

Catalogue guide

MARIO PINTO SPA
Strada delle Cacce 21 - 10135 Torino
www.live-tooling.com
www.mariopinto.it

PRODUCTS

MANUFACTURING PHILOSOPHY

Our Live Tools are entirely developed, designed and manufactured in our plant in Turin, Italy.

We ensure the best possible quality by using the most modern and advanced manufacturing machines and technologies available on the market.

The bodies of our Live Tools are machined from a solid block of steel; thus avoiding vibrations and structural defects caused by welded or bolted bodies. Each Live Tool is thoroughly tested after assembly to ensure proper operating features.

MODULAR CONCEPT

The modular concept used to design and build internal and external components of our Live Tools allows us to offer:

- **Superior quality**
- **Extended LT range**
- **Quick deliveries**
- **Competitive price.**

"PATENTED" DRIVE TRANSMISSION WITH EXTRA-COMPACT SYSTEM

The drive transmission is the "heart" of the Live Tool.

Before starting the manufacturing of our Live Tools, we analyzed the different drive systems available on the market. We finally decided to design and patent a special and innovative drive system offering reliability and durability.

Our competition uses a drive key on the outside of the shaft and inside the gear, generating a tangential (indirect) transmission.

The possible consequences of this system are:

- weakening of the shaft and the gear;
- low torque transmission;
- vibration, breakage of keys and shafts.

Our patented, SUPERCOMPACT drive system simply eliminates all described problems.

The ground shaft and the gear are coupled in a single operation, in a square or hexagonal housing.

All surfaces including the centering diameter are ground.

BEVEL GEARS FEATURES

Our angular Live Tools use bevel gears with a helical tooth form.

These gears are ID and OD ground.

The bevel gears in our Live Tools have a larger circular pitch dimension compared to the gears used by our competitors. The teeth of our bevel gears are hardened to a depth of 0.6/0.8 mm (.24"/.31").

Internal components are made of special steel, case-hardened and ground.

BEARINGS FEATURES

After careful tests, we chose for our Live Tools special steel, high-precision bearings; they are sealed on one side only to allow heat and lubrication exchange; and thus able to assure a balanced grease and heat distribution inside the product.

The two bearings on the shaft ends (near the collet where the cut tool is placed) support the entire surface assuring to our Live Tools highest rigidity and long durability.

“PATENTED” SEALING

Our Live Tools are **fully “sealed”** using **special “labyrinth”** seals.

The two seals are placed between the tool body and the rotating shaft.

One is located near the rotating shaft exit, while the second one is placed on the external diameter.

They prevent the entry of dirt chips and fluid, providing a long life to bevel gears and bearings.

This is the “added value” of our Live Tools; our products have been designed to satisfy our customers in terms of quality and durability.

TEST STAND & QUALITY CERTIFICATE

MARIO PINTO is UNI EN ISO 9001 certified.

Each single component of the live tool is provided with a code number which allows tracing the manufacturing process and therefore the total quality certification.

Each tool is subject to a detailed control system (both during the production operations and during assembly and testing).

A careful test is carried out on run-in and control machines.

Also the cooling option of every live tool (internal, external, high pressure) is controlled.

Initially, the speed is increased progressively.

After a stop and a greasing operation, the live tool is tested at the maximum speed, followed by different tests:

- **Geometrical and dimensional**

- **Temperature**

- **Noise and vibration.**

The final test has a duration of 60 min for each single live tool.

A test report is issued, including all data related to precision and performances. It is filled up by the operator during the assembly and after it is checked in the “Quality Control Department” before packing the product.

The test report is included in the live tool package and is delivered to final customer to assure maximum openness concerning the purchased product.

WARMING UP THE LIVE TOOLS

For the correct use of our Live Tools at max speed, we recommend a warming up period of at least 40 seconds at 500 rpm.

If the Live tool is provided with internal cooling, we recommend to use this option even during the warm-up phases.

PACKAGING

The packaging of our Live Tool has been developed to make identification easier for the operators - even without opening the package - and to avoid mistakes in shipping.

On every box there is a short description of the product, a picture and a bar code label. In addition to the Declaration of incorporation and the use and maintenance manual, inside every box there is a wrench kit for proper Live Tool use, and in the angular tool box also a greasing kit.

Inside every shell-mill box is a set of spacers and mounting accessories.

Live Tooling range

ANGULAR Tool holder



LT-A
Tool holder
angle 90°



LT-A 45
Tool holder
with fix angle 45°



LT-A DBL
Tool holder double
angle 90°



LT-A OFS
Tool holder offset
angle 90°



LT-A OFS DBL
Tool holder
double offset angle 90°



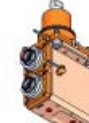
LT-A ST
Slotting tool 90°



LT-A2 H
Tool holder angle 90°
double horizontal



LT-A2 H OFS DBL
Tool holder angle 90°
double horizontal
offset



LT-A2 V
Tool holder angle 90°
double vertical

STRAIGHT Tool holder



LT-S
Tool holder straight



LT-S OFS
Tool holder
straight offset



LT-S-A
Tool holder double
vertical - horizontal



LT-S2
Tool holder
double straight



LT-S2 OFS
Tool holder
double straight offset



LT-SAW
Tool holder
saw and hobbing



LT-T
Tool holder tiltable

Steady Rest / Shaft Support

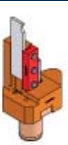


SHAFT SUPPORT
Tool holder
shaft support



STEADY REST
Self-centering steady
rest for turret

STATIC Tool holder



TH CUT
Cutting tool



TH AX
Axial Tool holder



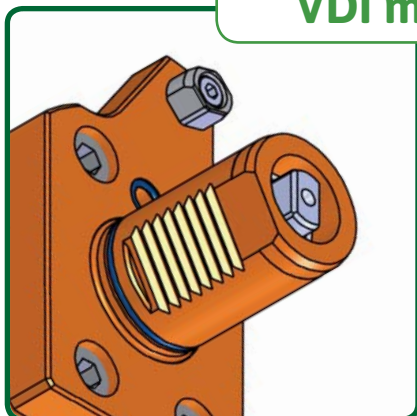
TH BRB
Boring bar holder



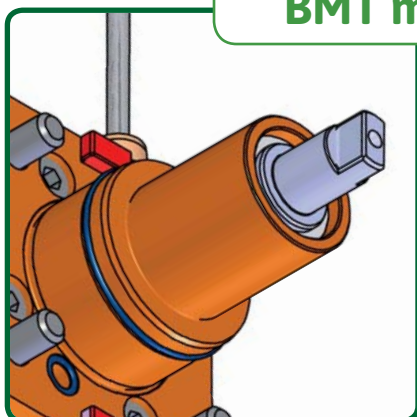
TH RAD
Radial Tool holder

Mounting

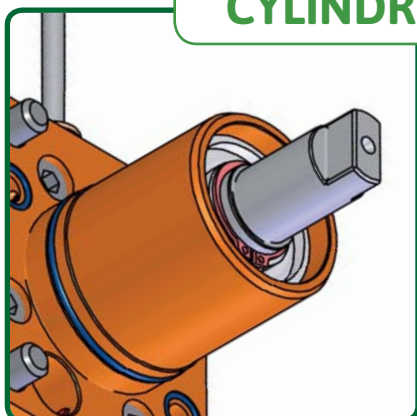
VDI mounting



BMT mounting



CYLINDRICAL shank



DESCRIPTION

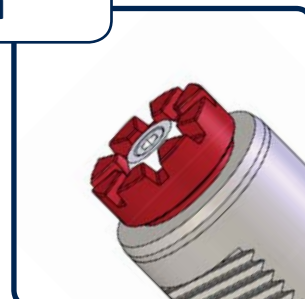
Our live tooling is available for most CNC turning machines.

The most important mounting and drive transmission styles are included in our range.

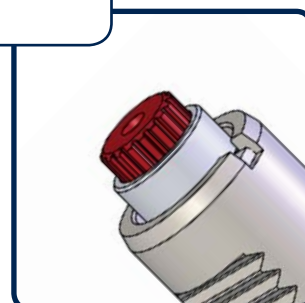
Drive transmission Mechanism range

Most live tooling are suitable for
installation on turrets with drive
transmission mechanism :

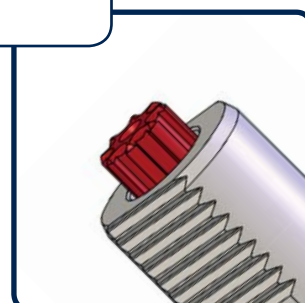
- **Baruffaldi**



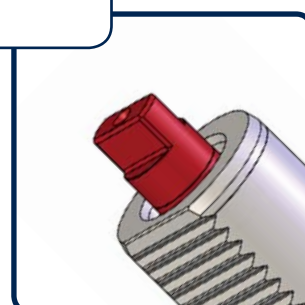
- **DIN 5480**



- **DIN 5482**



- **DIN 1809**



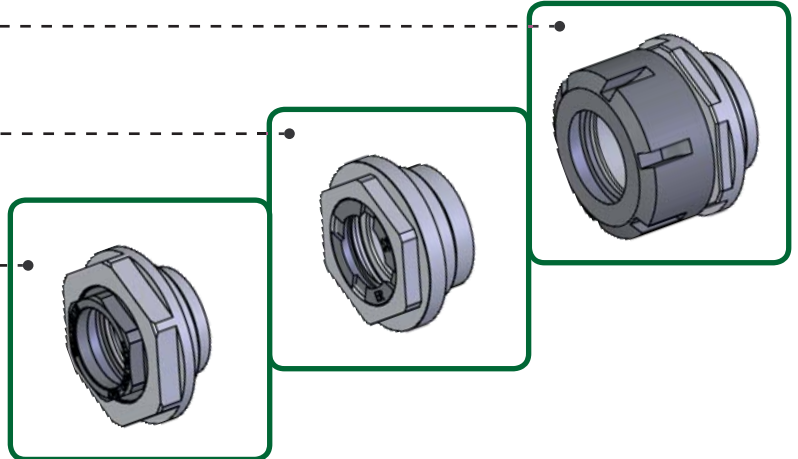
Tool output

Collet nut ER Collet nut ER-FLUSH

ER external nut

ER internal nut
with cut

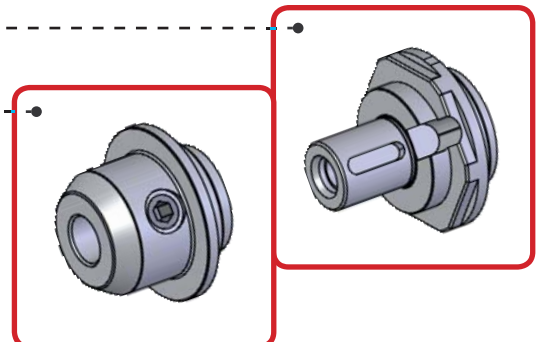
ER internal nut
with hexagon



Output BT Milling spindles

Shell-Mill DIN138

Weldon DIN1835B

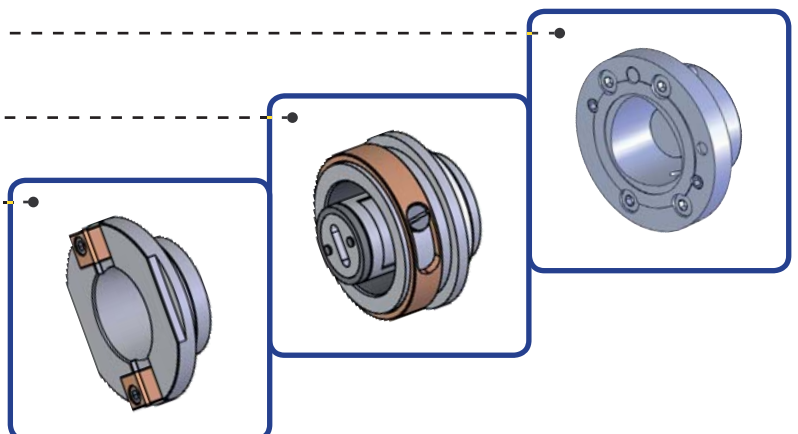


Quick CHANGE

Quick change CAPTO

Quick change HSK

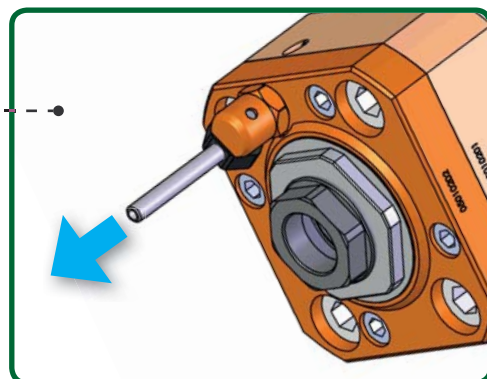
Quick change ISO-BT and CAT



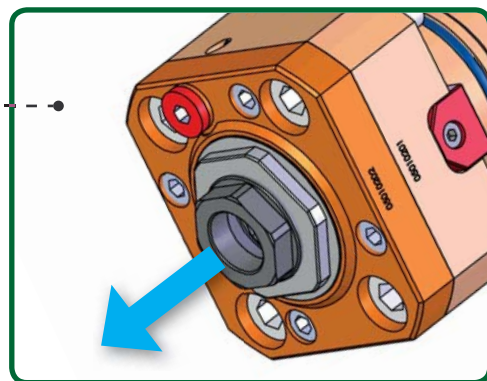
Cooling and kits

**TWO different
type of cooling**

EXTERNAL



INTERNAL



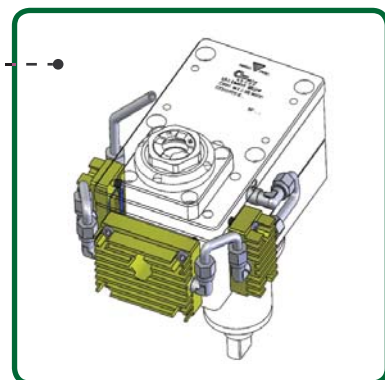
Cooling KIT

**Used to reduce the
temperature of the
live tools during the work
process.**

**ONLY applicable on
prepared models**



**Available in different
configurations**



Live tool ratio

We provide live toolings with
DIRECT, MULTIPLIED and DEMULTIPLIED RATIO



Live tooling		Transmission Ratio			
Type	Description	Direct	Multiplied	Demultiplied	
LT-A	Tool holder angle 90°	1:1	1:2	-	2:1
LT-A DBL	Tool holder double angle 90°	1:1	-	-	2:1
LT-A OFS	Tool holder offset angle 90°	1:1	1:1.75	-	-
LT-A OFS DBL	Tool holder double offset angle 90°	1:1	1:2	-	-
LT-A ST	Slotting tool 90°	1:1	-	-	-
LT-A 45	Tool holder with fix angle 45°	1:1	-	-	2:1
LT-A2 V	Tool holder angle 90° double vertical	1:1	-	-	-
LT A2 H	Tool holder angle 90° double horizontal	1:1	-	-	-
LT A2 H OFS DBL	Tool holder angle 90° double horizontal offset	1:1	-	-	-
LT-S	Tool holder straight	1:1	-	-	-
LT-S OFS	Tool holder straight offset	1:1	1:2	1:3	2:1
LT-S A	Tool holder double vertical horizontal	1:1	-	-	-
LT-S2	Tool holder double straight	1:1	1:2	-	1:1 / 2:1
LT-S2-OFs	Tool holder double straight offset	1:1	1:2	-	1:1 / 3:1
LT-SAW	Tool holder saw and hobbing	1:1	-	-	2.5:1
LT-T	Tool holder tiltable	1:1	-	-	-

Upon request we provide Live Tooling with specific ratio.



EXAMPLE		
RATIO	in RPM	out RPM
1:1	6000	6000
2:1	6000	3000
1:3	5000	15000
1:2	6000	12000

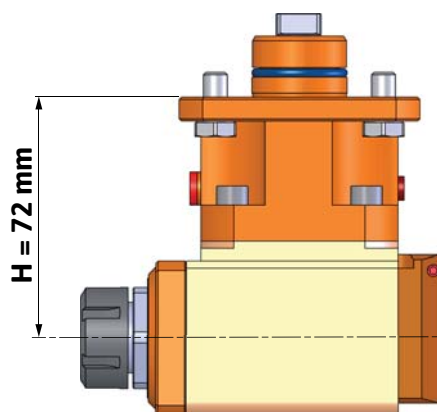
Live tool height

How to read the height dimension of straight and angular live tools.

LT-A

H = 72 mm

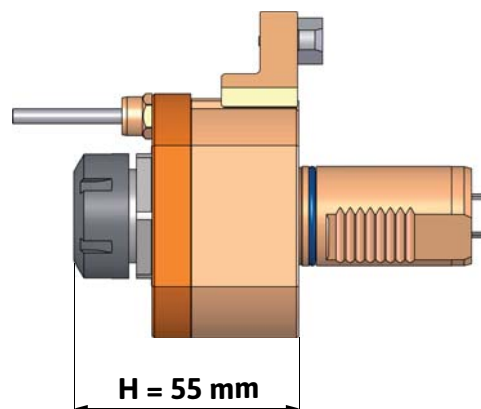
On an angle style tool the H dimension is the distance from the flush mounting face to the centerline of the collet



LT-S ER collet nut

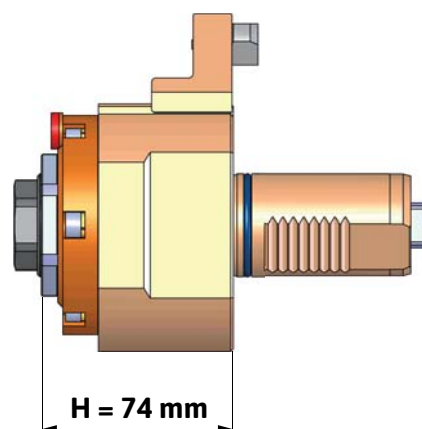
H = 55 mm

On a straight style tool the H dimension is the distance from the flush mounting face to the end face of the collet



LT-S ER-F collet nut

H = 74 mm



Slotting tool

DESCRIPTION

The new slotting tools are available in four different versions (with 25, 35, 50 and 65 stroke)

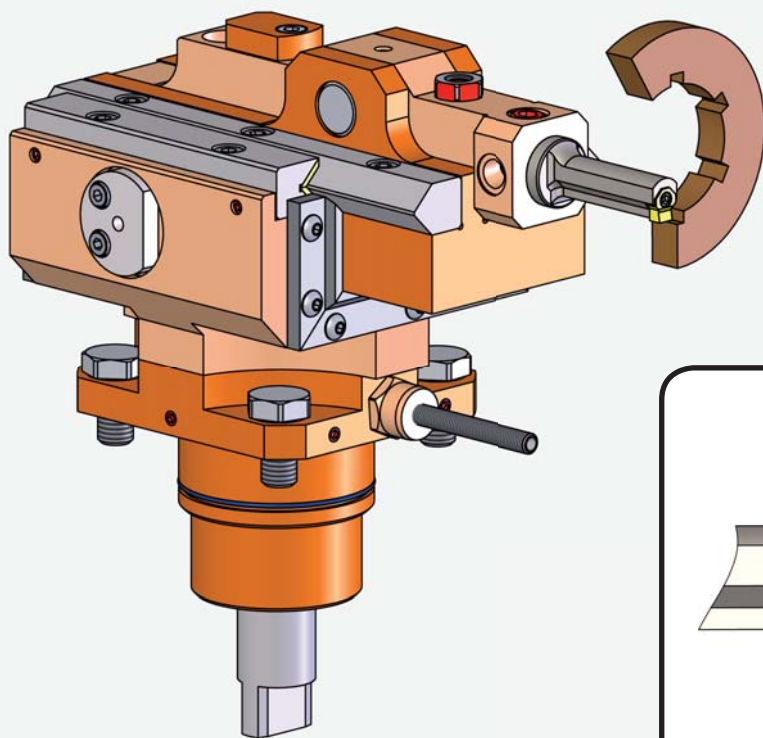
with maximum slot capacity of 10 mm.

Through a rigid slide box, the rotation takes from the live tooling drive of the turret is transformed into a stroke cycle.

DESCRIPTION

Each rotation is transformed into a stroke cycle (ratio 1:1).

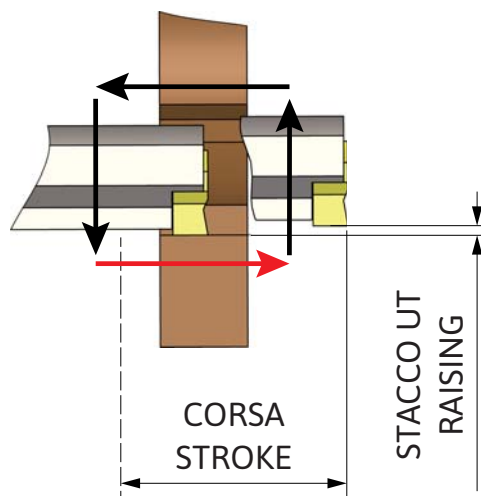
The slotting tool can be used in all radial turrets shown in our on-line catalogue.



Slotting tool
for motorized turret

LT-A ST

Available with stroke
25, 35, 50 and 65 mm



PERFORMANCES

EXAMPLE OF SLOT MACHINING

L = 5 mm depth. 3,5 mm

MATERIAL : STEEL 39NiCrMo3

PERFORMANCES

Rotational speed (Slide speed) $n = 500$ rpm

Feed $F = 30$ mm/min

Feed ea. round $A = 0,05$ mm/round

EXECUTION TIME FOR EACH SLOT $T = 6,6$ sec

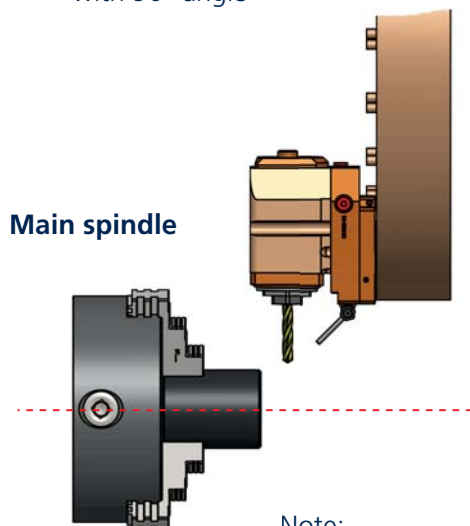
VDI - disk-type turret

VDI Livetooling

Operations with DISK-TYPE Turret

Radial Operation

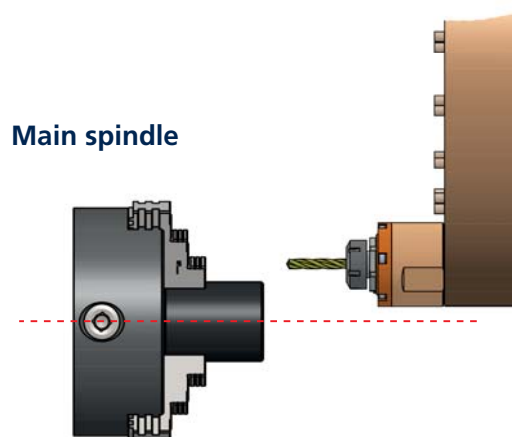
Radial tool holders
with 90° angle



Note:
Mind interference circles!

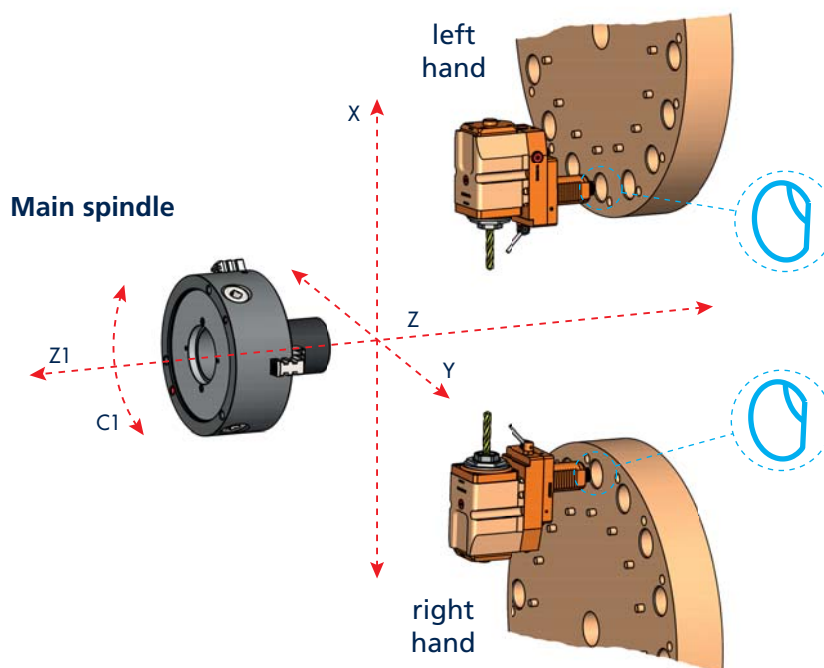
Axial Operation

Axial tool holders
straight version



Right and Left hand Versions of the Driven Toolholders

----- Axes

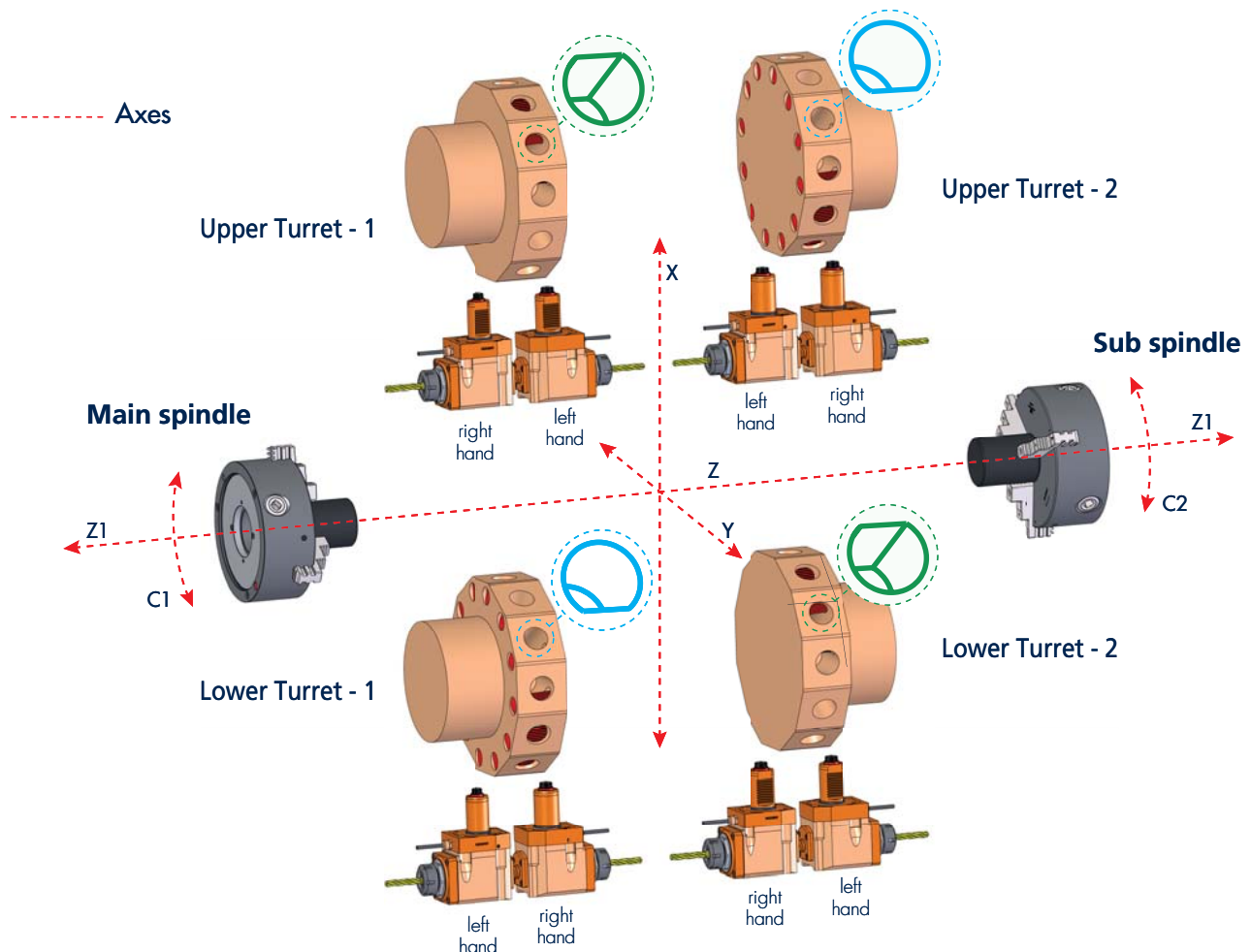


VDI - star-type turret

VDI Livetooling

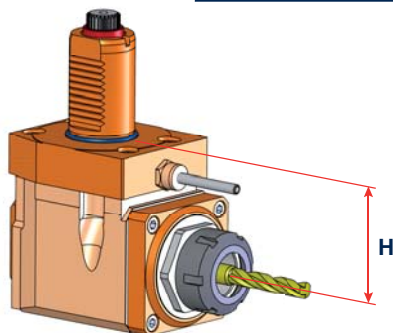
Operations with STAR-TYPE Turret

Right and Left hand Versions on Star-type Turrets with Main and Sub Spindle



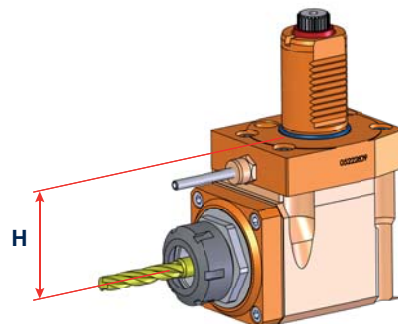
Left hand Version

Please note dimension H



Right hand Version

Please note dimension H



Please check interference circles with fixed tools!