

## Contents

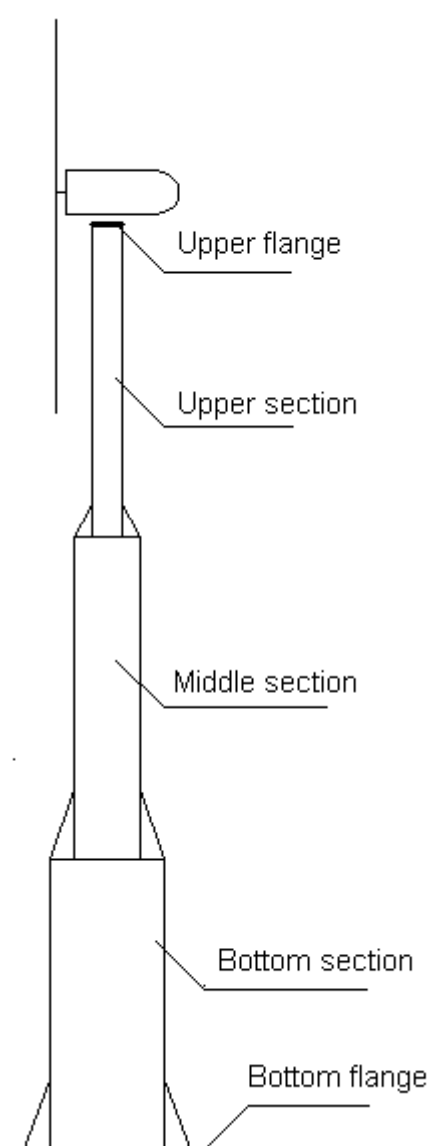
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## **1. Summary for WTGS free standing tower**

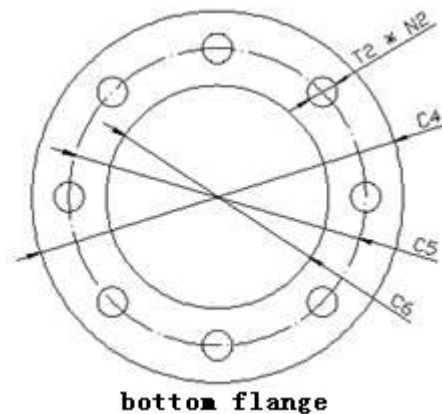
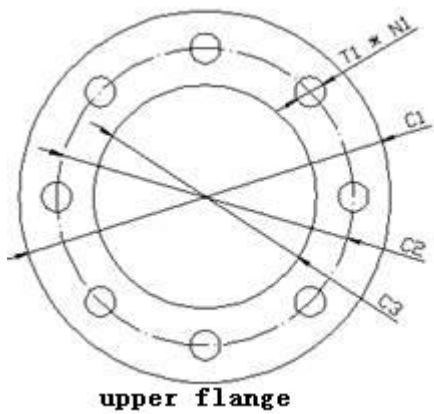
Compared to the traditional guy cable tower, free standing tower enjoys the advantages of handsome exterior and taking small room (burdensome steel wires); Compared to the traditional tapered tower, the most outstanding merit for free standing tower is that the transportation is much more easier and the prices is cheaper as well.

Composed by three sections of steel pipe with different diameters, the free standing towers are supplied with tower and re-bars for installation. Flanges are welded to the both sides of each tower for connections. Tower base will be placed on the foundation.

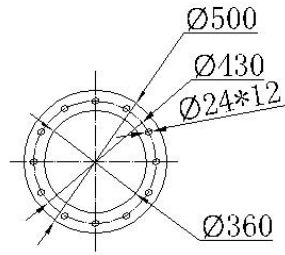
## 2. Parameter table

Model	Code No. in Pic. 1	500W-2KW free standing tower	3KW-10KW free standing tower	20KW free standing tower
Height(m)	-	8	12	18
Section No.	-	3	3	3
Upper section parameter	Height(m)	2	4	6
	Diameter(mm)	114	325	425
	Thickness(mm)	4	6	8
Middle section parameter	Height(m)	3	4	6
	Diameter(mm)	219	480	630
	Thickness(mm)	5	8	8
Bottom section parameter	Height(m)	3	4	6
	Diameter(mm)	325	630	820
	Thickness(mm)	6	8	8
Diagram	-			

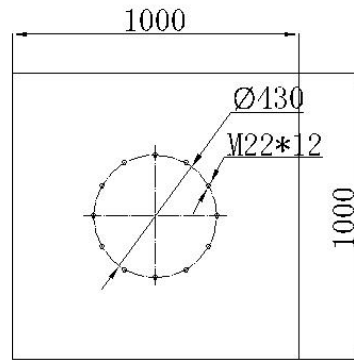
Weight(kg)	-	326	1328	2660
Upper flange (connecting generator)	C1( mm)	150	310	500
	C2( mm)	120	200	460
	C3( mm)	90	160	380
	T1( mm)	M12	M16	Φ24
	N1	6	12	16
Bottom flange (fixed on the foundation)	C4( mm)	500	940	1260
	C5( mm)	430	770	1100
	C6( mm)	326	635	820
	T2( mm)	Φ27	Φ40	Φ41
	N2	12	10	16



Pic. 1



Position board

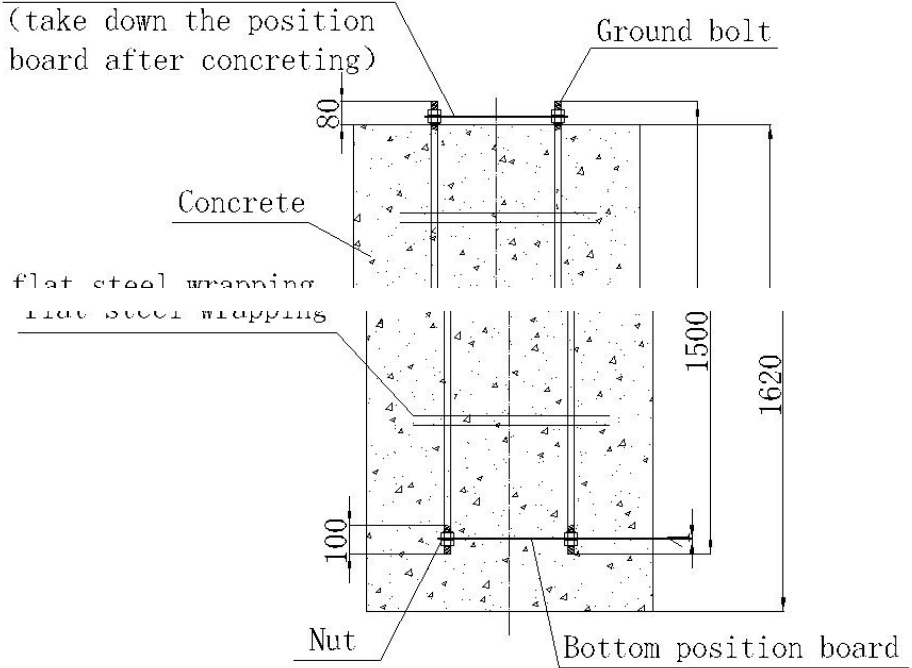


Top view

(removed the top position board and nuts)

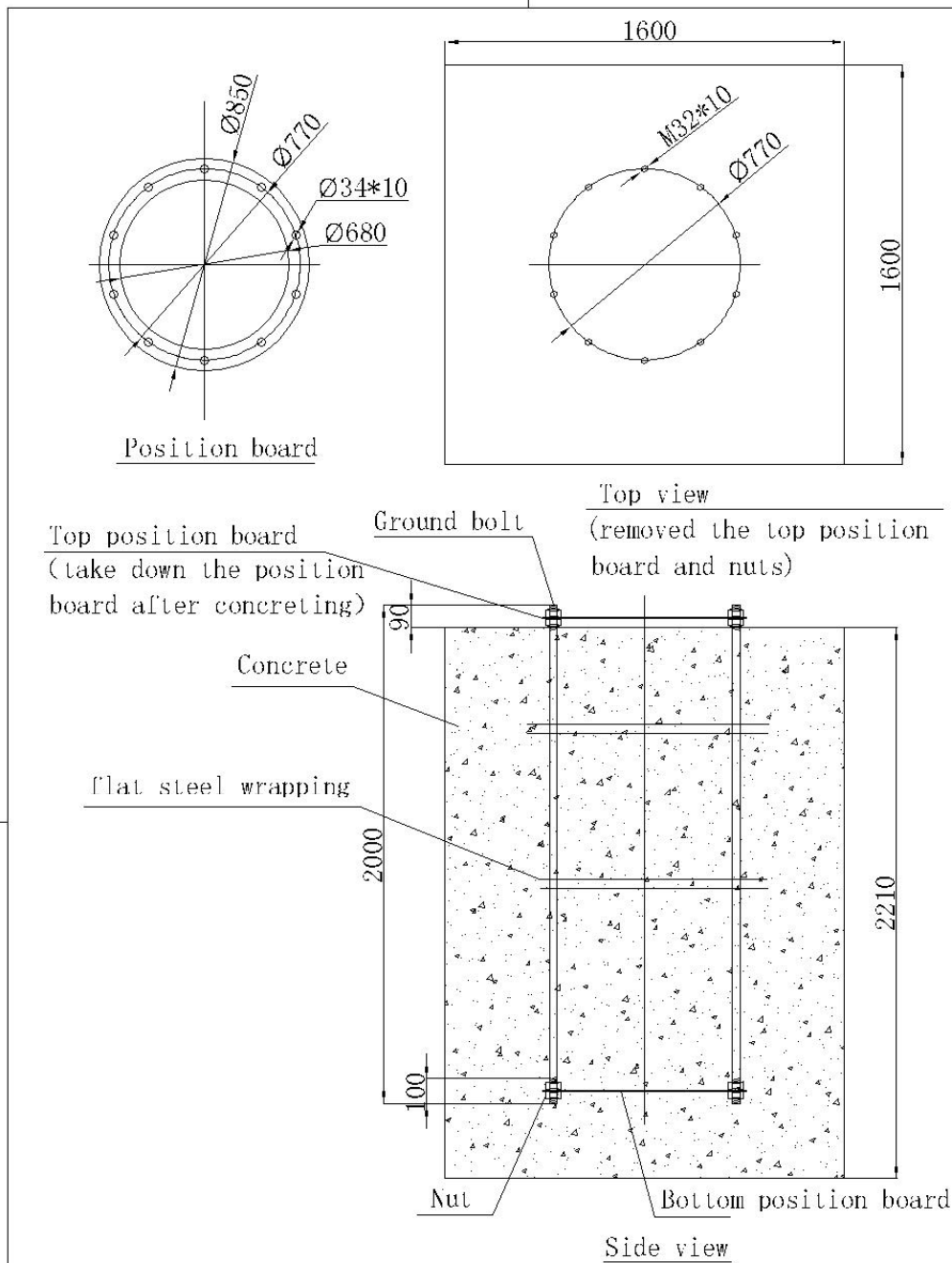
Top position board

(take down the position board after concreting)

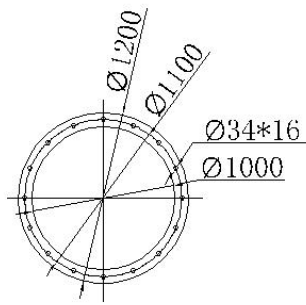


Side view

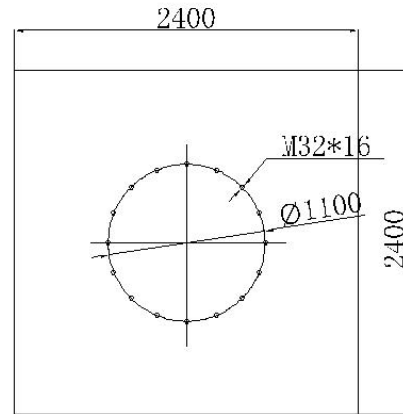
						扬州神州 风力发电机有限公司		
						Base of 500W-2KW regular free stand tower		
标记	处数	分区	更改文件号	签名	年、月、日	阶段标记	重量	比例
设计	(签名)	(年月日)	标准化	(签名)	(年月日)			1:20
审核								
工艺			批准			共	张	第
								页



						扬州神州 风力发电机有限公司		
						Base of 3KW-10KW regular free stand tower		
标记	处数	分区	更改文件号	签名	年、月、日	阶段标记	重量	比例
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审核						共 张 第 页		
工艺			批准					



Position board

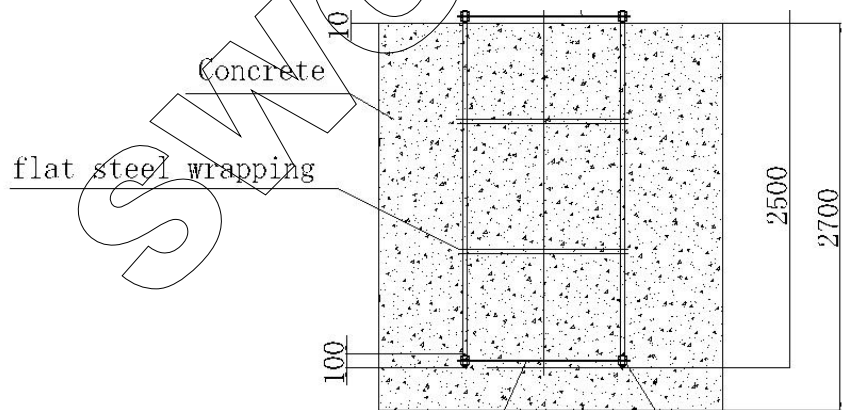


Top view

(removed the top position board and nuts)

Top position board  
(take down the position board after concreting)

Ground Bolt



Bottom position board

Side view

						扬州神州 风力发电机有限公司		
						Base of 20KW free stand tower		
标记	处数	分区	更改文件号	签名	年、月、日	阶段标记	重量	比例
设计	(签名)	(年月日)	标准化	(签名)	(年月日)			1:10
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## **6. Foundation concrete placement**

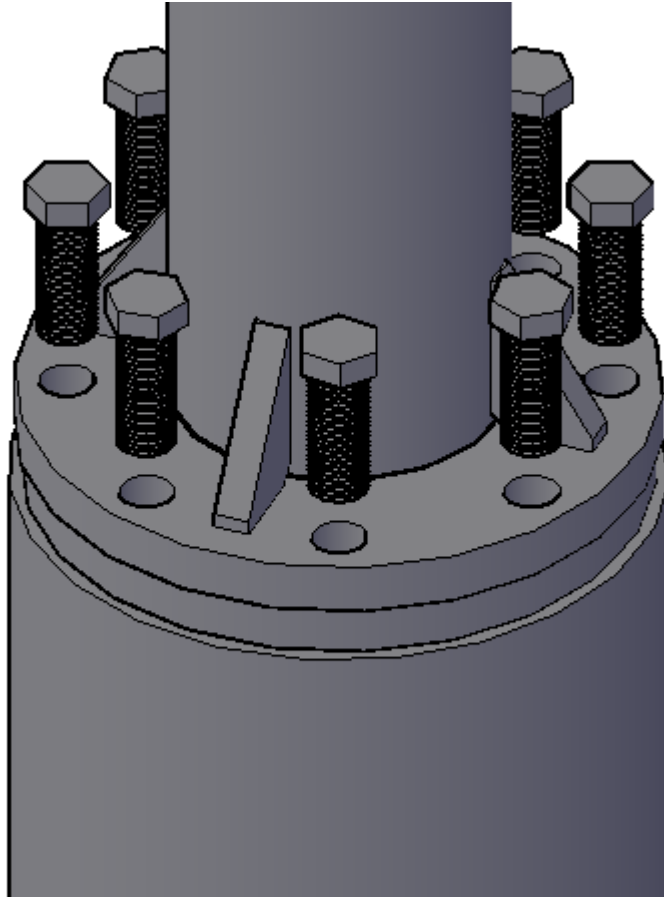
Dig the hole according to the tower foundation diagram and enlace or weld the re-bars by flat steel based on the collocation measurement of re-bars, and then put those re-bars into the hole and start to place the concrete after well collocating the re-bars. C25 concrete is suitable for the tower foundation. Vibrating spear can be used to thicken the concrete when placing concrete foundation.

The concrete volumes, required to the above three kinds of tower, will be 1.6CBM, 6BM and 16M respectively.



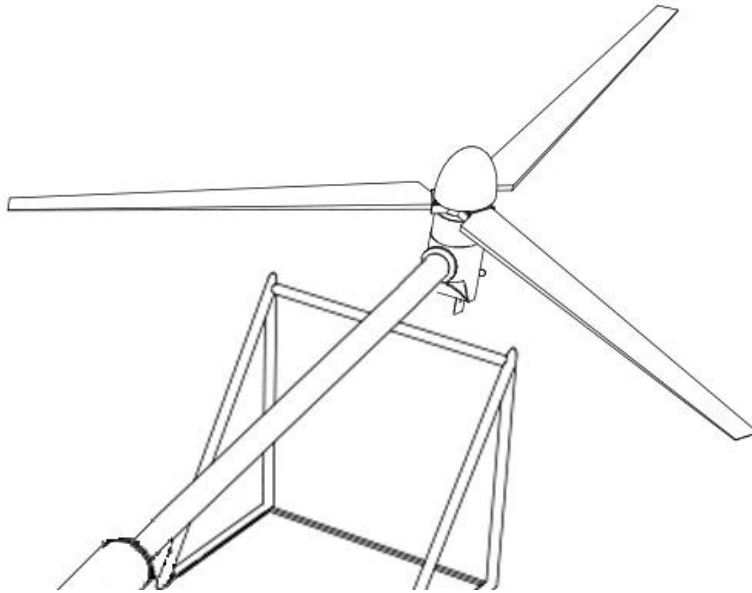
## 7. Tower assembly

There are flanges on either side of each section of towers. Connect each section by bolts according to the diameter in turn. Please refer to Pic.2.



Pic.2

Place the tower end on the ground while the upper part on a wooden stand with height 1~1.5M. And then connect the wind turbine generator with the tower (please refer to the users' manual for wind turbine generator system). Please see the following diagram as well.



Pic. 3

After successfully connecting turbine with the tower, the process of tower erection will be followed. This process should be programmed by professional personnel and crane with the help of braces rather than steel wire. The braces should be tied on the generator body during the erection. Special attention should be paid to protect the blades. When the tower is lifting, please adjust the position to make the holes of tower bottom flange be matched with the re-bars on the foundation, and then make the re-bars go through the holes.

Install spacer on the re-bars and screw the nuts tightly with some grease around the nuts.

### **8. Tower lay-down**

1. Choose a windless day to lay down the tower and prepare a wooden stand (the same as the installation)
2. Disconnect electric connection and make the wind turbine stop working, please refer to users' manual for wind turbines.
3. Tie the braces on the wind turbine body by professional personnel who operate the crane and operate the crane to make sure the tower will not fall down by accident when screw out the bolts of the re-bars.
4. Screw out the bolts on the re-bars.
5. Operate the crane to lift the tower with wind turbine generator to make it be off the re-bars.
6. Lay down slowly the tower with wind turbine generator to the wooden stand.

## **9. Maintenance**

1. Please check the bolts per year to see whether they are rusty or loose. If so, please replace them immediately. New grease should be covered on the bolts per year.
2. To avoid from any unpredictable loss we suggest laying down the tower before the coming of storm or any adverse weather.