



**IOJXX** di Donzello Rosanna









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## 8x8JXX2 Cross Yagi

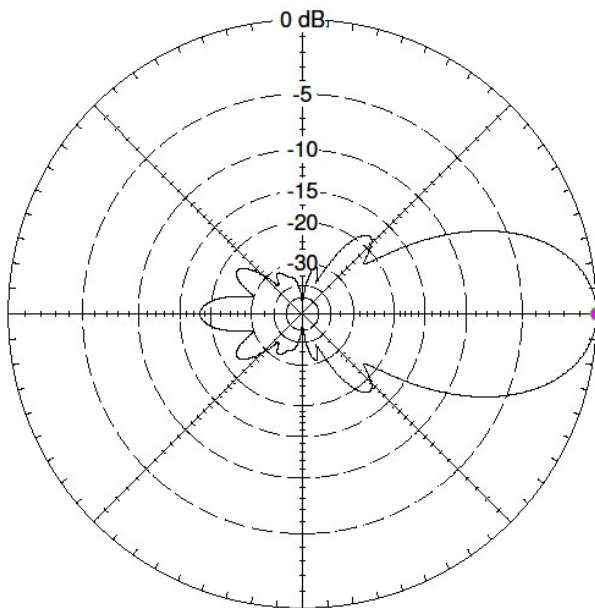
| Item                            |   | Q.ty | Item                              |   | Q.ty |
|---------------------------------|---|------|-----------------------------------|---|------|
| Stainless steel nut M4          |  | 12   | Stainless steel bolt M4x35        |  | 8    |
| Stainless steel nut M6          |  | 8    | Stainless steel bolt M4x40        |  | 6    |
| Nylon nut M8                    |  | 14   | Ergal Plate <b>PIA35JXX</b>       |   | 1    |
| Dipole type K6STI               |   | 2    | Section boom <b>A</b> 25 mm Ø     | 99.8 cm.  | 1    |
| Lock washer 4 mm Ø              |  | 14   | Section boom <b>A - B</b> 30 mm Ø | 99.8 cm.  | 1    |
| Lock washer 6 mm Ø              |  | 8    | Section boom <b>B - C</b> 35 mm Ø | 99.8 cm.  | 1    |
| Flat washer 6 mm Ø              |  | 8    | Section boom <b>C - D</b> 30 mm Ø | 99.8 cm.  | 1    |
| Horizontal element <b>1 ÷ 8</b> |   | 7    | Section boom <b>D</b> 25 mm Ø     | 110 cm.   | 1    |
| Vertical element <b>A ÷ H</b>   |   | 7    | Allen key 3 mm                    |   | 1    |

Total Field

EZNEC+

Total Field

EZNEC+



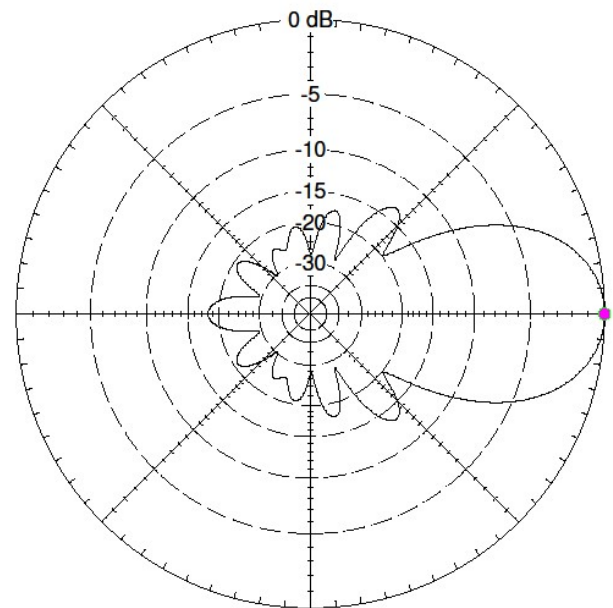
Dipole in free space

144,4 MHz

Azimuth Plot  
Elevation Angle 0,0 deg.  
Outer Ring 14,28 dBi

Cursor Az 0,0 deg.  
Gain 14,28 dBi  
0,0 dBmax  
0,0 dBmax3D

3D Max Gain 14,28 dBi  
Slice Max Gain 14,28 dBi @ Az Angle = 0,0 deg.  
Front/Back 18,13 dB  
Beamwidth 34,8 deg.; -3dB @ 342,6, 17,4 deg.  
Sidelobe Gain -3,79 dBi @ Az Angle = 49,0 deg.  
Front/Sidelobe 18,07 dB



Dipole in free space

144,4 MHz

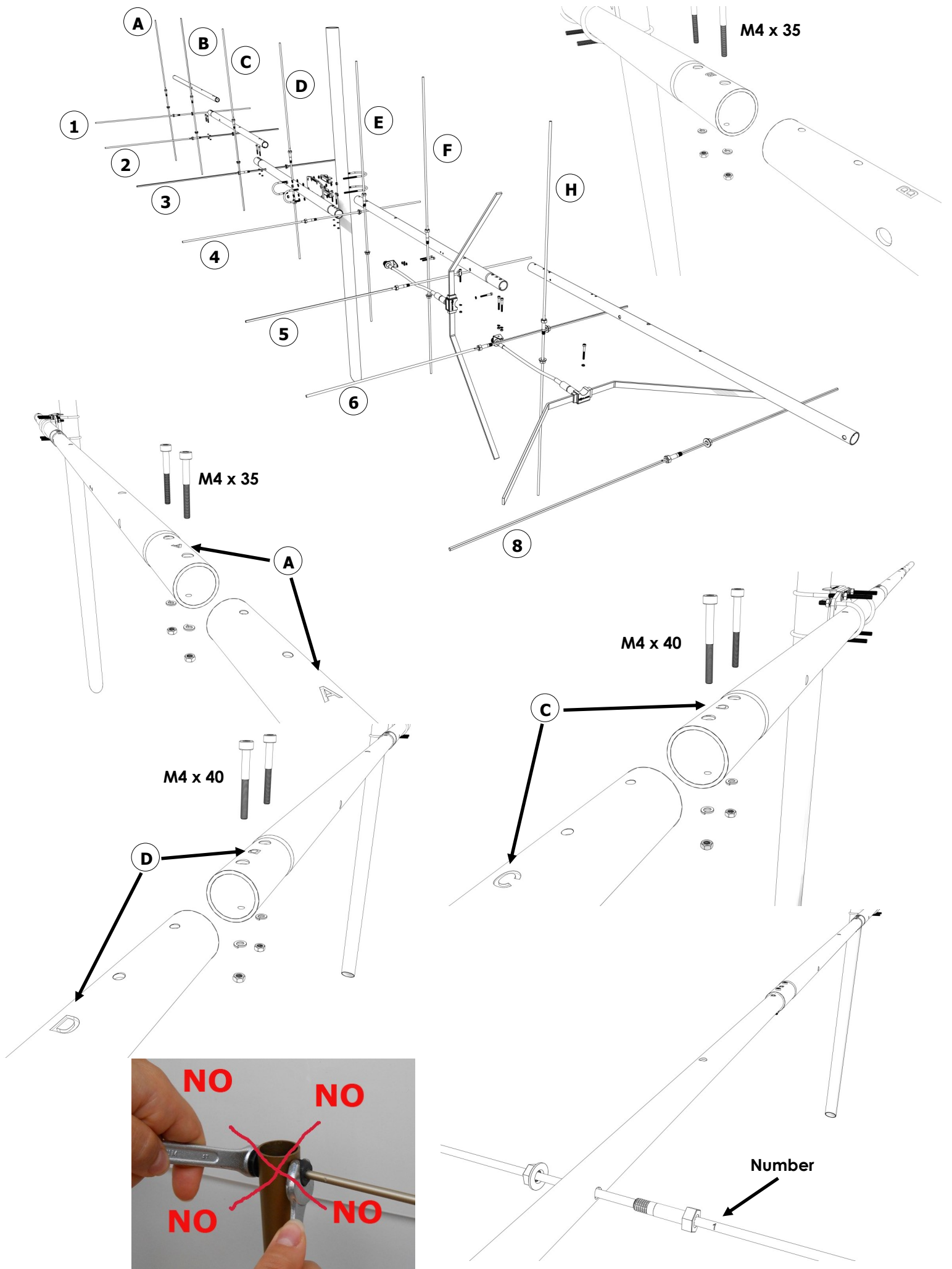
Elevation Plot  
Azimuth Angle 0,0 deg.  
Outer Ring 14,28 dBi

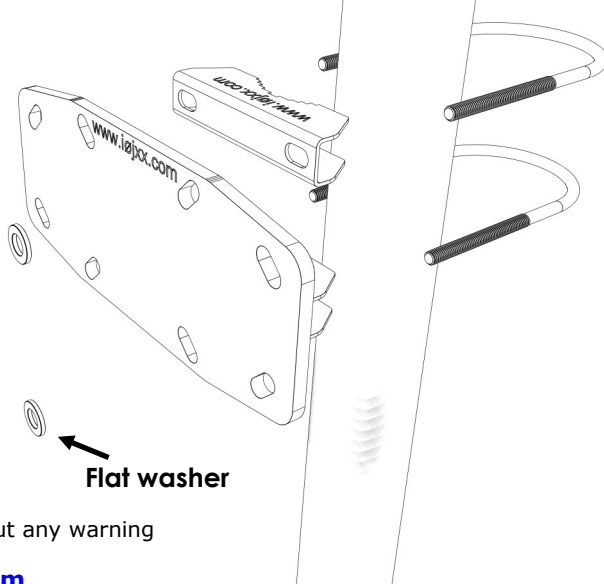
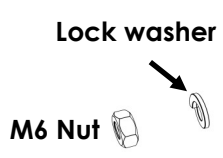
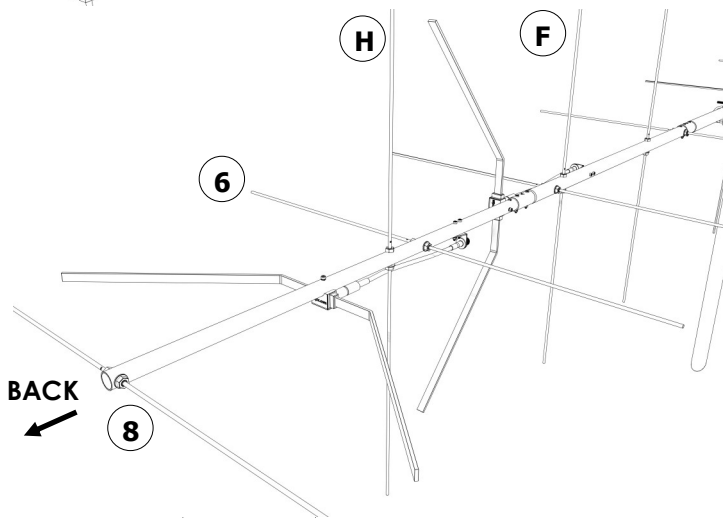
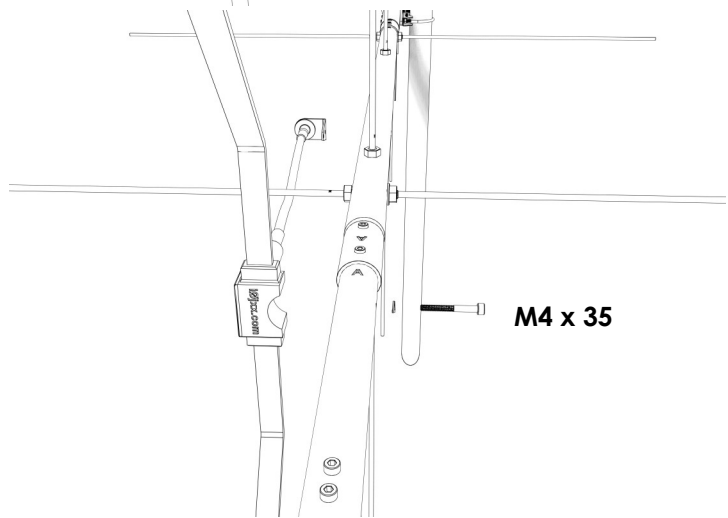
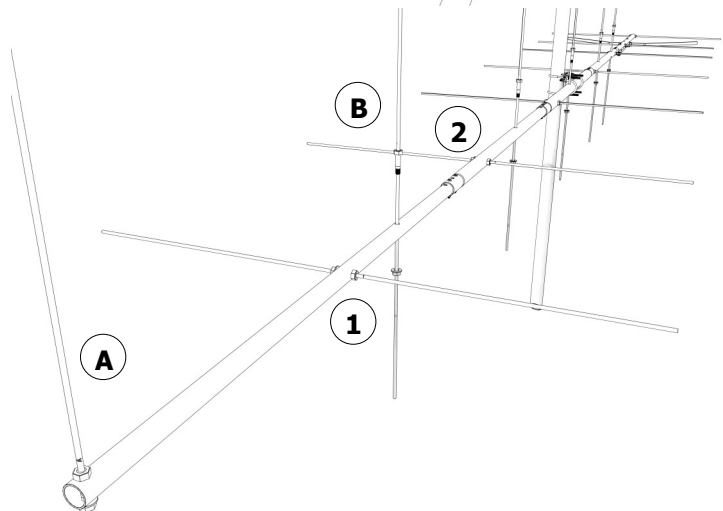
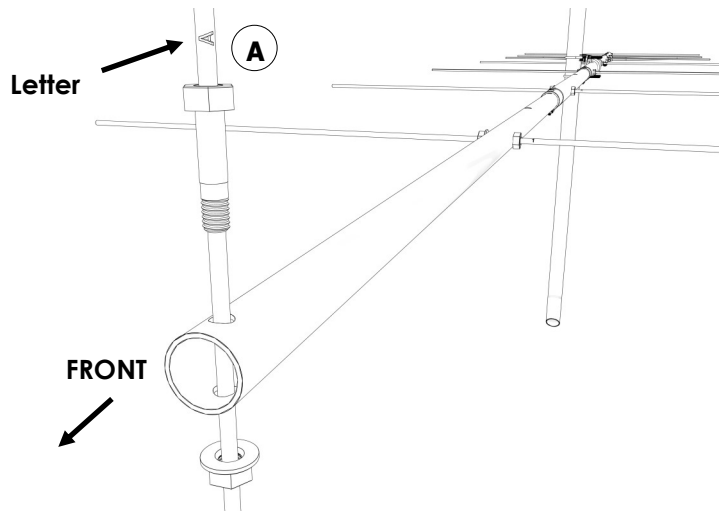
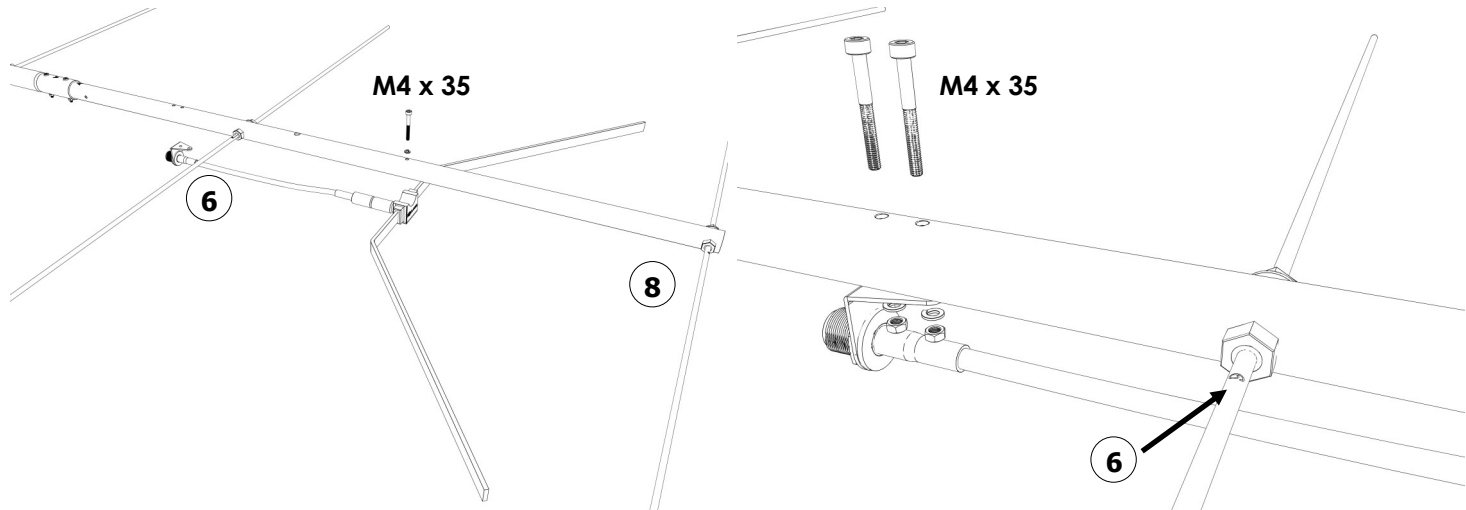
Cursor Elev 0,0 deg.  
Gain 14,28 dBi  
0,0 dBmax  
0,0 dBmax3D

3D Max Gain 14,28 dBi  
Slice Max Gain 14,28 dBi @ Elev Angle = 0,0 deg.  
Front/Back 18,13 dB  
Beamwidth 38,2 deg.; -3dB @ 340,9, 19,1 deg.  
Sidelobe Gain 1,01 dBi @ Elev Angle = 51,0 deg.  
Front/Sidelobe 13,27 dB

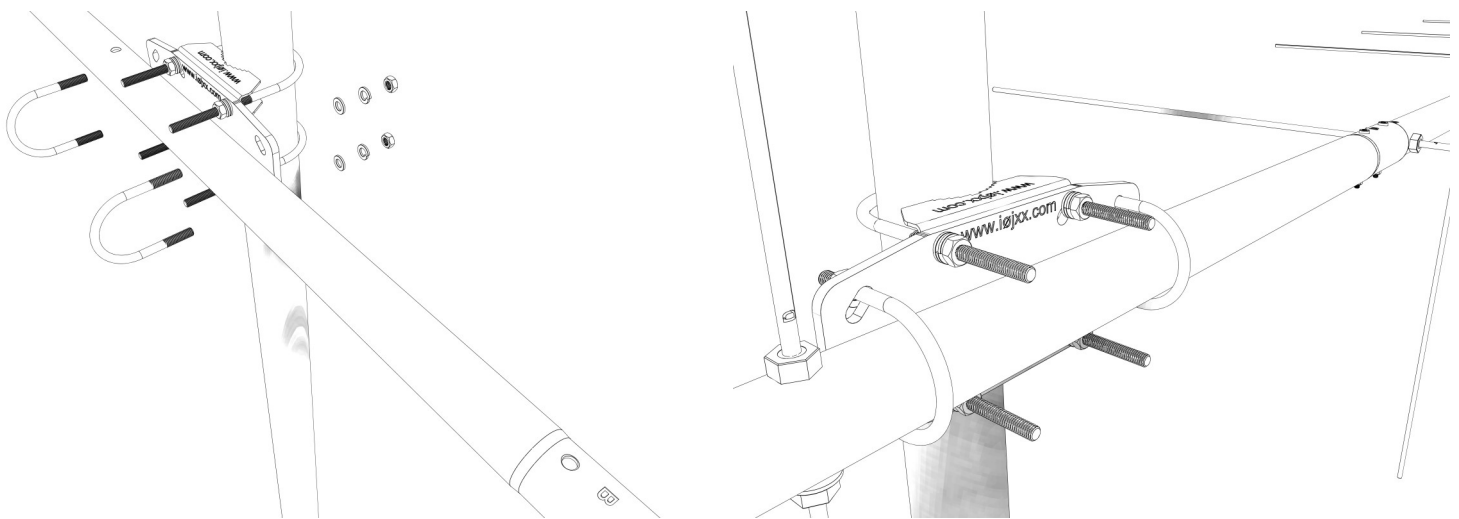
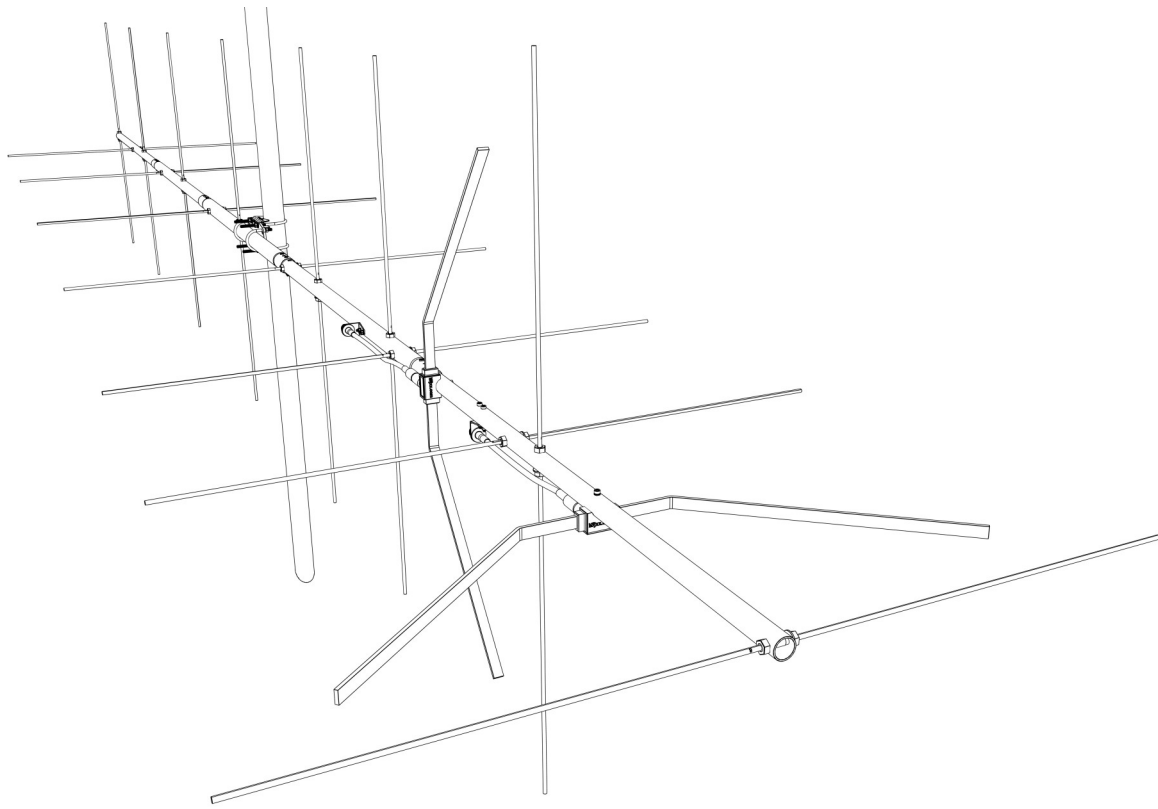
IOJXX may vary them without any warning

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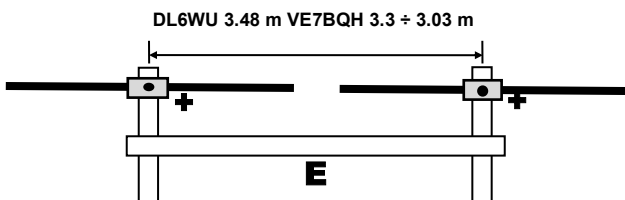
## Stacking

In order to obtain the best results in coupling the antennas, we warmly recommend an adequate antenna stacking calculation which would allow the best forward gain together with low side lobes. The stacking distance may be calculated with the following formula from Güenter Hoch DL6WU

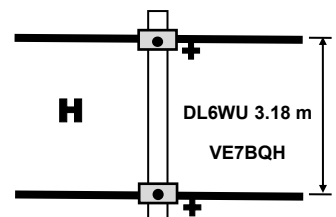
On the basis of further studies conducted by Lionel VE7BQH over the antenna stacking argument, a reduction of 5÷10% may be introduced on stacking distances without noticing significant overall worsening of the characteristics. Do respect the driven element supplying symmetry to allow anti-phase coupling

$$\text{Plane E} = 34.8^\circ = \frac{2079}{2 * \sin (34.8 / 2)} = \frac{2079}{0.598} \cong 3.48 \text{ m (with VE7BQH from 3.3 m to 3.13 m)}$$

$$\text{Plane H} = 38.2^\circ = \frac{2079}{2 * \sin (38.2 / 2)} = \frac{2079}{0.6544} \cong 3.18 \text{ m (with VE7BQH from 3.02 m to 2.86 m)}$$



$$d = \frac{L}{2 * \sin (\Phi / 2)}$$



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