

Lean Selection cam

HIGH-PERFORMANCE NON-CIRCULAR GRINDING



ECONOMICAL AND PRECISE CAMSHAFT GRINDING



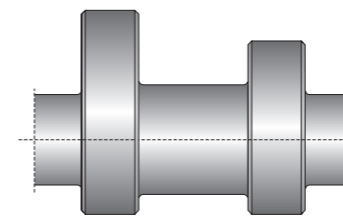
LEAN SELECTION – A FULL RANGE OF STANDARD MACHINES

The efficient universal grinding machines of the JUNKER Lean Selection are ideal for manufacturing single parts and small series. This means they're perfect for contractors, small suppliers and medium-sized businesses. They can also be used for mass production. The Lean Selection grinding machines are user-friendly and built to JUNKER's high standards of product quality and precision.

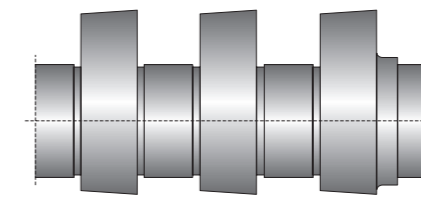
Part geometries

The Lean Selection cam can be used to grind the following part geometries:

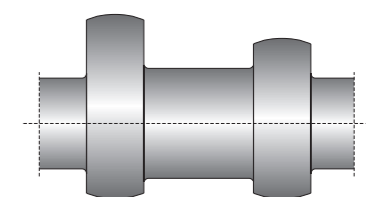
- cylindrical
- concave/convex
- with/without chamfers
- with/without radii
- with tangent
- polygonal/elliptical



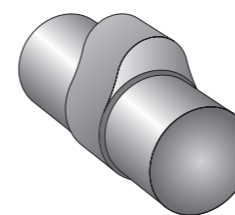
Cylindrical cam profile, with/without chamfer, with/without radius



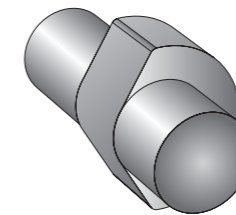
Cam profile with tapered geometry



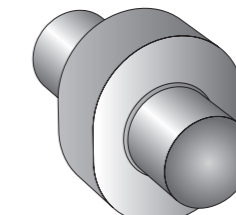
Cam profile with convex geometry



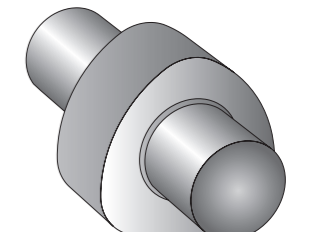
Cam profile with concave geometry



Cam profile with tangent



Elliptical cam profile



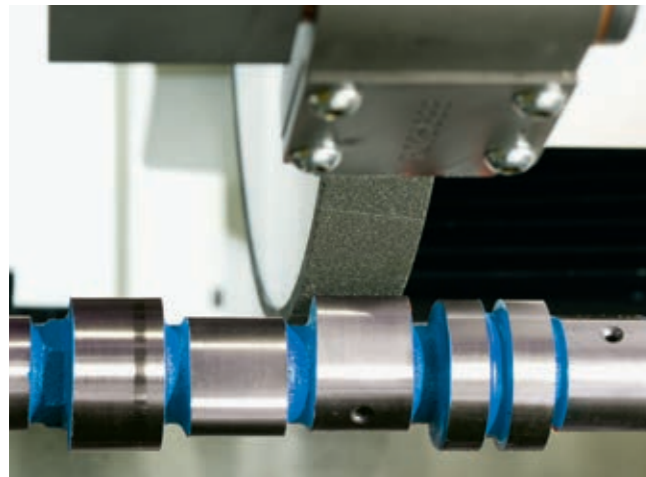
Polygonal cam profile

The Lean Selection cam is an economical and flexible machine concept for grinding camshafts in any lot size. The wheelhead can be fitted with up to two high-capacity grinding spindles, and the swiveling B-axis allows parts to be rough and finish-ground in a single clamping set-up. The Lean Selection cam CBN non-cylindrical grinding machine features userfriendly controls, minimal processing times and a high rate of availability.

Highlights of the Lean Selection cam

- Grinding with CBN grinding wheels
- Circumferential speed of 140 m/s
- Wheelhead with up to two high-capacity grinding spindles
- Fast changeovers
- High rate of availability
- Minimal auxiliary times
- Easy to operate
- Wide range of services

SOPHISTICATED GRINDING TECHNOLOGY



CBN grinding wheel grinding the cam shape

EFFICIENT CAMSHAFT PRODUCTION

- Performs rough and finish grinding in a single clamping set-up, which saves time and increases accuracy
- Design targeted for noncircular grinding, significantly boosting productivity
- High rate of utilization with CBN abrasive and oil coolant (emulsion optional)
- Proven CBN grinding technology with cutting speeds up to 140 m/s and high feed rates, resulting in fast cycle times
- JUNKER 3-point mounting interface for fast changeover and excellent grinding wheel concentricity
- High-frequency, high performance grinding spindle (42 kW drive capacity) with extremely low-maintenance thanks to lifetime lubrication and air seal
- Ergonomical machine concept with the option of manual loading
- Sophisticated, high-tech, user-friendly CNC controls

JUNKER STANDARD BORE GUARANTEES MAXIMAL ACCURACY AND EXTREMELY FAST TOOLING TIMES

The JUNKER standard bore is featured on the wheelhead and work-head and reduces the machine's tooling times.

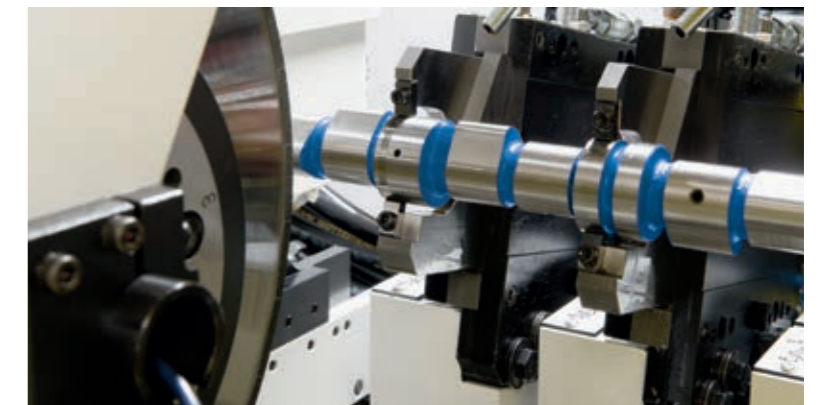
- Fast changeover and tooling times (under 2 min. for centers, under 20 min. for grinding wheels)
- Easy to mount
- Optimal centering
- Axially mounted with screwed-on grinding wheel flange, allowing changeover in rotational direction
- Concentricity 2/1000 mm



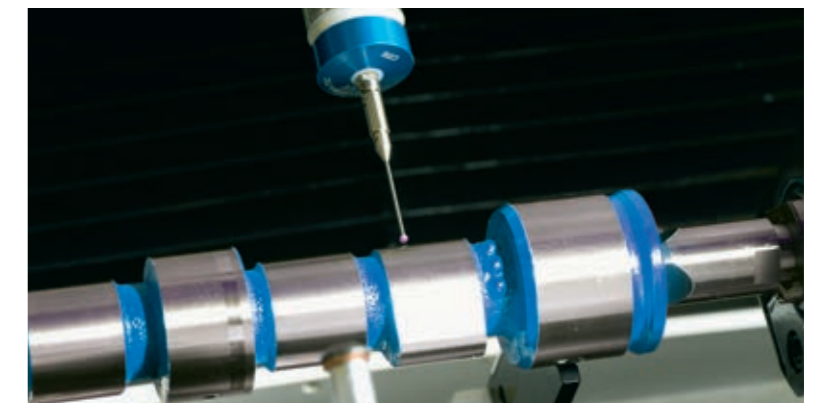
JUNKER standard bore: fast, simple, flexible

OPTIONS AND ACCESSORIES

- Approach sensors/wheel balancing systems
- Z-axis glass scale
- Length positioning system
- Automatic steady rests
- Collet chuck
- Coolant plant
- Automation system
- Teleservice connection
- Air filter unit
- Fire protection and extinguisher
- Additional options and accessories available upon request



Accessories: Trailing 3-point steady rest



Accessories: Length positioning unit



Grinding examples



EASY TO OPERATE

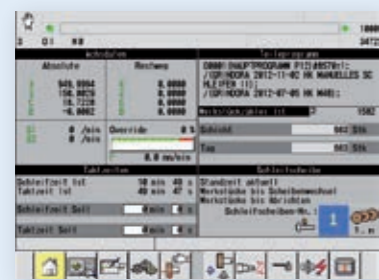
The machine comes standard with the JUWOP/U programming system. Alternatively, the machine can be programmed directly by entering DIN/ISO code. The machine can be programmed either directly on the controls via a 15-inch touchscreen or externally on a PC or laptop.

JUWOP/U – PROGRAMMING FOR CAM GEOMETRIES

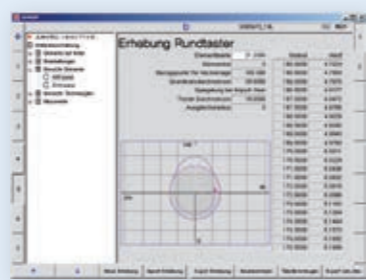
JUWOP/U is a programming system for non-cylindrical grinding of camshafts. It gives the user a practical method of programming with pre-defined geometrical elements using elevation tables or geometrical data. The program is created automatically from the values entered. The values are also automatically checked for completeness and plausibility. Part data may be saved locally or on a server.

Powerful CNC controls

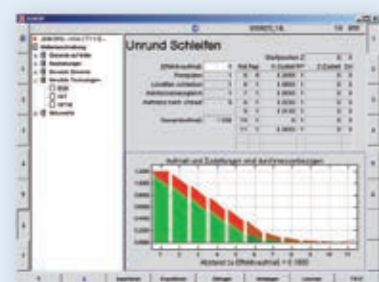
- Easy to operate
- Ergonomically designed input screens
- Graphically assisted parameter input
- Auxiliary function during data entry
- Plausibility check for entered parameters
- Multi-lingual operating guidance



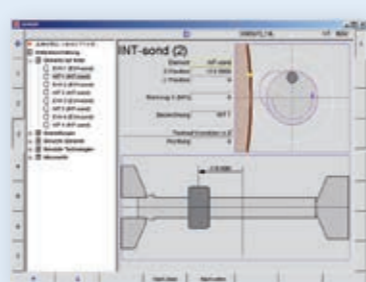
Starting screen: Basic configuration of the user interface with all relevant data in a single view



Element definition: Creating and managing geometries from imported or created elevation tables in JUWOP/U



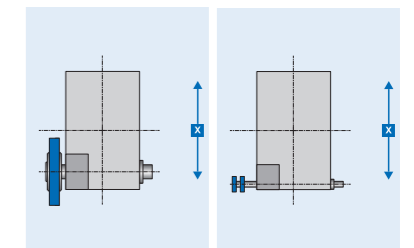
Equipment definition: Controlling infeed in X and Z, speed profile, cooling equipment and machine functions



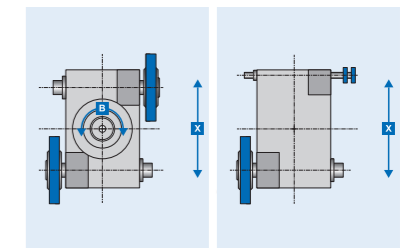
Shaft description: Arranging elements on the shaft according to position and type

TECHNICAL SPECIFICATIONS

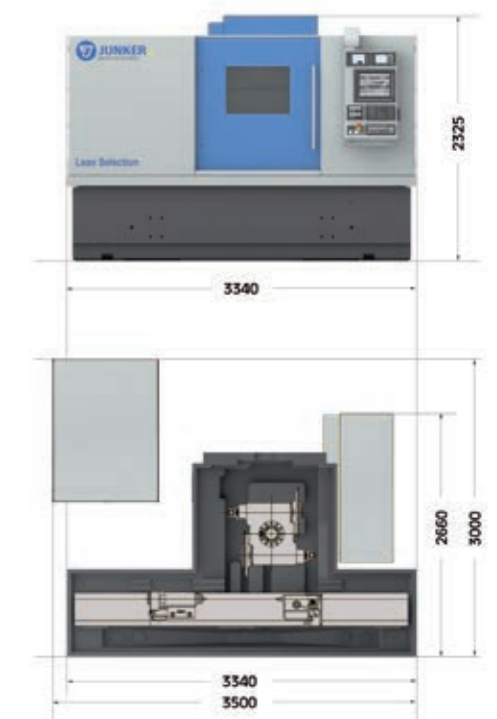
Lean Selection cam	
Workpiece specifications	<ul style="list-style-type: none"> • Workpiece diameter: 290 mm • Grinding length: 500 mm • Clamping length: 500 mm • Center height: 150 mm • Workpiece weight: max. 15 kg
Workhead	<ul style="list-style-type: none"> • Speed range: 0 – 500 rpm • C-axis: Resolution 0.0001° • Can be used with various clamping tools: workpiece carrier, clamping chuck • Spindle torque: 20 Nm
Tailstock	<ul style="list-style-type: none"> • Sleeve movement: opens through hydraulic actuation • Mounting bore: MK
OD grinding spindle	<ul style="list-style-type: none"> • Drive capacity: 42 kW • Grinding wheel diameter: 400 / 350 mm • Circumferential speed: 140 m/s • Mounting interface: 3-point system
Concave grinding spindle	<ul style="list-style-type: none"> • Drive capacity: 12 kW • Grinding wheel diameter: 80 –100 mm • Grinding wheel width: max. 30 mm • Circumferential speed: 140 m/s • Mounting interface: 3-point system
Infeed axis (X-axis)	<ul style="list-style-type: none"> • Max. travel: 350 mm • Speed: 0.001 – 10 m/min • Resolution: 0.0001 mm • Direct travel measuring system with glass scale
Longitudinal axis (Z-axis)	<ul style="list-style-type: none"> • Max. travel: 350 mm • Speed: 0.001 – 10 m/min • Resolution: 0.0001 mm • Direct travel measuring system with glass scale
Wheelhead (B-axis)	<ul style="list-style-type: none"> • Swivelling range: 210° (180° ± 15°) • B-axis resolution: 0,0001° • With one or two spindles (See wheelhead versions)
Connected load	20 kVA
Weight	12.000 kg (without coolant plant)
Dimensions	L x B x H: 3.340 x 2.660 x 2.325 mm (without coolant plant)



Version X1 OD Version X1c Concave



Version B13 OD/ OD Version B13c OD/Concave



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