Customer Name
Address 1
Address 2
Address 3
Post Code

IMPORTANT NOTE

This barrier is fitted with an automatic grease dispenser, it is imperative that this unit is inspected on a monthly base and replaced if required. Manufacturers warranties will be void if this instruction is not adhered to.

Barrier Serial Number:
Issue Date:

OPERATING AND MAINTENANCE MANUAL

MOTIVATION TIGER AUTOMATIC TRAFFIC BARRIER

DESCRIPTION:

The Tiger barrier is designed for heavy-duty industrial usage, capable of accepting arms up to 7m long (without skirts), or 6m long (with skirts). Each unit is designed around a high quality specification with emphasis very much on durability and a high resistance to the effects of the elements. During development, accelerated life cycle tests have exceeded ½ million cycles, without excessive wear upon mechanical components. With regular maintenance, your barrier should provide many years of reliable service.

FUNCTION:

Each barrier is equipped with either a single or three phase drive motor, with belt and pulley reduction to the main drive screw. A drive nut is located on the screw and travels in a linear forward and reversing motion, transmitting leverage to the main drive shaft and barrier arm via rose jointed lever arms. Micro switches operate at open and closed positions and overriding safety is built in by means of a mechanical stop with torque clutch.

CONTROL:

The standard barrier mounted control panel provides open/close impulse control from a remote location. An emergency stop function is also provided. The low voltage DC circuitry is designed to accept peripheral options, such as xenon warning lights with 2-position remote switching facility and power/control for safety reversing photocells. An inbuilt delay ensures instant stop, but with 500ms delay on reversing to reduce strain on the drive mechanism.

EMERGENCY
OPERATION:

An electroplated hand crank may be used for emergency power down operation, when located in the front end of the drive screw. A safety plate must be removed to achieve this and by removing the plate, power is cut to the unit by de-activating an isolating micro switch.

NB: Mains power must always be isolated when working on the barrier with cover removed.

SECURITY:

The drive mechanism is self locking, ensuring that arm operation can only be achieved under power, or by manual operation by persons in authority.

The computer designed arm profile has been tested to withstand 100mph wind loadings at maximum length, but may be crashed by emergency service vehicles without damage to the drive mechanism.

FINISH:

All fabricated frame components are smooth welded, shot blasted and plastic coated. Drive mechanism components are Zinc galvanised and passivated. The cover is a 3-piece polyethylene moulding and the barrier arms are finished in red/white stripes, stove enamelled electrostatic powder coating. All exposed fasteners are nylon capped, including ground anchor bolt heads. Each arm includes two PVC Stop/No Entry targets.

ACCESSORIES:

White PVC folding skirts (6m maximum)
Red xenon target mounted warning beacons
Post mounted safety photocells
Crutch posts
Induction Loop Circuits
Audible Warning Devices
Various control system options

MAINTENANCE SCHEDULE

The following points should be checked on a monthly basis to ensure maximum reliability and performance. In high activity applications (500 cycles per day and over) it is suggested that routine maintenance is carried out at shorter intervals.

1. Check automatic greasing unit - replace if necessary.
2. Check limit switch operation and adjust if required.
3. Check tension of drive belt and if necessary adjust drive motor by repositioning along elongated location slots. Belt tension should be approximately + or - 12mm.
4. Check all bearing, arm and boom carrier fasteners for tension.
5. Check main drive taper pin.
6. Grease rose joint, drive shaft and drive screw bearings with ROCOL MTS 1000 or similar.
7. Grease guide shaft using ROCOL 1000 or similar.
8. Check isolating micro switch operation with multimeter.
9. Check for correct safety reversing function (if applicable)
10. Check xenon beacon operation and power output (if applicable).
11. Check for safety photocell actuation during closing, power output and cell alignment (if applicable).
12. Wipe clean photocell lenses (if applicable).
13. Check skirt for damage etc (if applicable).
14. Check clutch torque.

EVERY 12 MONTHS:

* It is recommended that a suitably qualified Electrician undertake a full electrical and electronic service test in accordance with current Wiring Recommendations (UK only).

*This would be automatically included where equipment is maintained under contract with Motivation (Traffic Control) Ltd.

RECOMMENDED SPARES LIST

1) 1 x Automatic greasing unit.
2) 1 x Tin Castro) LM grease
3) 1 x VEE belt drive.
4) 1 x Special screwdriver for tamper-proof screws.
5) 2 x Micro switches (limit).
6) 1 x Micro switch (isolating).

EXPORT ORDERS ONLY – 3 YEAR ISSUE

1) 10 x Automatic greasing unit.
2) 2-6 above, plus:
3) 1 x Drive motor.
4) 1 x Arm assembly and boom carrier.
5) 2 x Xenon beacons (if applicable)
6) 1 x Skirt assembly (if applicable)
7) 1 x Control panel.
8) 1 x Set photocells and wiring loom (if applicable).

TIGER TRAFFIC BARRIERS ARE BRITISH MADE BY MOTIVATION (TRAFFIC CONTROL) LIMITED.

For further information or advice, contact :-

Motivation (Traffic Control) Limited

Unit 5, Horton Court
Hortonwood 50
Telford, Shropshire TF1 7XZ
Tel: (01952) 670390 Fax- (01952) 670379
Web site - www.motivation-tc.co.uk
Email – info@motivation-tc.co.uk

Tiger Automatic Traffic Barrier

PLEASE READ CAREFULLY BEFORE COMMENCING INSTALLATION OF BARRIER.

INSTALLATION INSTRUCTIONS

1. Unbolt barrier from its transit pallet and remove protective polythene wrapping.

2. Taking note of handing requirement, position barrier onto prepared concrete plinth and at the same time use a draw-wire to pull mains and control cables from protruding conduit, into the barrier pedestal, through the central hole in the pedestal base plate and the drive mechanism bed plate cable hole. (Fig 1.)

3. Drill 4 holes into the plinth to accept 12mm anchor bolts, and bolt barrier securely to its foundation. (Fig 2.)

4. With mains power isolated, connect supply and control cables to main terminal block (see connection drawing DP-1000-54) and fit plastic caps over anchor bolt heads. (Fig 2.)

5. Remove barrier arm from its transit packaging.

6. Remove the 3 x M6 hexagonal fasteners from the arm and pull away 'C' channel section. (Fig 3.)

7. Slide arm onto arm carrier, making sure that under-leg sections align with corresponding section on arm carrier casting. Push fit 'C' channel and secure arm in position using the 3 x M6 bolt sets. Insert locking screw to prevent radial movement. (Fig 3.)

8. Remove upper cover. Insert crank handle and wind barrier arm to its open and closed positions, checking for actuation of limit switches. Limits should trip just before the barrier arm reaches its vertical and horizontal positions.

9. If necessary, adjust limits.

10. Barriers fitted with clutches must be adjusted as follows: see Fig 5

    a) Using the crank handle wind the boom to the 'closed' position, ensure the boom is horizontal. Set the mechanical stop 'C' against the drive arm 'A'.
    b) Raise the boom, with the crank handle, to 'open' position ensure the boom is vertical. Set the mechanical stop 'D' against drive arm 'A'.
    c) Lower the boom to almost the closed position. Then lift up or push down the boom by hand to align drive arm 'A' and clutch arm 'B'. (Straight with no angular deflection).
    d) Adjust both upper and lower limit switches such that the overrun causes approximately 3-4mm deflection in clutch/drive arm. Check this in both open and closed positions.

NOTE! Under no circumstances allow the clutch arm to make contact with the cage.

e) Check clutch torque is set to 18Nm.
f) Run barrier and re-adjust limits/stops if necessary.
g) Tighten both stop lock nuts.

11. Re-fit top cover.

12. Fix Stop/No Entry signs to centre of barrier arm in pre-drilled holes, with rivets supplied. The barrier is now ready for test operation and commissioning.

ACCESSORIES

PVC Folding Underskirt

When included, the skirt is factory assembled and fixed to the barrier arm, and does not therefore require any attention.

Warning Lights

24V AC/DC red xenon warning lights are affixed to Stop/No Entry signs as follows:

a) Fix light unit Stop/No Entry sign, using pre-drilled holes and draw supply cables through central pre-drilled hole. (Fig 6.)
b) Clip cables into clamps on reverse of sign and feed into barrier arm cavity through the rubber grommet. (Fig 6.)
c) Using connectors supplied, run light cables to the pivot end of the arm.
d) Fit standard conduit adaptor into arm 'C' channel pre-tapped hole. (Fig 4)
e) Fit 90° adaptor to pre-drilled hole in barrier cover and secure with locking ring. (Fig 4.)
f) Using draw-wire, pull warning light cables through into barrier enclosure and connect according to drawing DP-1000-43.

NB: Where lights are included, a special push button control is supplied, including a switch, for remote operation of lights. Refer to drawing DP-1000-43 for connection details.

Safety Photocells

The light transmitter will be mounted in the barrier pedestal and will include a crutch post for locating the light receiver unit. Photocells are active during closing cycles, and will reverse the barrier arm to its open position if the beam is obstructed during this cycle.

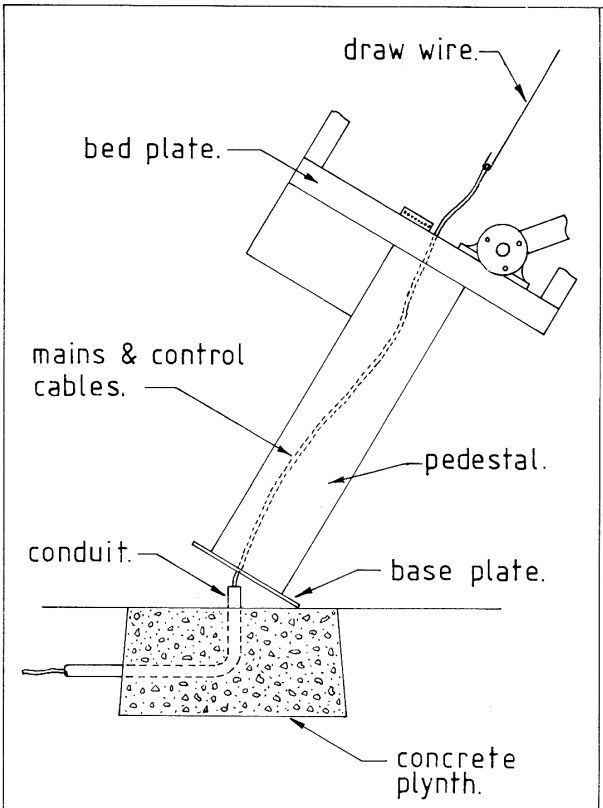


Fig.1.

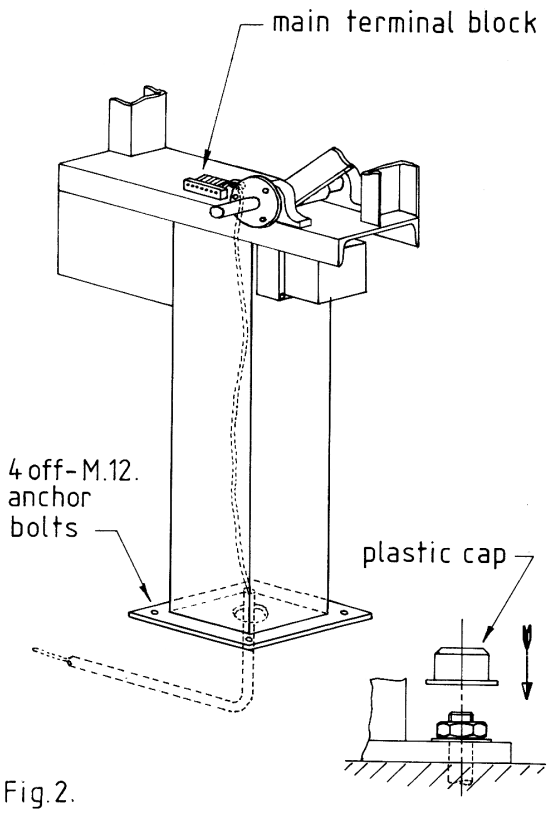


Fig.2.

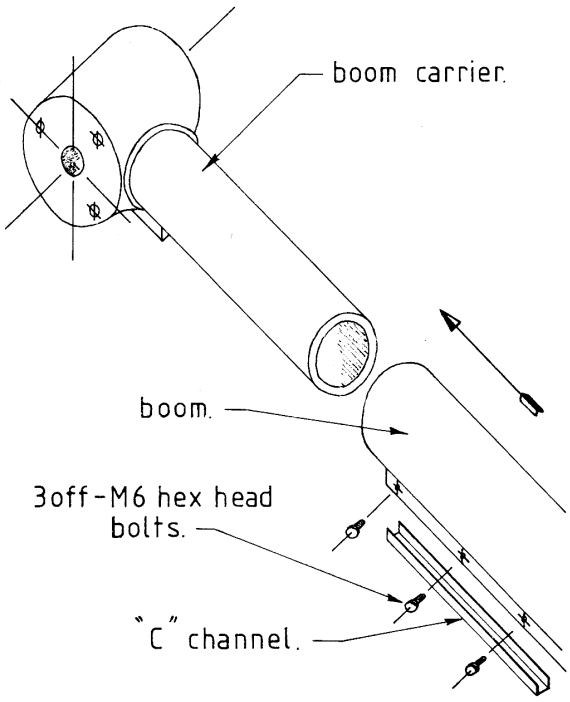


Fig.3.

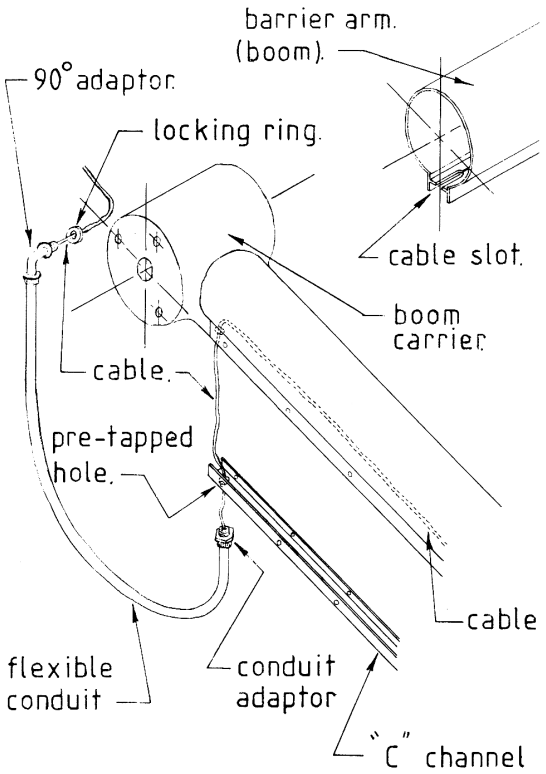
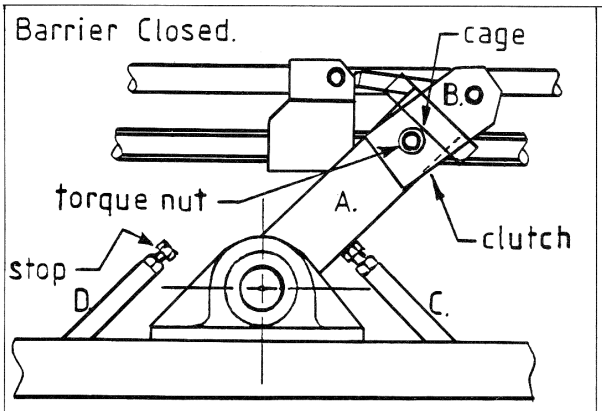


Fig.4.



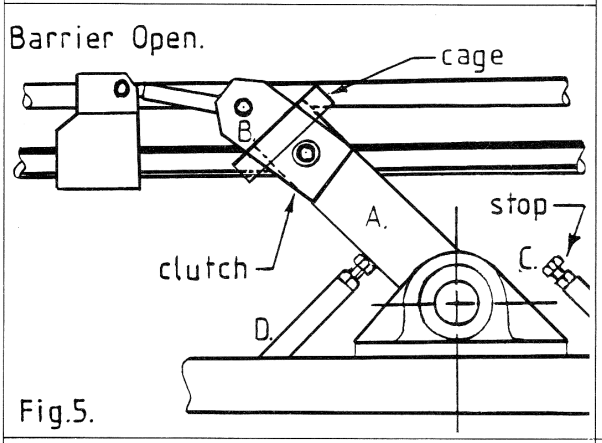


Fig.5.

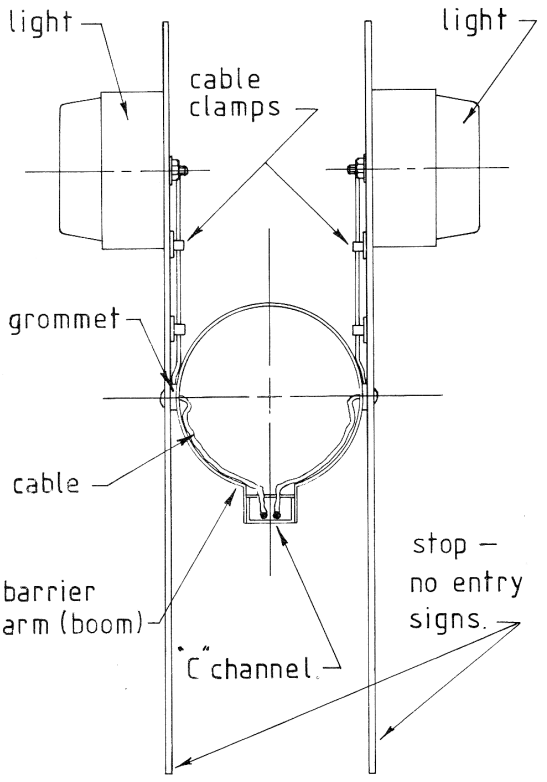


Fig.6.

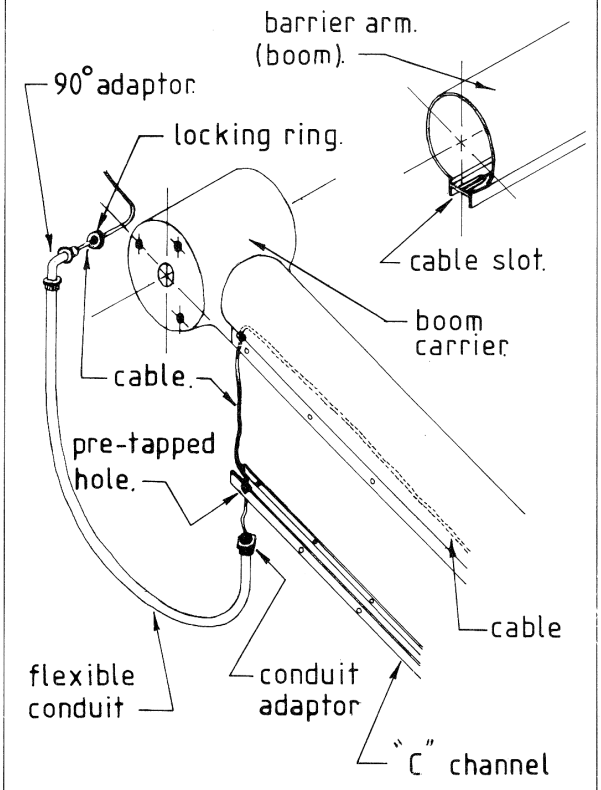


Fig.7.

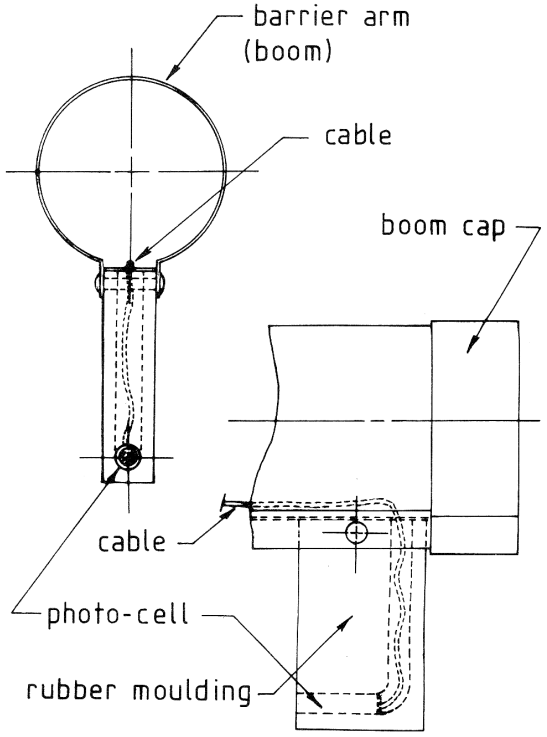
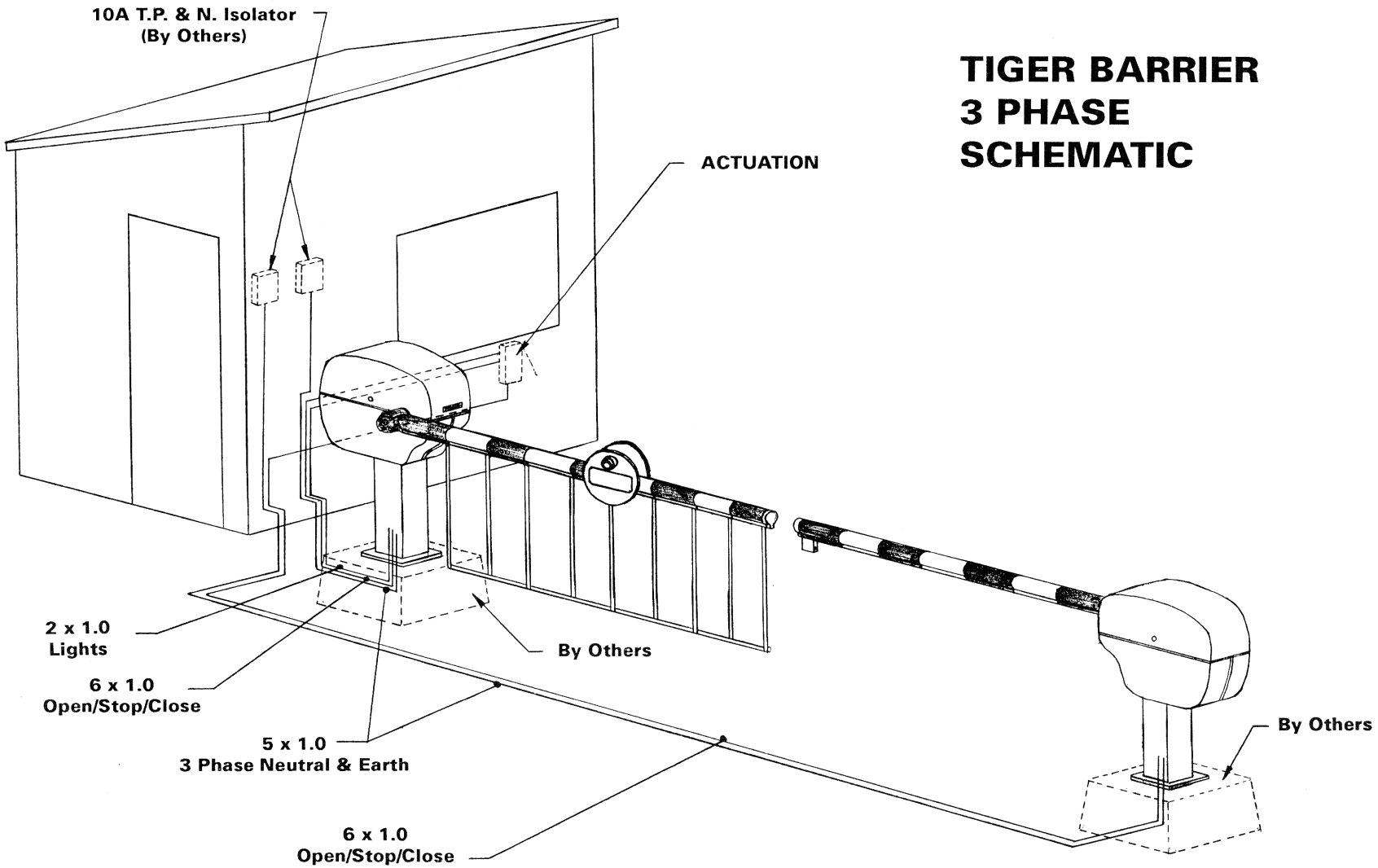
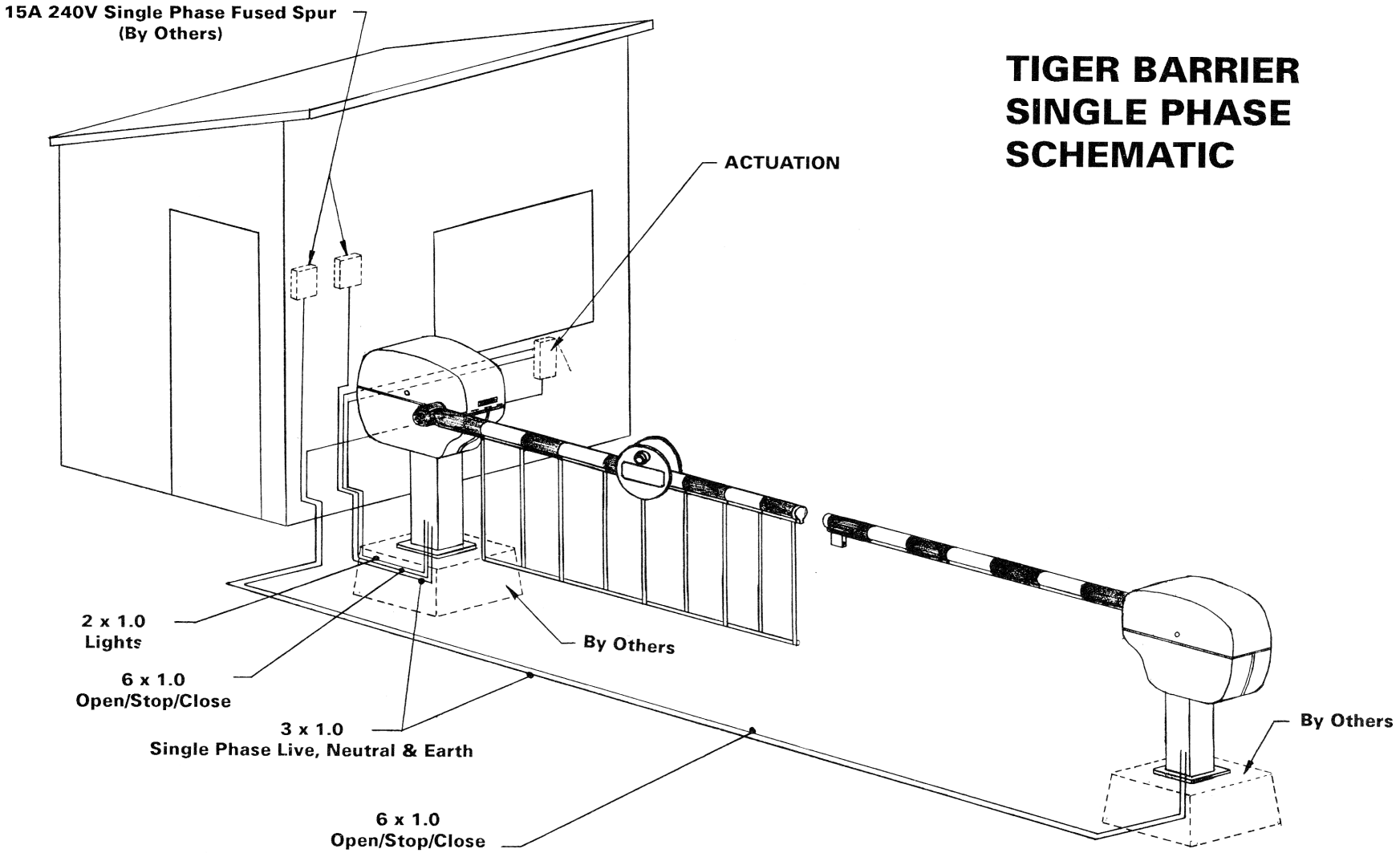


Fig.8.

TIGER BARRIER
3 PHASE
SCHEMATIC



TIGER BARRIER SINGLE PHASE SCHEMATIC



The contents of this owner’s manual are restricted to the barrier itself.

Connection details, wiring diagrams are available as a download from our website.
To obtain these documents, visit www.motivation-tc.co.uk/downloads