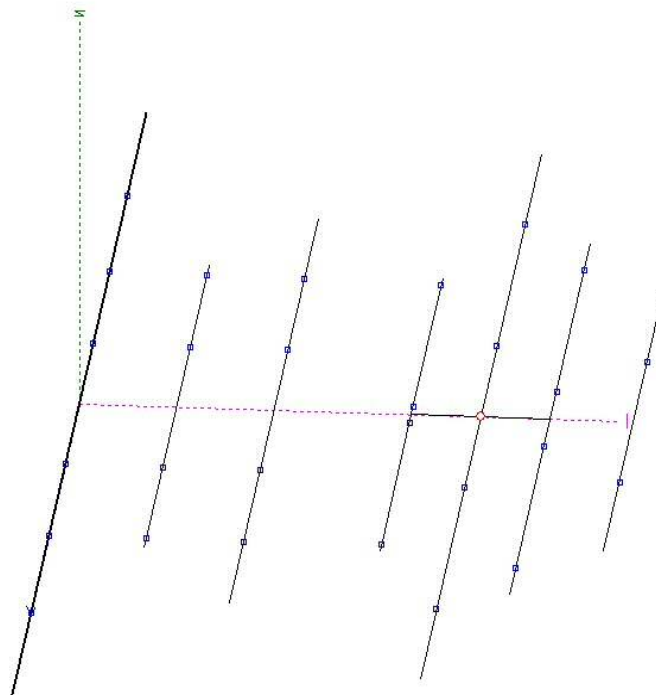


TA7OM

(7 EL 20m/15m/10m YAGI)

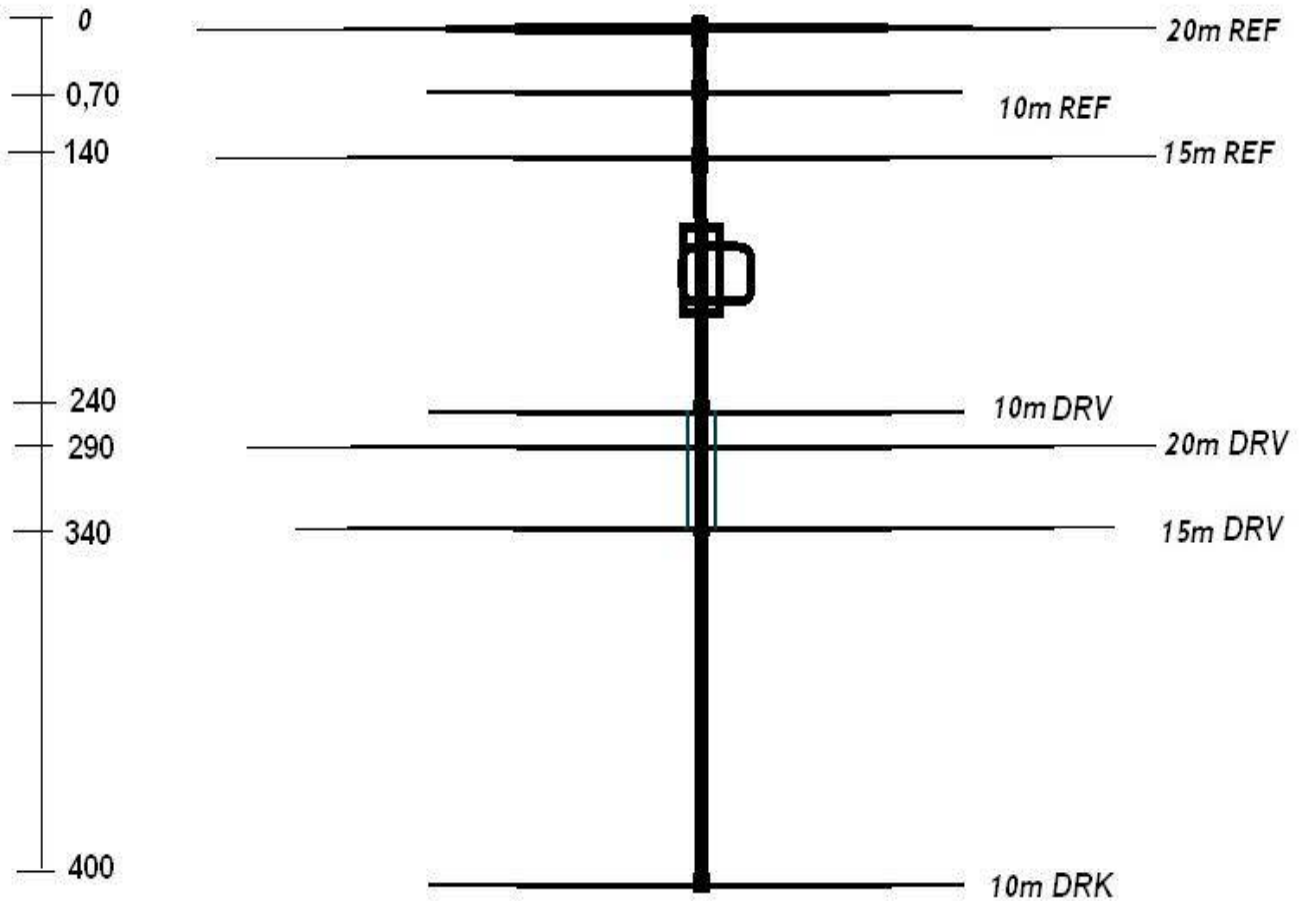
Band	10m / 15m / 20m
Gain(dbi)	13,1 / 12,0/ 11,5
SWR; 14,0 – 14,20 – 14,35	1,3 – 1,0 – 1,4
21,0 – 21,25 – 21,45	1,6 – 1,0 – 1,5
28,0 – 28,40 – 29,00	1,2 – 1,1 – 1,6
Impedance	50 Ohm
Number of Elements	7
Active Elements	10m:3 EL / 15m: 2 EL / 20m:2 EL
Longest element.	10,96m
Boom length.	4,10m
Weight. (kg)	20kg

◊Source
×Load



Wire No.1	
X1	: 0.0 m
Y1	: -5.5 m
Z1	: 0.0 m
X2	: 0.0 m
Y2	: 5.5 m
Z2	: 0.0 m
R	: -1 (taper)
Length	: 11.0 m
Azim.	: 0.0 deg
Zenith	: 90.0 deg

10-15-20m BEAM



$$20\text{m REF} = 5,48 \times 2 = 10,96\text{m}$$

$$10\text{m REF} = 2,68 \times 2 = 5,36\text{m}$$

$$15\text{m REF} = 3,60 \times 2 = 7,20\text{m}$$

$$10\text{m DRV} = 2,60 \times 2 = 5,20\text{m}$$

$$20\text{m DRV} = 5,16 \times 2 = 10,32\text{m}$$

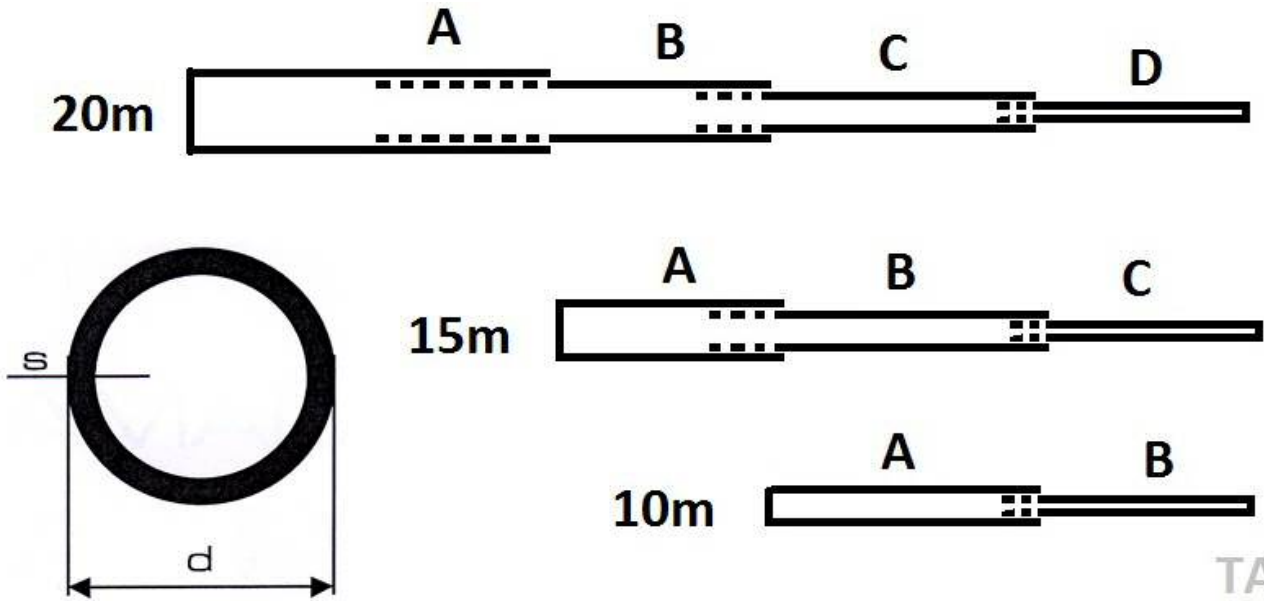
$$15\text{m DRV} = 3,44 \times 2 = 6,88\text{m}$$

$$10\text{m DRK} = 2,44 \times 2 = 4,88\text{m}$$

Boom 4,10m

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ASSEMBLED SIZE (1 WING)

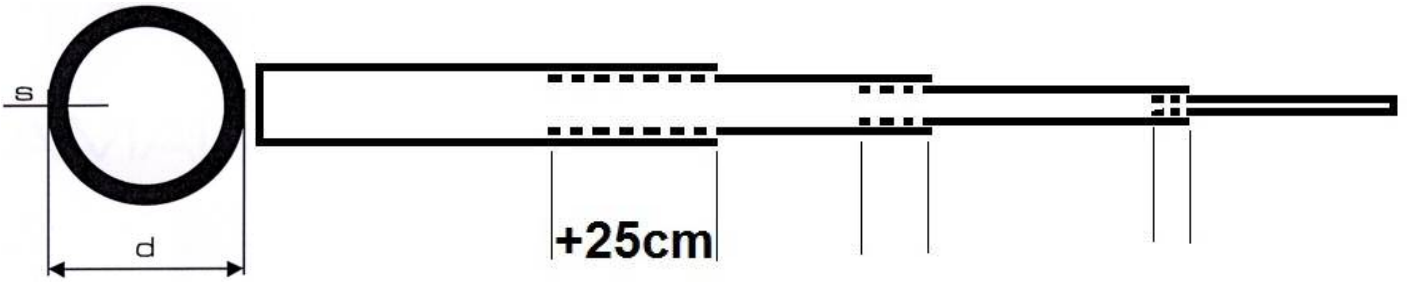


TA70M

BANDS	<u>A</u> D: 25 mm S: 2 mm	<u>B</u> D: 20 mm S: 1,5 mm	<u>C</u> D: 16 mm S:1,5 mm	<u>D</u> D:12mm S: 1 mm	One wing length	NOTES
20m REF	100cm	150cm	150cm	148cm	548	+25 cm will be added.
20m DRV	100cm	150cm	150cm	116cm	516	
		<u>A</u> D: 20 mm S: 1,5 mm	<u>B</u> D: 16 mm S:1,5 mm	<u>C</u> D:12mm S: 1 mm		
15m REF	-----	125cm.	115cm	120cm	360	
15m DRV	-----	125cm.	115cm	104cm	344	
			<u>A</u> D: 16 mm S:1,5 mm	<u>B</u> D:12mm S: 1 mm		
10m REF	-----	-----	125cm	143cm	268	
10m DRV	-----	-----	125cm	135cm	260	
10m DRK	-----	-----	250cm	119cm	244	

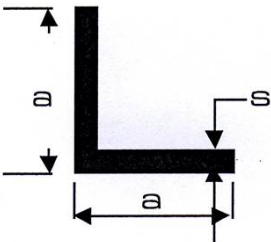
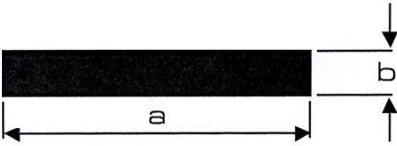
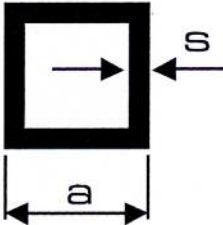
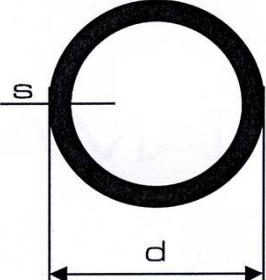
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ALUMINUM CUTING LENGTHS (+25cm addet)


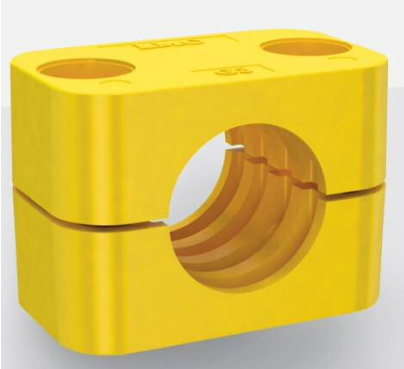


BANDS	<u>A</u> D: 25 mm S: 2 mm	<u>B</u> D: 20 mm S: 1,5 mm	<u>C</u> D: 16 mm S:1,5 mm	<u>D</u> D:12mm S: 1 mm	NOTLAR
20m REF	200cm X 1piece	175cm X 2piece	175cm X 2piece	170cm X 2 piece	will you cutting aluminum accordng to this measure!
20m DRV	100cm X 2piece	175cm X 2piece	175cm X 2 piece.	141cm X 2 piece.	
		<u>A</u> D: 20 mm S: 1,5 mm	<u>B</u> D: 16 mm S:1,5 mm	<u>C</u> D:12mm S: 1 mm	
15m REF	-----	250cm X 1piece	140cm X 2piece	145cm X 2 piece.	
15m DRV	-----	125cm X 2piece	140cm X 2 piece	130cm X 2 piece.	
			<u>A</u> D: 16 mm S:1,5 mm	<u>B</u> D:12mm S: 1 mm	
10m REF	-----	-----	250cm X 1 piece	168cm X 2 piece	
10m DRV	-----	-----	125cm X 2 piece	160cm X 2 piece	
10m DRK	-----	-----	250cm X 1 piece	145cm X 2piece	

THE TOTAL LENGHT LIST

Aluminum Pipes;			
25x2mm	20x1,5m m	16x1,5m m	12x1mm
4 meter	12meter	20,10 meter	21,66 meter
<p>L Bracket</p> <p>A – A: 4 cm</p> <p>S : 4mm</p>	<p>Total: 52 cm</p> <p>13cm x 4 piece</p>		
<p>SHEET</p> <p>30cmx6cm</p> <p>(thickness)</p> <p>B: 6 mm</p>	<p>Total: 90 cm</p> <p>30cm x 3 piece</p>		
<p>BOX</p> <p>A-A:20 mm</p> <p>S: 1mm</p>	<p>Total: 204 cm</p> <p>102cm x 2 piece</p>		
<p>BOOM</p> <p>D: 40 mm</p> <p>S: 2,5mm</p>	<p>Total: 410 cm</p>		

OTHER MATERIALS

<u>U Bolt Clamp</u> 54mm	2 piece	
<u>U Bolt Clamp</u> 45mm	12 piece	
Hydraulic Pipe Clamps	25x4 piece 20x4 piece 16x4 piece	

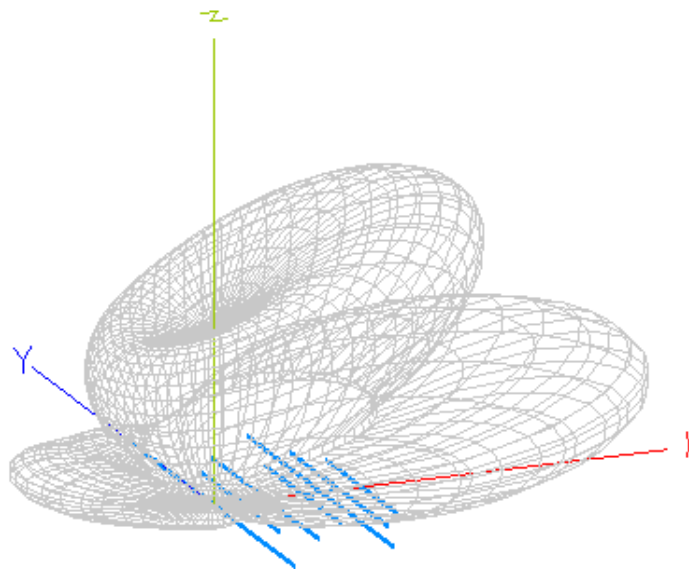
1 PCS ANTENNA CUTTING LENGTHS

6063 Aluminium Alloy		Cutting Length
40x2,5mm(Boom)		410cm X 1 pcs
25x2mm		200cm X 1 pcs 100cm X 2 pcs
20x1,5mm		175 cm X 4 pcs 250 x 1 pcs 125 x 2 pcs

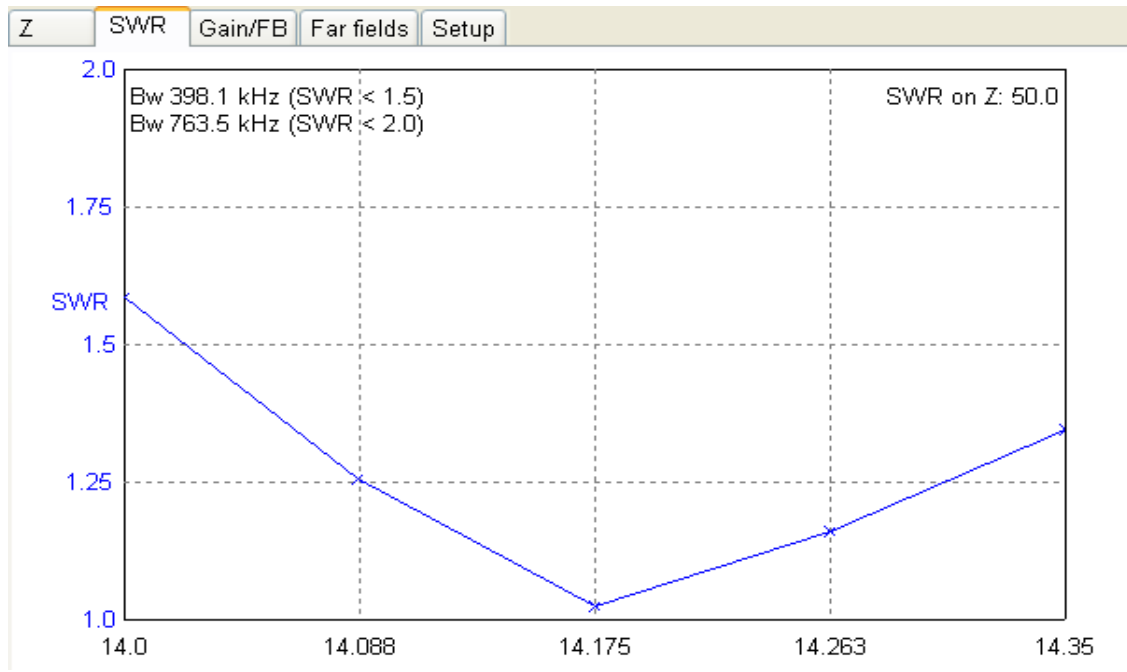
<p style="text-align: center;">16X1,5mm</p>		<p style="text-align: center;">175cm x 4 pcs</p> <p style="text-align: center;">140 cm x 4 pcs</p> <p style="text-align: center;">250cm x 2 pcs</p> <p style="text-align: center;">125 cm x 2 pcs</p>
<p style="text-align: center;">12X1mm</p>		<p style="text-align: center;">170 cm x 2 pcs</p> <p style="text-align: center;">141 cm x 2 pcs</p> <p style="text-align: center;">145 cm x 4 pcs</p> <p style="text-align: center;">130cm x 2 pcs</p> <p style="text-align: center;">168 cm x 2 pcs</p> <p style="text-align: center;">160 cm x 2 pcs</p>

Technical Notes;

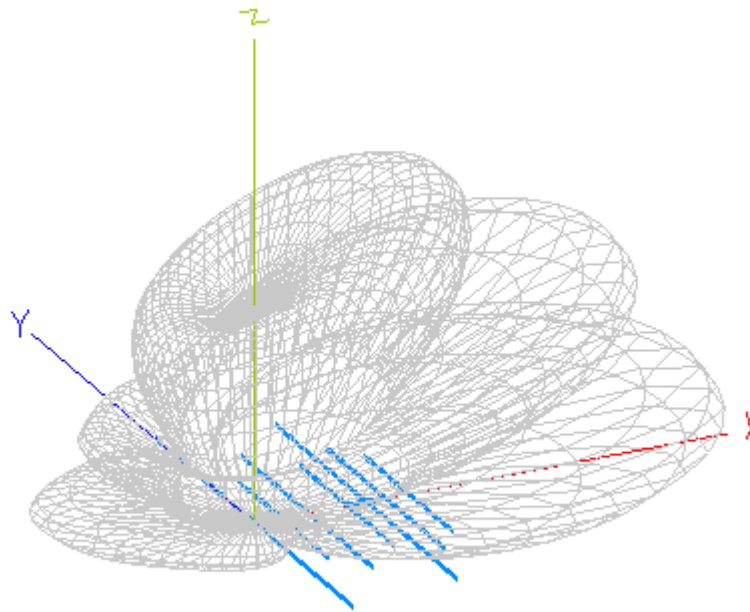
20m Pattern;



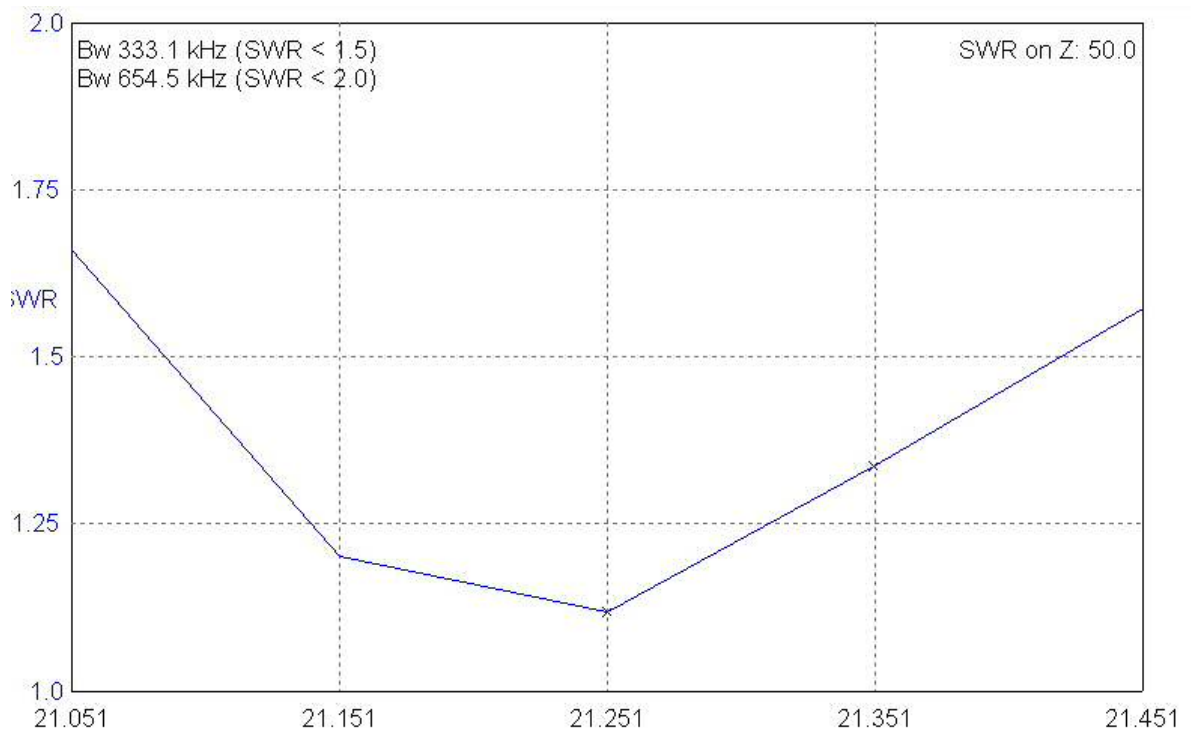
20m SWR; Bandwidth 398 Khz. (<1.5)



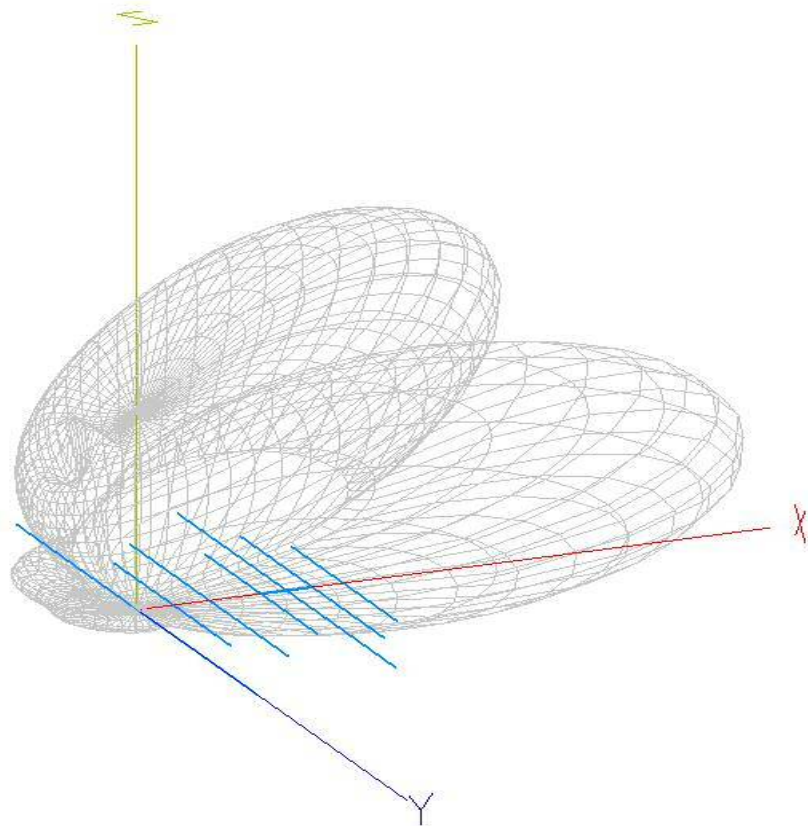
15m Pattern,



15m SWR, Bandwidth 333Khz (< 1.5)

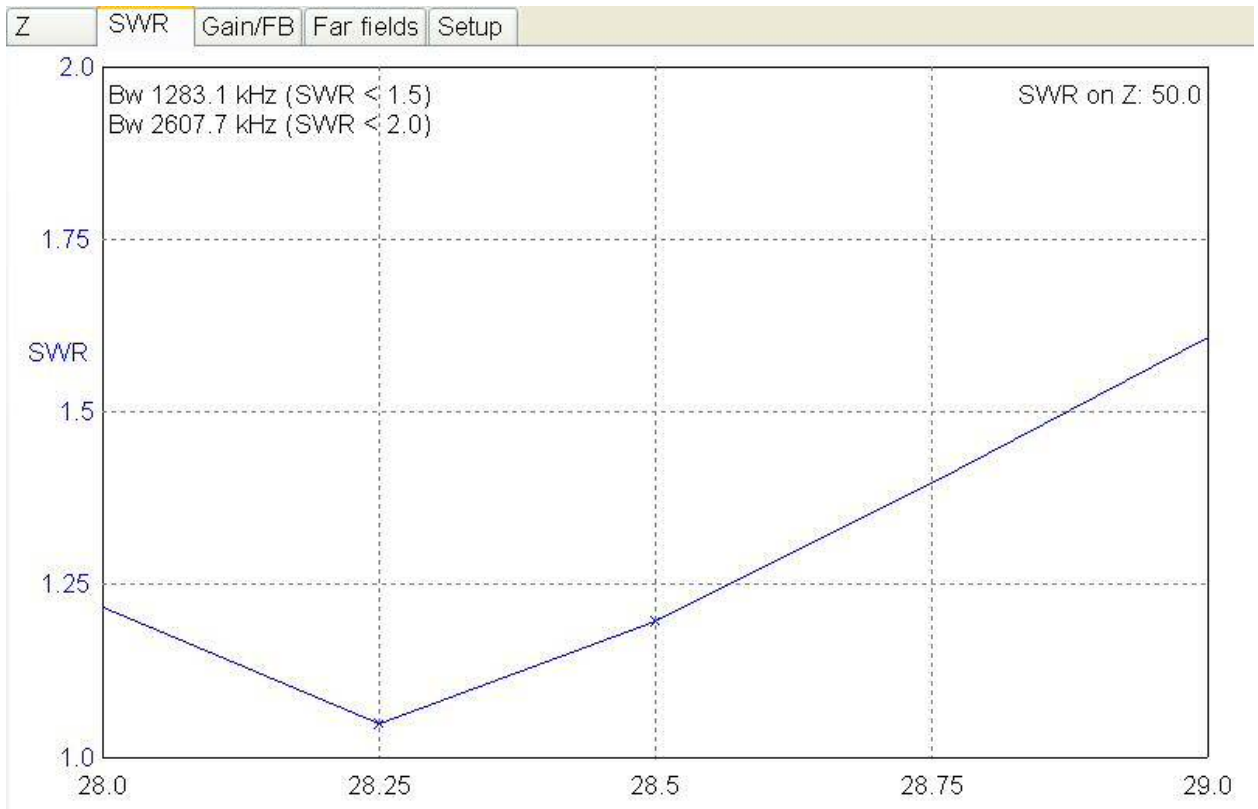


10m Pattern,



10m SWR, Bandwidth 1283 Khz (< 1.5)

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L-Bracket; (13cm length)



U Bolt Clamp (for the elements 47mm. and the Tower mounting pipe 54 or 60mm)



Hydraulic Pipe Clamps;





Driver Elements insulator; (Hart plastic)

According to the internal diameter of the pipe will be made. Pipes should be 25 cm. internal node spacing of 2.5 cm



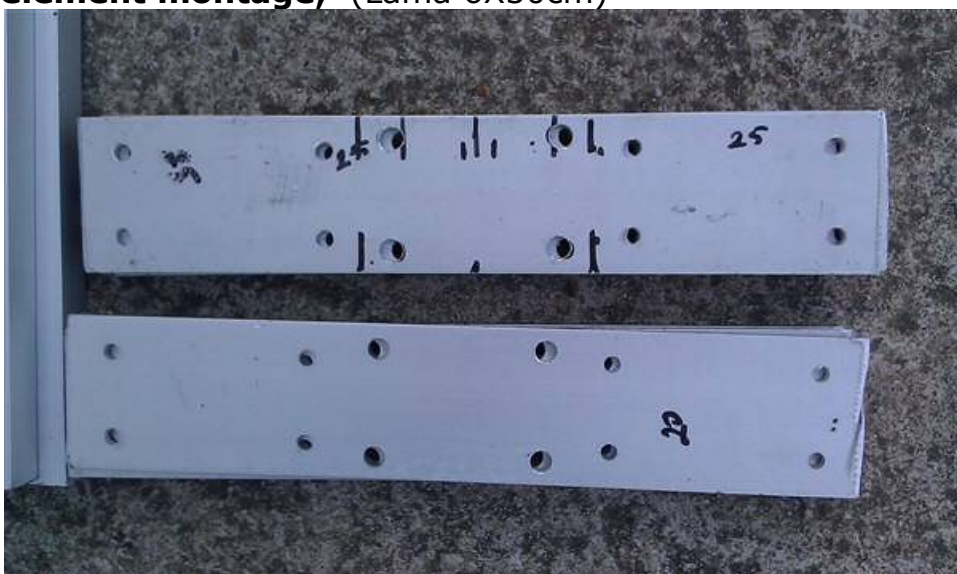
Pipe insertion method;

It should be noted in the screwing method. Aluminum pipes are drilled according to proper opening of the element chrome bolt hole opened up, but to go through the head of a screw on the top side of the aluminum supplied complete and tightly tightening. Otherwise it is not possible to make a complete and powerful compression. you need to use washers under the screw and relaxation for chromium to prevent corrosion.





Driving element montage; (Lama 6X30cm)



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Phase Line; 102cm X 2 piece, (2cm x 2cm)



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Coax Cable Connection;

This antenna is not required to use balun. You can use the 1:1 choke balun (ugly balun) for the Perfect pattern.



Pole Mounting Bracket.; Main connection apparatus. Especially chrome-plated material should be used..



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Setting:

Normally, no adjustment is required. However, due to enviromental differences the "Point of Minimum SWR" may shift. If low SWR values ocur in the low part of the band, elements have to be shortened or vice versa. All Antennas assembled in accordance to the dimensions given in the article proved to be performing perfectly and displaying SWR of 1:1 in all bands.

Final Say;

This antenna has been designed by myself. I have to note that I'm not an engineer. I'll be very happy if this project will be fulfilling the expectations of fellow Hams. This Project or any other Project of mine can be shared-as long as not being used for commercial purposes.

I wish all builders success.

Good luck

73!
TA7OM,
Hüdaverdi GÜNEŞ
www.ta7om.com