

CAT-3000

Service Manual

Rev.1.0

COMET Co.,Ltd.

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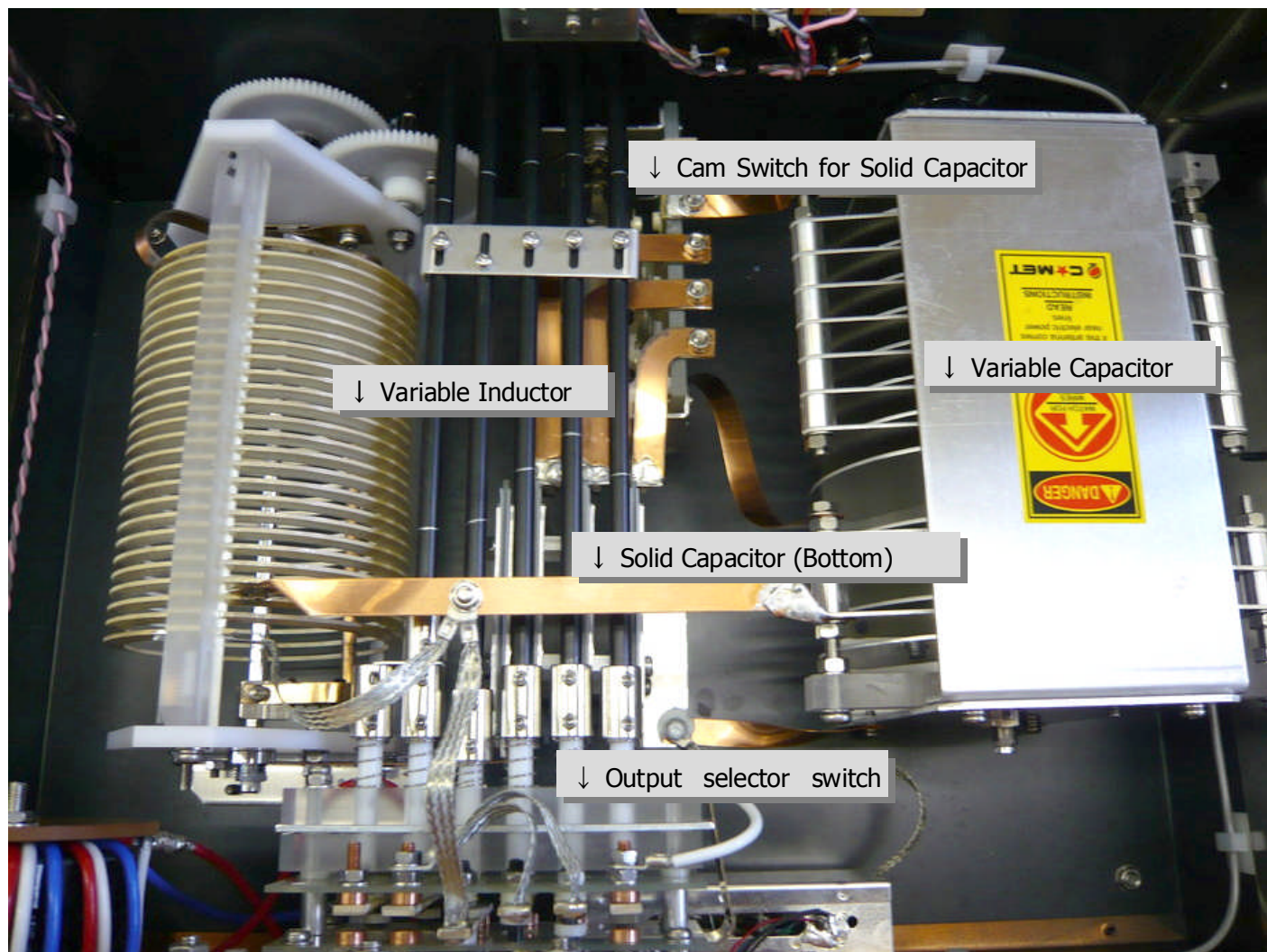
Specifications

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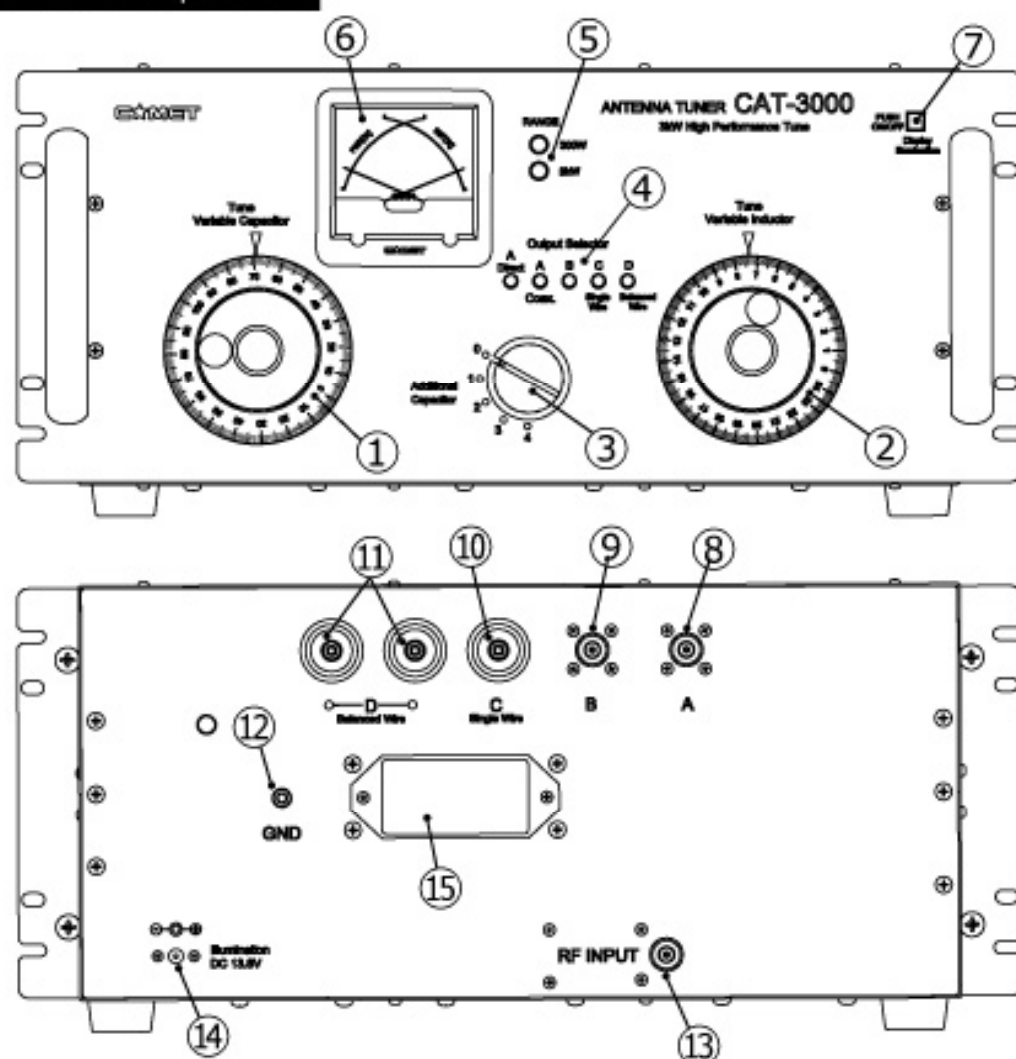
Internal Wiring Diagram

Front panel



Rear panel

CAT-3000 Components



① Variable Capacitor (100 reading scale)

Used to control impedance capacitance. Turn ① to 0 to bypass this circuit.

② Variable Inductor (250 reading scale)

The Roller Inductor controls Impedance induction. The scale moves one according the inside makes one turn.

③ Solid Capacitor

Capacitor to change the level to controls Impedance. when choosed 1 - 4, it passes through the Variable Capacitor

④ Output Selector

Switch on back panel for output terminal.

⑤ Range Switch

Used to switch measuring range on the cross meter.

⑥ Cross Needle Display

reads SWR, forward power(FWD) and reflected power(REF) simultaneously.

⑦ Illumination Switch

Switch for backlight display.

⑧ Output Terminal A (N-Female connector)

Terminal to output without passing through ①, ②, ③. when making it to A direct.

It outputs with passing through ①, ②, ③ when making it to A.

*You could have the difficulty in matching Impedance due to the stray capacitance.

⑨ Output Terminal B (N-Female connector)

Terminal to connect the different system from the terminal A.

*It's not possible to use simultaneously with Terminal A. Choose either one while operation.

⑩ Single wire Terminal

Insulation Termini for Single wire. *M5 size screw

⑪ Balanced line terminal

Insulation Terminal for balanced line, such as Wire Dipole and Ladder Line

* M5 size screw

⑫ Ground Terminal

Terminal for earthing and counterpoise. M5 size screw

⑬ Input Terminal (N-Female connector)

Terminal to input the signal from the radio

⑭ Power Supply Terminal for backlight

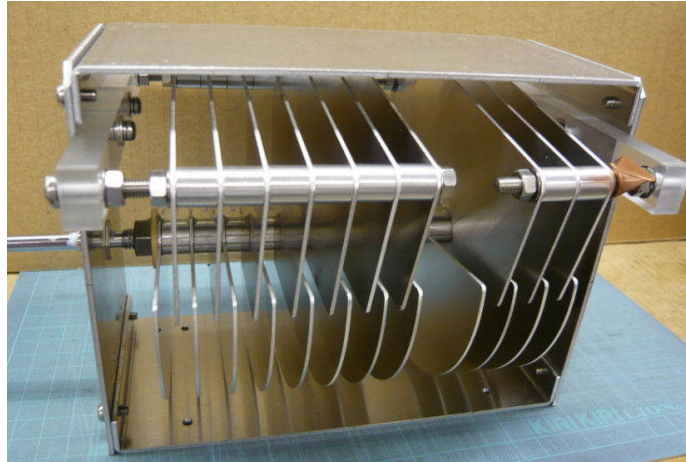
12 Volts Power Supply (11 - 15V)

⑮ Name Plate

with the serial number

◆ Variable Capacitor

Function : The rotor rotates to change the Capacitance of Antenna Impedance by capacitive coupling with the Stator.



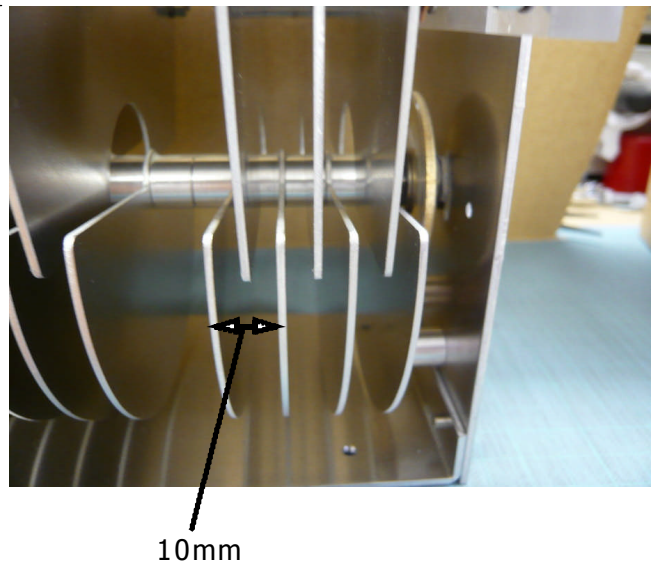
✓ Adjustment of the rotor plate and the stator plate.

The distance between the plates should be 10mm.

Only the stator can be changed in position.

Loosen the hex nut(M5) holding the stator plate.

Make sure rotor plates and stator plates are properly aligned. Move the stator plates so that the rotor plates come to the middle, then tighten the hex nuts. Rotate the rotor to confirm if it does not strike the stator plate.



✓ Self-rotation inhibit feature by the Disk Brake.

Metal on metal noise comes from the fitting corresponding to brake pad, but it's normal. However, if the friction noise becomes too extraordinary, put silicone grease on the rotation axis and the disk brake.

The rotor self-rotates under its weight so that it can't be a perfectly smooth rotation.

High-speed continuous rotation is not recommended. (it will cause excessive metal wear and rotation noise becomes bigger)

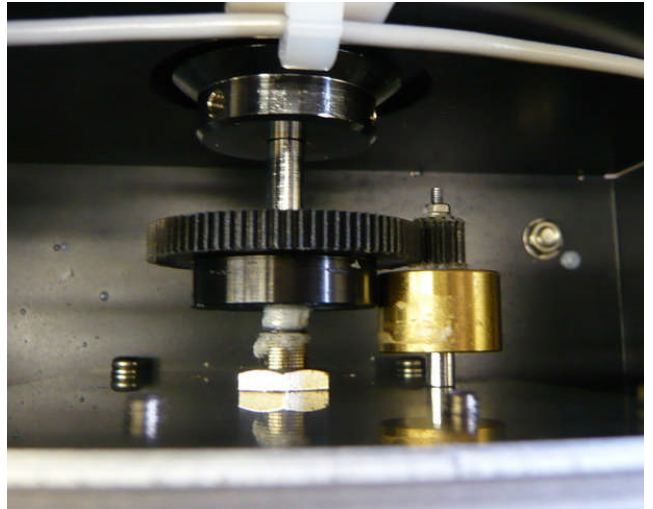


✓ the Gear

When abnormal noise comes from the disk brake, put thin rubber or sponge around the brass fittings so that the rotor can inhibit its self-rotation by friction. Let it simply rotates without any attachment if you do not hear abnormal noise.

Gear Model :

- KHK Kohara Gear Industry Co.,Ltd. SS0.5-15A
Material S45C / Gear Teeth 15
- KHK Kohara Gear Industry Co.,Ltd. SS0.5-80A
Material S45C / Gear Teeth 80



✓ Link with Solid Capacitor

When the solid capacitor knob indicates “0”, it passes through A section only. When 1-4, it bypasses all (A+B). B alone can never be “ON”

Details : in the explanation of the solid capacitor part.

✓ Connection with other circuits.

The followings are connected to other circuits with copper plates.

A section connected to Cum Switch, Variable Inductor and the fitting for Output C

Chassis connected to Solid Capacitor(GND)

✓ Disassembly

First of all, remove the copper plates connected with other circuits. Be careful of one plate, which you can't remove unless you loosen the holding bolt (M5) of the Stator.

Set the scale “0”. Remove 4 screws(M4) at the bottom, and move it as close to the front panel side as enough to touch the panel. Seen from the left above the front panel, you can find a hole to insert the hex wrench on the scale holder. Insert a blunt tip wrench (subtense 2mm) and loosen the screws to remove the knob. After knob removed, you can see three screws(M2) holding the scale panel. Remove it hard, as it is adhered with glue.

Be careful to scratch the scale panel in this disassembly process.

Reverse the above procedure when assembling.

Using a blunt tip wrench is highly recommended.