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OPERATION AND MAINTENANCE MANUAL

Smoke exhaust axial fan

mcr Monsun T-CL
mcr Monsun T-CS
mcr Monsun T-CW

Version: Monsun T CL/CS/CW 25.10.15.3

FIRE VENTILATION SYSTEMS

TABLE OF CONTENTS:

CAUTION:

Risk of injury from sharp edges, sharp corners and thin sheet metal elements.
Be careful when handling and working with the device.
Wear protective gloves, safety shoes and a helmet.

Risk of electric shock. Do not touch live parts. Only employees with the appropriate qualifications and certificates may perform electrical connections. Disconnect the power supply before starting work on electrical equipment.

NOTE

All previous issues of this Technical Manual expire on the date of issue hereof.
This O&MM does not apply to fans manufactured before the date of its issue.

1. FOREWORD

This O&MM is intended for users of mcr Monsun T smoke exhaust axial fans, versions CL, CS and CW. Its purpose is to provide guidance on the application, construction, commissioning and operation of the above-mentioned product.

Read this document thoroughly before installing this device at its operating site and its start-up.

In the event of faulty operation or defects, please contact the manufacturer or its authorised representative.

Due to the constant improvement of our products, we reserve the right to make design changes that increase the performance and safety of the device.

The design of the fans meets the essential requirements of the PN-EN 12101-3:2015 standard regarding smoke exhaust fans. It also meets the requirements of the current state of technology and ensures safety and health protection.

2. MANUFACTURER'S DISCLAIMER

- The manufacturer shall not be liable for any consequences of misuse of the device.
- Do not install additional elements on the device that are not its component or accessory.
- Any unauthorised alterations or modifications to the device are prohibited.
- The device housing must be protected from mechanical damage.
- Before installing the device, check the load-bearing capacity of the structural elements to which the device will be attached. Unreliable attachment may result in damage or destruction of the device and may also pose a risk to people nearby.
- This fan is not intended for forcing air with viscous pollutants that may settle on the device, and especially on its rotor.
- This fan is not intended for forcing air with corrosive pollutants that may be detrimental to the device.
- During use, the maximum speed of the rotor should not be higher than the rated speed.
- The manufacturer shall not be liable for any injuries, trauma or other bodily harm caused by misuse of this device.

3. SUBJECT OF DOCUMENTATION

The subject of this O&MM is:

- smoke exhaust axial fans mcr Monsun T, versions CS, CL, CW in F400 class

4. INTENDED USE

4.1. Application

Axial smoke exhaust fans type mcr Monsun T, versions CS, CL, CW are duct or wall fans designed to remove smoke and heat generated in rooms during a fire. They facilitate evacuation of persons from the area on fire, protect the building structure and its furnishing from high temperature, facilitate firefighting, and inhibit spreading of fire to adjacent fire zones.
The available versions include:

- single-function, with a single-speed motor
- dual-function, for general and fire ventilation, with a two-speed motor

The fans can be installed indoors or outdoors with the motor in a horizontal position on mounting feet. The total static pressure of the fans allows them to cooperate with a ventilation system with significant resistance.

The fan in the general ventilation system can operate in the ambient temperature range from -20 °C to +40 °C.
It can force dry air with dust content no greater than 0.3 g/m³.

This fan is not intended for forcing air with viscous pollutants that may settle on the device, and especially on its rotor.

This fan is not intended for forcing air with corrosive pollutants that may be detrimental to the device.

During use, the maximum speed of the rotor should not be higher than the rated speed.

A fan that has been operating in extreme fire conditions is not suitable for further operation.

4.2. Fire resistance

- Class F400 – fire resistance at 400°C for 120 minutes

4.3. Versions

- single-speed fans - single-function
- two-speed fans - dual-function

Housing length

- Long housing - CL version
- Short housing - CS version
- Wall housing - CW version

All fan versions can operate as unidirectional or reversible.

5. DESIGN AND OPERATING PRINCIPLE

5.1 Design

The mcr Monsun T axial smoke exhaust fan in the CS, CL, CW versions consist of an electric motor made in the appropriate insulation class, an axial rotor, a set of blades and a steel external housing. The electric motor driving the fan is placed on a support frame inside the housing. The motor is connected directly to the bearing rotor, on which the profiled blades are placed. The angle and number of blades result from the required static pressure and efficiency for the fan. The motor bearings are resistant to high temperatures. The forced medium – fire gases and smoky air – flows through the housing, motor and blades. A junction box – electrical – is installed on the motor. The fan has a connecting flange on the suction and discharge sides.

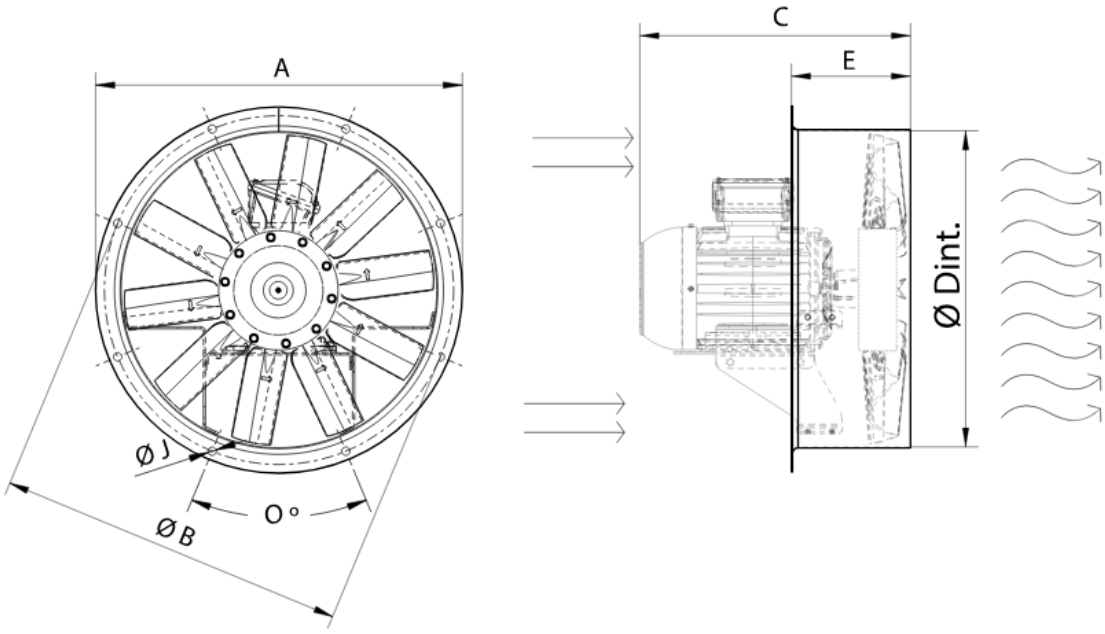
5.2 Operation

The single-functional fans do not run in standby. After applying the supply voltage to the terminals of the junction box, it starts up and operates at maximum speed.
In the case of dual-function fans – under normal conditions, the fan operates at lower rotational speeds within the general ventilation range. When the fan receives an alarm signal, it automatically starts running at maximum speed.

5.3 Dimensions

The basic dimensions and technical data and parameters of the fans are given below.

Wall housing - CW version

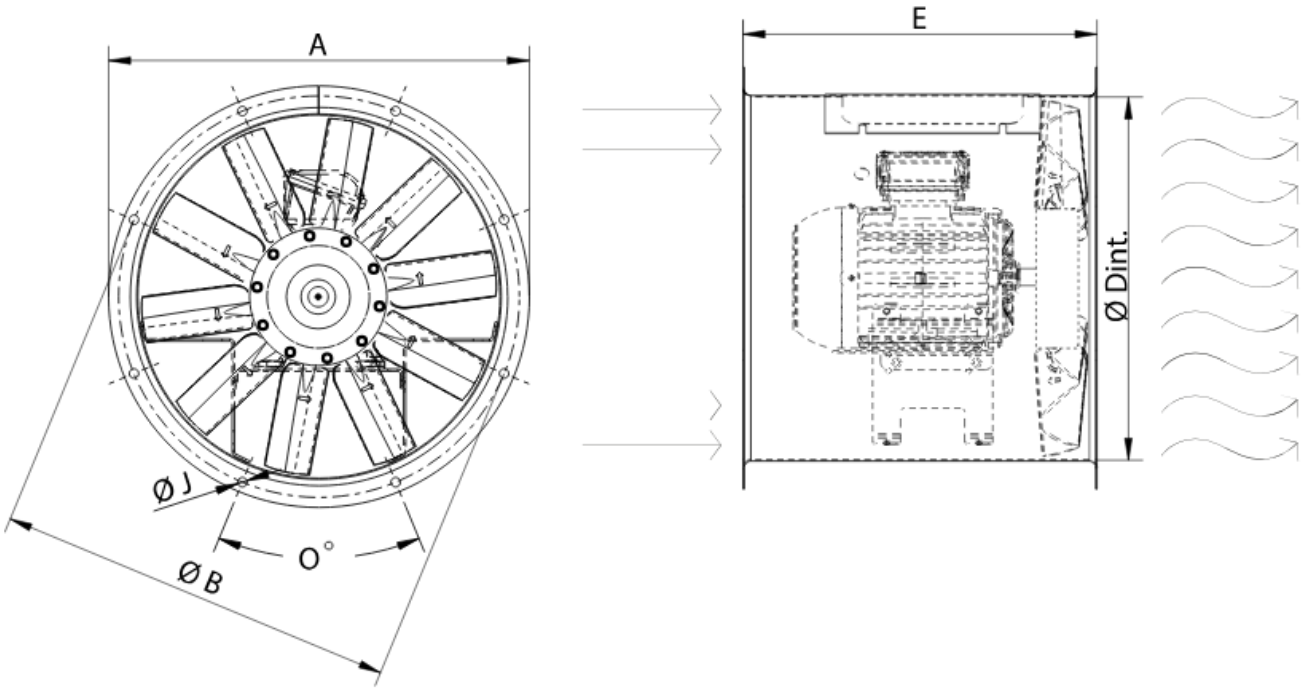


Description - version	DIA [cm]	E [mm]	O	ØA [mm]	ØB [mm]	ØD [mm]	ØJ [mm]	Weight [kg]
mcr MONSUN T-CW	45	165	8X45º	525	500	452	12	~16
mcr MONSUN T-CW	50	165	12x30º	600	560	504	12	~20
mcr MONSUN T-CW	56	175	12X30º	646	620	559	12	~23
mcr MONSUN T-CW	63	185	12X30º	725	690	633	12	~27
mcr MONSUN T-CW	71	190	16x22.5º	802	770	715	12	~31
mcr MONSUN T-CW	80	220	16x22.5º	892	860	801	12	~36
mcr MONSUN T-CW	90	340	16x22.5º	1000	970	903.5	12	~58-63
mcr MONSUN T-CW	100	340	16x22.5º	1115	1070	1013	12	~70-76

mcr MONSUN T-CW	112	340	16x22.5º	1234	1190	1132	12	~79-85
mcr MONSUN T-CW	125	340	20x18º	1365	1320	1263	15	~95

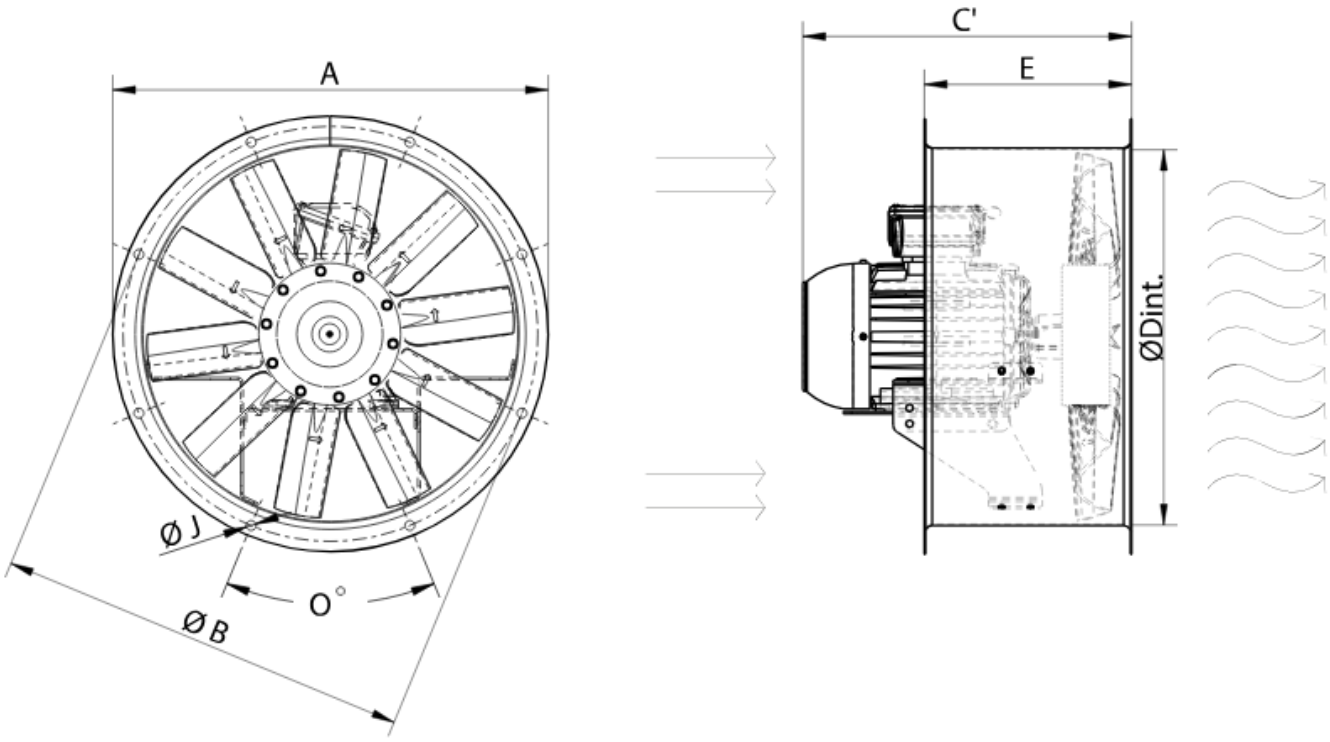
Dimension C – depends on the mechanical size of the motor used – details are included in the selection sheet of the given fan.

Long housing - CL version



Description - version	DIA [cm]	E [mm]	O	ØA [mm]	ØB [mm]	ØD [mm]	ØJ [mm]	Weight [kg]
mcr MONSUN T-CL	45	455	8x45º	525	500	452	12	~19
mcr MONSUN T-CL	50	540	12x30º	600	560	504	12	~25
mcr MONSUN T-CL	56	560	12x30º	646	620	559	12	~30
mcr MONSUN T-CL	63	550	12X30º	725	690	633	12	~34
mcr MONSUN T-CL	71	600	16x22.5º	802	770	715	12	~41
mcr MONSUN T-CL	80	600	16x22.5º	892	860	801	12	~46
mcr MONSUN T-CL	90	820	16x22.5º	1000	970	903.5	12	~76-81
mcr MONSUN T-CL	100	820	16x22.5º	1115	1070	1013	12	~94-100
mcr MONSUN T-CL	112	1000	16x22.5º	1234	1190	1132	12	~115-121
mcr MONSUN T-CL	125	1000	20x18º	1365	1320	1263	15	~130-136

Short housing – CS version



Description - version	DIA [cm]	E [mm]	O	ØA [mm]	ØB [mm]	ØD [mm]	ØJ [mm]	Weight [kg]
mcr MONSUN T-CS	45	250	8X45º	525	500	452	12	~17
mcr MONSUN T-CS	50	250	12x30º	600	560	504	12	~22
mcr MONSUN T-CS	56	250	12X30º	646	620	559	12	~24
mcr MONSUN T-CS	63	250	12X30º	725	690	633	12	~28
mcr MONSUN T-CS	71	350	16x22.5º	802	770	715	12	~35
mcr MONSUN T-CS	80	350	16x22.5º	892	860	801	12	~40
mcr MONSUN T-CS	90	425	16x22.5º	1000	970	903.5	12	~61-66
mcr MONSUN T-CS	100	425	16x22.5º	1115	1070	1013	12	~75-80
mcr MONSUN T-CS	112	500	16x22.5º	1234	1190	1132	12	~88-94
mcr MONSUN T-CS	125	500	20x18º	1365	1320	1263	15	~105

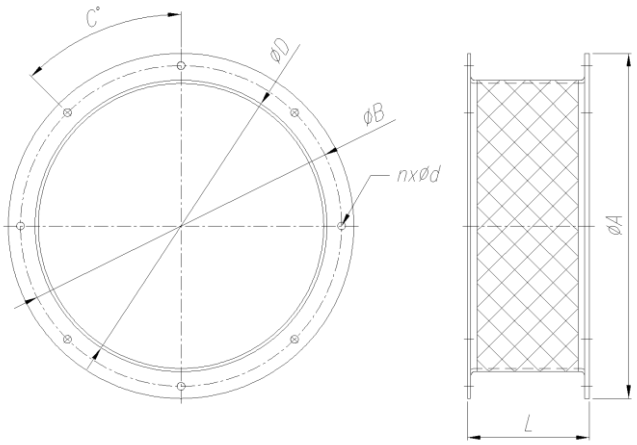
Dimension C – depends on the mechanical size of the motor used – details are included in the selection sheet of the given fan.

5.4. Accessories

Depending on the version, the fan can work with following accessories:

- **KD flexible joint**

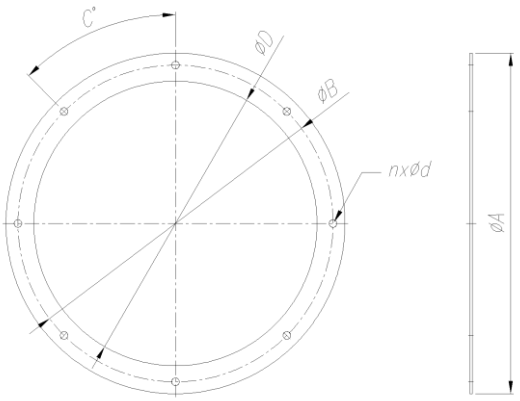
Special silicate and glass fabric ensures durability at 400ºC for 120 min. Type KD flexible joint is used to eliminate the vibrations transmitted from the fan to the ventilation system. It acts as a vibration damper. It is also used to compensate for thermal elongation. The fan integrated in a ventilation system should feature the flexible joint on the suction and discharge sides. The standard width is 160mm.



DIA [cm]	A	B	C	D	L	nxØd
45	525	500	45º	452	150	8x12,2
50	600	560	30º	504	150	12x12,2
56	620	620	30º	559	150	12x12,2
63	725	690	30º	633	200	12x12,2
71	802	770	30º	715	200	16x12,2
80	810	860	22,5º	903,5	200	16x12,2
90	1000	970	22,5º	1013	200	16x12,2
100	1115	1070	22,5º	1132	200	16x15
112	1234	1190	22,5º	1263	200	16x15
125	1365	1320	18º	1250	200	20x15

- **PK counterflange**

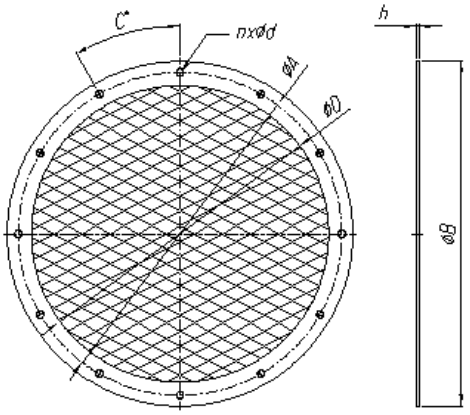
Made of galvanized steel sheet. It is used primarily for mounting flexible joints to the fan and connecting the ventilation system to the fan. Mounting to the fan is done via a connecting flange, using screws.



DIA [cm]	A	B	C	D	nxØd
45	525	500	45º	452	8x12,2
50	600	560	30º	504	12x12,2
56	620	620	30º	559	12x12,2
63	725	690	30º	633	12x12,2
71	802	770	22,5º	715	16x12,2
80	810	860	22,5º	903,5	16x12,2
90	1000	970	22,5º	1013	16x12,2
100	1115	1070	22,5º	1132	16x15
112	1234	1190	22,5º	1263	16x15
125	1365	1320	18º	1250	20x15

- **SO safety mesh**

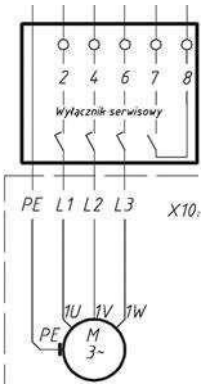
Made of galvanized steel sheet and galvanized wire mesh. It protects the fan from ingress of foreign bodies. The product is designed for direct mounting on the fan housing flange with free-flow suction and discharge. The cleanliness of the mesh should be checked periodically and any dirt removed from it.



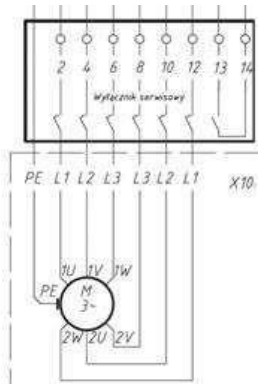
DIA [cm]	A	B	C	D	h	nxØd
45	500	525	45º	452	3	8x12,2
50	560	600	30º	504	3	12x12,2
56	620	620	30º	559	3	12x12,2
63	690	725	30º	633	3	12x12,2
71	770	802	30º	715	3	16x12,2
80	860	810	18º	903,5	3	16x12,2
90	970	1000	22,5º	1013	3	16x12,2
100	1070	1115	22,5º	1132	3	16x15
112	1190	1234	22,5º	1263	5	16x15
125	1320	1365	18º	1250	5	20x15

- **WS or AB service switch**

Designed to cut-off electric power from the fan when inspection or maintenance work is necessary. Each service switch features an auxiliary contact which indicates the power off position. The service switch with a 3-pole system is used for motors with a voltage of 230/400V [single-speed]. The service switch with a 6-pole system is used for single- and two-speed motors with a voltage of 400/690V and two-speed motors with a voltage of 230/400V. The switch can be designed for operation outside the fire zone (WS) or inside the fire zone (AB)



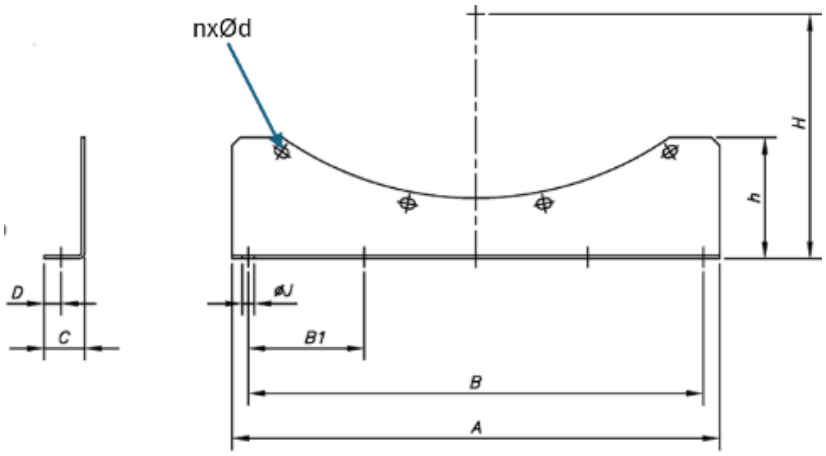
connection - 3-pole switch



connection - 6-pole switch

- **SW mounting feet**

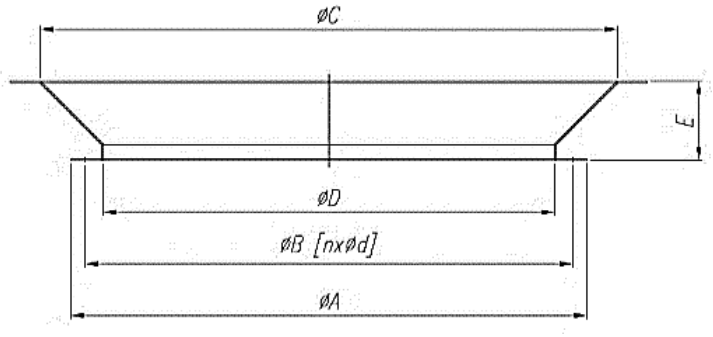
Made of galvanized steel sheet. Are intended for horizontal installation of the fan [horizontal orientation of the fan axis]. The feet should be mounted to the fan housing flange using screws. Make sure that after the fan is installed, the base of the electric motor is horizontal. The holes in the lower shelf of the foot allow for screwing in vibration dampers. Do not use mounting feet for vertical mounting of the fan.



DIA [cm]	A	B	B1	C	D	h	H	ØJ	nxØd
45	320	260	130	50	25	120	305	12,2	2x12
50	400	320	160	50	25	130	305	12,2	2x12
56	450	370	185	50	25	140	338	10,5	2x12
63	500	420	210	50	25	160	338	12,2	2x12
71	550	470	235	50	25	175	445	12,2	4x12
80	650	570	285	50	25	205	490	12,2	4x12
90	700	620	310	50	25	215	547,5	12,2	4x15
100	780	670	335	70	35	252,6	597,5	12,5	4x15
112	680	560	280	70	35	300	597,5	12,5	4x15
125	1095,4	1000	3x333	70	35	319,5	726.5	12,5	6x15

- **inlet nozzle (suction nozzle)**

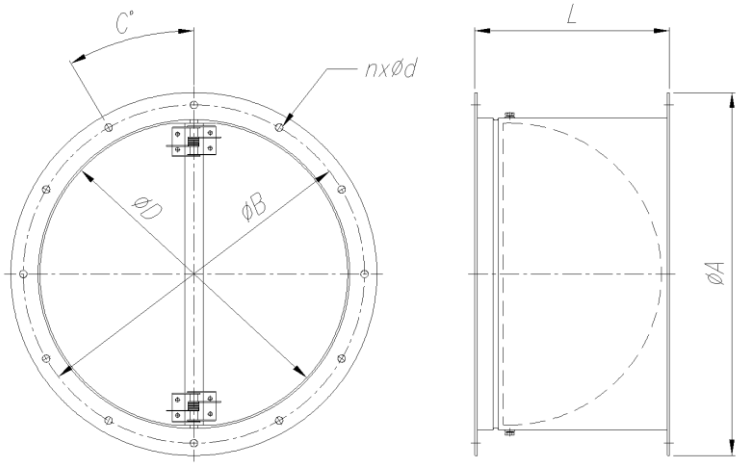
Made of galvanized steel sheet. It evens out the air flow at the fan inlet.



DIA [cm]	A	B	C	D	L	nxØd	E
45	520	500	45º	460	150	8x12,2	93
50	570	560	30º	514	150	12x12,2	93
56	640	620	30º	560	150	12x12,2	98
63	710	690	30º	640	200	12x12,2	108
71	790	770	22,5º	710	200	16x12,2	110
80	875	860	22,5º	800	200	16x12,2	112
90	975	970	22,5º	900	200	16x12,2	114
100	1080	1070	22,5º	1000	200	16x15	114
112	BRAK	BRAK	BRAK	BRAK	BRAK	BRAK	BRAK
125	1290	1320	22,5º	1250	200	20x15	140

- **KS automatic non-return flap**

The flap housing is made of steel sheet. The automatic non-return flap is used to prevent air circulation and heat loss when the fan is switched off. It must be precisely levelled to function properly. It is mounted to the fan/installation using screws. The flap is equipped with steel connecting flanges.



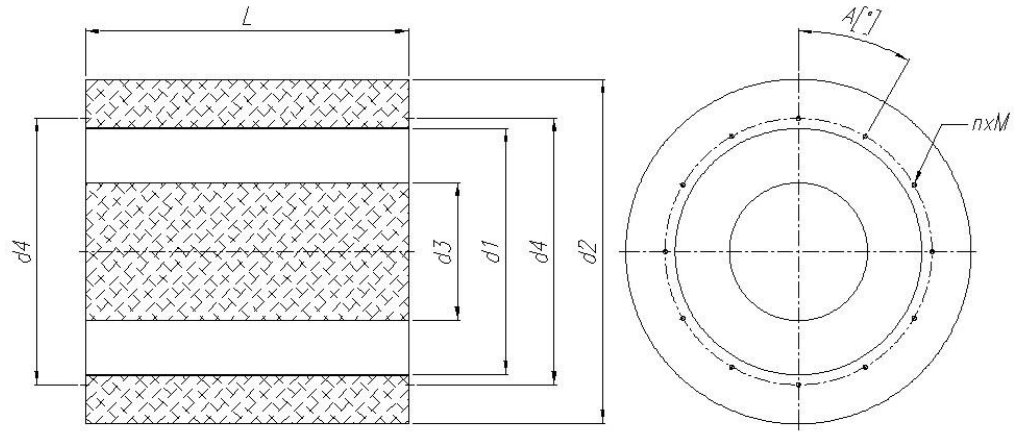
Średnica [cm]	A	B	C	D	L	nxØd
45	525	500	45º	452	290	8x12,2
50	600	560	30º	504	320	12x12,2
56	620	620	30º	559	350	12x12,2
63	725	690	30º	633	360	12x12,2
71	802	770	30º	715	430	16x12,2
80	810	860	22,5º	903,5	470	16x12,2

90	1000	970	22,5º	1013	540	16x12,2
100	1115	1070	22,5º	1132	640	16x15
112	BRAK	BRAK	BRAK	BRAK	BRAK	BRAK
125	1365	1320	18º	1250	700	20x15

- **TH or THR noise silencer**

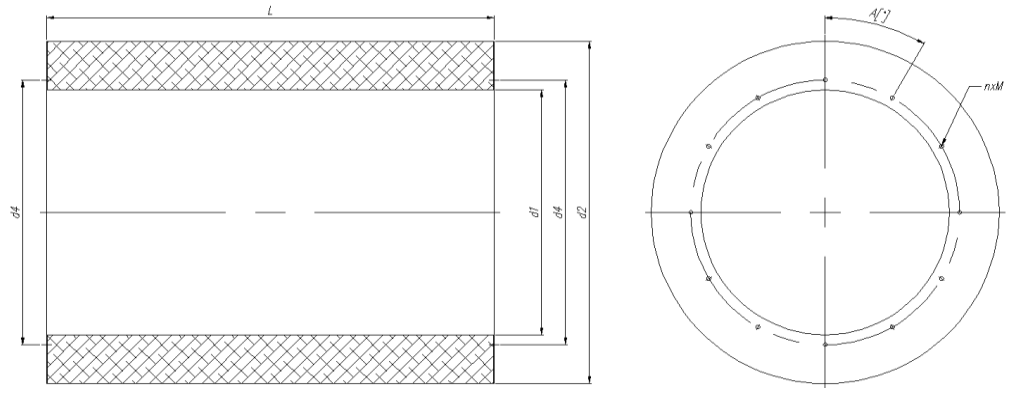
Its purpose is to decrease the noise generated by the fan. It can be made in a version without an internal core (TH) or with a core (TH-R). The silencer housing is made of galvanized steel sheet. The internal core is made of galvanized perforated sheet. The silencer element is non-flammable dampening wool. The threaded holes in the silencer allow direct mounting to the fan housing flange. The contact surface should be sealed with high-temperature silicone.

Silencer type TH-R



DIA [cm]	d1	d2	d3	d4	L	A	nxØM
45	460	650	250	500	950	45º	8x10
50	514	700	280	560	950	30º	12x10
56	560	760	315	620	950	30º	12x10
63	640	830	355	690	950	30º	12x10
71	710	960	400	770	1400	22,5º	16x10
80	800	1050	450	860	1400	22,5º	16x10
90	900	1150	500	970	1400	22,5º	16x12
100	1000	1250	480	1070	1400	22,5º	16x12
112	1126	1370	480	1190	1400	22,5º	16x15
125	1250	1500	480	1320	1400	18º	20x12

Cilencer type TH

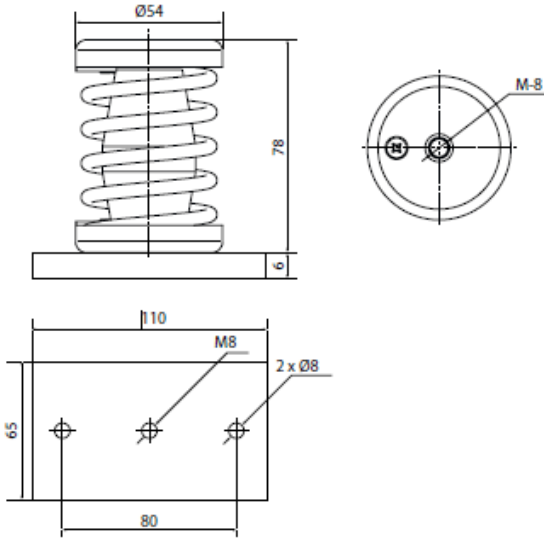


DIA [cm]	d1	d2	d4	L	A	nxØM
45	460	650	500	950	45º	8x10
50	514	700	560	950	30º	12x10
56	560	760	620	950	30º	12x10
63	640	830	690	950	30º	12x10
71	710	960	770	1400	22,5º	16x10
80	800	1050	860	1400	22,5º	16x10
90	900	1150	970	1400	22,5º	16x12
100	1000	1250	1070	1400	22,5º	16x12
112	1126	1370	1190	1400	22,5º	16x12
125	1250	1500	1320	1400	18º	20x12

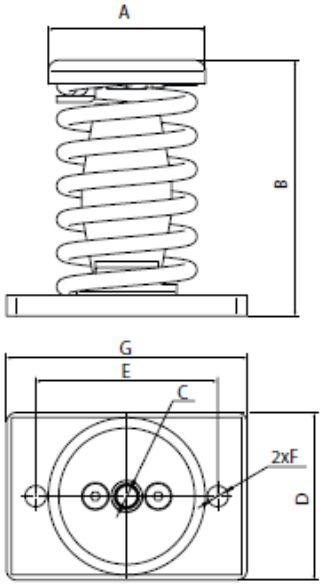
- **AM shock absorbers (vibration dampers)**

They are usedto dampen fan vibrations and prevent their transfer to the building structure

Model 54-25, 54-50, 54-75, 54-110, 54-125



Model 75-150, 75-200, 75-250

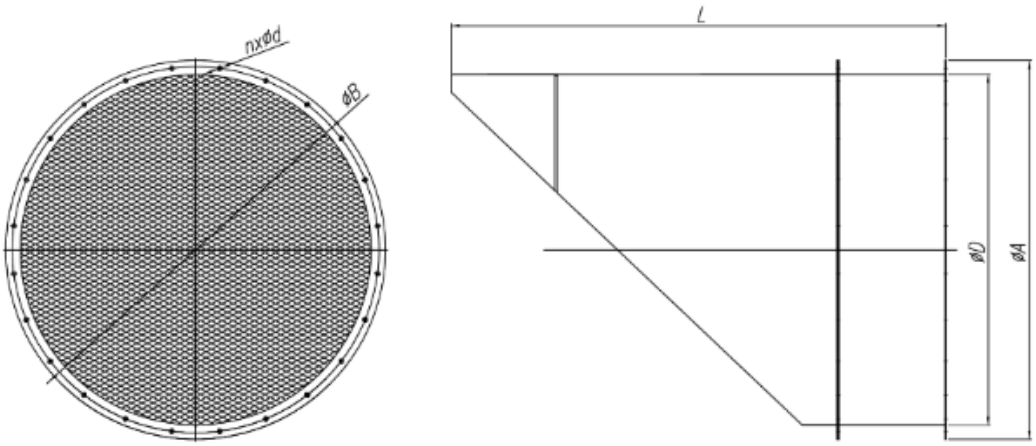


Model	Spring colour
54-25	Black
54-50	Blue
54-75	Grey
54-100	Beige
54-125	White

Model	A	B	Spring colour	C	D	E	F	G
75-150	75	122	blue	M-12	80	87	10	115
75-200	75	122	white	M-12	80	87	10	115
75-250	75	122	black	M-12	80	87	10	115

- **WO outlet nozzle**

It is used to even out the air flow at the fan outlet. It is made of galvanized steel sheet, finished with a steel mesh.



Średnica [cm]	A	B	C	D	L	nxØd
45	525	500	45º	452	1D-3D	8x12
50	600	560	30º	504	1D-3D	8x12
56	620	620	30º	559	1D-3D	12x12
63	725	690	30º	633	1D-3D	12x12
71	802	770	30º	715	1D-3D	12x12
80	810	860	22,5º	903,5	1D-3D	16x12
90	1000	970	22,5º	1013	1D-3D	16x12
100	1115	1070	22,5º	1132	1D-3D	16x15
112	1234	1190	22,5º	1263	1D-3D	16x15
125	1365	1320	18º	1250	1D-3D	20x15

6. DESIGNATION

Additionally, the fan designation may include the designation "REV," indicating that the fan has reversible blades and can operate in both directions. Flow parameters for reversible operation are about 98% of those for unidirectional operation.

7. ASSEMBLY

The mcr Monsun T axial smoke extraction fan in CW, CS, CL versions is designed for horizontal installation (rotor shaft in horizontal position). The device can be used outside and inside the fire zone.

7.1. Pre-assembly inspection

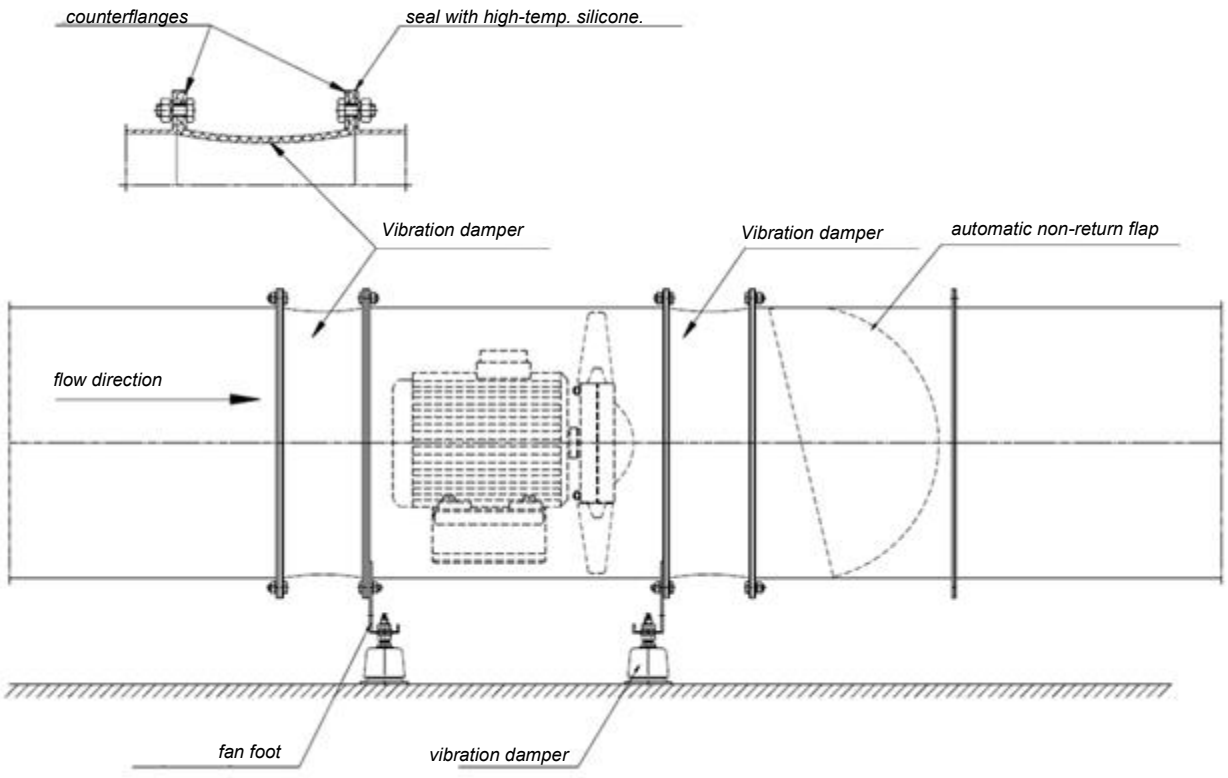
Each smoke exhaust fan is inspected by the manufacturer prior to packing and shipping. Upon unpacking the delivered smoke exhaust fan, visually examine it for any damage in transport. The motor shaft with rotor should rotate without noticeable resistance or grinding.

7.2. Location and assembly

The mcr Monsun T fan in the CW, CS, CL versions can be installed in a horizontal position. Before installing the fan, check the load-bearing capacity of the roof, ceiling, wall, and floor structure of the room where the device is to be installed.
For correct installation, attach the mounting feet to the fan housing using screws. The prepared set should be placed on previously prepared and anchored to the ground or frame vibration dampers. The screws and anchors (diameter, length) must be selected appropriately for the given size of the device.
If the fan is mounted under the ceiling, an appropriate support structure must be made. The fan must be placed on the structure after the shock absorbers and mounting feet have been installed. The mounting screws and anchors (diameter, length) must be selected appropriately for the given size of the device.

Connecting the smoke exhaust fan to the (smoke exhaust) ventilation system:
The ventilation (smoke exhaust) duct is connected to the fan via counterflanges. In order to reduce the transfer of vibrations to the ventilation ducts, flexible connections should be attached to the fan. The assembly of the set consists of sealing the surfaces of the adjacent elements [high-temperature silicone] and screwing with screws sized according to the fan size. The ventilation (smoke exhaust) duct must not load the fan or other components of the set. The duct should be supported by independent ventilation supports. With free suction and discharge, the fan inlet and outlet should be protected with a protective mesh. If the fan is working with the ventilation system, the suction and discharge sides should be protected against the suction of foreign bodies or accidental access by people, animals, etc.

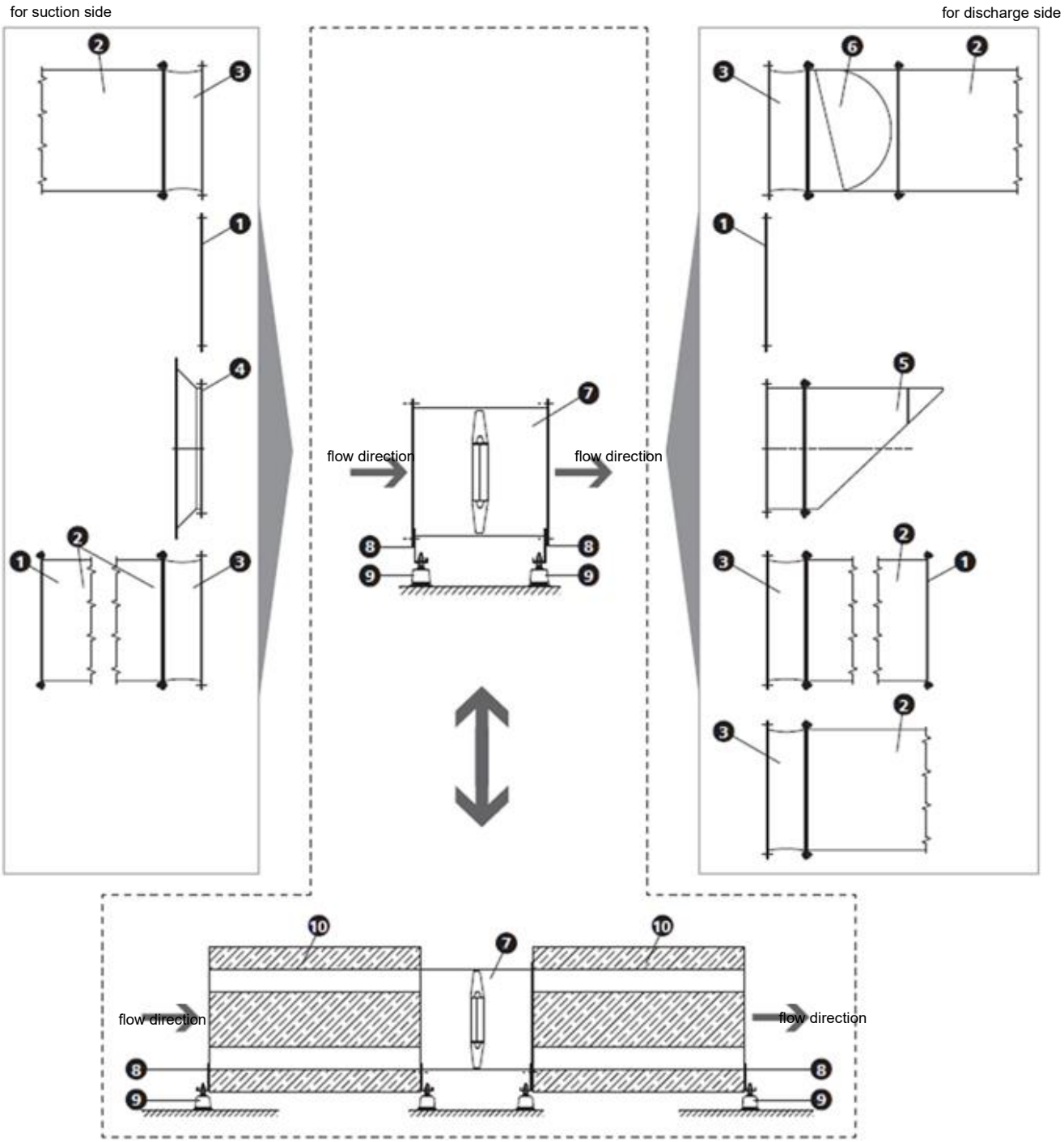
During the installation of the fan, secure the installation site and all involved structures, and prepare passage and access ways for all personnel not involved in the installation. Access to the fan must be provided for the purposes of inspections and maintenance.



Example of horizontal fan installation

Notes:

- secure the installation against the suction of foreign bodies by the fan and accidental access by people, animals, etc.
- ensure that the fan is aligned with the system components.
- the automatic non-return flap must be levelled to operate properly
- it is recommended to use a straight section of min. 2.5xD length on the discharge side of the fan
- seal the connection points of the installation elements with silicone or other high-temperature material



1- Safety mesh
2- Installation (e.g. smoke exhaust duct)
3- Flexible connection with counterflanges (vibration damper)
4- Inlet nozzle
5- Outlet nozzle
6- Automatic non-return flap
7- mcr Monsun fan
8- Mounting foot
9- Vibration damper
10- Noise silencer

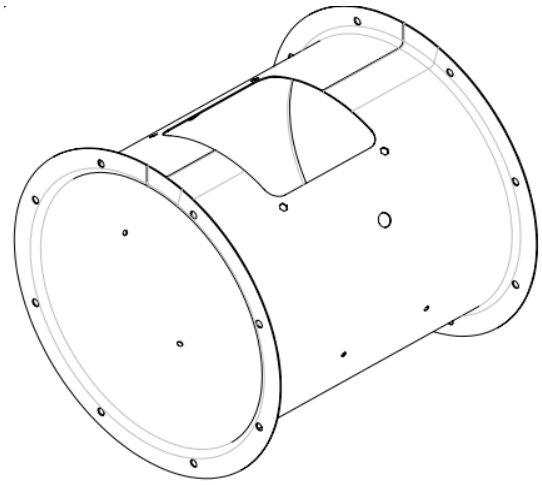
Examples of fan and accessory applications

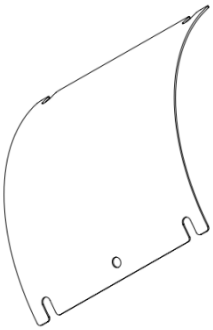
7.3. Electrical connections

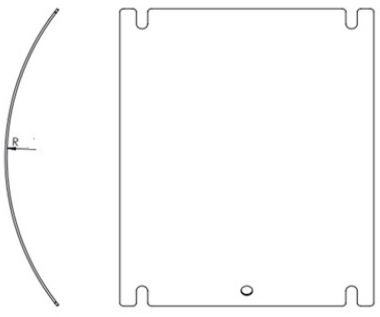
After the fan is properly positioned, connect the electrical wiring to the device. The wiring should be fed through the electrical glands located on the fan housing into the junction box located on the motor. For easy wiring installation, an inspection hole with a flap is provided on the fan housing (the hole is provided for the fan in the long housing – CL version). The CW and CS versions do not have an inspection hole. Connect the electrical wiring according to the instructions in the motor junction box. Upon request, the fan can be equipped with an external electrical junction box, which should be mounted, for example, on the fan housing. In this case, the power supply wires should be fed into the junction box through its glands and connected in the junction box. Each fan motor should be connected to the mains via a circuit breaker. Grounding should be performed in accordance with applicable standards.

Dane dot. otworu rewizyjnego oraz wielkości dławnic na obudowie wentylatora

DIA fan [cm]	Inspection hole cover size	cover radius	inspection hole size	Electric gland size
35	250x200	R=183	200x175	DIA18
40	300x270	R=203	250x175	DIA18
45	300x270	R=228	250x175	DIA18
50	300x270	R=254	250x200	2xDIA18
56	300x270	R-282	250x200	2xDIA18
63	430x295	R=319	250x200	2xDIA18
71	430x295	R=360	250x200	2xDIA18
80	430x295	R=402,5	250x200	2xDIA18
90	450x350	R=454,3	400x300	2xDIA18
100	450x350	R=510	400x300	DIA31
112	450x350	R=569	400x300	DIA31
125	450x350	R=635	400x300	2xDIA43

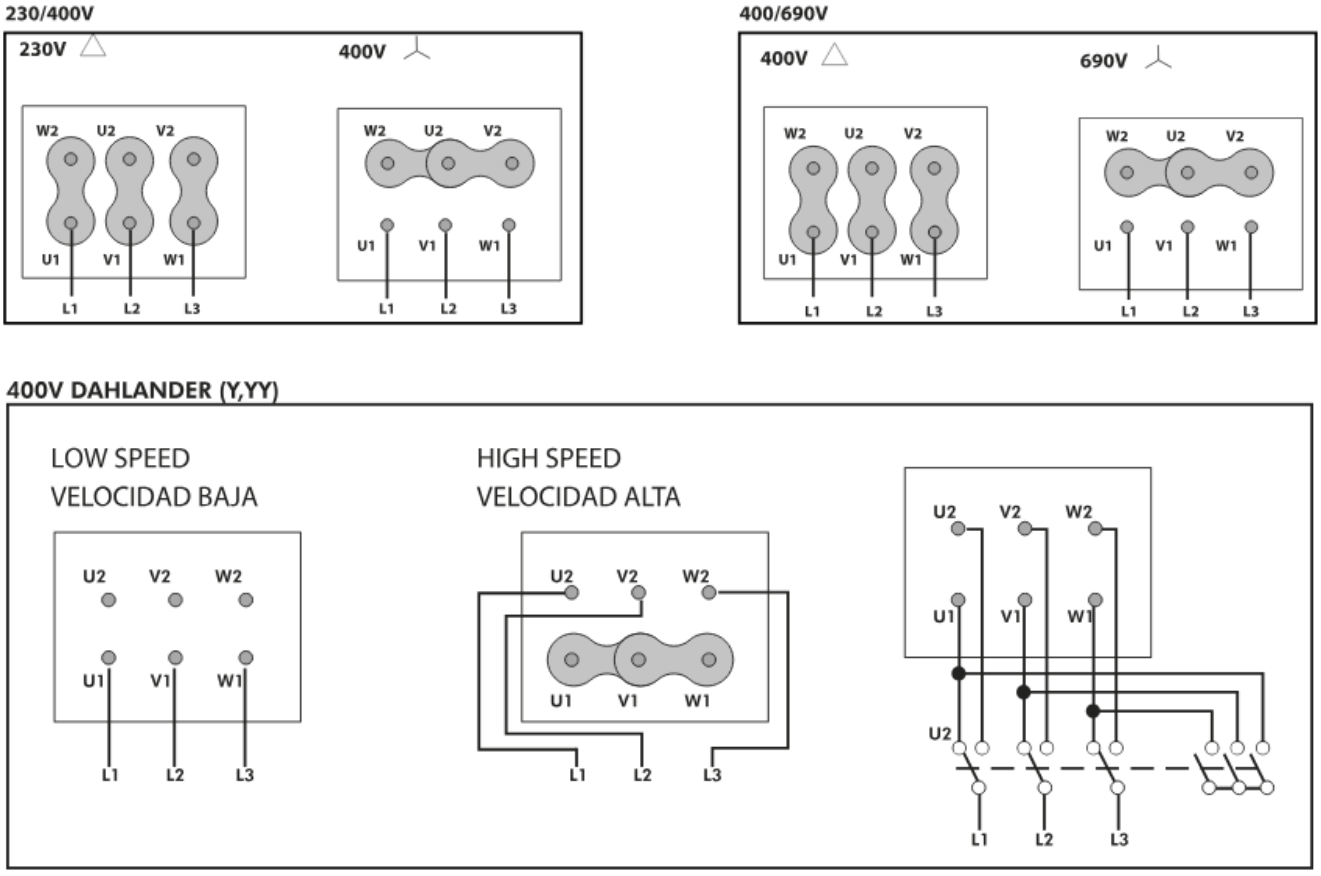






After starting the fan in the installation, measure the current consumption and verify compliance with the motor's nameplate. The current drawn by the fan during steady operation must not exceed 1.1 times the rated current.
The fan's electrical supply – from the control cabinet to the fan's power box – must be designed to ensure uninterrupted power supply during a fire. This can be achieved by using high-temperature-resistant cables or by using protective conduits and selecting appropriate wiring routes. No service switches are used to prevent accidental shutdown of the fan (an exception is a service switch with remote signaling of its current paths). Fan control cabinets must be powered directly from the main distribution boards, ensuring a continuous power supply – even if the building is disconnected. When using a main fire switch that cuts off the power supply for the entire building, the fan's power supply must be independent and allow for normal operation during a fire.
Electrical cables may only be connected by persons with valid SEP certification.

Fan wiring diagrams



7.4. START-UP

Before start-up of the installed fan, do the following:

- check the correctness and stability of the fan mounting.
- check all seals
- check that all electrical wiring is properly and firmly connected
- check that the phase connection sequence and PE/neutral wiring is properly connected.
- check that there are no foreign objects in the fan or the connected duct
- check that the protective elements are attached
- after the completed inspection, switch on the fan and check the operating properties
- when switching on the fan, also check the direction of the motor rotation by verifying the correct rotation with the direction of the arrow placed on the housing

8. TRANSPORT AND STORAGE CONDITIONS

The mcr Monsun T fans in the CW, CL, CS versions are placed on pallets for transport and storage. Do not topple or throw the packaging during loading and transport. Fans may be transported by any means of transport, provided they are protected against the effects of weather conditions. Fans placed on means of transport should be protected against changing their position during transport. A visual inspection of each device should be carried out after each transport operation.
Storage should take place in rooms where:

- there is no access to dust, gases, corrosive fumes and other aggressive chemical fumes that have a destructive effect on insulating elements, motor and fan construction elements,
- the maximum relative humidity does not exceed 80% at a temperature of + 20 ºC,
- the ambient temperature is between – 20 ºC and + 40 ºC,
- there are no vibrations.

9. OHS MANUAL

Read this O&MM before fan start-up and operation.
The fan does not pose a hazard provided it is carefully secured in the ventilation system and to the supporting structure.
The electrical connection must be made precisely according to the diagram attached to the fan and in accordance with the instructions presented in point 7.3 of this manual. It should be performed by a person with confirmed qualifications, in accordance with applicable regulations.
During use, the fan connection to the PE protective conductor should be checked.
All inspection work on the fan should be performed only after disconnecting the device from the power supply.

CAUTION:
1. High-pressure and steam washers should not be used to clean the fan from deposits.
2. Leaks in connections and flexible nozzles may lead to hazards related to the release of the forced medium and should be replaced immediately.
In the event of a faulty operation of the device (excessive noise, vibrations, uneven operation), disconnect the fan from the power supply, notify the manufacturer's service or a company with the appropriate authorisation from the manufacturer to perform inspections and repairs.

10. MAINTENANCE AND SERVICING

MERCOR L&V devices should undergo periodic technical inspections and maintenance activities at least every 12 months during the entire period of use, i.e. during the warranty period, as well as after the warranty period. Inspections and maintenance should be carried out by the manufacturer or by companies authorised to service MERCOR L&V devices.
The obligation to perform regular service inspections of fire protection devices results from Article 3(3) of the Regulation of the Minister of Internal Affairs and Administration of 7 June 2010 on fire protection of buildings, other construction facilities and areas (Journal of Laws 2010, No. 109, item 719).
It is recommended to perform the following between inspections:

- Check the condition of electrical connections, paying particular attention to mechanical damage.
- Check the condition of the device body, paying particular attention to mechanical damage.
- Checking whether there are no obstacles that could affect the correct operation of the devices.

In order to perform activities falling within the scope of service inspections as well as service and warranty activities such as inspections or repairs, it is required for the User to provide physical access to the devices by, for example, dismantling thermal insulation, dismantling suspended ceilings, dismantling other installations if they prevent free access to the device, etc.
If the devices are installed on the roof, it must be possible to access the roof (ladder or lift).
If the device is used for smoke exhaust during a fire only, it should be periodically run for approx. 10 minutes every 3 months.

For matters related to technical inspections, maintenance and service of the devices, please contact the representatives of the MERCOR L&V Service Department serwis@mercor.com.pl, phone +48 58 341 42 45 ext. 170 or fax +48 58 341 39 85 from 8:00 a.m. to 4:00 p.m. (Mon-Fri).

11. WARRANTY AND GUARANTEE CONDITIONS

1. MERCOR L&V grants a 12-month quality guarantee and warranty for the devices, counted from the date of purchase, unless the agreement provides otherwise.
2. A guarantee claim should be sent to MERCOR L&V within 7 days from the date of discovery of the defect covered by the guarantee (and/or warranty).
3. Guarantee claims can be submitted by phone: +48 58 341 42 45, by fax: 58/341-39-85, e-mail: reklamacje@mercor.com.pl or by sending a letter to the following address: MERCOR L&V, ul. Grzegorza z Sanoka 2, 80-408 Gdańsk.
4. If during the guarantee and warranty period any physical defects covered by the warranty and/or guarantee are revealed, MERCOR L&V undertakes to remove them as soon as possible, counting from the date of receipt of the written claim and delivery of proof of purchase (agreement, invoice, delivery document), subject to point 10.
5. MERCOR L&V reserves the right to extend the repair time in the case of complicated repairs or repairs requiring the purchase of non-standard components or spare parts.
6. The liability under the guarantee and warranty covers only defects resulting from causes inherent in the sold devices.
7. In the case of defects resulting from improper use of the devices (inconsistent with the O&MM) or other reasons indicated in point 10, the Buyer / person entitled to the guarantee may be charged with the costs of their removal.
8. The condition for removing defects is that the reporting party provides access to the full work site, in particular ensuring: a lift in the case of devices installed at a height above 3 m, free access to the rooms in which the devices were installed and necessary revisions, dismantling of thermal insulation, dismantling of suspended ceilings, dismantling of other installations if they prevent free access to the device.
9. In the event that the device cannot be repaired at the place of its installation, MERCOR L&V reserves the right to dismantle it, possibly deliver it to the address indicated by MERCOR L&V and reassemble it. The cost of this operation is borne by the buyer/guarantee holder.
10. The guarantee and warranty do not cover:
    - damage and failure of devices caused by misuse (inconsistent with the Operation and Maintenance Manual), interference by the user or persons unauthorised by MERCOR L&V, lack of periodic technical inspections, failure to perform maintenance activities described in the "MAINTENANCE AND SERVICING" section of this document,
    - damage to equipment resulting from reasons other than those attributable to MERCOR L&V, in particular: random events such as torrential rain, flood, hurricane, inundation, lightning strike, overvoltage in the grid, explosion, hail, aircraft crash, fire, avalanche, landslide and secondary damage resulting from the above-mentioned reasons. Torrential rain is considered to be rain with a performance factor of at least 4, as determined by he Polish Institute of Meteorology and Water Management - National Research Institute (IMiGW). If it is not possible to determine the factor referred to in the preceding sentence, the actual state and extent of damage at the place of its occurrence, which will indicate the effect of torrential rain, will be taken into account A hurricane is considered to be a wind with a speed of at least 17.5 m/s (damage is considered to have been caused by a hurricane if the effect of a hurricane has been confirmed in the immediate vicinity);
    - damage resulting from failure to immediately report a detected defect,
    - deterioration in the quality of coatings caused by their natural ageing processes,
    - defects caused by the use of abrasive or aggressive cleaning agents,
    - damage resulting from the action of aggressive external factors, in particular chemical and biological factors, or the origin of which is related to production processes and activities carried out in the facility or its immediate vicinity in which the devices were installed,
    - parts subject to natural wear and tear during use (e.g. seals), unless they have a manufacturing defect,
    - damage resulting from improper transport, unloading or storage of the device,

- damage resulting from assembly not in accordance with the provisions of the O&MM and good construction practice,
- devices or their parts in the event that the nameplate or guarantee seals have been torn off or damaged.

11. The guarantee and warranty expire with immediate effect in the event that:
    - The Buyer/guarantee and warranty holder makes design changes on their own without prior agreement with MERCOR L&V,
    - periodic technical inspections and maintenance activities were not performed on time or were performed by unauthorised persons or service not authorised by MERCOR L&V or when the devices were used incorrectly,
    - there was any interference by persons unauthorised by MERCOR L&V - outside the scope of activities falling within the scope of normal operation of the devices.
12. The buyer/guarantee and warranty holder is obliged to properly operate (in accordance with the O&MM) the devices and to carry out periodic technical inspections and maintenance activities, in accordance with the principles described in this document in the section "MAINTENANCE AND SERVICING".

In matters not covered by these warranty and guarantee conditions, the relevant provisions of the Civil Code shall apply.

FAN MEASUREMENT REPORT

FAN TYPE	
SERIAL NO.	
INSTALLATION SITE	
RATED CURRENT	

After installing the fan in its intended place and making the appropriate electrical connections, immediately measure the current consumption during steady operation.

MEASUREMENT RESULTS [A]

U1	V1	W1	U2	V2	W2

NOTES:

Full name of the person performing the measurements	Measurement date	Signature

Return this Report immediately after completion of measurements to:

MERCOR Light&Vent Sp. z o.o. (MERCOR L&V)
Fire Ventilation Systems
Ul. Grzegorza z Sanoka 2
80-408 Gdańsk

within a maximum of 8 weeks from the date of purchase of the device (the date of purchase is the date of the VAT invoice).

SENDING THE MEASUREMENT REPORT IS THE BASIS FOR THE VALIDITY OF THE WARRANTY/GUARANTEE GIVEN FOR THE DEVICE