

- » Cutting Tools
- » Angle Heads
- » Live Tools



We do
Specials!

We do Specials!

Manufacturer of Precision Tools since 1974

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Partner of the Engineering Industry
Sustainability Initiative

We do Specials!

mimatic Special Solutions

- » Cutting Tools
- » Angle Heads
- » Live Tools

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Milling Tools

in Shaft, Bell or Combination Design

General / Features



«Special Solutions»

Milling Tools in shaft, bell or combination design for countersinking, drilling, etc.

HIGHLIGHT

Complete Solution

Cutting tools with carbide inserts
 + Angle heads/Live tools
 = Responsibility from a single source.

mimatic special tools are customized solutions to improve the efficiency/quality in machining of high-quality components!

Combination Tools

- Milling
- Threading
- Countersinking
- Drilling
- Chamfering
- Slot milling

Bell Tools

- Milling
- Threading
- Countersinking
- Drilling
- Chamfering
- Slot milling

Special Solutions, Based on Proven Carbide Interfaces

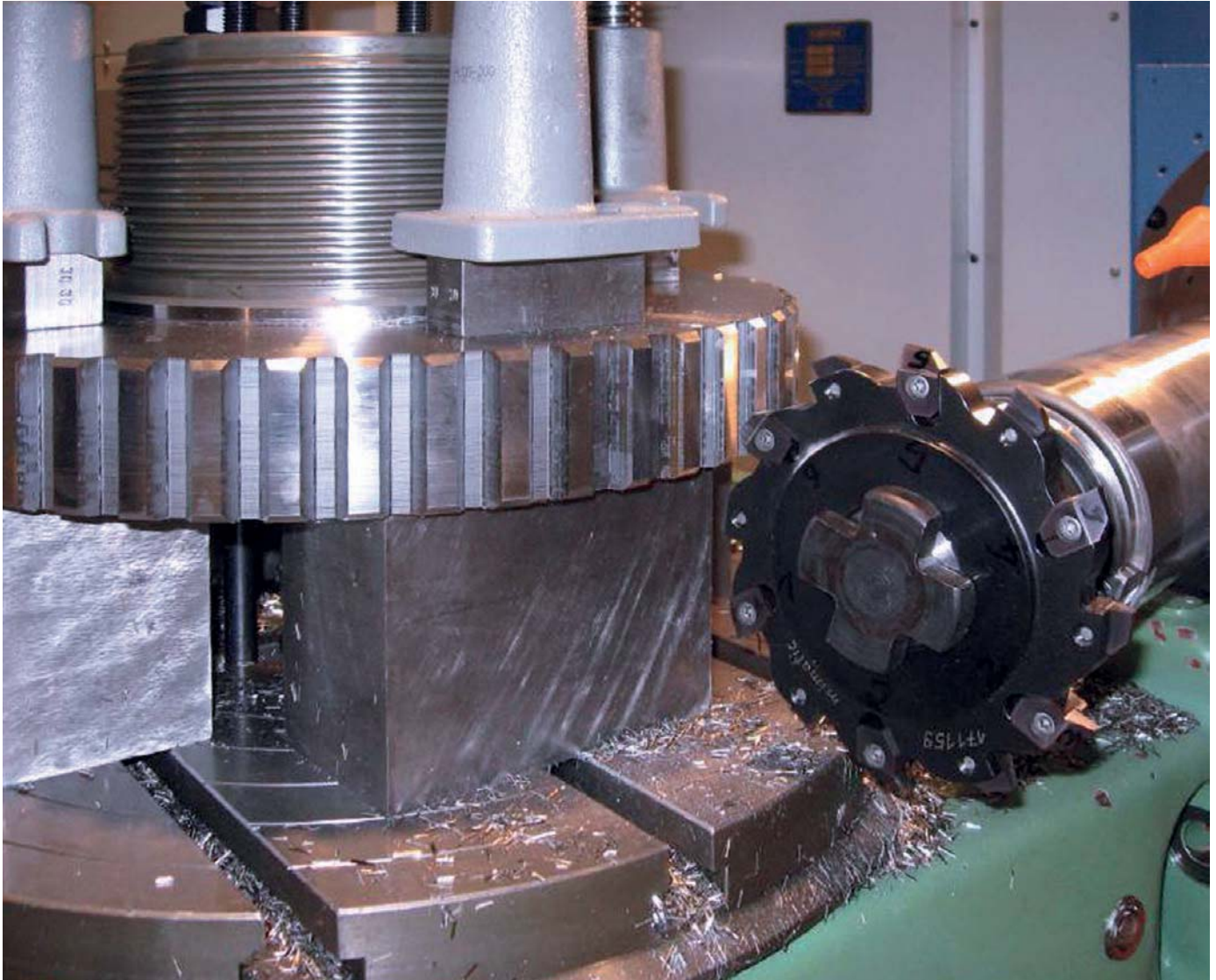
- Polygon: PolyMILL
- Quadragon: PolySAW and mimatic STC
- Classic: TriMILL

Milling Trials

- in the customer's factory
- at mimatic
- Testing in specialist institutes

Milling Tools

in Shaft, Bell or Combination Design



mimatic Gear Milling Cutters
with carbide form inserts

Milling Tools

in Shaft, Bell or Combination Design



Quick Change Holder mimatic mi in monoblock design with Quadragon interface for **PolySAW** and **DeepMILL**

Right image:
3x **DeepMILL** on Quadragon interface for slot milling.



Complete Solution

Cutting tools with carbide inserts
+ Angle heads/Live tools
= Responsibility from a single source.

You can find videos on YouTube and www.mimatic.de



Milling Tools

in Shaft, Bell or Combination Design

Bell Tool

for outer contour milling



Bell Cutter

Shank: HSK 63

No. of cutting edges: 4

Application:
Milling of external thread G 1"
and G 1 1/4"

Workpiece:
Fitting, Tapware



Milling Tools

in Shaft, Bell or Combination Design



Thread Bell Cutter

Shank: HSK 63
Processing time: 1,75 sec

No. of cutting edges: 4

Application:
Milling of external threads M 14 x 1,5

Workpiece:
Common rail distribution panel for the diesel injection



Thread Bell Cutter

Shank: HSK 63

No. of cutting edges: 5

Application:
Milling of external threads M 14 x 1,5

Workpiece:
Common rail distribution panel for the diesel injection. Extremely small outer diameter, because of the interfering contour at the Workpiece.

Milling Tools

in Shaft, Bell or Combination Design

Disc Milling Cutter

Shank: HSK 100
Processing time: 1,75 sec

No. of cutting edges:
48 - 3x16 Cutting rows

Application:
Profile slot milling

Workpiece:
Headrest poles



Drill Thread Milling with Chamfering and End Face Machining

Shank: Weldon dia. 16 mm

No. of cutting edges:
2 interchangeable carbide inserts

Application:
Hole dia. 11,45 mm without pre-drilling
Chamfer 45°, dia. 13,8 mm and end face thread G 1/4

Workpiece:
Angle seat valve



Milling Tools

in Shaft, Bell or Combination Design



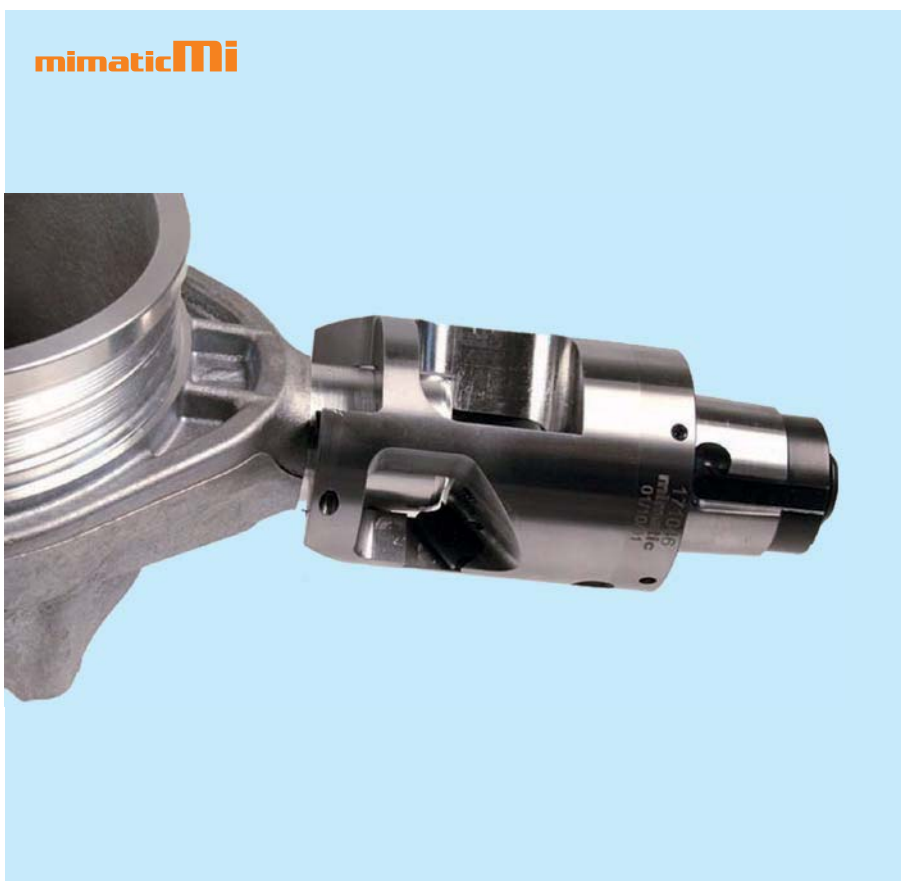
Special Cutting Insert

Shank: HSK 63

No. of cutting edges: 1

Application:
End face grooves (dia. adjustable)

Workpiece:
Housing



mimatic mi Monoblock Tool

as a bell tool for countersinking of contours

Shank: mi 50

No. of cutting edges: 4

Application:
External contour machining and
chamfering of a trunnion

Workpiece:
Housing

Milling Tools

in Shaft, Bell or Combination Design



Combination Tool

Special tool combined with PolyMILL cutter

Shank: HSK 63

No. of cutting edges: 15+3

Application:
Milling of Grooves

Workpiece:
Pump housing



mimaticSTC

mimatic STC Special Tool

Shank: HSK 100

Milling dia.: 50 mm
No. of cutting edges: 5x35

Application:
Milling of locating slots

Workpiece:
Engine block

You can find videos on YouTube and
www.mimatic.de



Milling Tools

in Shaft, Bell or Combination Design



Combination Tool

Shank: ABS 50

No. of cutting edges: 6+3

Application:
Undercut- and thread milling

Workpiece:
Pump housing



TriMILL

TriMILL Special Tool

Shank: Milling arbor holder

No. of cutting edges: 2x4

Application:
Simultaneous milling of 2 slots

Workpiece:
Circlip grooves in conrod



TriMILL

TriMILL Special Tool

Shank: Special holder

No. of cutting edges: 4

Application:
Thread whirling

Workpiece:
Drive shaft of an electric motor

Milling Tools

in Shaft, Bell or Combination Design

TriMILL



TriMILL Special Tool

Shank: Weldon dia. 16 mm

No. of cutting edges: 3

Application:

Backward milling from an undercut

Combination Tool

for drilling and threading

Shank: Weldon dia. 25 mm

No. of cutting edges: 7

Application:

Drilling into solid material and thread milling



Milling Tools

in Shaft, Bell or Combination Design

TriMILL



TriMILL Twin Disc Milling Cutter

Shank: Milling arbor holder,
dia. 22 mm

Milling dia.: 147 mm

No. of cutting edges: 2x6

Application:
Usage in a saw blade holder for flange
machining

Workpiece:
Housing



Slot Milling Cutter

Shank: Milling arbor holder,
dia. 40 mm

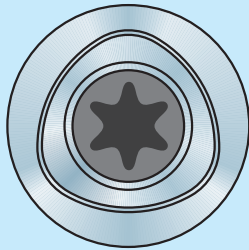
No. of cutting edges: 4

Application:
Simultaneous milling of annulus slot
and undercut

Workpiece:
Brake body

mimatic Milling Tools

Interfaces When Compared



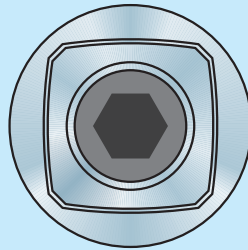
Polygon Interface

ideal for

- Slot milling
- Chamfering
- Deburring
- Contour milling

Use in cutting tool system

PolyMILL



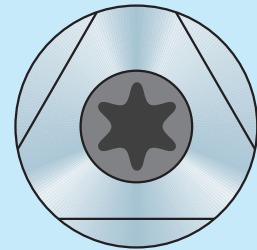
Quadragon Interface

ideal for

- Deep grooves
- Cutting, sawing, slitting
- Gang hobs

Use in cutting tool systems

PolySAW
mimaticSTC



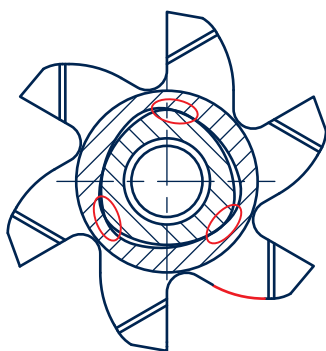
Classical Interface

ideal for

- Contour milling
- Grooving
- Threading

Use in cutting tool system

TriMILL



Advantages

- Very good concentricity by self centering on the 3- and 4-point polygon
- Transfer of higher cutting forces
- High stability through closed circular ring
- High resistance against breakage during interrupted cut

 = Transmission zones

Special tools with standard interface for carbide inserts are usually the cheaper solution, flexible and individually.



Angle Heads

General / Features



«Special Solutions» Angle Heads for Machining Centers

HIGHLIGHT

Complete Solution

Angle heads/Live tools + Cutting tools with carbide inserts = Responsibility from a single source.

mimatic special tools are customized solutions to improve the efficiency/quality in machining of high-quality components!

Machining Center: Angle Heads

- Plunge milling in cavities of larger components
- Multi spindle solutions
- Saw blade holder
- Complete solutions with cutting tools

Support Solutions to Increase the Stiffness, Strength and Precision

- 3-point support (adapted to the situation of the spindle)
- Active/passive hydraulic clamping
- Mechanical clampings: machine side

Torque Supports

- With locking mechanism to secure the position of substitute
- Sprung with precision positioning
- Adaptation to the spindle

Collision Checks

- CAD / 3D
- Machine situation
- complex and large components

Angle Heads

Angle Head, adjustable
on DMG Machining Center

DMG MORI



Angle Heads

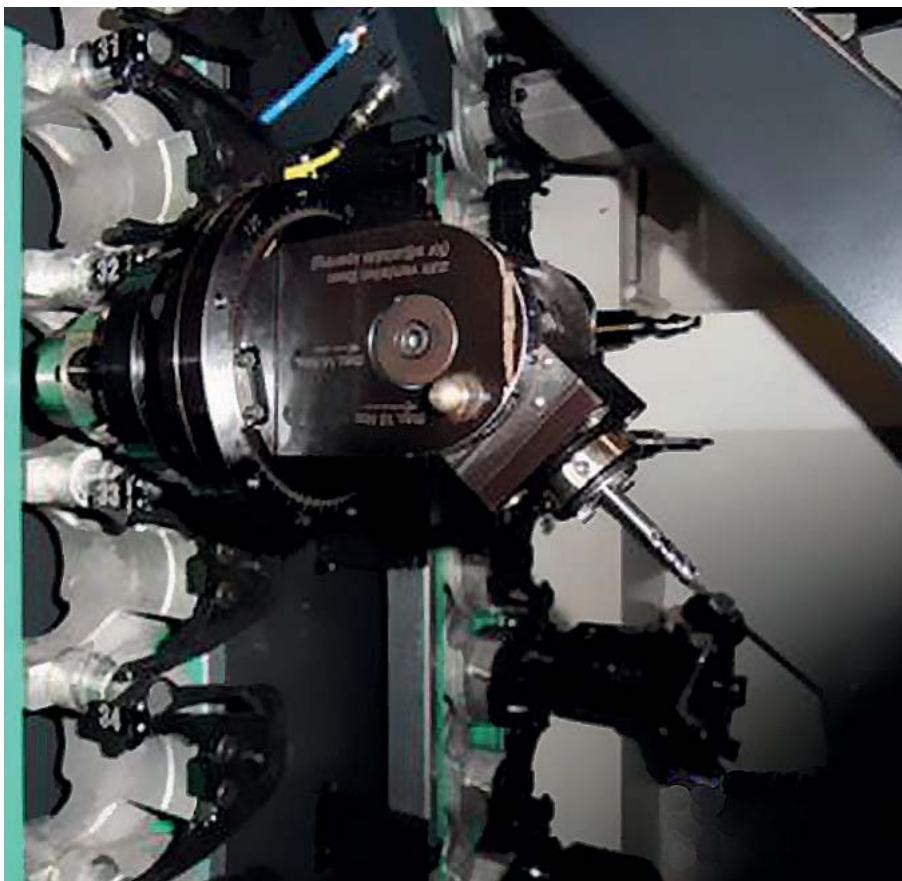


Angle Head 360° adjustable

Shank: HSK 63
Tool holder: ER32
n1 (max.): 6500 rpm
Transmission: 1:1
M (max.): 70 Nm

Right image:
mimatic Standard Angle Head
in the tool magazine of a DMG machi-
ning center

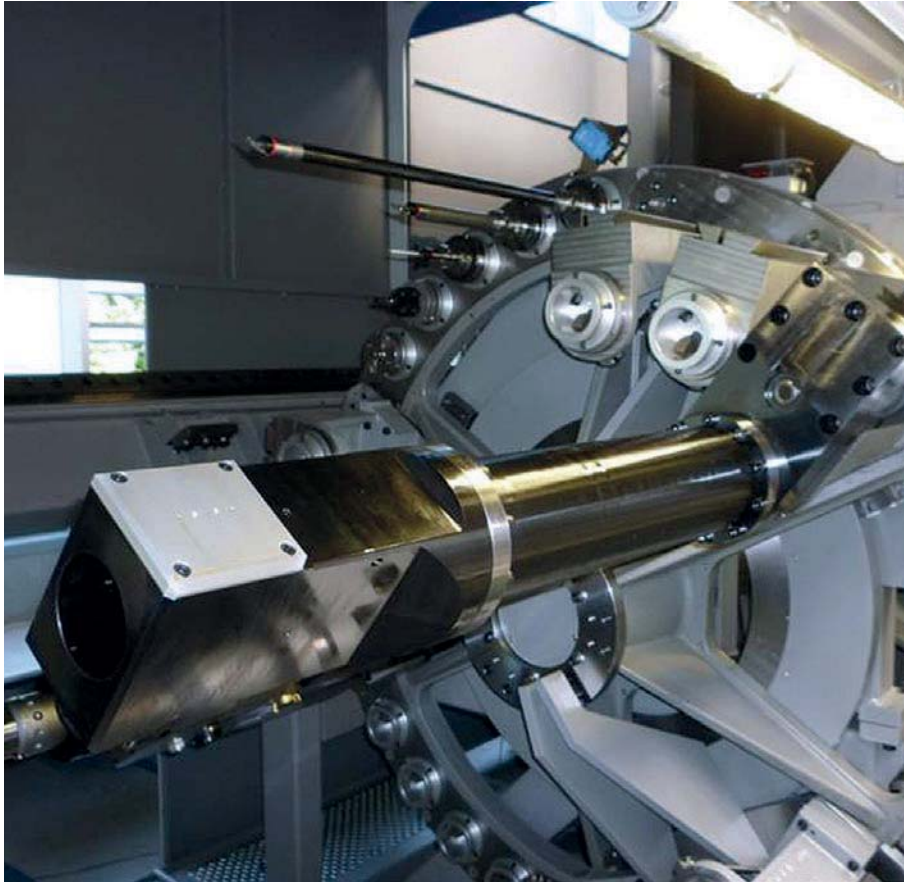
DMG MORI



mimatic Standard Angle Head
on Hermle machining center



Angle Heads



Angle Head

on a WFL machining center

Shank: HSK 100 with prisms support

Tool holder: mi 50

n1 (max.): 6500 rpm

Transmission: 1:1

M (max.): 70 Nm

Tool length: 450 mm



Angle Head Special Support with Weight Optimisation

Shank: SK 50

Tool holder: ER32

n1 (max.): 6000 rpm

Transmission: 1:1

M (max.): 70 Nm



Angle Heads



Angle Head with 3-Point Support and Special Cutting Tool on a Grob machining center

Usage: Automotive

Complete Solution

Angle Head/Live Tool + Milling Tool with carbide inserts = Responsibility from a single source.



Angle Heads

for an automobile manufacturer

Shank: HSK 63

Fixed angle: 50°

n1 (max.): 8000 rpm

Transmission: 1:1

M (max.): 30 Nm

Complete Solution

Angle Head/Live Tool + Milling Tool with carbide inserts = Responsibility from a single source.



Angle Heads

Angle Head

for Grob machining centers

Shank: HSK 100

Tool holder: Milling arbor, dia. 32 mm

n1 (max.): 6000 rpm

Transmission: 2:1

M (max.): 150 Nm



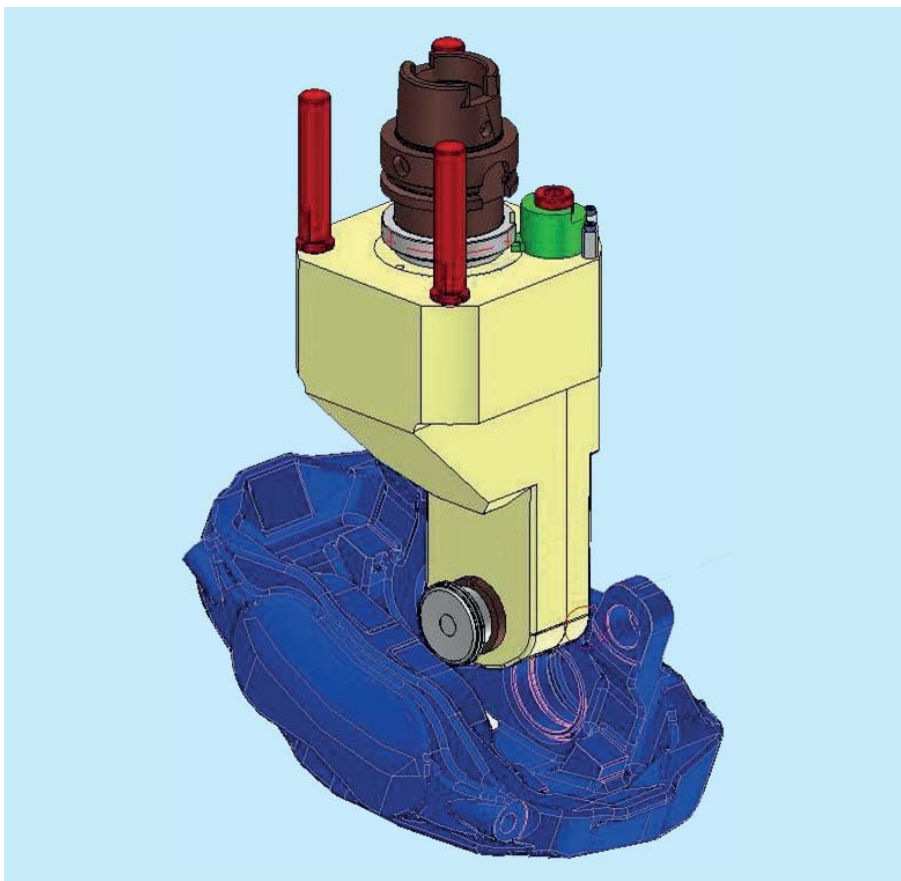
Angle Head with 3-Point Support

Workpiece:

Brake carrier for trucks

mimatic Service:

Collision check



Angle Heads

Heavy Cutting



Angle Head with Plunge Cutter
for the machining of pump housings

Transmission: 1:1,58

Finish milling:
Vc = 350 m/min; Vfz = 0,18 mm
Processing time ca. 18 sek.

Rough milling:
Vc = 350 m/min; Vfz = 0,3 mm
Processing time ca. 20 sek.

Complete Solution
Angle Head/Live Tool + Milling Tool
with carbide inserts =
Responsibility from a single source.



Angle Heads
with mimatic cutting tools are more
than 10 years in use.

Preventive maintenance is carried out
in intervals of several years.

Mazak

Angle Heads

Support Solution to Increase the Stiffness of the System

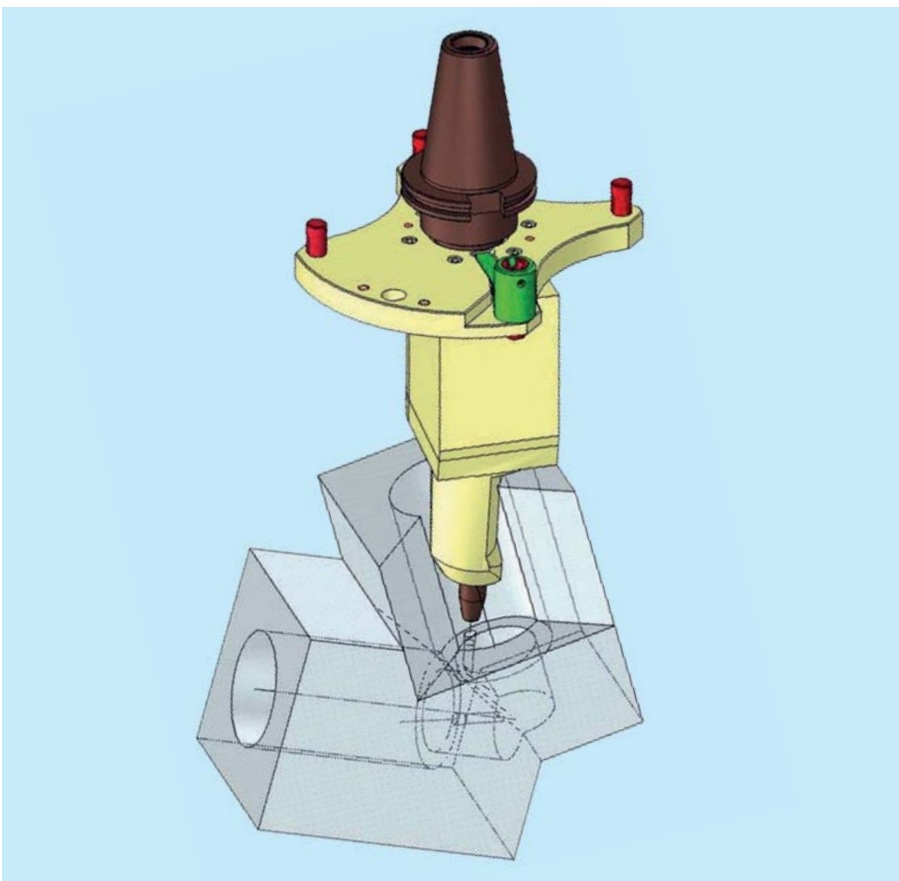
Angle Head with 3-Point Support
for the machining of engine blocks

Shank: HSK 50
Tool holder: Special dia. 6 mm
n1 (max.): 8000 rpm
Transmission: 1:1
M (max.): 30 Nm

DMG MORI



Interference contour analysis
on engine block machining



Angle Heads

Support Solution to Increase the Stiffness of the System

Angle Head

with different support points



Angle Head

Clamping/Support over mechanical levers

Angle Head

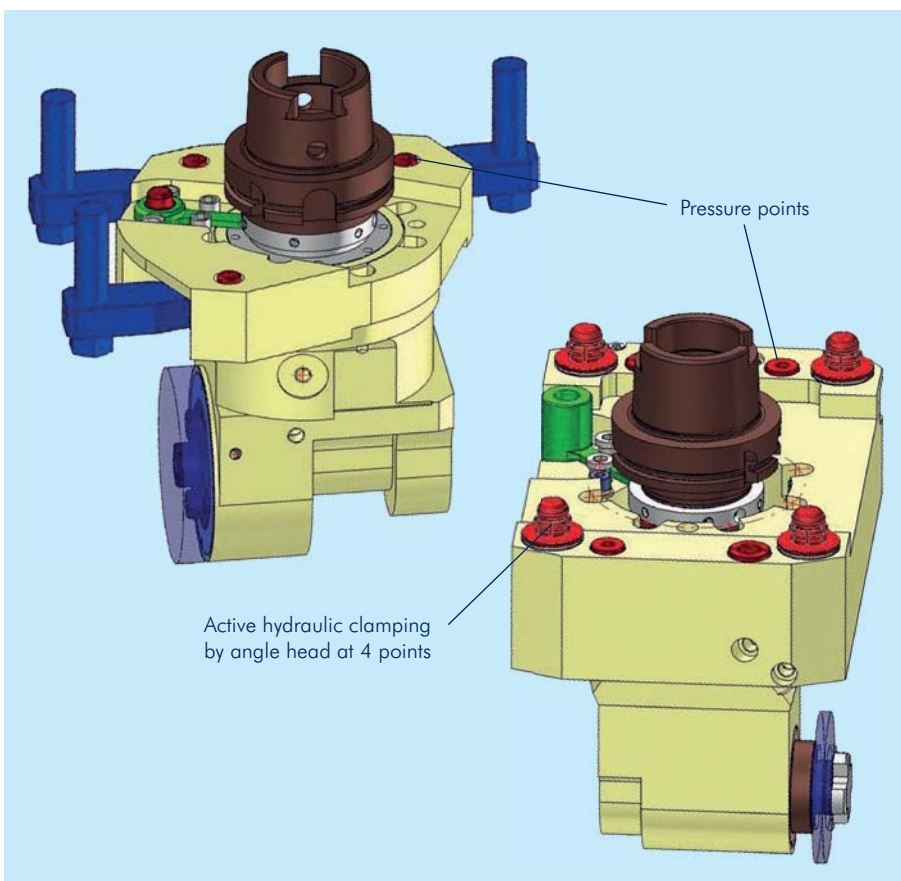
on DMG machining center

Shank: HSK 100

Workpiece: Cylinder head

- Active hydraulic clamping by angle head at 4 points
- Control by hydraulic oil passing by the machine
- Machine- and angle head spindles are 100% axialforce-balanced

DMG MORI



Angle Heads

Support Solution to Increase the Stiffness of the System

Angle Head

with many support points
on Heller machining center

Shank: HSK 100
Tool holder: Milling arbor dia. 16
n1 (max.): 6000 rpm
Transmission: 1:1
M (max.): 30 Nm
Tool length: 300 mm

HELLER



Angle Head with Fixed Angle 53,17°

on Heller MC25 machining center

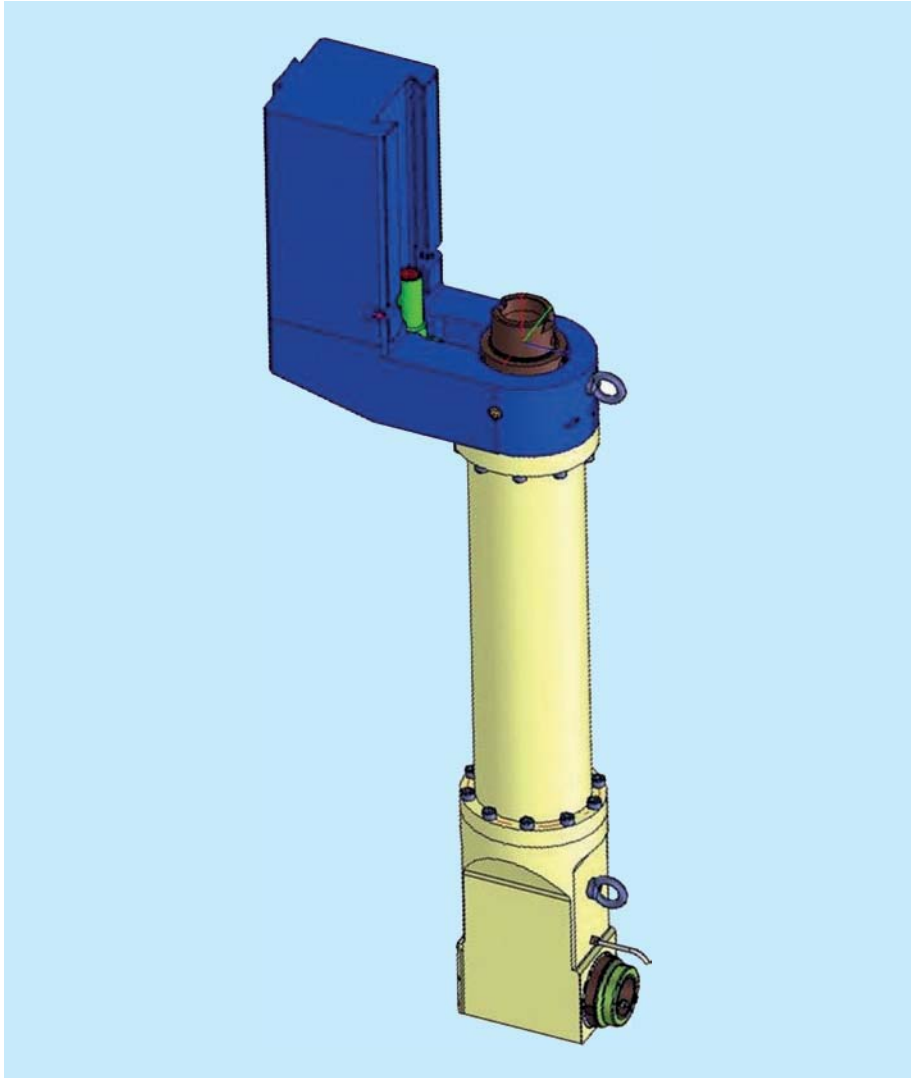
Shank: HSK 63
Tool holder: Special
n1 (max.): 8000 rpm
Transmission: 1:1
M (max.): 30 Nm

HELLER



Angle Heads

Massive and Long Solutions

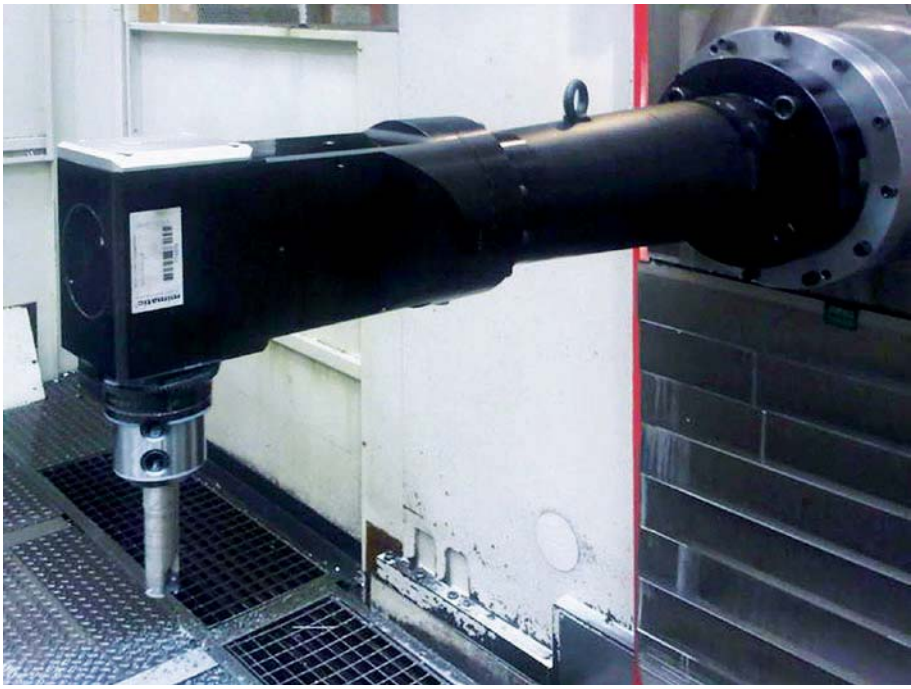


Up to 400 kg total weight
Up to 1200 mm length



Angle Head
on Giddings & Lewis machining center

Shank: Prism
Tool holder: mi 50
n1 (max.): 6500 rpm
Transmission: 1:1
M (max.): 70 Nm
Tool length: 450 mm



Angle Heads

Slim and Long Solutions

Special Angle Head 90°
flanged on special machine

ANGER
HIGH PERFORMANCE MACHINING



Oil mist lubrication for continuous operation.
Note: Angle heads and live tools with permanent grease lubrication are suitable for interval operation!

Diameter in the workspace: 29 mm
Rated speed: 15000 rpm

Special Angle Head

ANGER
HIGH PERFORMANCE MACHINING



Complete Solution
Angle Head/Live Tool + Milling Tool with carbide inserts = Responsibility from a single source.

Special Angle Head 90°
for Heller machining center

HELLER



Tool holder: ER11
n1 (max.): 6000 rpm
Transmission: 1:1,5
M (max.): 1,5 Nm
Special feature: belt drive



You can find videos on YouTube and www.mimatic.de

Angle Heads

Twin Angle Head 90° for ANGER machining center

Tool holder: Weldon dia. 5/6 mm
n1 (max.): 8000 rpm
Transmission: 1:1
M (max.): 20 Nm / spindle
Extras: detent air
Workpiece: Pump housing

ANGER
HIGH PERFORMANCE MACHINING



Angle Head on Scharmann machining center

Tool holder: SK 50
mimatic capto C5
n1 (max.): 4000 rpm
Transmission: 1:1
M (max.): 100 Nm

starrag
Starrag Group



Angle Heads

Angle Head With mimatic Disc Milling Cutter

Shank: SK 50
 n1 (max.): 2800 rpm
 n2 (max.): 1120 rpm
 Transmission (n1 / n2): 2,5:1
 M (max.): 300 Nm

VARNSDORF
TOLS



Angle Head

- with mimatic Capto C6 drive (in)
- with mimatic Capto C4 drive (out)



Angle Heads



Angle Head

Aluminium construction
on Heckert machining center

Shank: HSK 100
Transmission: 1,5:1

starrag

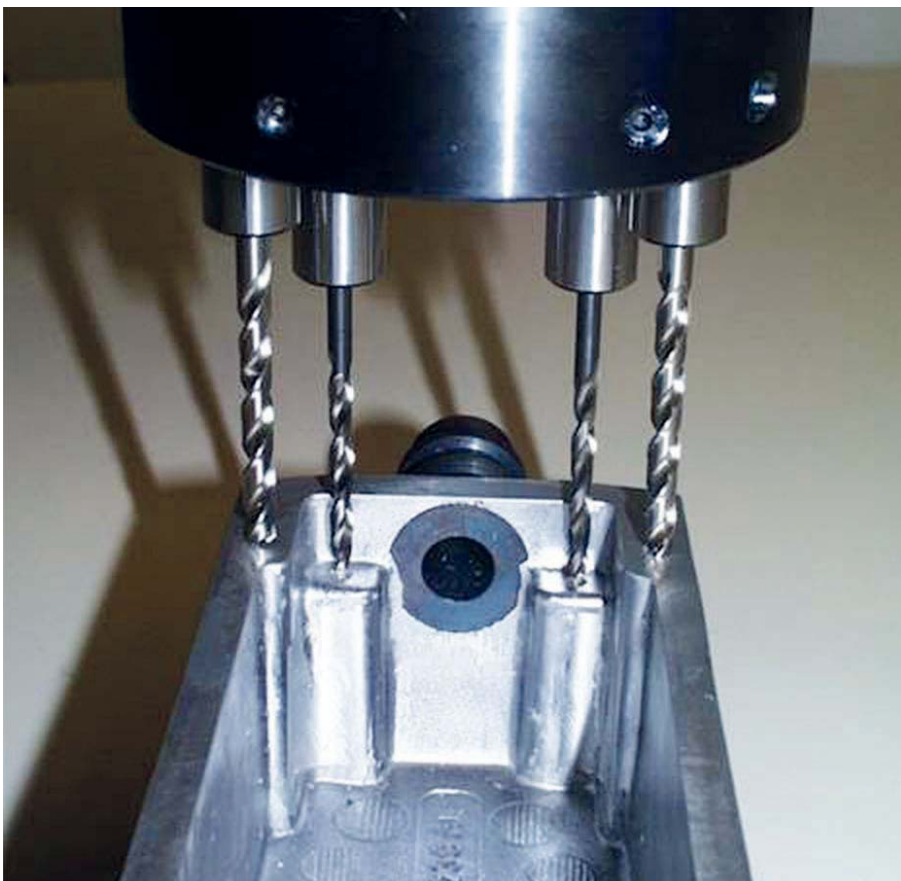
Starrag Group

Angle Heads

Multi Spindle Technology

Angle Head as 4 Spindle Unit
for drilling and threading with
length compensation on Deckel DC 40

Shank: SK 45
mimatic Capto C5
n (max.): 6000 rpm
Transmission i1: 1:1 for M5
Transmission i2: 1:1 for M4
M (max.): 2,5 Nm / spindle



Angle Heads

Multi Spindle Technology

Angle Head as 5 Spindle Unit on Heller machining center

Shank: HSK 50
 n1 (max.): 6000 rpm
 n2 (max.): 3000 rpm
 Transmission (n1 / n2): 2:1
 M (max.): 6 Nm / spindle

HELLER



Angle Head as 3 Spindle Unit

Shank: SK 40
 n1 (max.): 2000 rpm
 Transmission: 1:4
 M (max.): 10 Nm / spindle



Angle Heads

Multi Spindle Technology



Angle Head as 2 Spindle Unit
with **mimatic mi** quick change interface, size 25

n1 (max.): 6500 rpm
n2 (max.): 6500 rpm
Transmission: 1:1
M (max.): 10 Nm / spindle

Right figure:
Angle Head as 4 Spindle Unit
with tap drill quick change interfaces

n1 (max.): 6500 rpm
n2 (max.): 6500 rpm
Transmission: 1:1
M (max.): 40 Nm / spindle



Angle Head mit Fixed Angle 10,808°



Angle Heads

Multi Spindle Technology

Angle Head as 7 Spindle Unit
on DMG machining center

Shank: SK 50
n1 (max.): 4500 rpm
n2 (max.): 4500 rpm
Transmission: 1:1
M (max.): 20 Nm / spindle

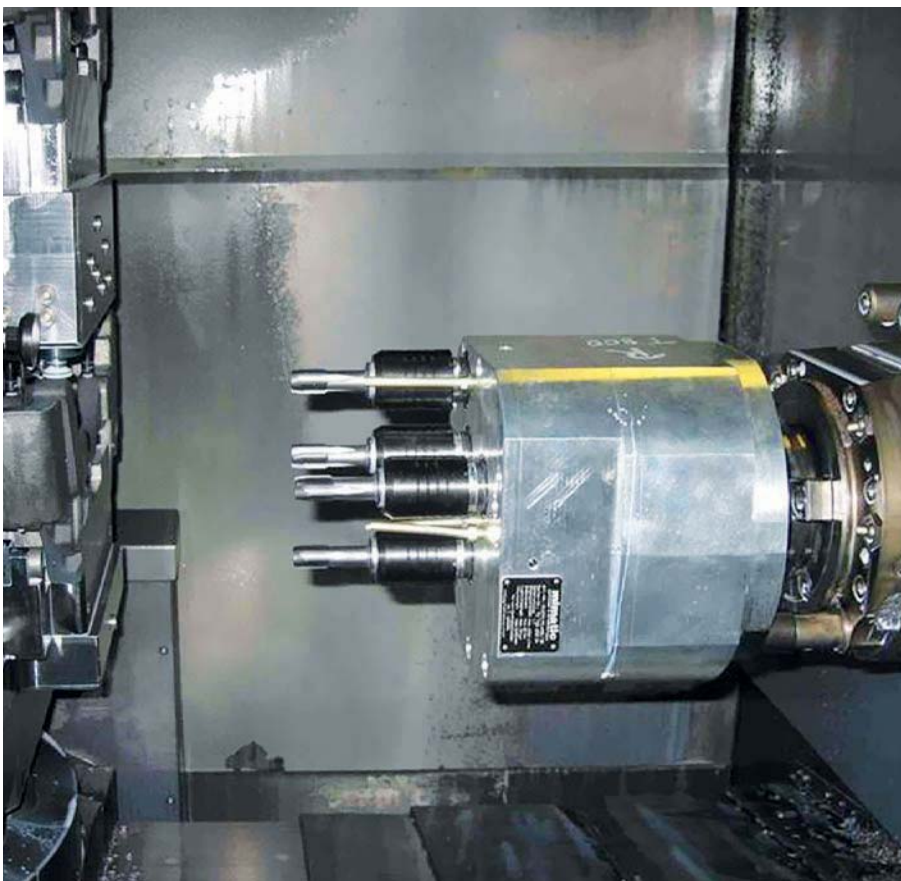
DMG MORI



Angle Head Multi Spindle Unit
on machine spindle

n1 (max.): 4500 rpm
n2 (max.): 4500 rpm
Transmission: 1:1
M (max.): 40 Nm / spindle

DMG MORI

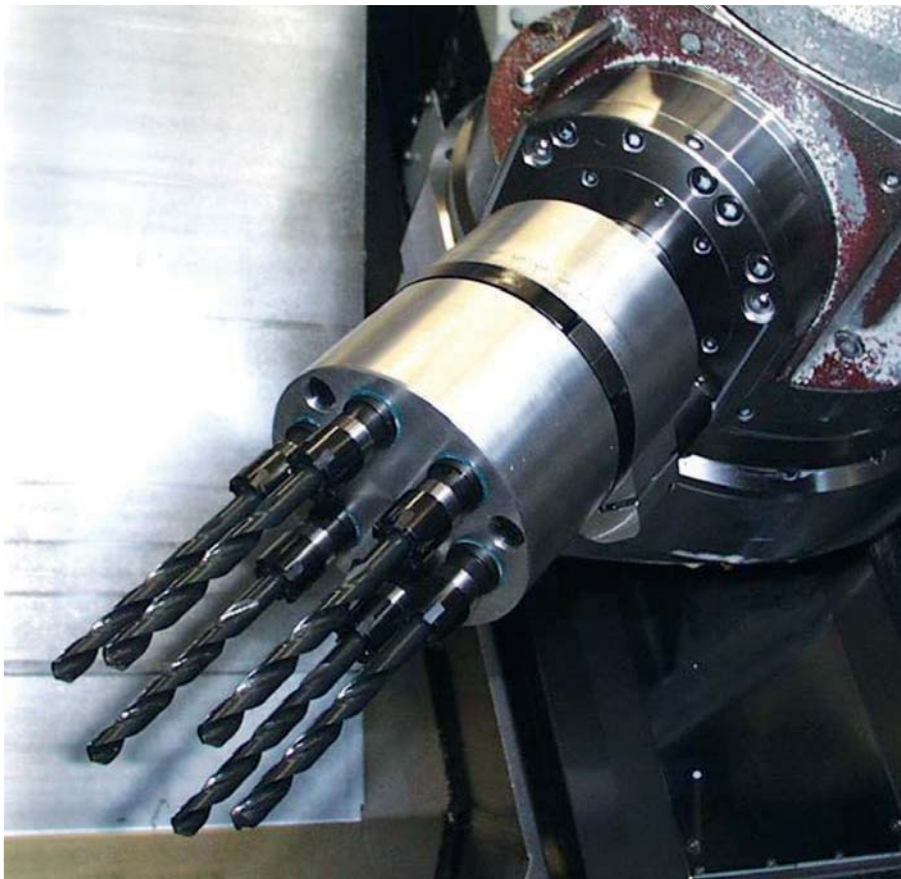


Angle Heads

Multi Spindle Technology

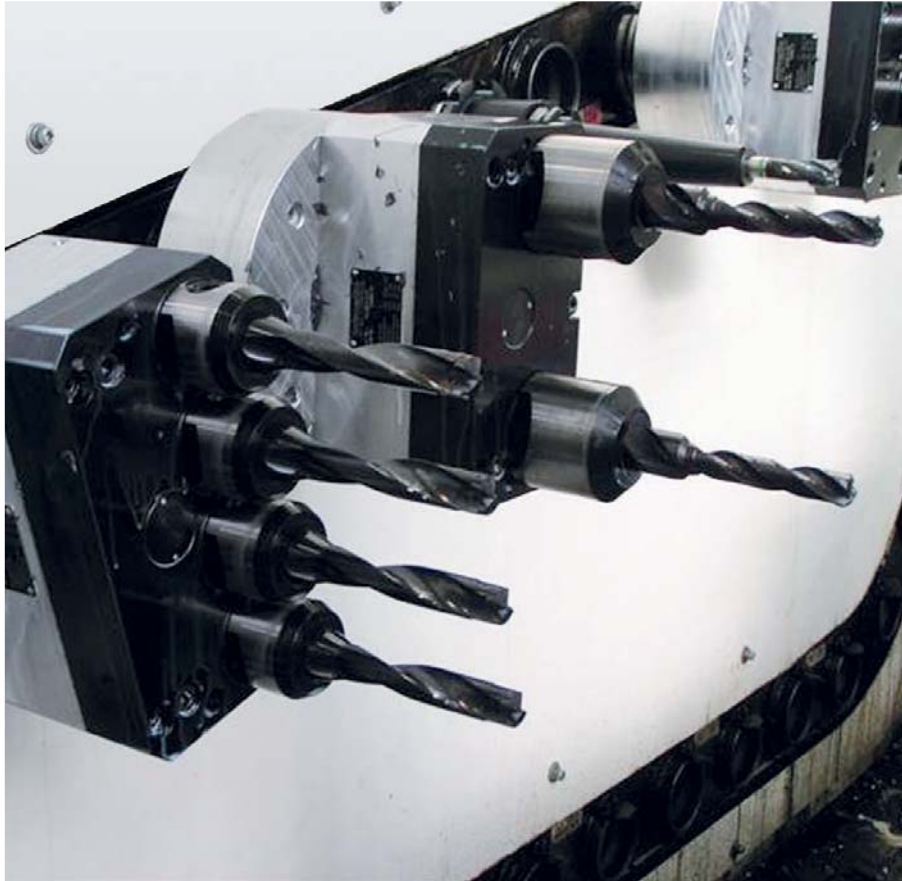
Angle Head as 6 Spindle Unit
on Mazak Integrex machining center

Mazak



Angle Heads

Multi Spindle Technology



Various Multi Spindle Units
in Mazak machining center magazine

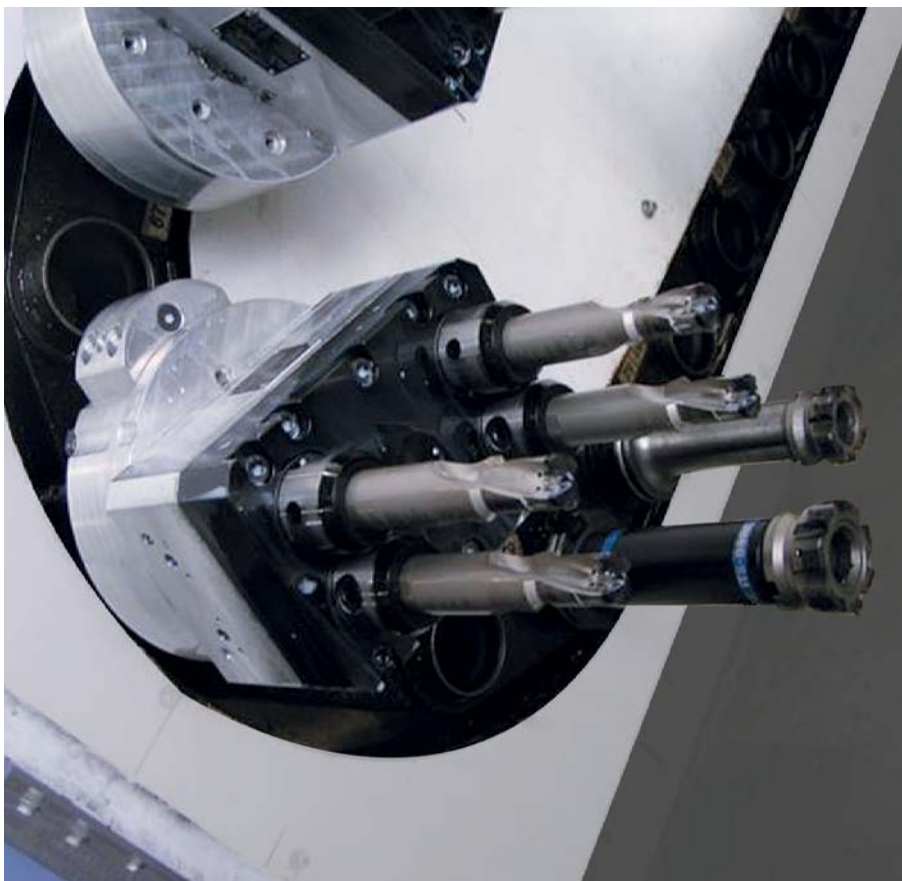
2 Spindle Unit

n1 (max.): 6500 rpm
n2 (max.): 6500 rpm
Transmission: 1:1
M (max.): 40 Nm / spindle

4 Spindle Unit

n1 (max.): 6500 rpm
n2 (max.): 6500 rpm
Transmission: 1:1
M (max.): 20 Nm / spindle

Mazak



Angle Heads

Multi Spindle Technology



Multi Spindle Unit

on Anger machining center

4 Spindle Unit

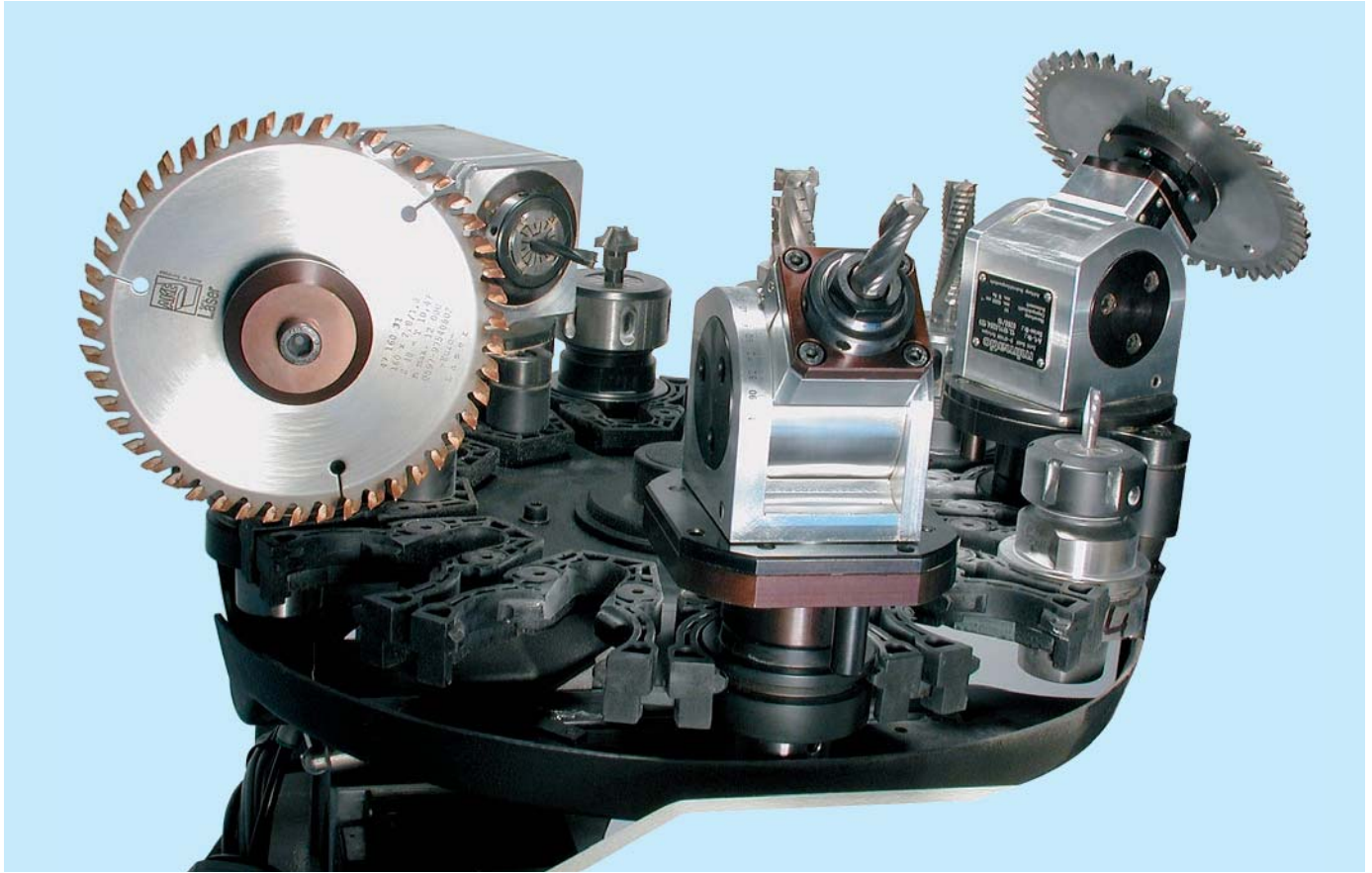
- n1 (max.): 4000 rpm
- n2 (max.): 14000 rpm
- Transmission: 1:3,5
- M (max.): 15 Nm / spindle



Angle Head as 4 Spindle Unit

with **mimatic mi** quick change interface

Angle Heads



Angular Gear in a Magazine

Angle Heads

Angle Head "Lower Floor Unit" for woodworking machines

Shank: SK 30
n2 (max.): 12000 rpm
Transmission: 1:1,25

 **BIESSE**



The surface of the snowboard is machined with the saw blade holder, to improve the adhesion of the sliding surface.



The angle head has a support to increase the stability.

Live Tools

General / Features



«Special Solutions» Live Tools for CNC Lathes

HIGHLIGHT

Complete Solution

Live tools/Angle heads + Cutting tools with carbide inserts
= Responsibility from a single source.

mimatic special tools are customized solutions to improve the efficiency/quality in machining of high-quality components!

CNC Lathes: Live Tools

for milling, drilling, threading, countersinking and chamfering

- Multi spindle solutions
- Saw blade holders
- Fixed angle
- Complete solutions with cutting tools

Interface competence

- Fast + flexible, modular
- Heavy machining, stiff, modular
- Own drive

Collision check

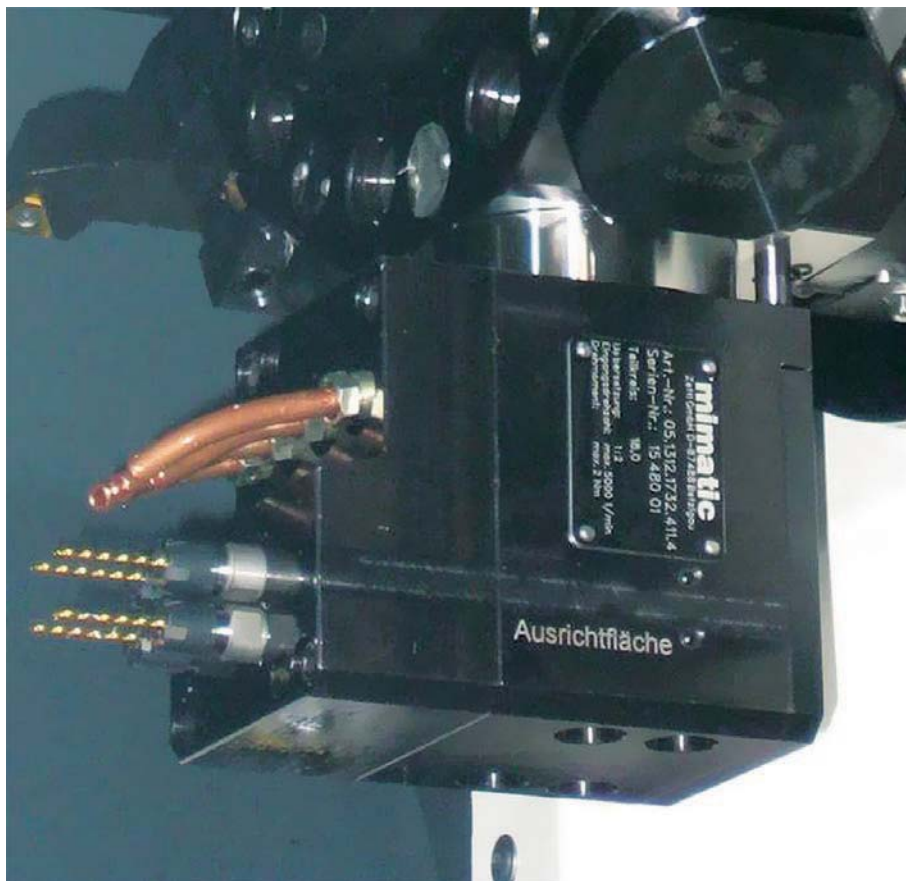
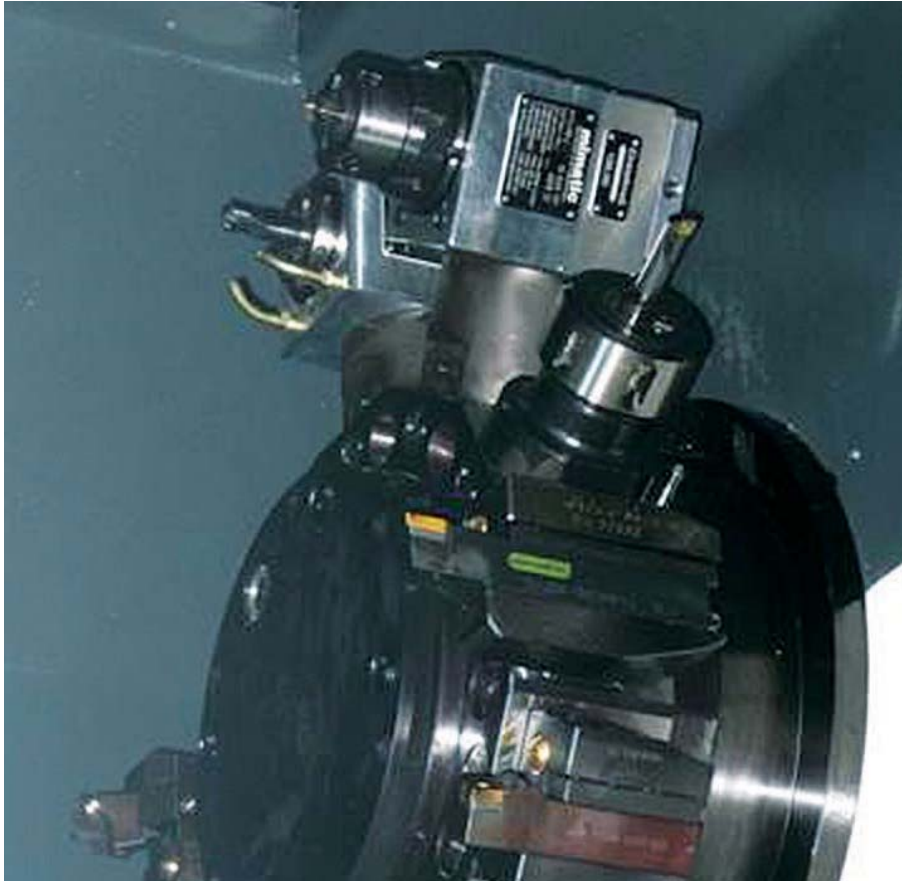
- CAD / 3D
- Machine situation, swing circles
- complex large components

Live Tools

Live Tools as 4 Spindle Unit with pitch point dia. ca. 40 mm

Shank: VDI 40
 n1 (max.): 5000 rpm
 n2 (max.): 10000 rpm
 Transmission: 1:2
 M (max.): 2 Nm / spindle

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Live Tools



Live Tools (+ Adjustable Angle Unit)

on turret

Live Tools

Live Tools With Twin Spindles

with special cutters on Hessapp

n1 (max.): 6000 rpm

n2 (max.): 6000 rpm

Transmission: 1:1

M (max.): 100 Nm



Live Tools

Multi Spindle Technology

Live Tool with CDI on EMAG

n1 (max.): 5000 rpm
n2 (max.): 2000 rpm by 10% E
Transmission: 1:4
M (max.): 5 Nm



Live Tools as 2, 3 and 4 Spindle Units with **mimatic mi** quick change interface

2 Spindle Unit

n1 (max.): 6000 rpm
n2 (max.): 3000 rpm
Transmission: 2:1
M (max.): 25 Nm / spindle

3 Spindle Unit

n1 (max.): 6000 rpm
n2 (max.): 3000 rpm
Transmission: 2:1
M (max.): 30 Nm / spindle

4 Spindle Unit

n1 (max.): 3250 rpm
n2 (max.): 6500 rpm
Transmission: 1:2
M (max.): 30 Nm / spindle



Live Tools

Live Tool as 3 Spindle Unit
with 2 different Weldon holders



Live Tool as 3 Spindle Unit
with special interface and screw-on flange



Live Tools

Live Tool Saw Blade Holder

Shank: VDI 40
 Tool holder: Milling arbor dia. 22 mm
 n1 (max.): 6500 rpm
 Transmission: 2,66:1
 M (max.): 20 Nm/spindle
 Cooling supply: EK 50 bar
 Extras: 22,62° adjusted

Workpiece:
 Circlip ring slots in conrod

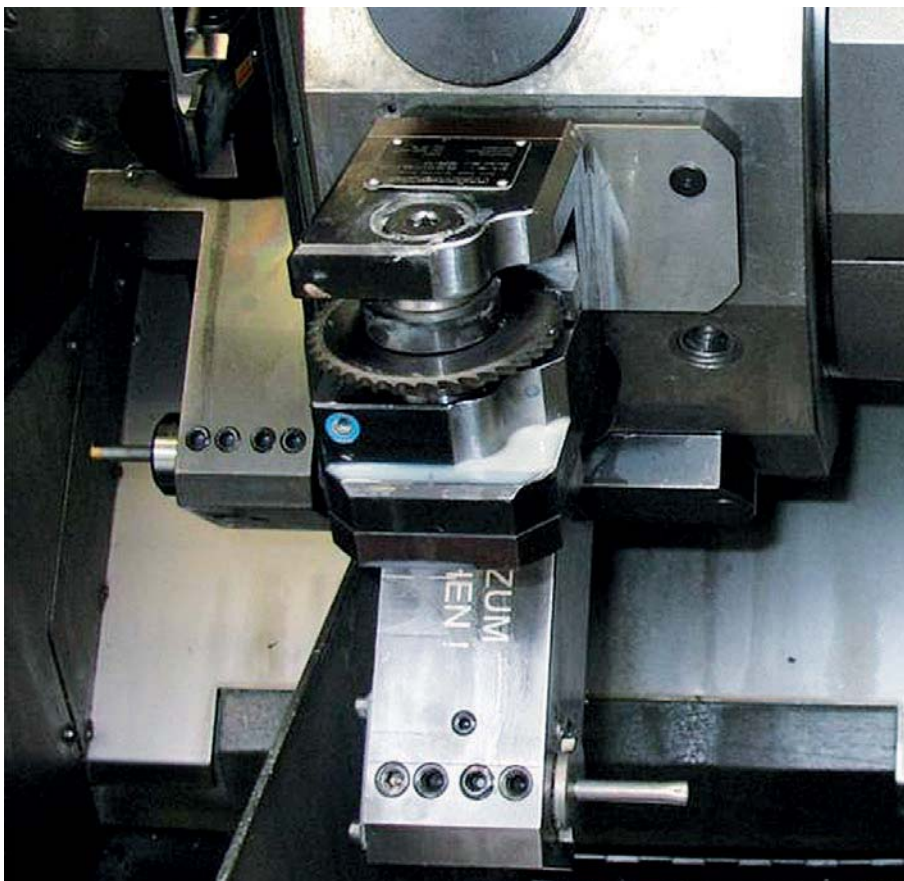
Mazak



Complete Solution

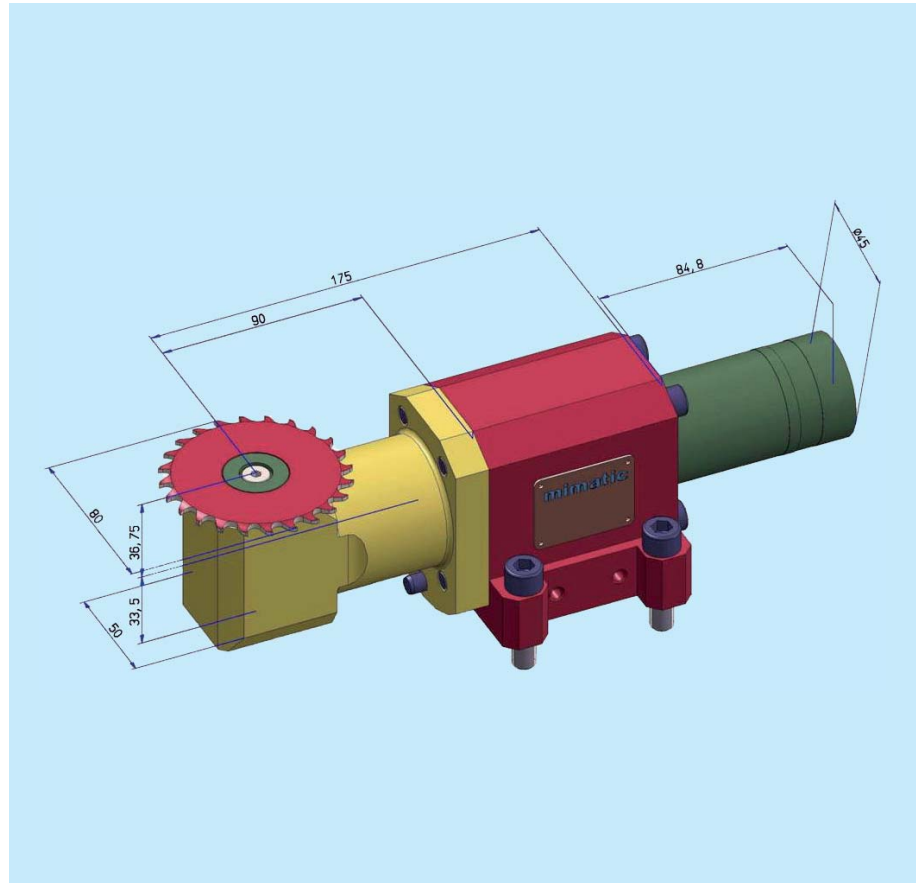
Live tools/Angle heads
 + Cutting tools with carbide inserts
 = Responsibility from a single source.

Mazak



Live Tools

Innovative Solutions



Complete solution in the workspace of a machine tool



Complete Solution
Cutting tools with carbide inserts
+ Angle heads/Live tools
= Responsibility from a single source.

Live Tools

Innovative Solutions

PolyMILL



Live Tool DIN 5480

with adjusting unit + **PolyMILL**

Complete Solution

Live tools / Angle heads
 + Cutting tools with carbide inserts
 = Responsibility from a single source.

Live Tool With Fixed Angle 75°

Shank: VDI 40
 Tool holder: HydroFlex
 n1 (max.): 6000 rpm
 n2 (max.): 12000 rpm
 Transmission: 1:2
 M (max.): 20 Nm



Live Tools

Multi Spindle Technology

Live Tools as 2 Spindle Units on Licon

Image top left

n1 (max.): 8000 rpm
n2 (max.): 8000 rpm
Transmission: 1:1
M (max.): 10 Nm / spindle

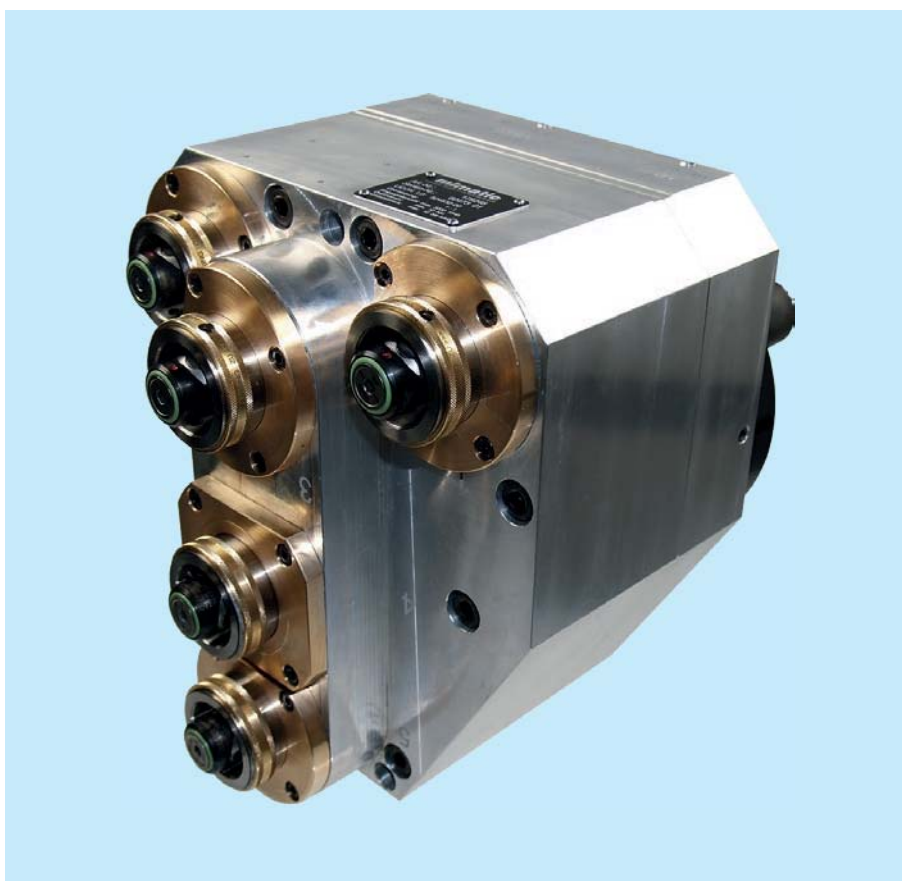
Image right below

n1 (max.): 8000 rpm
n2 (max.): 8000 rpm
Transmission: 1:1
M (max.): 10 Nm / spindle



Live Tool as 5 Spindle Unit on Licon

Shank: D78
Tool holder: 6 x HSK 40
n1 (max.): 8000 rpm
Transmission: 1:1
M (max.): 10 Nm / spindle
Coolant supply: MMS
Extras: detent air



Live Tools

Multi Spindle Technology

Live Tool as 5 Spindle Unit on Licon

Shank: D78
 Tool holder: 5 x HSK 32
 n1 (max.): 8000 rpm
 Transmission: 1:1
 M (max.): 5 Nm / spindle
 Coolant supply: MMS
 Extras: detent air



Live Tool as 6 Spindle Unit on Licon

Shank: D78
 Tool holder: 5 x HSK 32
 n1 (max.): 8000 rpm
 Transmission: 1:1
 M (max.): 5 Nm / spindle
 Coolant supply: MMS
 Extras: detent air



Live Tools

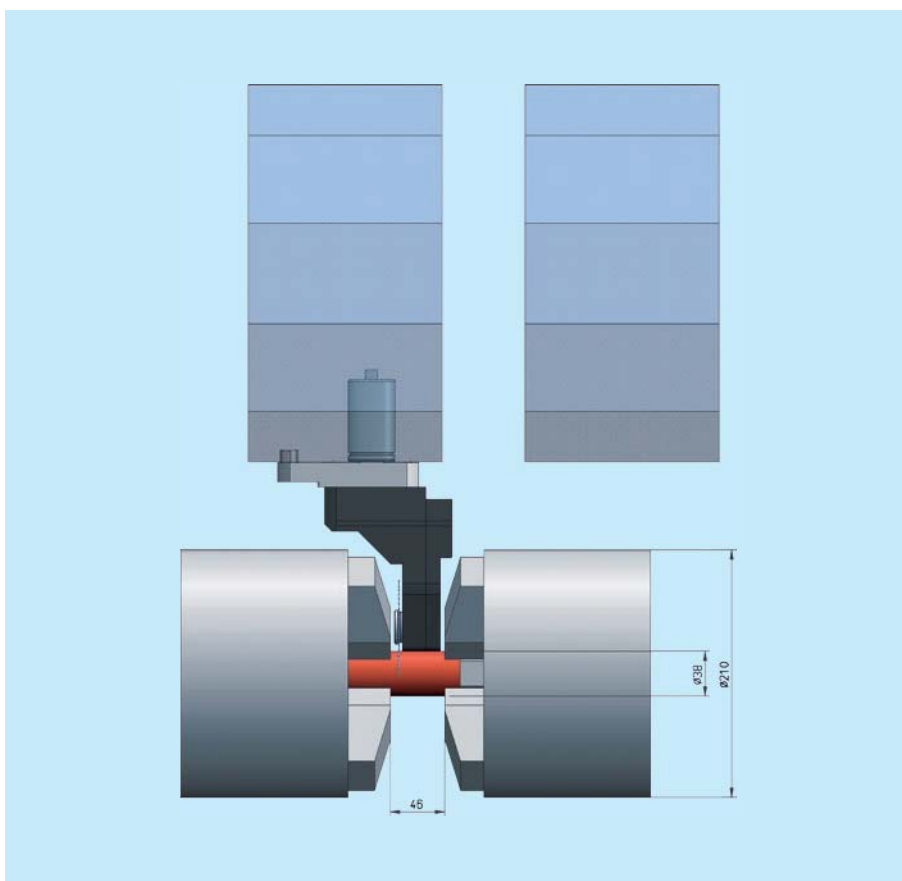
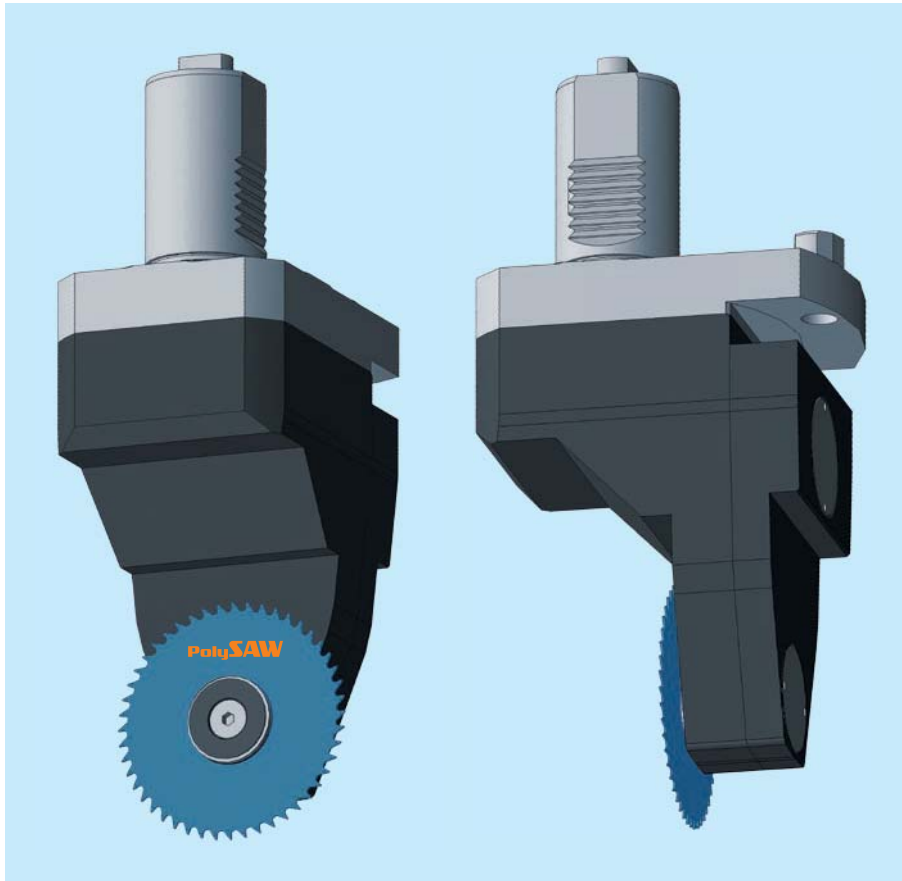
Innovative Solutions

mimatic Tool for Turn Cut Milling with PolySAW in right version design.

Suitable in bar-laden lathes up to 50 mm bar diameter.

Complete Solution

- Live tools/Angle heads
- + Cutting tools with carbide inserts
- = Responsibility from a single source.



Situation in a machine with main and sub spindle, two turrets and mimatic turn cut milling tool in left version design.

You can find videos on YouTube and www.mimatic.de



Live Tools

Slim and Long Solutions

Lower Floor Milling Unit

for Mori Seiki

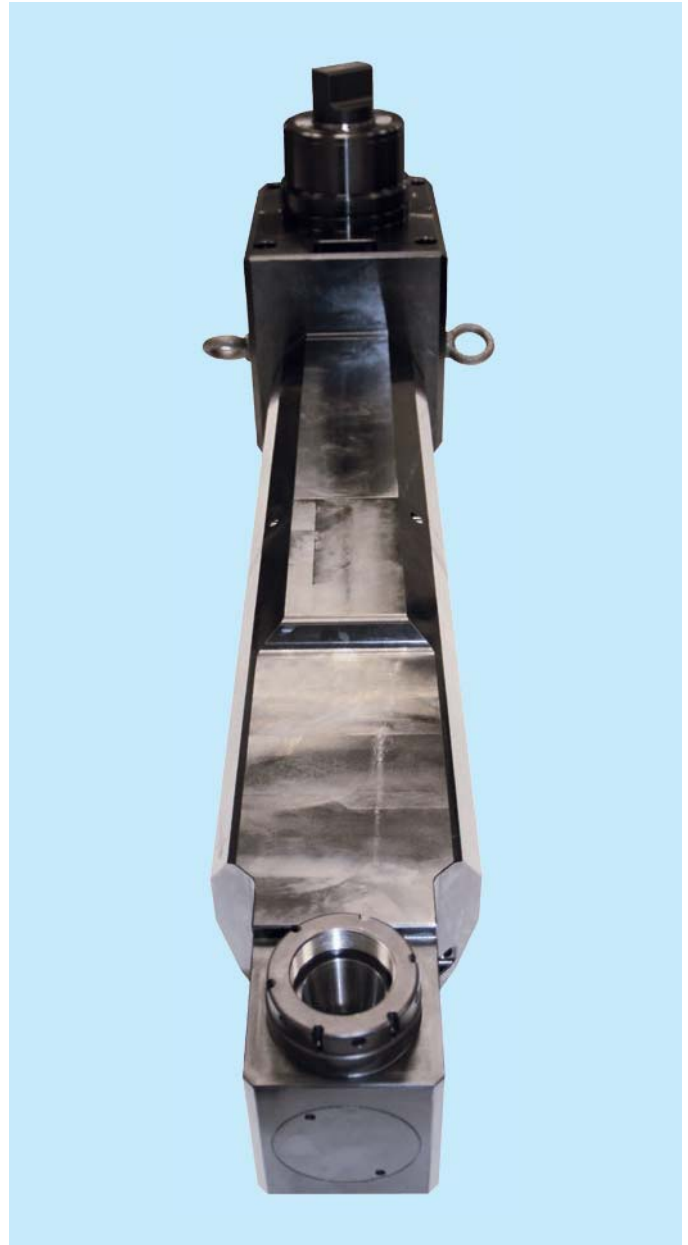


Shank: BMT 40
 Tool holder: ER 11
 n1 (max.): 3750 rpm
 n2 (max.): 7500 rpm
 Transmission: 1:2
 M (max.): 10 Nm
 Plunge depth: 102 mm
 Plunge dia.: 54 mm

DMG MORI

Special Angle Head

for Mori Seiki



Shank: BMT110
 Tool holder: ER 32
 n1 (max.): 6500 rpm
 Transmission: 1:1
 M (max.): 20 Nm
 Coolant pressure: IK 70 bar
 Length: 868 mm
 Plunge depth: 614 mm
 Plunge dia.: 150 mm

DMG MORI

Tool Interface for CNC Lathes



Developed in cooperation by:



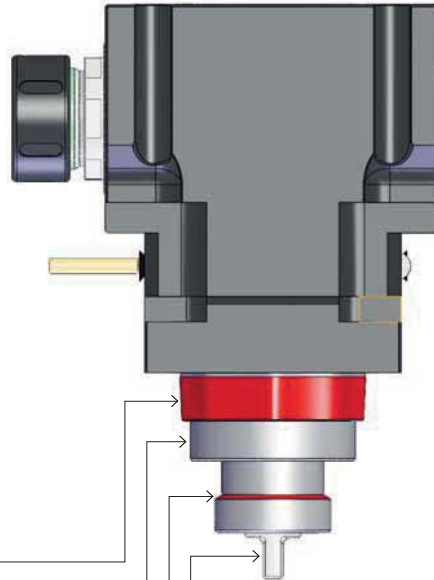
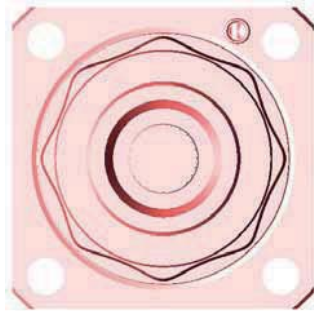
Development and standardization project, sponsored by:



Bundesministerium
für Bildung
und Forschung

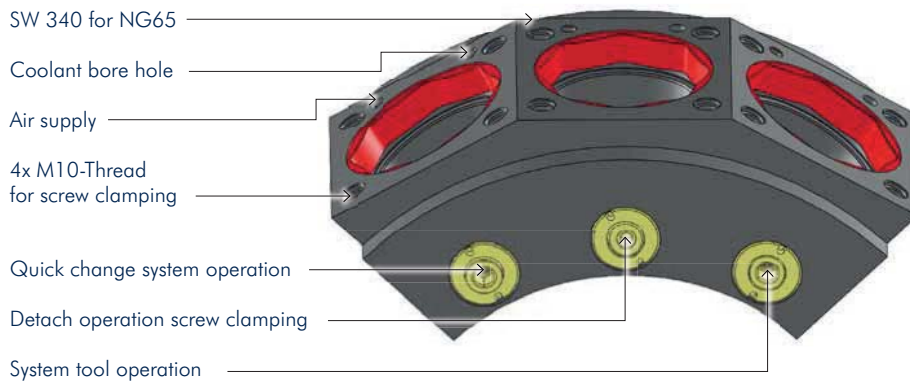
Live Tools

Innovative Solutions



Innovation power and interface expertise from mimatic tool systems are demonstrated in the development of a new turret interface for CNC lathes.

- 8-fold cone-shaped polygon
- Ø 65 mm
- Clamping chamfer for quick change system
- Clutch for live tools



- SW 340 for NG65
- Coolant bore hole
- Air supply
- 4x M10-Thread for screw clamping
- Quick change system operation
- Detach operation screw clamping
- System tool operation



Management Service

CERTIFICATE

The Certification Body
of TÜV SÜD Management Service GmbH

certifies that

mimatic[®]
T o o l S y s t e m s

mimatic GmbH
Westendstraße 3
D-87488 Betzigau

has established and applies
a Quality Management System for

**Development, Design, Production, Sales and
Service of Driven Toolholders, Cutting Tools,
Clamping Systems and Special Tools.**

An audit was performed, Report No. **70006182**
Proof has been furnished that the requirements
according to

ISO 9001:2008

are fulfilled. The certificate is valid until **2014-02-06**

Certificate Registration No. **12 100 15724 TMS**

M. Wegner

Munich, 2013-02-26



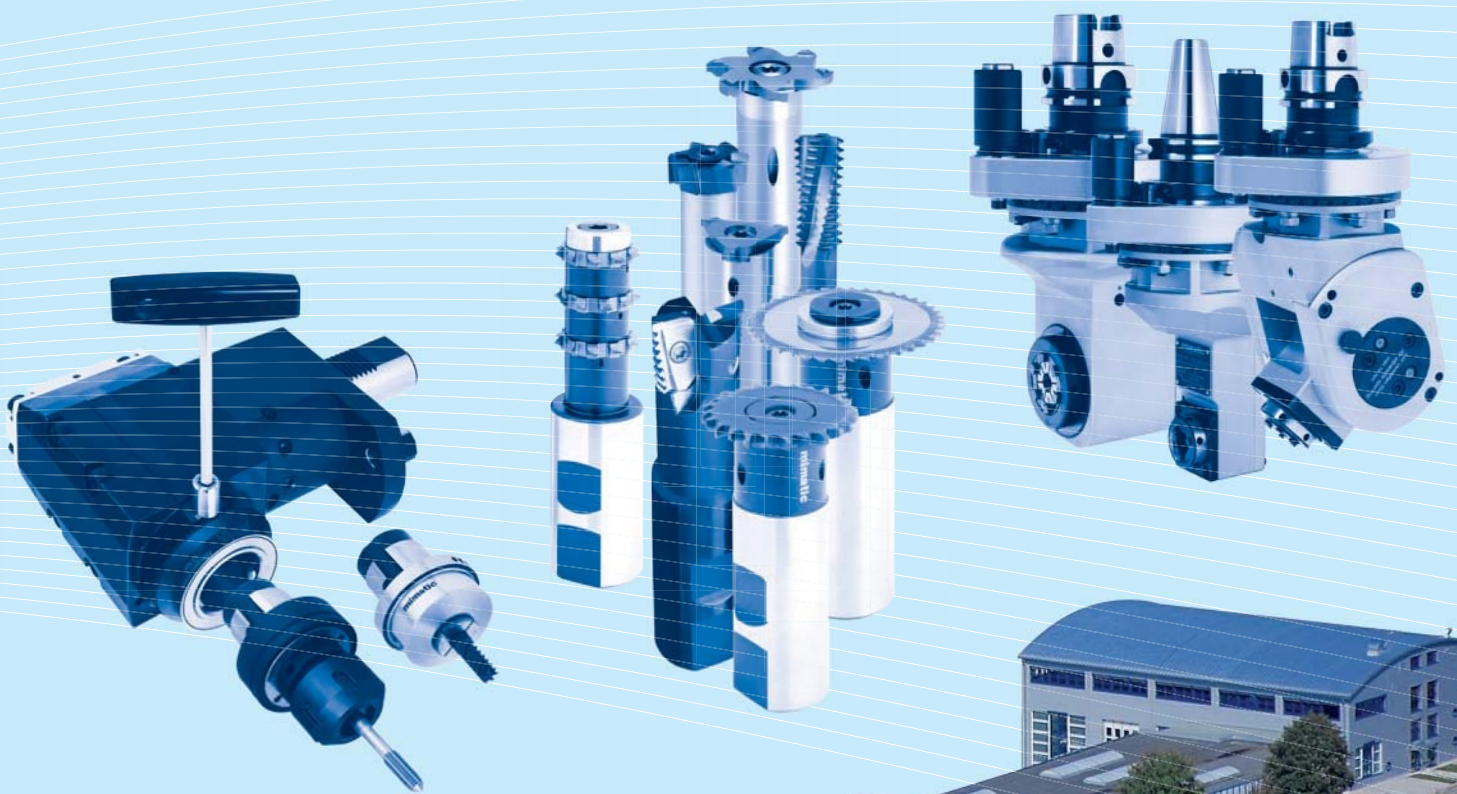
QMS-TGA-ZM-07-92

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ CERTIFICADO ◆ CERTIFICAT
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MSZ-TGA-07/9

We do Specials!

- Circular- and Thread Milling Tools
- Reamers with Polygonal Interface
- Driven Toolholders for CNC Machining Centers
- Driven Toolholders for CNC Turning Machines
- Multi-Spindle Technology
- Modular Quick Change Toolholders mimatic® mi
- Static Toolholders for CNC Turning Machines
- Precision Chucks
- Special Cutting Tools



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Tool Systems

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