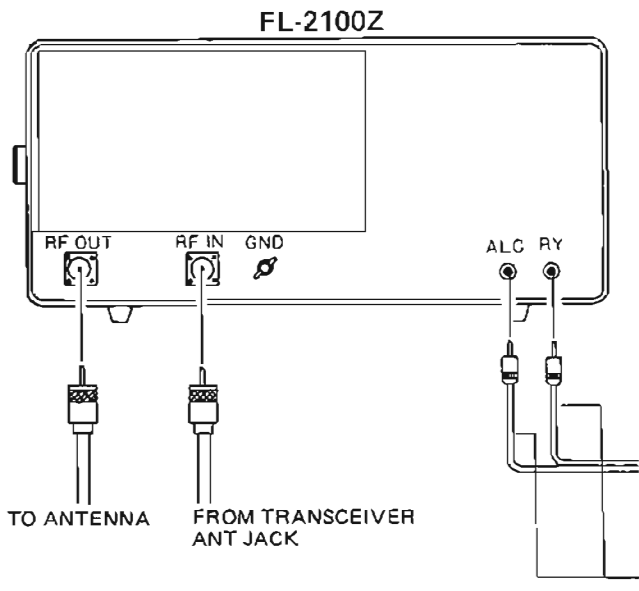
## ANTENNA REQUIREMENTS

The FL-2100Z has been designed for use with an antenna presenting a 50 to 75-ohm resistive load to the RF OUT jack. When using an antenna presenting an impedance which is far from this figure, use an antenna matching network in order to bring the antenna system impedance within the operating range of this amplifier.

## GROUND

This amplifier should be connected to a good earth ground, using a heavy, braided cable not more than 10 feet long for connection to the station ground bus. The connection of the ground cable should be made to the rear apron GND terminal.

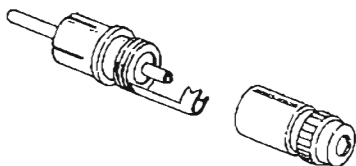
# INTERCONNECTIONS



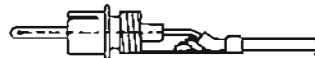
TRANSCIVER	JACK	ALC pin	RY pin	COMMON pin	NOTE
FT-101ZD	ACC	7	9	8	
FT-901/902	ACC	7	9	8	
FT-107M	ACC-1	1	3	2 and 4	
FT-ONE*	ACC-1	1	3	2 and 4	jumper 2 to 4 and 6 to 7
FT-77	ACC-1	1	4	3	
FT-102	ACC-2	1	3	2 and 4	
FT-980*	ACC-2	1	3	2 and 4	jumper 2 to 4 LIN AMP switch to position 2
FT-707	-	-	-	-	use FRB-707 Relay Box

\* Jumpers must be installed as indicated. The FL-2100Z is a non-QSK amplifier, and may be damaged by attempting QSK operation.

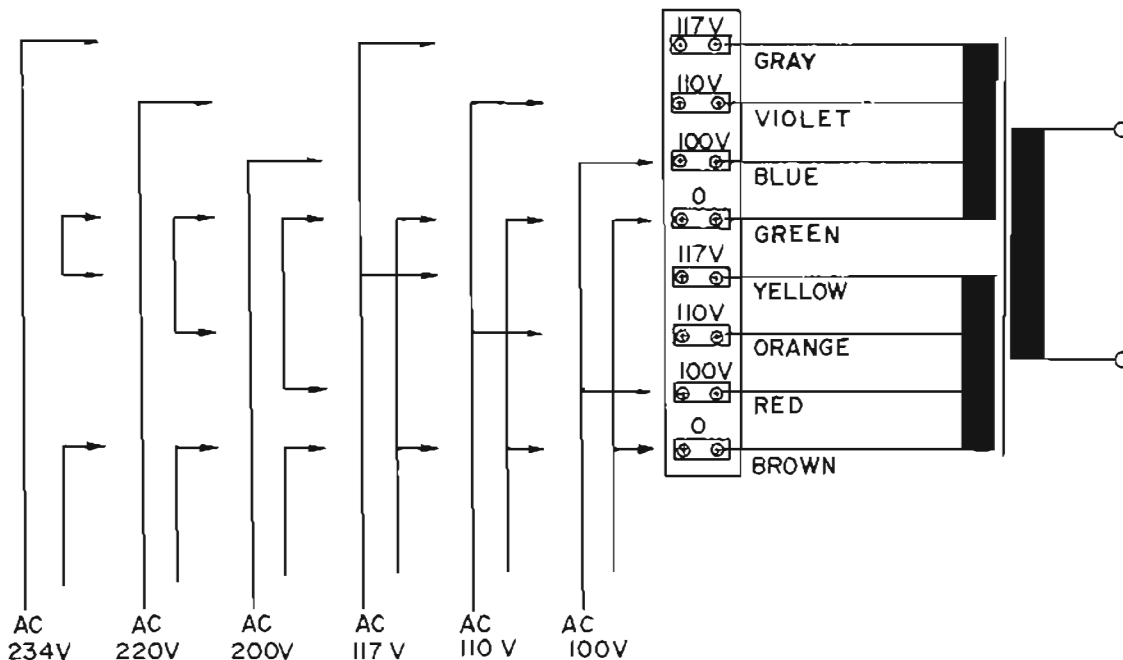
Use shielded cable with the braid connected to common/ground.



For test purposes, the RY plug may be jumpered as shown above.



For normal operation connect the RY plug as shown above.



POWER TRANSFORMER PRIMARY CONNECTIONS



## OPERATION

BEFORE COMMENCING OPERATION, CONFIRM THAT THE POWER TRANSFORMER PRIMARY HAS BEEN CORRECTLY WIRED FOR YOUR LOCAL AC SUPPLY VOLTAGE, AND CONFIRM THAT A FUSE OF THE PROPER RATING HAS BEEN INSTALLED. BE CERTAIN THAT AN ANTENNA IS CONNECTED TO THE RF OUT JACK.

The exciter may be tuned up with the amplifier on or off. If you tune up the exciter with the amplifier turned on, set the OPER/STBY to STBY during exciter tuning.

Preset the FL-2100Z controls and switches as follows:

POWER switch . . . . . OFF  
OPER/STBY switch . . . . . STBY  
METER switch . . . . . IP  
BAND switch . . . . . Desired band  
PLATE control . . . . . To the position shown in Table 1.  
LOAD control . . . . . Fully counterclockwise to number 0.

Turn the FL-2100Z POWER switch ON, and recheck the exciter tuning with the OPER/STBY switch still set to STBY. Now rotate the exciter drive control fully counterclockwise (minimum drive level).

Set the OPER/STBY switch to OPER.

Close the exciter PTT switch, and slowly advance the drive control of the exciter until a reading of 0.2 amps is obtained on the FL-2100Z plate meter. Tune the FL-2100Z PLATE control for a dip (minimum meter reading) in the plate current indication on the meter. Return the exciter to standby (release the PTT switch).

Place the METER switch in the FWD position (to read relative forward power). Again apply drive from the exciter, and advance the SWR SENS control for a reading of approximately  $\frac{1}{4}$  scale. Now advance the LOAD control in small increments, each time tuning the PLATE control for a maximum forward power reading. Adjust the SENS control, as necessary, to prevent off-scale deflection of the forward power meter.

DO NOT EXCEED 10 SECONDS OF KEY-DOWN TIME DURING TUNING, SO AS NOT TO DAMAGE THE EXCITER OF AMPLIFIER FINAL TUBES.

Peak power should occur at a plate current (IP) reading of approximately 0.5 amperes. Approximate settings of the FL-2100Z LOAD control for maximum output into a 50 ohm load are shown in Table 1.

When tuning, be certain to start at a very low drive level, and keep the plate current dipped. Likewise, do not begin tuning with the LOAD control advanced beyond the 0 point. The correct technique is to increase the exciter drive only after an initial dip is obtained in the plate current. With proper care taken in tuning, your FL-2100Z will provide many years of trouble-free operation.

The amplifier is now tuned for SSB and CW operation. For SSB operation, the exciter should be adjusted so that the FL-2100Z plate current indicates between 0.2 and 0.3 amperes under normal voice operating conditions. Because the meter cannot follow the current flow corresponding to the speech signal, the actual peak current value is approximately twice the value shown on the meter.

For AM operation, tune up the FL-2100Z as described above. Now adjust the exciter carrier level for a plate current indication of 0.2 amps with unmodulated carrier. If an exciter capable of FM or FSK operation is used with the FL-2100Z, do not exceed the ratings stipulated for AM operation.

For CW operation, set the drive level of the exciter for a power input of 1 kilowatt (e.g. 0.5 amps at 2000 volts plate current under load).

To measure the SWR at the antenna jack, set the meter switch to FWD (Forward), and apply RF power. Adjust the SWR SENS control for a full scale deflection of the SWR meter. Now set the METER switch to REF (Reflected). The SWR may be read directly from the upper scale of the meter.



## CIRCUIT DESCRIPTION

The FL-2100Z employs two 572B/T160 zero bias triodes in class AB<sub>2</sub> grounded-grid configuration.

RF driving power from the exciter is applied through antenna changeover relay RL<sub>2</sub> and an input matching network to the filaments. The broadband input pi networks require no tuning to present the correct impedance match to the tubes and 50 ohms to the exciter.

A sample of the exciter RF is taken from the filaments through C<sub>11</sub> to ALC rectifier diodes D<sub>1</sub> (1S1007) and D<sub>2</sub> (10D10). Trimmer capacitor TC<sub>1</sub> then serves as a voltage divider in conjunction with C<sub>11</sub>, for adjusting the level of ALC voltage provided for the exciter at J<sub>3</sub>.

The grid bias is set by R<sub>4</sub>. When antenna relays RL<sub>1</sub> and RL<sub>2</sub> are activated (to transmit), C<sub>306</sub> discharges through R<sub>304</sub>. The values of these components are selected so as to delay activation of bias relay RL<sub>301</sub> long enough to ensure that the RL<sub>1</sub> and RL<sub>2</sub> are fully closed. This protective feature prevents a momentary open circuit at the amplifier output which might otherwise occur due to relay travel time. While the amplifier is set to standby, switch S<sub>4</sub> is open and the tubes are biased to cut-off.

The plates of the amplifier tubes are connected through an adjustable pi network of the RF OUT jack, and the output is sampled for directional relative power measurement by a bridge circuit, for relative power and SWR indications on the meter.

BAND	FREQ (MHz)	PALTE	LOADING
160	1.8	1	1
	2.0	9	7
80	3.5	1	1
	4.0	6	3.5
40	7.0	3.5	1.5
	7.5	5	2.5
30	10.0	5	2
	10.5	5.5	2.5
20	14.0	7	3
	14.5	7.5	3.5
17	18.0	5.5	2
	18.5	6	2.5
15	21.0	8	4
	21.5	8.5	4
12	24.5	7	3
	25.0	7.5	3.5
10	28.0	9	4
	29.7	10	4.5

Table 1

## MAINTENANCE AND ALIGNMENT

### WARNING

LETHAL VOLTAGES ARE PRESENT WITHIN THE CABINET OF THIS EQUIPMENT. BEFORE REMOVING THE COVERS OF THIS AMPLIFIER, UNPLUG THE POWER CORD FROM THE AC SUPPLY LINE. USE EXTREME CAUTION WHENEVER MAKING ANY ADJUSTMENTS INSIDE THE CABINET. NEVER WORK ON THIS AMPLIFIER WHILE ALONE: YOU MAY NEED SOMEONE TO TURN OFF THE POWER QUICKLY.

### REMOVAL OF TOP AND BOTTOM COVERS

After disconnecting the AC power cable from the AC supply mains, the top cover of the amplifier may be removed by removing the 8 screws. Then remove the 12 screws affixing the bottom cover, and remove the cover.

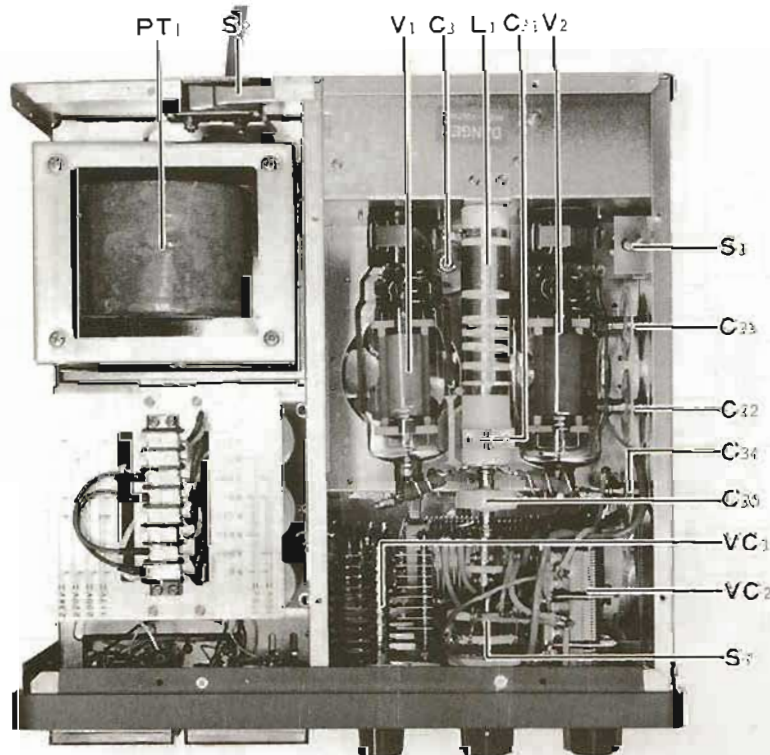
### REMOVAL OF THE PA COMPARTMENT SHIELD COVER

Once the top cover is removed, the shield cover for the PA compartment may be removed by taking off the screws of the shield cover. A safety interlock will short out the filter capacitors when this is done.

Always discharge the plate cap to ground with an insulated screwdriver when working on the PA compartment circuitry. Wait at least ten minutes after turning the amplifier off before removing the shield cover.

### TUBE REPLACEMENT

If replacement of the amplifier tubes becomes necessary, use tubes of identical manufacture as the originals. See your Yaesu dealer.



TOP VIEW

Fig. 1

## TROUBLESHOOTING

Should trouble arise which cannot be cured by tube substitution, we recommend that the amplifier be returned to the dealer from whom you purchased it for servicing. If this is impossible, write to the Yaesu agent in your country, including as many details of the problem as possible. In countries where Yaesu is not currently represented, you may write directly to the factory: Yaesu Musen Co., Ltd., C.P.O. Box 1500, Tokyo, Japan. We will then advise you as to the best course of action.

Under no circumstances should troubleshooting or servicing of this equipment be attempted by anyone other than a technician experienced with high-power devices.

## TUBE REPLACEMENT

Wait at least 10 minutes after having turned off the FL-2100Z. Disconnect the power cable from the AC supply outlet, and remove the cabinet of the amplifier. Remove the shield case of the PA compartment to gain access to the final tubes.

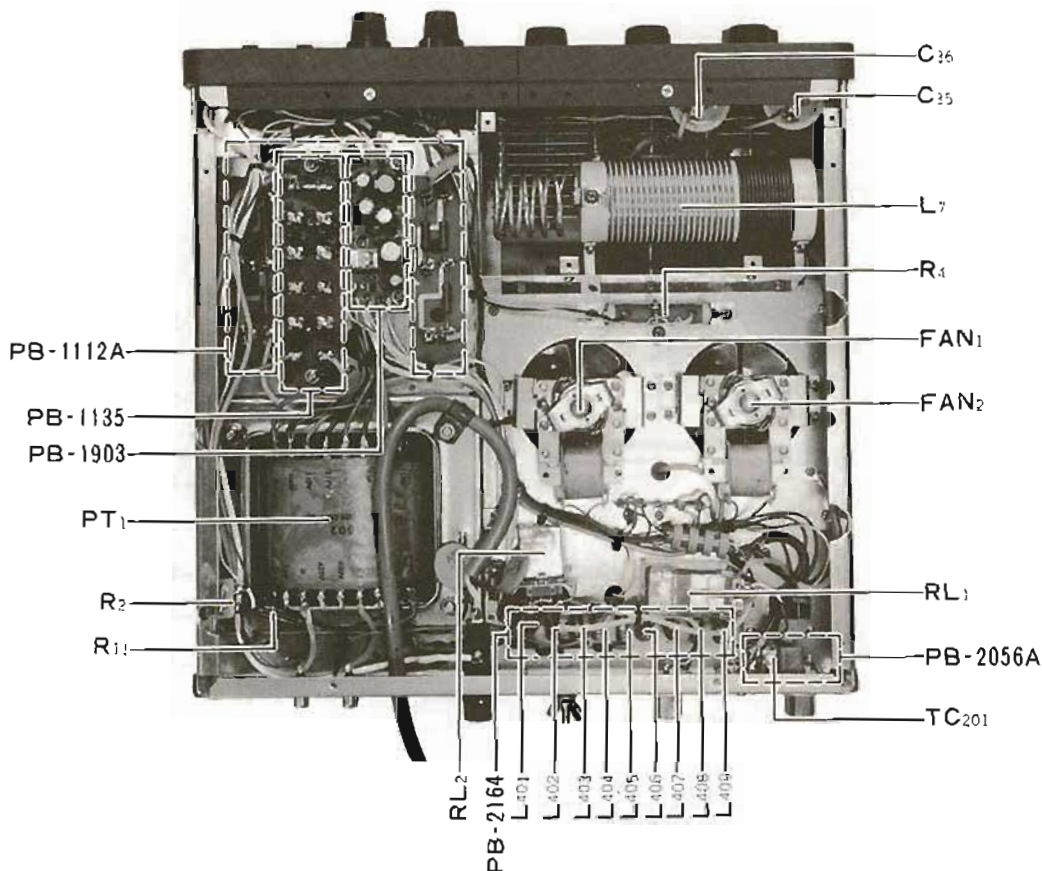
Before touching the final tubes be sure to discharge the plate caps of both tubes by shorting them to ground with an insulated screwdriver.

Once tube replacement is completed, replace the shield cover and the cabinet before plugging the AC cord into the AC supply outlet. Never apply AC power with the shield cover removed.

## BIAS ADJUSTMENT

Set the OPER/STBY switch to OPER. Close the exciter PTT switch (SSB mode), and note the amplifier IP reading with no modulation (no RF input to the amplifier). The meter IP indication should be 0.09 amperes; if it is not, then adjustment of the bias setting is required.

Remove the bottom cover of the amplifier. Turn on the amplifier, and adjust R<sub>4</sub> for a reading of exactly 0.09 amps of idling current. Use extreme caution, as high voltage is present.



BOTTOM VIEW

Fig. 2

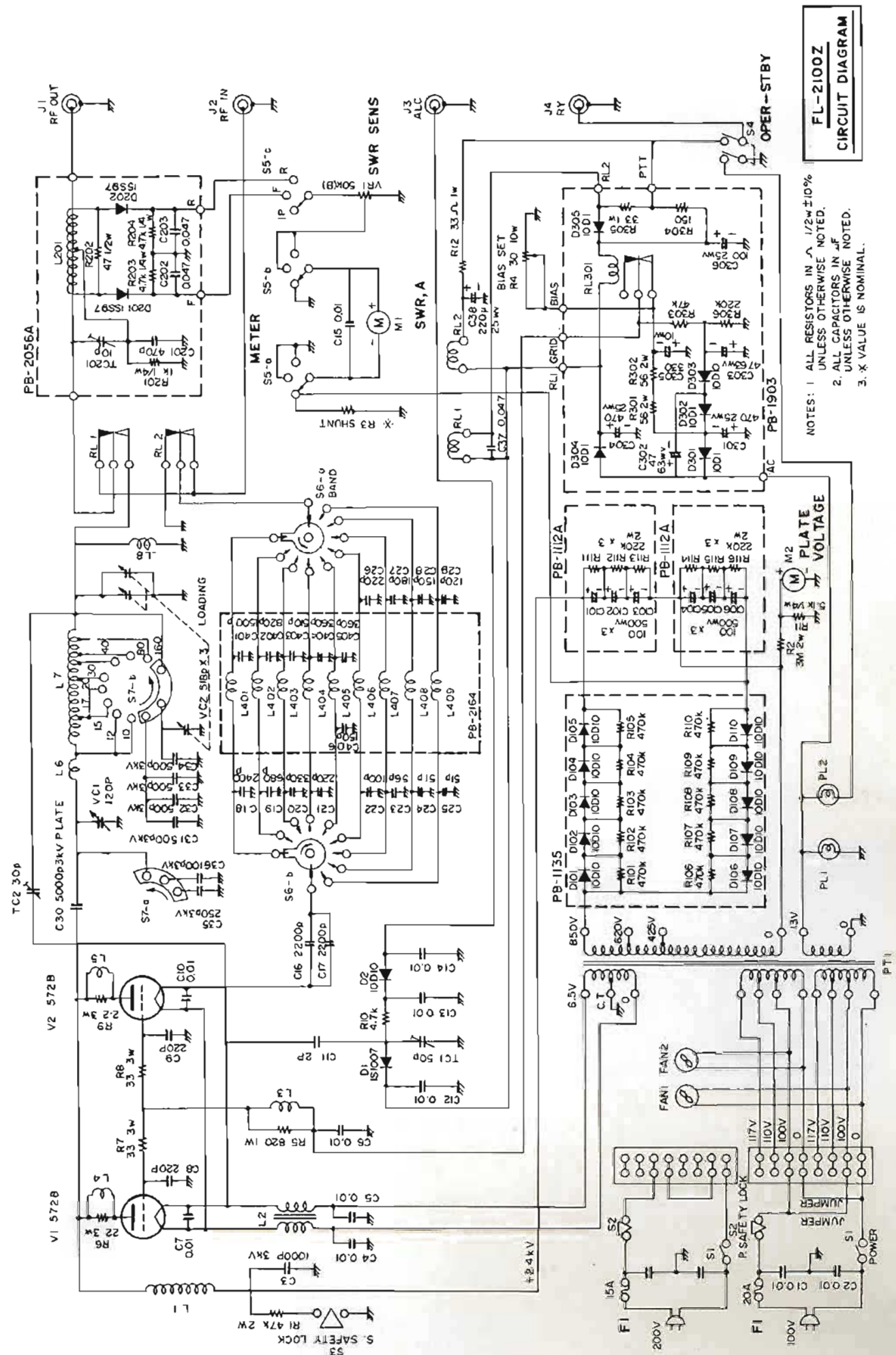


MAIN CHASSIS			C37,39	K13179009	Ceramic 50WV 0.047 $\mu$ F (DD110F473K50V)
Symbol No.	Part No.	Description			
		VACUUM TUBE	C36	K24390002	" 7KV 100pF (RDA-30-100P)
V1,2	G6090005	572B/T160	C35	K24390003	" " 345pF (RDA-40-345P)
		VACUUM TUBE SOCKET	C31-34	K24356501	" 3KV 500pF (RDA40-500P)
VS1,2	P3090047	DA204UX			
	S5000018	PLATE CAP HV-3001	C3,30	K24356102	" " 1000pF (RDA-30-1000P)
		DIODE	C38	K40140227	Electrolytic 25WV 220 $\mu$ F (25RL220)
D1	G2010070	Germanium 1S1007			
D2	G2090002	Silicon 10D10			
					VARIABLE CAPACITOR
		RESISTOR	VC1	K90000032	YP-120-22 120pF
R11	J01245512	Carbon film 1/4W Tj 5.1k $\Omega$	VC2	K90000031	530P $\times$ 3L 530pFx3
R5	J01305821	" " RD1P821 820 $\Omega$			
R10	J10276472	" composition 1/2W GK 4.7k $\Omega$			TRIMMER CAPACITOR
R6,9(L4,L6)	-	" " 3W 22 $\Omega$	TC1	K91000016	ECV-1ZW50 $\times$ 32 50pF
R7,8	J21355330	" " " 33 $\Omega$	TC2	K91000001	TSN-150C30P 30pF
R12	J20306330	Metallic film 1W 33 $\Omega$			
R1	J20336473	" " 2W 47k $\Omega$			INDUCTOR
R4	J31406300	Wire wound variable 10W RWH-10G1 30 $\Omega$	L1	L1020667C	
R3(with M1)	J32009006	Meter shunt 0.21 $\Omega$	L2	L1020659	
R2	J32009005	RH2HVD 2W 3M $\Omega$ J	L3	L1020661	
			L4,5(R6,9)	L1020664B	
			L6	L0020758A	
			L7	L0020850	
		POTENTIOMETER	L8	L1020064	
VR1	J60800068	EVH-B0AS20B54 50k $\Omega$ B			
					POWER TRANSFORMER
		CAPACITOR	PT1	L3030012	
C11	K30279005	Dipped Mica 500WV 3pF (DM15D030D5)			
C24,25	K30279121	" " " 51pF (DM15D510K5)			METER
C22	K30279027	" " " 100pF (DM15D101K5)	M1(with R3)	M0090013	
C23,29	K30279029	" " " 120pF (DM15D121K5)	M2	M0090012	
C28	K30279031	" " " 150pF (DM15D151K5)			RELAY
C21,26	K30279035	" " " 220pF (DM15D221K5)	RL1	M1090001	AW5221-HP2 DC12V
C27	K30279037	" " " 270pF (DM15D271K5)	RL2	M1090008	MX2F "
C20	K30279085	" " " 330pF (DM19D331K5)			SWITCH
C19	K30279113	" " " 680pF (DM19D681K5)	S1,4	N7090005	WD9223
C16,17	K30279059	" " " 2200pF (DM19D222K5)	S2	N7090023	AM2317
C18	K30279060	" " " 2400pF (DM19D242K5)	S5	N0190060	ESR-E143R-20Z (Meter)
CJ,2	K12329001	Ceramic 1.4KV 0.01 $\mu$ F (ECK-DAL103PE)	S3	R0011670A	Safety Switch Ass'y
C4-7,10,12-15	K12279002	" 500WV 0.01 $\mu$ F (ECK-D2H103PE)	S6	N0050051	Band Switch C Ass'y
C8,9	K00359002	" 3KV 220pF (CC45SL3F221KY)	S7	N0050052	" " D Ass'y
					FAN MOTOR
			FAN1,2	M2190001	2S10A (with fan)
					LAMP
			PL1,2	Q1000033	K0252-6-8 14V 40mA

		FUSE	COUPLER UNIT		
F1	Q0000009	100V-117V 20A	Symbol No.	Part No.	Description
	Q0000008	200V-234V 15A	PB-2056A	F0002056A C020560A	Printed circuit board PCB with components
		FUSE HOLDER			
FH1	P2000017	SN2050			DIODE
			D201,202	G2090118	Schottky barrier 1SS97
		RECEPTACLE			
J1,2	P1090028	MBR-06B			RESISTOR
J3,4	P1090133	STR-01-3	R202	J01245470	Carbon film 1/2W TJ 47Ω
			R201	J00245102	" " 1/4W VJ 1kΩ
			R203,204	J00245104	" " " " 100kΩ
		FERRITE BEADS			
	L9190001	4A Ri 3x3x1			
	L910035	3A Ri 5.8x6.4x2			
		AC CORD			CAPACITOR
			C201	K30176471	Dipped mica 50WV 470pF (Z18D471K05)
			C202,203	K13179009	Ceramic " 0.047μF (DD110F473Z50V)
	T7600001	2 wire, 2 prong plug			
	T9000382	3 wire, 3 prong UL plug			
	T9000680	3 wire, 3 prong Australian plug			
	T9000584	3 wire, 2 prong EU plug			TRIMMER CAPACITOR
			TC201	K91000019	ECV-1ZW 10x40 10pF
		TERMINAL BLOCK			
	Q6000041	ML-3391-8P(H)			CM COUPLER
			L201	L0020301A	
<b>RECTIFIER BOARD</b>					
Symbol No.	Part No.	Description	<b>BIAS CNTL BOARD</b>		
PB-1135	F0001135	Printed circuit board	Symbol No.	Part No.	Description
	C011350A	PCB with components	PB-1903	F0001903 C019030A	Printed circuit board PCB with components
		DIODE			
D101-110	G2090002	Silicon 10D10			DIODE
			D301,302,304,305 D303	G2090001 G2090002	Silicon 10D1 " 10D10
		RESISTOR			
R101-110	J10276474	Carbon composition 1/2W GK 470kΩ			RESISTOR
			R307 R304	J02245102 J10276151	Carbon film 1/4W SJ 1kΩ " composition 1/2W GK 150Ω
			R303	J10276473	" " " " 47kΩ
			R306	J10276224	" " " " 220kΩ
			R305	J20306330	Metallic film 1W 33Ω
			R301,302	J20336560	" " 2W 56Ω
<b>CAPACITOR BOARD (A) (B)</b>					
Symbol No.	Part No.	Description			
PB-1112A	F0001112A	Printed circuit board			
	C011120A	PCB with components			
		RESISTOR			CAPACITOR
R111-113(A) R114-116(B)	J20336224	Metallic film 2W 220kΩ	C305	K40100337	Electrolytic 10WV 330μF (10RL330)
			C306	K40149003	" 25WV 100μF (25RE100)
			C301,304	K40149002	" " 470μF (25RE470)
			C302,303	K40180476	" 63WV 47μF (63RL47)
C101-103(A) C104-106(B)	K43270004	Electrolytic 500WV 100μF (ECE-M2HR101ER)			

		RELAY			
RL301	M1190002	FBR211AD012M			
		INPUT UNIT			
Symbol No.	Part No.	Description			
PB-2164	F0002164	Printed Circuit Board			
	C021640	PCB with components			
		CAPACITOR			
C406	K30279031	Dipped Mica 500WV 150pF (DM150D151K5)			
C404,405	K30279040	" " " 360pF (DM19D361K5)			
C403	K30279044	" " " 510pF (DM19D511K5)			
C402	K30279049	" " " 820pF (DM19D821K5)			
C401	K30279055	" " " 1500pF (DM19D152K5)			
		INDUCTOR			
L401	L0020849				
L402	L0020613				
L403	L0020848				
L404	L0020617				
L405	L0020847				
L406	L0020620				
L407,409	L0020621				
L408	L0020622				
		ACCESSORIES			
Symbol No.	Part No.	Description			
	P0090019	Coaxial plug MP-7			
	P0090018	Phono plug STP-58			
	Q0000009	Fuse 20A (100-117V)			
	Q0000008	" 15A (200-234V)			





NOTES: 1. ALL RESISTORS IN  $\frac{1}{2}\%$  ±10%  
 2. ALL CAPACITORS IN  $\mu$ F UNLESS OTHERWISE NOTED.  
 3. X VALUE IS NOMINAL.

FL-2100Z  
 CIRCUIT DIAGRAM