INTRODUCTION

This booklet provides guidance for the site activities necessary to identify, handle, install, commission and service Dunham-Bush Hydrocourse Trench Heating. Where necessary, Hydrocourse Trench heating orders are supplied with baseboard layout drawings (BL drawings), which show the location of all runs of equipment relative to the building.

These instructions are to be read in conjunction with, where applicable, the customer approved base layout drawing (BL drawing).

The instructions refer to the standard product only: please refer to drawings and diagrams supplied for details of any special features. Please study all documentation carefully before commencing installation work.

IDENTIFICATION

Refer to diagrams for exploded views and identification of the main parts. On majority of schemes, there will be a customer approved layout drawing, which details each run, its overall length and individual part numbers.

DESCRIPTION

The system comprises casings formed from black powdered coated steel, aluminium finned copper tube element and rigid or roll satin anodized aluminium grilles. The standard finned element lengths are manufactured with 15mm or 22mm O.D. copper tube and aluminium fins having a nominal spacing of 6mm. Casings and elements are sized to accommodate single or double runs of finned element lengths where appropriate, in progressive ascending output combinations.
HANDLING

Small orders are usually packed in boxes and can usually be off-loaded by hand. Larger orders are usually palletised and lifting equipment should be provided by the buyer. Care should be taken when handling to avoid damage.

STORAGE

Hydrocourse Trench components should be stored under dry, clean conditions. Any protective packing should not be removed until the components 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 ‘delivery note’ is endorsed by the buyer and countersigned by the carrier or shipping agent with a note detailing the damage).
STANDARD RANGE

There are 22 standard casing styles in three groups.
Standard Casing Type: - HTA-1 to HTA-10
Return pipework: - HTA-1/P to HTA-10/P
Cast Iron Grille: - HCI-11 & HCI-12

Casing
The casing type is defined by model reference; H - (Hydrocourse)TA – (Transverse Aluminium Grille Bars) and the casing size type number. The ‘P’ suffix denotes whether a casing is fitted with provision to accommodate return pipework, and the suffix ‘CI’ denotes cast iron grille models. Dunham-Bush Hydrocourse Trench heat emitters casings are manufactured in 22 standard types and in fixed lengths of 500mm, 1000mm, 1500mm.A telescopic 1000-1500mm length and a 50-1000mm trim length are also available where the trench length is less than 150mm or not in increments of 500mm.

Elements
Element types W, X, Y and Z are manufactured in 15mm or 22mm O.D. copper tube.
Fin types: -
W = 70mm x 75mm 15mm & 22mm
X = 60mm x 48mm 15mm & 22mm
Y = 100mm x 70mm 15mm & 22mm
Z = 100mm x 100mm 15mm & 22mm
The number of elements and orientation in a run is defined by the number of letters before the fin size. i.e. W-070 = single run of W element set at (70mm high x 75mm wide), WW-070 = double run of W element set at (70mm high x 75mm wide). Element is supplied in 1000mm and 1500mm lengths, element can be trimmed to length onsite.

Accessories
End caps for finishing Hydrocourse Trench casing runs, and 90° / 270° butt & mitred corners are as standard in all casing sizes.

Floor Grilles
Rigid or flexible roll grilles are available. Roll grille shall be supplied as standard. Applications, as classified in BS EN 13264:2001
Y-Bar Roll Grille
6.2mm thick 'Y' profile bars in silver satin extruded aluminium, crimped onto flexible black nylon tube and pitched at 13.5mm centres; available in 0.5m, 1.0m, 1.5m and 3.0m lengths. Generally for light duty applications.
I-Bar Roll Grille
3mm thick 'I' profile bars in silver satin extruded aluminium, fixed onto steel spring cores and pitched at 12.5mm centres; available in 0.5m, 1.0m, 1.2m, 1.25m, 1.5m, 1.75m, 2.25, 2.75m, 3.0m and 3.25m lengths. Generally for light duty applications.
INSTALLATION

Preparation
Allow for a suitable trench with a working clearance. The top of the Hydrocourse Trench should be flush with the finished floor level and any cornering. The bottom of the trench should be suitable for accepting the point loading of the levelling screws etc. or telescopic mounting feet (see Diagram 3) Refer to supplied BL drawings for assembly of casing runs, corners, expansion joints, adjustable & trim sections.

Identify trench sections and lay them out adjacent to the trench. Check that all items have been supplied as per the delivery note and BL drawing.

⚠️ WARNING
Assembly and installation should be undertaken by qualified personnel only.
Prior to assembly and installation, ensure that all electrical supplies are disconnected from the trench heater via local isolators.

Some internal components may have sharp edges. Care must be taken when assembling and installing this product and it is recommended that protective gloves are worn.
ROOM SIDE  HTA-2P  WINDOW / WALL

ROOM SIDE  HCI-11 & HCI-12  WINDOW / WALL

HYDROCOURSE TRENCH HEATER 
HCI-11 & HCI-12 DOUBLE ELEMENT SECTION

<table>
<thead>
<tr>
<th>UNIT</th>
<th>H</th>
<th>W</th>
<th>T1</th>
<th>T2</th>
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<tbody>
<tr>
<td>HCI-11</td>
<td>175</td>
<td>226</td>
<td>41</td>
<td>75</td>
</tr>
<tr>
<td>HCI-12</td>
<td>150</td>
<td>328</td>
<td>56</td>
<td>105</td>
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NOTES:
1. Lay Hydrocourse casing(s) into trench or on floor in position required, see layout drawing(s).
2. Adjust levelling feet using screwdriver until top of casing is level and 25mm below invert of heater. See Fig. 1a.
3. Offer casing to adjacent casing and joint through flanges using M6 fixings supplied. See Fig 1b.
4. For detailed instructions on fitting of end caps and corners, and adjustment of telescopic and trim casing, refer to Sheets 3 to 6 inc. of Installation Details.
5. Fit neoprene strip provided to element support bracket, as shown in Fig 1a.
6. Fit element and pipework as required, see Fig 1c. Make all joints, allowing for expansion, drainage, venting, etc. then pressure test.
7. Slot baffle plate into element support bracket, see Fig 1c.
8. Starting from end of casing fit edge trim to casing. Where possible joints should NOT be made at casing joints. Trim last length of edge trim to required length and fit, see Fig 1d.
9. Check top of edge trim is at required invert and level in horizontal plane adjusting levelling feet as necessary.
10. Starting from end of casing lay grille onto edge trim, see Fig 1d. After 48hrs. of heating to allow for shrinkage, trim last length of grille to required length and fit.
11. Refer to drawing 5132-032 for Electric Hydrocourse Installation instructions.
NOTES:
1. Rivet end cap to end of casing as required. Position casing, levelling as per standard casing detail.
2. Position casing in required location, refer to layout drawing. Install this and remaining casings as per standard casing detail.
3. Fit end edge trim followed by side edge trim, as Fig. 4a.
   **NB** Check invert of edge trim is correct and level in horizontal plane by adjust levelling feet as necessary.
4. Fit remaining components as per standard casing detail.
NOTES:
1. Measure length between adjacent casings Dim. X.
   See Fig. 5b.
2. Extend sections of telescopic casing to equal Dim. X, taking care to centralise middle section of casing, and lock sections to required length using M6 fixings, as detailed in Fig. 5c.
3. Fit remaining components as per standard casing detail.
FIG 6a

SIDExTRUSION

BAFFLE

FIG 6b

ADJACENT CASING

FIG 6c

ADJACENT CASING

CUT-LINE AT SLOTS
CLOSEST TO BUT LESS
THAN DIM Y.

FIG 6d

ADJACENT CASING

FIG 6e

ADJACENT CASING

NOTES:
1. Measure length between adjacent casings, Dim Y. See Fig. 6b.
2. Identify slots around casing closest to, but not greater than,
   Dim. Y and cut off excess trim casing using slots as a guide,
   see Fig. 6c.
3. If dim Y exceeds 500mm, one element support bracket is required.
   Bracket to be riveted centrally to trimmed casing using rivets
   supplied, see detail Fig. 6d.
4. Fix sliding bracket to trim casing at opposite end to casing bracket
   using 4 No. pop rivets supplied, to adjust to overall length of
   dim. Y, see Fig 6e.
FIG 7c
HIGH PRESSURE EXPANSION JOINT
MAX. OPERATING CONDITIONS: 78a, G @ 82°C
COLD TEST PRESSURE 10.5 Bar G
@ AMBIENT TEMPERATURE

NOTE:
1. Position, spotdrill and fix pipe guide support to base
   of casing using 2 No. M4x10 screws supplied, see Fig. 7a.
2. Position couplings (Couplings by others) at ends of expansion
   bellows tails. Determine required element length to position
   bellows at mid line of support bracket, trim elements to
   length. Clean & flux joint components assemble joints ready for
   soldering.
3. **CAUTION!!** ONLY USE SOLDER AND NON-ACTIVE
   FLUX SUCH AS 99/15Sn/Cu SOLDER AND 'YORKSHIRE' FLUX.
   ENSURE THAT FLUX AND SOLDER TO NOT COME INTO CONTACT
   WITH THE OUTSIDE OF THE BELLOWS SLEEVE WITHIN THE
   PROTECTIVE HOUSING.
4. Annealing of the expansion bellows MUST be avoided. The
   soldering flame should only be directed on the copper
   tubing and NOT the bellows. The bellows must NOT exceed
   300°C during soldering.
5. After installation, flush pipework and clean the outside of
   the joint with a damp cloth to remove all flux residue.

FIG 7a

FIG 7b
LOW PRESSURE EXPANSION JOINT
MAX. OPERATING CONDITIONS: 3Bar G @ 110°C
COLD TEST PRESSURE 4.5 Bar G
@ AMBIENT TEMPERATURE
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Declaration of Conformity

We, Dunham-Bush Ltd. of Downley Road, Havant, Hampshire, England, PO9 2JD, hereby declare conformity of the 'Hydrocourse' trench heating product with the following European Union Directives:

- Pressure Vessel Directive 97/23/EC
- Construction Products 305/2011/EU

In addition, we declare that the 'Hydrocourse' trench heating product complies with the following standards:

- EN 442-1 Specification for Radiators and convectors
  Part 1: Technical Specifications and requirements
- EN 442-2 Specification for Radiators and convectors
  Part 2: Test Methods and Ratings
- EN 442-3 Specification for Radiators and convectors
  Part 3: Evaluation of Conformity
- EN13264 Ventilation for buildings. Floor mounted air terminal devices. Tests for structural classification

For and on behalf of Dunham-Bush Ltd.

[Signature]

David Shuttleworth B.Sc., C.Eng. MCIBSE
Technical Director

Date 11/2/13
MAINTENANCE

Every 3-6 months the grille should be lifted and the casing inspected for dust and debris. Any dust and debris be vacuumed from the casing, the finned element. Great care must be taken not to damage the finned element, a soft brush attachment should be used.

⚠️ WARNING

Maintenance should be undertaken by qualified personnel only.

Some internal components may have sharp edges. Care must be taken when servicing this product and it is recommended that protective gloves are worn.

SPARES/SERVICE

PLEASE WRITE THE DETAILS OF THE UNIT HERE.

These details will be required when ordering spares for you Dunham-Bush Hydrocourse Trench Heater.

HEATER TYPE AND MODEL INFORMATION

SERIAL NUMBER

DATE OF INSTALLATION

Spare parts/service – Please contact our office, contact information shown below.

Manufacturer reserves the right to change any product specification without notice.
<table>
<thead>
<tr>
<th>Sales and Technical Support</th>
<th>Spare Parts and Service</th>
</tr>
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<tbody>
<tr>
<td>Tel: 023 9247 7700  Fax: 023 9245 3601</td>
<td>Tel: 023 9247 7700  Fax: 023 9245 3601</td>
</tr>
<tr>
<td>Email: <a href="mailto:info@dunham-bush.co.uk">info@dunham-bush.co.uk</a></td>
<td>Email: <a href="mailto:spares@dunham-bush.co.uk">spares@dunham-bush.co.uk</a></td>
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