

GRIND - X

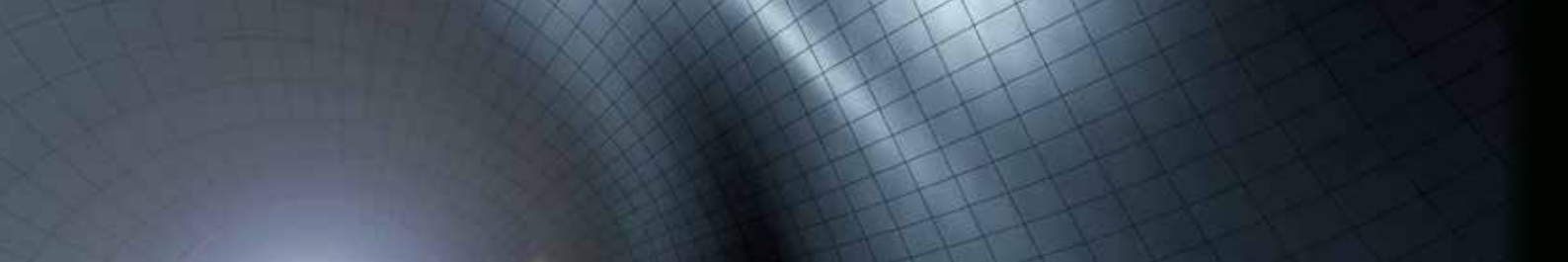
OKAMOTO PRECISION SYSTEMS

Okamoto

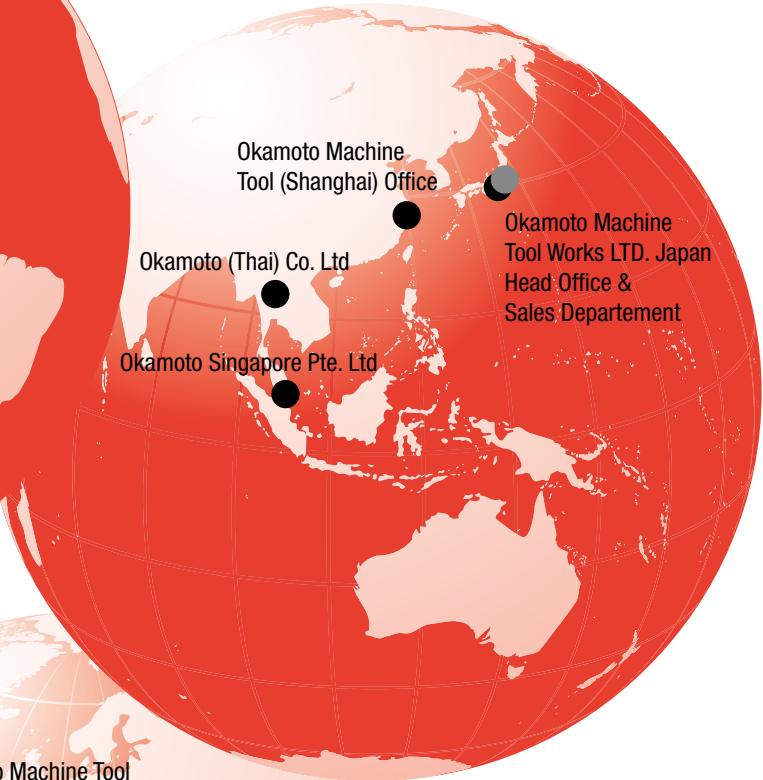
GRINDING SOLUTIONS

**PERFECTION
IN FORM AND
TECHNOLOGY**





Okamoto Corporation (USA)



Okamoto Machine
Tool (Shanghai) Office

Okamoto Machine
Tool Works LTD. Japan
Head Office &
Sales Department

Okamoto (Thai) Co. Ltd

Okamoto Singapore Pte. Ltd



Okamoto Machine Tool
Europe GmbH



The Company

Okamoto Machine Tool Works Ltd. Japan has been the world's leading manufacturer of high-quality grinding machines and equipment since 1926. Its European headquarters, Okamoto Machine Tool Europe GmbH, based in Langen near Frankfurt am Main has been catering to the needs of the European market since 1992. As a result of the company's ongoing growth, a network consisting of subsidiaries and sales organizations arose in more than 70 countries. Its most significant production facilities are located in Japan, Singapore and Thailand.

The intense collaborations between Okamoto Machine Tool Works Ltd. Japan and Okamoto Machine Tool Europe GmbH guarantees the development and manufacture of innovative grinding machines with the very highest precision. In our actions, we aspire to respond positively to the market and make use of investments for future growth for the overall success of our company.

Okamoto
Machine Tool Europe GmbH
Frankfurt (Germany)

Central Location

Okamoto Machine Tool Works Ltd. Japan and Okamoto Machine Tool Europe GmbH is a customer-oriented, globally active enterprise - a modern service provider with high service quality. The focus of our full-service strategy is based on the customer and his needs. Our aim is to support our customers with innovative products of the highest precision and reliability, as well as the best quality and usability. In our modern showroom facilities in Langen, Germany we present an interesting selection from our product range. With these facilities we re-affirm our commitment towards our customers, suppliers, and sales partners.

Our focus is on long-term, reliable, successful, trustworthy and cooperative relationships with both our customers and partners.

Surface & profile grinding machines

Manual precision surface grinding machine

With a grinding length of 350 mm and a cross travel of 150 mm the Linear 350B is ideally suited for the tool-room. It features a high level of standard equipment to ensure easy handling and the manual control allows quick and precise small part production.

LINEAR 350 B

- Machine base made of cast iron
- Vibration -reducing construction
- Table slideway with linear rollers



Additional equipment

- Electro-magnetic chuck
- Balancing unit with arbour
- Wheel flange

Work area	Max. table stroke	390 mm
	Max. cross table movement	210 mm
	Max. height capacity New wheel → Table	362,5 mm
	Magnetic chuck size	350 x 150 mm
	Max. table load (including chuck)	120 kg
Table	T-slots (number x width)	1 x 17 mm
Cross movement	Feed per rotation on hand wheel	3 mm
	Division of hand wheel	0.02 mm
Vertical movement	Crossfeed per division hand wheel	0.005 mm
Grinding wheel spindle	Dimensions (D x B x d) mm	Ø 205 x 25 x Ø 31.75 mm
	Speed	3000 ⁻¹
Motors	Grinding wheel spindle	1.5 kW
Power supply	Connection values incl. electro-magnetic chuck and coolant system	3 KVA
Installation plan	(L x W x H)	1526 x 1405 x 1727 mm
	Net weight	840 kg

Surface grinding machines

Precision surface grinding machine

With a grinding length of 500 - 1000 mm and a cross travel of 200 - 500 mm the Okamoto DX Series is ideally suited for the toolroom. It features a high level of standard equipment to ensure easy handling, quick and precise small part production. The robust cast iron construction and double-V slideways in both table and crossfeed ensure long term precision.

ACC DX

- Hydraulic surface grinder with automatic feed
- Moving saddle design
- Double-V slideways longitudinal and cross
- PLC controller with proven reliability



Optional equipment

- Electro-permanent magnetic chuck
- Wheel head mounted Hydraulic dresser
- Paper band filter with coolant system
- Cross-feed digital readout
- Spindle speed inverter

	Description		Unit	52 DX	63 DX	64 DX	65 DX	84 DX	105 DX
Table	Machine table (length x width)		mm	550 x 200	650 x 300	650 x 400	650 x 500	850 x 400	1016 x 500
	Max. distance table > wheel	205 mm wheel	mm	47.5 ~ 397.5	—	—	—	—	—
		355 mm wheel	mm	—	22.5 ~ 322.5	22.5 ~ 322.5	22.5 ~ 522.5	22.5 ~ 522.5	22.5 ~ 522.5
	Standard size of magnetic chuck (L x W x H)		mm	500 x 200 x 90	600 x 300 x 90	600 x 400 x 90	600 x 500 x 90	800 x 400 x 90	1000 x 500 x 90
	Max. table load (incl. magnet.)		kg	200	420	420	700	700	700
	T-slots (W x width)		mm	17 x 1	17 x 3				
Longitudinal feed	Max. traverse path		mm	650	750	750	750	950	1150
	Speed		m/min	0.3 ~ 25	0.3 ~ 25	0.3 ~ 25	0.3 ~ 25	0.3 ~ 25	0.3 ~ 25
	Manual feed/rotation		mm	47					
Crossfeed	Max. table traverse lenght		mm	230	340	440	540	440	540
	Manual cross feed	per rotation of hand wheel	mm	5.0					
		per division	mm	0.02					
	Autom. cross movement	step-wise	mm	0.5 ~ 12	0.5 ~ 20	0.5 ~ 20	0.5 ~ 20	0.5 ~ 20	0.5 ~ 20
		continuous	m/min	0.1 ~ 1.0	0.1 ~1.0	0.1 ~ 1.0	01 ~ 1.0	0.1 ~ 1.0	0.1 ~ 1.0
Vertical feed	Automatic feed		mm	0.0001 ~ 0.03					
	Manual feed	Per rotation of hand wheel 0.1x1x10x	mm	0.0001 / 0.001 / 0.01					
		Per impulse 0.1x1x10x	mm	0.01 / 0.1 / 1.0					
	Sparkout		Nr.	0 ~ 5					
	Vertical fast positioning		mm/min	600					
Grinding wheel	ø x width x bore		mm	ø 205 x 19 x ø 50.8	ø 355 x 38 x ø 127				
	Speed		min ⁻¹	3000	1500				
Motors	Wheel spindle		kW/P	1.5 / 2	3.7 / 4				
	Hydraulic pump		kW/P	0.75/4	1.5/4	1.5 / 4	2.2 / 4		
	Vertical movement		kW	0.4 (AC Servermotor)					
Power supply	Connection value		kVA	4.5	7.5	8.0			
Space requirements	Length x Width x Height		mm	3030x1593x1800	3350x1929x1800	3350x2180x1800	3350x2450x2060	4220x2205x2060	4870x2264x2060
Weight	net		kg	2100	2800	3000	3500	3900	4800

Surface grinding machines

Precision surface grinding machine

With a grinding length of 500 - 600 mm and a cross travel of 200 - 300 mm the Okamoto SA Series is ideally suited for the toolroom. It features a high level of standard equipment to ensure easy handling, quick and precise small part production. The robust cast iron construction and double-V slideways in both table and crossfeed ensure long term precision. The intuitive operation of the controls simplifies usage and increases productivity considerably.

ACC SA

- Reinforced machine construction
- Automatic grinding cycles
- Double-V table and cross slideways
- Table dresser option



Additional equipment

- Electro-(permanent) magnetic chuck
500 mm x 200 mm / 600 mm x 300 mm
- Paper band filter coolant system
- Temperature stabilized wheelhead
- Fully automated balancing system
- Wheel flange

	Description	Unit	ACC 52 SA	ACC 63 SA
Work area	Table stroke	mm	650 x 230	750 x 340
	Magnetic chuck size	mm	500 x 200	600 x 300
	Table -> new wheel	mm	47,5 ~ 397,5	22,5 ~ 322,5
	Load	kg	200	420
Table	T-slots	mm	17 x 1	17 x 3
	Speed	m/min	0,3 ~ 25	
Cross movement	Incr. movement	mm	0,5 ~ 12	0,5 ~ 20
	Cont. movement	mm/min	0 ~ 1000	
	Rapid	mm	1000	
	Hand wheel division	mm	0,001 / 0,01 / 0,05	
Vertical movement	Feed	µm	0,5 ~ 30	
	Rapid	mm/min	1000	
	Hand wheel division	mm	0,0001 / 0,001 / 0,01	
	Spark-out passes		0 ~ 5	
Grinding wheel	Dimensions (DxWxd)	mm	ø 205 x 19 x ø 50,8	ø 355 x 38 x ø 127
	Speed	min ⁻¹	3000	1500
Motors	Wheel spindle	kW	1,5	3,7
	Hydraulic pump	kW	0,75	1,5
	Vertical movement	kW	0,55 kW	
Installation plan	Dimensions (LxWxH)	mm	3030 x 1784 x 2276	3350 x 1987 x 2313
	Weight	kg	2100	3500

Surface & profile grinding machines

Precision surface and profile grinding machine

With a grinding length of 400 mm and a cross travel of 200 mm the Okamoto ACC-42SAiQ is ideally suited for the toolroom. It features a high level of standard equipment to ensure easy handling, quick and precise small part production. The robust cast iron construction and double-V slideways in both table and crossfeed ensure long term precision. The intuitive graphical user interface of the colour touch screen control simplifies usage and increases productivity considerably.

ACC 42 SAiQ

- Reinforced machine construction
- Automatic grinding cycles
- Double-V table and cross slideways
- 3-point dresser



Additional equipment

- Electro-(permanent) magnetic chuck
400 mm x 200 mm
- Paper band filter coolant system
- ISO profile-making software
- Okamoto-I-CAM, CAD/CAM software

	Description		Unit	42SA-iQ
Work area	Table size		mm	500 x 200
	Table stroke length x width		mm	510 x 230
	Maximum distance grinding wheel - table		mm	22,5 - 302.5
	Magnetic chuck size		mm	400 x 200 x 70
	Table load incl. chuck		kg	120
Table	T-slots		mm	17 x 1
	Speed		m/min	0,1 - 20
Cross movement	Manual	Feed / rotation	mm	0,01 / 0,1 / 1,0
		Division hand wheel	mm	0,0001/0,001/0,01
	Automatic	Int. feed	mm	0,5 - 12
		Cont. feed	mm/min	0,1 - 1000
Vertical movement	Manual	Feed / rotation	mm	0,01 / 0,1 / 5,0
		Division hand wheel	mm	0,0001/0,001/0,05
	Automatic	Roughing	mm	0,001 - 0,03
		Fine finishing	mm	0,0001 - 0,01
	Number of spark-out passes		Anzahl	0- 99
	Rapid traverse		mm/min	0 - 1000
Grinding wheel	D x Width x d		mm	Ø 205 x 6-25 x Ø 31.75
	Speed (inverter)		min ⁻¹	1000 - 3600
Motors	Grinding spindle		kW/P	2,2 / 2
	Hydraulic pump		kW/P	0,75 / 4
	Feed		kW	0,75
	Cross movement		kW	0,75
Power consumption (incl. magnet and coolant system)			kVA	14
Space requirements	Length		mm	2400
	Depth		mm	2840
	Height		mm	2240
Weight			kg	2100

Surface & profile grinding machines

Precision surface and profile grinding machine

With a grinding length of 600 - 1000 mm and a cross travel of 400 - 600 mm the Okamoto ACC-CA/CAiQ is ideally suited for the toolroom. It features a high level of standard equipment to ensure easy handling, quick and precise small part production. The robust cast iron construction and double-V slideways in the table ensure long term precision. The intuitive operation of the controls simplifies usage and increases productivity considerably.

ACC CA/CAiQ

- Surface and profile grinding machine
- Choice of touch screen control or simple PLC controller
- Moving column design
- Magnetic chuck sizes from 600 x 400 to 1000 x 600 mm



Additional equipment

- Electro-(permanent) magnetic chuck
- Hydraulic overhead dresser with compensation
- Paper band filter coolant system

	Description		Unit	CA series					CA-iQ series				
				64CA	84CA	104CA	66CA	106CA	64CA-iQ	84CA-iQ	104CA-iQ	66CA-iQ	106CA-iQ
Work area	Table length x width		mm	605 x 400	805 x 400	1016 x 400	605 x 600	1016 x 600	605 x 400	805 x 400	1016 x 400	605 x 600	1016 x 600
	Table stroke length x width		mm	800 x 440	1000 x 440	1200 x 440	800 x 652	1200 x 652	800 x 440	1000 x 440	1200 x 440	800 x 652	1200 x 652
	Maximum distance grinding wheel - table		mm	22,5 - 522,5			-2,5 - 497,5		22,5 - 522,5			-2,5 - 497,5	-2,5 - 497,5
	Standard size chuck		kg	600 x 400 x 90	800 x 400 x 90	1000 x 400 x 90	600 x 600 x 90	1000 x 600 x 90	600 x 400 x 85	800 x 400 x 85	1000 x 400 x 85	600 x 600 x 85	1000 x 600 x 85
	Table load incl. chuck			1000			1500		1000			1500	1500
	Table height (from floor)			915									
Table	T-slots		mm	-									
	Speed		rpm	3 - 25									
Cross movement	Manual	Feed / rotation	mm	0,1 / 1,0 / 5,0					0,01 / 0,1 / 1,0 / 5,0				
		Division hand wheel		0,001 / 0,01 / 0,05					0,0001/0,001/0,01 / 0,05				
	Automatic	Int. feed	mm	0,5 - 20									
		Cont. feed	mm/min	0 - 2000					0 - 1000				
Vertical movement	Manual	Feed / rotation	mm	0,01 / 0,1 / 1,0									
		Division hand wheel	mm	0,0001 / 0,001 / 0,01									
	Automatic	Roughing	mm	0,0001 - 0,03 (15 steps)					0,001 - 0,03				
		Finishing	mm/min.						0,0001 - 0,01				
	Feed (F command)		mm	-					1000				
	Number of spark-out passes			0 - 5					0- 99				
	Rapid traverse			0 - 1000									
Grinding wheel	D x Width x d		mm	Ø 355 x 38 x Ø 127			Ø 405 x 50 x Ø 127		Ø 355 x 38 x Ø 127			Ø 405 x 50 x Ø 127	
	Speed (inverter)		R.P.M.	500 - 2500									
Motors	Grinding wheel spindle		kW	7,5									
	Hydraulic pump		kW	2,2 / 4									
	Infeed		kW	1,5									
	Cross movement		kW	0,75									
Power consumption (incl. chuck and coolant system)				13			16		24				
Space requirements	Length		mm	3400	3800	4400	3550	4480	3400	3800	4400	3550	4478
	Depth		mm	2900	2900	2900	3350	3350	2900	2900	2900	3350	3350
	Height		mm	2203	2203	2203	2275	2275	2203	2203	2203	2275	2275
Weight			kg	4950	5500	7000	6300	7300	4950	5500	7000	6300	7300

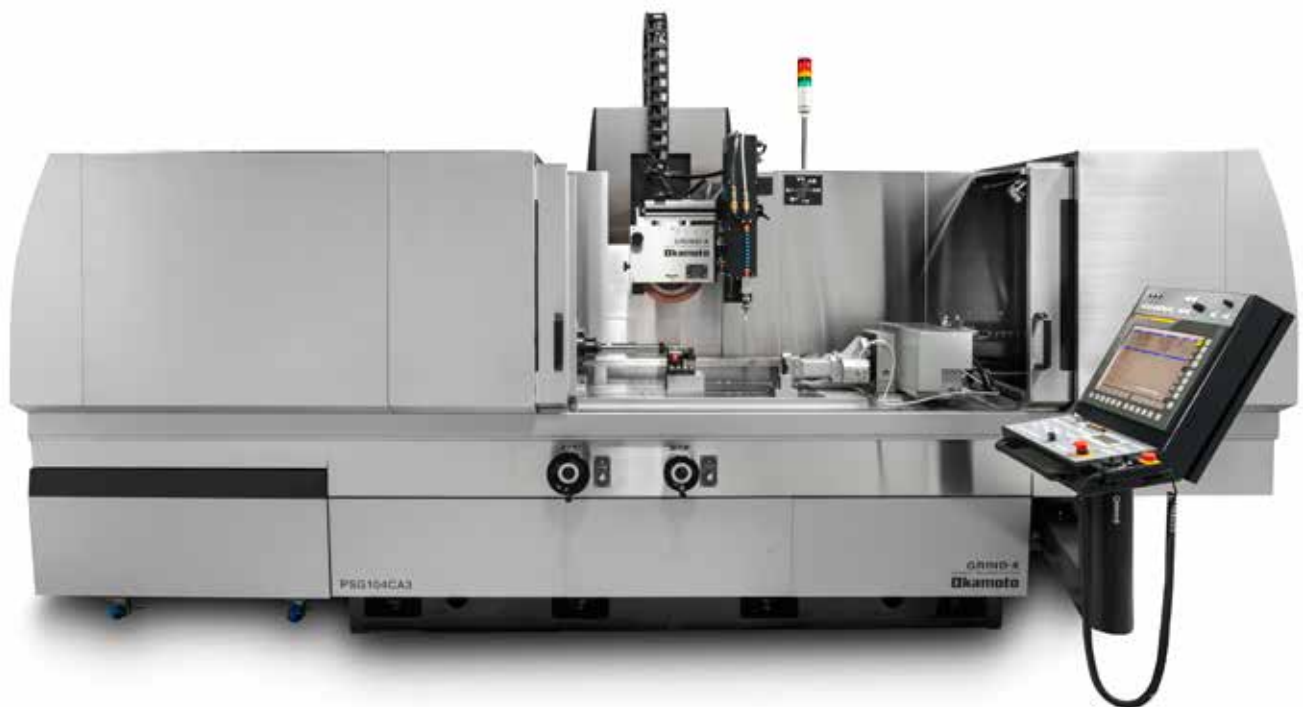
Surface & profile grinding machines

Precision surface grinding machine

With a grinding length of 600 - 1000 mm and a cross travel of 400 - 600 mm the Okamoto ACC-CA2/CA3 is ideally suited for the toolroom. It features a high level of standard equipment to ensure easy handling, quick and precise small part production. The robust cast iron construction and double-V table slideways (CA2) ensure long term precision. The intuitive operation of the controls simplifies usage and increases productivity considerably.

ACC CA2 / CA3

- CNC surface & profile grinding machine
- e.g. 3 axes simultaneously
- Column feed for cross movement
- Dialogue input system



Additional equipment

- Hydraulic oil temperature controller
- Wheel flange
- Balancing unit with arbour
- Electromagnetic chuck
- Coolant systems

	Technical specifications	64 CA2	84 CA2	104 CA2	106 CA2
Work area	Table path	800 x 440 mm	1000 x 440 mm	1200 x 440 mm	1200 x 652 mm
	Magnetic chuck size	600 x 400 mm	800 x 400 mm	1000 x 400 mm	1000 x 600 mm
	New wheel to table	-2.5 ~ 497.5 mm			
	Table load	1000 kg			1500 kg
Table	Speed	3 ~ 25 m/min			
Cross movement	Int. movement	0.5 ~ 20 mm			
	Cont. movement	0 ~ 2000 mm/min			
	Hand wheel division.	0.001 / 0.01 / 0.05 mm			
Vertical movement	Rapid	1000 mm/min			
	Hand wheel division.	0.0001 / 0.001 / 0.01 mm			
Grinding wheel	Dimensions (D x B x d) mm	ø 405 x 50 x ø 127			
	Speed	500 ~ 2500 · ⁻¹			
Motors	Grinding wheel spindle	7.5 kW			
	Hydraulic pump	2.2 kW			
	Vertical movement	0.75 kW			
Installation plan	(L x W x H) mm	3400 x 2900 x 2203	3800 x 2900 x 2203	4400 x 2900 x 2203	4400 x 3350 x 2203
	Weight	4000 ~ 4500 kg			5500 kg

Double column machine

Precision double column machine

The ACC-CHiQ series meets the very highest requirements in terms of precision to be found in the manufacture for parts in tool and mould construction, in hot runner technology and punching die construction. The cross slideways can be adjusted mechanically and can be realigned at any time as needed. In doing so, the CNC does not need to be compensated which in turn affords advantages in a higher surface quality and smoothness.

ACC CHiQ

- Double column machine
- PC control with touchscreen
- Simple data input via symbols
- Stable construction for the very highest geometry requirements
- Mechanically adjustable cross slideways



Additional equipment

- Electro-permanent magnetic chuck
- Paper band filter coolant system
- Hydraulic overhead dresser with compensation
- Column increase 200mm

Description			Unit	208CH-iQ	258CH-iQ	358CH-iQ
Capacity	Max. work size (L x W x H)		mm	2000 x 800 x 600	2500 x 800 x 600	3500 x 800 x 600
	Max. pass width		mm	1050		
	Standard chuck size (L x W)		mm	2000 x 800	2500 x 800	3500 x 800
	Max. table load (incl. magnetic chuck)		kg	3200 (1390)	3900 (1690)	5500 (2180)
	Max. chuck size (L x W)		mm	2000 x 1000	2500 x 1000	3500 x 1000
Longitudinal feed	Max. traverse length		mm	2250	2750	3750
	Table speed		m/min	2~30		
Crossfeed	Max. stroke		mm	910		
	Smallest input unit		mm	0.0001		
	Rapid		mm/m	6000		
	Autom. crossfeed	Continuous	mm/min	0~1000		
	Hand feed	Per rotation of hand wheel	mm	0.01/0.1/1.0		
		Per division	mm/m	0.0001/0.001/0.01		
Vertical feed	Max. stroke		mm	620		
	Smallest input unit		mm	0.0001		
	Rapid traverse		mm/m	2000		
	Automatic mode	Coarse	mm	0.0001~0.9999		
		Fine				
	Hand adjustment	Per rotation of hand wheel	mm	0.01/0.1/1.0		
		Per division		0.0001/0.001/ 0.01		
Grinding wheel	Size (D x Width x d)		mm	Ø 510 x100 x Ø127		
				(Optional equipment: 610 x 50 x 127)		
	R.P.M.		mm ⁻¹	400~1600		
Hydraulic unit	Motor		kW/P	22/4		
	Tank volume		L	300		
Space requirements	L x W x H		mm	6570 x 3850 x 3550	7750 x 3850 x 3550	10200 x 3850 x 3550
Net weight	Standard		kg	15500	17000	20000

Surface & profile grinding machine

Double column surface and profile grinding machine

With a grinding length of 2000 - 4000 mm and a cross travel of 1050 - 2050 mm the Okamoto ACC-CHNC Series is ideally suited for both toolroom and production use. It features a high level of standard equipment to ensure easy handling, quick and precise part production. The robust cast iron construction and double-V table slideways together with gantry cross slide ensure long term precision. The intuitive operation of the controls simplifies usage and increases productivity considerably.

ACC CHNC

- Double column machine
- Robust construction for the very highest geometry requirements
- Precision surface processing
- Conversation software



Additional equipment

- Electro-(permanent) magnetic chuck
- Paper band filter coolant system
- Hydraulic overhead dresser with compensation

	Description	Unit	1000 Series		1500 Series			2000 Series	
			2010CHNC	3010CHNC	2015CHNC	3015CHNC	4015CHNC	3020CHNC	4020CHNC
Work area	Table size, length x width	mm	2000 x 1050	3000 x 1050	2000 x 1550	3000 x 1550	4000 x 1550	3000 x 2050	4000 x 2050
	Max. grinding height	mm	700						
	Clearance width	mm	1300		1800			2500	
Table	Work area	mm	2050 x 1050	3050 x 1050	2050 x 1550	3050 x 1550	4050 x 1550	3050 x 2050	4050 x 2050
	Max. load	kg	4600	6900	5400	8100	10800	9200	12300
	Magnet weight	kg	1560	2340	2360	3540	4720	4620	6160
Longitudinal movement	Max. traverse path	mm	2250	3250	2250	3250	4250	3250	4250
	Feed	m/min	2-30						
Cross movement	Max. traverse path	mm	1170		1670			2170	
	Rapid traverse	mm/min	5000						
Vertical movement	Max. traverse path	mm	740						
	Rapid traverse	mm/min	1500						
Grinding wheel	Grinding wheel size (opt.)	mm	Ø 510 (option: Ø 610) x 100 x Ø 203.2					Ø 610 x 100 x Ø 203.2	
	Speed (opt.)	min ⁻¹	980 (option: 850)					850	
	Grinding wheel motor (opt.)	kW	15 (option: 22)						
Installation plan	Length	mm	7300	8650	7300	8650	10950	8650	11310
	Width	mm	4100	4100	4600	4600	4600	4800	6833
	Height	mm	4100	4100	4100	4100	4100	4100	4100
	Weight	kg	18500	21000	21500	24500	28000	35000	40000

CNC High Precision Surface & Profile Grinding Machine

NC-controlled surface & profile grinding machine

With a grinding length of 400 - 500 mm and a cross travel of 200 - 250 mm the Okamoto UPZ NCII Series is ideally suited for the toolroom. It features a high level of standard equipment to ensure easy handling, quick and precise small part production. The robust cast iron construction and double-V slideways in both table and crossfeed ensure long term precision. The intuitive operation of the controls simplifies usage and increases productivity considerably.

UPZ NC II

- FANUC Oi control
- „Teach-in process“
- Scale-Feed-Back for the Z axis
- Temperature-stabilized grinding spindle head



Additional equipment

- Electro-(permanent) magnetic chuck
- Paper band filter coolant system
- Precision static balancing unit
- Diamond roll / disk dressing unit
- Temperature stabilized wheelhead

	Description	Unit	UPZ 525 NC II
Work area	Work area (L x W) mm	mm	500 x 250
	Table strokes (L x W) mm	mm	650 x 280
	Distance table to new wheel mm	mm	60 - 397,5
Table	Speed	mm/min	0.8 - 25000
	Max. load	kg	200
Cross movement	Rapid traverse	mm/min	1000
	Programmed speed	mm/min	1 - 1000
	Hand wheel division	mm	0.01 / 0.1 / 1
Vertical movement	Rapid traverse	mm/min	1000
	Hand wheel division mm	mm	0.0001/0.001/0.01
Grinding wheel	Dimensions	mm	Ø 225 x 25 x Ø 50.8
	Rotational speed	min ⁻¹	0 - 3600 ⁻¹
Motors	Grinding wheel	kW	3.7
	Hydraulic pump	kW	1.5
	Cross movement	kW	0.3
	Vertical movement	kW	0.4
Installation plan	Dimensions L x W x H	mm	3470 x 3164 x 1850
	Weight	kg	3500

CNC Fast Reciprocation Profile Grinding Machine

Ultra Precision surface and profile grinding machine

With a grinding length of 500 mm and a cross travel of 200 mm the Okamoto UPZ-52Li is equally suited to the toolroom, small or large batch production. It features a high level of standard equipment to ensure easy handling, quick and precise small part production. The robust cast iron construction and linear guideways in both table and crossfeed provide for fast and accurate grinding. The intuitive operation of the controls simplifies usage and increases productivity considerably.

UPZ 52Li

- Linear motor table drive
- Workpiece measurement system
- CCD camera
- High-speed reciprocation (500/min)
- Temperature-stabilized grinding wheel spindle head



Additional equipment

- Electro-(permanent) magnetic chuck
500 mm x 200 mm
- Paper band filter coolant system
- Mist collector
- 2-point rotary dresser
- Measuring system incl. CCD camera and software

	Description		
Work area	Work table size		550 × 220 mm
	Table traverse path		600 mm
	Max. distance Table to Wheel		12.5 ~ 395 mm
	Magnetic chuck size (Length x Width x Height)		500 × 200 × 80 mm
	Max. table load		60 (41) kg
Table	Feed		Feed 0.1 ~ 25 (average) m/min
	Max. traverse path		600 mm
	Rapid traverse		5000 mm/min
	Smallest input unit		0.0001 mm
	Hand feed	Graduation	0.0001 / 0.001 / 0.01 / 0.05 mm
		Wheel speed	0.1 / 0.1 / 1.0 / 5.0 mm
Cross movement	Feed		1 ~ 2000 m/min
	Max. stroke		230 mm
	Rapid		2000 mm/min
	Smallest input unit		0.0001 mm
	Hand feed	Graduation	0.0001 / 0.001 / 0.01 / 0.05 mm
		Wheel speed	0.01 / 0.1 / 1.0 / 5.0 mm
Vertical movement	Feed		1 ~ 2000 m/min
	Max. stroke		382.5 mm
	Rapid		2000 mm/min
	Smallest input unit		0.0001 mm
	Hand feed	Graduation	0.0001 / 0.001 / 0.01 mm
		Wheel speed	0.01 / 0.1 / 1.0 mm
Grinding wheel	Grinding wheel size		ø 205 × 13 × ø 31.75 mm
	Speed		0 ~ 3600 min ⁻¹
Motors	Grinding wheel spindle		3.7/2 Liquid cool. motor
	Vertical movement		1.3 kW
	Cross movement		0.85 kW
	Table feed		3.0 × 2 kW
Power	Power consumption		25.5 (varies according to specification) kVA
Installation plan	(L × W × H) mm		2300 × 2340 × 2237 mm
	Weight		4500 kg

CNC Fast Reciprocation Profile Grinding Machine

Ultra Precision surface and profile grinding machine

Weighing in at 5700 kg, the design of this machine offers an excellent low-vibration base for ultra-precision grinding of surfaces and profiles. High-precision linear slideways (optionally with hydrostatic slideways) paired with linear motors in all axes offer ultra high speed and precision. The linear motor table drive achieves an oscillation rate of up to 250 double strokes per minute. Two independently working grinding heads enable roughing and finishing operations to be carried out concurrently.

In combination with a CCD camera option, this machine is capable of completely automatic cycle including re-grinding with compensation and final part measurement without having to remove the part from the machine, thereby guaranteeing the very highest precision.

UPZ 210 Li/LiII

- CNC Fast Reciprocation Profile Grinding Machine
- with linear motor drive
- carbide grinding with 520 oscillation strokes per minute
- Roughing and finish grinding, measuring, compensating independently one after the other



Additional equipment

- Coolant system
- Mist collector
- Temperature stabilization
- Cleaning cycle during measurement

	Description	Unit	UPZ 210 LIII	UPZ 210 LIII-2
Work area	Table clamping surface	mm	200 x 110	200 x 105
	Table path (L x W)	mm	270 x 120	500 x 120
	Max. distance wheel to table	mm	214 (Ø 80 mm)	225 (Ø 80 mm)
	Max. load incl. chuck	kg	5	5
	Magnetic Chuck Size (L x W x H)	mm	175 x 105 x 45	100 x 100 x 45
Table	Speed	mm/min	0,1 - 60	0,1 - 60
Cross movement	Rapid traverse	mm/min	1000	1000
	Speed	mm/min	1 - 1000	
	Smallest input increment	mm	0.0001	0.0001
Vertical movement	Rapid traverse	mm/min	1000	1000
	Speed	mm/min	1 - 1000	
	Smallest input increment	mm	0.0001	0.0001
Drive	Wheel spindle motor	kW	2,2	1,5
	Table oscillation (linear motor)	kW	2,0 x 2	2,0 x 2
	Cross movement	kW	2,0 (linear motor)	2,0 (linear motor)
	Vertical movement	kW	0,06	0,06
	Coolant pump (optional)	kW	1,6	1,6
	Coolant temperature control	kW	1,6	1,6
	Oil temperature control	kW	1,6	1,6
Power consumption (incl. chuck and coolant system)		kVA	21	31
Installation plan	Dimensions L x W x H	mm	170 x 1850 x 1880	1883 x 3384 x 1907
	Weight	kg	6000	6000

Rotary Surface grinding machines

Precision rotary table grinding machine

Horizontal spindle CNC rotary table grinding machine. This machine has a portal design, with moving column crossfeed. The table is in constant rotary motion, which adapts automatically to the changing grinding diameter. Furthermore, the table can be pivoted $\pm 3^\circ$ for calibration.

PRG DXNC

- Rotary table grinding machine with horizontal spindle
- Variable table speed with constant cutting speed
- Portal design with cast iron construction
- FANUC control



Additional equipment

- Variable speed control for the grinding wheel
- Work light LED
- Oil mist extraction
- Coolant system with paper filter and magnet separator

	Description		Unit	PRG6DXNC	PRG8DXNC	PRG10DXNC	PRG120DXNC
Work area	Magnetic chuck diameter		mm	Ø 600	Ø 800	Ø 1000	Ø 1200
	Swing diameter		mm	Ø 750	Ø 900	Ø 952	Ø 1130
	Distance between chuck and wheel	Ø 355 grinding wheel	mm	-60 ~ 250		-	
		Ø 510 Grinding Wheel	mm	-		500	
	Max. load		kg	150	250	1200	1300
Table	Speed (V-constant, stepless)		min ⁻¹	20 ~ 150	15 ~ 130	8 ~ 65	
	Inclination		degree	±1	±1	±4	
Cross movement	Drive unit			AC servo motor (NC)			
	Stroke		mm	450	550	800	860
	Automatic	Feed	mm/min	0~2000			
		Rapid traverse	mm/min	4000		5000	
	Manual	Per rotation	mm	0.01 (x 1), 0.1 (x 10), 1 (x 100)			
		Hand wheel division	mm	0.0001 (x 1), 0.001 (x 10), 0.01 (x 100)			
		Rapid traverse	mm/min	4000		5000	
	Stroke		mm	310		500	
	Automatic	Feed	mm/min	0~2000			
		Rapid traverse	mm/min	4000			
	Hand adjustment	Per rotation	mm	0.01 (x 1), 0.1 (x 10), 1 (x 100)			
		Hand wheel division	mm	0.0001 (x 1), 0.001 (x 10), 0.01 (x 100)			
Grinding wheel	Dimensions		mm	Ø 355 x 38 (max. 50) x Ø 127		Ø 510 x 50 (OP: max. 75) x Ø 127	
	Rotational speed		min ⁻¹	1500		1000	
Motors	Grinding wheel		kW	7.5			
	Table		kW	2.2	3.7	7.5	
Installation plan	Dimensions L x W x H		mm	1665 x 2560 x 2586	1810 x 2931 x 2586	4535 x 4296 x 3581	
	Weight		kg	4000	5000	12800	13000

Precision cylindrical grinding machine

Universal cylindrical grinding machine

A Universal cylindrical grinding machine having a diameter capacity of 200mm and with 500 mm between centres, the OGM 250 UDXB is ideally suited for toolroom small batch production. It is delivered with a comprehensive level of standard equipment to suit toolroom production and allows quick and easy setup. The stable design of the spindle head together with double-V table slideways provides for a robust machine with long-term precision. The intuitive operation of the controls simplifies usage and increases productivity considerably.

OGM 250 UDX

- Proven PLC type Okamoto DX control
- With internal grinding unit in the standard equipment
- AC motor ball screw table drive mounted on a T-shaped cast iron machine bed



Additional equipment

- Set of 6 Automatic driving dogs $\varnothing$ 8-80mm capacity
- Static Balancing unit with arbour
- Table angle measuring system
- Internal grinding unit
- Self-centring chuck
- Manual type 2- and 3-point steady rests

	Description	Unit	OGM-250UDXB
Capacity	Max. swing diameter	mm	220
	Max. distance between centres	mm	500
	Max. grinding diameter	mm	200
	Max. workpiece weight (between centres)	kg	60
Grinding wheel	Diameter x Width x bore	mm	Ø 305 x 25 x 127
	Rotational speed	rpm	2087/2357
	Max. peripheral grinding speed	m/sec	33
Workhead	Infeed stroke	mm	200
	Swivel range		+/- 30°
	Smallest input increment	mm	0,001
	Feed speed	mm/min	1000
	Electronic hand wheel	mm	0.001 / 0.01
	Spark out	sec. strokes	0-10
Table axis	Stroke	mm	650
	Swivel range	mm	+4° / -9°
	Smallest input increment	mm	0,001
	Max. table speed	mm/min.	50 - 4000
	Feed per hand wheel rotation	mm	7.5
	Work Spindle Taper	M.T.	No. 3
	Spindle through bore	mm	14
	Rotational speed	rpm (3 steps)	150/250/400
	Swivel range		+30° / -90°
Tailstock	Sleeve travel	mm	20
	Taper	M.T.	No. 3
Motors	Wheel spindle	kw	1.5
	Workhead	kw	0.2
	Table drive	kw (AC servomotor)	0.75
	Workhead	kw (AC servomotor)	0.4
	Internal grinding unit	kw	0.75
	Power supply	kva	7
Dimensions	(L x W x H)	mm	2880 x 1851
	Machine height	mm	1640
	Net Weight	kg	1900

Cylindrical Grinding Machine

Precision cylindrical grinding machine

Standard software with 10-step grinding program. Software for profile grinding optionally available. Entry of grinding data via touchscreen. Wheel and work spindles driven by Fanuc AC servomotors. Shoulder locator and gap eliminator are included in the standard equipment.

OGM 350 NCIII

- External / universal cylindrical grinding machine
- FANUC touchscreen control
- featuring easy to use software
- Sizes from 500 mm to 1500 mm between centres



Additional equipment

- Self centring 3-jaw chuck with adaptor Ø 200 mm
- Paper filter coolant system with 120 litre tank
- Work light LED

	Description	Unit	Series 200		Series 300					
			External	universal	External			universal		
			250	250	350	390	3150	350	390	3150
Capacity	Swing over table	mm	220	220	320	320	320	320	320	320
	Centre distance	mm	500	500	500	900	1500	500	900	1500
	Max. grinding diameter		mm	200	200	300	300	300	300	300
	Max. weight	Between centres	kg	50	50	150	150	150	150	150
Chuck (face plate + chuck + load)		kg	20	20	40	40	40	40	40	
Grinding wheel	Size (Outside - Ø x B x Inside - Ø)	mm	Ø 355 x 38 x Ø 127	Ø 305 x 25 x Ø 127	Ø 455 x 50 x Ø 127			Ø 405 x 50 x Ø 127		
	Max. peripheral wheel speed		m/sec	45	45	45	45	45	45	45
Wheelhead	Stroke	mm	215	215	300	300	300	300	300	300
	Swivel angle degree		Grad	Fixed	±30	Fixed		±30		
	Min. Increment		mm	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
	Rapid traverse		m/min	4	4	4	4	4	4	4
Table	Stroke	mm	762	762	870	1270	1870	870	1270	1870
	Swivel angle		Degree	0 - -9	0 - -9	0 - -10	0 - -8.5	0 - -5	0 - -10	0 - -8.5
	Min. Increment		mm	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
	Rapid traverse		m/min	8	8	10	10	10	10	10
Workhead	Spindle type		High-strength combined live & dead spindle							
	Centre taper	MT	Nr. 3	Nr. 3	Nr. 4	Nr. 4	Nr. 4	Nr. 4	Nr. 4	Nr. 4
	Through bore	mm	Ø 18	Ø 18	Ø 20	Ø 20	Ø 20	Ø 20	Ø 20	Ø 20
	Spindle speed		min ⁻¹	10 - 500	10 - 500	10 - 500	10 - 500	10 - 500	10 - 500	10 - 500
	Swivel angle		Degree	30 ~ -90		Fixed		30 ~ -90		
Tailstock	Tailstock sleeve		Taper control type							
	Sleeve stroke	mm	20	20	30	30	30	30	30	30
	Taper	MT	Nr. 3	Nr. 3	Nr. 4	Nr. 4	Nr. 4	Nr. 4	Nr. 4	Nr. 4
Motor	Wheel spindle	kW	3.7		5.5 (opt. 7.5)					
	Workhead	kW	1,8 (AC servomotor)							
	Table feed	kW	1,2 (AC servomotor)							
	Wheelhead infeed	kW	1,2 (AC servomotor)							
	Lubricant pump	W	3							
	Coolant pump	W/P	180/2	180/2	180/2	180/2	180/2	180/2	180/2	180/2
Required power consumption		kVA	15	15	20	20	20	20	20	20
Height floor - Centre workpiece		mm	980	980	1000	1000	1000	1000	1000	1000
Total weight net		kg	3300	3300	4600	5000	6000	4600	5200	6000
			Series EX III					Series NC III		
			250	350	390	3150	250	350	390	3150
Space requirements	Width	mm	2920	3400	4200	5600	2920	3400	4200	5600
	Depth	mm	2010	2330	2330	2330	2010	2330	2330	2330
	Height	mm	1800	1800	1800	1800	1950	1950	1950	1950

Universal Cylindrical grinding machine

Precision cylindrical grinding machine with B-axis

Standard software with 10-step grinding program. Software for profile grinding optionally available. Entry of grinding data via touchscreen. Wheel and work spindles driven by Fanuc AC servomotors. A swing down wheel dressing device for internal grinding is included in the standard equipment.

UGM 360 NC

- Double V table slideways
- T-shaped machine bed
- Temperature-stabilized spindles
- Low-maintenance B-axis motor with direct drive
- Directly powered ball screws



Additional equipment

- Motor-powered tailstock
- Roll dresser
- Gap Elimination
- Programming software iCAM / EDELAC Win

	Technical specifications Series UGM 360 NC / 3100 NC	Unit	UGM 360 NC	UGM 3100 NC
Workhead	Spindle type		High-strength combined live & dead spindle	
	Centre taper	MT	5	
	Through bore	mm	Ø 21	
	Spindle speed	min ⁻¹	10 ~ 500	
	Swivel angle	Degree	90	
	Swivel angle operator side	Degree	30	
Tailstock	Tailstock sleeve		Taper control type	
	Sleeve stroke	mm	30	
	Taper	MT	4	
Motor	Wheel spindle (AC motor)	kW	11.0/4 (Direct drive)	
	Internal grinding spindle (AC motor)	kW	3.7	
	Workhead Spindle (C-axis/AC motor)	kW	1.8 (βIS12/3000HV)	
	Table feed (Z-axis/AC motor)	kW	4.5 (αIS/4000HV)	
	Wheelhead infeed (X-axis / AC servo motor)	kW	3.0 (αIF12/4000HV)	
	Wheelhead swivel Motor (B-axis / AC servo motor)	kW	5.6 (Direct drive: DiS250/250)	
	Lubricant pump	W/P	3/4	
	Oil temperature controller	W	2800	
	Oil temperature controller pump	W	400/1500W(O.P)	
Grinding wheel	Size (Outside - Ø x B x Inside - Ø)	mm	Ø 510 x 63 (OP80) x Ø 203.2	
	Rotational speed min.	min ⁻¹	900~3800	
	Max. peripheral wheel speed	m/sec	60	
Feed axis (X-axis)	X-axis stroke	mm	360	
	Min. input increment	mm	0.0001	
	Rapid traverse	mm/min	10000	
Swivel Axis (B-axis)	Swivel angle	Degree	+0~-240°	
	Min. input increment	mm	0.0001	
	Rapid traverse	min ⁻¹	15	
Table (Z-axis)	Z-axis stroke	mm	850	1250
	Swivel angle	Degree	0 ~8.5	0 ~6.0
	Min. input increment	mm	0.0001	
	Rapid traverse	mm/min	20000	
Power consumption		kVA	33	36
Tank capacity	Lubricant	L	3	
	Coolant	L	80	
Control	Type		FANUC Oi-MF	
	Number of controlled axes		3 (2-axis simultaneously)	
	Coordinates		Polar, Linear, Arc	
Work height	High floor - Centre workpiece	mm	1135	
Space requirement	Width x Depth x Height	mm	2780 x 2750 x 1900	3180 x 2750 x 1900
Total weight net		kg	7000	7900

Internal Cylindrical grinding machine

Internal grinding machine with single or twin spindles

Standard software with 10-step grinding program Software for plain bore, taper and contour grinding with 2-axis control. Entry of grinding data via touchscreen with easy to use software. Wheel and workhead spindles are driven by AC servomotors. High precision is further optimized via thermally stabilized infeed ball screw.

IGM 15 NCIII/NCIII-2

- Internal cylindrical grinding machine for bore lengths up to 150 mm
- FANUC touchscreen with easy to use software input
- Single spindle or Twin spindle model with high frequency motor-driven spindles



Additional equipment

- 3-jaw chuck
- Selection of internal spindles with quill
- Coolant system with paper belt filter
- Coolant system with magnetic separator and temperature controller

	Description	Unit	IGM15NCIII	IGM15NCIII-2
Capacity	Internal grinding diameter	mm	Ø 6 - 150	Ø 6 - 100
	Stroke	mm	max 125	
	Swing diameter	mm	Ø 600	
	Swing diameter in chuck guard	mm	Ø 260	
	Distance from machine bed floor to grinding centre - centre axis	mm	1000	
Infeed	Stroke	mm	170	300
	Feed	mm/min	0.001 - 10000	
	Rapid traverse	mm/min	1000	
Longitudinal Axis	Stroke	mm	500	
	Feed	mm/min	0.001 - 15000	
	Rapid traverse	mm/min	15000	
Smallest input increment	X axis	mm	Ø 0.0001	
	Z axis	mm	0.0001	
Workhead	Speed	min ⁻¹	100 - 850	
	Swivel range	deg.	-5 - 15	
Motor	Workhead spindle	kW	1,8 (AC Servo Motor)	
	Grinding spindle	kW	3,7	
	X axis	kW	1,2	
	Z axis	kW	1,2	
Power supply (for optional cooling system)		kVA	8	12
Machine size		mm	2525 x 1860 x 1800	2535 x 2010 x 1800
own weight		kg	2300	2400

Universal Vertical Grinding Machine

Precision vertical universal cylindrical grinding machine with B axis

With the introduction of this new universal series of vertical and internal grinding machines, Okamoto combines its extensive know-how in the field of internal and external grinding in an entirely new design.

UGM5V

- CNC universal vertical grinding machine
- Automatic Tool Changer for 4 wheels
- Pivoting wheel head (B axis)
- Roundness 0.9 μm



Additional equipment

- 3-jaw chuck 500mm diameter manual
- wheel mounts / holder with clamping cone BT40
- coolant system with paper belt filter SBF 60
- coolant system with magnet separator and temperature controller

Item		Unit	UGM5V
Swing		mm	Ø 550
Max. bore grinding diameter		mm	Ø 70 ~ Ø 500
Max. grinding height		mm	450
Crossfeed (X-axis)	Max. stroke	mm	1000
	Rapid traverse	mm/min	20000
Longitudinal feed (Z-axis)	Max. stroke	mm	450
	Rapid traverse	mm/min	20000
Grinding spindle	Pivot angle grinding spindle	Degree	30
	Rotations	min ⁻¹	500 ~ 8000
	Diameter grinding wheel	mm	Ø 60 ~ Ø 200
	Drive power motor	kW	11
Table	Rotations	min ⁻¹	10-150
Power supply		kVA	45
Machine dimensions		mm	2390 x 2000 x 2822
Weight net		kg	7000

Lapping machine

Finishing system for polishing / lapping irregular profiles

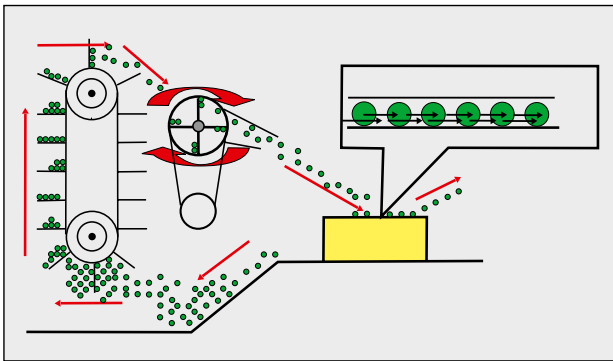
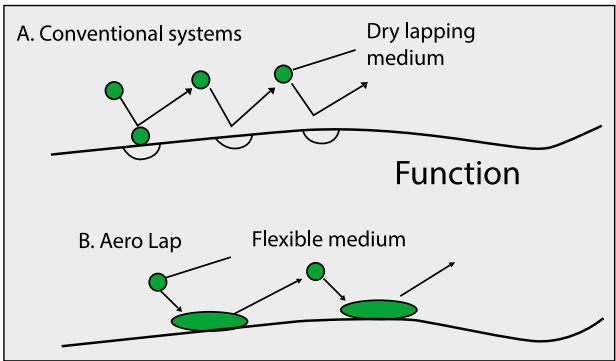
For extremely fine lapping of irregular profiles, AERO LAP is also equipped for small tools and parts. The special suspension multicone enables an automated lapping process without changing the geometry of the components to be worked. Multicone is a special elastic carrier medium to which diamond powder has been added. The media is directed onto the workpiece via a nozzle from a special turbine.

AERO LAP

- Easy lapping of irregular profiles
- Improves tool life of all tools (drills, milling cutters, form punches, etc.)
- Suitable for PVD/CVD coating (pre/mirror-gloss lapping)
- Negligible production of dust and odour



Standard specifications	Unit	YT300
Workpiece dimensions	mm	300 x 300
Air connection	bar	0.5 - 0.8
Power supply 3 phases 50 Hz 16 A	V	400
Machine size W x H x D	mm	700 x 1600 x 900



- Locations
- ▲ Servicepoints
- Dealer
- Dealer DE

- 1 FHL-Werkzeugmaschinenvertrieb Apolda
- 2 M.Peters Werkzeugmaschinen Waldshut-Tiengen
- 3 J+K Jugard + Künstler München
- 4 Prematech e.K. Obermichelbach
- 5 Bernd Goll Industrievertretungen Knittlingen
- 6 PeHa Werkzeugmaschinen Weissenhorn
- 7 Hermann Wirth Indutrieteknik Karben
- 8 Sudler Werkzeugmaschinen Langgöns
- 9 Niemeyer Werkzeugmaschinen Berlin



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