



SFM 00 - L	SFM 00 - L-DZ	SFM 00 - L-Z
SFM 01 - L	SFM 01 - L-DZ	SFM 01 - L-Z
SFM 03 - L	SFM 03 - L-DZ	SFM 03 - L-Z
SFM 04 - L	SFM 04 - L-DZ	SFM 04 - L-Z

**EMUGE**

**Quick-change tap holder SFM - L / - L-DZ / - L-Z**

**Operating instruction**

**Contents:**

<b>1</b>	<b>Application range, safety instructions and technical data .....</b>	<b>4</b>
1.1	Application range, determined use, specifications .....	4
1.2	Safety instructions and hints .....	6
1.3	Proprietary rights .....	6
1.4	Dimensions and technical data .....	7
<b>2</b>	<b>Putting the quick-change tap holders into operation .....</b>	<b>8</b>
2.1	Unpacking.....	8
2.2	First putting into operation .....	8
2.3	Re-putting into operation.....	9
2.4	Application and choice of different quick-change adapters.....	10
2.5	Insert tap/cold-forming tap .....	12
2.5.1	Quick-change adapters types EM, EM-U, EM-L, EM-UL .....	12
2.5.2	Quick-change adapters type EM-E-Lock .....	13
2.6	Insert quick-change adapter .....	14
2.7	Remove quick-change adapter .....	15
2.8	Remove tap/cold-forming tap.....	16
<b>3</b>	<b>Maintenance.....</b>	<b>17</b>
3.1	Maintenance schedule .....	17
3.2	External cleaning .....	17
<b>4</b>	<b>Storage when not in use .....</b>	<b>17</b>

## Warnings, symbols

In this operating instruction the following symbols are used:



### Attention

Marks special instructions, rules and prohibitions, which are important in order to avoid any damage.

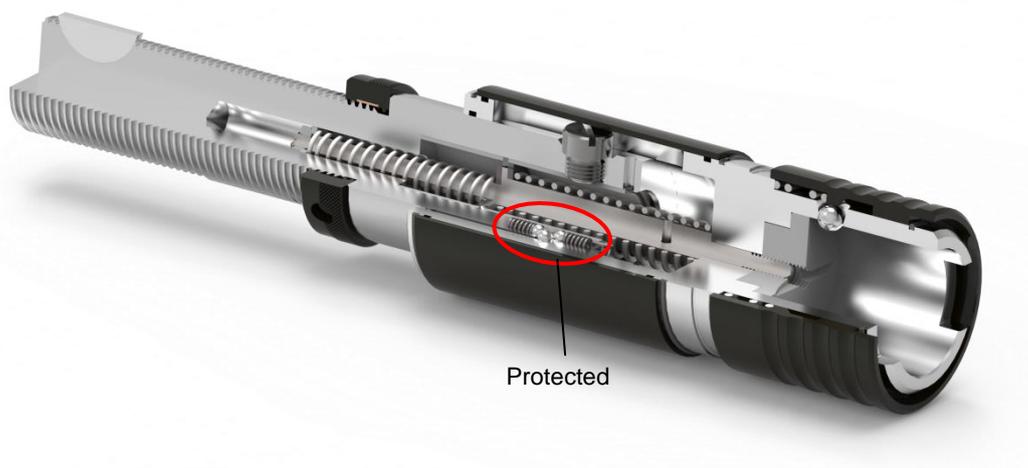
► Please observe these instructions!



### Note

Marks application instructions and other useful information.

Sectional view:



Quick-change adapter SFM - L

## 1 Application range, safety instructions and technical data

### 1.1 Application range, determined use, specifications

The quick-change tap holders types SFM-L, SFM-L-DZ and SFM-L-Z are mainly used on multi-spindle machines and transfer lines. Owing to their thin and short design, they allow to machine drill holes with small distance.

Length compensation:

- a) The quick-change tap holders type **SFM-L** are equipped with a **length compensation on compression**.
- b) The quick-change tap holders type **SFM-L-DZ** are equipped with a **length compensation on compression and tension**.
- c) The quick-change tap holders type **SFM-L-Z** are equipped with a **length compensation on tension**.

For all three quick-change tap holder sizes the total overhang length of the length compensation, depending on the size of quick-change tap holder, is 20, 30 or 40 mm. The length should be bigger than the thread depth to be cut.

Quick-change tap holders with **length compensation on compression** are primarily used in combination with quick-change adapters with an overload clutch. If the overload clutch is activated, the length compensation must compensate discrepancies between the movement of tap/cold-forming tap and feed unit. The length compensation on compression is also necessary in cases where the feed per revolution exceeds the thread pitch.

**Length compensation on tension** is necessary in situations where:

- Spindle feed per revolution is smaller than the thread pitch
- Feed is irregular, e.g. when operated by hand
- Possible afterrun of the machine spindle at the moment of reversal needs to be compensated

The quick-change tap holder types SFM-L and SFM-L-DZ are equipped with a pressure point mechanism.

The pressure point mechanism guarantees the safe cutting of the tap/cold-forming tap. Only when the axial force exceeds the allowed cutting force, the pressure point mechanism sets the length compensation movement free. ⇒ Repeatable and regular thread depths are reached.

---

Normally the quick-change tap holders are equipped with one of the following shanks:

- Morse taper shank acc. to DIN 228 B (ASME B 5.10)
- Cylindrical shank acc. to DIN 6327 or to ASME B 5.11

The quick-change tap holders are suited for cutting right- and left-hand threads and can be used on machines with reverse rotation.

Table 1, page 7, indicates the cutting range of each type.

Locking of the tap/cold-forming tap or die is executed via quick-change adapters type EM. The quick-change adapters must be chosen according to the size and the used tool, please see chapter 2.5, page 12.

The quick-change tap holders types SFM-L, SFM-L-Z, SFM-L-DZ are **not** suited for internal coolant-lubricant supply.

**The non-determined use exempts the manufacturer from any liability!**

## 1.2 Safety instructions and hints

For all works, i.e. putting into operation, production or maintenance, please observe the details given in the operating instruction.

All relevant safety regulations as well as local instructions are to be observed when working with the quick-change tap holders.

Below please find some basic rules:



### Attention



- ▶ Please wear gloves during tool change to avoid injury.
- ▶ Basically change the tool yourself to avoid the sudden start of the spindle caused by mis-operating.



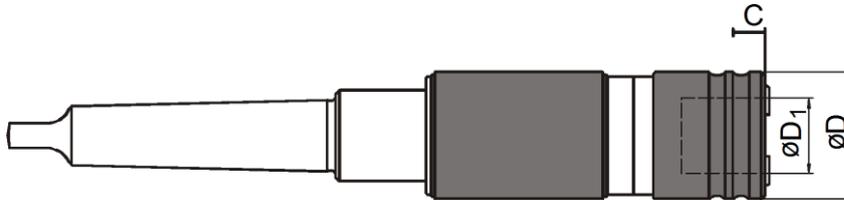
- ▶ Hold the tool when loosening the tool clamping to avoid it falling down and damaging the tool and the work piece.
- ▶ Keep the tool adaptation clean.
- ▶ There are maximum values for cutting speeds and feeds for every kind of machining. Please observe such data.
- ▶ Please observe the maximum tool dimensions.
- ▶ Furthermore, the instructions of the tool manufacturers are valid!

## 1.3 Proprietary rights

The entire contents of these operating instructions are subject to German proprietary rights legislation.

Any form of multiplication, processing, broadcasting, passing on to third parties - also in the form of extracts - and any kind of use outside the boundaries of proprietary rights requires the written consent of EMUGE GmbH&Co.KG.

## 1.4 Dimensions and technical data



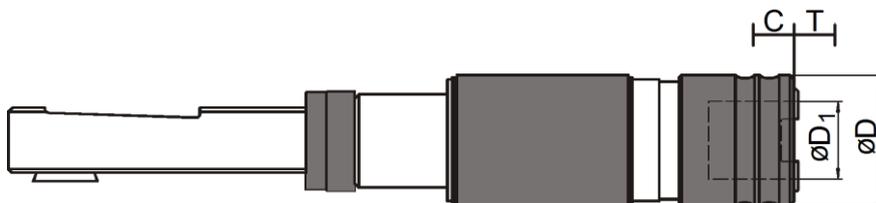
Picture 1: Dimensions of the quick-change tap holders SFM-L



Picture 2: Dimensions of the quick-change tap holders SFM-L-Z

C = Length compensation  
on compression

T = Length compensation  
on tension



Picture 3: Dimensions of the quick-change tap holders SFM-L-DZ

Table 1: Technical data of the quick-change tap holders SFM-L, SFM-L-Z, SFM-L-DZ

Type	Cutting range	Quick-change adapter size type EM	ØD [mm]	ØD <sub>1</sub> [mm]
SFM 00 - L ...	M1 – M10 (Nr. 0 – $\frac{3}{8}$ )	00	23	13
SFM 01 - L ...	M3 – M14 (Nr. 4 – $\frac{9}{16}$ )	01	32	19
SFM 03 - L ...	M4,5 – M24 (Nr. 10 – 1")	03	50	31
SFM 04 - L ...	M14 – M36 ( $\frac{9}{16}$ – $1\frac{3}{8}$ )	04	72	48

Further outer dimensions of the single types depend on the required shank. The details for the length compensation are defined by the type and the size of the quick-change tap holder. Please refer to the EMUGE main catalogue for these dimensions or refer to our local representative.

## 2 Putting the quick-change tap holders into operation

### 2.1 Unpacking

- Take the quick-change tap holder from the packing
- Clean the quick-change tap holder with a duster to remove any conservation oil



#### Note

- ▶ Do not use any aggressive solvents.
- ▶ Do not use fibrous materials i.e. steel wool.

✓ The quick-change tap holder is now ready for operation.

### 2.2 First putting into operation

The quick-change tap holder is inserted into the machine manually or, if provided, by the tool exchanger.



#### Attention

- ▶ The tool exchange must not be executed while the machine spindle rotates!
- ▶ Only use tool shanks and tightening bolts suitable for the specific machine.
- ▶ Make sure the tool is correctly clamped.  
Otherwise: Risk of accident by spinning of the tool!
- ▶ Please see also the indications in the operating instruction of your machine tool

### 2.3 Re-putting into operation

If the quick-change tap holder is back into operation as described see chapter 4, page 17, please go through the following steps:

1. Clean the quick-change tap holder with a duster to remove any conservation oil.



#### Note

- ▶ Do not use any aggressive solvents.
- ▶ Do not use fibrous materials i.e. steel wool.

2. Check the function of the length compensation by:
  - **SFM-L:**  
Compress tap holder at the front face  
→ when released, the tap holder must return to its initial position
  - **SFM-L-Z:**  
Pull apart the tap holder at the grip sleeve  
→ when released, the tap holder must return to its initial position
  - **SFM-L-DZ:**  
Compress the tap holder  
→ when released, the tap holder must return to its initial position  
Pull apart the tap holder  
→ when released, the tap holder must return to its initial position
3. Insert the quick-change tap holder into the machine as described in chapter 2.2, page 8.

## 2.4 Application and choice of different quick-change adapters

The tap/cold-forming tap or die adaptation is executed via quick-change adapters. The following quick-change adapters are available:

Typ	Beschreibung	Empfohlene Einsatzgebiete
EM.. <sup>1</sup>	Rigid type	Through hole threads
EM..-E-Lock	Rigid type, locking of the tool is secured by form-fitting	Clamping of carbide tools High coolant-lubricant pressures High-speed machining
EM..-U <sup>2</sup>	With adjustable overload clutch	Blind hole threads
EM..-L	With length adjustment	On multi-spindle heads and transfer lines
EM..-UL <sup>2</sup>	With adjustable overload clutch and length adjustment	Blind hole threads on multi-spindle heads
EM..-Z	Rigid type with adaptation for collets according to DIN ISO 15488	Clamping of carbide tools High coolant-lubricant pressures High-speed machining
EM..L/ER/IKZ	With length adjustment and adaptation for collets according to DIN ISO 15488	On multi-spindle heads and transfer lines Clamping of carbide tools High coolant-lubricant pressures High-speed machining
EM..-PGR	Rigid type with adaptation for collets according to type PGR (GB)	Clamping of carbide tools High coolant-lubricant pressures High-speed machining
EM..-SE	Rigid type with adaptation for dies according to DIN 223	External threads
EM..-R	Reducing adaptation for all EM types	For the extension of the clamping range downwards

<sup>1</sup> Main application range for the quick-change tap holders type SFM - L-Z

<sup>2</sup> Main application range for the quick-change adapters type SFM - L and SFM - L-DZ

The adaptation of the tap/cold-forming tap is carried out via a quick-change ball clamping system, except for EM-Z, EM-L/ER/IKZ and EM/PGR. The torque arising during the thread producing operation is transferred via the square integrated in the quick-change adapter. The adaptation of the dies is executed via mechanical locking.

All quick-change adapters are suited for cutting right- and left-hand threads.

The quick-change adapter sizes for the appropriate quick-change tap holder may be taken from table 1, page 7. The clamping diameter is defined by the tool used. Each diameter requires a separate quick-change adapter.

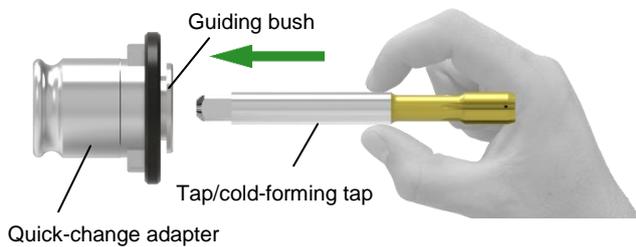
## 2.5 Insert tap/cold-forming tap

### 2.5.1 Quick-change adapters types EM, EM-U, EM-L, EM-UL

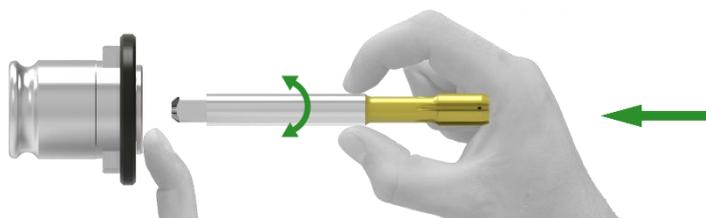


#### Attention

- ▶ Choose the appropriate quick-change adapter for the used tap/cold-forming tap!
- ▶ The exchange of the tap/cold-forming tap must not be executed while the machine spindle rotates!



1. Press guiding bush back and hold it.

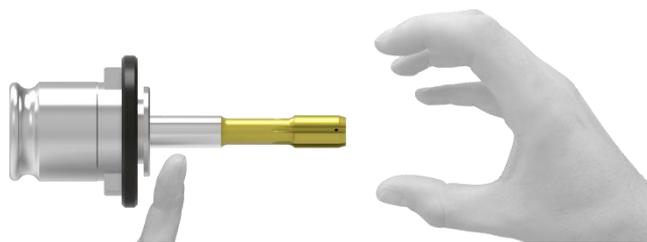


2. Push tap/cold-forming tap into the guiding bush.



#### Note

Bring the square into the correct position by turning the tap/cold-forming tap.



3. Let go of the guiding bush.



#### Note

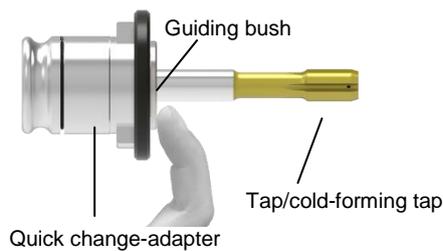
For the instruction of EM-E-Lock, please see chapter 2.5.2, page 13.

For other quick-change adapters please observe the details given in the appropriate operating instruction.

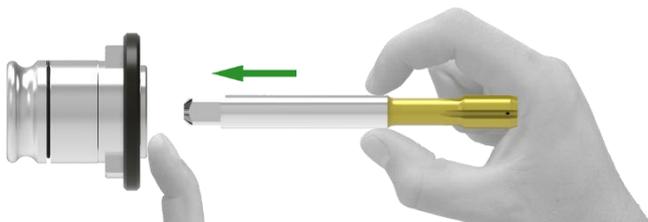
## 2.5.2 Quick-change adapters type EM-E-Lock

### Attention

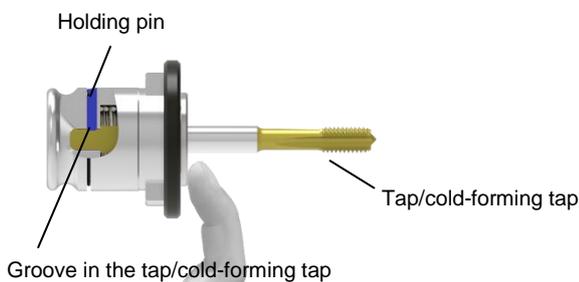
- ▶ Choose the appropriate quick-change adapter for the used tap/cold-forming tap!
- ▶ The tap/cold-forming tap must be provided with a corresponding groove in the square face!
- ▶ The tool may only be changed if the quick-change adapter is **not** fixed in the quick-change tap holder
- ▶ The exchange of the tap/cold-forming tap must not be executed while the machine spindle rotates!
- ▶ If quick-change adapter and tap/cold-forming tap are fixed in the quick-change tap holder, the holding pin in the quick-change adapter stops the tap/cold-forming tap from being taken out.



1. Press guiding bush back and hold it.

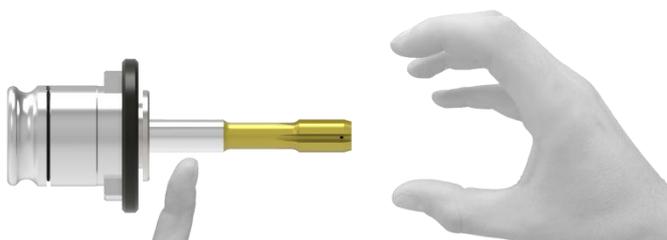


2. Push tap/cold-forming tap into the guiding bush.



### Attention

Position of the holding pin and of the groove in the tool must match!



3. Let go of guiding bush.

## 2.6 Insert quick-change adapter



### Attention

▶ The quick-change adapter must not be changed while the machine spindle rotates!

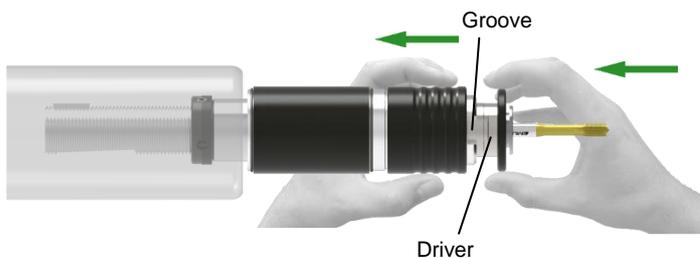


1. Fix tap holder shank

i.e. by adaptation of the quick-change tap holder in the machine spindle.



2. Push grip sleeve in direction of the shank and hold it.



3. Push in quick-change adapter.



### Attention

Watch position of the driver and the groove.



4. Let go of grip sleeve.

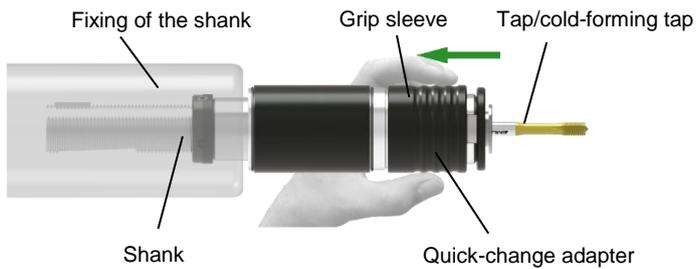
Check, whether the grip sleeve is in front position.

## 2.7 Remove quick-change adapter



### Attention

► The quick-change adapter must not be changed while the machine spindle rotates!



1. Push grip sleeve in direction of the shank and hold it.



2. Remove quick-change adapter.



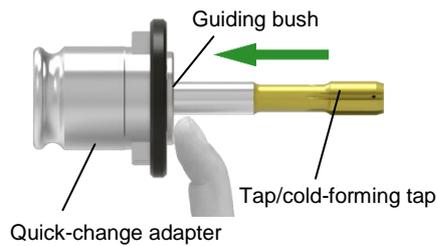
3. Let go of grip sleeve.

## 2.8 Remove tap/cold-forming tap



### Attention

▶ The tap/cold-forming tap must not be changed while the machine spindle rotates!



1. Press guiding bush back and hold it.



2. Remove tap/cold-forming tap



3. Let go of guiding bush



### Note

This instruction is valid for all quick-change adapters type:

EM, EM-L and EM-E-Lock

For other quick-change adapters, please observe the details given in the appropriate operating instruction.

#### **EM-E-Lock:**

The tap/cold-forming tap may only be released if the quick-change adapter is **not** fixed in the quick-change tap holder.

### 3 Maintenance

#### 3.1 Maintenance schedule

What?	When?	Who?
External cleaning	Periodically, depending on the degree of dirt.	Operator

#### 3.2 External cleaning

Clean the quick-change tap holder at periodic intervals with a duster depending on how dirty the quick-change tap holder is.



#### Note

- ▶ Do not use any aggressive solvents.
- ▶ Do not use fibrous materials i.e. steel wool.

### 4 Storage when not in use

If the quick-change tap holder is taken out of service, please go through the following steps:

1. Clean the quick-change tap holder with a duster, see chapter 3.2
2. Spray the quick-change tap holder with a preservation oil to avoid rusting and to preserve the easy running of the quick-change tap holder.



#### Attention

Before storage all evidence of coolant-lubricant and machining residues must be removed!

**Notes:**

---

**Notes:**

**EMUGE quick-change adapter SFM - L / SFM - L-DZ / SFM - L-Z**  
**Operating instruction**

Article number: **ZB10027.GB** 10575225

Original in German, Edition: 3, last change: 01.02.2017, change stage: 2

Please keep the operating instruction for future use!

**EMUGE-Werk Richard Glimpel GmbH & Co. KG**

Fabrik für Präzisionswerkzeuge

🏠 Nürnberger Straße 96-100  
91207 Lauf  
GERMANY

☎ +49 9123 186-0

📠 +49 9123 186-230

✉ [info@emuge-franken.com](mailto:info@emuge-franken.com)

🌐 [www.emuge-franken.com](http://www.emuge-franken.com)