

WELE

WELE

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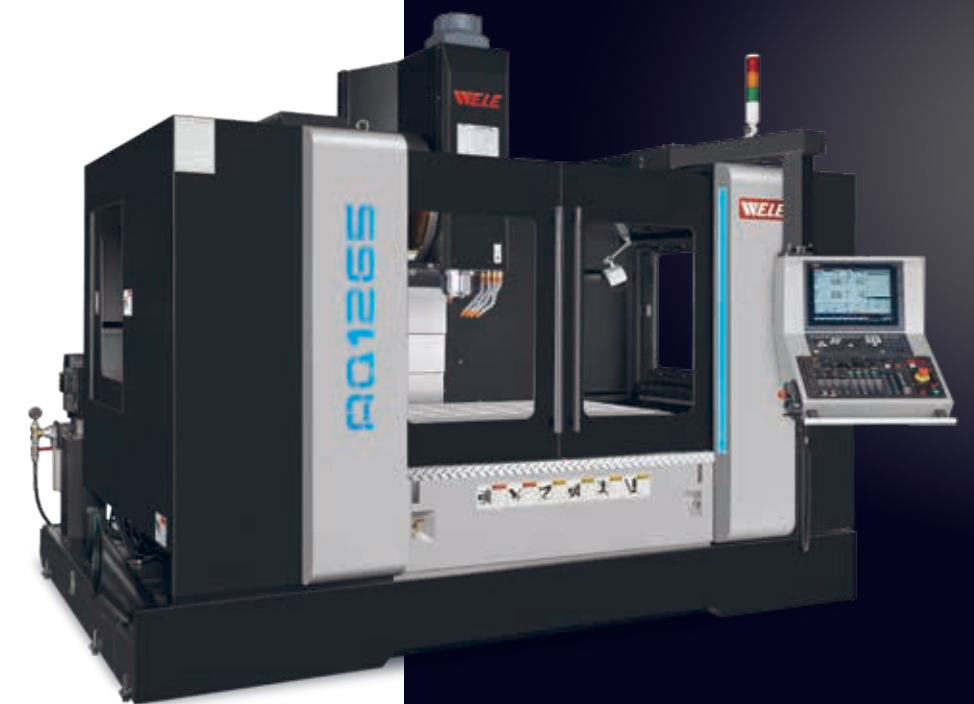
WELE

We lead the way by a new business model

AQSERIES



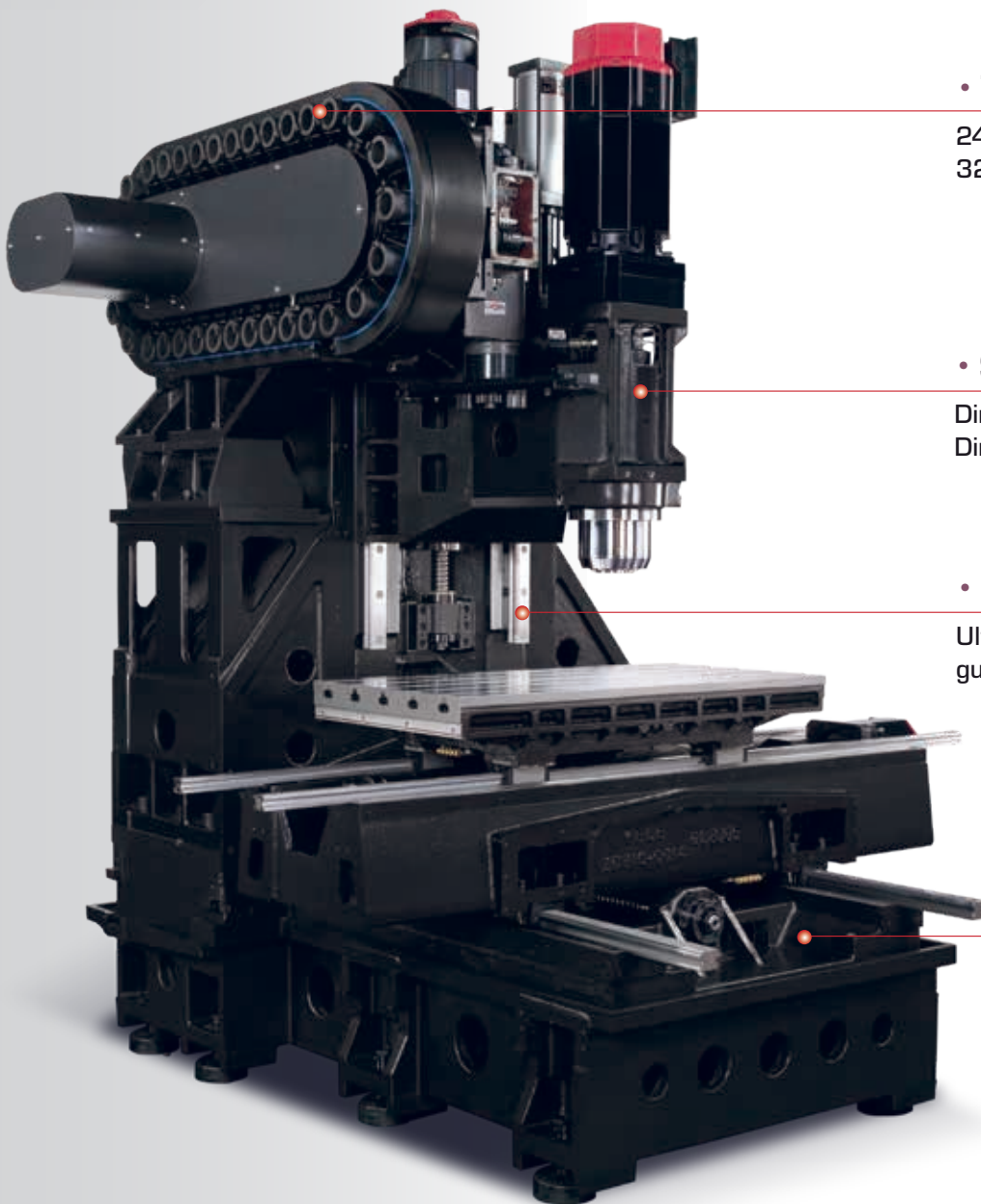
Vertical Machining Center
Linear Guideways Type



WELE MECHATRONIC CO., LTD

AQ series

The machine AQ series is developing for the demand of high performance cutting, fitted with generously sized guideways and equipped with a mechanical, two steps direct spindle head as standard which is directly coupled to the precision spindle.



• Tool magazine

24 tools (STD) ;
32/40 tools(OPT)

• Spindle

Direct driven 12,000 rpm [STD]
Direct driven 15,000 rpm [OPT]

• Linear guideway

Ultra-heavy load roller linear guideways.

• Super 650mm
Y axis travel

(AQ 65 series)

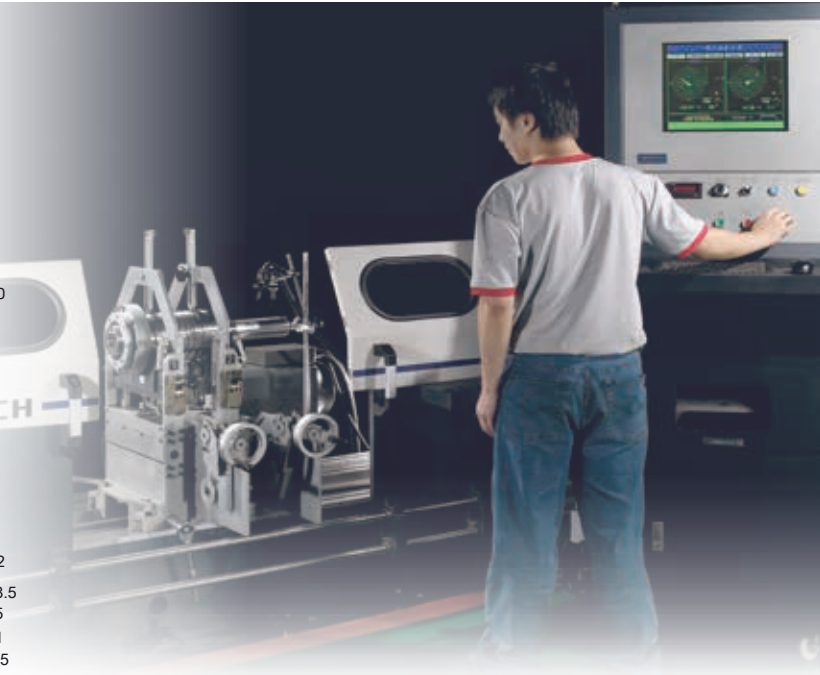
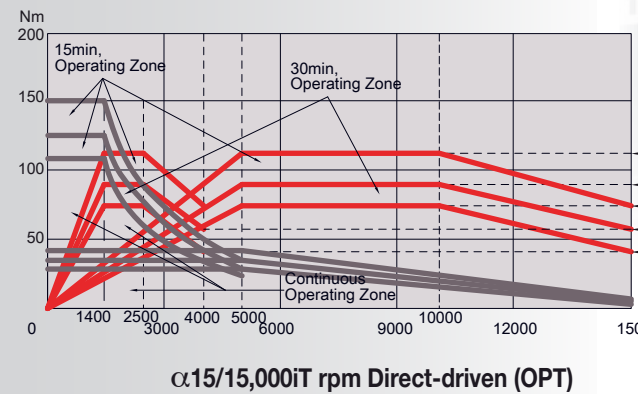
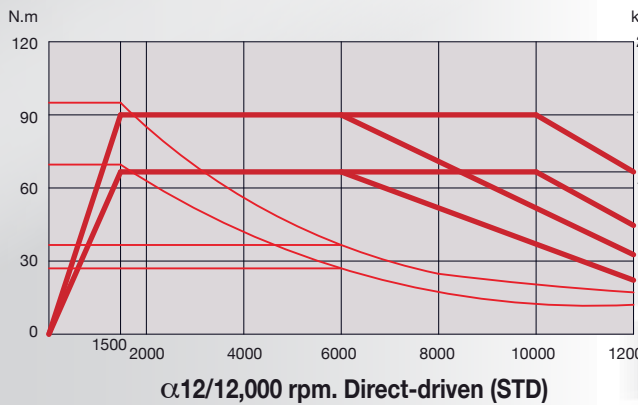
* Above figure is AQ1050's main structure without splash guarding system.



* Above figure is AQ1265 with some accessories.

		AQ850	AQ1050	AQ1265	AQ1465	AQ1665
Strokes	Unit					
X travel (left & right)	mm (in)	800 (31.5)	1,020 (40.2)	1,200 (47.2)	1,400 (55.1)	1,600 (63.0)
Y travel (in & out)	mm (in)	510 (20.1)	510 (20.1)	650 (25.6)	650 (25.6)	650 (25.6)
Z travel (up & down)	mm (in)	510 (20.1)	510 (20.1)	610 (24.0)	610 (24.0)	610 (24.0)
Table dimensions		Unit				
Table size (X direction)	mm (in)		1,000 (39.4)	1,200 (47.2)	1,400 (55.1)	1,600 (63.0)
Table size (Y direction)	mm (in)		510 (20.1)	510 (20.1)	650 (25.6)	650 (25.6)
Table load capacity	kg (lb)		500 (1,102.3)	600 (1,322.8)	1,000 (2,204.6)	1,000 (2,204.6)

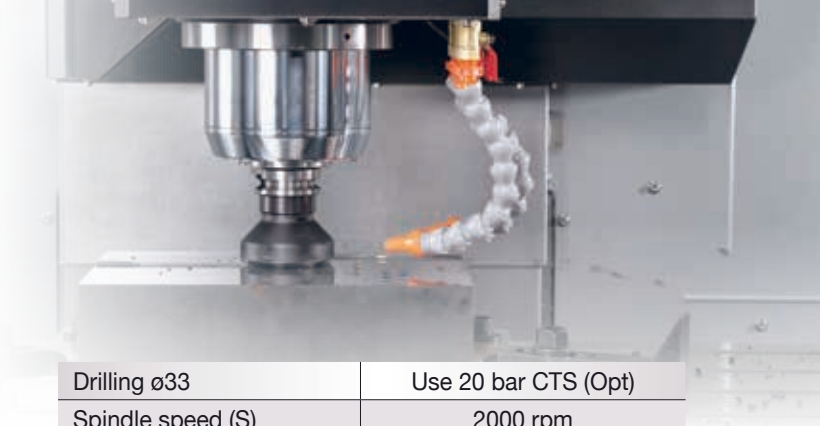
Spindle Configuration



High Efficiency Cutting Performance

AQ850 Direct Driven Spindle CAT40-12,000 rpm a15/ 18.5 kW (OPT) Material: S45C

Face milling	Ø80 x 8t
Spindle speed (S)	1300 rpm
Cutting velocity (Vc)	327 m/min
Cutting width (ae)	60 mm
Cutting depth (ap)	3 mm
Cutting feedrate (Vf)	2600 mm/min
Cutting feedrate per tip (fz)	0.25 mm/tooth
Cutting capacity (MRR)	468 cc/min



End milling φ32x2t	Side milling	Slot milling
Spindle speed (S)	1400 rpm	1400 rpm
Cutting velocity (Vc)	140 m/min	140 m/min
Cutting width (ae)	16 mm	32 mm
Cutting depth (ap)	32 mm	16 mm
Cutting feedrate (Vf)	280 mm/min	280 mm/min
Cutting feedrate per tip (fz)	0.1 mm/tooth	0.1 mm/tooth
Cutting capacity (MRR)	143 cc/min	143 cc/min

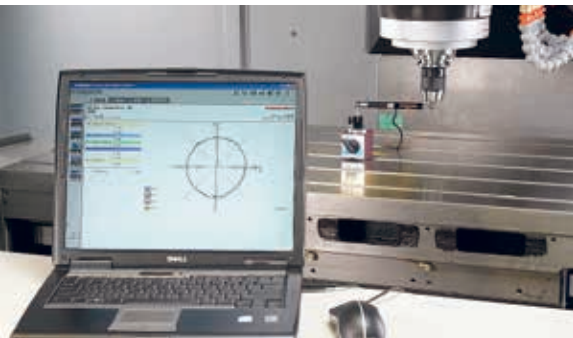
Drilling ø33	Use 20 bar CTS (Opt)	
Spindle speed (S)	2000 rpm	
Cutting velocity (Vc)	207 m/min	
Cutting feedrate (Vf)	250 mm/min	
Cutting feedrate per tip (fz)	0.125 mm/rev	
Cutting capacity (MRR)	214 cc/min	

Rigid tapping	M30xP3.5	M4xP0.7
Spindle speed (S)	180 rpm	2000 rpm
Cutting feedrate (Vf)	630 mm/min	1400 mm/min

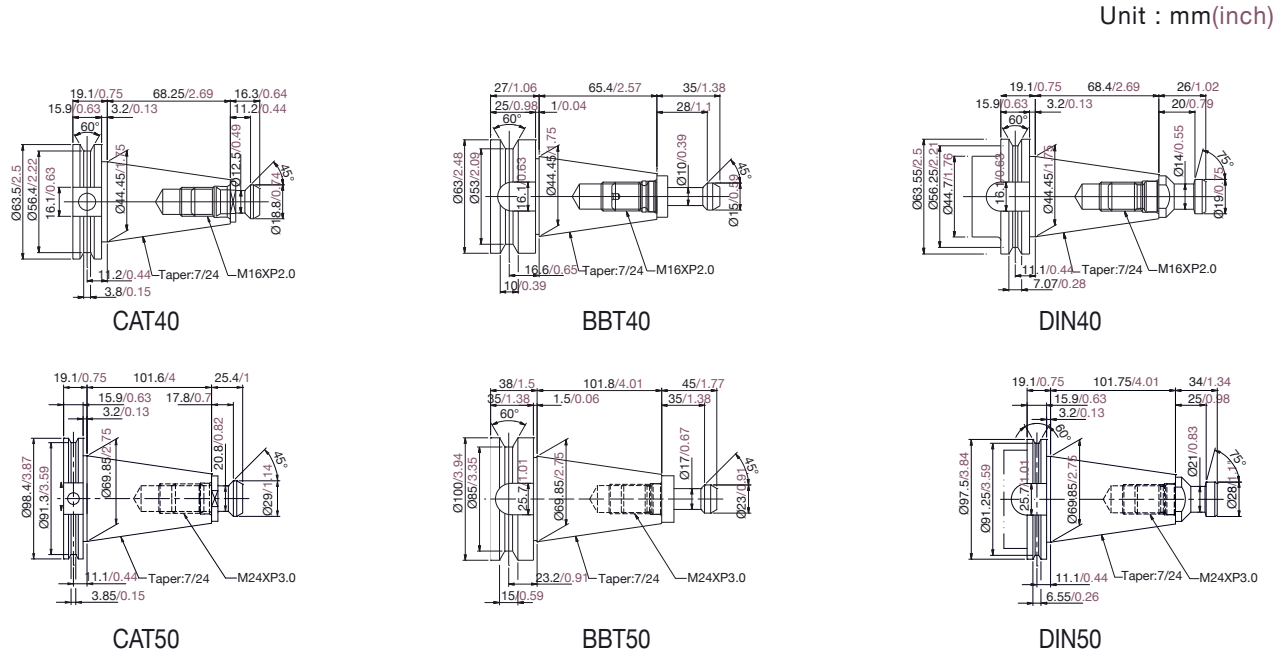
Experienced technology



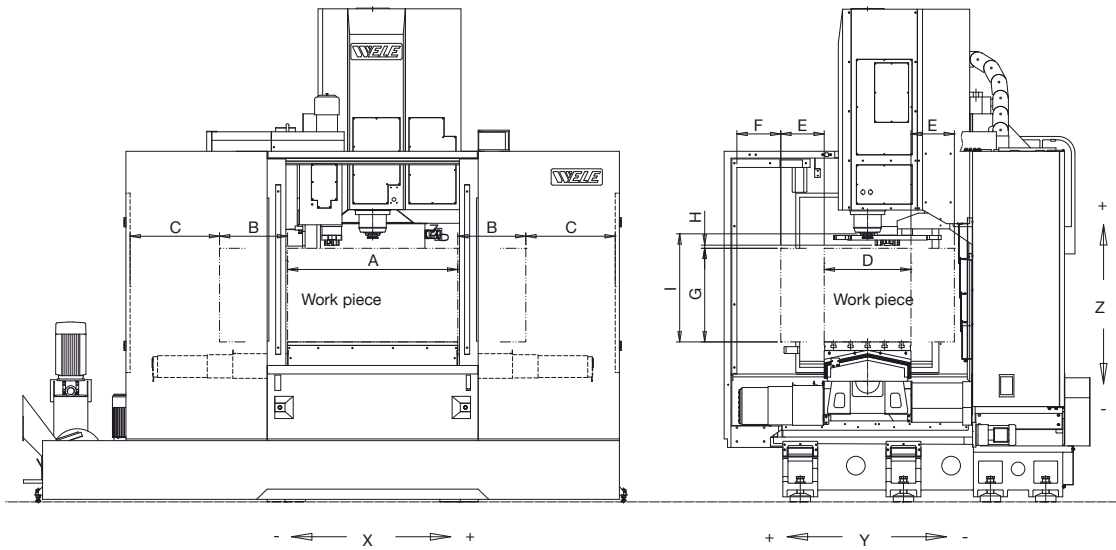
Strick quality assurance



Tool Shank and Pull Stud Dimension



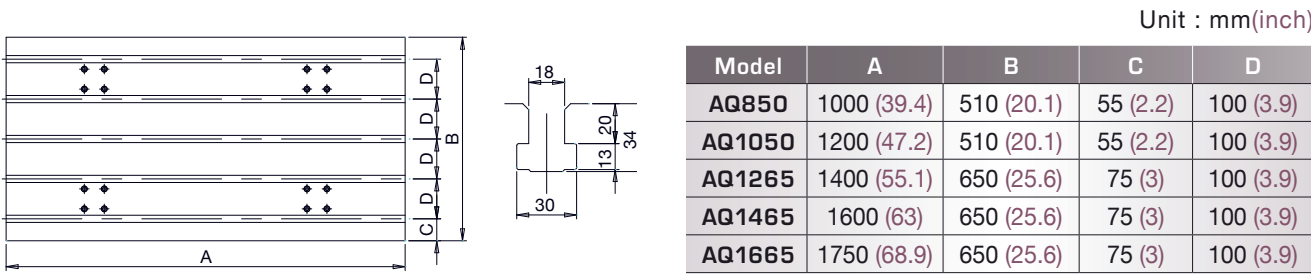
Inside of Working Area Dimensions



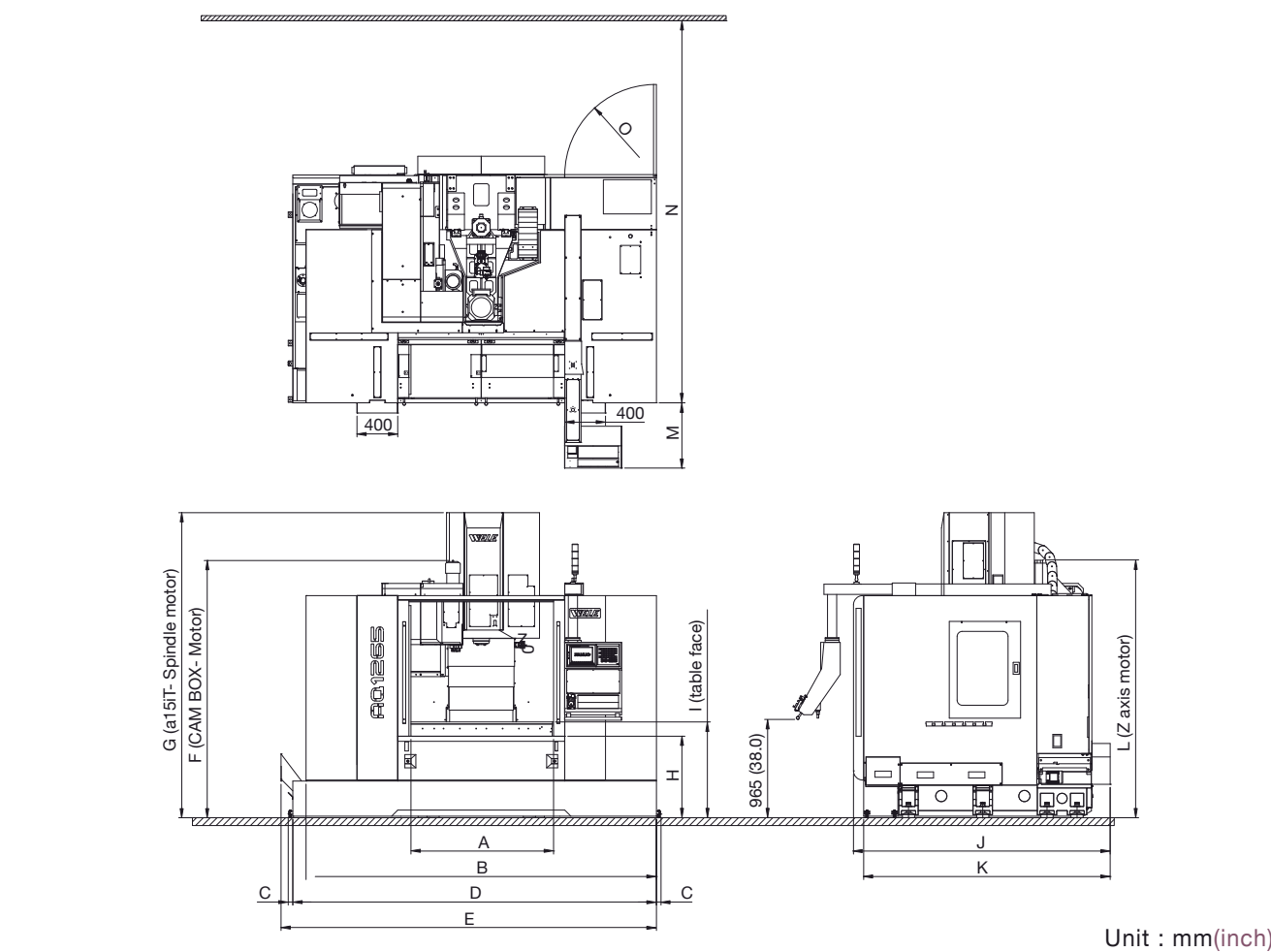
Unit : mm(inch)

Model	A	B	C	D	E	F	G	H	I
AQ850	1000 (39.4)	400 (15.7)	525 (20.7)	510 (20.1)	255 (10.0)	260 (10.2)	550 (21.7)	20 (0.8)	125-635 (4.9-25)
AQ1050	1200 (47.2)	510 (20.1)	415 (16.3)						
AQ1265	1400 (55.1)	600 (23.6)	395 (15.6)	650 (25.6)	325 (12.8)	210 (8.3)	660 (26.0)	20 (0.8)	150-760 (5.9-29.9)
AQ1465	1600 (63)	700 (27.6)	435 (17.1)						
AQ1665	1750 (68.9)	800 (31.5)	470 (18.5)						

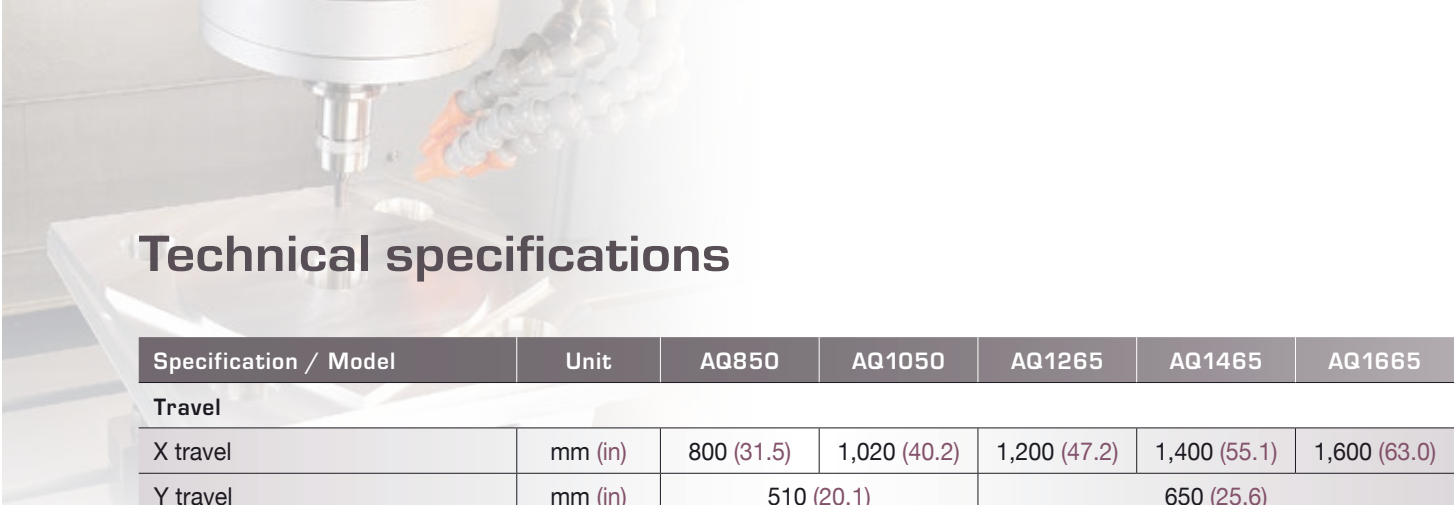
Table Dimensions



Machine Dimension and Space Requirement



** Above estimated dimensions not including the chip bucket, CTS tank, and other optional accessories.
** Product informations are subject change without notice.



Technical specifications

Specification / Model	Unit	AQ850	AQ1050	AQ1265	AQ1465	AQ1665
Travel						
X travel	mm (in)	800 (31.5)	1,020 (40.2)	1,200 (47.2)	1,400 (55.1)	1,600 (63.0)
Y travel	mm (in)	510 (20.1)		650 (25.6)		
Z travel	mm (in)	510 (20.1)		610 (24.0)		
Distance from spindle nose to table top	mm (in)	125-635 (4.9-25)		150-760 (5.9-29.9)		
Table						
Table size (X direction)	mm (in)	1,000 (39.4)	1,200 (47.2)	1,400 (55.1)	1,600 (63.0)	1,750 (68.9)
Table size (Y direction)	mm (in)	510 (20.1)		650 (25.6)		
Table load capacity	kg (lb)	500 (1,102.3)	600 (1,322.8)	1,000 (2,204.6)		
Spindle						
Spindle speed	rpm	Direct driven / 12,000		Direct driven / 12,000		
Spindle motor (cont./30 min. rating)	kW (HP)	11/15 (15/20)		11/15 (15/20)		
Spindle Torque (cont./30 min. rating)	Nm (lb-ft)	70/95 (51.6/70)		70/95 (51.6/70)		
Spindle taper		BBT40		BBT40		
Feedrate						
Rapid traverse rate (X axis)	mm(in)/min	48,000 (1,889.8)		36,000 (1,417.3)		
Rapid traverse rate (Y axis)	mm(in)/min	48,000 (1,889.8)		36,000 (1,417.3)		
Rapid traverse rate (Z axis)	mm(in)/min	36,000 (1,417.3)		30,000 (1,181.1)		
Cutting feedrate	mm(in)/min	1-10,000 (0.04-393.7)		1-10,000 (0.04-393.7)		
Tool magazine						
Tool magazine capacity	pockets	24		24		
Max. tool diameter/ adjacent pocket empty	mm (in)	70/150 (2.75/5.9)		70/150 (2.75/5.9)		
Max. tool length	mm (in)	250 (9.8)		250 (9.8)		
Max. tool weight	kg (lb)	7 (15.4)		7 (15.4)		
Accuracy						
Positioning accuracy (JIS 6338)	mm (in)	±0.005/300 (0.0002/11.8)		±0.005/300 (0.0002/11.8)		
Positioning accuracy (VDI 3441)	mm (in)	P≤0.012 (0.0005)		P≤0.012 (0.0005)		
Repeatability (JIS 6338)	mm (in)	±0.003 (0.0001)		±0.003 (0.0001)		
Repeatability (VDI 3441)	mm (in)	Ps≤0.006 (0.0002)		Ps≤0.006 (0.0002)		
Space requirement & weight						
Machine length	mm (in)	2,900 (114.2)	3,100 (122.0)	3,570 (140.6)	3,920 (154.3)	4,340 (170.9)
Machine width	mm (in)	2,250 (88.6)		2,520 (99.2)		
Machine height	mm (in)	2,900 (114.2)		2,994 (117.9)		
Machine weight	kg (lb)	6,700 (14,771)	7,200 (15,873.3)	7,700 (16,975.6)	8,100 (17,857.5)	8,600 (18,959.8)

**Product specifications and accessories are subject to change without notice.

Standard and optional accessories

Specification / Model	● : Standard ○ : Option X : Not avaiable				
	AQ850	AQ1050	AQ1265	AQ1465	AQ1665
*BBT40 spindle taper with its tool magazine	●	●	●	●	●
*DIN40 spindle taper with its tool magazine	○	○	○	○	○
*CAT40 spindle taper with its tool magazine	○	○	○	○	○
*DIN50 spindle taper with its tool magazine	X	X	○	○	○
*CAT50 spindle taper with its tool magazine	X	X	○	○	○
*HSK A63 spindle taper with its tool magazine	○	○	○	○	○
*HSK A100 spindle taper with its tool magazine	X	X	○	○	○
*12,000 rpm direct driven spindle (15/20HP) BBT40	●	●	●	●	●
*15,000 rpm direct driven spindle (20/25HP) BBT40	○	○	○	○	○
*Column raise up for 200mm	○	○	○	○	○
*Spindle chiller	●	●	●	●	●
*Centralized automatic lubricating system in X/Y/Z axis.	●	●	●	●	●
*Roof enclosure guarding system	●	●	●	●	●
*Flood coolant system (Pump & tank)	●	●	●	●	●
*Recycling lubricating oil collector for 3 axes	●	●	●	●	●
*Twin chip auger in Y axis	●	●	●	●	●
*Caterpillar or scrape types conveyor and bucket	○	○	○	○	○
*20 capacity of umbrella type tool magazine (Tool holder #40)	○	○	X	X	X
*24 capacity of arm type tool magazine (Tool holder #40)	●	●	●	●	●
*32 capacity of arm type tool magazine (Tool holder #40)	○	○	○	○	○
*40 capacity of arm type tool magazine (Tool holder #40)	○	○	○	○	○
*Rigid tapping	●	●	●	●	●
*Switch for manual tool unclamping	●	●	●	●	●
*Remote handwheel control (MPG)	●	●	●	●	●
*Work light	●	●	●	●	●
*Operation cycle finish and alarm lights	●	●	●	●	●
*RS232 interface	●	●	●	●	●
*Spray hose for chip wash down	●	●	●	●	●
*Foundation bolt kit	●	●	●	●	●
*Machine manuals	●	●	●	●	●
*Linear scale feedback system for X/Y/Z axis.	○	○	○	○	○
Thermal compensation function package	○	○	○	○	○
*Coolant through the tool adapter	○	○	○	○	○
*Coolant through the spindle (Form A)	○	○	○	○	○
*Automatic tool length measurement (Blum or Renishaw)	○	○	○	○	○
*Automatic workpiece measuring system (Blum or Renishaw)	○	○	○	○	○
*4th axis interface prepared	○	○	○	○	○
*CNC rotary table	○	○	○	○	○
*FANUC 0iM controller	●	●	●	●	●
*FANUC 31iMB controller	○	○	○	○	○
*Mitsubishi M830 controller	○	○	○	○	○
*Heidenhain TNC 640 controller	○	○	○	○	○

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