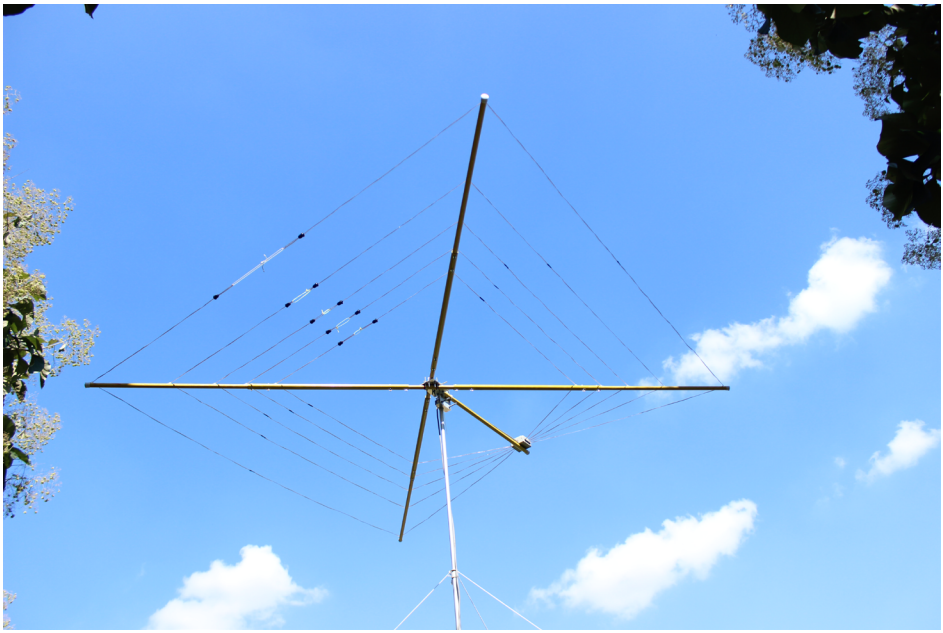
RH-DX1020

Portable Antenna 10, 12 15, 17, 20m

ASSEMBLY INSTRUCTIONS



Thank you for choosing the SPIDERDXMAN RH-DX1020 Antenna, a Cobweb antenna for portable use in the 10, 12, 15, 17 and 20 meter bands. This antenna was developed considering its efficiency and durability of the materials. It is ideal for hamradio operators that have problems with space and it's great for using in portable operations.

ATTENTION

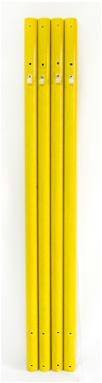
• Do not handle or install your RH-DX1020 antenna near electrical areas
• Always use protective equipment for installation in height
• Do not touch the antenna when the radio is transmitting
• Wear gloves to handle fiber tubes, since small particles can cause skin irritation

TOOLS / ACCESSORIES REQUIRED (not supplied)

• Small pliers
• Wrench
• Silicone rubber
• 50 Ohms Coaxial Cable
• Mast, tripod, mounting hardware

1) IDENTIFICATION OF THE PARTS OF YOUR ANTENNA

A



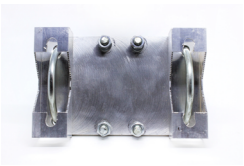
B

C

D

E

F



G

H

A) Mast / Distribution Box Part

B) 4 Pieces Fiberglass tubes with a nylon cable clamp

C) 4 Pieces Fiberglass tubes with three nylon cable clamps

D) 2 Pieces Small Fiberglass Tubes

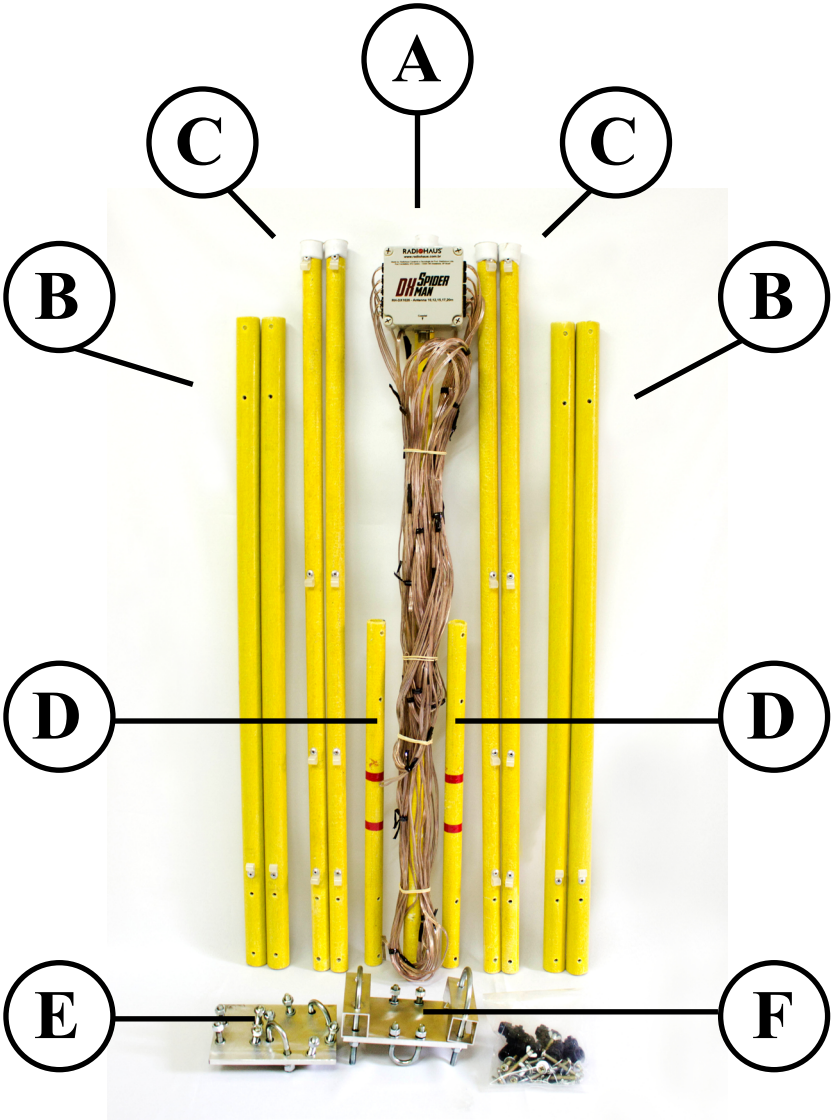
E) 1 Aluminum plate with central axis clamps

F) 1 Aluminum plate with clamps for fixing the mast

G) 16 bolts / 32 washers / 16 butterfly nuts

H) 10 Nylon cable glands

I) Rope for mooring


A
C
C
B
B
D
D
E
F

2) ASSEMBLY

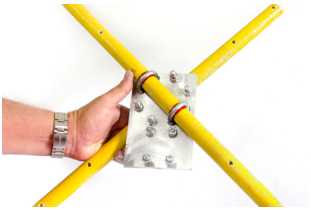
2.1) Take the aluminum plate **E** and the two tubes **D**. ***(Photo 01)***

2.2) Position each of the tubes **D** on one side of the plate **E**, so that the red marks match the clamps. Note that the tubes should form a cross and two clamps will be free for later use. Using a suitable wrench, secure the tubes until firm. ***(Photo 02)*** *Do not overtighten!*

2.3) Insert the tube **B** at each end of the four tubes **D**. Make sure that the drilling matches. ***(Photo 03)***

2.4) Take 8 screws and fit a washer into each of them. Thread the bolts through the 8 fixing holes (two holes in each tube) and insert another washer on the other side. Secure each screw with a wing nut. ***(Photo 04)***

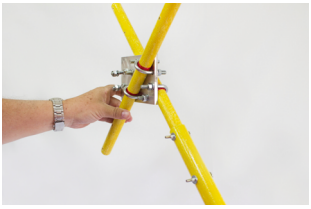
01



02

03

04



Note that the nylon tab should be positioned toward the outside of the assembly.

2.5) In the same way as with tubes **B**, mount a tube **C** on each end so that the plastic cap is positioned on the outside. That way you will have an X-shaped set that will be the structure of your antenna.

2.6) Take tube **A** and loosen the elastics that are holding the elements (wires) of the antenna. Pick up the aluminum foil **F**. Note that it has 4 clamps, two small and two larger ones. Insert the tip of tube **A** into the smaller clamps and tighten slightly. Let it pass a little way until there are a few inches of tube on the end.

2.7) Position tube **A** so that the label faces the top of the antenna when the assembly is complete. Insert the end of tube **A** into the tabs of plate **E** (the one you mounted tube X) so that one plate is perpendicular to another. ***(Photo 05)***

The larger clamps will be used to attach the entire assembly to the antenna mast.

05

06

2.9) At each end of each wire, insert one of the 10 nylon cable glands. ***(Photos 07, 08 and 09)*** Twist the cable press to give pressure and prevent the cable from escaping. Note that the tips of each antenna element are folded and glued with electrical tape. Do not remove the insulation tape unless you want to make some adjustments to your antenna as explained below. Keep the insulation tape and secure the cable gland over the top.

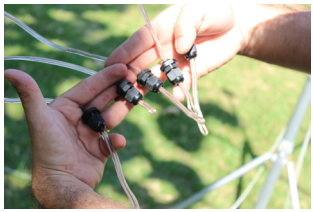
2.10) Using the nylon rope, tie the ends of each element of the antenna. ***(Photo 10)*** If you prefer, you can use nylon cable ties instead of the nylon rope.

2.11) Connect an RG-58 or RG-213 *(not supplied)* coaxial cable to the antenna terminal in the footage required to reach your radio. ***(Photo 11)***

2.12) Apply silicone rubber *(not supplied)* to the screws and onto the coaxial connector to protect from moisture and water.

2.13) Attach the antenna in a tube or mast and climb to a minimum height of 3 meters (10 ft) from the ground or roof.

07



08

09

10

3) ADJUSTMENT

Your **RH-DX1020** antenna is already set and centered for the lowest SWR at the following approximate frequencies:
20m - 14,150kHz
17m - 18,100kHz
15m - 21,200kHz
12m - 24,950kHz
10m - 28,400kHz

In all bands, at the center frequency a very low SWR is obtained, with an increase of SWR for the ends of each band. Modernt radios with automatic antenna couplers will easily compensate for this higher SWR.

But if you want to make your antenna more optimized for a specific segment (for the CW sub-band, for example), you can fine-tune your antenna. **Note that this adjustment is critical and should be done with great patience.** In the case of 17-meter and 12-meter bands whose operating range is only 100kHz, no adjustment is required since minimum SWR is obtained over the entire range.

In the case of the 20, 15 and 10 meter bands, you can fine-tune as described below:

• SWR adjustment is achieved at the end of each element. Notice that the tips are bent and that is where you get the variation of the resonant frequency and the SWR adjustment;

• First mount your antenna as you received it without removing the red tape from the tips. After mounting, check SWR on all bands using an antenna analyzer or your own radio;

• If you find it necessary to fine-tune the antenna to pick up a certain sub-band, remove the red tape from the two ends of the track you want to adjust. ***See picture 12 for each element;***

• Example: If you have measured SWR of 1:1 at 21,200kHz and want SWR at

21,050kHz (CW subband), remove the tape and INCREASE the length of the antenna. This adjustment is critical, so you will have to increase only about 5mm (1/4”) on each side, reassemble the antenna and give the SWR. If you want the SWR to be lower at a higher frequency, SHORTEN the antenna’s length. *Note that this operation requires a lot of patience until you get the desired result.*

• Having obtained the ideal resonant frequency, fasten the tip of each element using the cable gland.

11

12

5) SPECIFICATIONS

• Cobweb antenna
• Omni-directional (receives and transmits to all sides, no rotor required)
• Impedance: 50 Ohms
• Maximum power: 300 Watts
• Operates on 20, 17, 15, 12 and 10 meters
• Fiberglass elements
• Horizontal polarization
• Water-proof distribution box
• It occupies an area of only 260 x 260cm (approx. 100”)
• Light and compact
• Weight: 7 kg (15.4 lb)
• Fixing in measuring tube or mast 1 ¼ to 2 ¼ “
• Usable even when mounted only 3 meters (10 ft) from the ground
• Can be mounted on a tripod and mast for greater portability

WARRANTY TERM

This product is guaranteed by **RADIOHAUS COMÉRCIO E TECNOLOGIA DE PRODUTOS ELETRÔNICOS LTDA.** for the period of 01 (one) year from the date of acquisition. This warranty covers defects and materials used in manufacturing.
The warranty does not cover defects caused by misuse or misuse of the product.

SERIAL NUMBER: _____

UNIT'S TEST RESULTS:

20m OK ☐
17m OK ☐
15m OK ☐
12m OK ☐
10m OK ☐

Watch the assembly instructions video on our Youtube channel:
Radiohaus Radiocomunicação

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