

# USER MANUAL

TOOLGRINDER  
FME-TG-01

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## 1. GENERAL INFORMATION

This user manual.

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This user manual has been compiled in English by:

### **FEED MILL SERVICES & EQUIPMENT BV**

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### 1.1 Machinery Information

This user manual belongs to the machine of the type as indicated on the cover page.

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This toolgrinder, FME-TG-01, is produced by:

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Date of issue at Feed Mill Services & Equipment BV: July 2018

## 1.2 IIB-Marking

The toolgrinder has been constructed and implemented by Feed Mill Services & Equipment BV according to the relevant European directives on safety and health. This means that the machine complies with the IIB-marking. The Declaration of Conformity (included in this manual) indicates the guidelines applicable to this machine.

## 2. INTRODUCTION

This user manual is a support to allow you to handle your machine. You should read this documentation completely. For additional information we ask you to contact the Feed Mill Services & Equipment BV.

This user manual is part of the delivery and must remain in good hands while using the countersink machine. There must be a copy available for those working with this machine. When the machine is surrendered, it is intended that this user manual is also transferred.

Treat this instruction carefully. It is not allowed to change or delete pages. Feed Mill Services & Equipment BV reserves the right to replace parts of this manual, in the context of the improvement of the product, at any time without directly providing a new edition.

### 2.1 Staff

Certain operations can only be operated or made by qualified or trained staff. For the description of the qualification level the following standard features are used:

- The qualified staff must have sufficiently technical knowledge and/or work experience to be able to recognize and prevent potential danger (engineers and technicians).
- The staff must be adequately trained and/or controlled by the qualified staff to identify and prevent the potential danger (the operated and maintenance staff). They should have the following qualifications:
  1. They must be trained to operate the product safely. They must be capable to operate the equipment according to standard safety regulations.
  2. They must maintain the product and use the safety devices as described in this manual.

The customer and/or user is/are required to ensure, in particular, that the machine uses:

- that the staff has read and understood this manual.
- that the staff follows the instructions as given in this manual.



## 2.2 Individual Means Of Protection

The staff, mentioned in the previous paragraph, must wear protective clothing which is necessary for the employment of the machine.



Safety shoes are required. The need for wearing hearing protection, eye protection and a helmet can be defined by the user.



It isn't allowed to wear clothing that can get caught in moving machine parts.

## 2.3 Workplace

If workplace is intended and requires a space of at least 0,5 metre around the entire machine. From here, all operations can be performed.

## 2.4 General Safety Instructions

The following provisions and recommendations are primarily based on observing the rules of the safety regulations mentioned in this manual.

Feed Mill Services & Equipment BV isn't responsible for possible damage to persons or goods related to ignoring of the safety regulations and instructions in this manual.



Transportation, installation, operation and maintenance of the machine can only be performed by the staff which meets the conditions described in the previous section.

The toolgrinder is designed and constructed so that it can be safely used and maintained. This applies to the application, the circumstances and the rules as described in this manual. Reading this manual and following the instructions is therefore **necessary** for anyone working with or to this machine.

Additional safety measures may be prescribed by the company or country in which the machine is in use. This concerns in particular working conditions. This manual describes **not** how to comply, however, the necessary information about the machine is given.

A distinction is made in this manual between normal use and other work on the machine. The reason for this is that, especially regarding safety, the service personnel are subject to different requirements than to operators.

## 2.5 Operational Restrictions

Attention is hereby drawn to the following applications, for which the machine **not** suitable:

- Processing of products other than those prescribed
- For functions other than those defined

Consequences regarding the use of the toolgrinder in any application is not the responsibility of Feed Mill Services & Equipment BV in any form whatsoever.

All claims for damage caused by unintended use are not permitted. Here the owner/responsible is responsible for itself.

## 2.6 Protection Of The Environment

No special hazards are associated with the use, maintenance and demolition of this machine, taking into account the prescribed (safety) measures.

The machine itself does not contain any substances that may pose a danger to individuals.

## 2.7 Calamities

By calamities is meant: fire, flood and the like.

Measures must be taken in an emergency situation that don't endanger persons or goods. The usual extinguishing agents can be used.

In the event of fire, care must be taken to ensure that the galvanizing machine isn't connected to the electrical circuit when taking measures.

The machine must be de-energized when there is damage to the equipment. Keep moisture away from live parts. Moisture can lead to short circuit.

Repairs and work on electrical installations may only be carried out by a qualified electrician.

Ensure that hot surfaces can't be touched. Touching hot surfaces can lead to severe burns.

Improper use of environmentally-friendly and hazardous substances can cause serious damage to the environment.

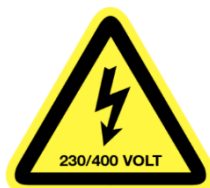
## 2.8 Marking

The toolgrinder is equipped with a type plate with a manufacturer-known and unique type number. The type plate gives various information for example about the year of construction and the manufacturer's details.



Figure 2.8.1  
Example of a type plate

If the following warning sticker is indicated, attention must be paid to electrical danger during repair or maintenance.



For indications on the standard parts see their own specifications.

### Warnings:

- Read the user manual carefully before turning on the galvanizing machine.
- When products fall during import, they must be removed as soon as possible. Products that remain can be an obstacle to a subsequent import cycle.

Unreadable labels, symbols, etc. can lead to danger. They can become dirty or unreadable over time. Therefore:

- Labels, symbols, etc. must be clearly legible.
- Damaged labels, symbols, etc. must be replaced. For this we advise you to contact Feed Mill Services & Equipment BV.



## 2.9 Transport

Before shipment each machine has been examined and checked thoroughly. Check at reception of the goods the integrity and the contents of the package to ensure that nothing has been damaged during the transport. Check also if the delivery corresponds to the order.

When unloading should carefully be made to the equipment.

Report any defects or damage immediately to Feed Mill Services & Equipment BV and to the carrier responsible for the damage during the transport.

An objection to any defects or damages must be made within 10 days after receipt of the goods.

### 3. SPECIFICATIONS

#### 3.1 Technical Data

Machine dimensions

Length:	450 mm
Width:	350 mm
Height:	380 mm

Machine weight: ±45 kg

Grinding wheel

Diameter:	∅100 mm
Thickness:	50 mm
Boring:	∅20 mm
Number of revolutions:	5200 rpm

Motor data

Power:	0,37 kW ~ 0,5 PK
Number of revolutions:	2800 rpm
Voltage:	230 V – 50 Hz

Collet chuck: ∅1.5 till ∅30 mm

Taper Range: adjustable from 0 - 180 degrees

Negative corner: adjustable from 0 - 52 degrees

Angle of inclination: adjustable from 0 - 44 degrees

Long displacement of the cutter holder: 140 mm

Long displacement of the cutter holder: 18 mm  
(in micro adjustment)

Long displacement of the main spindle: 6 mm  
(in micro adjustment)



*Figure 3.1.1*  
Toolgrinder FME-TG-01



*Figure 3.1.2*  
Included Accessories

## 3.2 Safety Instructions

- The machine is intended to be used by well trained, experienced personnel.
- Keep all guards in place and ensure that they are intact.
- Remove the wrench and adjusting tools after adjustment. Check this before you let the machine run!
- Make sure the machine can't be switched on accidentally. Switch it OFF if, for example, you execute a (new, different, etc.) turning tool, cutter, blade, etc.
- Never force it! Uses the turning tools, drills, cutters, etc. for which they are intended.
- Maintain the cutting and sawing tools well, keep them sharp, this yields better results. Follow the recommendations for lubrication and the changing of chisels, cutters, drills, etc.
- Before you adjust anything or before you carry out maintenance: shut off power!
- Check regularly that no parts are damaged. Check the correct alignment, check for breakage, proper effort and everything that may adversely affect operation. Replace defective parts or protective covers.
- Never walk away when the machine is running: always switch off the power!
- Keep the workplace clean. Making a mess requires accidents.
- Don't use electrical equipment in a hazardous location. Never expose to moisture, water or rain. Provide good lighting.
- Wear safety clothing. Pay attention! Loose clothing, ties, gloves, rings etc. can be grabbed by the rotating machine. Wear shoes with non-slip soles. Stop long hair under your clothes or wear a hairnet. Never wear gloves!
- Wear safety goggles or integral mask. Ordinary glasses or contact lenses do not protect your eyes!
- Never reach over the machine. Watch your balance, make sure you stand firmly.
- Hands away when the parts are rotating when the machine is running.
- Never try to adjust anything when the machine is running.
- Follow all warnings on the machine. Failure to follow these may result in serious injury.

## 4. INSTALLATION AND USE

### 4.1 General

Before starting the machine, ensure that all lubrication points are lubricated and the power supply is correct. Nor should anything prevent the machine from working and all safety regulations are met.

After an operation, always remove the loose cutting and all the chips with a brush (not with the hands). It is recommended to occasionally rub the bare metal surfaces with light machine oil to prevent corrosion.

### 4.2 Operation Instructions

Grinding of the edges:

- Adjust the grinding length of the cutter. Tighten the cutter in the collet. The protruding length of the cutter should be longer than the needed grinding length. Adjust the cutter holder in order to align the "0" scale line on the plate with the axial scale line on the cutter holder's spindle. Meanwhile adjust the cutter holder's axial position on the cutter holder's spindle, in order to let the outer circular face and the front end of the cutter are 1-2 mm away from the front end of the grinding wheel. Lock and rotate the adjusting screw and let the cutter protruding to the needed length.
- Grinding the front face of the cutter. By adjusting the cutter holder and rotating the collet handle sleeve, the cutter holder could be moved toward the grinding wheel. Thus it could grind the front surface of the cutter. When first grinding it, the front face of the cutter should be 0.03 mm higher than the centre of the grinding wheel.
- The grinding of the taper angle  $2^\circ$  of the cutter. Set the index pin handle in the short slot of the dovetail block. Let the index plate could rotate freely. On one hand, feed it slightly by the handle sleeve; on the other hand continue to rotate the knurling nut clockwise. Thus the taper angle  $2^\circ$  could be grinded.
- Grinding the relief angle of the cutter. We need to rotate the swivel base to certain angle in order to grind the relief angle and the secondary relief angle of the cutter. Take care not to damage the main cutting edge. It should be 0.01 mm (0.0004") away from the main cutting edge.
- Adjust the eccentric centre of the eccentric cutter. Adjust the leading screw rod and align the scale.
- We need to grind the back of the cutter after grinding the relief angle. The method is to let the radius of the back of cutter is a little smaller than the radius of the main cutting edge. The radius should be decided according to the size of the cutter.
- Grinding the back of the cutter. First let the axial line of the cutter holder to be vertical to the grinding wheel's spindle. Thus let index plate and the cutter could rotate by  $180^\circ$  repeatedly. Feeding according to the scale indication on the handle, we could avoid damaging the main cutting edge when we grind the needed radius of the back of the cutter.
- In addition, the cutter could be rotated by any angle to set the position again.

## 5. MAINTENANCE AND REPAIR

### 5.1 Introduction

The appropriate maintenance is important for a long life of the countersink machine and its components, under good and functional conditions. It also guarantees the necessary long-term reliability.

### 5.2 Safety During Maintenance

The maintenance work of the countersink machine requires a few rules of conduct, namely:

- All maintenance work must be carried out by qualified personnel (see section 2.1).
- Maintenance work must be performed when the equipment is energized. The whole of the operational and maintenance staff must adhere strictly to the rules for the prevention of accidents of the equipment.



- Allow to cool hot surfaces
- Always wear safety shoes, protective clothing and other necessary equipment. During maintenance work do not wear jewellery or loose clothing.



- Use only original parts for proper operation of the equipment.
- Do not use abrasive or corrosive materials or solvents when cleaning the toolgrinder. Do not use any cleaning agents that affect the parts and/or cause corrosion.



### **5.3 Repairs**

During the warranty period, repairs can only be carried out under the manufacturer's direction. Each repair must be kept in a machine log. All parts that are replaced must meet the specifications of the original components at least.

### **5.4 Storage**

There are no special requirements for storage, a cool and dry space is most suitable. After a long storage, the machine must be inspected by a technician for commissioning.

If the machine is brought from a cold in a warm space, it can occur during condensation (also internally in electrical components).

Direct switching can cause damage to the machine and danger to the operator. Let the machine first acclimatize.

## 6. EC-DECLARATION OF CONFORMITY

This Declaration of conformity and the CE marking on the type plate are valid for the toolgrinder which is part of the Feed Mill Services & Equipment BV delivery. When this toolgrinder is built into a larger system, the manufacturer of this system (this can also be the operator) must carry out the conformity review process for this large system according to machinery Directive 2006/42/EC, the Declaration of Conformity and provide the system with the CE marking.



We

Feed Mill Services & Equipment BV  
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The Netherlands

Declaring that toolgrinder FME-TG-01,

In accordance with the EU Directives:  
- "Machines" 2006/42/EC

Is designed and manufactured to the following standards:

- NEN-EN-ISO 12100-1/-2      Safety of Machinery – General Design Principles, Part 1 and 2
- 73 / 23 / EEC              Low-voltage directive as adapted in 93/68 / EEC
- 89 / 336 / EEC              EMC directive as adapted in 93/68 / EEC

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