



INFINITE WIND ENERGY, LLC

Hydraulic Free Standing Tower

Installation Guide

Warnings:

This guide has been carefully checked by engineers.

Please excuse from specification alterations without notice.

It is required to comply with the local law, regulation or the permission from local government before installing.

Only under no wind weather should proceed with the installation, maintenance and dismantling of.

Colour or figuration of pictures might be varied against physical goods.

Project of tower installation should be carried out by professional builder. Please pay attention to safety during installation.

Please do not dismantle the inner structure of wind turbines until get any instructions from us. Any personal actions without our hints to dismantle should be excluded from the rights of warranty.

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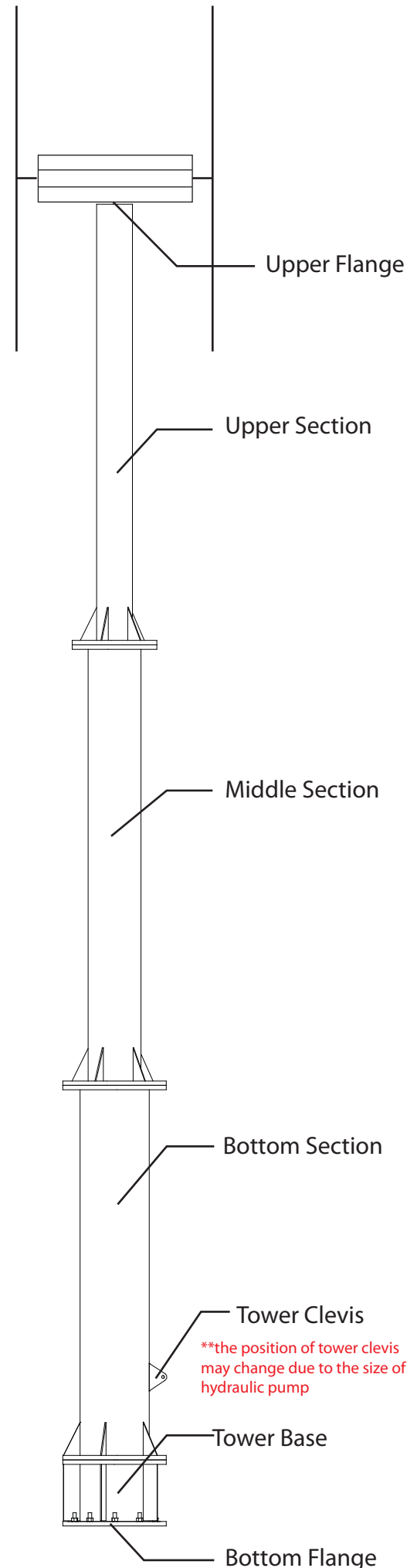
1. Summary

Hydraulic towers are applied to wind turbine generators from 2KW to 20KW. Compared to the traditional cable tower, hydraulic tower enjoys the advantages of handsome exterior and taking small room (burdensome steel wires); the most outstanding merit for hydraulic tower is that wind turbine generator can be erected and laid down automatically through the appliance of hydraulic system to achieve installation and maintenance. So there is no need the cooperation of the crane, which will save the installation and maintenance cost to a great extent.

Composed by three sections of steel pipe with different diameters, the hydraulic towers are supplied by tower base, hypo-cylinder, and hydraulic pump. Flanges are welded to the both sides of each tower for connections. Tower base will be placed on the foundation.

2. Placement Table

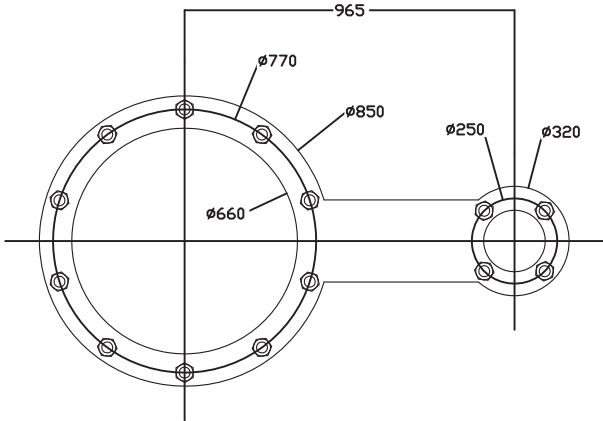
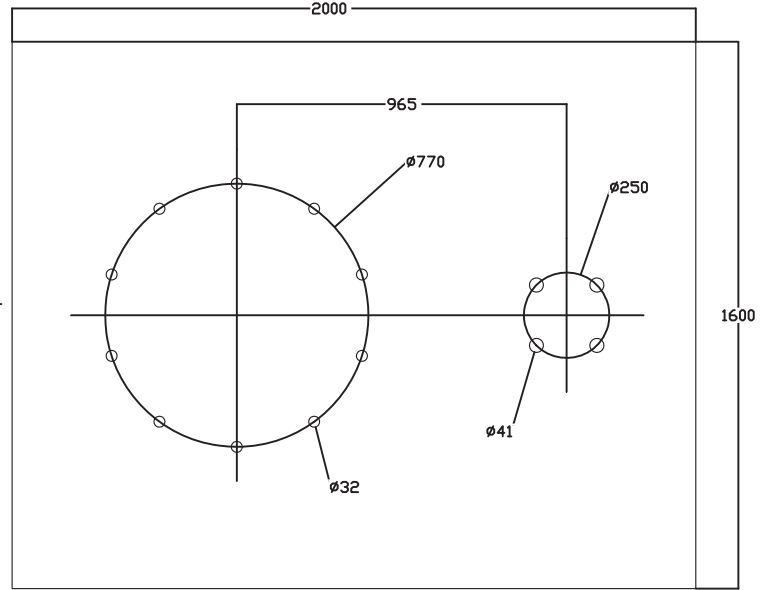
Model		2-4kw Model	10kw Model	20kw Model
Height	-	12	16	18
Section No.	-	3	3	3
Upper Section Parameter	Height (m)	4	4	6
	Diameter (mm)	325	325	425
	Thickness (mm)	6	6	8
Middle section parameter	Height (m)	4	6	6
	Diameter (mm)	480	480	630
	Thickness (mm)	8	8	8
Bottom Section Parameter	Height (m)	3.4	5.4	6
	Diameter (mm)	630	630	820
	Thickness (mm)	8	8	8
Tower base parameter	Height (m)	0.6	0.6	0.6
	Diameter (mm)	630	630	820
	Thickness (mm)	8	8	8
weight (kg)	-	1408	2051	2660
Upper flange (connecting generator)	C1(mm)	310	310	500
	C2(mm)	200	200	460
	C3(mm)	160	160	380
	T1(mm)	M16	M16	OD24
	N1	12	12	16
Bottom flange (placed on foundation)	C4(mm)	940	940	1260
	C5(mm)	770	770	1100
	C6(mm)	635	635	820
	T2(mm)	OD40	OD40	OD41
	N2	10	10	10



2KW-4KW and 10KW Foundation Detail

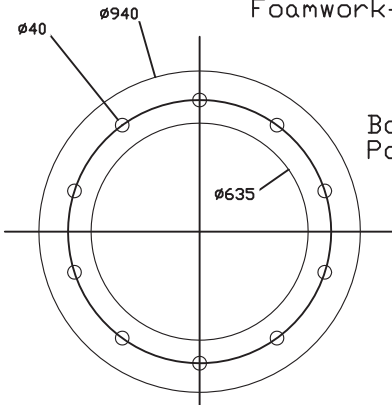
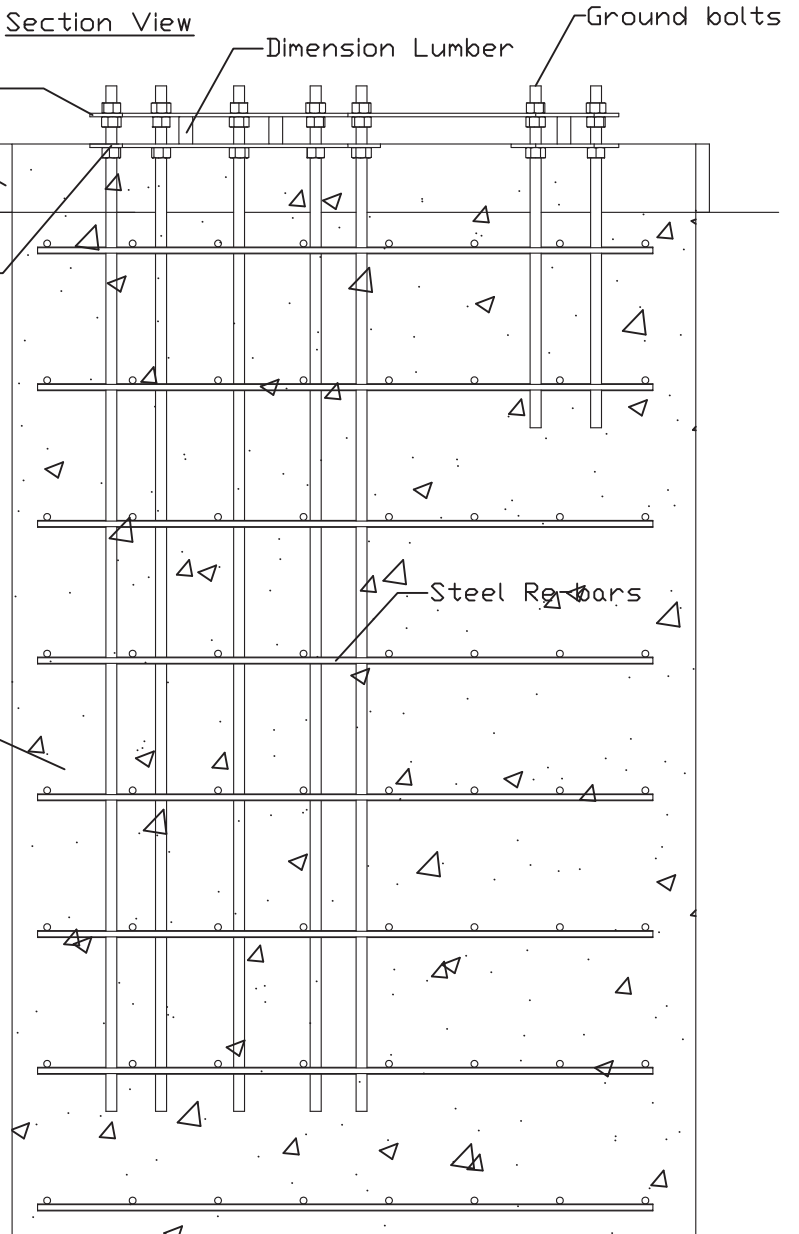
**The dimension of tower clevis may change due to the size of hydraulic pump

Top View

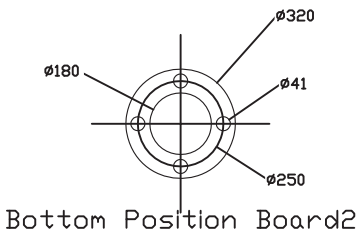


Top Position Board1

Section View



Bottom Position Board1



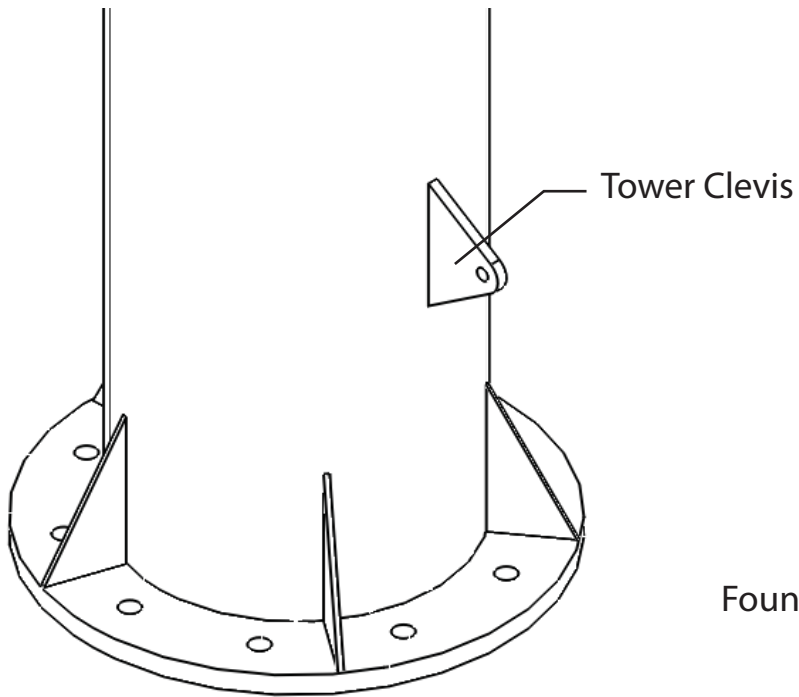
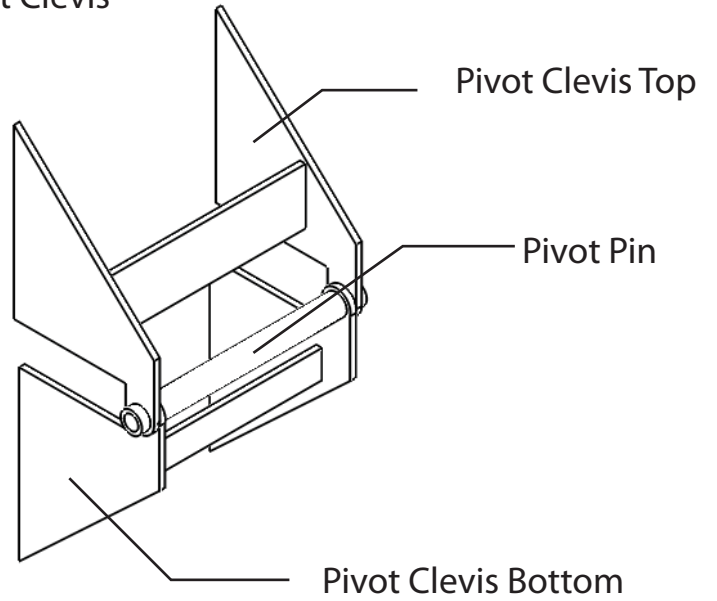
Bottom Position Board2

Part Detail

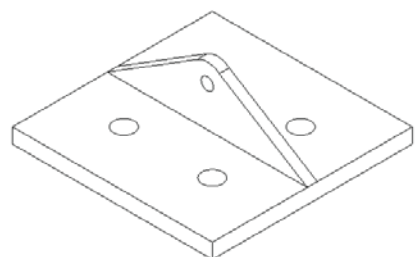
Welded Hydraulic Cylinder - Clevis Ends - 3.5" Bore x 28" Stroke
3.5 x 28 3000PSI Welded Valves Hydraulic Cylinder



Pivot Clevis



Foundation Clevis



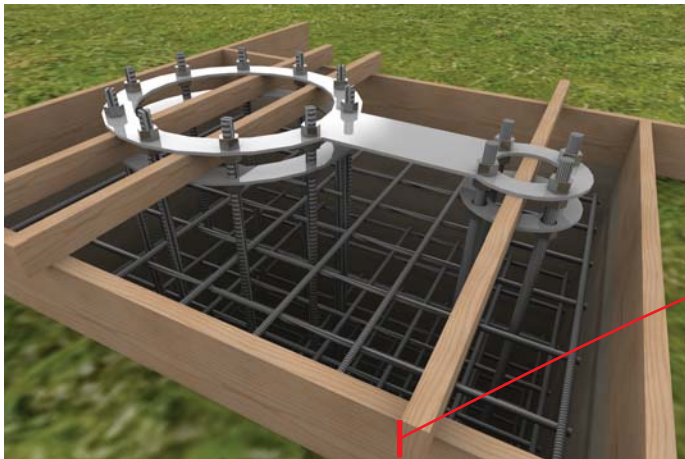
3. Foundation Concrete Placement Instruction



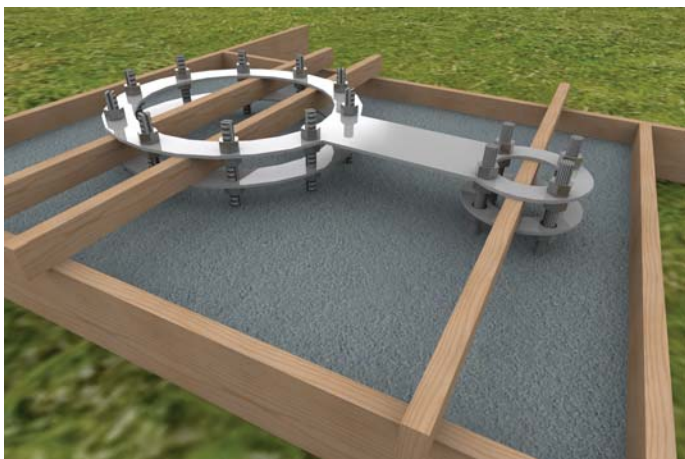
The first step is to excavate the ground soil and make a 1600mm x 2000mm x depth 3000 hole. Make a wall around the hole with lumbars and place the re-bars into the hole. C25 concrete is suitable for the tower foundation. Vibrating spear can be used to thicken the concrete when casting the concrete.



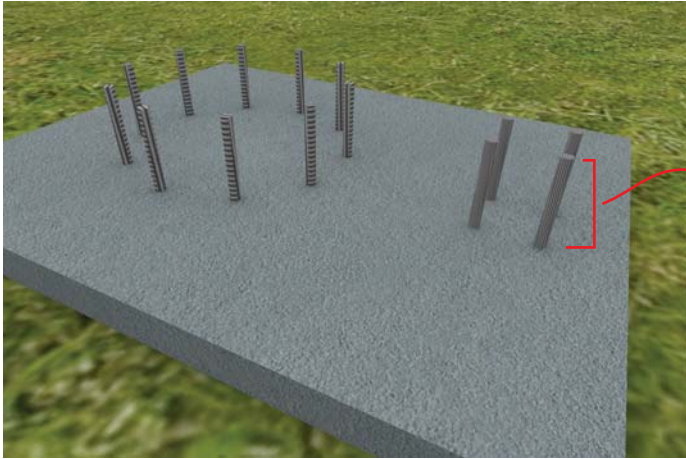
Assemble the provided position boards with dimension lumber and ground bolts. Then place them onto the formwork as shown in the image



The height of the dimension lumbars should be equal to the desired exposure of ground bolt.

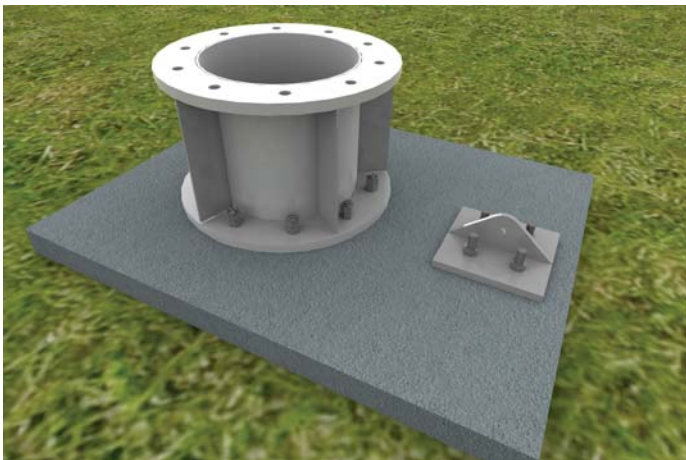


Fill the hole with the concrete.

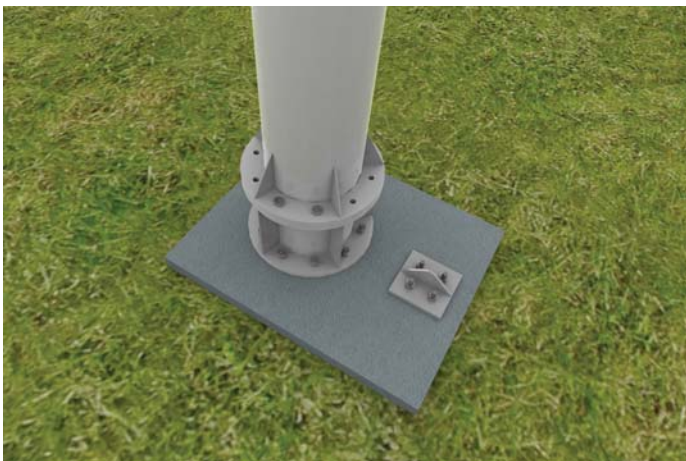


Take off the position boards and formworks.

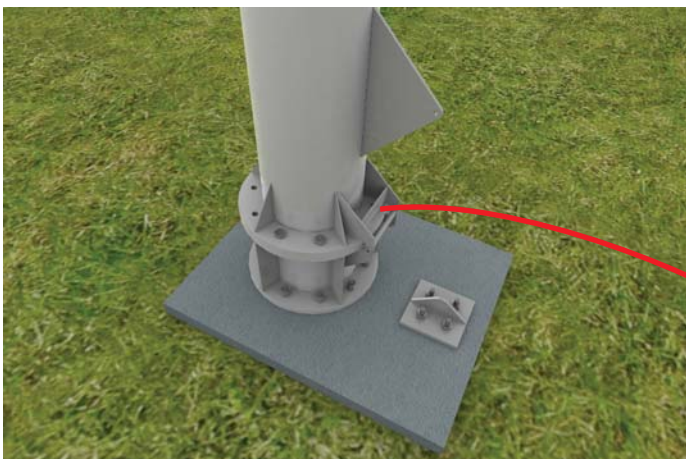
The height of the exposed ground bolts will be determined by the height of the dimension lumber used. Carefully chose the right size of the dimension lumbars in order to get desired height exposed.



Attach the tower base and the clevis to the ground bolts. Make sure when placing the tower base there is no brace on the clevis side in order to attach pivot clevis to the tower base.



Place the bottom section tower. Align the braces with the one on the tower base. Temporary place the bolts for better alignment.

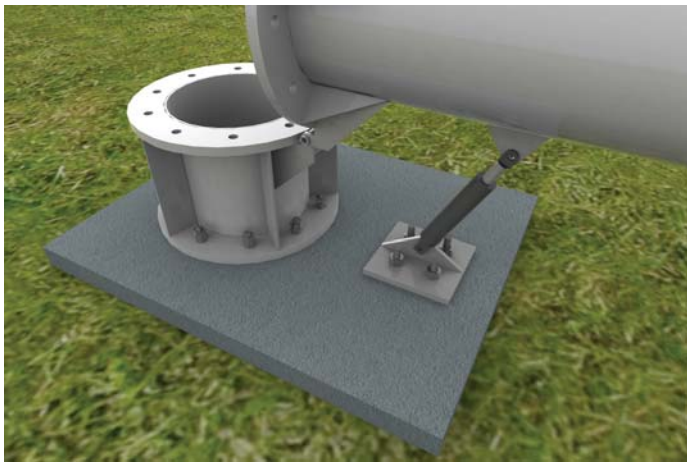


Weld the pivot clevis and tower clevis onto tower. Make the pivot pins to be perpendicular to the clevis. The position of the tower clevis will be determined by the stroke of provided hydraulic pump.

Depending on the spec of hydraulic pump the size and location of the pivot clevis may vary



Attach the hydraulic pump to the foundation clevis and tower clevis.



Take out the bolts and lay down the tower using hydraulic pump. Stop the hydraulic pump when it tilt 90 degree (parallel to the ground).

Company Name: Infinite Wind Energy, LLC

E-mail: info@infinetwindenergyllc.com

Phone: (201)-853-9648

URL: <http://www.infinetwindenergyllc.com/>