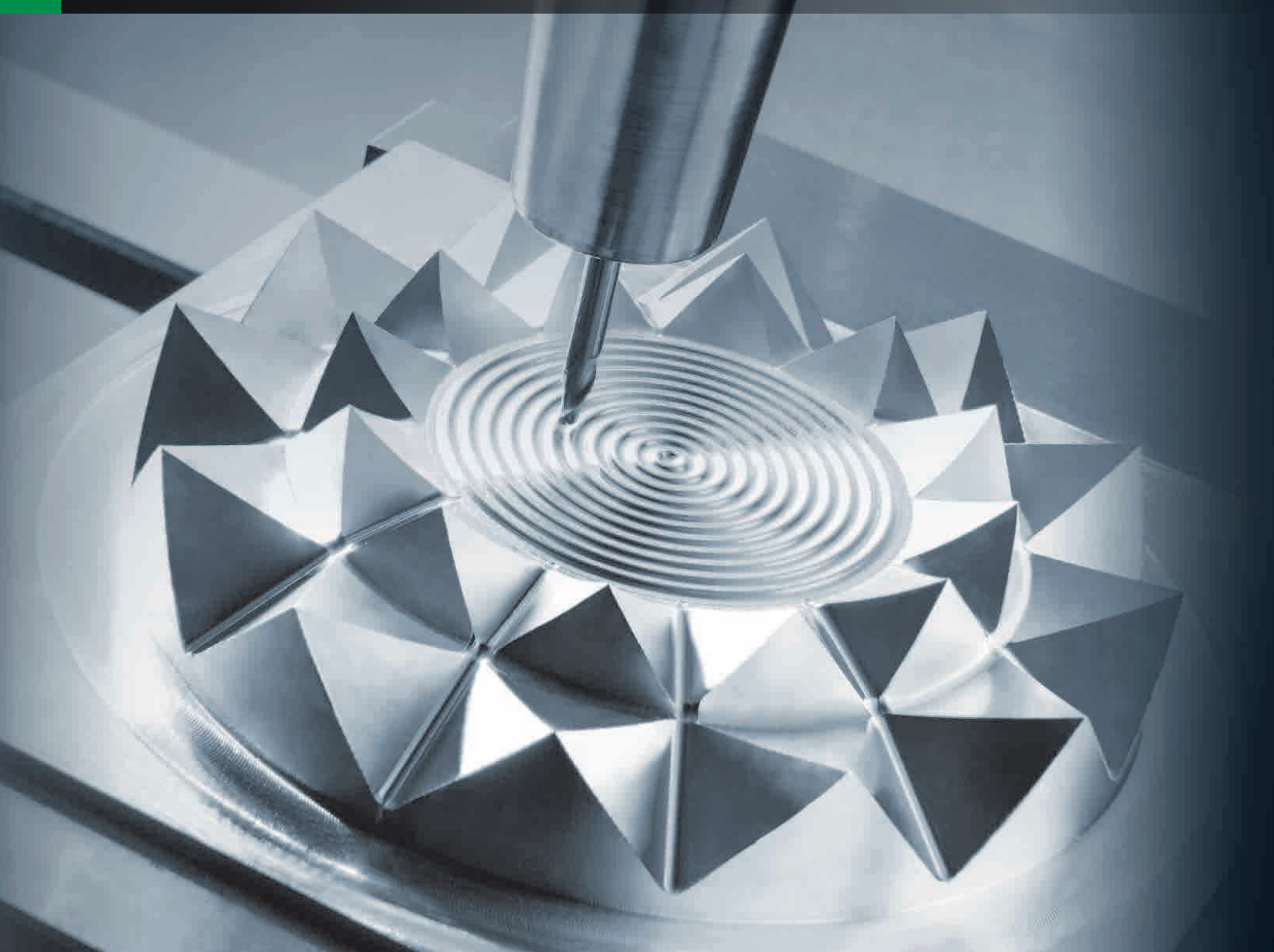


# AE SERIES

High Speed Vertical Machining Centers



THE ULTIMATE MACHINING POWER

AWEA MECHANTRONIC CO.,LTD.

## NEW GENERATION Vertical Machining Centers

The AE series features high speed linear guide ways and high speed spindle with rigid casting body and fast ATC system to achieve high efficiency and excellent accuracy. Along with design differentiation and high CP value, the AE series fulfill various machining needs from now and future.

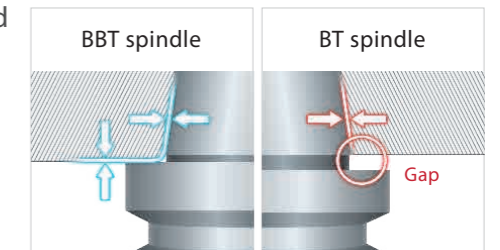


### Modularized spindle options

- Versatile spindle selections to accommodate customer's requirements, Spindle RPM ranges between 10,000 rpm ~ 15,000 rpm

#### BBT dual contact spindle

Standard BBT dual contact spindle to make the spindle taper and surface contact closely with tool holder which ensure highly cutting rigidity while high speed processing.



### Faster rapid

- Linear guideways with optimized servo motors setting achieves agile acceleration with maximum rapid at 36 m/min.

X-axis travel  
**660**  
**1,060**

Y-axis travel  
**460**  
**610**

Z-axis travel  
**510**  
**680**

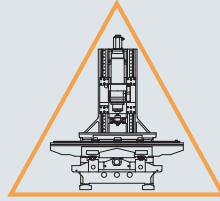
Unit : mm



# AE SERIES

## Finite Element Analysis ( FEM )

The Finite Element Analysis provides the optimal machine design to build a light-weight, yet super rigid machine structure.

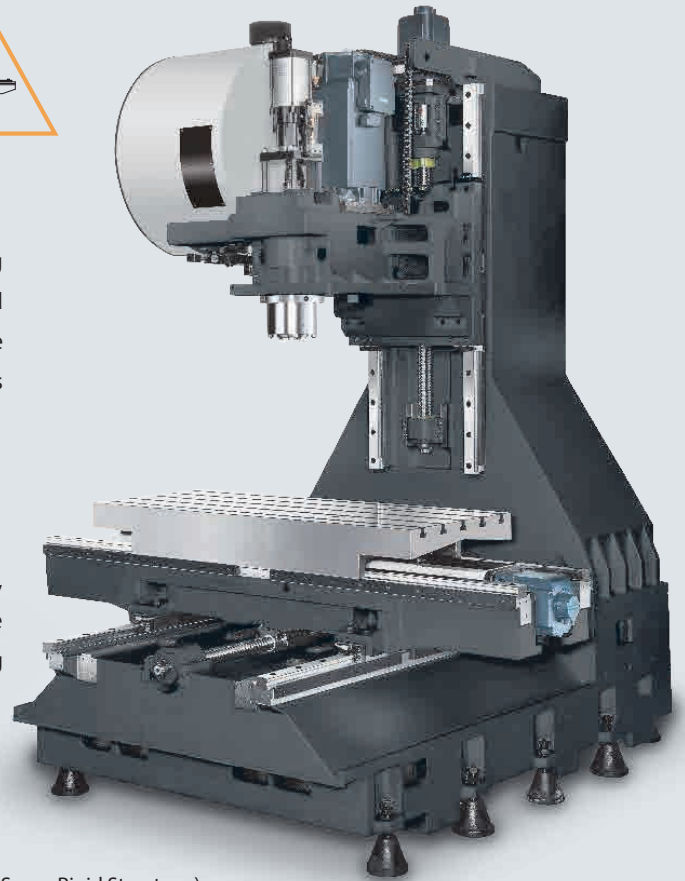


## High-grade MEEHANITE castings

The base, column and head stock are all cast from high-damping and low-deformation FC300 MEEHANITE. It can absorb shocks and vibrations more than 10 times better than steel. Therefore, the AE-660 series not only has ultra-high structural rigidity but also is extremely durable.

## Hand scraped craftsmanship

All the sliding or fix surface of machine bed, column, saddle, headstock, and ball screw holder are hand scraped to provide excellent assembly precision and load distribution, ensuring long term accuracy.

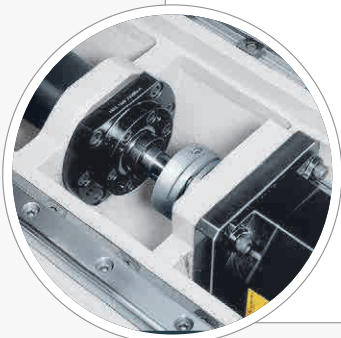


( AE-1060 Super Rigid Structure )



## C3 grade ball screw

- The heat-treated and precision-ground C3 grade ball screw offers the highest precision and long term durability. The standard assembly procedure includes adjustments to ensure perfect parallelism between the screw and the guide ways, and the optimal pre-loaded of the nut, which minimizes back lash and greatly improves machining accuracy.



## Direct drive servo motor

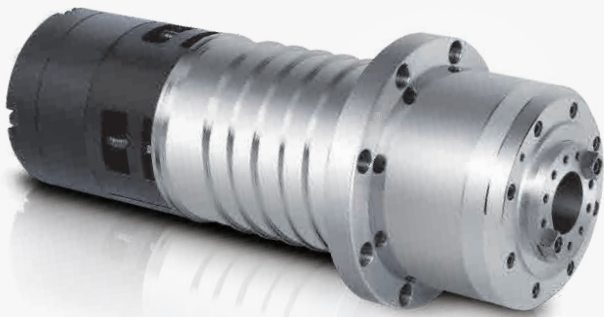
- 3 axes are adopted with direct drive AC servo motors to ensure great heavy load ability, high dynamic precision and fast acceleration / deceleration.

# HIGH SPEED VERTICAL MACHINING CENTERS

## Highly Cost-Effective Spindle

### High efficiency belt-drive spindle

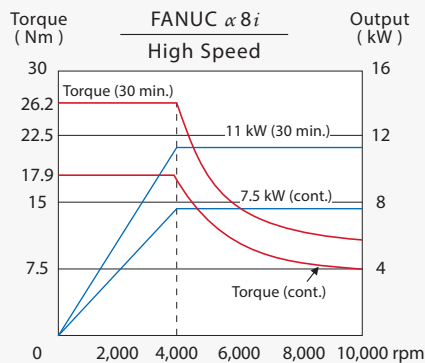
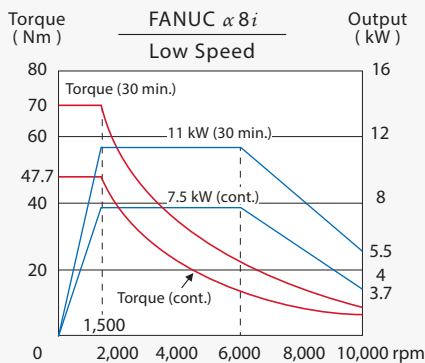
- The spindle combines the capabilities of both precision and heavy-duty cutting. The 10,000 rpm belt-drive spindle delivers a max. torque output of 70 Nm at 1,500 rpm.



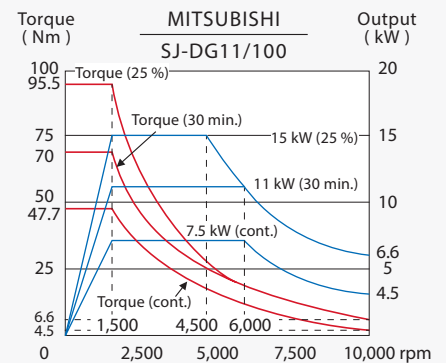
### High speed direct-drive spindle

- Direct-drive design efficiently isolates heat from motor, reduces thermal deformation and maintain long period of machining accuracy.

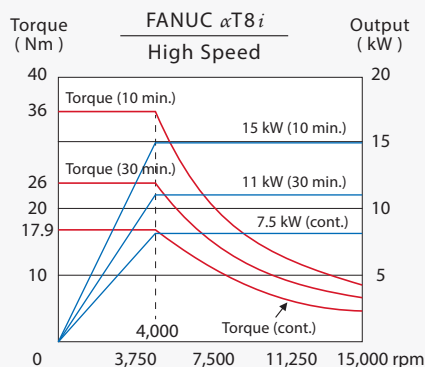
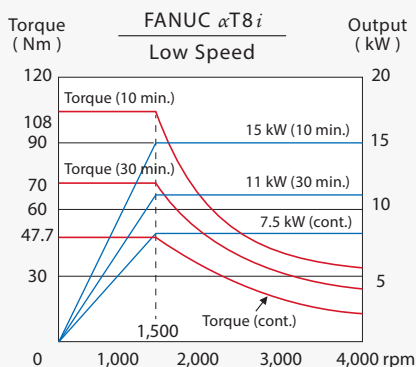
10,000 rpm Belt-drive Spindle



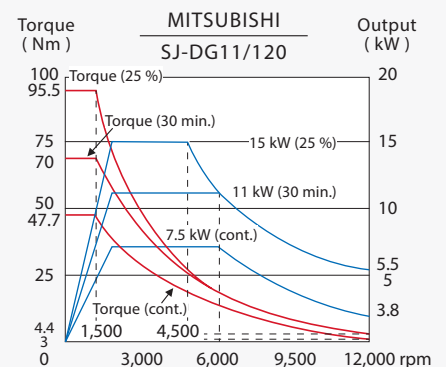
10,000 rpm Belt-drive Spindle



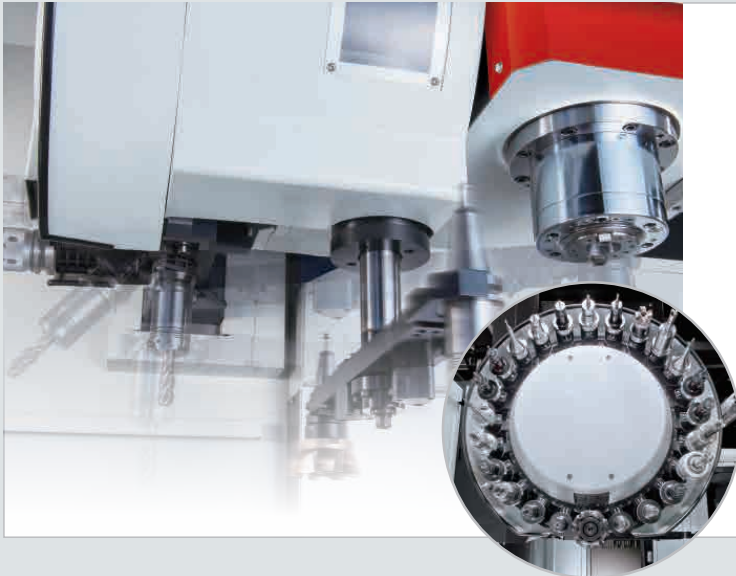
15,000 rpm Direct-drive Spindle



12,000 rpm Direct-drive Spindle



# High Reliable ATC System



- All machines must pass the test of long-term tool change reliability before shipment to achieve high efficiency and high stability during tool change.
- Various options of tool magazine configurations are available by machine models to meet different machining needs.

24T Disc Type Tool Magazine

# High Efficiency Chips Removal



AE-660 Chip auger x 1

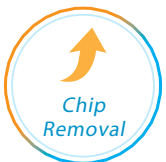
AE-1060 Chip auger x 3

## Screw type chip auger

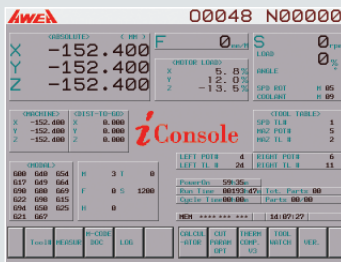
- With high-performance screw chip auger as standard, chips can be quickly removed and reliably separated from the coolant. It successfully reduces both the workload of personnel cleaning and the risk of machining accuracy being affected by chips piling up.

# High Pressure Coolant Systems Opt.

- The high-pressure cooling system enables higher cutting speeds, extends the tool life, and improves the chip removal capacity when deep drilling. It is the most economical processing mode and can vastly improve capacity.

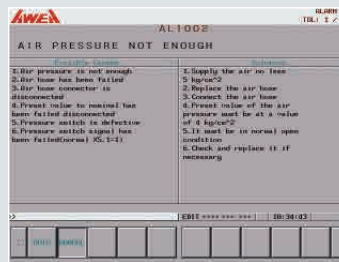


# i Console NC Intelligence Opt.



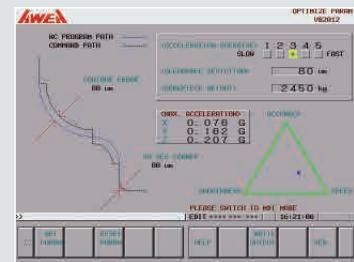
**Main screen**

- Instant messaging system
  - Tool list
  - Work piece measurement
  - M code
  - Calculator
- OPTION :**
- CNC parameter optimization
  - Spindle thermal compensation
  - Adoptive feed control (AFC)



**Trouble shooting**

When the alarm appears, the screen will display the malfunction message and trouble shooting procedure enabling the operator to solve problems to shorten the shutdown time.



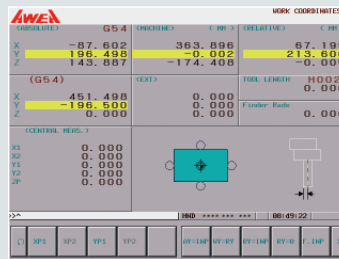
**CNC optimized parameter**

From rough cutting to fine machining, users can select different work modes, define the allowable tolerances and enter the weight of the work-piece. Based on this input the i Console program will modify machining parameters to reduce machining time.



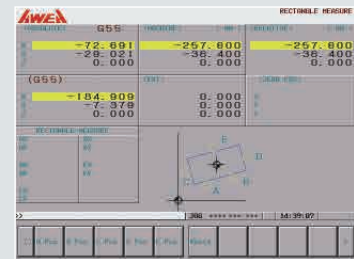
**Circular work-piece measurement**

By measuring the A, B, C three points coordinates the circular work-piece's center point can be correctly calculated.



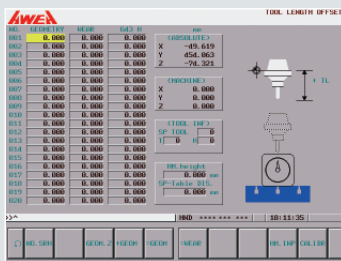
**Basic rectangular work piece measurement**

By measuring the four points X+, X-, Y+, and Y-, the rectangular work piece's center point can be calculated. Then the center point coordinates can be entered in the work piece coordinate system. (G54 - G59)



**Advanced rectangular work piece measurement**

By measuring the five points A, B, C, D, and E, the rectangular work piece's center point and slant angle can be calculated. Then the center point coordinate can be entered in the work piece coordinate system. (G54 - G59)



**Tool length offset**

After manually measuring the tool length, the controller will automatically calculate the tool tip position and enter the data into the tool length offset table.



**Tools management**

Complete tools database, easy to use with intuitive fast tool set-up, lowering the possibility of incorrect entries.



**Machining parameter GP**

This function is different from CNC parameter optimization, as it allows the operator to set parameters manually to achieve optimal machining efficiency. (Opt.)

## Standard / Optional Accessories



**Std.** Tool storage support (AE-660)



**Opt.** Automatic tool length measurement



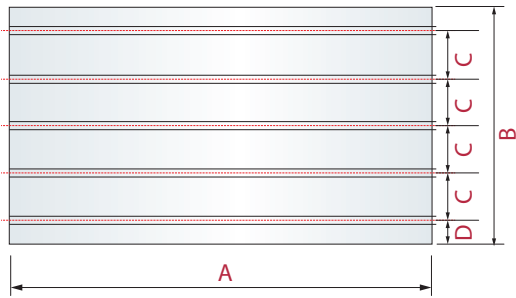
**Opt.** Automatic work piece measurement



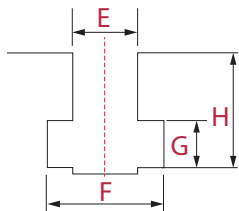
# Dimensions

(Unit : mm)

## Table Dimensions



## T-slot Dimensions



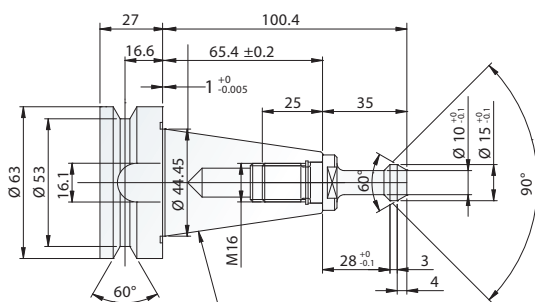
Models	A	B	C	D	E
AE-660	760	456	110	58	18H9
AE-1060	1,258	510	100	55	

Models	F	G	H	NO*1
AE-660	32	12	29	4
AE-1060				5

\* 1 : No. = Number of T-slots

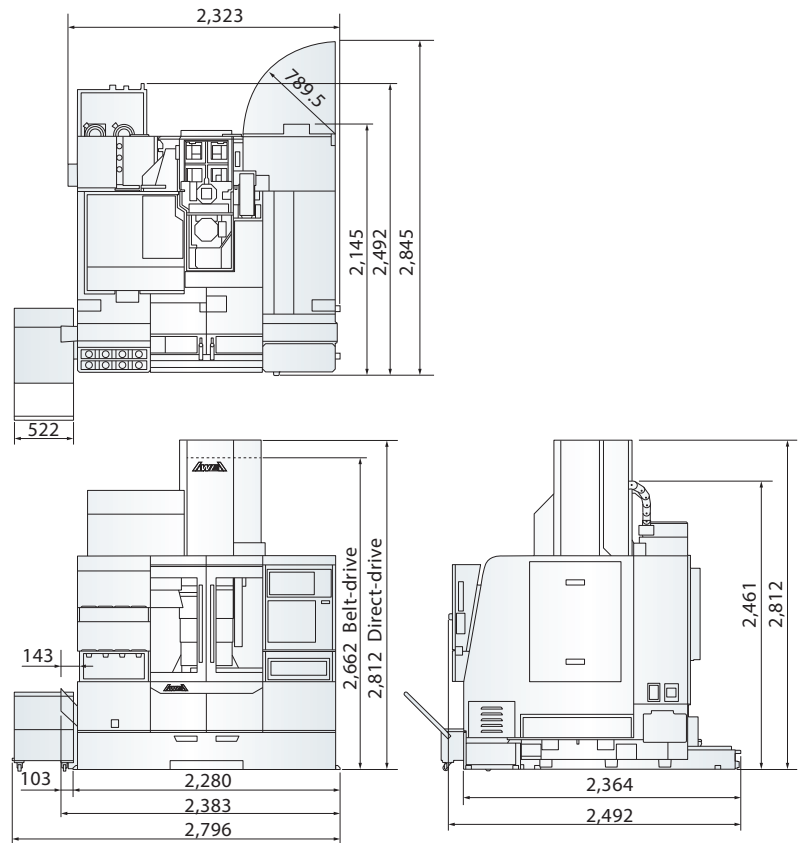
## Tool Shank Dimensions

### BBT40

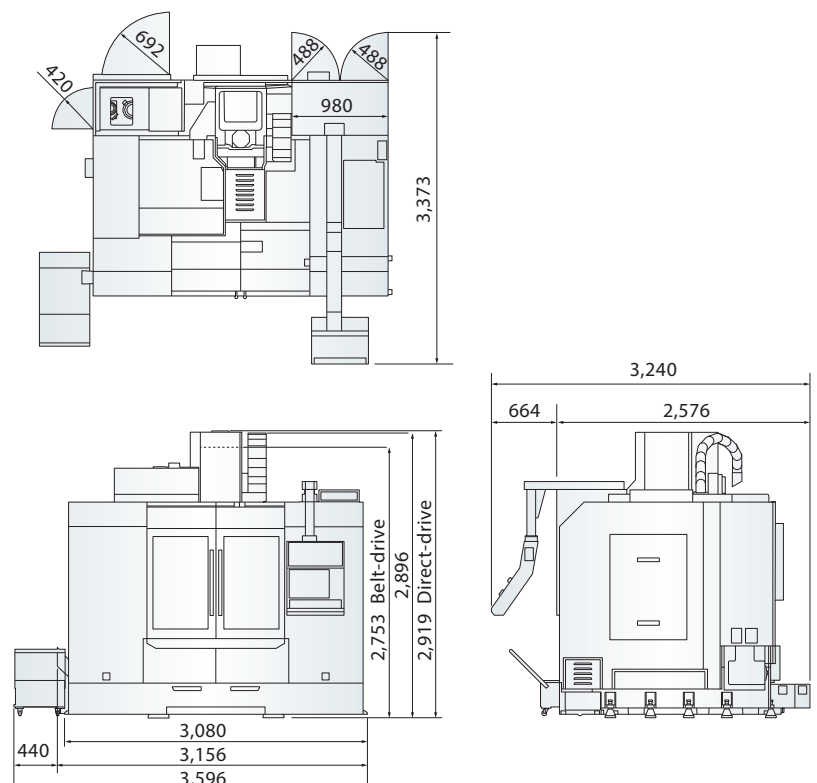


## Machine Dimensions

### AE-660



### AE-1060



# Specifications

		AE-660	AE-1060
<b>SPECIFICATIONS</b>			
X-axis travel	mm	660	1,060
Y-axis travel	mm	460	610
Z-axis travel	mm	510	680
Dist. from spindle nose to table center	mm	150 ~ 660	120 ~ 820
<b>WORK TABLE</b>			
Table size (X direction)	mm	760	1,260
Table size (Y direction)	mm	456	600
Table load capacity	kg	500	700
T-slot ( Width x Pitch x No. )		18 mm x 110 mm x 4	18 mm x 120 mm x 5
<b>SPINDLE</b>			
Spindle taper		BBT40	
Spindle motor ( cont. / 30 min. )	kW	7.5 / 11	
Spindle speed	rpm	10,000 Belt-drive / 12,000 Direct-drive / 15,000 Direct-drive	
<b>FEED RATE</b>			
X / Y axes rapid feed rate	m/min.	36	
Z-axis rapids feed rate	m/min.	30	
Cutting feed rate	m/min.	1 ~ 10	
<b>TOOL MAGAZINE</b>			
Tool magazine capacity		24 T	
Max. tool length	mm	300	
Max. tool weight	kg	7	
Max. tool dia. / adj. pocket empty	mm	Ø80 / Ø150	
<b>ACCURACY</b>			
Positioning accuracy ( ISO230-2 )	mm	0.006	
Repeatability ( ISO230-2 )	mm	0.005	
<b>GENERAL</b>			
Control system		FANUC Oi -MF PLUS / MITSUBISHI M80A	
Pneumatic pressure requirement	kg/cm <sup>2</sup>	5 ~ 8	
Power requirement	kVA	19	32
Machine weight	kg	4,500	6,500

Specifications are subject to change without notice.

## Standard Accessories

- Spindle air curtain
- Coolant nozzle around spindle
- Spindle cooling system
- Centralized automatic lubricating system
- Fully enclosed splash guard w/ roof
- Chips flush coolant system
- Screw type chip auger ( coolant tank )
- Coolant system with pump and tank
- Disk type oil skimmer
- Automatic power-off system

- Air gun system
- Heat exchanger for electric cabinet
- Tool storage support ( AE-660 )
- Status signal lamp
- Foundation bolt kit
- Tool box
- Water gun
- CE

## Optional Accessories

- Automatic work piece measurement
- Automatic tool length measurement
- Coolant through spindle
- Gravity axis anti-drop function
- Caterpillar type chip conveyor and bucket





THE ULTIMATE MACHINING POWER

**AWEA MECHANTRONIC CO.,LTD.**

ISO 9001

ISO 14001



Official distributor for Benelux



**THOLITEC**

Jan Doustraat 37  
1689 XK Zwaag (NH)  
The Netherlands

Tel. +31(0)85 0022937  
info@tholitec.nl  
www.tholitec.nl