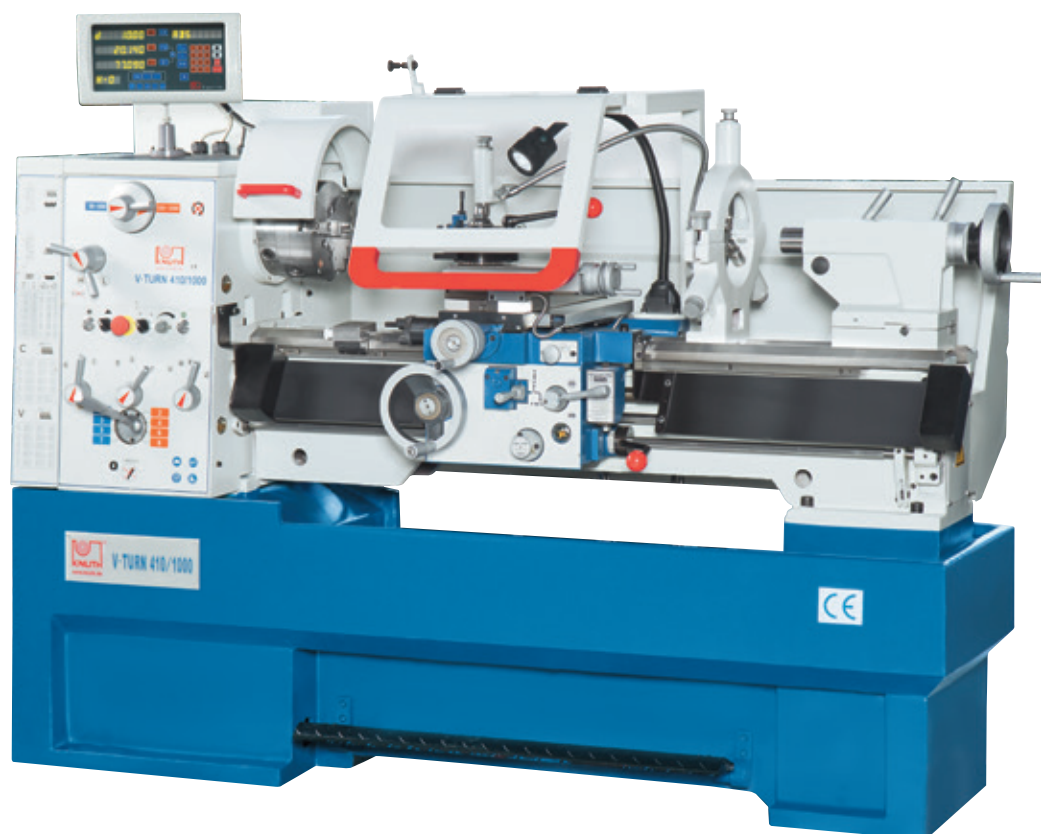

V-Turn 410/1000

PRECISION LATHE

Page	2. Highlights
Page	3. Machine construction and feed system
Page	3. Main spindle drive
Page	4. Toolpost
Page	4. Tailstock and auxiliary systems
Page	5. 3 Axis Digital Read Out - X.pos 3.1 VC
Page	6. 3 Axis Digital Read Out - X.pos 3.1 functions
Page	7. Technical Data
Page	8. Standard Accessories
Page	9. Recommended Accessories
Page	10. Optional Accessories





V-Turn 410/1000

Precision lathe

Part. Nr. 300820

CONSTANT CUTTING SPEED

HIGH SPINDLE SPEED AND MOTOR POWER

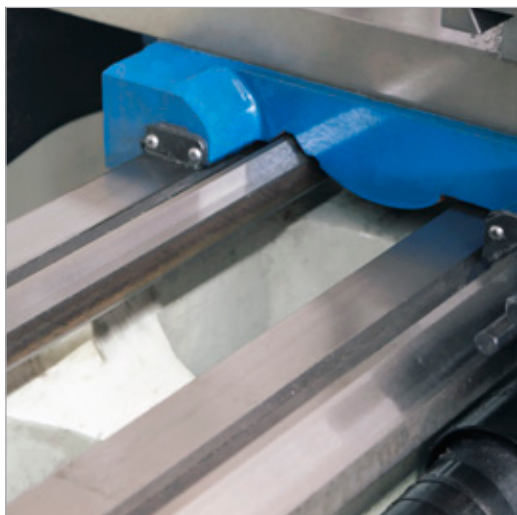
EXTENSIVE STANDARD EQUIPMENT

WIDE RANGE OF APPLICATIONS

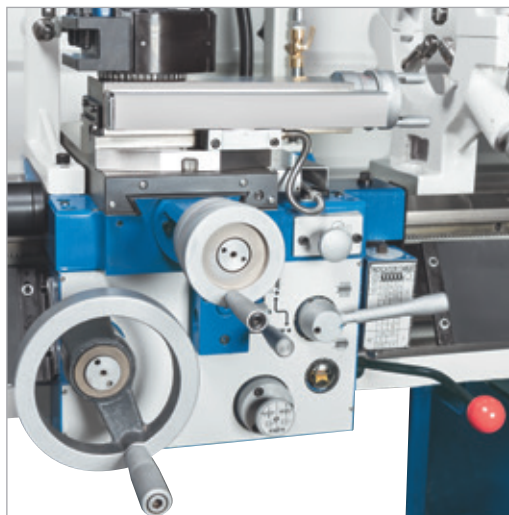
V-turn is a versatile model designed to cover a wide range of applications. Equipped with an inverter and a high power spindle motor, this lathe can easily reach 3.000 rpm. It also has a built in feature which allow you to have constant cutting speed during face turning (the spindle speed automatically adjusts based on the turning diameter).

Main Features

Machine construction and feed system



- Heavy ribbed heat treated machine bed and a massive one-piece cast-iron frame to provide a solid basis for this machine.
- Gap bed lathe offering the possibility to turn larger diameter workpiece by removing part of the bridge.
- Wide, hardened and ground guideways to ensure superior turning results.
- Solid leadscrew with protection against chips and cooling liquids to increase the life of the machine and to prevent injuries.

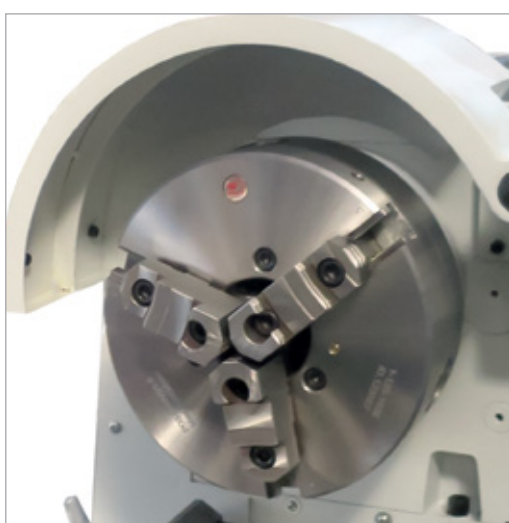


- Clearly arranged, user friendly feed handwheels and levers.
- High quality cross slide leadscrew for precise operations.
- Swiveling top slide for easy taper turning.
- Micrometric carriage stop.
- Standard equipped with thread dial.

Main spindle drive



- Headstock gears and shafts are hardened and ground for quiet operation.
- High headstock power motor (among the highest from its class) ensures powerful machining.
- Machine equipped with inverter reducing to only two speed steps with infinitely variable speed adjustment and constant cutting speed.



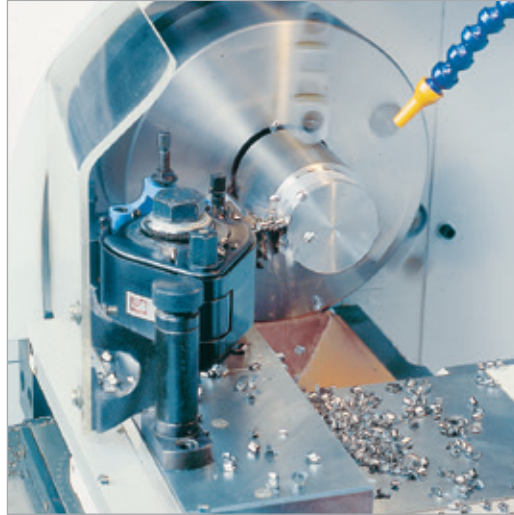
- Large spindle bearings ensure excellent concentricity.
- Spindle cover for operator protection with interlock system (machine stops if the cover is lifted).
- Machine comes standard with 4-jaw chuck (1.270 rpm maximum), 3-jaw chuck is optional.

Main Features

Toolpost



- Machine comes equipped as standard with high quality German type quick change tool holder to easily switch the tools with repeat accuracy of 0,01 mm
- Tool holders clamp the knife by using thumb screws.
- Toolpost swivels with angle scale offering a larger range of working possibilities



- Equipped with safety guard with interlock to protect the operator against chips and coolant splashing (if the guard is opened the machine stops)

Tailstock and auxiliary systems



- Possibility of tailstock repositioning for taper turning adjustable by handwheel with 0,02 mm scale.
- MT4 bore type with large quill travel.



- Machine comes standard with cooling system;
- Model is equipped with integrated central lubrication at the support for low maintenance;
- Work light provided through very rugged halogen lamp with protection against water, oil and dust;

Main Features

3 Axis Digital Read Out - X.pos 3.1 VC



High Durability Switch Membrane

- A high quality polyester film is used as the key membrane of X.pos Series, offering excellent chemical resistance to most commonly used industry solvent and excellent switch life.

Adaptable to poor electrical source

- Low power consumption approach is used in the system design for very wide voltage supply range operation; linear power supply can still be used without serious heat generation, linear power supply offer excellent noise immunity and proven highest reliability.

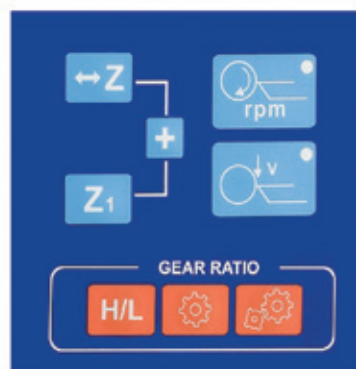
Robust Aluminum Casing

- The front plate of the X.pos is built by an 1.5 mm thick electroplated steel built by pressurized injection forming aluminum case to provide high quality robust casing, electrostatic powder spray paint is used to provide hard, scrape resistance, long lasting surface finish.

Totally Sealed Enclosure

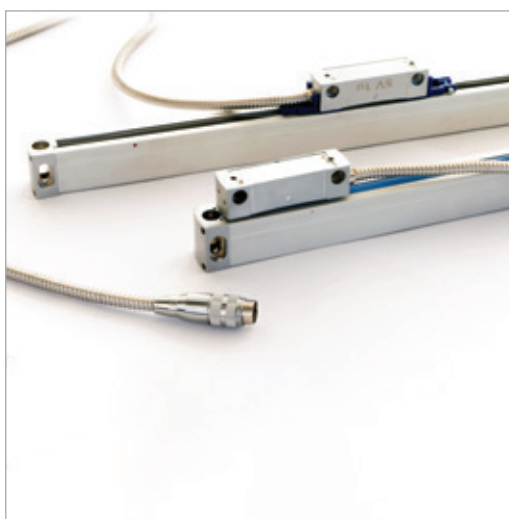
- The enclosure is totally sealed to protect the electronic circuitry against the hazardous environment is shop floor, such as dust, evaporated coolant fume from EDM machining and etc.

To avoid overheat of the PCB caused by totally sealed enclosure, metal front plate & panel is used to quickly dissipate the heat generated by the electronic circuitry and an ultra-low temperature rise transformer is used.



For constant speed lathes – VC models

- Gear ration selection function: Provides a maximum of 50 set of gear ration parameters memory that virtually covers all type of manual lathes in the market
- Direct spindle rotation / Linear surface cutting speed display: X.pos is equipped with an oil proof hall effect sensor for accurate spindle speed measurement offering direct reading of spindle machining rotation speed and tool's linear surface cutting speed
- Z/Z1 axes summing: Provides the axes summing function for the Z and Z1 axes



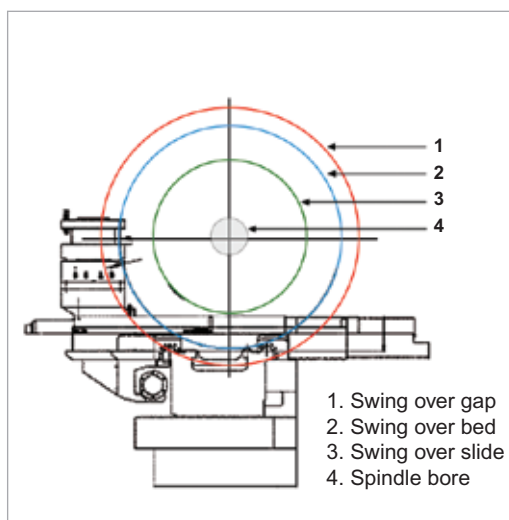
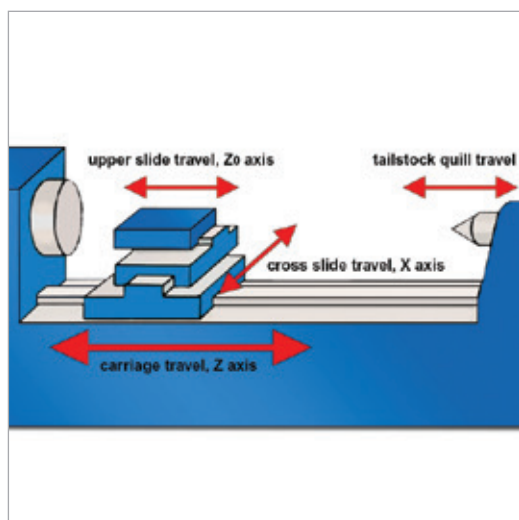
- Optical Scales:** 5 micron resolution (0.005 mm) with aluminum outside cover for protection anti oil and coolant.

Main Features

3 Axis Digital Read Out - X.pos 3.1 functions

Function	X.pos 3.1 VC
Number of axis controller	3
5 micron resolution for each axis	Yes
Radius / Diameter for each axis	Yes
Clear Zero	Yes
Centering (1/2)	Yes
Metric / inches Display (mm/in)	Yes
Absolute / Incremental (ABS/INC)	Yes
Reference Memory (REF)	Yes

Technical Data



Constant Cutting Speed:

during face turning the spindle speed automatically adjusts based on the turning diameter

- $\varnothing = 100$ | rpm: 541;
- $\varnothing = 80$ | rpm: 1.479;
- $\varnothing = 20$ | rpm: 2.007.

Technical Data

Working area	
Center width	1.000 mm
Center height	205 mm
Turning diameter over bed	380 mm
Turning diameter over gap bridge	580 mm
Turning diameter over support	255 mm
Gap bridge length	250 mm
Bed width	250 mm
range of top slide Swing	± 45 °
Travel Z1-axis	140 mm
Travels	
Travel X-axis	210 mm
Headstock	
Speed range, high	550 - 3.000 rpm
Speed range, low	30 - 550 rpm
Spindle bore	52 mm
Spindle mount	Camlock D1-6
Spindle taper	MT 6
Feed	
Feed X-axis	0,025 - 0,85 mm/R
Feed Z-axis	0,05 - 1,7 mm/R
Tapping	
Tapping, metric	(39) 0,2-14 mm
Tapping, diametric	(21) 8-44 DP
Tapping, module	(18) 0,3 - 3,5 mm
Tapping, whitworth	(45) 2-72 TPI
Tailstock	
Tailstock quill diameter	50 mm
Tailstock taper	MT 4
Tailstock quill stroke	120 mm
Tailstock traverse adjustment	± 13 mm / ± 0.5"
Drive capacity	
Motor rating main drive	5,5 kW
Supply voltage	400 V
Measures and weights	
Overall dimensions (length x width x height)	1,94x1,06x1,36 m
Weight	1.550 kg
Part No.	300820

Standard Accessories

3 axis position indicator



4-jaw face plate chuck



- size: Ø250 mm

Face plate



- size: Ø350 mm

Change Gears



Quick change tools post



- including 1 piece tool holder

Coolant system



Steady rest



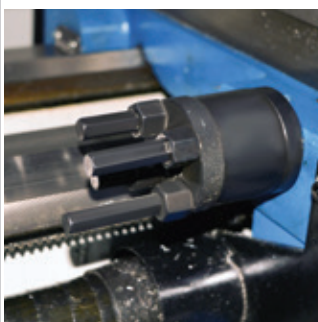
Follow rest



Turret stop



Micrometric stop



Chip tray



Slash guard



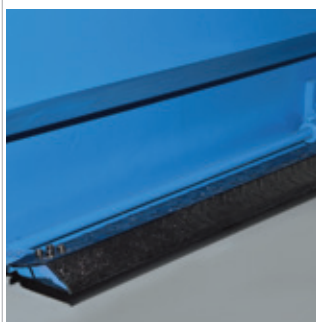
Toolspost guard



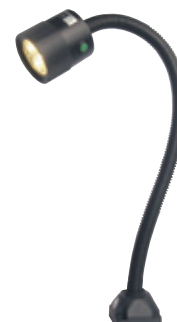
Chuck guard



Foot brake pedal



Halogen light



Standard Accessories

Thread gauge



Operation tools

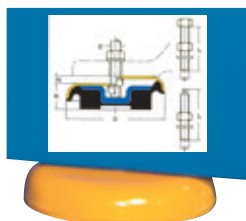


Operation manual



Recommended Accessories

Pivoted mounts LK 33 Art Nr. 103321



- Damper elements absorb shock and vibration
- Vibration-free machine operation
- Set screws allow for easy machine alignment

Accessory set for MT4 – 8 pieces Art Nr. 104594



- Including keyless drill chuck and drill chuck arbors
- 1 set in wooden case which contains:
 - Reducing sleeves: MT 4 / MT 3, MT 4 / MT 2, MT 4 / MT 1
 - Extension Sleeve: MT 4 / MT 5
 - Tool holder bits: MT 4 / B 18, MT 4 / B 16
 - Keyless drill chucks: Ø3-16 mm / B 18, Ø1-13 mm / B 16

3-jaw chuck steel Art Nr. 146372



- Speed: 4.000 rpm
- Diameter: Ø200 mm
- Mounts: Camlock D1-6
- Chuck bore: Ø55 mm
- Weight: 19 kg

Live center for MT4 Art Nr. 106755



- Precision needle bearing
- Hardened and ground point 60°
- Morse taper: MT 4
- Length: 190 mm
- Center diameter: Ø30 mm
- Body: 57 mm

Tool holder WBD 25×120 Art Nr. 103291



- Fits all standard German quick-change tool holder
- Tool holder head and tool holder feature profile-ground gearing
- Holder height adjustment with a thumb screw

Soft jaw pads on demand



- One set of soft jaw pads

Coolant concentrate 5 Liters Art Nr. 103184



- Improved chip flow, longer tool service life and better cut profile
- For sawing, drilling, milling, turning of steel, cast-iron, stainless steel, non-ferrous and light metals
- Dilute with water 1:20

Optional Accessories

Power Worker Metal Cutter



Art Nr. 123040

Live centers set for MT4



Art Nr. 106790

Quick-Set spindle bore stop 6 46-58 mm



Art Nr. 103020

Hard jaw pads



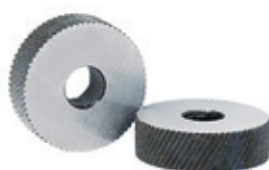
on demand

Knurl Holder



Art Nr. 108520

Knurl Set, angles



Art Nr. 108521

4-Jaw Lathe Chuck Steel 200 mm



Art Nr. 146472

Clamped Turning Tool Set 25 mm



Art Nr. 108670

Indexable Insert Set 25 mm, 30 pcs.



Art Nr. 108675

Turning Tool Set 8 pcs., 20 mm



Art Nr. 108700

Clamped Turning Tool Set 20 mm



Art Nr. 108773

Replacem. 12/16/20 mm 5pc / Clamping Turning Tool



Art Nr. 108775

Optional Accessories

Clamped Turning Tool Set 20 mm, 9-pc



Art Nr. 108778

Indexable Insert Set 20 mm, 30-pc



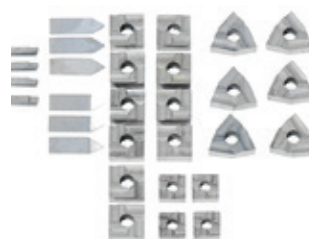
Art Nr. 108779

Clamped Turning Tool Set 16/20/24 mm, 9-pc



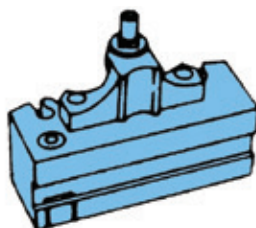
Art Nr. 108780

Indexable Insert Set 16/20/24 mm, 30-pc



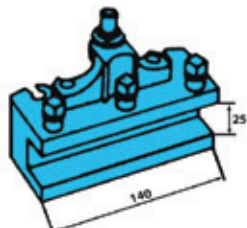
Art. Nr. 108782

Cut-off insert holder WBA-A2a



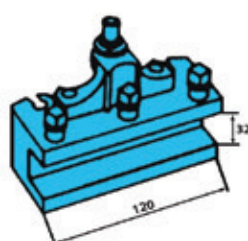
Art Nr. 103297

Tool Holder WBD 25x140



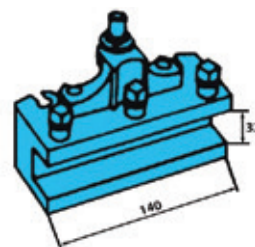
Art Nr. 103292

Tool Holder WBD 32x120



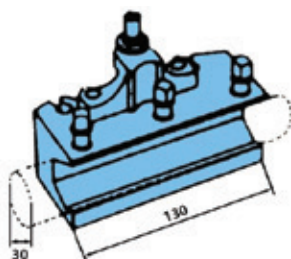
Art Nr. 103293

Tool Holder WBD 32x140



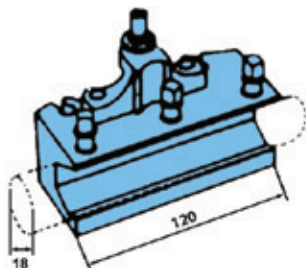
Art Nr. 103294

Tool Holder WBH 30x130



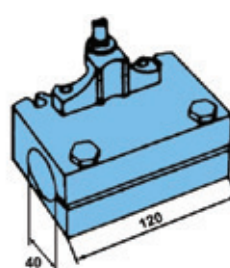
Art Nr. 103295

Tool Holder WBH 18x120



Art Nr. 103298

Tool Holder WBJ 40x120



Art Nr. 103296

Measuring Tool Set M5



Art Nr. 108344

Optional Accessories

Hydraulic measuring tripod



Art Nr. 108810

Digital Feele Gauge +/-0.5mm



Art Nr. 127410



KNUTH Werkzeugmaschinen GmbH

Schmalenbrook 14

D-24647 Wasbek / Neumünster

Tel. +49 (0)4321 - 609-0

Fax +49 (0)4321 - 68900

E-Mail info@knuth.de

www.knuth.de