

Technical Section



Winches

Altron's standard winch is the Fulton hand winch. We have used it since 1985 and have supplied many thousands of winches into the marketplace. In the U.K. and E.U. there are no specific standards for this type of hand winch. The winch incorporates numerous safety features.

1. Automatic braking mechanism

This takes the form of a friction pad clutch. When the winch winds cable in (raises tower/pole), a conventional ratchet is used. When it winds rope out (lowers tower/pole), the primary shaft (the one the handle is attached to) opens itself up (unscrews) and traps a fibre disc (friction pad). The greater the load, the harder the friction pad is gripped. If the handle is released, the load will stay static - the only way to lower the load is to wind against the friction pad.

2. Double ratchet spring clip

On winches where there is a ratchet, this is operated under the tension of a spring (the ratchet is pushed into the gear cog by the load of the spring). If the spring should fail, the ratchet will not engage into the cog and the winch load will freefall. A modification Altron had Fulton make to the winch in 1989, was to put a second back-up spring on the winch (1000lb and 1500lb versions). This has now been increased to 2. no. ratchets on the 1500lb winch. This reduces the odds of a possible failure to virtually zero.

3. Winch drum gear guard

On 1000lb and 1500lb winches, a guard is fitted as standard and is soon to be introduced on the 2500lb winch. This stops the possibility of anything getting trapped in the gears of the winch during the winding operation such as loose clothing, etc. and also stops the possibility of the drum gears getting damaged (chipped) if the winch, for any reason, is dropped.

4. Large diameter drum core - Reduced flattening and kinking of winch cable, extending the usable life of the cable.

5. Gearing ratio - The gearing ratio used on all Fulton winches stops the winch being overloaded by manual winding of the winch handle.

General use and Safety Precautions for Altron Winch Kits

Altron winch kits, incorporating the Fulton winch range, are designed to be as simple and safe as possible to use but, as with all mechanical lifting equipment, require the correct operating method to be employed and a regular maintenance programme. Prior to the raising or lowering of any Altron tower/pole, the operator should be familiar with the possible risks involved in the operation and necessary avoidance and safety precautions. The operator should have thoroughly read the operating instructions supplied, covering the operation of the specific product and be competent in the raising and lowering method. Instructions are always available by contacting Altron and regular training courses are run at our offices.

Under LOLER (The Lifting Operations and Lifting Equipment Regulations 1998), it is the owner's responsibility to carry out an annual inspection of the winch to ensure that it is kept in a serviceable condition. Details of the elements to be inspected can be obtained from Altron. Inspection should be carried out by a competent person and a local lifting gear company may need to be employed to carry out this inspection - on an annual basis.

Please contact us if you require any further information regarding Altron winch kits and their uses.

All products in this brochure are manufactured to the following standards.

Design

POLES

Windloading and structural design in accordance with ILE TR7 (the Institute of Lighting Engineers' Technical Report Number 7 high masts for lighting and CCTV 2000 edition). Design analysis is carried out using a specialist software package in accordance with ILE TR7, BS6399 and BS81000. We can also produce designs in accordance with EN40/BS5649 and BD94/07 (Highways structures design : Design of minor structures) where necessary.

TOWERS

Windloading and structural design is carried out using our specialist software package in accordance with BS8100 PT1, 'Code of practice for loading' and BS8100 PT3, 'Code of practice for strength assessment of members of lattice towers and masts', and fully complies with May 2005 amendment for increased windloading upon structures up to 10 metres above ground level.

FOUNDATIONS

As standard in accordance with BS8004 for a safety factor better than 2:1. We can design to BD94/07 and BSEN40 where required, for planted/direct burial foundations.

Material and Finishing

- Structural steel hollow sections EN10219 – EN10025:1993
- Steel flat angles and structural sections EN10025 , EN10111 , EN 10130
- Stainless steel sections Grade 304 ,316
- Aluminium section Grade 6082
- Foundation bolts Grade 4.6 spun galvanised BS4190, BS3692, DIN931, 934, 601
- Fixings: stainless steel Grade A2, galvanised Grade 4.6 – Grade 8.8 – BS4190, BS3692
DIN 931, 934, 601
- Hot dipped galvanising after fabrication to ISO 1461
- Painting in BS and RAL colours in accordance with BS4800

Manufacturing

- Welding Procedures conform with BSEN 1011: 1998, BSEN 287
- Testing procedures for welders where applicable to BSEN 15614

Winches

- Wire ropes to BS183/5281
- Winches conform with American ASAE standard S361.IT.

Design Services

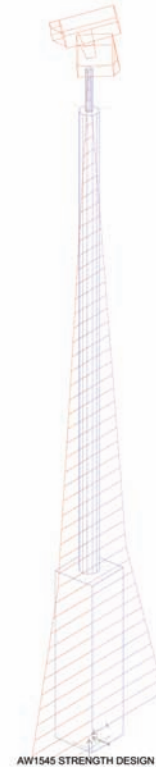
In-house designs of columns, poles and towers are carried out using specialist software taking account of all the relevant aspects of designing for CCTV camera mounting. Due to the nature of the software, we now can provide the following services in addition to our existing technical support:

- Deflection details and calculations for all columns, poles and towers in any loading condition.
- Structural calculations for any of our products in any windloading condition with any payload requirement taken from our extensive library of pre-assembled products and load conditions.
- Site specific foundation sizes on a 24h – 48h turn-around. These take into account actual equipment loading and windloading details for individual specific sites allowing foundations to be designed to the minimum required size, thus providing the possibility of significant cost savings.

Altron Communications Equipment Ltd
Job: AW1545-6
CIRCULAR-POLE
WARNING: HOLES IN TUBES CONSIDERABLY REDUCE THEIR STRENGTH

Load Cases:
— 500 C DL + WL, 0 DEG FOR STRENGTH
— 510 C DL + WL, 225 DEG FOR STRENGTH
— 520 C DL + WL, 90 DEG FOR STRENGTH
— 530 C DL + WL, 45 DEG FOR STRENGTH

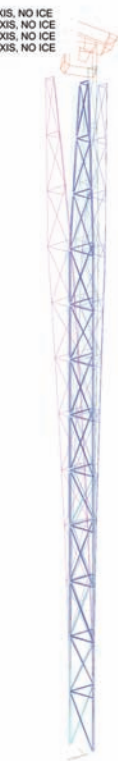
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Altron Communications Equipment Ltd
Job: ACT 3 FB CCTV TOWER
CAMERA TOWER DESIGN FILE

Load Cases:
— 3560 C DEFLECTION: WIND AT 45 TO X AXIS, NO ICE
— 3640 C DEFLECTION: WIND AT 135 TO X AXIS, NO ICE
— 3720 C DEFLECTION: WIND AT 225 TO X AXIS, NO ICE
— 3800 C DEFLECTION: WIND AT 315 TO X AXIS, NO ICE

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ACT 3 FB DEFLECTION DIAGRAM

Altron Communications Equipment Ltd
Job: ACT 3 FB CCTV TOWER
CAMERA TOWER DESIGN FILE

Design Ratios - % of Code Capacity:
— <= 50
— <= 95
— <= 100
— <= 105
— <= 110
— > 110

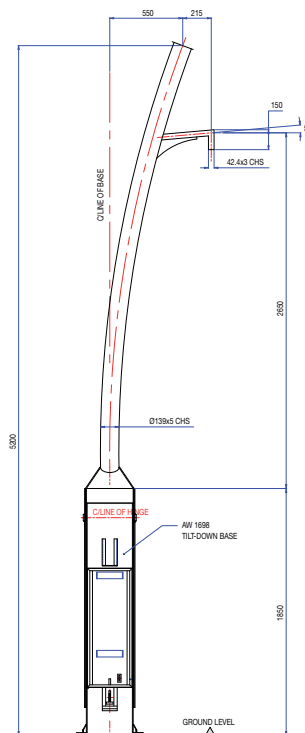
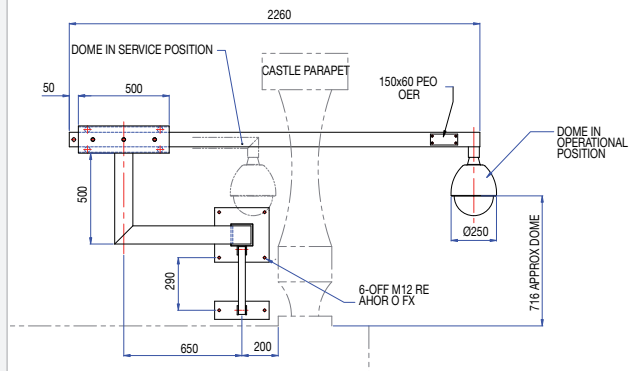
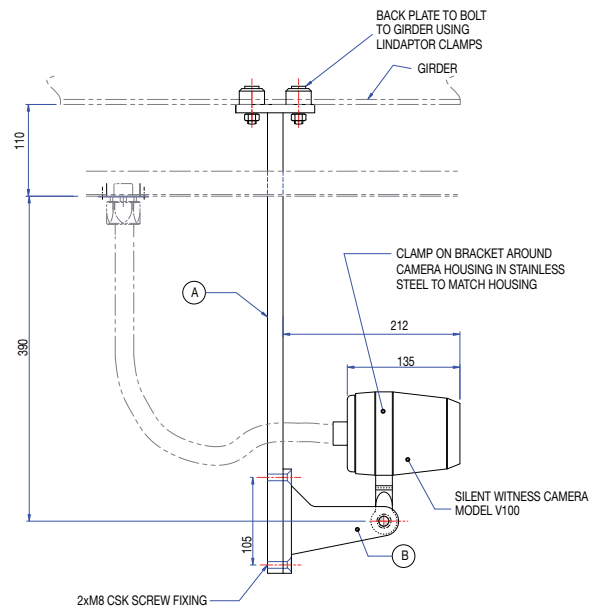
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ACT 3 FB DESIGN RATIOS

Specials Design Services

Altron has many years experience in designing special/bespoke one-off brackets and poles – we have designed and produced many thousands of special application brackets – to the extent now that most special modifications can be built up from common design details and built from common stocked components. Where we do have complete bespoke one-off designs, we are able to produce detailed design drawings and calculations to satisfy your client or engineer.



- /LA Lockable Access.** Lockable access door to ACC fixed base units or ACT units
- /TS Tamper Switch.** Tamper switch to door frame for connection of customers connections to monitor unauthorised opening of compartment
- /APL Altron Padlock.** Padlock for tilting products to ensure unauthorised lowering is not carried out.
- /DD Double Door.** Additional, second door. AWI697,AWI545 having doors back to back. AWI502 having second door above existing.
- /A4P Altron 4-point Locks.** 4.No.Altron locks in 4-point arrangement. Suitable for all cabinet based pole/column doors. (For lock details see Urban/Highway Pole features).
- /FL Flush locks.** Altron and High Security locks flushed level with door surface. (For lock details see Urban/Highway Pole features).
- /HS High Security Lock.** High Security lock in addition to standard locking.
- /AC Access Cover Plate and Cable Restraining Bar.** Removable access cover at pole top with horizontal bar for camera cables to be affixed to prevent cable strain and prolong cable life.
- /B Decorative Banding.** Decorative banding to pole which can be highlighted by painting.
- /SN Screw in Swan Neck Adaptor.** Pole top fitted with screw in thread to accept threaded Swan Neck.
- /DD/W Double door with washer Conduits.** Cabinet base pole fitted with double door and galvanised steel conduit from pole top to cabinet ensuring in event of washer tube burst water disperses to low level
- /V Venting.** Venting to cabinets pole base to prevent condensation (see Urban/Highway Pole features).
- /ENAP Enlarged Aperture.** Enlarged door aperture on AWI502
- /W Washer Conduit.** Galvanised steel conduit to low level of pole to ensure low level dispersion of water in the event of washer tube failure.
- /FR Fire Resistant Lining.** Lining installed in AWI664 and AWI663 anti-vandal poles to increase fire resistance.
- /DA Drop Down Arm.** For use on AWI545/LTH and AWI502/LTH models.
- /C Capped Top.** To indicate pole with blank plate at top instead of bobbin.
- /F Filter for vents.** Pole will have filter fitted at vent aperture.
- /LS Lighting Spigot.** Length at top of pole/column/tower over which lighting can be fitted.