

## INSTALLATION INSTRUCTIONS

### INSTALLATION OF ROUND TUBES AND FITTINGS (TO TIGHTNESS CLASS D)

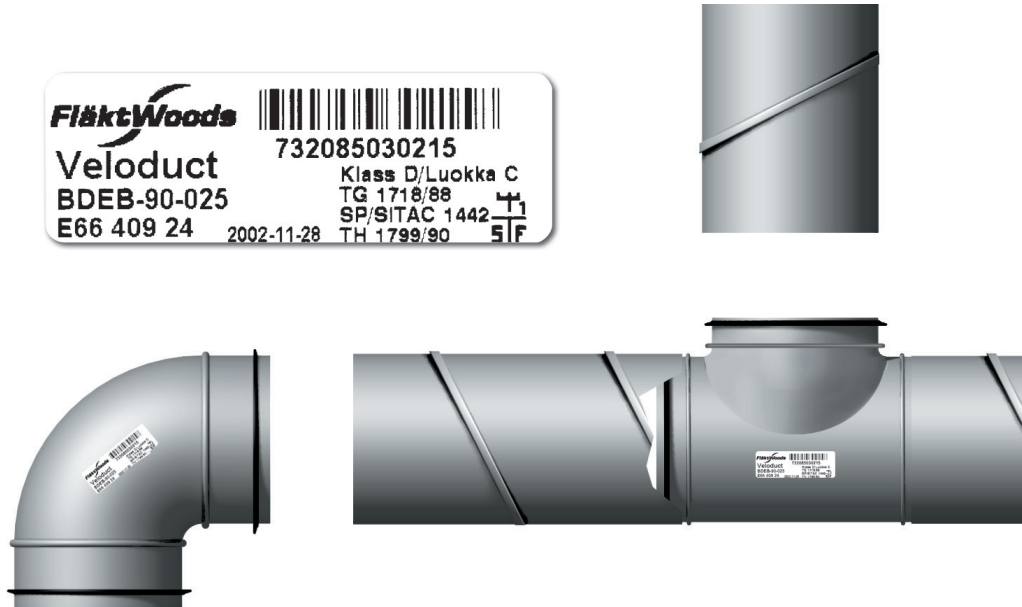


Fig. 1

### THE TYPE APPROVAL

The Veloduct ducting system has been granted type approval by SITAC (the Swedish Institute for Technical Approval in Construction) in accordance with Type Approval Certificate 1718/88. The type approval signifies that a Veloduct ducting system, installed in accordance with this instruction, complies with the provisions of the Swedish Law (1994:847) on technical specification requirements for construction work, etc. In order for the type approval to be valid, it is required that all details be marked as shown in Fig. 1 or in a similar manner.

Components without this seal of approval may only be employed to a limited extent and only if they are essential for connection to items of equipment or for special matching of the ducting to the building structure.

The supervisor must check any components which do not bear the seal of approval with regard to the sealing employed and the installation. The sealing employed and the installation.

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#### PREPARATORY WORK PRIOR TO INSTALLATION



#### WARNING!

Ventilation ducts made of thin sheet metal sometimes have razor-sharp edges.

#### WEAR PROTECTIVE GLOVES!

Be especially careful with the following:

- cut edges of spiral ducts
- straight (non-folded) sheet metal edges of assembly parts.

1. Select a suitable section of ducting and check that the duct can be run in accordance with the drawing before collecting the necessary components from the storage area.

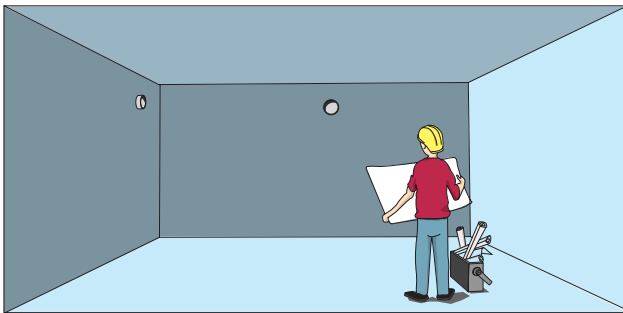


Fig. 2

2. Collect the necessary fittings and tubes. Check that they aren't damaged in any way that would cause air leakage in the finished ducting system, such as holes left after rivets/screws have been removed from reused parts. If the storage area is well arranged and has good weather protection, the components will be easier to find, and the risk of damage or wastage will be reduced. A sign such as that shown in Fig. 3 will facilitate the delivery of materials.

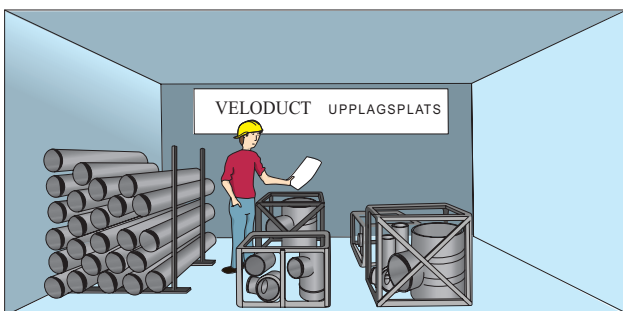


Fig. 3

3. Cut the tubes at right angles to the measured lengths (make allowance for the fitting lengths of the components), and deburr the tube ends thoroughly, using a file or a deburring tool.

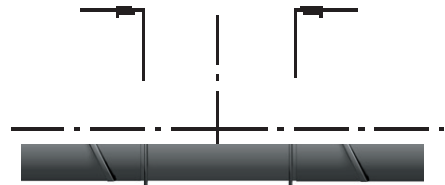


Fig. 4

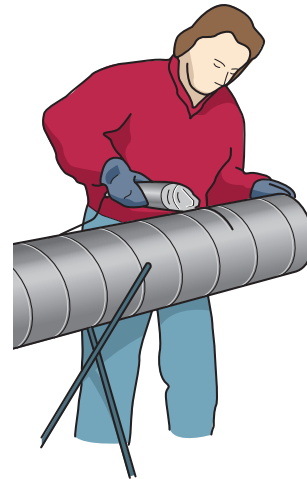


Fig. 5

#### INSTALLATION

4. Assemble suitable sections on the floor. To facilitate the fitting of one part into another, turn one of them while pushing it in.

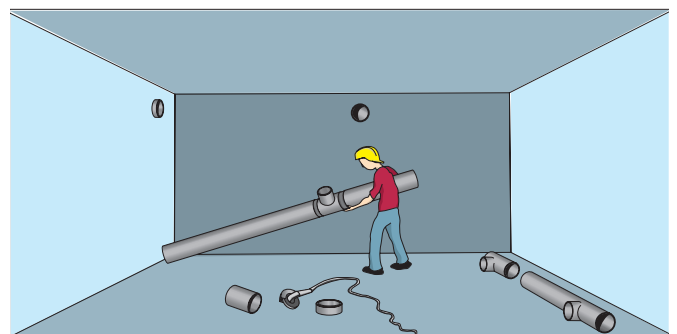


Fig. 6

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#### SIZE 008–063 COMPONENTS

a) Minimum overlap = to edge of bead

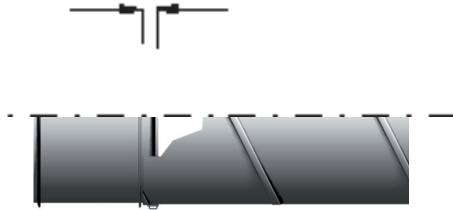


Fig. 7

#### SIZE 035–125 COMPONENTS

b) Minimum overlap = until the dimples centre to tube end

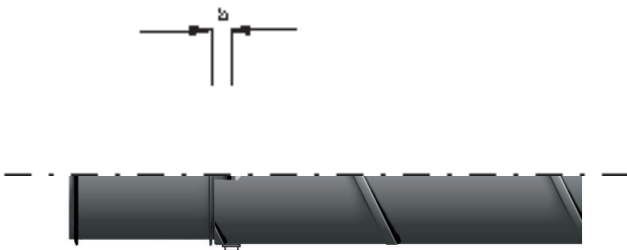


Fig. 8

- Fit together the various components as shown in Fig. 7 and 8.
- Lock the joints. All joints must be secured by means of self-tapping screws or pop rivets in the ducts. The purchaser decides which fasteners can be utilised for ease of cleaning. The number of self-tapping screws or pop rivets necessary is specified in the table above. Locate the screws at such a distance from the tube end that the rubber seal will not be damaged. Space the screws equally around the periphery, and arrange them in such a manner that the gap between the tube and the fitting will be as small as possible. The ductwork can be locked with the tubes and fittings resting on the floor, or this can be done after the ducting has been suspended. The latter procedure facilitates adjustment of the overall length and the positions of various fittings.

Duct size	Number of screws/pop rivets
008-016	2
020-031	3
040-063	4
080-125	8

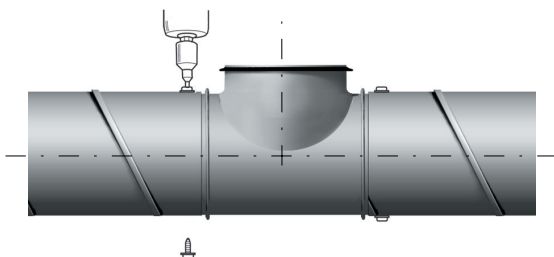


Fig. 9

- Fit the hangers (e.g. XCEZ-111 Veloduct hanger straps). The distance  $L$  between hangers should not exceed 3.0 m for uninsulated ducts and 2.0 m for ducts with fire insulation.

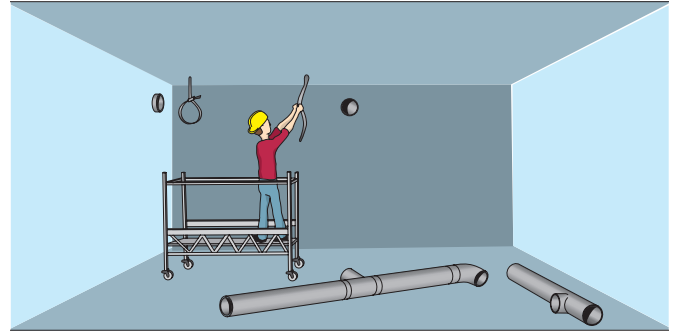


Fig. 10

- Suspend the duct sections from the hangers.

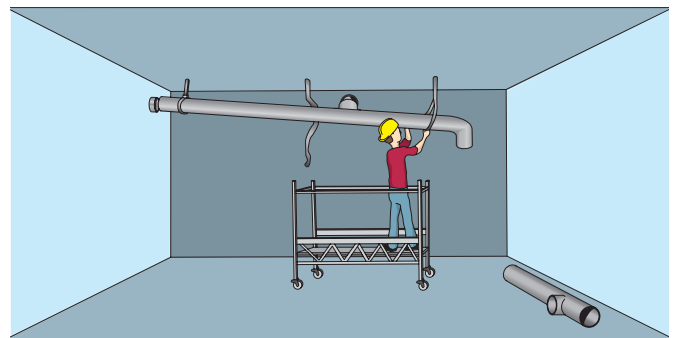


Fig. 11

- Insertion is facilitated if the entry end is located so that the seal will not be nipped.

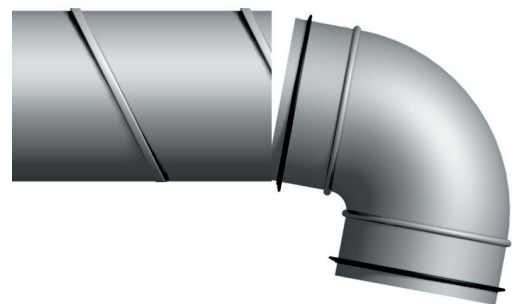


Fig. 12

- Readjustment of Veloduct joints: If it becomes necessary to turn one or both duct components at their joint, and the rivets or screws securing it are removed, the rivet/screw holes left in the duct component will have to be sealed before the joint is relocked. Keep in mind that an open hole in the insertion end of the duct component will leak even though it is concealed by a tube or connection piece.

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11. Removal of fittings or tubes: Turn the component while withdrawing since the seal will otherwise fold and render dismantling difficult.

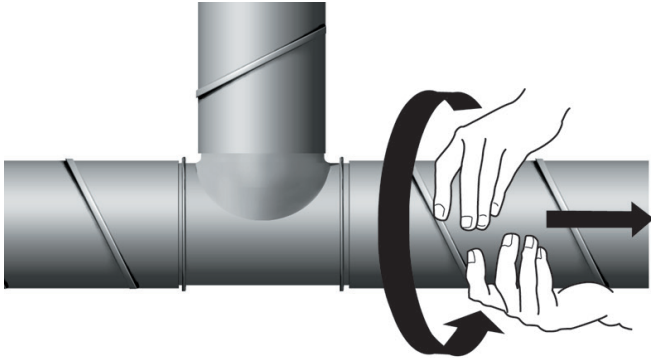


Fig. 13

### INSTALLATION OF PRODUCTS WITHOUT SEAL OF APPROVAL

12. Products without seal of approval incorporated into the ducting and fitted in accordance with the provisions of the seal of approval must be sealed so that they will definitely be in conformance with tightness class D. The seal at joints, etc. must be checked visually before fitting into the ducting. A test report must be produced for products with concealed joint seals. Components not provided with VELODUCT seals must be sealed in accordance with relevant parts of the example below. The sealing material should be non-ageing and permanently elastic.

#### A) Mounting frames and branches for duct fittings and equipment branches (Fig. 14).

Deburr the tube end (1).

Apply an abundant coating of sealing agent to the end of the branch so that a bead of sealing agent will be formed (2).

Push the branch into the tube.

Secure the branch to the tube by means of self-tapping screws/ blind rivets.

If sealing compound cannot be applied to the outside of the branch (e.g. in the case of a mounting frame), apply additional sealing compound at the inner end of the branch (3).

If the branch is accessible from the outside (item of equipment), spread out the compound which has been squeezed out (4). If necessary, apply additional compound until a uniform, sealing bead has been



Fig. 14 a

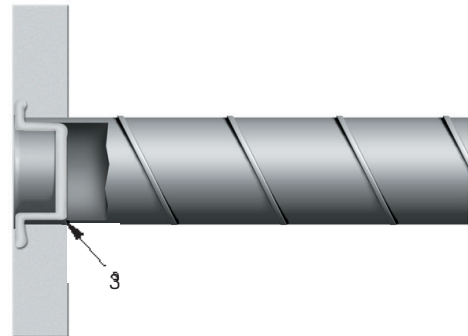


Fig. 14 b

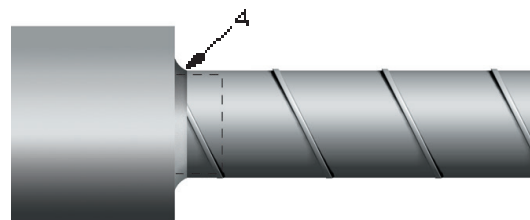


Fig. 14 c

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#### B) Securing of products to the building structure (Fig. 15).

Check that the joint surface (1) is smooth.

Apply a sealing strip to the joint surface of the product (2).

Secure the product to the building structure. Then seal the inside of the joint (3) or, if preferable, on the outside.

Refinish with concrete or similar material, if necessary (4)

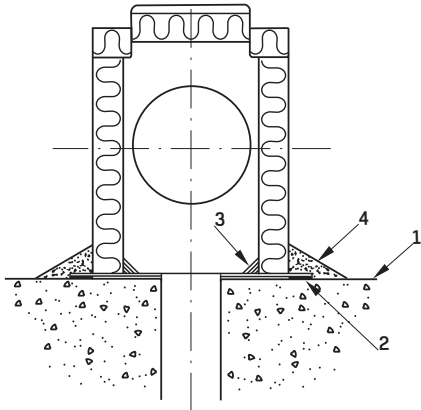


Fig. 15.

#### C) Sealing of rectangular joint against items of equipment (transition from a circular duct to an item of equipment with a rectangular connection) as shown in Fig. 16.

If possible, the circular connection (1) of the transition piece should be made by means of a VELODUCT joint.

The rectangular joint (2) should be of the factory-made type and should be fitted in accordance with the manufacturer's instructions for tightness class C.

A flanged joint (bolted joint) must be fitted with a non-ageing sealing strip and external corners under the flange should be carefully sealed with sealing compound (3).

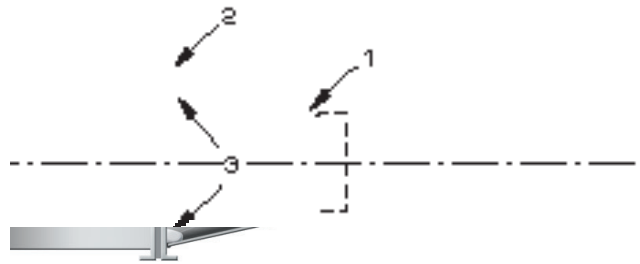


Fig. 16.