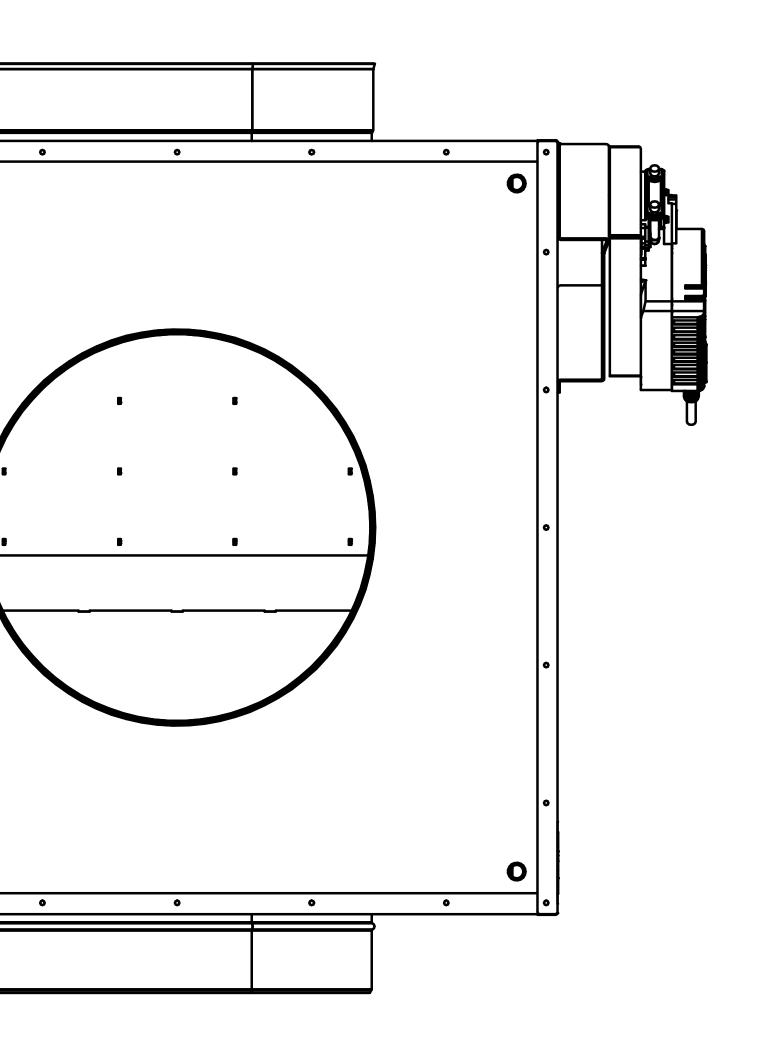
Heat Recovery

BD







Heat Recovery | Bypass Damper Content

Product information	7
Scope of supply	7
Accessories and spare parts	8
Warranty	9
Technical specifications	10
Mechanical installation	13
Placement and orientation	13
Flue gas direction	15
Damper dicretion	16
Mounting	18
Mounting points	19
Electrical installation	21
Wiring Diagram/Electrical Connection of Damper Motor	21
Installation and Placement of Belimo Motor Unit	22
Installation Guide for Bypass Damper 250	24
Installation Guide for Bypass Damper 350, -400, -500, -700	30
Startup and configuration	35
System startup	35
Operating Conditions on Flue Gas Side	35
Maintenance and Troubleshooting	36
Troubleshooting	36
UK Conformity Assessed	37
Declaration of Conformity	38



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.





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 always read the manual and only use the product in accordance with the manufacturer's instructions. If in doubt, contact one of the Exodraft specialized dealers.
- All installations must be carried out by properly qualified personnel in accordance with national legislation and regulations.
- Prior to servicing the product, the heat source must be shut off and cooled down.
- Please ensure that the heat source is not turned back on inadvertently.
- A safety thermostat (ST110) and/or safety valve must be installed and connected to the burner, ensuring disconnection in case of excessive temperatures. The switch must comply with EN 14597.

Product information

The exodraft Bypass Damper is used in exhaust systems to control the hot flue gases/process air to the Basic Plate heat recovery devices.

A Bypass Damper is used primarily for larger boiler systems, industrial processing plants, or commercial systems. An integrated electric motor opens and closes the damper.

Power supply and start/stop signal come from an external exodraft panel, and is not a part of the Bypass Damper.

The Bypass Damper has a safety spring return, causing it to close automatically in case of a power failure.

All parts affected by flue gas are made of stainless steel EN 1.4404.

All exterior parts are made of stainless steel EN 1.4301.

The Bypass Dampers limitations

- The Bypass Damper is not to be used as a draining point in an exhaust system.
- As a rule, the Bypass Damper is only for indoor installation.
 Installation outside requires extra shielding.
- Max. temperature 600°C
- Flue gas/process air must be of a quality (particle free) that will not, over time, cause the damper to be filled with residue that can affect the function of the damper.

To find out more about heat recovery visit www.exodraft.com

Scope of supply

- Exodraft Bypass Damper
- Installation manual and user instructions
- Pallet*
- Straps*
- Screws*
- Transportation safety brackets*

^{*}For transportation only. Be aware to disconnect these parts before installation.

Accessories and spare parts

The table below shows the spare parts available for the Bypass Damper models.

Spare par	ts
3201081	Damper motor NFA 10 Nm
3201079	Damper motor GK24 40 Nm

^{*}This manual does not describe the specific use of spare parts. 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

Basic types

Exodraft item number	Type (Bypass Damper)	Description	Inlet Ø exterior [mm]	Outlet Ø interior [mm]
8003300	BD250	Bypass Damper with motor Standard pipe connection dimensions Max 600°C	250,5	251,2
8003500	BD350	Bypass Damper with motor Standard pipe connection dimensions Max 600°C	350,5	351,2
8003600	BD400	Bypass Damper with motor Standard pipe connection dimensions Max 600°C	400,5	401,2
8003700	BD500	Bypass Damper with motor Standard pipe connection dimensions Max 600°C	500,5	501,2
8003800	BD700	Bypass Damper with motor Standard pipe connection dimensions Max 600°C	700,5	701,2

Standard components

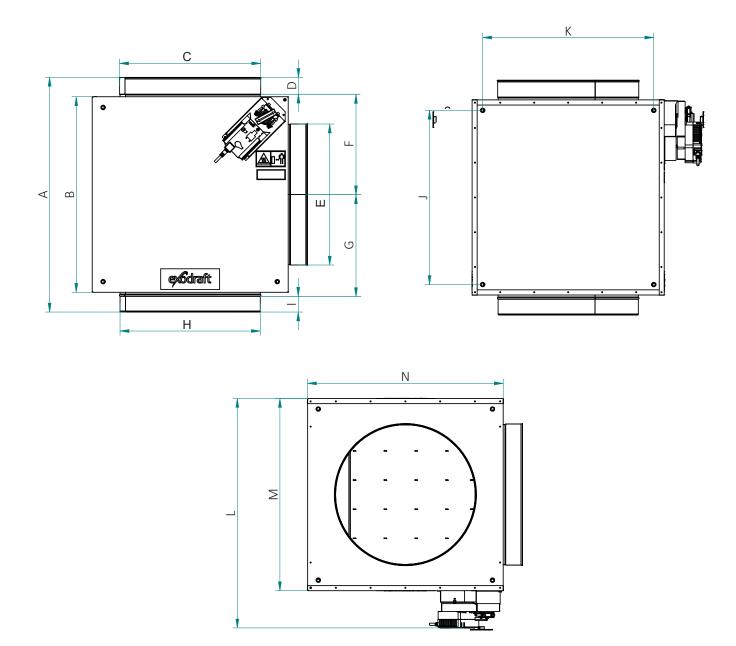
1	Outlet	
2	Housing	
3	M12 thread for mounting, three at each corner	
4	Damper motor (can be installed at both sides of the axle for reverse function)	
5	Nameplate	
6	Danger/Caution sign	
7	Inlet	1
8	Outlet	2
9	Damper (inside)	9
	2	

Technical data

	1													
Model						D	imensi	ons [mm]					
	А	В	C*	D	E*	F	G	H**	1	J	K	L	М	N
BD250	512	373	253.2	60	253.2	195	201	250.5	56	295	358	555	431	373
BD350	837	698	353.2	60	353.2	358	363	350.5	56	621	610.4	818	685	698
BD400	837	698	403.2	60	403.2	358	363	400.5	56	621	610.4	818	685	698
BD500	837	698	503.2	60	503.2	358	363	500.5	56	621	610.4	818	685	698
BD700	837	698	703.2	60	703.2	358	363	700.5	56	621	610.4	818	685	698

^{*}Specifies inside sleeve dimensions

^{**}Specifies outside adapter dimensions



Mechanical installation

Exodraft products must always be installed by properly qualified personnel.

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.



CAUTION! If the exodraft Bypass Damper is not installed, maintained, and/or operated in compliance with the manufacturer's instructions, conditions may arise which could lead to personal injury or material damage.

Placement and orientation

You must allow for hot surfaces on the Bypass Damper. If Bypass Damper is placed where it is easily accessible, it must Be Aware of hot to avoid inadvertent touch and any risk of inadvertent touch.

The damper motor on the Bypass Damper can be installed on the left or right side.

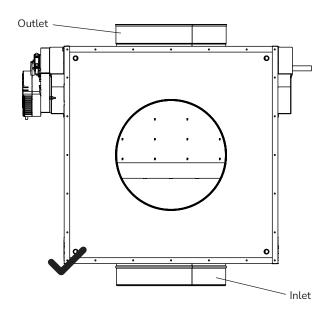


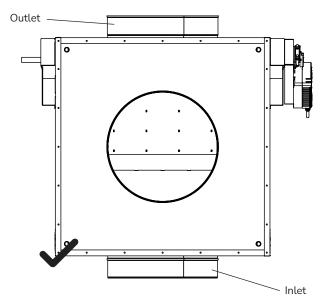
DANGER! Observe national regulations regarding distance from flammable materials.

If Bypass Damper is placed where it is easily accessible, it must be shielded to avoid inadvertent touch and any risk of collision.

Motor placed on left side

Motor placed on right side

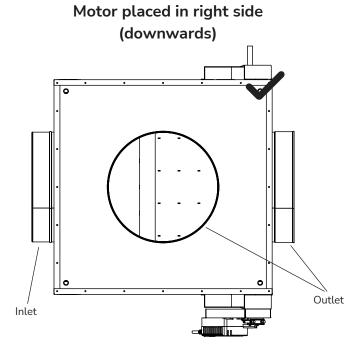




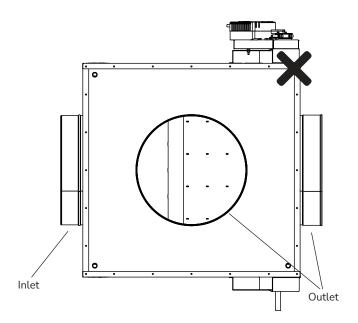
In addition to placing the motor on either (right or left) side of the Bypass Damper, you can also install the bypass damper with the damper motor pointing downwards.

However, we do **not recommend** placing the motor at the top, due to the temperature of the flue gas. See examples on the next page.

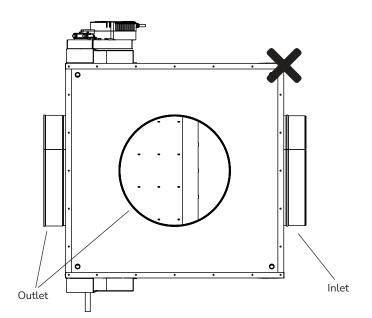
Motor placed in left side (downwards)



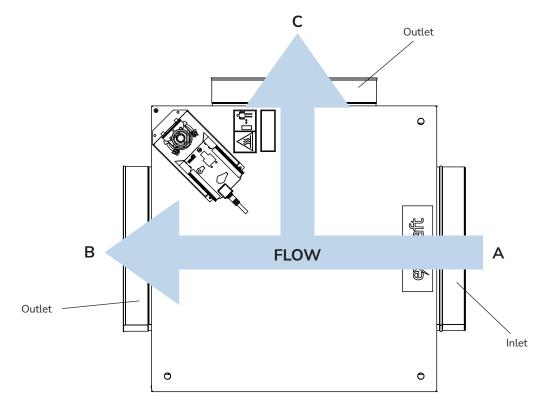
Motor placed at the left side (at the top)

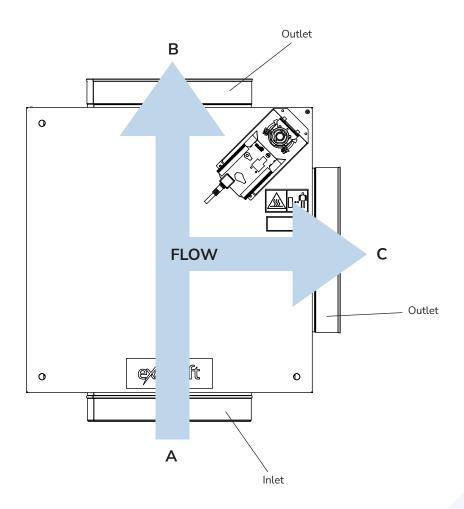


Motor placed at the right side (at the top)



Flue gas direction



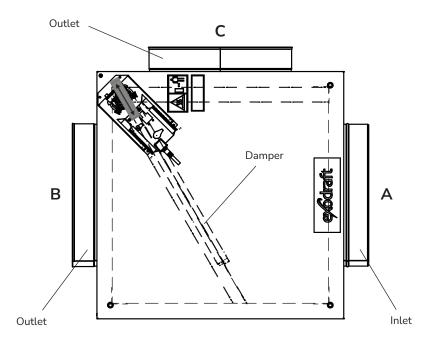


Damper dicretion

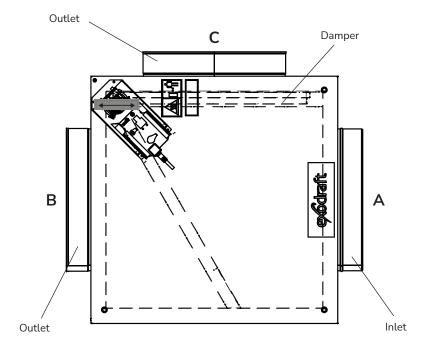
To ensure which direction the dampers are, when the unit is mounted, a damper indicator is mounted at the end of the shaft. The arrow points in the direction of the damper. See examples below and next page.



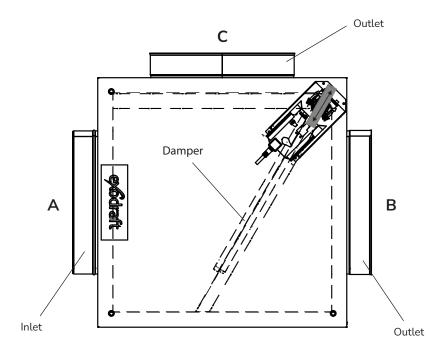
Closed damper in sleeve B, thus flue gas flow from sleeve A to sleeve C



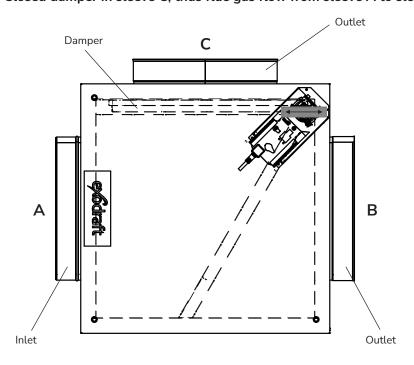
Closed damper in sleeve C, thus flue gas flow from sleeve A to sleeve B



Closed damper in sleeve B, thus flue gas flow from sleeve A to sleeve C



Closed damper in sleeve C, thus flue gas flow from sleeve A to sleeve B



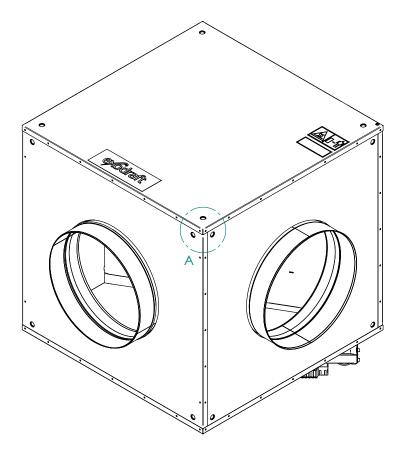
Mounting

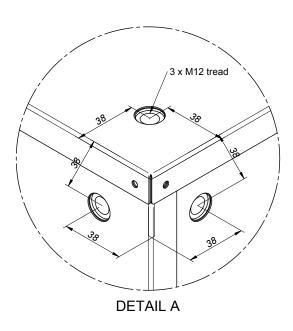
The weight must be distributed among at least 4 mounting corners (see section 3.4 - Mounting Points). Mounting points are only intended to support the weight of the product itself. As such, the Damper Motor is not built to support the weight of any chimney.



DANGER! Max. load on mounting corner 100kg

Exodraft item number	Type (Bypass Damper)	Weight
8003300	BD250	30
8003500	BD350	72
8003600	BD400	70
8003700	BD500	68
8003800	BD700	140





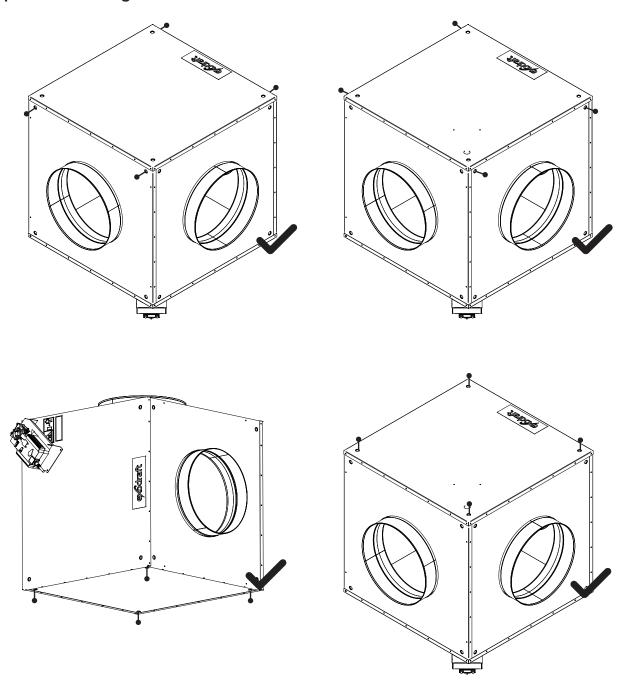
Mounting points

When mounting the Bypass Damper, you must use a minimum of four loadbearing mounting points.

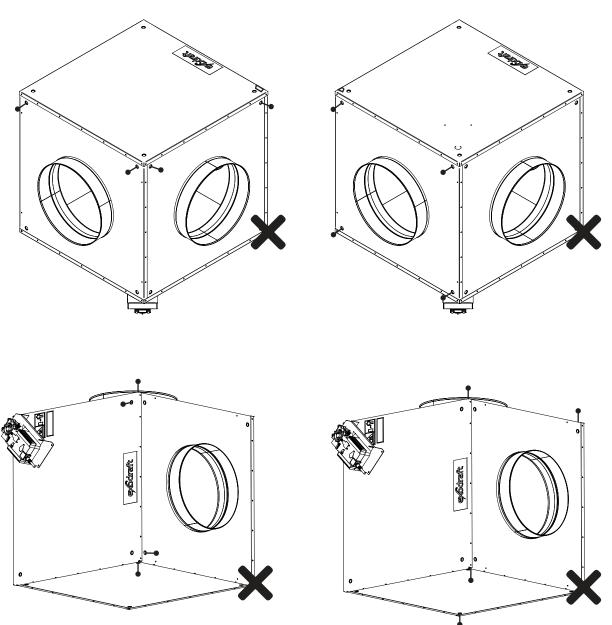
The Bypass Damper should not be mounted using four points on the same side, unless it is the top or the bottom. Top and bottom depends on the position, i.e. the top is the side facing the ceiling.

The Bypass Damper should not be mounted using four points where two surfaces meet or where the points are offset. See examples below and on the following page of approved and disapproved mounting methods.

Approved mounting methods



Unapproved mounting methods



Electrical installation

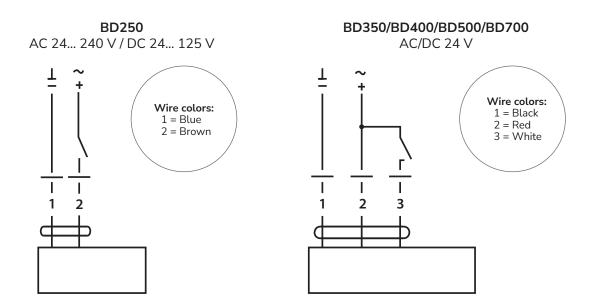
DANGER! Always turn off the power before working on the unit. Contact with live wires can cause electric shock or death!



CAUTION! If it becomes necessary to replace any of the original wiring that was delivered with the system, you need to use the same type of cable with the same temperature classification. If not, the isolation can melt or erode, exposing the actual wire.

All wiring must be completed in accordance with national regulations – in addition, the cable from the damper motor must not touch the Bypass Damper.

Wiring Diagram/Electrical Connection of Damper Motor



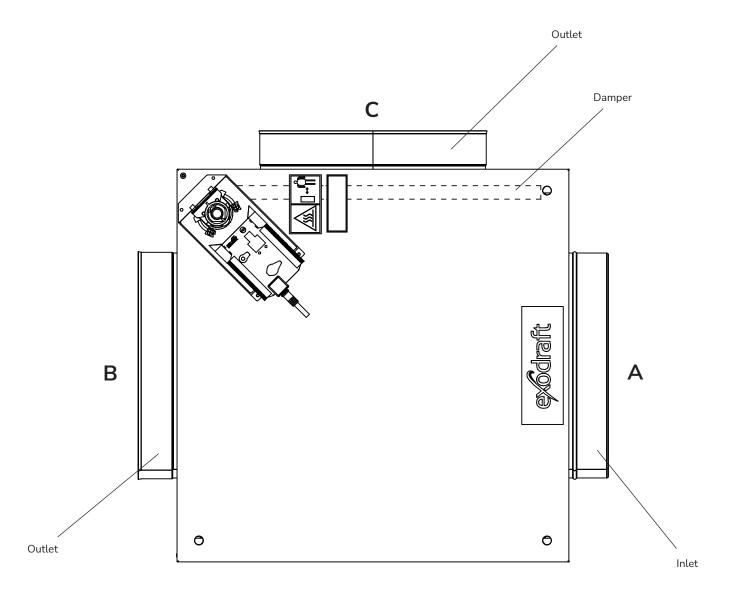
Installation and Placement of Belimo Motor Unit

The motor unit can be placed in both the right and left side of the Bypass Damper, which makes it possible to adjust the setup and the safety position according to individual requirement.

In addition, the Safety position can be set to have a 'closed port' at Sleeve B or Sleeve C. The drawing below shows where Sleeve B and Sleeve C are placed on the product.

The choice of placement/orientation of the Bypass Damper depends on the setup of the chimney installation and where you want to have the safety position in your system.

By default, Bypass Damper is always installed from exodraft's production, with closed damper in sleeve C when it is in safety position.



To install the motor unit correctly, you must first decide where you want to have the safety position. After this, you also need to decide on which side you want the motor to be placed. Below you see the four options.

The letters illustrates which column needs to be used and followed in the installation guide in the next pages.

Motor unit placed in the left side
- Bypass/Safety Position in the B-sleeve

Outlet

Outlet

A

A

Inlet

Motor unit placed in the right side
- Bypass/Safety Position in the B-sleeve

Outlet

Damper

B

Damper

Outlet

Outlet

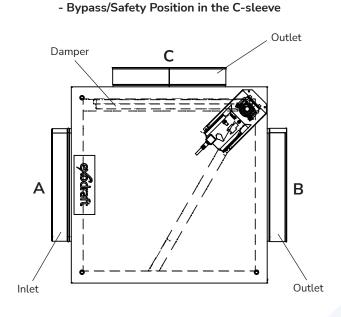
Outlet

Outlet

Damper

Inlet

Motor unit placed in the left side



Motor unit placed in the right side

Outlet

Installation Guide for Bypass Damper 250

			ty position in sleeve		ty position in sleeve
	Step by step	A. Motor unit Placed in left side	B. Motor unit Placed in right side	C. Motor unit Placed in left side	D. Motor unit Placed in right side
1. Loosen bolts to uninstall the motor unit from the originally chosen mounting side		Loosen bolts	Loosen bolts	Loosen bolts	Loosen bolts
2. Loosen the stop and take it off completely. Place it somewhere safe where you won't lose it.		Loosen the mechanical stopper and uninstall	Loosen the mechanical stopper and uninstall	Loosen the mechanical stopper and uninstall	Loosen the mechanical stopper and uninstall
3. Flip the motor and uninstall striker plate and stop washer.		Uninstall stri- ker plate and stop washer			

4. On the opposite side, uninstall striker plate and clamps.	Uninstall striker plate and clamps	Uninstall striker plate and clamps	Uninstall striker plate and clamps	Uninstall striker plate and clamps
5. Now install stop washer and striker plate on the opposite side of where they were before. Be sure to set the stopper to position 0.	Install stop washer and striker plate			
6. Turn the motor around and install clamps and striker plate in that order. Be careful to keep the two marks on the clamps and the bushing are across from each other.	Install clamps and striker plate	Install clamps and striker plate	Install clamps and striker plate	Install clamps and striker plate

7. Place "stopper" and tighten the screw.		Place the mechanical stopper and tighten	Place the mechanical stopper and tighten	Place the mechanical stopper and tighten	Place the mechanical stopper and tighten
8. Place motor in the desired side	A O O O O O O O O O O O O O O O O O O O	Place motor in the left side	Place motor in the right side	Place motor in the left side	Place motor in the right side
9. Loosely tighten bolts.		Loosely tigh- ten bolts	Loosely tigh- ten bolts	Loosely tigh- ten bolts	Loosely tigh- ten bolts
10. Install the black handle and pre-tighten the actuator by turning the handle in the direction of the arrow until it catches – Turn the handle one more round after it catches.		Pre-tighten the actuator	Pre-tighten the actuator	Pre-tighten the actuator	Pre-tighten the actuator

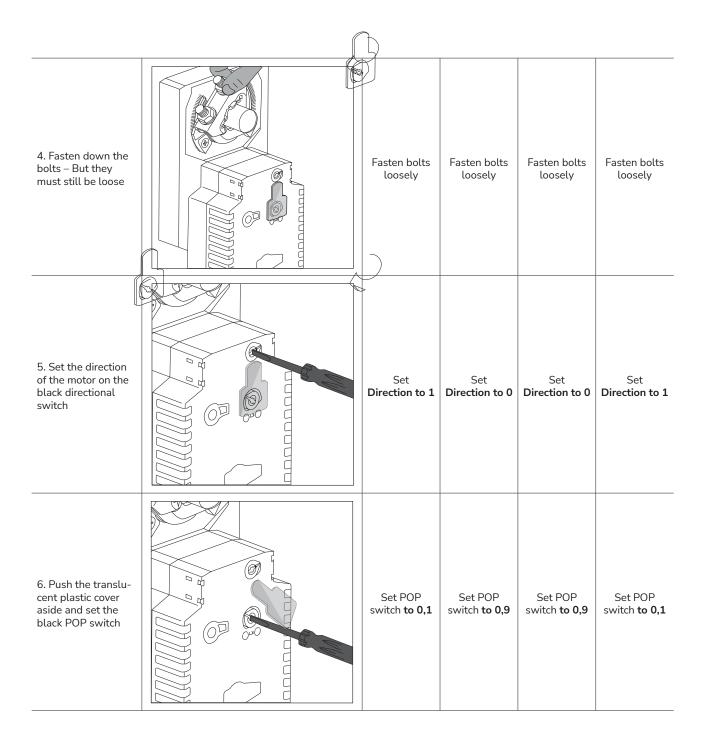
11. Lock actuator into pre-tightened position, by pushing the black lock to	B	Lock the position	Lock the position	Lock the position	Lock the position
12. Check if the damper is closed completely		Damper must be closed toward port B.	Damper must be closed toward port B.	Damper must be closed toward port C	Damper must be closed toward port C.
13. Tighten bolts completely.		Tighten bolts	Tighten bolts	Tighten bolts	Tighten bolts
14. Turn the black handle in the direction of the arrow until the lock disengages.		Turn the handle	Turn the handle	Turn the handle	Turn the handle

15. The lock itself must now be set to		The lock is disengaged	The lock is disengaged	The lock is disengaged	The lock is disengaged
16. Next, place the handle with side facing the motor as shown in the picture.		Put the handle back into place			
17. Connect power to the motor	- +	Connect power	Connect power	Connect power	Connect power

18. Let damper run in operational position	Damper must be closed toward port C.	Damper must be closed toward port C.	Damper must be closed toward port B.	Damper must be closed toward port B.
19. Move the stopper down too and tighten	Move down the mechani- cal stopper			
20. Turn off the power and let the damper go all the way back to the bypass starting point. Check that the damper is completely closed. The engine unit of the Bypass Damper is now completely installed.	Damper must be closed toward port B.	Damper must be closed toward port B.	Damper must be closed toward port C.	Damper must be closed toward port C.

Installation Guide for Bypass Damper 350, -400, -500, -700

			ty position in sleeve		ty position in sleeve
Step by step		A. Motor unit Placed in left side	B. Motor unit Placed in right side	C. Motor unit Placed in left side	D. Motor unit Placed in right side
1. Loosen bolts to uninstall the motor unit from the originally chosen mounting side.		Loosen bolts	Loosen bolts	Loosen bolts	Loosen bolts
2. Reset the motor by loosening the screws in both sides and push the mechanical stoppers down to position 0. Take the motor off the axle.		Move the mechanical stoppers down	Move the mechanical stoppers down	Move the mechanical stoppers down	Move the mechanical stoppers down
3. Place the motor in the desired side, in over the axle.		Place the motor in the left side	Place the motor in the right side	Place the motor in the left side	Place the motor in the right side



7. Connect 24 V DC to motor.	- +	Connect power	Connect power	Connect power	Connect power
8. Turn on 24-volt power. Wait 20 seconds, and then turn off the power. Let the motor take the damper to the safety position.	on off	Turn on power and wait 20 seconds. Then turn off the power			
9. When the motor stops in the outside position, keep the damper closed with one hand		Damper must be closed toward port B	Damper must be closed toward port B	Damper must be closed toward port C	Damper must be closed toward port C

10. Tighten bolts completely.		Tighten bolts	Tighten bolts	Tighten bolts	Tighten bolts	
11. Reset the black POP switch from previous setting to the following		Set POP switch to 0	Set POP switch to 1	Set POP switch to 1	Set POP switch to 0	
12. Turn the power back on and the damper will now run operate in production position.	on off	Turn on power	Turn on power	Turn on power	Turn on power	

13. When the damper has gone all the way up (into production position), the motor must stop before the mechanical stop. Next, lift up the mechanical stopper all the way and tighten completely.	Lift up the mechanical stopper	Lift up the mechanical stopper	Lift up the mechanical stopper	Lift up the mechanical stopper
14. Turn off/disconnect the power. Let the damper goall the way back to the safety position—Check that the damper is closed completely:	Damper must be closed toward port C	Damper must be closed toward port C	Damper must be closed toward port B	Damper must be closed toward port B
15. Now, lift up the mechanical stopper in the opposite side and tighten – The motor can now run within this interval and with the correct stops.	Lift up the mechanical stopper	Lift up the mechanical stopper	Lift up the mechanical stopper	Lift up the mechanical stopper
16. Setup and installation of the Bypass Damper motor unit is now completed.	Installation of the motor unit is now complete			

Startup and configuration

System startup



CAUTION! Bypass Damper should not be put into operation before being properly installed. Remember: Danger may be associated with touching hot components

- 1. Check that the supply voltage complies with the voltage mentioned on the name plate
- 2. Check that the unit is set to bypass when the motor receives no voltage, and that the indside damper has not been bent during shipping or installation
- 3. Turn on the power and check that the bypass damper is working
- 4. Check that the spring return / safety function works properly
- 5. Do a slow and controlled warmup of the Bypass Damper
- 6. Check joints and sealings for any leakage
- 7. Check the damper function at high temperatures

Operating Conditions on Flue Gas Side

• Max. flue gas temperature: 600°C

Max operating pressure: 0 Pa

• Min operating pressure: -5000 Pa

Maintenance and Troubleshooting

Troubleshooting

Problem	Possible cause	Rectification	
	Defect in the damper motor	Check voltage and the wiring connections to damper motor	
	Loose wire connection in the power supply	Check the installation for loose connections	
The damper doesn't change position	Damper is jammed	Clean the device, check function of damper movement	
	Mounting of damper motor has become loose	Check mounting on damper axis and adjust according to the directions described in section "Installation and Placement of Belimo Motor Unit"	
Wrong damper motor position	Wrong mounting of damper motor	Check damper motor settings and adjust according to directions described in section "Installation and Placement of Belimo Motor Unit"	



UK Conformity Assessed



Exodraft a/s Industrivej 10 DK-5550 Langeskov

Hereby declares that the following products:

BD250, BD250-2, BD500, BD500-2, BD750, BD750-2, BD1000, BD1000-2, BD2000, BD2000-2

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



Declaration of Conformity

DK: EU-Overensstemmelseserklæring GB: Declaration of Conformity EU-Konformitätserklärung DE:

FR: Déclaration de conformité de l'Union Européenne

NO: EU-Samsvarserklæring EU Deklaracja zgodności PL:

NL: EU-Conformiteits verklaring SE: EU-Överensstämmelsedeklaration FI: EU-Vaatimustenmukaisuusvakuutus

IS: ESS-Samræmisstaðfesting

IT: Dichiarazione di Conformità Unione Europea



Exodraft a/s Industrivej 10 DK-5550 Langeskov

Erklærer på eget ansvar, at følgende produkter:

Hereby declares that the following products:

Erklärt hierdurch auf eigene Verantwortung, daß folgende Produkte:

Déclare, sous sa propre responsabilité, que les produits suivants:

Erklærer på eget ansvar at følgende produkter:

Niniejszym oświadcza, że następujące produkty:

Veklaart dat onderstaande producten:

Deklarerar på eget ansvar, att följande produkter:

Vastaa siltä, että seuraava tuote:

Staðfesti à eigin àbyrgð, að eftirfarandi vörur:

Dichiara con la presente che i seguenti prodotti:

BD250, BD250-2, BD500, BD500-2, BD750, BD750-2, BD1000, BD1000-2, BD2000, BD2000-2

Som er omfattet af denne erklæring, er i overensstemmelse med følgende standarder

Were manufactured in conformity with the provisions of the following stand-

Die von dieser Erklärung umfaßt sind, den folgenden Normen:

Auxquels s'applique cette déclaration sont en conformité avec les normes

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-

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 sequenti:

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:

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:

Zaodnie z: Maskindirektivet:

The Machinery Directive: Richtlinie Maschinen: Directive Machines: Maskindirektivet:

Dyrektywą maszynową:

De machinerichtliin: 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

FMC-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

Langeskov, 01-11-2022

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Algemeen directeur Geschäftsführender Direktor Président Directeur Général Verkställande direktör Toimitusjohtaja Framkvemdastjori Direttore Generale

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