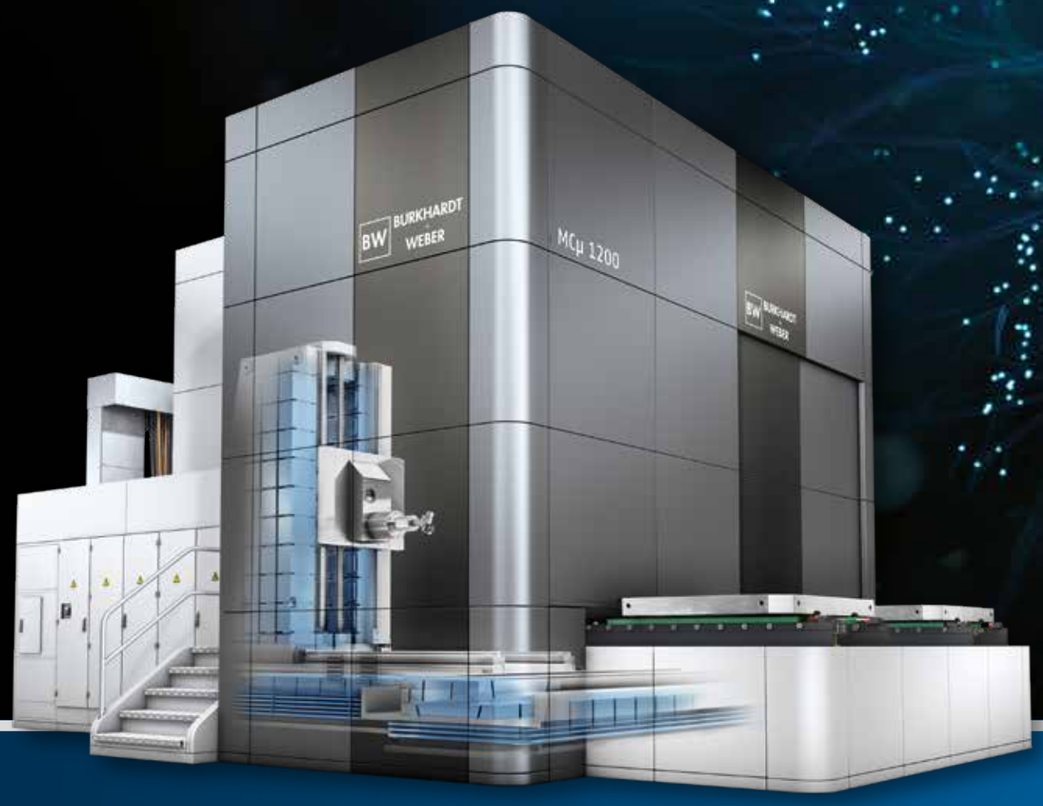
MCµ.

ULTRA-PRECISE MACHINING CENTRES.

Machines of the MCµ series are designed for ultimate precision and long-term accuracy. Close to µ accuracy and – as always at BW – not just on the day of commissioning, but over many years of use. The MCµ series is no standard machine trimmed for accuracy. The MCµ is based much more on a fundamentally new concept. Because the final µ is the result of many specific individual measures, such as careful design, best materials, strict production methods and very experienced employees.

MCµ: Accuracy by design, not compensation.



MCµ – THE ULTRA-PRECISE SERIES.

WHEN ACCURATE IS NOT ACCURATE ENOUGH.

The MCµ provides tightest geometric tolerances (positioning, flatness, radial eccentricity, concentricity, angularity, repositioning) for the most demanding applications. The basis for long-term accuracy is maximum stability from the ground up. High guide bars, FEM-optimised structures cast from mineral casting material, a thermally inert system and active tempering are examples of the many measures taken. BW's very high degree of vertical integration in all core components is decisive for the successful implementation of such accurate machines.

Hand-crafted perfection is reflected in the guide supports, which are refiled by hand. The last µ is obtained in this way.

Ideal technical conditions: high-precision machining in-house in production halls air-conditioned to ±1 °C and an integrated, thermally symmetrical measuring machine in the same climatic environment for component measurement.

MCμ – THE ULTRA-PRECISE SERIES.

TECHNICAL DATA.

MCμ (Metric System)	Unit	800	900		1000	1200	1250
							
Working range X|Y|Z	mm	1,250|1,000|1,250	1,600|1,400|1,600		2,200|1,400|1,800	2,500|1,800|1,800	2,800|1,800|2,100
Workpiece swing diameter Ø x h	mm	1,500x1,300	1,600x1,750		2,300x1,900	2,500x2,100	2,800x2,500
Pallet size (optional)	mm	800x800, 630x800	800x1,000, 800x800		1,000x1,250	1,000x1,250	1,000x1,250
Pallet load	kg	2,500	3,000		5,000	6,000	7,000
Feed force X|Y|Z	kN	15|15|15	20|20|20		20|20|20	25|25|25	25|25|25
Rapid traverse X|Y|Z (standard axis travel)	m/min	30|30|30	30|30|30		30|30|30	30|30|30	30|30|30
Table speed	rpm	15	10		6	6	6
Tilting torque	Nm	20,000	35,000		55,000	55,000	55,000
Tangential torque	Nm	12,000	20,000		35,000	35,000	35,000
Spindle power 100% duty rating	kW	32	32		32	32	32
Torque 100% duty rating	Nm	610	610		610	610	610
Speed range	rpm	20 – 6,000	20 – 6,000		20 – 6,000	20 – 6,000	20 – 6,000
Bearing diameter main spindle	mm	120	120		120	120	120
Spindle radial runout	mm	< 0.002	< 0.002		< 0.002	< 0.002	< 0.002
Spindle axial runout	mm	< 0.002	< 0.002		< 0.002	< 0.002	< 0.002
Number of tool pockets		128 – 608	128 – 608		128 – 608	128 – 608	128 – 608
Machine control, Siemens Sinumerik		SIN 840D sl	SIN 840D sl		SIN 840D sl	SIN 840D sl	SIN 840D sl
Floor space required, LxWxH approximately	mm	8,600x6,100x4,700	9,800x6,500x5,100		10,200x7,200x5,300	10,600x7,800x5,400	11,600x8,600x5,400
Weight approximately	kg	38,000	44,000		52,000	59,000	62,000
ACCURACY according to VDI/DGQ 3441							
P X|Y|Z	mm	0.004	0.004		0.005	0.005	0.005
Pa X|Y|Z	mm	0.003	0.003		0.004	0.004	0.004
Us X|Y|Z	mm	0.002	0.002		0.003 X | 0.002 Y, Z	0.003	0.003
P, B	arcsec	3	3		3	3	3
Pa, B	arcsec	2	2		2	2	2
Us, B	arcsec	2	2		2	2	2
ANGULARITY of the linear axes X|Y|Z	mm	< 0.005|1,000	< 0.005|1,000		< 0.006|1,000 X < 0.005|1,000 Y, Z	< 0.006|1,000	< 0.006|1,000
STRAIGHTNESS of the linear axes X|Y|Z	mm	< 0.004	< 0.005		< 0.007 X, < 0.005 Y, Z	< 0.008	< 0.008
EXCHANGING REPEATABILITY of pallets	mm	< 0.008	< 0.008		< 0.010	< 0.010	< 0.010

Technical specifications are subject to change without prior notice.

MCμ – THE ULTRA-PRECISE SERIES.

TECHNICAL DATA.

MCμ (Imperial System)	Unit	800	900		1000	1200	1250
							
Working range X|Y|Z	in	49.21|39.37|49.21	63.00|55.12|63.00		86.61|55.12|70.87	98.43|70.87|70.87	110.24|70.87|82.68
Workpiece swing diameter Ø x h	in	59.06 x 51.18	63.00 x 68.90		90.55 x 74.80	98.43 x 82.68	110.24 x 98.43
Pallet size (optional)	in	31.50 x 31.50, 24,80 x 31.50	31.50 x 39.37, 31.50 x 31.50		39.37 x 49.21	39.37 x 49.21	39.37 x 49.21
Pallet load	lbs	4,409	6,614		11,023	13,228	15,432
Feed force X|Y|Z	lb	3,372|3,372|3,372	4,496|4,496|4,496		4,496|4,496|4,496	5,620|5,620|5,620	5,620|5,620|5,620
Rapid traverse X|Y|Z (standard axis travel)	in/min	1,181|1,181|1,181	1,181|1,181|1,181		1,181|1,181|1,181	1,181|1,181|1,181	1,181|1,181|1,181
Table speed	rpm	15	10		6	6	6
Tilting torque	lb/in	177,015	309,776		486,791	486,791	486,791
Tangential torque	lb/in	106,205	177,015		309,776	309,776	309,776
Spindle power 100 % duty rating	HP	43	43		43	43	43
Torque 100 % duty rating	lb/in	5,400	5,400		5,400	5,400	5,400
Speed range	rpm	20 – 6,000	20 – 6,000		20 – 6,000	20 – 6,000	20 – 6,000
Bearing diameter main spindle	in	4.7244	4.7244		4.7244	4.7244	4.7244
Spindle radial runout	in	< 0.0000787	< 0.0000787		< 0.0000787	< 0.0000787	< 0.0000787
Spindle axial runout	in	< 0.0000787	< 0.0000787		< 0.0000787	< 0.0000787	< 0.0000787
Number of tool pockets		128 – 608	128 – 608		128 – 608	128 – 608	128 – 608
Machine control, Siemens Sinumerik		SIN 840D sl	SIN 840D sl		SIN 840D sl	SIN 840D sl	SIN 840D sl
Floor space required, LxWxH approximately	in	339 x 240 x 185	386 x 256 x 201		402 x 283 x 209	417 x 307 x 213	457 x 339 x 213
Weight approximately	lbs	83,780	97,000		114,640	130,070	136,680
ACCURACY according to VDI/DGQ 3441							
P X|Y|Z	in	0.000157	0.000157		0.000197	0.000197	0.000197
Pa X|Y|Z	in	0.000118	0.000118		0.000157	0.000157	0.000157
Us X|Y|Z	in	0.000079	0.000079		0.000118 X 0.000079 Y, Z	0.000118	0.000118
P, B	arcsec	3	3		3	3	3
Pa, B	arcsec	2	2		2	2	2
Us, B	arcsec	2	2		2	2	2
ANGULARITY of the linear axes X|Y|Z	in	< 0.000197|39.37	< 0.000197|39.37		< 0.000236|39.37 X < 0.000197|39.37 Y, Z	< 0.000236|39.37	< 0.000236|39.37
STRAIGHTNESS of the linear axes X|Y|Z	in	< 0.000157	< 0.000197		< 0.000276 X < 0.000197 Y, Z	< 0.000315	< 0.000315
EXCHANGING REPEATABILITY of pallets	in	< 0.000315	< 0.000315		< 0.000394	< 0.000394	< 0.000394

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