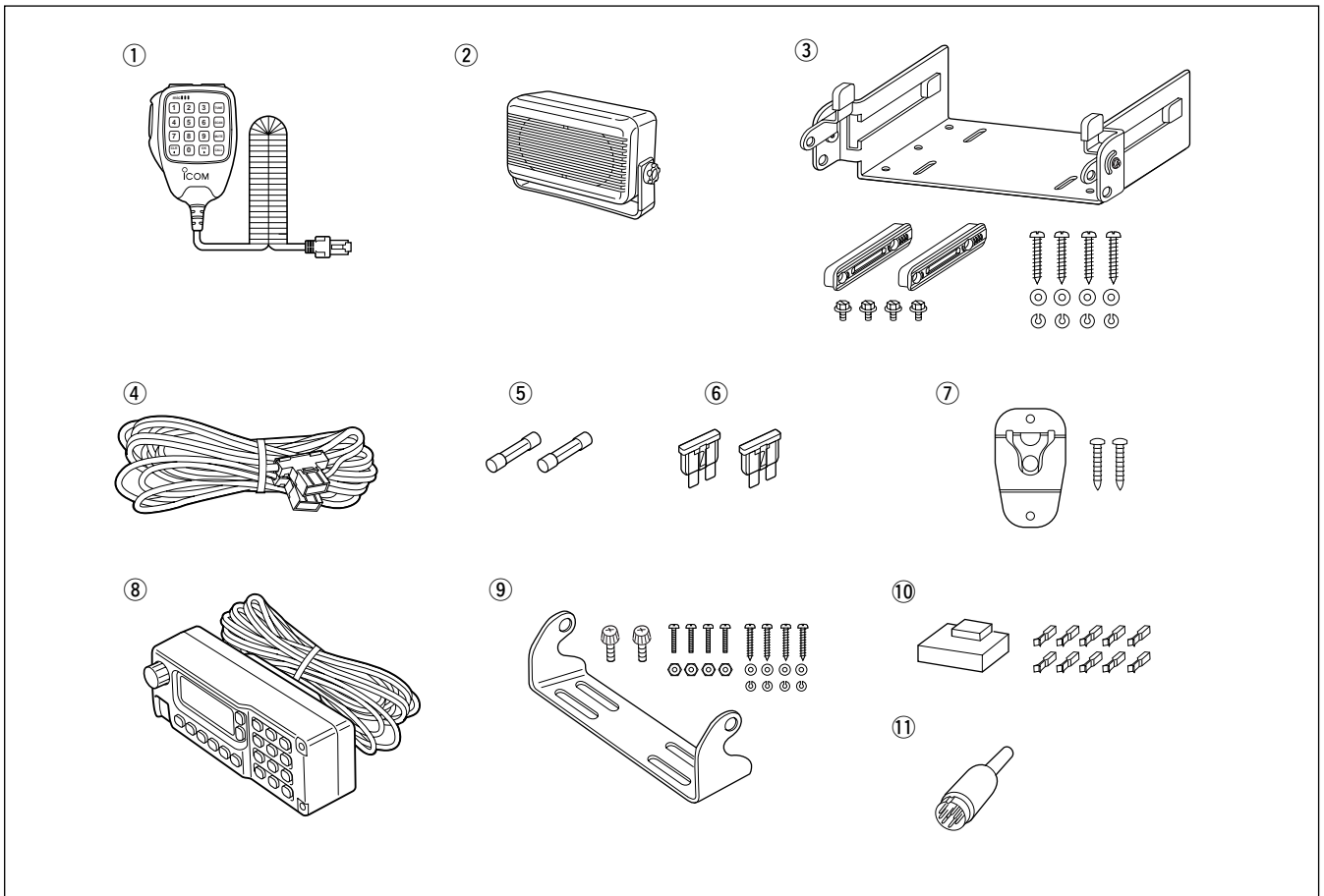


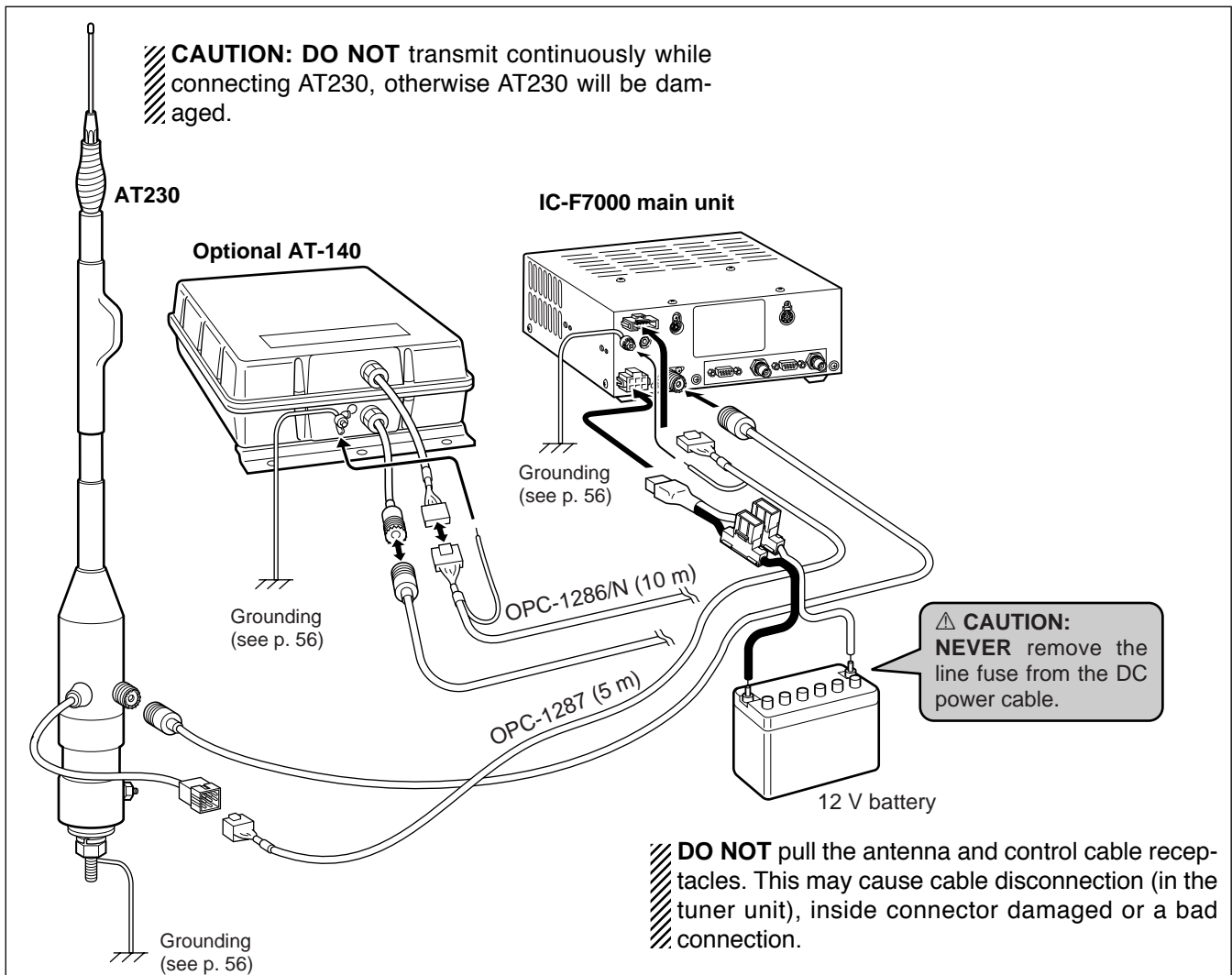
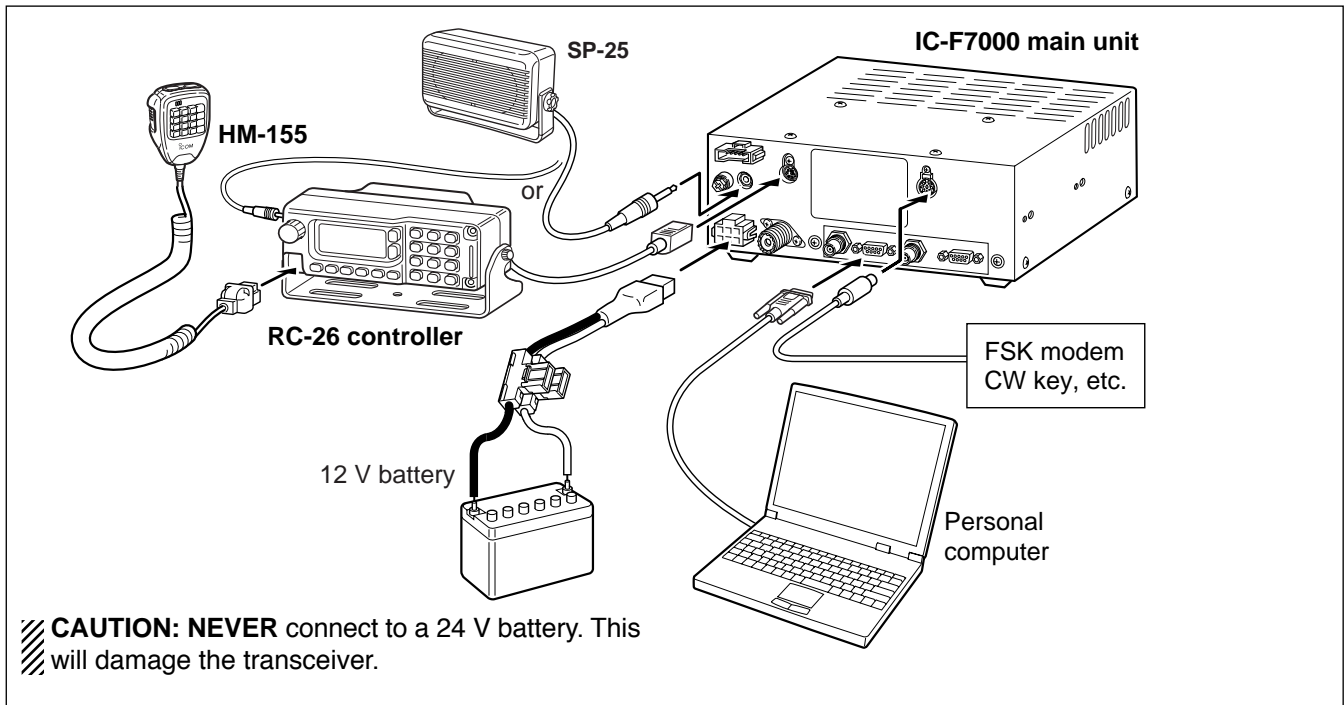
## ■ Supplied accessories

The following accessories are supplied with IC-F7000.

- ① Microphone (HM-155) ..... 1
- ② External speaker (SP-25) ..... 1
- ③ Mounting bracket kit for main unit ..... 1 set
- ④ DC power cable (OPC-1289) ..... 1
- ⑤ Spare fuses (FGB 5 A) ..... 2
- ⑥ Spare fuses (ATC 30 A) ..... 2
- ⑦ Microphone hanger kit ..... 1 set
- ⑧ Remote controller (RC-26) ..... 1
- ⑨ Mounting bracket kit for remote controller ... 1 set
- ⑩ Tuner connector kit (10 pin) ..... 1 set
- ⑪ Accessory connector (8-pin DIN) ..... 1 set



## ■ Connections



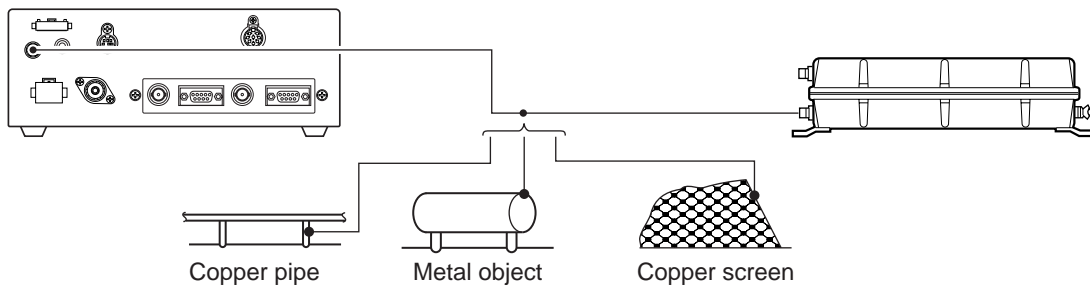
## Ground connection

The transceiver and antenna tuner **MUST** have an adequate RF ground connection. Otherwise, the overall efficiency of the transceiver and antenna tuner installation will be reduced. Electrolysis, electrical shocks and interference from other equipment could also occur.

For best results, use 50 or 75 mm (2 or 3 inches) wide copper strap and make the connection as short as possible. Ground the transceiver and antenna tuner to one ground point, otherwise the voltage difference (in RF level) between 2 ground points may cause electrolysis.

- ⚠ **WARNING— When grounding to a metal hull**  
Use Zinc anodes to protect the hull from electrolysis.
- Ask your technical dealer, installer or refer to a technical book, etc., for RF grounding details.

### Ground system example



### Best ground points

- External ground plate
- Copper screen
- Copper foil

### Un-usable ground points

- (these connections may cause an explosion or electrical shock)
- Gas or electrical pipe
  - Fuel tank or oil-catch pan

## Power source

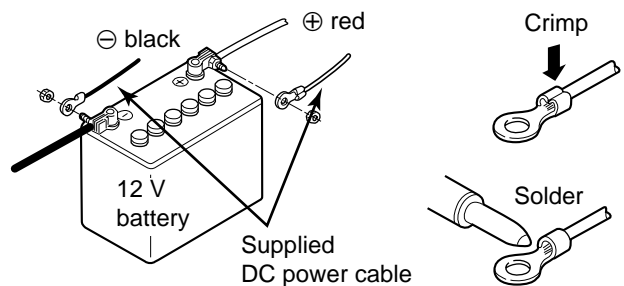
The transceiver requires a regulated DC power of 13.8 V and at least 30 A. There are 2 ways to supply power:

- Direct connection to a 12 V battery in your vehicle through the supplied DC power cable.
- Use PS-60 DC POWER SUPPLY to connect to an AC outlet.

**CATION:** The supplied DC power cable **MUST** be used to provide power to the transceiver. **AVOID** exceeding the 3 m (10 ft.) length of the DC power cable. When it is necessary to make a run of over 3 m, use #6 or similar weight cable with line fuses, 30 A, instead of the supplied DC power cable for a maximum of 6 m (20 ft.).

### DC power cable connection

⚡ **NOTE:** Use terminals for the cable connection.



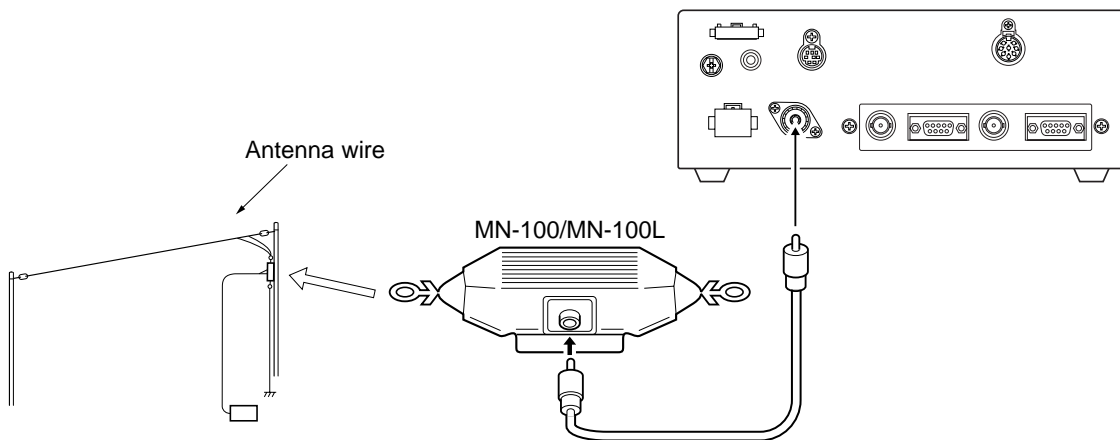
## ■ Antenna

Most stations operate with a whip or long wire (insulated backstay) antenna. However, these antennas cannot be connected directly to the transceiver since their impedance may not be matched with the transceiver antenna connector.

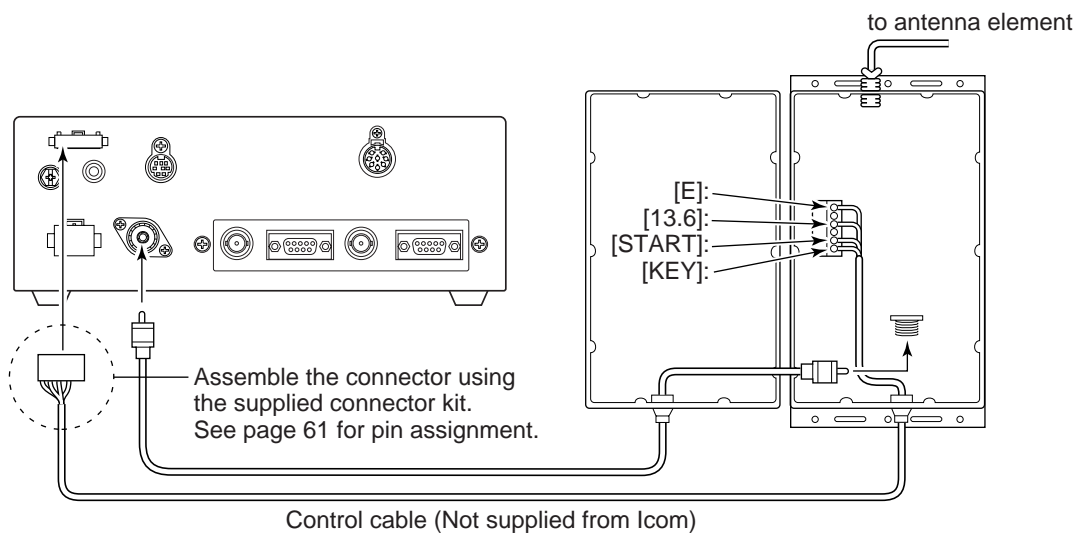
With a 50 Ω matched antenna all HF bands cannot be used. The following antenna matcher or antenna tuner may be helpful for antenna installation.

**⚠ WARNING: HIGH VOLTAGE!**  
**NEVER** touch the antenna element/wire while tuning or transmitting.

### ◇ MN-100/MN-100L ANTENNA MATCHERS



### ◇ AT-130/AT-130E AUTOMATIC ANTENNA TUNER



### ◇ Non-Icom tuner

Some non-Icom tuners may be used with the IC-F7000. Please consult your dealer if you wish to connect one.

### ◇ AT-140 AUTOMATIC ANTENNA TUNER

See page 55.

## ■ Mounting

### ◇ Mounting location

Select a location which can support the weight of the transceiver and does not interfere with driving. We recommend the locations shown in the diagram below.

**NEVER** place the main unit or remote controller where normal operation of the vehicle may be hindered or where it could cause bodily injury.

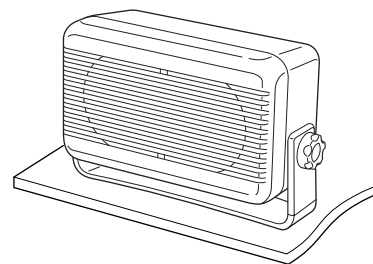
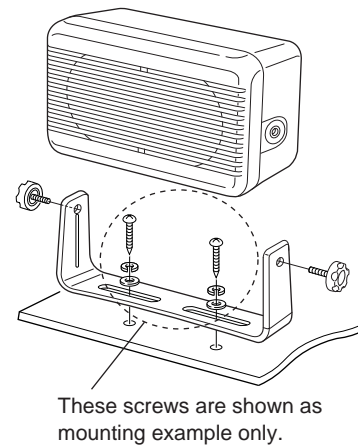
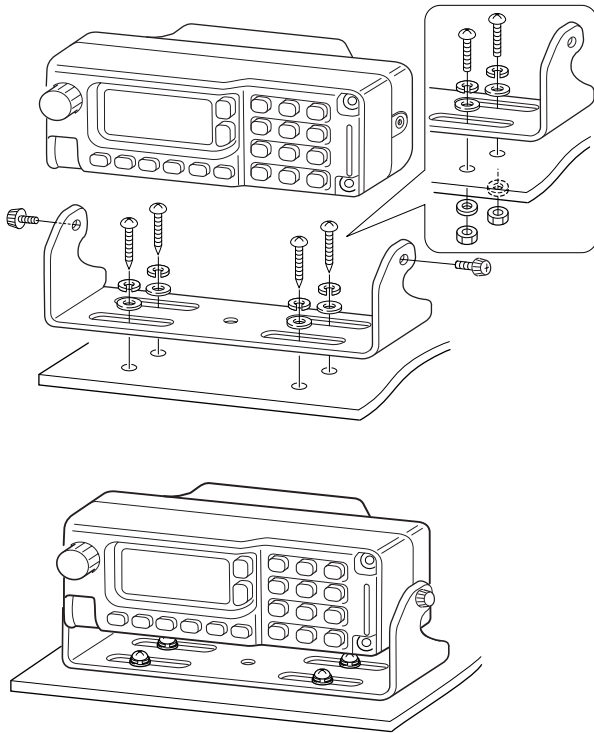
**NEVER** place the main unit or remote controller where air bag deployment may be obstructed.

**DO NOT** place the main unit or remote controller where hot or cold air blows directly onto it.

**AVOID** placing the main unit or remote controller in direct sunlight.

### ◇ Mounting the controller or speaker

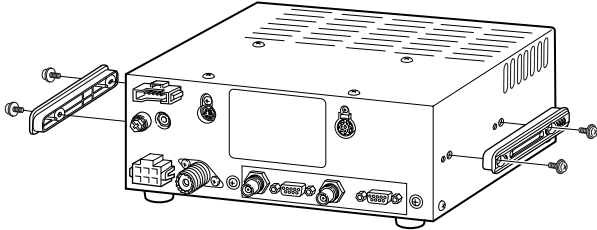
Check the installation angle; the display may not be easy to read at some angles.



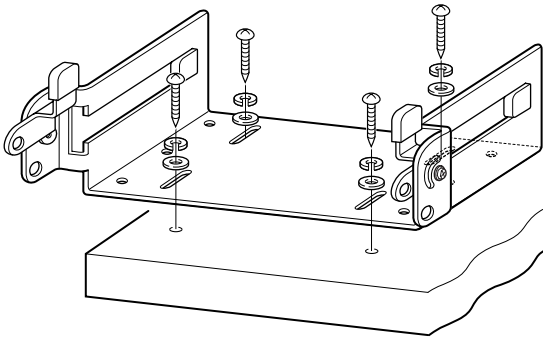
◆ **Mounting the Main unit**

A supplied mounting bracket is available for mounting the transceiver's Main unit to a flat surface.

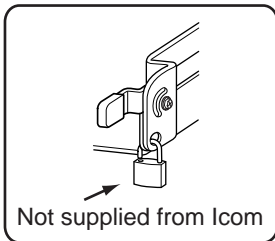
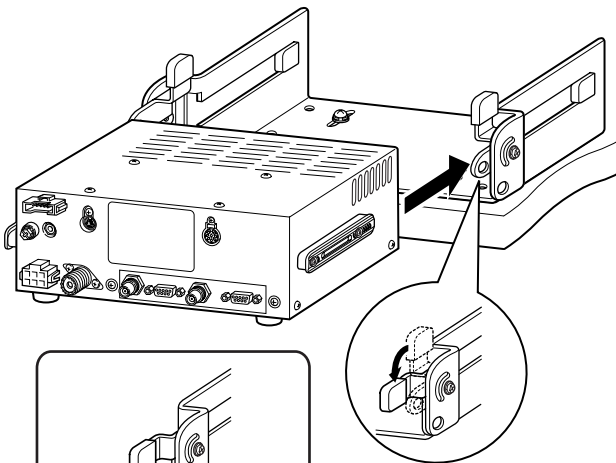
- ① Attach the mounting plates, and tighten the 2 supplied screws (M5 × 8) for each side.



- ② Put the mounting bracket on the board, and then tighten the 4 supplied screws (M5 × 20).

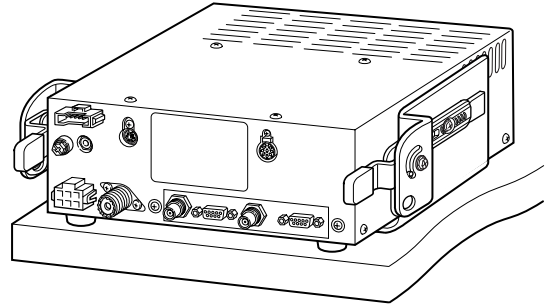


- ③ Attach the Main unit to the mounting bracket as shown below.

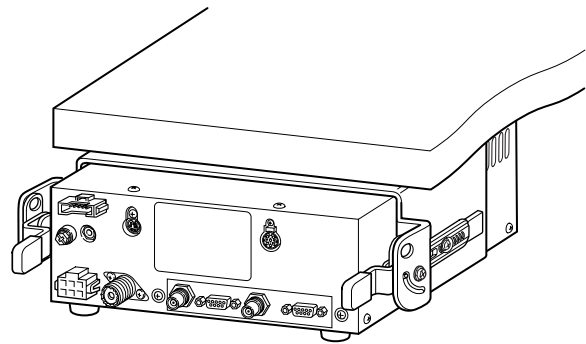


- ④ The completed mounting should look like this.

• **Mounting on the board**



• **Overhead mounting**



⚠ **WARNING:** mount the mounting bracket with 4 supplied screws to surface which is more than 40 mm thick and can support more than 10 kg. The unit must be mounted on a flat hard surface only.

## ■ Fuse replacement

The transceiver has 2 fuses (2 types) to protect internal circuitry, 1 fuse for the fuse holder on the DC power cable and 1 for inside. If the transceiver stops functioning, check the fuses below.

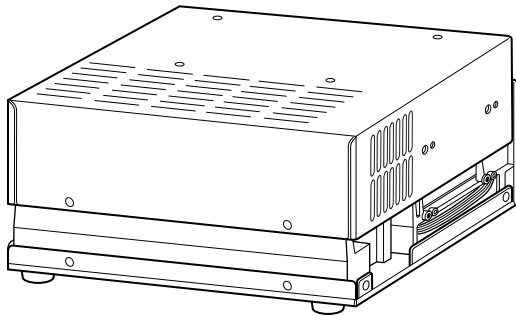
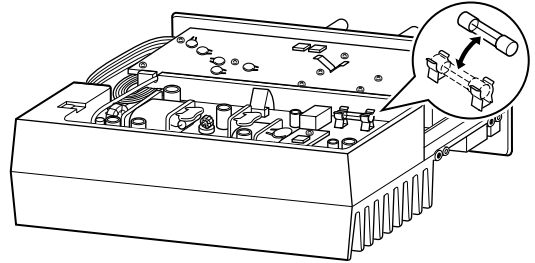
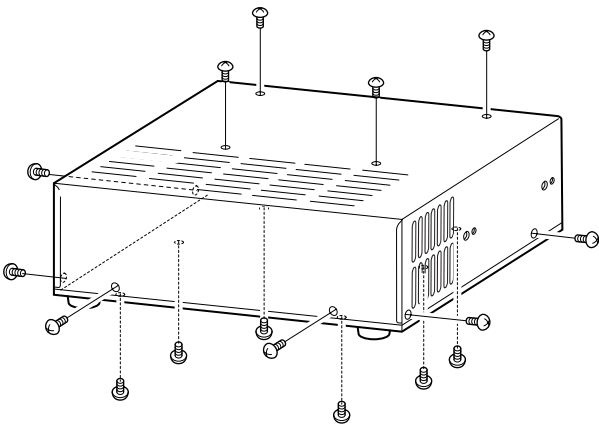
- DC power cable .....ATC 30 A
- Circuitry fuse .....FGB 5 A

**CAUTION: DISCONNECT** the DC power cable from the transceiver when changing a fuse.

### ◇ Internal fuse replacement

- ① Unscrew 4 screws from the top of the transceiver and 6 screws from the sides, then lift up the top cover.
- ② Turn the transceiver upside down.
- ③ Unscrew 6 screws from the bottom cover, then lift up the bottom cover.

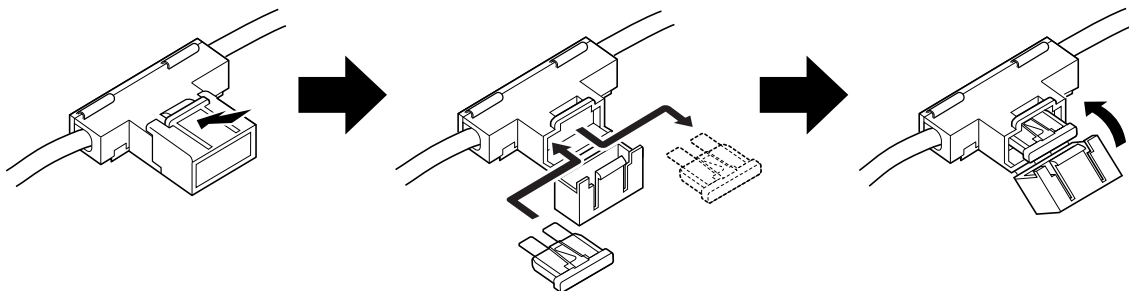
- ③ Replace the circuitry fuse as shown in the diagram below.
  - Use the supplied FGB 5 A fuse (glass tube type).




- ④ Replace the top and bottom covers to their original position.


7

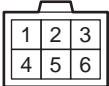
### ◇ Line fuse replacement



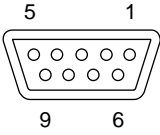
## ■ Connector information

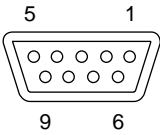
ACC	Pin	Pin name	Description	Specification
	1	CWK (NC)	CW and FSK keying input. (NC: AUS version)	Input level : Less than 0.6 V for transmit
	2	AF GND	Ground line for AF signal.	
	3	SEND	Input/output pin. Goes to ground when transmitting. When grounded, transmits.	Ground level : -0.5 to 0.8 V Input current : Less than 20 mA
	4	MOD	Modulator input. Usable when pin 3 is grounded.	Input impedance : 5 kΩ Input level : Approx. 100 mV rms
	5	AF	AF detector output. Fixed, regardless of [VOL] position.	Output impedance: 4.7 kΩ Output level : 100–300 mV rms
	6	SQLS	Squelch output. Goes to ground when squelch opens.	Squelch open : Less than 0.3 V/5 mA Squelch closed : More than 6.0 V/100 μA
	7	13.8 V	13.8 V output when power is ON.	Output current : max. 1 A
	8	ALC	ALC voltage input.	Control voltage : -3 to 0 V Input impedance : More than 10 kΩ
	*	DC GND	Common ground.	


TUNER	Pin	Pin name	Description	Specification
	1	E	Negative terminal	
	2	13.8V	13.8 V output	
	3	TUM4	Stepping motor control signal output for AT230.	
	4	TUM2	Stepping motor control signal output for AT230.	
	5	TUM1	Stepping motor control signal output for AT230.	
	6	TURS	Band control signal output for AT230.	
	7	TSCS	Preamp control signal output while scanning.	
	8	TUM3	Stepping motor control signal output for AT230.	
	9	START	Start/through signal output	
	10	KEY	Key signal input.	-0.5 to 0.8 V during tuning

DC 13.8V	Pin	Pin name	Description	Specification
	1-3	⊕	DC input ⊕.	Max. power consumption 23 A typical.
	4-6	⊖	DC input ⊖.	

### ■ Connector information (continued)

AF/MOD	Pin	Pin name	Description	Specification
	1	MOD+	Modulation input (unmatched) from an external terminal unit.	Input impedance : 150 Ω Input level : Approx. 0.1 V rms.
	2	MOD-	Coaxial ground for MOD+.	
	3	GND	Ground for digital equipment.	
	4	NAF+	AF detector output (unmatched) for an external terminal unit.	Output level : More than 0.774 V rms
	5	NAF-	Coaxial ground for NAF+.	
	6	GND	Ground for digital equipment.	
	7	NC	No connection.	
	8	SEND	Transmits when grounded.	Output level : -0.5 to 0.8 V Input level : Less than 20 mA
	9	GND	Ground for digital equipment.	

REMOTE	Pin	Pin name	Description
	1	DCD	Input terminal for carrier detection.
	2	RXD	Input terminal for receive data. ("RS-232C" selection for REMOTE I/F. (p.43))
		NMEA-OUT	NMEA0183 ver. 3.01 data output. ("NMEA" selection for REMOTE I/F. (p. 43))
	3	TXD	Outputs transmit data. ("RS-232C" selection for REMOTE I/F. (p. 43))
		NMEA-IN	NMEA0183 ver. 3.01 data input. ("NMEA" selection for REMOTE I/F. (p. 43))
	4	DTR	Outputs data terminal ready signal.
	5	GND	Connected to the ground.
	6	DSR	Input terminal for data-set-ready signal.
	7	RTS	Outputs request-to-send data.
8	CTS	Input terminal for clear-to-send data.	
9	NC	No connection.	

GPS	Pin	Pin name	Description
	1	NMEA ⊕	NMEA0183 ver 2.0 or 3.01 data input ⊕.
	2	NMEA ⊖	Ground for NMEA data.