



# INSTALLATION AND USAGE MANUAL

Manufacturer: GRYFIT TECHNIK Sp. z o.o. – ul. Łąkowa 11 – 95-050 Konstantynów Łódzki

## CX-5 FIRE DAMPER with FDG-WT-8 or BELIMO actuators EI ( $v_e - h_o - i \leftrightarrow o$ ) S

**CERTIFICATE OF CONSTANCY OF PERFORMANCE No 1488-CPR-0280/W**

### 1- INSTALLATION

Installation should be carried out by professional who has been trained in GRYFIT components installation.

#### 1.1- OVERALL DIMENSION OF THE INSTALLATION OPENING

To install the damper properly the recommended overall dimension of the installation opening is D+50 mm. Smaller overall dimension of the installation opening is allowed however in that case installation should be carried with particular care – the clearance between damper body and wall should be entirely filled with the grout or heat resisting sealant or filler without leaving voids. Grout, sealant or filler should be selected accordingly too gap size to be filled in and required fire class.

#### 1.2- FIXING AND INSTALLATION

Close the damper before installation. Place the damper axially in the installation opening. In order to provide partition walls with fire resistance, it is absolutely necessary to observe the mortaring border line which is marked on the label on the damper casing. In case of installation in the brick or concrete walls, the clearance between damper body and wall should be filled in with masonry mortar grout or appropriate sealant or filler. In case of installation in the plaster-cardboard walls, the drawings on the next pages should be followed.

#### NOTES:

- a) **Damper mechanism must be always accessible for inspection and maintenance – keep free space of 200 mm between damper mechanism and nearest building partition or any other obstacle which may restrict the access to the damper mechanism.**
- b) **It is highly recommended to use the UM optional installation brackets to facilitate installation. Installation brackets are delivered flat and have to be bended before installation of the product.**
- c) **it is absolutely necessary to respect damper installation mortaring border line which is clearly marked on the label to be found on the damper casing.**
- d) **While installing it is impermissible to grime a control mechanism of the damper with mortar, sealant, filler, glue or paints. The control mechanism of the damper has to be protected until the masonry and completion work is finished.**
- e) **The damper blade has to be closed during installation and until mortar, sealant, filler or glue is hardened. The damper casing cannot be burdened during installation otherwise it can result in deformation of the casing and damage of the damper blade.**

#### 1.3- INSTALLATION METHOD

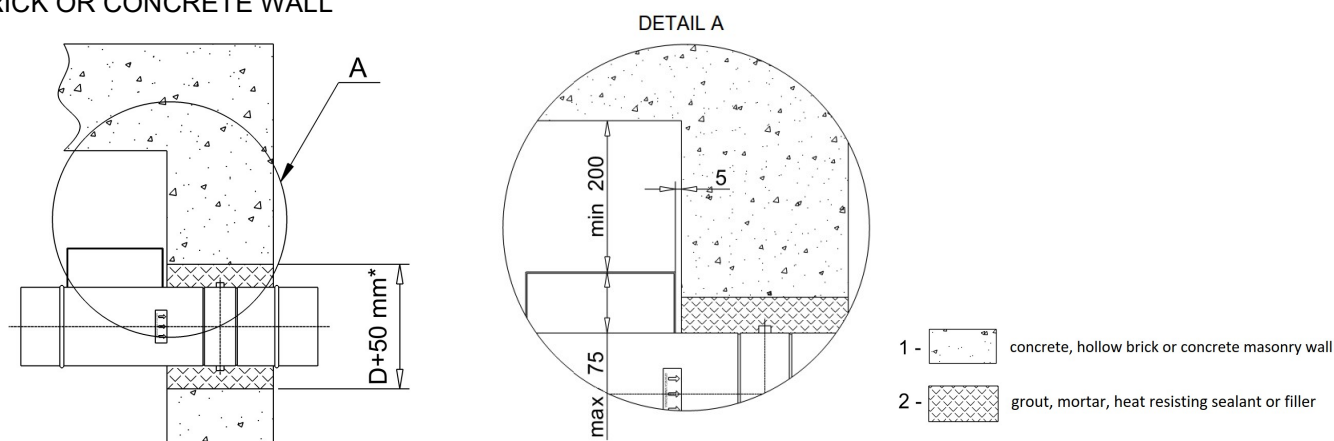
The dampers can be installed both with their blade axis positioned horizontally and vertically.

##### 1.3.1- APPROVED BUILDING PARTITIONS IN WHICH MAY BE INSTALLED THE CX-5 DAMPERS

The dampers can be installed in the following vertical and horizontal building partitions:

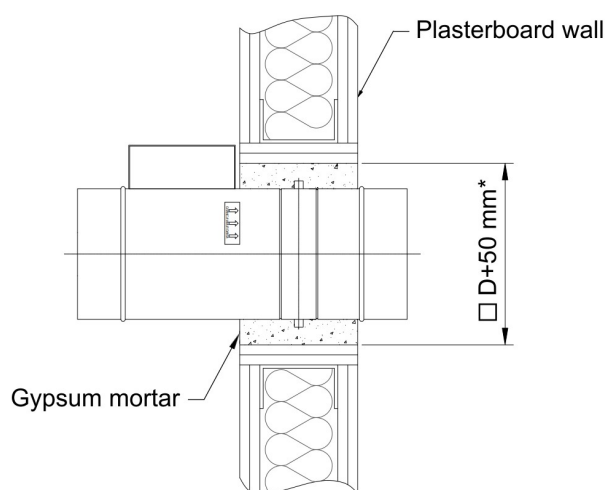
- walls with a thickness not smaller than 115 mm,
- plasterboard walls installed with metal studs framing approved to fire resistance class not less than EI 120 with a thickness not smaller than 125 mm,
- plasterboard walls type 98/48 with thickness 98 mm installed with metal studs framing 48 mm with double leaf boards type BA13 thickness 12,5 mm each (applies only to dampers with nominal diameter min 100, max 355),
- concrete floor/ceilings with a thickness not smaller than 150 mm

## 1.3.2- BRICK OR CONCRETE WALL



\*Recommended overall dimension of the installation opening is D+50 mm. Smaller overall dimension of the installation opening is allowed however in that case installation should be carried with particular care - the clearance between damper body and wall should be entirely filled with the grout or heat resisting sealant or filler without leaving voids. Grout, sealant or filler should be selected accordingly too gap size to be filed in and required fire class.

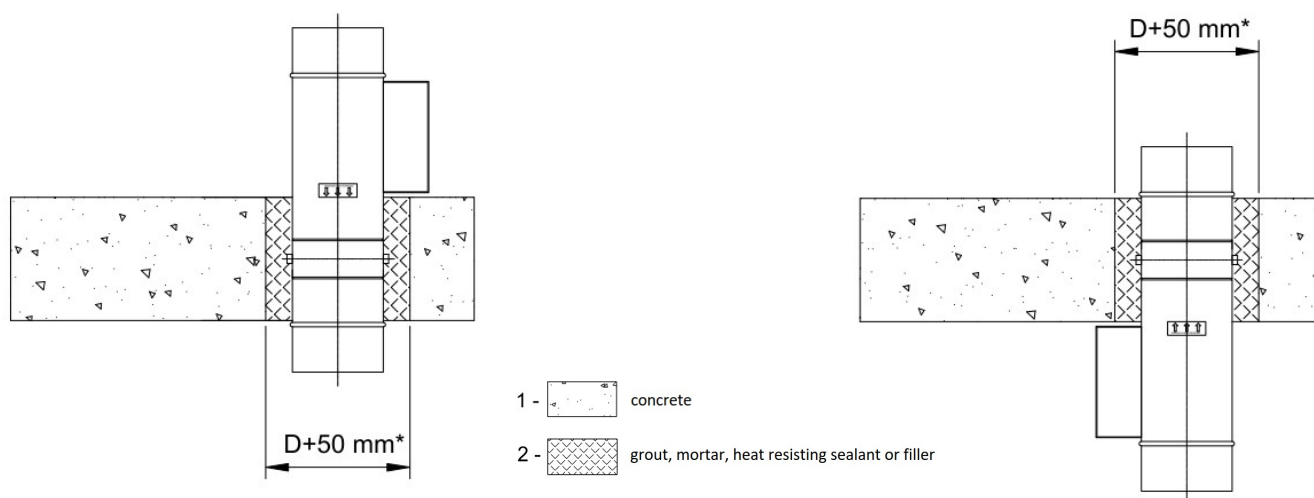
## 1.3.2- PLASTERBOARD WALL



Schematic light-weight plasterboard wall shown in the drawing is only an example

\*Recommended overall dimension of the installation opening is D+50 mm. Smaller overall dimension of the installation opening is allowed however in that case installation should be carried with particular care - the clearance between damper body and wall should be entirely filled with the grout or heat resisting sealant or filler without leaving voids. Grout, sealant or filler should be selected accordingly too gap size to be filed in and required fire class.

## 1.3.3- INSTALLATION IN THE HORIZONTAL PARTITIONS



\*Recommended overall dimension of the installation opening is D+50 mm. Smaller overall dimension of the installation opening is allowed however in that case installation should be carried with particular care - the clearance between damper body and wall should be entirely filled with the grout or heat resisting sealant or filler without leaving voids. Grout, sealant or filler should be selected accordingly too gap size to be filed in and required fire class.

#### 1.4- CONNECTION TO VENTILATION DUCT

While installing the damper in the partition, the damper casing cannot be damaged and in particular tightening cannot occur. When the damper is connected to ventilation duct, the operation test should be carried out.

##### NOTES:

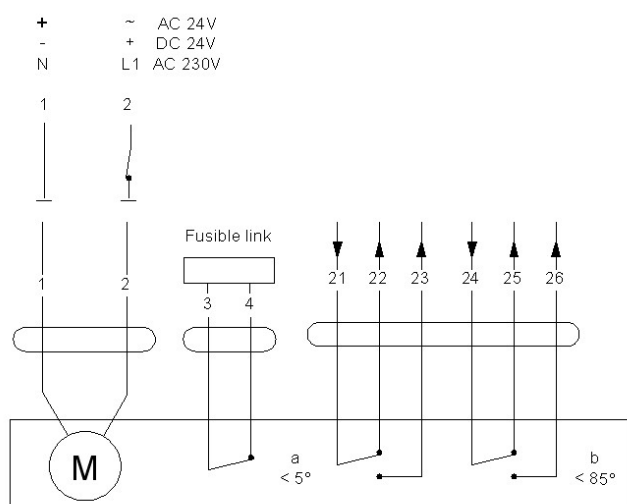
- Connection of the damper to ventilation or air-conditioning duct has to be done coaxially.
- The damper should be installed firmly, because mechanical tightening and free vibration of ventilation system cannot be transferred onto the damper casing.

#### 1.5- ELECTRICAL CONNECTION

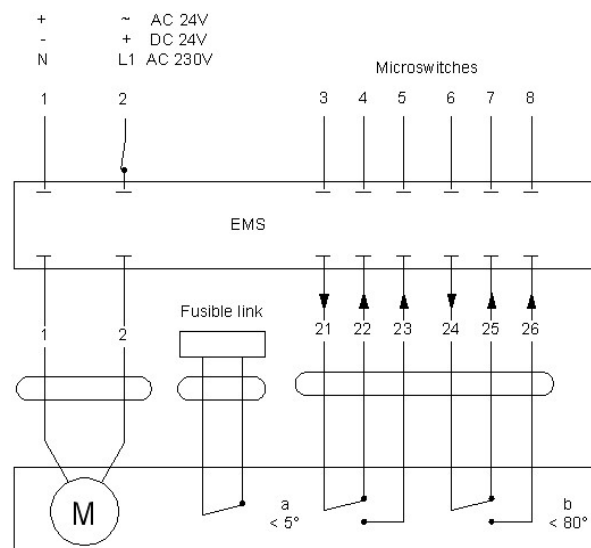
Connect power cable and microswitches' cables according to the table and electrical wiring diagram. Run the test of power connections.

##### 1.5.1- FDG-WT-5 AND FDG-WT-8 ACTUATORS

ACTUATOR CHARACTERISTICS	ACTUATOR TYPE			
Actuator type	FDG-WT-5-24	FDG-WT-5-230	FDG-WT-8-24	FDG-WT-8-230
Supply voltage	24 V AC lub DC	230 V AC	24 V AC lub DC	230 V AC
Power input during tensioning the spring	4 W	4 W	3,5 W	9,2 VA
Power input during stand-by	1 W	1 W	0,5 W	6,9 VA
Time of movement – engine	<40 s		55 - 71 s	
Time of movement – spring	<20 s		21 s	
Protection class	II		II	
Protection level	IP 54		IP 54	
Sound power level	<45 dB(A) motor, <65 dB(A) spring		<47 dB(A) motor, <52 dB(A) spring	
Working temperature range	-30 ... +50 °C		-20 ... +50 °C	



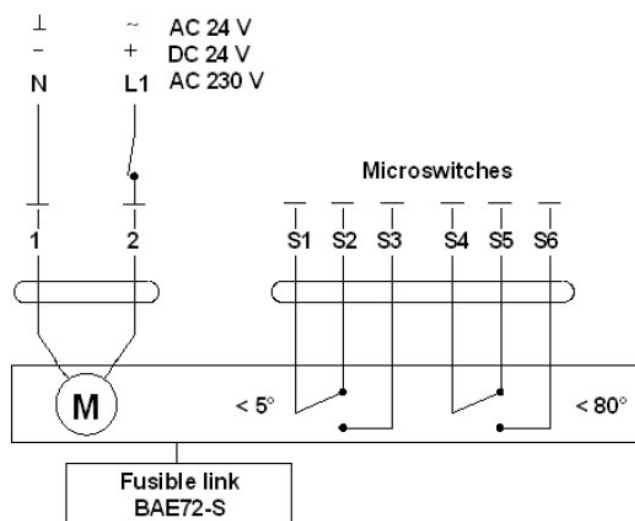
Electrical wiring diagram for actuators:  
FDG-WT-5-24, FDG-WT-5-230, FDG-WT-8-24, FDG-WT-8-230



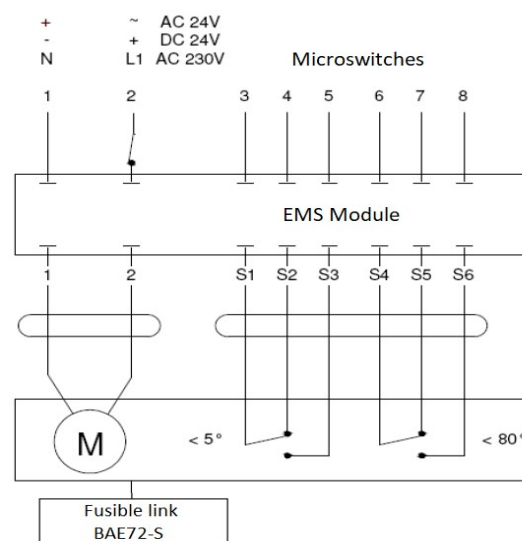
Electrical wiring diagram for actuators +EMS:  
FDG-WT-5-24, FDG-WT-5-230, FDG-WT-8-24, FDG-WT-8-230

## 1.5.2 - BELIMO ACTUATORS

	BELIMO				
Actuator type	BF24-T BF24-T-ST	BF230-T	BLF24-T BLF24-T-ST	BLF230-T	BF24TL-T-ST
Supply voltage	24V AC/DC	230V AC	24V AC/DC	230V AC	24V AC/DC
Power input during tensioning the spring	7W	8W	5W	5W	7W
Power input during stand-by	2W	3W	2,5W	3W	2W
Time of movement - engine	140 s.	140 s.	40 - 75 s.	40 - 75 s.	140 s.
Time of movement - spring	16 s.	16 s.	20 s.	20 s.	16 s.
Protection class	III	II	III	II	III
Protection level	IP54				
Sond Power level	max. motor 45 dB(A), spring ~ 62 dB(A)				
Working temperature	- 30°C do + 50°C				



Electrical wiring diagram for actuators: BF-24-T, BF24-T-ST, BF230-T, BLF-24-T, BLF24-T-ST, BLF230-T.



Electrical wiring diagram for actuators + EMS: BF-24-T, BF24-T-ST, BF230-T, BLF-24-T, BLF24-T-ST, BLF230-T.

## 2- USAGE INSTRUCTION

In the stand-by position the damper blade is open.

### 2.1- OPEN DAMPER – THE STAND-BY POSITION

**FDG-WT-5, FDG-WT-8, BLF, BF, actuator types:** The damper blade is held in the stand-by position, because electrical actuator puts constantly the integrated return spring under tension. The damper blade is held in the open position only when the actuator is powered continuously in 1(-) and 2(+) electrical wires by current supply 24V AC/DC or 230V AC (depending on the actuator version).

### 2.2- CLOSURE OF THE DAMPER – TURNING INTO THE SAFETY POSITION

**FDG-WT-5, FDG-WT-8, BLF, BF, actuator types:** Closure of the blade – turning into the safety position can result from:

- activation of the fusible link when the temperature inside the damper casing rises above 70°C, or
- pushing the control button on the fusible link (BF and BLF actuators), or
- remote control of the damper with the use of current interruption signal (current decay in 1(-) and 2(+) electrical wires of the actuator and activation of return spring).

### 2.3- OPENING OF THE DAMPER – RETURN TO THE STAND-BY POSITION

**FDG-WT-5, FDG-WT-8, BLF, BF, actuator types:** Opening of the blade – turning into the stand-by position can result from:

- current supply in 1(-) and 2(+) electrical wires once again, with continuous voltage 24V AC/DC or 230V AC (depending on the actuator version), or
- manual control, with the use of special spanner (crank) delivered with the actuator.

#### NOTE:

1. If the damper has been exposed to fire, it should be replaced with a new one.
2. In case of damage or activation of the fusible link (FDG-WT-8, BLF and BF actuator types with fusible links) it has to be replaced with a new one before re-opening of the damper.
3. While returning the damper to the open position, it is necessary to switch off the fans or air-conditioning and ventilation central units of ventilation duct which the damper is located in.

## 3- MAINTENANCE AND SERVICE

The damper does not required special maintenance. However, it is advisable to control the proper working of the damper and make a written report once a year.

Maintenance and service should be carried out by the service staff of GRYFIT company or by professional who has been trained in maintenance of GRYFIT components.

## 4- STORAGE

The damper is delivered in the closed (safety) position, with the complete control mechanism installed. While installing the damper on the building site, the industrial safety regulations should be observed and this instruction should be followed in order to avoid damage of the damper.

The dampers should be protected from moisture and mechanical shock or impact. It is forbidden to store more than two dampers one on top of the other. In case of storage on the ground, the dampers should be put on protective pads in order to avoid damage or deformation of the casing.

## 5- GUARANTEE

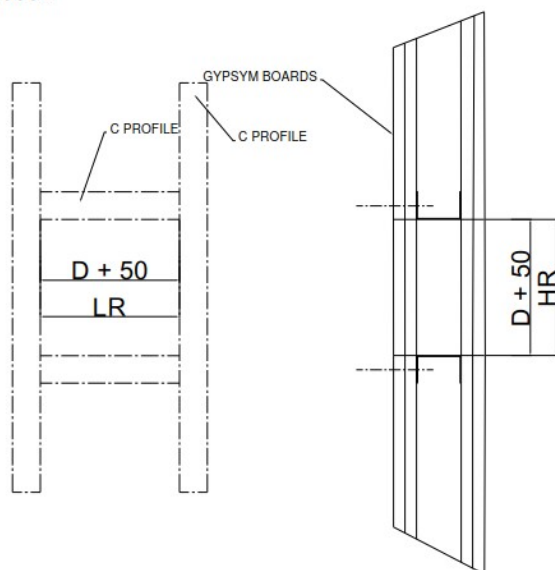
The product is subject to a three-year guarantee from the date of sale, provided that product was checked and necessary maintenance was carried out by personnel authorized by the Manufacturer at least once in the year and it is documented by the written report delivered to Manufacturer or its local Distributor without delay after product check. If this condition was not met, a guarantee period would be limited to one year. Distributor is allowed to extend guarantee conditions to its own risk.

Warranty does not apply to claims for malfunction resulting from non-compliance with this Installation and Usage Manual. The Manufacturer is not responsible for the components that are installed outdoors and exposed to weather conditions.

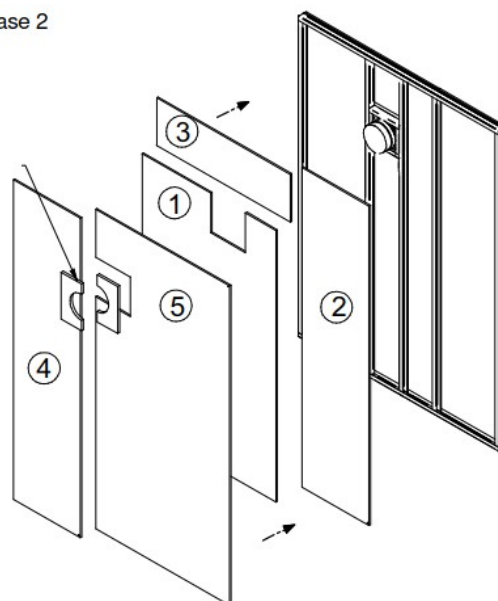
Distributor is the sole responsible entity for execution of guarantee to customers.

## 6- COMPLEMENTARY INSTALLATION METHODS IN 98 MM DRY GYPSUM BOARD WALLS

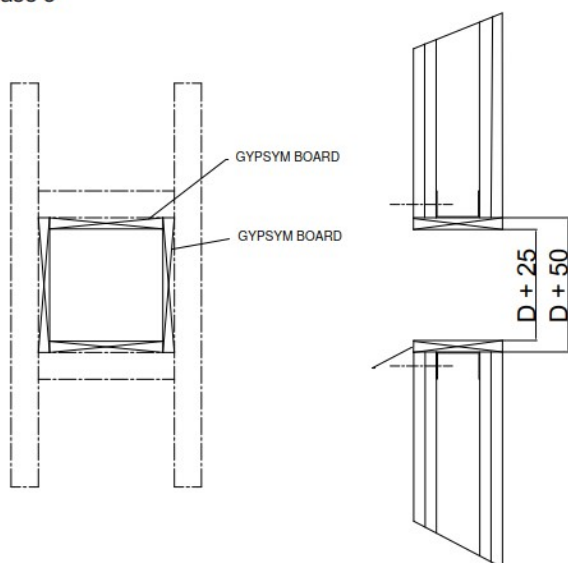
Phase 1



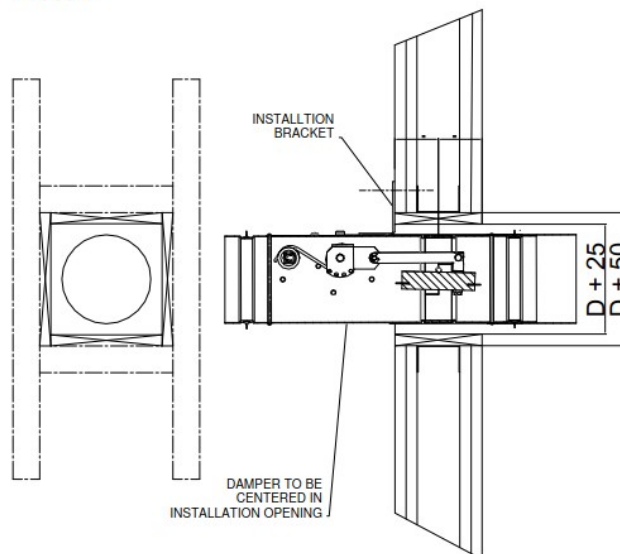
Phase 2



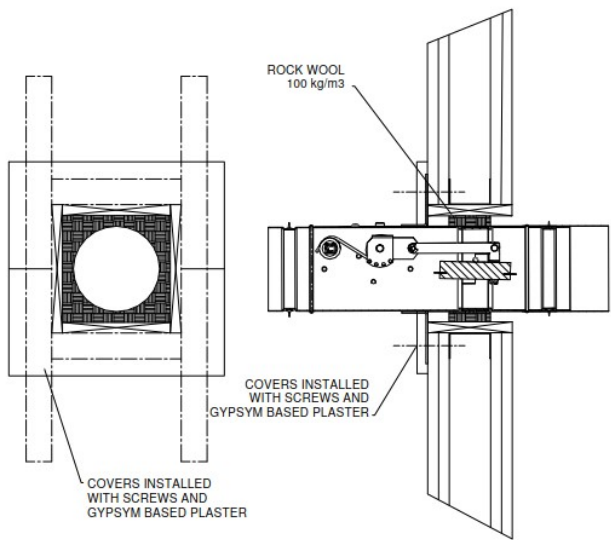
Phase 3



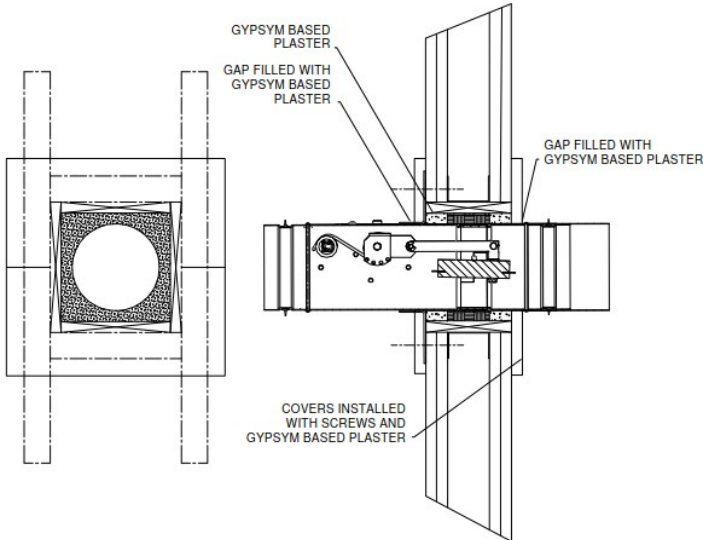
Phase 4



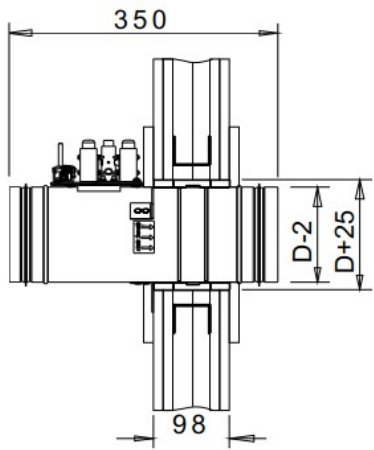
Phase 5



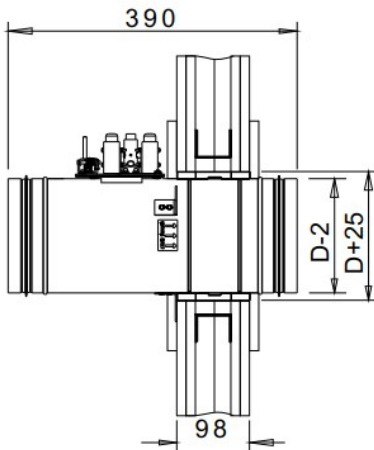
Phase 6



**D = 100-160**



**D = 200**



**D = 250-355**

