

Sentry Door Curtain Installation, Operation & Maintenance Instructions

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Warning

1. Please read this instruction booklet before any works commence.
2. Leave this booklet and all wiring diagrams with the product so other trades / end users can read it, where applicable.
3. Ensure all Health & Safety requirements are followed and that adequate lifting equipment is used (where necessary) in the handling of this product. Please note that some products may have an offset centre of mass.
4. When working with the internal components of this product, the wearing of suitable anti-cut protection is recommended.
5. Ensure that the electrical supply is isolated before working on the electrical components of this product or any remote accessory connected to this product.
6. This product is an electrical class II appliance and must be earthed in accordance with current ISO, EN & BS standards.
7. When providing the main power supply or wiring to remote items, refer to the wiring diagram supplied with this product and any manufacturer's information supplied with the remote item. Any deviation from the wiring scheme may render the product unusable and invalidate the warranty.
8. All remote accessories and cables intended for use with this product must be of a suitable type and current rating for the duty of the appliance.
9. Please refer to the table of weights and ensure that adequate fixings (by others) are used to support the product and ensure that the building fabric is suitable to accept the same.
10. This product should never be operated when in a partial disassembled state other than by a competent trades person during installation, testing & commissioning.

INTRODUCTION

This booklet provides guidance for the operation and maintenance of Dunham-Bush Sentry door curtains. The instructions apply to standard product only, as described in Standard Range of Models and Sizes.

IDENTIFICATION

The air curtain serial number, model, description and size are can be found on a label either on the inside or external face of the main access panel. A stencil reference may also be marked on the air curtain for on-site identification.

Model	Description
CH	Cased horozontal unit
CV	Cased vertical unit
BH	Basic chassis horizontal unit
BV	Basic chassis unit

Table 1: Models in standard range

DESCRIPTION

Dunham-Bush Sentry door curtains comprise a steel casing with access panel(s) and extruded aluminium grilles, centrifugal fans mounted on a plenum bulkhead, panel air filter, hot water heating coil or electric elements, electrical controls and a connections box. Casings are either self-finished galvanised steel or polyester powder coated steel.

STANDARD RANGE OF MODELS AND SIZES

There are four models in the standard range, each model available in three sizes.

Size	Unit length (mm)	Door width (mm)
Fig 10	1000	1000 or less
Fig 15	1500	1500 or less
Fig 20	2000	2000 or less

Table 2: Standard sizes for each model

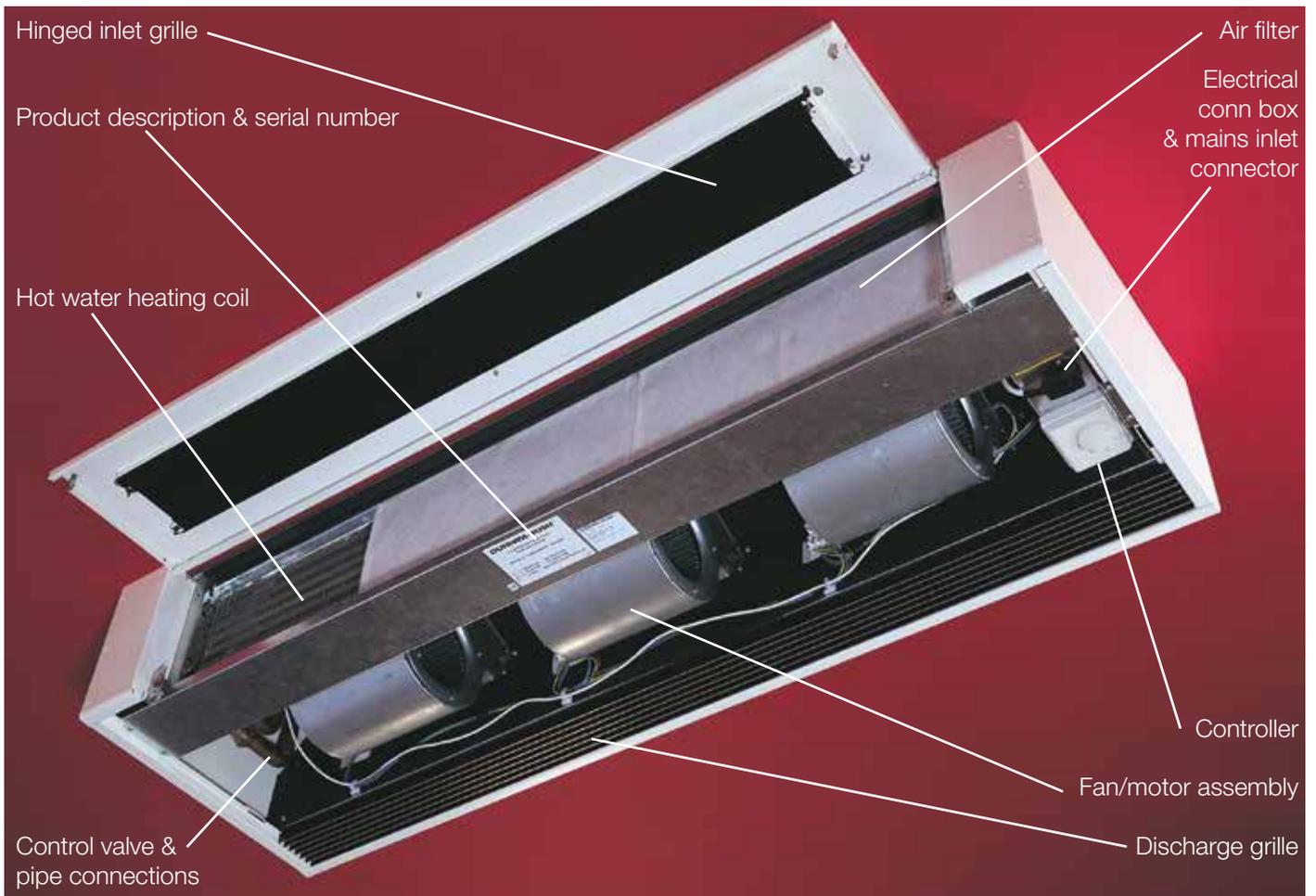


Diagram 1: Sentry air curtain - Model CH - Figure 15 - RH connection



Diagram 2: Sentry air curtain - Model BH - Figure 15 - RH connection

CONSTRUCTION

Delivery

The purchaser is responsible for off-loading, and must examine units promptly upon receipt. Any claims for damage will only be accepted if, at the time of delivery, the consignment note is endorsed with the details and counter signed by the transport driver. Each unit is marked to show the model, figure number, serial number and stencil reference if specified.

Handling

Air curtains are individually packed and two/three persons can usually handle the heaviest unit. When a significant quantity of air curtains is delivered, they may be palletised and/or shrink-wrapped, so a fork-lift or similar will be required for lifting. An air curtain must not be dropped or suffer impact in any circumstances and should never be lifted or handled by coil connections.

Storage

Air curtains should be stored in clean, dry conditions. Packaging should not be removed until the unit is required for installation, and should only be removed if damage is suspected at the time of delivery.

Preparation

Provision must be made for proper fixings. The ceiling or soffit must be suitable to accept fixings such as expanding anchors and/or drop rods. Access is required for maintenance i.e. pipe and electrical connections and removal of access panels. Ceiling tiles, builders work etc should be removable with sufficient clearance.

Piping and electrical conduit should, as far as possible, have been completed and ductwork should be fully prepared.

Model	Fig 10	Fig 15	Fig 20
CH cased horizontal	40	53	65
CV cased vertical	40	53	65
BH basic horizontal	38	51	63
BV basic vertical	38	51	63

Table 3 : Approximate masses (kg) of Sentry air curtain



Diagram 3: Loose grille and fixing frame

CONTROLS

Sentry door curtains are delivered with controls as specified on the order. A wiring diagram is enclosed with these instructions should be studied prior to fitting or wiring any controls to the unit.

Fitted fan speed control

Sentry air curtain is fitted with an on/off switch with indicator lamp and fan speed commissioning potentiometer. On models CH and CV, control is located on the side plate, behind the hinged inlet grille. On models BH and BV, control are located next to the inlet.

Controller

If specified on the order, a controls package will be fitted to the air curtain. The package comprises a supply air sensor measuring leaving air temperature, a controller with a setpoint adjustment and a valve/actuator assembly on the coil. The deviation between leaving air temperature and setpoint is used to control the heat output by modulating the water flow rate through the coil.

Remote switches

A remote on/off switch may be provided for on-site fitting, and is available for flush or surface wall-mounting.

Remote controller

Remote controls may be supplied for on-site fitting, depending upon the control system type specified. Remote controls can include remote fan speed potentiometer, remote setpoint and/or sensor.

Special controls

If specified, the air curtain may incorporate special controls such as relays, thermostats etc. Refer to the wiring diagram supplied with the air curtain.

ACCESSORIES

The following optional accessories are available if specified

Loose grilles and fixing frame

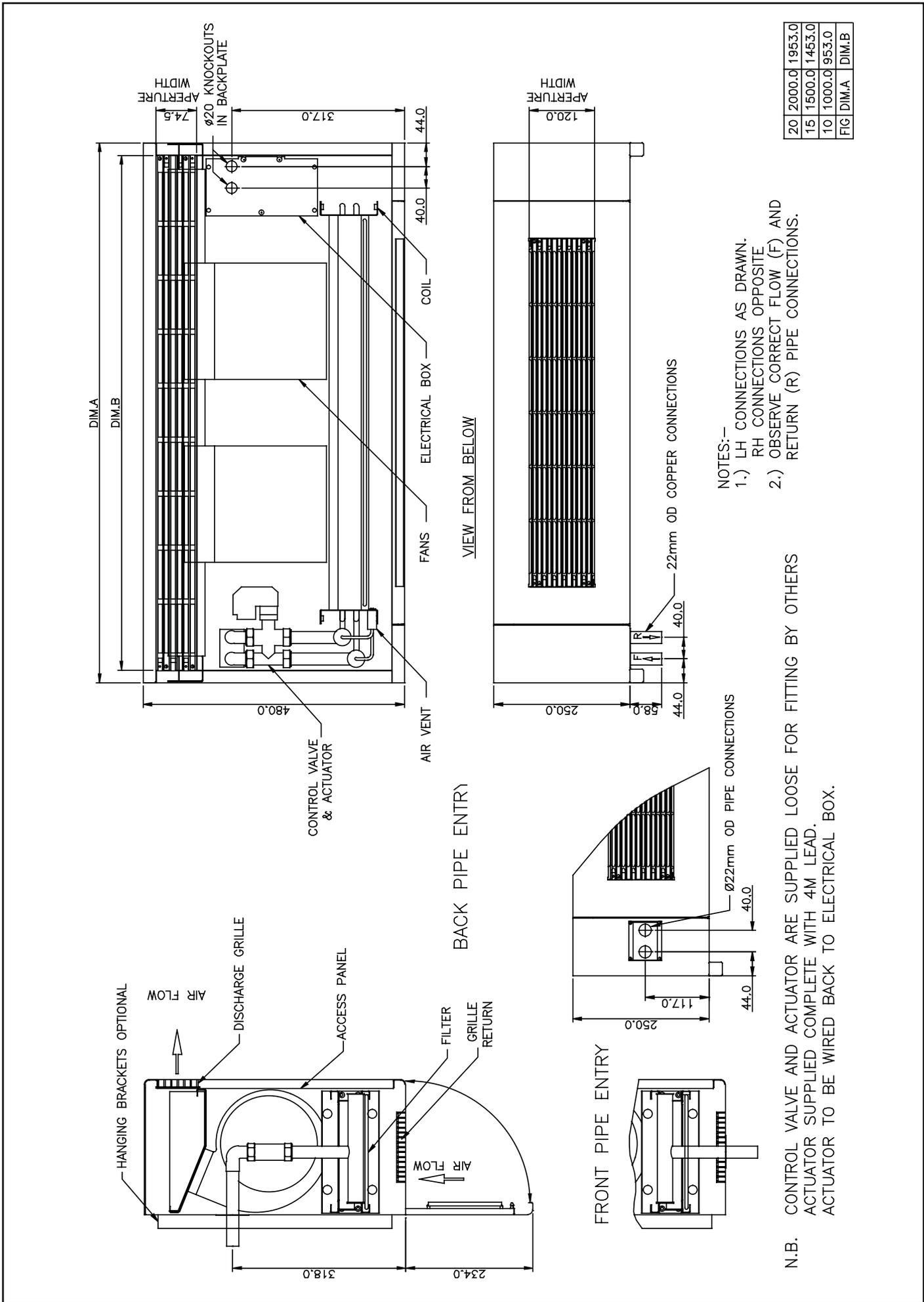
Models BH and BV may be supplied with a loose grilles and fixing frame, which is fitted to ceiling or bulkhead to provide recirculating air for the air curtain.

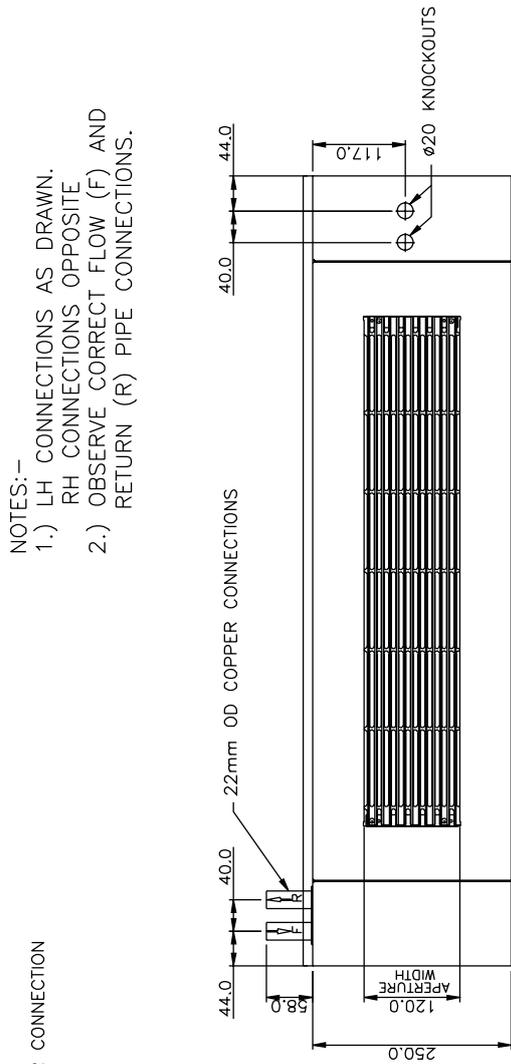
Hanging Plate

Model CV is available with optional hanging plate, for fixing to a vertical wall surface (see frame 10 on page 9).

Hanging brackets

Models CH and CV are available with optional hanging brackets for suspension from drop rods (see frame 11 on page 10).





TOP PIPE ENTRY

22mm OD COPPER CONNECTION

44.0

40.0

117.0

250.0

44.0

40.0

44.0

120.0 APERTURE WIDTH

22mm OD COPPER CONNECTIONS

40.0

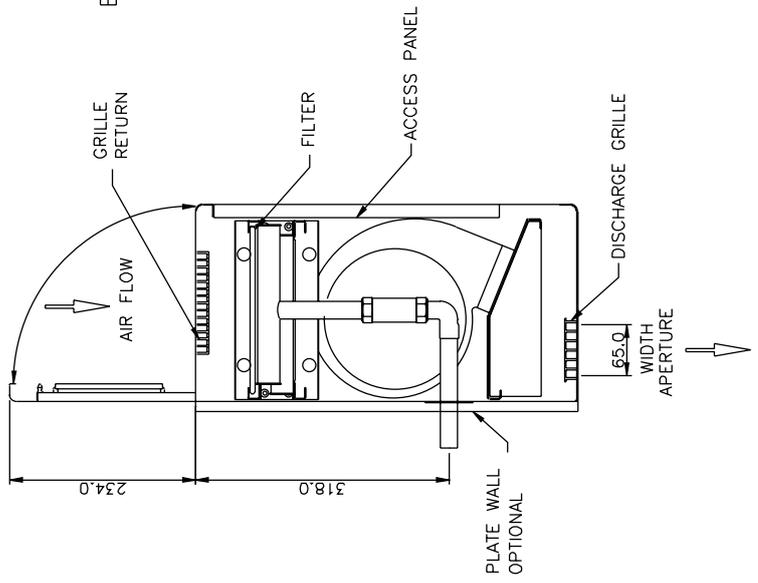
44.0

117.0

Ø20 KNOCKOUTS

NOTES:-
 1.) LH CONNECTIONS AS DRAWN.
 RH CONNECTIONS OPPOSITE
 2.) OBSERVE CORRECT FLOW (F) AND
 RETURN (R) PIPE CONNECTIONS.

N.B. CONTROL VALVE AND ACTUATOR ARE SUPPLIED LOOSE FOR FITTING BY OTHERS. ACTUATOR SUPPLIED COMPLETE WITH 4M LEAD. ACTUATOR TO BE WIRED BACK TO ELECTRICAL BOX.



BACK PIPE ENTRY

GRILLE RETURN

AIR FLOW

234.0

318.0

FILTER

ACCESS PANEL

CONTROL VALVE & ACTUATOR

480.0

PLATE WALL OPTIONAL

65.0 WIDTH APERTURE

DISCHARGE GRILLE

44.0

40.0

317.0

Ø20 KNOCKOUTS IN BACKPLATE

FANS

ELECTRICAL BOX

COIL

DIM.B

DIM.A

20	2000.0	1953.0
15	1500.0	1453.0
10	1000.0	953.0
FIG	DIM.A	DIM.B

VIEW FACING ACCESS PANEL

Diagram 5 : Dimensions of sentry Model CV

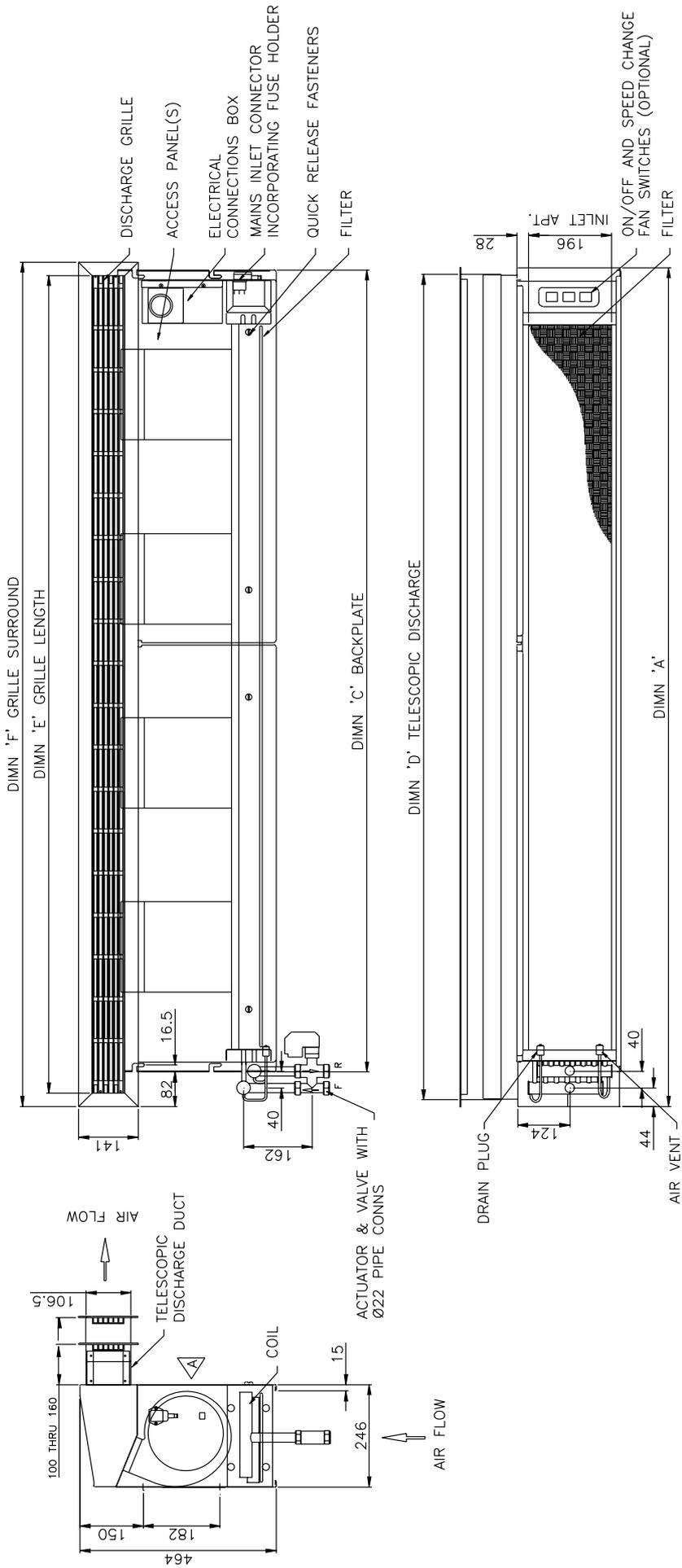


FIG	A	C	D	E	F
10	1000	912	978	953	1013.5
15	1500	1412	1478	1453	1513.5
20	2000	1912	1978	1953	2013.5

NOTES:
 1. LH CONNS DRAWN, RH OPPOSITE
 2. OBSERVE CORRECT FLOW (F) AND RETURN (R) PIPE CONNECTIONS

Diagram 6 : Dimensions of sentry Model BH

- NOTES:
 1. LH CONNS DRAWN, RH OPPOSITE
 2. OBSERVE CORRECT FLOW (F) AND RETURN (R) PIPE CONNECTIONS.

FIG	A	C	D	E	F
10	1000	912	978	953	1013.5
15	1500	1412	1478	1453	1513.5
20	2000	1912	1978	1953	2013.5

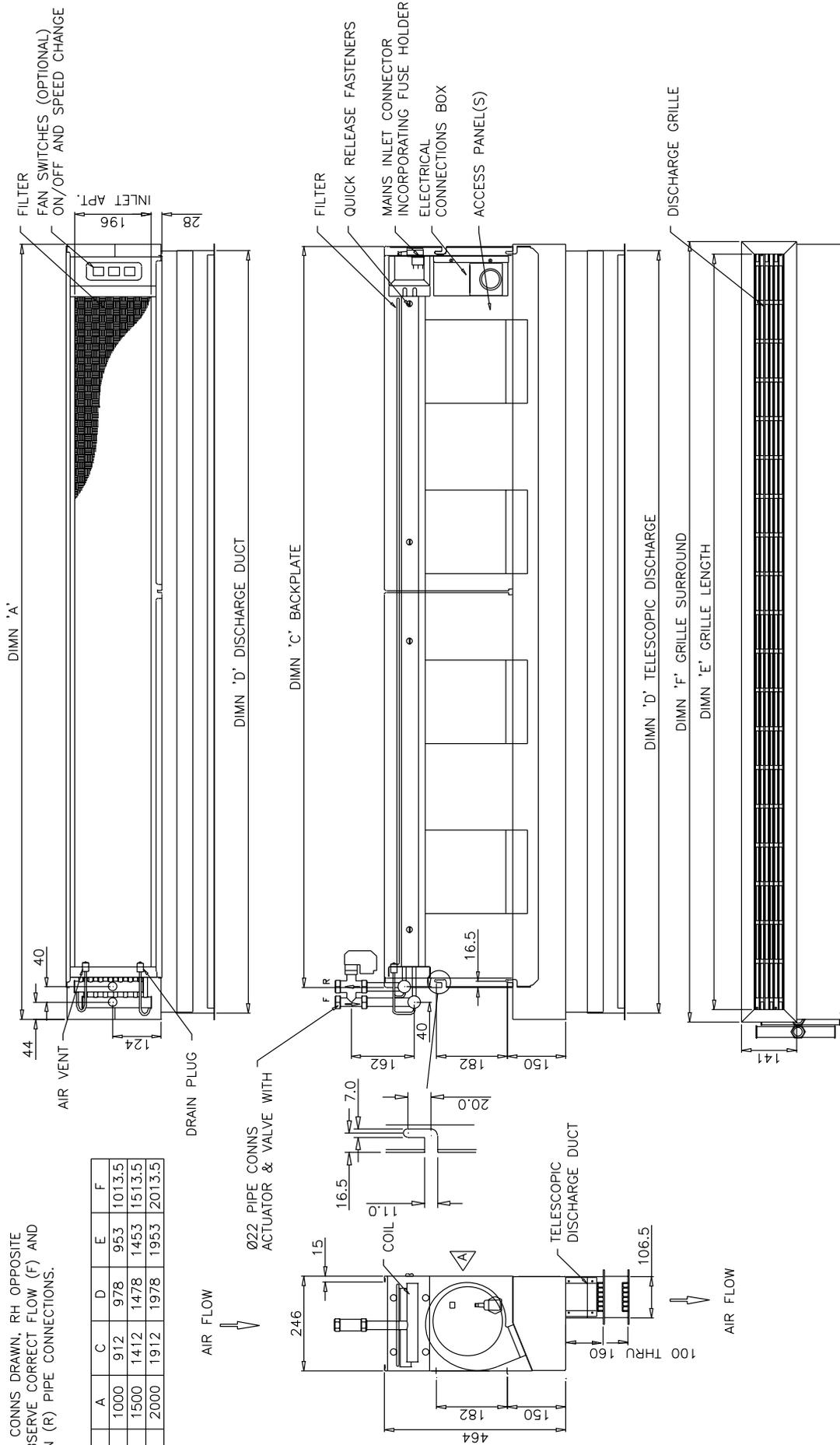


Diagram 7 : Dimensions of sentry Model BH

INSTALLATION

General

1. Before removing any packaging, check the identity of the air curtain stencil reference against any schedule or layout drawing. Packaging should be retained to prevent damage by other works after installation.
2. To gain internal access to Models CH or CV, open the hinged inlet grille and undo the fastenings to remove the main access panel. On models BH and BV, internal access is gained by undoing the quick release fasteners (quarter-turn) and removing the access panel(s).
3. Access to electrical connections box is obtained on all models by removing the main access panels and undoing the screws fixing the electrical connections box cover.

Fitting

1. Position and fix the air curtain, with all accessories fitted. Model CH - suspend unit from drop rods, using optional fitted hanging brackets

Model CV - fit fixing plate to wall first and suspend unit from fixing plate

Model BH - suspend unit from drop rods and/or anchors

Model BV - suspend the unit from the wall surface using anchors or bracket
2. The discharge grille should be installed as close as possible to the top of the doorway opening, to ensure minimal air leakage around the air curtain.
3. On models BH and BV, adjust position of telescopic outlet duct and fix using self-tapping screws, and fit loose grilles and fixing frames to bulkhead/ceiling for inlet.
4. Connect pipework as shown observing the correct flow and return connections.
5. Connect electrical supply and remote control accessories as shown on wiring diagram(s) enclosed with air curtain.
6. If supplied, fit the type 2 adjustable LTC thermostat to the return pipe (the thermostat will be factory wired).
7. After filling the hot water system, check the unit for leaks (see Commissioning)

Pipework connections

1. Sentry air curtain is fitted with a hot water coil with copper tails for mains connection. On models CH and CV, these will protrude either through the front or back of the casing. On models BH and BV, they are located adjacent to the coil end.
2. Connections are OD22mm copper tube, suitable for compression fittings or similar. Refer to diagram 9 for flow and return connections.

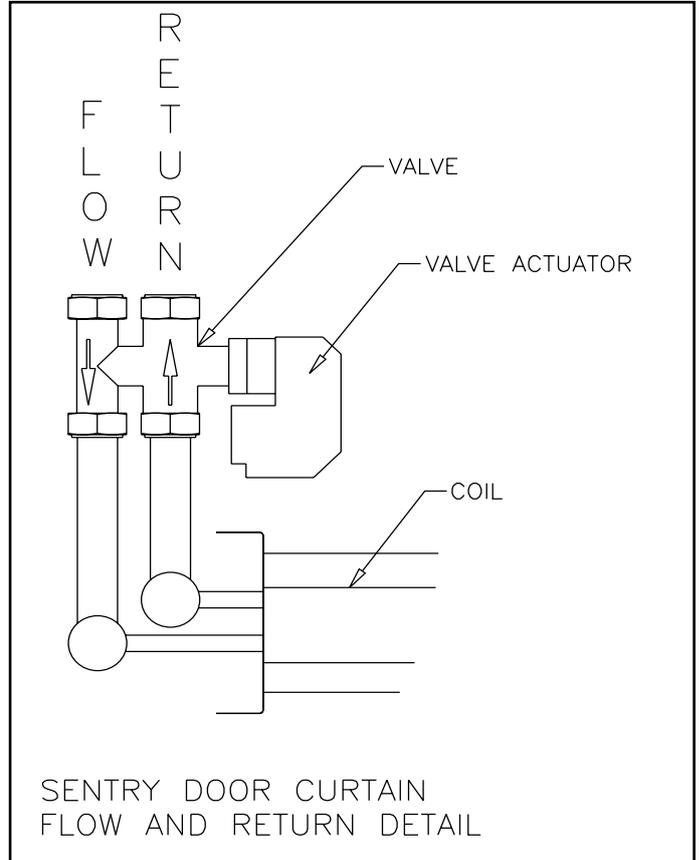


Diagram 8 : Fitted control valve & actuator

Electrical Connections and Controls

1. Connect a 230V/1ph/50Hz supply to the IEC mains inlet connector.
2. Fix any remote controls in the appropriate locations and connected to the 12 way terminal block, as shown on the wiring diagram supplied with the unit. When supplied the terminal block is located behind the plate on which the mains inlet connector is fitted.

Loose Grille and Fixing frame

1. Check dimensions and position of the loose grille and prepare an appropriate aperture.
3. Fit spire captive nuts into the slots in each corner of the fixing frame, and fix the frame into the aperture, using appropriate fixings (not provided).
4. Fit the loose grille to the fixing frame, aligning the holes in the grille with the spire nuts in the fixing frame, and fix using the black self-tapping screws provided.
5. An alternative fixing can be to omit the fixing frame and screw through the grille flanges directly onto a wooden (or similar) surround

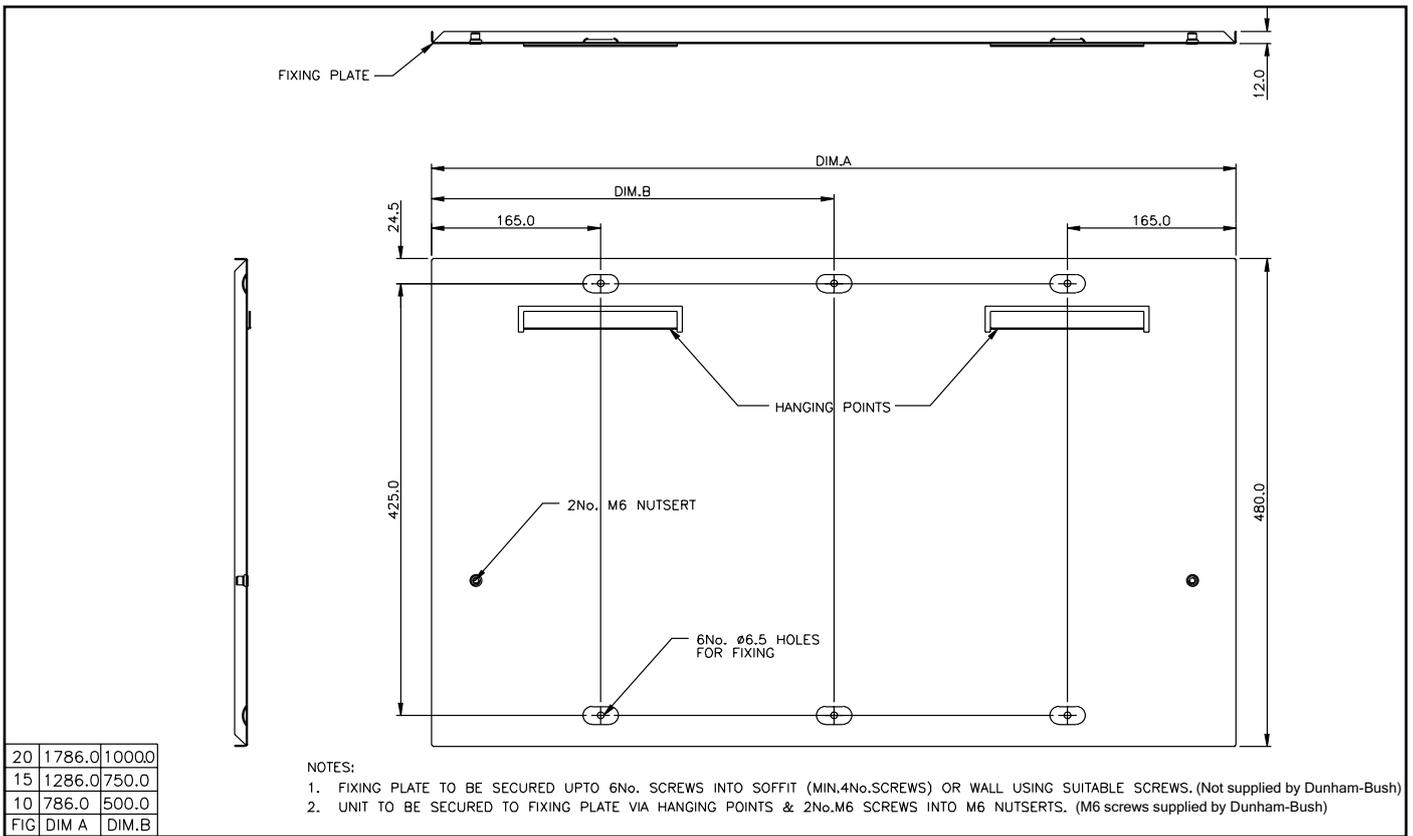


Diagram 9 : Fixing plate used to suspend Sentry Model CV (vertical wall surface mounting only)

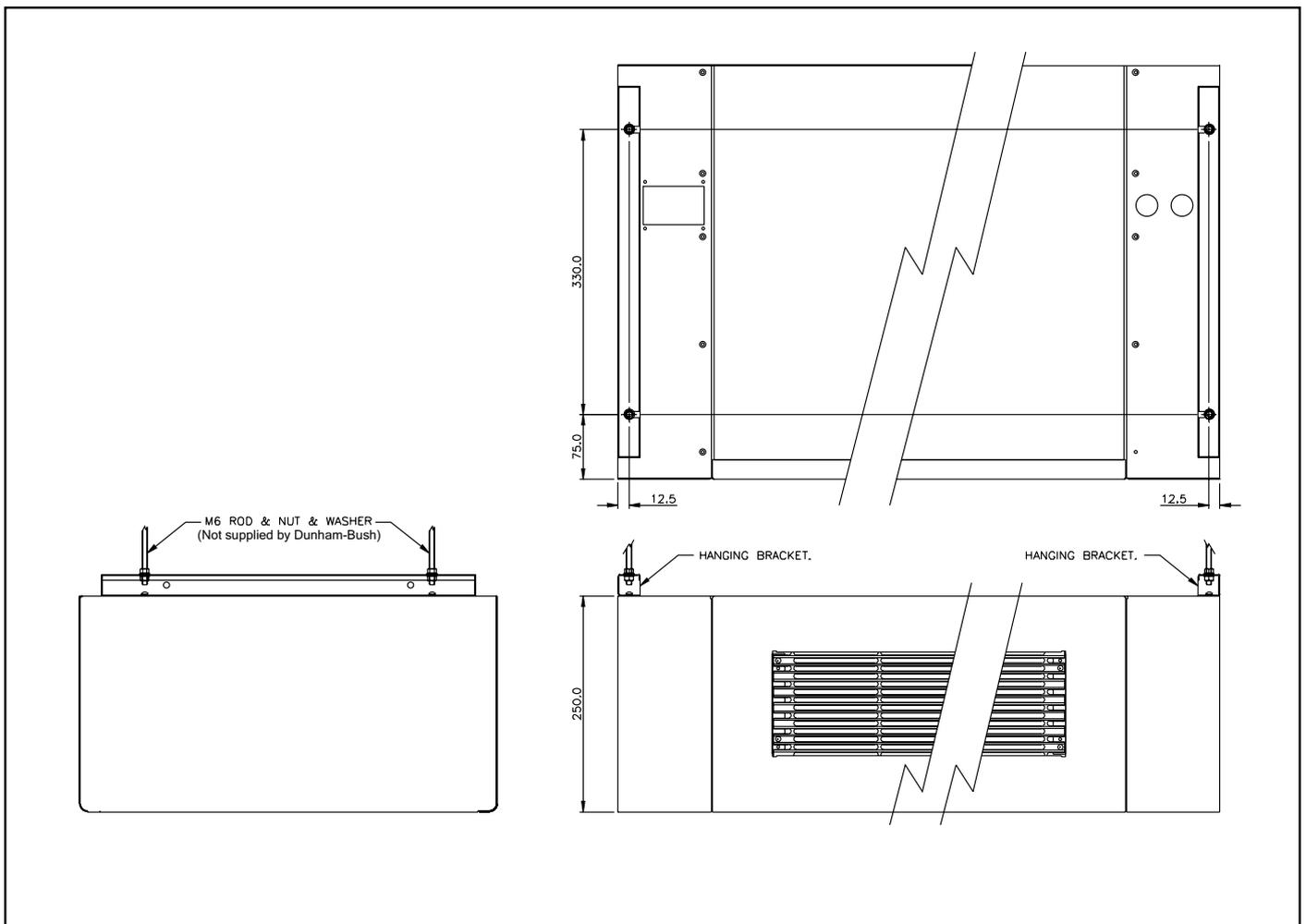


Diagram 10 : Suspension of Model CH using drop rods from ceiling slab/soffit

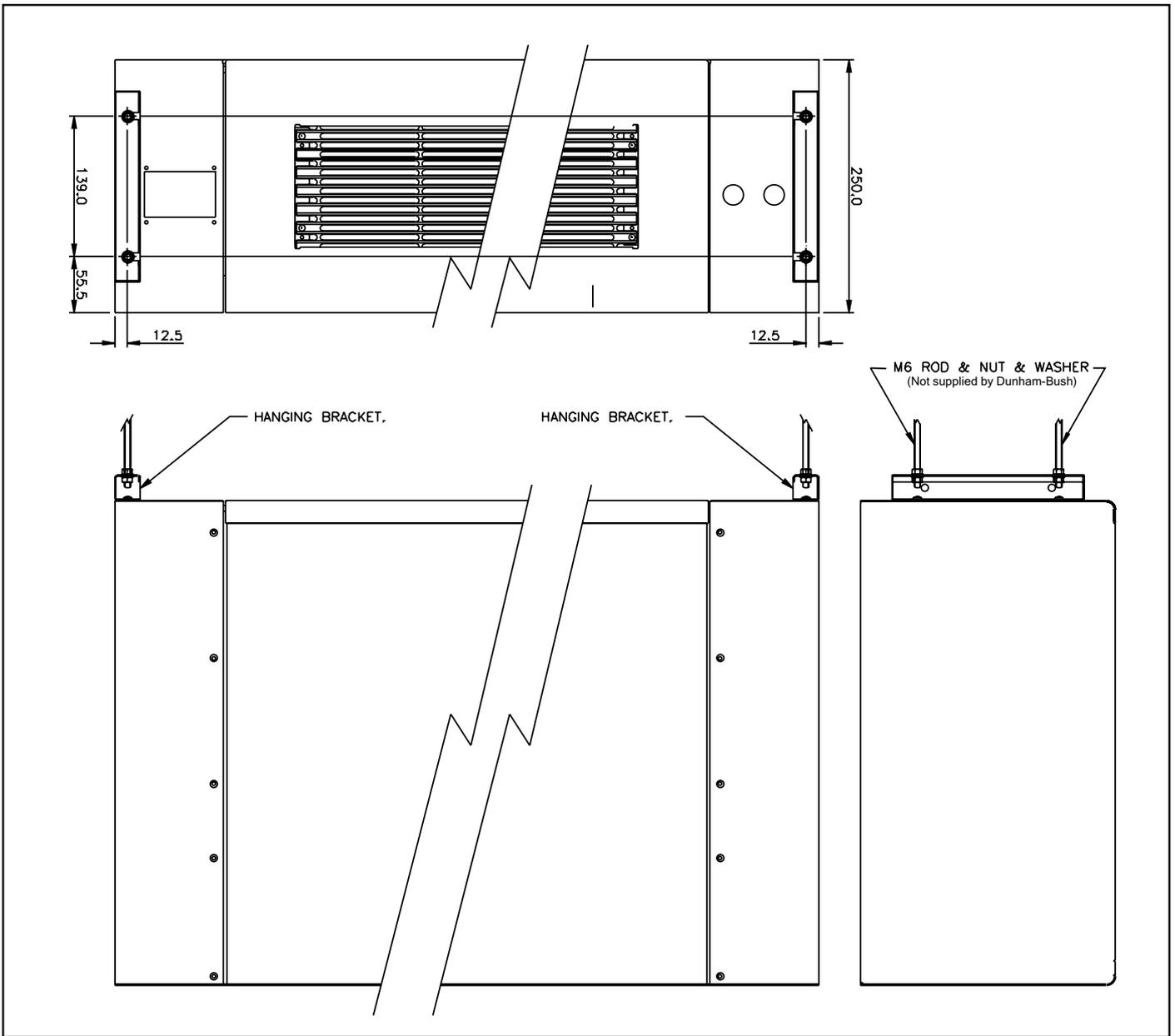
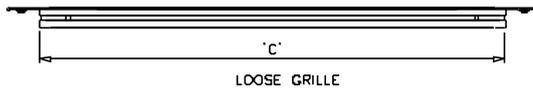
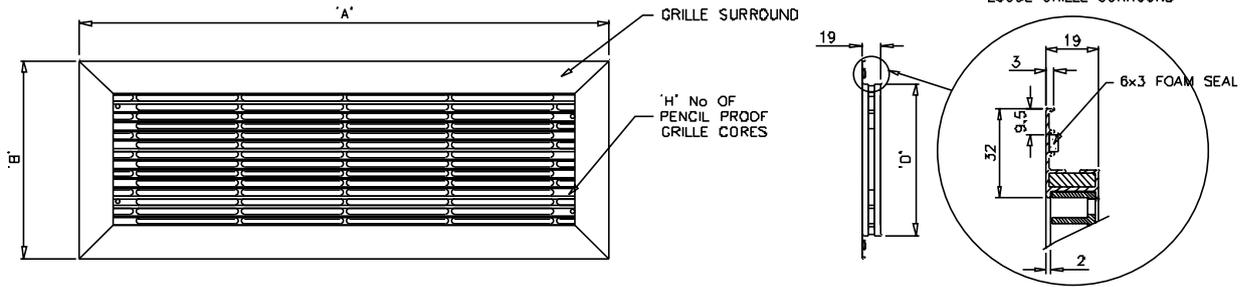


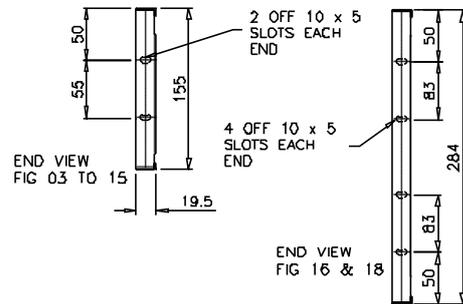
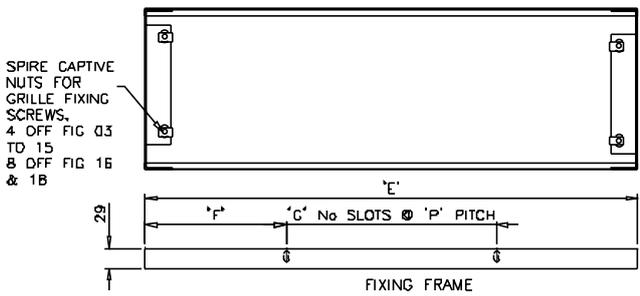
Diagram 11 : Suspension of Model CV using drop rods from ceiling slab/soffit

LG & FF LOOSE GRILLE AND FIXING FRAME

NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETRES.



NB: THIS GRILLE IS NOT WEATHERPROOF AND IS NOT RECOMMENDED FOR EXTERNAL USE.



Model	'A'	'B'	'C'	'D'	'E'	'F'	'G'	'H'	'P'
Fig 10	1004	190	943	145	968	321	2	1	326
Fig 15	1304	190	1243	145	1268	315	3	1	319
Fig 20	1004	319	943	275	968	321	2	2	326

Diagram 12 : Dimensions of loose grilles and fixing frames

COMMISSIONING

1. Purge air from the coil using the manual air vents fitted, or through the mains above the coil if applicable. Balance the water flow rate through the whole system to accepted practice so as to achieve the specified flow rate.
2. If fitted, the LTC thermostat will switch power to the fan only when the thermostat clipped to the return pipe reaches the required temperature. For a type 1 (fixed setting) $54^{\circ}\text{C} \pm 3\text{K}$ or for type 2 (adjustable setting) $30\text{-}90^{\circ}\text{C}$. In the absence of hot water, a temporary link can be used to run the fan.
4. If switches are fitted (either to the air curtain or remote mounted on a wall), check for satisfactory operation.
5. Commission fitted controls in accordance with the control manufacturer's instructions (enclosed with this document).
6. Sentry air curtain is manufactured with fan speed set for the doorway height specified. If adjustment is necessary, fan speed can be adjusted using the fan speed potentiometer.
7. Check that airflow discharges at satisfactory velocity - the airflow should be reasonably uniform across the doorway width, and should reach down to floor level.
8. Leave this document, wiring diagrams and Operating & Maintenance Instructions with the end user.

CLEANING AND MAINTENANCE

Cleaning and maintenance should be undertaken by a competent person or persons.

WARNING

- 1 Prior to undertaking any cleaning or maintenance, ensure that all electrical supplies are disconnected from the air curtain via local isolators.**
- 2 Some internal components may have sharp edges. Care must be taken when servicing this product and it is recommended that protective gloves are worn.**

Inspection

The frequency of cleaning and inspection depends upon the conditions in which the air curtain operates. Initially, it is suggested that the air filter is inspected after 6-8 weeks normal operation, and cleaned as required at regular intervals. Cleaning the air filter ensures that the air curtain operates satisfactorily. The air curtain should not be operated without a filter, since the heating coil fins will become clogged with fluff and dust particles, resulting in reduced performance.

Filter access and removal

Models CH and CV - To gain access to the air filter, open the hinged inlet grille and remove the filter from the coil inlet.

Models BH and BV - The air filter can be removed from the coil inlet.

Maintenance

1. Coil - Purge any air from the coil using the manual air vent (using a suitable key).
2. Motors - The fan motor has 'sealed for life' bearings which do not require any maintenance, other than visual inspection.
3. Fuse - The mains inlet connector on the electrical connections box incorporates a 2A anti-surge fuse. A spare fuse is supplied in a slide out fuse holder next to the socket.
4. Controls - see accessories. A wiring diagram is supplied with each air curtain. Further copies are available on request, please quote the serial number from the nameplate, located on the inner side of the access panel.

Spare parts

Always quote the air curtain serial number, model and figure number (shown on label, positioned on the inner side of the access panel), when ordering spare parts. Most major items, such as motors, capacitors, fans, auto-transformers and heating coils are usually available from stock.

Cleaning

1. Air filters can be cleaned by tapping out excess dust and washing in warm water (up to 40°C), using detergent if necessary. The filter must be rinsed and allow to dry naturally before replacing. Do not use a vacuum cleaner, as it can damage the filter media. Filters should be replaced after approximately 20 washes.
2. Because the air filter retains most of the dusty particles, it will only be necessary to clean air curtains annually. An industrial vacuum cleaner can used to clean the inside, in particular the heater coil or electric element and fans, with suction through the coil in the opposite direction to normal air flow. All accessible surfaces can be cleaned with a cloth.

Please note:

1. If fitted, the LTC thermostat will switch power to the fan only when the thermostat clipped to the return pipe on the heater coil reaches the required temperature. For a type 1 (fixed setting) - approx. 50°C ± 3K or for type 2 (adjustable setting) 30-90°C.
2. If fitted or remote fan speed controls are being used, check that they operate correctly.