

# Cincom



# Cincom Evolution Lin

Sliding HeadstockType Automatic CNC Lathe









Cincom's B series 'best seller' model has been enhanced to expand the machining range up to  $\emptyset$  16 mm. And the cost has been substantially reduced.

**Cincom Evolution** 

The B series, which has sold well worldwide for a long time, has been enhanced as part of the Cincom Evolution Line, with a significant price revision. The B16E can handle diameters up to Ø 16 mm, so the range of target workpieces has been expanded. The B series is renowned for it's speed, accuracy and high reliability at extremely low running costs. This 4<sup>th</sup> generation model retains the same tool layout which provides high-accuracy machining. The rigidity of the back headstock has been improved. Preprocessing, for shortest cycle time is supported by an on-machine program check function for easy prove-out. The standard specifications include a comprehensive range of NC functions.

#### Program processed before operation – Preprocessing

Running the calculations in NC programs in advance shortens the processing time during operation, which helps to reduce cycle times.

#### Tool post configuration factoring in thermal expansion – Tool layout compensating for thermal displacement

Virtual XY axis control is used to achieve a tool layout that is not too focused on the ball screw axis. This suppresses the effects of thermal displacement and makes it possible to maintain high accuracy during continuous machining.

#### Achieving smooth setup changes – on-machine program check function

This is for running a program in the forward or reverse direction using the manual pulse handle while checking the machine operations. NC programs can be checked intuitively and in an easy-to-understand manner.

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#### **Comprehensive standard specifications – full NC functions**

A wealth of functions generally treated as options, like canned cycle drilling, direct input of drawing dimensions, and user macros, are featured as standard NC functions.

# Flexible support according to the application – a range of optional accessories

The wide range of optional accessories available, including the shaft processing unit and the long workpiece unit means that you can change the specifications according to your needs.

### Tooling Example B12/16E Type VI



#### Front Spindle B12E

Max. spindle speed: 12,000 min<sup>-1</sup> When using an RGB: 8,000 min<sup>-1</sup>

B16E

Max. spindle speed: 10,000 min<sup>-1</sup> When using an RGB: 8,000 min<sup>-1</sup> Max. drilling diameter: Ø 6 mm

**Rotary Tools** Max. spindle speed: 4,500 min<sup>-1</sup>

Max. drilling diameter: Ø 5 mm

**Back Spindle** Max. spindle speed: 6,000 min<sup>-1</sup> Max. drilling diameter: Ø 5 mm

**Drill Sleeve Holder** This holder can mount four drilling tools as standard. Ø 19.05<sup>0P</sup> and Ø 20 gauges are available.

## Tooling Patterns B12/16E Type VI

Turning tools: 5<sup>10</sup> Rotary tools on the gang tool post: 3 Front drilling tools: 4 Back drilling tools: 4





**Program input/output** NC programs can be input and output by using the PC card slot or the USB terminal. Support for RS-232C is also available as an option.



Product chute The back spindle retracts and ejects the workpiece into the chute, which drops it to the product receiver box. By reversing the product receiver box, it can be used as an oil bath.



**Chip receiver box** The chip receiver box is easily drawn out for efficient cleaning.



**Coolant tank** The coolant tank has a large capacity of 117 liters and can be moved easily when carrying out maintenance.

# **Machine Specifications**

ItemsB12EB16EMaximum machining diameter0 12 mm0 16 mmMaximum machining lenght135 mm/1 chucking (57 mm/1 chucking (8,000 min*) with R6B)Maximum front tapping diameter0 20 mm0 20 mmMain spindle speed12,000 min*10,000 min*Main spindle speed12,000 min*0 5 mmMaximum drilling diameter for the gang rotary toolM4M4Spindle speed of the gang rotary tool4,500 min*4,500 min*Maximum apping diameter for the gang rotary tool4,500 min*4,500 min*Maximum protrusion lenght of the back spindle0 12 mm0 16 mmMaximum protrusion lenght80 mm80 mm30 mmMaximum rotols555Cross rotary tools333Back spindle speed6,000 min*6,000 min*Maximum rotrusion lenght80 mm80 mmMaximum rotrusion lenght80 mm30 mmSor for toot sto be mounted1616Turring tools55Cross rotary tools33Tools for back drilling44Ado size turring tools10 mmSor for tort drilling44Ado size turring tools10 mmSor for tort drilling1212E/40.012Back spindle collet chuckER8Guide bushing166.001Main spindle			
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Maximum front tapping diameterM6M66Spindle through-hole diameterØ 20 mmØ 20 mmMain spindle speed(2,000 min' with R6B)(8,000 min' with R6B)Maximum drilling diameter for the gang rotary toolØ 5 mmØ 5 mmMaximum tapping diameter for the gang rotary toolM4M4Spindle speed of the back spindleØ 12 mmØ 16 mmMaximum protrusion lenght80 mm80 mmMaximum drilling diameter on back spindleØ 5 mmØ 5 mmMaximum tapping diameter on back spindleØ 5 mmØ 5 mmMaximum tapping diameter on back spindleØ 5 mmØ 5 mmMaximum tapping diameter on back spindleØ 5 mmØ 5 mmMaximum tapping diameter on back spindleØ 5 mmØ 5 mmMaximum tapping diameter on back spindleØ 5 mmØ 5 mmMaximum tapping diameter on back spindleØ 5 mmØ 5 mmMaximum tapping diameterØ 00 min'6,000 min'Number of tools to be mounted1616Turning tools55Cross rotary tools33Tools for front drilling44Tool spindle collet chuck1212E/40.012138E/40.004Back spindle collet chuck1212E/40.012138E/40.004Rotary tools10 mm10 mmCruck and bushing21 m/min21 m/min<	Maximum machining lenght	(57 mm/1 chucking	135 mm/1 chucking (57 mm/1 chucking with RGB)
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Maximum drilling diameter on back spindleØ 5 mmØ 5 mmMaximum tapping diameter on back spindleM3M3Back spindle speed6,000 min 16,000 min 1Number of tools to be mounted1616Turning tools55Cross rotary tools33Tools for front drilling44Tools for back drilling44Tools for back drilling44Tool size turning tools10 mm10 mmSleeve diameterØ 20 mmØ 20 mmCuck and bushing1212E/40.012138E/40.004Back spindle collet chuck1212E/40.012138E/40.004Back spindle collet chuckER8ER8Guide bushing (Neukomm)166.00161.002Rapif feed rate2.2/3.7 kW2.2/3.7 kWX-, Y-axes21 m/min15 m/minMain spindle speed2.2/3.7 kW0.5 kWCool spindle0.5 kW0.5 kWBack spindle1.0 kW1.0 kWCoolant pump0.18 kW0.18 kWCoolant pump0.18 kW0.000 mmAir pressure/air flow rate6 bar/30 NI/min (max.50 NI/min)6 bar/30 NI/min	· · · · ·	30 mm	30 mm
Maximum tapping diameter on back spindle  M3  M3    Back spindle speed  6,000 min <sup>-1</sup> 6,000 min <sup>-1</sup> Number of tools to be mounted  16  16    Turning tools  5  55    Cross rotary tools  3  33    Tools for front drilling  4  4    Tools for back drilling  4  4    Tool size turning tools  10 mm  10 mm    Sleeve diameter  Ø 20 mm  Ø 20 mm    Cuck and bushing  10 lorm  10 mm    Main spindle collet chuck  1212E/40.012  138E/40.004    Back spindle collet chuck  ER8  ER8    Guide bushing (Neukomm)  166.001  61.002    Rapif feed rate  2  2    X-, Y-axes  21 m/min  21 m/min    Z-, A2-axes  15 m/min  15 m/min    Main spindle speed  2.2/3.7 kW  2.2/3.7 kW    Tool spindle  0.5 kW  0.5 kW    Back spindle  1.0 kW  0.18 kW    Coolant pump  0.18 kW  0.18 kW <td>Maximum protrusion lenght</td> <td>80 mm</td> <td>80 mm</td>	Maximum protrusion lenght	80 mm	80 mm
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Number of tools to be mounted  16  16    Turning tools  5  55    Cross rotary tools  3  33    Tools for front drilling  4  44    Tools for back drilling  4  44    Tool size turning tools  10 mm  10 mm    Sleeve diameter  Ø 20 mm  Ø 20 mm    Cuck and bushing  7  7    Main spindle collet chuck  1212E/40.012  138E/40.004    Back spindle collet chuck  ER8  ER8    Guide bushing (Neukomm)  166.001  61.002    Rapif feed rate  2  21 m/min  21 m/min    Z-, Y- axes  21 m/min  15 m/min  15 m/min    Main spindle speed  2.2/3.7 kW  2.2/3.7 kW  2.2/3.7 kW    Tool spindle  0.5 kW  0.5 kW  0.5 kW    Back spindle collet nuck  1.0 kW  1.0 kW  0.0 kW    Cool ant pump  0.18 kW  0.18 kW  0.18 kW    Cool ant pump  0.08 kW  0.18 kW  0.18 kW    Center hei	Maximum tapping diameter on back spindle	M3	M3
Turning tools  5  5    Cross rotary tools  3  3    Tools for front drilling  4  4    Tools for hack drilling  4  4    Tool size turning tools  10 mm  10 mm    Sleeve diameter  Ø 20 mm  Ø 20 mm    Cuck and bushing  0  0    Cuck and bushing  1212E/40.012  138E/40.004    Back spindle collet chuck  1212E/40.012  138E/40.004    Back spindle collet chuck  ER8  ER8    Guide bushing (Neukomm)  166.001  61.002    Rapif feed rate  2  21 m/min    X-, Y-axes  21 m/min  21 m/min    Z-, A2-axes  15 m/min  15 m/min    Main spindle speed  2.2/3.7 kW  2.2/3.7 kW    Tool spindle  0.5 kW  0.5 kW    Back spindle  1.0 kW  1.0 kW    Coolant pump  0.18 kW  0.18 kW    Center height  1,000 mm  1,000 mm    Air pressure/air flow rate  6 bar/30 Nl/min  6 bar/30 Nl/min	Back spindle speed	6,000 min <sup>-1</sup>	6,000 min <sup>-1</sup>
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Tools for back drilling  4  4    Tool size turning tools  10 mm  10 mm    Sleeve diameter  Ø 20 mm  Ø 20 mm    Cuck and bushing   Ø    Main spindle collet chuck  1212E/40.012  138E/40.004    Back spindle collet chuck  1212E/40.012  138E/40.004    Rotary tool collet chuck  ER8  ER8    Guide bushing (Neukomm)  166.001  61.002    Rapif feed rate      X-, Y-axes  21 m/min  21 m/min    Z, A2-axes  15 m/min  15 m/min    Main spindle speed  2.2/3.7 kW  2.2/3.7 kW    Tool spindle  0.5 kW  0.5 kW    Back spindle  1.0 kW  1.0 kW    Coolant pump  0.18 kW  0.18 kW    Center height  1,000 mm  1,000 mm    Air pressure/air flow rate  6 bar/30 Nl/min  6 bar/30 Nl/min	Cross rotary tools	3	3
Tool size turning tools10 mmTool size turning tools10 mmSleeve diameterØ 20 mmCuck and bushingØCuck and bushing1212E/40.012Main spindle collet chuck1212E/40.012Back spindle collet chuck1212E/40.012Rotary tool collet chuck166.001Guide bushing (Neukomm)166.001Rapif feed rateVX-, Y-axes21 m/minZ-, Y-axes21 m/minMain spindle speed2.2/3.7 kWColl spindle0.5 kWBack spindle1.0 kWColl spindle0.18 kWColl spindle0.18 kWColl spindle1,000 mmAir pressure/air flow rate6 bar/30 Nl/min (max. 50 Nl/min)Air pressure/air flow rate6 bar/30 Nl/min (max. 50 Nl/min)	Tools for front drilling	4	4
Sleeve diameter  Ø 20 mm  Ø 20 mm    Cuck and bushing	Tools for back drilling	4	4
Cuck and bushing    Main spindle collet chuck  1212E/40.012  138E/40.004    Back spindle collet chuck  1212E/40.012  138E/40.004    Rotary tool collet chuck  ER8  ER8    Guide bushing (Neukomm)  166.001  61.002    Rapif feed rate  X-, Y-axes  21 m/min  21 m/min    X-, Y-axes  21 m/min  15 m/min  15 m/min    Motor power  10  0.5 kW  0.5 kW    Main spindle speed  2.2/3.7 kW  2.2/3.7 kW  0.5 kW    Tool spindle  0.5 kW  0.5 kW  0.5 kW    Back spindle  1.0 kW  1.0 kW  1.0 kW    Coolant pump  0.18 kW  0.18 kW  0.18 kW    Center height  1,000 mm  1,000 mm    Air pressure/air flow rate  6 bar/30 Nl/min (max. 50 Nl/min)  6 bar/30 Nl/min	Tool size turning tools	10 mm	10 mm
Main spindle collet chuck  1212E/40.012  138E/40.004    Back spindle collet chuck  1212E/40.012  138E/40.004    Rotary tool collet chuck  ER8  ER8    Guide bushing (Neukomm)  166.001  61.002    Rapif feed rate  X-, Y-axes  21 m/min  21 m/min    Z-, Y-axes  21 m/min  15 m/min  15 m/min    Main spindle speed  2.2/3.7 kW  2.2/3.7 kW  2.2/3.7 kW    Tool spindle  0.5 kW  0.5 kW  0.5 kW    Back spindle  1.0 kW  1.0 kW  0.18 kW    Coolant pump  0.18 kW  0.18 kW  0.18 kW    Center height  1,000 mm  1,000 mm    Air pressure/air flow rate  6 bar/30 Nl/min (max. 50 Nl/min)  6 bar/30 Nl/min (max. 50 Nl/min)	Sleeve diameter	Ø 20 mm	Ø 20 mm
Name production1212E/40.012138E/40.004Back spindle collet chuck1212E/40.012138E/40.004Rotary tool collet chuckER8ER8Guide bushing (Neukomm)166.00161.002Rapif feed rateX-, Y-axes21 m/minX-, Y-axes21 m/min21 m/minZ-, A2-axes15 m/min15 m/minMain spindle speed2.2/3.7 kW2.2/3.7 kWTool spindle0.5 kW0.5 kWBack spindle1.0 kW1.0 kWCoolant pump0.18 kW0.18 kWCenter height1,000 mm1,000 mmAir pressure/air flow rate6 bar/30 NI/min (max. 50 NI/min)6 bar/30 NI/min (max. 50 NI/min)	Cuck and bushing		
Both philos contect chuckER8ER8Rotary tool collet chuck166.00161.002Rapif feed rateX-, Y-axes21 m/min21 m/minZ-, A2-axes15 m/min15 m/minMotor powerMain spindle speed2.2/3.7 kW2.2/3.7 kWTool spindle0.5 kW0.5 kWBack spindle1.0 kW1.0 kWCoolant pump0.18 kW0.18 kWCenter height1,000 mm1,000 mmAir pressure/air flow rate6 bar/30 Nl/min (max. 50 Nl/min)6 bar/30 Nl/min	Main spindle collet chuck	1212E/40.012	138E/40.004
Total y too conce on a conceptGuide bushing (Neukomm)166.00161.002Rapif feed rateX-, Y-axes21 m/min21 m/minZ-, A2-axes15 m/min15 m/minMotor power22/3.7 kW2.2/3.7 kWTool spindle0.5 kW0.5 kWBack spindle1.0 kW1.0 kWCoolant pump0.18 kW0.18 kWCenter height1,000 mm1,000 mmAir pressure/air flow rate6 bar/30 Nl/min (max. 50 Nl/min)6 bar/30 Nl/min (max. 50 Nl/min)	Back spindle collet chuck	1212E/40.012	138E/40.004
Rapif feed rateX-, Y-axes21 m/min21 m/minZ-, A2-axes15 m/min15 m/minMotor power22/3.7 kW2.2/3.7 kWMain spindle speed2.2/3.7 kW0.5 kWTool spindle0.5 kW0.5 kWBack spindle1.0 kW1.0 kWCoolant pump0.18 kW0.18 kWCenter height1,000 mm1,000 mmAir pressure/air flow rate6 bar/30 Nl/min (max. 50 Nl/min)6 bar/30 Nl/min (max. 50 Nl/min)	Rotary tool collet chuck	ER8	ER8
X-, Y-axes  21 m/min  21 m/min    Z-, A2-axes  15 m/min  15 m/min    Motor power  2.2/3.7 kW  2.2/3.7 kW    Main spindle speed  2.2/3.7 kW  0.5 kW    Back spindle  0.5 kW  0.5 kW    Back spindle  1.0 kW  1.0 kW    Coolant pump  0.18 kW  0.18 kW    Center height  1,000 mm  1,000 mm    Air pressure/air flow rate  6 bar/30 Nl/min (max. 50 Nl/min)  6 bar/30 Nl/min	Guide bushing (Neukomm)	166.001	61.002
Z-, A2-axes  15 m/min  15 m/min    Motor power  15 m/min  15 m/min    Main spindle speed  2.2/3.7 kW  2.2/3.7 kW    Tool spindle  0.5 kW  0.5 kW    Back spindle  1.0 kW  1.0 kW    Coolant pump  0.18 kW  0.18 kW    Center height  1,000 mm  1,000 mm    Air pressure/air flow rate  6 bar/30 Nl/min (max. 50 Nl/min)  6 bar/30 Nl/min	Rapif feed rate		
Motor power    Main spindle speed  2.2/3.7 kW  2.2/3.7 kW    Tool spindle  0.5 kW  0.5 kW    Back spindle  1.0 kW  1.0 kW    Coolant pump  0.18 kW  0.18 kW    Center height  1,000 mm  1,000 mm    Air pressure/air flow rate  6 bar/30 Nl/min (max. 50 Nl/min) (max. 50 Nl/min)  6 bar/30 Nl/min (max. 50 Nl/min)	X-, Y-axes	21 m/min	21 m/min
Main spindle speed  2.2/3.7 kW  2.2/3.7 kW    Tool spindle  0.5 kW  0.5 kW    Back spindle  1.0 kW  1.0 kW    Coolant pump  0.18 kW  0.18 kW    Center height  1,000 mm  1,000 mm    Air pressure/air flow rate  6 bar/30 Nl/min (max. 50 Nl/min)  6 bar/30 Nl/min (max. 50 Nl/min)	Z-, A2-axes	15 m/min	15 m/min
Tool spindle  0.5 kW  0.5 kW    Back spindle  1.0 kW  1.0 kW    Coolant pump  0.18 kW  0.18 kW    Center height  1,000 mm  1,000 mm    Air pressure/air flow rate  6 bar/30 Nl/min (max. 50 Nl/min)  6 bar/30 Nl/min (max. 50 Nl/min)	Motor power		
Tool spindle  0.5 kW  0.5 kW    Back spindle  1.0 kW  1.0 kW    Coolant pump  0.18 kW  0.18 kW    Center height  1,000 mm  1,000 mm    Air pressure/air flow rate  6 bar/30 Nl/min (max. 50 Nl/min)  6 bar/30 Nl/min (max. 50 Nl/min)	Main spindle speed	2.2/3.7 kW	2.2/3.7 kW
Back spindle  1.0 kW  1.0 kW    Coolant pump  0.18 kW  0.18 kW    Center height  1,000 mm  1,000 mm    Air pressure/air flow rate  6 bar/30 Nl/min (max. 50 Nl/min)  6 bar/30 Nl/min (max. 50 Nl/min)	Tool spindle		
Coolar pump  0.18 kW  0.18 kW    Center height  1,000 mm  1,000 mm    Air pressure/air flow rate  6 bar/30 Nl/min (max. 50 Nl/min)  6 bar/30 Nl/min (max. 50 Nl/min)		1.0 kW	1.0 kW
Center height  1,000 mm  1,000 mm    Air pressure/air flow rate  6 bar/30 NI/min (max. 50 NI/min)  6 bar/30 NI/min (max. 50 NI/min)		0.18 kW	0.18 kW
Air pressure/air flow rate 6 bar/30 Nl/min (max. 50 Nl/min) 6 bar/30 Nl/min (max. 50 Nl/min)		1,000 mm	1,000 mm
		6 bar/30 NI/min	6 bar/30 NI/min
	Weight	1,150 kg	1,150kg

Standard accessories
Main spindle chucking device
Back spindle chucking device
Gang rotary tool driving device
Coolant device (with level detector)
Lubricating oil supply unit (with level detector)
Machine relocation detector
Door lock function
Cut-off tool breakage detector
Lighting
Rotary guide bushing device
Pneumatic device for air sealing
3-color signal tower
0
Special Accessories
Chip conveyor
Option for long parts
Option for long parts High pressure unit
Option for long parts High pressure unit Standard NC functions
Option for long parts High pressure unit Standard NC functions Tool nose radius compensation
Option for long parts High pressure unit Standard NC functions Tool nose radius compensation NC unit: Fanuc 0i-TD
Option for long parts High pressure unit Standard NC functions Tool nose radius compensation NC unit: Fanuc 0i-TD 8.4 inch LCD color
Option for long parts High pressure unit Standard NC functions Tool nose radius compensation NC unit: Fanuc 0i-TD 8.4 inch LCD color Multiple repetitive cycle
Option for long parts High pressure unit Standard NC functions Tool nose radius compensation NC unit: Fanuc 0i-TD 8.4 inch LCD color Multiple repetitive cycle Canned cycle for drilling
Option for long parts High pressure unit Standard NC functions Tool nose radius compensation NC unit: Fanuc 0i-TD 8.4 inch LCD color Multiple repetitive cycle Canned cycle for drilling Constant surface speed control
Option for long parts High pressure unit Standard NC functions Tool nose radius compensation NC unit: Fanuc 0i-TD 8.4 inch LCD color Multiple repetitive cycle Canned cycle for drilling Constant surface speed control Corner chamfer and R function
Option for long parts High pressure unit Standard NC functions Tool nose radius compensation NC unit: Fanuc 0i-TD 8.4 inch LCD color Multiple repetitive cycle Canned cycle for drilling Constant surface speed control Corner chamfer and R function Customer macro
Option for long parts High pressure unit Standard NC functions Tool nose radius compensation NC unit: Fanuc 0i-TD 8.4 inch LCD color Multiple repetitive cycle Canned cycle for drilling Constant surface speed control Corner chamfer and R function Customer macro Hobbing/polygon machining (B)
Option for long parts High pressure unit Standard NC functions Tool nose radius compensation NC unit: Fanuc 0i-TD 8.4 inch LCD color Multiple repetitive cycle Canned cycle for drilling Constant surface speed control Corner chamfer and R function Customer macro Hobbing/polygon machining (B) Spindle speed fluctuation detection
Option for long parts High pressure unit Standard NC functions Tool nose radius compensation NC unit: Fanuc 0i-TD 8.4 inch LCD color Multiple repetitive cycle Canned cycle for drilling Constant surface speed control Corner chamfer and R function Customer macro Hobbing/polygon machining (B)

# B12/16 Standard machine layout



#### B12/16E Option-installed machine

Synchronous tapping function Spindle 1 degree indexing Drawing dimension direct input

Tool life management function (II) Sub microns command

**B-Code** function

**Special NC functions** 





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