

Series UH Unit Heater

Sitework Instructions/Recommendations

DUNHAM-BUSH®

Product Data Sheet - Applications Department
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Introduction

This booklet provides guidance for site activities necessary to handle, store, install and commission series UH unit heaters.

Please study the information carefully before commencing site work.

Identification

The nameplate on the side of the heater casing is marked with the unit designation, serial number, motor electrical supply, and maximum working and test pressures.

Description

Each basic heater consists of a casing, heating coil, discharge louver and a fan/motor plate assembly. A wide range of accessories is offered. Series UH unit heaters are suitable for horizontal and vertical application and set of four hanging plates is provided for site fixing to suit the required application.

Range

Series UH unit heaters are offered in four casing sizes, 1, 2, 3 & 4. Each casing is offered with a choice of four hot water coils. Type A, B, C & D, and one steam coil, type S.

All motors are single speed only, normal or low. All standard motors have built-in thermal cut-out, to prevent the motors overheating.

Accessories

A wide range of accessories is offered, including filter box, mixing box, inlet box. Wall/ceiling brackets, wide spread discharge, discharge cone, four sides discharge and contactor starter switches.

Handling

Unit heaters are usually palletised either individually or in groups. Appropriate lifting equipment, such as a fork lift truck or crane may be required for off-loading. Care should be taken to ensure units are not dropped or knocked under any circumstances.

Storage

Units should be stored under clean dry conditions and packing should not be removed until heaters are required for installation, unless damage in transit is suspected. (Note – the buyer must examine the goods promptly upon arrival and is not entitled to make any claim against the Company in respect of damaged goods, unless at the time of delivery the consignment note is endorsed by the buyer and countersigned by the carrier or shipping agent, with a note detailing the damage complaint).

Preparation

Proper supports must be provided for the unit heater, pipework and electrical conduit. When applicable, ducting should be properly supported and flexible connections are recommended to reduce noise transmission.

Application

Refer to mechanical services drawing for location and mounting height of each unit.

Please note the following: -

- a) Units should be installed allowing unobstructed air inlet – recirculation heaters.
- b) When units are being installed for vertical application it is important to avoid overheating and damaging the motor when it is switched off. If the water temperature exceeds 100°C or if steam is used, a valve must be fitted in the flow pipe, arranged to automatically shut-off when the fan motor stops.
- c) Sufficient clearance must be allowed, to give access for removal of motor/fan guard assembly.
- d) When accessories such as filter box and/or mixing box are supplied, leave sufficient clearance for maintenance and adjustment.



Pipework Connections

Hot water coils

The water flow must always be fitted to the coil connection nearest the air outlet – see page 4. Valves should be fitted for balancing and isolation purposes. An air vent should be fitted at a high point adjacent to each heater, to permit purging of air from the coil. A drain should be fitted at low level.

Steam Coils

The steam supply must always be fitted to the top connection, see page 5. A suitable steam trap, strainer and check valve must be fitted to the bottom condensate connection. A scale pocket, the same size as the condensate connection, is also recommended.

Installation

Each unit is provided with a set of mounting plates, screws and washers. The four hanging plates should be screwed to the sides of the heater, to suit the required horizontal or vertical application. When accessories are fitted to the inlet, the hanging plates should be positioned so that the unit is balanced when suspended.

As an alternative to the standard mounting plates, a pair of fixing brackets for wall or ceiling mounting can be supplied for site fixing. From the nameplate on the side of the casing, check the unit size and electrical supply details are correct for the location, before lifting into position. Make pipe connections and electrical connections as detailed in the relevant sections of the instructions.

Note: - Wall/ceiling fixing brackets are not suitable for use with mixing boxes.

Commissioning

1. Coils

Check coil connections for leaks.

Hot water coils: - Vent coils by means of air vents in mains above unit. Balance water volume flow rate, to give the appropriate water temperature drop, by means of the valve on the 'return' connection.

Steam coils: - It is desirable to allow steam to pass through the coil and exhaust to atmosphere, to clean the system before connecting the strainer and steam trap.

Site Test and Working Pressures

Coil Type	Max Working Pressure	Max Cold Test Pressure	Max Operating Temperatures
AS	20	30	140
BS	20	30	140
CS	20	30	140
DS	20	30	140
SF	8	30	180

2. Electrical

When using a starter with adjustable overload, set the overload to suit full load current shown on the motor nameplate. Switch on the electrical supply and check that the fan is rotating in the correct direction. To reverse rotation refer to wiring diagrams. If a unit is controlled by a room thermostat, adjust to the specific temperature.

3. General

When applicable, adjust drop rods so that the unit is level and free from vibration, and pipework is not under stress. Where applicable, adjust the outlet louvers. For horizontal applications, adjust the angle of inclination to ensure warm air reaches working level but will not cause annoyance.

For vertical application adjust louvers to suit mounting height and required spread. Louvers in the vertical position will give maximum downward throw and minimum spread. Angling the louvers will give the opposite effect.

Electrical Connections, Warning

All units with standard motors must be properly protected against overheating/overloading by using the thermal cut-out in the motor windings; otherwise the motor guarantee is void.

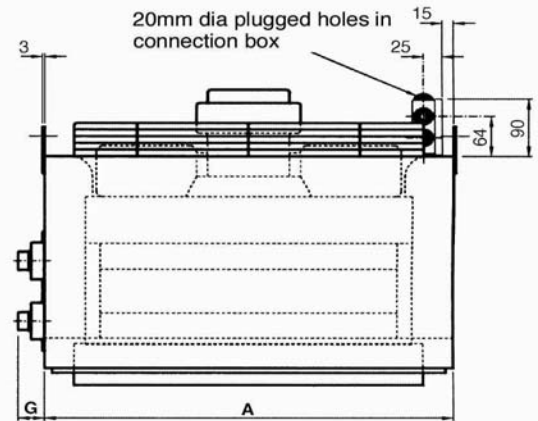
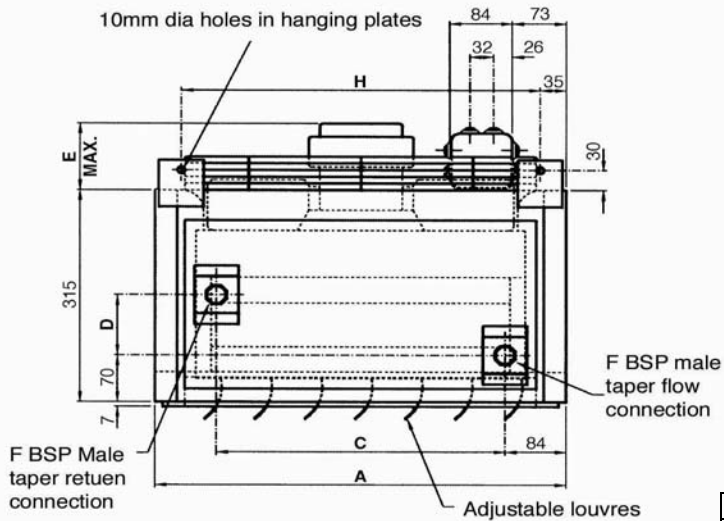
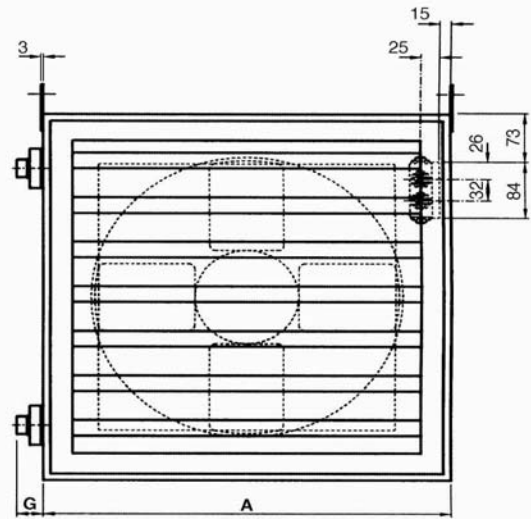
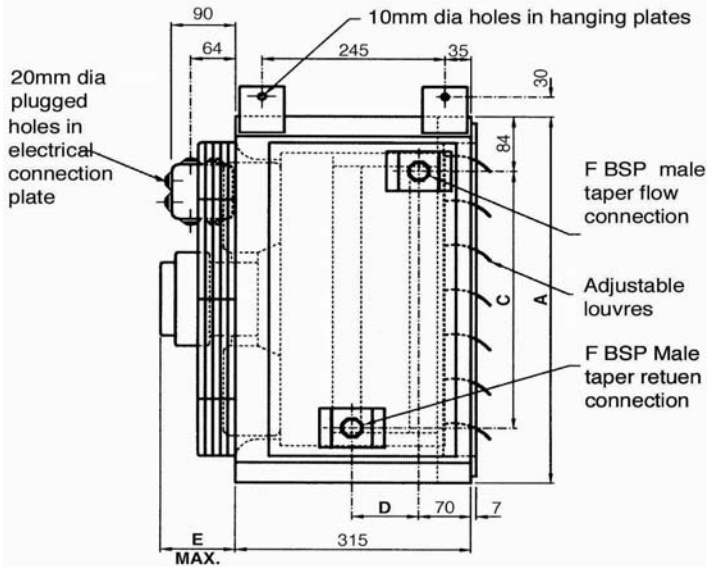
When supplied, explosion proof motors do not have thermal cut-outs and must therefore be protected by a starter with sufficient current overload protection, to suit the motor full load current.

Before connecting the electrical supply, check that the motor nameplate electrical details are the same as the supply available on site.

When wiring to units with accessories on the inlet, note there is a knockout in one of the side/top panels for conduit or cable entry. Remove one of the panels which are at 90° to the panel with knockout. This provides access to the motor junction box.

Refer to the appropriate wiring diagrams on page 6. When wiring units with flameproof motors, connect directly to the motor terminal box.

BASIC UNIT – HORIZONTAL APPLICATION, HOT WATER COIL, DISCHARGE LOUVERS AND HANGING PLATES



Note: Hanging plates supplied loose for fixing to unit prior to installation of unit on site

SIZE	COIL	A	C	D	E	F	G	H	
1	AS	450	287	46		3/4	37	380	
	BS			68		3/4			
	CS			89		3/4			
	DS			111		3/4			
2	AS	550	387	46		3/4	37	480	
	BS			68		1			44
	CS			89		1			44
	DS			111		1			44
3	AS	650	487	46		3/4	37	580	
	BS			68		1			44
	CS			89		1			44
	DS			111		1			44
4	AS	800	637	46		1 1/4	44	730	
	BS			68		1 1/4			51
	CS			89		1 1/4			51
	DS			111		1 1/4			51



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