

# **Guy cable tower for WTGS**

## **Installation guide for tower & foundation**



**CE**



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**Warning:**

- **The guide has been carefully checked by engineers of Yangzhou Shenzhou Wind-driven Generator Co.,Ltd.**
- **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 WTGS.**
- **Only under no wind weather should proceed with the installation, maintenance and dismantling of WTGS.**
- **Color 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 getting any instructions from our end. Any personal actions without our hints to dismantle should be excluded from the rights of warranty.**



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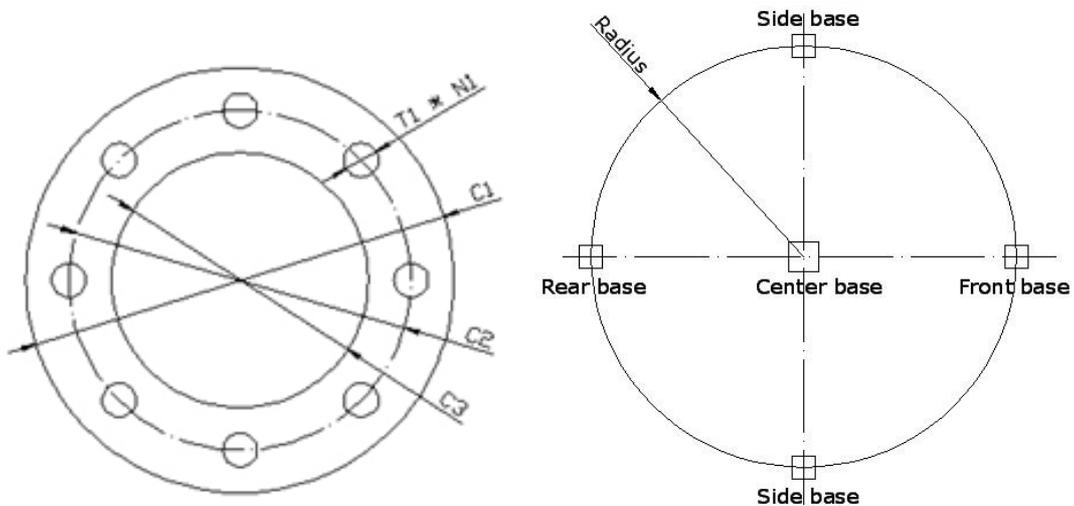
## 1. Tower parameters & concrete foundation

Model	Code No. in Pic.1	200W Guy cable tower	300W Guy cable tower	Aeolus300 Guy cable tower	500W Guy cable tower	1KW Guy cable tower
Total height( m)		4.5	6	6	6	6
Section No.		3	3	3	2	2
Diameter(mm)		60	75	48	89	114
Thickness (mm)		2.5	2.5	2.5	3.25	3.25
Weight( kg)		16.2	40	23.5	41.8	54
Upper flange(connecting generator)	C1( mm)	-	120	-	150	150
	C2( mm)	-	100	-	120	120
	C3( mm)	-	76	-	89	89
	T1( mm)	-	M12	-	M12	M12
	N1	-	6	-	6	6
Foundation	Radius ( m)	2	3	3	3	3
	Dimension for central foundation( m)	-	0.5*0.5*0.8		0.6*0.6*0.8	
	Dimension for side foundation( m)	-	0.4*0.4*0.6		0.5*0.5*0.7	

- Note: No concrete foundation is required for 200W WTGS. It will fixed by the iron spikes.



Model	Code No. in Pic.1	2KW Guy cable tower	3KW Guy cable tower	5KW Guy cable tower	10KW Guy cable tower	20KW Guy cable tower
Total height( m)		9	9	12	12	18
Section No.		3	2	3	3	3
Diameter (mm)		140	273	273	325	377
Thickness (mm)		3.5	6	6	6	8
Weight( kg)		107.5	360.5	480.6	574.2	1328.4
Upper flange (connecti ng generator )	C1( mm)	150	260	260	310	500
	C2( mm)	120	200	200	200	460
	C3( mm)	89	155	155	155	310
	T1( mm)	M12	M16	M16	M16	M20
	N1	6	12	12	12	16
Foundatio n	Radius ( m)	4	4	6	6	8
	Dimension for central foundation( m)	0.6*0.6*0.8	0.9*0.9*1.2			1.0*1.0*1.2
	Dimension for side foundation( m)	0.6*0.6*0.7	0.8*0.8*0.9			0.8*0.8*1.0

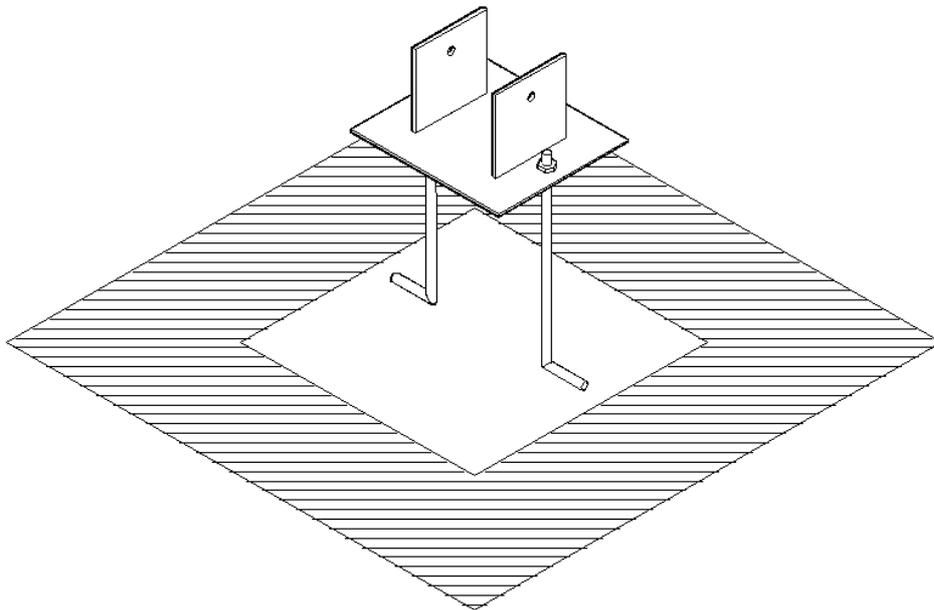


Pic. 1

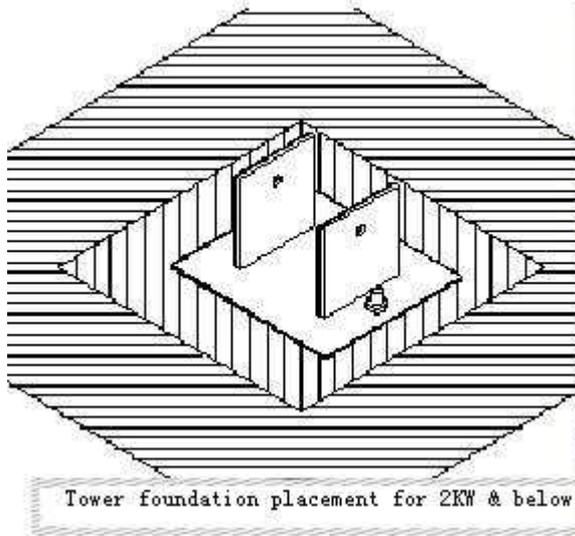


## 2. Ground cage layout & foundation placement

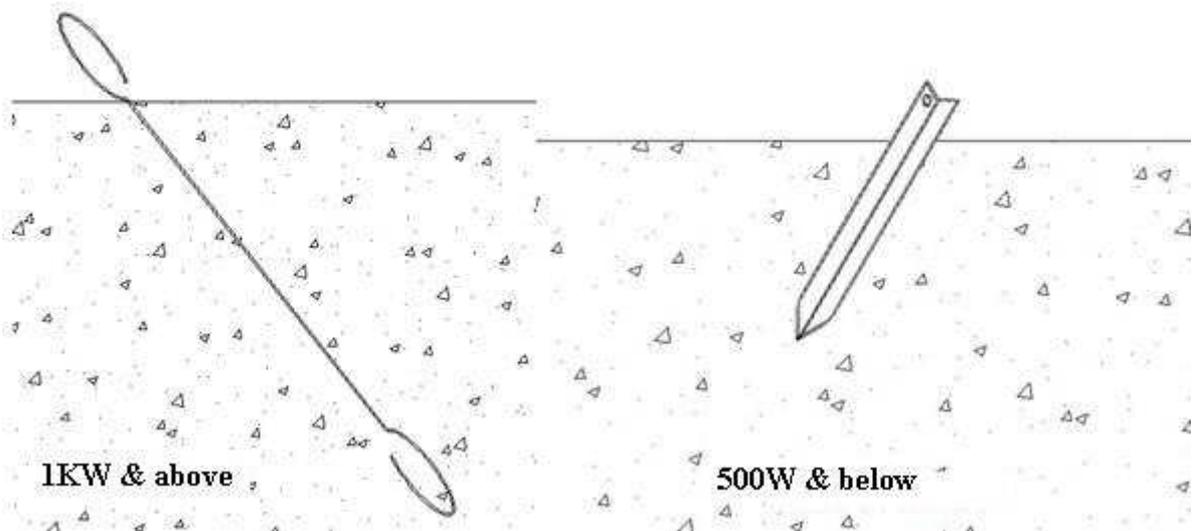
Dig the hole for foundation as per the tower. Put the ground cages into the central foundation and make sure that the ground cages and the bottom boards are put together. Please refer to the following diagram. As for the tower for 2KW and below, the tie-line of axis pin hole on the tower should be matched with the two side foundations; as for the tower for 3KW and above, the tower base will enable the direction with three threaded holes to face the front foundation.



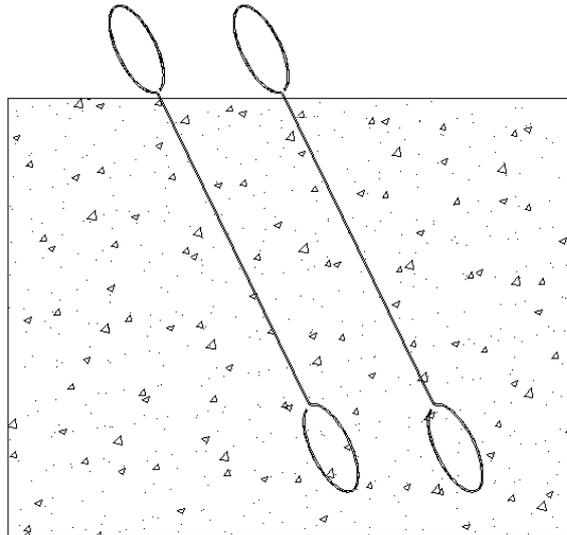
Concrete the foundation with C25 concrete when the ground cages and foundation are placed well. Please refer to the following diagram.



Position the side ground cages into the side foundation and check the distance between the ring hook and foundation center. When all the ground cages are basically in parallel, concrete can be proceeded. Please refer to the following diagram when placing.



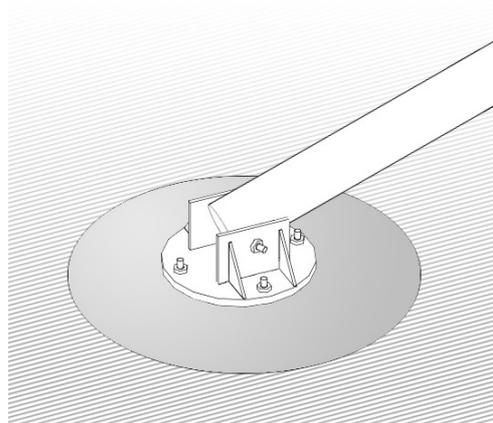
As for the tower requiring double cables, namely for 2KW, 5KW and 10KW, the placement of side ground cages will be viewed as the following diagram.



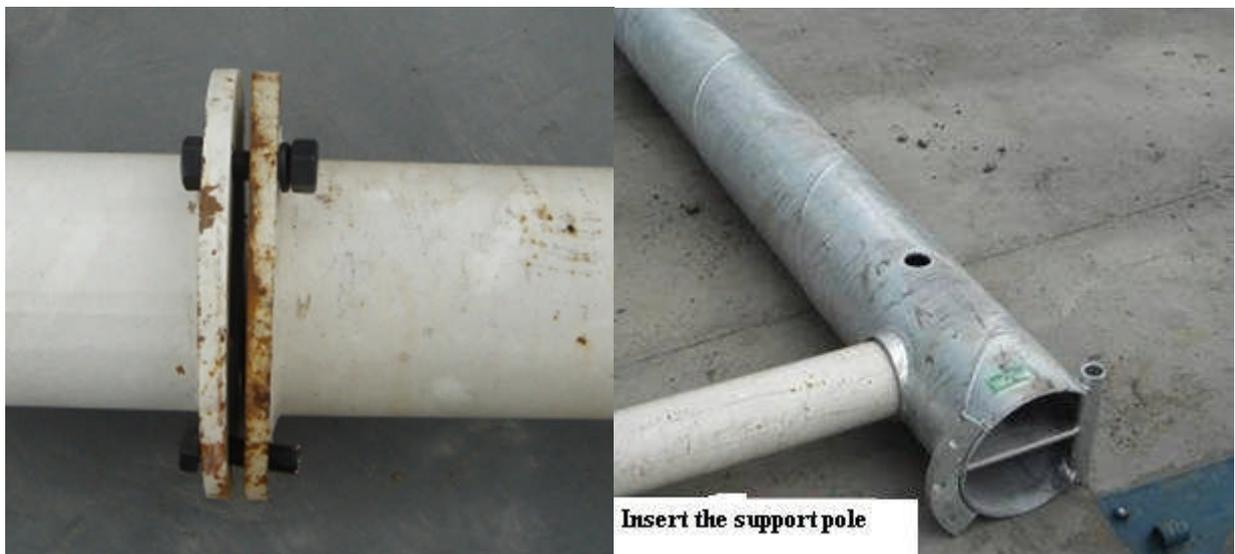
The heights of the ground cages and tower foundation should be consistent, so that the balance of pull force among the steel cable when fixing and the adjustment can be proceeded easily. Otherwise, when erecting the tower, the pull force for fixing steel cable might be too tight or too loose, which will cause the tower bent-down or downfall.

### 3. Tower assembly

1. 【2KW and 2KW below】 Please put the bottom section of the tower into the tower base, and then insert the pin axis into the base and screw the pin axis. Please refer to the following diagram.



- 【3KW to 10KW】 Please connect the two support poles and insert them into the holes on the bottom section of the tower. Please refer to the following pictures.



- Please connect four support steel cables on the top of the support pole, and then connect the two steel cable for side ground cages by U-turnbuckle to the side cages. Please refer to the following pictures.



Please connect the hand pulling block (not supplied by us) with one of the steel cable of the corresponding ground cages. Please refer to the following diagram.



Pull the support pole and fix the steel cable on both ends on the side ground cages. Please refer to the following pictures.



Match together the pin axis' hole on the bottom tower and the pin axis' hole on the tower base. Grease the pin axis and then join the pin axis. Please refer to the following pictures.



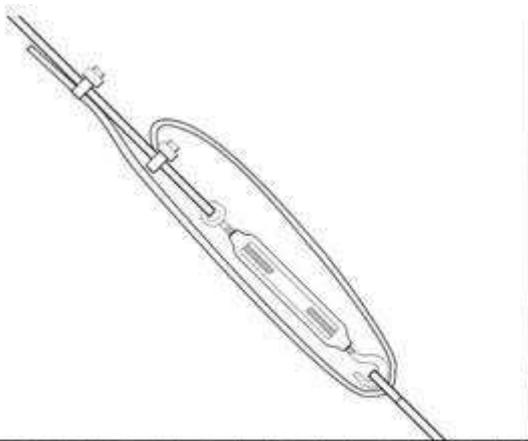
2. Connect each section of the tower by bolts step by step. Please refer to the following picture.



3. Connect the steel cables after all the tower sections are connected successfully, please refer to the following picture. To be much safer, please circle the steel cable on the tower before tightening the steel cables by clamps. Each steel cable will be fixed by two clamps and there will be 10 to 20cm length on the end of the steel cable.



4. Except for positioning the steel cable of the front ground cage, the ends of all the rest steel cables should be connect to the relevant ground cages. There is no need to tight them deadly. To tight them tightly after the adjustment of the steel cable when the installation is finished. Please refer to the following picture.

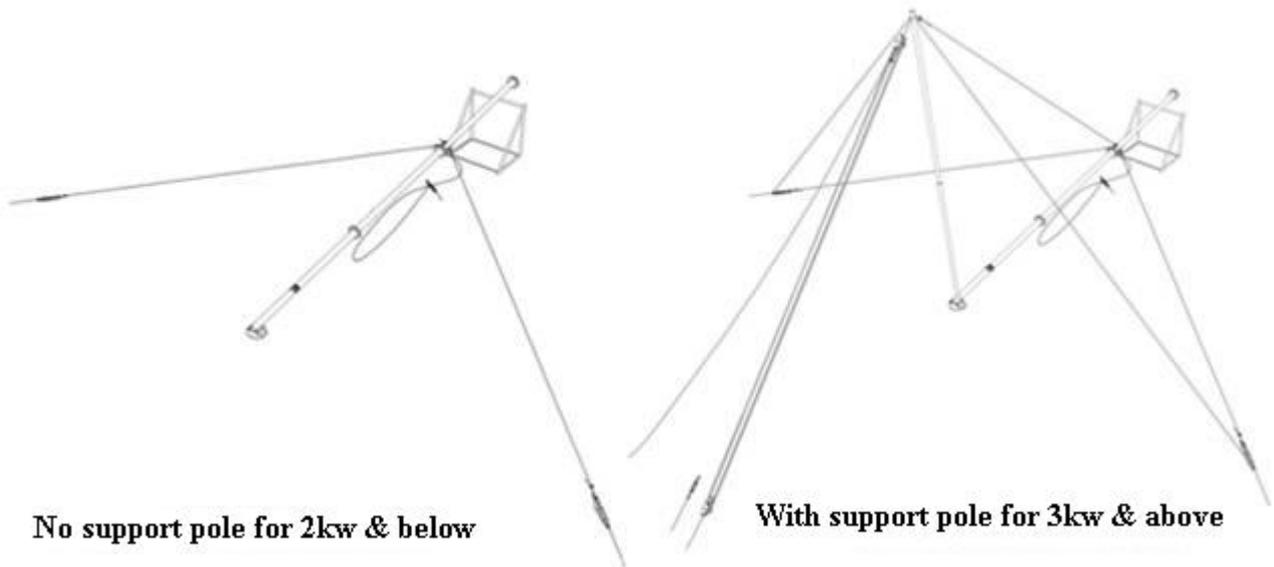


**Rigging screw for 2kw & below**

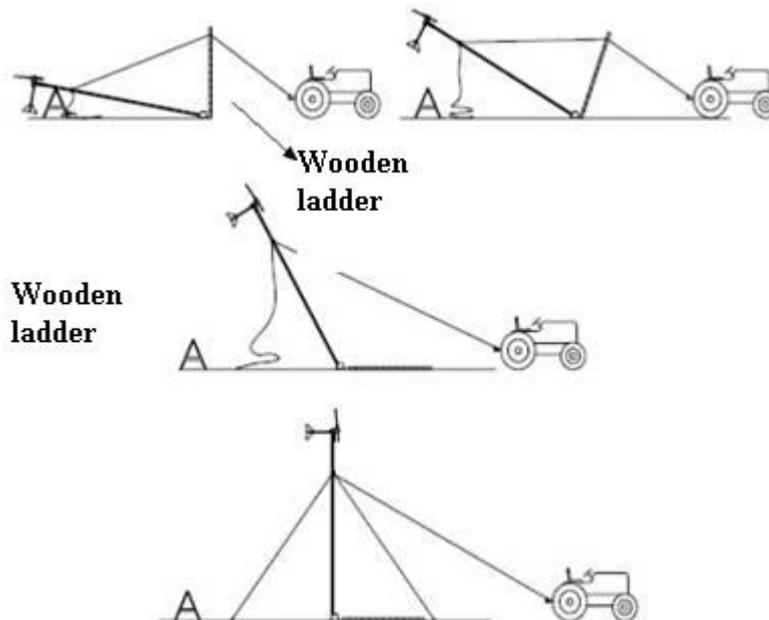


**U-Rigging screw for 3kw & above**

5. Raise the tower and position it on a wooden stand with the height 1 to 1.5m. Please refer to the following picture.



6. WTGS installation. Please refer to the users' manual for WTGS in detailed.
7. Erect the tower after the assembly of the WTG. Tractor, hauling engine or crane can be applied to finish this procedure. A support wooden ladder should be available when erecting tower of 2KW and below by tractor or hauling engine. Please refer to the following pictures. Special attention should be paid to the steel cables when erecting the tower to avoid any unbalance.



8. 【3KW & 3KW above】 Screw the three holes of the tower bottom flange and fix them onto the



tower base.

9. Adjust the lengths of the steel cables on four ends, and tight them deadly by clamp. It is better to have the radian in terms of the degree of tightness.
10. 【For 3KW and above WTGS】 Discharge the support pole and loosen the supporting steel wires, and then the installation has been finished successfully.



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#### 4. Tower lay-down

Choose a windless day to lay down the tower and prepare for a wooden stand (the same as the installation process)

1. Disconnect electric connection and make the wind turbine generator stop working.  
Please refer to the users' manual for WTGS in details.
2. 【Supposed that the crane is employed】 Tie the brace to the wind turbine generator body by professional crane personnel, loosen the connection between the tail edge and steel cable, and then position the tower on the wooden stand slowly with an angle.
3. 【Supposed that the tractor or the hauling engine is applied】 Unfasten the steel cable connection of the front foundation, and then follow the opposite procedures of assembling the tower to connect the steel cable with the tractor or hauling engine and lay down the tower slowly onto the wooden stand.



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## 5.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. Please check the wires after the storm. If the wires are loose, please adjust them in time.
3. To avoid from any unpredictable loss, we suggest laying down the tower before the coming of storm of any adverse weather.

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