TOOLTEC

CUTTING TOOL PRODUCTION

JUNKER
partner for precision

TOOLTEC

Your partner for a sharper edge

High precision, economy and reliability - the grinding machines of the high-performance JUNKER TOOLTEC series are among the technological leaders in the field of cutting tool manufacturing. The most discerning customers use JUNKER TOOLTEC to produce taps, drills, mills, reamers and sinks, as well as saw blades and a variety of special cutting tools.

Using meticulously engineered concepts, JUNKER TOOLTEC fulfills all the requirements imposed on modern production, and commands a position at the cutting edge of innovative technical development. Individual system solutions are just as much one of the strengths of the JUNKER TOOLTEC series as integral line concepts.

The JUNKER TOOLTEC machines:

- Lean Selection speed
- Lean Selection allround
- QUICKPOINT
- QUICKPOINT Blank
- JUMINIMAT
- FLUTEMAT
- JUMAXIMAT
- TAPOMAT
- DRILLMAT
- NAJ VII / NAJ VIIa
- JUSTAR

BLANK GRINDING

Lean Selection speed, Lean Selection allround
QUICKPOINT 1000, QUICKPOINT 3000, QUICKPOINT Blank

THREADED TOOL GRINDING

Flutes: JUMINIMAT, FLUTEMAT, JUMAXIMAT
Thread and chamfer: TAPOMAT 1000, TAPOMAT 3000

DRILL GRINDING

DRILLMAT S, DRILLMAT L

CUTTING TOOL GRINDING

JUMINIMAT, JUMAXIMAT

COMPLETE GRINDING OF A COMPREHENSIVE TOOL SPECTRUM

JUSTAR

TOOTH GRINDING ON CIRCULAR SAWBLADES

JUMAXIMAT IV, NAJ VII / NAJ VIIa

TECHNICAL DATA

BLANK GRINDING

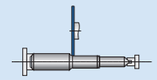
Diameter, runout, surface finish – the guarantee of consistent quality is pivotal to the successful cylindrical grinding of all types of blanks. At the same time, the demands made on flexible but efficient production are growing all the time. This is why JUNKER designed its grinding machines for blank grinding to cope with an expansive part spectrum. Minimal tooling work and maximum productivity are at the forefront.

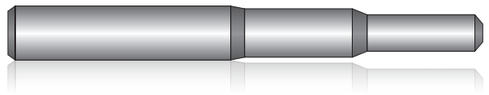
Lean Selection speed

External cylindrical grinding

Lean Selection speed grinds tool blanks at truly impressive speeds. One or more high-performance grinding spindles mounted at the swivel-action wheelhead (B axis) work using both the plunge-cut and QUICKPOINT grinding methods. This feature makes the grinding machine extremely flexible and capable of implementing several grinding operations in a single clamping set-up.

Strengths:
- QUICKPOINT grinding method
- Peripheral speed of up to 140 m/s
- Freely programmable, steplessly adjustable B axis
- Workpiece driven between centers
- Ingeniously engineered automation





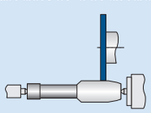
Carbide step drill: dia. 10 mm, length 80 mm
Cycle time: 210 s
Grinding task: Grinding the outer contour from solid (allowance 0.5 mm)

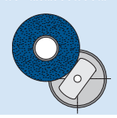
Lean Selection allround

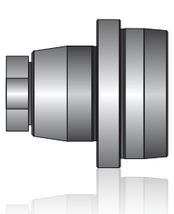
External and internal cylindrical grinding max. dia. 290 mm

The Lean Selection allround covers a wide range of applications: It grinds workpieces outside and in, combining extreme user convenience with precise execution. Up to three high-performance spindles can be mounted on the high-precision, swivel-action wheelhead. This degree of flexibility makes the Lean Selection allround the perfect fit for anyone with a wide assortment of workpieces to grind.

Strengths:
- Freely programmable, steplessly adjustable B axis
- Rapid retooling
- Abrasive: Corundum, CBN or diamond







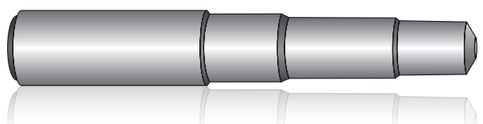
Grinding task:
- External and internal cylindrical grinding: Diameter, plane surface, taper
- Grinding the hexagon surface (flat)

QUICKPOINT

External cylindrical grinding
QUICKPOINT 1000: max. dia. 50 mm
QUICKPOINT 3000: max. dia. 150 mm

The QUICKPOINT grinding method, patented by JUNKER, ensures efficient blank grinding. With up to three high speed grinding spindles and a grinding contact area no bigger than a point, the QUICKPOINT grinds shoulders, tapers, chamfers and grooves in a single clamping set-up. Extremely low-wear CBN or diamond grinding wheels, just a few millimeters wide, are used.

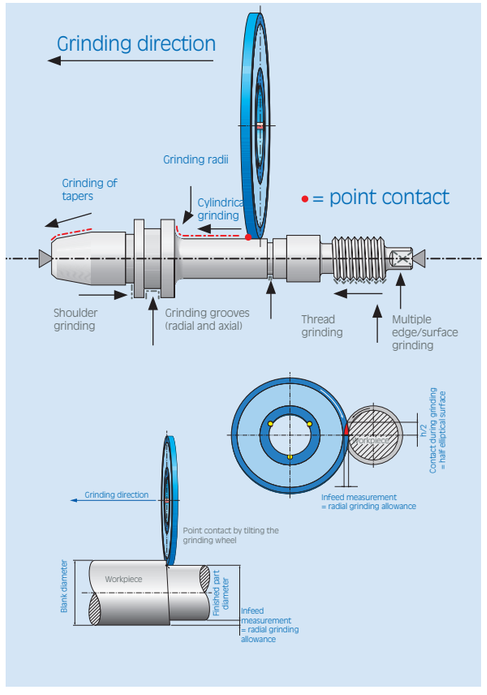
Strengths:
- QUICKPOINT grinding method
- Workpiece driven between centers
- Rapid retooling
- Up to three high-speed grinding spindles



Carbide step drill blank:
dia. 15 mm, length 120 mm

Cycle time: 310 s

Grinding task: Grinding the outer contour from solid (allowance 0.5 mm)



The standard QUICKPOINT grinding operations are shoulders, tapers, chamfers and grooves. Thread grinding and multiple edge and face grinding can be additionally integrated.

QUICKPOINT Blank

External cylindrical grinding directly from round bar stock, diameter 3 – 25.4 mm

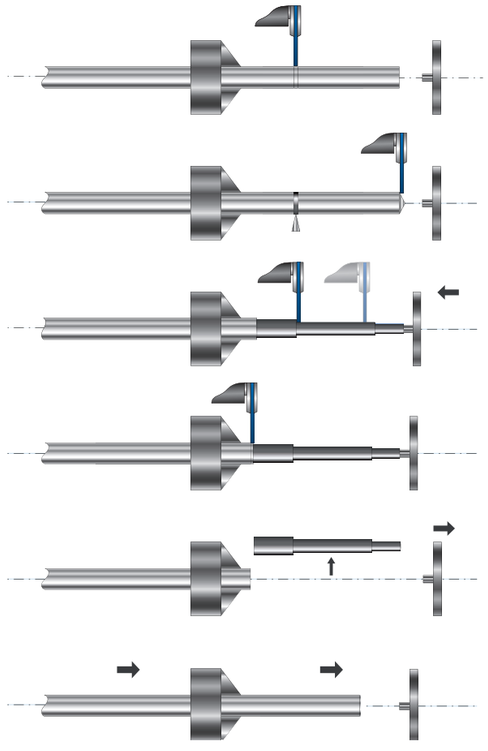
The QUICKPOINT Blank minimizes the throughfeed time required for blank production: From infeed of the round bar stock through chamfering, contour grinding and cutting off to carefully ordered depositing - every step is fully automatic. Maximum productivity is ensured by the QUICKPOINT high-speed grinding method.

Strengths:
- Grinding round bar stock (carbide or HSS)
- Minimal throughfeed times due to combination of all production steps
- Quality increase due to grinding in a single clamping set-up

Carbide step drill: dia. 10 mm, length 145 mm from carbide round bar stock (dia. 10.4 mm, length 330 mm)

Cycle time: 560 s

Grinding task:



Steady seat

Tip or chamfer

Contour

Workpiece cutting

Removal of tool blank

Drawing in new bar stock

THREADED TOOL GRINDING

Threaded tools must withstand high cutting speeds and leave behind an excellent thread surface. Behind every thread tap, thread former and thread milling cutter is a complex manufacturing process which is efficiently managed using precisely engineered solutions from JUNKER. The combination of high output performance and superb quality is a common feature to all JUNKER grinding machines.

Reliable loading and clamping systems ensure a smooth production process – from the blank to the finished threaded tool. A relief grinding measurement device completes the production line.

JUMINIMAT

Flute grinding
dia. 1 – 12.7 mm

The JUMINIMAT grinds the flutes of small threaded tools with up to four grinding wheels. The threaded tool is ground either unsupported or with tailstock support. If required, a steady can be used for stabilization. The integrated loading system takes care of a high level of independent operation and can be swiveled to the side for retooling.

Strengths:
- Maximum dimensional stability
- Integrated dressing unit
- Compact design
- Different tool cassettes possible
- Integrated loading system

HSS tap: M1, spiral fluted

Cycle time: < 50 s

Grinding task:
Grinding the three flutes

FLUTEMAT

Flute grinding
dia. 2 – 20 mm

In the FLUTEMAT, the threaded tools are mounted with a spring-loaded square insert and tailstock center. The fixed stop at the tailstock guarantees that the start of each flute is identical. The dressing unit mounted directly behind the grinding spindle helps ensure a short cycle time. It carries out in-process dressing of the grinding wheels while the grinding or loading operation is under way.

Strengths:
- In-process dressing
- 11 kW grinding spindle
- Profile precision

HSS tap: M12, straight fluted

Cycle time: < 75 s

Grinding task:
Grinding the three chip and peel flutes

JUMAXIMAT

Groove and chamfer grinding dia. 6 – 42 mm

In the JUMAXIMAT, the threaded tool is ground either unsupported or with tailstock support. A steady can be used for stabilization. Requirement-based loading systems ensure a smooth production sequence. A CNC dressing unit creates all the profile shapes.

Strengths:
- Automatic coolant pipe adjustment
- 20 kW grinding spindle
- Rapid retooling

HSS tap: M24, straight fluted

Cycle time: < 208 s

Grinding task:
Grinding four chip grooves, and peel grooves with chamfer and bevel

TAPOMAT 3000

Thread and chamfer grinding dia. 3 – 32 mm (52 mm)

The TAPOMAT 3000 also works with two grinding wheels. The thread and chamfer are ground in a single clamping set-up. All chamfer shapes can be generated with a diamond dressing wheel. The relief grinding movement, patented by JUNKER, ensures a top-quality thread tap and thread former.

Strengths:
- Single or multiple tooth grinding (with or without chamfer)
- All strokes and shapes can be covered with a single relief cam
- User-friendly programming

HSS tap: M20

Cycle time: < 180 s

Grinding task:
Grinding the thread profile and lead taper

TAPOMAT 1000

Thread and chamfer grinding dia. 0.8 – 8 mm

The TAPOMAT 1000 is characterized by high flexibility, short tooling times, easy operability and a minimal contact surface. A diamond roller (single or multiple tooth) is used to profile the relevant threaded grinding wheel. Diamond fliese tools are used for profiling the chamfer grinding wheel. This allows the machine to grind any optional thread and chamfer shapes.

Strengths:
- Single or multiple tooth grinding
- The patented dressing system permits the production of even minimal thread radii (grain size)
- CNC controlled relief grinding

HSS tap: M1, spiraled

Cycle time: < 60 s

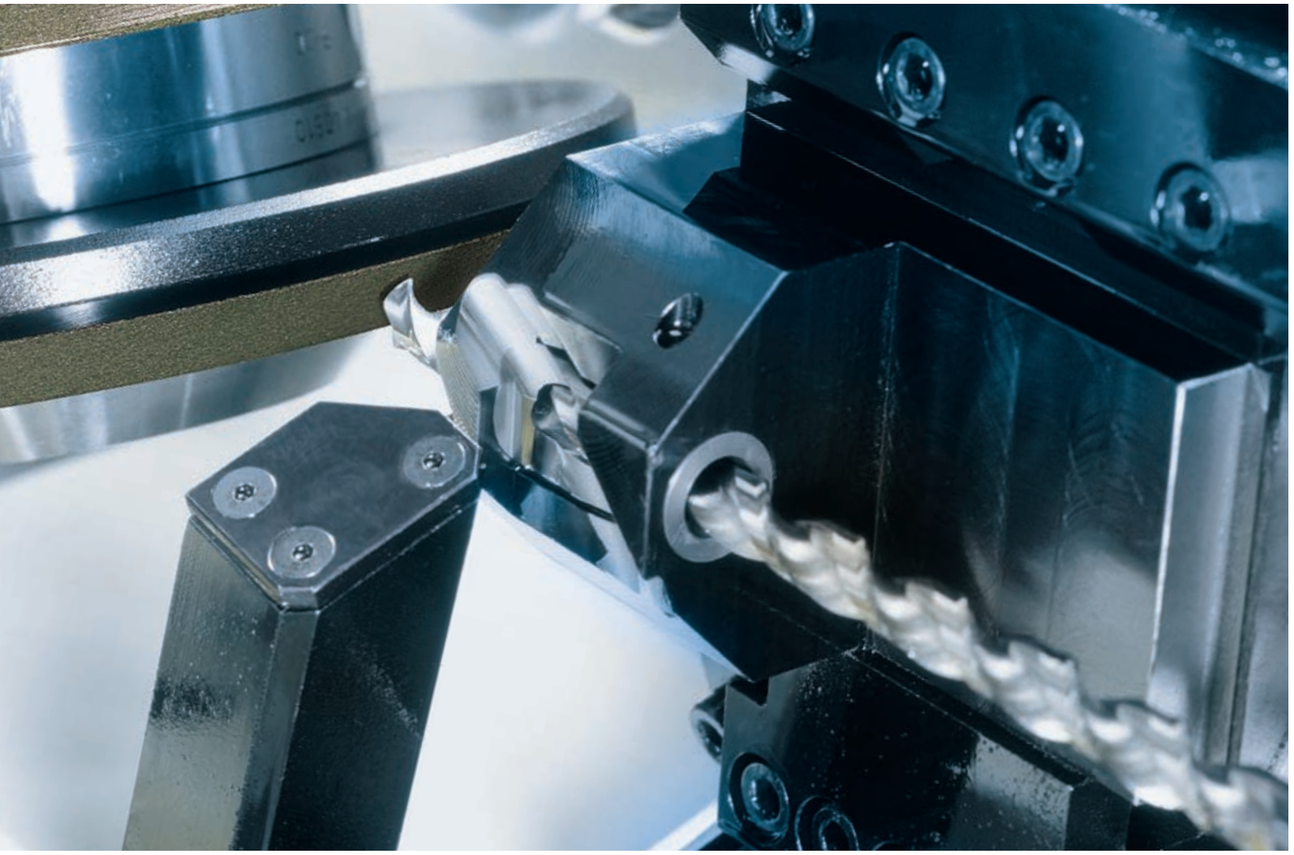
Grinding task:
Thread profile and chamfer grinding

RELIEF EXPERT

Relief grinding measuring device for thread and chamfer dia. 1 – 80 mm

For relief grinding measurement of the thread and chamfer, JUNKER developed the RELIEF EXPERT measuring machine. It measures each thread flank separately and is suitable for straight and spiral fluted workpieces in the diameter range of 1 – 80 mm.

Strengths:
- Extreme measurement accuracy
- 2-axis CNC controlled
- Fully automatic measurement sequence



TWIST DRILL GRINDING

A sharp cutting edge, precise concentricity, a long service life - twist drills for professional use must be manufactured to an exemplary standard without neglecting the cost aspect. This is achieved by DRILLMAT, which grinds from blanks made of HSS in a single clamping set-up to produce a finished twist drill. The grinding wheel package ensures a perfect ground finish for twist drills with even the most complex cutting edge geometry. Integrated loading and unloading systems reduce downtimes.

DRILLMAT

Complete grinding of HSS twist drills
DRILLMAT S: dia. 2 – 10 mm
DRILLMAT L: dia. 5 – 20 mm

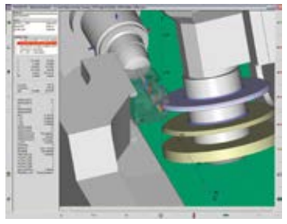
The DRILLMAT grinds flutes, the face geometry and the back in a single clamping set-up. Stable bushing support ensures the necessary rigidity during grinding operations, thus enabling maximum precision. Up to four corundum grinding wheels are mounted on the grinding spindle. With the DRILLMAT S, dressing is possible simultaneously with the grinding and loading sequence. The cooling nozzle system can be individually controlled with 4 channels for each grinding process.

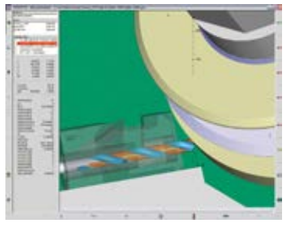
Strengths:
- Face grinding prior to back grinding
- 11/20 kW grinding spindle
- Rapid retooling
- CNC dressing unit

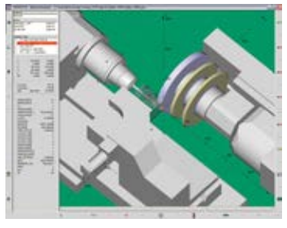
HSS twist drill: dia. 5 mm, total length 86 mm, flute length 52 mm, two flutes, Runout< 0.002 mm

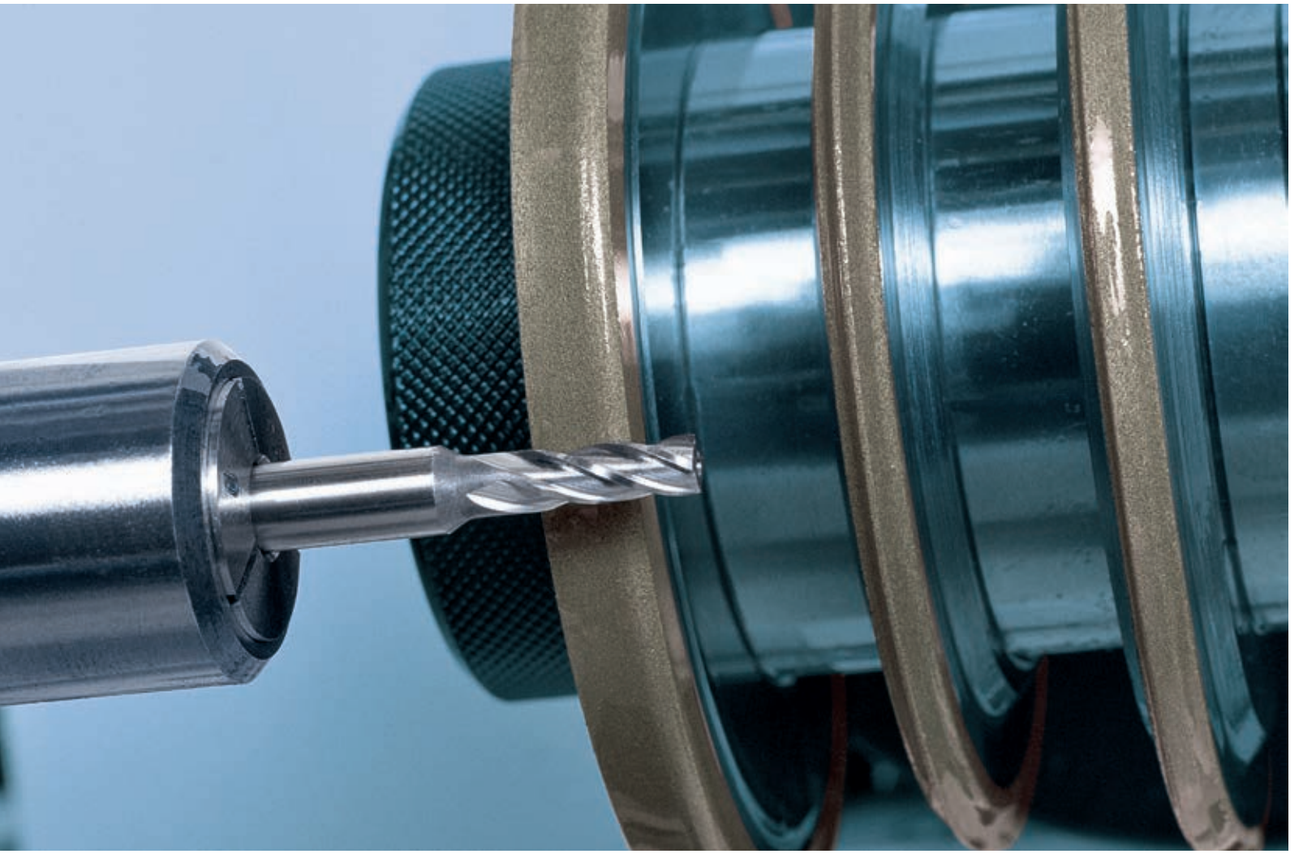
Cycle time: < 49 s

Grinding task:
Complete grinding


Flute


Cutting edge


Back



CUTTING TOOL GRINDING

Cutting tools such as reamers, mills or sinks are required to withstand high cutting forces, adhere to narrow tolerances and guarantee perfect runout between the cutting edges and shaft. This requirement can only be met by grinding the cutting tool in a single clamping set-up. It is precisely for this application that JUNKER developed the grinding machines JUMINIMAT and JUMAXIMAT.

JUMINIMAT

Complete grinding of cutting tools dia. 1 – 12.7 mm

In a single clamping set-up, the JUMINIMAT grinds the flutes, end teeth and cutting relief from solid. The cutting tool is ground either unsupported or with tailstock support. If required, a swivel-in steady can be used for stabilization.

Strengths:

- Integrated loading system
- Different tool cassettes possible
- Compact design
- Integrated CNC dressing unit
- Profile precision

HSS shank cutter: dia. 6 mm, four cutting edges

Cycle time: < 5 min

Grinding task: Grinding the flutes, the end tooth and the body relief

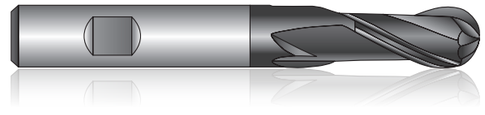
JUMAXIMAT

Complete grinding of cutting tools dia. 6 – 42 mm

The JUMAXIMAT grinds precision tools from solid. The cutting tool is ground either unsupported or with tailstock support. A steady can be used for stabilization. Requirement-based loading systems ensure a trouble-free production sequence and a CNC dressing unit generates all profile shapes.

Strengths:

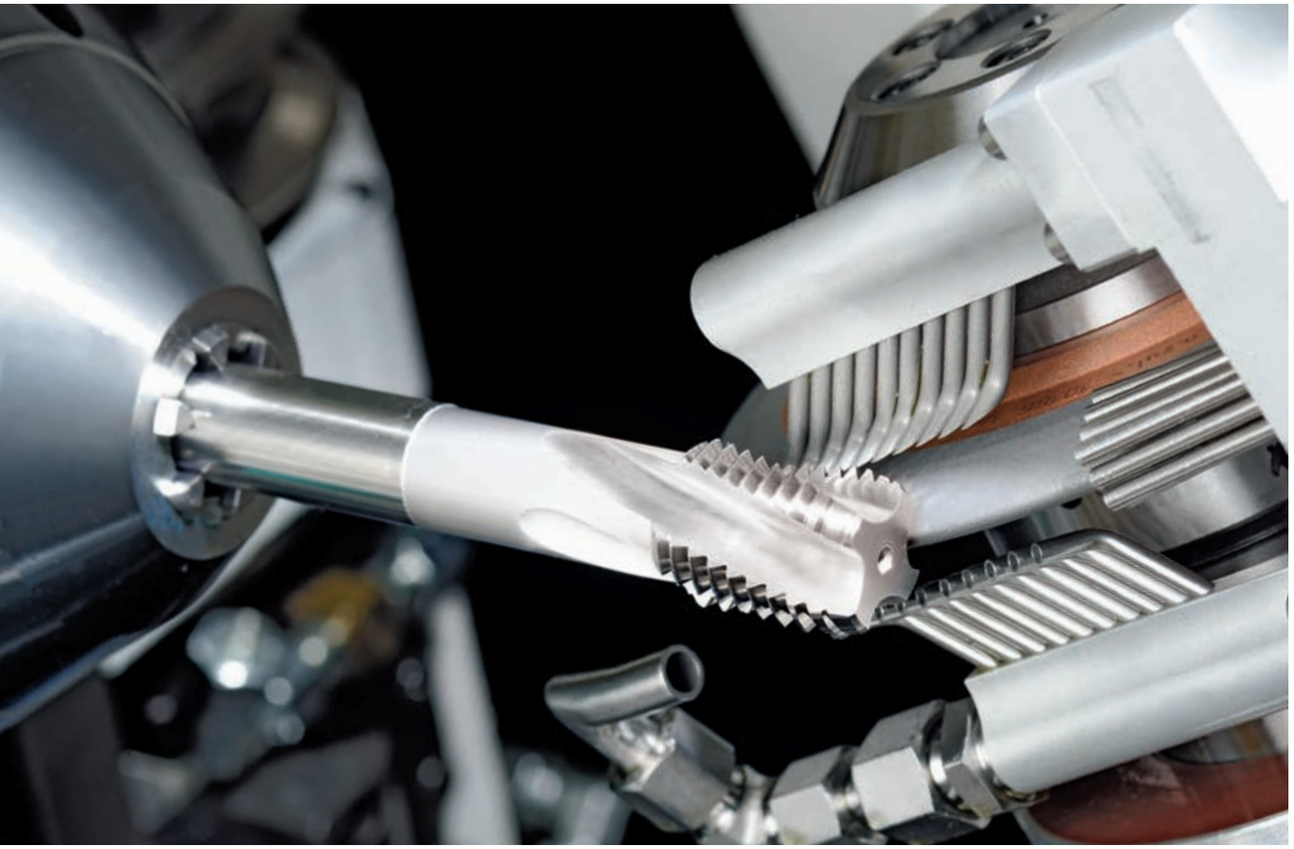
- Automatic coolant pipe adjustment
- 20 kW grinding spindle
- Rapid retooling



Carbide ball-head milling cutter: dia. 20 mm, length 110 mm, diameter tolerance < 0.005 mm Axial runout 0.002 mm

Cycle time: < 18 min

Grinding task:
Complete grinding



COMPLETE GRINDING OF A COMPREHENSIVE TOOL SPECTRUM

The JUSTAR grinding center is a dream come true: The production of wide-ranging cutting tools in HSS and carbide with just one machine. This is made possible by the JUSTAR's fully automatic grinding wheel changer, with up to 30 grinding wheel mounting interfaces. This ingenious technology allows the machine to grind finished tools from round bar stock – in a single clamping set-up.

JUSTAR

Complete grinding of all kinds of tools dia. 2 – 24.5 mm (51 mm)

The JUSTAR Grinding Center is the perfect machine for complete processing of an extensive range of workpieces. It offers maximum flexibility with top productivity and practice-oriented programming.

A high-performance grinding spindle ensures high-speed cutting, and is supported by robot-operated cooling nozzle tracking. Thanks to a measurement system featuring automatic dimensional correction, only acceptable parts leave the machine.

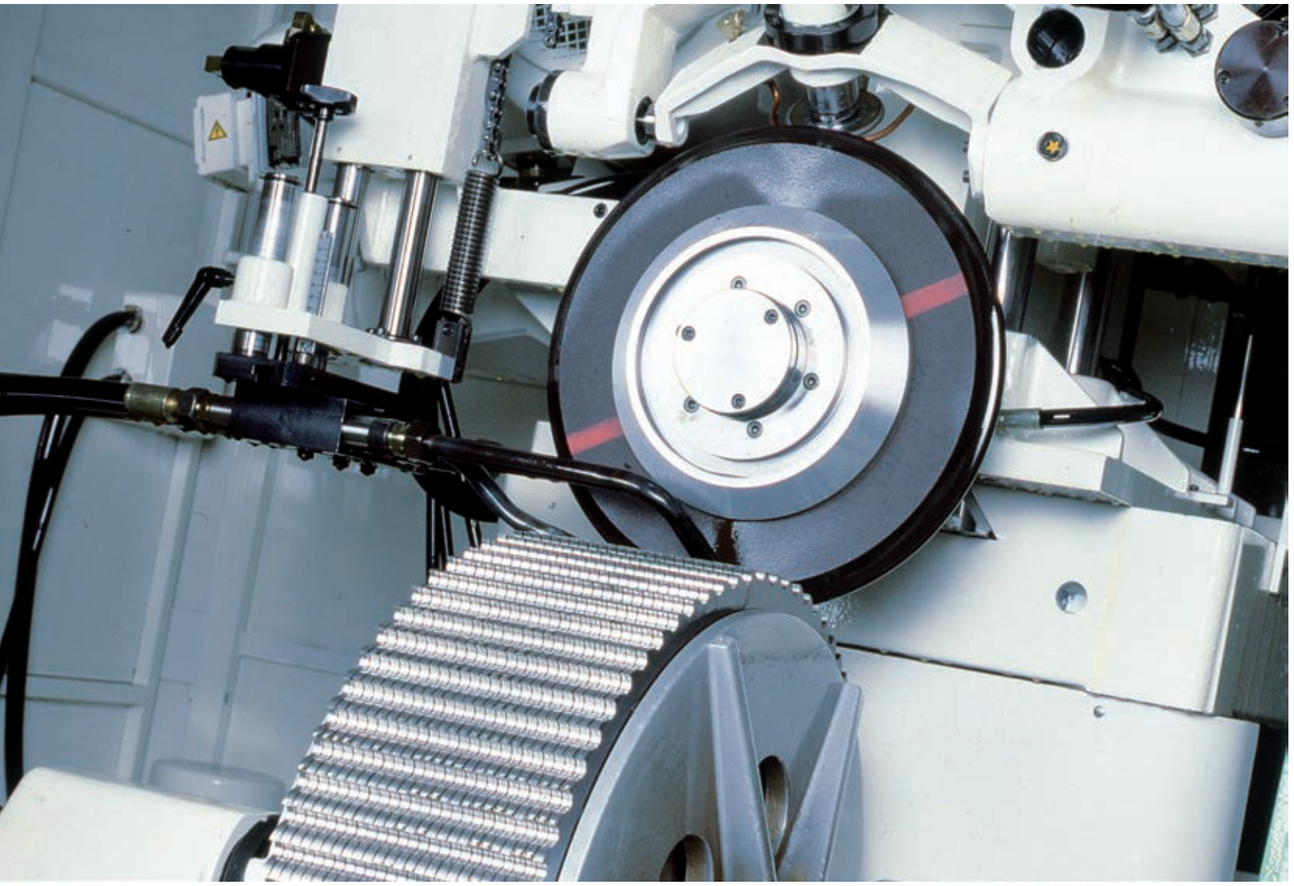
Strengths:
- Automatic dimensional correction
- Robot-operated coolant nozzle tracking
- Grinding wheel changer (with up to 30 grinding wheels)
- Stable machine bed

Carbide tap: M8, total length 91 mm, thread length 25 mm from round carbide bar (dia. 8.5 mm, length 330 mm)

Cycle time: < 20 min

Grinding task:
1. Solid tip (external centering for tailstock mounting)
2. Steady seat
3. Measurement seat
4. Contour
5. Square section
6. Chamfer on square section
7. Four flutes
8. Peeling chamfer
9. Chamfer
10. Thread
11. Workpiece cutting

Workpiece examples



TOOTH GRINDING ON CIRCULAR SAWBLADES

High-quality circular sawblades have a long service life, permit high feed rates and ensure great cutting quality. The decisive factors here are the material type and precise tooth grinding finish. This is why, as a ‘partner for precision’, JUNKER offers three machines for grinding peripheral toothing which guarantee not only perfect quality but also high productivity.

JUMAXIMAT IV

Tooth grinding on circular sawblades
dia. 20 – 203 mm

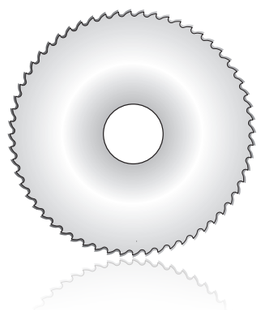
NAJ VII / NAJ VIIa

Tooth grinding on circular sawblades
NAJ VII: dia. 100 – 550 mm
NAJ VIIa: dia. 210 – 710 mm

These special machines grind the peripheral toothing of circular saw blades in package clamping. All technical tooth profiles, with identical or non-identical tooth heights, are ground from solid blanks. The oscillating longitudinal grinding process guarantees the production of high-grade circular saw blades with excellent runout.

Strengths:

- Grinding in package clamping
- Short cycle time
- Grinding of all tooth profiles with identical and non-identical tooth height
- Runout< 0.03 mm



Metal circular sawblades

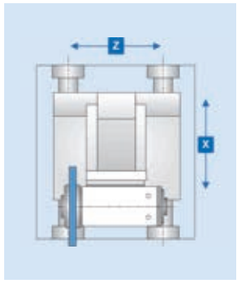
Grinding task:
Tooth grinding

Machine	Workpiece diameter	Clamping/ workpiece length	Grinding length	Drive capacity	Peripheral speed	Abrasive	Swivel grinding spindle
Lean Selection speed	max. dia. 150 mm	max. 800 mm	max. 650 mm	12 kW	140 m/s	CBN/diamond	210°
Lean Selection allround	max. dia. 290 mm	max. 800 mm	max. 800 mm	5 kW	45 m/s	Corundum/CBN/ diamond	240°
QUICKPOINT 1000	max. dia. 50 mm	max. 150 mm	max. 150 mm	12 kW	140 m/s	CBN/diamond/ carbon	B axis
QUICKPOINT 3000	max. dia. 150 mm	max. 500 mm	max. 500 mm	24 kW	140 m/s	CBN/diamond/ carbon	B axis
QUICKPOINT Blank	dia. 3 – 25.4 mm	Bar stock max. 400 mm	max. 400 mm	24 kW	140 m/s	Diamond	B axis
JUMINIMAT	Tap: dia. 1 – 8 mm Thread milling cutter: max.12.7 mm	30 – 105 mm	max. 80 mm	3 kW	70 m/s	Corundum/CBN/ diamond	-53°/+105°
FLUTEMAT	dia. 2 – 20 mm	man. loading: max. 740 mm autom. loading: 50 – 350 mm	max. 700 mm	11 kW	80 m/s	Corundum/CBN/ diamond	-53°/+91°
TAPOMAT 1000	dia. 0.8 – 8 mm	30 – 105 mm	max. 50 mm	5 kW	32 m/s	Corundum	-7°/+10°
TAPOMAT 3000	dia. 3 – 32 mm (52 mm)	45 – 280 mm	Thread only: max. 180 mm, Thread + chamfer: max. 150 mm	12 kW	50 m/s	Corundum	-5°/+5°
RELIEF EXPERT	dia. 1 – 80 m	20 – 400 mm	160 mm (measurement length)	–	–	–	–
DRILLMAT S	dia. 2 – 10 mm	man. loading: max. 550 mm, autom. loading: 40 – 305 mm	max. 470 mm	11 kW	80 m/s	Corundum/ diamond	-53°/+91°
DRILLMAT L	dia. 5 – 20 mm	man. loading: max. 500 mm, autom. loading: 63 – 305 mm	max. 420 mm	20 kW	80 m/s	Corundum/ diamond	-53°/+91°
JUMAXIMAT	dia. 6 – 42 mm	man. loading without face grinding: max. 700 mm	max. 550 mm	20 kW	80 m/s	Corundum/CBN/ diamond	-53°/+91°
		man. loading with face grinding: max. 400 mm,	max. 350 mm				
JUSTAR	dia. 2 – 25.4 mm (51 mm)	35 – 430 mm	35 – 430 mm	20 kW	140 m/s	Corundum/CBN/ diamond	-115°+103°
JUMAXIMAT IV	dia. 20 – 203 mm	max. 200 mm	max. 200 mm (package width)	20 KW	80 m/s	Corundum/ diamond	-53°/+91°
NAJ VII	dia. 100 – 550 mm	max. 200 mm	max. 200 mm (package width)	30 kW	80 m/s	Corundum	–
NAJ VIIa	dia. 210 – 710 mm	max. 200 mm	max. 200 mm	30 kW	80 m/s	Corundum	–

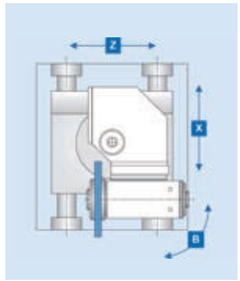
Number of grinding wheels	Diameter grinding wheel	Bore diameter, grinding wheel	Width per grinding wheel	Thread pitch	Material grinding	Axes	Grinding spindle variants
2	400 – 290 mm	127 mm	max. 63 mm	–	HSS/carbide	4	B1, B4, B12, B13, X1
3	400 – 290 mm	–	max. 63 mm	–	HSS/carbide	4	B1, B1i, B4, B4i, B12, B12i, B13
2	max. 350 mm	127 mm	max. 50 mm	–	HSS/carbide	4	/10, /20, /50
3	400 – 350 mm	127 mm	max. 60 mm	–	HSS/carbide	4	/10, /20, /40, /50, /60
3	max. 350 mm	127 mm	max. 60 mm	–	HSS/carbide	4	/50, /60
4	90 mm (optional: 100 mm)	32 mm	max. 10 mm	–	HSS/carbide	5	–
2	200 – 120 mm	50.8 mm	max. 16 mm	–	HSS/carbide	5	–
2	250 – 200 mm	76/120 mm	6 – 15 mm	0.2 – 1.5 mm	HSS/carbide	3	–
2	400 – 300 mm	160 mm	Thread only: max. 28 mm, Chamfer only: max. 40 mm	0.2 – 4 mm	HSS/carbide	5	–
–	–	–	–	from 0.25 mm	–	2	–
4	200 – 120 mm	50.8 mm	max. 90 mm (wheel package)	–	HSS (carbide only with external dressing)	6 (and 2 for dressing)	–
4	250 – 175 mm	76 mm	max. 120 mm (wheel package)	–	HSS (carbide only with external dressing)	6	–
4	250 – 175 mm	76 mm	max. 25 mm (max. 120 mm wheel package)	–	HSS/carbide	5	–
30	70 – 250 mm	32 mm dia./ 50.8 mm dia./ 76 mm dia.	1 – 25 mm	Depends on the diamond roller with multiple tooth	HSS/carbide	10 / 2 robots	–
4	250 – 175 mm	76 mm	max. 25 mm	–	HSS	5 (and 2 for dressing)	–
2	400 – 350 mm	127 mm	max. 32 mm	–	HSS	3 (and 3 for dressing)	–
2	max. 350 mm	127 mm	max. 32 mm	–	HSS	3 (and 3 for dressing)	/10, /10i, /17, /20, /50

WHEELHEAD VERSIONS

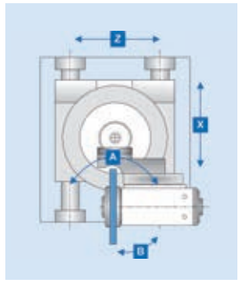
QUICKPOINT 1000 / 3000



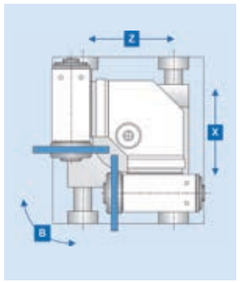
Variant 10



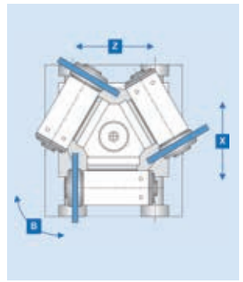
Variant 20



Variant 3000/40

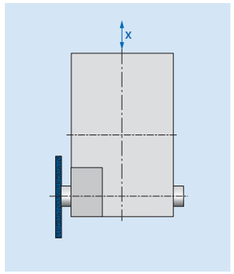


Variant 50

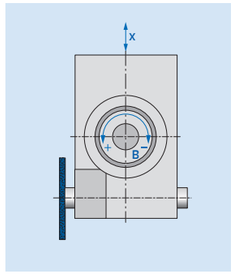


Variant 3000/60

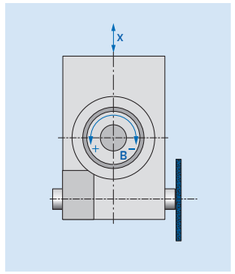
Lean Selection speed



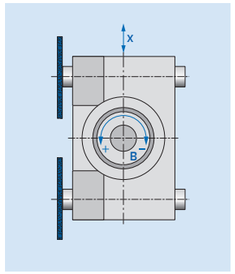
Variant X1



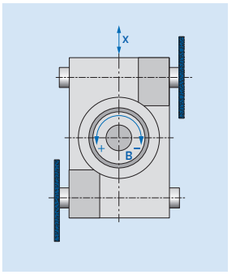
Variant B1



Variant B4

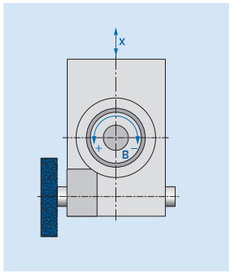


Variant B12

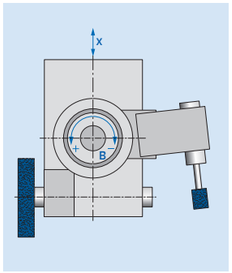


Variant B13

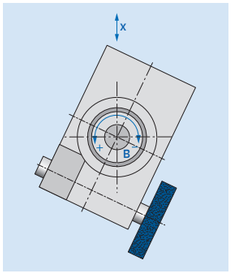
Lean Selection allround



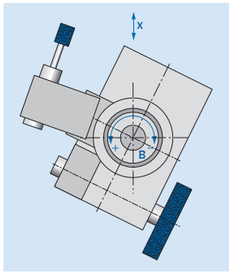
Variant B1



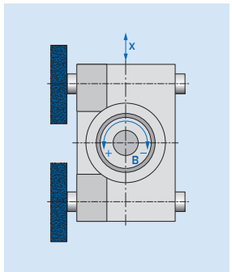
Variant B1i



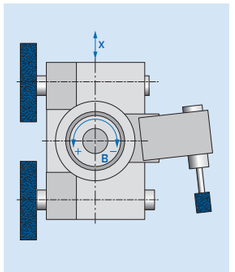
Variant B4



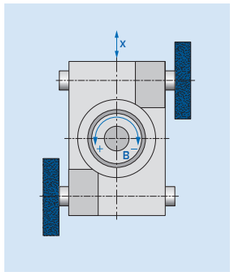
Variant B4i



Variant B12



Variant B12i



Variant B13

EUROPE

Erwin Junker
Maschinenfabrik GmbH

Junkerstraße 2
77787 Nordrach
Germany

info@junker.de
+49 7838 84-0

Erwin Junker
Grinding Technology a.s.
Plant Holice
Pardubická 332
534 01 Holice
Czech Republic

info@junker.cz
+420 466 003-111

Erwin Junker
Grinding Technology a.s.
Russia Branch Office
Prospekt Tolbukhina 17/65
150000 Yaroslavl
Russian Federation

info@junker-russia.ru
+7 4852 206121

Erwin Junker
Makina Sanayi Ticaret LTD. ŞTİ.
Esentepe Mah.
Milangaz Cad. No:75
Monumento
Kartal/Istanbul
Turkey

info@junker-turkey.com.tr
+90 216 5042811

LTA Lufttechnik GmbH

Junkerstraße 2
77787 Nordrach
Germany

info@lta-filter.com
+49 7838 84-245
www.lta-filter.com

LTA Industrial Air Cleaning
Systems s.r.o.
Lidická 66
252 68 Středokluky
Czech Republic

info@lta-filter.com
+420 233 012-113
www.lta-filter.com

AMERICA

Erwin Junker
Machinery, Inc.
2541 Technology Drive, #410
Elgin, IL 60124
USA

info@junker-usa.com
+1 847 4880406

Erwin Junker
de Mexico, S. de R.L. de C.V.
Blvd. Bernardo Quintana #7001
Torre 2, #1203
Centro Sur Querétaro
Qro., C.P. 76079
Mexico

info@junker.com.mx
+52 442 1995111

Erwin Junker
Máquinas Ltda.
Estrada do Capivari 751
Cep 09838-900
S.B. do Campo, São Paulo
Brazil

info@junker-group.com.br
+55 11 4153-9645
+55 11 4397-6008

LTA Industrial Air Cleaning
Systems, Inc.
2541 Technology Drive, #410
Elgin, IL 60124
USA

info@lta-filter.com
+1 847 4880406
www.lta-filter.com

ZEMA Zselics Ltda.

Estrada do Capivari 741
Cep 09838-900
S.B. do Campo, São Paulo
Brazil

zema@zema.com.br
+55 11 4397-6000
www.zema.com.br

ASIA

Erwin Junker
Maschinenfabrik GmbH
Shanghai Representative Office
Unit 1003, Floor 10
Tower II Kerry Ever Bright City
Enterprise Center
No. 209 Gonghe Road
200070 Shanghai
P.R. China

info@junker.com.cn
+86 21 61438528

Erwin Junker Machinery
(Shanghai) Co., Ltd.

Section D, Floor 6, Building 16#
No.69 Xi Ya Road
Waigaoqiao Free Trade Zone
200131 Shanghai
P.R. China

services@junker.com.cn
+86 2150 463525

Erwin Junker
Maschinenfabrik GmbH
India Branch Office
Office No. 805, Deron Heights
Baner Road,
Pune 411 045
India

info@junker.in
+91 20 27293403

www.junker-group.com