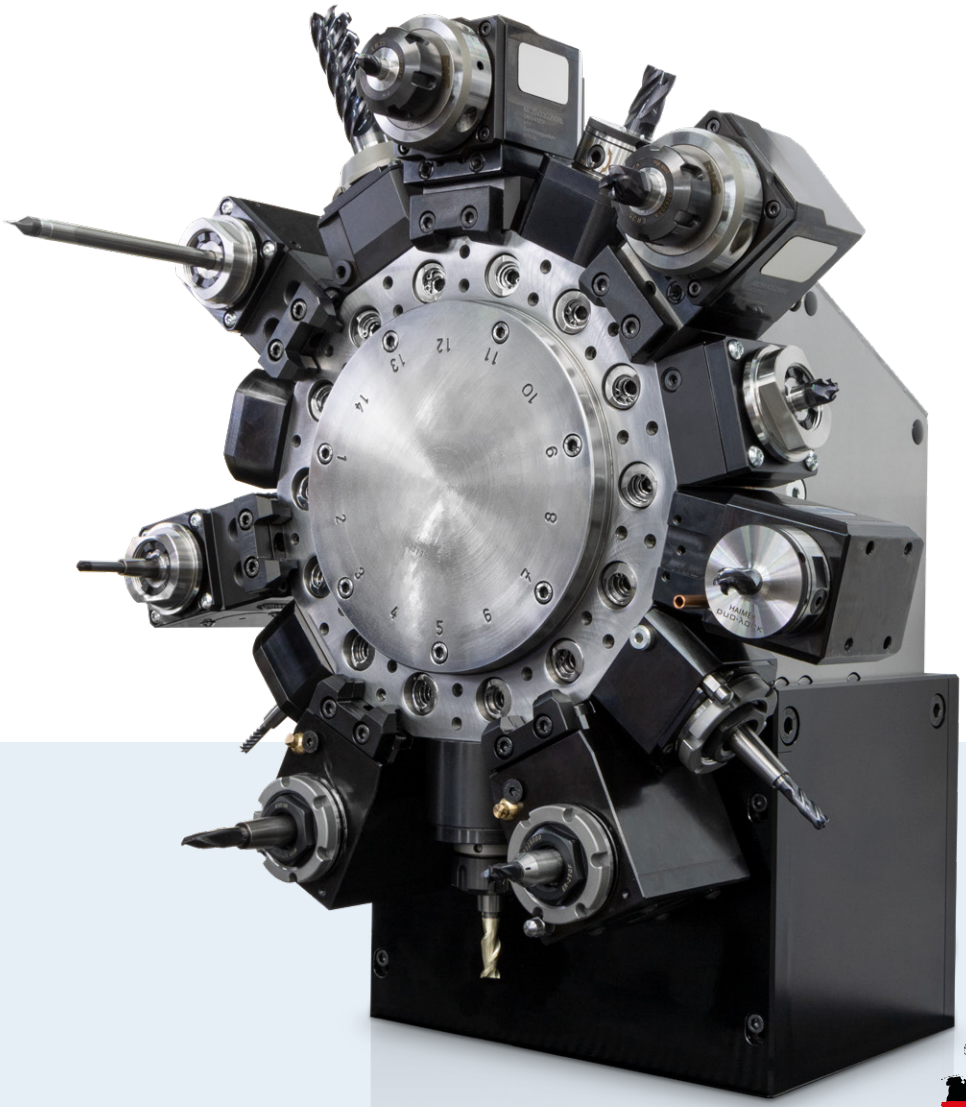
HAIMER®
Quality Wins.

SOLUTIONS FOR TURNING



100%
MADE IN GERMANY
MADE BY HAIMER

www.haimer.com

SOLUTIONS FOR TURNING

CONTENT

Benefit from our wide experience in the area of turning

Since 1977 HAIMER has built up extensive experience and competence in turning and milling.

By our daily production capacity of 4,000 tool holders per day and a wide accessories program, we function as your test center and technology partner as well when it comes to innovative clamping solutions for turning machines.

In our own production, we are using a big variety of Duo-Lock products in order to further develop the system and the program range for your needs in your production as well.

With a maximum capacity of 4,000 tool holders per day, the HAIMER plant in Motzenhofen is the biggest production facility for rotating tool holders worldwide.

HAIMER shrink fit collets

- Available in ER11, ER16, ER20, ER25 and ER32 in various lenghts
- Tool changing process quick and easy
- Compatible with all established ER holders and ER locknuts
- Optional available with slits for coolant supply
- Shrink fit collets are sealed due to their closed shape (prevent the clamping cones from getting dirty)
- Outstanding radial runout accuracy, in comparison to conventional collets
- High rigidity and precision even at direct use in driven tools

SCAN HERE TO WATCH A SUCCESS STORY ABOUT HAIMER SHRINK FIT COLLETS, SHRINK FIT TECHNOLOGY AND MICROSET PRESETTING TECHNOLOGY

Highest clamping force from 3/8"–7/16" (3–12 mm)

Overhang from 0–35 mm with mini outer geometry

Three symmetrical flats on the collar
for easy threading into the locknut

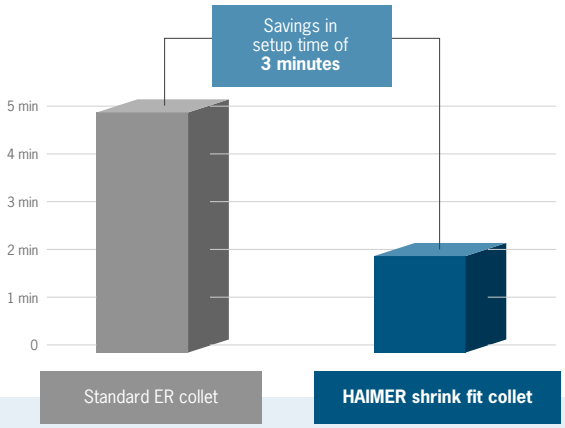
Sealed by mono-design for use of tools with internal coolant
(shrink fit collet with slits on option)

Two contact areas → more rigidity and better runout

Fixing thread for easy handling with chuck support
for HAIMER shrink fit collets

Success stories

Tool change of ER clamping systems



System	Time for tool change
Standard ER collet	5 min
HAIMER shrink fit collet	2 min
Saving	3 min

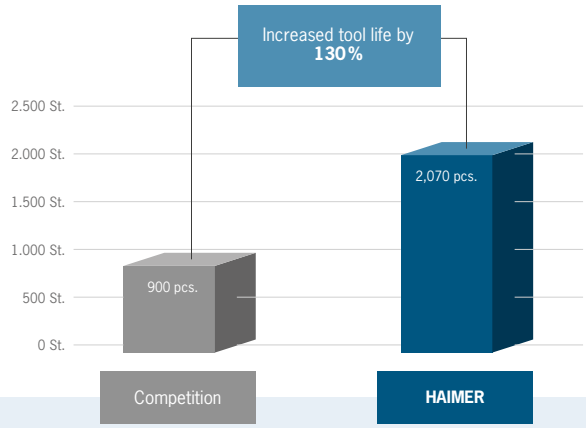
Capacity savings for:

5 tool changes per machine per day
250 working days per year

→ 3,750 minutes per year = 62.5 hours per year

By external setup and fast tool change with HAIMER shrink fit collets you can gain **62.5 hours of machine tool capacity per year!**

Tool life (in parts)



	Tool life (in parts)
Competition	900
HAIMER	2,070

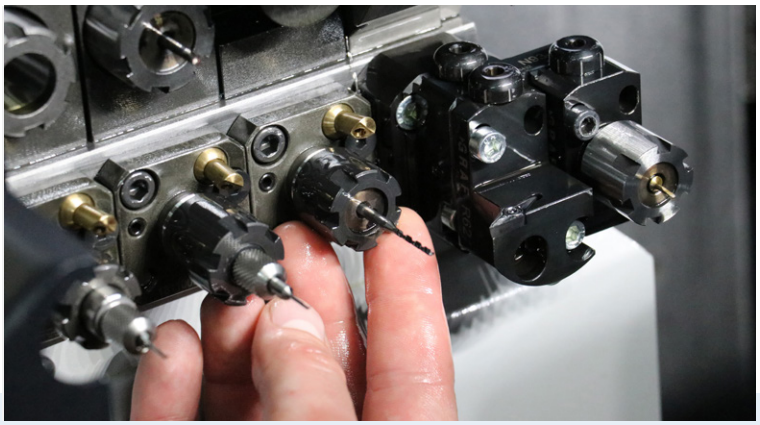
At an automotive supplier, the use of HAIMER shrink fit collets enabled them to **increase tool life by 130% on average.**

In some cases the increase was even by **more than 200%!**

The customer was able to save $ 4,600+ of tool costs per year on one machine tool.

Reduce setup times: Shrink fit and presetting technology makes automatic lathes more productive

Dental Direkt, a full-service provider of dental laboratory equipment, has added a shrinking and presetting machine from HAIMER for manufacturing their dental prosthetic parts. Setup for Swiss-type automatic lathes is now many times faster, leaving the machines free for more valuable machining time.



The operator reads the QR code on the shrink fit collet with a hand scanner. The shrink fit machine is then provided with all important parameters.

Problem: High set-up times slow down productivity

The set-up times of the sliding headstock lathes are far too high for economic production. With 37 different implant connections, the batch sizes are only between 600 and 1,000 parts. This means that the machines have to be retooled every second day on average. Until recently, this meant quite a lot of work. The set-up process took several hours, during which the tools had to be calibrated on the machine and the respective machine was at a standstill.

The idea behind the solution: reduce non-productive time in order to increase production time. Then unit costs will also go down sustainably!

Realization: Complete solution of shrinking and tool presetting technology

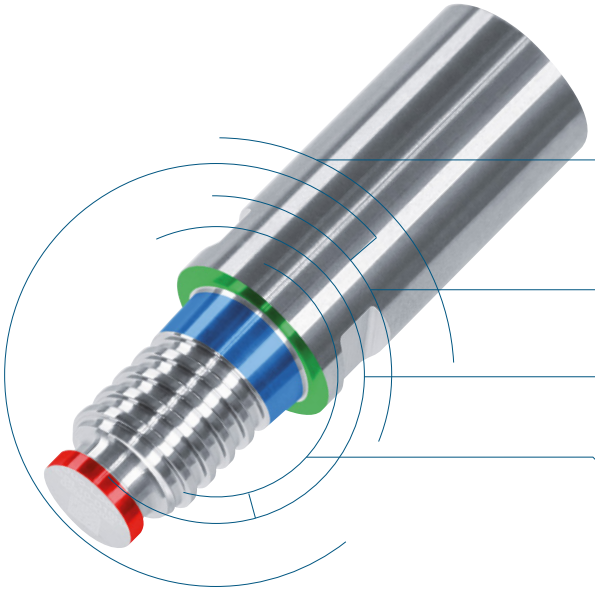
This combination ensures maximum accuracy on one hand and a fast, reliable presetting process on the other. This saves about eight minutes per tool during set-up on the machine.

Result: The HAIMER system succeeded in reducing set-up times by 50% and ensuring productive machining.

The HAIMER Microset UNO 20|40 automatic drive tool presetter features an image editing system and automatic tool measurement in three axes.

WATCH THE FULL SUCCESS STORY HERE

DUO-LOCK COLLETS

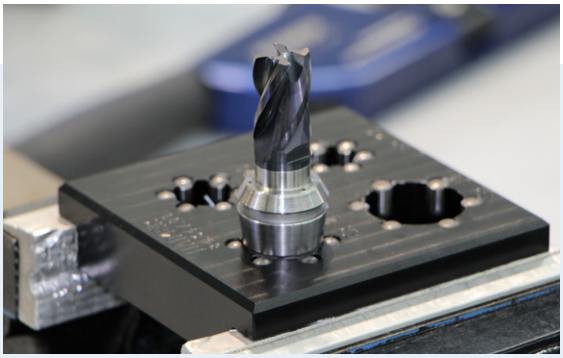


Duo-Lock interface runout accuracy 5 µm

Double cone plane surface and face cone –
precise positioning and safe support of machining forces

Optimum force distribution along the whole thread

Additional plane surface, to absorb bending moments



Duo-Lock collet with Duo-Lock milling head and clamping device

Sealed by mono-design for use of tools with internal
coolant (optional with 3 or 6 Cool Jet bores)

Three symmetrical flats on the collar for easy
threading into the locknut

Length repeatability of ± 0.003" (0.01 mm)
with HAIMER Duo-Lock cutting tool heads

Two contact areas → more rigidity and better runout

Fixing surfaces for an easy tool change outside of the machine tool

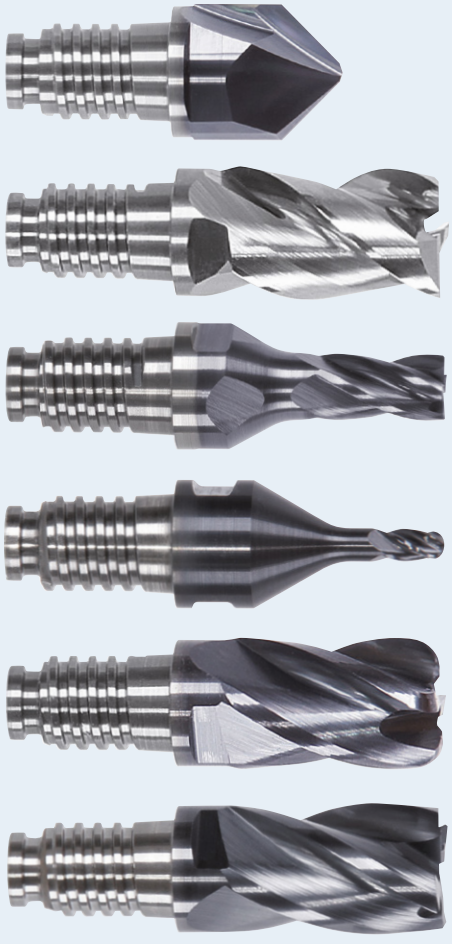
Compatible with all established ER interfaces

Clamping technology for turning machines

- High system and length repeatability
- Reduced set-up times resulting from fast tool changes directly in the machine
- Monoblock design offers more stability and best runout accuracy
- Best cooling results in combination with the HAIMER Cool Jet system
- No presetting necessary due to best length repeatability
- Process reliable and easy handling
- Suitable for established ER collet chucks, driven units and machine spindles with ER interface

Duo-Lock benefits

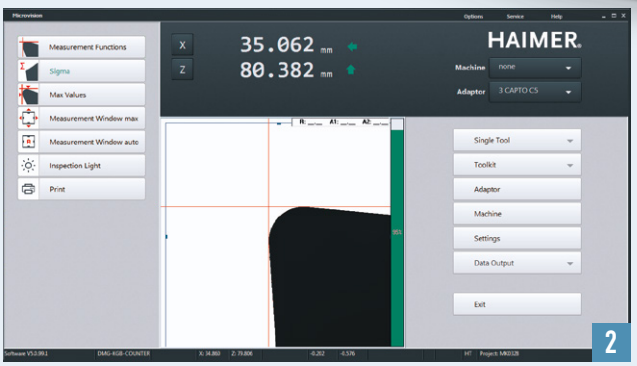
- Big variety of Duo-Lock cutting tool geometries
- Standardized cutting edge lengths, 0.75×D, 1.5×D and 3×D
- Suitable accessories for tool change in every situation



TOOL PRESETTER MICROSET UNO

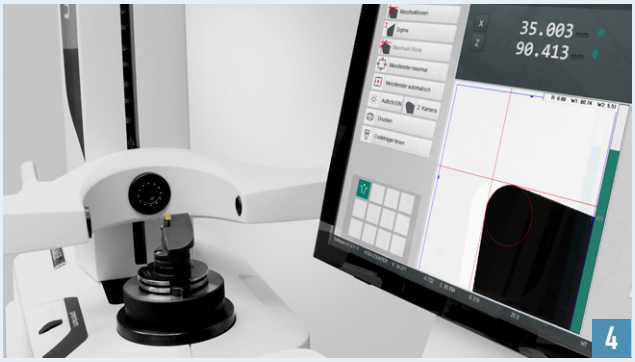
1 High quality components

- Thermo-stable cast iron design
- Guidance and glass mass scale of high quality
- User-friendly operation



Easy measuring of your turning tools ➔ no manual touch off necessary anymore

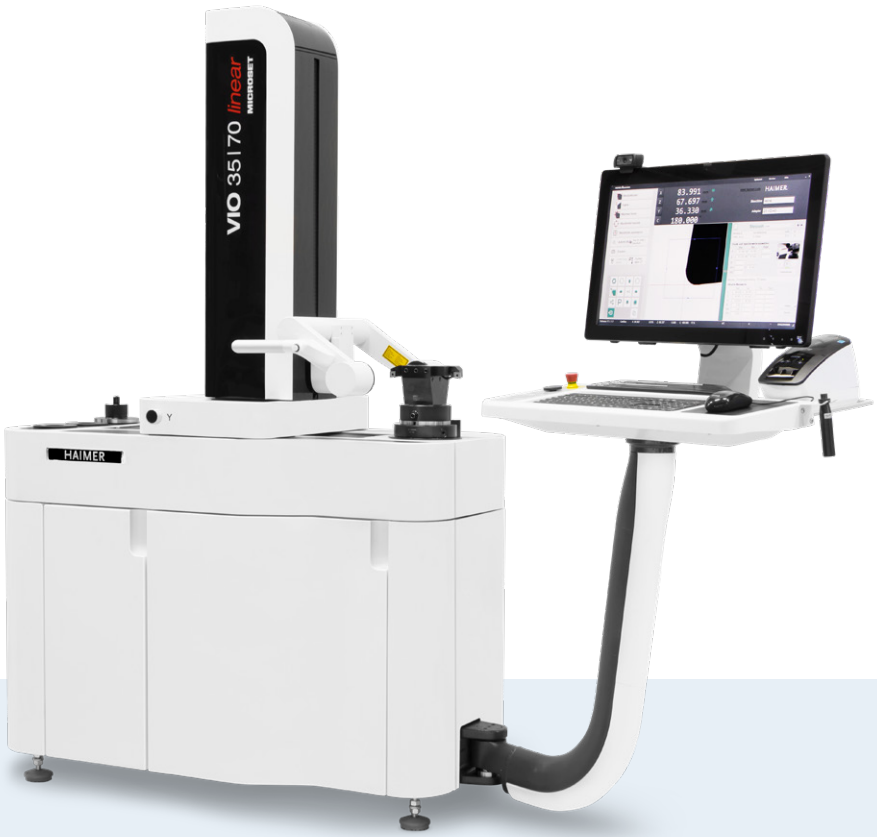
Common adapters like VDI, Trifix, PSC, HSK with 4 × 90° indexing



Second camera for rotation center check (important for turning machines)

- *With the second camera the rotation center (center height) of a turning tool can be determined and preset precisely*
- *Especially necessary for groove-turning*

TOOL PRESETTER MICROSET VIO *LINEAR* WITH Y-AXIS



Features

- Moveable Y-axis to measure non-centered tools (optional)
- Low distortion even under the maximum permissible load due to its high rigidity
- ISS-U universal ultra-high precision spindle with automatic adapter identification
- Fast, silent and high accurate cutting edge approach by unique linear drive
- Data exchange and data transfer to the machine tool (integration of all popular RFID systems)

Moveable y-axis to measure non-centered tools (optional)

SHRINK FIT MACHINES FOR TURNING... AND MORE

Power Clamp Nano NG i4.0

Power Clamp Nano NG i4.0

- Horizontal shrinking
- Especially for small tool holders in high frequency spindles, for shrink fit collets and for shrink fit chucks up to HSK-A63
- Intelligent motor coil
- Nano air cooling
- With length presetting
- 7" touch display and new intuitive software for simplified usability
- Industry 4.0-ready for communication in the shopfloor
- Scanner to readout shrinking parameters from tool holders (Data-Matrix code)
- **Order No.: PC406-I42-C20-US**

Power Clamp Air i4.0

Power Clamp Air i4.0 Eco/Comfort

- High performance shrink fit machine with integrated cooling for all tools (solid carbide and HSS)
- Smooth and clean cooling of all kind of shrink fit chucks and shrink fit collets regardless of the outside contour by air – without dirt and water residue
- Contour independent air cooling with temperature control
- Start of cooling process by release-by-touch
- Intelligent motor coil (optional for Air i4.0 Eco)
- 7" touch display and new intuitive software for simplified usability
- Industry 4.0-ready for communication in the shopfloor
- Scanner to readout shrinking parameters from tool holders (Data-Matrix code) (optional for Air i4.0 Eco)
- Length presetting (optional for Air i4.0 Eco)
- **Power Clamp Air i4.0 Eco Oder No.: PC409-I21-C21-US**
- **Power Clamp Air i4.0 Comfort Order No.: PC409-I41-C21-US**

Power Clamp Sprint i4.0

SCAN AND LEARN MORE

Ergonomic shrink station in new, premium quality industry design with integrated cooling for all kind of cutting tools (solid carbide and HSS) in record time.

- With 7" touch display and new intuitive software
- Network-compatible and industry 4.0-ready
- Power: 13 kW, mains voltage: 3×400–480 V, 16 A
- Tools: solid carbide and HSS from Ø 1/8"–1 1/4" (3–32 mm)
- With NG coil
- Automatic motor coil (optional)
- Smooth and clean cooling of all kind of shrink fit chucks and shrink fit collets regardless of the outside contour by air nozzles and drizzle – without dirt and water residue
- Temperature control for optimized and safe cooling
- No damage at the edges of the cutting tool
- Incl. 2 precision base holders and 2 precision chuck supports
- Integrated drawer in base cabinet
- Scanner to readout shrinking parameters from Data-Matrix codes for easiest automatic shrinking (optional)
- Length presetting (optional)
- **Order No.: PC408-I22-C21-US**

Shrinking process with HAIMER Power Clamp Sprint i4.0

- Process secure shrinking, fast and easy
- Scanner to readout shrinking parameters from Data-Matrix codes (optional)
- Easiest automatic shrinking
- Length presetting (optional)
- With motor coil for more process security (optional)

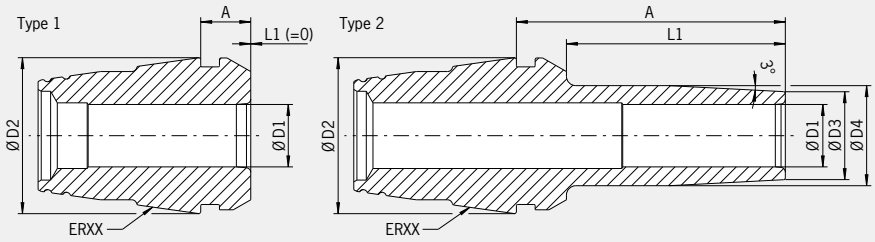
Length presetting and scan of Data-Matrix Code for automatic identification of shrinking parameters

Fast shrinking process

Cooling of shrink fit collet with temperature control


1/8" – 3/16"
3-5
#1
#2
1/4" – 5/16"
6-8
#3
3/8" – 7/16"
10-12
#4
1/2" – 5/8"
14-16
#5
3/4" – 7/8"
18-20
#6
25-32
#7
#8
HAIMER
G 2.5 25000
A63.144.16.3
ø 16 x 130
A 4
80.131.01

SHRINK FIT COLLETS ER11 (8°)
INCH & METRIC



Version

- Compatible with all established ER nuts
- Optional with slits along the clamping bore for cooling from outside
- For solid carbide tools with shank tolerance h6

Inch Version

Order No.	Type	ER size	D1 [inch]	A [inch]	L1 [inch]	D2 [inch]	D3 [inch]	D4 [inch]	Insertion depth [inch]
81.110.000.1/8z	1	ER11	0.433	0.179	0	1/8	–	–	–
81.110.000.3/16z[1)]	1	ER11	0.433	0.179	0	3/16	–	–	–
81.110.000.1/4z[1)]	1	ER11	0.433	0.179	0	1/4	–	–	–
81.110.020.1/8z	2	ER11	0.433	0.967	0.787	1/8	0.276	0.291	–
81.110.020.3/16z	2	ER11	0.433	0.967	0.787	3/16	–	0.291	–

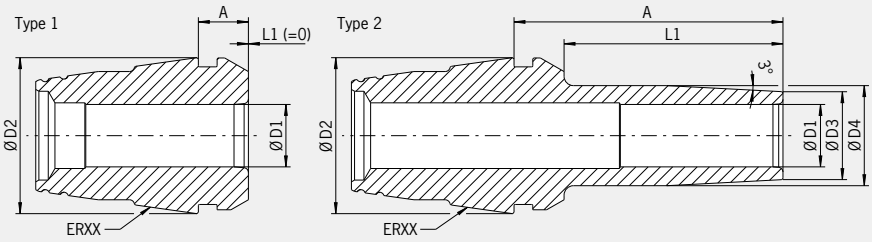
Metric version

Order No.	Type	ER size	D1 [mm]	A [mm]	L1 [mm]	D2 [mm]	D3 [mm]	D4 [mm]	Insertion depth [mm]
81.110.000.03	1	ER11	11	4.55	0	3	–	–	–
81.110.010.03	2	ER11	11	14.55	10	3	7	7.4	–
81.110.020.03	2	ER11	11	24.55	20	3	7	7.4	–
81.110.000.04	1	ER11	11	4.55	0	4	–	–	–
81.110.010.04	2	ER11	11	14.55	10	4	7	7.4	–
81.110.020.04	2	ER11	11	24.55	20	4	7	7.4	–
81.110.000.05[1)]	1	ER11	11	4.55	0	5	–	–	–
81.110.000.06[1)]	1	ER11	11	4.55	0	6	–	–	17

Coolant slots
Order No. 91.100.42

1) Mounting of slits not possible

SHRINK FIT COLLETS ER16 (8°)
INCH



Version

- Compatible with all established ER nuts
- Optional with slits along the clamping bore for cooling from outside
- For solid carbide tools with shank tolerance h6

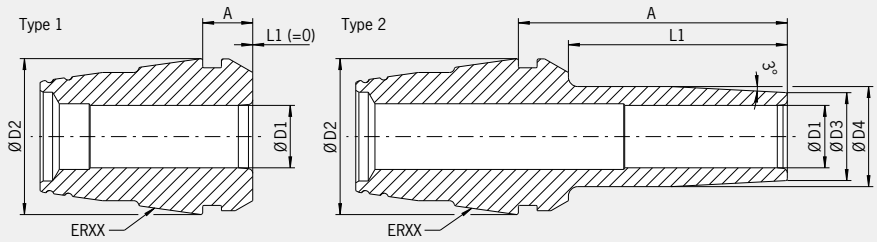
Inch Version

Order No.	Type	ER size	D1 [inch]	A [inch]	L1 [inch]	D2 [inch]	D3 [inch]	D4 [inch]	Insertion depth [inch]
81.160.000.1/8z	1	ER16	0.630	0.264	0	1/8	–	–	–
81.160.000.3/16z	1	ER16	0.630	0.264	0	3/16	–	–	–
81.160.000.1/4z	1	ER16	0.630	0.264	0	1/4	–	–	–
81.160.000.5/16z[1)]	1	ER16	0.630	0.264	0	5/16	–	–	–
81.160.000.3/8z[1)]	1	ER16	0.630	0.264	0	3/8	–	–	–
81.160.035.1/8z	2	ER16	0.630	1.642	1.378	1/8	0.276	0.374	–
81.160.035.3/16z	2	ER16	0.630	1.642	1.378	3/16	0.315	0.374	–
81.160.035.1/4z	2	ER16	0.630	1.642	1.378	1/4	0.354	0.394	–

Coolant slots
Order No. 91.100.42

1) Mounting of slits not possible

SHRINK FIT COLLETS ER16 (8°) METRIC



Version

- Compatible with all established ER nuts
- Optional with slits along the clamping bore for cooling from outside
- For solid carbide tools with shank tolerance h6

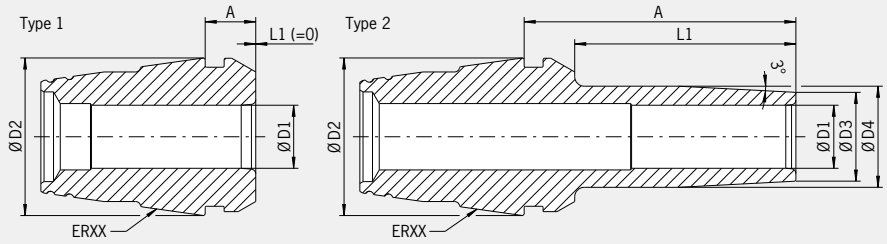
Metric version

Order No.	Type	ER size	D1 [mm]	A [mm]	L1 [mm]	D2 [mm]	D3 [mm]	D4 [mm]	Insertion depth [mm]
81.160.000.03	1	ER16	16	6.7	0	3	–	–	–
81.160.010.03	2	ER16	16	16.7	10	3	7	–	–
81.160.020.03	2	ER16	16	26.7	20	3	7	–	–
81.160.025.03	2	ER16	16	31.7	25	3	7	–	–
81.160.030.03	2	ER16	16	36.7	30	3	7	9.5	–
81.160.035.03	2	ER16	16	41.7	35	3	7	9.5	–
81.160.000.04	1	ER16	16	6.7	0	4	–	–	–
81.160.010.04	2	ER16	16	16.7	10	4	7	–	–
81.160.020.04	2	ER16	16	26.7	20	4	7	–	–
81.160.025.04	2	ER16	16	31.7	25	4	7	–	–
81.160.030.04	2	ER16	16	36.7	30	4	7	9.5	–
81.160.035.04	2	ER16	16	41.7	35	4	7	9.5	–
81.160.000.05	1	ER16	16	6.7	0	5	–	–	–
81.160.010.05	2	ER16	16	16.7	10	5	8	–	–
81.160.020.05	2	ER16	16	26.7	20	5	8	9.5	–
81.160.025.05	2	ER16	16	31.7	25	5	8	9.5	–
81.160.030.05	2	ER16	16	36.7	30	5	8	9.5	–
81.160.035.05	2	ER16	16	41.7	35	5	8	9.5	–
81.160.000.06	1	ER16	16	6.7	0	6	–	–	–
81.160.010.06	2	ER16	16	16.7	10	6	9	–	–
81.160.020.06	2	ER16	16	26.7	20	6	9	10	–
81.160.025.06	2	ER16	16	31.7	25	6	9	10	–
81.160.030.06	2	ER16	16	36.7	30	6	9	10	–
81.160.035.06	2	ER16	16	41.7	35	6	9	10	–
81.160.000.08[1)]	1	ER16	16	6.7	0	8	–	–	–
81.160.000.10[1)]	1	ER16	16	6.7	0	10	–	–	23

Coolant slots
Order No. 91.100.42

1) Mounting of slits not possible

SHRINK FIT COLLETS ER20 (8°)
INCH



Version

- Compatible with all established ER nuts
- Optional with slits along the clamping bore for cooling from outside
- For solid carbide tools with shank tolerance h6

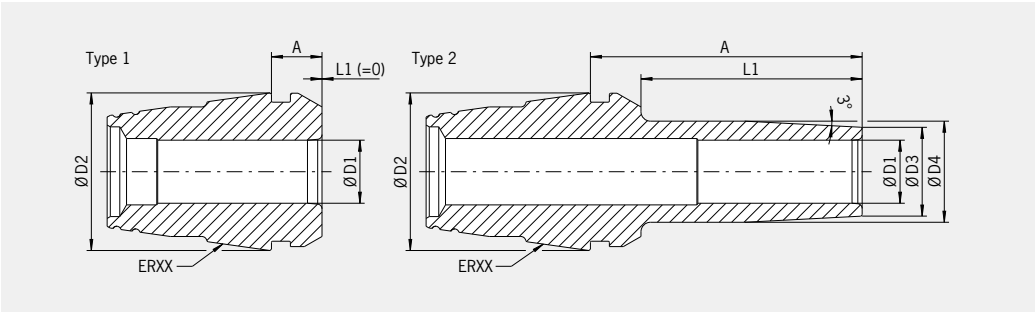
Inch Version

Order No.	Type	ER size	D1 [inch]	A [inch]	L1 [inch]	D2 [inch]	D3 [inch]	D4 [inch]	Insertion depth [inch]
81.200.000.1/8z	1	ER20	0.787	0.296	0	1/8	–	–	–
81.200.000.3/16z	1	ER20	0.787	0.296	0	3/16	–	–	–
81.200.000.1/4z	1	ER20	0.787	0.296	0	1/4	–	–	–
81.200.000.5/16z	1	ER20	0.787	0.296	0	5/16	–	–	–
81.200.000.3/8z	1	ER20	0.787	0.296	0	3/8	–	–	–
81.200.000.7/16z	1	ER20	0.787	0.296	0	7/16	–	–	–
81.200.000.1/2z[1)]	1	ER20	0.787	0.296	0	1/2	–	–	–
81.200.035.1/8z	2	ER20	0.787	1.674	1.378	1/8	0.276	0.531	–
81.200.035.3/16z	2	ER20	0.787	1.674	1.378	3/16	0.315	0.531	–
81.200.035.1/4z	2	ER20	0.787	1.674	1.378	1/4	0.354	0.531	–
81.200.035.5/16z	2	ER20	0.787	1.674	1.378	5/16	0.433	0.531	–

Coolant slots
Order No. 91.100.42

1) Mounting of slits not possible

SHRINK FIT COLLETS ER20 (8°)
METRIC



Version

- Compatible with all established ER nuts
- Optional with slits along the clamping bore for cooling from outside
- For solid carbide tools with shank tolerance h6

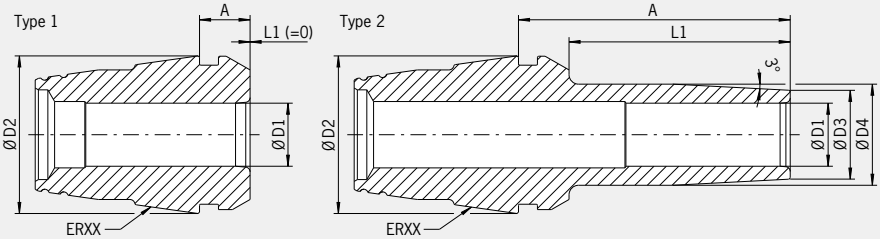
Metric version

Order No.	Type	ER size	D1 [mm]	A [mm]	L1 [mm]	D2 [mm]	D3 [mm]	D4 [mm]	Insertion depth [mm]
81.200.000.03	1	ER20	20	7.52	0	3	–	–	–
81.200.025.03	2	ER20	20	32.52	25	3	7	12.5	–
81.200.035.03	2	ER20	20	42.52	35	3	7	13.5	–
81.200.000.04	1	ER20	20	7.52	0	4	–	–	–
81.200.025.04	2	ER20	20	32.52	25	4	7	12.5	–
81.200.035.04	2	ER20	20	42.52	35	4	7	13.5	–
81.200.000.05	1	ER20	20	7.52	0	5	–	–	–
81.200.025.05	2	ER20	20	32.52	25	5	8	13.5	–
81.200.035.05	2	ER20	20	42.52	35	5	8	13.5	–
81.200.000.06	1	ER20	20	7.52	0	6	–	–	–
81.200.025.06	2	ER20	20	32.52	25	6	9	13.5	–
81.200.035.06	2	ER20	20	42.52	35	6	9	13.5	–
81.200.000.08	1	ER20	20	7.52	0	8	–	–	–
81.200.025.08	2	ER20	20	32.52	25	8	11	14	–
81.200.035.08	2	ER20	20	42.52	35	8	11	14	–
81.200.000.10	1	ER20	20	7.52	0	10	–	–	–
81.200.000.12[1)]	1	ER20	20	7.52	0	12	–	–	29.5

Coolant slots
Order No. 91.100.42

1) Mounting of slits not possible

SHRINK FIT COLLETS ER25 (8°)
INCH



Version

- Compatible with all established ER nuts
- Optional with slits along the clamping bore for cooling from outside
- For solid carbide tools with shank tolerance h6

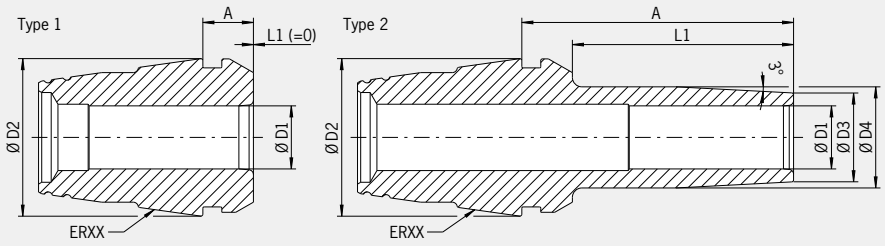
Inch Version

Order No.	Type	ER size	D1 [inch]	A [inch]	L1 [inch]	D2 [inch]	D3 [inch]	D4 [inch]	Insertion depth [inch]
81.250.000.1/8z	1	ER25	0.984	0.315	0.000	1/8	–	–	–
81.250.000.3/16z	1	ER25	0.984	0.315	0.000	3/16	–	–	–
81.250.000.1/4z	1	ER25	0.984	0.315	0.000	1/4	–	–	–
81.250.000.5/16z	1	ER25	0.984	0.315	0.000	5/16	–	–	–
81.250.000.3/8z	1	ER25	0.984	0.315	0.000	3/8	–	–	–
81.250.000.7/16z	1	ER25	0.984	0.315	0.000	7/16	–	–	–
81.250.000.1/2z	1	ER25	0.984	0.315	0.000	1/2	–	–	–
81.250.000.9/16z	1	ER25	0.984	0.315	0.000	9/16	–	–	–
81.250.000.5/8z[1)]	1	ER25	0.984	0.315	0.000	5/8	–	–	–
81.250.035.1/8z	2	ER25	0.984	1.693	1.378	1/8	0.276	0.531	–
81.250.035.3/16z	2	ER25	0.984	1.693	1.378	3/16	0.315	0.531	–
81.250.035.1/4z	2	ER25	0.984	1.693	1.378	1/4	0.354	0.610	–
81.250.035.5/16z	2	ER25	0.984	1.693	1.378	5/16	0.433	0.657	–
81.250.035.3/8z	2	ER25	0.984	1.693	1.378	3/8	0.551	0.630	–
81.250.035.7/16z	2	ER25	0.984	1.693	1.378	7/16	0.591	0.630	–

Coolant slots
Order No. 91.100.42

1) Mounting of slits not possible

SHRINK FIT COLLETS ER25 (8°) METRIC



Version

- Compatible with all established ER nuts
- Optional with slits along the clamping bore for cooling from outside
- For solid carbide tools with shank tolerance h6

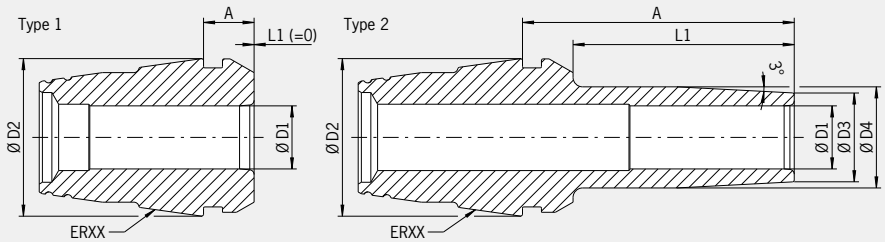
Metric version

Order No.	Type	ER size	D1 [mm]	A [mm]	L1 [mm]	D2 [mm]	D3 [mm]	D4 [mm]	Insertion depth [mm]
81.250.000.03	1	ER25	25	8	0	3	–	–	–
81.250.010.03	2	ER25	25	18	10	3	7	12.5	–
81.250.020.03	2	ER25	25	28	20	3	7	12.5	–
81.250.025.03	2	ER25	25	33	25	3	7	12.5	–
81.250.030.03	2	ER25	25	38	30	3	7	13.5	–
81.250.035.03	2	ER25	25	43	35	3	7	13.5	–
81.250.000.04	1	ER25	25	8	0	4	–	–	–
81.250.010.04	2	ER25	25	18	10	4	7	12.5	–
81.250.020.04	2	ER25	25	28	20	4	7	12.5	–
81.250.025.04	2	ER25	25	33	25	4	7	12.5	–
81.250.030.04	2	ER25	25	38	30	4	7	13.5	–
81.250.035.04	2	ER25	25	43	35	4	7	13.5	–
81.250.000.05	1	ER25	25	8	0	5	–	–	–
81.250.010.05	2	ER25	25	18	10	5	8	13.5	–
81.250.020.05	2	ER25	25	28	20	5	8	13.5	–
81.250.025.05	2	ER25	25	33	25	5	8	13.5	–
81.250.030.05	2	ER25	25	38	30	5	8	14.5	–
81.250.035.05	2	ER25	25	43	35	5	8	14.5	–
81.250.000.06	1	ER25	25	8	0	6	–	–	–
81.250.010.06	2	ER25	25	18	10	6	9	14.5	–
81.250.020.06	2	ER25	25	28	20	6	9	14.5	–
81.250.025.06	2	ER25	25	33	25	6	9	14.5	–
81.250.030.06	2	ER25	25	38	30	6	9	15.5	–
81.250.035.06	2	ER25	25	43	35	6	9	15.5	–
81.250.000.08	1	ER25	25	8	0	8	–	–	–
81.250.010.08	2	ER25	25	18	10	8	11	16	–

Coolant slots

Order No. 91.100.42

SHRINK FIT COLLETS ER25 (8°)
METRIC



Version

- Compatible with all established ER nuts
- Optional with slits along the clamping bore for cooling from outside
- For solid carbide tools with shank tolerance h6

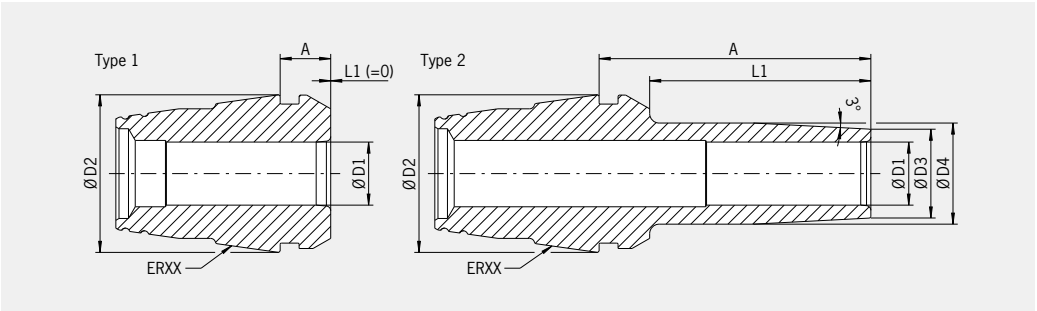
Metric version

Order No.	Type	ER size	D1 [mm]	A [mm]	L1 [mm]	D2 [mm]	D3 [mm]	D4 [mm]	Insertion depth [mm]
81.250.020.08	2	ER25	25	28	20	8	11	16	–
81.250.025.08	2	ER25	25	33	25	8	11	16	–
81.250.030.08	2	ER25	25	38	30	8	11	16.7	–
81.250.035.08	2	ER25	25	43	35	8	11	16.7	–
81.250.000.10	1	ER25	25	8	0	10	–	–	–
81.250.010.10	2	ER25	25	18	10	10	14	–	–
81.250.020.10	2	ER25	25	28	20	10	14	–	–
81.250.025.10	2	ER25	25	33	25	10	14	–	–
81.250.030.10	2	ER25	25	38	30	10	14	16	–
81.250.035.10	2	ER25	25	43	35	10	14	16	–
81.250.000.12	1	ER25	25	8	0	12	–	–	–
81.250.000.14	1	ER25	25	8	0	14	–	–	–
81.250.000.16[1)]	1	ER25	25	8	0	16	–	–	33

Coolant slots
Order No. 91.100.42

1) Mounting of slits not possible

SHRINK FIT COLLETS ER32 (8°)
INCH



Version

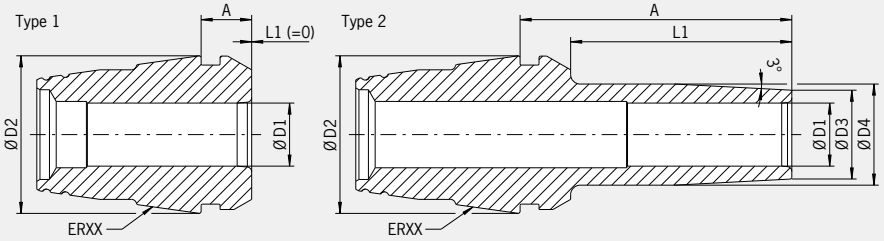
- Compatible with all established ER nuts
- Optional with slits along the clamping bore for cooling from outside
- For solid carbide tools with shank tolerance h6

Inch Version

Order No.	Type	ER size	D1 [inch]	A [inch]	L1 [inch]	D2 [inch]	D3 [inch]	D4 [inch]	Insertion depth [inch]
81.320.000.1/8z	1	ER32	1.260	0.354	0.000	1/8	–	–	–
81.320.000.3/16z	1	ER32	1.260	0.354	0.000	3/16	–	–	–
81.320.000.1/4z	1	ER32	1.260	0.354	0.000	1/4	–	–	–
81.320.000.5/16z	1	ER32	1.260	0.354	0.000	5/16	–	–	–
81.320.000.3/8z	1	ER32	1.260	0.354	0.000	3/8	–	–	–
81.320.000.7/16z	1	ER32	1.260	0.354	0.000	7/16	–	–	–
81.320.000.1/2z	1	ER32	1.260	0.354	0.000	1/2	–	–	–
81.320.000.9/16z	1	ER32	1.260	0.354	0.000	9/16	–	–	–
81.320.000.5/8z	1	ER32	1.260	0.354	0.000	5/8	–	–	–
81.320.000.3/4z	1	ER32	1.260	0.354	0.000	3/4	–	–	–
81.320.035.1/8z	2	ER32	1.260	1.732	1.378	1/8	0.276	0.591	–
81.320.035.3/16z	2	ER32	1.260	1.732	1.378	3/16	0.315	0.591	–
81.320.035.1/4z	2	ER32	1.260	1.732	1.378	1/4	0.354	0.669	–
81.320.035.5/16z	2	ER32	1.260	1.732	1.378	5/16	0.433	0.748	–
81.320.035.3/8z	2	ER32	1.260	1.732	1.378	3/8	0.551	0.866	–
81.320.035.7/16z	2	ER32	1.260	1.732	1.378	7/16	0.591	0.866	–
81.320.035.1/2z	2	ER32	1.260	1.732	1.378	1/2	0.630	0.945	–
81.320.035.9/16z	2	ER32	1.260	1.732	1.378	9/16	0.669	0.945	–
81.320.035.5/8z	2	ER32	1.260	1.732	1.378	5/8	0.748	0.945	–

Coolant slots
Order No. 91.100.42

SHRINK FIT COLLETS ER32 (8°)
METRIC



Version

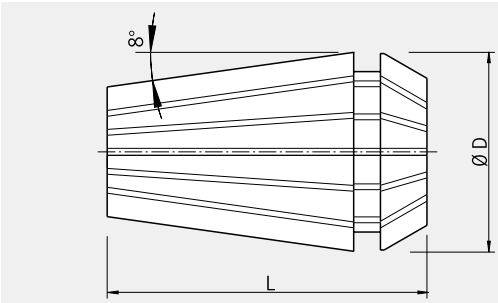
- Compatible with all established ER nuts
- Optional with slits along the clamping bore for cooling from outside
- For solid carbide tools with shank tolerance h6

Metric version

Order No.	Type	ER size	D1 [mm]	A [mm]	L1 [mm]	D2 [mm]	D3 [mm]	D4 [mm]	Insertion depth [mm]
81.320.000.03	1	ER32	32	9	0	3	–	–	–
81.320.035.03	2	ER32	32	44	35	3	7	15	–
81.320.000.04	1	ER32	32	9	0	4	–	–	–
81.320.035.04	2	ER32	32	44	35	4	7	15	–
81.320.000.05	1	ER32	32	9	0	5	–	–	–
81.320.035.05	2	ER32	32	44	35	5	8	16	–
81.320.000.06	1	ER32	32	9	0	6	–	–	–
81.320.035.06	2	ER32	32	44	35	6	9	17	–
81.320.000.08	1	ER32	32	9	0	8	–	–	–
81.320.035.08	2	ER32	32	44	35	8	11	19	–
81.320.000.10	1	ER32	32	9	0	10	–	–	–
81.320.035.10	2	ER32	32	44	35	10	14	22	–
81.320.000.12	1	ER32	32	9	0	12	–	–	–
81.320.035.12	2	ER32	32	44	35	12	15	24	–
81.320.000.14	1	ER32	32	9	0	14	–	–	–
81.320.035.14	2	ER32	32	44	35	14	17	24	–
81.320.000.16	1	ER32	32	9	0	16	–	–	–
81.320.035.16	2	ER32	32	44	35	16	19	24	–
81.320.000.18	1	ER32	32	9	0	18	–	–	–
81.320.000.20	1	ER32	32	9	0	20	–	–	–

Coolant slots
Order No. 91.100.42

HIGH PRECISION ER COLLETS METRIC



Version

- High polished finish for extra accuracy and long life, especially when clamped in HAIMER ER collet chucks
- ISO 15488 (formerly DIN 6499)
- Superior clamping strength
- Fits all brands of ER collet holders
- Run-out accuracy 0.0002" (5 µm)

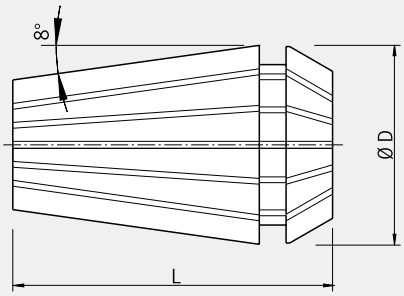
ER11 Clamping Ø		[mm]	Ø D	L
Order No.	**81.110.1.0**	0.50–1.00	11.5	18
	81.110.1.5	1.00–1.50	11.5	18
	81.110.2.0	1.50–2.00	11.5	18
	81.110.2.5	2.00–2.50	11.5	18
	81.110.3.0	2.50–3.00	11.5	18
	81.110.3.5	3.00–3.50	11.5	18
	81.110.4.0	3.50–4.00	11.5	18
	81.110.4.5	4.00–4.50	11.5	18
	81.110.5.0	4.50–5.00	11.5	18
	81.110.5.5	5.00–5.50	11.5	18
	81.110.6.0	5.50–6.00	11.5	18
	81.110.6.5	6.00–6.50	11.5	18
	81.110.7.0	6.50–7.00	11.5	18
	81.110.00	Set of ER11 collets (7 pcs., seperately packaged)		

ER16 Clamping Ø		[mm]	Ø D	L
Order No.	**81.160.1.0**	0.50–1.00	17	27
	81.160.1.5	1.00–1.50	17	27
	81.160.02	1.50–2.00	17	27
	81.160.2.5	2.00–2.50	17	27
	81.160.03	2.50–3.00	17	27
	81.160.04	3.00–4.00	17	27
	81.160.05	4.00–5.00	17	27
	81.160.06	5.00–6.00	17	27
	81.160.07	6.00–7.00	17	27
	81.160.08	7.00–8.00	17	27
	81.160.09	8.00–9.00	17	27
	81.160.10	9.00–10.00	17	27
	81.160.00	Set of ER16 collets (10 pcs., seperately packaged)		
	81.160.001	Set of ER16 collets (10 pcs., seperately packaged, with collet carrier))		

ER20 Clamping Ø		[mm]	Ø D	L
Order No.	**81.200.02**	1.50–2.00	21	31.5
	81.200.03	2.00–3.00	21	31.5
	81.200.04	3.00–4.00	21	31.5
	81.200.05	4.00–5.00	21	31.5
	81.200.06	5.00–6.00	21	31.5
	81.200.07	6.00–7.00	21	31.5
	81.200.08	7.00–8.00	21	31.5
	81.200.09	8.00–9.00	21	31.5
	81.200.10	9.00–10.00	21	31.5
	81.200.11	10.00–11.00	21	31.5
	81.200.12	11.00–12.00	21	31.5
	81.200.13	12.00–13.00	21	31.5
	81.200.00	Set of ER20 collets (12 pcs., seperately packaged)		
	81.200.001	Set of ER20 collets (12 pcs., seperately packaged, with collet carrier))		

ER25 Clamping Ø		[mm]	Ø D	L
Order No.	**81.250.1.5**	1.00–1.50	26	35
	81.250.02	1.50–2.00	26	35
	81.250.2.5	2.00–2.50	26	35
	81.250.03	2.50–3.00	26	35
	81.250.04	3.00–4.00	26	35
	81.250.05	4.00–5.00	26	35
	81.250.06	5.00–6.00	26	35
	81.250.07	6.00–7.00	26	35
	81.250.08	7.00–8.00	26	35
	81.250.09	8.00–9.00	26	35
	81.250.10	9.00–10.00	26	35
	81.250.11	10.00–11.00	26	35
	81.250.12	11.00–12.00	26	35
	81.250.13	12.00–13.00	26	35
	81.250.14	13.00–14.00	26	35
	81.250.15	14.00–15.00	26	35
	81.250.16	15.00–16.00	26	35
	81.250.00	Set of ER25 collets (15 pcs., seperately packaged)		
	81.250.001	Set of ER25 collets (15 pcs., seperately packaged, with collet carrier))		

HIGH PRECISION ER COLLETS
METRIC



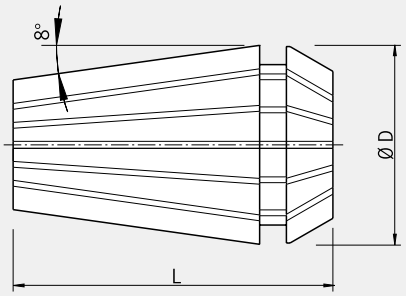
Version

- High polished finish for extra accuracy and long life, especially when clamped in HAIMER ER collet chucks
- ISO 15488 (formerly DIN 6499)
- Superior clamping strength
- Fits all brands of ER collet holders
- Run-out accuracy 0.0002" (5 µm)

ER32 Clamping Ø		[mm]	Ø D	L
Order No.	**81.320.02**	1.50–2.00	33	40
	81.320.2.5	2.00–2.50	33	40
	81.320.03	2.50–3.00	33	40
	81.320.04	3.00–4.00	33	40
	81.320.05	4.00–5.00	33	40
	81.320.06	5.00–6.00	33	40
	81.320.07	6.00–7.00	33	40
	81.320.08	7.00–8.00	33	40
	81.320.09	8.00–9.00	33	40
	81.320.10	9.00–10.00	33	40
	81.320.11	10.00–11.00	33	40
	81.320.12	11.00–12.00	33	40
	81.320.13	12.00–13.00	33	40
	81.320.14	13.00–14.00	33	40
	81.320.15	14.00–15.00	33	40
	81.320.16	15.00–16.00	33	40
	81.320.17	16.00–17.00	33	40
	81.320.18	17.00–18.00	33	40
	81.320.19	18.00–19.00	33	40
	81.320.20	19.00–20.00	33	40
	81.320.00	Set of ER32 collets (19 pcs., seperately packaged)		
	81.320.001	Set of ER32 collets (19 pcs., seperately packaged, with collet carrier))		

ER40 Clamping Ø		[mm]	Ø D	L
Order No.	**81.400.03**	2.50–3.00	41	46
	81.400.04	3.00–4.00	41	46
	81.400.05	4.00–5.00	41	46
	81.400.06	5.00–6.00	41	46
	81.400.07	6.00–7.00	41	46
	81.400.08	7.00–8.00	41	46
	81.400.09	8.00–9.00	41	46
	81.400.10	9.00–10.00	41	46
	81.400.11	10.00–11.00	41	46
	81.400.12	11.00–12.00	41	46
	81.400.13	12.00–13.00	41	46
	81.400.14	13.00–14.00	41	46
	81.400.15	14.00–15.00	41	46
	81.400.16	15.00–16.00	41	46
	81.400.17	16.00–17.00	41	46
	81.400.18	17.00–18.00	41	46
	81.400.19	18.00–19.00	41	46
	81.400.20	19.00–20.00	41	46
	81.400.21	20.00–21.00	41	46
	81.400.22	21.00–22.00	41	46
	81.400.23	22.00–23.00	41	46
	81.400.24	23.00–24.00	41	46
	81.400.25	24.00–25.00	41	46
	81.400.26	25.00–26.00	41	46
	81.400.00	Set of ER40 collets (24 pcs., seperately packaged)		
	81.400.001	Set of ER40 collets (24 pcs., seperately packaged, with collet carrier))		

HIGH PRECISION ER COLLETS
INCH



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- Run-out accuracy 0.0002" (5 µm)

ER16 Clamping Ø		[inch]	Ø D	L
Order No.	**81.160.1/16z**	0.0425–0.0625	0.67	1.06
	81.160.1/8z	0.085–0.125	0.67	1.06
	81.160.3/16z	0.1475–0.1875	0.67	1.06
	81.160.1/4z	0.21–0.25	0.67	1.06
	81.160.5/16z	0.2725–0.3125	0.67	1.06
	81.160.3/8z	0.335–0.375	0.67	1.06

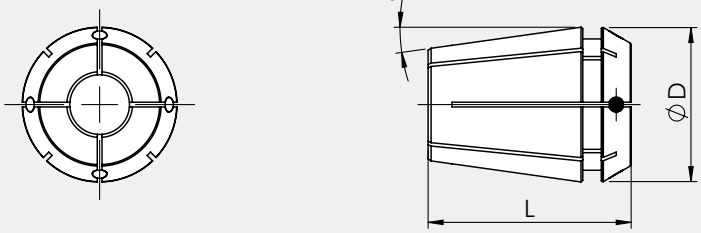
ER20 Clamping Ø		[inch]	Ø D	L
Order No.	**81.200.1/8z**	0.085–0.125	0.83	1.24
	81.200.3/16z	0.1475–0.1875	0.83	1.24
	81.200.1/4z	0.21–0.25	0.83	1.24
	81.200.5/16z	0.2725–0.3125	0.83	1.24
	81.200.3/8z	0.335–0.375	0.83	1.24
	81.200.7/16z	0.3975–0.4375	0.83	1.24
	81.200.1/2z	0.46–0.50	0.83	1.24

ER25 Clamping Ø		[inch]	Ø D	L
Order No.	**81.250.1/8z**	0.085–0.125	1.02	1.38
	81.250.3/16z	0.1475–0.1875	1.02	1.38
	81.250.1/4z	0.21–0.25	1.02	1.38
	81.250.5/16z	0.2725–0.3125	1.02	1.38
	81.250.3/8z	0.335–0.375	1.02	1.38
	81.250.7/16z	0.3975–0.4375	1.02	1.38
	81.250.1/2z	0.46–0.50	1.02	1.38
	81.250.9/16z	0.5225–0.5625	1.02	1.38
	81.250.5/8z	0.585–0.625	1.02	1.38

ER32 Clamping Ø		[inch]	Ø D	L
Order No.	**81.320.1/8z**	0.085–0.125	1.3	1.57
	81.320.3/16z	0.1475–0.1875	1.3	1.57
	81.320.1/4z	0.21–0.25	1.3	1.57
	81.320.5/16z	0.2725–0.3125	1.3	1.57
	81.320.3/8z	0.335–0.375	1.3	1.57
	81.320.7/16z	0.3975–0.4375	1.3	1.57
	81.320.1/2z	0.46–0.50	1.3	1.57
	81.320.9/16z	0.5225–0.5625	1.3	1.57
	81.320.5/8z	0.585–0.625	1.3	1.57
	81.320.11/16z	0.6475–0.6875	1.3	1.57
	81.320.3/4z	0.71–0.75	1.3	1.57

ER40 Clamping Ø		[inch]	Ø D	L
Order No.	**81.400.1/4z**	0.21–0.25	1.61	1.81
	81.400.5/16z	0.2725–0.3125	1.61	1.81
	81.400.3/8z	0.335–0.375	1.61	1.81
	81.400.7/16z	0.3975–0.4375	1.61	1.81
	81.400.1/2z	0.46–0.50	1.61	1.81
	81.400.9/16z	0.5225–0.5625	1.61	1.81
	81.400.5/8z	0.585–0.625	1.61	1.81
	81.400.3/4z	0.71–0.75	1.61	1.81
	81.400.7/8z	0.835–0.875	1.61	1.81
	81.400.1z	0.96–1	1.61	1.81

HIGH PRECISION ER COLLETS – SEALED METRIC



Version

- High polished finish for extra accuracy and long life, especially when clamped in HAIMER ER collet chucks
- ISO 15488 (formerly DIN 6499)
- Superior clamping strength
- Fits all brands of ER collet holders
- Run-out accuracy 0.0002" (5 µm)
- Sealed for internal coolant tools

ER16 Clamping Ø		[mm]	Ø D	L
Order No.	81.165.03	03	16.70	30
	81.165.04	04	16.70	30
	81.165.05	05	16.70	30
	81.165.06	06	16.70	30
	81.165.07	07	16.70	30
	81.165.08	08	16.70	30
	81.165.09	09	16.70	30
	81.165.10	10	16.70	30

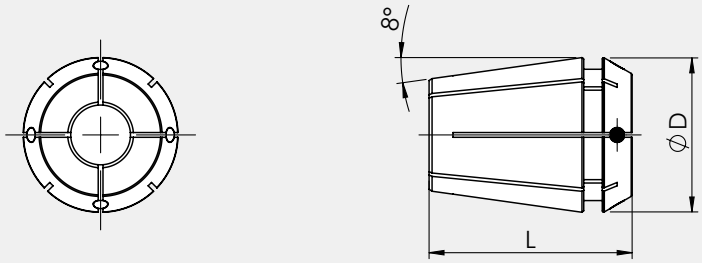
ER25 Clamping Ø		[mm]	Ø D	L
Order No.	81.255.03	03	25.70	37
	81.255.04	04	25.70	37
	81.255.05	05	25.70	37
	81.255.06	06	25.70	37
	81.255.07	07	25.70	37
	81.255.08	08	25.70	37
	81.255.09	09	25.70	37
	81.255.10	10	25.70	37
	81.255.11	11	25.70	37
	81.255.12	12	25.70	37
	81.255.13	13	25.70	37
	81.255.14	14	25.70	37
	81.255.15	15	25.70	37
	81.255.16	16	25.70	37

ER40 Clamping Ø		[mm]	Ø D	L
Order No.	81.405.06	06	40.70	30
	81.405.08	08	40.70	30
	81.405.10	10	40.70	30
	81.405.12	12	40.70	30
	81.405.14	14	40.70	30
	81.405.16	16	40.70	30
	81.405.18	18	40.70	30
	81.405.20	20	40.70	30
	81.405.22	22	40.70	30
	81.405.25	25	40.70	30

ER20 Clamping Ø		[mm]	Ø D	L
Order No.	81.205.03	03	20.70	30
	81.205.04	04	20.70	30
	81.205.05	05	20.70	30
	81.205.06	06	20.70	30
	81.205.07	07	20.70	30
	81.205.08	08	20.70	30
	81.205.09	09	20.70	30
	81.205.10	10	20.70	30
	81.205.11	11	20.70	30
	81.205.12	12	20.70	30

ER25 Clamping Ø		[mm]	Ø D	L
Order No.	81.325.03	03	32.70	45
	81.325.04	04	32.70	45
	81.325.05	05	32.70	45
	81.325.06	06	32.70	45
	81.325.07	07	32.70	45
	81.325.08	08	32.70	45
	81.325.09	09	32.70	45
	81.325.10	10	32.70	45
	81.325.11	11	32.70	45
	81.325.12	12	32.70	45
	81.325.13	13	32.70	45
	81.325.14	14	32.70	45
	81.325.15	15	32.70	45
	81.325.16	16	32.70	45
	81.325.17	17	32.70	45
	81.325.18	18	32.70	45
	81.325.19	19	32.70	45
	81.325.20	20	32.70	45

HIGH PRECISION ER COLLETS – SEALED INCH



Version

- High polished finish for extra accuracy and long life, especially when clamped in HAIMER ER collet chucks
- ISO 15488 (formerly DIN 6499)
- Superior clamping strength
- Fits all brands of ER collet holders
- Run-out accuracy 0.0002" (5 µm)
- Sealed for internal coolant tools

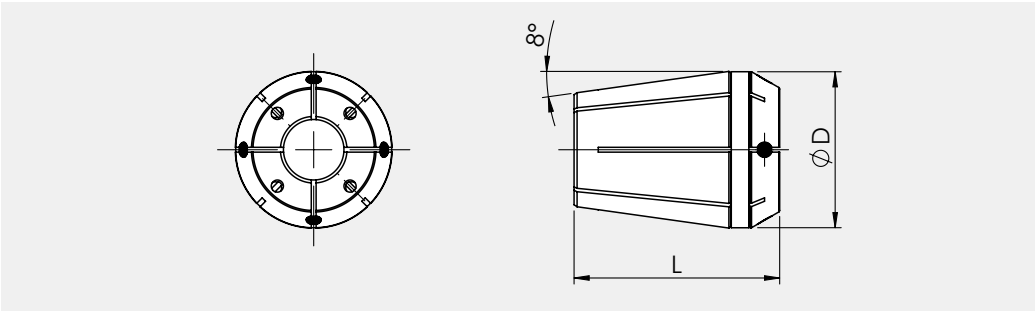
ER16 Clamping Ø		[inch]	Ø D	L
Order No.	**81.165.1/8z**	1/8	0.65	1.18
	81.165.3/16z	3/16	0.65	1.18
	81.165.1/4z	1/4	0.65	1.18
	81.165.5/16z	5/16	0.65	1.18
	81.165.3/8z	3/8	0.65	1.18

ER25 Clamping Ø		[inch]	Ø D	L
Order No.	**81.255.1/8z**	1/8	1.001	1.46
	81.255.3/16z	3/16	1.001	1.46
	81.255.1/4z	1/4	1.001	1.46
	81.255.5/16z	5/16	1.001	1.46
	81.255.3/8z	3/8	1.001	1.46
	81.255.7/16z	7/16	1.001	1.46
	81.255.1/2z	1/2	1.001	1.46
	81.255.9/16z	9/16	1.001	1.46
	81.255.5/8z	5/8	1.001	1.46

ER20 Clamping Ø		[inch]	Ø D	L
Order No.	**81.205.1/8z**	1/8	1.001	1.46
	81.205.3/16z	3/16	1.001	1.46
	81.205.1/4z	1/4	1.001	1.46
	81.205.5/16z	5/16	1.001	1.46
	81.205.3/8z	3/8	1.001	1.46
	81.205.7/16z	7/16	1.001	1.46
	81.205.1/2z	1/2	1.001	1.46

ER32 Clamping Ø		[inch]	Ø D	L
Order No.	**81.325.1/8z**	1/8	1.28	1.77
	81.325.3/16z	3/16	1.28	1.77
	81.325.1/4z	1/4	1.28	1.77
	81.325.5/16z	5/16	1.28	1.77
	81.325.3/8z	3/8	1.28	1.77
	81.325.7/16z	7/16	1.28	1.77
	81.325.1/2z	1/2	1.28	1.77
	81.325.9/16z	9/16	1.28	1.77
	81.325.5/8z	5/8	1.28	1.77
	81.325.3/4z	3/4	1.28	1.77

HIGH PRECISION ER COLLETS – SEALED WITH COOL JET METRIC



Version

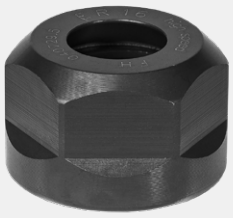
- High polished finish for extra accuracy and long life, especially when clamped in HAIMER ER collet chucks
- ISO 15488 (formerly DIN 6499)
- Superior clamping strength
- Fits all brands of ER collet holders
- Run-out accuracy 0.00012" (3 µm)
- With Cool Jet bores for optimal coolant supply
- For cylindrical shanks with tolerance h8 or better

ER25 Clamping Ø		[mm]	Ø D	L
Order No.	**81.252.04**	04	26	37
	81.252.06	06	26	37
	81.252.08	08	26	37
	81.252.10	10	26	37
	81.252.12	12	26	37
	81.252.14	14	26	37

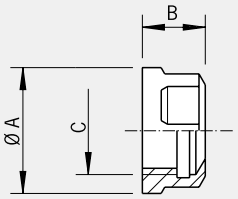
ER32 Clamping Ø		[mm]	Ø D	L
Order No.	**81.322.04**	04	33	45
	81.322.06	06	33	45
	81.322.08	08	33	45
	81.322.10	10	33	45
	81.322.12	12	33	45
	81.322.14	14	33	45
	81.322.16	16	33	45
	81.322.18	18	33	45
	81.322.20	20	33	45

Attention: Blue plastic ring is for identification purposes only and must be removed before use!

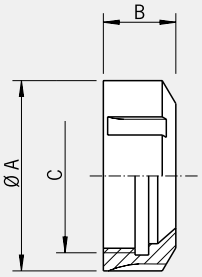
LOCKNUTS FOR ER COLLET CHUCKS



ER 11–20
for fork wrench



ER 25–40
for ER spanner
clamping wrench



Locknut ER

- Highest runout accuracy
- No wear and high clamping force due to special slide coating
- Small vibrations due to pre-balancing
- Version HS fine-balanced

ER		ER11	ER16	ER20	ER25	ER32	ER40
Order No.	**83.912....**	**.11**	**.16**	**.20**	**.25**	**.32**	**.40**
HS Version							
Order No.	**83.912....**		**.16.HS**	**.20.HS**	**.25.HS**	**.32.HS**	**.40.HS**
Ø A		19	28	34	42	50	63
B		11.3	17	19	20	22.5	25.5
C		M 14×0.75	M 22×1.5	M 25×1.5	M 32×1.5	M 40×1.5	M 50×1.5

TORQUE MASTER TORQUE WRENCH FOR HAIMER POWER COLLET CHUCKS AND STANDARD ER CHUCKS

Two-armed clamping wrench and torque wrench for Collet Chucks

- For highest runout accuracy, no one-sided clamping
- Optimal power transmission by consistent force application
- Torque wrench for highest clamping accuracy and repeatability with dial gauge
- Maximum torque for highest clamping force
- No overloading of smaller clamping diameters
- Interchangeable inserts, usable also for standard ER Collets

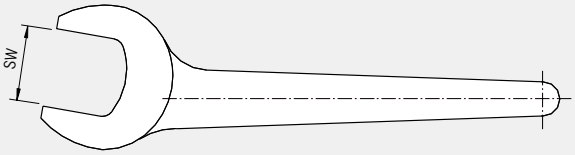
Torque Master Torque Wrench	Order No.
Torque Master with case	**84.600.00**
Torque Master without case	**84.600.00.S**
Torque Master torque wrench set with case and 3 inserts for Standard ER Chucks in ER16, ER25, ER32	**84.600.00.AK**

INSERTS FOR TORQUE MASTER TORQUE WRENCH

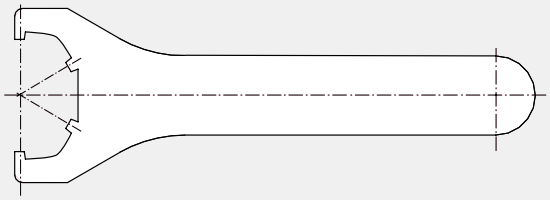
Inserts for Torque Master Wrench		
for Power Collet Chucks	Size	
Order No.		
84.610.16	ER16	
84.610.25	ER25	
84.610.32	ER32	
for Standard ER Chucks	Size	Wrench size SW
84.620.11	ER11	SW17
84.620.16	ER16	SW25
84.620.20	ER20	SW30
84.620.25	ER25	
84.620.32	ER32	
		Wrench size SW
84.620.16.1	ER16 Mini	

WRENCHES

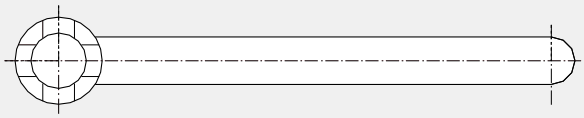
Power Collet clamping wrench for ER 16, ER 25 and ER 32				
ER		ER16	ER25	ER32
Order No.	84.650...	.16	.25	.32



Wrench for locknuts ER 11, ER 16 and ER 20				
ER		ER11	ER16	ER20
Wrench size		17	25	30
Order No.	84.200...	.11	.16	.20



Wrench for locknuts ER 25–40					
ER		ER25	ER32	ER40	ER50
Order No.	84.200...	.25	.32	.40	.50



Wrench for tightening bolts for face mill arbors and combination shell end mill adapters Ø 16–60								
Ø		16	22	27	32	40	50	60
Order No.	84.400...	.16	.22	.27	.32	.40	.50	.60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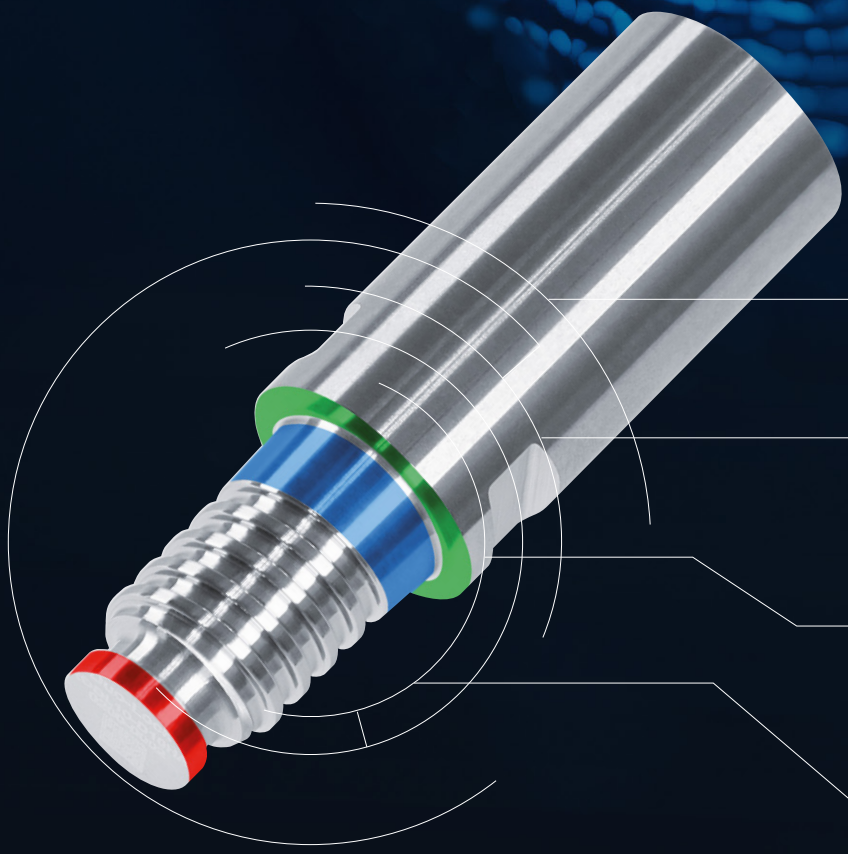
HAIMER 79.110.04
OPEN

DUO-LOCK®

For the first time, a modular milling system can achieve the similar high performance of the latest generation solid carbide end mill.

To deliver groundbreaking joint technology, Duo-Lock combines the innovative histories of two leaders in the world of manufacturing – Kennametal and HAIMER.

Duo-Lock maximizes a carbide tool's full potential with productivity gains in both roughing and finishing. It provides high load capacity and rigidity when machining at high metal removal rates. When combined with high-performance cutting tools, Duo-Lock provides more than double the metal removal rate in common milling applications.



Superior rigidity of the interface that allows for unique d.o.c. capability of up to 1.5 × D and 1 × D in full slotting.

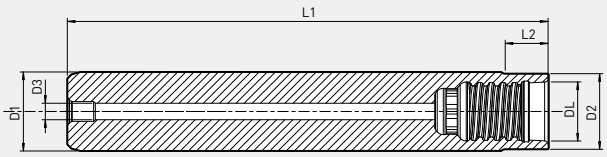
Geometric parameters of the connection have been optimized and thoroughly tested leading to the most robust modular system ever developed.

FEA based design ensures that stress levels in the interface remain below critical values even at elevated loads.

The double cone surfaces combined with the third contact area in the back delivers high stiffness and accuracy.

HAIMER

DUO-LOCK EXTENSIONS
CYLINDRICAL – SHORT – STEEL



Version: Cylindrical, short

- Shank tolerance: h6
- With inner coolant bore
- Optional with Safe-Lock

Also available:

Extensions with coating – for perfect shrinking in and out even at high forces during machining

Duo-Lock extensions cylindrical: short (Metric version)

Interface DL	Order No.	Order No. with coating	Clamping Ø D1 [mm]	Length L1 [mm]	Neck Ø D2 [mm]	Neck length L2 [mm]	Internal bore Ø D3 [mm]
DL12	75.120.DL12	75.120.DL12.1	12	60	11.5	6	2.5
DL16	75.160.DL16	75.160.DL16.1	16	65	15.5	8	3
DL20	75.200.DL20	75.200.DL20.1	20	70	19.3	10	3
DL25	75.250.DL25	75.250.DL25.1	25	80	24	12.5	5
DL32	75.320.DL32	75.320.DL32.1	32	90	31	16	5

Duo-Lock extensions cylindrical: short with Safe-Lock (Metric version)

Interface DL	Order No.	Order No. with coating	Clamping Ø D1 [mm]	Length L1 [mm]	Neck Ø D2 [mm]	Neck length L2 [mm]	Internal bore Ø D3 [mm]
DL10	75.100.DL10	75.100.DL10.1	10	55	9.6	5	2.5
DL12	75.121.DL12	75.121.DL12.1	12	65	11.5	6	2.5
DL16	75.161.DL16	75.161.DL16.1	16	70	15.5	8	3
DL20	75.201.DL20	75.201.DL20.1	20	80	19.3	10	3
DL25	75.251.DL25	75.251.DL25.1	25	90	24	12.5	5
DL32	75.321.DL32	75.321.DL32.1	32	105	31	16	5

Duo-Lock extensions cylindrical: short (Inch version)

Interface DL	Order No.	Order No. with coating	Clamping Ø D1 [mm]	Length L1 [mm]	Neck Ø D2 [mm]	Neck length L2 [mm]	Internal bore Ø D3 [mm]
DL16	75.5/8z0.DL16	75.5/8z0.DL16.1	5/8	2.5	0.3125	0.6053	0.1181
DL20	75.3/4z0.DL20	75.3/4z0.DL20.1	3/4	3	0.375	0.7303	0.1181
DL25	75.1z0.DL25	75.1z0.DL25.1	1	3	0.5	0.9606	0.1969
DL32	75.11/4z0.DL32	75.11/4z0.DL32.1	11/4	3.5	0.625	1.2106	0.1969

Duo-Lock extensions cylindrical: short (Inch version)

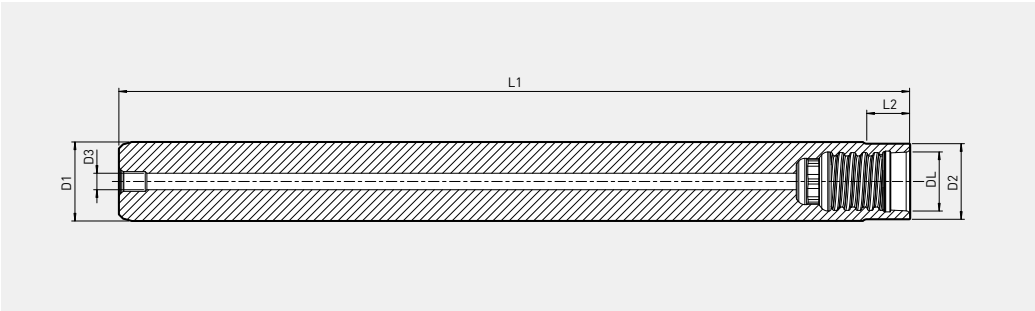
Interface DL	Order No.	Order No. with coating	Clamping Ø D1 [mm]	Length L1 [mm]	Neck Ø D2 [mm]	Neck length L2 [mm]	Internal bore Ø D3 [mm]
DL10	75.3/8z0.DL10	75.3/8z0.DL10.1	3/8	2.25	0.1875	0.3593	0.0984
DL12	75.1/2z0.DL12	75.1/2z0.DL12.1	1/2	2.5	0.25	0.4803	0.0984
DL16	75.5/8z1.DL16	75.5/8z1.DL16.1	5/8	2.75	0.3125	0.6053	0.1181
DL20	75.3/4z1.DL20	75.3/4z1.DL20.1	3/4	3	0.375	0.7303	0.1181
DL25	75.1z1.DL25	75.1z1.DL25.1	1	3.5	0.5	0.9606	0.1969
DL32	75.11/4z1.DL32	75.11/4z1.DL32.1	11/4	4	0.625	1.2106	0.1969

Torque of Duo-Lock interface

	DL10	DL12	DL16	DL20	DL25	DL32
Nm	20	30	60	80	100	130

Attention: For longlife cycle of the system, compliance with the torque is required!

DUO-LOCK EXTENSIONS
CYLINDRICAL – SHORT – STEEL



Version: Cylindrical, short

- Shank tolerance: h6
- With inner coolant bore
- Vibration dampening on request
- Safe-Lock for an extra charge
- Cutting to length possible for an extra charge

Also available:

Extensions with coating – for perfect shrinking in and out even at high forces during machining

Duo-Lock extensions cylindrical: long (Metric version)

Interface DL	Order No.	Order No. with coating	Clamping Ø D1 [mm]	Length L1 [mm]	Neck Ø D2 [mm]	Neck length L2 [mm]	Internal bore Ø D3 [mm]
DL10	**75.102.DL10**	**75.102.DL10.1**	10	100	9.6	5	2.5
DL12	**75.122.DL12**	**75.122.DL12.1**	12	120	11.5	6	2.5
DL16	**75.162.DL16**	**75.162.DL16.1**	16	160	15.5	8	3
DL20	**75.202.DL20**	**75.202.DL20.1**	20	200	19.3	10	3
DL25	**75.252.DL25**	**75.252.DL25.1**	25	250	24	12.5	5
DL32	**75.322.DL32**	**75.322.DL32.1**	32	250	31	16	5

Duo-Lock extensions cylindrical: long (Inch version)

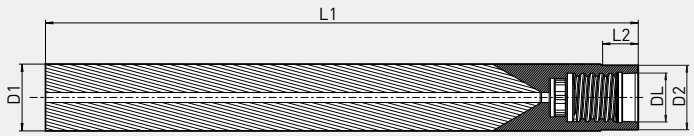
Interface DL	Order No.	Order No. with coating	Clamping Ø D1 [mm]	Length L1 [mm]	Neck Ø D2 [mm]	Neck length L2 [mm]	Internal bore Ø D3 [mm]
DL10	**75.3/8z2.DL10**	**75.3/8z2.DL10.1**	3/8	3.75	0.1875	0.3593	0.0984
DL12	**75.1/2z2.DL12**	**75.1/2z2.DL12.1**	1/2	5	0.25	0.4803	0.0984
DL16	**75.5/8z2.DL16**	**75.5/8z2.DL16.1**	5/8	6.25	0.3125	0.6053	0.1181
DL20	**75.3/4z2.DL20**	**75.3/4z2.DL20.1**	3/4	7.5	0.375	0.7303	0.1181
DL25	**75.1z2.DL25**	**75.1z2.DL25.1**	1	10	0.5	0.9606	0.1969
DL32	**75.11/4z2.DL32**	**75.11/4z2.DL32.1**	11/4	10	0.625	1.2106	0.1969

Torque of Duo-Lock interface						
	DL10	DL12	DL16	DL20	DL25	DL32
Nm	**20**	**30**	**60**	**80**	**100**	**130**

Attention: For longlife cycle of the system, compliance with the torque is required!

HAIMER

DUO-LOCK EXTENSIONS CARBIDE METRIC



Version: Carbide

- L1 and L2 customizable
- Shank tolerance: h6
- With inner coolant bore
- Optional with Safe-Lock

Duo-Lock extensions solid carbide: standard (Metric version)

Interface DL	Order No.	Clamping Ø D1 [mm]	Length max. L1 [mm]	Fix Ø D2 [mm]	Length L2 [mm]
DL10	**75.109.DL10.6.0775.0375**	10	77.5	9.6	37.5
DL10	**75.109.DL10.6.150.032**	10	150	9.6	32
DL12	**75.129.DL12.6.070.037**	12	70	11.5	37
DL12	**75.129.DL12.6.093.045**	12	93	11.5	45
DL12	**75.129.DL12.6.180.037**	12	180	11.5	37
DL16	**75.169.DL16.6.090.0475**	16	90	15.5	47.5
DL16	**75.169.DL16.6.108.060**	16	108	15.5	60
DL16	**75.169.DL16.6.240.0475**	16	240	15.5	47.5
DL20	**75.209.DL20.6.105.055**	20	105	19.3	55
DL20	**75.209.DL20.6.125.075**	20	125	19.3	75
DL20	**75.209.DL20.6.260.055**	20	260	19.3	55
DL25	**75.259.DL25.6.135.070**	25	135	24	70
DL25	**75.259.DL25.6.165.09375**	25	165	24	93.75
DL25	**75.259.DL25.6.260.070**	25	260	24	70
DL32	**75.329.DL32.6.145.088**	32	145	31	88
DL32	**75.329.DL32.6.180.120**	32	180	31	120
DL32	**75.329.DL32.6.260.088**	32	260	31	88

Duo-Lock extensions solid carbide: standard (Metric version)

Interface DL	Order No.	Clamping Ø D1 [mm]	Length max. L1 [mm]	Fix Ø D2 [mm]	Standard L2 [mm]
DL10	**75.109.DL10.6.XXX.XXX**	10	150	9.6	5
DL12	**75.129.DL12.6.XXX.XXX**	12	180	11.5	6
DL16	**75.169.DL16.6.XXX.XXX**	16	240	15.5	8
DL20	**75.209.DL20.6.XXX.XXX**	20	260	19.3	10
DL25	**75.259.DL25.6.XXX.XXX**	25	260	24	12.5
DL32	**75.329.DL32.6.XXX.XXX**	32	260	31	16

Legend Order No.:

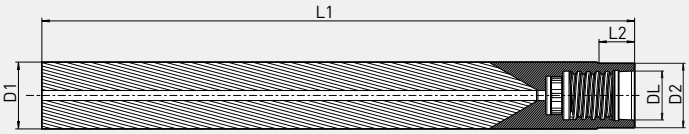
75.XXX.DLXX.6.XXX.XXX

- Length L2
- Total length L1
- Type carbide metal
- Duo-Lock size
- Diameter shank inch
- Duo-Lock group

Torque of Duo-Lock interface						
	DL10	DL12	DL16	DL20	DL25	DL32
Nm	**20**	**30**	**60**	**80**	**100**	**130**

Attention: For longlife cycle of the system, compliance with the torque is required!

DUO-LOCK EXTENSIONS CARBIDE INCH



Version: Carbide

- L1 and L2 customizable
- Shank tolerance: h6
- With inner coolant bore
- Optional with Safe-Lock

Duo-Lock extensions cylindrical: long (Inch version)

Interface DL	Order No.	Clamping Ø D1 [inch]	Length max. L1 [inch]	Fix Ø D2 [inch]	Standard L2 [inch]
DL10	**75.3/8z9.DL10.6.XXX.XXX**	3/8	5.9055	0.3593	0.1875
DL12	**75.1/2z9.DL12.6.XXX.XXX**	1/2	7.0866	0.4803	0.25
DL16	**75.5/8z9.DL16.6.XXX.XXX**	5/8	9.4488	0.6053	0.3125
DL20	**75.3/4z9.DL20.6.XXX.XXX**	3/4	10.2362	0.7303	0.375
DL25	**75.1z9.DL25.6.XXX.XXX**	1	10.2362	0.9606	0.5
DL32	**75.11/4z9.DL32.6.XXX.XXX**	11/4	10.2362	1.2106	0.625

Legend Order No.:

75.XXz.DLXX.6.XXX.XXX

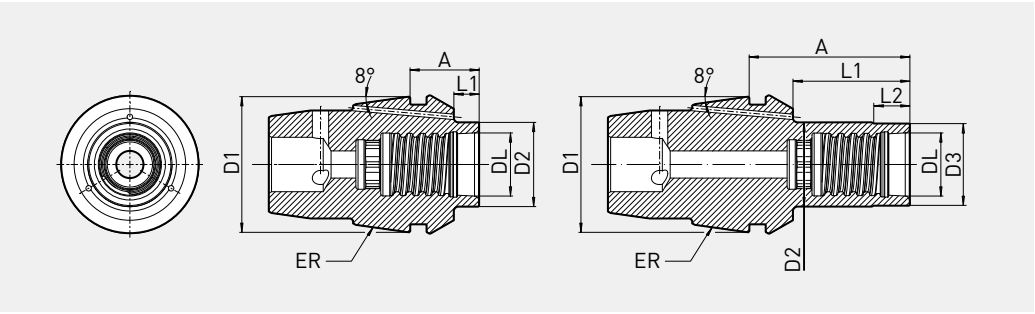
- Length L2
- Total length L1
- Type carbide metal
- Duo-Lock size
- Diameter shank inch
- Duo-Lock group

Torque of Duo-Lock interface

	DL10	DL12	DL16	DL20	DL25	DL32
Nm	**20**	**30**	**60**	**80**	**100**	**130**

Attention: For longlife cycle of the system, compliance with the torque is required!

DUO-LOCK COLLETS



- Useable for Duo-Lock milling heads from DL10–DL25
- For use with metric or inch Duo-Lock cutting tools
- Compatible with all established ER systems
- Optional with Cool Jet 3 or 6 bores

Duo-Lock collets

Order No.	ER size	Norminal Ø D1 [mm]	Length A [mm]	Length L1 [mm]	Length L2 [mm]	Outer Ø D2 [mm]	Neck Ø D3 [mm]	Duo-Lock size DL
81.160.0120.DL10	**ER16**	16	12	5.3	–	9.6	–	DL10
81.200.0130.DL10	**ER20**	20	13	5.48	–	9.6	–	DL10
81.200.0140.DL12	**ER20**	20	14	6.48	–	11.5	–	DL12
81.250.0135.DL10	**ER25**	25	13.5	5.5	–	9.6	–	DL10
81.250.0145.DL12	**ER25**	25	14.5	6.5	–	11.5	–	DL12
81.250.0135.DL16	**ER25**	25	13.5	5.5	–	15.5	–	DL16
81.320.0140.DL10	**ER32**	32	14	5	–	9.6	–	DL10
81.320.0355.DL10	**ER32**	32	35.5	26.5	5	10	9.6	DL10
81.320.0150.DL12	**ER32**	32	15	6	–	11.5	–	DL12
81.320.0365.DL12	**ER32**	32	36.5	27.5	6	12	11.5	DL12
81.320.0170.DL16	**ER32**	32	17	8	–	15.5	–	DL16
81.320.0355.DL16	**ER32**	32	35.5	26.5	8	16	15.5	DL16
81.320.0190.DL20	**ER32**	32	19	10	–	19.3	–	DL20
81.320.0355.DL20	**ER32**	32	35.5	26.5	10	20	19.3	DL20
81.320.0215.DL25	**ER32**	32	21.5	12.5	–	24	–	DL25
81.320.0407.DL25	**ER32**	32	40.75	31.75	–	24	–	DL25

Torque of Duo-Lock interface						
	DL10	DL12	DL16	DL20	DL25	DL32
Nm	**20**	**30**	**60**	**80**	**100**	**130**

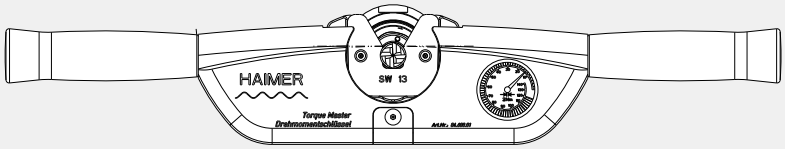
Attention: For longlife cycle of the system, compliance with the torque is required!

Accessories

Cool Jet with 3 coolant bores	
Order No.	**91.100.25**
Cool Jet with 6 coolant bores	
Order No.	**91.100.31**

Alternatively we recommend using our shrink fit collets in driven tools.

DUO-LOCK TORQUE MASTER



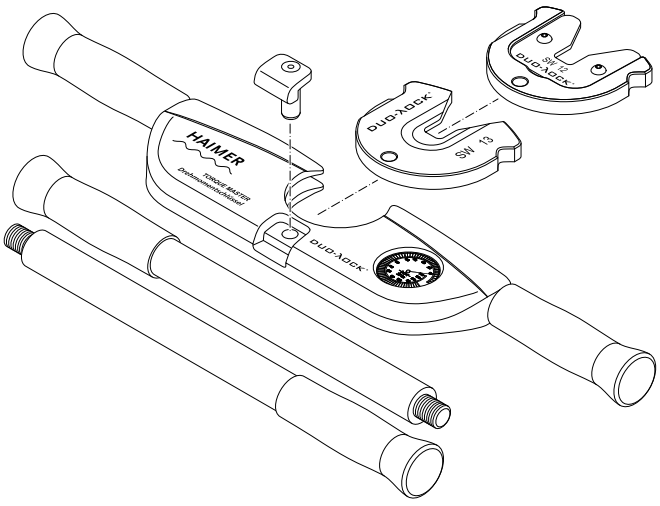
Two-armed torque wrench for Duo-Lock

- For highest runout accuracy, avoids one-sided clamping
- Optimal power transmission by constant force application
- Torque wrench for highest clamping accuracy and repeatability with dial gauge
- Maximum torque for highest clamping force
- No overloading of smaller clamping diameters
- Changeable inserts, useable also for standard ER-Nuts
- Extended grips for DL16–DL32

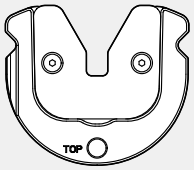
Torque wrench for Duo-Lock	Order No.
Torque Master Set Duo-Lock (with case, 6 inserts and grip sets, long)	84.600.20.AK
Torque Master Duo-Lock incl. grip set long (without inserts)	84.600.20
Grip set long for Torque Master Duo-Lock	84.600.10.1

Torque of Duo-Lock interface						
	DL10	DL12	DL16	DL20	DL25	DL32
Nm	20	30	60	80	100	130

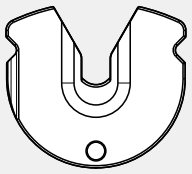
Attention: For longlife cycle of the system, compliance with the torque is required!



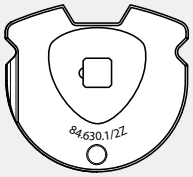
INSERTS FOR DUO-LOCK TORQUE MASTER



DL10–DL12: With wear insert



DL16–DL32: Made of a single piece

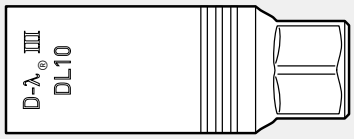


To insert all common square socket wrenches with 1/2"

- Exchangeable inserts for Duo-Lock Torque Master
- Suitable for Duo-Lock milling heads

Inserts		
Order No.	**Size**	**AF [mm]**
84.640.10	DL10	8
84.640.12	DL12	9.5
84.640.16	DL16	13
84.640.20	DL20	16
84.640.25	DL25	21
84.640.32	DL32	28
84.630.1/2z	To insert all common square socket wrenches with 1/2"	

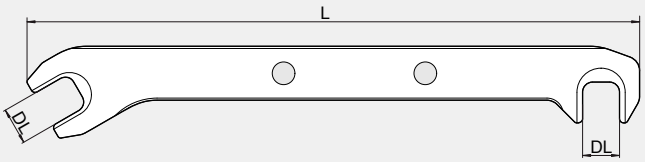
ROLLER BEARING WRENCH FOR CLAMPING DUO-LOCK BLANKS



- Useable for Duo-Lock blanks from DL10–DL20
- For square socket ratchet with 1/2"

Roller Bearing Wrench	
Order No.	
84.645.DL10	DL10
84.645.DL12	DL12
84.645.DL16	DL16
84.645.DL20	DL20

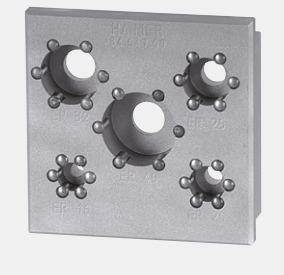
DUO-LOCK HAND WRENCH

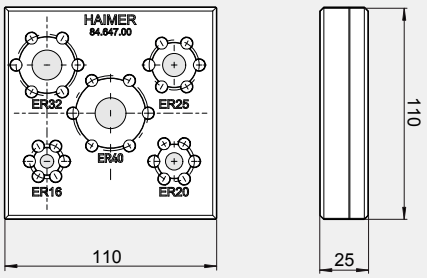


- Useable for Duo-Lock tool heads from DL10–DL20
- For replacing Duo-Lock tool heads directly in the lathe

Duo-Lock Hand wrench			
Order No.	**Size**	**Overall length L [mm]**	**Overall length L [mm]**
84.647.DL10	**DL10**	196	7.7165
84.647.DL12	**DL12**	199	7.8346
84.647.DL16	**DL16**	217	8.5433
84.647.DL20	**DL20**	236	9.2913

DUO-LOCK COLLETS CLAMPING DEVICE

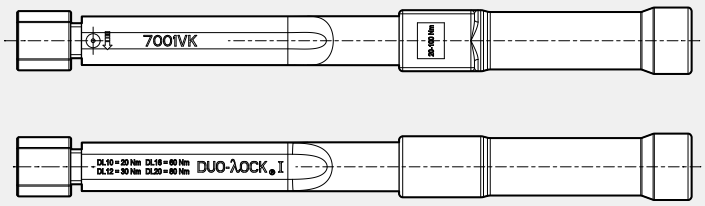




- Useable for Duo-Lock collets from ER16, ER20, ER25, ER32, ER40
- Clamping surfaces for the tension in the vice

Duo-Lock collets clamping device	
Order No.	**Size**
84.647.00	ER16, ER20, ER32, ER40

7001 TORQUE WRENCH DL10 – DL20

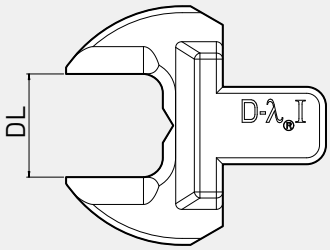


- 7001 torque wrench with changeover ratchet
- For changing Duo-Lock tool heads directly in the lathe
- Torque: 20–100 Nm
- Useable for Duo-Lock milling heads from DL10–DL20
- Connecting size 9×12 mm
- Changeable to clockwise and counter clockwise

Torque wrench for Duo-Lock	Order No.
7001 torque wrench 9×12 mm	**82.587.00**

Torque of Duo-Lock interface				
	DL10	DL12	DL16	DL20
Nm	**20**	**30**	**60**	**80**

DUO-LOCK INSERTS FOR 7001 TORQUE WRENCH



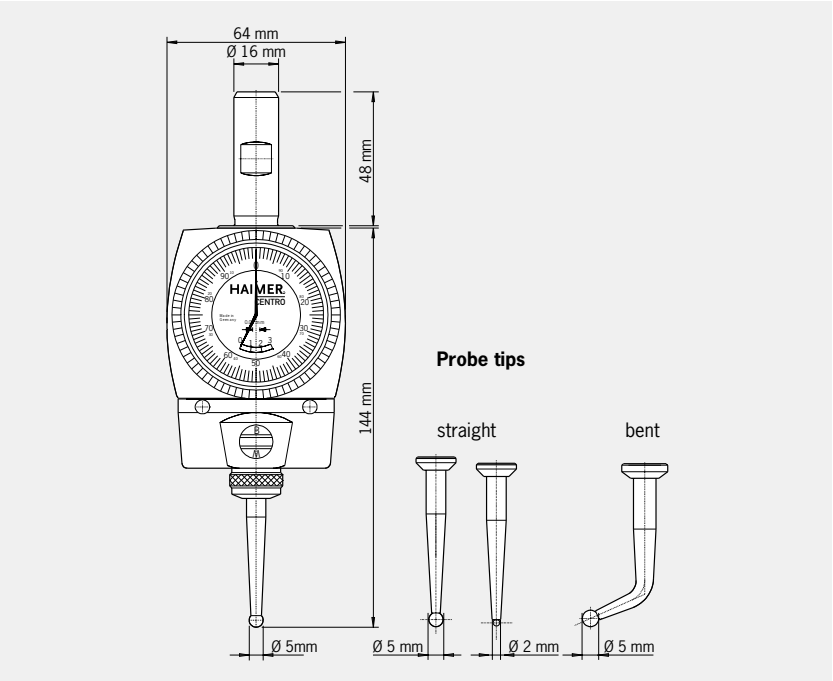
- For changing Duo-Lock tool heads directly in the lathe
- Changeable inserts for 7001 torque wrench
- Useable for Duo-Lock milling heads from DL10–DL20
- Connecting size 9×12 mm

Insert	
Order No.	Size
82.587.DL10	**DL10**
82.587.DL12	**DL12**
82.587.DL16	**DL16**
82.587.DL20	**DL20**

HAIMER

Coaxial Indicator Centro

COAXIAL INDICATOR CENTRO
THE MOST ROBUST INDICATOR AVAILABLE ON THE MARKET



Centro

Center bores and arbors quick and precise
The Centro is clamped in a tool holder and positioned close the sought axis.
The probe tip is adjusted and touches the bore or arbor all the way around.

Dial gauge always in field of vision
With low rpm the probe slides along the bore or arbor.
Its movement is transferred to the dial gauge. By using an antenna the Centro does not spin around and stays in field of vision.

By using the Centro, you find the axis of bores or arbors – reliably
As long as the spindle is out of the center of the bore or arbor, the hands of the dial gauge stay in movement. By changing the position of x- and y- axis at the machine, you can align the axis of the spindle and the work piece.

Further advantages
- Check the axial run-out of the work piece to the spindle
- Compensation of the run-out errors of the spindle and tool holder
  ➞ no adjustment necessary!
- Even in bigger distance the unusual size of the dial gauge is helpful to finish the job
- Replaceable probes

Technical details	
Centro with clamping shank Ø 0.63" (16 mm) incl. straight probe tip Ø 0.2" (5 mm)	
Centering accuracy	0.0001" / 0.003 mm
Max. rotation speed	150 rpm
Measuring range interior diameter (drill hole)	0.1"–5" / 3–125 mm
Measuring range exterior diameter (shaft, with probe tip bent)	0"–5" / 0–125 mm
Order No.	**80.300.00.FHN**

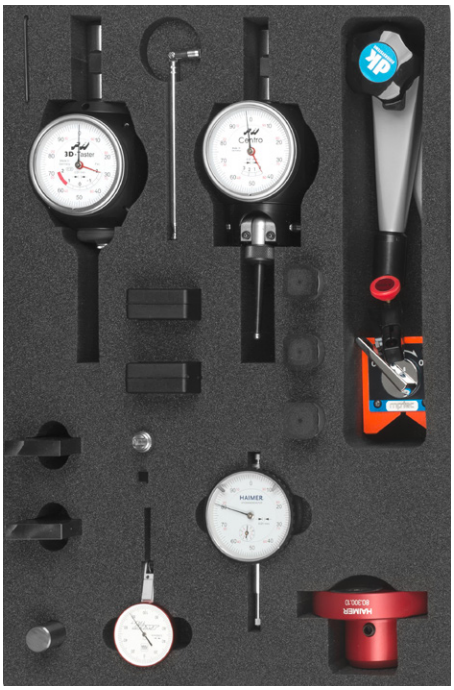
Accessories	
Probe tip straight with diameter of ball 0.2" / 5 mm **Order No. 80.301.00**	
Probe tip bent with diameter of ball 0.2" / 5 mm **Order No. 80.302.00**	
Probe tip straight with diameter of ball 0.08" / 2 mm, for small bores **Order No. 80.303.00**	

Recommended HAIMER tool holders	
	Order No.
Short chuck SK40	**40.305.16**
Short chuck SK50	**50.300.16**
Short chuck BT40	**40.500.16**
Short chuck BT50	**50.500.16**
Short chuck HSK-A40	**A40.000.16**
Short chuck HSK-A50	**A50.000.16**
Short chuck HSK-E50	**E50.000.16**
Short chuck HSK-A63	**A63.000.16**
Short chuck HSK-A100	**A10.000.16**

HAIMER

Machine tool calibration set

MACHINE TOOL CALIBRATION SET



- Stable, dust proof and water proof plastic-case provides perfect protection of your measuring equipment
- Two high quality, precise and universal HAIMER sensors incl. accessories
- Adapter for versatile use of the HAIMER sensors in all types of metal cutting machines
- Several gauge blocks for checking and calibrating your measuring equipment and for individual measurements
- Two high quality dial indicators with corresponding gauge stand

Fast and easy installation and inspection of your machine tool

- Highly accurate alignment of lathe and milling machines to secure your quality level
- Quick and very precise positioning of your axis and workpieces to check the machine accuracy
- Faster and more precise installation of axis and spindles of your machine tool to reduce scrap and avoid unnecessarily high tool costs
- Simple and reliable inspection of the machine geometry for consistent machining results

Included in delivery

- Suitcase: Black plastic-case, dust- and water proof according to IP67, collision protection external dimension: 464 × 366 × 176 mm, internal dimension: 426 × 290 × 159 mm
- Black foam inlay with 18 recesses
- HAIMER Universal 3D-Sensor
- Short probe tip Ø 4 mm, long probe tip Ø 8 mm
- HAIMER Centro
- Straight probe tip, Ø 5 mm
- Bent probe tip, Ø 5 mm
- Straight probe tip, Ø 2 mm
- Centro fixture and ajustment help
- Test bolt, Ø 16 × 93 mm
- KÄFER dialindicator M2TopS: Measuring range 10 mm, collision protection, robust metal housing, rotation counter
- Lever gauge, TESA Swisstast: Length probe arm 12.5 mm with ruby ball
- Dial indicator tripod, DK fixturing systems: Radius of action 345 mm, magnetic holding power 900 N, clamping shaft Ø 8 h 6
- Gauge block, 50 × 35 × 9 mm

HAIMER®
Quality Wins.

Haimer USA, LLC | 134 E. Hill Street | Villa Park IL 60181 | USA
☎ +1-630-833-1500 haimer@haimer-usa.com www.haimer.com