GEOVENT

INSTRUCTION MANUAL

CHANNEL DUCT

Type 35

Version 1.0 30.05.2023

www.geovent.com

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1.0 Introduction

This manual is made and designed in order to facilitate the best and most secure interaction with the product. The manual is relevant for people involved in transportation, stocking, installation, using, maintaining and all other thinkable interaction with the product.

The manual must be read in full and understood before interacting with the product.

When the manual has been read and understood in full, the table of contents can be used to find the relevant information in each case.

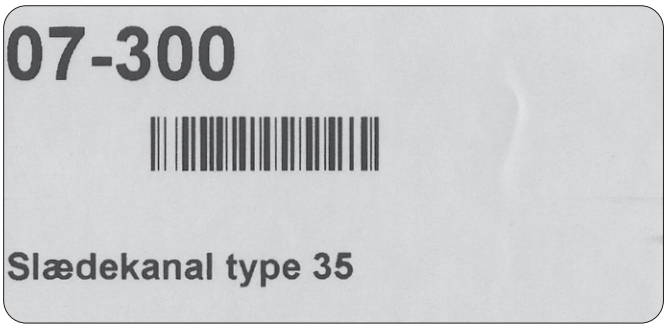
The product is manufactured by:

Geovent A/S
Hovedgaden 86
DK-8861 Løgstrup
DENMARK

Tel.: (+45) 86 64 22 11
E-mail: salg@geovent.dk
www.geovent.com

This manual is to be used for all interactions with the product including: Transportation, stocking, installation, operation and maintenance.

This product is marked with: (example)



2.0 Safety

2.1 General safety

Carefully read this manual before use and observe the safety instructions in order to avoid injuries!
Keep this manual in a safe place!

Secure that all users of the product have read this manual and that they follow the instructions as described.
Observe all instructions marked on the product!
Observe the indications of the manufacturer.
Never use the product if you are in doubt about how it works or what you should do.

When doing maintenance follow the instructions in chapter 7.0.

Do not modify the product or use spare parts from other suppliers than Geovent, as this may hamper the product and the function.

2.2 Danger

You must wear safety gloves when handling or using the product to protect your hands from scratches etc.

Be aware that the product may tilt when you move it.
You must handle the product with care and tie it safely to the truck or the fork lift when it is in transport.

Follow the instructions in chapter 7.0 when the product is maintained.

When handling the product be sure that the there is no risk for the installer, and secure that there are no people around the product, secure that the product cannot fall down risking to injure persons or subjects.

In case of an accident or a fire:
Call for help.

The product is not to be used in areas categorised as ATEX zones, e.g. with dust from aluminium, flour, wood, and other mediums that present an explosion hazard.

If a repair is not possible you should dispose of the product. Please follow the instruction for disposal in chapter 10.0.

3.0 Machine overview

3.1. Description

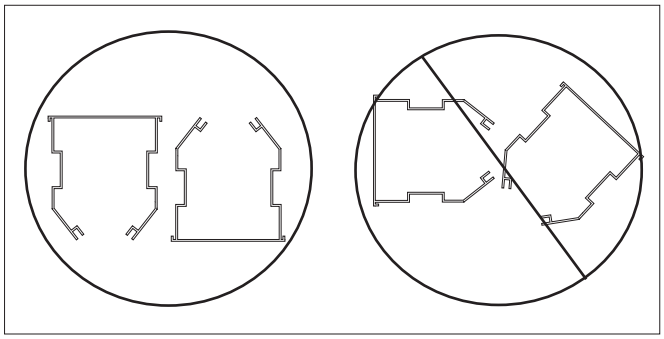
The Geovent Channel duct type 35 system is developed for the extraction of exhaust fumes and welding smoke. When the trolley has been correctly installed in the Channel duct, the trolley may be moved linearly to the area, where it is to be used.
A trolley is mounted in the Channel duct. The hose is pulled down and can be moved to the place where extraction is desired. Various equipment can be added to the system, such as an extraction arm to be mounted on the trolley.

3.2 Intended use

The GEOVENT Channel duct system is a rail system, developed for the extraction of exhaust gas and welding fume. The system can be used in different ways and various optional extras are available. Normally one or several trolleys will be installed in the Channel duct, the trolley may be moved linearly to the area, where it is requested. The hose is pulled down and the nozzle is fixed to the exhaust pipe.

It is also possible to mount a hose trolley prepared for a hose reel (type GTE or GTS). Alternatively, the Trolley may be mounted with an extraction arm

The arm can rotate 360° and is suitable for the removal of welding fume etc.



The Channel duct can only be installed in such a way that the rubber lips point either directly up or down. The Channel duct may not be used in areas classified as ATEX zones, for example extraction of aluminum, flour, textiles and wood dust and other media (eg. vapor / gas) which is associated with danger of explosion.

3.3 Machine specifications

3.3.1 Design

The Chanal duct:
The rail: The actual Channel duct is made of extruded aluminium profile. Neoprene rubber lips are fixed to the duct and are completely tight-fitting at a 5-600 Pa pressure. They are self-sealing. The rubber lips cannot be used for oil/oil vapours.

Trolley: Powder coated steel, complete with 8 smooth-running nylon wheels. Take contact to Geovent if you need trolleys for special applications which are available on request.

Balancer: Safeguards that the hose does not take up floor space and that it is easy to operate. The length and capacity vary from system to system (optional extras).

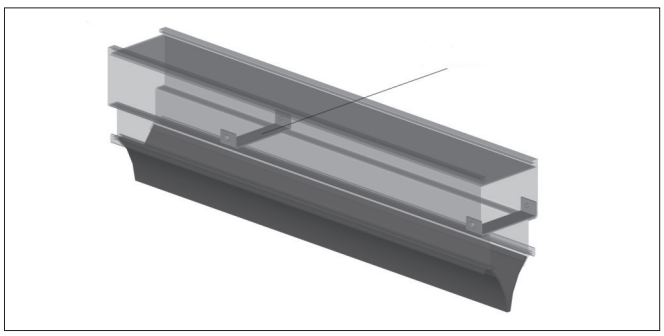
Hose: TPE hose with nylon spiral. The hose may conditionally be run over. Temperature resistant up to 150°C, however briefly up to 170°C.

Nozzle: Is to be fixed to the exhaust pipe of the vehicle. Available in many different executions, such as rubber and steel, with or without vise grip, etc.

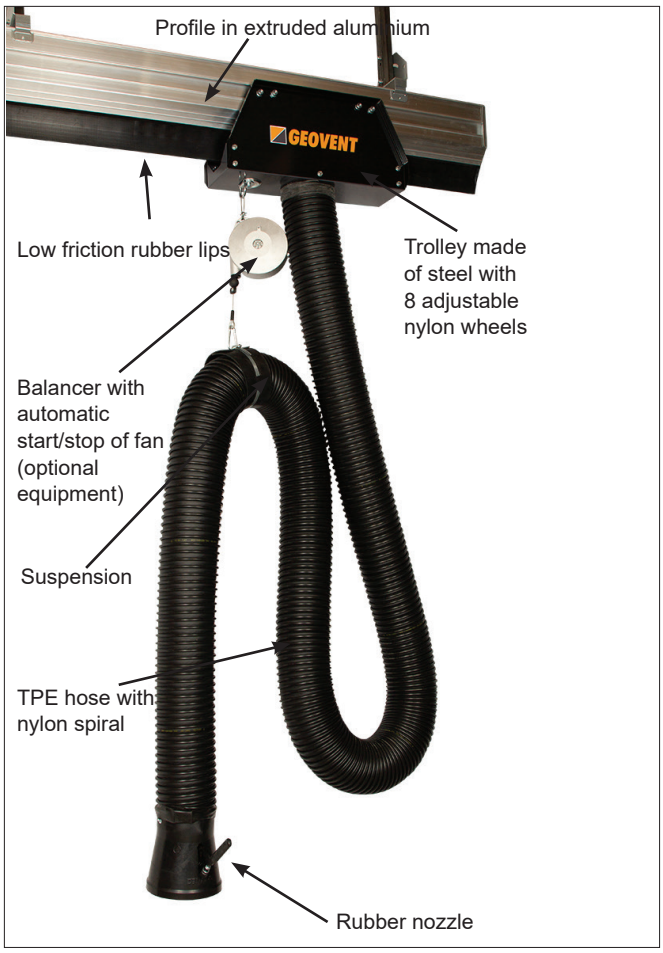
Weight:
The Channel duct weighs 7 kg/m with rubber lips. To this comes the weight of mounting parts, trolley etc.

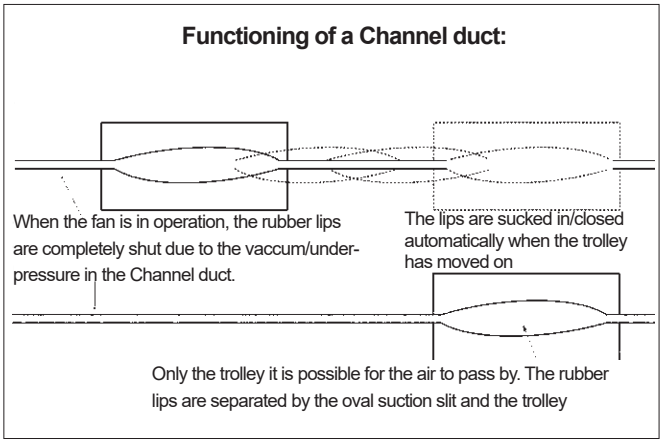
Capacity:
The profile of the Channel duct corresponds to a ø180 mm spiro pipe. Recommended max. volume of air per trolley = 2.000 m³/h
For air volumes > 1.200m³/h a special trolley is necessary. In situations with high pressure, it will be necessary to use a channel bracing to stabilize the Channal duct. The bracket should always be used when a welding arm is mounted on the trolley and when the pressure drop exceeds 1.700 Pa.

Accessories: see page 15.



The channel bracing reinforces the channel and is mounted for every 2 metres.





3.3.2 Technical data

Temperature exhaust air	Max. 150°C
Temperature surroundings	0 - 50°C

In special situations, where the temperature of the exhaust air is higher than 150°C, the standard hose may melt. In order to avoid such a problem, another hose most be chosen or precautions may be taken: Please refer to chapter 9.0 regarding troubleshooting.

Noise data
The actual Channel duct does not emit any noise in itself. The noise level depends on several factors, primarily the relation between the diameter of the hose and the extracted volume of air. If the hose has been under dimensioned in relation to the required volumes of air, wind roar may occur.

Optimum volume of air
Several factors are of importance when selecting the optimum Channel duct solution. Depending on the application, the table below may be used as a guideline for the volume of air, which is requested for the various requirements.

Type of vehicle	Recomm. air volume	Recomm. hose dia.
Small cars	300 m³/h	ø80/ø100
Smaller private cars	400 m³/h	ø100
Private cars > 3000 ccm	600 m³/h	ø125
Vans/smaller trucks	800 m³/h	ø125
Trucks	1000 m³/h	ø150
Contractors machinery	1000 m³/h	ø150
Test stand	1-2.000 m³/h	ø150/ø200

The previous mentioned data cover idle running and is only intended as a guideline. Some projects may involve situations, where deviations from the table occur.

When adjusting, the trolley is placed on the Channel duct system so that the trolley is as far away as possible from the fan.
Many factors can influence the pressure loss in the system. These include how many trolleys are connected, where they are located, how many outlets there are and where the outlets to the fan are located. In addition, the length, size and hanging of the hose determine the pressure loss.

4.0 Transport, handling and storage

During transport in a truck or in another means of transportation the product must be securely packed in a box or a pallet and covered with a water proff material.
The product must be securely stowed in the truck so that it will neither tilt nor shift during transport.

During transport over a short distance e.g. in a stock or a factory, the product can be moved by means of a forklift or a stabeler.
When moved it must be secured that the product does not tilt or shift. And it must be secured that the limitations of the means of transportation is not exceeded.

Secure that there are no people around the product, when the product is moved.

The product must be placed in a dry place and covered securely, in order to secure that moist, metal parts or other substances do not damage the product.
It is not allowed to place anything on top of the product.

5.0 Assembly, installation and start of operation

5.1 Location

The product is placed 3 to 5 meters above the floor.

5.2 Installation

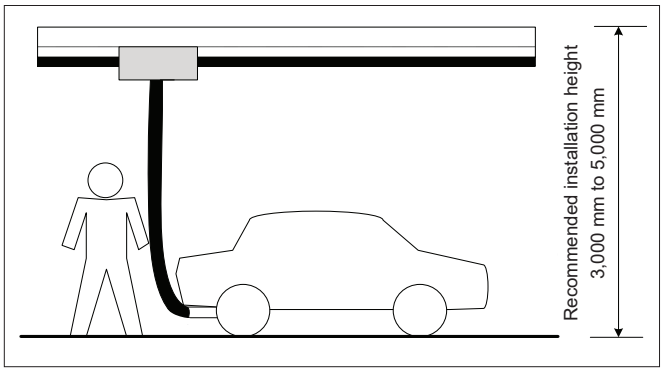
The Channel duct System is supplied disassembled. The Channel duct is supplied in lengths of either 3 or 6 meters.
The Channel duct should be fixed for every 2 to 4 meters.

The following installation instruction should only be carried out by a skilled fitter.

Before mounting, please consider the following:
- Space requirements for the satisfactory installation and service of the Channel duct system.
- Optimum connection possibilities for piping and automatics

The Channel duct may be mounted both in an even and in a sloping ceiling, on a concrete girder/rafter and on the wall. Furthermore, the Channel duct may also be mounted on a column or on a carrying arm (special equipment).

The drawing below shows the recommended installation height.

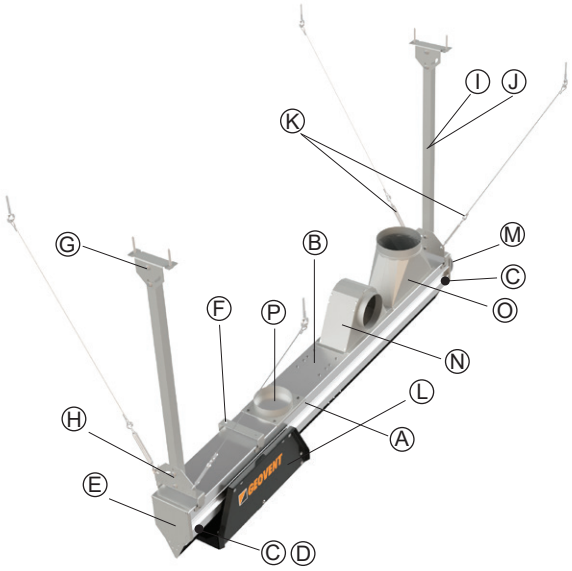


Tools to be used
Drilling/screwing machine, mounting kit (accessory bag with screws, etc.) compass saw, felt tip, spanner or socket wrench set, silicone or aluminium filler.

For Channel ducts of more than 100 meters also a Loctite quick glue or similar for the joining of the rubber lips is requested (optional equipment).

We also recommend using two lifts for lifting the Channel duct up to the required mounting height.

Component overview
Depending on the individual application, one or several of these components may not be included in the individual project.



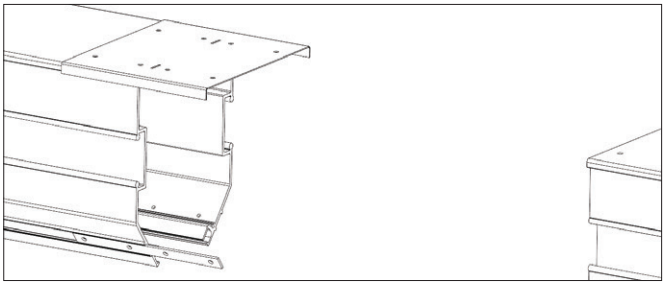
A: Channel bracing for channel duct
B: Channel assembly bracket for connecting 2 lengths of channel duct
C: End stop for trolley
D: Spring end stop for trolley
E: End cover galvanized steel
F: Suspension bracket in galvanized steel
G: Ceiling bracket with tilt function
H: Channel fittings with tilt function for suspension profile
I: Suspension profile 1 meter galvanized steel
J: Suspension profile 2 meter galvanized steel
K: Wiring kit
L: Trolley type 35
M: End connection ø160 mm, from the end of the channel duct to round channel
N: Top outlet 90°, nippel ø160, from channel duct top to round channel
O: Top outlet, nippel ø160 mm, from channel duct top to round channel
P: Top outlet short, nippel ø200 mm, from channel duct top to round channel

Procedure:

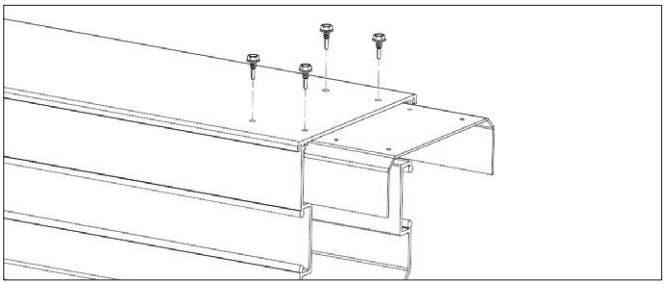
1. Start by fixing the bracket in the ceiling, on the wall or on a concrete girder with a suitable distance on the required surface. (Please refer to symbol A, B or G1 (see previous figure). Remember that the mounted Channel duct works best, if it is mounted in a height of 3-5 meters.

2. When using tilting brackets and spacers, it should be ensured that the sled channel is mounted in the waders, as the trolley operates optimally with a completely vertical installation.

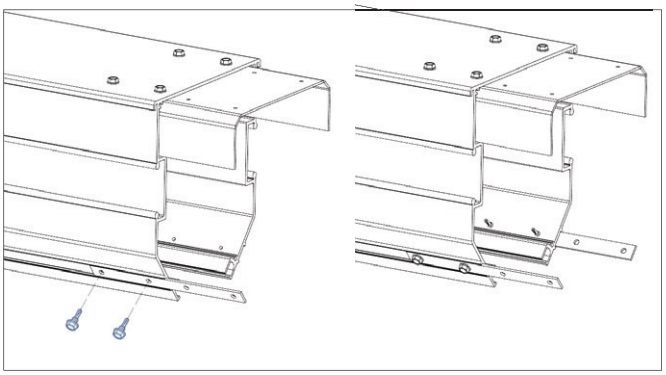
3. Then assemble the channel pieces to the desired length. This is best done by placing the pieces of duct in line with each other and then assembling the pieces individually as shown below.



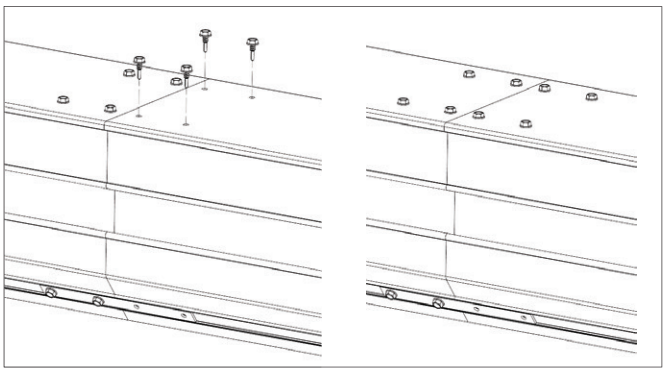
3A. Place the drilling template on the duct and mark where to drill.



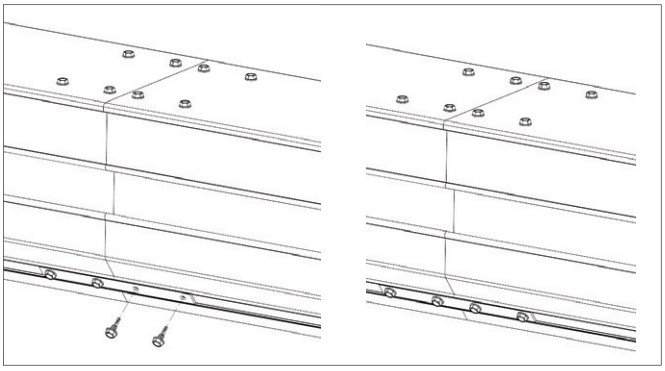
3B. Fit duct kit part 1 into the duct using self-drilling screws.



3C. Mount duct kit part 2 on the outside of the duct. Mark and drill holes, then mount the brackets with self-tapping screws.



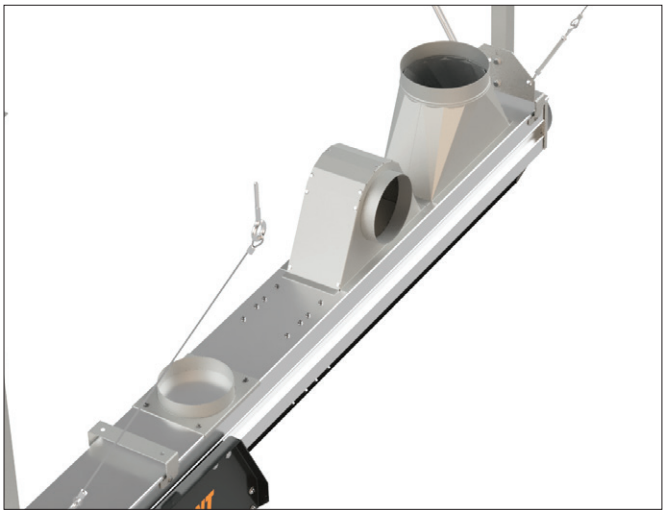
3D. Fit the second piece of duct and mount it with self-tapping screws.



3E. Repeat the process as in step 3B.

4. Then collect any remaining pieces of channel according to item 3.

5. If the connection of the Channel duct to the fan/piping system is to be top mounted (See item D in the assembly drawing above), then the holes for the duct connections must be made. As a rule of thumb, top mounting is always to be preferred. The connection at the end of the Channel duct should only be used on Channel duct lengths of max. 18 meters. Go to item 9, if the connection is to be made at the end of the Channel duct.



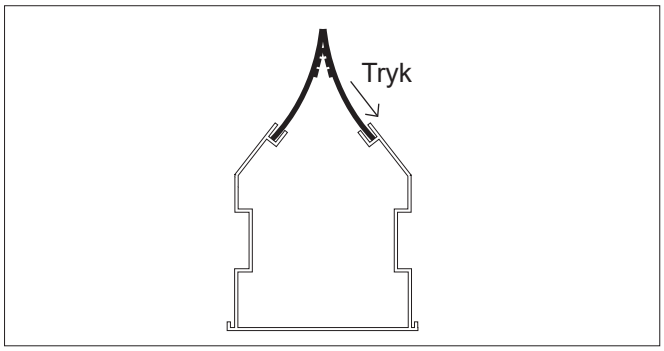
6. Now the pressure connecting piece is placed in the required place, and subsequently the hole to be sawn is drawn up by means of a felt tip from the inner side of the top outlet. The is removed and a hole is drilled on the line drawn up. Make sure that the line is long

enough so that a compass saw can be used. The same procedure is followed in all places, where top outlets are to be used. The hole should not be any closer than 1 meter from the end of the Channel duct. Remember to place the duct connections at regular intervals on the Channel duct in order to even out the drop of pressure over the whole length of the Channel duct.

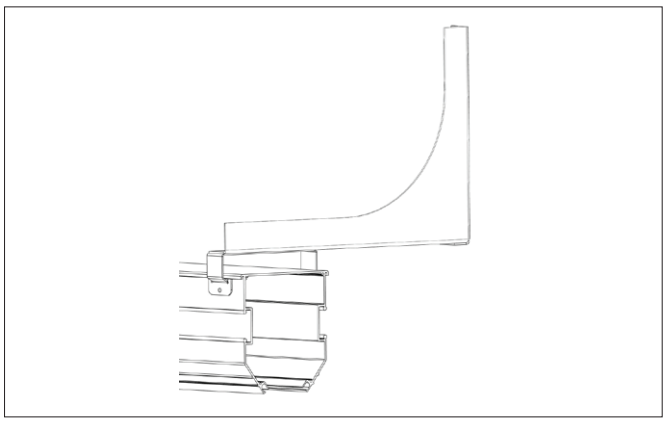
7. The rubber lips are fastened to the profile (after the assembly of the Channel duct lengths).
   Do this before mountingthe suspension of the Channel duct. If the Channel duct is more than 50 meters, see section 5.2.1.

NEVER use soap, grease or oil-containing substances

Start from one end and press approx. 30 cm of the rubber lips into place (in the slit) at a time. Get a good hold with both hands and press a small part down at a time.



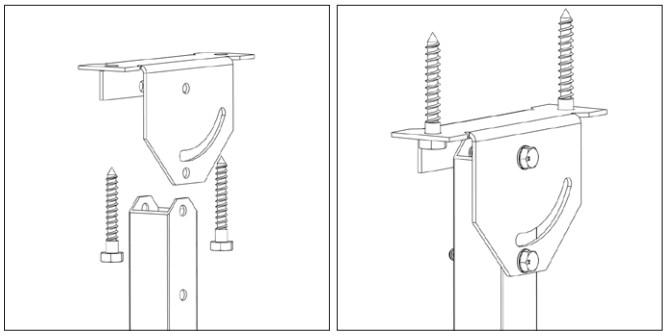
8. Test with a light pull on the rubber that this is properly attached to the channel.



Hanging the duct on the wall

For wall mounting, the wall bracket must first be bolted into the wall. Snap the suspension bracket to the duct. Then mount the duct on the wall bracket. Use two lifts so that the complete Channel duct can be raised simultaneously. Drill a hole and screw the obel screw into the channel.

Mounting of the duct in the ceiling

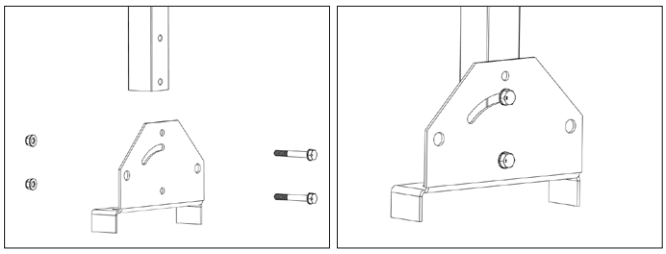


For ceiling mounting, the ceiling bracket must first be bolted to the ceiling.
Then mount the suspension profile so that it hangs vertically.

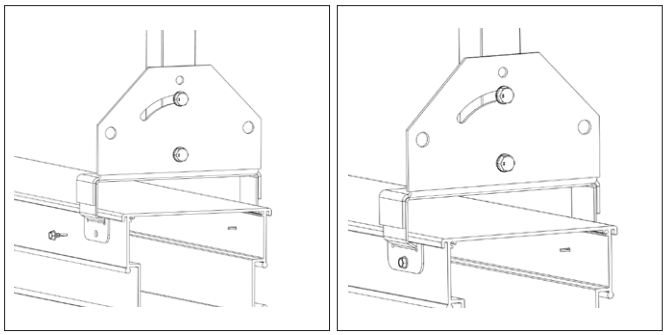
Shortening the suspension profile

If the suspension profiles need to be shortened, a laser can be used to mark the cut-off points.

Mark the point on all suspension profiles, cut them to length and then continue with the installation.



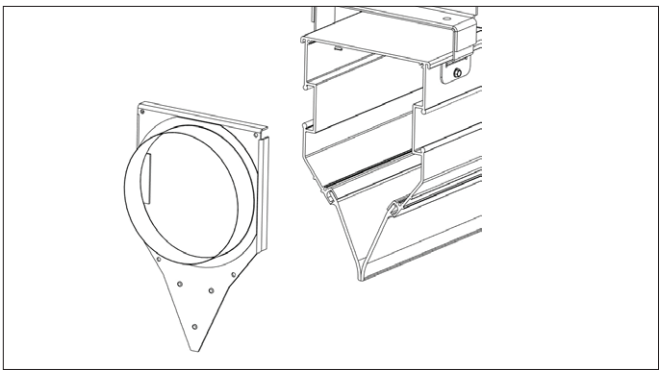
Install the channel bracket at the end of the suspension profile.



Click the suspension bracket onto the sliding channel.

Lift up the entire sliding channel and bolt the suspension bracket to the channel bracket. Use two lifts so that the channel can be raised at the same time. Drill a hole in the channel bracket and screw the obel screw into the channel.

The connection of the Channel duct to the fan/piping system may take place either via top mounting or by connecting a transition piece to the end of the Channel duct. Refer to item 6 above for top mounting -and to item 9 for connection to the end of the Channel duct.



9. Install the end cap and end cover. The end cover is fastened with screws, while the end stop is fastened with a bolt.

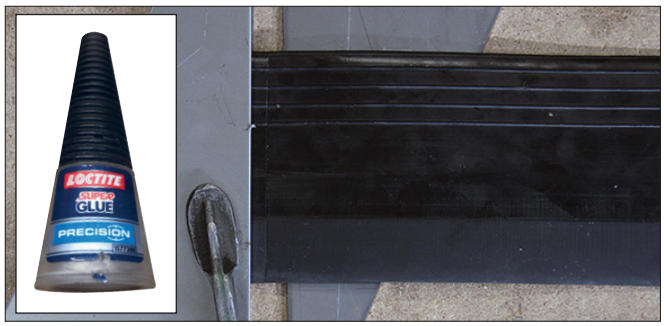
The duct system must be sealed thoroughly. Apply silicone or aluminium sealant wherever there are leaks. This will most often be at the end of the duct and at the outlets.

5.2.1 Assembly of rubber for the Channel duct

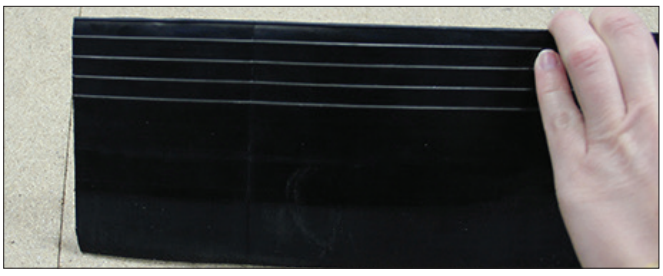
If more than one piece of rubber is to be used for the Channel duct, the 2 pieces must be fitted together.

1. Cut a straight edge at 90°.

2. Clean the surfaces to be glued on. Use a file as it gives a slightly rough surface and better adhesion. Then dry with thinner so the surface is completely clean.



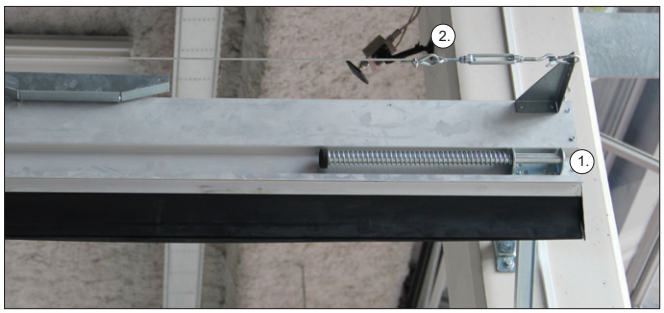
3. Lay the rubber on a flat surface during gluing. Apply Loctite glue or equivalent glue and hold the edges of the 2 pieces of rubber together. Place a plate on top of the joint. Keep the rubber and assembly completely level and press down. Let it harden for about 5-10 min.



Finished assembly of 2 rubber pieces.

5.2.2 Optional equipment

Cables that can be hung on the wire can be power cables, but also hoses for compressed air, for start / stop of the fan and / or damper, and for disconnection of a nozzle.



1. Installing of mounting brackets for a wire.
   The longer the channel (wire), the better the brackets must be. It must be anchored at both ends of the channel. Suited securing point could be concrete rafters or walls.

2. Secure the wire at one end.

3. Slide the plastic rings on the wire ③, use approx. 1 per meter.

4. Secure the wire to the other end. It is important that this is tightened up use the tensioner ②, so that there

system used with c-profile. Here hooks have been used instead of rings.

5. Attach the cabel to the rings. It is important to let the cable follow it is natural path to avoid twisting. It is important that the cable does not get cluttered up in use. This must be tested.

6. For more vehicles separate cables are recommended. Either starting from each end of the Channel duct, or if possibe mounted on the opposite side of the Channel duct.

5.2.3 Optional equipment

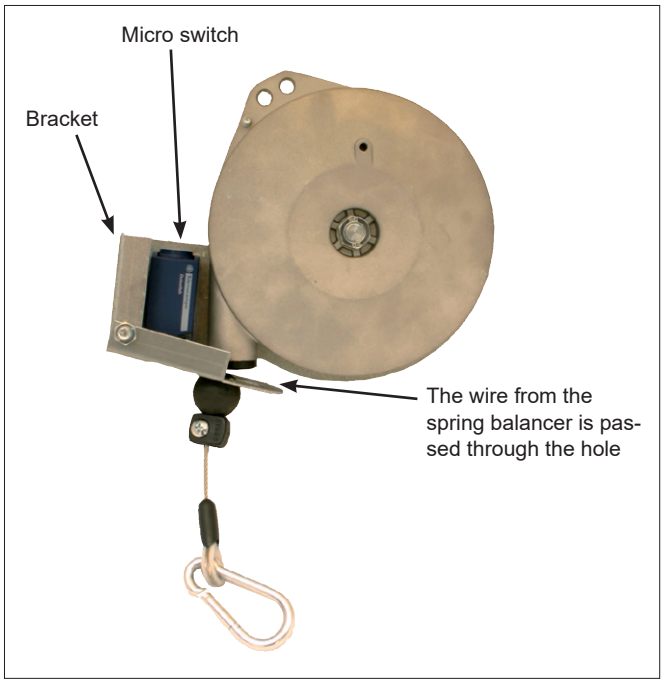
The Channel duct System may be supplied with optional extras. Below, you will find some advice for the installation/connection of some of the most common types of optional extras.

Automatic uncoupling, pneumatically
By using a compressed air nozzle (pneumatic), the nozzle can be uncoupled at the end automatically.

Automatic return system
The Channel duct can be equipped with automatic return of the trolley to the starting point. Typically used in MOT test centers.
See separate manual for this.

5.2.4 Mounting of balancers

A balancer is mounted on the trolley when there is a desire for automatic lifting of the hose when it is released. Insert the wire into the lashing bracket and the balancer. Secure the wire with the wire lock.

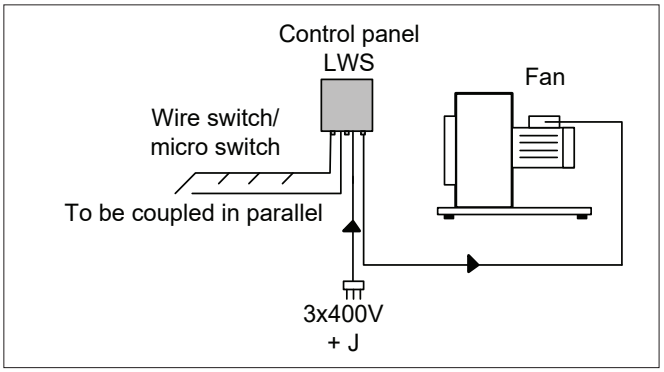


A balancer with micro switch

Insert the wire into the lashing bracket and the balancer. Secure the wire with the wire lock.

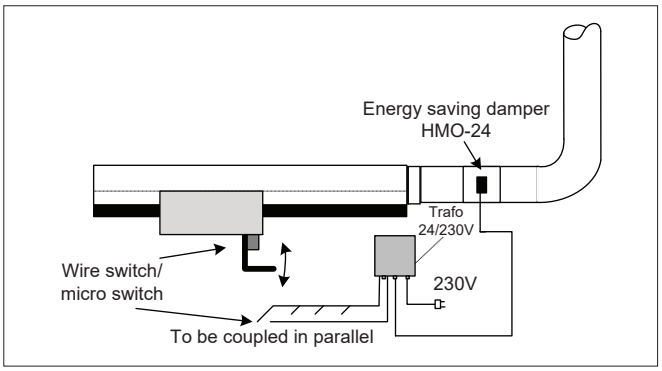
Insert the carabiner through the clamp on the suspension.

5.2.5 Connection of controls and motors



Connection diagram for GFD damper.

The start/stop automatics may also be used together with a quick-action motor damper (for connection, please refer to the drawing below).



Procedure

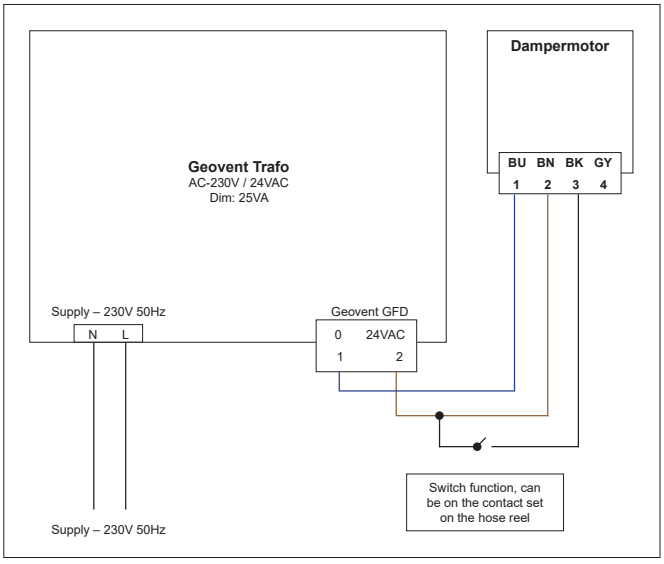
1: Connect main power supply (230V)

BU 1 – 1 (0) GND
BN 2 – 2 (24VAC)
BK 3 – 2 (24VAC/Contact)

2: Connect cable ”1” and ”2” from the damper to terminal ”1” and ”2” in the power supply.

3: Connect wire ”3” to terminal ”2” through a switch. When the swich is on, the damper motor is activated.

NB: The DIP switches should not be set.



5.3 Control and test of the security system

Check whether the trolley can be operated satisfactorily. The hose is moved to the required working area and subsequently it is returned.

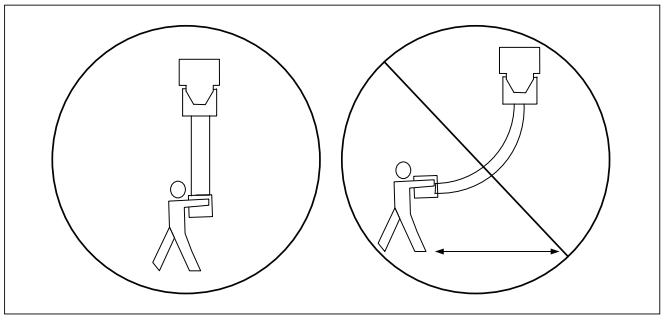
We also recommend checking if the fan is supplying the volume of air, for which the system has been dimensioned. If the pressure is not sufficient, there is a risk that the hose melting is increased, and if the pressure is too high, the trolley will be sluggish to move.

Before putting the system into service, check that there is no noise or vibration in the system.
Check that the entire system is tight. In case of a squeaking sound, it is probably due to a leak. Find the leak and seal it with sealant and/or tape.

Check that the entire system provides the volume of air and pressure for which the system is designed. Measure the air flow and adjust it, for example with a regulating damper.
In case of overcapacity, the power consumption may exceed capacity of the fan and burn the fan off. Refer to the fan manual.

6.0 Commissioning

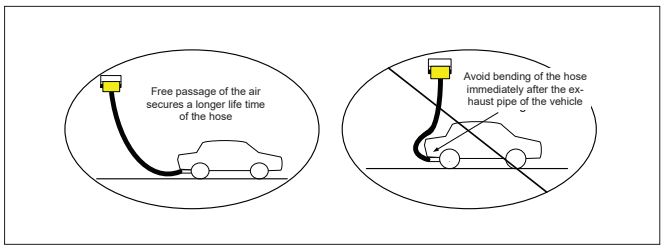
After the installation, the Channel duct does not require any special attention. However, the trolley is often moved by the operator. In order to secure a long working life of the system, the trolley must always be shifted/pulled below the Channel duct, as shown on the drawing below. If this is not complied with, the endurance of the system will be substantially reduced.



The Channel duct will not work according to the intentions if …
- Unauthorised parts are mounted on the rail system, the trolley, the hose or on the nozzle.
- The Channel duct is used for other purposes than for which it was originally intended.
- The fan is not switched on – the hose will melt!

6.1 After installation

Check the installation according to chapter 5.3.



7.0 Control, test and maintenance

7.1 Control

Check the installation according to chapter 5.3.

7.2 Maintenance

Periodic maintenance

- In continuation of the above, we also recommend treatment of the rubber lips with Rocol Teflon spray, for example, in order to reduce the friction.
- The hose is not be maintained, however, in order to secure a long working life overrunning the hose with any vehicles should be avoided.
- Check that the correct volume of air is extracted, and that the hose does not bend right after the exhaust pipe.
- Measure the volume of air on the Channel duct at least once every year. If the volume of air is too small, the hose may melt.

At least once a year, the total system should be inspected by an authorised installer.

8.0 Cleaning

The product is cleaned with a vacuum cleaner or a cloth.

9.0 Troubleshooting

In case of problems with the Channel duct, follow the instructions below:

Problems with the operation of the Channel duct
- If the trolley moves slowly and needs a pull of more than 10 kg to move the trolley: Itneeds to be serviced. Reduce the pressure, mount guide straps and check that the Channel duct does not bend.
  The rubber lips may have become brittle if they have been exposed to oil/oil mist, which they are not designed for. In this case, replace the rubber lips.

Noise problems:
- The base on which the Channel duct and/or the fan are/is placed is unstable.
- More air is extracted than the equipment has been dimensioned for. Use an adjusting damper.

Problems with the hose:
- The hose melts near the nozzle. This happens if there

Trolleyed by increasing the air volume or by exchanging the hose near the nozzle with 1-2 m of high-temperature hose.

- For vertical exhaust pipes we recommend using a 06-200 “gooseneck nozzle”.

10.0 Dismantling, disabling and scrapping

Deactive the product by disconnection the electrical mains. Dismantle compressed air pipes and other pipes or wires etc.

The inside of the product must be cleaned by means of a vacuum cleaner with a filter which suits the purpose.

Dismantle plastic parts and dispose of it according to local regulations.

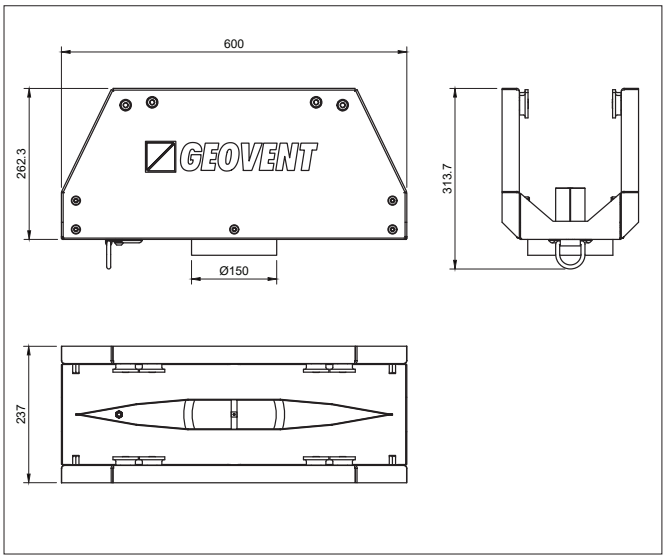
Dismantle the metallic parts by unscrewing screws and bolts. Afterwards cut the larger pieces into smaller pieces and dispose of it according to local regulation.

Dismantle plastic parts and dispose of it according to local regulations.

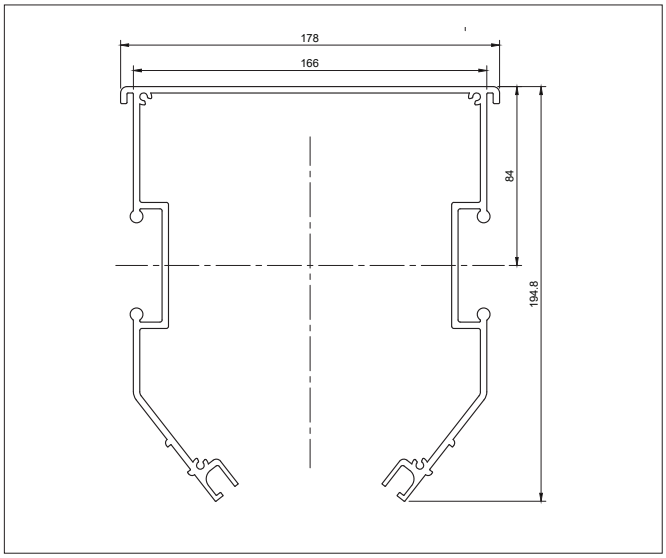
The packing material must be sorted according to local regulation in order to be able to reuse the material.

11.0 Dimensions

Channel duct



Hose trolley



12.0 Liability

Warranty
Geovent A/S grants a warranty for products, which are defective, when it can be proved that the defects are due to poor manufacture or materials on the part of Geovent. The warranty comprises remedial action (reparation or exchange) until one year after the date of shipment.

No claims can be made against Geovent A/S in relation to loss of earnings or consequential loss as a result of defects on products from Geovent.

Wear on parts such as filter cartridges and hose is not included in the warranty.

User liability

In order for Geovent to be capable of granting the declared warranty, the user/fitter must follow this instruction manual in all respects.

Under no circumstances may the products be changed in any way, without prior written agreement with Geovent A/S.

Please refer to the current sales and delivery conditions at www.geovent.com

13.0 Declaration of conformity

The manufacturer: GEOVENT A/S
HOVEDGADEN 86
DK-8831 LØGSTRUP

Hereby declares that:

The product: Chanal Duct
Model: Type 35

Complies with the relevant parts of the following directives and standards:

Directive 2006/42 / EC of the European Parliament and of the Council of 17 May 2006 on machines and amending directives 95/16 / EC.

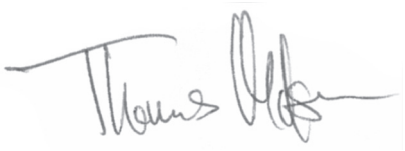
This declaration is no more valid if changes are made to the product by others than the manufacturer.

Authorized to collect the technical file:

Lise Cramer

Date: 30.05.2023

Position: Director
Name: Thomas Molsen



Signature: _____

CE

14.0 Spare part list

Art. No.	Description
07-322	Hose trolley type 35
07-323	Hose trolley type 35 for arm
07-324	Hose trolley type 35 long
07-300A	Upgrade to silicone profil
07-310-RAA	Rubber profile for Channel duct V2 - EPDM
07-311-RAA	Rubber profile for Channel duct V2 - silicone
06-200	Extended nozzle ø125/250

Geovent offers a wide range of nozzles

GEOVENT

HOVEDGADEN 86 • DK-8831 LØGSTRUP
(+45) 8664 2211 • salg@geovent.dk