TC400 Mk I

FREE STANDING RADIANT WARMER

THERMACOT

TC400/W Mk I

OVERHEAD BABY WARMER

DESIGNED AND MANUFACTURED IN ENGLAND

BY

APPLEYARD AND SONS
29 BATTER LANE, RAWDON
LEEDS, LS19 6EU
(01132 502917)

Sole Agents for Sales and Service

VIAMED
15 Station Road, Crosshills
Keighley, West Yorkshire
England
(01535 634542)

APPLEYARD AND SONS will only accept responsibility for the safety, reliability and performance of the equipment if:-

Assembly, operations, repairs and modifications are carried out by authorised engineers.

The electrical installation of the relevant room complies with the 'Regulations For Electrical Equipment Of Buildings' PUBLISHED BY THE INSTITUTE OF ELECTRICAL ENGINEERS.

The mechanical installation complies fully with the instructions supplied The equipment is used in accordance with the instructions for use

THERMACOT TC400/W Mk I

Contents

ILLUSTRATIONS

1.0 WARNINGS

The TC400 THERMACOT must be earthed at all times during operation.

Lethal voltages exist within the radiant warmer, always switch off the mains power before removing the access cover of the radiant warmer.

During periods of prolonged usage of the radiant warmer, some areas of the outer cover may become warm, therefore, caution should be exercised when handling the heater housing.

The ventilation louvres of the radiant warmer must never be obstructed and under no circumstances should any blankets, sheets, etc., be draped over the radiant warmer

2 .0 SAFETY PRECAUTIONS

Ensure that the electrical installation of the room complies with the 'Regulations For Electrical Equipment Of Buildings' PUBLISHED BY THE INSTITUTION OF ELECTRICAL ENGINEERS.

It is recommended that the patients temperature is monitored during operation.

Before connecting the unit to the mains ensure that the radiant warmer power cable and mains plug are undamaged

Should the THERMACOT TC400 malfunction, immediately disconnect from the mains supply and contact an authorised engineer.

The THERMACOT TC400 must never be operated with any of the covers removed, except by an authorised engineer. All maintenance, modifications and adjustments are only to be carried out by an authorised engineer.

The Thermacot lower face and grill will become hot when in use. Care should be exercised when attending the patient that excessive heat does not effect the users head. Care should be taken to ensure neither hair nor hats/caps etc. come into contact with the heater grill.

The Grill must be at least 72cm above the mattress at all times whilst heater is switched on.

3.0 TECHNICAL DATA

3.1 Overall dimensions (nominal)

Length	900mm
Width	100mm
Height	100mm
Weight	7.6 Kg
Wall Plate	3.5 Kg

Minimum Heater operating height above baby 720mm

3.2 Specification

Power supply (input) 240v, 50Hz (mains)
Protection against electric shock :-
Type Class I
Degree Type B

Mode of operation Continuous
Heater rating 240v - 400 watts nominal
Heater element Tubalox element Incalox sheathed
Fuse type 20mm cartridge (20x5mm)
Fuse rating 2 amp antisurge Time delay (T)

Temperature rise within mattress area Approx. 10 degrees above ambient (nominal) with heat control set to maximum

3.3 Electrical safety

Designed to comply with BS5724;Part 1 regarding the safety of electrical medical equipment.

4.0 GENERAL DESCRIPTION

The THERMACOT TC400/F is a mobile radiant warmer, designed to provide a simple, effective method of reducing radiant heat loss from infants nursed on the paediatric ward, special care baby units and maternity units.

The 400 watt radiant warmer is designed to be used over a standard bastinet. the height of the heater above the mattress is adjustable but should never be used less than 72cm above the mattress. It is operated by a mains power switch and a variable heat control, which facilitates the reduction of heater output when required and enables standby operation.

The combination of a 400 watt heating element and an effective reflector, ensures a safe and uniform warmth within the cot area, raising the surface temperature by about 10 c above the ambient temperature at maximum output.

5.0 INSTRUCTIONS FOR USE

Prior to operating the THERMACOT TC400/F the warnings and safety precautions printed on page 4 MUST be observed.

5.1 Operation of the radiant warmer

The THERMACOT TC400/F has been designed for continuous operation. Connection to a suitable 240v 50Hz mains supply is required, and the equipment MUST be earthed to a suitable safety earth via the non-detachable mains cable.

Mains cable colour code:-
Brown.....Live
Blue.....Neutral
Green/Yellow....Earth

Two controls are situated on the front panel of the radiant warmer, these are:-

1. Illuminated On/Off switch

2. Variable temperature control

Before switching the radiant warmer on, turn the temperature control knob anti-clockwise to the MIN position.

To switch the radiant warmer on, depress the green rocker towards the T symbol. The switch will now be illuminated, indicating that power is available to the heating element.

Rotate the temperature control knob clockwise to the desired temperature setting. (NB. The type of heating element fitted to the radiant warmer does not respond instantaneously to changes of the temperature control.) It is recommended that the patients temperature is monitored during operation.

To switch the radiant warmer off, depress the green rocker switch towards the 'O' symbol. The switch will not be illuminated.

Whenever the THERMACOT TC400 is switched off disconnect the mains input from the supply.

6.0 User Maintenance

Regularly monitor the THERMACOT TC400/F during its operation to ensure satisfactory functioning.

Check the power switch is illuminated

Check that the louvres of the radiant warmer are not obstructed and there are no indications of unit overheating

Check the mains supply cable is not trapped or damaged

Report all faults immediately to an authorised engineer.

It is recommended that the THERMACOT TC400 /F should be inspected by an authorised engineer at intervals not exceeding six weeks.

6.1 Recommended cleaning

The Radiant warmer housing must only be wiped clean with a DAMP cloth, and dried thoroughly. Never allow the ingress of water into this unit.

7.0 TECHNICAL DESCRIPTION

The THERMACOT TC400/F radiant warmer is mounted at a distance of 72cm above the mattress top. Housed within the radiant warmer is a 400 watt Incalox sheathed Tubalox element, the output of the element is sufficient to raise the temperature of the mattress area by approximately 10 Celcius above the ambient air temperature.

The heater element is controlled by a double pole illuminated rocker On/Off switch and a temperature controller mounted on the front panel of the radiant warmer.

The temperature controller, is a 15 Amp encapsulated pulse firing controller, which maintains the output of the heating element at any set level to a maximum of 400 watts.
The radiant warmer is protected by two 2 Amp anti-surge time delay (T) 20 x 5mm cartridge fuses housed in low profile fuseholders located on the rear panel.

8.0 CIRCUIT DIAGRAM

The 240v 50Hz mains input voltage is fed via the rewireable non-detachable mains cable to barrier terminal block TB1.
The protective earth of the mains cable is attached to the cot frame, a protective earth conductor links the cot frame to TB1. From TB1 protective earth conductors bond the power controller, heater hosing radiant warmer chassis and the Incalox sheath of the heating element.

Tri-rated live and neutral conductors feed the mains voltage from TB1 via 2 Amp anti-surge time delay fuses F1/F2 and a double pole illuminated switch to the live and neutral input terminals of the pulse firing power controller.

The duty cycle of the output triac of the power controller is controlled by an internally generated square wave with an adjustable mark-space ratio which is varied using the potentiometer RV1 to achieve a range of duty cycle from 0% - 100%. Triac switching takes place ar the zero voltage on each cycle virtually eliminating any ratio frequency interference.

The live and neutral outputs of the power controller are fed to the resistive 400 watt Tubalox heating element via high temperature appliance conductors.

9.0 MAINTENANCE INSTRUCTIONS

ROUTINE MAINTENANCE, ASSEMBLY, REPAIRS, ADJUSTMENTS AND MODIFICATIONS ARE ONLY TO BE CARRIED OUT BY AUTHORISED ENGINEERS.

It is recommended that the following maintenance routine should be carried out at intervals not exceeding six weeks.

a. Thoroughly clean the exterior and interior of the radiant warmer.
b. Inspect the mains plug, mains cable, and radiant warmer for damage.
c. Inspect all connectors and conductors within the radiant warmer for security and damage.
d. Carry out earth leakage tests in accordance with BS5724:PART 1. (IEC601)
e. Carry out insulation tests in accordance with BS5724:PART1. (IEC601)
f Functionally test the radiant warmer to ensure satisfactory operation.
g. Check operation of brakes
h. Check operation of height adjustment and ensure locking bolts are present.

9.1 Replacement of Fuses

a. Disconnect the THERMACOT TC400/W from the mains supply.
b. Fuse holders F1 and F2 are situated on the rear panel of the radiant heater.
c. Using a suitable screwdriver unscrew the slotted fuse cap from the low profile fuseholder.
d. After ascertaining the cause of a fuse failure, replace defective fuses with B.S.I. approved 2 Amp anti-surge time delay(T) 20 x 5mm cartridge fuses.

9.2 Removal of the Radiant Warmer Heater

1. Disconnect the THERMACOT TC400 from the mains supply.
2. Remove screw pins on wall bracket

9.3 Replacement of the Heater Element

REPLACEMENT HEATING ELEMENT KITS ARE ONLY AVAILABLE FROM:- VIAMED, 15 STATION ROAD, CROSSHILLS, KEIGHLEY, W. YORKSHIRE. ENGLAND TEL 01535 634542 AND SHOULD ONLY BE REPLACED BY A COMPANY SERVICE ENGINEER OR OTHER AUTHORISED ENGINEER.

a. Carry out the procedure 9.3 "Removal of the Radiant Warmer".
b. Cut away the heat shrink tubing from the spade terminals at each end of the heater element.
c. Disconnect the high temperature conductors from the element by pulling off the spade terminals.
d. Unscrew the four screws holding the heater housing to the radiant warmer inner mounting plate then pull the heater housing clear.
e. Using a spanner unscrew the heater element clamp nut and withdraw the element from the heater housing, remove the 'olive' from the element.
f.. Pass the replacement element into the heater housing, refit the 'olive', replace and tighten the element clamp nut. Ensuring that there is a minimum of 4mm between each end of the element and the element holder/clamp.
g..Re-attach the heater housing to the radiant warmer mounting plate
h..Pass the replacement heat shrink tubing over the high temperature conductors and push the spade connectors onto the element terminals. Using a suitable heat gun, shrink the heat shrink tubing over the exposed metal terminals.

10.0 SERVICING AND SPARES

All servicing of the THERMACOT TC400/F is only to be carried out by suitably qualified personnel, instructed in the operation and maintenance of the THERMACOT TC400/F and approved by a representative of the manufacturer or his agent. Servicing information, assistance and spares may be obtained by contacting:- VIAMED Ltd

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Parts List

Drg. No	Item	Part No
	Radiant Heater unit	2000
1	Cover	2001
2	Screw	2002
3	Mounting Plate	2003
4	Screw	2004
5	Washer	2005
6	Nut	2006
7	Insulating spacer	2007
8	Power controller	2008
9	Knob	2009
10	Switch	2010
13	Nut	2013
14	Fuse Holder	2014
15	Terminal Block	2015
16	Radiant cover	2016
17	Reflector	2017
18	400watt element	2018
19	Element holder	2019
20	Grille	2020

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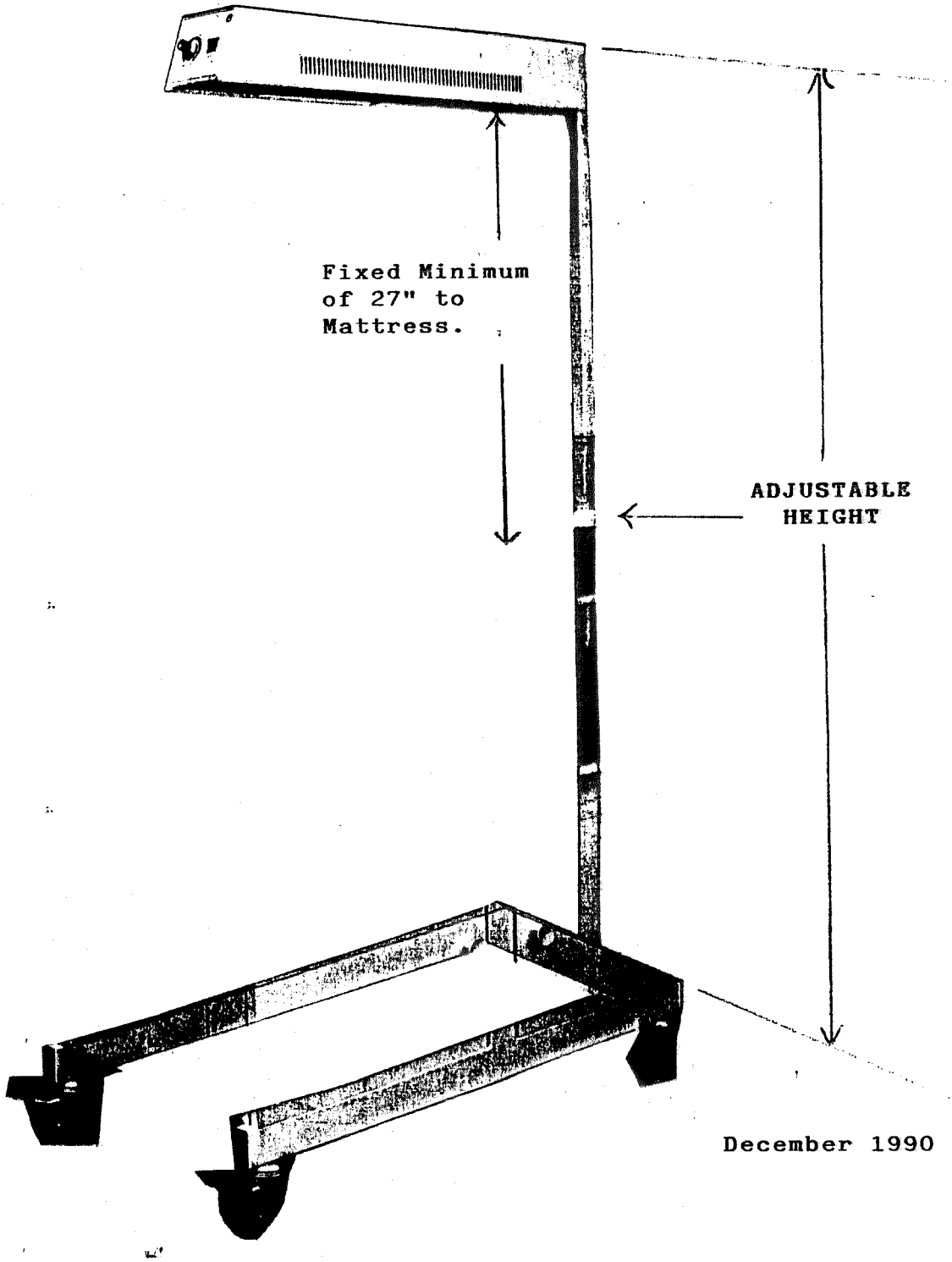
FREE STANDING THERMACOT TC400/F



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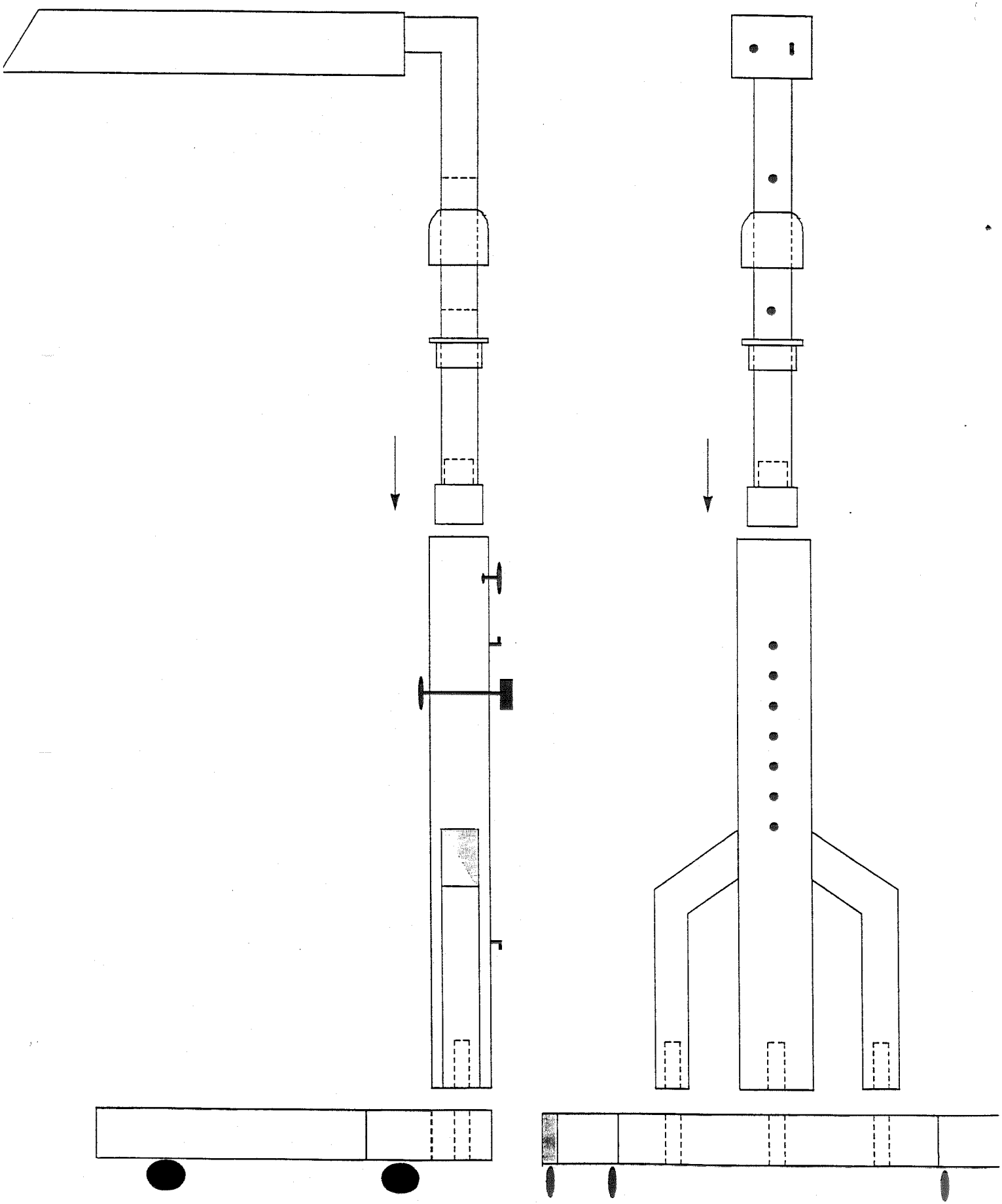
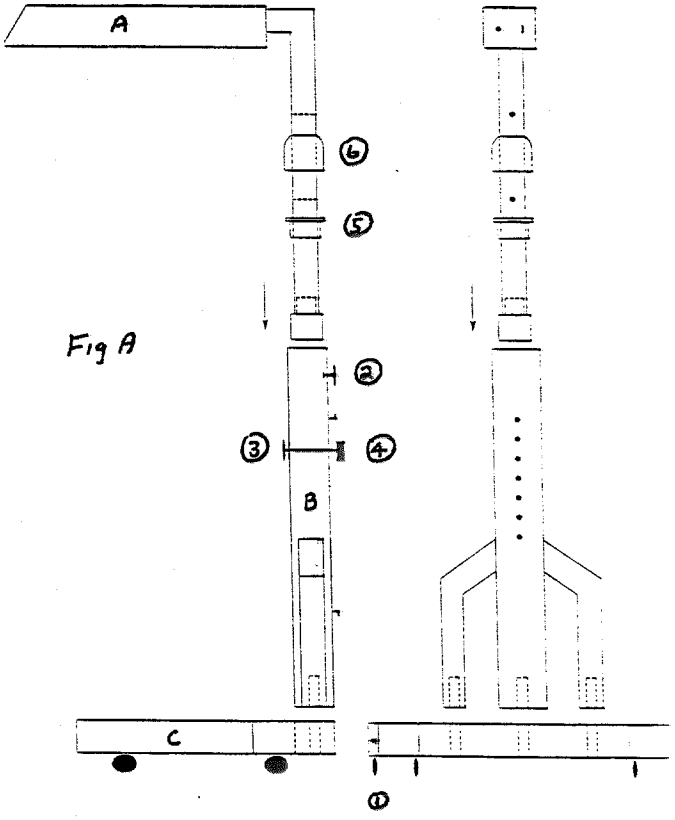


Parts List

Drg. No	Item	Part No
	Radiant Heater unit	2000
1	Cover	2001
2	Screw	2002
3	Mounting Plate	2003
4	Screw	2004
5	Washer	2005
6	Nut	2006
7	Insulating spacer	2007
8	Power controller	2008
9	Knob	2009
10	Switch	2010
13	Nut	2013
14	Fuse Holder	2014
15	Terminal Block	2015
16	Radiant cover	2016
17	Reflector	2017
18	400watt element	2018
19	Element holder	2019
20	Grille	2020
Stand Drawing		
1	Upright Bolts	3001
2	Brake	3002
3	Height Bolt	3003
4	Height adjust knob	3004
5	Spacer	3005
6	Spacer cover	3006
7	Bumper	3007

Installation of the Thermacot TC400/F



The unit is supplied flat packed in three parts.
a.) Heater unit: b) Three Leg stand: c) Base with wheels

1] Fasten the three leg stand to the bas with the three bolts (1) supplied (attached to the stand)
2] The black brake knob (2) should facing the rear (Fig A)
3] Insert the heater unit upright in to the stand with the heater over the legs (Fig A]
4] There are two holes in the heater upright and seven holes in the stand. Height adjustment is achieved by the lining up of the two sets of holes.
5] Insert bolt (3) through two matching holes and lock with the black knob (4)
6] The Brake (2) is used to relieve the weight of the heater whilst the height is being adjusted.
7] The filler (5) holds the heater upright vertical in the stand and hidden with a cover (6)

Warning
The Heater should ideally be 72 cms above the mattress at all times for best use of the Thermacot. The warning label of 68.8 cms is an absolute minimum and stated only cope with a worst case situation E.g. Extremely cold enviroment, and the situation where the height of the cot and the adjustment range make 72 cms impossible to achieve
Distances less than 68.8cms could cause overheating of the patient.

The brake should only be used during height adjustment and never as a means of fine height control. Adjustment of height should never be attempted with a patient beneath the heater or the heater switched on.

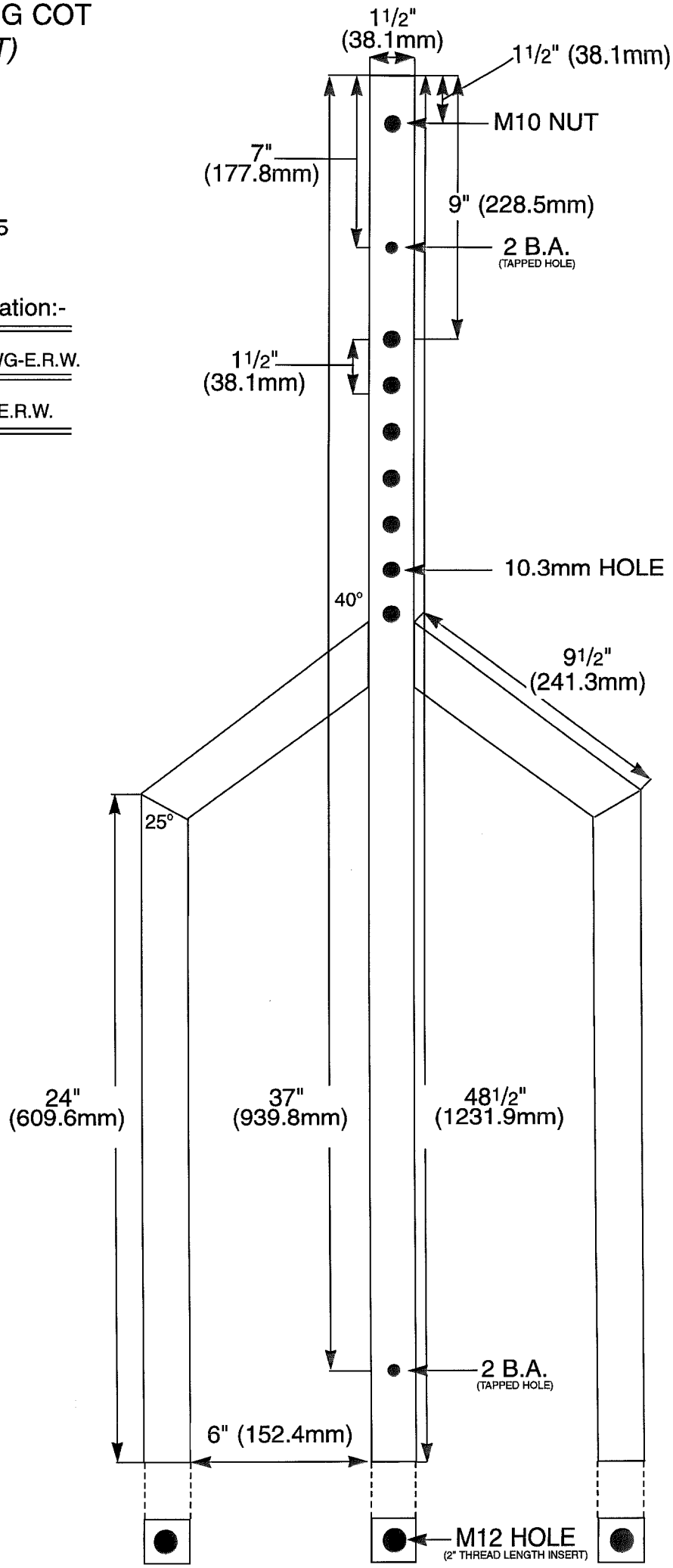
FREE STANDING COT
(UPRIGHT)

Scale:- 1 : 5

Material Specification:-

1 1/2" x 1 1/2"x 14" SWG-E.R.W.

1" x 1"x 16" SWG-E.R.W.

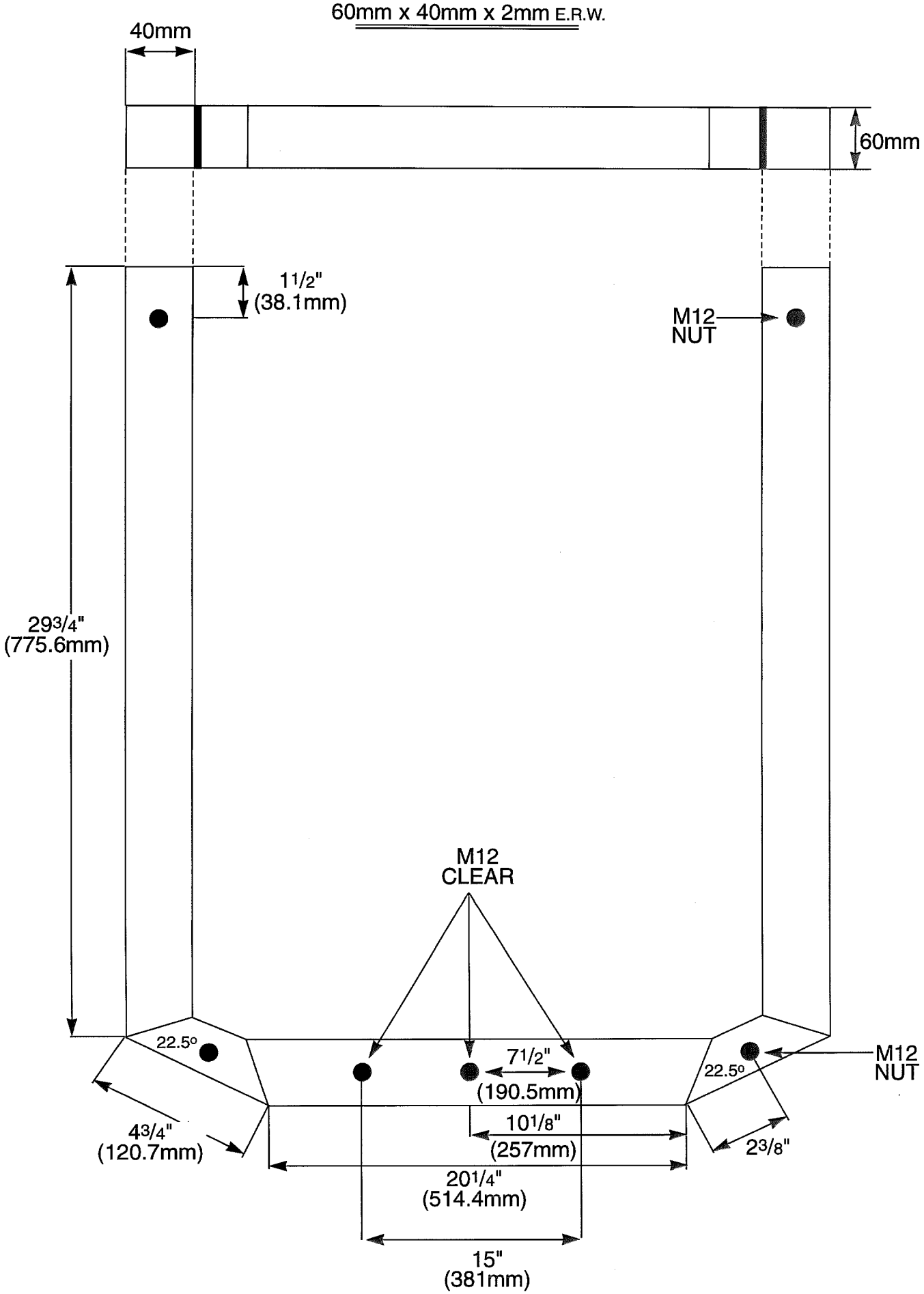


FREE STANDING COT - BASE

Scale:- 1 : 5

Material Specification:-

60mm x 40mm x 2mm E.R.W.

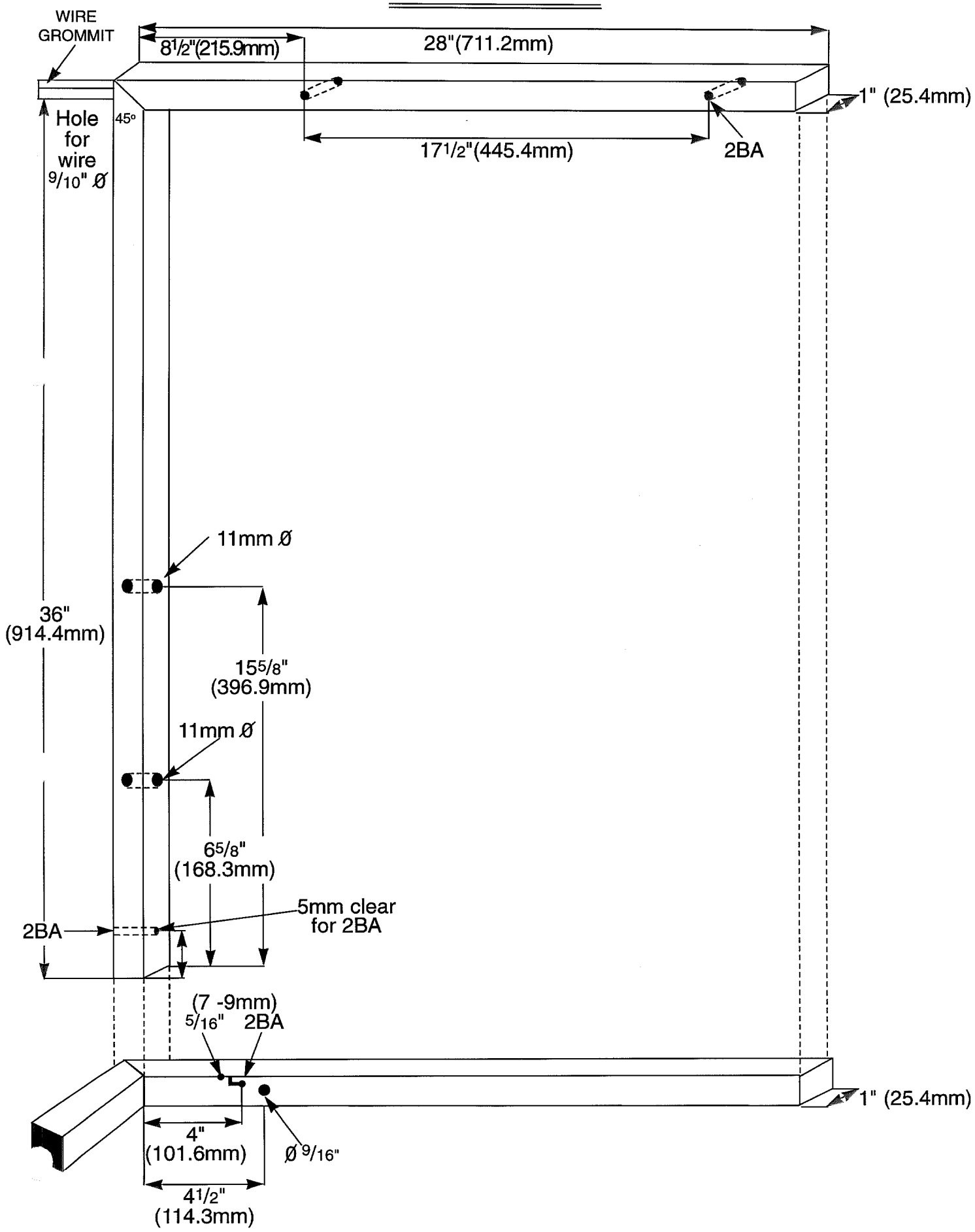


FREE STANDING COT - TOP SECTION

Scale:- 1 : 5

Material Specification:-

1" x 1" x 14 E.R.W.



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