



**IOJXX** di Donzello Rosanna

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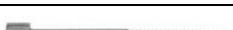




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## 5JXX6 Yagi

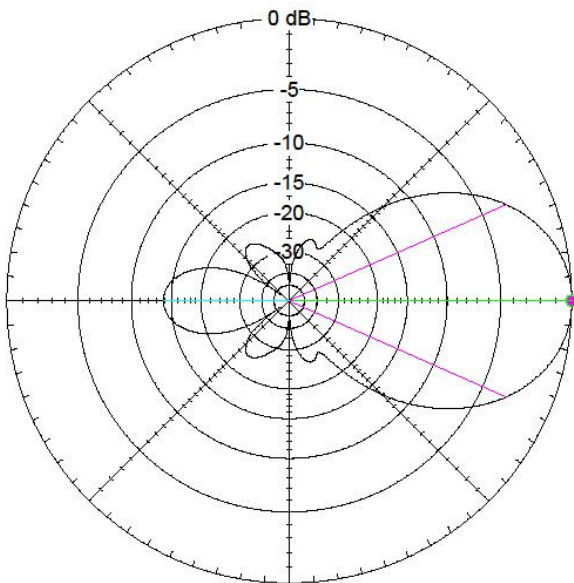
Item		Q.ty	Item		Q.ty
Stainless steel nut M3		16	Stainless steel bolt M3 x 16 mm		16
Lock washer 3.2 mm Ø		16	Stainless steel bolt M4 x 16 mm		5
Stainless steel nut M4		18	Stainless steel bolt M4 x 30 mm		4
Lock washer 4.2 mm Ø		18	Stainless steel bolt M4 x 35 mm		6
Stainless steel nut M6		8	Stainless steel bolt M4 x 40 mm		2
Lock washer 6 mm Ø		8	Stainless steel bolt M4 x 45 mm		1
Flat washer 6 mm Ø		8	Semi - element Ø 12 mm	115 cm	4
U_Bolt 35 mm Ø		2	Semi - dipole Ø 12 mm	74 cm	2
U_Bolt 50 mm Ø		2	Semi - element Ø 10 mm	from 823 to 952 mm	8
Sheet metal steel stainless		2	Semi - dipole Ø 10 mm	628 mm	2
Plate <b>PIA35JXX</b>		1	Stainless steel parker screw 3.5 x 9.5		8
Section boom <b>A</b> 25 mm Ø	105 cm	1	Dipole and balun ISO30D_12		1
Section boom <b>A—B</b> 30 mm Ø	105 cm	1	Insulator ISO25_12		2
Section boom <b>B—C</b> 35 mm Ø	105 cm	1	Insulator ISO30_12		1
Section boom <b>C—D</b> 30 mm Ø	105 cm	1	Insulator ISO35_12		1
Section boom <b>D</b> 25 mm Ø	105 cm	1	Hairpin	180 mm	1
Inbuss key 3 mm		1			

Total Field

EZNEC+

Total Field

EZNEC+



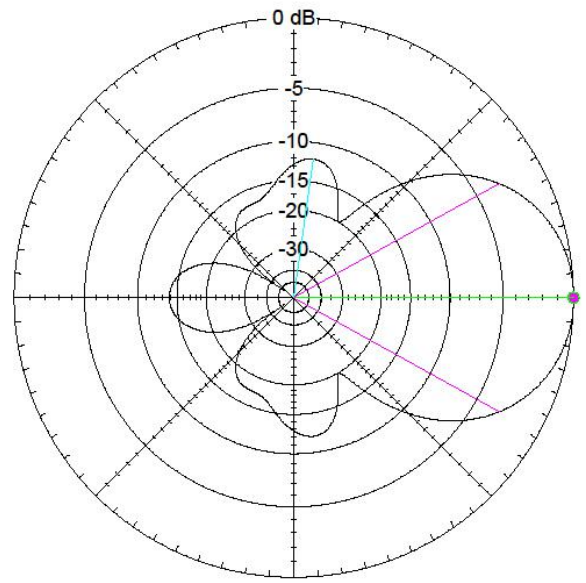
Dipole in free space

50,1 MHz

Azimuth Plot  
Elevation Angle 0,0 deg.  
Outer Ring 11,17 dBi

Cursor Az 0,0 deg.  
Gain 11,17 dBi  
0,0 dBmax  
0,0 dBmax3D

3D Max Gain 11,17 dBi  
Slice Max Gain 11,17 dBi @ Az Angle = 0,0 deg.  
Front/Back 13,89 dB  
Beamwidth 47,8 deg.; -3dB @ 336,1, 23,9 deg.  
Sidelobe Gain -2,72 dBi @ Az Angle = 180,0 deg.  
Front/Sidelobe 13,89 dB



Dipole in free space

50,1 MHz

Elevation Plot  
Azimuth Angle 0,0 deg.  
Outer Ring 11,17 dBi

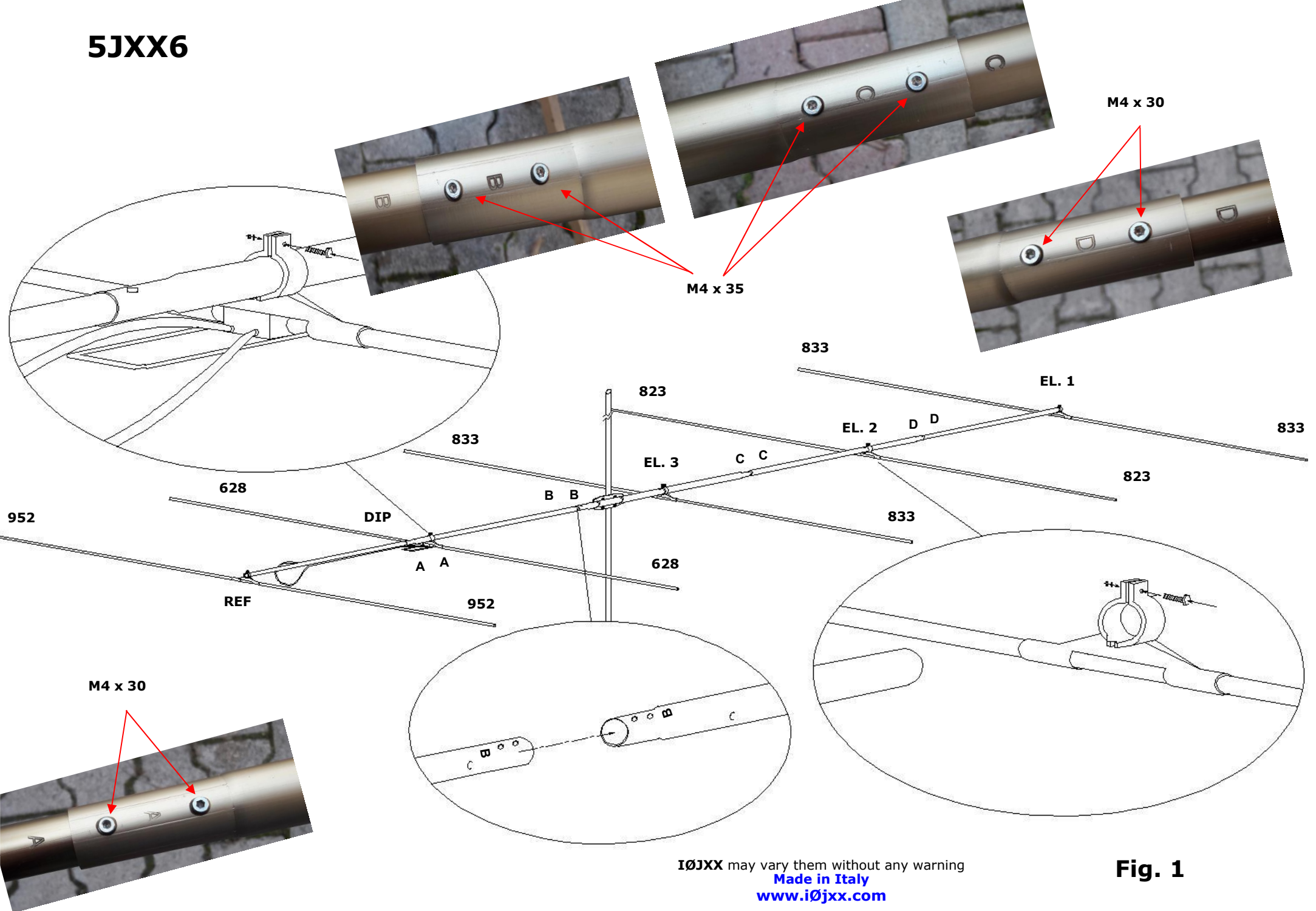
Cursor Elev 0,0 deg.  
Gain 11,17 dBi  
0,0 dBmax  
0,0 dBmax3D

3D Max Gain 11,17 dBi  
Slice Max Gain 11,17 dBi @ Elev Angle = 0,0 deg.  
Front/Back 13,89 dB  
Beamwidth 58,0 deg.; -3dB @ 331,0, 29,0 deg.  
Sidelobe Gain -0,72 dBi @ Elev Angle = 82,0 deg.  
Front/Sidelobe 11,89 dB

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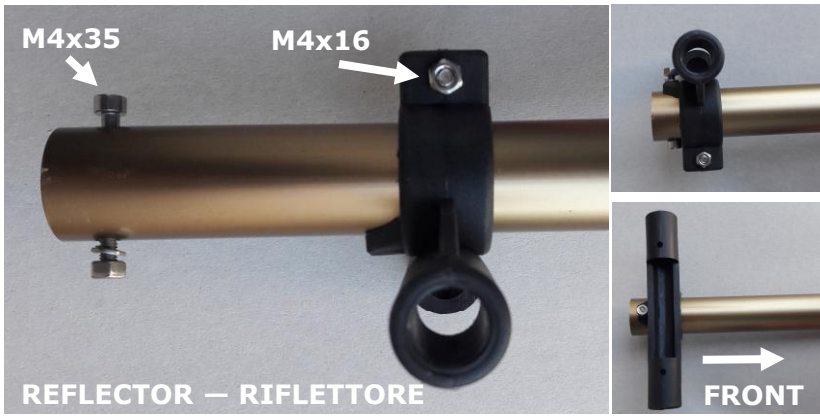
# 5JXX6



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**Fig. 1**

## ASSEMBLY INSTRUCTIONS



1° Iniziare inserendo vite M4x35 mm rondella e dado per **REF** su boom 25 mm  $\varnothing$  **A** e relativo isolatore ISO25\_12 (vedi foto) rispettando il verso, fissare con vite M4x16 mm rondella e dado



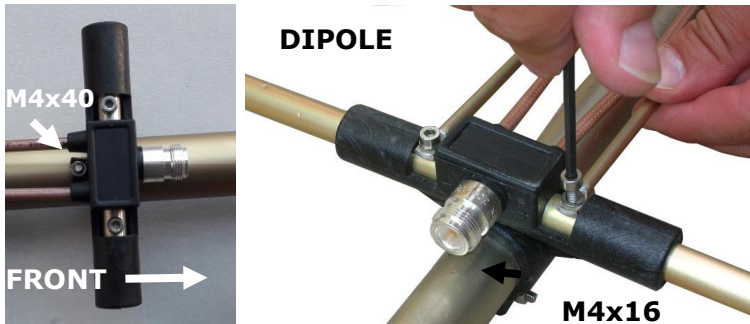
1° Start by inserting screw M4x35 mm washer and nut for **REF** on boom 25 mm  $\varnothing$  **A** and relative insulator ISO25\_12 (see photo) respecting the direction, fix with screw M4x16 mm washer and nut



1° Beginnen Sie mit dem Einsetzen der Schraube M4x35 mm Unterlegscheibe und Mutter für **REF** am Ausleger 25 mm  $\varnothing$  **A** und relativem Isolator ISO25\_12 (siehe Foto) unter Beachtung der Richtung, mit Schraube M4x16 mm



1° Commencez par insérer la vis rondelle et écrou M4x35 mm pour **REF** sur la boom de 25 mm  $\varnothing$  **A** et l'isolant relatif ISO25\_12 (voir photo) en respectant le sens, fixez à l'aide de la vis rondelle et écrou M4x16 mm



2° Inserire vite M4x40 mm rondella e dado su boom 30 mm  $\varnothing$  **A-B** ISO30D\_12, rimuovere le viti M4x8 ed inserire semi — dipolo 12 mm  $\varnothing$  da 74 cm ed **HAIRPIN**, vedi foto, rispettare il verso; fissare con vite M4x16 mm rondella e dado



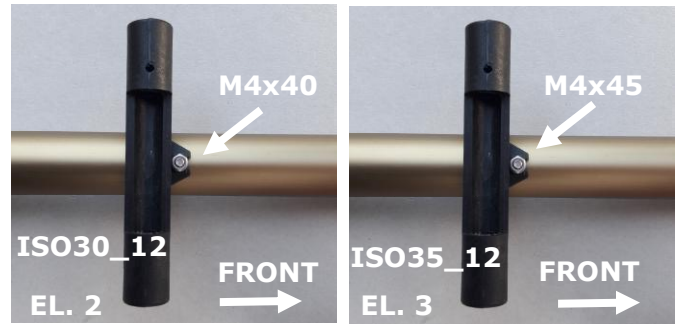
2° Insert screw M4x40 mm washer and nut on boom 30 mm  $\varnothing$  **A-B** ISO30D\_12, remove the screws M4x8 and insert semi-dipole 12 mm  $\varnothing$  of 74 cm and **HAIRPIN**, see photo, respect the direction; fix with washer M4x16 mm washer and nut



2° Schraube M4x40 mm Scheibe und Mutter am Ausleger 30 mm  $\varnothing$  **A-B** ISO30D\_12 eindrehen, die Schrauben M4x8 entfernen und den Halbdipol 12 mm  $\varnothing$  von 74 cm und **HAIRPIN** einsetzen, siehe Foto, Richtung beachten; mit Scheibe M4x16 mm Scheibe und Mutter befestigen



2° Insérer la vis M4x40 mm, rondelle et écrou sur la boom de 30 mm  $\varnothing$  **A-B** ISO30D\_12, retirer les vis M4x8 et insérer le demi-dipôle 12 mm  $\varnothing$  de 74 cm et **HAIRPIN**, voir photo, respecter le sens; fixer avec rondelle M4x16 mm rondelle et écrou



3° Inserire vite M4x40 mm rondella e dado su boom 30 mm  $\varnothing$  **B-C** ed ISOD30\_12 (**EL. 2**) e M4x45 mm rondella e dado su boom 35 mm  $\varnothing$  **C-D** ed ISOD35\_12 (**EL. 3**), vedi foto, rispettare il verso; fissare con vite M4x16 mm rondella e dado



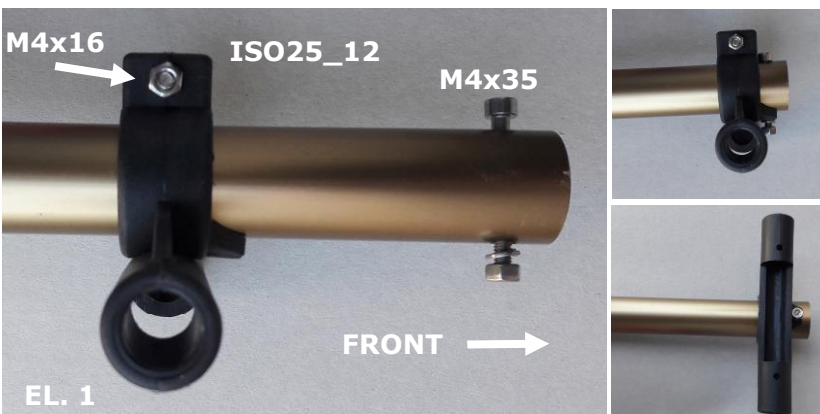
3° Insert screw M4x40 mm washer and nut on boom 30 mm  $\varnothing$  **B-C** and ISOD30\_12 (**EL.2**) and M4x45 mm washer and nut on boom 35 mm  $\varnothing$  **C-D** and ISOD35\_12 (**EL.3**), see photo, respect the direction; fix with washer M4x16 mm washer and nut



3° Schraube M4x40 mm Scheibe und Mutter am Ausleger 30 mm  $\varnothing$  **B-C** und ISOD30\_12 (**EL.2**) und Scheibe M4x45 mm und Mutter am Ausleger 35 mm  $\varnothing$  **C-D** und ISOD35\_12 (**EL.3**) einschrauben, siehe Foto, Richtung beachten; mit Scheibe M4x16 mm Scheibe und Mutter befestigen



3° Insérer la vis M4x40 mm rondelle et écrou sur la flèche 30 mm  $\varnothing$  **B-C** et ISOD30\_12 (**EL.2**) et M4x45 mm rondelle et écrou sur la rampe 35 mm  $\varnothing$  **C-D** et ISO-D35\_12 (**EL.3**), voir photo, respecter le sens; fixer avec rondelle M4x16 mm rondelle et écrou



4° Inserire vite M4x35 mm rondella e dado per **EL. 1** su boom 25 mm  $\varnothing$  **D** e relativo isolatore ISO25\_12 (vedi foto) rispettare il verso; fissare con vite M4x16 mm rondella e dado



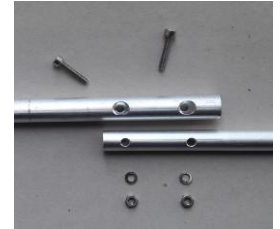
4° Insert screw M4x35 mm washer and nut for **EL. 1** on boom 25 mm  $\varnothing$  **D** and relative insulator ISO25\_12 (see photo) respect the direction; fix with washer M4x16 mm washer and nut



4° Setzen Sie die Schraube M4x35 mm Scheibe und Mutter für **EL. 1** am Ausleger 25 mm  $\varnothing$  **D** und relativ Isolator ISO25\_12 (siehe Foto) Richtung beachten; mit Scheibe M4x16 mm Scheibe und Mutter befestigen



4° Insérer la vis M4x35 mm rondelle et écrou pour **EL. 1** sur la flèche 25 mm  $\varnothing$  **D** et l'isolant relatif ISO25\_12 (voir photo) respecter le sens; fixer avec rondelle M4x16 mm rondelle et écrou



5° Inserire semi — elementi da 12 mm Ø da 115 cm. , fissarli con viti autofilettanti 3.5x9.5 mm, inserire i semi—elementi da 10 mm Ø come riportato in **Fig. 1** e fissare con viti M3x16 mm rondella e dado (vedi foto)



5° Insert 12 mm Ø 115 cm half elements, fix them with 3.5x9.5 mm self-tapping screws, insert the 10 mm half elements as shown in **Fig. 1** and fix with screws M3x16 mm washer and nut (see photo)



5° Setzen Sie Samen - 12 mm Ø 115 cm Elemente. , befestigen Sie sie mit selbstschneidenden 3,5x9,5 mm Schrauben, setzen Sie die 10 mm Halbelemente wie in **Fig. 1** gezeigt ein und befestigen Sie sie mit Schrauben M3x16 mm Unterlegscheibe und Mutter (siehe Foto)



5° Insérer des graines - éléments de 12 mm Ø 115 cm. , fixez-les avec des vis auto-taraudeuses de 3,5 x 9,5 mm, insérez les demi-éléments de 10 mm comme indiqué à la **Fig. 1** et fixez-les à l'aide de vis à rondelle et écrou M3x16 mm (voir photo)



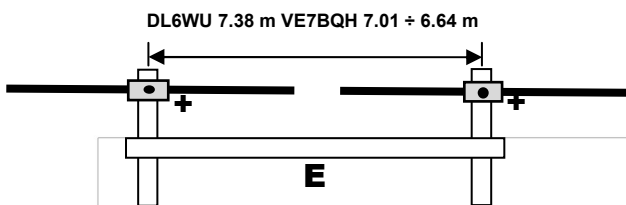
## Stacking

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

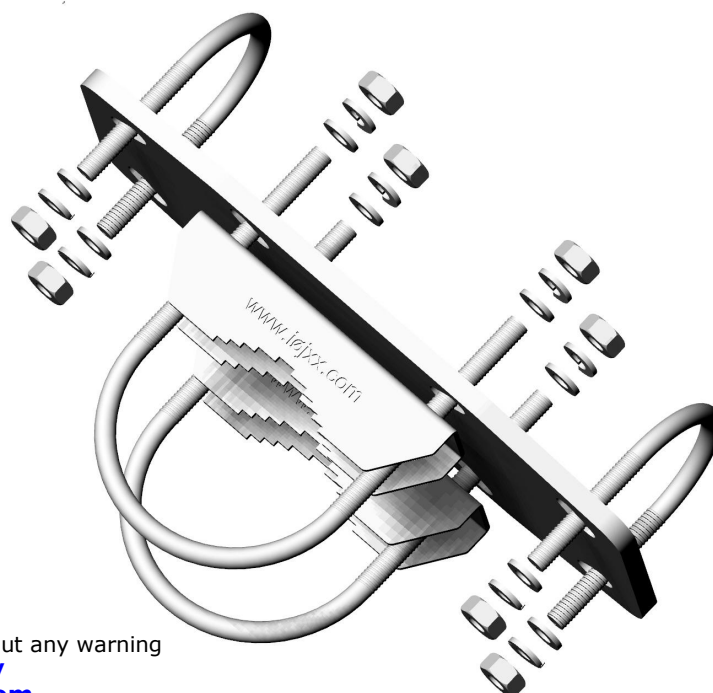
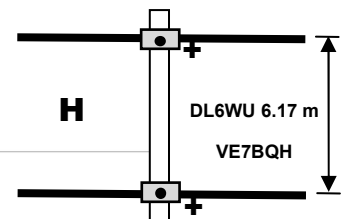
On the basis of further studies conducted by Lionel VE7BQH over the antenna stacking argument, a reduction of 5÷10% may be introduced on stacking distances without noticing significant overall worsening of the characteristics. Do respect the driven element supplying symmetry to allow anti-phase coupling

$$\text{Plane E} = 47.8^\circ = \frac{5982}{2 * \sin (47.8 / 2)} = \frac{5982}{0.8103} \cong 7.38 \text{ m (with VE7BQH from 7.01 m to 6.64 m)}$$

$$\text{Plane H} = 58.0^\circ = \frac{5982}{2 * \sin (58.0 / 2)} = \frac{5982}{0.9696} \cong 6.17 \text{ m (with VE7BQH from 5.86 m to 5.55 m)}$$



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



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