

# Vine Antenna DU-1500L 1.5Kw Antenna Tuner LAMCO Barnsley



Price: £549.95

SKU: LAMCO DU-1500L ATU

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## Product Summary

£549.95

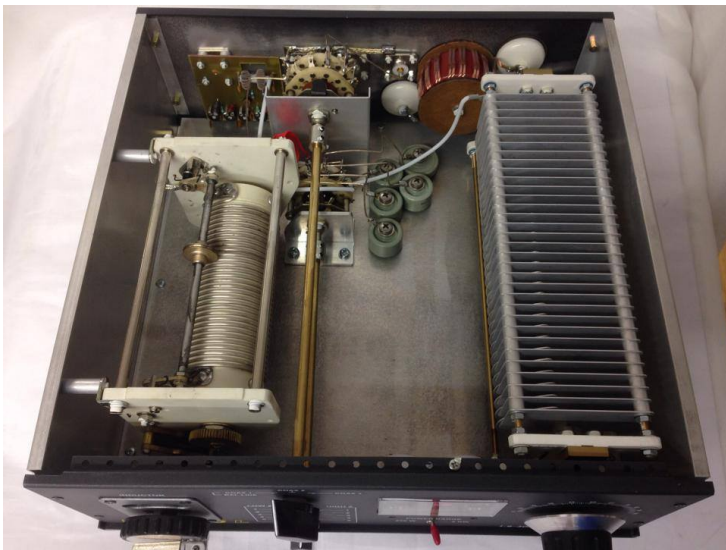
## Product Description

Vine Antenna DU-1500L 1.5Kw Antenna Tuner

LAMCO Barnsley

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lamco-du-150011

### EASY START GUIDE

Read all the information in the manual leading up to this point, then use the below

Instructions to start using your tuner.

Set CAPACITOR to '2' and INDUCTOR to fully counter-clockwise ('0') and the center Switch to BYPASS.

Turn the center switch to the LOW Z 1 position (immediatly to the left of BYPASS)

Apply 30 to 50 watts of transmitter power and note SWR show non the meter.

Unkey the transmitter and then move the switch to the HIGH Z 1 position. Apply 30 to 50 Watts or less transmitter power and note SWR show non the meter. Depending on wich of the HIGH Z 1 or LOW Z 1 settings showed a lower SWR, try more positions on the same side to see if the SWR is lower. Choose the position among all switch position that shows lowest SWR.

Adjust the capacitor for lowest SWR. Then turn the roller inductor clockwise to a higher setting and note if SWR changes. If SWR drops adjust the capacitor for a lower SWR Value. Go back and forth between these two controls adjusting them for best match and the lowest available SWR. If the capacitor shows best meter null (lowest SWR) at a setting of '0' turn the center switch to the other side of BYPASS.

If the best meter null (lowest SWR) is with the capacitor at '100' turn the center switch to the next higher position.

It possible depending on your antenna and the frequency in use that a good'starting' match may not be readily apparent (i.e. all starting positions ont he center switch show a somewhat high SWR).

Try adjusting the roller inductor and/or capacitor to a higher initial setting and repeat the same instrinctions if this the case.

**WARNING:**

While all the components of the DU 1500 L are rated to easly handle continuous duty operation at full rated power, do NOT adjust the antenna tuner when runnung high Output power. Adjust the tuner lowest SWR at less that 50 watts and then enable your linear amplifier. High circulating currents are present when high power is applied to the tuner adjusting the tuner controls for lower SWR while running high power through the tuner can damage the unit.

**WARNING:**

In normal operation the DU 1500 L produces very high RF voltages and currents.We do not recommend operation of this without the top cover securely installed due to the danger of contact with high voltage.

Always be sure that a dummy load or antenna is properly connected when power is applied.

Voltages in excess of ratings can occur if no load is connected.

**SPECIFICATION**

**FRONT PANEL INDICATORS AND CONTROLS**

Meter ..... Cross needle Power and SWR meter

**CONTROLS**

Input Tuning ..... Continuous rotation 4,5kV capacitor 330pF

Output Tuning ..... Continuous rotation 4,5kV capacitor 330pF

Antenna Switch Selector..... Five position ceramic switch: COAX 1, Tuned and COAX 2 Tuned and BYPASS, COAX 1 DIRECT, COAX 2 DIRECT

Power Range Switch ..... Two position: 3 00W/3kW

**REAR PANEL CONNECTORS**

Coax 1 ..... SO-239 Teflon connector

Coax 2 ..... SO-239 Tflon connector

Balanced Line ..... Dual high voltage ceramic terminal

Include 4:1 balun

**OTHER**

Frequency Coverage ..... 1.8-30MHz ,continusoly tunable

Power Maximum ..... 3000W max 3kW

Input impedance ..... 50ohm  
Output impedance ..... 25-600ohm and  
d wire 2000ohm  
Dimension ..... H 330xW  
330xD 120  
Weight ..... 5.5kg

#### CONTROL/CONNECTORS

##### FRONT PANEL FUNCTIONS (Refer to page 3)

- Output (Antenna)

Continuously adjustable input capacitor

- POWER/SWR METER

Dual needle meter displays FORWARD and REFLECTED Power in Watts. The SWR is measured where the two needles intersect on the red scale.

- INPUT (Transmitter)

Continuously adjustable output capacitor.

- DIRECT-TUNED OUTPUT SELECTOR

Five-position rotary switch and output coaxial connector.

- TUNED COAX 1 selects the COAX 1 connector through the impedance matching circuit. - TUNED COAX 2 selects the COAX 2 connector through the impedance matching circuit. - DIRECT BYPASS selects BYPASS COAX connector by passing the

impedance matching circuit but providing SWR, FORWARD and REFLECTED power meter readings.

- DIRECT COAX 1 selects the COAX 1 connector bypassing the impedance matching circuit but providing SWR, FORWARD and REF

LECTED meter readings.

- DIRECT COAX 2 selects the COAX 2 connector bypassing the impedance matching circuit but providing SWR, FORWARD and REFLECTED meter readings. - TUNED WIRE/BAL selects the BAL. LINE+COAX 2 connector through the impedance matching circuit. - POWER RANGE SWITCH

Two-position switch selects the range (300W or 3kW) of FORWARD and REFLECTED Power displayed on the power meter.

When the METER (power range) switch 300W the FORWARD meter scale reads 300W full scale and the REFLECTED meter scale reads

400W full scale. When the METER switch 3kW, the FORWARD meter scale reads 3kW full scale and the REFLECTED meter scale reads 400W full scale.

- INDUCTOR Ceramic body

#### REAR PANEL CONNECTORS

- RF INPUT

Coaxial connector for input from SWL receiver or transmitter.

- COAX 1

Coaxial connector for output to Antenna One or Wire Antenna

- COAX 2 Coaxial connector for output to Antenna Two. - BY PASS Coaxial connector for output to dummy load or third

coax output.

- GROUND

Post/Wing-nut type ground connector.

- BALANCED OUTPUT

Two feed through ceramic posts for output to RF balanced twin-lead antennas.

- INSTALL JUMPER - when using Balanced Output

## INSTALLATION

Select a location for the DU 1500 that allows the connectors to be free of any possible contact during operation.

WARNING: SOME BALANCED OR END-FED ANTENNAS WILL PRODUCE HIGH RF VOLTAGES AT THE FEEDTHROUGH CONNECTORS. RF BURNS MAY RESULT IF TOUCHED DURING TRANSMISSION.

## INSTALLATION PROCEDURES

- Connect a coax cable from your transmitter or receiver to the RF INPUT connector on the rear panel. Keep the cable as short as possible. If you use a linear amplifier, connect your transmitter to the linear amplifier output to the DU 3000.
- Connect coax cable(s) from your antenna to COAX 1 or COAX 2 connectors on the rear panel. These connectors are either direct from the transmitter or through the tuned circuit depending on the setting of the OUTPUT SELECTOR switch on the front panel.
- If you are using a balanced feed antenna, connect the INSTALL JUMPER in the COAX 1 connector and switch band switch TUNED COAX 1.
- If using a single wire antenna, connect it to post COAX 1 without installing jumper.
- Connect a dummy load to the BYPASS CONNECTOR using a coax cable.

This lets you select the dummy load from the OUTPUT SELECTOR switch. Any antenna that does not require the use of an antenna tuner may be connected to the BYPASS connector, if desired.

## BEFORE OPERATION

- To avoid possible damage to the DU 1500, set INPUT, OUTPUT, BAND SWITCH and POWER RANGE switches as outlined in the next section before applying transmitter power. (Tuning Section)
- Begin tuning with your transmitter set to a low power setting (~50 w is more than enough)

WARNING: DO NOT OPERATE THE DU 3000 WITH THE COVER OFF!

## NOTES

- An SWR of 1:1 is best, but an SWR as high as 2:1 may be acceptable. Check your transmitter manual for details.
- If you cannot get an acceptable SWR, lengthen or shorten your antenna and/or feedlines and retune.
- If you get low SWR readings at more than one setting, use the setting that:

Gives the highest FORWARD power reading.

Gives the lowest REFLECTED power reading.

Uses the largest capacitance (highest number) on the TRANSMITTER and ANTENNA controls.

- Any time a new or different antenna is connected, it is necessary to repeat the tuning procedure for each antenna.

## OPERATION INSTRUCTIONS

The following set of instructions will allow the operator to quickly place the DU 1500 L into operation. Included are descriptions of the front panel controls and their functions.

This is followed by instructions for antenna matching and selection, and a brief discourse on antenna systems matching them.

### (1) CAPACITOR

This control connects to the variable tuning capacitor used as one of the elements in the L type matching network. This capacitor has a tuning range of 40-500pF and is continuous tuning with no stops.

### (2) INDUCTOR

This control is connected to the roller inductor, another element in the L type matching network. This inductor has a tuning range of 0.2-18uH which is covered in approximately 30 revolutions of the control knob. A gear reduction system behind the front panel of the DU 1500 L is connected to a concentric skirt turns counter numbered 0-29 in 180 degree Arc over the top of this control, to make returning to earlier settings easier and quicker.

#### (3) IMPEDANCE SWITCH

This 11 position rotary switch is used to change the configuration of tuning network for matching either high or low impedance antenna systems. This switch also selects additional capacitors as needed for matching at lower frequencies. When placed in the 12 o'clock position, the tuner is connected to the BYPASS configuration and the network has no effect on the transmission line systems (antennas are fed through directly from the transmitter to the antenna without use of the tuner.) The SWR and power metering remains usable even when this switch is set to BAYPASS.

The purpose of this switch is to set the capacitor either across the input or across the antenna, depending on whether a load of above or below 50 ohms is trying to be matched (reverses the L network).

#### (4) ANTENNA SELECT KNOB

This 3 position switch is used to select one of up to four antennas connected to the rear panel of the DU 1500 L and correspond to the COAX1, COAX2, COAX3 connectors.

#### (5) METER

The meter on model DU 1500 L dual cross needle SWR and wattmeter. Forward power output is measured on the right-hand needle, left-hand scale. Reflected power is read on the left-hand needle, right-hand scale. SWR is read by reading the point at which the two needles cross on the red scale lines on the face of the meter.

Power output is read in switchable scales of 200 or 2000 watts.

#### (6) POWER RANGE SWITCH

The power scale switch is used to set the power output metering to scales of either 200 or 2000 watts.

### CHAPTER 3

#### SPECIFICATIONS

Circuit Type: L network

RF Power Rating: 2000 watts

Frequency Range: 1.8-30MHz continuous

Input Impedance: 50 ohm nominal

Output Matching Range: At least 10:1 SWR, any phase angle.

Input/Output Connectors: Input and four antenna coax connectors

Are SO-239, UHF type. Studs with wing nuts for single wire and

Balanced feeders.

Capacitor Voltage Rating: 3500 volts

Inductor: 0.2-18 uH silver-plated roller inductor.

Size: H12 x W33 x D33 cm Depth measurement cabinet only,

Does not account for knobs or connectors.

Weight: 5.5 kg

<https://www.hamradio-shop.co.uk/product/vine-antenna-rs-hf-osf-80/>

<https://www.hamradio-shop.co.uk/product/vine-antenna-rs-hf-ocf-40/>

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