

Artists impression not to scale.



# WINCH-UP CYCLONIC TELETOWERS

Telescopic, triangular, lattice section, guyed towers heights 13, 17, 24 & 30m.

## Cyclonic winch-up teletowers

A range of telescoping, triangular, lattice section guyed towers available in four standard heights.

Designed to comply with Australian design codes.

Precision built from high quality steel. All towers are hot dip galvanised after fabrication to provide corrosion resistance for all surfaces.

Ease of installation provides labour economies.

A range of optional accessories includes mast base insulators.

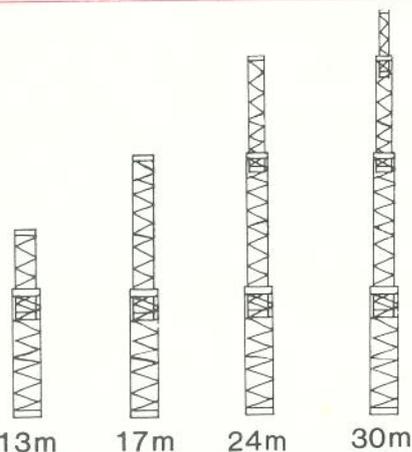
Positive locking of sections by bolts passed through locking plates in each section.

Safety ratchet-locked winch which may be removed after installation to prevent unauthorised use of tower. Climbing rungs fitted to all bottom sections.

Optional rotating device allows rotation of top mast section by cable operation from ground level.

### APPLICATIONS

Television antenna, low profile amateur beam antennas and for R.F. radiating towers, when used with optional insulating accessories.



The design features of Hills winch-up teletowers have been specifically evolved to cope with extreme conditions in areas which experience cyclonic wind conditions.

For the purpose of design requirements, the area where tropical cyclones are liable to occur shall be taken to be a strip bounded by all the coastline north of latitude 27°S and extending inland for a distance of 50km from the coastline (see attached diagram).

Islands off the coastline and north of latitude 27°S are included in the cyclone area.

In areas where tropical cyclones are liable to occur, the adoption of the wind velocity for a 50 year return period would lead to risk of failure, at overload conditions due to wind, which would be considerably greater than for the other areas of Australia. In order that the risk

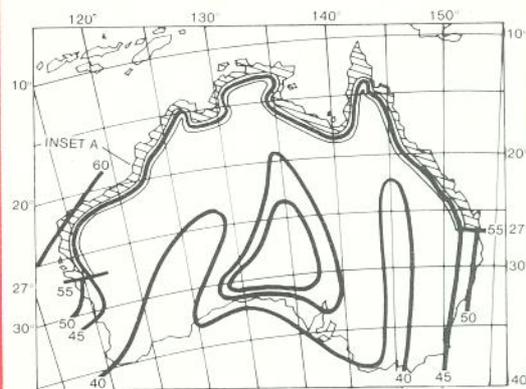


Typical  
2 section  
tower

of failure comparable with that for the remainder of the continent should be maintained under cyclone wind loading, an increase in the design wind velocity has been incorporated into the configuration of Hills Cyclonic winch up teletowers to comply with the requirements of AS1170/1981 category 1 areas.

However, the occurrence of a tornado or tornadic squall is not restricted to the area north of 27°S. They are possible in virtually any part of Australia.

With this in mind, we have available full data for your consideration, in confidence that we can meet your requirements.



## Standards statement

This is to certify that the guyed towers described in this brochure have been designed in accordance with the latest Australian Standards.

As 1170 Part II 1981  
S.A.A. Loading Code - Wind Loads.

As 1250 1981  
S.A.A. Steel Structures Code.

As 1480 1974  
S.A.A. Concrete Structures Codes.

As 1538 1974  
S.A.A. Cold Formed Steel Structures Code.

For use under the conditions described in this specification.

For design conditions other than those used herein, additional calculations are required.

## Design Specifications

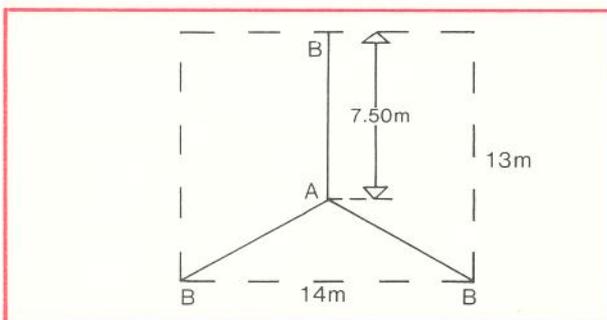
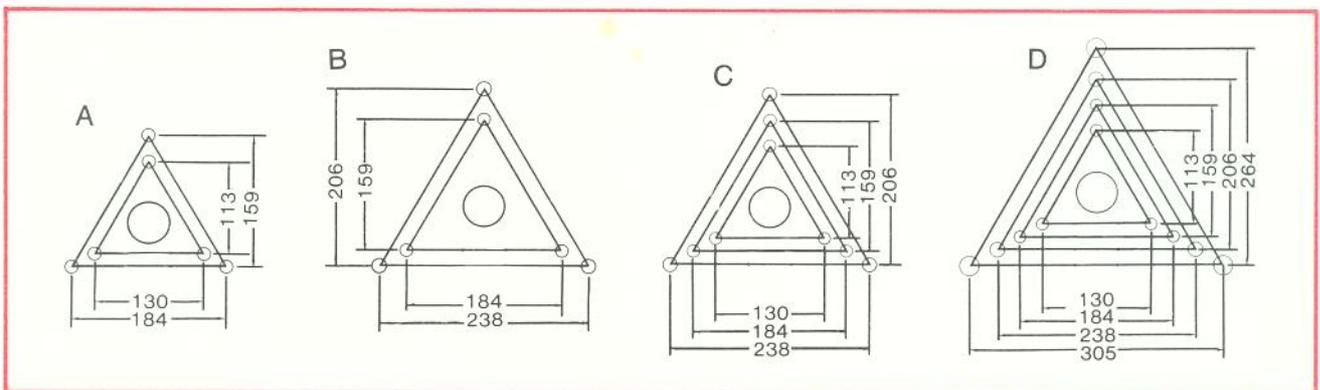
Hills teletowers are designed in rigid compliance with the current S.A.A. codes for cyclonic conditions. Designs, drawings and computations are available for submission to local councils and shire bodies where permits for erection must be obtained.

## Telescopic winch up towers

TOWER HEIGHT	SECT	PLAN	DISTANCE BASE TO GUY ANCHOR	AREA REQUIRED TO ENCLOSE GUY ANCHORS		MINIMUM SIZE-FOOTINGS		
						BASE CUBE	ANCHOR CUBE (3)	CONCRETE VOLUME
(M)			(M)	(M)	(Sq.M)	(M)	(M)	Cu.M
13	2	A	6.5	13 x 11	143	0.28	0.92	2.4
17	2	B	7.5	14 x 13	182	0.28	0.96	2.7
24	3	C	12.0	23 x 19	437	0.31	0.96	2.7
30	4	D	15.0	27 x 24	648	0.37	1.00	3.1

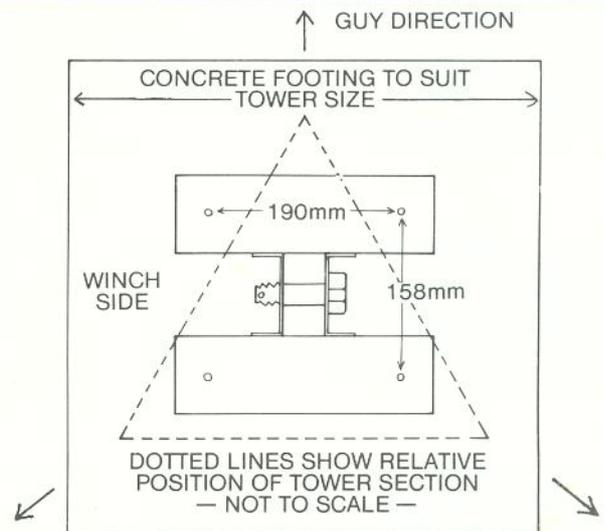
NOTE: All towers are supplied with a top mast 3 metres in length, and 51 mm diameter, 1.5 metres of which is available for antenna mounting.

## Plan diagrams



## Area required to enclose guy anchors

A. Base of 17 metre tower.  
B. Guy anchor points at specified distance from mast base. Broken line indicates minimum area required to enclose guys.



## Material specifications

Relationship of tower base footing, base, tower and winch.

TOWER SECTION	13METRE		17METRE		24METRE		30METRE	
TUBULAR CHORDS	OUTSIDE DIAM.	WALL THICKNESS						
BASE SECTION	16mm	1.6mm	19mm	1.6mm	19mm	1.6mm	25.4mm	1.6mm
2ND SECTION	16mm	2.0mm	16mm	1.6mm	16mm	1.6mm	19mm	1.6mm
3RD SECTION					16mm	2.0mm	16mm	1.6mm
4TH SECTION							16mm	2.0mm
BRACINGS								
BASE SECTION	8mm		8mm		8mm		10mm	
2ND SECTION	6.3mm		8mm		8mm		8mm	
3RD SECTION					6.3mm		8mm	
4TH SECTION							6.3mm	

## Conforms to latest Australian standards

Loading code, concrete structures code, cold formed steel structures for use in Terrain Category 1 with head loading less than 15kg weight and 0.4sq. metres, acting 0.75 metres above the uppermost guying point.

## Sectional Locking, guy fixing

As each section is winched to correct level, it is locked in position with M12 bolts fitted through steel plates integrated with the inner and outer sections on all three sides of the tower. The hazard of snapping guy rings is eliminated in favour of fixing around each vertical member for a stronger, safer attachment.

## Wind-up safety winch

The type of safety winch used is recognised as giving the easy convenient and safe means of elevation necessary in tower systems. Continuous locking by ratchet prevents back lash - reducing the possibility of injury should the operator lose his grip while elevating sections.

## Foot mounting

The foot mount is designed to allow pivoting of mast from horizontal position for ease of erection. The base mount is designed to support the full downward thrust of the combined forces on the tower.

## Construction

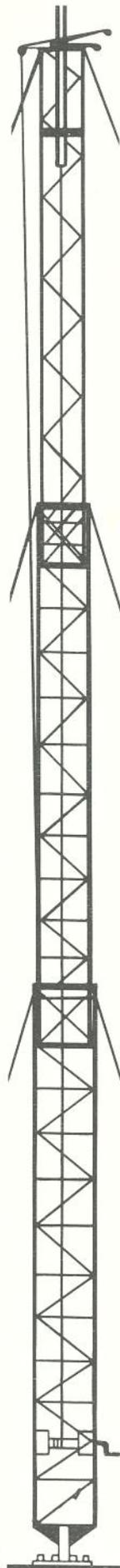
Triangular lattice steel sections. Heavy hot dipped galvanised after construction, Telescopes down to convenient length for transportation (6 to 7 metres according to tower type).

## Ease of installation

The convenient peg base and built-in winch incorporated in Hills teletower design allows you to work to preselected base and guy points for fast and easy installations. Complete instruction sequence step by step are included with every tower to help you spend a minimum of time on the job. A full range of hardware, rigging kits and accessories is available to complete an installation.

## Optional extra

Rotation device comprises wide-angle quadrant fixed to rotating tubular section, allowing rotation through more than 120 degrees, operated by control wires at ground level.



Typical 3 section tower

## Installation summary

1. With tower horizontal, fit base plate, winch and guy wires.
2. Extend and lock top mast section and fit antenna facing the correct direction.
3. Raise to vertical and tie-off guys for bottom section.
4. Winch up other sections ensuring that the top section is elevated first, followed by remaining sections.
5. When installation is complete, ensure that each section is vertical and straight and that guy pretensions are correct.

Full installation instructions are provided with each tower.

## Note

Ensure that local government approval is granted before installing any mast or tower.

Specifications quoted in this brochure are subject to change without notice.

In line with company policy of constantly improving and innovating products, products specification may be changed without notice.

## Shipping details

HEIGHT (M)	WEIGHT (KG)	CUBIC (Cu.M.)
13	64	0.28
17	91	0.41
24	131	0.57
30	179	0.76

## Addresses

### **SOUTH AUSTRALIA:**

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### **NEW SOUTH WALES:**

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### **QUEENSLAND:**

Hills Industries Ltd. - Electronics Division, Ivedon Street, Banyo, QLD. 4014. Ph: 267 5022 Telex: AA40166.

### **WESTERN AUSTRALIA:**

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### **TASMANIA:**

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