



# Matchmaster

## TV Reception Systems

*For the Best*

### 11MM-MT20, 30 & 50 INSTRUCTION MANUAL

Warning: Telomast installation should not be undertaken by inexperienced persons. It is recommended that the mast be installed by a suitably qualified tradesperson. Safety precautions should be observed, including the wearing of a builder's hardhat and safety boots. Beware of overhead electric cables. Local government authorities may require the submission of an application for building approval and/or an Occupational Health & Safety Plan before installation can commence.

1. Select the site. For installation on a level surface, the staying diagram (fig 1) indicates the space required. For installation on pitched roofs, special guy lengths and loading conditions will apply. The base and guy anchor points must be capable of supporting the design loads from the mast. The base and guy anchor loads are specified in table 2 for standard installations. Foot mounts are available for sloping and flat surfaces as well as roof peaks. Foot mount options include our 11MM-TRM-MD for tiled roof ridges or flat surfaces, 11MM-IRM for tin roof ridges and 11MM-LARM for flat or sloped surfaces.

2. Securely install the foot mount or base plate to the mast base fixing point. Attach turnbuckles to all guy anchor points. Note: to avoid possible over-stressing of the mast structure, it is important that the guy anchors be located no closer to the mast base than specified in figure 1.

3. Remove shipping pin (fig 2) from bottom of mast and the small screw from the top lock rings. Slide the top guy support and the top guy plate off the mast and replace them in opposite order. Screw the lock screws (from the accessory bag) into the lock rings, making sure that the lock screw just protrudes into the top hole in each mast section, except the top section which will have its lock ring tightened 300mm below antenna position (fig 3). Install thimbles in the guy plates and attach the guy wires with wire rope grips. Three wire rope grips should be used at each end of the guy wire. Fit the bridge of the wire rope grip to the loaded part of the rope (fig 4).

4. Stand mast in foot mount or base plate. Attach bottom set of guy wires to turnbuckles on anchors. Tighten and check for vertical with spirit level (fig 5).

5. Using an elevated work platform, attach antenna and feeder cable and line up the guy plates so that all fittings are facing in the same direction.

6. Extend top section of mast until stop is reached and tighten lock screw to hold it there. Extend next section of mast 80-90mm until the holes for the retaining pins are visible, clamp with lock screw, and insert the two retaining pins. Release lock screw holding the top section and allow it to drop down onto the retaining pins, then turn it until the notches engage on the pins (fig 6). Retighten the lock screw. Continue as above until mast is fully extended.

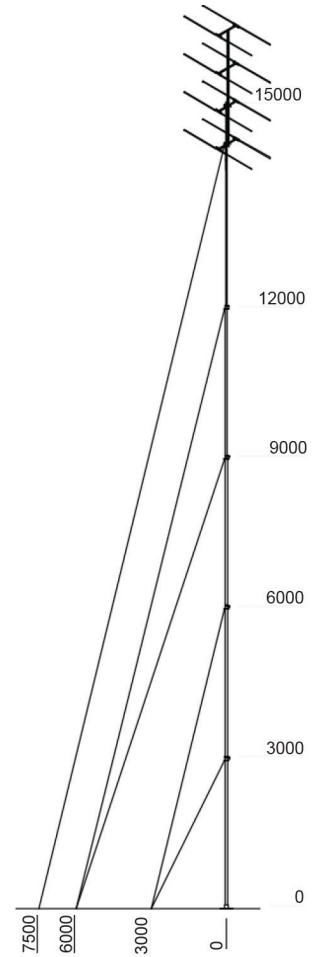


Fig 1 15m Telomast Arrangement

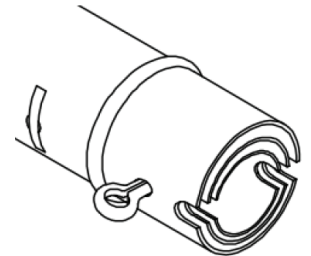


Fig 2 Shipping Pin

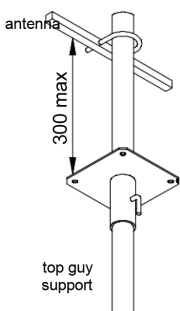


Fig 3 Antenna Position

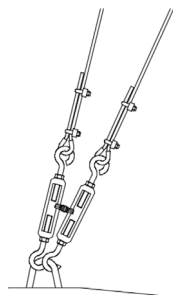


Fig 4 Wired Turnbuckles

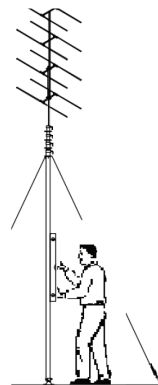


Fig 5 Check Vertical

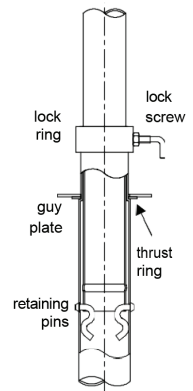


Fig 6 Joint Detail

Attach the guy wires at the correct anchor points, but do not tighten fully. Turn the mast until antenna gives best results, and then tighten all guy wires evenly, ensuring that the mast remains straight and vertical. Guy pretension is to be 10% of the specified guy minimum breaking force. For the recommended 7/1.25 G380 guying strand, pretension is to be 32 kg. Pretension may be checked by attaching the lifting hook of a suitable spring balance to the lower guy thimble and applying sufficient force to pull the lower guy thimble out of contact with the lower anchor. For added security, wire turnbuckles to each other (fig 4).

### Telomast Maximum Design Loads

Matchmaster has been designed to conform to the requirements of the relevant Australian Standards:

- AS 1170.1 1989 SAA Loading Code Part 1: Dead and live loads and load combinations
- AS 1170.2-1989 SAA Loading Code Part 2: Wind loads
- AS 4055-1992 Wind loads for housing
- AS 4100-1990 Steel structures
- AS/NZ 4600-1996 Cold-formed steel structures

Rationalised gust wind speeds have been used to simplify the determination of the maximum allowable head loads (antenna projected wind area and weight).

### Maximum Permissible Head Loading for wind classifications up to W41: Maximum antenna $C_d * Area \dagger 0.30 \text{ m}^2$ Maximum antenna weight 15 kg

Table 1. Typical Antenna Head Loadings:

Hills Part#	Antenna	Projected Area	$C_d * Area \dagger$	Weight
FB601308	CA16 VHF Antenna	0.23 m <sup>2</sup>	0.28 m <sup>2</sup>	6.2 kg
FB607083	TMX34 UHF Antenna	0.08 m <sup>2</sup>	0.10 m <sup>2</sup>	1.8 kg
FB608519	OMX400plus VHF/UHF Antenna	0.20 m <sup>2</sup>	0.24 m <sup>2</sup>	6.5 kg
FB606962	REF 25 Microwave Reflector	0.11 m <sup>2</sup>	0.14 m <sup>2</sup>	3.7 kg

$\dagger C_d * Area$  is the sum of the projected areas of each of the components of the antenna multiplied by a drag force coefficient in accordance with AS1170.2

Table 2. Worst case ultimate limit state loads at mast base and guy anchor points resulting from maximum permissible head loading:

Load Direction	At 3m Guy Anchor	At 6m Guy Anchor	At 7.5m Guy Anchor	At Mast Base
FH	1.38 kN	1.08 kN	1.50 kN	0.15 kN
FV	1.92 kN	1.88 kN	2.73 kN	6.24 kN

It is the responsibility of the installer to ensure that any structure to which the Telomast is fixed, as well as the fixing devices, are capable of supporting the design loads. The maximum ultimate limit state loads at the mast base and guy anchor points for the worst case loading situation are shown in the table above. The loadings are applicable to three and four way guying arrangements.

