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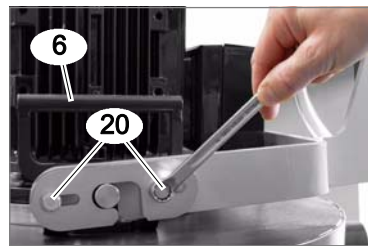
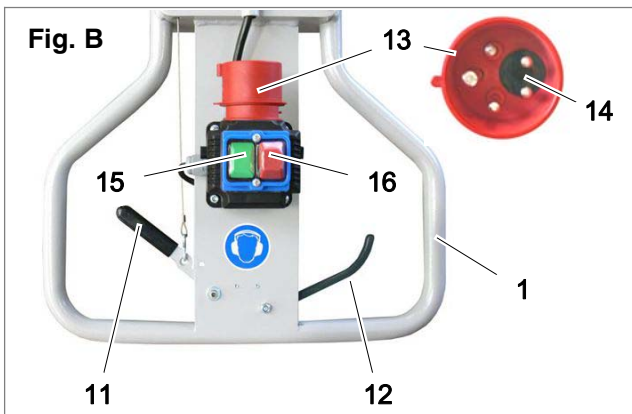
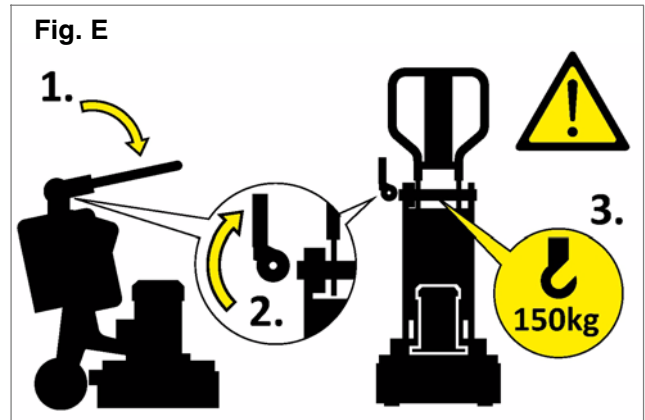


Fig. F



Fig. G

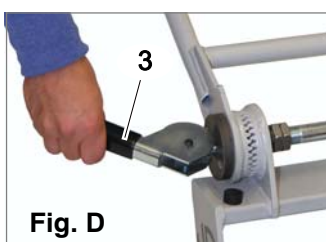
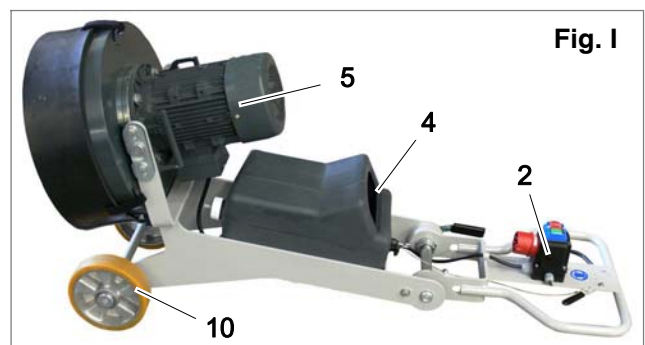
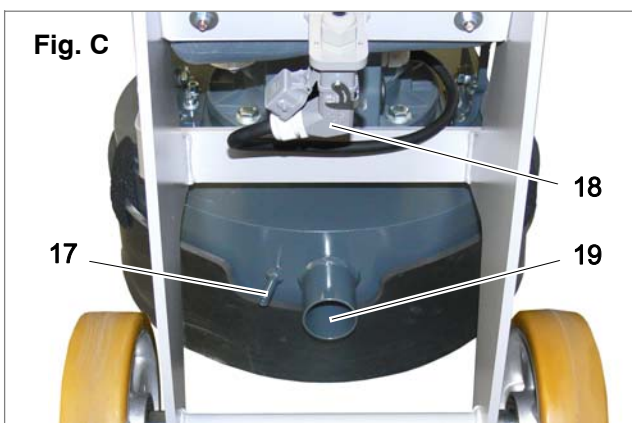
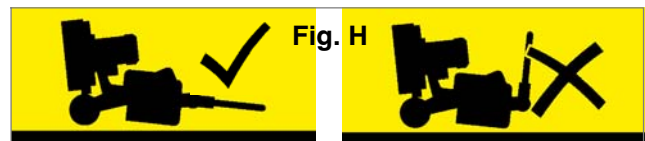
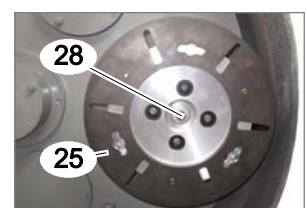
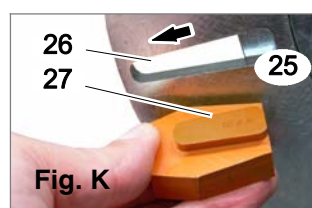
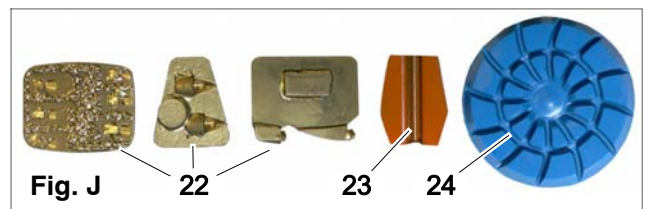


Fig. D



EN Floor grinding machine FGE 450

Translation of the original operating manual

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Key to the illustrations

Pos.	Fig.	Designation
1	A/B	Guide handle
2	A/I	Switch box
3	A/D	Clamping lever
4	A/I	Tank
5	A/I	Drive motor
6	A/F	Carrier handle
7	A	Safety hood
8	A	Dust cover
9	A	Velcro strip
10	A/I	Transport wheel
11	B	Lever (water supply)
12	B	Safety switch
13	B	Power plug (CEE 16 A)
14	B	Pole reverser
15	B	ON switch (green)
16	B	OFF switch (red)
17	C	Water connection
18	C	Plug connection
19	C	Connection to the dust extraction
20	F	Screws
21	G	Bolt
22	J	Polycrystalline diamonds (PCD)
23	J	Metal bonded diamonds
24	J	Synthetic resin bonded diamond pads
25	K	ETX locating plate
26	K	Recess
27	K	ETX diamond tool
28	K	Fixing screw (ETX)

1 Important notes

The machine may be used only with the accessories supplied by the manufacturer for stripping, wet grinding, and dry grinding of even, level floor surfaces such as:

- cement
- screeds
- synthetic resin screeds / asphalt
- natural stone floors
- residual adhesive or filling compound
- floor remnants (e.g. foam backing)

Any other use of the machine can lead to dangerous situations and is prohibited!

To ensure correct use of the machine, follow the instructions in the operating manual, paying particular attention to any warnings and instructions relating to operation and maintenance!



Before using the machine, the operating personnel must carefully read and understand this operating manual! Keep this operating manual close at hand for easy reference!

Read and observe documents and operating manuals provided by suppliers!

If the machine is on loan to other parties, the operating manual must be provided with the machine and its importance must be made clear!

1.1 Symbols used

The following symbols are used in this documentation:



Safety instructions

This symbol indicates warnings, prohibitions and instructions regarding potential hazards. These instructions must be obeyed and closely observed.

Some safety instructions are accompanied by corresponding symbols.



Warning



Prohibition



Direction



Additional information

This symbol indicates additional information.

1.2 Liability and warranty

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All rights, including those pertaining to translation, lie with TYROLIT Hydrostress AG.

Liability or warranty is excluded if:

- The instructions in the operating manual have not been observed.
- The machine or its attachments were improperly operated.
- The maintenance was carried out inadequately or incorrectly.
- Specified spare parts were not used.
- The protective equipment was not used, has been altered or was removed.
- The specified power supply ratings and surrounding conditions have not been observed.

The manufacturer is not liable for any damage that may result if the user makes any changes to the machine without the manufacturer's permission. Any such actions will void the warranty.

2 Safety

This chapter contains a summary of the most important information on safety when handling the machine.

2.1 Accident prevention and safety

The following instructions comply with legislation, directives, and publications including:

- EU Machinery Directive
- EU Product Liability Directive
- Law governing technical materials
- Law governing equipment safety
- Law governing product liability

This operating manual is intended for operators and tool setters, as well as for the personnel that service, maintain and repair the machine. Together with all the technical documentation, it is intended to help


- avoid hazardous situations
- use the machine for its intended applications
- avoid downtime and repair costs
- maintain the function of the machine
- extend the service life of the machine.


The manufacturer and owner of the machine must respect the contents and provisions of the EU directives. The effectiveness of any measure ultimately depends on how well all parties, i.e. the manufacturer, the owner and the machine operators, work together to uphold safety standards.

All laws and regulations (e.g. the valid regulations on waste disposal), accident prevention guidelines and generally recognised safety rules must be complied with when working on and with the machine.


2.2 Safety instructions

This machine incorporates state of the art technology and has been built in accordance with recognised safety regulations. This ensures that the highest possible standards of occupational safety are maintained. However, incorrect use of the machine could endanger the health and lives of the personnel or cause material damage.

 The machine may only be operated by people who have been assigned to do so and who have the appropriate training and skills.


 If any defects are found in the machine that could endanger people or damage property, stop the machine immediately and ensure that it cannot be used again until all repairs are completed.




 The operating and maintenance personnel responsible for the machine must ensure that no one can enter the machine's danger zone during operation or maintenance work.

Persons with pacemakers are not permitted to work with the machine!





 Risk of injury if safety equipment has been removed or is non-functional!
The safety equipment must be checked for completeness and function before starting up.
The safety equipment must be mounted during operation.

 The surfaces to be processed by the machine must be free of obstacles.


 Warning signs [→ Fig. E/H] must be in a legible condition!



 Risk of injury from rotating machine parts! Limbs and clothing can be drawn in. Proceed with the greatest care and caution!

 When working on the machine (set-up, maintenance, service, repair, cleaning, etc.), the power supply of the machine has to be disconnected from the mains (disconnect power plug)!




 High-voltage electrical current can be fatal!
Only connect the machine to power supplies equipped with a ground fault circuit breaker (type B)!


Connections with mains cables must be protected from splash water!

Only suitably knowledgeable, qualified professional electricians may perform work on any electrical parts of the system.



 Risk of poisoning due to harmful substances at the workplace!
Eating, drinking and smoking at the workplace is not permitted. Always eat in break rooms or canteen areas!

 After completing the work, thoroughly clean yourself!


 A general inspection of the machine must be conducted before starting up the machine. Particular attention should be paid to damaged or loose components, and wear.

The machine may only be put into operation in perfect technical condition.

Adding to or modifying the machine in any way that could compromise operating safety is prohibited!


 Cleaning and maintenance may be done only by trained personnel.

Maintenance must be conducted according to the operation manual.
Do not use high pressure cleaners to clean the machine!


 Do not operate the machine in areas where there is risk of explosion or where flammable materials are present.

3 Operating




 Risk of injury from parts flung out during grinding!
Wear protective clothing and protective goggles.
Wear safety shoes!
Wear safety gloves!
Proceed with the greatest care and caution!




 Danger of injury from loud noise during grinding operation of the machine!
Always wear hearing protection when the machine is in operation!



 Risk of injury from dust formation during grinding work!
Connect an extractor unit to the machine or feed in water during the grinding process.
Wear respiratory protection!

3.1 Starting up the machine

 Observe the safety instructions in Chapter 2!
The initial start-up of the machine may be carried out only by qualified personnel.

A visual inspection of the machine must be carried out before starting up the machine.
Particular attention should be paid to damaged or loose components, wearing and filling levels.

Always use ETX diamond tools or abrasive bonding for the surface to be machined (e.g. some surfaces require wet grinding).

1. Disconnect the power plug [13, Fig. B] from the mains.
 2. Check ETX diamond tools for function and condition and replace if necessary (→ Chapter 4.3 - page 8).
 3. Check the surface to be ground and remove any protruding objects.
 4. **Either** (dry grinding)
 - Attach external dust extraction at the connection to the dust extraction [19, Fig. C].**or** (wet grinding)
 - Check the water level in the tank [4, Fig. A] and refill if necessary.
 5. Grip the guide handle [1, Fig. A/B] or secure against dropping and open the clamping lever [3, Fig. A/D].
 - ✓ The guide handle is unlocked.
 6. Set the guide handle to the desired position.
- i** Operation begins in the standard position [Fig. A].
- i** The stretched position is intended for **tool change** and for **maintenance**. The machine can then be tilted backward.

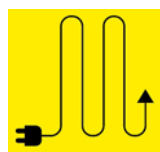
EN Floor grinding machine FGE 450

3 Operating

- i** For **transporting** the machine, the guide handle can be swivelled to the front position.
- Close the clamping lever (Fig. E).
 - ✓ The guide handle is locked.
 - Place the grinding tool on the surface to be ground.
 - Check the dust cover [8, Fig. A] for proper position and function and, if necessary, correct.
 - ➔ There should be a 3 ... 4 mm gap between the dust cover and the grinding surface.
 - Check the safety equipment for completeness and function before starting up.
 - ⚠ Risk of damage due to tensile strain exerted by the power line!
 - ⚠ The electric outlet serving as the power supply should be supported and installed according to local regulations.
 - ⚠ Risk of injury from inadvertent starting of the machine!
Before plugging in the power plug, make sure the machine is switched off.
 - Join the connecting cable (extension cable) with the proper power socket and plug the connection cable's coupling in the power plug [13, Fig. B].
 - ✓ The machine is ready for operation.

3.2 Operation

- ⚠ Risk of damage and injury from uncontrolled movement of the machine!
Before pressing the safety switch, the machine has to be held firmly by the handle of the guide bar.



- ⚠ High-voltage electrical current can be fatal! Do not allow the power line to be run over, crushed or pulled on!
The direction of work always has to be away from the socket / extractor unit.
- Hold the machine by the guide handle [1, Fig. A/B].
 - ✓ The surface to be ground can now be machined.

- Activate and secure the safety switch [12, Fig. B].
- Press the green ON switch [15, Fig. B].
 - ✓ The drive is switched on.
The tool mount rotates.
- For wet grinding, press the lever (water supply) [11, Fig. B] according to the required amount of water (empirical value).

3.3 Switching the machine off

- ⚠ Observe the safety instructions in Chapter 2.
 - ⚠ Risk of injury from a still-rotating ETX locating plate, even after the machine is switched off!
Only switch off the machine with the tools resting on the floor.
The tool mount can otherwise still rotate idly (run-on) for several seconds after being switched off or the safety switch is released.
- Release the safety switch [12, Fig. B].
 - Press the red ON switch [16, Fig. B].
 - ✓ The machine is switched off
- ⚠ Risk of injury from high voltage!
There is still residual voltage even after the machine has been switched off.
The power supply has to be disconnected to remove all voltage from the machine.

4 Maintenance

! Observe the safety instructions in Chapter 2!



! The operating and maintenance personnel responsible for the machine must ensure that no one can enter the machine's danger zone during operation or maintenance work.

! Maintenance work may only be performed by trained specialists! They must be familiar with the dangers associated with such work, protect themselves and avoid danger!

! When working on the machine (set-up, maintenance, service, repair, cleaning, etc.), the power supply of the machine has to be disconnected from the mains (disconnect power plug)!

Perform cleaning and maintenance work in accordance with the operating manual and check the safety equipment for completeness and functionality.

4.1 Customer service and spare parts

In case of customer service queries, replacement parts or repairs, please contact the manufacturer. To ensure your queries are dealt with as quickly as possible, always quote your machine data. These are located on the machine's nameplate.

4.2 Tilting the machine

! Before tilting the machine, always make sure that it is on an even, level floor surface!

1. Disconnect the power plug [13, Fig. B] from the mains.
2. If necessary, activate the lever [11, Fig. B] and empty the tank [4, Fig. A/I].
3. Swivel and lock the guide handle [1, Fig. AB] into the stretched position (→ Chapter 3.1).
4. Tilt the machine and place it on the floor (Fig. HI).

4.3 Mounting and dismantling ETX diamond tools

The consistency of the surface to be ground determines the type or composition of the tools to be used.

i All ETX diamond tools authorised for this machine [Fig. J] are removed and mounted in the same manner.

➔ Always mount 3 tools of the same type and degree of wear per ETX locating plate according to the processing specifications.

Each ETX locating plate must be equipped with the same number of tools.

1. Tilt the machine (→ Chapter 4.2).
2. Gently tap with a lump hammer to loosen the tools [27, Fig. K] from the EXT locating plate [25, Fig. K] and then remove.
3. Insert new tools into the recess [26, Fig. K] of the ETX locating plate and press firmly in the direction of the arrow (use lump hammer if necessary).

➔ All locating plates must be equipped with diamond tools of the same type and the same quantity. The heights of the diamond tools (degree of wear) must also be the same.

4. Set the machine upright, swivel and lock the guide handles in standard position (→ Chapter 3.1).

4.4 Mounting and dismantling surface mills

1. Tilt the machine (→ Chapter 4.2).
2. Fasten the three surface mills with the supplied screws (3 each, M8) to the ETX locating plates [25, Fig. K].
3. Set the machine upright, swivel and lock the guide handle in standard position (→ Chapter 3.1).

➔ All locating plates must be equipped with complete surface mills of the same type. The degree of wear on all surface mill elements must be identical.

4.5 Mounting the ETX locating plate

1. Tilt the machine (→ Chapter 4.2).
2. Push the ETX locating plate [25, Fig. K] onto the guide bolts and screw tight with the central fixing screw M8x20 [28, Fig. K].
3. Set the machine upright, swivel and lock the guide handle in standard position (→ Chapter 3.1).

4.6 Cleaning the machine

1. Tilt the machine (→ Chapter 4.2).
2. Clean the machine and tools dry with a cloth or suitable agents.
3. Set the machine upright, swivel and lock the guide handle in standard position (→ Chapter 3.1).

4.7 Checking electrical components

Only suitably knowledgeable, qualified professional electricians may perform work on any electrical parts of the system.

Risk of fire due to faulty electrical cables!

- Check the mains cable and power plug regularly for functional safety.

4.8 Final tasks

Either decommission the machine

- a. Disconnect the power plug [13, Fig. B] from the mains.
- b. If necessary, activate the lever [11, Fig. B] and empty the tank [4, Fig. A/I].

Reduce the projection if necessary:

- c. Swivel and lock the guide handle in the front position (over the drive motor) (→ Chapter 3.1).

or

- Restart the machine (→ Chapter 3.1 Č page 6).

5 Acceptance and transportation

Observe the safety instructions in Chapter 2.

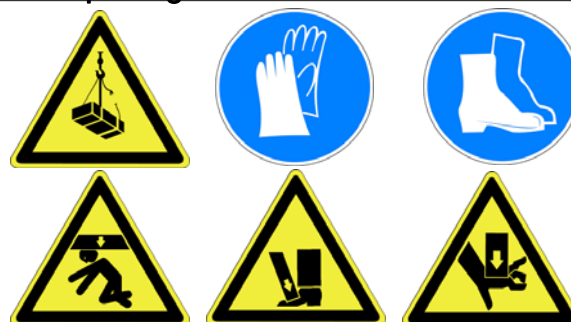
5.1 Machine acceptance

The packaged machine is supplied complete from the manufacturer.

1. Unpack machine and check the delivery slip to make sure all parts are delivered.
2. Check for any transportation damage.
3. In case of damage, contact the transport company promptly.
4. Report any problems to the manufacturer immediately.

Complaints at a later date cannot be acknowledged!

5.2 Transporting the machine



The machine may only be transported if it has been switched off and the ETX locating plate is at a standstill!

Do not lift any additional loads together with the machine!

During transport, the guide handle [1, Fig. A/B] should always be locked in position [3, Fig. A/D] with the clamping lever!

Risk of injury from heavy loads!

During transport, the specified threshold values for lifting and carrying must be observed!

Use devices for lashing and transporting the unit that have been rated to handle its full weight and dimensions. Observe weight data on packaging or in the accompanying documentation!

The crane hook or lashing gear may only be attached at the specified position [→ Fig. E]!

Wear safety shoes!
 Wear safety gloves!

Suspended loads can fall or tip over, causing serious injuries!



! Raising and lowering the load must be performed by two persons!

Do not raise loads any higher than necessary!
Do not stand under suspended loads!
Prevent the load from swinging back and forth!
Keep sufficient safety distance.

Never walk or reach beneath the load while it is being lowered.

Proceed with the greatest care and caution!

! For longer transports or longer storage, the machine must be covered to protect against soiling.

The machine can be separated into 2 parts for transport and fastened to pallets to protect it against damages. A relocation over shorter distances is possible on the transport wheels.

1. Decommission the machine (→ Chapter 4.8)

2. **Either**

a. Fasten all loose parts to the frame.

b. Move the machine to the respective location with the transport wheels [10, Fig. A/I] and deposit.

or

a. Unplug the plug connection [18, Fig. C], water connection [17, Fig. C] and if necessary the connection to the dust extraction [19, Fig. C].



! Risk of injury from tipping carriage!
The following tasks (b. to d.) must be carried out by 2 persons! One person has to hold the carriage by the guide handle [1, Fig. A/B].

b. Loosen the 4 screws [20, Fig. F] as far as possible without removing, so that the bolts [21, Fig. G] are movable.

c. Push the bolts into the open position [Fig. G].

d. Disconnect drive from the frame.

- e. If necessary (e. g. for lorry transport), screw the 4 screws [20, Fig. F] tightly and fasten all loose parts on the frame.
- f. Move drive and frame to the respective location and deposit.
- g. If necessary, lift drive and frame onto a suitable transport device (e.g. a pallette). If necessary, use suitable lashing gear (belts or ropes).

! Always secure the machine according to regulations during lifting or transport by a vehicle or suitable devices and strap down with tension belts.

6 Technical data

Designation	FGE 450
Rated voltage	400 V, 3~
Rated frequency	50/60 Hz
Rated current	10 A
Rated power	2,2 kW
Connecting cable	5 x min. 2,5 mm ² (max. 25 m) 5 x min. 4,0 mm ² (>25 m)
Tool Speed	1200 rpm
Protection rating	IP 23
Dust extraction	∅ 50
Tank capacity	about 10 litres
Dimensions (L x W x H)	ca. 800x 600 x 1050 mm
Working width	∅ 450 mm
Edge distance	min. 10 mm
Grinding wheel	3 x ∅ 180 mm
Grinding pressure	82 kg
Weight	106 kg
Noise level *)	79 dB

*) determined under standardised manufacturer operation conditions according to measuring method HARM.

7 Troubleshooting

i Only suitably knowledgeable, qualified professional technicians may perform repairs on the machine.

Malfunction	Cause	Rectification
Machine will not start.	The voltage supply has not been properly connected.	Join the connecting cable (extension cable) with the proper power socket and plug the connection cable's coupling in the power plug [13, Fig. B].
	Connecting cable is defective.	Replace connecting cable.
	Safety switch [12, Fig. B] is defective.	Replace safety switch.
When using an extraction, the suction housing sucks itself to the floor.	Distance between rubber ring and the surface to be ground is too little.	Correct the distance between rubber lip and the surface to be ground (→ Chapter 3.1 - page 6).
Grinding pattern is uneven.	Tools are loose.	Fasten tools.
	Tools are damaged or worn.	Replace tools.
Machine shuts down automatically.	Machine is overloaded. The drive overload protection (MOP) has triggered.	<ul style="list-style-type: none"> — Select other tools if needed (→ Chapter 4.3, 4.4 - page 8). — Reset: <ul style="list-style-type: none"> a. Disconnect the power plug [13, Fig. B] from the mains. b. Wait 30 seconds. c. Restart the machine (→ Chapter 3.1 Ć page 6).
	Connecting cable (extension cable) is too long.	The minimum cross section and the maximum length of the connecting cable (extension cable) → Chapter 6
	Faulty power supply.	<p>Check the connecting cable (extension cable) and replace if necessary.</p> <p>Use a different power socket if necessary.</p>
Tool mount turning in the wrong direction.	Polarity error	Replace the pin with the pole reverser [14, Fig. B] (use a screwdriver).
		Use a different power socket if necessary.

8 Declaration of Conformity

TYROLIT Hydrostress AG
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CH-8330 Pfäffikon ZH
Switzerland

We hereby declare that the machine

FGE 450

complies with the provisions described in

- **Directive 2006/42/EG**
Machine
- **Directive 2014/30/EU**
Electromagnetic Compatibility

The following harmonised standards apply:

- **ISO 12100**
Safety of Machinery
- **EN 60204-1**
Electrical Equipment of Machines
- **EN 61000-6-2/EN 61000-6-4**
Electromagnetic Compatibility

This declaration is no longer valid if the machine is modified or retrofitted without our prior consent and approval.

Pfäffikon, den 16.1.2018

Pascal Schmid
Development manager and responsible for the
technical documentation



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