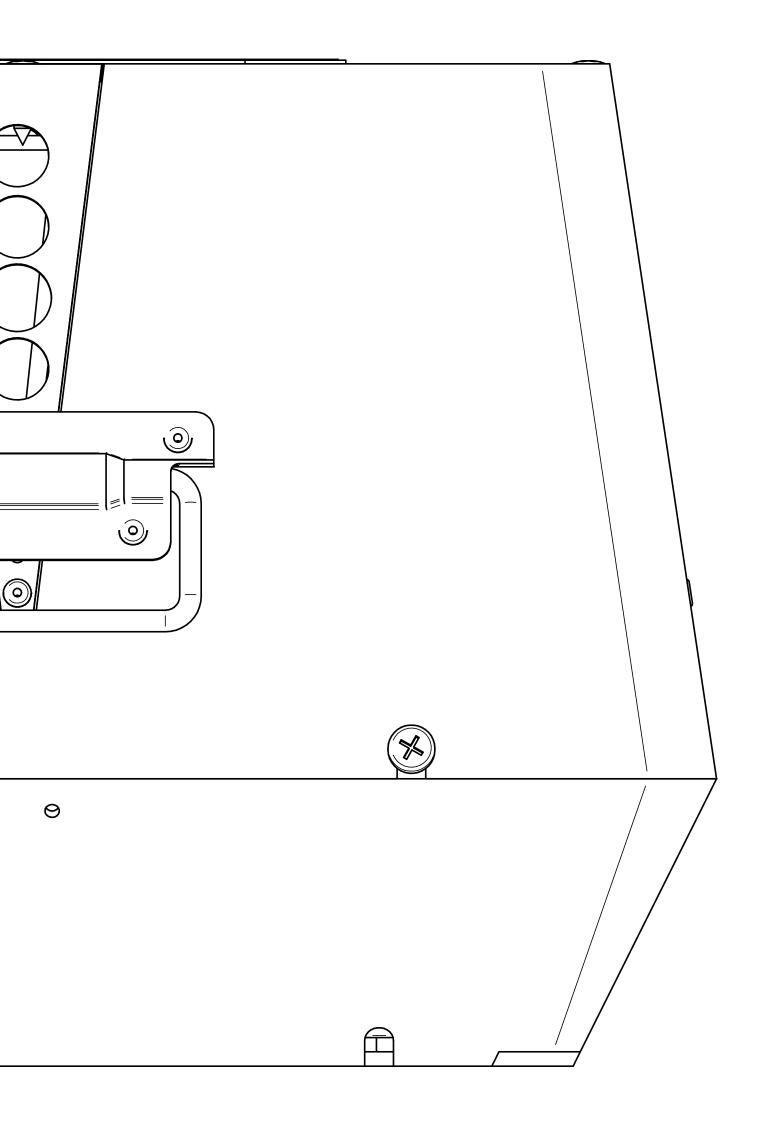
# Chimney Fan







# Chimney Fan | GSV **Content**

Product information	7
Scope of supply	7
Accessories and spare parts	7
Technical specifications	9
Precautions and user instructions	12
Mechanical installation	13
Transportation safety bracket	13
Minimum distance	14
Installation onto a brick chimney	15
Installation onto a steel chimney	17
Multiple fans on chimney	20
Electrical installation	21
Isolation switch	21
Startup and configuration	22
System testing	22
Maintenance and troubleshooting	23
Care and cleaning	23
Troubleshooting	24
UK Conformity Assessed	25
	26
Declaration of Conformity	26



### How to use this manual

This manual has been prepared based on the specific product and contains relevant technical information and installations guides.

Accessories and spare parts are not covered by this manual. Please refer to the individual manuals of these components.

This installation manual does not contain any system design documentation.

Failure to observe instructions marked with a danger symbol may result in personal injury and/or damage to the product.

Errors and omissions excepted.

### Disposal



Electrical and electronic equipment (EEE) often contain materials, components and substances that may harm the environment or be hazardous to your health. Products (WEEE) marked with the 'crossed-out wheeled bin' symbol should be disposed of separately from other waste at the end of its life. Though legislation may differ from country to country we strongly advise that electrical and electronic waste is separated from other waste and disposed of according to national legislation to protect the environment and personnel that may come into contact with waste.

# Symbols

The following symbols may be used in the manual to draw attention to danger or risk of personal injury or damage to the product.



# **General prohibition**

Failure to observe instructions marked with the prohibited symbol may result in extreme danger or serious personal injury.



# **General attention**

Marks a dangerous situation that, in the worst-case scenario, can cause serious personal injury or significant damage to the product.



# General warning

Failure to observe instructions marked with a danger symbol may result in personal injury and/or damage to the product.



# Electricity hazard/High Voltage

Marks a situation in which caution is advised due to the risk of high voltage electric shock which can cause serious personal injury or significant damage to the product.



# Connect an earth terminal to the ground

Failure to observe instructions marked with a danger symbol may result in personal injury and/or damage to the product.



# Permitted and approved

Permitted and approved method of installation.



# Prohibited and not approved

Prohibited and not approved method of installation.



# Warning

To minimise the risk of fire, electric shock, personal injury and/or damage to the product please observe the following:

- Please read the manual before you start using the product and only use the product in accordance with the manufacturer's instructions. If in doubt, contact one of our specialized dealers.
- All installations must be carried out by properly qualified personnel and in accordance with national legislation and regulations.
- This product must be earthed. Get assistance from a qualified electrician if in doubt.
- In order to avoid chimney fires, ensure that the chimney has been swept before mounting the fan.
- The chimney fan must remain switched on the entire time when the fireplace is in use.
- Exodraft recommends that the chimney fan is switched on at least once every three months, to avoid longer periods of stagnation as this may have a negative effect on the mechanical parts.
- Prior to servicing the product, disconnect the power and ensure that it cannot accidentally be reconnected.
- Exodraft always recommends the use of a smoke alarm when a solid fuel fireplace is installed.
- If the Exodraft fan system has been designed for solid fuel/multi fuel installations, please ensure that the design meets the requirements of BS EN15287-1. If this cannot be achieved, a smoke alarm must be installed in the same room as the heat appliance.
- Note! Fans serving biomass boilers must be cleaned more often due to extensive residue/ soot building. It is essential that a regular inspection and cleaning schedule is implemented, especially in the early days of usage, to experience how often regular inspections and cleaning should be carried out.

# **Product information**

The Exodraft GSV chimney fan with integrated grease drain is a specially built exhaust fan with a vertical discharge for grills and kitchen exhaust.

When mounted on top of a chimney the chimney fan generates a vacuum in the flue pipe and in the chimney. The grease fan is especially suitable for grills and kitchen exhausts. With its integrated grease drain, grease drip pan and exchangeable granule cushion it is the ideal solution for greasy exhaust air.

The GSV are built for temperatures up to 250°C.

The fan must be installed on top of a chimney and creates a negative pressure (suction) along the full length of the flue.

The fan is part of an Exodraft system and should be connected to an Exodraft controller for optimal effect.

Incorrect firing may result in problems with soot, chimney fires, etc. which might damage the product. Please check out this site for advice about lighting and maintaining a fire:

www.exodraft.com

# Scope of supply

- Exodraft GSV chimney fan
- Mineral wool mat for vibration-free mounting
- Packet with location brackets, safety wire, bolts and nuts (wing screws included - to be used where allowed)
- Armoured hose
- Installation manual and user instructions

# Accessories and spare parts

The table below shows the accessories and spare parts available for the GSV-models.

Accessories*	Spare parts
Flanges (for steel chimneys)	Motors
Cover Plates (for steel and brick chimneys)	Impellers and axial vanes
RSD - Dilution bolts (for brick chimneys)	Mineral wool mats
Rainshield	SVD-RS - Vibration dampers (for flanges on steel chimneys)
GCB - Drip pan for grease and/or oil	Capacitors

\*This manual does not describe the specific use of accessories. We refer to the separate manuals for such components. For more details contact your Exodraft dealer.

# Warranty

All Exodraft products are covered by a 2-year guarantee as per European consumer rights legislation. For some countries an extended period of guarantee may apply depending on either national legislation or other clearly stipulated conditions. Customer complaints must be handled by a specialised dealer or wholesaler (preferably where the Exodraft product has been bought originally). An updated list of Exodraft specialised dealers can be found on our website for the country in question.

Exodraft products must always be installed by properly qualified personnel. Exodraft reserves the right to change these guidelines without prior notice.

The warranty and liability does not cover instances regarding personal injury or damage to property or the product that can be ascribed to one or more of the following causes:

- Failure to follow this installation and operation manual
- Incorrect installation, start-up, maintenance or servicing
- Improper repairs
- Unauthorised structural modifications made to the product
- Installation of additional components that have not been tested/approved with the product
- Any damage resulting from continued use of the product despite an evident defect
- Failure to use original spareparts and accessories
- Failure to use the product as intended
- Exceeding or failure to meet the limit values in the technical data
- Force majeure

# **Technical specifications**

The GSV fan is designed for vertical discharge. It is available in two sizes.

The body and casing are manufactured in cast aluminium and equipped with a s cast aluminium impeller.

Chimney fan	Axial vane/Impeller
GSV315-41 GSV400-41	Cast aluminium impeller
GSV400-42	Cast aluminium impeller

All models can be opened for service and cleaning purposes.

The motor is a temperature-resistant, encapsulated induction motor with sealed and maintenance-free ball bearings, sitting outside the air volume flow.

The cable is heat-resistant, strain-relieved and shielded externally with a reinforced hose. These measures give the chimney fan high operational reliability and long service life.

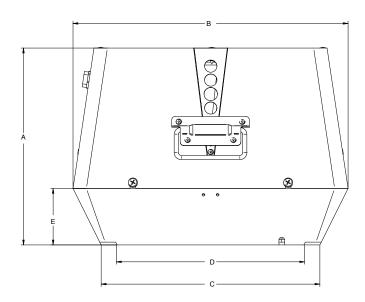
The drain opening is fitted with a stainless steel grid as finger and bird protection.

The sound level varies between the different chimney fan models. Further information about sound levels available in our technical brochure/datasheet.

The GSV fan has been designed to tolerate flue gas temperatures up to 250°C. Should the temperature be higher (though maximum 300°C), the mineral wool mat should be removed and replaced with optional dilution bolts (type RSD) or vibration dampers (type SVD-RS) at the flange to create extra cooling air under the fan. For more information about these parts see under accessories.

All GSV models has a motor capacitor. The capacitor is considered a wear part that will be worn out over time (depending on usage). If the capacitor is worn out, the motor will have difficulties starting up. Then it is time to replace the capacitor. Please ask a qualified electrician to carry out this job.

# **Technical data**



Model	Motor specifications			Weight	Dimension [mm]					
	rpm	V	Amp	kW*	kg	А	В×В	C x C	D [Ø]	E
GSV315-41	1400	1 x 230	1.80	0.37	37	380	580	465	315	115
GSV400-41	1400	1 x 230	2.60	0.40	47	430	650	525	400	130
GSV400-42**	1720	3 x 400	3.50	0.75	52	460	650	525	400	130

\*Power consumption at ambient temperature of 20 °C

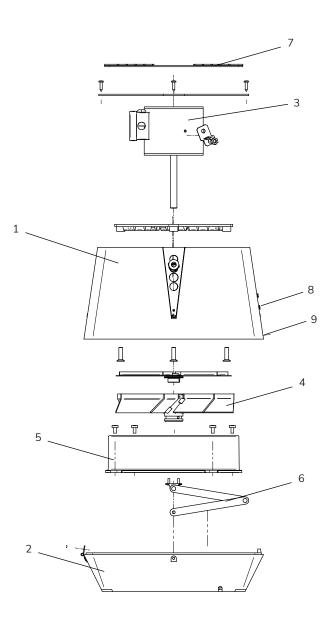
\*\* Frequency inverter is required

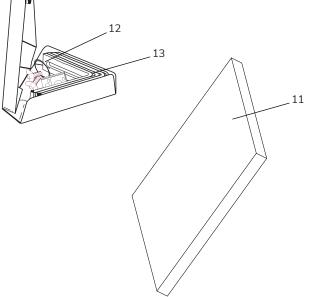
- The RPM of the above fan models are infinitely adjustable
- Motor protection IP rating IP54
- Insulation class F

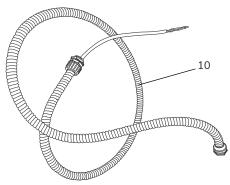
# **Construction and components**

1	Top section
2	Bottom section
3	Motor
4	Axial vane/Centrifugal impeller
5	Inlet for axial vane/centrifugal impeller
6	Safety hinge
7	Safety mesh
8	Handle
9	Screws to fasten top and bottom section (Alternatively use supplied wing screws, where conditions allow)

10	Armoured cable and connecting cable
11	Mineral wool mat
12	Safety wire
13	Location brackets, bolts and nuts etc.







# Precautions and user instructions

These instructions, applicable standards and relevant safety procedures from the manufacturer must be followed and at the same time the official provisions in force in the country, where the product is installed, must be observed.

### Support system

Prior to installation of a chimney fan, it must be determined if the chimney can safely carry the weight of the chimney fan.

A steel chimney should be well supported at the roof penetration point. If the chimney extends high above the roof, the chimney and the fan should be secured. The manufacturer's instructions must be followed.

Brick chimneys do not usually need any kind of support to carry the weight of the chimney fan.

### System type

The chimney fan generates a vacuum in the flue pipe and in the chimney. The grease fan is especially suitable for grills and kitchen exhausts. With its integrated grease drain, grease drip pan and exchangeable granule cushion it is the ideal solution for greasy exhaust air.

### Precautions

Be aware

- that it must be installed on top of the chimney
- that it can be mounted on steel as well as brick chimneys
- that it must be mounted with the approved Exodraft accessories
- that the chimney fan must always remain switched on when the fireplace is in use
- that it must be accessible for service and maintenance from the roof or from a ladder/cherry picker
- that the distance to flammable materials must be at least 500 mm
- that the isolation switch must be easily accessible



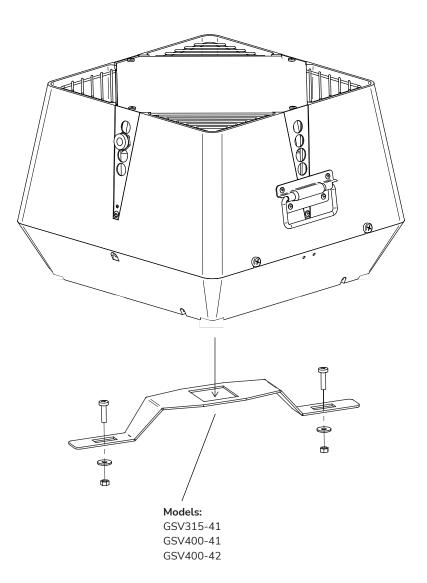
ATTENTION! It is always recommended to install a smoke alarm in connection with a wood fired installation.

# Mechanical installation

Exodraft products must always be installed by properly qualified personnel and according to the manufacturer's instructions.

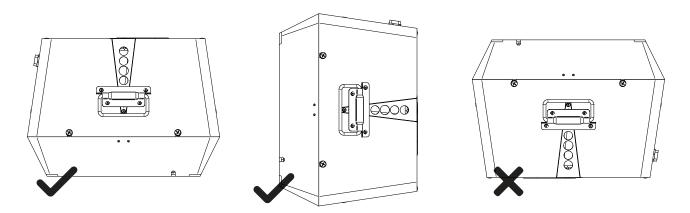
# Transportation safety bracket

Do not forget to remove the transport safety bracket located near the impeller and check that the axial vane/impeller turns freely, before mounting the fan on the chimney.



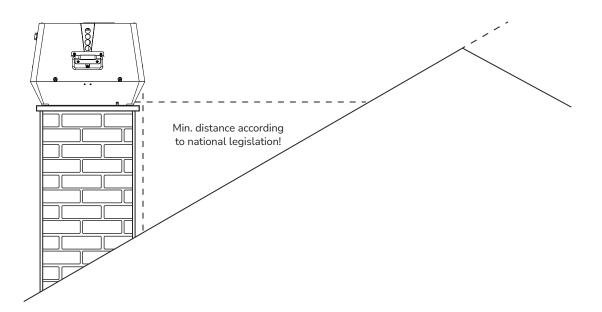
# Positioning of the chimney fan

The chimney fan can be mounted horizontally or vertically. Be aware of national law and building regulations!



# Minimum distance

The minimum distance to flammable materials must be at least 500 mm (national legislation must be observed)!



# Installation onto a brick chimney

If the fan is to be fitted on a brick chimney, please use the location brackets. See the installation guide below.

Step	Action	Illustration
1	Measure the inside diameter of the brick chimney.	
2	Then cut a hole in the mineral wool mat that matches. Note that there must always be a minimum of 20 mm of mat surface at any point around the	
Z	circumference of the hole. If a temperature sensor is to be installed with the chimney fan, cut a groove in the mineral wool mat that is big enough for the sensor.	20 mm 20 mm
3	Mount and fasten the location brackets to the underside of the base plate by means of the bolts and nuts supplied. Please note that the bolts must be inserted from beneath.	
4	Adjust the distance between the location brackets to fit the inside diameter of the chimney, and then tighten the nuts. Note that there should be a 2-4 mm gap between the brackets and the chimney in order to avoid transmitting vibrations from the fan to the chimney.	

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Place the mineral wool mat on top of the chimney. It can be used with either of the sides facing the fan. The chimney fan can now be lowered into place (on top of the mat) with the location brackets into the chimney.

IMPORTANT! Do not screw or bolt the brackets into the flue pipe!

Use the safety wire to secure the fan to the chimney. Apply the supplied screw and rawlplug into the brick chimney. Then mount the wire through the designated hole in the base plate and into the wire lock.

Tighten the safety wire slightly and then tighten the wire lock, so that the chimney fan is secured

when opened for service and cleaning purposes. The isolation switch should be fitted on the side of the chimney, so it is easily accessible when servicing the fan.

The armoured cable should be connected into the underside of the isolator and up into the switch via the cable gland.

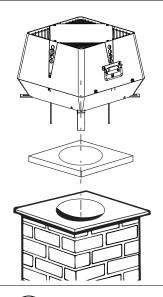
Before taking the fan into operation, please make sure that:

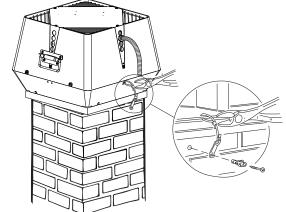
- the nuts in the location brackets have been tightened.
- the safety wire has been fastened to the fan and chimney.
- the safety wire and the wire lock have been tightened.
- the connection on the armoured cable has been fastened. The armoured cable must hang straight down from the fan.
- the chimney fan is securely closed.
- when opening/closing the fan, support the upper part with your hand.

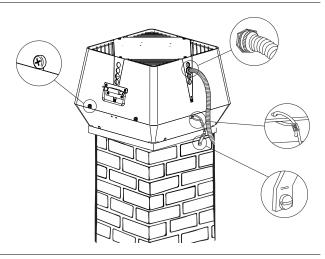
**NOTICE!** The end-user should be made aware of the fact that the chimney fan must always remain switched on when the fireplace/boiler is in use.

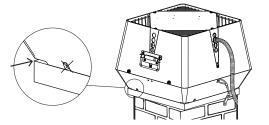
To avoid rainwater from entering the chimney fan the slots and holes must be sealed with heat resistant and fireproof silicone.

Do not seal the drain holes!





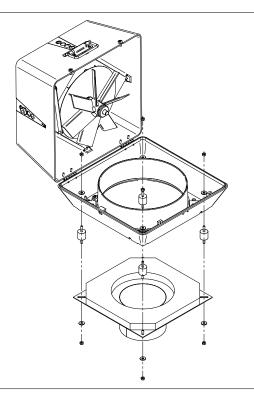




# Installation onto a steel chimney

If the fan is to be fitted on a steel chimney, the chimney fan must be installed with an approved flange. See the installation guide below.

Step	Action	Illustration
1	The flange must be placed so that the spigot goes into the chimney! Measure the diameter of the hole in the flange.	
2	Then cut a hole in the mineral wool mat that matches. Note that there must always be a minimum of 20 mm of mat surface at any point around the circumference of the hole.	°
3	Cut the corners off the mineral wool mat, so there is room to fit the vibration dampers. If a temperature sensor is to be installed with the chimney fan, cut a groove in the mineral wool mat that is big enough for the sensor. Now place the mineral wool mat on the flange (between the flange and the fan).	



4 Fixate the flange to the chimney fan with the use of the vibration dampers supplied with the flange.

5 The fan assembly can now be fitted onto the steel chimney.

Use the safety wire to secure the fan to the chimney. Apply the supplied self-cutting screw in steel chimney. Then mount the wire through the designated hole in the base plate and into the wire lock.

Tighten the safety wire slightly and then tighten the wire lock, so that the chimney fan is secured when opened for service and cleaning purposes. The isolation switch should be fitted on the side of the chimney, so it is easily accessible when servicing the fan.

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The armoured cable should be connected into the underside of the isolator and up into the switch via the cable gland.

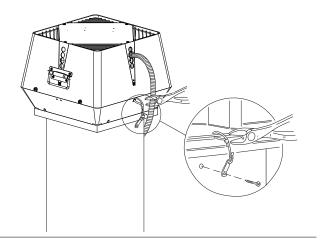
Before taking the fan into operation, please make sure that:

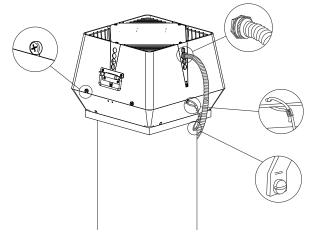
- the nuts in the location brackets have been tightened.
- the safety wire has been fastened to the fan and chimney.
- the safety wire and the wire lock have been tightened.
- the connection on the armoured cable has been fastened. The armoured cable must hang straight down from the fan.
  - the chimney fan is securely closed.
  - when opening/closing the fan, support the upper part with your hand.

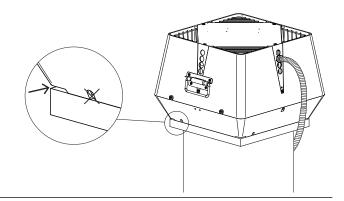
**NOTICE!** The end-user should be made aware of the fact that the chimney fan must always remain switched on when the fireplace/boiler is in use.

To avoid rainwater from entering the chimney fan the slots and holes must be sealed with heat resistant and fireproof silicone.

Do not seal the drain holes!







# Multiple fans on chimney

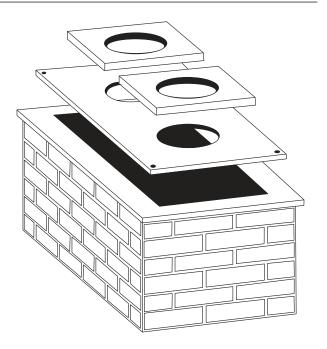
If two or more chimney fans are required to create sufficient draft, installation procedures are almost the same as for single fan installation. See the installation guide below.

### Multiple fans on a brick chimney

If two or more fans are required to create sufficient draft, a special adapter plate is required (not an Exodraft part). The two holes in the plate should match the throat diameter of the fan model used and the distance from center to center should be at least equal to the fan width. Exodraft recommends that a partition is mounted between the fans.

The adapter should be sealed with silicone and bolted onto the top. When installing multiple fans, it is extremely important that the fans are of the same model and size, and they must be controlled in tandem by one motor speed control.

> A similar approach should be taken if the flue size exceeds the fan base dimensions. The adapter plate should be sized so it covers the flue and secured. A hole should be cut in the center of the plate and the fan mounted centered over the hole.



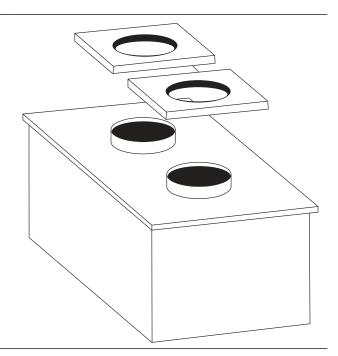
### Multiple fans on a steel chimney

If two or more chimney fans are required to create sufficient draft, the installation procedures are basically the same as for single fan installation on a steel chimney. However, as the fans will be placed next to each other, a special plenum box will be required (not an Exodraft part).

1

Exodraft recommends that a partition is mounted between the fans.

When installing multiple fans, it is extremely important that the fans are of the same model and size, and they must be controlled in tandem by one motor speed control.

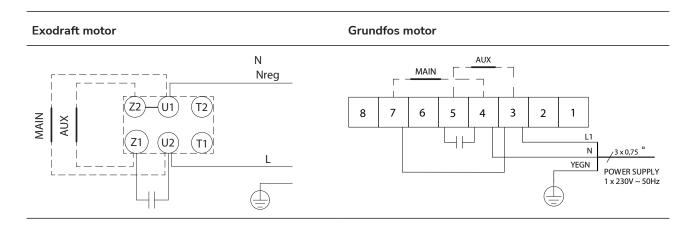


# **Electrical installation**

The fan and motor specifications are provided on the fan's type plate. All the single-phased fan models are adjustable in speed.

Wires are to be connected in accordance the wiring diagram. For further details, please see guidelines for the Exodraft control units.

Any lightning conductor connected to the fan must respect current applicable national legislation.



# **Isolation switch**

In accordance with the provisions of the applicable EU Machinery Directive a chimney fan must always have an isolation switch fitted. The isolation switch must comply with national wiring standards, and it must be ordered separately, as it is not part of the standard Exodraft scope of delivery.

Model	Connecting cable and wiring	Variable adjustable electronic regulator	Protection
SV315-41 SV400-41	brown = L blue = Nreg yellow/green = ⊥	Yes	The motor requires overload protection
5SV400-42	1 - L1 2 - L2 3 - L3 4 + 5 Thermocal switch yellow/green = —	Yes, by frequency inverter max. 60Hz	The motor requires overload protection

# Startup and configuration

# System testing

Before any adjustments are made to the system, please follow these procedures:

Turn the chimney fan ON and make sure that it is turning. Increase and decrease the speed of the fan by adjusting the speed control to make sure the fan is operating properly.



DANGER! Check that the heating appliance (water heater, furnace, etc.) is working properly after the chimney fan has been switched on. Make sure that no flue gases are spilling out as this can lead to carbon monoxide poisoning!

After system testing, Exodraft recommends igniting your fireplace.



CAUTION! Do not overfire the fireplace/stove. Small deposits of creosote could be ignited and start a small chimney fire which could cause the chimney flue to reach a dangerously high temperature.

# Maintenance and troubleshooting

# Care and cleaning

It is extremely important to keep the flue clean from creosote and deposits as soot is the major cause of chimney fires. The top of the fan is hinged and can be opened to ensure easy cleaning of the fan.

Cleaning intervals depend on the use of the fireplace. The more the appliance is used, the more often the chimney flue must be cleaned.

If a fireplace is used regularly (2-3 times a week), a semi-annual cleaning of the chimney and the fan may be required. If used on a daily basis shorter intervals may apply.

No matter how often the fan is used, the fan must be inspected and cleaned at least once a year – for instance when the chimney is inspected and cleaned by your chimney sweep. The chimney should always be cleaned by a trained professional chimney sweep.

### Note!

The motor in the fan has ball bearings that are sealed, lifetime lubricated and maintenance-free. Should replacement of the bearings be required, this should be carried out by properly qualified personnel only.



WARNING! Do not open the motor housing unless the power to the chimney fan has been disconnected!

# **Cleaning procedure**

Step	Action
1	Use the isolation switch to switch off the power to the fan and make sure the fan doesn't rotate.
2	Loosen the screw and open the top section of the fan so that it hangs on its hinges and the safety wire.
3	Using a scraper or brush, carefully clean the axial vane/impeller.
4	Check the path taken by the smoke through the top and bottom sections of the fan for soot deposits, and clean where necessary with a scraper or brush.
5	While the fan is open, it is also possible for the chimney sweep to sweep the chimney.
6	Make sure that no weights on the centrifugal impeller are removed as this could impair the balance of the impeller.

# Troubleshooting

Observation	Problem	Solution	
	The isolation switch may be on off	Check isolation switch	
There is no power to the fan	The speed control is turned off	Turn speed control on	
	Loose electrical connection	Check wiring and correct problem	
There is power to the fan but it is not working	Loose electrical connections	Check wiring and correct problems with connections. Pay special attention to the wiring in the junction box	
	The voltage setting is too low	Increase the speed setting	
There is power to the fan	The capacitor may be worn out	Check capacitor and replace if necessary	
but it hums and does not turn	Soot makes the axial vane/impeller stick	Clean the fan	
	The fan may be undersized	Replace with a larger fan	
The fan seems to work fine, but there is not enough draught	The capacitor may be worn out	Check capacitor and replace if necessary	
	The flue is damaged/blocked	Check the flue (chimney sweep)	
	The motor shaft may be bent	Replace motor	
The fan vibrates	The fan needs cleaning	Clean the fan	
	Incorrect installation	Check installation guide in this manual	
There is airflow noise from the fireplace opening	The fan is running too fast	Reduce the fan speed	
	Soot or tar may impair the axial vane/impeller	Clean the axial vane/impeller	
Mechanical noise can be heard	Motor bearings may be worn out/over-heated	Replace bearings	
	Incorrect installation	Check installation guide in this manual	

# **UK** UK Conformity Assessed

# exôdraft

Exodraft a/s Industrivej 10 DK-5550 Langeskov

Hereby declares that the following products:

GSV315-41, GSV400-41, GSV400-42

Were manufactured in conformity with the provisions of the following regulations:

The Supply of Machinery (Safety) Regulations 2008

Electrical Equipment (Safety) Regulations 2016

Electromagnetic Compatibility Regulations 2016

Langeskov, 01-11-2022 Managing Director Anders Haugaard

ala

# **C E** Declaration of Conformity

EU-Overensstemmelseserklæring Declaration of Conformity EU-Konformitätserklärung Déclaration de conformité de l'Union Européenne EU-Samsvarserklæring	NL: SE: FI: IS: IT:	EU-Conformiteits verklaring EU-Överensstämmelsedeklaration EU-Vaatimustenmukaisuusvakuutus ESS-Samræmisstaðfesting Dichiarazione di Conformità Unione Europea
EU Deklaracja zgodności		

# Exodraft Exodraft a/s Industrivej 10 DK-5550 Langeskov

GSV315-41, GSV400-41, GSV400-42

Som er omfattet af denne erklæring, er i overensstemmelse med følgende standarder: Were manufactured in conformity with the provisions of the following stand- ards: Die von dieser Erklärung umfaßt sind, den folgenden Normen: Auxquels s'applique cette déclaration sont en conformité avec les normes ci-contre: Som er omfattet av denne erklæring, er i samsvar med følgende standarder: Zostały wyprodukowane zgodnie z warunkami określonymi w następujących normach:	Zijn vervaardigd in overeenstemming met de voorschriften uit de hieronder genoemde normen en standaards: Som omfattas av denna deklaration, överensstämmer med följande standard- er: Jota tämä selvitys koskee, on seuraavien standardien mukainen: Sem eru meðtalin i staðfestingu Pessari, eru i fullu samræmi við eftirtalda staðla: Sono stati fabbricati in conformità con le norme degli standard seguenti:	
EN 60335-1, EN 60335-2-80, DS/EN ISO 12100: 2011		
I.h.t bestemmelser i direktiv: In accordance with Entsprechen gemäß den Bestimmungen der folgenden Richtlinien: Suivant les dispositions prévues aux directives: I.h.t bestemmelser i direktiv: Zaodnie z:	En voldoen aan de volgende richtlijnen: Enligt bestämmelserna i följande direktiv: Seuraavien direktiivien määräysten mukaan: Med tilvisun til àkvarðana eftirlits: In conformità con le direttive:	

Zgodnie z:	
Maskindirektivet: The Machinery Directive: Richtlinie Maschinen: Directive Machines: Maskindirektivet: Dyrektywą maszynową:	De machinerichtlijn: Maskindirektivet Konedirektiivi: Vèlaeftirlitið: Direttiva Macchinari:

2006/42/EF/-EEC/-EWG/-CEE		
Lavspændingsdirektiv: The Low Voltage Directive: Niederspannungsrichtlinie: Directive Basse Tension: Lavspenningsdirektivet: Dyrektywą Niskonapięciową	De laagspanningsrichtlijn: Lågspänningsdirektivet: Pienjännitedirektiivi: Smáspennueftirlitið: Direttiva Basso Voltaggio:	

2014/35/EC	
EMC-direktivet: And the EMC Directive: EMV-Richtlinie: Directive Compatibilité Electromagnétique: EMC-direktivet: Dyrektywą EMC – kompatybilności elektromagnetycznej	En de EMC richtlijn: EMC-direktivet: EMC-direktiivi: EMC-eftirlitið: Direttiva Compatibilità Elettromagnetica:

2014/30/EC

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