



EM 00 – L / ER / IKZ

EM 01 – L / ER / IKZ

EM 03 – L / ER / IKZ

EMUGE

Quick-change adapters EM – L / ER / IKZ

Operating instruction

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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-L/ER/IKZ

1 Application range, safety instructions and technical data

1.1 Application range, determined use

Application of the quick-change adapters:

- Clamping of taps/cold-forming taps via collets according to DIN ISO 15488
- 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
The size of the adapter to be used is defined by the size of quick-change tap holder.
- For taps/cold-forming taps **with** and **without** internal coolant-lubricant supply (oil channel). The max. coolant-lubricant pressure is defined by the used quick-change tap holder, but not more than 50 bar.
- The quick-change adapters EM-L/ER/IKZ are used if the machining requires a rigid tool holder, e.g. for:
 - Horizontal use
 - Use of solid carbide tools
 - Applications with high coolant-lubricant pressure
 - High speed machining
- The quick-change adapter is equipped with a length adjustment and can therefore be used on multi-spindle heads and transfer lines.
- Production of right- and left-hand threads
- All machining directions

The taps/cold-forming taps are clamped via collets type ER or ER-GB or ET-1-PCM. With collets type ER the taps/cold-forming taps are centered and clamped via the shank diameter. With collets type ER-GB the torque arising during the thread producing cycle is transferred via the square integrated in the collet. The collets type ET-1-PCM are equipped with a length compensation on tension and a square driving. The collets must be chosen according to the used quick-change adapter and tap/cold-forming tap.

If taps/cold-forming taps with internal coolant-lubricant supply (oil channel) are used, the clamping nut must be provided with a sealing disk. The assembly instruction is given in chapter 2.2, page 7.

The collets type ET-1-PCM 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 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.

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.



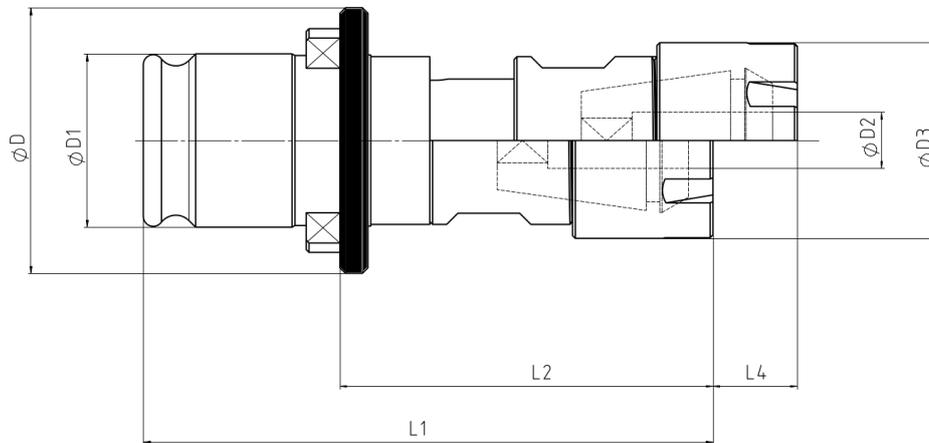
- ▶ Hold the tool when loosening the tool clamping to avoid it falling down and damaging the tool and the work piece.
- ▶ There are maximum values for cutting speeds and feeds for every kind of machining. Please observe such data.
- ▶ Please observe the maximum tool dimensions.
- ▶ Furthermore, the instructions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



Picture 1: Dimensions of the quick-change adapters EM-L/ER/IKZ

Table 1: Technical data of the quick-change adapters EM-L/ER/IKZ

Type	Cutting range	Adapter size ¹	Collet size ²	ØD [mm]	ØD ₁ [mm]	ØD ₂ ³ [mm]	ØD ₃ [mm]	L ₁ [mm]	L ₂ [mm]	L ₄ [mm]
EM00-L/ER/IKZ	M2 - M8 Nr.2 - ⁵ / ₁₆	00	ER11 (GB)	23	13	2,5-7	16	57,5	38	8
EM01-L/ER/IKZ	M4 - M12 Nr.8 - ⁷ / ₁₆	01	ER16 (GB)	30	19	4,5-9	22	72	50,5	10
EM03-L/ER/IKZ	M4 - M20 Nr.8 - ³ / ₄	03	ER25 (GB)	48	31	4,5-16	35	103	68	15

For further dimensions please refer to our EMUGE main catalogue.

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

² Nominal size according to DIN ISO 15488

³ Clamping diameter is defined by the required tap/cold-forming tap

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 Sealing disks for clamping nuts

2.2.1 Application

The sealing disks are inserted into the clamping nuts if threads with internal coolant-lubricant supply are produced (max. coolant-lubricant pressure 50 bar). The sealing disks additionally avoid the penetration of dirt and chips into the collet slots. We recommend the use of sealing disks.

Note

For quick-change adapter sizes 01 and 03 the delivery contains a clamping nut for sealing disks. This sealing disk must be ordered separately according to the size of clamping nut and clamping diameter!

There are special clamping nuts with integrated sealing for size 00. These sealed clamping nuts must also be ordered separately for the required clamping diameter.

2.2.2 Assembly of the sealing disks into the clamping nuts

1. Insert sealing disk into clamping nut as described in picture 2.
2. Push sealing disk in clamping nut forward until it clearly engages. The sealing disk must be flush with the clamping nut at the front.



picture 2: assembly of sealing disk

2.3 Insert collet and tap/cold-forming tap

Attention

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

Note

- ▶ Choose collet according to the quick-change adapter size and required tap/cold-forming tap!
- ▶ **Required tool:**
Wrench
For tightening and loosening the clamping nut, you can order the following tool sets suitable for the used adapter size:

EM00-L/ER: F350098.01

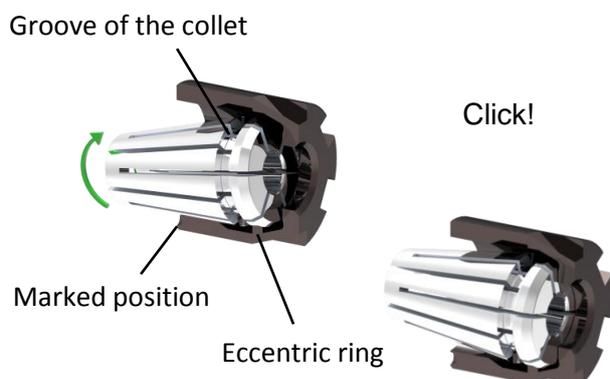
EM01-L/ER: F350198.01

EM03-L/ER: F350398.01

Each tool set consists of a wrench for the clamping nut and a spanner to support the spindle.



1. Screw off clamping nut

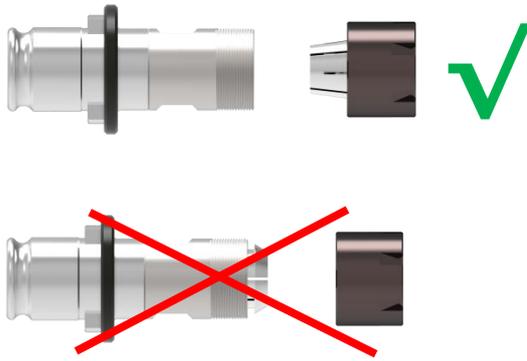


2. Insert collet into the clamping nut, tilt collet.

The groove of the collet must engage at the marked position in the eccentric ring of the clamping nut.

Tilt collet in opposite direction until it clearly engages.

→ Collet is flush with the clamping nut or the sealing disk.

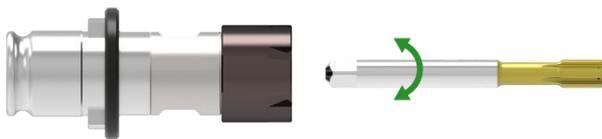


- Screw clamping nut with the engaged collet manually onto the thread of the quick-change adapter.



Attention

Only mount clamping nut with correctly engaged collet!



- Push in tap/cold-forming tap.



Note

When using ER-GB collets: Bring square into correct position by turning the tap/cold-forming tap.



- Use wrench to tighten clamping nut. Tightening torque see Table 2, page 10



Attention

In order to avoid damaging the quick-change adapter it is necessary to support the spindle with the open-ended spanner ② when tightening the clamping nut with the wrench ①.

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



Note

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

Table 2: Tightening torque of the clamping nuts

Type	Recommended tightening torque [Nm]
Hi-Q/ERM11 Hi-Q/ERMC11	12
Hi-Q/ERMC16	24
Hi-Q/ERMC25	32

Data valid for the use of ER-GB collets.
The maximum tightening torque must not be more than 25% above the recommended tightening torque. Higher torque may result in the damage of the collet holder.



Note

To adjust the correct tightening torque we recommend the use of a torque wrench with fitting shell-type wrench, see our EMUGE main catalogue, chapter accessories.

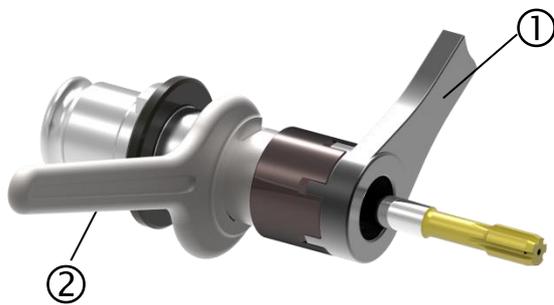
2.4 Remove tap/cold-forming tap and collet

Attention

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

Note

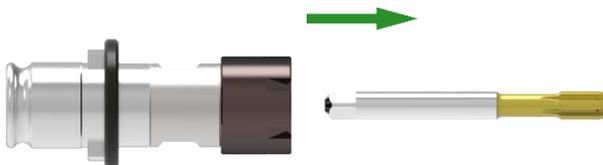
- ▶ **Required tool:**
Wrench
Suitable tool sets see chapter 2.3, page 8!



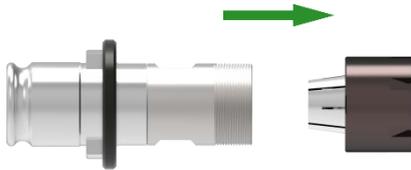
1. Use wrench to loosen the clamping nut.

Attention

In order to avoid damaging the quick-change adapter it is necessary to support the spindle with the open-ended spanner ② when loosening the clamping nut with the wrench ①.



2. Pull out the tap/cold-forming tap.



3. Screw off clamping nut.



4. Tilt collet up to the marking until it is removed from the eccentric ring. Remove collet.



Note

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

2.5 Length adjustment

The overhang length of the quick-change adapters EM-L/ER/IKZ can be adjusted if required. This could be necessary, e.g. when adjusting a predetermined length on multi spindle heads or transfer lines.



Note

The length can only be adjusted if the quick-change adapter is **not** fixed in the quick-change tap holder.

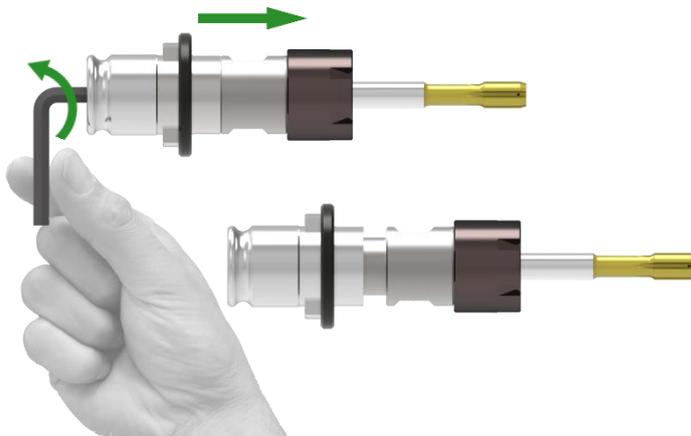
Required tool:

Hexagon socket wrench size:

EM00-L: SW 2,5

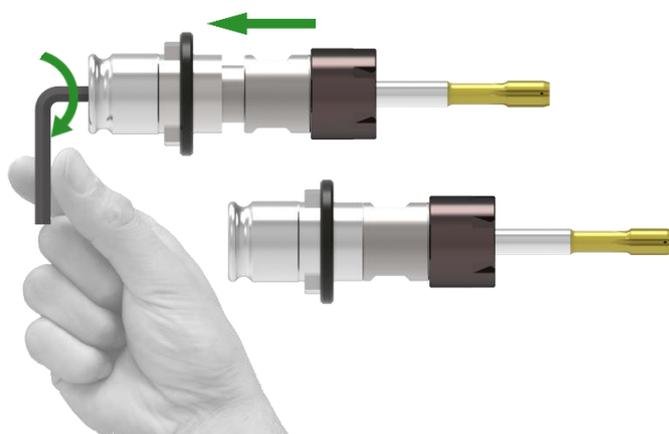
EM01-L: SW 4

EM03-L: SW 6



Turn hexagon socket wrench **anti-clock-wise**

⇒ **Extension**



Turn hexagon socket wrench **clock-wise**

⇒ **Reduction**

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 e.g. 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..	Rigid type	Through hole threads
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..-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 otherwise stated, can be used for internal coolant supply when the taps/cold-forming taps are designed accordingly.

EMUGE quick-change adapter EM - L / ER / IKZ
Operating instruction

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Please keep this for future use!

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