This instruction manual applies to the following AFS air purification devices:

AFS 600, AFS 1100, AFS 1600, AFS 3000, AFS 4000, AFS 6000, AFS 8000, AFS 12000, AFS 16000.
Each classification corresponds to the AFS device's exhaust volume flow in m³/h.

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Explanation of Symbols

⚠ Safety precautions, danger point, or important or absolutely mandatory instructions

⚠⚠ Installation rules that must be followed

ℹ Important additional information or advice for use

1 General Information

AFS Airfilter Systeme GmbH (AFS) manufactures highly efficient mechanical air purification devices and systems that remove oil, emulsion, and minimal lubricant mist from the air, protecting the workplace environment in metalworking shops. Moreover, as a special construction, AFS also manufactures air purification devices for cleaning air contaminated with solvents in areas that are not at risk of explosion as well as for exhaust air that accrues in dry processing.

⚠ AFS devices are not ATEX-certified!

Our AFS air filter systems are today’s air purification devices both with respect to their safety levels and operating safety. Our devices’ CE marking verifies their compliance with the basic health and safety requirements of the latest EC Machinery Directive and latest EC Low Voltage Directive. Please see the appendix for our EC Declaration of Conformity.

ℹ The type plate, which lists the device type, serial number, and CE mark, is attached to the device’s door or at the rear of the device.

⚠⚠ The relevant norms as well as local, national, and international regulations apply. They are to be observed and obeyed.
1.1 Importance of the Instruction Manual

Read this instruction manual carefully before installation and startup to ensure proper use! Please note that this instruction manual only applies to the particular device and not to the entire system!

The present instruction manual facilitates safe work on and with the device named. It contains safety information that must be observed as well as information that is necessary for undisturbed operation of the device.

The instruction manual is to be kept with the device. The instruction manual must be kept available to any person who is to interact with the device at all times. The instruction manual is to be kept for further use and must be passed on to each successive owner, user, or end customer.

1.2 Target Audience for the Instruction Manual

The instruction manual is directed at those who are entrusted with planning, installing, operating, maintaining, or repairing the device and who have the qualifications and knowledge necessary to execute their activities.

1.3 Disclaimer

This instruction manual has been examined to ensure that its contents coincide with the hardware and software of the device described. Nonetheless, there may be discrepancies; no guarantee of complete agreement is implied. We reserve the right to make changes in the construction and technical data in the interest of further development. Therefore, no claims may be derived from the information, illustrations or drawings, or descriptions. Errors are excepted.

AFS will not be liable for damages due to incorrect use or inappropriate use or that are incurred as a consequence of unauthorized repairs or alterations.

1.4 Appropriate Use

The AFS-device is intended exclusively for the task of purifying exhaust air which is contaminated with particles, vapor or mist of cooling lubricant which develop during metal working processes. Further intended use may be laid down or in the order confirmation. Any other or additional use that is not contractually agreed upon will be considered inappropriate. The manufacturer will not be liable for any resulting damages. The company that uses the device will bear all risk.

Intended use also includes reading this instruction manual and adhering to all of the information contained therein – particularly the safety information. Instruction manuals for any attached components are also to be observed. The device operator, not the manufacturer, will be responsible for all damages to persons or property that result from inappropriate use.

1.5 Product Safety

The device was the best available technology at the time of its sale and is regarded as fundamentally reliable. The device and its accessories may only be installed and operated in sound condition and with due regard for the installation and operating instructions. Operation outside of the confines of the device's technical specifications (identification plate and addendum/technical data) may damage the device and could cause additional damages!
2 Safety instructions

2.1 Danger Due to Unloading and/or Transportation

Severe personal injury due to falling:
- Secure the AFS device against tipping and falling.
- Avoid standing under floating loads.
- Secure the assembly area.

2.2 Danger from Doors and Inspection Doors

Low pressure prevails when AFS devices are in operation.

Danger of hand crushing due to pressure from doors and inspection doors on the low-pressure side:
- Open doors only after the ventilator has stopped.

If AFS air purification devices are operated in conjunction with multiple devices, then all of the devices must be turned off before a door or maintenance door is opened.

2.3 Danger Due to Electrical Power

Danger of electric shock – potentially fatal – from contact with live components:
- Always ensure that there is no electrical power before working.

Danger of electric shock – potentially fatal. Some electric circuits such as the electronics in the ventilator may be charged for a few minutes after the electrical supply has been interrupted:
- After turning off the electricity, wait at least three minutes before beginning to work on or near electrical components.

Danger of electric shock due to static charge in the housing:
- Ground the device (see Chapter 4.5).

Danger of electric shock due to short circuit upon contact between electrical components:
- All cables must be examined for assembly damage or insulation damage before operation.

Danger of electric shock due to wet cleaning the device:
- Always clean without electrical currents.

2.4 Danger Due to Ventilators

After electrical tension has been interrupted, the ventilator can be started up again automatically.

Fatal or severe injury from ventilator rotor:
- Keep persons and objects away from the ventilator rotor.
- For all work on the AFS device, switch off power to the system and wait for the ventilator to stop running.
Fatal or severe injury from the ventilator’s suction effect on clothing and hair:

- Never wear loose clothing and tie up long hair.
- For all work on the AFS device, switch off power to the system and wait for the ventilator to stop running.

Fatal or severe injury from rotor bursting if the maximum permissible operating speed is exceeded:

- Always operate the ventilator within permissible operating speed range.
- For all work on the AFS device, switch off power to the system and wait for the ventilator to stop running.

2.5 Danger from Flaps, Cutoff Devices, or Shutters

Flaps, cutoff devices, or shutters may be built into the pipes or ducts leading to or from the AFS air purification device.

Danger of finger crushing due to the motion of a shut-off flap:

- Keep hands away from the flap area.

Danger of hand injuries due to closing shutter flaps:

- Keep hands away from the flap area.

3 Transportation and Loading

The devices are delivered on non-returnable pallets. Pallets may be recycled by the recipient.

All other components are delivered in recyclable non-returnable packaging to be recycled by the recipient.

The devices can be transported and moved using a forklift (by lifting the entire transport pallet with the device) or, if they are fitted with lifting eyes, lifted off the pallet using transport chains.

AFS devices may only be transported, loaded, or handled by qualified personnel with appropriate professional qualifications.

3.1 Transport Damage and Missing Parts

Please check the delivery for completeness using the delivery documents / part lists as a reference and check the device for transport damage in the presence of the forwarder immediately on receipt. If there are any damaged or missing parts, please take a written note of this, let the forwarder countersign this note, and immediately notify the respective transport company and AFS, in the case of

Visible damage: Immediately, i.e. without undue delay.
Hidden damage: Within one week.
4 Installation and Startup

4.1 Device Assembly

The device must always be set up horizontally on a rigid and, if possible, vibration isolated base.

**Space requirement:**

<table>
<thead>
<tr>
<th>Device</th>
<th>AFS 600</th>
<th>AFS 1100/1600</th>
<th>AFS 3000/4000</th>
<th>AFS 6000/8000</th>
<th>AFS 12000/16000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length (mm)</td>
<td>900</td>
<td>1,300</td>
<td>1,500</td>
<td>2,300</td>
<td>3,000</td>
</tr>
<tr>
<td>Width (mm)</td>
<td>500</td>
<td>500</td>
<td>750</td>
<td>950</td>
<td>1,500</td>
</tr>
<tr>
<td>Height (mm)</td>
<td>550</td>
<td>650</td>
<td>800</td>
<td>1,150</td>
<td>1,600</td>
</tr>
</tbody>
</table>

The minimum distances between the device and ceilings, walls etc. required to ensure proper operation are:

- Top of the device (exhaust air outlet): > 800 mm
- Motor side: > 500 mm
- Door side: > 800 mm
- Bottom of the device (siphon connection): > 500 mm

⚠️ These minimum distances must be observed to ensure that the device can operate properly.

4.2 Pipe Connections

In devices fitted with suction heads for connecting suction pipes, the connecting pipes between the suction point and the device must be fitted in such a way that they do not kink and have a large bending radius (R ≥ D). The connecting pipes should have a slight incline either in the direction of the suction point or of the device so as to allow condensate to drain and must be installed without sagging to prevent fluid from building up inside them.

- The extraction opening on your processing machines/centers should always be fitted with a baffle plate to prevent droplets of cooling lubricant from entering the pipe. There should be a ca. 100 mm gap between this opening and the wall and the cover over the extraction opening should be at least 100 mm on all sides.

4.3 Siphon Connections

The device has 2 (or 3, in AFS 12000 and AFS 16000) round outlets on its bottom side, each of which is fitted with a ½" hose connection sleeve and thorough which the separated cooling lubricant can be drained away. In order to ensure this drainage mechanism’s full functionality and to prevent leaked air from being sucked into it, each one of these outlets **must be fitted with one filled siphon connection each.** See Figure 1.

⚠️ The following points are vital to the device’s proper functioning and must be observed.

To do so, it is **vital** to proceed as follows:

- The connecting pipes between the device and the siphons must have a slight incline in the direction of the siphons so as to ensure that the cooling lubricant drains and that fluid cannot build up (forming water pockets).

- When doing so, the effective siphon height of the loop or U-bent must be at least D>250 mm (measured vertically).
Each siphon outlet must be fitted with either a flexible ½" hose line or a rigid pipe with a R½" external thread (in this case, remove sleeve), and the siphon subsequently shaped into a U-shaped or round siphon.

The distance between the bottom of the device and the top siphon loop must be H>250 mm (measured vertically).

Each siphon opening must be connected separately, as the siphon principle will otherwise not work. Once past the siphons, the drain pipes can be joined into one pipe.

The siphons must be filled with coolant lubricant after installation. This also applies if the device has not been used for longer periods of time. (To make sure: When filling the siphon, there must be fluid coming out of the bottom hose line or pipe!)

4.4 Electrical Connections

Safety Instructions:

Electric motors contain dangerous components that are live and rotate during operation. If operated incorrectly, used improperly, or inadequately serviced, these components can cause damage to health and property.

The devices are only to be accessed for work if the system has been disconnected from the power supply. The devices must also be protected from being accidentally reconnected.

The devices' electrical components, such as electric motors, servomotors, control and monitoring systems, must be connected as specified in the manufacturer’s instructions and the regulations of the relevant electricity board. The German Electrotechnology Federation's (VDE) regulations must be adhered to. Work on electrical components must be carried out only by qualified electricians.

The drive motors for the ventilator wheels are always fitted with thermostat relays or PTC thermistors for motor protectors and must be connected accordingly.
Once the ventilator motor has been connected, it is vital to make sure that **the radial wheel rotates in the direction indicated by the direction arrow** on the front of the device before starting up the air purification device.

If the radial wheel rotates in the wrong direction the motor direction of rotation must be reversed by changing the electric poles (reversing the phases).

### 4.4.1 Installation of AFS Air Purification Devices with Frequency Converters (Optional)

The instruction manual for the frequency converter that is provided and the installation instructions contained within them must be observed for air purification devices with frequency converters. The frequency converter allows to regulate the flow rate by controlling the rotation speed of the engine fan wheel.

When AFS air purification devices are fitted with frequency converters, a repair switch (rep. switch) is mounted on the AFS device's housing.

During maintenance work, the currents to the AFS device are to be shut off with the rep. switch and protected against switching back on.

The rep. switch and the frequency converter are to be connected by a qualified and competent specialist and in accordance with all current guidelines and VDE regulations.

AFS partly parameterizes and presets the frequency converters. Adjustments that deviate from the standard are documented in the instruction manual for the frequency converter, see Figure 2.

The currents in the frequency converter are not shut off when the frequency converter's motor is turned off.

If the frequency converter's operating mode is set to "Motor ON" and the frequency converter is cut off from the grid, the motor will start immediately once the frequency converter is back on the grid.

---

**Figure 2**: Example of basic setting on the frequency converter as altered by AFS
4.5 Protective Conductor System

AFS devices must be grounded at the ground plate or ground bolt indicated in accordance with EN60204-1.

Before the AFS device is turned on, the protective conductor system of the entire system must be inspected and safe operation ensured.

A ground bolt is mounted ex factory. Depending on the device type, multiple locations have been provided for ground bolts at the base of the device or the carrier. If necessary, the ground bolts can be mounted elsewhere. The ground bolt is to be connected to the metal housing structure by a professional.

4.6 Startup Operations

Before the device is turned on, all electrical wires, pipes, ducts, and the AFS device must be examined for proper installation and mechanical damage and leaks.

Before the device is turned on, all electrical wires, pipes, ducts, and the AFS device must be examined for proper installation and for mechanical damage and leaks.

The following must be ensured:

- All filter elements must be arranged properly; see Figure 4
- All filter elements must be as delivered
- The motor must be turning in the correct direction
- The AFS device must be securely placed and bolted down at its location
- There must be no debris (shavings, screws, installation materials, etc.) inside the device, the pipes, or the ducts.

The suction output for AFS devices with frequency converters can be adjusted and readjusted manually.

The operating principles of all AFS air purification devices are the same; they differ only in scale, ventilation system performance, and number of filters used, regardless of device type.

5 Operation

AFS air purification devices are not equipped with ON/OFF switches or circuit breakers as a standard feature. The electrical connection to the motor is to be made with Harting connectors or terminal boxes depending on the device model. AFS devices can remain in continuous operation.

Operating modes are to be described and observed separately depending on the on-site electrical installation.

5.1 AFS Air Purification Devices with Frequency Converter (Optional)

An AFS air purification device that has a frequency converter is operated and controlled by means of that frequency converter. Operation is menu-guided via the arrow keys and the P button.
Turning the System On:

We recommend installing a main switch using it to turn the AFS air purification device on and off. The operating modes and the suction output are to be adjusted accordingly with the frequency converter.

Figure 3: Example of frequency converter Fcontrol DXDM...AM and main switch

If the frequency converter is parameterized ex factory, then the corresponding parameters will be noted in the instruction manual that is delivered with the frequency converter, see Chapter 4.4.

- The operating modes and on/off procedures can be found in the frequency converter's instruction manual.
- The currents in the frequency converter are not shut off when the frequency converter's motor is turned off.
- If the frequency converter's operating mode is set to "Motor ON" and the frequency converter is cut off from the grid, the frequency converter will start again at the last selected setting immediately upon coming back on the grid. Where applicable, the motor may start.
- To ensure safe suction output, the frequency converter is not to be operated below its minimum frequency of $f_{\text{min}} = 30.0 \text{ Hz}$.

6 Maintenance

Failure to maintain the device as specified in the AFS operating instructions will void the warranty or guarantee!

6.1 Maintenance Work and Cycles for Oil and Emulsion Mist Separation

All maintenance work on a device must be performed exclusively after the device has been turned off and by trained personnel familiar with the device.

- If multiple AFS air purification devices are operating in conjunction with one another, ALL the devices must be disabled for maintenance to be performed. Low pressure will persist throughout the entire extraction pipe system for as long as networked devices are turned on. Where applicable, device doors must not be opened. There is an increased risk of injury.
- Maintenance cycles are to be set in accordance with the type of process and degree of contamination in the air that is to be cleaned. The degree of pollution in the device as well as the separator elements must be examined and then cleaned or replaced as needed.
Figure 4: Filter arrangement within AFS air purification devices

Never change the order, number or installation position of the separation and filter elements as this will render the device inoperable.

The device must only be operated with AFS-approved separation/filter elements.

The separation and filter elements may be laterally removed from the device for cleaning or replacement.

6.1.1 Preliminary separator (pos. ①)

The preliminary separator is made of a corrosion-resistant metal mesh, is non-wearing, and can be cleaned/rinsed:

Cleaning interval: Clean when obviously clogged and dirty, i.e. if full of chips, hardened oil, abraded material, grease residues.

And at least every 4 weeks.

Directions: Use hot water and a grease-removing cleaning agent with a high-pressure cleaner or in a component washing system.

Parts will have oil and coolant lubricant residue. Wastewater must be disposed of properly and in an ecologically responsible manner.

6.1.2 Preliminary filter fleece (pos. ②)

The preliminary filter comprises filter grade G3 – F6 filter fleeces, which must be replaced when they become clogged and dirty.

Replacement interval: Clean when obviously clogged and dirty, i.e. if full of chips, hardened oil, abraded material, grease residues.

And at least every 4 weeks.
The preliminary filter fleeces can be replaced with conventional filter grade G 3 – F 6 filter fleeces with a fleece thickness of 20 mm.

![Warning] Parts will have oil and coolant lubricant residue. Proper and ecologically responsible disposal is absolutely necessary.

6.1.3 **Longlife separator (pos. ③)**

The Longlife separator distinguishes itself through its high-performance self-cleaning action and must therefore only be cleaned when visibly and seriously clogged or dirty.

**Directions:** Self-cleaning.

If, despite its self-cleaning action, the Longlife separator should nonetheless become extremely dirty or clogged, i.e. full of oil and emulsion residues, hardened oil, the entire separator can be cleaned using warm water and a grease-removing cleaning agent. The separator must not be opened or disassembled for cleaning.

It is vital that the separator be installed in accordance with the air flow direction arrows on the separator’s frame. Otherwise the device will no longer function properly.

If necessary, the writing on the Longlife separator can be arranged upside down relative to the airflow direction and the installation position.

Parts will have oil and coolant lubricant residue. Wastewater must be disposed of properly and in an ecologically responsible manner.

6.1.4 **H 13 Post filter (pos. ④)**

The grade H 13 suspended particle filter used as a post filter must be replaced when dirty or saturated or if the device’s air extraction performance becomes affected as a result of such clogging or saturation (cannot be cleaned!).

**Replacement interval:** Replace when there is a noticeable reduction in the device’s extraction performance due to oil and emulsion residue deposits, or hardened oil.

To replace, undo the M6 screws on the terminal strips so as to allow the suspended particle filter to be pulled out. When fitting a new post filter, the filter’s rubber sealing strips must be on the suction side (in the terminal area) and the filter bags must be vertical.

6.1.5 **Metal mesh follow-up separator (pos. ⑤) - Alternative to H 13 post filter (pos. ⑥)**

The alternative to an H 13 post filter, an adjustable, non-wearing, corrosion-resistant metal mesh follow-up separator, can be cleaned or washed like the metal mesh preliminary separator.

**Cleaning interval:** Clean when obviously clogged and dirty, i.e. if full of chips, hardened oil, abraded material, or grease residues.

And at least every 4 weeks.
Directions: Use hot water and a grease-removing cleaning agent with a high-pressure cleaner or in a component washing system.

To replace a dirty post filter, undo the M6 screws on the terminal strips so as to allow the follow-up separator to be pulled out.

Parts will have oil and coolant lubricant residue. Wastewater must be disposed of properly and in an ecologically responsible manner.

6.1.6 Ventilator (pos. ⑥)

The ventilator motor and wheel are largely maintenance-free. If the separation and filter elements are not maintained or not properly maintained, there is a risk that the ventilator motor will overheat.

In the event of a malfunction, please contact AFS.

The ventilator wheel in any AFS air purification device must not be disassembled under any circumstances.

6.1.7 Siphon (pos. ⑦)

Siphons and drain pipes must be inspected and cleaned regularly. When separating sludge-forming products, the siphons and drain pipes might become blocked.

Inspection interval: Inspect when there is an obvious blockage caused by oil and emulsion residue deposits, hardened oil, fine dusts, etc.

And at least every 4 weeks.

Directions: Clean with hot water and a grease-removing cleaning agent.

After cleaning the siphons, they must be filled again with coolant lubricant. If this is not done, then the AFS device will not be operational. It is therefore absolutely vital to ensure that the siphons are always full of fluid. See chapter 4.3.

Parts will have oil and coolant lubricant residue. Wastewater must be disposed of properly and in an ecologically responsible manner.

6.1.8 Overview of maintenance intervals

The filter elements must be inspected every week or inspected immediately if the device’s air extraction performance diminishes.

The AFS device must be serviced when all or some of the filter elements are clogged and dirty as detailed in the following.

The separation and filter elements can be pulled out of the side of the device for cleaning.

The AFS device must always be disconnected from its power supply before servicing!
<table>
<thead>
<tr>
<th>Type of clogging/dirt</th>
<th>Directions for cleaning/replacements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preliminary separator metal mesh</td>
<td>Shaving, hardened oil, abraded material, grease residue deposits</td>
</tr>
<tr>
<td>Preliminary filter (G3-F6-fleece)</td>
<td>Shaving, hardened oil, abraded material, grease residue deposits</td>
</tr>
<tr>
<td>Longlife separator</td>
<td>Self-cleaning</td>
</tr>
<tr>
<td>H13 Post filter</td>
<td>Shaving, hardened oil, abraded material, grease residue deposits</td>
</tr>
<tr>
<td>Follow-up separator metal mesh (alternative to 4)</td>
<td>Shaving, hardened oil, abraded material, grease residue deposits</td>
</tr>
<tr>
<td>Ventilator</td>
<td>Maintenance-free.</td>
</tr>
<tr>
<td>Siphon</td>
<td>May become blocked if used to separate sludge-forming products</td>
</tr>
</tbody>
</table>

We recommend keeping a set of replacement filters on hand so that old ones may be replaced quickly when necessary and so that the system can be put back into operation immediately.

Parts will have oil or coolant lubricant residue. Wastewater or components must be disposed of properly and in an ecologically responsible manner.

### 6.2 Differential Pressure Indicator MPR (optional)

On AFS devices that are equipped with differential pressure indicators (MPR), the MPR sends a signal as soon as the volumetric flow rate falls below 40% of the nominal volume flow (adjustment ex factory).

When that happens, maintenance according to Chapter 6 must be performed promptly. Continued system operation is not permitted.

The maintenance work and cycles described in Chapter 6 are absolutely mandatory. Extending the maintenance intervals until the MPR is activated is not permitted.

The MPR's technical details as well as information on connecting it and processing its signals can be found in the accompanying instruction manual.
6.2.1 MPR Functionality

There is a defined drop in pressure in the Longlife separator (see Chapter 6.1.3) when air flows through. The Longlife separator does not get dirty in normal operation. Consequently, the loss of pressure via the Longlife separator remains constant in all the AFS air purification device's areas of operation. The flow speed and therefore the volumetric flow rate within the device are directly indicated by the differential pressure determined by the differential pressure measurements up- and downstream of the Longlife separator.

The MPR will only operate error-free if the Longlife separator is not dirty or damaged. If the Longlife separator is removed, the MPR will not work.

6.2.2 MPR Error Diagnostics

If the MPR still indicates that the volumetric flow rate through the AFS device is below the minimum despite new filters or maintenance work, then the following steps should be carried out:

- Remove all filters other than the Longlife separator
- Close the device again and turn the system back on
- Wait a little while until the differential pressure has adjusted
- If the signal is no longer on, install new or cleaned filters and separators as indicated in Chapter 4.6.

However, if the signal remains, then the unwanted volumetric flow rate is not being caused by the filters or separators. Other possible error sources might be:

- Blocked intake port or induction pipe
- Clogged pressure transducer
- Bent pressure transducer pipes (run in a path to the inner top edge of the device)
- Blocked exhaust vent or exhaust air pipe
- Overall pressure loss through the entire system (from intake to exhaust) is too great
- Ventilator does not work in the desired area of operation
- Frequency converter (where available) adjusted incorrectly
- Ventilator speed too low
- MPR connected incorrectly

Figure 5: MPR ex factory adjustment and installation point
7 EC Declaration of Conformity

EG-Konformitäts-Erklärung
EC Declaration of Conformity

im Sinne der: EG-Richtlinie Maschinen 2006/42/EG, Anhang II A
as defined by: EC Machinery Directive 2006/42/ EEC, Annex II A
EG-Richtlinie Niederspannung 2006/95/EG
EC Low Voltage Directive 2006/95/EEC

Die Bauart der Maschine: Luftreinigungsgerät für den betrieblichen Umweltschutz.
The type of machinery: Air filter device for environmental protection in factories.

Typenbezeichnung: AFS 600, -1100, -1600, -3000, -4000, -6000, -8000, -12000, -16000
Type number:
(stat. article no. 84146000)

Fabrikationsnummer: 9300 und folgende
Fabrication number: 9300 and following

ist entwickelt, konstruiert und gefertigt in Übereinstimmung mit der EG-Richtlinie:
is developed, designed and manufactured in accordance with the EC Directive:

Maschinen 2006/42/EG
Machinery 2006/42/EEC
Niederspannung 2006/95/EG
Low Voltage 2006/95/EEC

in alleiniger Verantwortung von
on the own responsibility of

Firma: AFS Airfilter Systeme GmbH
Company: Am Richtbach 14
D - 74547 Untermünkheim-Übrigshausen

Folgende harmonisierte Normen sind angewandt:
The following harmonized standards are in use:

Sicherheit von Maschinen:
Safety of machinery:

EN 60204-1 Elektrische Ausführung
Electrical equipment

EN 12100-1 Grundbegriffe
Fundamental principles

EN 12100-2 Grundbegriffe

EN 13857 Sicherheitsabstände
Safety distances

Eine technische Dokumentation ist vollständig vorhanden. Eine Betriebsanleitung wird jedem Gerät beigefügt.
The complete technical documentation is available. An operator's manual is component of each machinery supply.

Übrigshausen, 01.01.2014

- Dr. Heinz Kuppinger -
(Geschäftsführer / Manager)

- Dipl.-Ing. Kai Kuppinger -
(Geschäftsführer / Manager)
## Electric Motors – Performance Data

<table>
<thead>
<tr>
<th>Model</th>
<th>Voltage</th>
<th>Current</th>
<th>Power</th>
<th>RPM</th>
<th>Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFS 600 (400 V/ 50 Hz) ErP2015</td>
<td>3~ 230/ 400 V ± 10%, D/Y, 50 Hz</td>
<td>0.50 kW intake, 1.5/ , 0.88 A, IP 54</td>
<td>2,780/min., THCL 155</td>
<td>2.</td>
<td>AFS 600 UL (460 V/ 60 Hz) ErP2015</td>
</tr>
<tr>
<td>AFS 1100 (400V/ 50 Hz) ErP2015</td>
<td>3~ 230/ 400 V ± 10%, D/Y, 50 Hz</td>
<td>0.66 kW intake, 2.1/ , 1.2 A, IP 54</td>
<td>2,790/min., THCL 155</td>
<td>4.</td>
<td>AFS 1100 UL (460 V/ 60 Hz) ErP2015</td>
</tr>
<tr>
<td>AFS 1600 (400 V/ 50 Hz) ErP2015</td>
<td>3~ 230/ 400 V ± 10%, D/Y, 50 Hz</td>
<td>1.1 kW intake, 3.1/ , 1.8 A, IP 54</td>
<td>2,660/min., THCL 155</td>
<td>5.</td>
<td>AFS 1600 UL (460 V/ 60 Hz) ErP2015</td>
</tr>
<tr>
<td>AFS 3000 (400 V/ 50 Hz) ErP2015</td>
<td>3~ 230/ 400 V ± 10%, D/Y, 50 Hz</td>
<td>1.5 kW intake, 5.5/ , 3.2 A, IP 55</td>
<td>2,885/min., THCL 155</td>
<td>7.</td>
<td>AFS 3000 UL (460 V/ 60 Hz) ErP2015</td>
</tr>
<tr>
<td>AFS 4000 (400 V/ 50 Hz) ErP2015</td>
<td>3~ 230/ 400 V ± 10%, D/Y, 50 Hz</td>
<td>2.2 kW intake, 7.8/ , 4.5 A, IP 55</td>
<td>2,880/min., THCL 155</td>
<td>9.</td>
<td>AFS 4000 UL (460 V/ 60 Hz) ErP2015</td>
</tr>
<tr>
<td>AFS 6000 (400 V/ 50 Hz) ErP2015</td>
<td>3~ 400/ 690 V ± 10%, D/Y, 50 Hz</td>
<td>4.0 kW intake, 7.8/ , 4.5 A, IP 55</td>
<td>2,950/min., THCL 155</td>
<td>11.</td>
<td>AFS 6000 UL</td>
</tr>
<tr>
<td>AFS 8000 (400 V/ 50 Hz) ErP2015</td>
<td>3~ 400/690 V ± 10%, D/Y, 50 Hz, 7.5 kW intake, 14.1/ 8.2 A, IP 55, 2,950/min., THCL 155</td>
<td>14.</td>
<td>AFS 8000 UL</td>
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<tr>
<td>AFS 12000 (400 V/ 50 Hz) ErP2015</td>
<td>3~ 400/690 V ± 10%, D/Y, 50 Hz, 7.5 kW intake, 14.7/ 8.2 A, IP 55, 2,950/min., THCL 155</td>
<td>16.</td>
<td>AFS 12000 UL</td>
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<td></td>
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<tr>
<td>AFS 16000 (400 V/ 50 Hz) ErP2013</td>
<td>3~ 400/690 V ± 10%, D/Y, 50 Hz, 15 kW intake, 27/15.6 A, IP 55, 2,955/min., THCL 155</td>
<td>18.</td>
<td>AFS 16000 UL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
9 Spare parts

<table>
<thead>
<tr>
<th>Item no.</th>
<th>AFS 600 Item no.</th>
<th>AFS 1100 Item no.</th>
<th>AFS 1600 Item no.</th>
<th>AFS 3000 Item no.</th>
<th>AFS 4000 Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>① Preliminary separator (metal mesh)</td>
<td>060006</td>
<td>060001</td>
<td>060001</td>
<td>060002</td>
<td>060002</td>
</tr>
<tr>
<td>② Preliminary filter (G3 filter fleece)</td>
<td>090008</td>
<td>090003</td>
<td>090003</td>
<td>090004</td>
<td>090004</td>
</tr>
<tr>
<td>③ Longlife separator (plastic)</td>
<td>080006</td>
<td>080001</td>
<td>080002</td>
<td>080003</td>
<td>080003</td>
</tr>
<tr>
<td>④ Post filter (H13 filter)</td>
<td>090007</td>
<td>090001</td>
<td>090001</td>
<td>090002</td>
<td>090002</td>
</tr>
<tr>
<td>⑤ Follow-up separator (metal mesh)</td>
<td>060007</td>
<td>060004</td>
<td>060004</td>
<td>060005</td>
<td>060005</td>
</tr>
<tr>
<td>⑥ Ventilator with motor (model with terminal box)</td>
<td>Upon request</td>
<td>Upon request</td>
<td>Upon request</td>
<td>Upon request</td>
<td>Upon request</td>
</tr>
<tr>
<td>⑦ Ventilator with motor (model with connection cable)</td>
<td>Upon request</td>
<td>Upon request</td>
<td>Upon request</td>
<td>Upon request</td>
<td>Upon request</td>
</tr>
</tbody>
</table>

We recommend keeping a set of replacement filters on hand so that old ones may be replaced quickly when necessary.

Customer service contact details:

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