

3.5-50MHz(80-6m)

Element for External Automatic Antenna Tuner for Wire



CPATU

OPERATION INSTRUCTIONS

To use the antenna properly, read these instructions thoroughly before using it.
Keep this manual carefully at hand for later use.




【Introduction】

CPATU is an element for external automatic antenna tuner (ATU) for wire use only. The element alone cannot be used as an antenna. The transceiver with internal automatic antenna tuner and the antenna tuner cannot be used with this product.

Safety Precautions

Note beforehand that the company shall not be liable for any damages suffered by the customers or third parties in using that product, or for any failures and faults that occur the use or misuse of this product, unless otherwise provided for under the law.

■ Type and meaning of the marks

 DANGER	This mark indicates an imminently hazardous situation, which, if not avoided, could result in death or serious injury.
 WARNING	This mark indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.
 CAUTION	This mark indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury or only property damage.

DANGER

- Don't install the antenna on a rainy or windy day since it is dangerous.
- Don't touch the antenna during transmitting since it is dangerous.
- If there is a thunderstorm during operation, stop the operation immediately and remove the cable from the transceiver. If that doesn't make it in time, don't touch the antenna and the cable. It may be severely injured or die due to getting and electronic shock from a lightning strike.

WARNING

- Don't drop the antenna, tools and attachment when installing the antenna in the height. Install the antenna after assembling it on the ground.
- Install the antenna firmly not to fall down due to the strong wind. Even if falling down the antenna, locate the antenna at the safe place where people and building are not inflicted injuries.
- Don't attempt to install the antenna only by yourself. Installing the antenna alone on the roof may lead you dangerous accident. Always ask your friends for help installing the antenna.

CAUTION

- Install the antenna as far away as possible from any obstacles to obtain its maximum performance.
- Keeping transmitting with high VSWR may cause the transceiver to be damaged. Stop transmitting immediately and check the antenna.
- When transmitting, operate within the specification of the transmission power. It is a big burden on the antenna on FT8 etc. Don't operate over the specification of the transmission power. The antenna may be damaged.

■ ■ Note before operating ■ ■

- The element alone cannot be used. It is the element for external automatic antenna tuner for wire (referred to as ATU) use only.
- Connect between ATU and the supplied feeding cable. The coaxial cable cannot be used.
- It cannot be used with the transceiver with internal automatic antenna tuner, antenna tuner or antenna matching box(included with tuner).
- Set the transceiver with internal automatic antenna tuner through mode not to operate the internal automatic antenna tuner.
- Connect between the transceiver and ATU with the cable included in the antenna tuner or the boughten coaxial cable.

● Description

1. Diamond original element is employed. This product is designed as radiating efficiently.
2. It can be operated at 3.5-50MHz including WARC bands.
3. It is possible to TX and RX efficiently together with ATU of each manufacture.

● Parts list

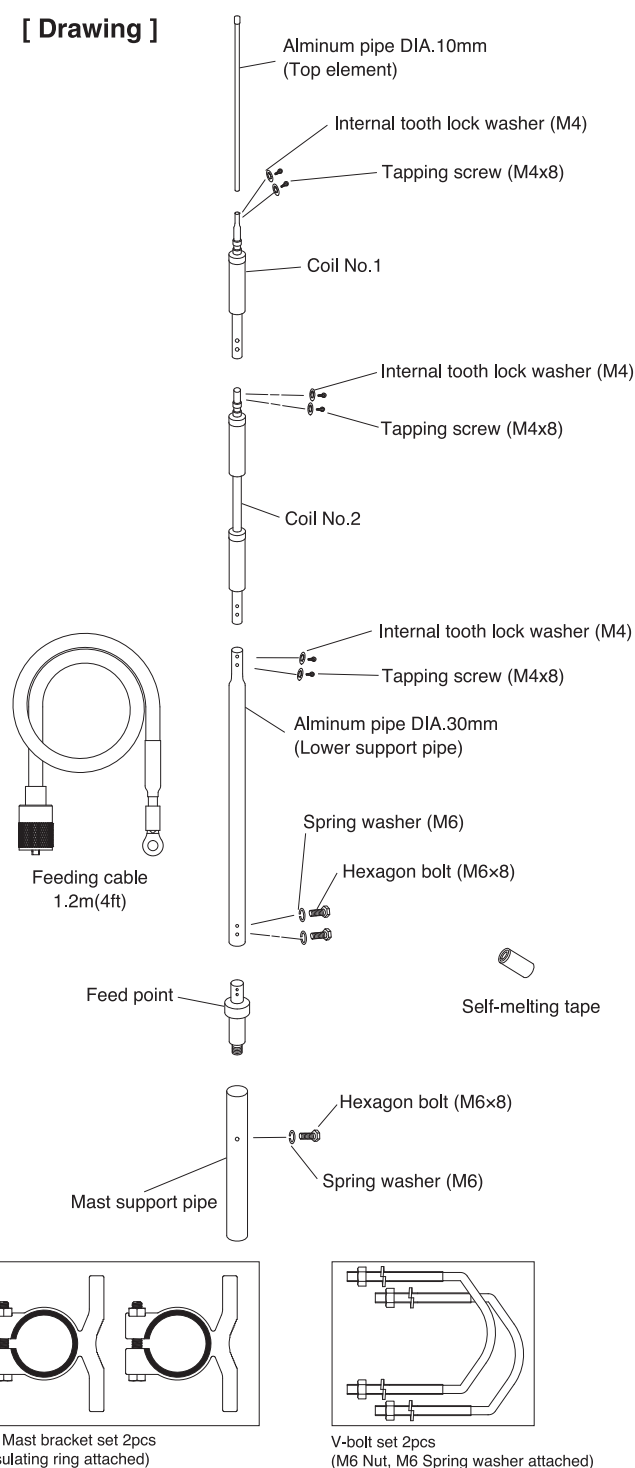
Please confirm if all parts of the below list are contained in the package.

Part No.	Part Name	QTY
PCP6TE	Aluminum pipe DIA.10mm (Top element)	1
PCPATULC1	Coil No.1	1
PCPATULC2	Coil No.2	1
PCPALP30	Aluminum pipe DIA.30mm (Lower support pipe)	1
PCPATUKS	Feed point	1
PCPATUFC	Feeding cable 1.2m(4ft)	1
PCPMSP	Mast support pipe	1
PCPMBS	CP Mast bracket set 2pcs	1
PVBS	V-bolt set 2pcs	1
PSETAPE	Self-melting tape	1
PSCRC	Set screw C *1	
	Spring washer (M6)	3
	Hexagon bolt (M6x8)	3
PSCRD	Set screw D *2	
	Internal tooth lock washer (M4)	6
	Tapping screw (M4x8)	6

*1
Set Screw C is common to all models.
We supply [Set Screw C] as spare parts.
[Set content]
Hexagon bolt (M6x8) 5pcs, Flat spring washer(M6) 5pcs
Spring washer (M6) 5pcs

*2
Set Screw D is common to all models.
We supply [Set Screw D] as spare parts.
[Set content]
Tapping screw (M4x8) 10pcs
Internal tooth lock washer (M4) 10pcs

[Drawing]



● Assembly

- ① Assemble the element referring to the drawing on 2nd page. Connect aluminum pipe DIA.10mm (Top element), coil No.1, coil No. 2 and aluminum pipe DIA.30mm(Lower support pipe) with the tapping screw through the internal tooth lock washer. Fix them firmly.
- ② Fix the mast support pipe to the mast with the supplied CP mast bracket. The mast support pipe's tapping hole has to be placed above the brackets and it has to be pointed outside against the mast.
- ③ Connect the feed point to the supplied feeding cable. Be sure to do waterproofing with the self-melting tape and the plastic tape.

⚠ WARNING

Use the supplied feeding cable only. The coaxial cable cannot be used. If connecting the transceiver with the coaxial cable, it doesn't work. Don't add the ferrite core etc. to the feeding cable.

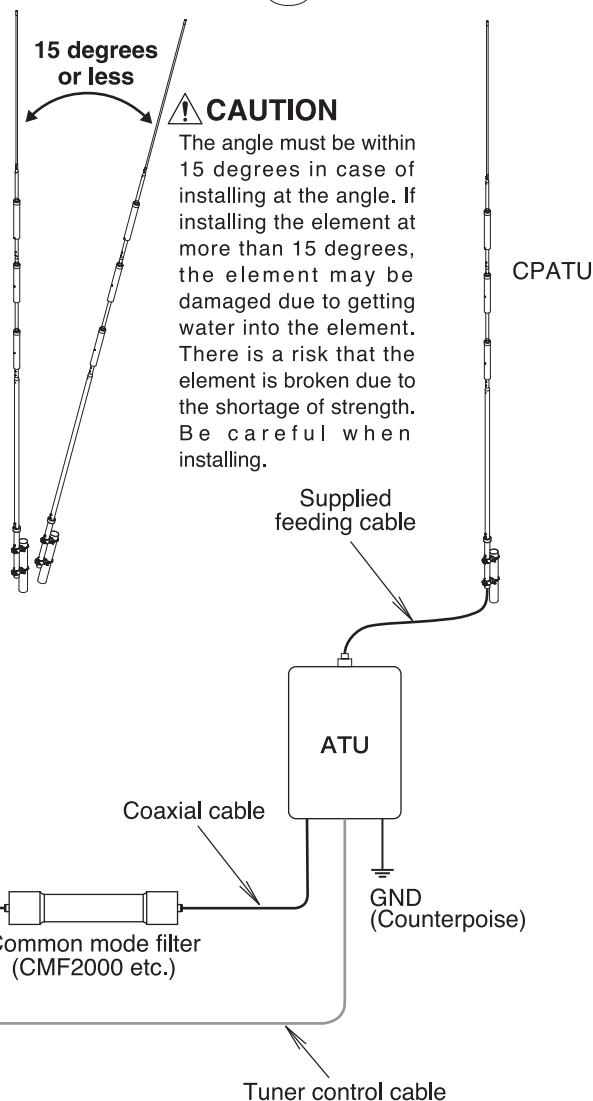
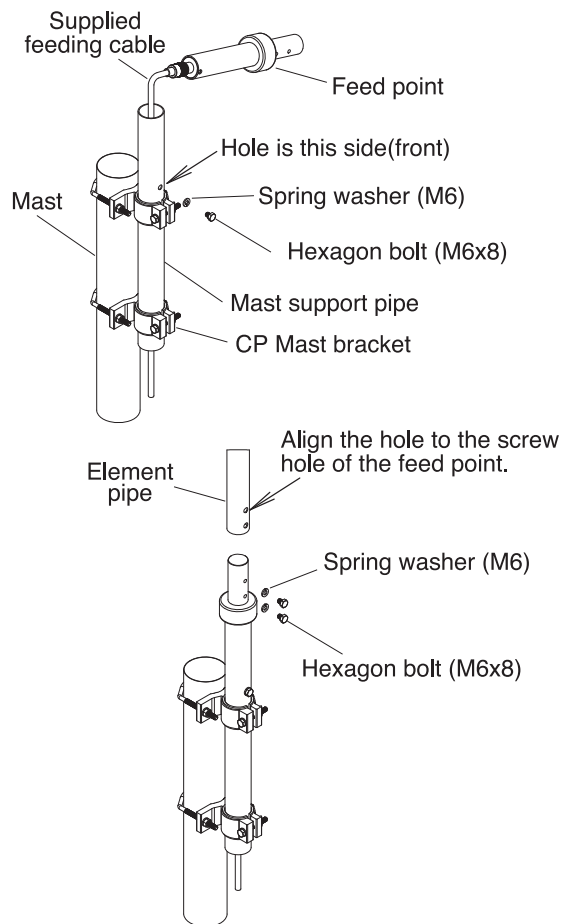
- ④ Align the hole in the lower part of the feed point with the hole in the mast support pipe and secure them with the hexagon bolt(M6x8) through the spring washer.
- ⑤ Align the hole in the lower part of the element with the screw hole of the feed point. Connect the element to the feed point and fix them with the hexagon bolt(M6x8) through the spring washer.

● Connecting(example)

We recommend to use the common filter close to the transceiver at the coaxial cable side and add the ferrite core to the tuner control cable to prevent the interference. Interference is likely to occur at the balcony of 2nd floor and above. While transmitting, there are concerns about the malfunction. Tune at lower output before transmitting and confirm if there is anything wrong.

We confirm the operation of the below ATUs.

Manufacturer	Model
ICOM	AH-4, AH-730, AH-705
YAESU	FC-40
CG Antenna	CG-3000
MFJ	MFJ-993BRT



[Example for balcony]

In case of installing the CPATU at the balcony, refer to the below pictures. To hide the ground wire by the drainboard or the astroturf is not affect SWR but no puddle is required.



(Picture-1)
Fixing the antenna mast (DAP600) at the support column of the hand rail, installing the element at the tip of the mast, fixing the ATU at the mast.



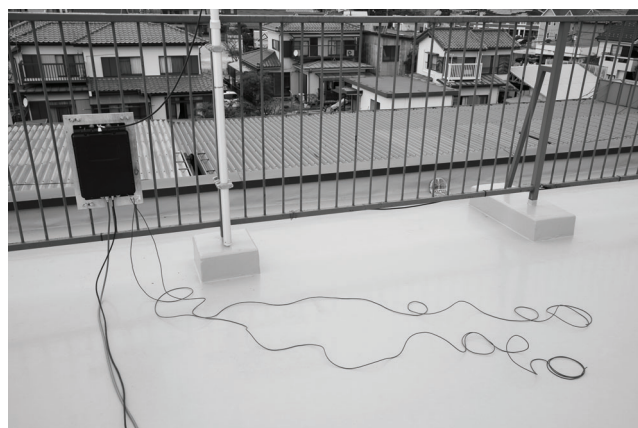
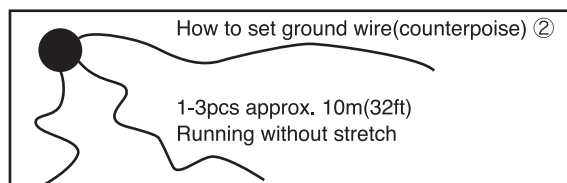
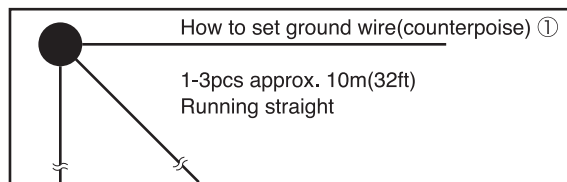
(Picture-2)
Installing the ATU far from the mast.
ATU is the CG3000.

[How to set the ground wire (counter poise)]

It is possible to use the metal of the balcony and the handrail as a ground. There is a possibility to use the plain kitted wire (DIAMOND TPES3 etc.) as grounding to connect the grounding terminal to the metal of the balcony and the handrail. To apply the conductive grease to the contact part is effective.

Contacting the ground to the large metal space helps to tune all bands. If it is difficult to tune higher bands, placing the ground wire close to the tuner helps to tune easily.

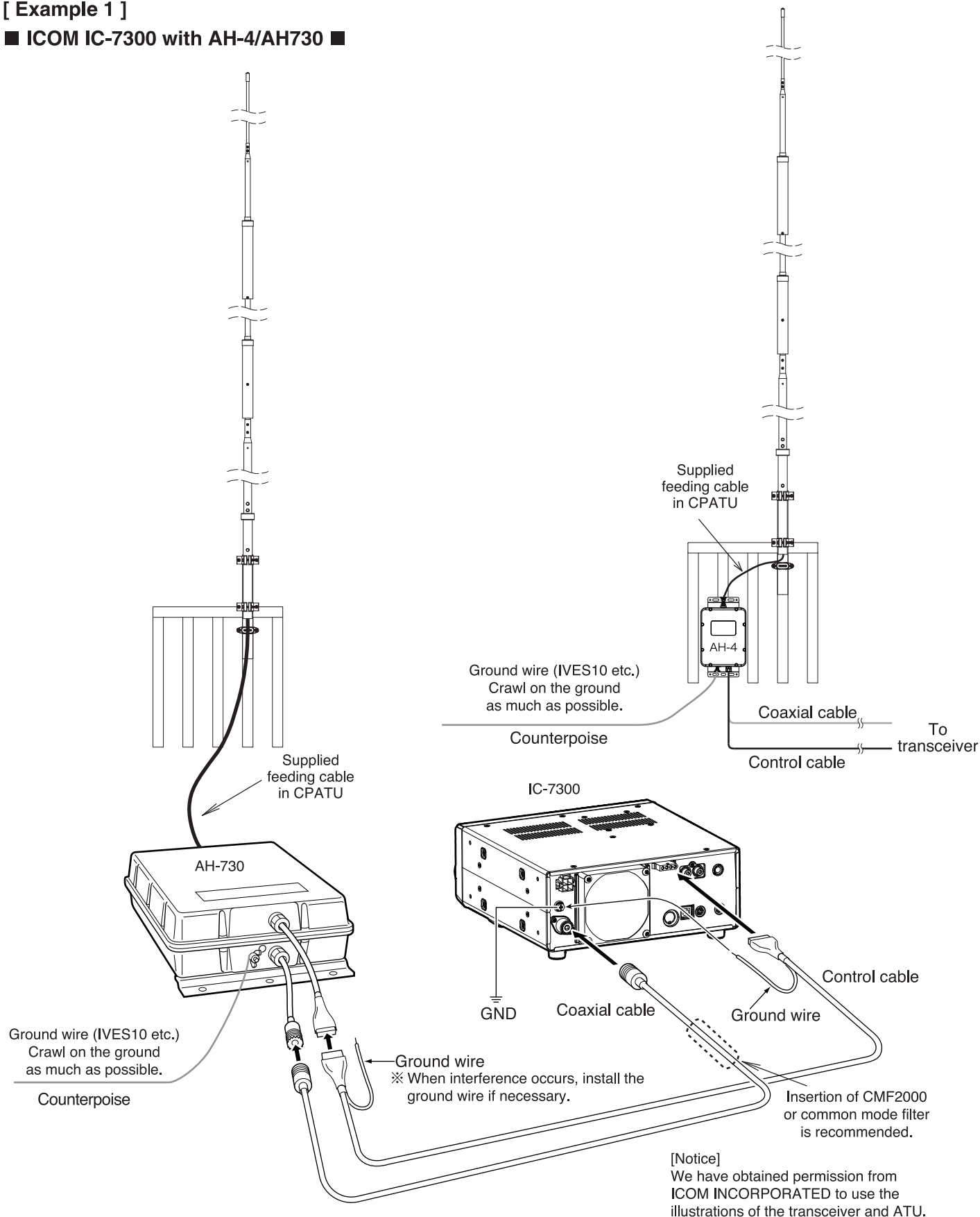
We recommend to use the common filter (CMF2000 etc.) close to the transceiver at the coaxial cable side to prevent the interference. There is a possibility that the interference occurs on ALC circuit of the transceiver. While tuning, operate at approx. 10W.



(Picture-3)
2pcs 5m(16.4ft) ground wire (counter poise).

[Example 1]

■ ICOM IC-7300 with AH-4/AH730 ■



Push [TUNER] of the front panel shortly to start tuning. While tuning, you hear the side tone and [TUNE] blinks red. While tuning, if [TUNE] goes out, it means SWR is high. Please confirm the length of the grounding wire or if there is something to affect the transmission wave or not. (Refer to 4-page of the operation instructions.)

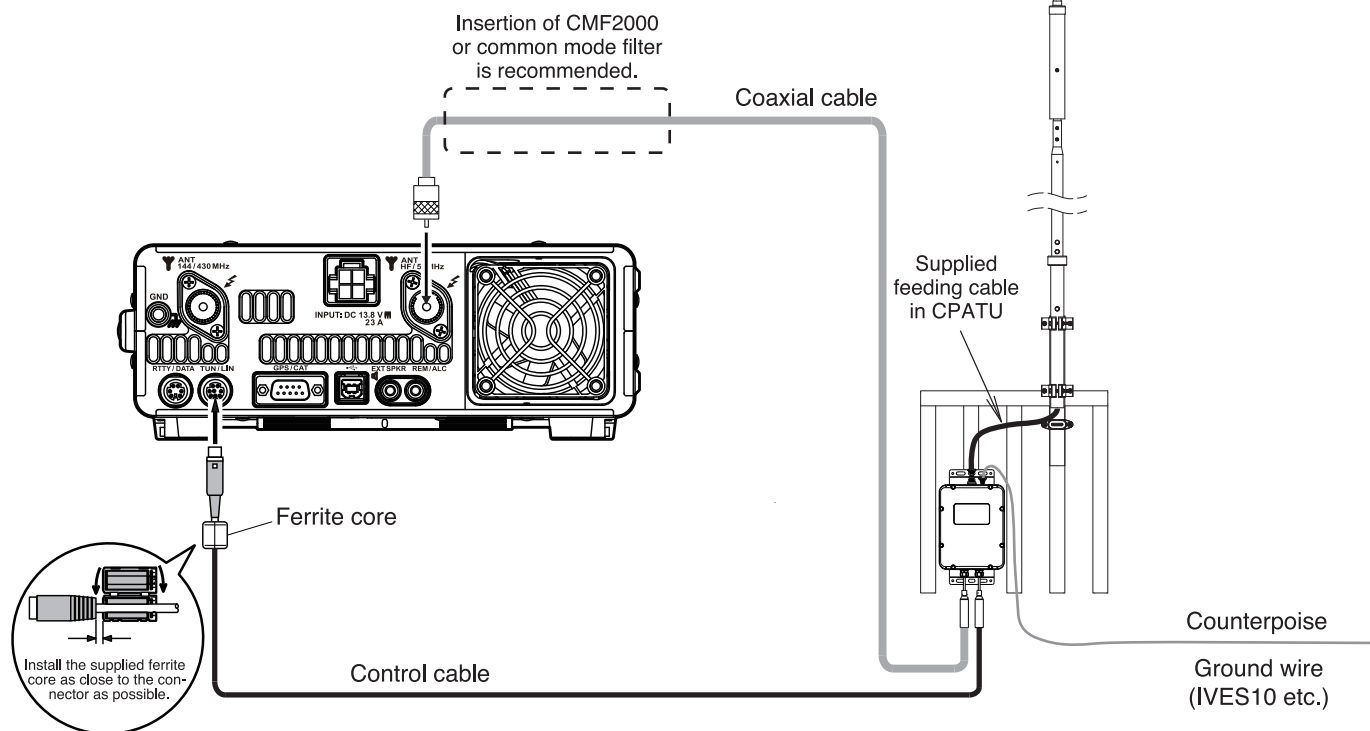
Don't install the counterpoise parallel to the feeding cable. Don't install the counter poise and the feeding cable facing the same direction. Take the counter poise out in the opposite direction of the coaxial cable and the control cable (as shown). In case of using AH-4/AH730, perform the tuning operation to set the preset feature of ATU. The reception of the band operated is not shown without tuning. Receive the band desired after finishing tuning.

[Example 2]

■ YAESU FT-991series with FC-40 ■

In case of FT-991 series, the internal tuner is not used. Change to [EXTERNAL] by menu mode [TUNER SELECT] in advance. While tuning, output power must be 10W. Switch to RTTY mode etc., confirm SWR and interference carefully. Increase the power gradually once you confirm there is no interference and no unusual movement. If the packet interface cable is connected, each band is captured in memory under the preset feature after tuning correctly.

We recommend to use the common mode filter to prevent the interference on the packet interface cable because wide frequency range is operated.

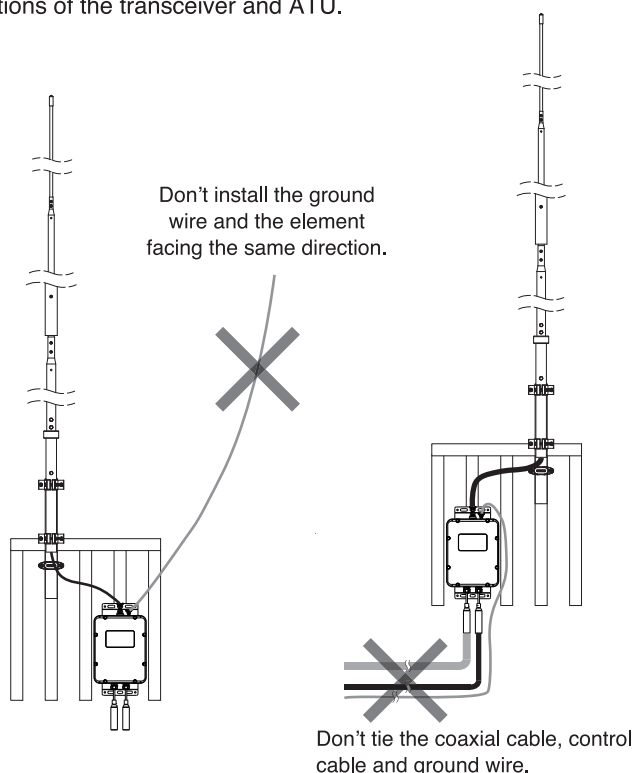


[Notice]

We have obtained permission from YAESU MUSEN Co., Ltd. to use the illustrations of the transceiver and ATU.

⚠ WARNING

Don't install the counterpoise parallel to the feeding cable. Don't install the counterpoise and the feeding cable facing the same direction. Take the counterpoise out in the opposite direction of the coaxial cable and the control cable. The same applies to ATUs of each manufacturer.



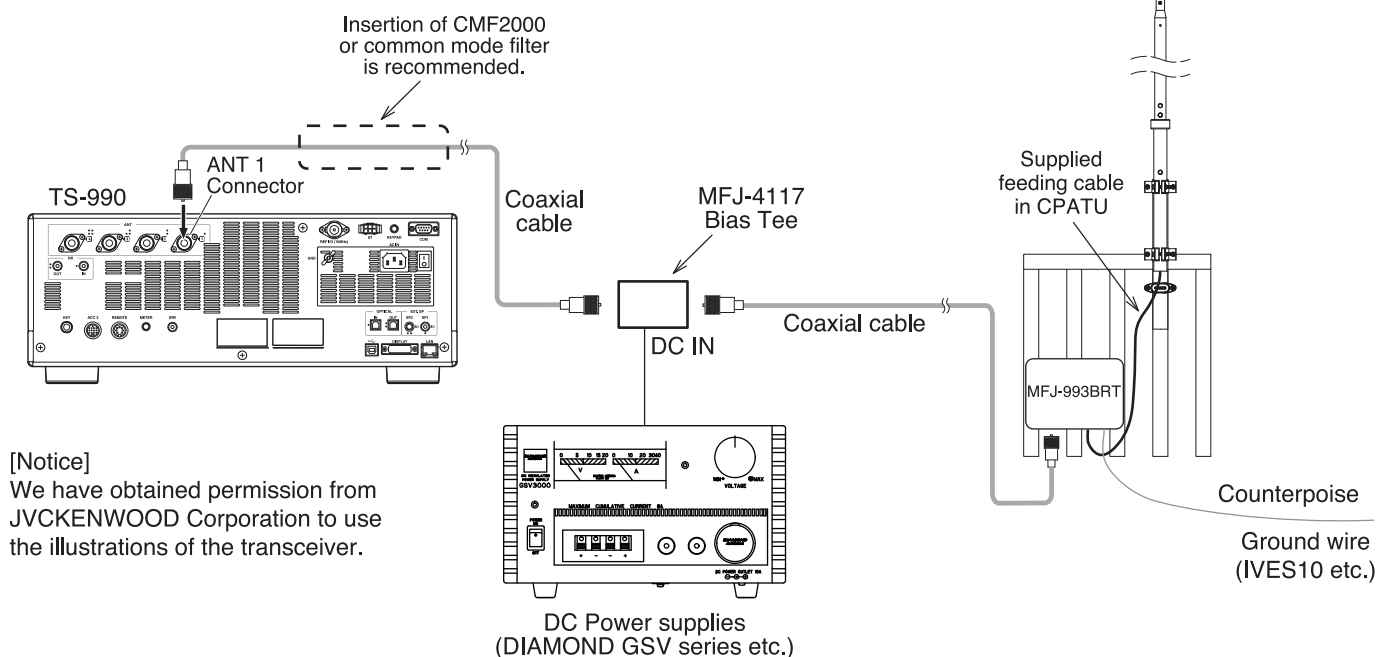
[Example 3]

■ Kenwood TS-990 with MFJ-993BRT ■

ATU of MFJ has no preset feature so it is already through mode. Set the preset feature of the frequency operated in advance. Turn on the bias tee and tune at FSK or RTTY mode at 10W.

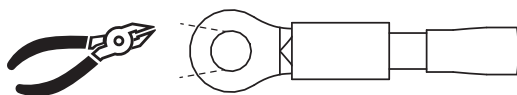
Transmit and confirm if it is tuned correctly. Increase the power and operate once you confirm the tuning is done. When changing to QSY band, repeat the same tuning.

Refer to the operation instructions of ATU for details.



⚠ For customers using ICOM AH-705

- There is a possibility not to operate 50MHz with AH-705 depending on the installation condition.
- The thread outer diameter of the terminal of AH-705 is too big to pass the round terminal of the feeding cable. Please cut the part of the round terminal with the wire cutter. Expand the hole and connect the terminal. The ATUs except for AH-705 we confirm the operation can be used without cutting the round terminal.



Cut the round terminal referring to the drawing.

● Specifications

Frequency	3.5-50MHz (Conform to the specifications of the tuner to be connected.)
Max. power rating	300W (SSB)
Max. wind resistance	40m/s (89.5MPH)
Length	Approx. 4.6m(15ft)
Weight	Approx. 2.5kg(5.5lb)
Mast DIA. accepted	DIA. 30-62mm(DIA. 1.2-2.4in)

— Point when operating new digital mode FT8 etc. —

Operating new digital mode FT8 etc. is a big burden on the antenna and other equipments due to continuous transmission. Operate the **max. power rating at less than 1/5 of SSB(PEP)** on FT8 etc.

- Though these products purchased are manufactured under strict quality control, if damage is caused by transporting, ask your dealer promptly.
- Design and specifications of these products will be changed for future improvement without advance notice.

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