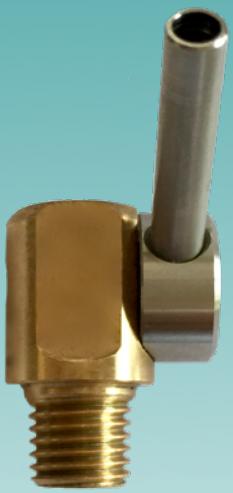
# Coolant nozzles for CNC lathes

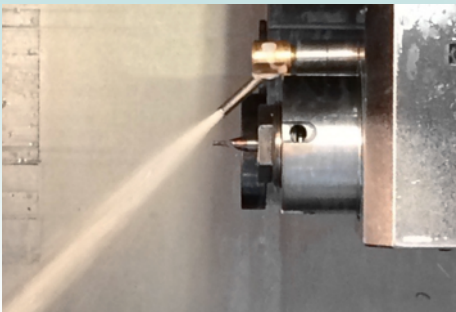
Made in Germany

The smart way to get the coolant to the cuttling tool edge

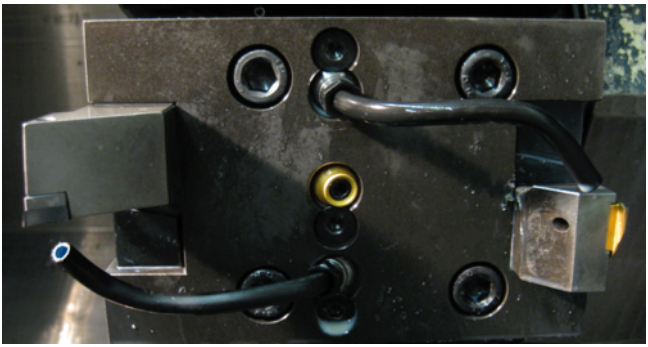
**New: RingKD**



**2016**



# Introduction



## Great ideas from professionals for professionals

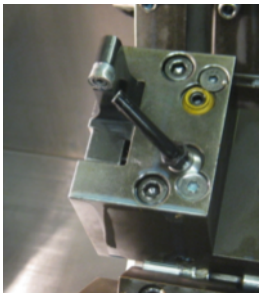
Have you ever tried to cut a thread to a thin-walled copper pipe or to bend it manually to a certain form? It is almost impossible without special tools. Often the adjustment cannot be made on the machine,which of course causes further delays. As a consequence of this, coolant pipes are often made poorly and the tools are not cooled optimally. We have changed all that: we have developed coolant nozzles which can be quickly and easily fitted. Winging it should come to rent versions. Both threaded and ready for fitting in a coolant borehole directly.

In this picture you can see how someone fought a losing battle trying to make a coolant pipe with “home remedies”.

# Content

# Smart--KD

With the innovative coolant nozzle “Smart--KD”, you can save a lot of time when setting up your lathe. Now complicated adaptations of “baulky” copper pipes belong to the past. Thanks to the replaceable coolant pipe, you always have a suitable coolant nozzle.



SmartKD in use

Fitting the Smar--KD can be managed in a jiffy. Simply insert the coolant nozzle into the coolant borehole and screw it on tightly. After that, align the pipe to the tool cutting edge. As you see, fitting it is a piece of cake. With the Smart--KD, you save the setting-up time and ensure an optimal cooling of the cutting edge.

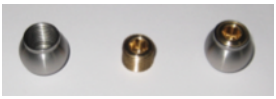
## Advantages

- easy fitting
- stainless steel ball
- exact and strong coolant jet
- suitable for many CNC machines

## Technical Data

- ball diameters 14, 15, 16 or 18 mm
- pipe inner diameter 4 mm
- pipe lengths 50, 70 or 100 mm
- pressure 6 - 10 bar (depending on the length)

The SmartKD consists of a stainless steel ball and a pipe made of flexible composite material (aluminium with plastic jacketing).Thanks to this smart structure, the pipe can be easily bent by hand and is still robust. The pipe is to be fastened by a spigot nut. You can replace the pipe at any time.



Screw plug M10x1

SmartKD with **18 mm** ball on request

| Order-No | Name | Description |
|---|---|---|
| 01105 | SmartKD1405 | ⌀-14, Smartpipe 5cm |
| 01107 | SmartKD1407 | ⌀-14, Smartpipe 7cm |
| 01110 | SmartKD1410 | ⌀-14, Smartpipe 10cm |
| 01205 | SmartKD1505 | ⌀-15, Smartpipe 5cm |
| 01207 | SmartKD1507 | ⌀-15, Smartpipe 7cm |
| 01210 | SmartKD1510 | ⌀-15, Smartpipe 10cm |
| 01605 | SmartKD1605 | ⌀-16, Smartpipe 5cm |
| 01607 | SmartKD1607 | ⌀-16, Smartpipe 7cm |
| 01610 | SmartKD1610 | ⌀-16, Smartpipe 10cm |
| 06005 | Smartpipe 5 | Replacement pipe 5cm |
| 06007 | Smartpipe 7 | Replacement pipe 7cm |
| 06010 | Smartpipe 10 | Replacement pipe 10cm |
| 06003 | Screw plug M10x1 | Qty 5 pcs |

min. Qty. 5 pcs

# Mini--KD

The Mini--KD is the small version of the Smart--KD. It is distinguished by easy use and perfectly adjustable coolant pipe. It is ideally suitable for tool receiving sockets of 10mm, 11mm or 12mm boreholes for coolants. More recently, Mini--KD is also available with M5 and M6 threaded end fitting.

Mini--KD in VDI-tool holder

The Mini--KD was specially designed for use in compact VDI-standard tool holders, however, it is also suitable for many other tool holders with external cooling. Like Smart--KD, fitting the Mini--KD is very easy. Simply insert into the coolant borehole, screw it on tightly and align. The new Mini-KD with M5 or M6 thread has simply to be screwed in and aligned.
- READY! -

## Advantages

- easy fitting
- receiving socket made of stainless steel
- exact and strong coolant jet
- favourable price

## Technical Data

- Ball diameters 10, 11 or 12 mm or
- M5 or M6 thread
- pipe inner diameter is 4 mm
- pipe length 50 oder 70 mm with ball
- pressure 6-10 bar
(depending on the length)

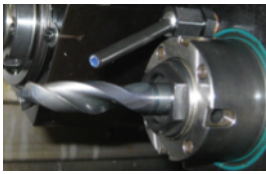
Unlike the SmartKD, the MiniKD consists only of the ball and the smart pipe. Both components are rigidly glued to each other. The MiniKD is also installed in the DriveKD and can be used in many applications.

| Order-No. | Name | Description |
|---|---|---|
| 02005 | MiniKD1005 | ⌀-10, Length 5cm |
| 02007 | MiniKD1007 | ⌀-10, Length 7cm |
| 02110 | MiniKD1010 | ⌀-10, Length 10cm |
| 02010 | MiniKD1105 | ⌀-11, Length 5cm |
| 02017 | MiniKD1107 | ⌀-11, Length 7cm |
| 02025 | MiniKD1205 | ⌀-12, Length 5cm |
| 02027 | MiniKD1207 | ⌀-12, Length 7cm |
| 020M6 | MiniKD-M6 | M6, Length 5cm |
| 020M5 | MiniKD-M5 | M5, Length 5cm |

min. Qty. 5 pcs

# Drive--KD

Conventional coolant nozzles used at driven tools often spray in all directions and create no direct coolant jet. So the cooling on the tool cutting edge is often not sufficient. The Drive--KD fulfills its purpose with distinction: it can be easily adjusted and and ensures sufficient cooling with a direct jet.



The new DriveKD with metric and inch thread was also developed for use in drive tools for CNC lathes. It is perfectly suitable for use in units of diverse manufacturers, e.g.. Eppinger, MT and many others.

## Advantages

- quick and easy mounting
- exact an strong coolant jet
- favourable price
- versatile use

## Technical Data

- threaded ends M8x1, M10x1 or G1/8
- pipe inner diameter 4 mm
- pipe length 50 or 70 mm with ball
- special length 100 mm
- pressure max. 10 Bar (5cm and 7cm)

# DriveKD

The DriveKD consists of a double nipple (galvanized steel), a sleeve nut and the above-mentioned MiniKD. Thanks to use of the MiniKD, you can replace the pipe at any time you want. With the flexible pipe, you can adjust the coolant jet with utmost precision.

Replacement nozzles for DriveKD
MiniKD1005/MiniKD1007

| Order-No. | Name | Description |
|---|---|---|
| 07000 | DriveKD1005 | M10x1, 5cm pipe |
| 07007 | DriveKD1007 | M10x1, 7cm pipe |
| 07010 | DriveKD1010 | M10x1, 10cm pipe ** |
| 07100 | DriveKD0805 | M8x1, 5cm pipe |
| 71007 | DriveKD0807 | M8x1, 7cm pipe |
| 71010 | DriveKD0810 | M8x1, 10cm pipe ** |
| 07G18 | DriveKD1805 | G1/8, 5cm pipe |
| 7G187 | DriveKD1807 | G1/8, 7cm pipe |
| 7G180 | DriveKD1810 | G1/8, 10cm pipe ** |
| 02005 | MiniKD1005 | Replacement nozzle 5cm |
| 02007 | MiniKD1007 | Replacement nozzle 7cm |
| 02110 | MiniKD1010 | Replacement nozzle 10cm |

** max. preasure 6 bar

min. Qty. 5 pcs

# EdgeKD

The EdgeKD coolant nozzle was developed for use in tool holders in which an angle adapter is required for fitting. With the EdgeKD, the cumbersome fitting of unflexible coolant pipes has come to an end! So the EdgeKD can be easily slewed and locked. It is suitable for Heimatec and many other manufacturers.

Similar to the SmartKD, the EdgeKD is equipped with a flexible smart pipe to ensure an easy adjustment of the coolant jet. Despite the flexible structure of the pipe, the coolant jet remains in the position that you desire. The smart pipe is easy to replace and also available separately.

## Advantages

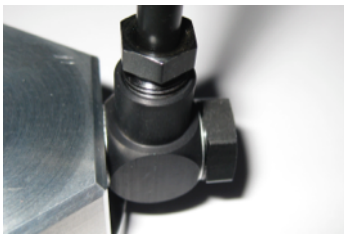
- quick and easy fitting
- flexible coolant pipe (smart pipe)
- exact and strong coolant jet
- favourable price
- versatile use

## Technical Data

- threaded ends M10x1 and G1/8
- pipe inside diameter 4 mm
- pipe length 100 mm
- max. preasure 6 bar

# EdgeKD

The EdgeKD consists of a “smart” pipe with a sleeve nut, a ring piece and a hollow screw. Two aluminium seals included in the delivery maintain the tightness of the EdgeKD despite its being easy to turn.



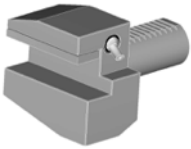
Angle fitting

| Order-No | Name | Description |
|---|---|---|
| 08010 | EdgeKD10 | M10x1, 10cm pipe |
| 08G18 | EdgeKD18 | G1/8, 10cm pipe |
| 06010 | Smartpipe 10 | Replacement pipe 10cm |
| 06007 | Smartpipe 7 | Replacement pipe 7cm |

min. Qty. 3 pcs

# ScrewKD

With the ScrewKD, we have developed a new coolant nozzle for use in VDI-standard tool holders. Unlike other coolant nozzles, the ScrewKD is not fitted by pressing the nozzle in, but rather by screwing in a metric taper thread. This ensures a long lifecycle of the coolant nozzle.



The force which needs to be applied to adjust the ScrewKD is regulated via the screw-in depth of the housing. During screwing, the housing is compressed. In this way, it clamps the ball so that the nozzle cannot be altered by itself. Thanks to the M5 thread in the ball, the ScrewKD can also be combined with the MiniKD-M5.

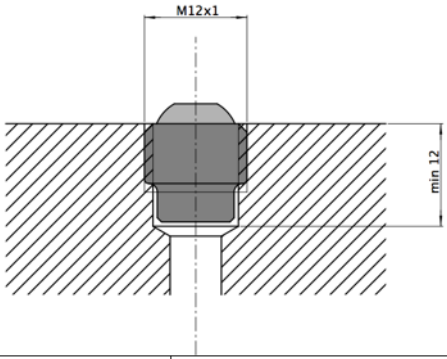
## Advantages

- easy fitting
- nozzle is included in the delivery
- adjustable slewing force
- can be replaced at any time
- little space required

## Technical Data

- screw-in thread M12x1
- nozzle flow hole 2mm
- nozzle length is 10mm
- thread with ball M5
- tested pressure: 15 Bar
- screw insert T15 (Torx)

ScrewKD consists of three parts: a plastic housing with taper thread and with built-in screw insert made of steel with Torx T15, a built-in ball with M5 thread and a separately supplied nozzle.




| Order-No | Name | Description |
|---|---|---|
| 03012 | ScrewKD12 | Coolant nozzle |
| 020M5 | MiniKD-M5 | Optional ** |

min. Qty. 5 pcs

** The MiniKD-M5 is not required for operating. The MiniKD-M5 is needed only in the case if the distance between the nozzle and the tool cutting edge is very large or if the adjustable angle is not sufficient.

# JetKD

With the revised JetKD-A, you have a robust coolant nozzle for use in modern CNC lathes. It can be installed both in rigid and in driven tool holders. Machines with high-pressure pumps need special coolant nozzles which are able to withstand high pressures. Here is where the JetKD-A comes into play! The large-sized flow hole ensures a strong and well-controllable coolant jet.

With the JetKD-A, you will achieve an optimal coolant jet. You can set the desired direction by hand. Simply choose the direction you need and tighten the sleeve nut. Thanks to the large setting range, you can adjust the angle up to 45° in each direction.

## Advantages

- easy fitting
- nozzle can be arrested in any position
- high stability
- little space required

## Technical Data

- screw-in thread M8x1, M10x1 or G1/8 BSP
- nozzle flow hole 4mm
- nozzle length 12 mm and 20 mm
- suitable for high pressures

# JetKD

The JetKD consists of three parts which are designed for an optimal function and long lifecycle. Especially in such an important component as a coolant nozzle, the right matching of all parts is of primary importance. Plastic and steel are the only raw materials we use here. That allows use of JetKD in medical engineering, as well.

**Detail:** the lower part of JetKD-A with tapered thread.

| Order-No | Name | Description |
|---|---|---|
| 0908K | JetKD0812-A | M8x1, pipe length 12 mm |
| 0908L | JetKD0820-A | M8x1, pipe length 20 mm |
| 0910K | JetKD1012-A | M10x1, pipe length 12 mm |
| 0910L | JetKD1020-A | M10x1, pipe length 20 mm |
| 0918K | JetKD1812-A | G1/8, pipe length 12 mm |
| 0918L | JetKD1820-A | G1/8, pipe length 20 mm |
| 09081 | Extension | Thread M8x1 |
| 09101 | Extension | Thread M10x1 |
| 09181 | Extension | Thread G1/8 BSP |

With the optimal extension, the JetKD-A protrudes about 12 mm over the holder. It is available for all 3 thread sizes.You can easily screw on the extension with an Allen key in the flow hole.

min. Qty. 5 pcs

# EasyKD

The EasyKD, as the name suggests, is an easy-to-use coolant nozzle. It fits all tool holders with 12 mm receiving socket borehole. It is suitable for all cases in which no pliable pipe is needed and a high stability is required.

Advantages of the EasyKD are especially visible when it is used in rigid tool holders. Due to its quite short shape, it can also be used on drill rod holders without colliding with the workpiece to be machined. It can be used both for BMT-standard receiving sockets and VDI-standard receiving sockets with 12 mm borehole.

## Advantages

- easy fitting
- available in three different lengths
- large slewing range
- little space required

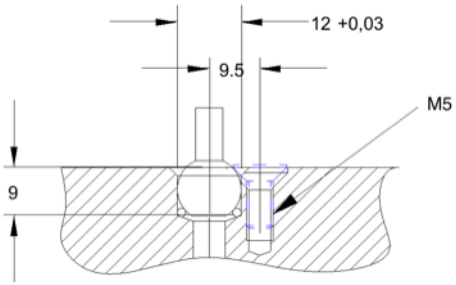
## Technical Data

- ball diameter is 12 mm
- nozzle flow hole 4 mm
- nozzle length 10, 15 and 20 mm
- can be used at high pressures

The EasyKD is manufactured from a single piece, completely of stainless steel. Thanks to this simple design, it is very robust and almost non-wearing. It is to fitted into a 12 mm receiving socket borehole of the tool holder. The ball is clamped with an M5 countersunk screw in order to hold the coolant jet in the right position.

| Order-No. | Name | Description | |
|---|---|---|---|
| 11210 | EasyKD1210 | ⌀-12, Length 10 mm | |
| 11215 | EasyKD1215 | ⌀-12, Length 15 mm | |
| 11220 | EasyKD1220 | ⌀-12, Length 20 mm | |
| 01275 | OR-EasyKD | O-Ring for EasyKD | |

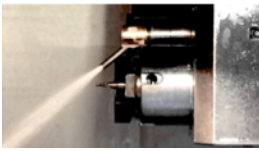
min. Qty. 10 pcs




In some tool holders with simple boreholes, you should insert an O-ring to achieve better sealing. If you have a hole bottom with rounding-off, e. g. Eppinger, it is not necessary.

# RingKD

The RingKD conveys the boring emulsion / cutting oil into a straightly adjustable nozzle via a ring. The RingKD can be used for many tool holders with a suitable threaded end fitting. The RingKD demonstrates its advantages in “cramped” applications where you need an exactly adjusted jet.



The RingKD is usually employed in driven tool holders of German, European and Asian manufacturers. With an optionally available extension, the nozzle can be brought in a higher position. (see page 15)

## Advantages

- easy fitting
- versatile use
- slewing range > 180°
- little space required
- very exact coolant jet

## Technical Data

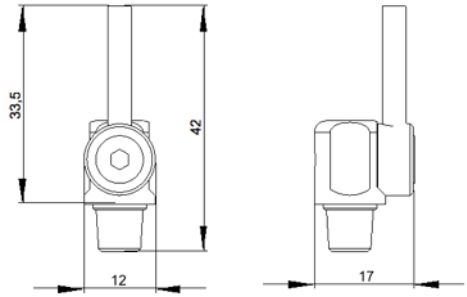
- nozzle flow hole 4 mm
- nozzle made of stainless steel
- brass body threaded end fitting
- can be used at high pressures
- self-sealing taper thread

# RingKD

The RingKD consists of four parts. Thanks to its simple design, it is very robust and almost non-wearing. You can fit it in the coolant borehole of the tool holder with M8x1, M10x1 or G1/8 thread. By means of an open-ended spanner and a 3 mm Allen key, the coolant jet can be adjusted.

| Order-No. | Name | Description |
|---|---|---|
| 13108 | RingKD08 | RingKD M8 x 1 |
| 13110 | RingKD10 | RingKD M10 x 1 |
| 13118 | RingKD18 | RingKD G1/8 |

min. Qty. 3 pcs



# FAQ & Hints

**Which pipe length do I need?**

Due to the good bending property of the coolant pipe, the coolant jet can be adjusted very precisely and the distance between the tool cutting edge and the end of the pipe can be larger than in conventional solutions. If the distance between the cutting edge and the coolant nozzle is too short, there will be a danger that thread chips will entangle in the coolant pipe and deflect the jet or cover it. To always have the right length ready to hand, we recommend to keep several different lengths on stock.

**How narrow can the smart pipe be bent?**

The smallest bending radius of the pipe is 20 mm. This bending radius is sufficient for almost all applications. With a 20 mm bending radius, it is easily possible to adapt the pipe many times without snapping it. If the bending radius is smaller, there will be a danger of breaking. If this does indeed actually happen, the smart pipe of the SmartKD, DriveKD and EdgeKD can be replaced at a low price.

**Can I shorten the smart pipe myself?**

Sure you can shorten the pipe yourself. When shortening it, please pay attention that the end of the coolant pipe is not distorted, deformed or frayed.
Hint: Currently, 3 different lengths of the smart pipe are available. If the available lengths are not suitable for your application, you can always receive intermediate sizes, as well. Please contact your dealer.

**Can I influence the jet?**

The jet can be adapted to your requirements, as follows: If you need a constant and consistent jet, the pipe opening should be as round as possible. To achieve a round end of the pipe, it is better to use a centring tool. Simply put the pipe end onto the centring tool. Then, slightly pressing it, turn the pipe around by a slight circular motion. You will see: the pipe opening will be round and the coolant jet will leave the pipe evenly! If the jet should be a little wider, but not so high, slightly press onto the pipe end with a flat-nose pliers. So you get a lower but wider jet!

**What is the maximum permissible pressure?** (MiniKD, SmartKD, EdgeKD and DriveKD)

The pressure may be max. 10 bar at a pipe length of about 50 mm. The longer the pipe the lower should be the pressure to avoid vibrations of the pipe. If the pipe is shorter than 50 mm, the pressure can be definitely higher than 10 bar. However, we cannot provide a warranty of function for pressure rates exceeding 10 bar.

# FAQ & Hints

For safety reasons, all coolant nozzles can only be used in closed machine rooms.

**Can I cap the coolant nozzles?**

If you use double holders and/or tools cooled inside, it is mostly reasonable to cap the coolant nozzles which you do not need. If you leave the unrequired coolant nozzles open, the coolant pressure might not be enough for the tools cooled inside. There are suitable closing plugs for the SmartKD. So you can simply and very safely close the coolant channels which you do not need. In the case of the ScrewKD, please proceed, as follows: Unscrew the nozzle (pipe) and then screw the ScrewKD out. Close the borehole with a commercially available closing plug (M12x1).

**Are there any special solutions available?**

For some applications, there are also special solutions. Please notify your dealer about your demand. Then the dealer will check together with us, whether the solution which you require is feasible, and will submit you an appropriate offer.

**Hints for the MiniKD with threaded end fitting**

The MiniKD with threaded end fitting can be screwed into the balls of the VDI-standard holders and other holders with M5 or M6 thread. Due to the compact design, we decided to dispense with one key face for screwing on. Do not try to turn the MiniKD on the pipe to tighten it. The MiniKD is not intended to be turned on the pipe! If normal tightening on the collar by hand is not enough, use pliers for tightening (be careful: never tighten on the pipe, only on the collar). Do not screw the MiniKD too tightly - only so that you can loosen it again.

**Info on JetKD-A**

Due to a large variety of machine designs, the actual high pressure coming to the coolant nozzle might be very different. If the pressure exceeds 80 bar, use the longer version with 20 mm nozzle, if possible.