

EM 00
EM 01
EM 03
EM 04
EM 05



EM 01 / IKZ
EM 03 / IKZ
EM 04 / IKZ
EM 05 / IKZ



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Warning signs, symbols

This operating instruction uses the following symbols:

**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 EM



Quick-change adapter EM / IKZ

1 Application range, safety instructions and technical data

1.1 Application range, determined use

Application of the quick-change adapters:

- Adaptation of taps/cold-forming taps according to: DIN or ISO or ASME dimensions
- These adapters are designed to be used in all quick-change tap holders, EMUGE types:

KSN	KSN/HD		
SFM	SFM/NP	SFM-L	SFM-L-DZ

as well as compatible quick-change holders of other manufactures.

The size of the adapter to be used is defined by the size of quick-change tap holder.

- Main application range: Production of through hole threads
- Production of right-hand and left-hand threads
- All machining directions



Note

There are special adapters available in case of problems with chip locking between adapter and quick-change tap holder during overhead-machining.

The adaptation of the tap/cold-forming tap is executed via a quick-change-ball clamping system, the tool is centered at the shank. The torque arising during the thread producing operation is transferred via the square in the quick-change adapter.

The required clamping diameter is determined by the used tap/cold-forming tap. Owing to the quick-change principle each shank diameter requires a separate adapter.

If you work with internal coolant- lubricant supply through the spindle, the following adapter types are available:

- **Type EM:**
Use of taps/cold-forming taps **with** internal coolant-lubricant supply.
- **Type EM/IKZ:**
Use of taps/cold-forming taps **without** internal coolant-lubricant supply. The coolant is guided along the tool shank through channels.

Valid for both versions:

The maximum coolant-lubricant pressure is determined by the used quick-change tap holder, but not more than 50 bar.

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 and maintenance, please observe the details given in the operating instructions.

All relevant safety regulations as well as local instructions are to be observed when working with the collet 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.
- ▶ 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!

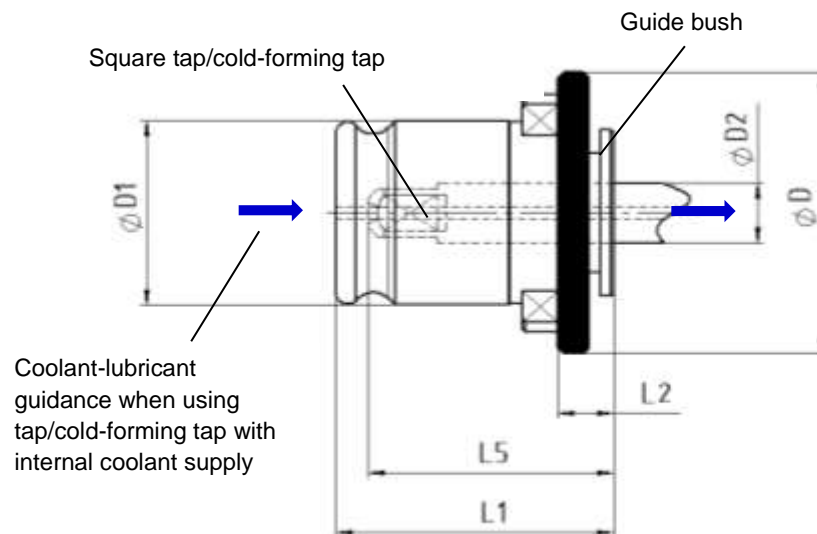
1.3 Proprietary rights

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

1.4.1 Type EM



Picture 1: Dimensions of the quick-change adapters EM

Table 1: Technical data of the quick-change adapters EM

Type	Cutting range	Adapter size ¹	ØD [mm]	ØD ₁ [mm]	ØD ₂ ² [mm]	L ₁ [mm]	L ₂ [mm]	L ₅ ³ [mm]	Tool type
EM 00	M1-M10 M1-M9 Nr.0- ¹ / ₄	00	23	13	2,5-7 2,24-7,1 0,141-0,255 inch	27	7	20-23 19-23 20-23,5	DIN ISO ASME
EM 01	M3-M14 M3,5-M14 Nr.0- ⁹ / ₁₆	01	30	19	3,5-11 3,55-11,2 0,141-0,437 inch	29	7	23-27 22-27 22-28,5	DIN ISO ASME
EM 03	M4,5-M24 M6-M24 ¹ / ₄ - ⁷ / ₈	03	48	31	6-18 6,3-18 0,255-0,700 inch	45	10	37-44 37-43 29,5-45	DIN ISO ASME
EM 04	M14-M36 M13-M36 ⁵ / ₈ -1 ³ / ₈	04	70	48	11-28 11,2-28 0,480-1,125 inch	67	11	53-66 53-66 31,5-67	DIN ISO ASME
EM 05	M22-M48 M24-M48 ⁷ / ₈ -1 ⁷ / ₈	05	92	60	18-36 18-31,5 0,697-1,519 inch	111	48	94-109 95-105 35,5-74	DIN ISO ASME

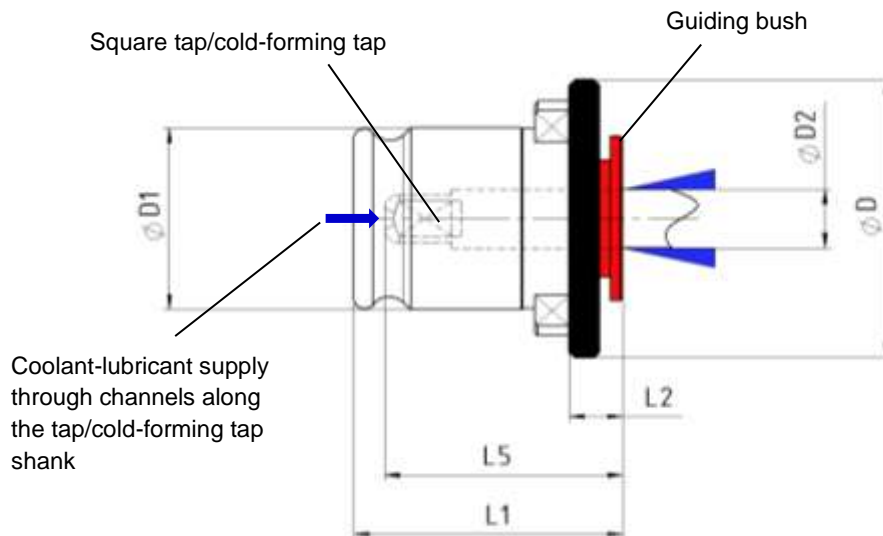
For further dimensions please refer to our EMUGE main catalogue.

¹ Size is defined by the used quick-change tap holder

² Clamping diameter is defined by the required tap/cold-forming tap.

³ Plug-in depth is defined by the used tap/cold-forming tap.

1.4.2 Type EM/IKZ



Picture 2: Dimensions of the quick-change adapters EM/IKZ

Table 2: Technical data of the quick-change adapters EM/IKZ

Type	Cutting range	Adapter size ⁴	ØD [mm]	ØD ₁ [mm]	ØD ₂ ⁵ [mm]	L ₁ [mm]	L ₂ [mm]	L ₅ ⁶ [mm]	Tool type
EM01/IKZ	M3-M14 Nr.0- ⁹ / ₁₆	01	30	19	3,5-11 0,141-0,437 inch	29	7	23-27 22-28,5	DIN ASME
EM03/IKZ	M4,5-M24 ¹ / ₄ - ⁷ / ₈	03	48	31	6-18 0,255-0,700 inch	45	10	37-44 29,5-45	DIN ASME
EM04/IKZ	M14-M36 ⁵ / ₈ -1 ³ / ₈	04	70	48	11-28 0,480-1,125 inch	67	11	53-66 31,5-67	DIN ASME
EM05/IKZ	M22-M48 ⁷ / ₈ -1 ⁷ / ₈	05	92	60	18-36 0,697-1,519 inch	111	48	94-109 35,5-74	DIN ASME

For further dimensions please refer to our EMUGE main catalogue.

⁴ Size is defined by the used quick-change tap holder

⁵ Clamping diameter is defined by the required tap/cold-forming tap.

⁶ Plug-in depth is defined by the tap/cold-forming tap used.

2 Putting the quick-change adapters into operation

2.1 Unpacking

- Take the quick-change adapter from the plastic case.
- Clean the quick-change adapter with a duster to remove any conservation oil.

! Note

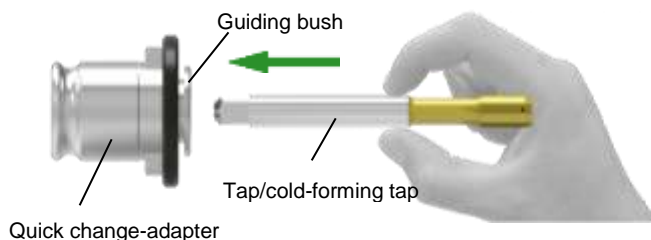
- ▶ Do not use any aggressive solvents.
- ▶ Do not use fibrous materials i.e. steel wool.

✓ The quick-change adapter is now ready for operation

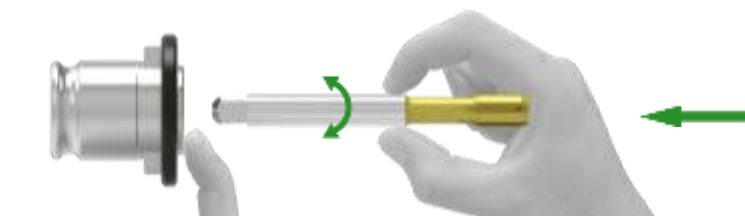
2.2 Insert tap/cold-forming tap

! Attention

- ▶ Choose the appropriate quick-change adapter for the required 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

Insert the quick-change adapter into the quick-change tap holder as described in the operating instruction of the used tap holder.

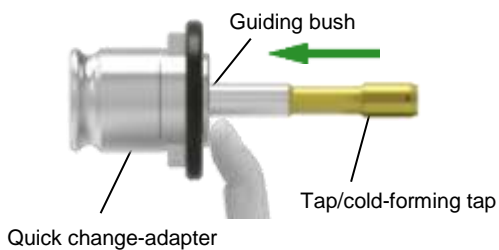
Note

The tap/cold-forming tap may also be changed according to the above mentioned method if the quick-change adapter is fixed in the quick-change tap holder.

2.3 Detach tap/cold-forming tap

Attention

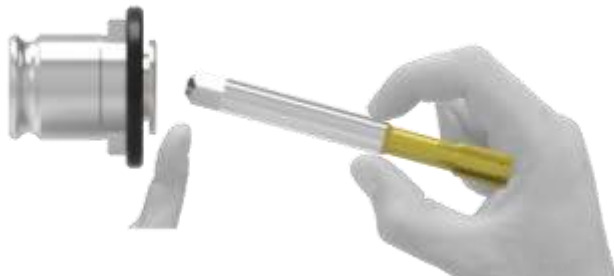
▶ The exchange of the tap/cold-forming tap must not be executed while the machine spindle rotates!



1. Press guiding bush back and hold it



2. Pull out tap/cold-forming tap



3. Let go of guiding bush

Note

The tap/cold-forming tap may be loosened according to the above mentioned method if the quick-change adapter is 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 adapter at periodic intervals depending on how dirty the adapter is.

 Note
<ul style="list-style-type: none"> ▶ 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 adapter is taken out of service, please go through the following working steps:

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

 Attention
<p>Before storage all evidence of coolant-lubricant and machining residues must be removed!</p>

5 Application and choice of other quick-change adapters

Type	Description	Recommended Applications
EM../MQL	Rigid type, for minimum-quantity lubrication (MQL)	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	With adjustable overload clutch	Blind hole threads
EM../U/IKZ	With adjustable overload clutch and internal coolant supply through channels along the tap/cold-forming tap shank.	Blind hole threads
EM../L	With length adjustment	On multi-spindle heads and transfer lines
EM../UL	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../Z/MQL	Rigid type with adaptation for collets according to DIN ISO 15488, for minimum-quantity lubrication, with adjustment screw for presetting the tap/cold-forming tap length	Clamping of carbide tools 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

All quick-change adapters, unless stated otherwise, can be used for internal coolant supply when the taps/cold-forming taps are designed accordingly.

EMUGE quick-change adapter EM, EM/IKZ
Operating instruction

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Please keep this for future use!

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