



NORDsmoke - Circular smoke extraction ducts Installation instruction

General

NORDsmoke is a certified ventilation ducts product group for single compartment smoke extraction. It is used in a system to control the movement and/or containment of smoke and heat.

ETS NORD NORDsmoke smoke control duct section achieves CE standard requirements.

NORDsmoke ducts are in accordance with EN 13501 standard. Duct system has been tested for 600°C/2 hours (according to EN 1366-9).

NORDsmoke smoke extraction ducts are classified according to EN 13501-4 as follows:

$E_{600} 120 (v_e - h_o) S 1500$

Classification report of the fire resistance of a smoke extraction duct according to EN 13501-4

Maximum negative pressure is -1500 Pa

Maximum positive pressure is +500 Pa

Resistance temperature is 600 °C for 120 minutes

Round smoke control duct section

We produce NORDsmoke round ducts and fittings according to the requirements of standard EN 1506:2007. Components of NORDsmoke ventilation round ducts fulfil requirements of density class D, if stated installation instructions are followed.

All NORDsmoke round male fittings are equipped with EPDM rubber seals and promaseal tape, which maintain their proper characteristics after installation.

Maximum permitted dimension for installation is Ø 1000 mm.

Marking

Marking of standard products should clearly indicate the type and size of the product. All dimensions are given in millimeters. Each product of the smoke and heat control systems ducts are labeled with the CE label and smoke control ducts also with NORDsmoke adhesive tape.

Round smoke control duct system installation

Only permitted for single compartments, i.e. the smoke zone and/or fire compartment with smoke extraction ducts of sheet steel are not allowed to be lead through fire-resistant walls or fire walls into other fire compartments.

The connections of the fittings are by means of plug-in joints fitted with factory-mounted sealings and with a thermo intumescent sealing to guarantee the leak tightness in the event of a fire and shall also be secured by steel rivets.

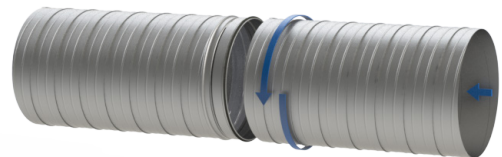
When installing use only NORDsmoke smoke control ducts system CE-marked ducts and fittings.

1. Preliminary operations

- Before commencing ensure that the installation location corresponds to the design drawings and check that the installation of ductwork is possible according to the drawings before delivering system components.
- Stock necessary ducts and system components in a closed area of the installation place and protect them from atmospheric impacts. Ensure that ducts and other components are not damaged in a way affecting their density. Use of damaged parts must be avoided.

2. Connection of duct components

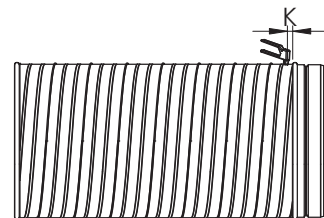
- 2.1. Cut ducts to required sizes using a cutting disc or nibbler, taking account the fitting lengths of system components. Cuts must be perpendicular to the duct axis. Wear protective glasses while cutting. Always clean off metal particles after cutting. Round off cut edges, i.e. by file to avoid possible seal damages.



- 2.1. Preliminarily attach fittings to ducts on the floor. Turn and push components simultaneously to facilitate attaching.

- 2.1. Use male-coupling (NI-T) or flexible connection coupling (NIL-T) for connection of two ducts.

- 2.1. Push the fitting into the duct until the stop seam. Fasten all fittings with self-cutting metal screws or steel blind rivets. The minimum screws/rivets quantity according to the table (see Table 1). The maximum distance (K) of rivets/screws as seen from the air duct end according to the table (see Table 1). Metal particles resulting from filing should be removed. Distribute rivets/screws as equally as possible to avoid damaging seals. When attaching always position the next rivet/screw opposite the last one, and following the rivet/screw to 90° from the last rivet/screw. When positioning rivets/screws, divide tolerances evenly on the whole diameter.



- 2.1. For saddling a saddle (NPS-T, NPSK-T or NPSV-T) is recommended, as this will enable connection without cutting apart a duct. Place the saddle on the duct and draw the saddle contour on the duct surface. Cut a hole into the duct about 10 mm smaller than the contour. Start cutting from the centre hole of the area to be cut. Apply a sealing compound on hole edges before attaching the saddle. Place the saddle in the correct position and attach.

- 2.1. Simultaneous turning and pulling of a part of a duct will facilitate removal.

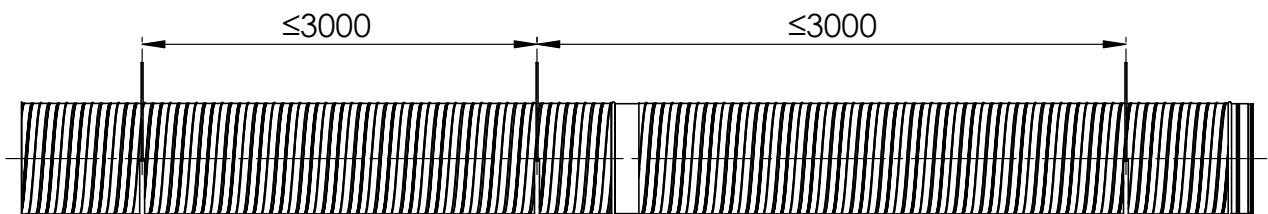
Table 1 Rivets quantity and position distances

Duct diameter mm	Number of rivet pcs	K max., mm
100-200	3	12
250	3	15
315-400	4	15
500	4	30
630	8	30
800	8	40
1000	8	45

3. Supporting of air ducts

Air duct supports must ensure safe support for loads of ducts, duct equipment and smaller extra loads, i.e. occurring during maintenance, repair and construction works. Positioning of supports should not obstruct maintenance and adjustment or make them more complicated.

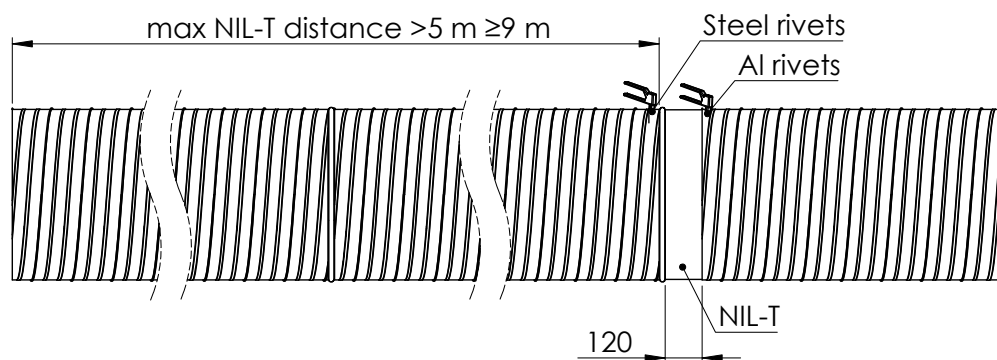
- The suspension shall be performed with mounting clamps. Place clamps as close to fitting points as possible.
- Recommended hanger elements are threaded rods, ensuring the correct appearance of the installation. The maximum tensile load for clamps is 750 N 20,5 N/mm² (M8) and the threaded M8 rods are allowed to be loaded with 750 N each.
- The distance between two suspensions is limited due to the load-bearing capacity of the threaded rods; however, the maximum distance is 3000 mm.
- Attach ductwork on supports. Adjust the installation height as required.
- The supports of the round smoke and heat control ducts shall be performed according to fire safety engineering aspects.
- Tested fire safety dowels shall be used.



4. Thermal expansion compensation

The thermal expansion of the duct must be compensated to prevent damage to the ductwork in the event of a fire. Install the long connector NIL-T on the duct at regular intervals as shown.

4.1 Horizontal installation



4.2 Vertical installation

The vertical ventilation ductsystem shall be suspended with recommended hinge material according to construction conditions, corrosion and fire resistance requirements and a particular system weight.

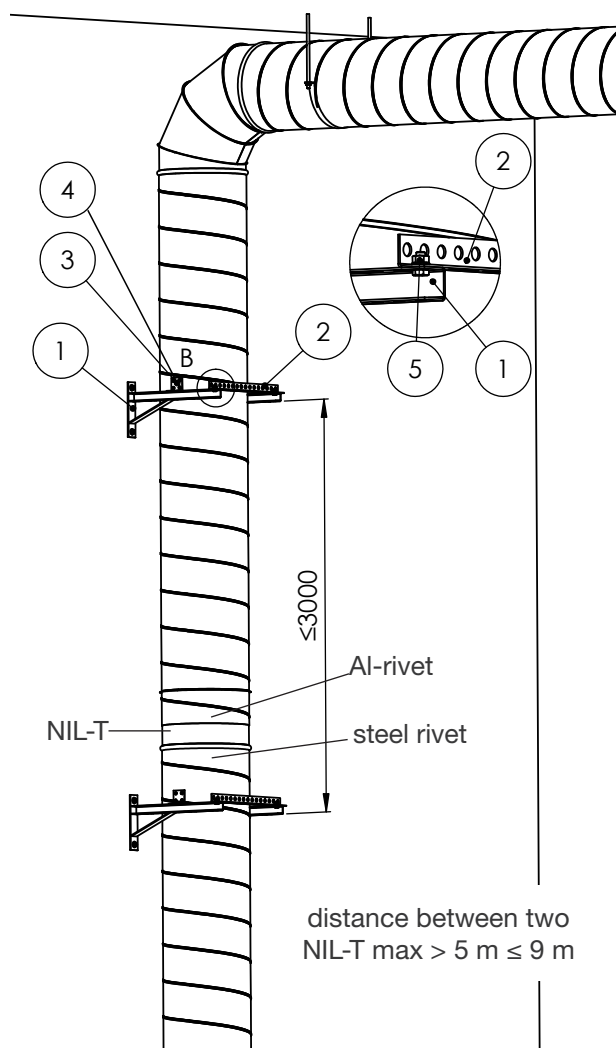
In the vertical installation used supporting materials:

1. wall bracket KOLI
2. mounting rail, L-profile
3. fixing bracket
4. Blind rivet, steel
5. bolts, nuts, washers, M8 min

Install the console brackets (1) as shown on both sides of the duct and attach the mounting rail (2) to the brackets with bolts and nuts.

Secure the two fixing brackets (3) to the duct with four blind steel rivets (4).

NB! The fixing bracket rely freely on the KOLI wall bracket, allowing the duct to move as a result of thermal expansion.





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