

HELIXPRO

**Collet holder NORIS HELIXPRO**

Operating instruction

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## Warnings, symbols

In this operating instruction the following symbols are used:

### Attention

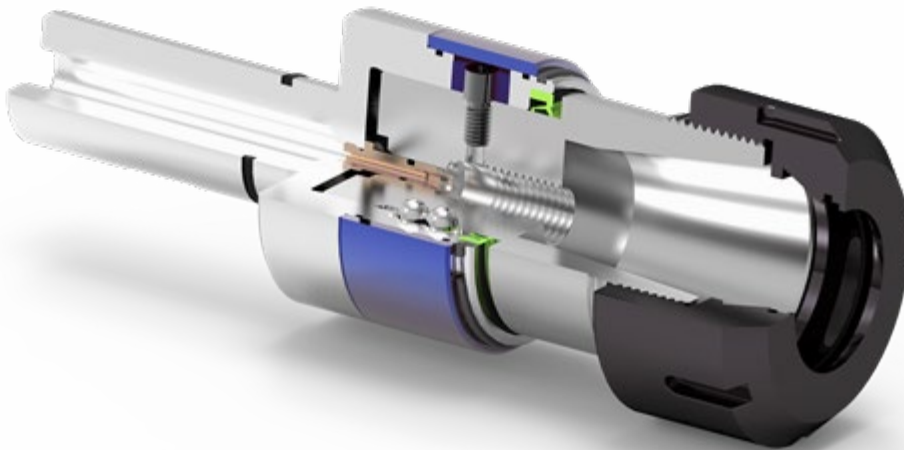
Marks special instructions, rules and prohibitions, which are important in order to avoid any damage.

▶ Please observe these instructions!

### Note

Marks application instructions and other useful information.

Sectional view:



Collet holder NORIS HELIXPRO

## 1 Application range, safety instructions and technical data

### 1.1 Application range, determined use

The collet holders type NORIS HELIXPRO are used on CNC machining centres with synchronous control. They are intended for clamping of taps/cold-forming taps for thread production.

The integrated minimal length compensation on tension and compression compensates arising minimal pitch differences between synchronous spindle and tap/cold-forming tap which would lead to high thread flank friction forces. An eventual increase of the axial force during the thread producing cycle is reduced to a minimum. The resulting advantages are:

- No mis-cutting of the threads
- Optimised tap/cold-forming tap life

Normally the collet holders are equipped with one of the following shanks:

- Cylinder shank according to DIN 1835 B+E or ASME B94.19 (Weldon)
- Hollow taper shank according to DIN 69893-HSK-A and HSK-C

The cutting range of each type is indicated in table 1, page 6

The tap/cold-forming tap is locked via the collets acc. to DIN ISO 15488.

The collets must be chosen depending on the used type and the used tap/cold-forming tap, for more information please refer to chapter 2.5 page 10.

The collet holders type NORIS HELIXPRO are suitable for coolant pressures up to 50 bar.

### 1.2 Specifications

Further features of the collet holders type NORIS HELIXPRO are:

- Small and compact overhang
- For collet holders sizes 0-4:  
The standardized cylinder shank acc. to DIN 1835 B+E allows a simple adaptation with the required adaptation shank. For adaptation shanks please refer to the REIME NORIS main catalogue.

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

### 1.3 Safety instructions

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.

▶ Keep the tool adaption 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.

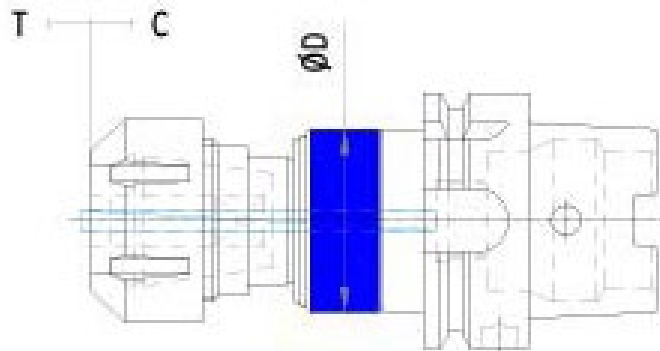
▶ Furthermore, the instructions of the tool manufacturers are valid!

### 1.4 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 REIME NORIS GmbH.

## 1.5 Dimensions and technical data



Picture 1: Collet holder NORIS HELIXPRO

Table 1: Technical Data of the collet holder type NORIS HELIXPRO

Type	Cutting range	Clamping range [mm]	Collet size <sup>1</sup>	ØD [mm]	ØD <sub>3</sub> [mm]	C <sup>2</sup> [mm]	T <sup>3</sup> [mm]
NORIS HELIXPRO 0	M2 – M8 (Nr. 2 – <sup>5</sup> / <sub>16</sub> )	2,5 – 7	ER 11 (GB)	34	16	0,5	0,5
NORIS HELIXPRO 1	M4 – M12 (Nr. 8 – <sup>7</sup> / <sub>16</sub> )	4,5 – 10	ER 20 (GB)	34	34	0,5	0,5
NORIS HELIXPRO 3	M4 – M20 (Nr. 8 – <sup>3</sup> / <sub>4</sub> )	4,5 – 16	ER 32 (GB)	45	50	0,5	0,5
NORIS HELIXPRO 4	M12 – M30 ( <sup>7</sup> / <sub>16</sub> – 1 <sup>1</sup> / <sub>8</sub> )	9 – 22	ER 40 (GB)	63	63	0,7	0,7
NORIS HELIXPRO 5	M30 – M48 (1 <sup>1</sup> / <sub>8</sub> – 1 <sup>3</sup> / <sub>4</sub> )	22 – 36	ER 50 (GB)	103	78	2	2



### Note

The maximum coolant pressure is 50 bar.

Further outer dimensions of the individual types depend on the required shank.

<sup>1</sup> Dimension according DIN ISO 15488

<sup>2</sup> Length compensation on compression

<sup>3</sup> Length compensation on tension


## 2 Putting the collet holders into operation

### 2.1 Unpacking

- Take the collet holder from the packing
- Clean the collet 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 collet holder is now ready for operation.

#### Exception:

Type with **hollow taper shank (HSK)**. Please refer to chapter 2.2.1, page 8, for how to put this collet holder into operation.

### 2.2 First putting into operation

#### Note

For collet holders with HSK-shank (hollow taper shank) the coolant-lubricant tube must be mounted prior to putting into operation, see chapter 2.2.1, page 8

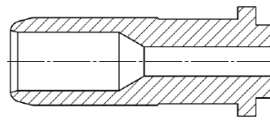
The collet holders are inserted into the machine manually or - if provided - by the tool exchanger.

#### Attention

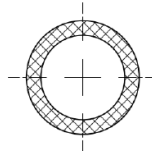
- ▶ The exchange of the collet holder must not be executed while the machine spindle rotates!
- ▶ Only use tool shanks suitable for the specific machine.
- ▶ Make sure the tool is correctly clamped.  
Otherwise: Risk of accident by spinning of the tool!
- ▶ Please see also the indications in the operating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

2.2.1 Assembly of the coolant-lubricant tube for collet holders with shank type HSK (hollow taper shank DIN 69893A)

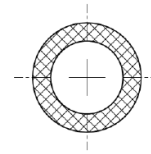
a) Components



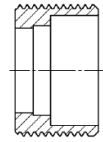
Coolant-lubricant tube



O-ring small cross-section

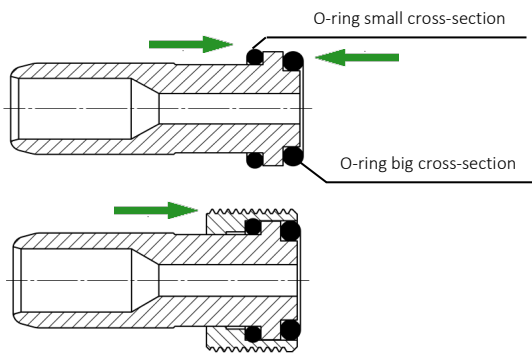


O-ring big cross-section



Thread nut

b) Prepare coolant-lubricant tube



1. Slide on the two O-rings

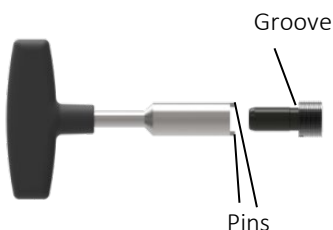
2. Slide on thread nut

c) Mount coolant-lubricant tube in the shank

**Note**

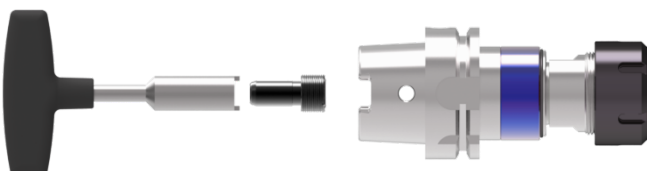
**Required tool:**

Choose appropriate assembly wrench for the shank size



1. Plug assembly wrench on the coolant-lubricant tube

Watch the position of the pins against the grooves!



2. Screw coolant-lubricant tube in the shank



## 2.3 Re-putting into operation

If the collet holder is back into operation as described in chapter 4, page 15, please go through the following steps:

- Clean the collet 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.

- If necessary, prepare the collet holder as described in chapter 2.2, page 7

## 2.4 Sealing disks for clamping nuts

### 2.4.1 Application

The sealing disks are inserted into the clamping nuts for producing threads with internal coolant supply (maximum coolant 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

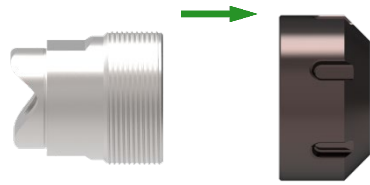
For collet holders **sizes 1 - 5**:

Normally a clamping nut for sealing disks is part of the delivery for collet holders. The sealing disk has to be ordered separately, suitable for the clamping nut and the clamping diameter.

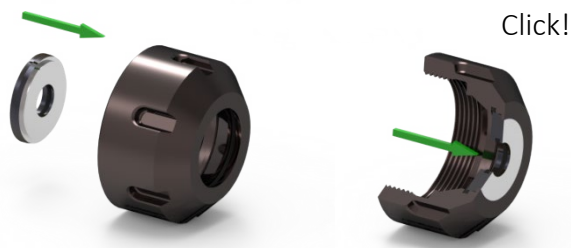
For **size 0**:

The clamping nuts with integrated sealing system can be used. No separate sealing disk is required; the clamping nut is chosen depending on the used clamping diameter. Please order required clamping nut separately.

### 2.4.2 Assembly instruction for sealing disks



1. Screw the clamping nut off



2. Insert the sealing disk into the clamping nut as shown on picture. Push the sealing disk forward into the clamping nut until you clearly hear the engagement. The sealing disk must be flush at the front with the clamping nut

## 2.5 Collets

### 2.5.1 Application

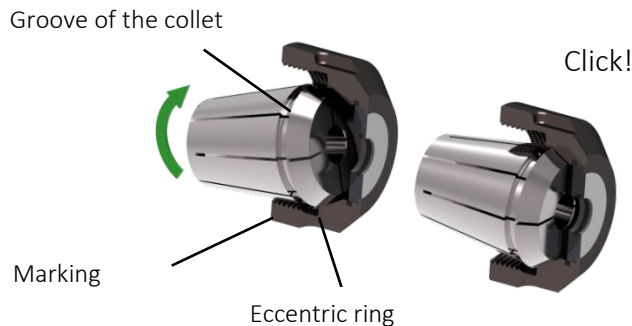
The adaptation of the tap/cold-forming tap is executed via collets type ER and/or ER/GB. With collets type ER the tap/cold-forming tap is centered and clamped via the shank diameter. With collets type ER/GB the torque - arising during the thread producing operation - is additionally transferred via the square integrated in the collet.

**!** Note

Owing to the better torque transmission, we recommend the use of collets type ER/GB.

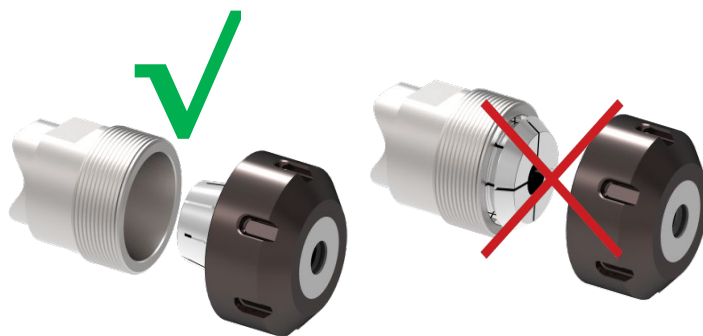
The collet sizes for the according collet holders may be taken from table 1, page 6. The clamping diameter is indicated by the used tap/cold-forming tap.

## 2.5.2 Assembly instruction for the collets and tap/cold-forming tap

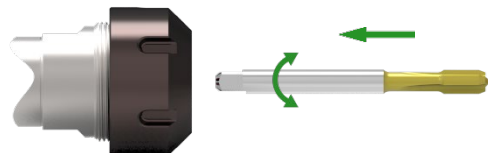


1. Insert collet into the clamping nut, tilt collet.  
The groove of the collet must engage in the eccentric ring of the clamping nut at the marked position. Tilt collet in opposite direction until it clearly engages.

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



2. Screw the collet with the engaged clamping nut manually onto the thread of the collet holder.



3. Insert tap/cold-forming tap.



### Attention

For collet holders **sizes 0 - 4:**

If collet and tool are provided with a square, the tool must be turned into position in order to be inserted into the square of the collet.

For collet holders **size 5:**

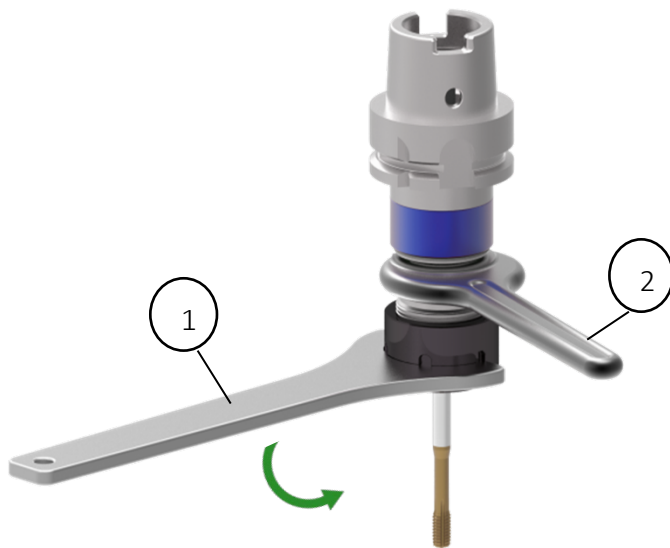
Clamping  $\varnothing$  22 – 32 mm:

We recommend the use of collets with integrated square for better torque transmission.

Clamping  $\varnothing$  36 mm:

Use of cylindrical collets; the square is integrated in the tap holder.

Bring tool into position (by turning) where square can be moved into the tap holder.



4. Tighten the clamping nut with the appropriate wrench.

The tightening torques for the clamping nut may be taken from table 3, page 13.

 Attention

For collet holders **sizes 0 - 4:**

In order to avoid damaging the collet holder it is necessary to support the spindle with the open-ended spanner<sup>Ⓜ</sup> when tightening the clamping nut with the wrench<sup>Ⓛ</sup>. The tool set see table 2, page 12

As an alternative to the above mentioned wrench the assembly device for NORIS HELIXPRO size 1 / 3 / 4 can be used



For collet holders **size 5:**

Only the wrench<sup>Ⓛ</sup> is required for tightening the clamping nut

Table 2: Tool set

Collet holder	Article number of the tool set
NORIS HELIXPRO 0	AZWZ0E70011
NORIS HELIXPRO 1	AZWZ0E70120
NORIS HELIXPRO 3	AZWZ0E70332
NORIS HELIXPRO 4	AZWZ0E70440
NORIS HELIXPRO 5	AZWZ0E70550

Tool set for NORIS HELIXPRO sizes 0 - 4 consists of wrench<sup>Ⓛ</sup> for the clamping nut and spanner<sup>Ⓜ</sup> to support the spindle

Table 3: Tightening torques for clamping nuts

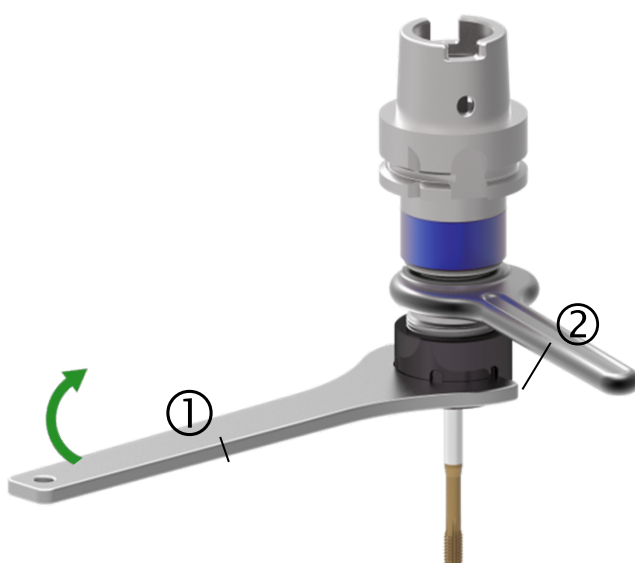
Type	Recommended tightening torque [Nm]
Hi-Q/ERM(C) 11	12
Hi-Q/ER(C) 20	32
Hi-Q/ER(C) 32	90
Hi-Q/ER(C) 40	180
Hi-Q/ERBC 50/AF	ER50-GB: 300 ER50: 240

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

**! Note**

To find out the correct tightening torque we recommend the use of a torque wrench with suitable shell-type wrench.

**2.5.3 Remove tap/cold-forming tap and clamping nut**



1. Remove the clamping nut with wrench.

 Attention

For collet holders **sizes 0 - 4:**

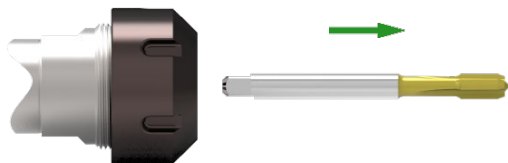
In order to avoid damaging the collet holder it is necessary to support the spindle with the open-ended spanner<sup>②</sup> when loosening the clamping nut with the wrench<sup>①</sup>. The tool set see table 2, page 12

As an alternative to the above mentioned wrench the assembly device for NORIS HELIXPRO size 1 / 3 / 4, with article number A70Z0AXX01, can be used

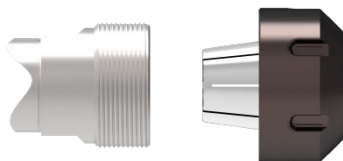


For collet holders **size 5:**

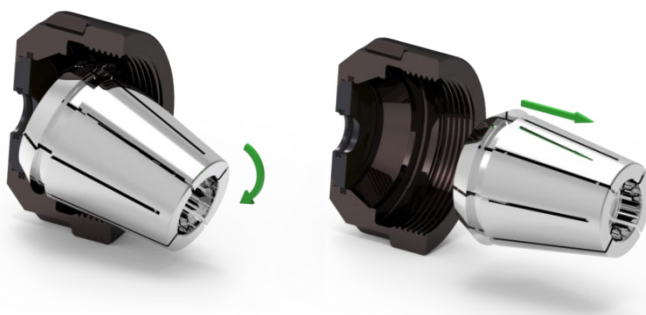
Only the wrench<sup>①</sup> is required for loosening the clamping nut



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



3. Screw the clamping nut off.



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

### 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 collet holder at periodic intervals with a duster, depending on how dirty the holder is.



#### Attention

- ▶ Do not use any aggressive solvents.
- ▶ Do not use fibrous materials i.e. steel wool.
- ▶ Do not clean and dry the collet holder in an automatic washplace, as a result the built-in dampers and seals may be damaged.

### 4 Storage when not in use

If the collet holder is taken out of service, please go through the following steps:

- Clean the collet holder with a duster, see chapter 3.2
- Spray the collet holder with preservation oil to avoid rusting



#### Attention

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


**REIME NORIS collet holder NORIS HELIXPRO**  
**Operating instruction**


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Please keep the operating instruction for future use!


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