

WEISSER PORTFOLIO

MULTI-FUNCTIONAL VERTICAL
& HORIZONTAL MACHINING



MACHINE PORTFOLIO

PICK-UP – CUSTOMIZED MACHINES

WORKPIECE
DIAMETER

150

VERTICAL
SPINDLE



WORKPIECE
DIAMETER

360

VERTICAL
SPINDLE

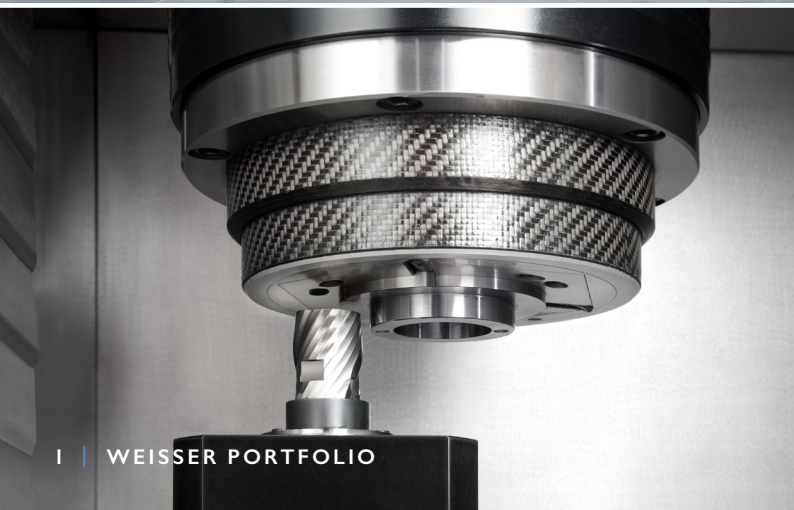


UNIVERTOR AC

- Single or double spindle version
- WEISSER Pick-up concept
- Parts handling parallel to machining with integrated turning station for short loading and unloading times
- 4-axis complete machining (synchronous)

UNIVERTOR AM

- Single or double spindle version
- WEISSER Pick-up concept
- Parts handling parallel to machining with integrated turning station for short loading and unloading times
- 4-axis complete machining (synchronous)



TRANSFER SYSTEM – CUSTOMIZED MACHINES

WORKPIECE
DIAMETER

450

VERTICAL
SPINDLE



WORKPIECE
DIAMETER

650

VERTICAL
SPINDLE



UNIVERTOR AM-T

- Double spindle version
- WEISSER Pick-up concept
- Multi-functional slide for diverse processing options
- High workpiece change accuracy through transfer system

UNIVERTOR AH-T

- Double spindle version
- WEISSER Pick-up concept
- Multi-functional slide for diverse processing options
- High workpiece change accuracy through transfer system



MACHINE PORTFOLIO

HORIZONTAL - CUSTOMIZED MACHINES

WORKPIECE
DIAMETER

150

WORKPIECE
DIAMETER

160

HORIZONTAL
SPINDLE

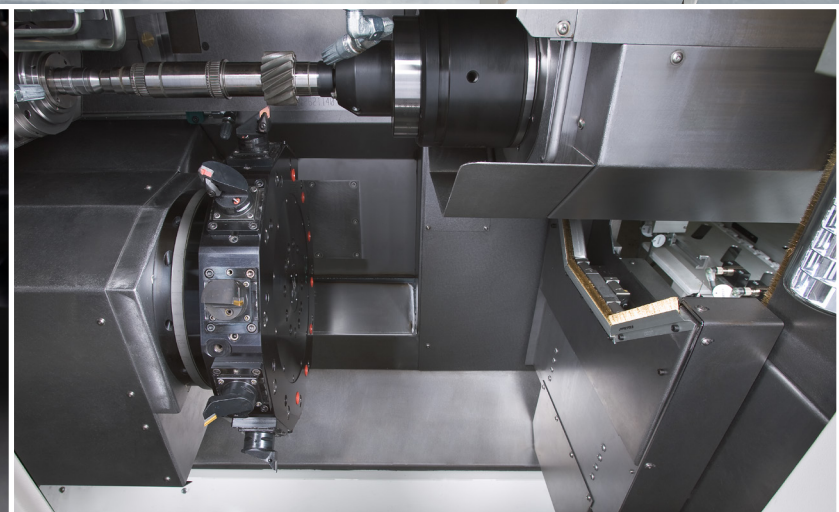


UNIVERTOR AE

- Centric clamping for the process-safe fixation of the raw parts
- Overturning, centering, cutting to length, reboring and milling of shaft ends with up to 24 tools
- Deep drilling up to 20xD

UNIVERTOR AS - PICK-UP CONCEPT

- Single spindle version
- WEISSER Pick-up concept
- Complete machining for high machining and quality requirements



WORKPIECE
DIAMETER

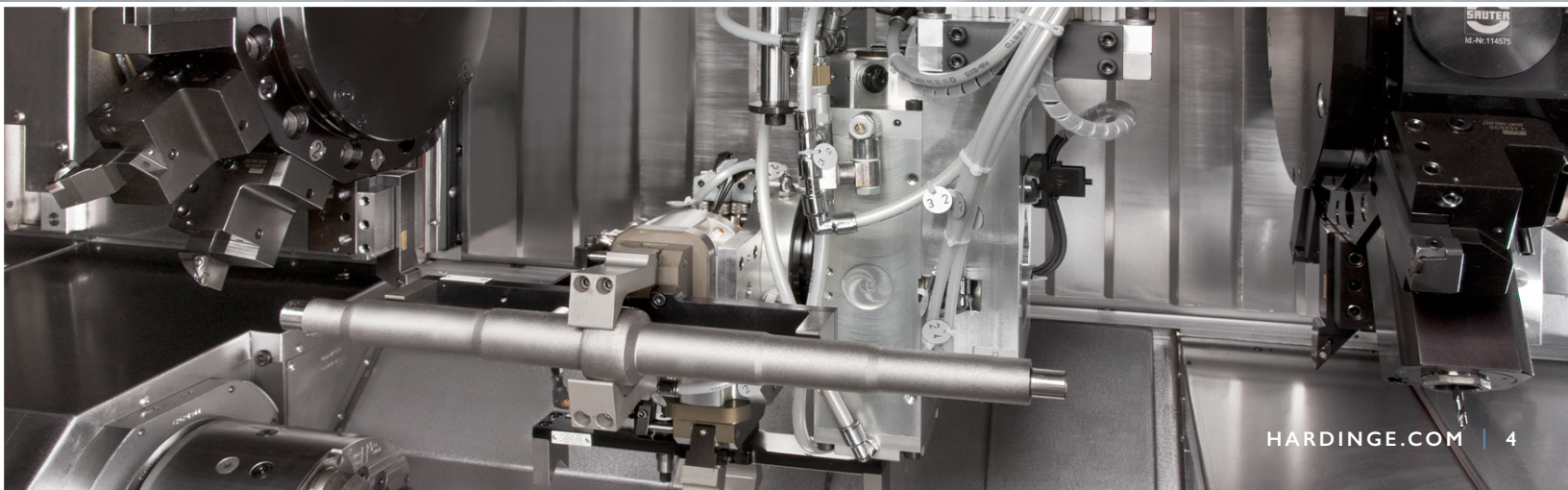
320

HORIZONTAL
SPINDLE



UNIVERTOR AS - PORTAL LOADING

- Single or double spindle version
- Portal loading
- Highly productive simultaneous machining
- Machining of workpieces up to 800 mm in length



MACHINE PORTFOLIO

VERTICAL - CUSTOMIZED MACHINES

WORKPIECE
DIAMETER

450

VERTICAL
SPINDLE



VERTOR C / VERTOR M

- Single or double spindle version
- Machining of chuck turned parts or shafts with tailstock and steady rest support
- 4/5-axis version for reduced machining times



STANDARD MACHINES

WORKPIECE DIAMETER
350
VERTICAL SPINDLE

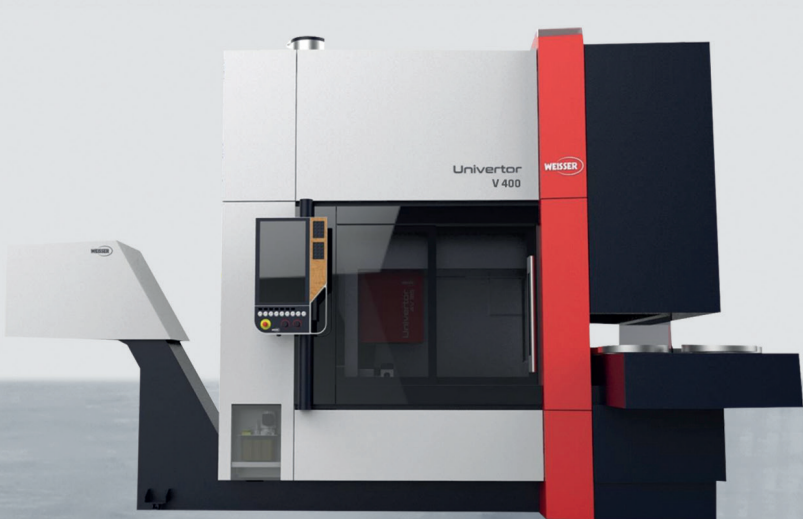

WORKPIECE DIAMETER
350
HORIZONTAL SPINDLE


UNIVERTOR V400

- Single spindle version
- Proven quality through 100% further development of the proven AM series
- Faster throughput times due to modular construction system
- Large working area and long traverse paths

ARTERY

- Single or double spindle version
- Parallel turning or turning and milling
- Large working area with compact footprint
- Vibration-optimized design



TECHNOLOGY PORTFOLIO

4-AXES-MACHINING

Highly productive simultaneous machining in one machine with two powerful disk turrets (4-axes). Intelligent technology processes and the combination of different machining steps offer high savings potential. Working with two tools simultaneously shortens the machining times of the workpiece and thus reduces the cost per part.

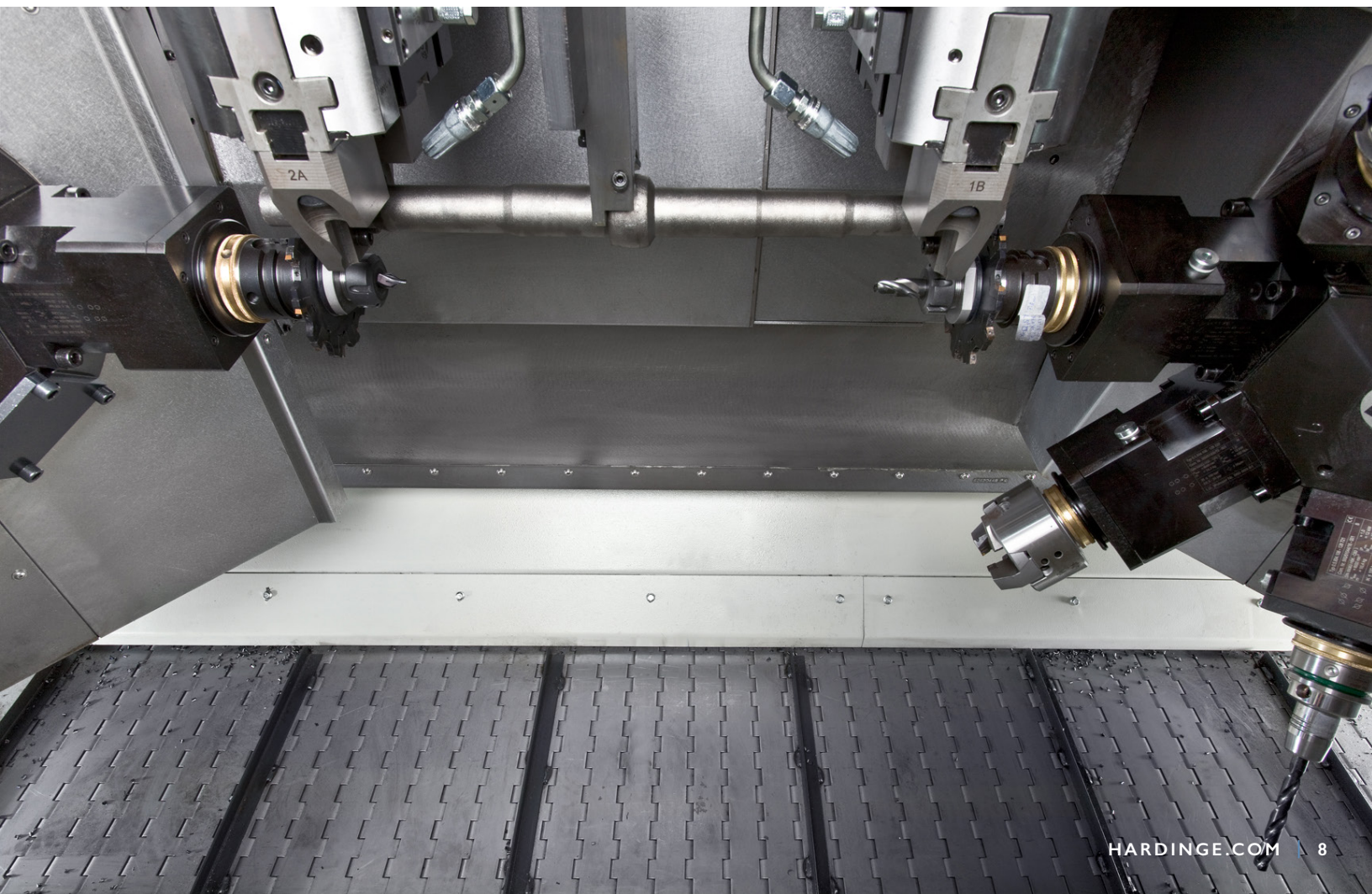
UNIVERSAL MACHINING

WEISSER offers the option of turning and milling from the bar parallel to machining time. This for diameters up to 105 mm and a length of 1200 mm in a 6-sided complete machining. The 6-sided machining enables an excellent machining quality due to fewer reclamping processes. In addition, order throughput and machining times are significantly reduced, and the unit costs are noticeably lower.



END MACHINING

With the end machining technology, Weisser offers a solution for the face machining of shafts. Typical processes include deburring, facing, chamfering, drilling, centering and spindle machining. In addition to contour machining at the ends, both single and double-sided machining of shafts is possible. The technology also offers advantages in terms of cycle time and availability.



TECHNOLOGY PORTFOLIO

HARD TURNING

Hard turning describes the turning of steel with a hardness of more than 45 HRC. It is an efficient alternative for grinding hardened workpieces. The advantages of this process are shorter cycle, set-up and tooling times as well as the relatively lower investment costs and the options of wet and dry machining.

INTERNAL / EXTERNAL GRINDING

Machining with the technology of internal and external cylindrical grinding in one machine is exemplary for perfect hard fine machining of rotationally symmetrical workpieces. In order to achieve optimum cycle times, this machining technology can be combined with hard turning or rotational turning processes.



ROTATIONAL TURNING

With the rotation turning process developed and patented by WEISSER, precisely machined surfaces can be generated with twist-free finishing precision and thus replace the expensive grinding operations. The simultaneous rotation of workpiece and tool cutting edge reduces the machining time by up to 77 % compared with hard turning.

OUT-OF-ROUND TURNING

3 times capacity with WEISSER HOT system for shorter piece times and lower piece costs. The technology enables the highly productive machining of a wide range of workpieces, such as pistons for combustion engines, camshafts, polygonal profiles or the production of polygon shapes (shaft-hub connections) with process-oriented perfection.



TECHNOLOGY PORTFOLIO

GEAR CUTTING (HOBBING)

Integration of a hobbing module, being the only method to manufacture internal and external gearings with different helix angles and directions in a single machining center. This manufacturing process combines hobbing and slotting by continuous hobbing with maximum feed rate.

WHIRLING

Whirling or impact/turn-milled brass cages are perfect for heavy-duty bearings. The WEISSER-whirling offers high efficiency due to the substitution of time-consuming and expensive manufacturing processes, such as milling, drilling and broaching or boring and punching. Furthermore whirling offers improved contact conditions between roller and cage bar with the new concave pocket-window geometry.



SERVICE

USED MACHINES

With WEISSER's used machines you save costs and time, yet receive reliable quality from the world's leading manufacturer of Multi-functional precision lathes and turning centers. We place the highest value on high quality and only offer used machines for sale that meet our standards in terms of maintenance and serviceability. WEISSER distinguishes between three retrofit classes of used machines.

SPINDLE REPAIR

WEISSER spindle repairs are a synonym for unrivaled quality by the use of original parts, manufacturer know-how, promptness and full cost control. More than 75 years of experience in the development, design and in-house production of motor spindles result in a unique competence potential from which especially WEISSER customers benefit:

 SERVICE-HOTLINE 24/7	 MAINTENANCE + INSPECTION	 SPARE PARTS SUPPORT	 MODERNIZATION/ RETROFIT	 PROCESS OPTIMIZATION
 PRODUCTION SUPPORT	 REMOTE DIAGNOSIS	 PREVENTIVE MAINTENANCE	 RETROFIT	 TRAINING

TURNKEY

INTELLIGENT TECHNOLOGY PROCESSES AND COMPLETE TURNKEY SYSTEMS

WEISSER machining centers with integrated technology concepts are the solution to demands for shorter process times, productivity and process safety. Shorter cycle times and the associated lower unit costs are decisive competitive factors, especially when manufacturing high quantities. WEISSER turnkey solutions produce at both high and small quantities with high set-up flexibility. We pass this competitive advantage

on to our customers. With the experience of more than 160 years of development, construction and realization of customized machines, our engineers develop today the most economical solution for your requirements. The development of the complete production process provides you full cost transparency and helps you to solve complex tasks in an optimal way. With 3 steps to success. WEISSER Turnkey.

OFFER PHASE AND PLANNING PHASE

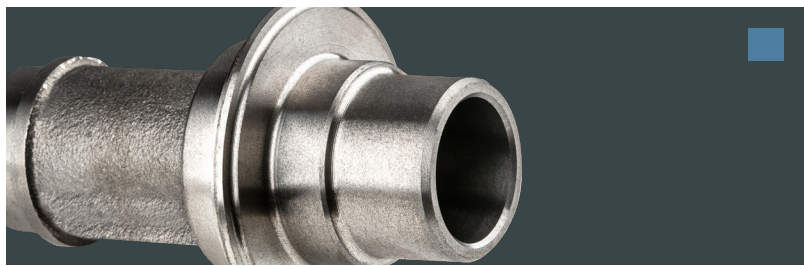
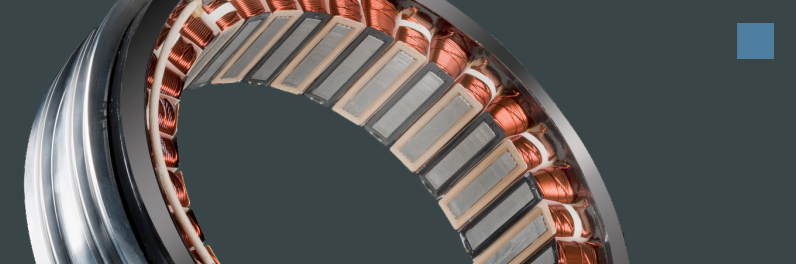
- Process requirements
- Production boundary conditions
- Machine requirements & machine type
- Workpiece clamping / Tools
- MFU features
- Terms of acceptance
- Delivery instructions
- Processing strategy
- Inspection of critical MFU characteristics
- Number of spindles
- Design of the machine system
- Workpiece loading and automation
- Clamping device
- Tools

IMPLEMENTATION PHASE

- Construction and integration of the workpiece-specific
 - Clamping fixtures
 - Tools
 - Automation
- Approval process of the tooling plan, layout plan, etc.
- The verification procedure of the process capability through
 - the preliminary acceptance at WEISSER
 - the final acceptance at the customer

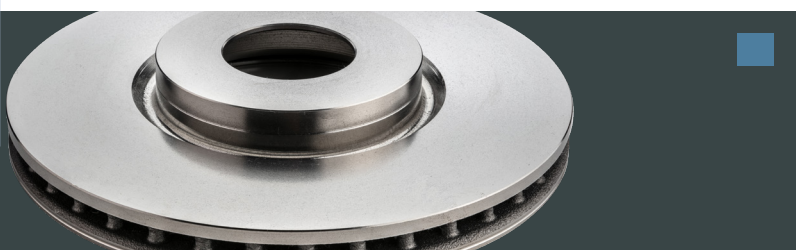
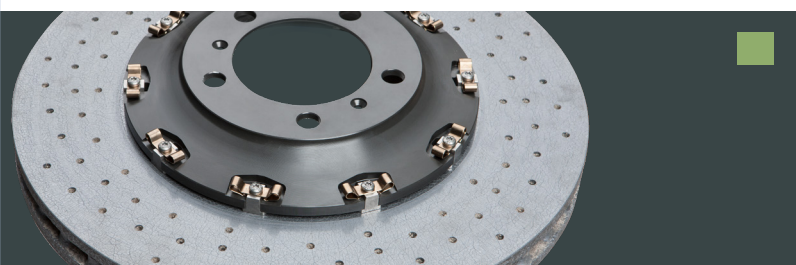
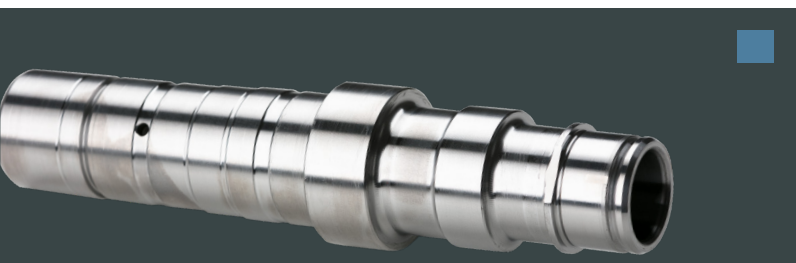
TARGET PHASE

- Assistance with production startup and support
- Training in operation, programming and maintenance
- Service e.g. with preventive maintenance, spare part support, qualified service personnel, etc.



TURNKEY WORKPIECES WITH THE MOST VARIED MACHINING TECHNOLOGIES.

Soft turning Hard turning Rotational turning Grinding



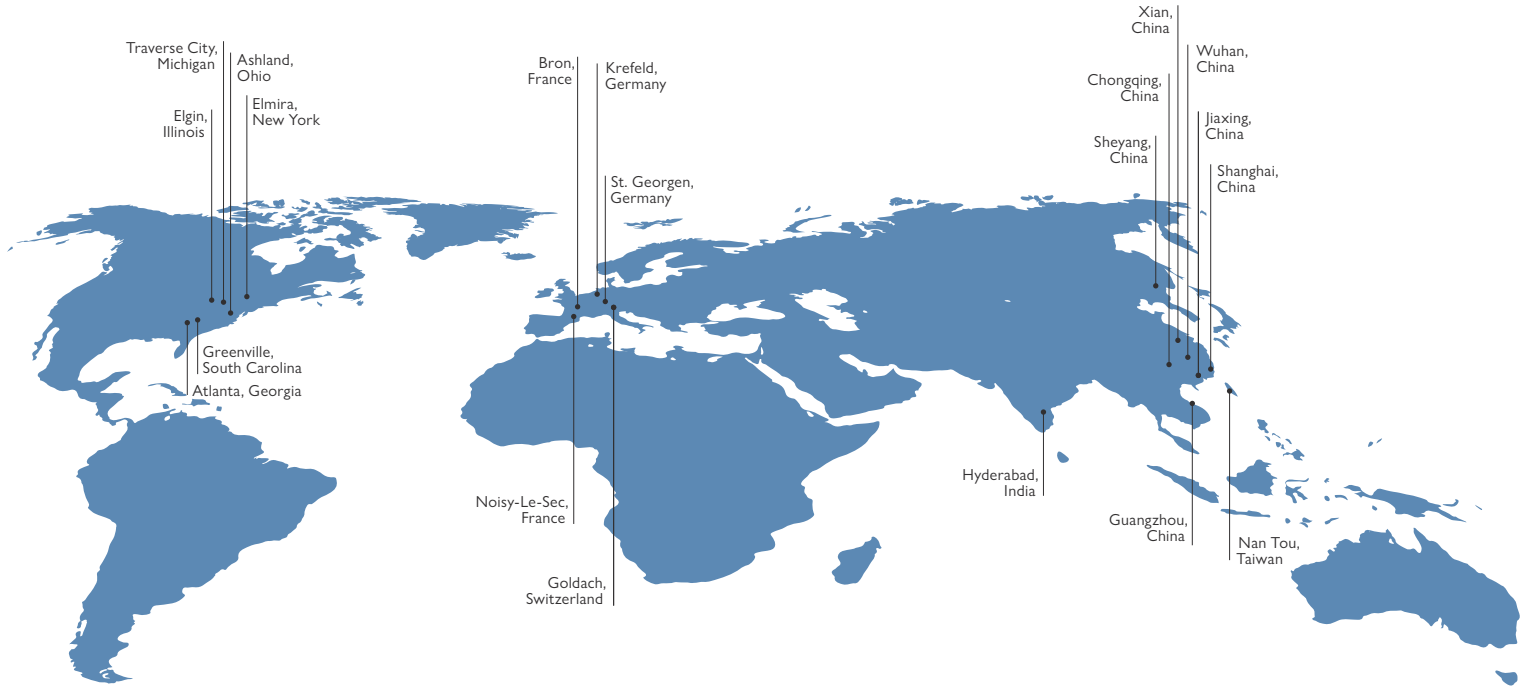
TECHNICAL DATA

MACHINE TYPE		AC	AM	AM-T	AH-T	AE
Max. Turning diameter	mm	150 (5.90")	360 (14.17")	450 (17.71")	900 (35.433")	150 (5.90")
Max. Chuck diameter	mm	215 (8.46")	410 (16.14")	500 (19.68")	900 (35.433")	-
Max. Feed force X1 / Z1 (40 % CDF)	kN	8 / 10	8 / 10	8 / 10	10 / 12	5 / 5
Max. Feed force X2 / Z2 (40 % CDF)	kN	-	-	-	-	12
Working stroke X1 / Z1-axes	mm	830 / 180 (32.67" / 7.08")	1,400 / 440 (55.11" / 17.32")	1,400 / 350 (55.11" / 13.77")	3,050 (2,210) / 700 (120.07"(87") / 27.55")	AE: 350 / 1,900 AE-T: 310 / 1,900
Working stroke X2 / Z2-axes	mm	-	-	-	-	457
Working stroke Y-axis	mm	-	-	-	-	-
Max. Process speed X1 / Z1	m/min	60 / 30	60 / 30	60 / 30	60 / 25	30 / 50
Max. Process speed Z2	m/min	-	-	-	-	30
Max. Process speed Y	m/min	-	-	-	-	-
Ball screw diameter X1/Z1	mm	40 / 40 (1.57" / 1.57")	40 / 40 (1.57" / 1.57")	40 / 40 (1.57" / 1.57")	Linear motor / 50	40 / 40 (1.57" / 1.57")
Number of tools		12	12	8 / 12	8 / 12	AE: 2 / 6 / 8 (2x) AE-T: 2 x 6 (2x)
Turret drive power		-	-	-	-	-
Tool holder		VDI40 / Capto	VDI40 / 50 / Capto	VDI40 / 50 / Capto	Capto C5 / CDI80	HSK63
Tool flight circle	mm	670 (26.37")	740 (29.13")	-	1,000 / 660 (39.37" / 25.98")	-
Spindle flange	DIN 55026	A6	A8	A8	A11 / A8	-
Spindle bearing diameter	mm	90 (3.54")	120 (4.72")	120 (4.72")	150 (5.90")	-
Drive power 100 % CDF	kW	16.8 (20.9)	35.1	35	80 / 27	-
Drive power 40 % CDF	kW	21.5 (26.8)	40	40	103 / 38.3	-
Rated speed	rpm	1,600	780	780	1,000 / 1,100	-
Max. Speed	rpm	4,500	3,500	3,500	3,500	-
Torque 100 % CDF	Nm	100 (200)	430	430	764 / 234	-
Torque 40 % CDF	Nm	128 (255)	610	610	1,110 / 332	-
Dimensions basic machine (LxWxH)	mm	AC-1: 2,450 x 2,400 x 3,000 (96.45" x 94.48" x 118.11") AC-2: 4,300 x 2,250 x 3,000 (169.29" x 88.58" x 118.11")	AM-1: 3,400 x 2,587 x 3,190 (133.85" x 101.85" x 125.59") AM-2: 5,400 x 2,587 x 3,190 (212.59" x 101.85" x 125.59")	3,500 x 3,200 x 3,800 (137.79" x 125.98" x 149.60")	6,400 x 3,100 x 4,600 (251.96" x 122.04" x 181.10")	AE: 5,050 x 2,750 x 3,150 (198.81" x 108.26" x 124.01") AE-T: 5,050 x 3,000 x 3,150 (198.81" x 118.11" x 124.01")
Weight	kg	AC-1: 7,000 (15,432.35 lb.) AC-2: 15,000 (33,069.33 lb.)	AM-1: 11,000 (24,250.84 lb.) AM-2: 21,000 (46,297.075 lb.)	18,000 (39,683.20 lb.)	36,000 (79,366.41 lb.)	AE: 14,500 (31,967.02 lb.) AE-T: 17,000 (37,478.58 lb.)

TECHNICAL DATA

MACHINE TYPE		AS PICK-UP	AS PORTAL	VERTOR C & M	V400	ARTERY
Max. Turning diameter	mm	160 (6.29")	320 (12.59")	450 (17.71")	350 (13.77")	350 (13.77")
Max. Chuck diameter	mm	215 (8.46")	400 (15.74")	600 (23.62")	400 (15.74")	350 (13.77")
Max. Feed force X1 / Z1 (40 % CDF)	kN	10 / 8	10 / 8	9 / 9	8 / 10	7,5 / 7,5
Max. Feed force X2 / Z2 (40 % CDF)	kN	-	-	-	-	-
Working stroke X1 / Z1-axes	mm	AS400: 280 / 1,130 (11.02" / 44.48") AS650: 280 / 2,400 (11.02" / 94.48")	280 / 7,000 (11.02" / 275.59")	230 / 280 (9.05" / 11.02")	1,400 (1.850) / 400 (55.11"(72.83") / 15.74")	200 / 200 (7.87" / 7.87") M-2 TM: 500 / 200 (19.68" / 7.87")
Working stroke X2 / Z2-axes	mm	-	-	-	-	-
Working stroke Y-axis	mm	-	-	-	-	210 (+130 / -80) 8.26" (+5.11 / -3.14")
Max. Process speed X1 / Z1	m/min	AS400: 30 / 60 AS650: 30 / 100	30 / 60	30 / 30	75 / 30	40 / 45
Max. Process speed Z2	m/min	-	-	-	-	-
Max. Process speed Y	m/min	-	-	-	-	40
Ball screw diameter X1/Z1	mm	AS400: 40 / 40 AS650: 40 / Linear motor	40 / 40 (1.57" / 1.57")	40 / 40 (1.57" / 1.57")	50 / 40 (1.57" / 1.57")	40 / 40 (1.96" / 1.57")
Number of tools		12 (2x)	12 (2x)	12 (2x)	8 / 12	-
Turret drive power		-	-	-	28.5 torque drive 23.5 speed drive	-
Tool holder		VDI40	VDI40	VDI40 / 50	Ø = 40 / 50	BMT 65s / VDI40 M-2 TM: HSK T63 / (Capto C6)
Tool flight circle	mm	600 / 650 (23.62" / 25.59")	730 (28.74")	620 (24.40")	880 (34.64")	700 (27.55")
Spindle flange	DIN 55026	A6	A6 / A8 / A8	VERTOR C: A6 / M: A8	A6 / A8	A6
Spindle bearing diameter	mm	90 (3.54")	90 / 120 / 150 (3.54" / 4.72" / 5.90")	VERTOR C: 90 / M: 150 (C: 3.54" / M: 5.90")	120 (4.72")	150 (5.90")
Drive power 100 % CDF	kW	18 (23)	18 (23) / 35 / 52	VERTOR C: 18 / M: 52	29.1 / 35.1	22 / (48)
Drive power 40 % CDF	kW	23 (30)	23 (30) / 40 / 67	VERTOR C: 23 / M: 67	30 / 40	24 / (52)
Rated speed	rpm	1,500	1,500 / 780 / 1,100	VERTOR C: 1,500 / M: 1,100	1,050 / 780	1,400 / (780)
Max. Speed	rpm	4,500	4,500 / 3,500 / 3,500	VERTOR C: 6,000 / M: 3,500	4,500 / 3,500	5,700 / (3,200)
Torque 100 % CDF	Nm	115 (151)	115 (151) / 610 / 580	VERTOR C: 115 / M: 580	265 / 430	150
Torque 40 % CDF	Nm	146 (191)	146 (191) / 430 / 450	VERTOR C: 146 / M: 450	340 / 610	191
Dimensions basic machine (LxWxH)	mm	AS400: 4,350 x 2,550 x 2,950 (171.25" x 100.39" x 116.14") AS650: 5,550 x 2,250 x 2,950 (218.5" x 100.39" x 116.14")	3,600 x 2,800 x 2,950 (141.73" x 110.23" x 110.23")	3,000 x 1,900 x 2,600 (118.11" x 74.80" x 102.36")	V400: 3,100 x 2,500 x 3,000 (122" x 98.42" x 118.11") V400-2: 6,110 x 2,584 x 3,299 (240.55" x 101.73" x 129.88")	4,500 x 2,500 x 2,500 (177.16" x 98.42" x 98.42")
Weight	kg	AS400: 12,000 (26,455.47 lb.) AS650: 16,000 (35,273.96 lb.)	16,000 (35,273.96 lb.)	11,000 (24,250.84 lb.)	V400: approx. 11,000 (24,250.84 lb.) V400-2: approx. 21,000 (46,297.07 lb.)	M-1 3X: 12,500 (27,557.78 lb.) M-2 5X: 13,500 (29,762.40 lb.) M-2 TM: 15,000 (2,645.5 lb.)

HARDINGE WORLDWIDE



Hardinge is a leading international provider of advanced metal-cutting solutions. We provide a full spectrum of highly reliable CNC turning, milling, grinding, and honing machines as well as technologically advanced workholding accessories.

The diverse products we offer enable us to support a variety of market applications in industries including aerospace, agricultural, automotive, construction, consumer products, defense, energy, medical, technology, transportation and more.

We've developed a strong global presence with manufacturing operations in North America, Europe, and Asia. Hardinge applies its engineering and applications expertise to provide your company with the right machine tool solution and support every time.

AMERICAS

GEORGIA
Hardinge Corporate
79 W Paces Ferry Rd, 2F
Atlanta, GA 30305
P. 800.843.8801

ILLINOIS
Hardinge
1755 Britannia Dr
Unit 1A
Elgin, IL 60124

MICHIGAN
Forkardt
2155 Traversefield Dr
Traverse City, MI 49686
P. 800.544.3823
E. tcsales@forkardt.com

NEW YORK
Hardinge
1 Hardinge Drive
Elmira, NY 14903
P. 800.843.8801
E. info@hardinge.com

OHIO
Ohio Tool Works
1374 Enterprise Parkway (TR 743)
Ashland, OH 44805
P. 419.281.3700
E. sales@ohiotoolworks.com

EUROPE

SWITZERLAND
Hardinge Kellenberger AG
Thannäckerstrasse 22
CH-9403 Goldach
P. 41 71 2429111
E. info@kellenberger.net

GERMANY
Hardinge GmbH
Fichtenhain A 13c
47807 Krefeld
P. 49 2151 49649 10
E. info@hardinge-gmbh.de

J.G. Weisser Söhne GmbH
Johann-Georg-Weisser-Straße 1
78112 St. Georgen
P. +49 7724 881-0
E. info@weisser-web.com

FRANCE
Jones & Shipman SARL
8 Allee des Ginkgos
BP 112-69672
Bron Cedex, France

ASIA

CHINA
Hardinge Machine
(Shanghai) Co. Ltd.
1388 East Kangqiao Road
Pudong, Shanghai 201319
P. 0086 21 3810 8686

TAIWAN
Hardinge Machine Tools
B.V., Taiwan Branch
No.11,Tzu Li 3rd Rd.,
Nantou City, 540 Taiwan
P. 886 49 2260 536
E. cs@hardinge.com.tw