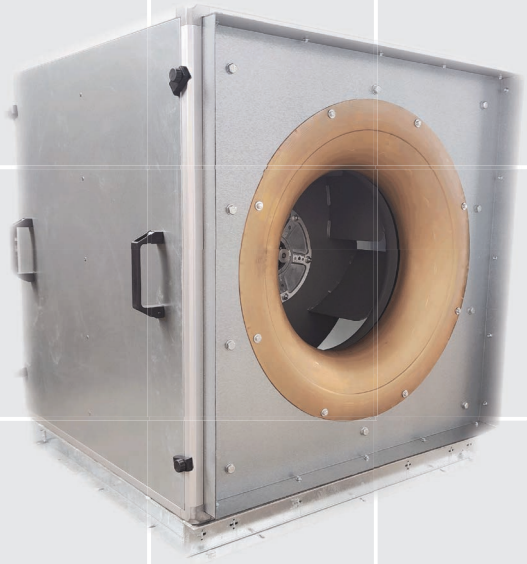
Operating Instructions
for

In-Line Centrifugal Fans: WMF Series



WMF 250 to 1000
c/w 25 or 50mm acoustic as optional
13 diameters - 250, 280, 315, 355, 400, 450, 500, 560, 630, 710, 800, 900 and 1000mm

Explosion-capable sizes: WMF 250 to 630

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Contents

This operation instruction contains important technical advice and information about safety. Therefore please pay attention to this operation instruction before unpacking, installation or any other work is undertaken on this fan!

1 Safety

The following symbols are used in these operating instructions. These symbols are, above all, intended to draw the reader‘s attention to the text contained in the adjacent safety note.

Danger This symbol indicates that dangers exist which are hazardous to life and health

Mortal danger Electrical hazard. Serious and also fatal injury can result if these notes are disregarded.

Danger Do not step under hanging load!

Danger Crush danger!

Note Important information!

1.1 Safety advice

Wolter WMF series are produced in accordance with the latest technical standards and our quality assurance programme, which includes material and function tests, ensures that the final product is of a high quality and durability. Never the less these fans can be dangerous if they are not used and installed correctly, according to the instructions.

Before installing and operating this fan please read instructions carefully! Only use the fan after it has been securely mounted or fitted with protection guards and maintenance cover to suit the application (Tested guards can be supplied for all fans from our programme). Installation, electrical and mechanical maintenance and service should only be undertaken by qualified worker! The fan must only be used according to its design parameters, with regard to required performance stated in the name-plate and mediums passing through it!

Users are responsible for the proper assembly and intended use.

- Read the operating instructions completely and carefully
- Keep the operating instructions and other valid documents, such as the circuit diagram or motor instructions, with the fan. They must always be available at the place of use
- Observe and respect local conditions, regulations and laws.
- Abide by the system-related conditions and requirements of the manufacturer.
- Safety elements may not be dismantled, circumvented or deactivated
- Only use the fan in a flawless condition
- Provide generally prescribed electrical and mechanical protective devices
- During installation, electrical connection, commissioning, troubleshooting, and maintenance, secure the location and premises against unauthorised access
- Do not circumvent any safety components or put them out of action
- Before any work on the fan, test absence of voltage. Even when the motor is stopped, dangerous voltages may be present on terminals
- Keep all the warning signs on the fan complete and in a legible condition
- When lifting the device, use suitable lifting gear
- Do not allow children to play with the device

1.2 Personnel

The fan may only be used by qualified, instructed and trained personnel. The persons must know the relevant safety directives in order to recognise and to avoid risks.

1.3 Personal proctectuve equipment

Wear protective equipment during all work in the vicinity of the fan:
protective working clothes · protective working shoes · protective working gloves · helmet · goggles · hearing protection

1.4 Rules of electrical safety

- Disconnect (disconnection of the electrical system from live components at all terminals)
- Prevent reactivation
- Test absence of voltage
- Ground and short-circuit
- Cover or restrict adjacent live parts

2 Explosion-protection information

Danger

Explosion protection!
This warning marks information which applies if the device is used in a potentially explosive atmosphere. Failure to comply with this information will result in loss of explosion protection and may lead to serious injury or death.

Warning

Hazard resulting from improper use of the fans.
These operating instructions and the fan name plate describe how to use the EX fans safely.
- Read the operating instructions completely and carefully.
- If used in potentially explosive atmospheres, examine the name plate.

Warning

Protective clothing must be worn in potentially explosive atmospheres to reduce the risks to employee health.
- Wear protective equipment during all work in the vicinity of the fan.
- Comply with the information on personal protective equipment displayed in the workarea.

Warning

Regarding the choice of material, the EX fans fulfil the requirements of Standard EN 14986:2017(E) (Construction of fans for use in potentially explosive atmospheres) as a result of specific protection measures in areas of potential contact between rotating and stationary components (impeller / inlet cone).
A safety clearance to the inlet cone is guaranteed for the rotating part. The manufacturer is responsible for selecting the materials for the fixed peripheral parts for fan designs without protective grids. Only pairs of materials according to Standard EN 14986:2017(E) are to be used.

Warning

The temperature class stated on the EX name plate (motor) must match the temperature class of the combustible gas which may occur, or the motor must have a higher temperature class.

Danger

Explosion protection
Transport damage or failure to comply with this information can lead to loss of explosion protection.
- In the event of recognisable transport damage, contact the manufacturer and do not put the device into operation.

Warning

The effects of lightning strikes must be limited so that hazards are prevented. In addition to protection against the effects of "direct" lightning strikes, this also includes protection against lightning strikes at a distance from the building. The latter can lead to hazards resulting from excess voltage.
- Carry out a risk analysis according to IEC 60364-4-44, with a balance between protection and consequences, taking the probability of the occurrence of excess voltage into account.
- Protect all devices, protective systems and components by using suitable lightning and excess voltage protection measures

Warning

Ignition protection class "d"
If fans are controlled using motors with a "d" ignition protection class with a frequency converter, then thermal protection via a PTC resistor in the motor is required.

3 Description

WMF series were especially developed for use in modern ventilation systems. By using high performance induction motor and the installation in a sound absorbing casing there are significant technical advantages, especially in the field of noise emission. The installed fans can suit a number of difference outlets to site condition and are statically and dynamically balanced as a complete unit in our factory.

3.1 Fan code

WMF 500 P S - 4 AD EX-ATEX II 2 G c IIB T5

- Temperature Class: T3, T4, T5, T6
- Gas group: IIB, IIB+H2
- Protection type: c, d, e, nA
- Classification: G = gas, D = dust
- Category
- Unit group
- Explosion Proof
- Motor supply: AE = AC single-phase, AD = AC three-phase, EE = EC single-phase, ED = EC three-phase
- Number of poles of motor: 2, 4, 6, 8
- Fan lining: S = single skin, S1 = 25mm double skin, S2 = 50mm double skin
- Material of the impeller: P = Plastic, M = Metal
- The size of the impeller: 250 to 1,000
- Model name

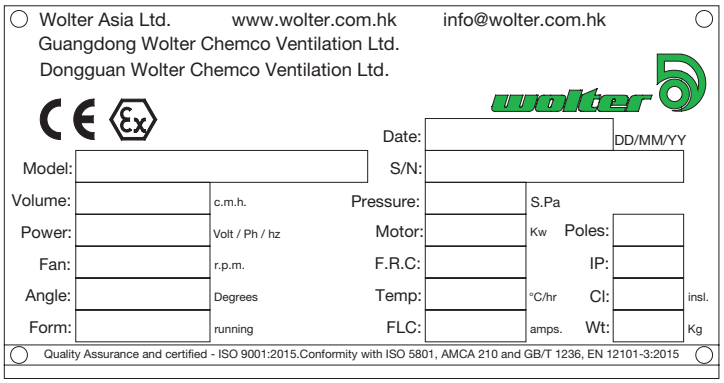
For explosion proof fans, the following table shows possible temperature classifications:

Protection type	Description
i	intrinsic safety
c	constructional safety
d	flameproof enclosure
e	increased safety
p	pressurisation
o	oil immersion
m	encapsulation
q	powder filling
nA	non sparking

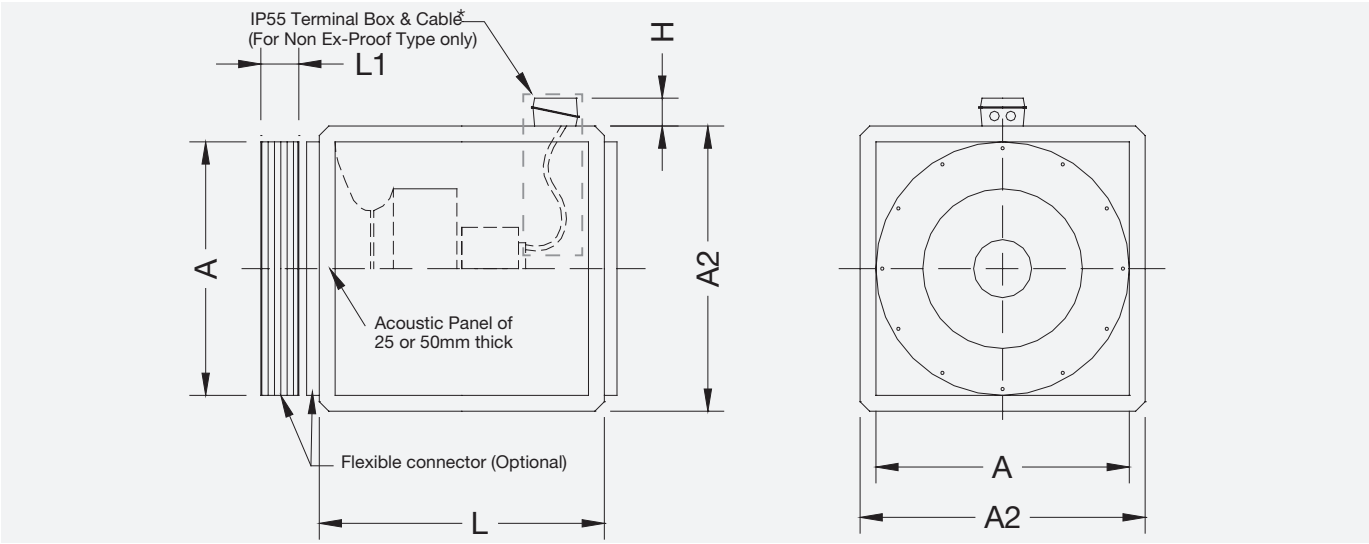
Group	Gases and vapours of substances
IIA	acetone, ammonia, ethyl alcohol, fuel, benzene, methane, propane, carbon dioxide
IIB	ethylene, town gas, diethylether
IIC	hydrogen, carbon, disulphide, acetylene

Temperature classification	Ignition temp.of different gas mixtures	Max. surface temp. of electrial equipment
T1	> 450 °C	450 °C
T2	> 300 - > 450 °C	300 °C
T3	> 200 - > 300 °C	200 °C
T4	> 135 - > 200 °C	135 °C
T5	> 100 - > 135 °C	100 °C
T6	> 85 - > 100 °C	85 °C

3.2 Nameplate



3.3 Dimensions



WMF	A	A2						H	L			L1	Weight
		Single Skinned PF25	Double Skinned PF25	Single Skinned PF50	Double Skinned PF50	Single Skinned PF100	Double Skinned PF100		PF25	PF50	PF100		PF50 w/o Motor
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
250**	450	500	500	550	550	-	-	60	450	500	-	140	30
280**	500	550	550	600	600	-	-	60	500	550	-	140	34
315**	550	600	600	650	650	-	-	60	550	600	-	140	37
355**	600	650	650	700	700	-	-	60	600	650	-	140	41
400**	650	700	700	750	750	-	-	60	650	700	-	140	45
450**	700	750	750	800	800	-	-	60	700	750	-	140	64
500**	800	850	850	900	900	-	-	88	800	850	-	140	81
560**	850	900	900	950	950	-	-	88	850	900	-	140	99
630**	900	950	950	1000	1000	-	-	88	900	950	-	140	118
710	1000	1050	1050	1100	1100	1200	1200	88	1000	1050	1050	140	182
800	1100	-	-	1200	1200	1300	1300	88	1100	1150	1150	140	210
900	1250	-	-	1350	1350	1450	1450	88	1250	1300	1300	140	242
1000	1350	-	-	1450	1450	1550	1550	88	1350	1400	1400	140	278

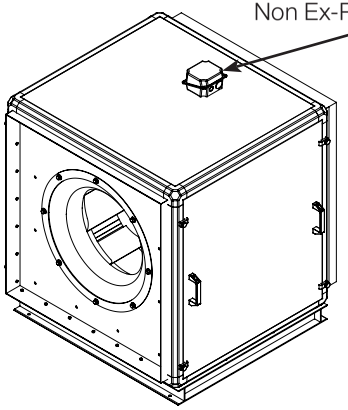
* Standard T-Box come with Non Ex-Proof Type only. All connection must be direct connected to motor terminal box as supplied. Additional proof terminal box are optional by customer and must have all required documents accroding to the Directive 2014/34/EU.

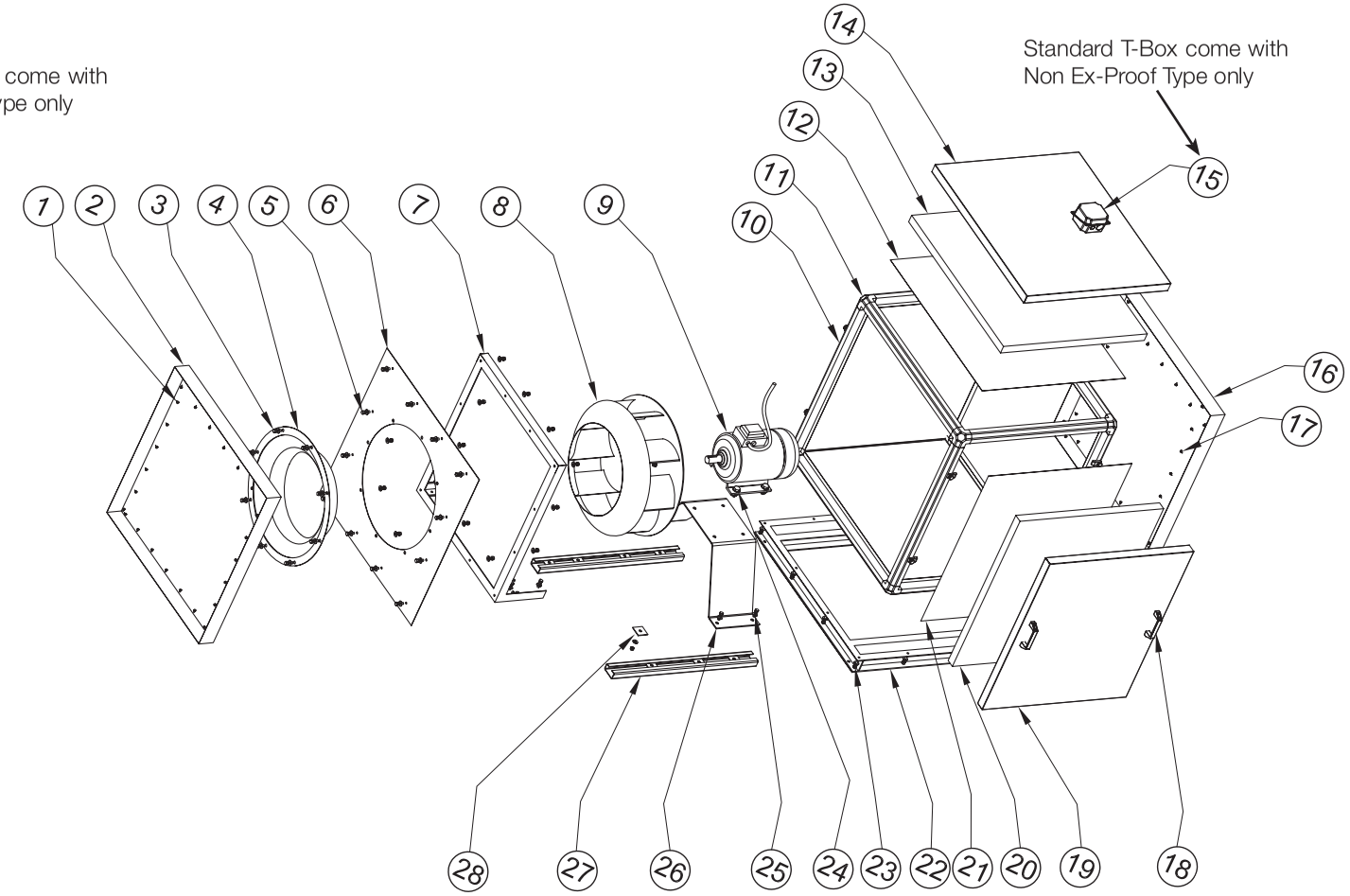
** Explosion proof fans with size 250, 280, 315, 355, 400, 450, 500, 560 and 630 are available upon requested. Certified according to ATEX guideline 94/9/EC as well as EN60079-0, EN1127-1 and 13463-1; Applicable in categorie 2, zone 1 and 2; Ex e increased safety respectively and Ex d = flameproof enclosure; The fans are applicable for group IIA, IIB and IIC and also additional usable for hydrogen; Motor protection by cold conductor. Only certified when connected with a motor protection device.

• We reserve the right to alter measurements without notice in case of technical improvements.

3.4 Schematic drawing

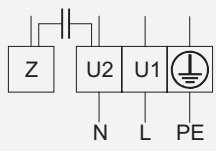
WMF Series





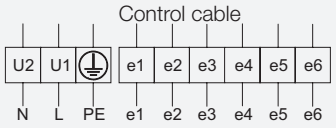
Part Nos	Description	Qty	Part Nos	Description	Qty	Part Nos	Description	Qty
1	Self-tapping screws for outlet	28	11	Aluminum corner	8	21	Perforated sheet	4
2	Outlet flange	1	12	Perforated sheet	4	22	Base	1
3	Screws for inlet cone	8	13	Sound insulation	4	23	Screws for base	12
4	Inlet cone	1	14	Side panel	4	24	Screws for motor	4
5	Screws for Outlet Panel	12	15	T-Box (Non Ex-proof type only)	1	25	Screws for motor support	4
6	Outlet Panel	1	16	Inlet flange	1	26	Motor support	1
7	Support	1	17	Screws for inlet flange	28	27	C-Channel	2
8	Impeller	1	18	Handle	4	28	Clamp splice	8
9	Motor	1	19	Side panel	4	-	-	-
10	Aluminum profile	12	20	Sound insulation	4	-	-	-

3.5 Wiring diagram



E10

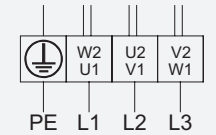
Nr. E10:
Single-phase AC motor with capacitor and thermal contact. Thermal contact in motor connected in series with the winding.



E16

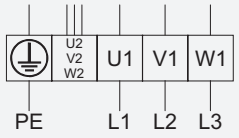
Nr. E16:
Single phase, Electronically Commutated Motor. Electronic protection: overload, over temperature and locked-rotor.

Control cable: e1 = DC voltage (2 ~ 10V), blue; e2 = DC current (4 ~ 20mA), red;
e3 = Frequency (10 ~ 95%), brown; e4 = Speed reference, white;
e5 = 10VDC source, yellow; e6 = Common, black.



DS2

Nr. DD2:
3-Phase motor in Δ-connection without thermostat. Changing of rotation direction by interchanging 2 phases.



DS2

Nr. DS2:
3-Phase motor in Y-connection without thermostat. Changing of rotation direction by interchanging 2 phases.

Wrong connection can damage or destroy the motor. Use the information on the nameplate to select the correct connection diagram.
* For explosion proof fan WMF size 250 to 630. For safety reason, all wiring should direct connections to explosion proof fan motor terminal box or otherwise customer should self install EEXd terminal box as recommend in accordance to the Directive 2014/34/EU.

4 Conditions of use

WMF series can be used for ventilation of:
- Clean air
- Slightly dusty and greasy air
- Aggressive gases and fumes (please refer to our engineers)
- Air performance data are based on with a temperature of -30°C up to + 40°C
- Mediums up to a max. Humidity of 95%

5 Storage & transport 

- Store the fan on a dry place and weather protected in its original packing
- Cover open palettes with a tarpaulin and protect the fans against influence of dirt (i.e. Stones, splinters, wires, etc.).
- Storage temperatures between -30°C and +40°C
- With storage times of more than 1 year, please check the bearings on soft running before mounting.
- Transport the fan with suitable loading means
- Do not damage casing.
- Use suitable assembling means as e.g. scaffolds conforming to specifications

- Danger! Do not step under hanging loads!
- Sharp, protruding edges can lead to injury through cuts. Suspended loads can fall, which then constitutes a fatal hazard - stand clear of suspended loads!

6 Installation

Installation and electric work only by skilled and introduced workers and in accordance to applying regulations!

- Mount WMF with suitable fixing means on a stable ground or console. Any mounting position is possible, but opening of maintenance cover must be possible!
- Mount tube system either directly on connection flange of WMF cabinet (optional) or fix with connection sleeve. Padded connection sleeves considerably reduce noise transmission!

The duct system must not be supported by the connection flange of the WMF cabinet!

- Open maintenance cover
- Check impeller on soft running with some rotations (turn by hand).
- Electrical wiring must be in accordance with technical connection regulations and local ordinances and national electric codes as per enclosed wiring diagram in the terminal box or on the casing
  - For explosion proof fan WMF size 250 to 630. For safety reason, all wiring should direct connections to explosion proof fan motor terminal box or otherwise customer should self install EEXd terminal box as recommend in accordance to the Directive 2014/34/EU
  - Insert motor power supply lead on site in drilled hole of casing (right or left side).
  - Insert cable according to the instruction in junction box and seal.

Do not use metal compression-gland fittings with plastic terminal boxes!

Before control of direction of rotation: Remove any foreign matter from the fan.
Install protection guards or give no entry to fan.
Check direction of rotation as per direction arrow on the casing by short turning on.

Crush danger! Do not reach into rotating impeller!

- Close maintenance cover

Danger

Risk of ignition of a potentially explosive atmosphere!

- Seal the system carefully.
- Install accessory parts correctly.

Aluminothermic Reaction

At high air speeds, in combination with aluminium, rust particles may lead to an aluminothermic reaction which, in the worst case, can trigger the ignition of an explosive atmosphere. Upstream or downstream components, or those which lie directly in the air flow, must not have any unprotected aluminium or steel surfaces. To prevent an aluminothermic reaction, surface protection is required which at least fulfils the cross-cut test classification 2 / EN ISO 2409:2020(E). Steel with an electro-galvanised or hot-dip galvanised surface is not critical. However, care must be taken that appropriate protection is also applied to the cut edges.

7 Operation

Danger

Risk of ignition of a potentially explosive gas/air atmosphere!
If the fan is connected to electricity via an additional connection box (not included in the scope of delivery) in explosion capable area, the following points must be observed!

- A connection box (with its own certification and explosion-protection identification) which has been selected as suitable for this area must be used.
- Whether the technical characteristics of components match the requirements of the explosion capable area must be checked by the customer.

Protection against explosions regarding use of accessories:

- Electronic accessories without explosion-protection (e.g. control device and motor protection) must be installed outside the explosion capable area.
- Speed control by frequency converter is only admissible for devices with the "Pressure-proof encapsulation Ex "d" ignition protection class.

Protection against explosions in general:

- Earth at the planned earthing point.
- In hazardous areas connect conductive components to a potential equalisation system.

Danger from electrical voltage!

- Observe the rules of electrical safety.
- Prevent the ingress of water into the connection box.
- Electrical connection may only be carried out by adequately qualified persons.

7.1 Preconditions:

- Potentially, the fans may become charged with static electricity. If this represents a risk, please contact Wolter sale Engineer for more informations.
- If fans with motors of ignition protection class "d" are controlled by frequency converter, a thermal protection (PTC) in the motor is necessary.

7.2 Prepare fan for first operation:

- Correct mechanical installation
- Electrical installation in accordance with regulations
- Remove foreign matter from inlet and outlet area and from inside of fan.
- Protection guard installed, maintenance cover closed, no entry to fan or fan being installed out of arm sweep

Only commence operation when it is in stalled in accordance with ordinances!

If the fan is started under free blow conditions, i.e. prior to connecting to ducting system, the current consumption may exceed the normal maximum (forbidden area of performance curve)!

The terminal protection of the motor may activate!

7.3 Protecting the motor

Damage to motor due to overcurrent, overload or short circiut.

- Lead-out temperature monitors must be integrated in the control circuit in such a way that, if a fault occurs, the motor cannot switch on again automatically after it has cooled down.
- Motor lines and temperature monitor lines should be laid separately on principle.
- Without thermal protection: Use a motor protection switch!

7.4 Taking WMF cabinet in operation:

- Observe correct function (smoothness of running, vibration, unbalance current consumption, possibly controllability)

By regular inspection of the fan inlet make sure debris has not collected on the guard and clean if necessary!

8 Maintenance

Our WMF cabinets are maintenance free with normal operation! When using them in the fringe range simple maintenance work may be required!

Before any maintenance work is undertaken!

Stop WMF cabinet in accordance to regulations and disconnect all poles from mains supply!

- Wait until impeller is stationary
- Make sure that is restart is not possible!

Clean fan:

- Open maintenance door or cover
- Clean inlet cones and outlet of WMF cabinet and fan

Warning ***Risk of ignition as a result of electrostatic charges.***
Because of the WMF EX plastic parts in the housing, a damp cloth has to be used for cleaning to avoid the risk of ignition as a result of electrostatic charges.

If necessary:

- Disconnect electric supply in junction box.
- Unscrew screws on inlet cone and carefully remove the inlet cone
- Unscrew the bolt on hub to remove the impeller
- Lift out the impeller unit.
- Clean inlet, pesdestal and impeller.
- Clean the motor shaft and bolt on hub and place the impeller in position. Check alignment and tighten the impeller in position
- Further action see “installation”

Only use usual commercial cleaning material paying attention to the prescribed safety measures and do not use any abrasive tools (surface protection will be destroyed!)

Keep unit dry!

Do not damage impeller, casing & blades!

General controls

- Bearing play too large?
- Grease leaking on bearings?
- Surface protection affected by medium to be ventilated too aggressive?
- Unusual operation noise?
- Fan capacity for possibly exceeded duct system still sufficient causing overloading?

9 Repair

Danger *Loss of explosion protection.*

- The manufacturer must always be consulted before any maintenance or repair work is carried out! Repairs should preferably always be carried out by the manufacturer! Exceptions can be made for non-relevant components such as terminal boxes, screwed cable connections, etc. These can also be dealt with on-site by the operator's qualified staff (authorised personnel). Non-compliance will result in the ATEX certification being revoked!
- For ATEX-certified products, the repair or replacement of fan components is expressly only permitted after consultation with the manufacturer and only if the manufacturer's original parts are used!
- After repair, the fan/system must be subjected to an inspection in accordance with local conditions, regulations and laws. This does not apply to repairs carried out by the manufacturer.

Before any repairs are undertaken!

Please:

Stop fan in accordance to regulations and disconnect all poles form mains supply. Wait until impeller is stationary!

Make sure that restart is not possible!

Only use original spare parts manufactured and supplied by Wolter!

9.1 Change of impeller unit:

- Disconnect electrical supply in junction box
- Unscrew screws on the inlet cone and carefully and remove inlet cone from ring plate
- On the bolt-on-hub, unscrew two screws with each at 9 and 3 o'clock.. Placed one screw at 12 o'clock to jerk out the fans impeller.

Warning ***Ensure inlet cone c/w non-sparking material lining are in good condition.***

9.2 Install of impeller unit:

- Clean the motor shaft and bolt-on-hub
- Place the impeller on the motor shaft and insert with the same taper bush
- Unscrew the 12 o'clock screw and place the jam screw each at 9 and 3 o'clock, lightly tighten in position
- Check the impeller and inlet cone in proper alignment and tighten properly in position
- Goto " Install fan"

Warning ***Ensure inlet cone c/w non-sparking material lining are in good condition and non-sparking protective sleeve on motor shaft are well in place.***

9.3 Change of electric motor unit:

- Follow instruction as per change of impeller unit
- Remove hollow dowel pins and unscrew the motor screws
- Carefully remove the motor and packing shim

9.4 Install the electric motor unit:

- Clean the shim and motor pedestal and place the shim in position
- Carefully place the electric motor on top of the shim and lightly tighten in position
- Dowel the serviced motor into position
- For replacing of new motor, check and confirm impeller and inlet cone alighnment
- Trace the pedestal dowel pin holes onto the new motor base, secure dowel pin and tighten screws in position
- Follow instruction as per install of impeller unit

Warning ***Ensure inlet cone c/w non-sparking material lining are in good condition and non-sparking protective sleeve on motor shaft are well in place.***

9.5 Install fan:

- Connect electrical supply
- Check whether installation is correct, motor impeller must rotate freely!
- Install maintenance cover in necessary

Starting Current Allowed

General rule for starting a fan with:

- Single phase capacitor and Run type - 4 to 5 time the FLC.
- Three phase A.C. DOL - 6.5 to 7 times the FLC
- Three phase A.C. Star-Delta start - 2 to 2.5 times the FLC

Min. MCB should be 1.5 times, preferred D curve type.

10 Help with Malfunctions

The following points must be observed in order to avoid damage to the machinery or life-threatening injury when eliminating machine malfunctions:

- Only eliminate any malfunction if you have the specified qualifications necessary for the task.
- First of all ensure that the machine cannot be switched on inadvertently, by locking the equipment‘s off switch or control cabinet by means of a padlock.
- Secure the hazardous area with respect to moving machine parts.
- Read the chapter, "Safety".

Tabular overview of possible malfunctions and aids in eliminating those malfunctions:

Symptom	Cause	Elimination
Motor or motor control system switches off	Motor too hot, thermocontact activates.	Allow the motor to cool off. Depending upon the control equipment in use, the fan will either start itself up or will have to be re-started again. Check whether: - The conveyed medium is too hot - All phases are evenly loaded and connected - Operating point does not match the lay-out - Rotor blocked
Air output incorrect	Incorrect direction of travel of the fan	Change the direction of travel (see electrical assembly)
	Fan assembled incorrectly	Either the rotor is incorrectly mounted on the motor shaft or the whole fan has been incorrectly fitted into the installation. Switch off the fan. Correct the incorrect assembly (rotor or complete fan).
	Rotor blocked	Switch off the fan. Remove the blockage. Ensure that the accident prevention regulations are observed in the process.
	Rotor defective	Switch off the fan. Dismantle the rotor and fit a new one.
	Lay-out does not match installation resistance	Clean or replace filters if dirty; In the event of an erroneous lay-out, the fan‘s output can be altered by changing the vane angle within limits. In this case the shaft output must be checked for the required vane, so that the motor is not overloaded. The rotor should be re-balanced after any alteration to the vane angle.
Fan is labouring under load, air flow is periodically interrupted	Fan is operating within an unfavourable characteristic curve range	If possible, reduce the installation resistance. If this laboured operation of the fan continues over a prolonged period, the rotor will be ruined!

Problem	Probable causes	Measure	Elimination
Too less volume flow	False direction of rotation Pressure higher than specified Rotational speed is too less Ducts are blocked Impeller is dirty	Shutdown Consult & shutdown Consult & shutdown Shutdown Shutdown	Check the motor connection Check the construction Adjust the rotational speed Clean the cables Clean the impeller
Very low pressure	False direction of rotation Volume flow is higher than spec. Density is lower than specified Rotational speed is too less Leakage in the fan Leakage in the system	Shutdown Consult & shutdown Consult & shutdown Consult & shutdown Shutdown Shutdown	Check the motor connection Check the construction Check the construction Adjust the rotational speed Change sealing Change sealing
Very high power	False direction of rotation	Consult & shutdown	Check the motor connection
Consumption	Volume flow is higher than spec. Pressure is lower than specified Density is higher than specified Rotational speed is high	Consult & shutdown Consult & shutdown Consult & shutdown Shutdown	Check the construction Check the construction Check the construction Adjust the rotational speed
Abnormal noises	Impeller grazes Defective sealing Contaminants in the casing Bearing damages Loose clamp screws	Shutdown Shutdown Shutdown Shutdown Shutdown	Check the Impeller/gap Change the sealing Eliminate contaminants Check for damages Repair Change the bearing Re-tighten the screws
Vibrations	Imbalance False direction of rotation Equipment defect Very high rotational speed Bearing damages Turbulences in the System Turbulences in the fan Loose clamp screws	Shutdown Shutdown Shutdown Shutdown Shutdown Consult & shutdown Consult & shutdown Shutdown	Clean the impeller, balancing Check the motor connection Align Check the rotational speed Change the bearing Check the air duct in the System Check the design/execution Re-tighten the screws
Rotational speed is too low	Slacking of the belt drive False transmission Motor overloaded	Consult & shutdown Consult & shutdown Shutdown	Tighten the belt or change Adjust the transmission Check the design
High bearing temperature	Too much grease / oil in the bearing Wrong grease/oil in the bearing Damaged bearings Very high temperature of the environment	Shutdown Shutdown Shutdown Consult & shutdown	Adjust the grease/oil quantity Change the grease/oil brands Change the bearing Cool down
Gas Odor	Defect of the shaft seal Defect of the casing seal Defect of the cable seal Crack in the casing or cables	Shutdown Shutdown Shutdown Shutdown	Change the shaft seal Change the seals Change the seals Repair

11 Status - and maintenance checklist

Name of Project / Machine Number:	Maintenance No.	
WORKING STEPS	EXAMINER	DATE
Maintenance (at least every 6 months)		
- Bearing status checked/ re-greased		
- Flexible connections checked for leakage		
- Vane controller- movement of blades checked		
- Vibration values of motor B-bearing measured acc. to ISO 14694/ ISO 10816-3 horizontal / vertical / axial .....mm/s mm/s mm/s		
- Vibration values of casing measured acc. to ISO 14694/ ISO 10816-3 horizontal / vertical / axial .....mm/s mm/s mm/s		
- Sound pressure level measured (3 m / 45° removed from suction) .....dB(A)		
- Electrical values measured voltage / Frequency.....V / ..... Hz Current Phase U / V / W ..... A / ..... A / ..... A		
- Visual check for corrosion (possible rectification of paint damages) - Blower - Vibration damper - Impeller		
- Visual check for corrosion - Motor		
damages checked - Blower - Vibration damper - Impeller		
- Insulation measurement at wrm motor (Resistance winding - mass with 500 V DC voltage) ..... MegaOhm		
- In case stainless steel-blower / -silencer -> All deposits of corroded particles on the surface removed		
- Functioning of fluctuation observation checked Read-off values horizontal / vertical / axial ..... mm/s .....mm/s .....mm/s		
E-Kit of tear-off –safety checked		

Note: If in doubt, please contact WOLTER local representative for assistance.

12 Commissioning

The system operator is responsible for the correct operation of the fan and/or the system!

Danger ***Risk of ignition of a potentially explosive gas / air atmosphere.***

- When commissioning the EX fan, the fundamental information of explosion protection rules and avoidance of risk of ignition as a result of electrostatic charges must be known.
- Observe and respect local conditions, regulations and laws.

Safety information

- Commissioning may only be carried out by adequately qualified persons.
- Pay attention to the safety data sheet of the chemical substances transported with the fan.

Warning ***Comply with fundamental information in the commissioning of the EX fan:***

- Explosion protection rules.
- Avoidance of risk of ignition as a result of electrostatic charges.
- Observe and respect local conditions, regulations and laws.

It is recommended to fill out the commissioning report as per below.

Name of Project / Machine Number:	Maintenance No.	
JOB STEPS	**EXAMINER**	**DATE**
First inspection		
- Inspection of transport damages		
- Inspection of completeness		
Inspection after mounting		
- flexible connection not damaged		
- Vibration damper correctly adjusted		
- Secure erection guaranteed		
- All damages to paint rectified		
- All basic safety instructions considered		
Inspection during commissioning		
- All basic safety instructions considered		
- Functioning of bearing status analysis checked		
- Functioning of fluctuation monitoring checked		
- Direction of rotation checked		
- Vibration values of bearing or motor measured. acc. to ISO 14694/ ISO 10816-3 horizontal / vertical / axial .....mm/s mm/s mm/s		
- Sound pressure level measured (1 - 3m / 45° removed from suction) .....dB(A)		
- Operation on frequency converter (yes / no / TYPE of FC)		
- Electrical values measured Voltage / Frequency .....V / ..... Hz Current Phase U / V / W ..... A / ..... A / ..... A		

Note: If in doubt, please contact WOLTER local representative for assistance.

13 EC Declaration of Conformity

Declaration of Incorporation
According to the Machinery Directive / CE declaration as defined by the Machinery Directive 89/392/EEC annex IIB

Type of machinery

- In-Line Centrifugal Fan: WMF

Motor type
Asynchronous external or internal rotor motor or D.C. or electronic committed external rotor motor.
The products are developed, designed and manufactured in accordance with the EC Machinery Directive 89/392/EEC in the responsibility of

Wolter Asia Ltd. Unit A4, 3rd floor, Merit Industrial Centre, No.94 To Kwa Wan Road, Kowloon, Hong Kong	**Guangdong Wolter Chemco Ventilation Ltd.** Jigongkeng Administrative Zone, Futian, Boluo, Huizhou, Guangdong, P.R.China	**Dongguan Wolter Chemco Ventilation Ltd.** No.69 of Miao Bian Wang Road, Shipai, Dongguan, Guangdong, P.R.China

Comply with all applicable requirements in the following directives:
ATEX Directive 2014/34/EU
2014/35/EU - The Low Voltage Directive (LVD)
2014/30/EU - Electromagnetic Compatibility (EMC) Directive

The following harmonized standards are used:

EN 60079-0: Explosive atmospheres - Part 0: Equipment - General requirements

EN 60079-1: Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"

EN 60079-31: Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

EN 14986: Explosive atmospheres - Design of fans working in potentially explosive atmospheres

EN 1127-1: Explosive atmospheres - Explosion prevention and protection - Part 1: Basic concepts and methodology

EN ISO 80079-36: Explosive atmospheres - Part 36: Non-electrical equipment for explosive atmospheres. Basic method and requirements

EN ISO 80079-37: Explosive atmospheres - Part 37: Non-electrical equipment for explosive atmospheres. Non-electrical type of protection constructional safety "c", control of ignition sources "b", liquid immersion "k"

EN 60204-1: Safety of machinery; electrical equipment of machines, Part 1: General requirements

EN 292: Safety of machinery; basic concepts, general principles for design

EN 294: Safety of machinery, Safety distances for the prevention of injures within danger zones

Note: The compliance with EN 294 refers to the fitted contact safety device only, as it is part of the extent of delivery. The total compliance with EN 294 is the system manufacturer's or the contractor's responsibility.

The following international standards are followed:

ISO 21940-11 / VDI 2060 Q2.5/ AMCA 204: The impellers with the shaft are statically and dynamically balanced on precision machines according to quality standard G 2.5.

ISO 13357-1 / ISO 13357-2 / AMCA 300: The ascertaining of the sound power level follows the reverberant room method.

EN ISO 5801 / AMCA 210 / AMCA 260: The performance curves provided in this catalogue were measured according to in an air test chamber.

EN 60034-1 / IEC 34-1: Rotating electrical machines: Part 1: Rating and performance

EN 60034-5: Rotating electrical machines - Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP code) - Classification

EN 60085-5: Electrical Insulation. Thermal evaluation and designation

An operator's manual is available

If the machine is a single component of a complete equipment/machinery, the conformity of this equipment/ machinery with the EC Machinery Directives has to be ensured before the initial operation.

Date: 25.05.2015

Nicholas Ang
Vice President

14 Service, address of producter

Wolter products are subject to steady quality controls and are in accordance with valid regulations. In case you have any questions with regard to our products please contact either your local agent of your air handling unit or directly to one of our distributors or

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Please contact your local sale & support service at:

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