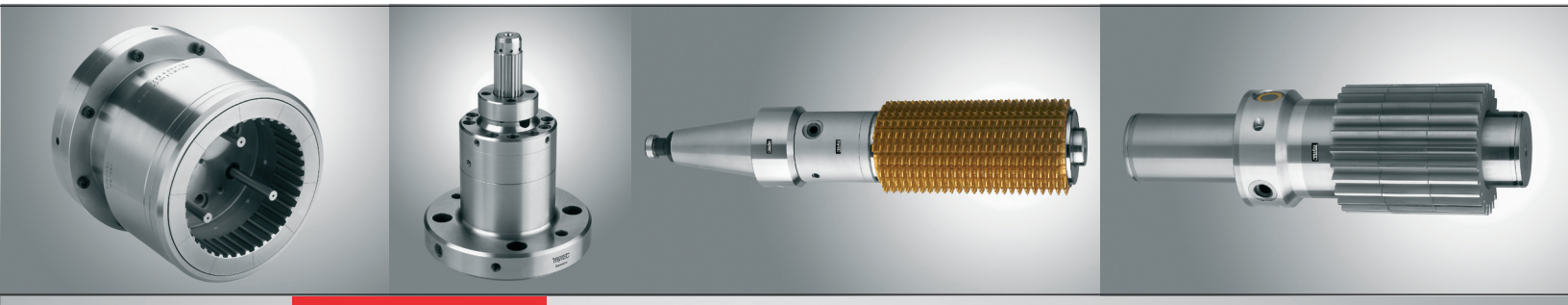
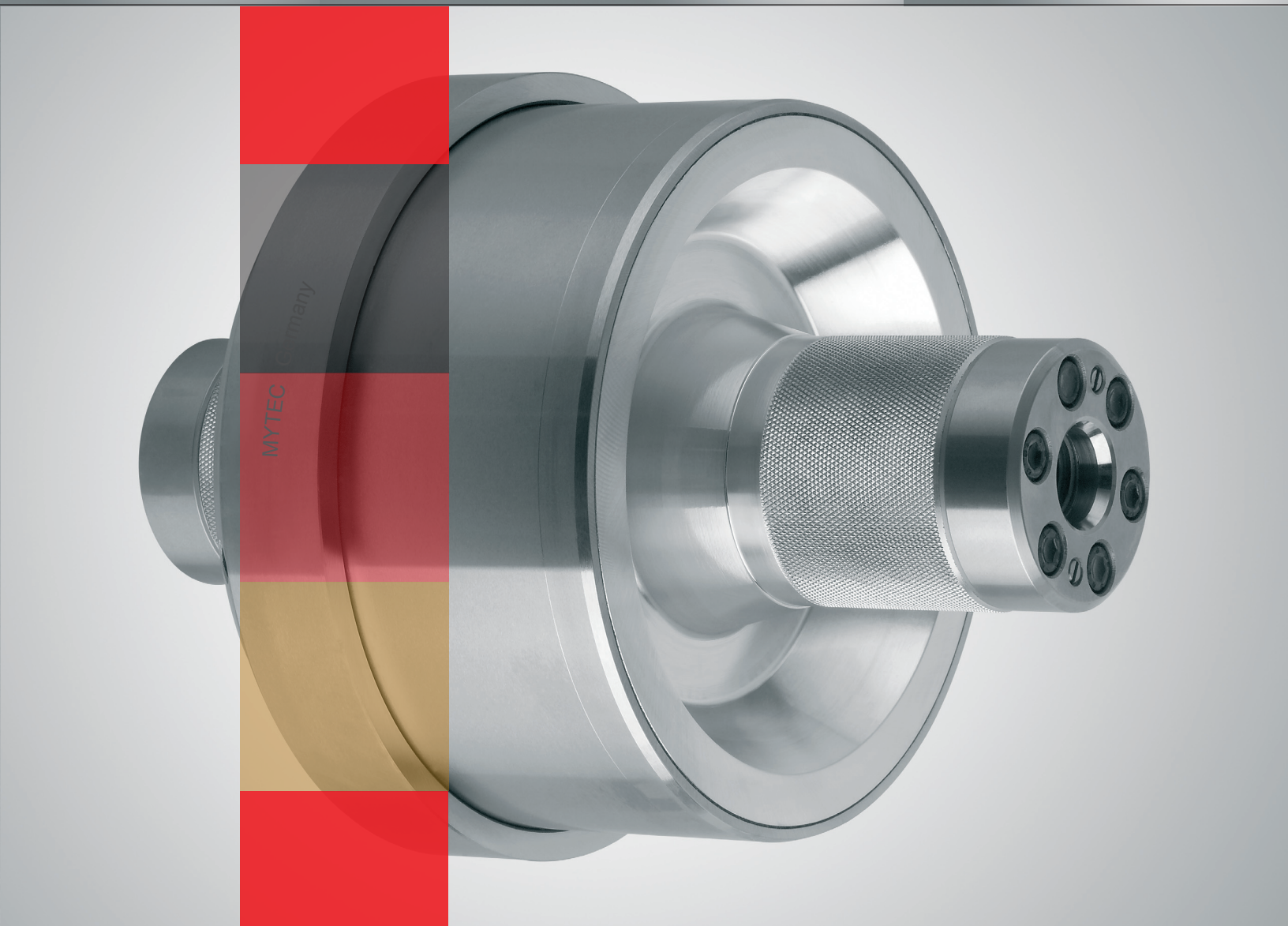
myTEC®
HYDRACLAMP®

Hydraulic -EXPANDING- Clamping Tools





myTEC®
HYDRACLAMP®

DO YOU HAVE
A REQUIREMENT
TO CLAMP THESE
KIND OF
WORKPIECES,
OR SIMILAR
WORKPIECES?

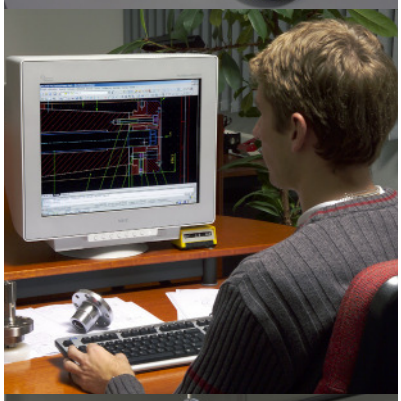
ASK US!

Mytec
-Hydraclamp-
OFFERS YOU
THE OPTIMAL
CHUCK

Table of contents

Corporate

Competent customer care and consultation - from the offer to project completion - is natural for Mytec -Hydraclamp-



Mytec -Hydraclamp- has been dedicated to development and manufacture of high-precision clamping tools for workpiece and tool clamping since the company was founded.

Particularly hydraulic expansion clamping technology.

Mytec -Hydraclamp- has been a known entity for decades in the main sectors of the tool construction and machine building industries.

Our corporate goal is to achieve a high level of customer satisfaction through leading technical solutions and unlimited application orientation.

Constant innovation is an important success factor in this process.

We are the pioneer in seal-less connection technology for hydraulic expansion clamping tools.

Clamping tools from Mytec -Hydraclamp- are in use at well-known companies, particularly in the automotive and aircraft industry, including suppliers, machine tool and machinery building, pump manufacturers, and the electronics industry.

Talk with our engineering department when high-precision workpiece and tool clamping are involved.

Your contacts

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Corporate

Innovative technologies, modern manufacturing techniques and the most highly-qualified employees are the basis of the high-quality precision clamping tools from Mytec -Hydraclamp-

Mytec -Hydraclamp- is an innovative partner of the precision industry, with the core task of satisfying today's increasing quality requirements through development and manufacturing of highly precise tensioning tools for lathing, hobbing, grinding, measuring and testing, and to contribute to our customer's increased competitive ability.

Products: In order to effectively solve the variety of application cases, a broadly diversified product line was developed.

- Hydraulic expansion arbors
  Hydraulic expansion chucks
- Hydraulic expansion arbors
  Hydraulic expansion chucks
  with geared expansion sleeve
- Hydraulic expansion arbors
  Hydraulic expansion chucks
  of light metal
- Complete clamping fixtures
  including peripherals
- Machine spindles with integrated
  hydraulic expansion technology
- Electronic clamping pressure control
  System "Power Control"
- Mechanical sliding sleeve expansion arbors
  and chucks system "Perman"
- Hydraulic lock nut for axial clamping
  system "Hydraclamp"

Thus complete solutions in all areas where workpiece and tool clamping are required.

System

- R S -

“Repl. sleeve”

System – RS – „Replaceable sleeve“

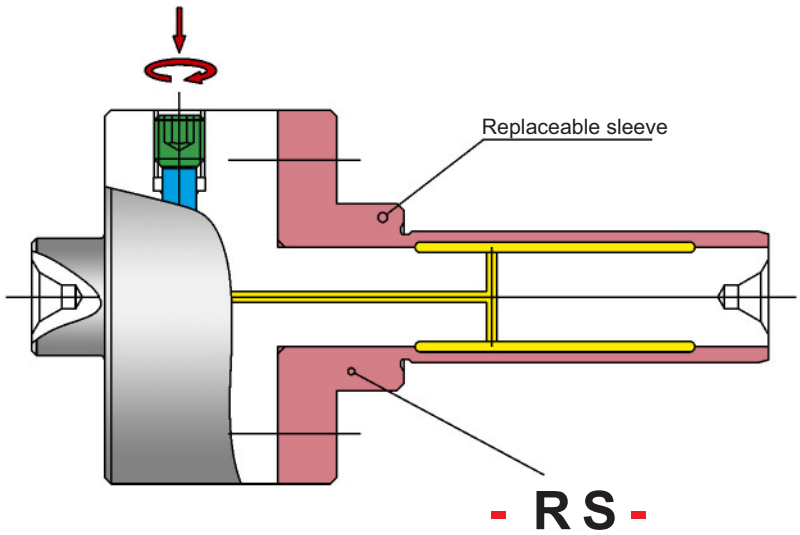
With this **precise** version the expansion sleeve of HSS high speed steel and the base body are connected in such a manner that they can be separated.

In the event of damage wear or dimensional change, the expansion sleeve can be replaced with no problems. The seal is mechanical.

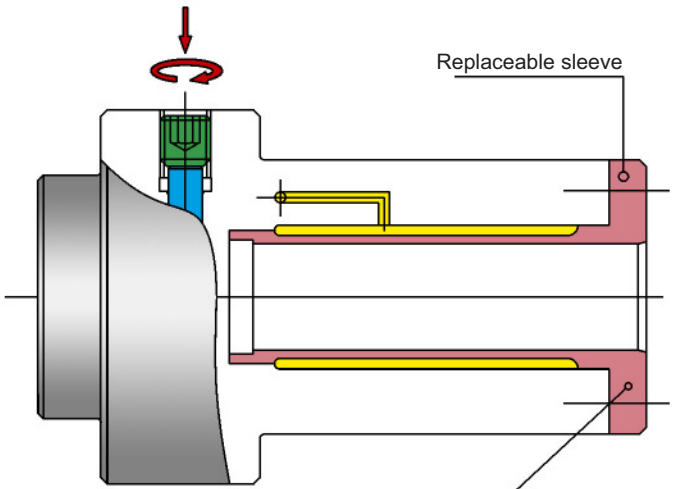
Centricity precision is ≤ 0.005 mm (0.0002”).

The expansion is 0.3% starting from the respective clamping diameter with a clamping length of 2 x D.

Advantage:
When using an replaceable sleeve made of special material (special plastic or titanium alloy) the expansion is up to 1%.



- RS -



- RS -

System

- SL -

“Seal-less”

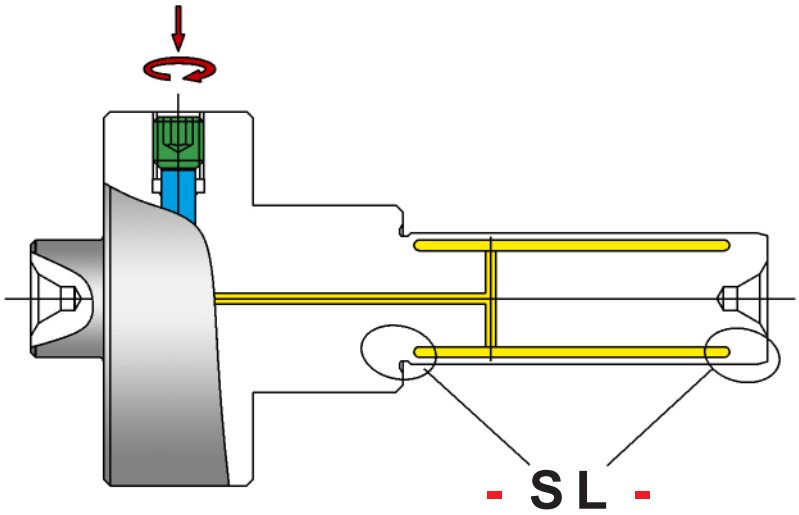
With this **high-precision** design the expansion sleeve of HSS high-speed steel and the base body are inseparably connected in a new Mytec manufacturing process without sealing elements on either end, and are connected to each other in such a manner that they are absolutely sealed. They are leakproof and rupture proof.

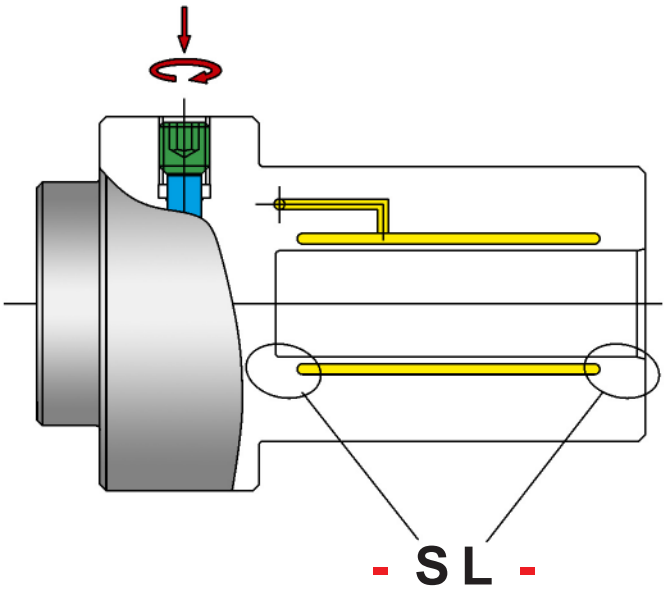
Concentricity precision is ≤ 0.003 mm (0.00012”).

The expansion is 0.3% starting from the respective clamping diameter with a clamping length of 2 x D.

Advantage:
Higher torsion resistance and precision relative to the system **- RS -** replaceable sleeve. Design is leakproof and rupture proof.

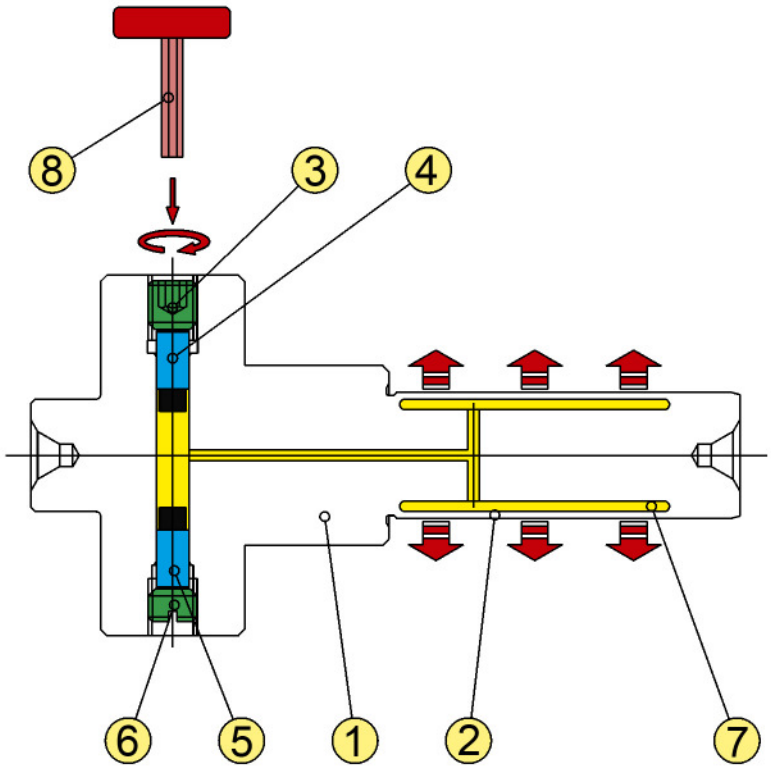
System – SL – „SEAL-LESS“





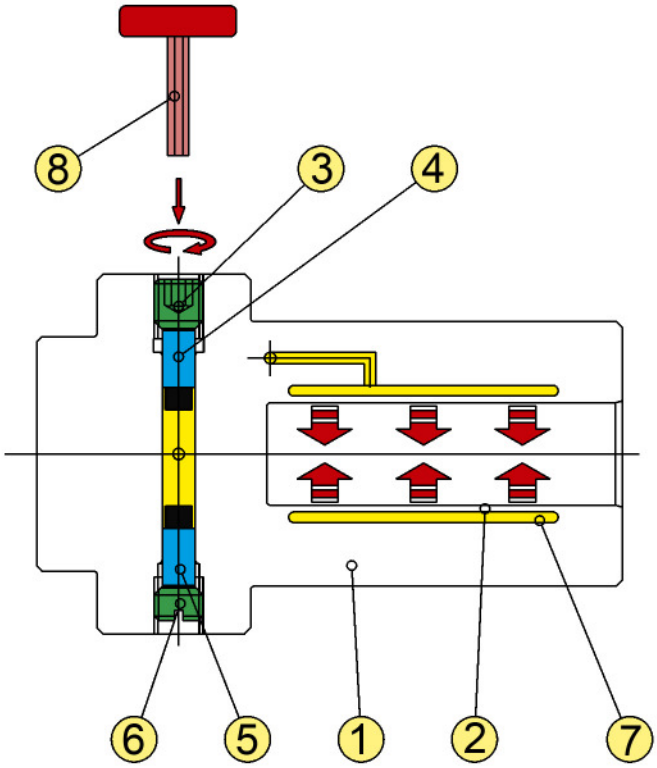
Structure and function

Structure of the Hydra-expansion arbor



1 Base body
2 Expansion sleeve
3 Actuating screw
4 Actuating piston
5 Adjusting piston
6 Adjusting screw
7 Chamber system
8 Clamping wrench

Structure of the Hydra-expansion chuck



1 Base body
2 Expansion sleeve
3 Actuating screw
4 Actuating piston
5 Adjusting piston
6 Adjusting screw
7 Chamber system
8 Clamping wrench

Structure and function

**of the hand-activated
Hydra expansion arbors
and
Hydra expansion chucks
from Mytec -Hydraclamp-**

Clamping:

For this type, a clamping wrench (8) is used with which the clamping bolt (3) is screwed in for maximum expansion, or the full clamping force can be adjusted to the stop.

Safety:

The stop also serves as stroke limiter, so that over-expansion or damage to the expansion sleeve (2) is not possible.

When screwing in the expansion bolt (3) the collet piston (4) is activated.

This causes the hydraulic fluid in the chamber system (7) to be pressed against the thin-walled expansion sleeve (2).

At the same time, the expansion sleeve (2) uniformly expands radially over the entire chucking length both centrically and cylindrically.

Release:

To release, clamping screw (3) is turned back to the starting position with the clamping wrench (8).

This triggers the pressure relief and the release of the expansion sleeve.

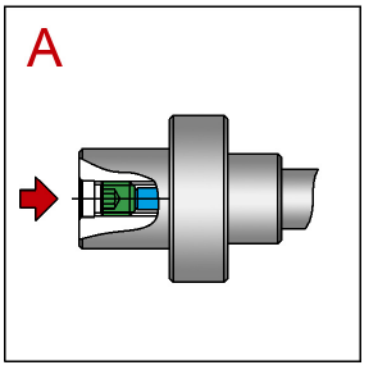
Due to its inherent tension, the expansion sleeve returns precisely to its starting position.

Power-activated:

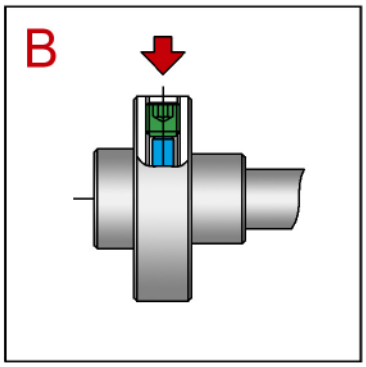
For power-activated hydraulic expansion tools from Mytec -Hydraclamp-, the clamping process is executed via the tensioning fixture of a machine.
(See system specification – activation types, page 12)

System specifications

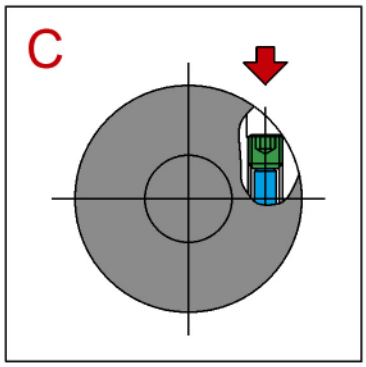
Actuation location possibilities:



Axial

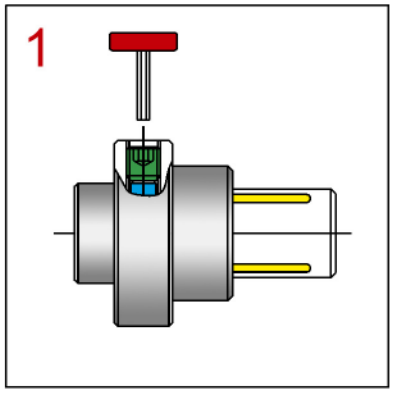


Radial

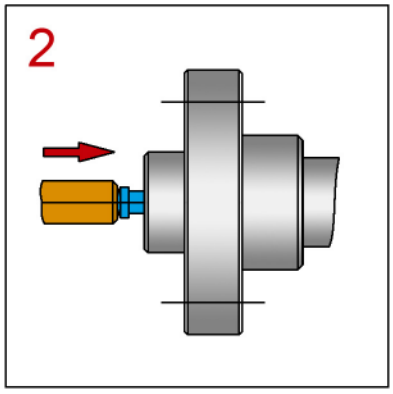


Tangential

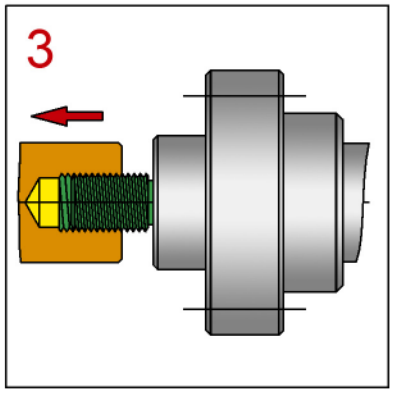
Activation Types:



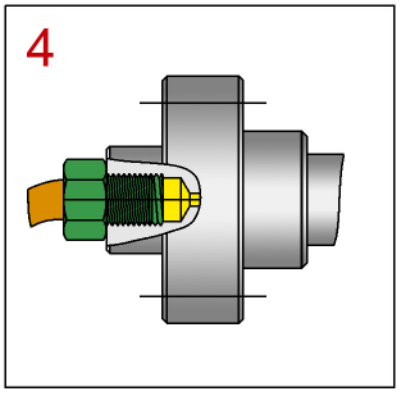
Manual:
with clamping wrench



Automatic:
with clamping cylinder
and push rod



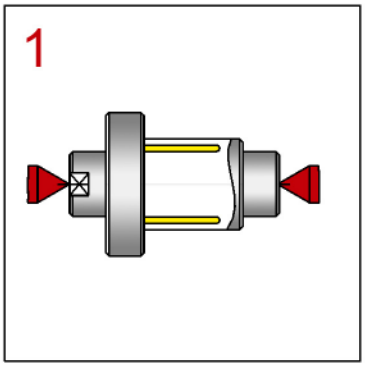
Automatic:
with clamping cylinder
and drawbar



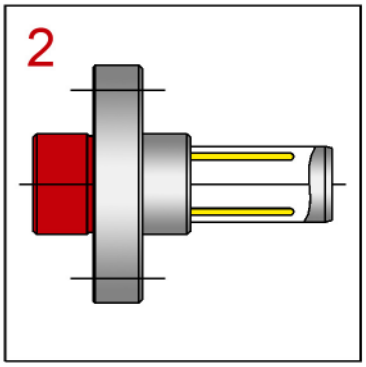
Automatic:
direct pressure from the
machines hydraulic system

System specifications

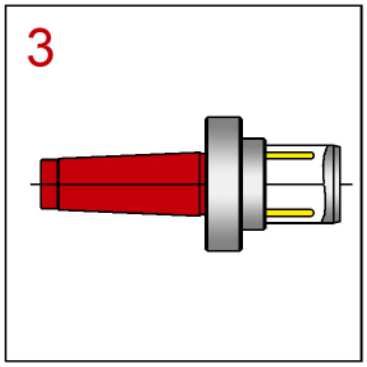
Machine connections:



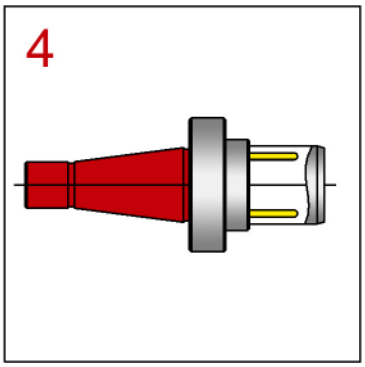
Between centers



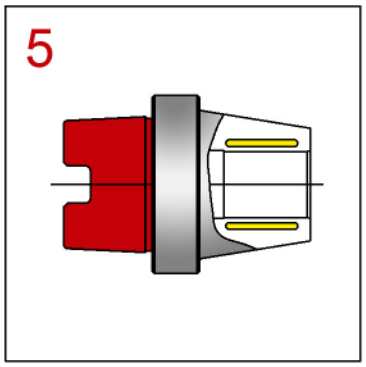
Flange,
cylindrical centering



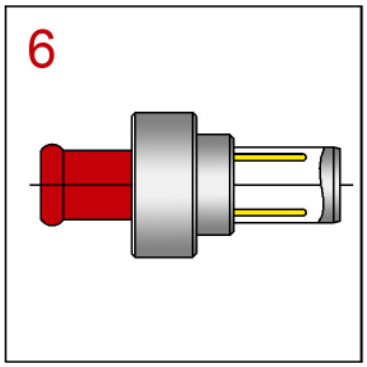
Morse tapers or
metric DIN tapers



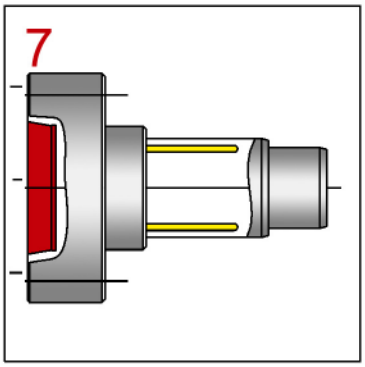
Steep tapers DIN2080
(SK / MAS BT / CAT)



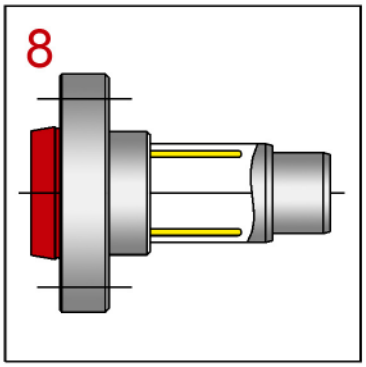
HSK



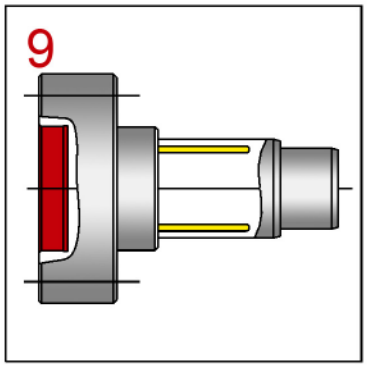
Reishauer connection



Flange,
short taper mount
(DIN / ISO) interior



Flange,
short taper mount
(DIN / ISO) exterior



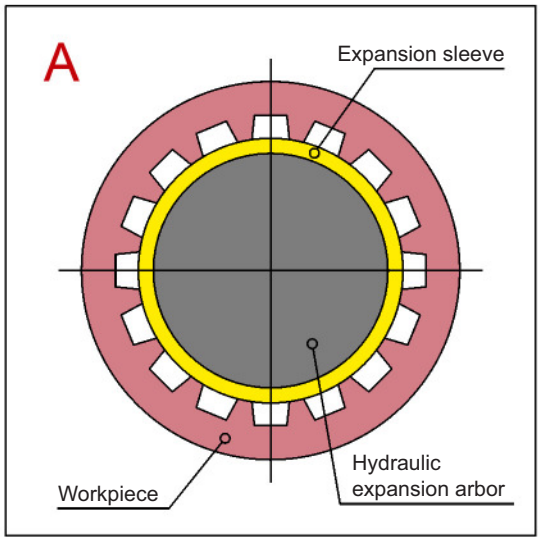
Flange,
cylindrical centering

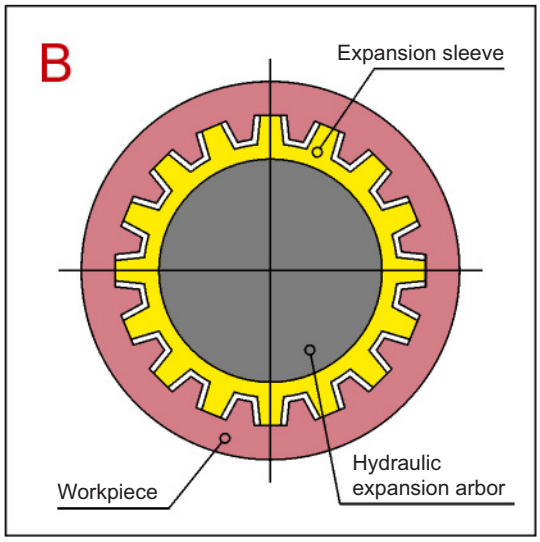
In addition to the illustrated standard tool connections, Hydra-expansion tools from Mytec can also be supplied with any other special connection.

Thus they can be used in any position in the machine or fixture.

Clamping of gears, sliding gears, or drive parts in the internal tooth system with a Hydra expansion arbor

Here the system can clamp in the root circle, on the tip circle, or in the tooth flanks





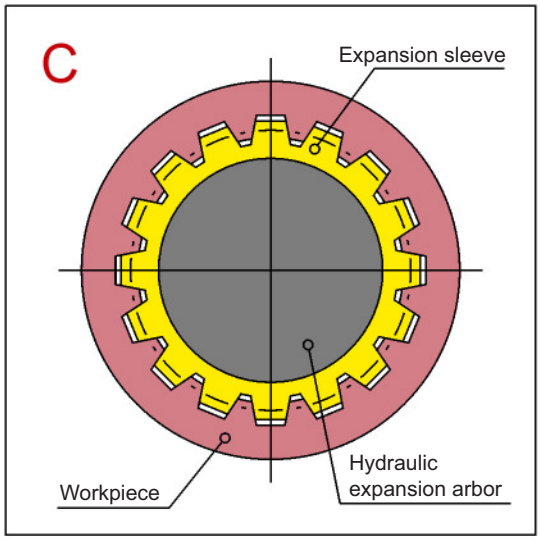
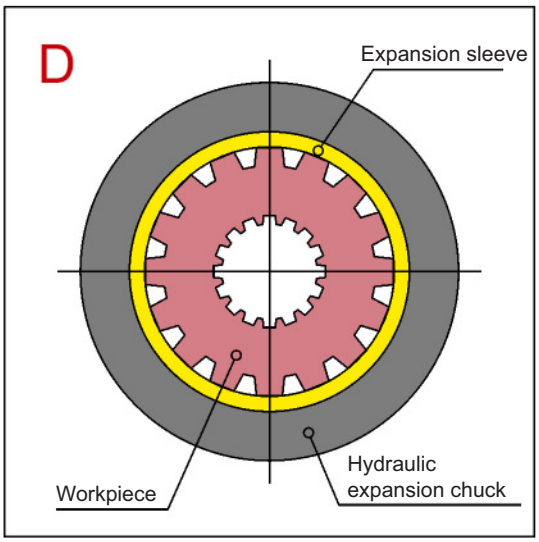


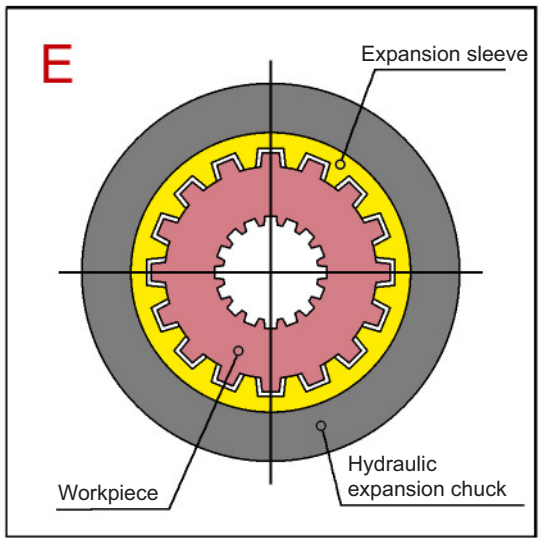
Illustration:

- A **Clamping on the tip circle**
- B **Clamping in the root circle**
- C **Clamping in the tooth flanks**

Clamping of gears, sliding gears, or drive parts in the external tooth system with a Hydra expansion chuck

Here you can clamp in the root circle, on the tip circle or in the tooth flanks





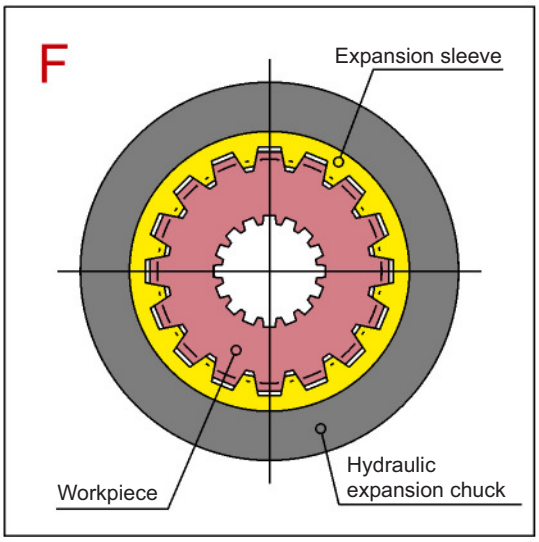
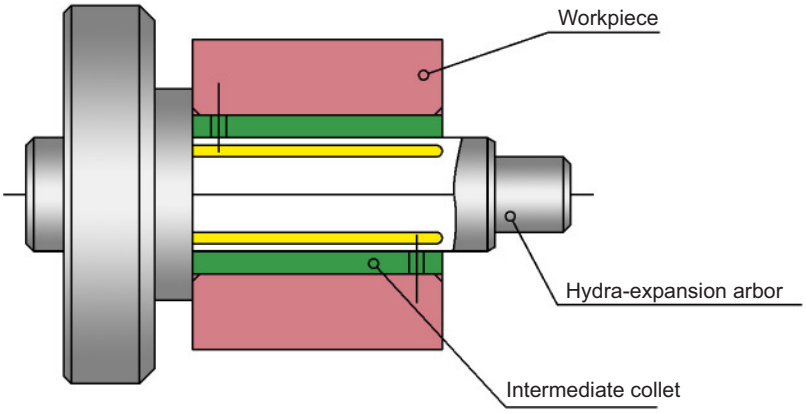


Illustration:

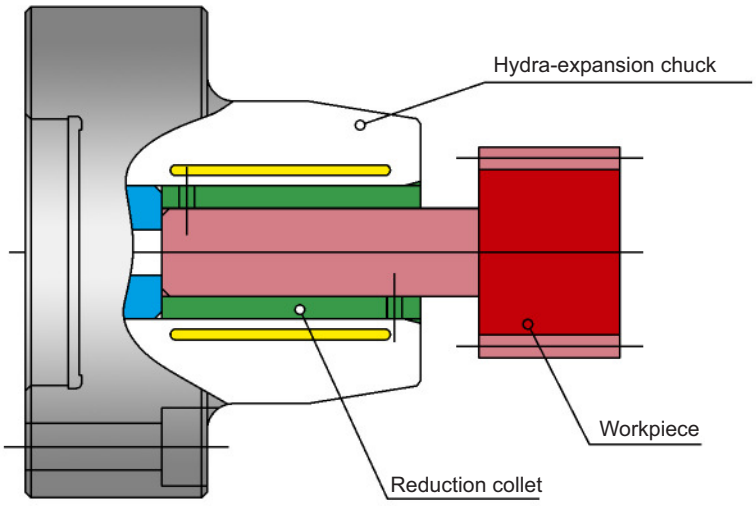
- D **Clamping on the tip circle**
- E **Clamping in the root circle**
- F **Clamping in the tooth flanks**

Clamping workpieces and tools via intermediate collets on a Hydra expansion arbor or in a Hydra expansion chuck



Example 1

**Hydra expansion arbor with open intermediate collet.
By using intermediate collets with different clamping diameters the application area is significantly extended.**

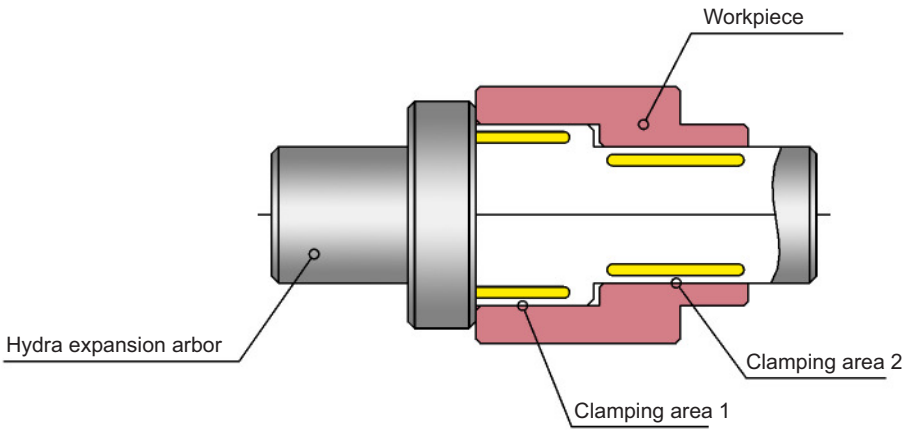


Example 2

**Hydra expansion chuck with built-in reduction collet.
By using reduction collets with different clamping diameters the application area is significantly extended.**

Clamping workpieces and tools with stepped bores

Direct admission of the workpiece in stepped bores with two clamping areas

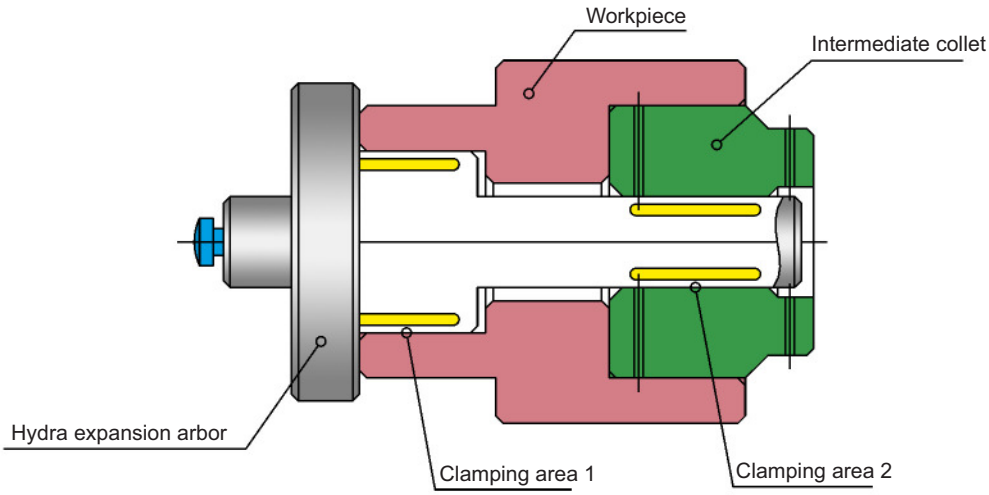


Example 5

Each clamping area is adapted to the respective bore tolerance. The different clamping areas can be designed in such a manner that they can be pressurized individually or at the same time.

Locating the workpiece in stepped bores with two clamping areas

(Clamping area 2 using a intermediate collet)



Example 6

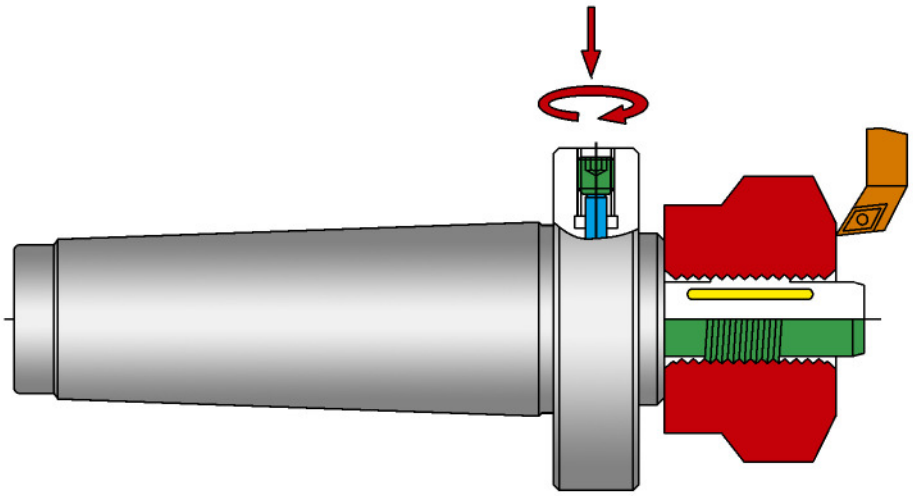
In the left locating bore of the workpiece the system clamps directly with clamping area 1. The front, larger locating bore of the workpiece can only be clamped via a slotted intermediate collet. Even in this case the different clamping areas can be laid out in such a manner that they can be pressurized individually or at the same time.

Field of application: *Turning*

Example 9

Hydra-Clamping-Arbor

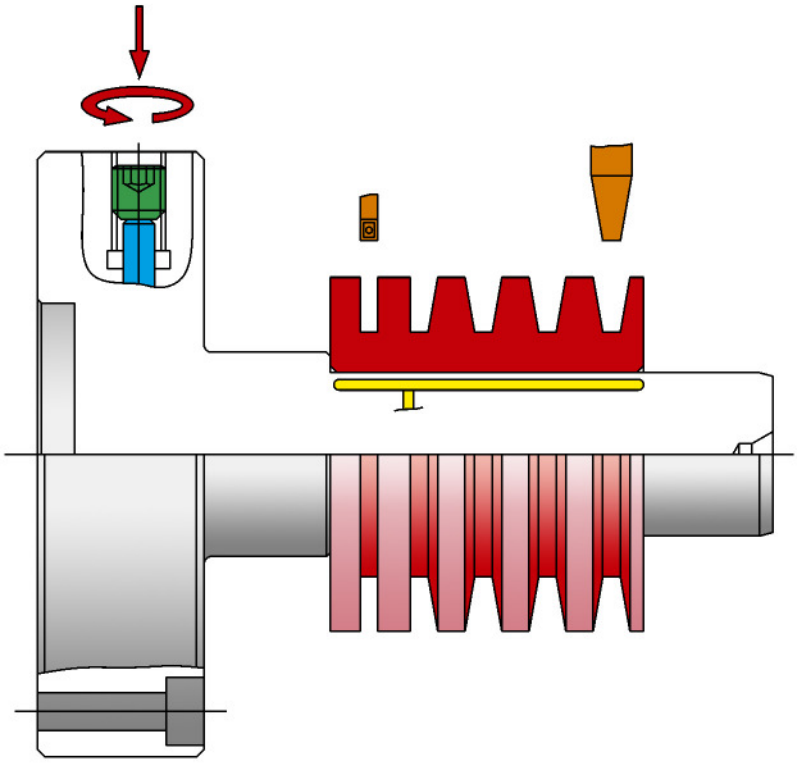
Actuation: Hand actuated Radially
Mounting: Morse taper 5
Workpiece: Adjusting nut
Machine: Lathe
Application: Turning of the outer contour
Advantage: High run-out accuracy ≤ 0,006 mm (0.00024") of the internal thread to the outer contour; clamping on the grinded thread profile of a sleeve



Example 10

Hydra-Clamping-Arbor

Actuation: Hand actuated Radially
Mounting: Flange; cyl. centering
Workpiece: Pulley
Machine: CNC-lathe
Application: Turning of the outer contour and the turned grooves
Advantage: High run-out accuracy ≤ 0,006 mm (0.00024") of the outer contour to the location hole; adjustable clamping force without work-piece deformation



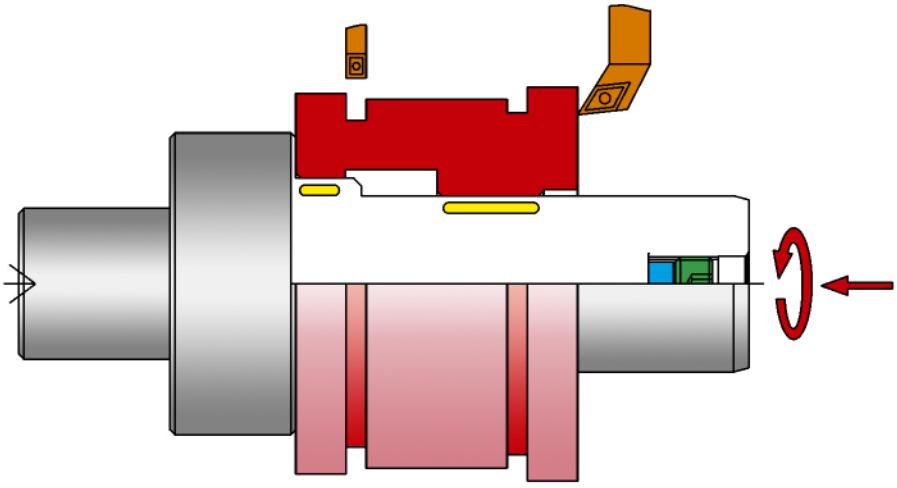
Workpiece clamping

Field of application: *Turning*

Example 11

Hydra-Clamping-Arbor

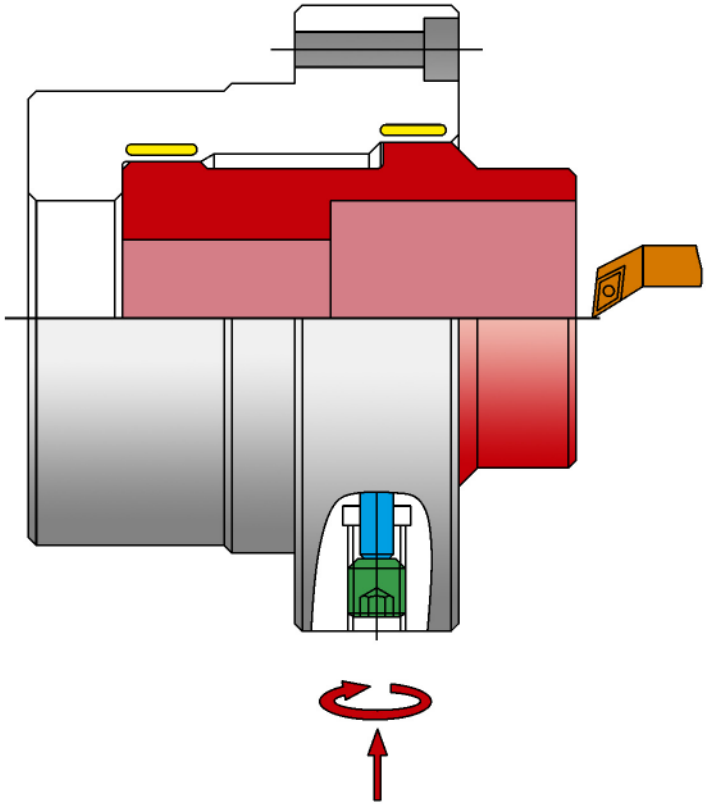
Actuation:	Hand actuated Axially
Mounting:	Cyl. shaft; support by tailstock
Workpiece:	Adapter bush
Machine:	CNC-lathe
Application:	Turning of the outer contour and the turning grooves
Advantage:	High run-out accuracy ≤ 0,005 mm (0.0002”) of the inside dia. to the outer contour; clamping with 2 clamping areas on the bearing seats



Example 12

Hydra-Clamping-Chuck

Actuation:	Hand actuated Radially
Mounting:	Flange, cyl. centering
Workpiece:	Bushing
Machine:	CNC-lathe
Application:	Turning of the inner contour
Advantage:	High run-out accuracy ≤ 0,006 mm (0.00024”) from the inner contour to the outer diameter; clamping with 2 clamping areas makes optimal centering and run-out accuarcy possible

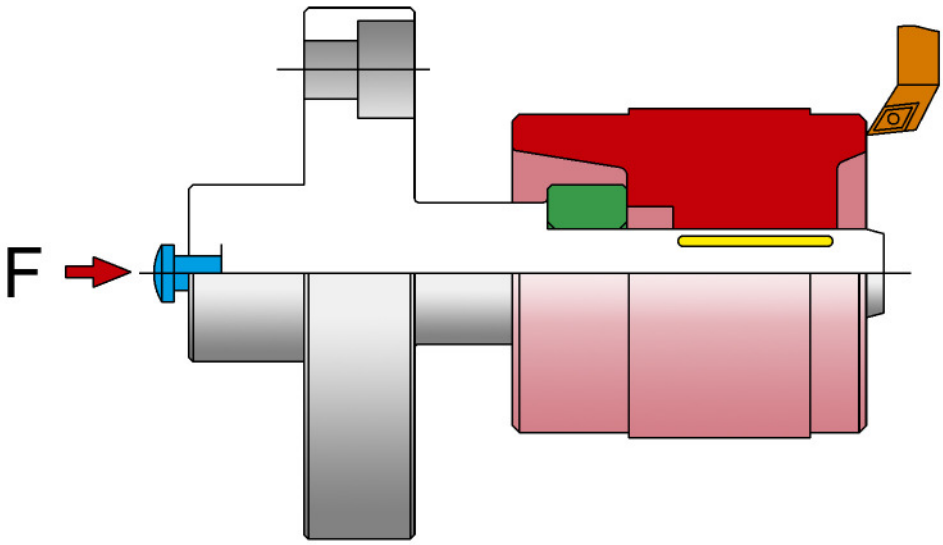


Field of application: *Turning*

Example 13

Hydra-Clamping-Arbor

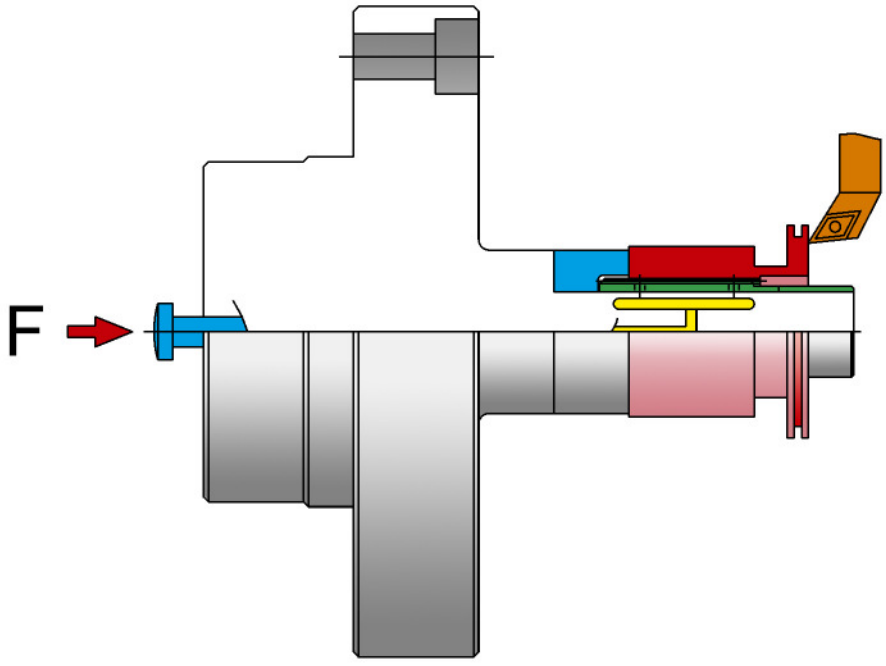
Actuation:	Power actuated Axially
Mounting:	Flange; cyl. centering
Workpiece:	Motor anker
Machine:	CNC-lathe
Application:	Turning of the outer contour
Advantage:	High run-out accuracy ≤ 0,006 mm (0.0002“); autom. loading; support by tailstock



Example 14

Hydra-Clamping-Arbor

Actuation:	Power actuated Axially
Mounting:	Flange; cyl. centering
Workpiece:	Transmission part with internal spline
Machine:	CNC-lathe
Application:	Turning of the outer contour
Advantage:	High run-out accuracy ≤ 0,006 mm (0.0002”) of the inner gearing to the outer contour; high precise clamping on form-grinded sleeve in the gearing; autom. loading; support by tailstock

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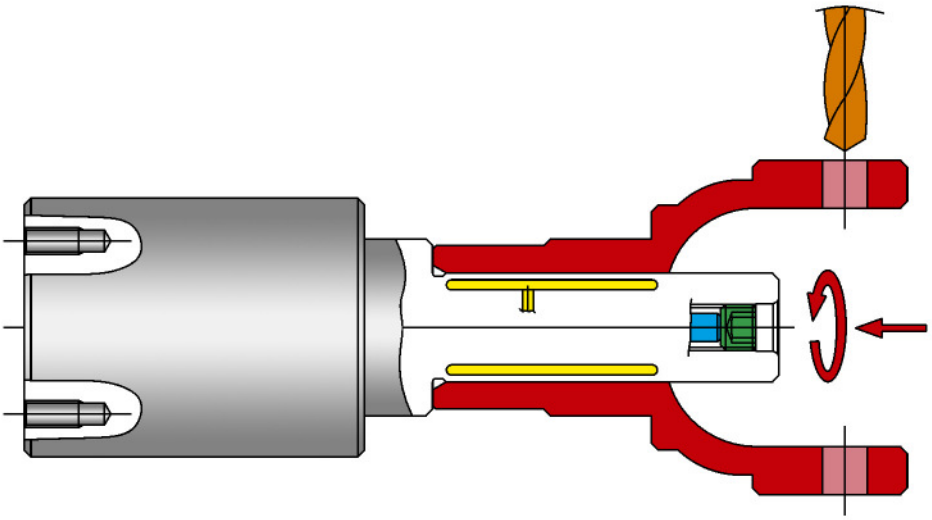
Germany

Field of application: *Drilling*

Example 15

Hydra-Clamping-Arbor

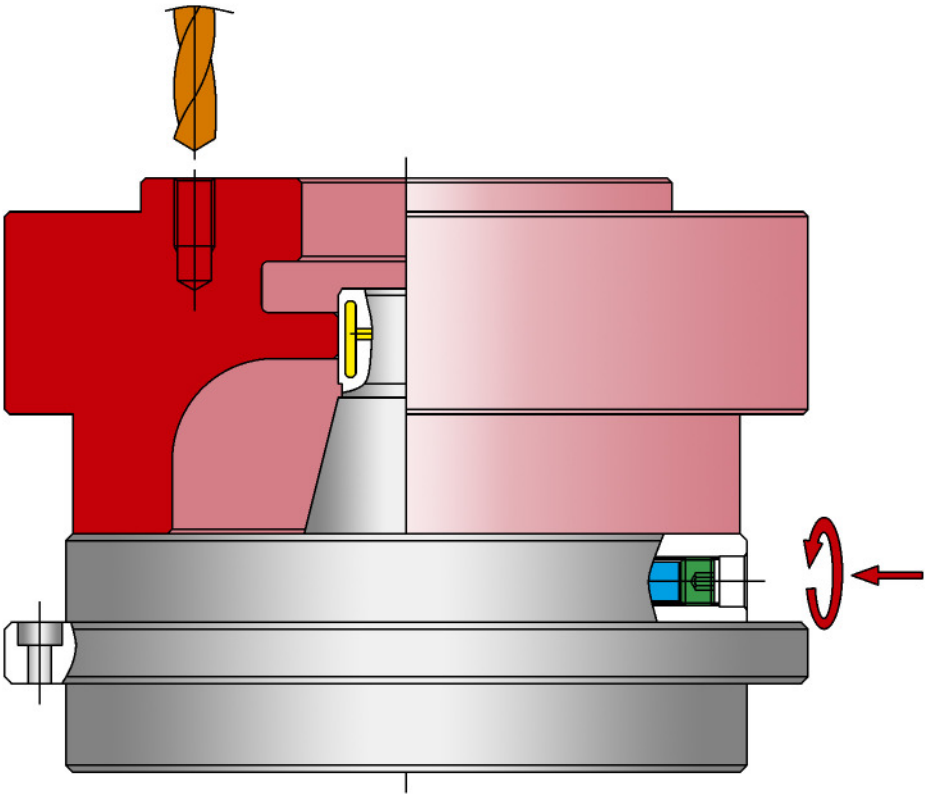
Actuation: Hand actuated Axially
Mounting: Cyl. shaft
Workpiece: Axle-Part
Machine: Drilling machine
Application: Drilling and reaming
Advantage: Precise squared and positioned clamping; clamping high precise and reproduceable

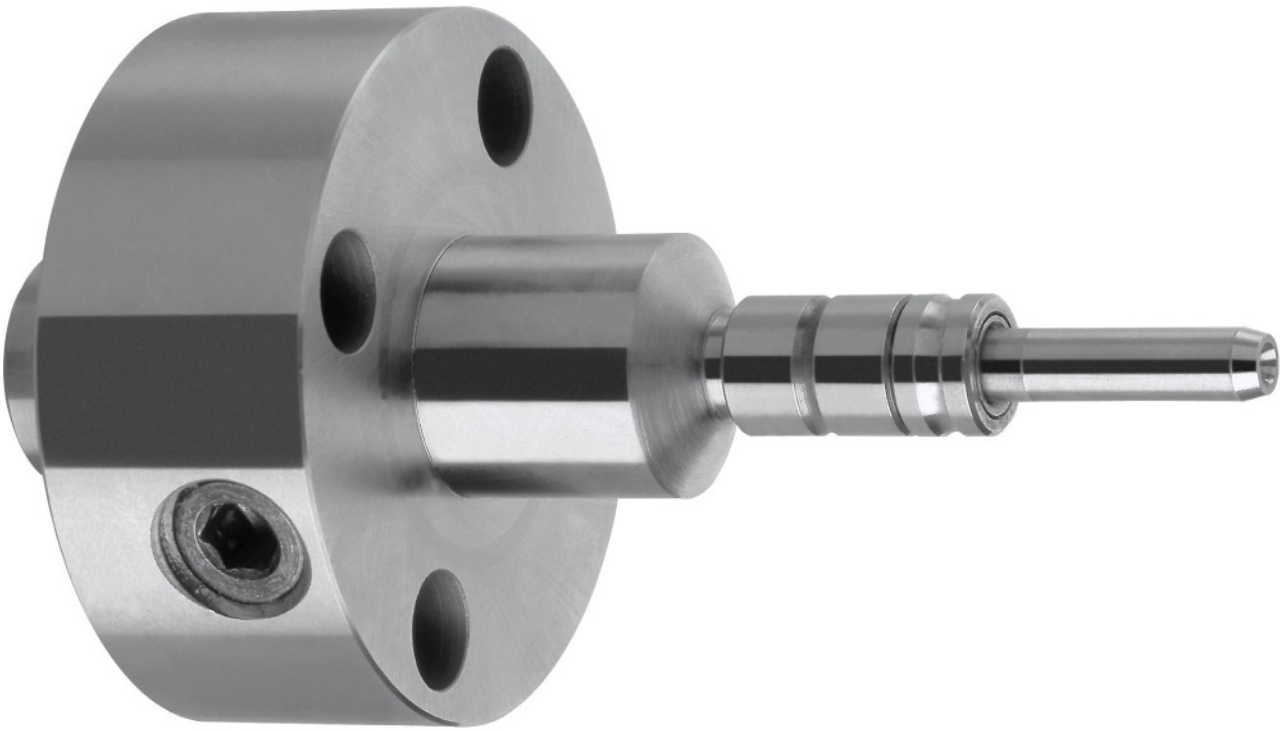


Example 16

Hydra-Clamping-Arbor

Actuation: Hand actuated Radially
Mounting: Flange; cyl. centering
Workpiece: Pump case
Machine: CNC-drilling machine
Application: Drilling, reaming and tapping
Advantage: Precise squared and positioned clamping; clamping high precise and reproduceable



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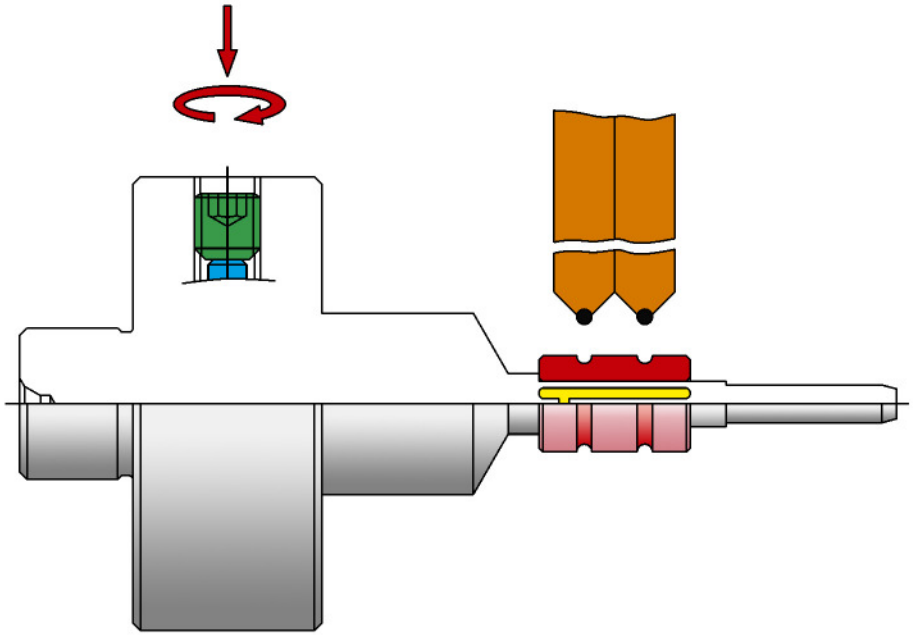
Field of application: ***Cylindrical grinding „external“***

Example 17

Hydra-Clamping-Arbor

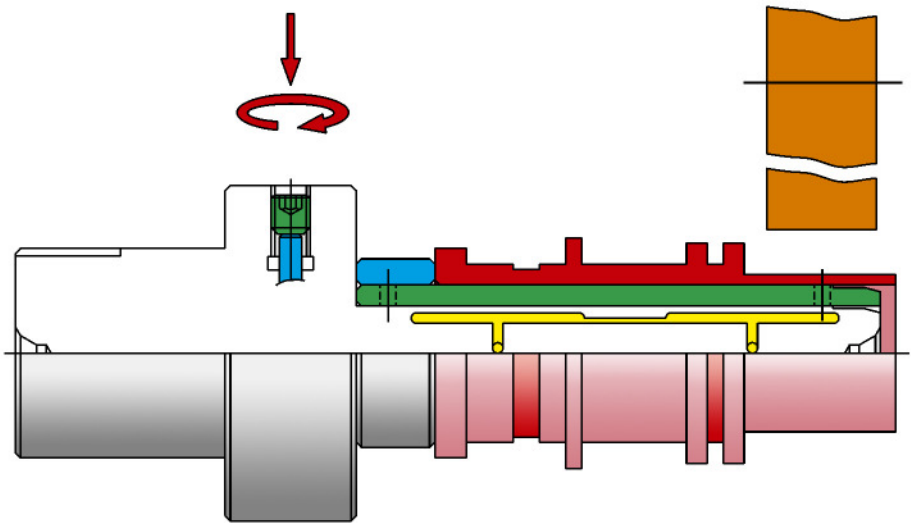
Actuation: Hand actuated Radially
Mounting: Flange; cyl. centering
Workpiece: Bearing bush
Machine: Profile-grinding machine
Application: Profile-grinding of the race-groove
Advantage: High run-out accuracy ≤ 0,002 mm (0.00008”) of the bore to the race-groove; clamping dia. till 6 mm are possible



Example 18

Hydra-Clamping-Arbor

Actuation: Hand actuated Radially
Mounting: Between centers
Workpiece: Pin bushing
Machine: Cyl.-grinding machine
Application: Cyl.-grinding of the outside dia.
Advantage: High run-out accuracy ≤ 0,003 mm (0.00012“); with interchangeable intermediate sleeve for different work-piece diameters; no deformation at the workpiece



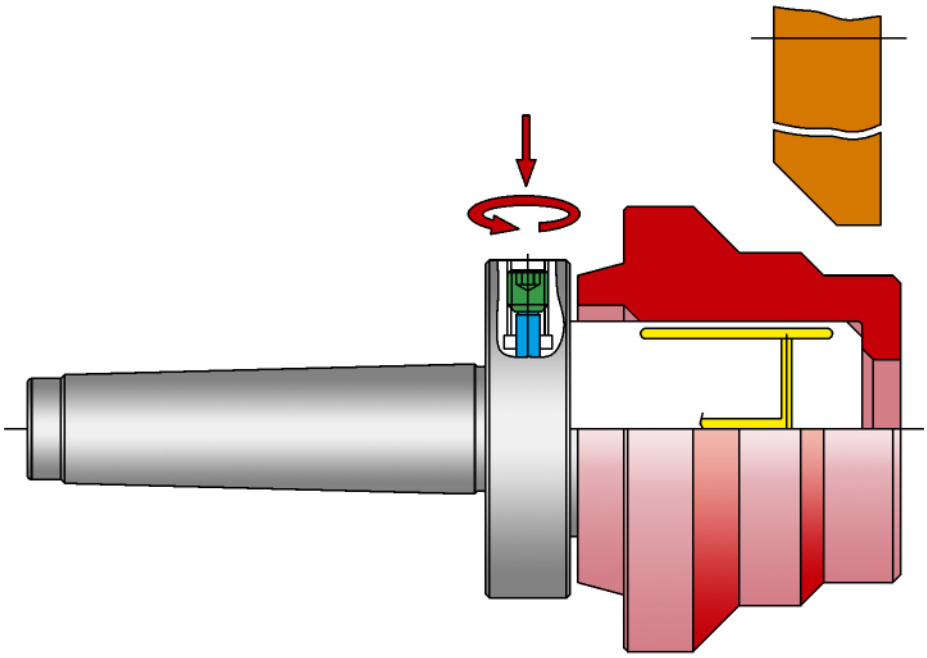
Workpiece clamping

Field of application: ***Cylindrical grinding „external“***

Example 19

Hydra-Clamping-Arbor

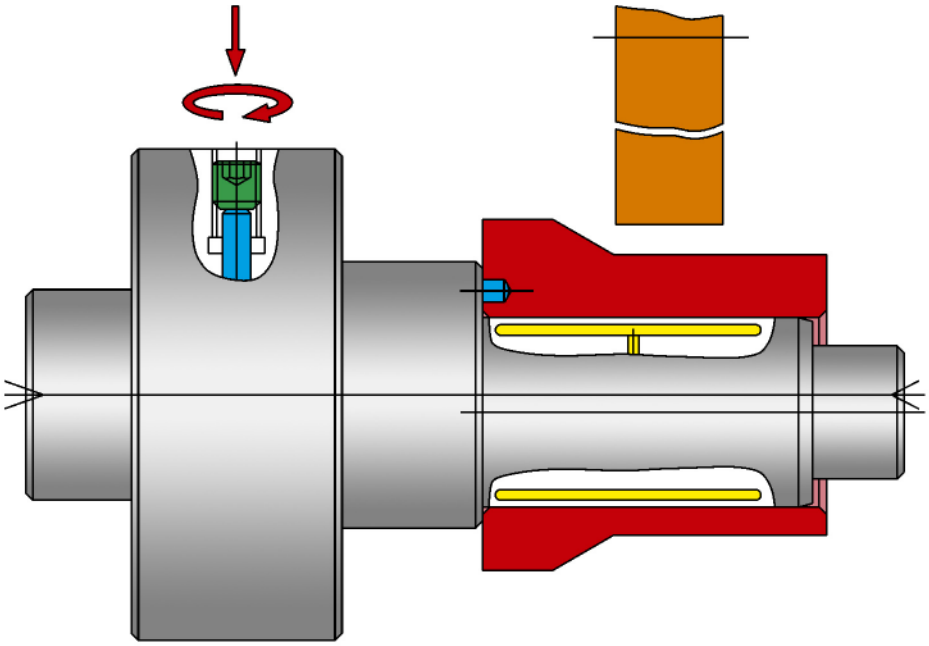
Actuation: Hand actuated Radially
Mounting: Morse taper 4
Workpiece: Run sleeve
Machine: CNC-cyl.-grinding machine
Application: Cyl.-grinding of the outer contour
Advantage: High run-out accuracy ≤ 0,002 mm (0.00008“); clamping of the workpiece internal in the ball-bearing seat; high accuracy from the ball-bearing seat to the outer diameter.



Example 20

Hydra-Clamping-Arbor

Actuation: Hand actuated Radially
Mounting: Between centers
Workpiece: Eccentric bush
Machine: CNC-cyl.-grinding machine
Application: Cyl.-grinding of the outer contour
Advantage: High run-out accuracy ≤ 0,002 mm (0.00008“) and dimensional accuracy at the eccentric; precise transference of the required eccentricity of the Clamping-Arbor to the workpiece

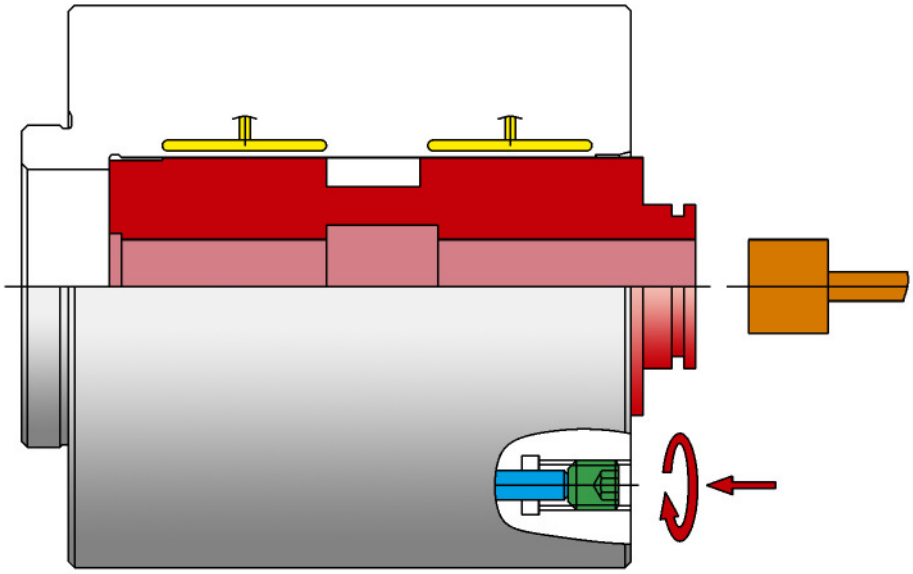


Field of application: ***Cylindrical grinding „internal“***

Example 21

Hydra-Clamping-Chuck

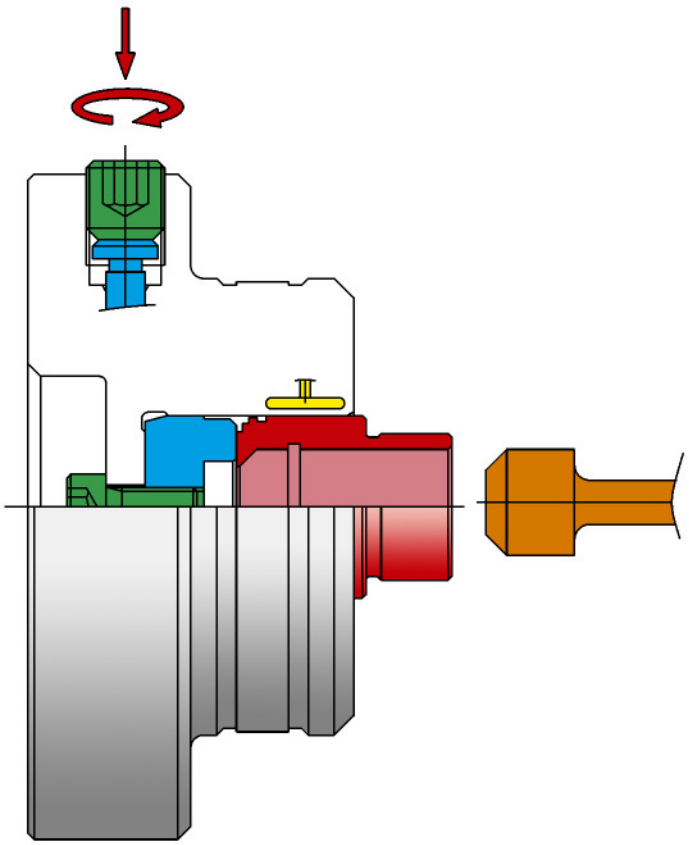
Actuation: Hand actuated Axially
Mounting: Flange, cyl. centering
Workpiece: Spindle case
Machine: CNC-internal grinding machine
Application: Ground-hole grinding
Advantage: High run-out accuracy ≤ 0,003 mm (0.00012”); clamping with 2 clamping areas on the bearing-seats makes a high run-out accuracy of the ground bore possible



Example 22

Hydra-Clamping-Chuck

Actuation: Hand actuated Radially
Mounting: Flange; cyl. centering
Workpiece: Valve bush
Machine: CNC-internal grinding machine
Application: Grinding of the valve seat
Advantage: High run-out accuracy ≤ 0,002 mm (0.00008“); improvement of the running qualities of the valve piston



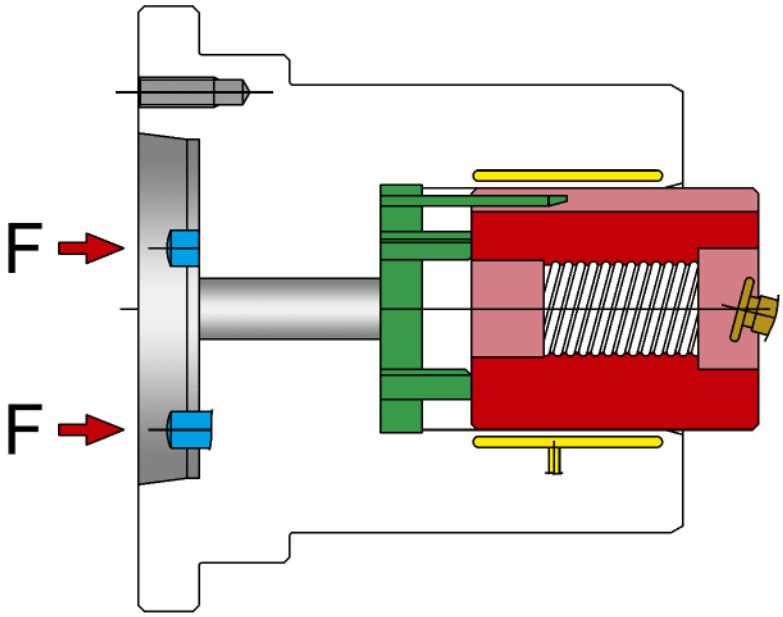
Workpiece clamping

Field of application: ***Cylindrical grinding „internal“ - „external“***

Example 23

Hydra-Clamping-Chuck

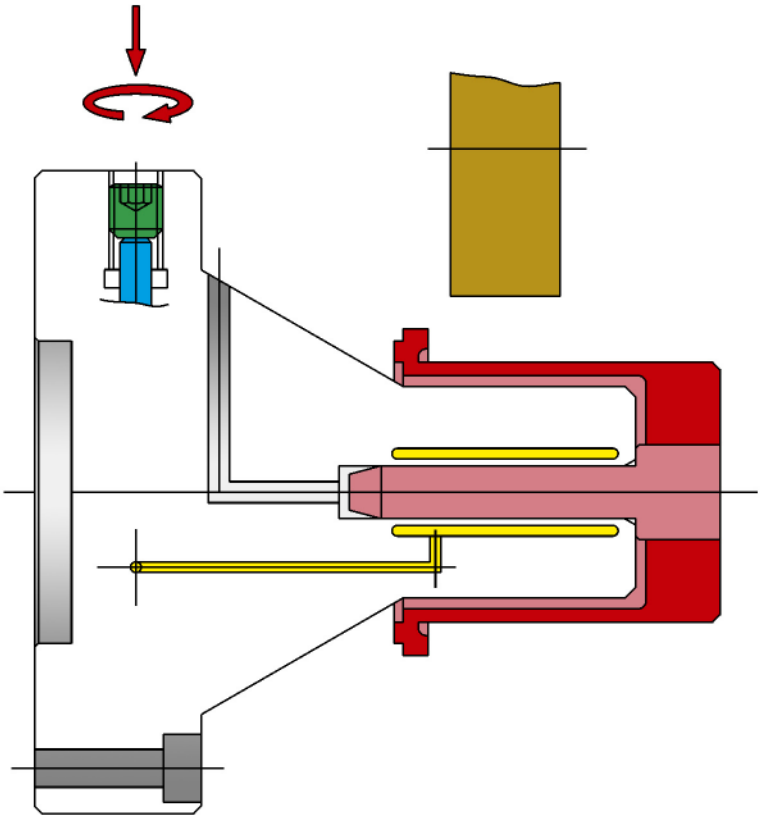
Actuation: Power actuated Axially
Mounting: Flange; short taper centering
Workpiece: Steering nut
Machine: CNC-internal profile grinding machine
Application: Grinding of the race-groove
Advantage: High run-out accuracy and face run-out accuracy ≤ 0,003 mm (0.00012“); clamping on the built-in dia. with position fastening, therefore better running qualities of the race-groove after the mounting



Example 24

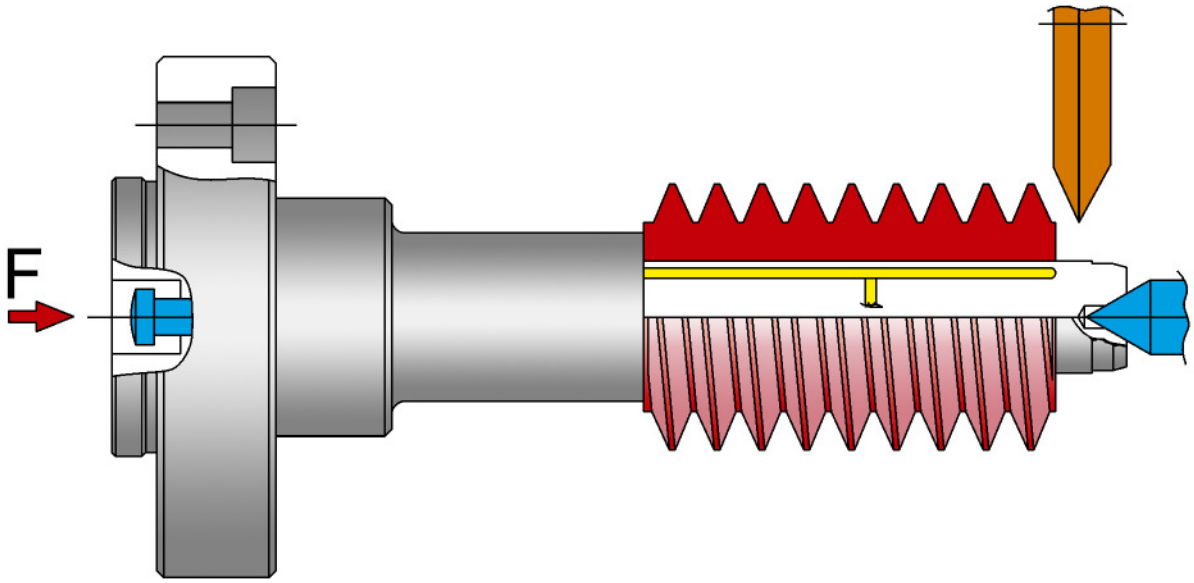
Hydra-Clamping-Chuck

Actuation: Hand actuated Radially
Mounting: Flange; cyl. centering
Workpiece: Stator case
Machine: Cyl. grinding machine
Application: Grinding of the outer contour
Advantage: High run-out accuracy ≤ 0,003 mm (0.00012“); clamping on centering pivot, therefore paralism to the axis of the outside dia.



Workpiece clamping

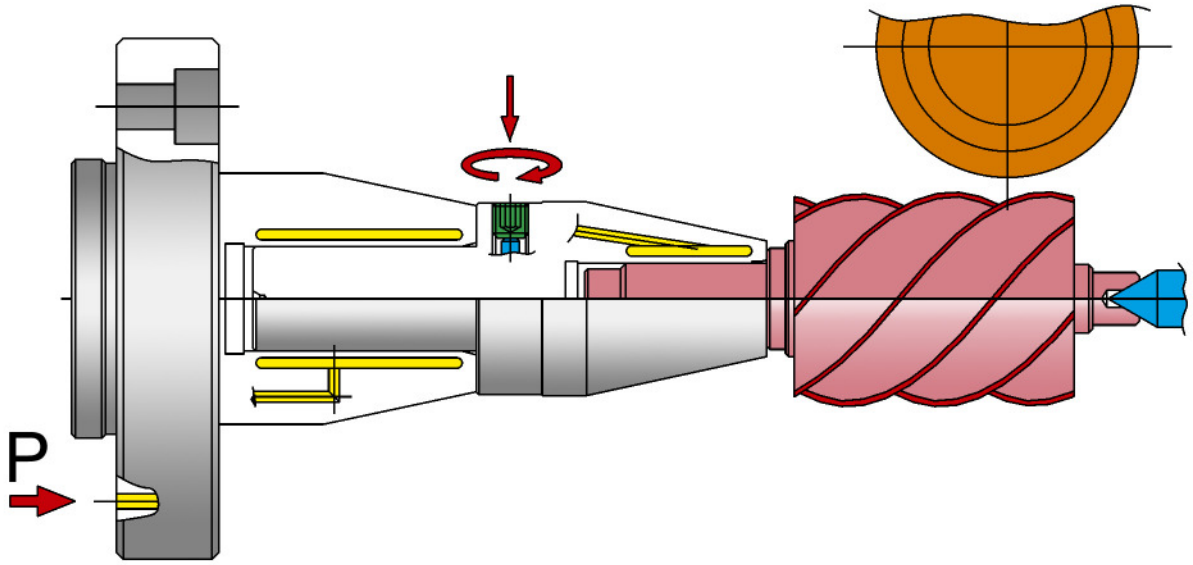
Field of application: *Profile-grinding*



Example 25

Hydra-Clamping-Arbor

Actuation:	Power actuated, axially
Mounting:	Flange; cyl. centering; support by tailstock
Workpiece:	Worm
Machine:	CNC-profile-grinding machine
Application:	Profile-grinding
Advantage:	High run-out accuracy ≤ 0,003 mm (0.00012”) of the worm profile to the ground hole



Example 26

Hydra-Clamping-Chuck

Actuation:	Hand actuated, radially
Mounting:	Flange; cyl. centering and Hydra-Clamping-Chuck; support by tailstock
Workpiece:	Rotor
Machine:	CNC-profile-grinding machine
Application:	Profile-grinding
Advantage:	High run-out accuracy ≤ 0,003 mm (0.00012”) of the rotor profile to the shaft of the rotor; Hydra-Clamping-Chuck will be fitted with the rotor outside of the machine. Following the Hydra-Clamping-Chuck with the rotor will be fitted into the machine location, which is designed as a Hydra-Clamping-Chuck, will be inserted and clamped autom. by the machine hydraulic.

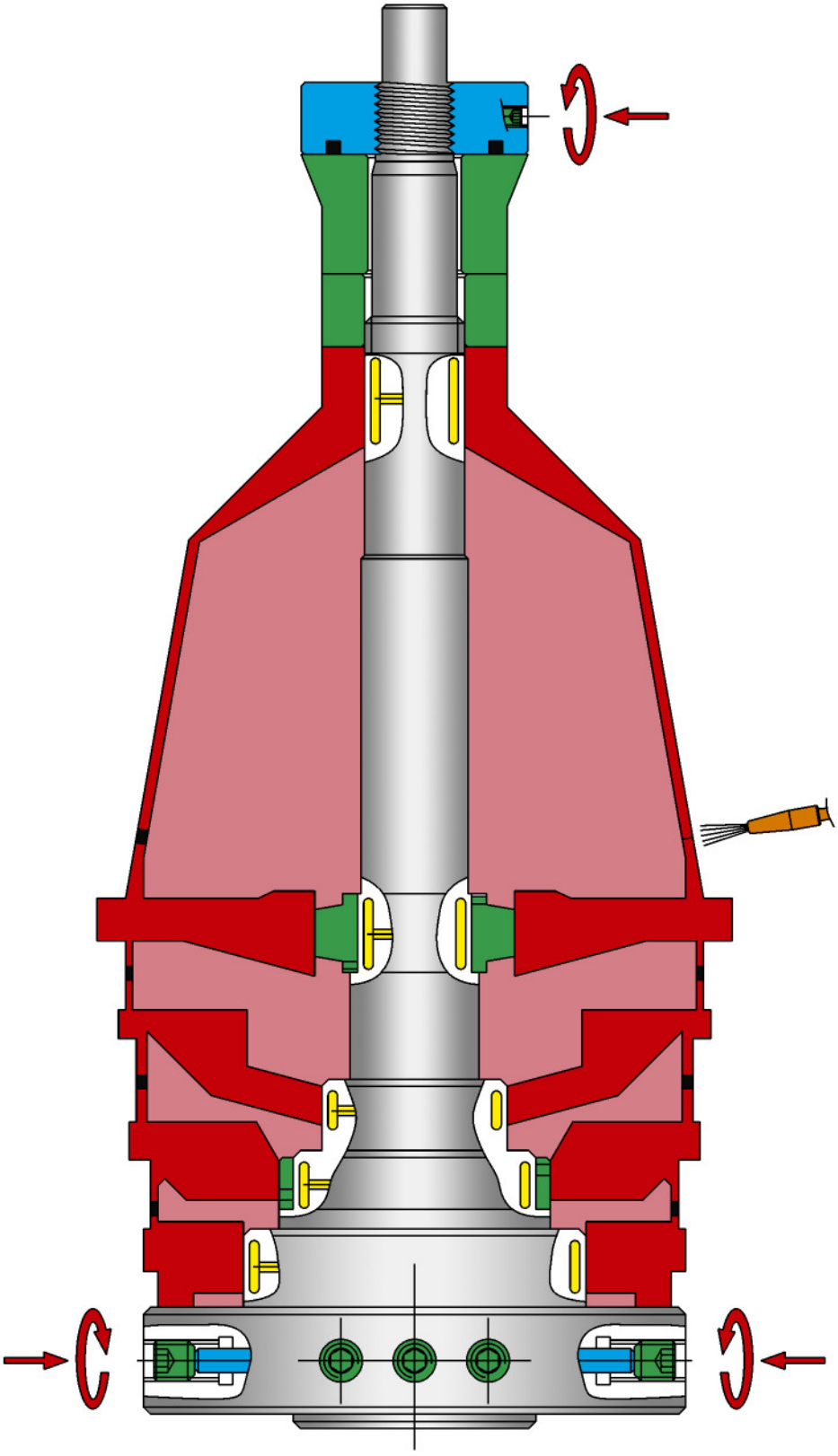
Workpiece clamping

Field of application: *Mounting*

Example 27

Hydra-Clamping-Arbor

Actuation:	Hand actuated Radially
Mounting:	Flange; cyl. centering
Workpiece:	Turbine case
Machine:	Vacuum-laser-welding machine
Application:	Laser-welding
Advantage:	High precise centering and clamping of the single turbine casing parts by 5 clamping areas; all 5 clamping areas will be actuated single; different location dia. will be covered with a interchangeable intermediate sleeve; axial clamping of the single parts with hydraulic axial clamping nut from Mytec-Hydraclamp-; after welding the single parts, the arrangement of the single location holes are in true alignment



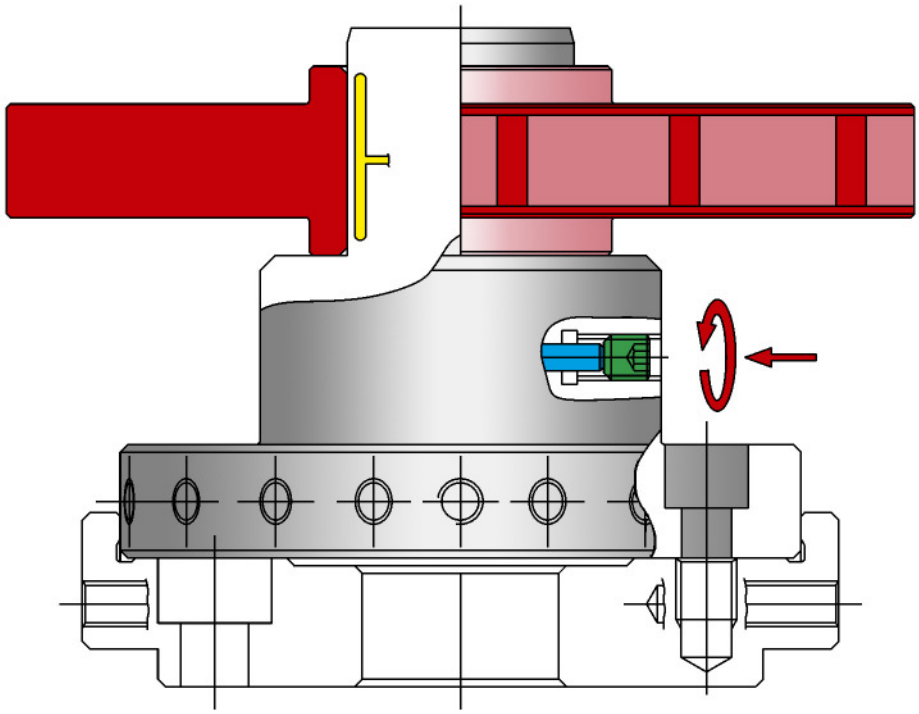
Workpiece clamping

Field of application: *Balancing*

Example 30

Hydra-Clamping-Arbor

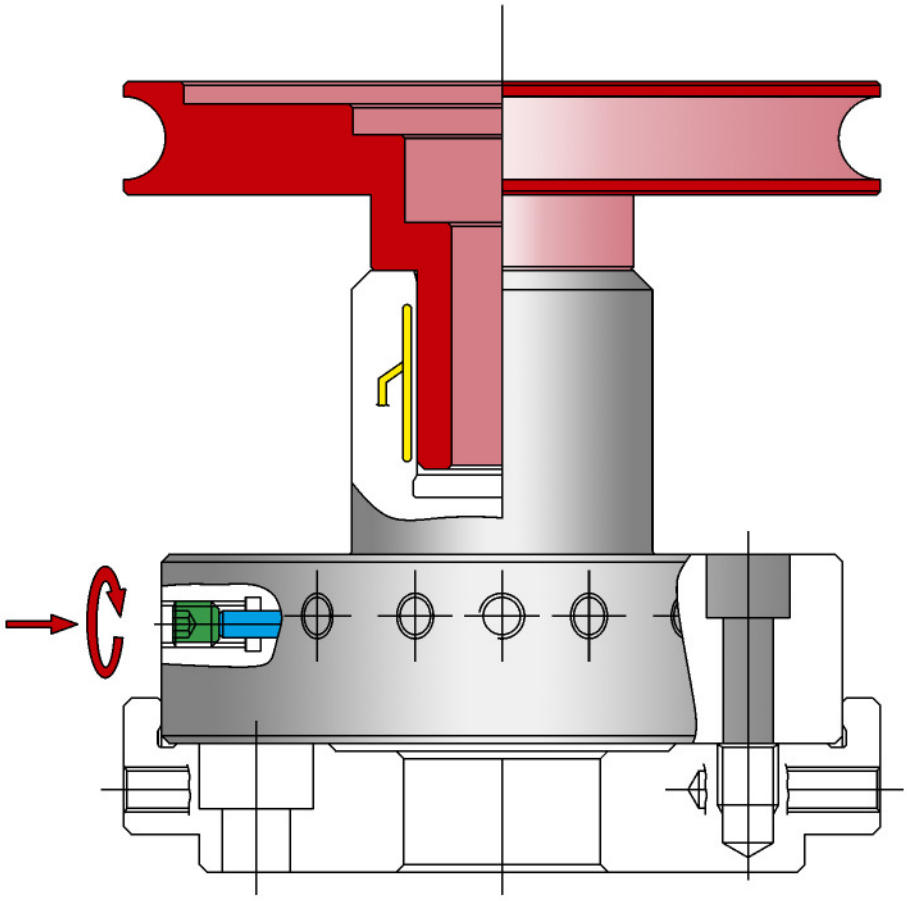
Actuation: Hand actuated Radially
Mounting: Flange
Workpiece: Brake disk
Machine: Balancing machine
Application: Balancing
Advantage: High run-out accuracy ≤ 0,003 mm (0.0002") of the clamping-tool makes the improvement of balancing accuracy possible. By using different intermediate sleeves, you can work with different workpieces with one arbor. It is possible to actuate the Hydra-arbor also by a drawbar.



Example 31

Hydra-Clamping-Chuck

Actuation: Hand actuated
Mounting: Flange
Workpiece: Driving flange
Machine: Balancing machine
Application: Balancing
Advantage: High run-out accuracy ≤ 0,003 mm (0.0002"). High active force quality by centering without play at the workpiece connection. It is possible to actuate the Hydra-chuck also by a drawbar.

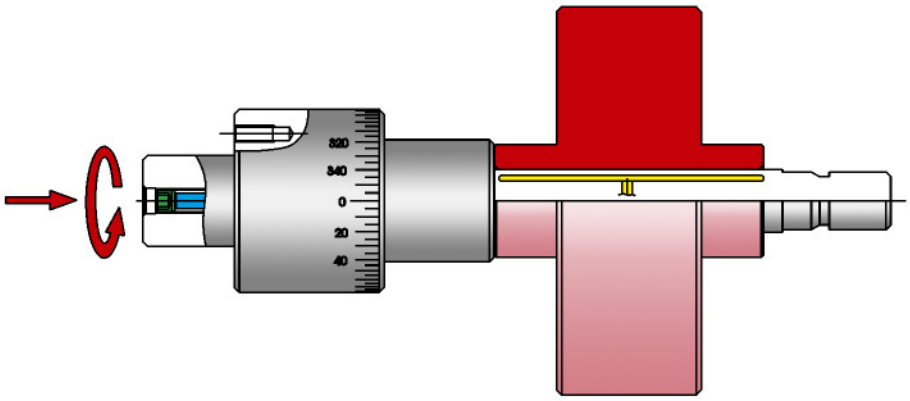


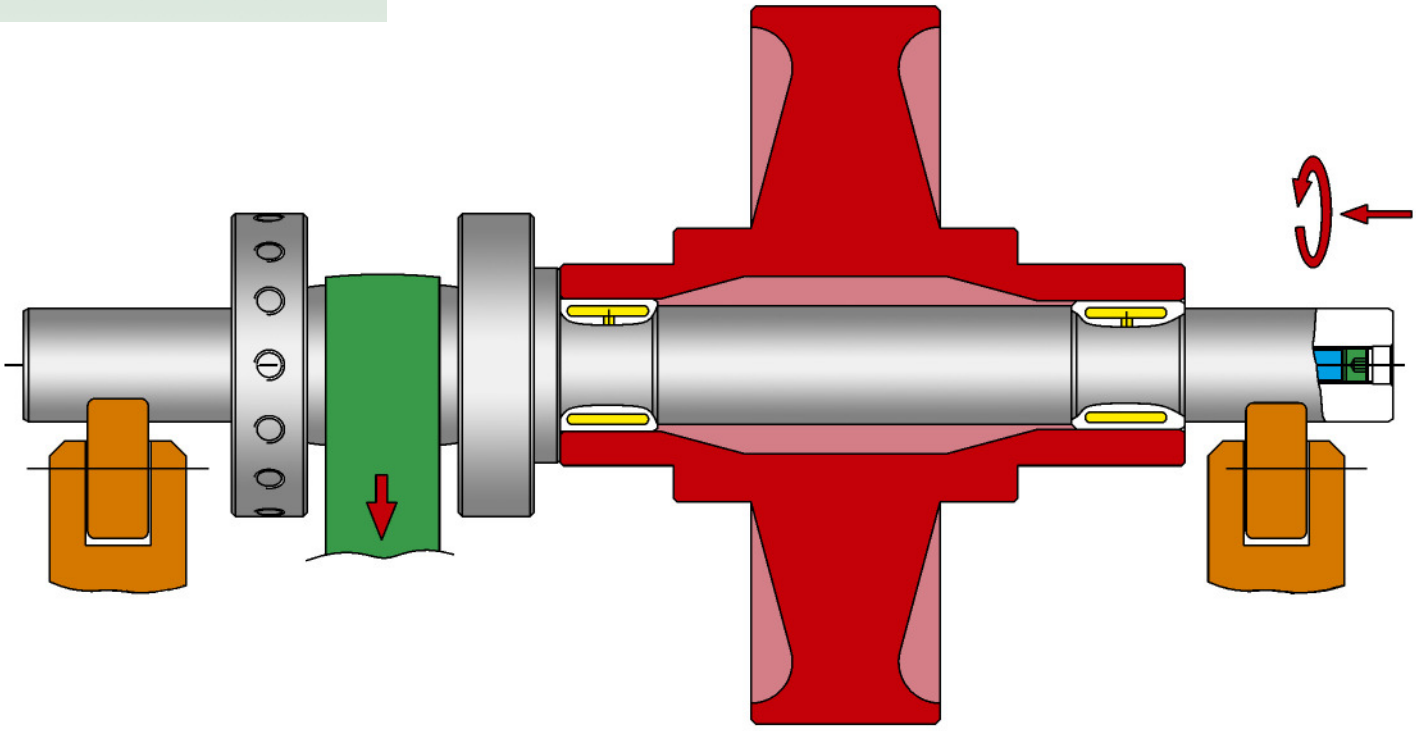
Field of application: *Balancing*

Example 32

Hydra-Clamping-Arbor

Actuation: Hand actuated Radially
Mounting: On rolls
Workpiece: Ventilation wheel
Machine: Balancing machine
Application: Balancing
Advantage: High precise clamping; run-out accuracy ≤ 0,005 mm (0.0002") at the balancing action; fast retrofit at the workpiece changing





Example 33

Hydra-Clamping-Arbor

Actuation: Hand actuated, axially
Mounting: On rolls
Workpiece: Turbine wheel
Machine: Balancing machine
Application: Balancing
Advantage: High precise clamping; run-out accuracy ≤ 0,005 mm (0.0002") at the balancing action; clamping with 2 clamping areas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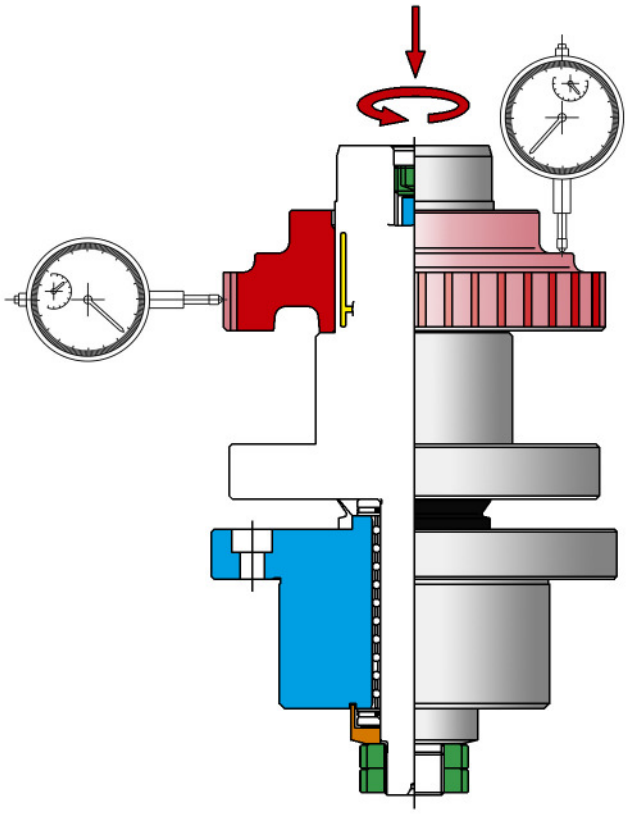
clamping tools

Field of application: *Checking and measuring*

Example 34

Hydra-Clamping-Arbor

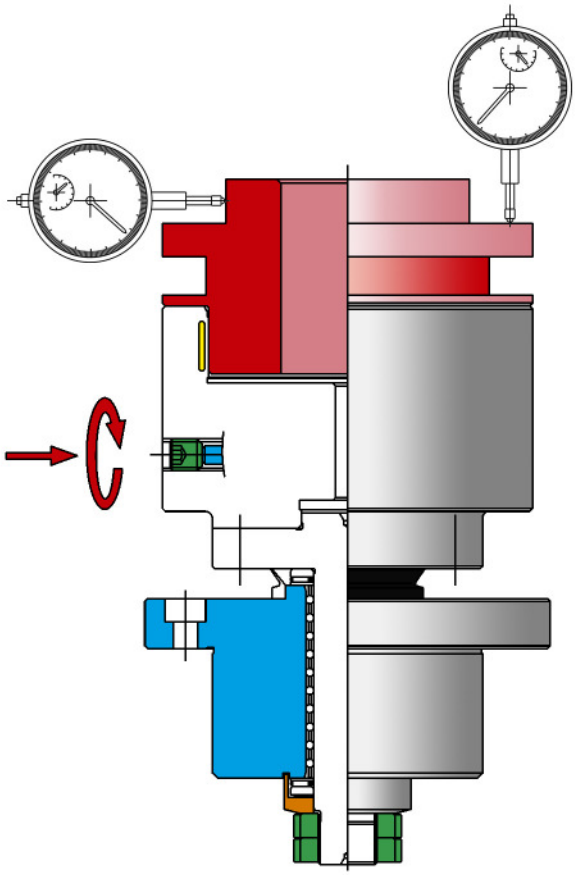
Actuation: Hand actuated Axially
Mounting: Flange; cyl. centering
Workpiece: Measuring fixture
Machine: Gearwheel
Application: Checking of run-out accuracy and face run-out accuracy
Advantage: Run-out accuracy ≤ 0,003 mm (0.00012“); the Hydra-Clamping-Arbor is 0,002 mm (0,00012“) accurately seated by using a pre-clamped bearing bushing and an axial bearing



Example 35

Hydra-Clamping-Arbor

Actuation: Hand actuated Radially
Mounting: Flange; cyl. centering
Workpiece: Hub
Machine: Measuring fixture
Application: Checking of run-out accuracy and face run-out accuracy
Advantage: Run-out accuracy ≤ 0,003 mm (0,00008“); the Hydra-Clamping-Chuck is 0,002 mm (0.00008”) accurately seated by using a preclamped bearing bushing and an axial bearing



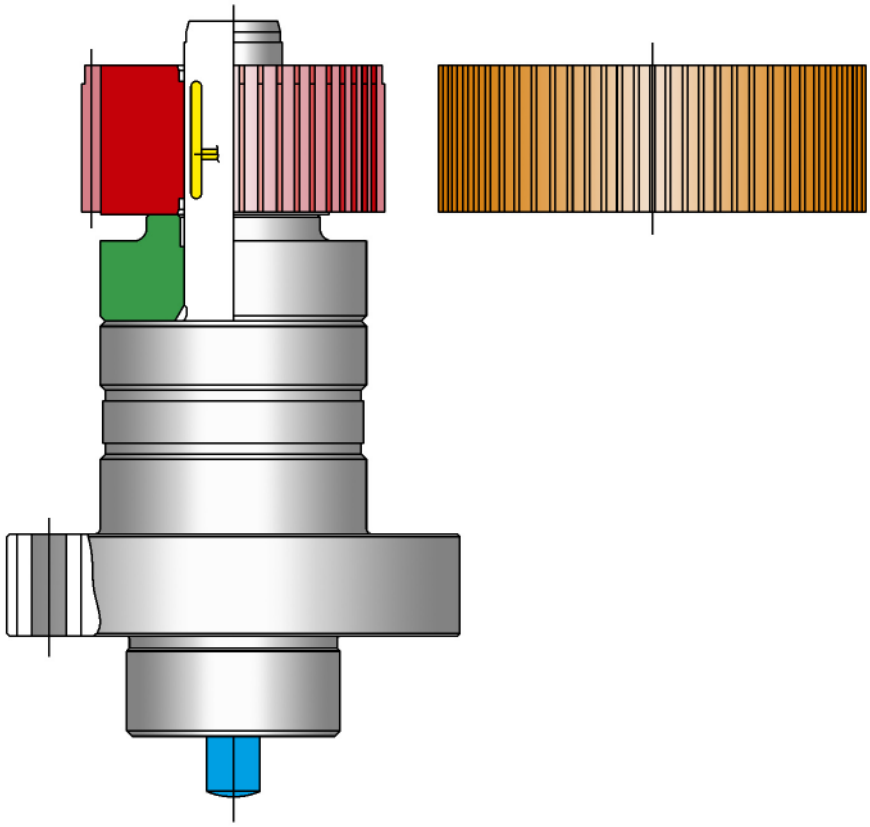
Workpiece clamping

Field of application: *Checking and measuring*

Example 36

Hydra-Clamping-Arbor

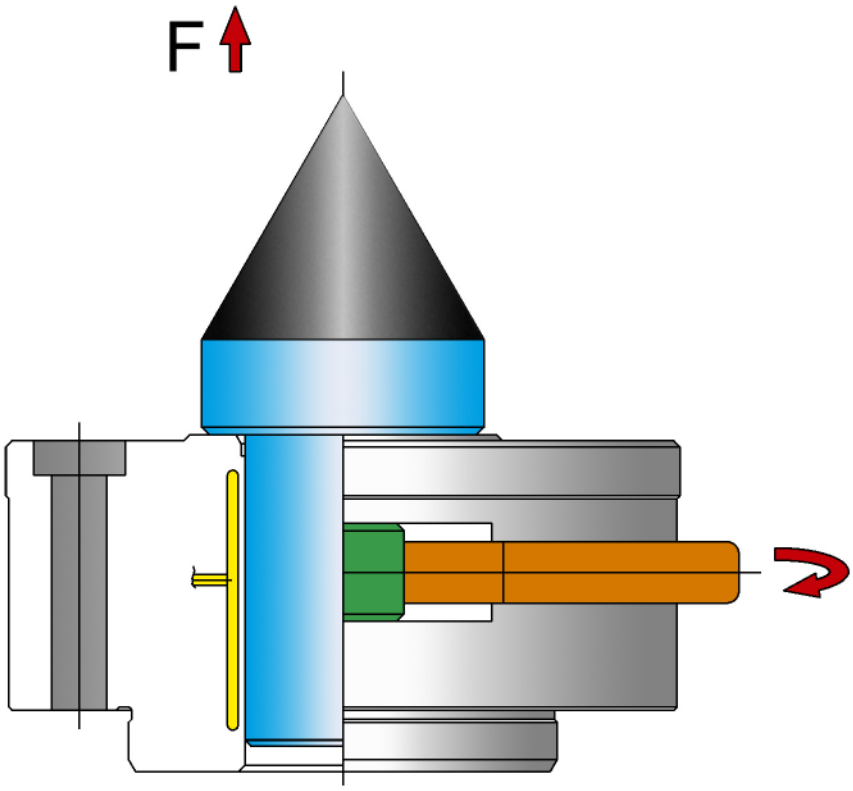
Actuation:	Power actuated
Mounting:	Flange; cyl. centering
Workpiece:	Gearwheel
Machine:	Measuring machine
Application:	Gear checking
Advantage:	High run-out accuracy ≤ 0,002 mm (0.00008“); high capacity of resistance to wear at automatic loading by hard coating of the clamp. dia. with a surface hardness of the coating of 80 HRC



Example 37

Hydra-Clamping-Chuck

Actuation:	Hand actuated Radially (rocker, lever)
Mounting:	Flange; cyl. centering
Workpiece:	Locating centers
Machine:	Measuring machine
Application:	Measuring and checking
Advantage:	Run-out accuracy ≤ 0,002 mm (0.00008”); clamping with rocker-mechanism, therefore very fast retrofitting possible

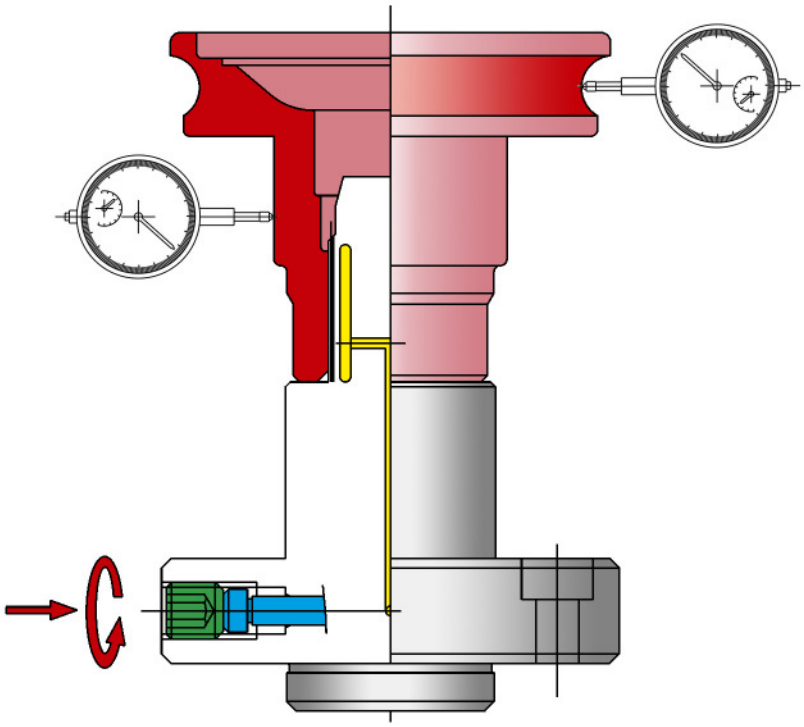


Field of application: *Checking and measuring*

Example 38

Hydra-Clamping-Arbor

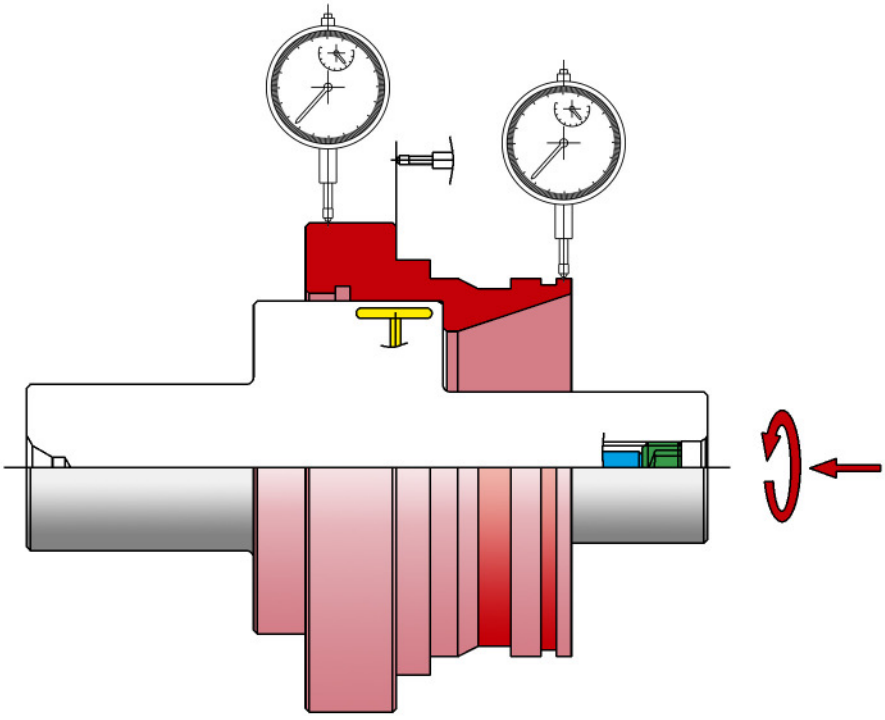
Actuation:	Hand actuated Radially
Mounting:	Flange; cyl. centering
Workpiece:	Driving flange
Machine:	Measuring machine
Application:	Measuring and checking of the outer contour
Advantage:	Run-out accuracy ≤ 0,002 mm (0.00008“); clamping of a sleeve with external gearing in the tooth profile



Example 39

Hydra-Clamping-Arbor

Actuation:	Hand actuated Axially
Mounting:	Between centers
Workpiece:	Adapter bushing
Machine:	Measuring fixture
Application:	Checking of run-out accuracy and face run-out accuracy
Advantage:	Run-out accuracy ≤ 0,002 mm (0.00008“); no deformation of the workpiece because of a sensitive actuation

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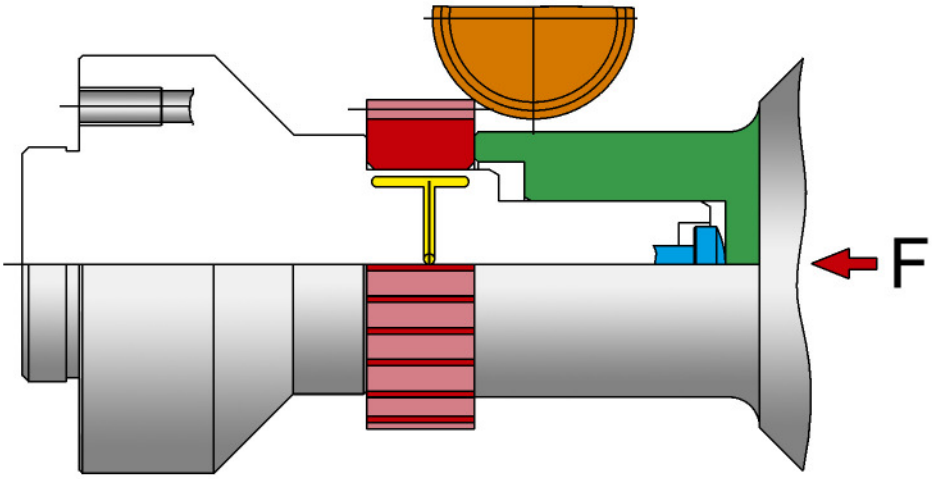
Gearwheel production

Field of application: *Gear Hobbing*

Example 40

Hydra-Clamping-Arbor

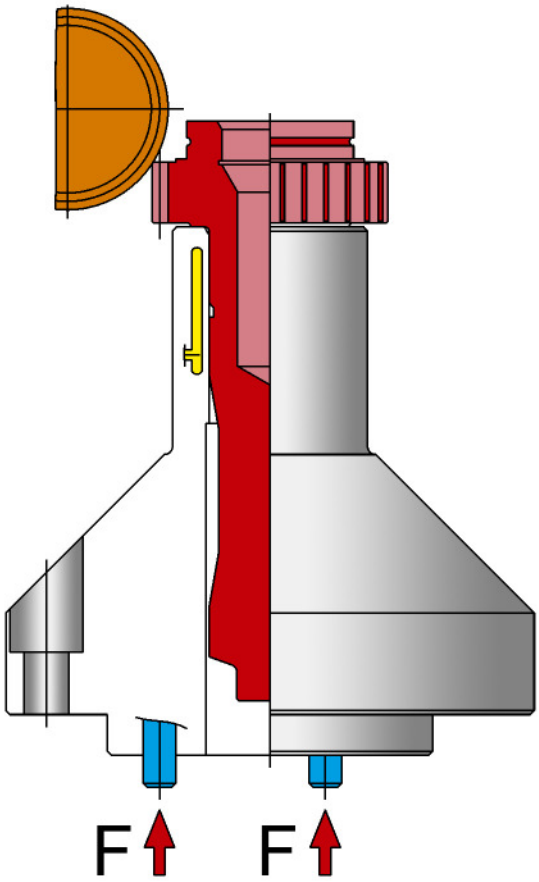
Actuation: Power actuated Axially
Mounting: Flange; cyl. centering
Workpiece: Gearwheel
Machine: CNC-Gear-hobbing machine
Application: Gear Hobbing
Advantage: High run-out accuracy ≤ 0,003 mm (0.00012”); tailstock center actuation through holder. Additionally the workpiece is being positioned axially by a holder; automatic loading



Example 41

Hydra-Clamping-Chuck

Actuation: Power actuated Axially
Mounting: Flange; cyl. centering
Workpiece: Main shaft
Machine: CNC-Gear-hobbing machine
Application: Gear Hobbing
Advantage: High run-out accuracy and high face run-out accuracy ≤ 0,003 mm (0.00012“), because of high stiffness and stability of the Hydra-Clamping-Chuck, there is no axial support necessary



Gearwheel production

Field of application: *Gear Hobbing*

Example 42

Hydra-Clamping-Arbor

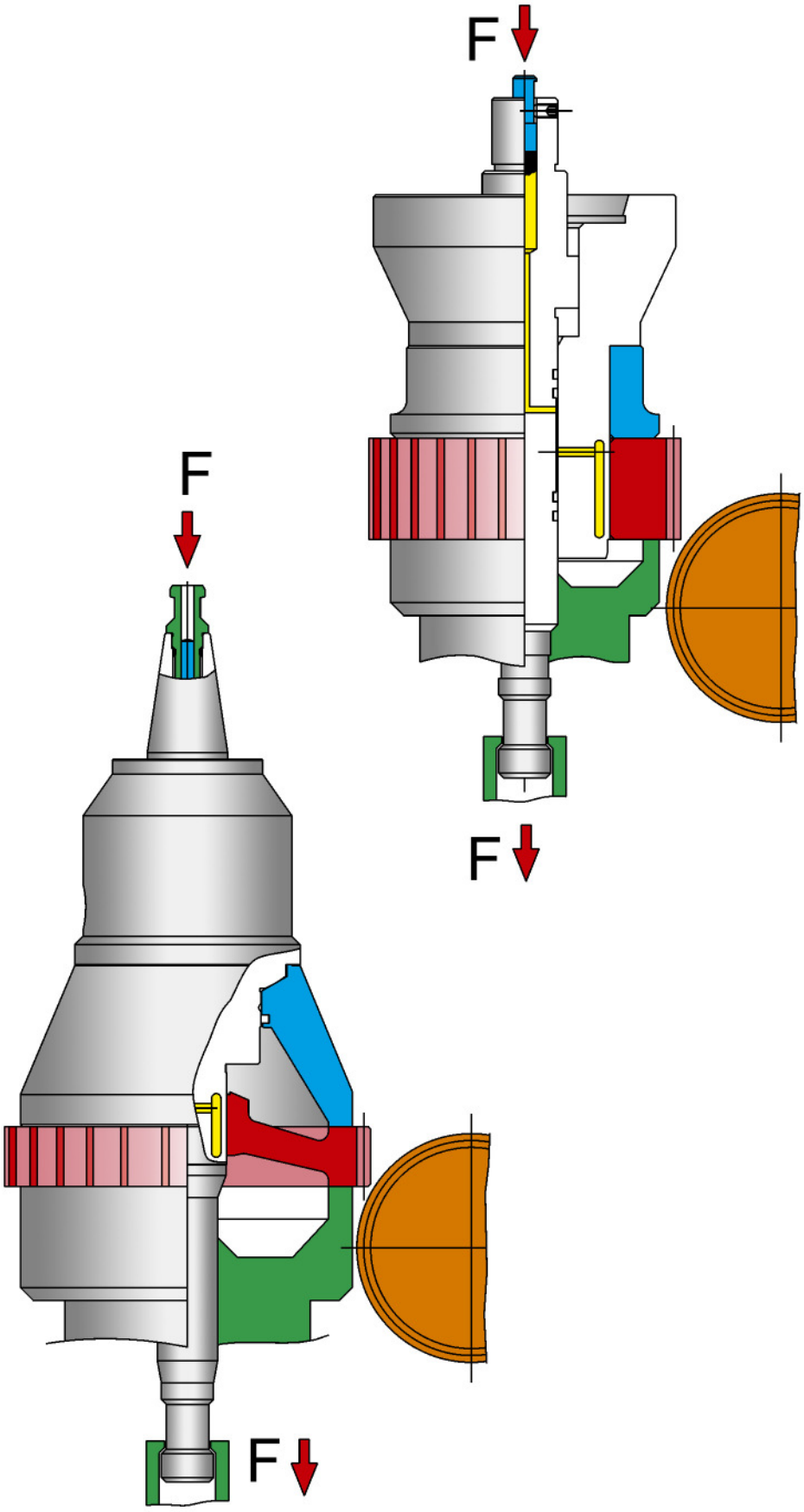
Actuation: Power actuated Axially
Mounting: Flange; short taper
Workpiece: Gearwheel
Machine: CNC-Gear-hobbing machine
Application: Gear Hobbing
Advantage: High precision centering of the gear; run-out accuracy ≤ 0,003 mm (0.00012”); Thus quieter running in the assembled stage is achieved. Additionally the workpiece is being clamped axially by a holder.

Example 43

Hydra-Clamping-Arbor

Actuation: Power actuated Axially
Mounting: Steep taper 40
Workpiece: Gearwheel
Machine: CNC-Gear-hobbing machine
Application: Gear Hobbing
Advantage: High precise centering of the gear; run-out acccuracy ≤ 0,003 mm (0.00012”);

Additionally the workpiece is being clamped by a holder; compen-sation of the run-out mistakes at the workpiece by a pendulum holder



Example 44

Hydra-Clamping-Arbor

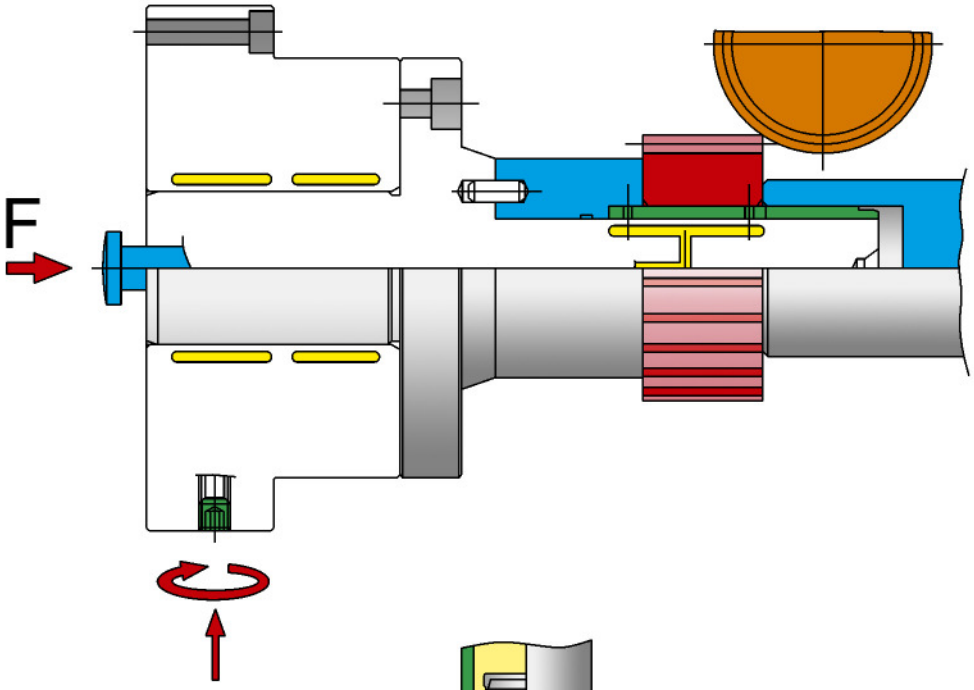
Actuation: Power actuated Axially
Mounting: Flange, cyl. centering
Workpiece: Gearwheel
Machine: CNC-Gear-hobbing machine
Application: Gear Hobbing
Advantage: High run-out accuracy and high face run-out accuracy ≤ 0,003 mm (0.00012“); clamping on a sleeve; sleeve highly wear resistant hard-coated to 80 HRC; Additionally the workpiece is being positioned axially by a holder; automatic loading; because of the use of a Hydra-Clamping-Chuck as a quick change base-chuck there is a precise and quick tool-change possible

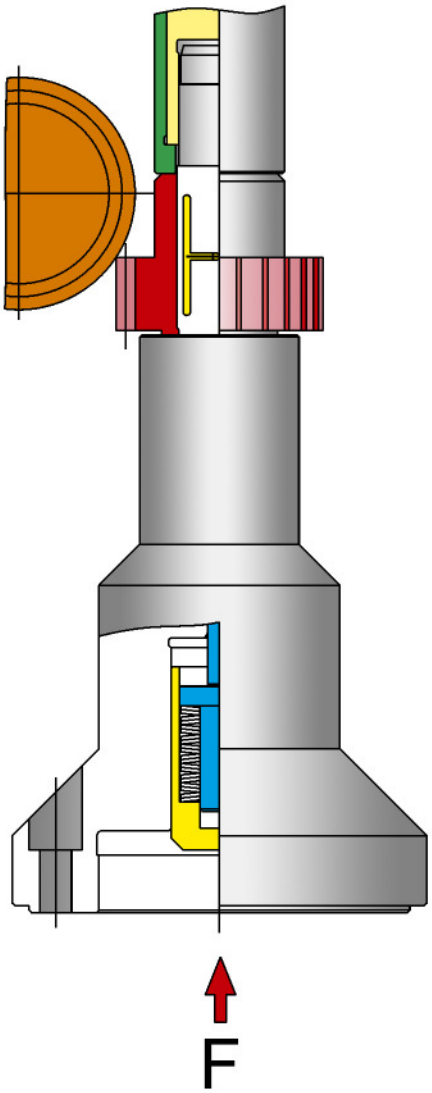
Example 45

Hydra-Clamping-Arbor

Actuation: Power actuated Axially
Mounting: Flange, short taper
Workpiece: Gearwheel
Machine: CNC-Gear-hobbing machine
Application: Gear Hobbing
Advantage: High run-out accuracy and high face run-out accuracy ≤ 0,003 mm (0.00012”); Additionally the workpiece is being positioned axially by a holder; automatic loading

Field of application: *Gear Hobbing*





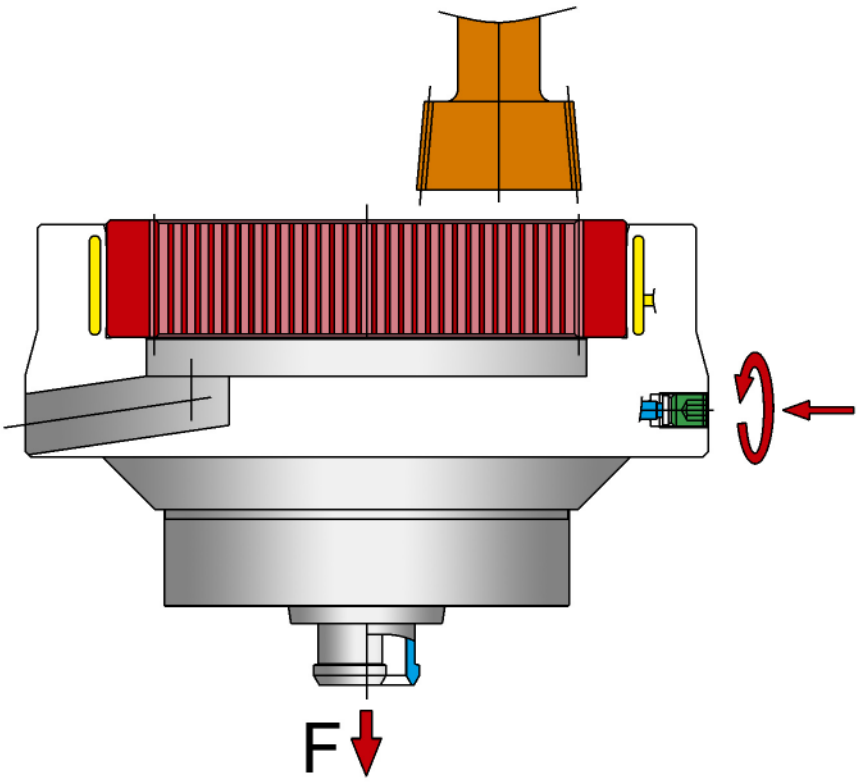
Gearwheel production

Field of application: *Gear Shaping*

Example 46

Hydra-Clamping-Chuck

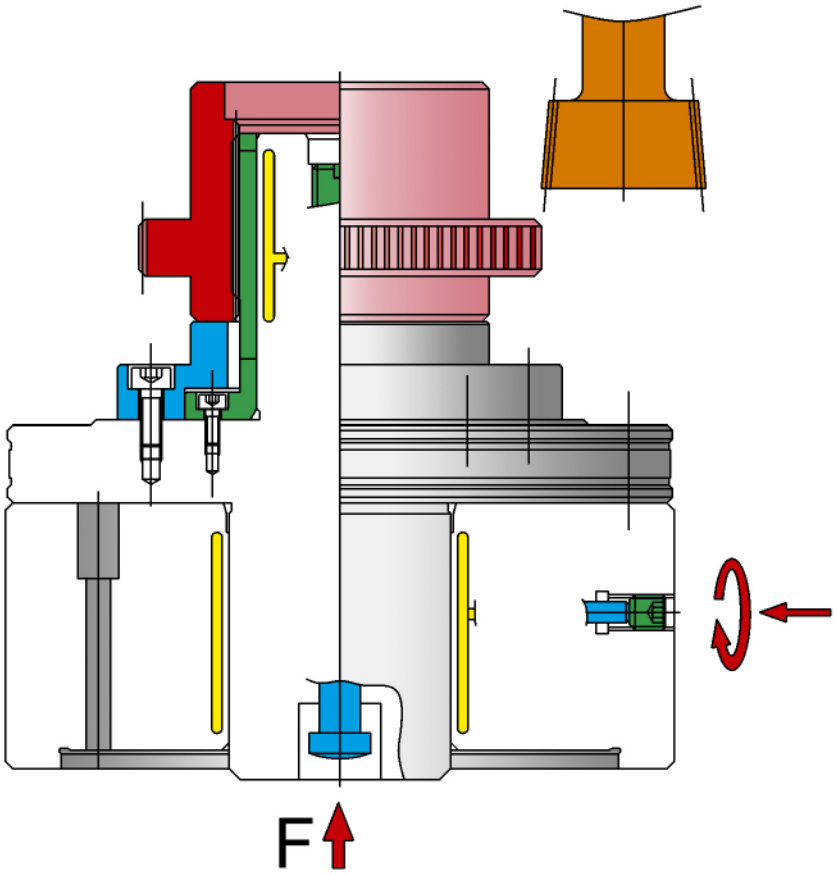
Actuation:	Hand actuated Radially
Mounting:	By straight pin
Workpiece:	Internal geared wheel
Machine:	Gear shaping machine
Application:	Shaping of the internal gearing
Advantage:	High run-out accuracy ≤ 0,003 mm (0.00012“); various workpiec mountings with intermediate sleeve possible



Example 47

Hydra-Clamping-Arbor

Actuation:	Power actuated Axially
Mounting:	Flange, cyl. centering in Hydra-Clamping-Base-Chuck
Workpiece:	Gear transmission
Machine:	Gear shaping machine
Application:	Gear Shaping
Advantage:	High run-out accuracy and high face run-out accuracy ≤ 0,003 mm (0.00012“); clamping in the internal gearing of the workpiece by form-ground intermediate sleeve

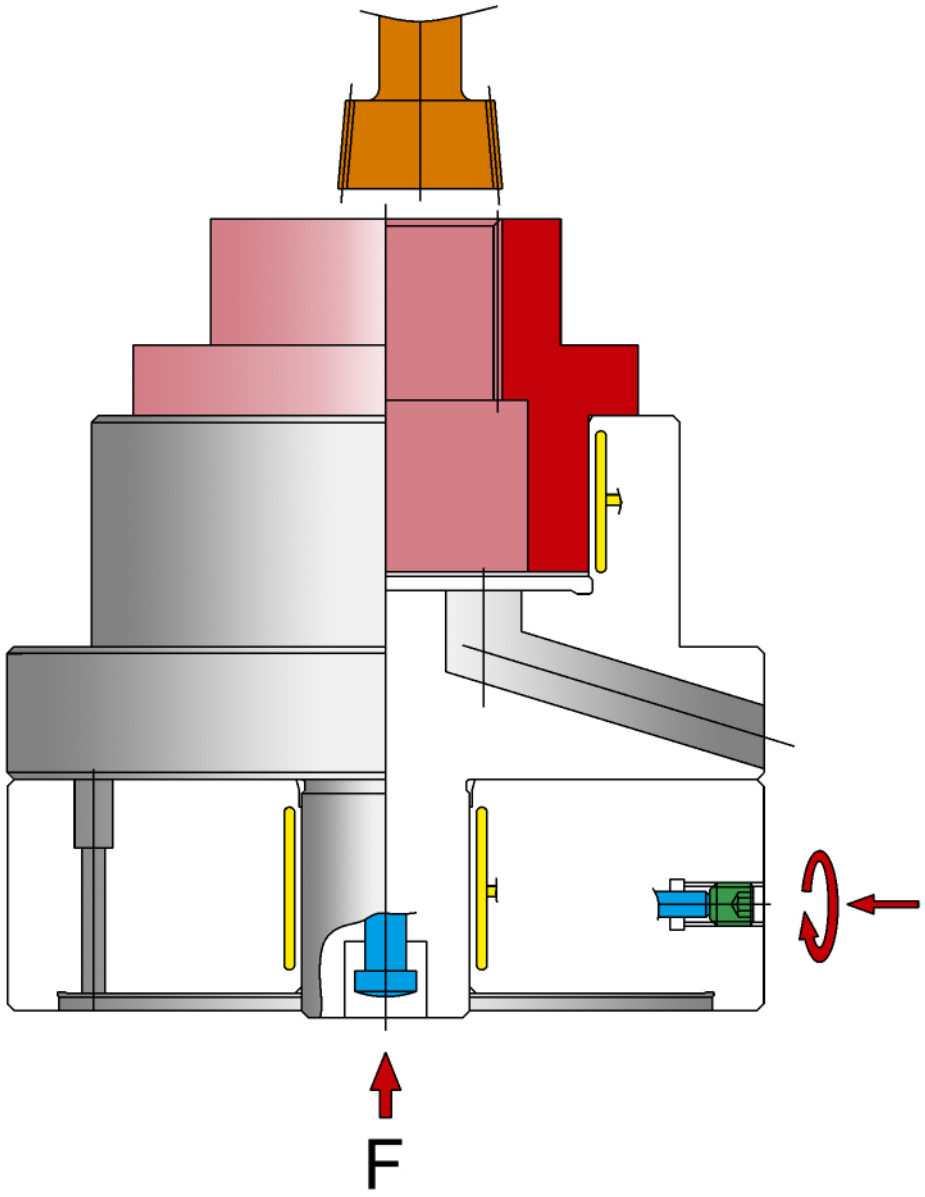


Field of application: *Gear Shaping*

Example 48

Hydra-Clamping-Chuck

Actuation:	Power actuated Axially
Mounting:	Flange; cly. centering in Hydra-Clamping-Base-Chuck
Workpiece:	Driving flange
Machine:	Gear shaping machine
Application:	Shaping of the internal gearing
Advantage:	High run-out accuracy and high face run-out accuracy ≤ 0,005 mm (0.0002“); because of the use of a Hydra-Clamping-Chuck as quick change base-chuck, there is a precise and quick tool-change possible

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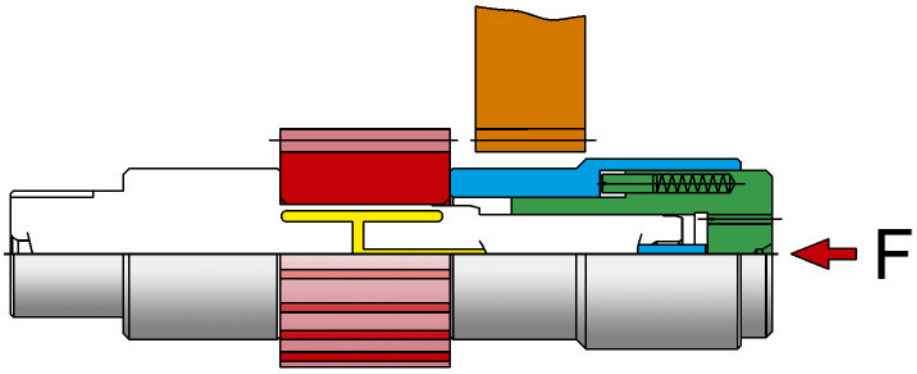
Field of application: *Gear Shaving*

Example 49

Hydra-Clamping-Arbor

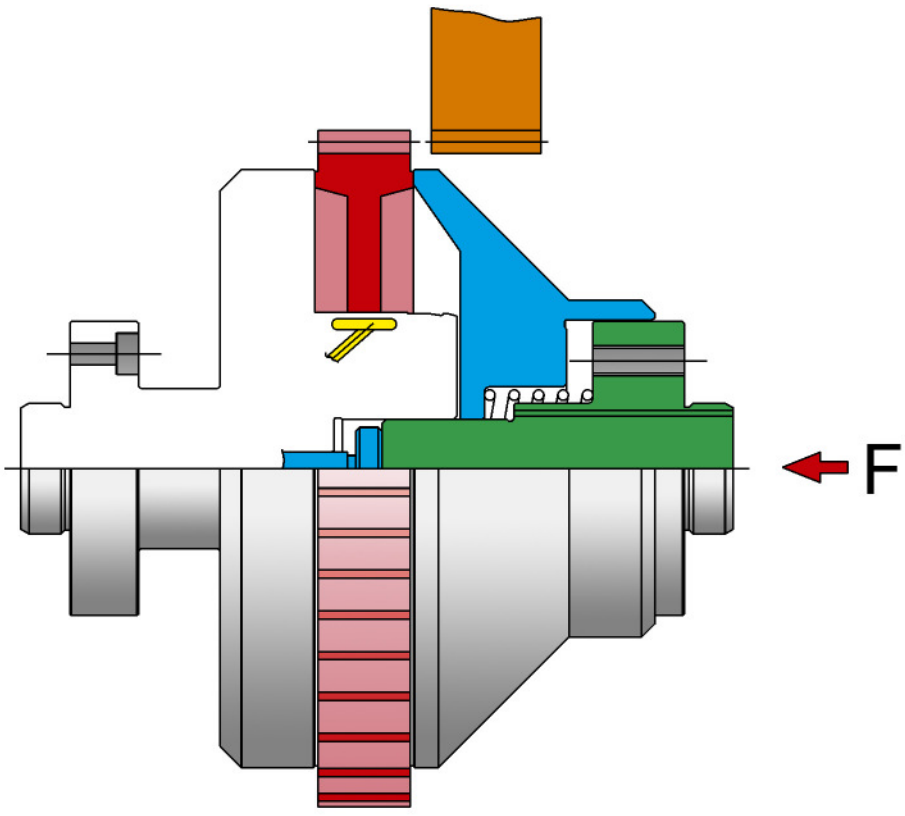
Actuation:	Power actuated Axially by push cap attached to the tailstock
Mounting:	Between centers
Workpiece:	Gearwheel
Machine:	Gear shaving machine
Application:	Gear Shaving
Advantage:	High run-out accuracy ≤ 0,003 mm (0.00012“); quick change of workpiece possible

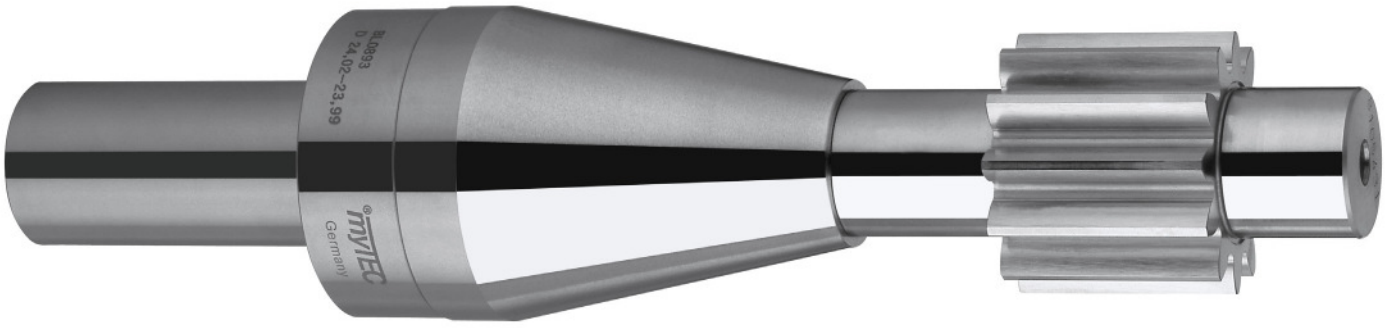


Example 50

Hydra-Clamping-Arbor

Actuation:	Power actuated Axially by push cap attached to the tailstock
Mounting:	Flange; cyl. centering
Workpiece:	Gearwheel
Machine:	Gear shaving machine
Application:	Gear Shaving
Advantage:	High run-out accuracy and high face run-out accuracy ≤ 0,003 mm (0.00012“); axially postitioned by a holder, therefore elimination of the vibration of the workpiece; automatic workpiece loading

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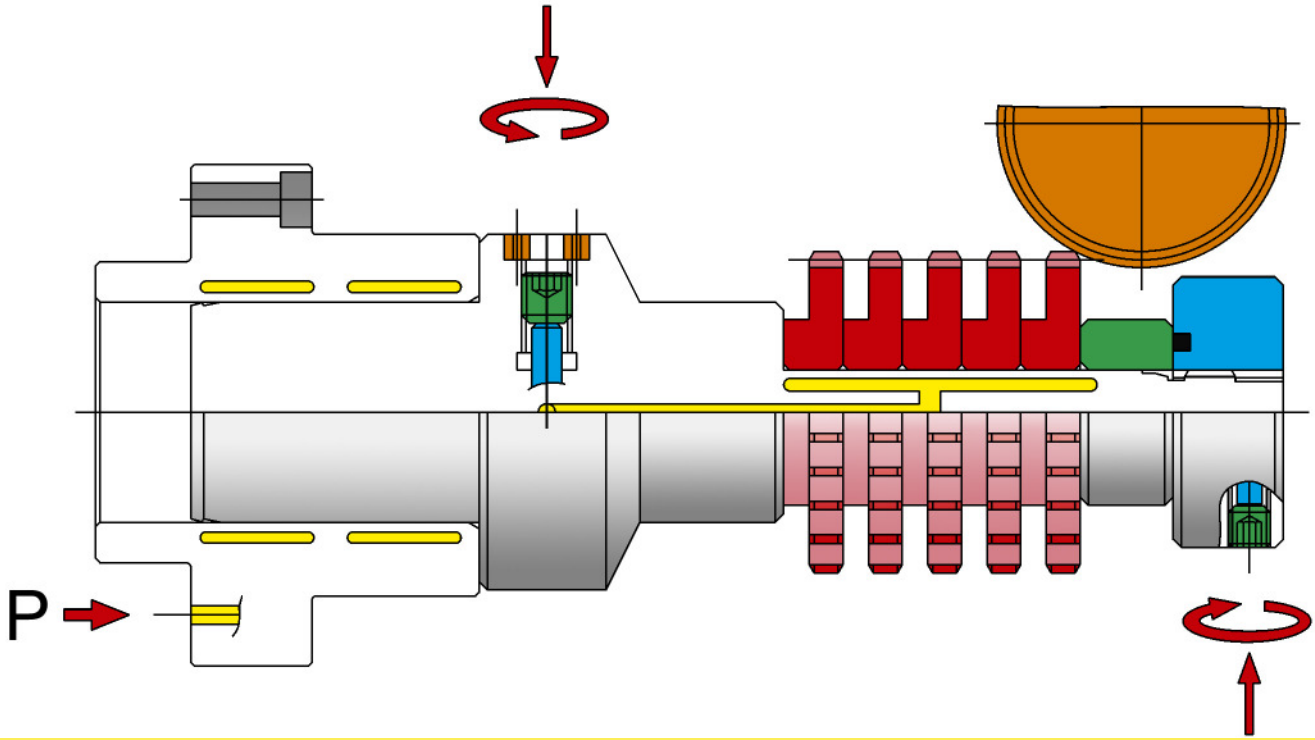
Gearwheel production

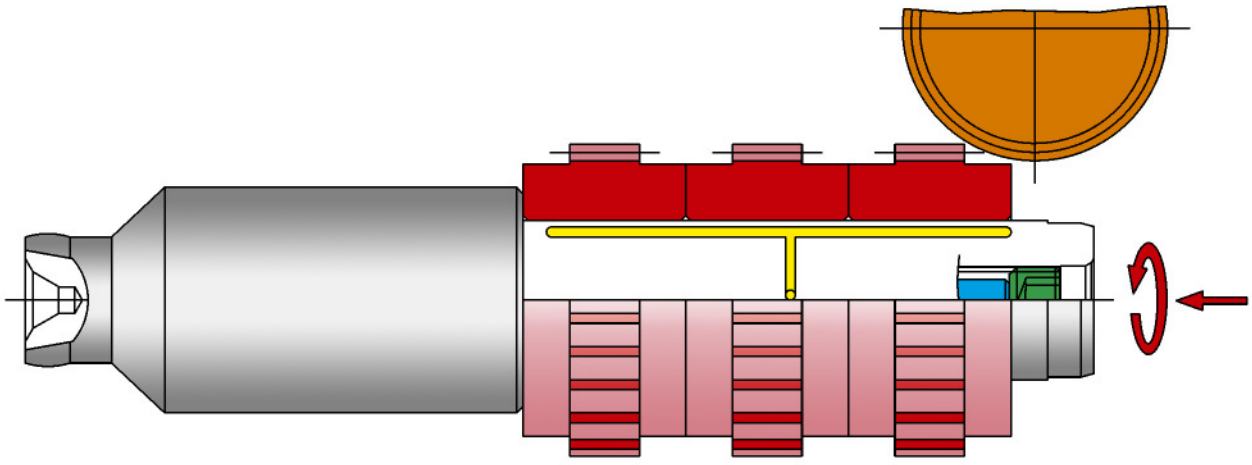
Field of application: *Gear Grinding*



Example 51

Hydra-Clamping-Arbor

Actuation:	Hand actuated, radially
Mounting:	Flange; cyl. centering in Hydra-Clamping-Base-Chuck
Workpiece:	Gearwheel
Machine:	Tooth profile grinding machine
Application:	Grinding of the tooth profile
Advantage:	High run-out accuracy and high face run-out accuracy ≤ 0,003 mm (0.00012”); because of the use of a power actuated Hydra-Clamping-Chuck as a quick change base-chuck, precise and quick retrofitting possible



Example 52

Hydra-Clamping-Arbor

Actuation:	Hand actuated, axially
Mounting:	Between centers (Reishauer)
Workpiece:	Gearwheel
Machine:	Tooth profile grinding machine
Application:	Grinding of the tooth profile
Advantage:	High run-out accuracy and high face run-out accuracy ≤ 0,003 mm (0.00012”); several workpieces with different bore tolerances are being ground simultaniously

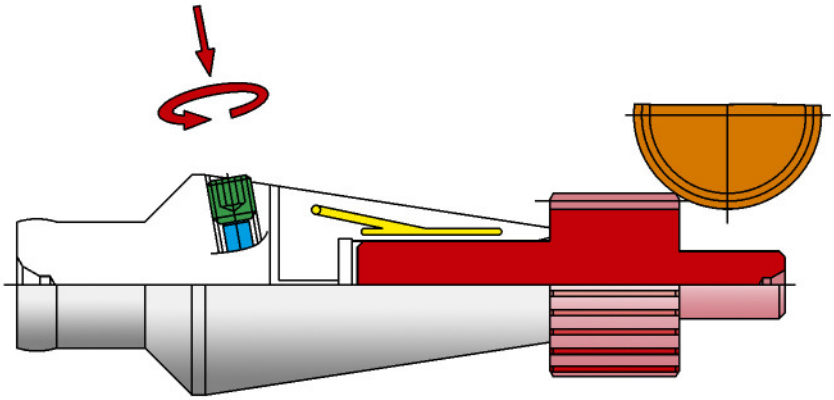
Gearwheel production

Field of application: *Gear Grinding*

Example 53

Hydra-Clamping-Chuck

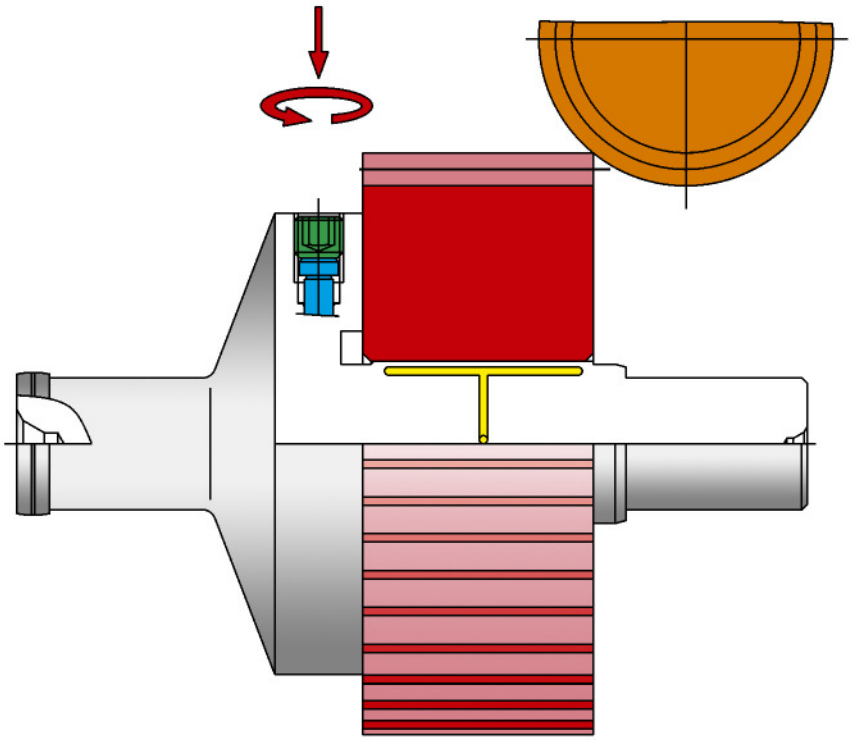
Actuation:	Hand actuated Radially
Mounting:	Between centers (Reishauer)
Workpiece:	Pinion Gear
Machine:	Tooth profile grinding machine
Application:	Grinding of the tooth profile
Advantage:	High run-out accuracy ≤ 0,003 mm (0.00012”) from the bearing seat to the splines



Example 54

Hydra-Clamping-Arbor

Actuation:	Hand actuated Radially
Mounting:	Between centers (Reishauer)
Workpiece:	Gearwheel
Machine:	Tooth profile grinding machine
Application:	Grinding of the tooth profile
Advantage:	High run-out accuracy and high face run-out accuracy ≤ 0,003 mm (0.00012“) from the splines to the ground hole

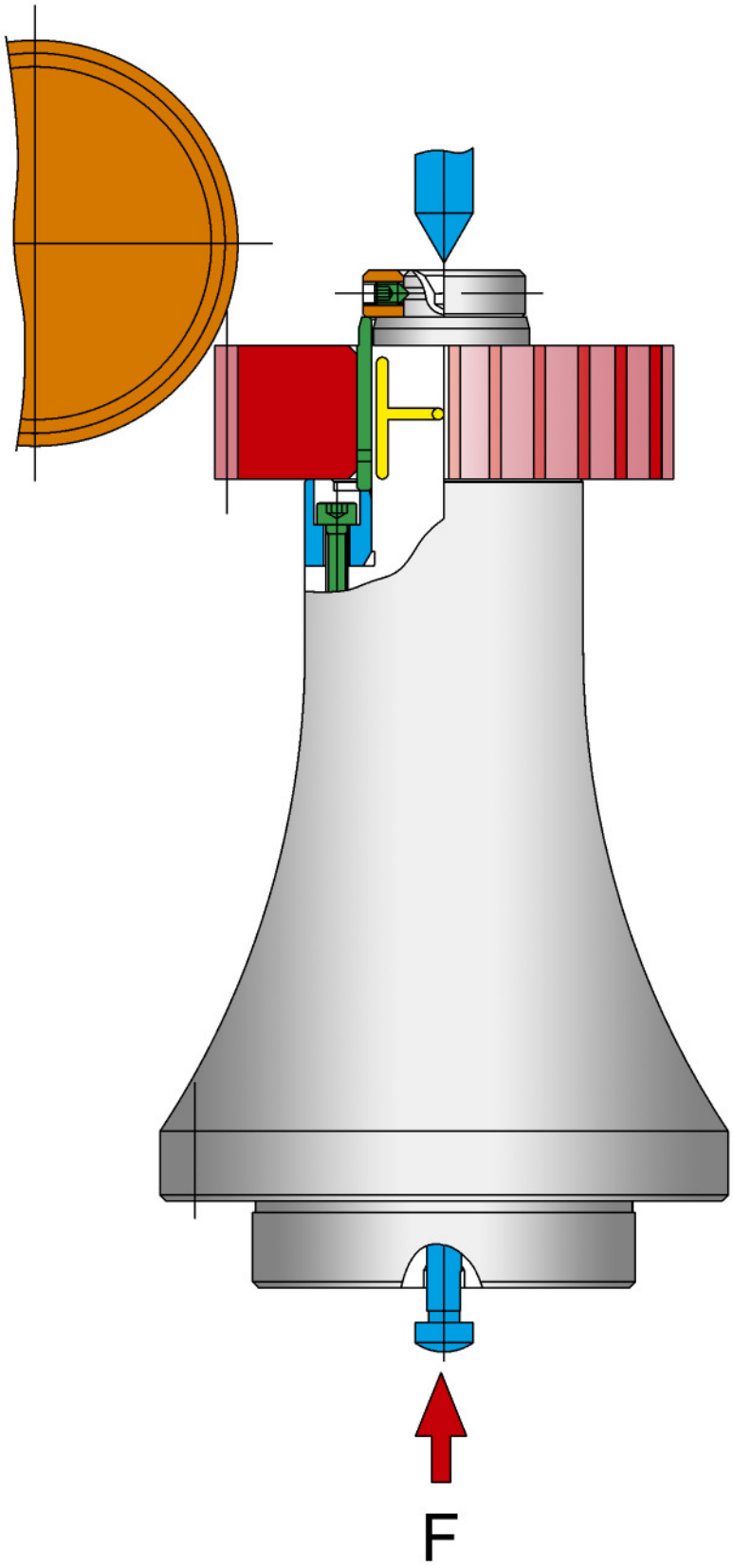


Field of application: *Gear Grinding*

Example 55

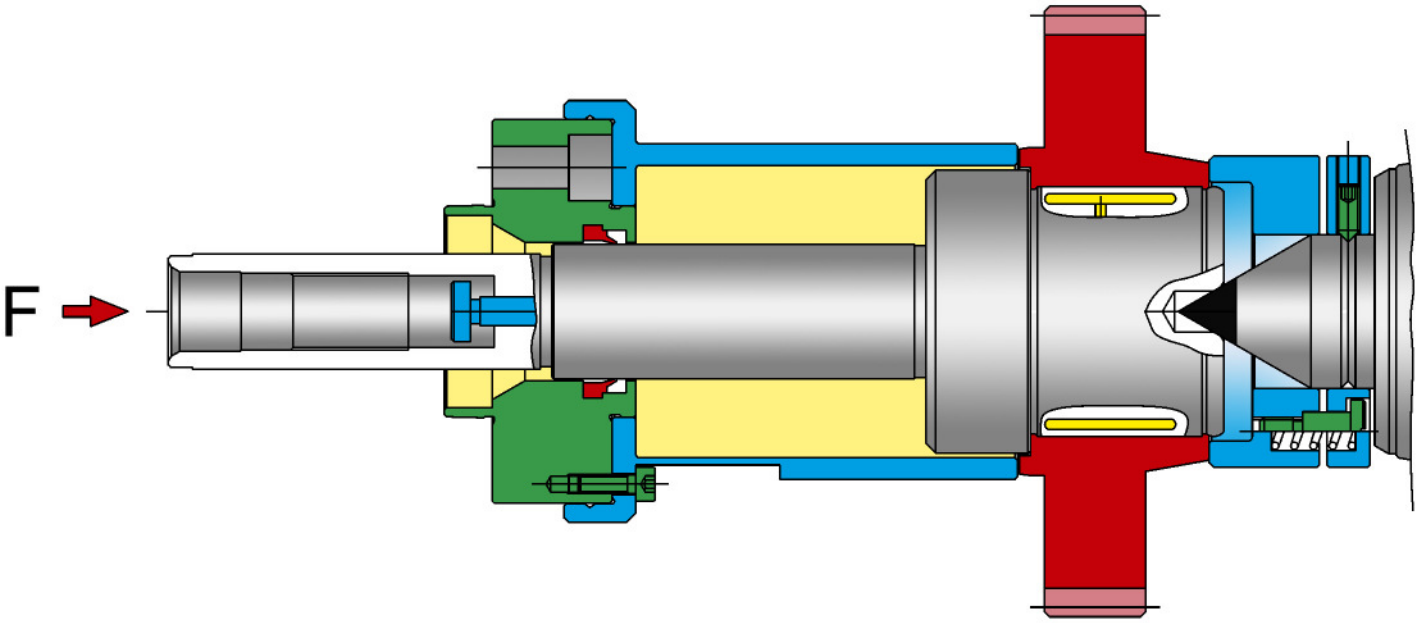
Hydra-Clamping-Arbor

Actuation:	Power actuated Axially
Mounting:	Flange; cyl. centering
Workpiece:	Gearwheel
Machine:	Tooth profile grinding machine
Application:	Grinding of the tooth profile
Advantage:	High run-out accuracy ≤ 0,003 mm (0.00012”) with interchangeable intermediate sleeve for different workpiece diameters. High resistance to wear at automatic loading by hard-coating of the sleeve with a surface hardness of the coating of 80 HRC.



Gearwheel production

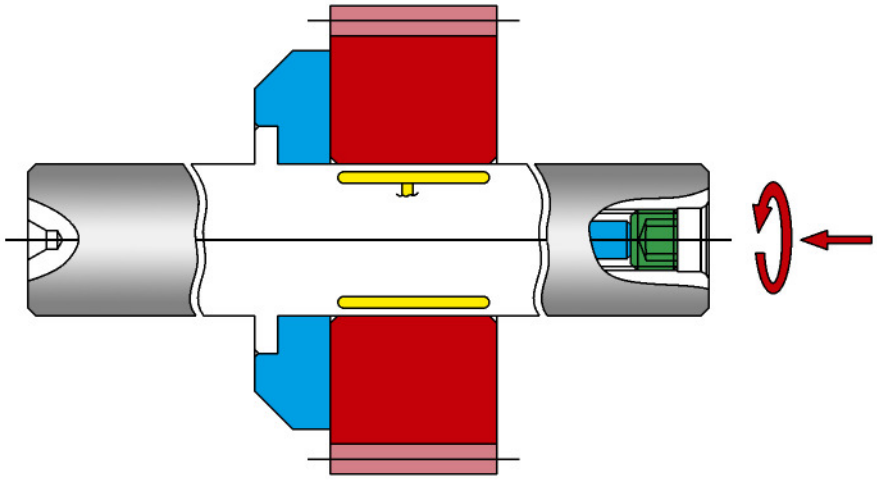
Field of application: *Gear Honing*

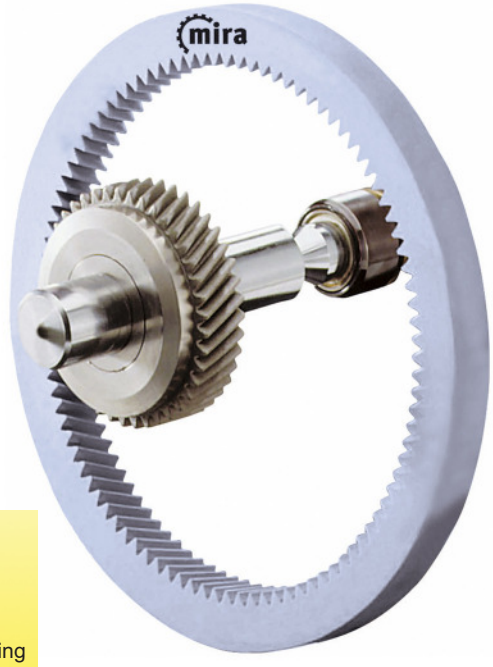


Example 56

Hydra-Clamping-Arbor

Actuation:	Power actuated, axially
Mounting:	Flange; cyl. centering
Workpiece:	Gearwheel
Machine:	„Fässler“ honing machine
Application:	Gear honing
Advantage:	High run-out accuracy and high face run-out accuracy ≤ 0,002 mm (0.00008”); axial support by tailstock; axially positioned by a holder





Example 57

Hydra-Clamping-Arbor

Actuation:	Hand actuated, axially
Mounting:	Between centers
Workpiece:	Gearwheel or dressing-tools
Machine:	“Power”- honing machine
Application:	Gear honing or dressing of the hone-ring
Advantage:	High run-out accuracy and high face run-out accuracy ≤ 0,002 mm (0.00008”)

Gearwheel production

high μ precision clamping

Field of application: *Gear Honing*

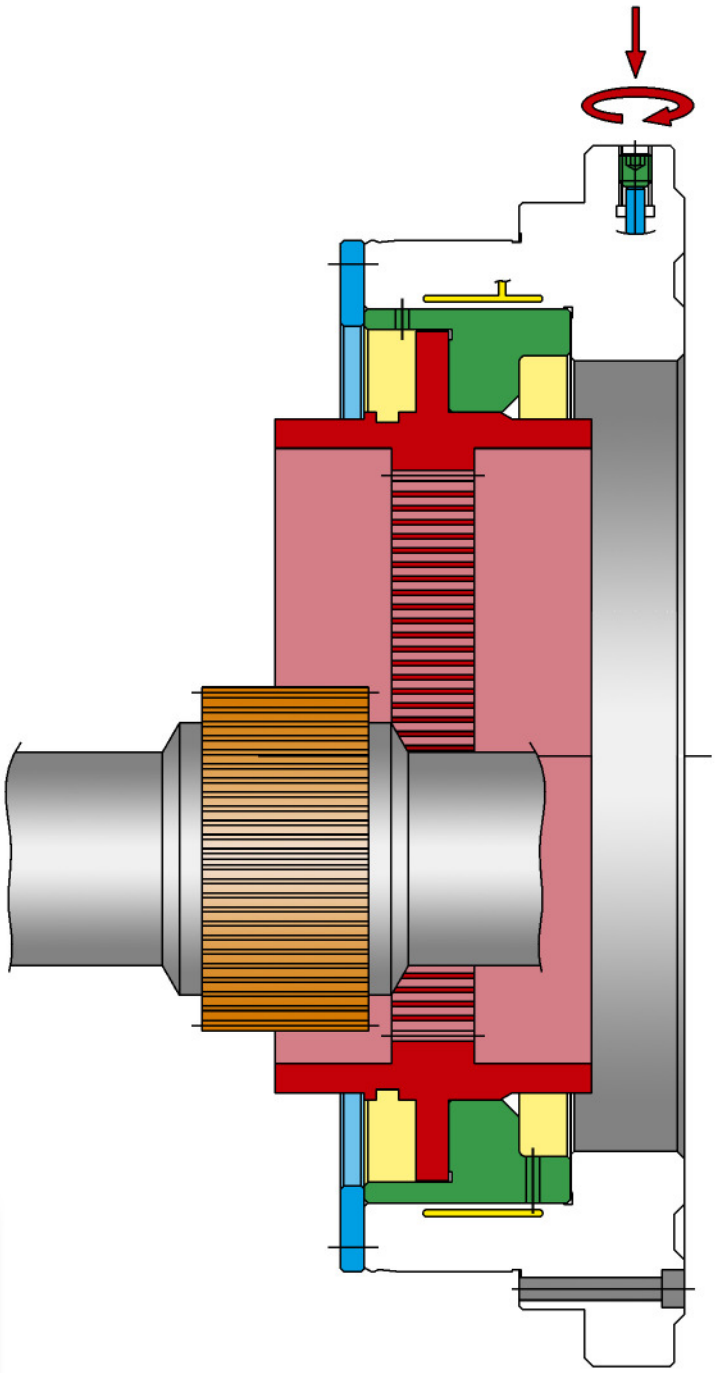
Example 58

Hydra-Clamping-Chuck

Actuation: Hand actuated Radially
Mounting: Flange; cyl. centering
Workpiece: Driving flange
Machine: Gear honing machine
Application: Honing of the internal gearing
Advantage: High run-out accuracy and face run-out accuracy ≤ 0,005 mm (0.0002“).

Hydra-Clamping-Chuck mounted into the hone-ring casting.

To eliminate the deformation of the driving flange, the pressure of the Hydra-Clamping-Chuck will be monitored by a pressure sensor and will be controlled by „Power Control“– electronic pressure control- from Mytec -Hydraclamp- with interchangeable intermediate sleeve for different workpiece diameters



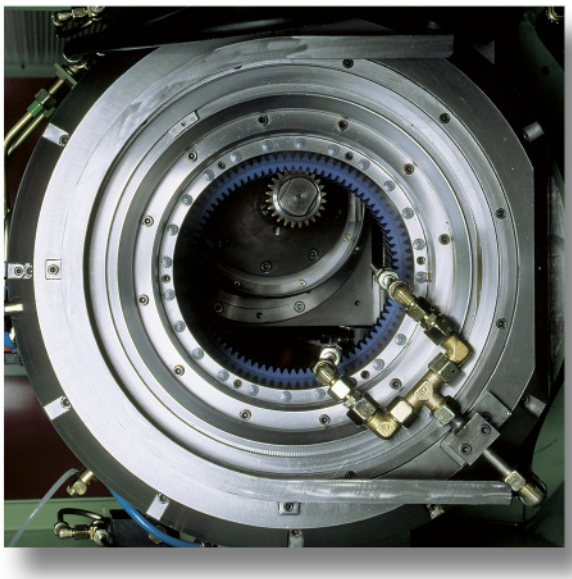


Photo: In the “Präwema” high performance gear honing machine mounted Hydra-Clamping-Chuck, where ceramic honing rings will be lightly clamped for high efficient finishing of hardened gears producing excellent results.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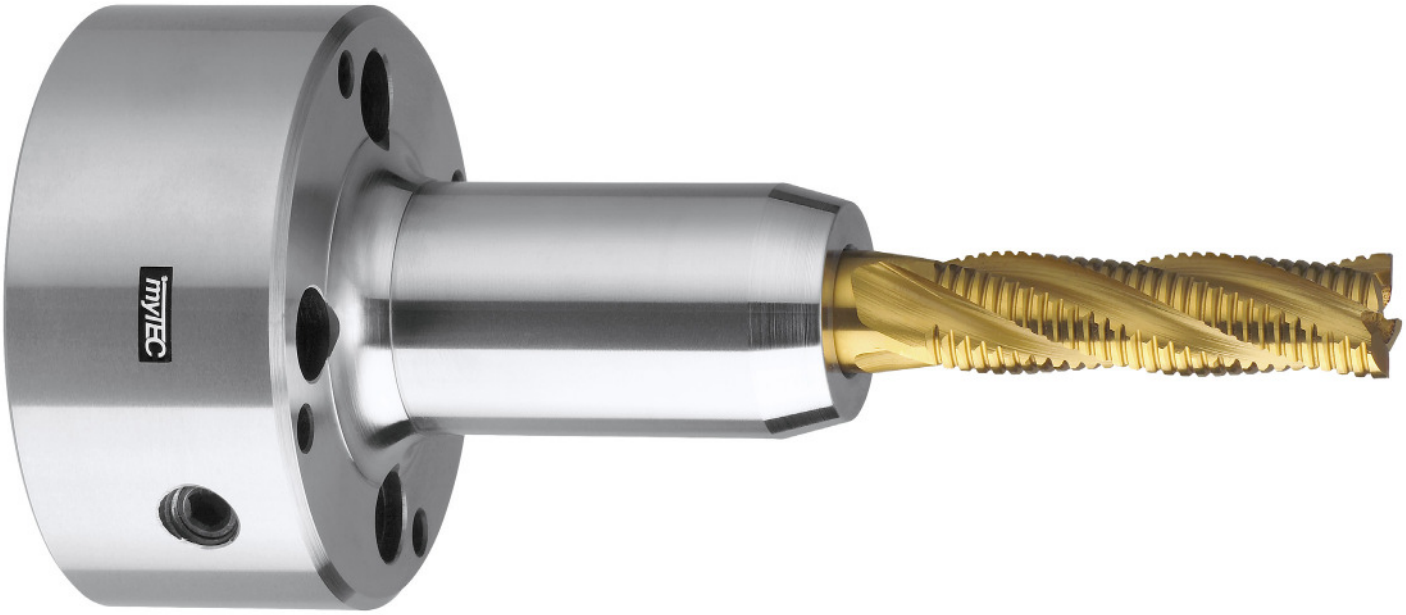
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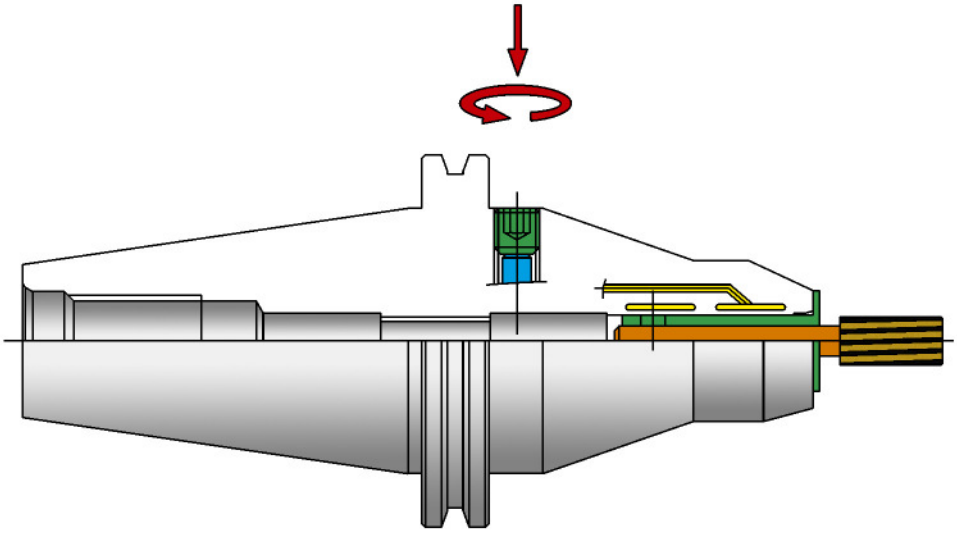
Field of application: ***Drilling - milling - reaming - tool-grinding***

Example 59

Hydra-Clamping-Chuck

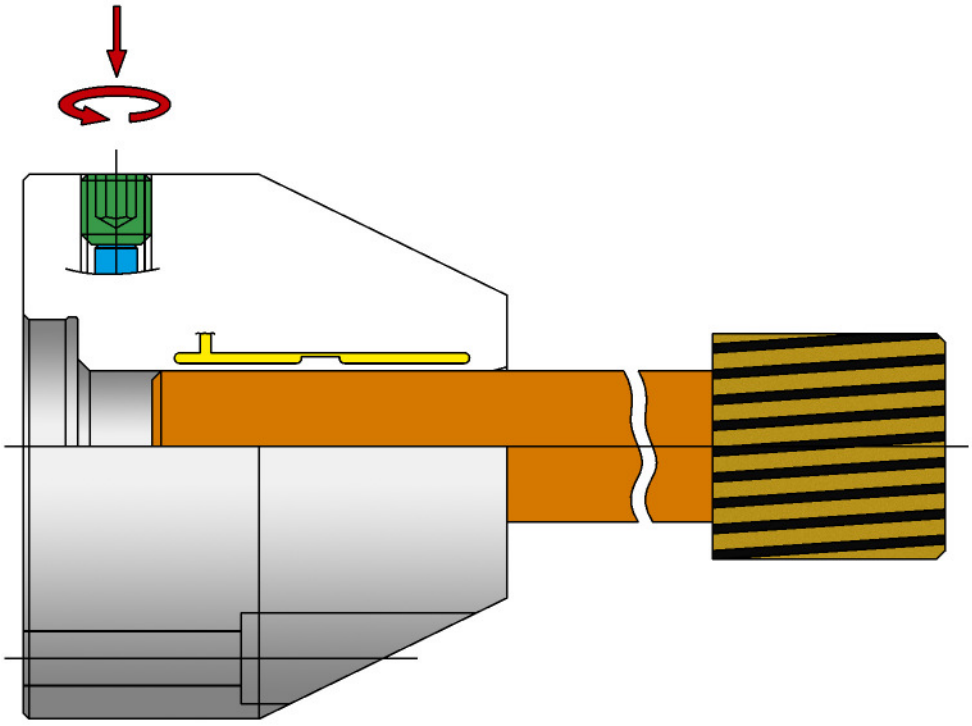
Actuation: Hand actuated Radially
Mounting: SK50
Workpiece: Endmill
Machine: Tool grinding machine
Application: Tool-grinding
Advantage: High run-out accuracy ≤ 0,003 mm (0.00012“); slim chuck contour for grinding wheel clearance. With interchangeable intermediate sleeves for different workpiece dia. This Hydra-Clamping-Chuck could also be delivered for various tool sizes and also with power actuation.



Example 60

Hydra-Clamping-Chuck

Actuation: Hand actuated Radially
Mounting: Flange; cyl. centering
Workpiece: Reamer
Machine: Machining center
Application: Reaming
Advantage: High run-out accuracy ≤ 0,003 mm (0.00012”); therefore longer life of the reamer and highest round-ness of the bore

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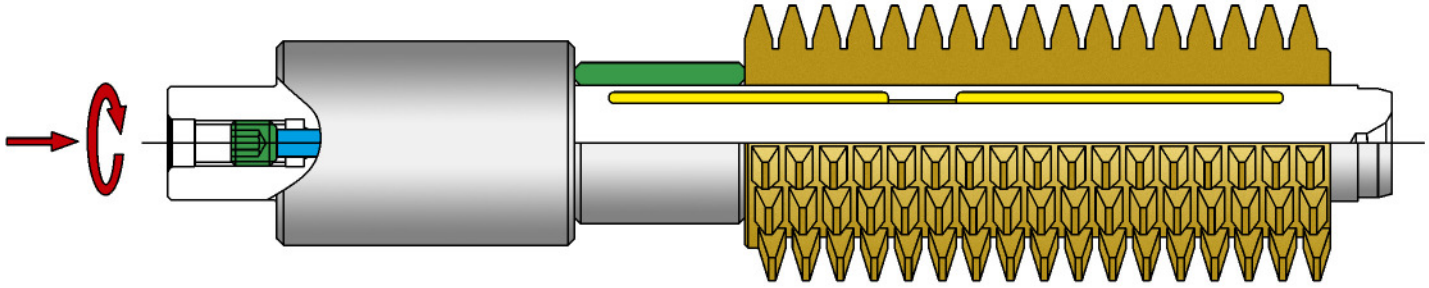
Tool clamping

high precision clamping

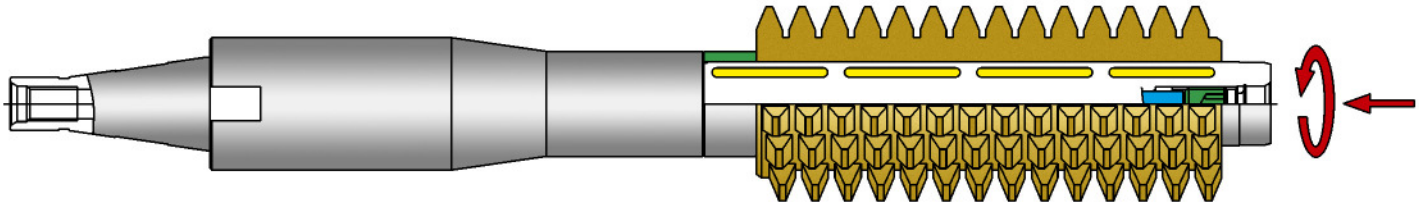
Field of application: *Hob Production*



Example 61

Hydra-Clamping-Arbor

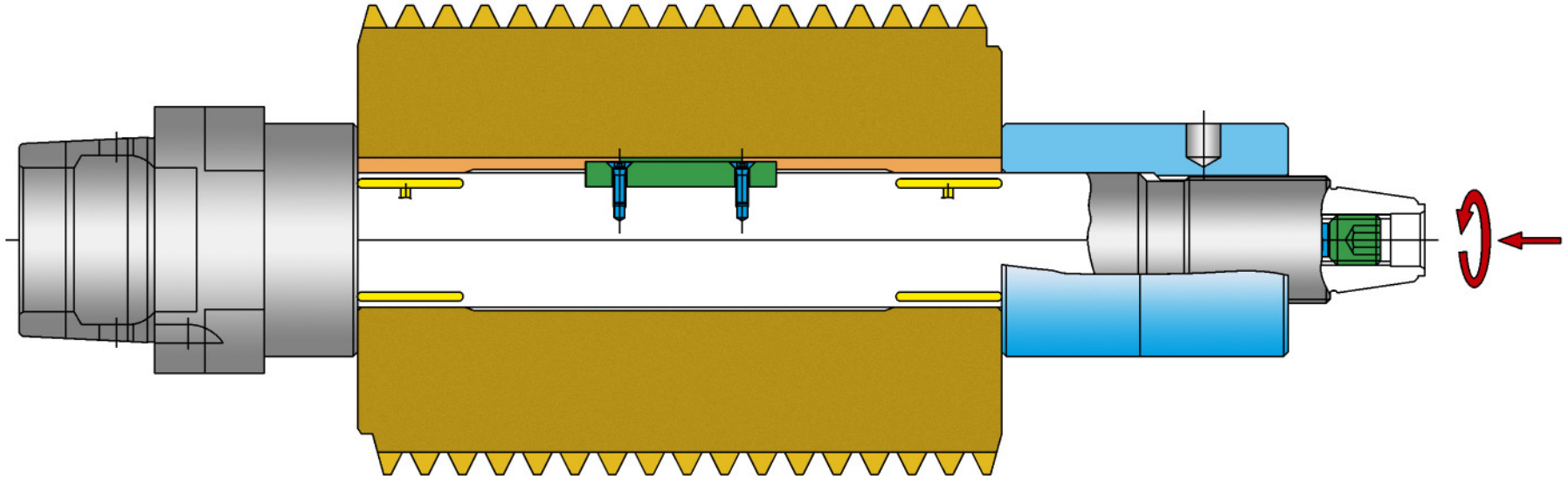
Actuation:	Hand actuated, axially
Mounting:	Between centers
Workpiece:	Hobs
Machine:	Measuring machine / grinding machine
Application:	Measuring, checking and grinding
Advantage:	High run-out accuracy and high face run-out accuracy ≤ 0,003 mm (0.00012”). Ground spacer makes the clamping of different hob lengths possible and extends the operating range.



Example 62

Hydra-Clamping-Arbor

Actuation:	Hand actuated, axially
Mounting:	Steep taper 40
Workpiece:	Hobs
Machine:	CNC-form-grinding machine
Application:	Form-grinding
Advantage:	High run-out accuracy and face run-out accuracy ≤ 0,003 mm (0.00012”). Ground spacer makes the clamping of different hob lengths possible and extends the operating range.



Field of application: *Hobbing*

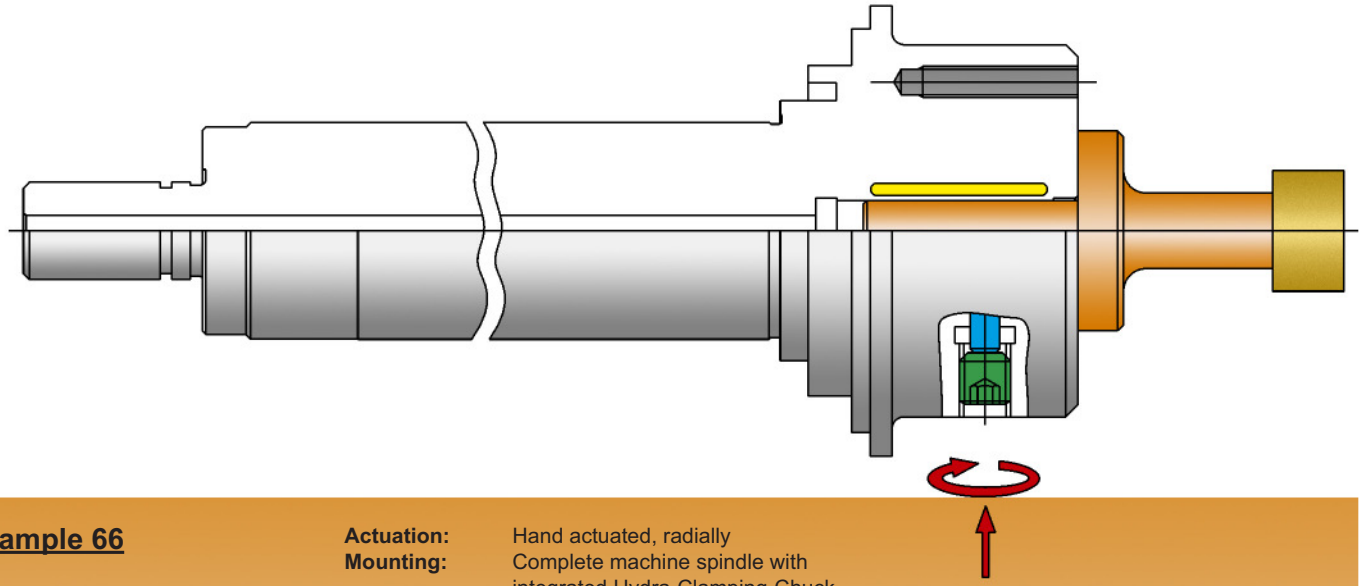
Example 65

Hydra-Clamping-Arbor

Actuation:	Hand actuated, axially
Mounting:	HSK
Workpiece:	Hobs
Machine:	CNC-hobbing machine
Application:	Hobbing
Advantage:	High run-out accuracy and high face run-out accuracy ≤ 0,003 mm (0.00012”); 2 clamping areas; transmission of torgue by feather key. Axial locating by high precision axial-nut. Because of extremely high run-out accuracy the tool life was 5 times greater than with previous tooling.

Tool clamping

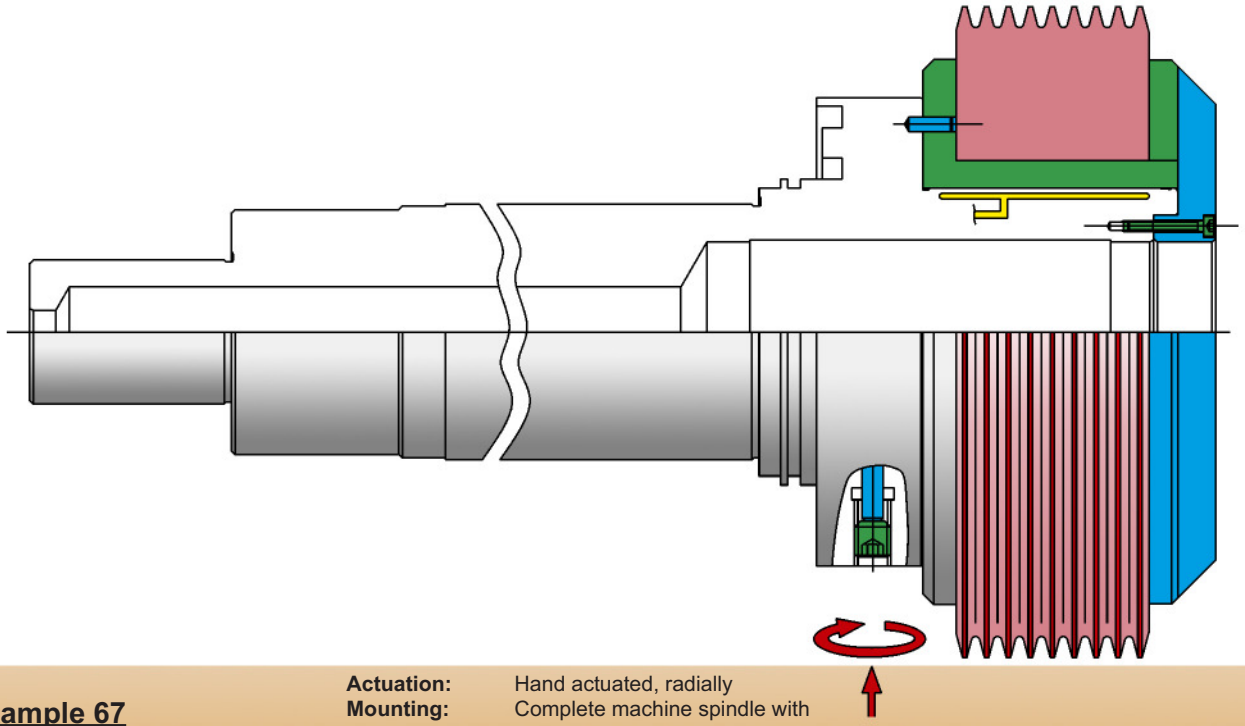
Field of application: *CNC - grinding*



Example 66

Hydra-Clamping-Chuck

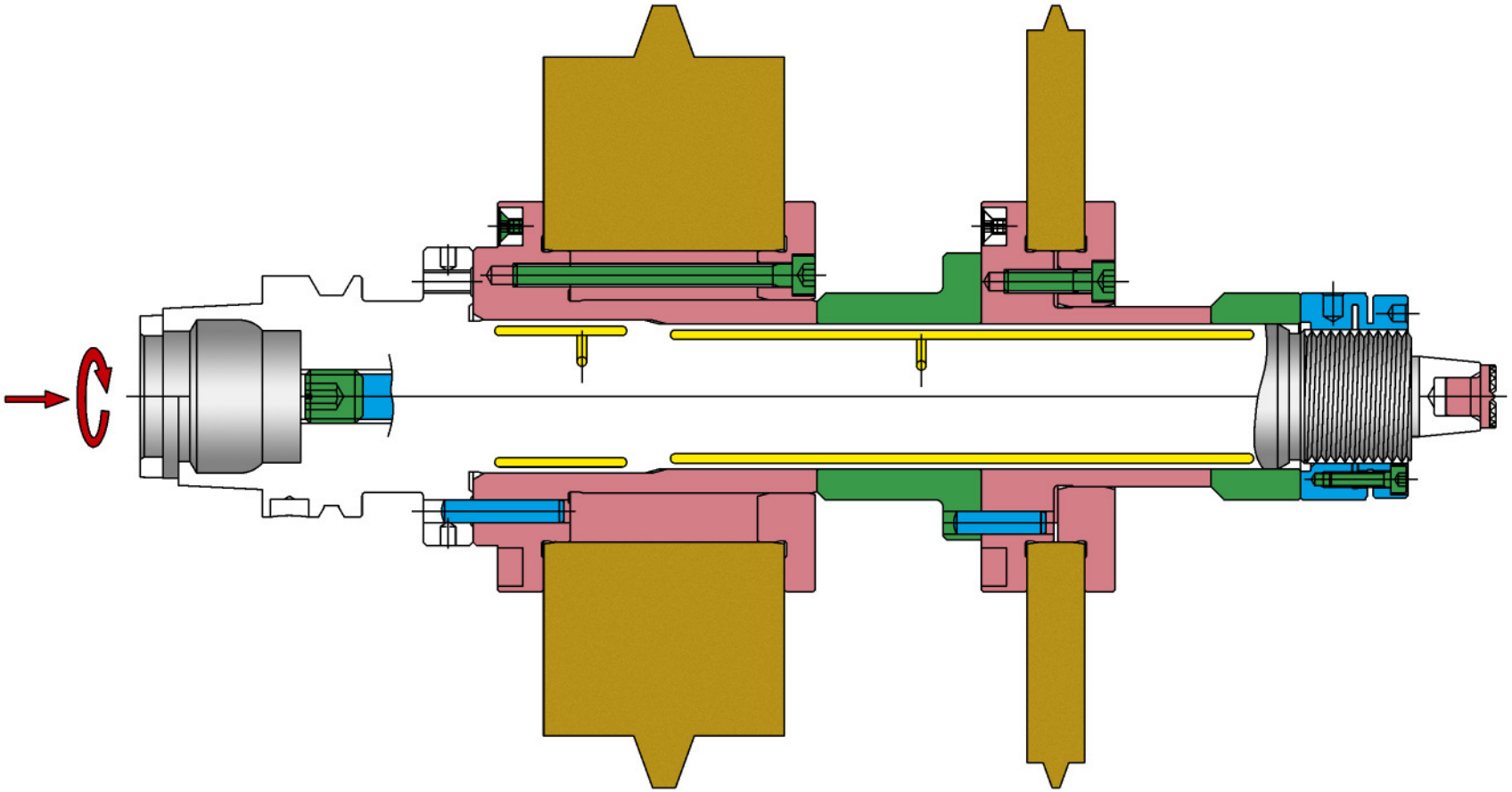
Actuation:	Hand actuated, radially
Mounting:	Complete machine spindle with integrated Hydra-Clamping-Chuck
Workpiece:	Grinding tool
Machine:	CNC-grinding machine
Application:	CNC-grinding
Advantage:	High run-out accuracy ≤ 0,003 mm (0.00012”). Improved tool life. High RPM´s are possible because of high gripping pressure and torgues, as well as internal coolant supply in the Hydra-Clamping-Chuck. Complete machine spindle precisely balanced.



Example 67

Hydra-Clamping-Arbor

Actuation:	Hand actuated, radially
Mounting:	Complete machine spindle with integrated Hydra-Clamping-Arbor
Workpiece:	Grinding wheel flange with mounted form-grinding wheel or dressing rolls
Machine:	CNC-grinding machine
Application:	CNC-grinding or grinding wheel dressing
Advantage:	High run-out accuracy ≤ 0,003 mm (0.00012”); quick and high precise changing of the grinding wheels or dressing rolls; no vibrations by frictional engaged clamping; complete machine spindle precisely balanced



Field of application: *CNC - grinding*

Example 68

Hydra-Clamping-Arbor

Actuation:	Hand actuated, axially
Mounting:	Complete grinding spindle with HSK-adapter
Workpiece:	Grinding wheel flanges with mounted form-grinding wheels
Machine:	CNC-gear-grinding machine
Application:	CNC-form-grinding
Advantage:	High run-out accuracy and high face run-out accuracy ≤ 0,003 mm; quick and high precision changing of the grinding wheels; no vibrations by frictional engaged clamping; complete grinding spindles precisely balanced; axial clamping by high precision axial adjusting nut

Questionnaire for processing inquiries

Company: _____

Address: _____

Postal code/City: _____

Contakt: _____

Telephone: _____

Fax: _____

E-mail: _____

Date: _____

Please copy and fill out this page and include it with every inquiry.

Clamping of workpiece or tool

Clamping diameter _____ mm / “

Active clamping length LS _____ mm / “

Axial eccentricity of the locating surface for

Clamping diameter 0.0 _____ mm / “

Tolerance: _____

Material: _____

Workpiece / tool loading:

☐ Manual ☐ Automatic

Please include always a drawing of the workpiece or tool to be clamped along with the enquiry.

Use for

☐ Turning
☐ Milling
☐ Drilling / reaming
☐ Grinding
☐ Honing / lapping
☐ Measuring / testing
☐ Balancing
☐ Centering

Please mark in the workpiece drawing
Clamping area : RED
Backstop area to be machined / measured : BLUE

Receptacle of the expansion tool

☐ Between centers ☐ Cantilever
☐ Taper shank: MK _____ SK _____ HSK _____ DIN / ASA _____
☐ Reishauer ball Ø 30 ☐ Reishauer ball Ø 65

☐ Short taper size _____ DIN _____

Please include spindle head drawing or sketch of the flange with dimension information.

Clamp activation

☐ Hand-actuation ☐ Power-activated ☐ Tension clamping ☐ Pressure clamping
☐ Direct clamping Pressure from _____ bar to _____ bar

Clamping direction

☐ Axial ☐ Radial ☐ Tangential ☐ Centric

Is balancing of expansion tool necessary ?

☐ Without workpiece ☐ With workpiece

Balancing quality Q _____ Nominal speed _____ 1 / min

Required residual unbalance _____ g / mm

☐ Hard coating of the expansion sleeve ☐ Wear protection ☐ Torque increase

Requirement

Quantity _____ Desired delivery time _____ (weeks)

Use conditions

(for example thermal influence, coolant etc.) _____

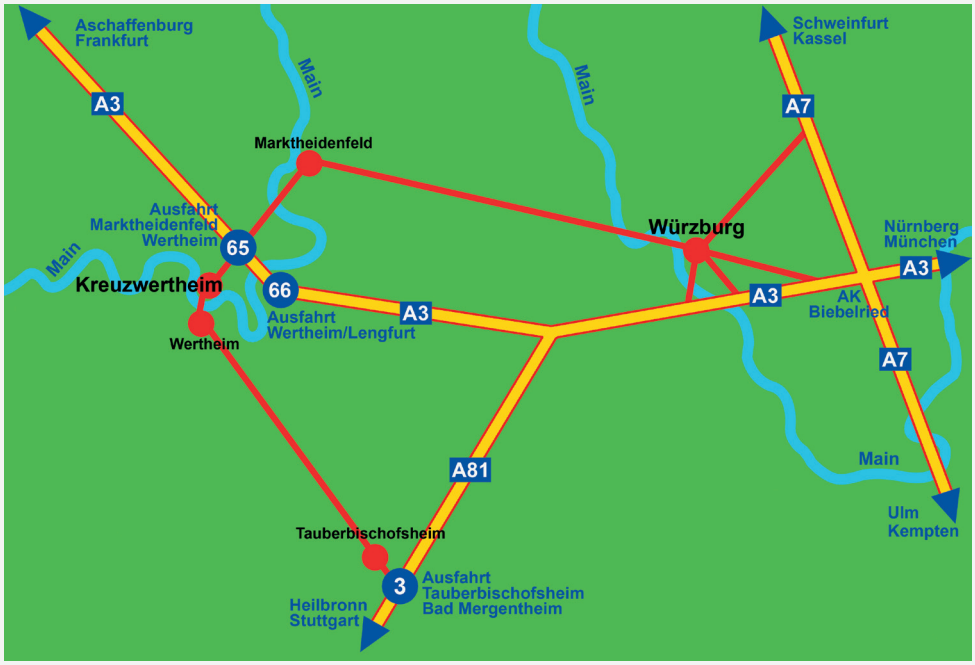
_____ _____

Appendices

☐ Drawing of the piece to be clamped (workpiece-/ tool drawing)
☐ Spindle head drawing
☐ Drawing of the mounting flange
☐ Drawing / data sheet of the stroke and axial pressure

Our company is situated in one of the most picturesque landscapes of Germany, where the river Tauber flows into the river Main, where the „Romantic Route" crosses the „Franconian Wine Route" and where you can enjoy the pleasures of the Spessart Forest.
Come and visit us, experience the magic of the Franconian landscape, culture and cuisine – and don't forget to try our wonderful wines which are often bottled in the typical Franconian „Bocksbeutel".

How to find us:



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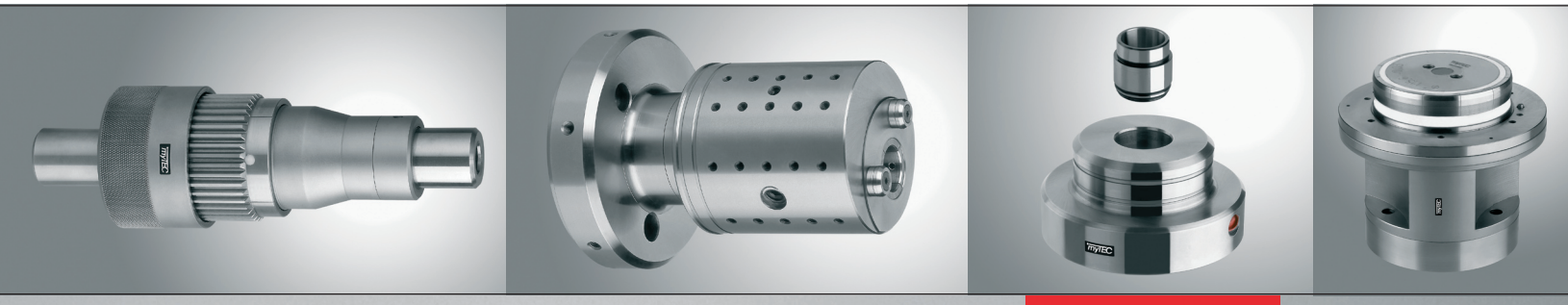
Workholding and Toolholding solutions



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