OKUMA

OPEN POSSIBILITIES

1-Saddle CNC Lathes

LB35Ⅲ/LB45Ⅲ

1-Saddle CNC Lathes

LB35Ⅲ/LB45Ⅲ

Intelligent Technology | Thermo-Friendly Concept | Collision Avoidance System | Machining Navi

Produce more with heavy-duty turn/mill operations! Large, 1-saddle CNC lathes meet the demands of the times

Okuma's world-class technology in 1-saddle CNC lathes and turning centers at your service....
With more speed, accuracy and power than ever, plus rotary tooling and long-bed capacities.
Big chucking and between-centers performance with a truly competitive price tag.

LB45Ⅲ DBC 1000

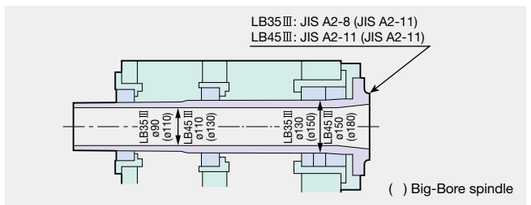
LB35Ⅲ DBC 2000

Number of doors differs depending on DBC.
Photographs used in this brochure may show optional equipment.

Spindle and motor with extra rigidity and power

Rigid spindle for fast, heavy-duty turning

- 3-point bearing support for steady, powerful cutting (double-row cylindrical roller bearings plus highspeed duplex angular contact ball bearings)
- Housing cooled for minimal thermal deformation
- Unique labyrinth construction keeps coolant from penetrating spindle bearings

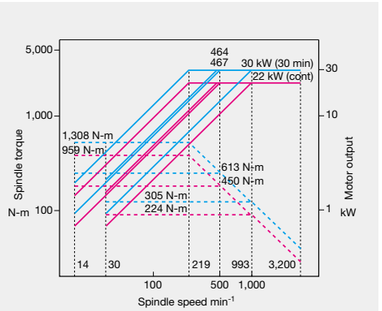


■ Wide-range, full power cutting

Full-power cutting over a wide range—from low to high speed ranges—is possible with gear shift system

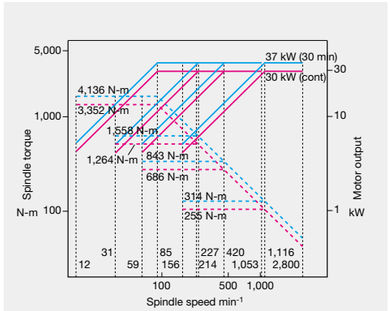
■ Turning spindle LB35Ⅲ

4 auto ranges (2 gears x 2 range motor coil switching)
Spindle speed 3,200 min^{-1}
Max output 30/22 kW (30 min/cont)
Max torque 1,308/959 N-m (30 min/cont)



■ Turning spindle LB45Ⅲ

4 auto ranges (4 gears)
Spindle speed 2,800 min^{-1}
Max output 37/30 kW (30 min/cont)
Max torque 4,136/3,352 N-m (30 min/cont)



*See pages 11 and 12 for options.

High-speed, high-accuracy C-axis headstock

- Direct C axis control with VAC motor
  X/Z-axis generation is possible
- Quick rapids/positioning: Max 100 min^{-1}
- C-axis geometric accuracies (ex):
  Indexing: LB35Ⅲ (M): ±0.01°
  LB45Ⅲ (M): ±0.015°
  Repeatability: LB35Ⅲ (M): ±0.003°
  LB45Ⅲ (M): ±0.007°

Higher production efficiency with fast machine movement

Multitasking V12 turret gives rise to highly efficient machining

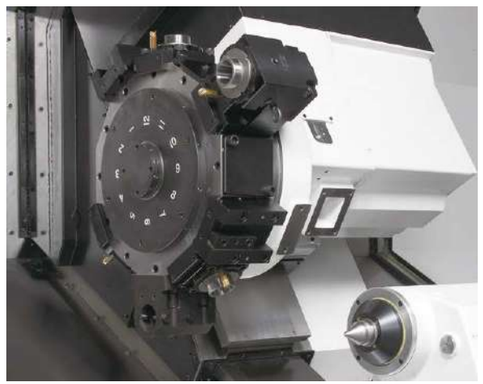
L (lathe) and M (milling) tools can be mounted in all stations

■ LB35Ⅲ (M), LB45Ⅲ (M) VDI specs

- Quick change tooling system used

■ LB45Ⅲ (MY) radial tooling specs

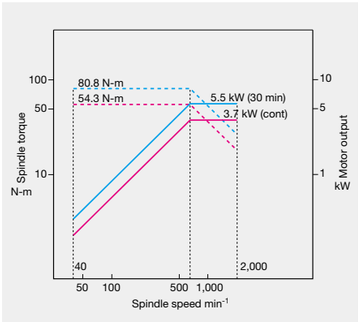
- Powerful milling with high power, high torque motor



■ High speed, high power milling tool spindle

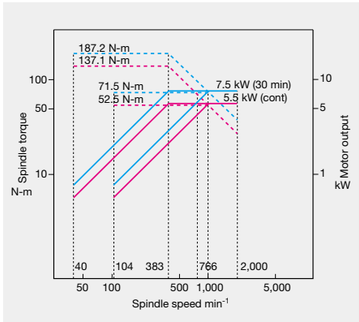
■ Milling tool spindle LB35Ⅲ(M)

Spindle speed 2,000 min^{-1}
Max output 5.5/3.7 kW (30 min/cont)
Max torque 80.8/54.3 N-m (30 min/cont)



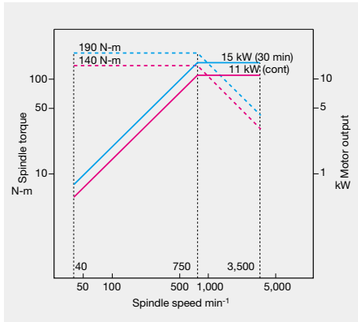
■ Milling tool spindle LB45Ⅲ(M)

Spindle speed 2,000 min^{-1}
Max output 7.5/5.5 kW (30 min/cont)
Max torque 187.2/71.5 N-m (30 min/cont)



■ Milling tool spindle LB45Ⅲ(MY)

Spindle speed 3,500 min^{-1}
Max output 15/11 kW (30 min/cont)
Max torque 190/140 N-m (30 min/cont)



*See pages 11 and 12 for options.

■ Faster machine movement reduces non-cutting time

- Fast turret rotation of 0.3 sec/1 index (LB35Ⅲ)
  Rotation speed is also unaffected by unbalanced tooling
  * LB45Ⅲ is 0.7 sec/1 index
- Further reduction in non-cutting time with high-speed rapid traverse of X axis: 15 m/min, Z axis: 20 m/min
  Uses backlash-free, direct drive mechanism on X axis

■ Powerful clamping to match heavy-duty turning

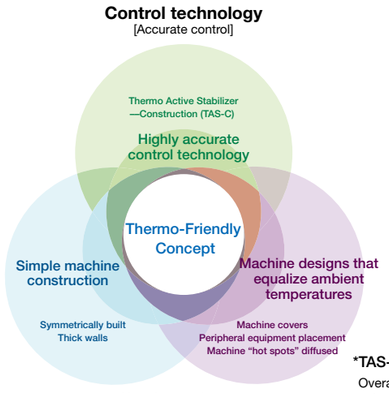
- Big coupling [LB35Ⅲ: ø354 (ø13.94), LB45Ⅲ: ø460 (ø18.11)] for powerful hydraulic clamping on turret
- Large turret but minimal interference
  [LB35Ⅲ: 570 mm (22.44 in.), LB45Ⅲ: 700 mm (27.56 in.)] across flats
- NC turret with servo motor drive

Achieves steady machining with high dimensional stability

Machining dimensional change over time of ø17 µm (LB35Ⅲ actual data)

Thermo-Friendly Concept

In addition to maintaining high dimensional accuracy when room temperature changes, Okuma's Thermo-Friendly Concept provides high dimensional accuracy during machine startup and machining restart.
To stabilize thermal deformation, warming-up time is shortened and the burden of dimensional correction during machining restart is reduced.



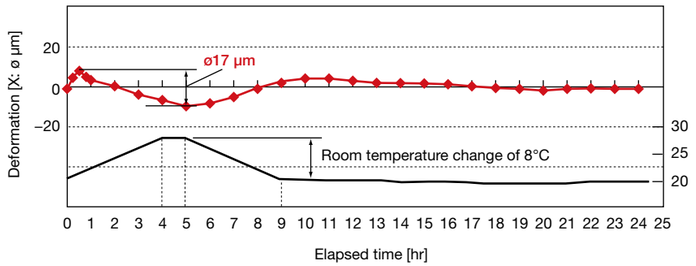
Introduction merit

- Machine startup
- Machining restart
- Room temp change

High dimensional stability

*TAS-C [Thermo Active Stabilizer – Construction]
Overall control of thermal deformation on headstock, bed, column, and turret

Machining dimensional change over time ø17 µm (LB35Ⅲ actual data)



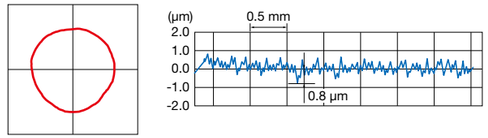
- Room temperature changes:
  Rise of 8 °C from 20 °C over 4 hr.
  After 1 hr, decline of 8 °C over 4 hr.
- Spindle speed: 2,340 min^{-1}
- Tool extension: 40 mm
- Coolant: On
- Cold start

* Data listed in the catalog are actual data. These values may not be obtained depending on specifications, tooling, and cutting conditions and other factors.

Machining accuracy

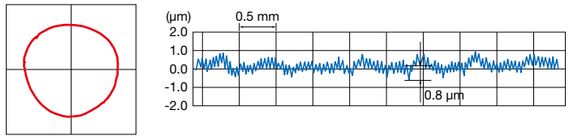
LB35Ⅲ actual data
Roundness
ø0.8 µm/2,000 min^{-1}

Surface roughness (tip uniformity)
Workpiece material: BsB
Spindle: 2,500 min^{-1}



LB45Ⅲ actual data
Roundness
ø0.9 µm/2,000 min^{-1}

Surface roughness (tip uniformity)
Workpiece material: BsB
Spindle: 2,000 min^{-1}



Wide-range of variations and greatest ease of use

Process-intensive machining with the Y axis 1-chuck machining even with complex-shaped workpieces (LB45Ⅲ MY specs)

- A wide range of milling based on highly precise, wide-ranging Y axis travel with a double slide system
- Achieves process-intensive machining with 1-chucking

The best tailstock with built-in center for machining shafts

- Highly-rigid built-in center (standard);
  Quill diameter LB35Ⅲ: ø120 mm, LB45Ⅲ: ø130 mm
  Built-in tailstock MT. No. 5)

Superior chip discharge

- Smooth chip discharge
  · Large outlet directly beneath chuck
  · Saddle cover with good chip flow
- Sealed cover construction including tailstock guideway
- Improved workplace environment with sophisticated appearance and covering with no water leakage

A low-maintenance machine — that helps the operator

- VAC motor (spindle) and brushless servo motors(servo axes) require no brush changing
- NC Torqur Limiter on servos minimizes any damage from possible operator error and makes it easy to resume processing.
- All ordinary miantenance from machine front: chuck pressure adjustment, tailstock pressure adjustment, way lubrication etc.

Ensuring smooth machining preparations

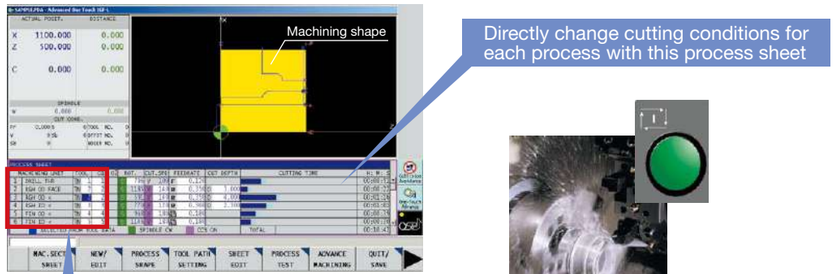
Interactive operations Advanced One-Touch IGF-L (Optional)

Part program create

After simple cutting data inputs (interactively), the required machining processes are determined and a part program is created (automatically).

Advanced run

To run the machine directly from the interactive part program screen.
When a problem is detected it can be quickly corrected and checked, speeding up first part machining.



PROCESS SHEET <CONTINUOUS>

	MACHINING UNIT	TOOL
1	DRILL THR	TN 1
2	RGH OD FACE	TN 2
3	RGH OD <	TN 2
4	RGH ID <	TN 3
5	FIN OD <	TN 4
6	FIN ID <	TN 5

Continuous run

PROCESS SHEET <CONTINUOUS>

	MACHINING UNIT	TOOL
1	DRILL THR	TN 1
2	RGH OD FACE	TN 2
3	RGH OD <	TN 2
4	RGH ID <	TN 3
5	FIN OD <	TN 4
6	FIN ID <	TN 5

Mid-cycle start
(finishing repeated)

PROCESS SHEET <SINGLE>

	MACHINING UNIT	TOOL
1	DRILL THR	TN 1
2	RGH OD FACE	TN 2
3	RGH OD <	TN 2
4	RGH ID <	TN 3
5	FIN OD <	TN 4
6	FIN ID <	TN 5

Individual run
(machining repeated with this tool only)

Easy to operate

Operation screen split into four displays

Simultaneous display includes setup work, current position needed in confirming movement in trial machining, NC program, and graphic simulation.

Tool registration

Register data for all of your tools.
Since the registered tool data is also used by Okuma auto programming (Advanced One-Touch IGF) and a collision check function (Collision Avoidance System), this screen will complete the entire registering process.
When loading a tool in the machine, simply select it from among the registered tools.
ATC manual operation does not require inputting the tool number. Just select the tool from the list and press the function key.

Forming soft jaws

Templates like this make it easy to set required jaw shape, tool, and cutting conditions.
Part programming not required to do this.

Zero offsets

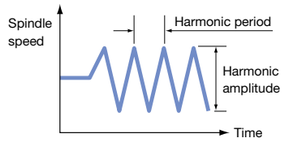
A simple function key operation is all it takes to shift a zero offset to either the left or right end of a workpiece. The required zero offset will be calculated automatically based on jaw and workpiece lengths. (when the tool offset is set with reference to the turret tool mounting surface)

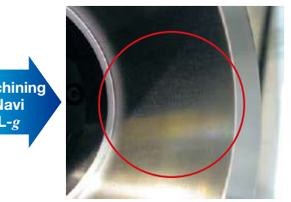
Okuma's Intelligent Technology reduces operator burden

Intelligent Technology

Cutting condition search function for turning
Machining Navi L-*g* (guided, harmonic spindle speed control) (Optional)

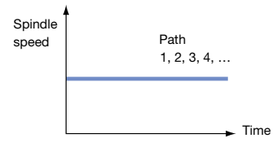
Varying the spindle speed in accordance with the best amplitude and period makes it possible to suppress chatter during turning operations. Tool life can be extended and machining time reduced with use of the optimum cutting conditions, producing significant effects in drilling/boring bar, threading, and grooving applications.

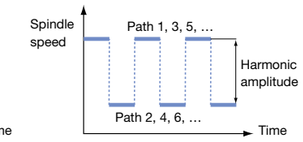




Cutting condition search in threading
Machining Navi T-*g* (Optional)

When chatter occurs in threading, general methods to resolve the problem have been to either lower cutting conditions at the expense of productivity, or to use special chatter-resistant tools at some cost. Machining Navi T-*g* (threading) provides optimum control, increasing or decreasing spindle speed on each pass to inhibit the periodic vibrations that are a cause of chatter.

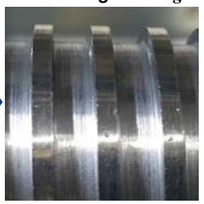




<Normal threading>

Chatter marks

<Machining Navi T-*g*>

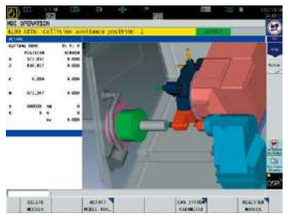


Smooth surface, clean finished threads

Collision prevention
Collision Avoidance System (Optional)

- **World's first "Collision-Free Machine"**

CAS prevents collisions in automatic or manual mode, providing risk-free protection for the machine and great confidence for the operator.



Virtual machine (collision check)

All energy-saving technologies that can be used by a machine are available

ECO suite

- **"ECO Idling Stop"** for operation of necessary units only
- **"ECO Power Monitor"** for visual graphic of power
- Intermittent/continuous operation of chip conveyor and mist collector during operation — **"ECO Operation"** (optional)

Machine Specifications

Model			LB35Ⅲ				LB35Ⅲ(M)			
			T	C×850	C×1500	C×2000	T	C×850	C×1500	C×2000
Capacity	Swing over bed	mm (in.)	ø700 (27.56)							
	Swing over carriage	mm (in.)	ø430 (16.93)							
	Distance between centers	mm (in.)	–	920 (36.22)	1,570 (61.81)	2,070 (81.50)	–	920 (36.22)	1,570 (61.81)	2,070 (81.50)
	Max turning dia	mm (in.)	ø460 (18.11)							
	Max turning length	mm (in.)	600 (23.62)	850 (33.46)	1,500 (59.06)	2,000 (78.74)	600 (23.62)	850 (33.46)	1,500 (59.06)	2,000 (78.74)
Travels	X axis travel	mm (in.)	330 <245+85> (13.00 <9.65+3.35>)							
	Z axis travel	mm (in.)	920 (36.22)		1,570 (61.81)	2,070 (81.50)	920 (36.22)		1,570 (61.81)	2,070 (81.50)
	Y axis travel	mm (in.)	–				–			
	C axis travel	deg	–				360° (0.001°)			
Spindle	Spindle speed	min^{-1} {rpm}	14 to 3,200 [12 to 2,800] <40 to 1,400>							
	No. of spindle speed ranges		4 auto ranges (2 gears × 2 range motor coil switching) [4 auto ranges (2 gears × 2 range motor coil switching)] <2 auto ranges (2 range motor coil switching)>							
	Spindle nose shape		JIS A2-8 [JIS A2-11] <JIS A2-15>							
	Thru-spindle hole dia	mm (in.)	ø90 [ø110] <ø180> (3.54 [4.33] <7.09>)							
	Spindle bearing ID	mm (in.)	ø130 [ø150] <ø220> (5.12 [5.91] <8.66>)							
Turret	Type		V12 turret (lining)				Multitasking V12 turret (VDI)			
	No. of tools		12				12 (L/M)			
	Tool shank height	mm (in.)	□25 (1)							
	Boring bar shank dia	mm (in.)	ø50 (2)							
	Indexing time	sec.	0.3/1 index							
Milling Tool	Spindle speed & range	min^{-1} {rpm}	–				40 to 2,000			
	No. of speeds & ranges		–				Infinitely variable			
Feedrates	Rapid traverse speed	mm/min (ipm)	X: 15 (0.59) Z: 20 (0.79)				X: 15 (0.59) Z: 20 (0.79) C: 100 min^{-1}			
Tailstock	Tailstock quill dia	mm (in.)	–	ø120 (4.72)			–	ø120 (4.72)		
	Tailstock quill taper hole		–	MT 5 (built-in center)			–	MT 5 (built-in center)		
	Tailstock travel	mm (in.)	–	170 (6.70)			–	170 (6.70)		
Motors	Spindle drive (30 min/cont)	kW (hp)	30/22 (40/30), 37/30 (50/40)*							
	Rotary tool motor (30 min/cont)	kW (hp)	–				5.5/3.7 (7.5/5)			
	Feed axis drive	kW (hp)	X: 3.5 (4.7) Z: 4.2 (5.7)				X: 3.6 (4.8) Z: 4.2 (5.7)			
	Coolant pump	kW (hp)	0.25 (0.33)							
Machine Size	Height	mm (in.)	2,210 (87.01)		2,325 (91.54)		2,210 (87.01)		2,325 (91.54)	
	Floor space	mm×mm	4,015 × 2,663		4,885 × 2,663	5,910 × 2,663	4,015 × 2,663		4,885 × 2,663	5,910 × 2,663
	Width × Depth (tank included)	(in.)	(158.07 × 104.84)		(192.32 × 104.84)	(232.68 × 104.84)	(158.07 × 104.84)		(192.32 × 104.84)	(232.68 × 104.84)
	Weight	kg (lb)	9,100 (20.020)	9,500 (20.900)	11,400 (25.080)	12,900 (28.380)	9,400 (20.680)	9,800 (21.560)	11,700 (25.740)	13,200 (29.040)
CNC system			OSP-P300LA							

[ ]: Big-Bore specs < >: Super Big-Bore specs * : High power motor specs

Model			LB45Ⅲ					LB45Ⅲ(M)					LB45Ⅲ(MY)				
			T	C×1000	C×2000	C×3000	C×4000	T	C×1000	C×2000	C×3000	C×4000	T	C×1000	C×2000	C×3000	C×4000
Capacity	Swing over bed	mm (in.)	ø900 (35.43)										ø1,330 (52.36)				
	Swing over carriage	mm (in.)	ø550 (21.65)										ø920 (36.22)				
	Distance between centers	mm (in.)	–	1,060 (41.73)	2,060 (81.10)	3,060 (120.47)	4,060 (159.84)	–	1,060 (41.73)	2,060 (81.10)	3,060 (120.47)	4,060 (159.84)	–	1,060 (41.73)	2,060 (81.10)	3,060 (120.47)	4,060 (159.84)
	Max turning dia	mm (in.)	ø660 (25.98)					ø640 (25.20)					ø650 (25.59)				
	Max turning length	mm (in.)	750 (29.53)	1,000 (39.37)	2,000 (78.74)	3,000 (118.11)	4,000 (157.48)	750 (29.53)	1,000 (39.37)	2,000 (78.74)	3,000 (118.11)	4,000 (157.48)	750 (29.53)	1,000 (39.37)	2,000 (78.74)	3,000 (118.11)	4,000 (157.48)
Travels	X axis travel	mm (in.)	440 {330+110} (17.32 {12.99 + 4.33})										614 {439 + 175} (24.17 {17.28 + 6.89})				
	Z axis travel	mm (in.)	1,060 (41.73)		2,060 (81.10)	3,060 (120.47)	4,060 (159.84)	1,060 (41.73)		2,060 (81.10)	3,060 (120.47)	4,060 (159.84)	1,060 (41.73)		2,060 (81.10)	3,060 (120.47)	4,060 (159.84)
	Y axis travel	mm (in.)	–					–					250 (+150 to –100)				
	C axis travel	deg	–					360° (0.001°)									
Spindle	Spindle speed	min^{-1} {rpm}	12 to 2,800 [10 to 2,400]<31 to 900>														
	No. of spindle speed ranges		4 auto ranges (4 gears) [4 auto ranges] <Infinitely variable>										4 gears [4 gears] <Infinitely variable>				
	Spindle nose shape		JIS A2-11 [JIS A2-11]<JIS A2-20>														
	Thru-spindle hole dia	mm (in.)	ø110 [ø130] <ø260> (4.33 [5.12] <10.24>)														
	Spindle bearing ID	mm (in.)	ø150 [ø180] <ø320> (5.91 [7.09] <12.60>)														
Turret	Type		V12 turret (lining)					Multitasking V12 turret (VDI)					Multitasking V12 turret (Radial)				
	No. of tools		12					12 (L/M)									
	Tool shank height	mm (in.)	□32 (1-1/4)														
	Boring bar shank dia	mm (in.)	ø63 (2-1/2)														
	Indexing time	sec.	0.7/1 index (lift-up)										1.2/1 index (no lift-up)				
Milling Tool	Spindle speed & range	min^{-1} {rpm}	–					40 to 2,000					40 to 3,500				
	No. of speeds & ranges		–					2 auto ranges (2 gears)					Infinitely variable				
Feedrates	Rapid traverse speed	mm/min (ipm)	X: 15 (0.59) Z: 20 (0.79)					X: 15 (0.59) Z: 20 (0.79) C: 100 min^{-1}					X: 15 (0.59) Z: 20 (0.79) Y: 6 (0.24) C: 100 min^{-1}				
Tailstock	Tailstock quill dia	mm (in.)	–	ø130 (5.12)				–	ø130 (5.12)				–	ø130 (5.12)			
	Tailstock quill taper hole		–	MT 5 (built-in center)				–	MT 5 (built-in center)				–	MT 5 (built-in center)			
	Tailstock travel	mm (in.)	–	170 (6.69)				–	170 (6.69)				–	170 (6.69)			
Motors	Spindle drive (30 min/cont)	kW (hp)	37/30 (50/40), 45/37 (60/50)*										37/30 (50/40) [37/30], 45/37 (60/50)* <45/37>				
	Rotary tool motor (30 min/cont)	kW (hp)	–					7.5/5.5 (10/7)					15/11 (20/14.7)				
	Feed axis drive	kW (hp)	X: 3.6 (4.8) Z: L4.6 (8)										X: 3.5 (4.8) Z: 4.6 (8) Ys: 4.6 (8)				
	Coolant pump	kW (hp)	0.4 (0.53)														
Machine Size	Height	mm (in.)	2,587 (101.85)	2,617 (103.03)	2,505 (98.62)	2,545 (100.2)		2,587 (101.85)	2,617 (103.03)	2,505 (98.62)	2,545 (100.2)		3,566 (140.39)	3,596 (141.57)	3,511 (138.23)	3,674 (144.65)	
	Floor space	mm×mm	4,260 × 3,358	5,760 × 3,358	7,010 × 2,920	8,570 × 3,181		4,260 × 3,358	5,760 × 3,358	7,010 × 2,920	8,570 × 3,181		4,858×3,939	6,324 × 3,674	7,536 × 3,230	9,025×3,483	
	Width × Depth (tank included)	(in.)	(167.72 × 132.20)	(226.77 × 132.20)	(275.98 × 114.96)	(337.4 × 125.2)		(167.72 × 132.20)	(226.77 × 132.20)	(275.98 × 114.96)	(337.4 × 125.2)		(191.26 × 155.08)	(248.98 × 144.65)	(296.69 × 127.17)	(355.31 × 137.13)	
	Weight	kg (lb)	12,000 (26,000)	12,500 (27,500)	14,500 (31,900)	18,000 (39,600)	19,500 (42,900)	12,500 (27,500)	13,000 (28,600)	15,000 (33,000)	18,500 (40,700)	20,000 (44,000)	17,000 (37,400)	17,500 (38,500)	21,500 (47,300)	25,500 (56,100)	26,000 (57,200)
CNC system			OSP-P300LA														

[ ]: Big-Bore specs < >: Super Big-Bore specs * : High power motor specs

Standard Accessories

Model			LB35Ⅲ		LB35Ⅲ(M)		LB45Ⅲ		LB45Ⅲ(M)		LB45Ⅲ(MY)
			T	C	T	C	T	C	T	C	C
Machine Specs	Spindle motor*	30/22 kW (40/30 hp)	●		●		–		–		–
		37/30 kW (50/40 hp)	–		–		●		●		●
	Spindle speed	14 to 3,200 min^{-1}	●		●		–		–		–
		12 to 2,800 min^{-1}	–		–		●		●		●
	M tool motor*	5.5/3.7 kW (7.5/5 hp)	–		●		–		–		–
		7.5/5.5 kW (10/7.5 hp)	–		–		–		●		–
		15/11 kW (20/14.7 hp)	–		–		–		–		●
	M tool speeds	40 to 2,000 min^{-1}	–		●		–		●		–
		40 to 3,500 min^{-1}	–		–		–		–		●
	Turret	V12	●		–		●		–		–
		Multitasking V12	–		●		–		●		●
	Hydraulic tailstock	Built-in center, MT 5	–	●	–	●	–	●	–	●	●
	Standard Equipment	Hydraulic unit	●		●		●		●		●
		Coolant system	●		●		●		●		●
		Chip shield	●		●		●		●		●
		Work lamp (LED)	●		●		●		●		●
	Standard Accessories	Foundation washers	●		●		●		●		●
		Levelling jack bolts	●		●		●		●		●
		Hand tools	●		●		●		●		●
CNC	OSP-P300LA		●		●		●		●		●

* 30 min / cont

Chucking / Tooling Kit

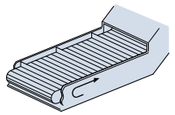
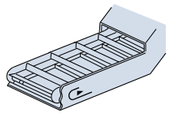
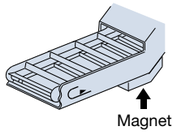
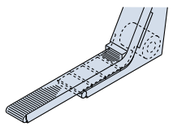
Model	LB35Ⅲ				LB35Ⅲ (M)		LB45Ⅲ				LB45Ⅲ (M)	
		Std Chucking Kit	Std Tooling E Kit	Std Tooling E Kit		Chucking Kit		Std Chucking Kit	Tooling Kit	Std Tooling E Kit		Chucking Kit
Hydraulic chuck		12"Solid		12"Solid		12"Solid		12"Solid		15"Solid		15"Solid
Hydraulic chuck drive		Solid		Hollow		Solid		Solid		Hollow		Solid
Standard soft jaws, A				5		5				5		5
Standard soft jaws, B				3		3				3		3
Standard hard jaws				1		1				1		1
OD	OD-I		4	6	OD-A (VDI)	2	OD-I		4	6	OD-A (VDI)	2
	OD-II		2	3	OD-B (VDI)	4	OD-II		2	3	OD-B (VDI)	4
					OD-C (VDI)	2					OD-C (VDI)	2
ID	ID-H50		6	6	ID-H50 (VDI)	4	ID-H63		6	6	ID-H50 (VDI)	4
Boring bar sleeve					BS 12-H50 (VDI)	2					BS 16-H63 (VDI)	2
					BS 16-H50 (VDI)	2					BS 20-H63 (VDI)	2
	BS 20-H50			2	BS 20-H50 (VDI)	2	BS 25-H63			2	BS 25-H63 (VDI)	2
	BS 25-H50			2	BS 25-H50 (VDI)	2	BS 32-H63		2	4	BS 32-H63 (VDI)	2
	BS 32-H50		2	2	BS 32-H50 (VDI)	2	BS 40-H63		2	2	BS 40-H63 (VDI)	2
	BS 40-H50		2	2	BS 40-H50 (VDI)	2					BS 50-H63 (VDI)	2
Drill sleeve	DS MT No.2-H50			1			DS MT No.2-H63			1		
	DS MT No.3-H50			1			DS MT No.3-H63			1		
	DS MT No.4-H50		1	1	DS MT No.4-H50 (VDI)	1	DS MT No.4-H63		1	1	DS MT No.4-H63 (VDI)	1
Axial drill/mill unit						2						2
Radial drill/mill unit						2						2
Dummy holder						3						3

Optional Equipment & Accessories

Spindle High power motor specs	Cover
LB35Ⅲ 37/30 kW (30 min/cont)	Auto front cover open/close*1
LB45Ⅲ 45/37 kW (30 min/cont)	Chucking
Big-Bore spindle	Chuck auto open/close confirm
LB35Ⅲ A2-11 2,800 min^{-1}	Chuck high/low pressure switch
Front bearing ø150, Spindle bore ø110	Air blower
LB45Ⅲ A2-11 2,400 min^{-1}	Chuck, turret, Tailstock
Front bearing ø180, Spindle bore ø130	Coolant blower
Big-Bore spindle High power motor specs	Shower type, in-machine chip washer
LB35Ⅲ A2-11 2,800 min^{-1}	Dust-proof
Front bearing ø150, Spindle bore ø110	Spindle air purging, turret air purging,
37/30 kW (30 min/cont)	X-axis double wiper, Z-axis double wiper
LB45Ⅲ A2-11 2,400 min^{-1}	Gauging
Front bearing ø180, Spindle bore ø130	In-process work gauging
45/37 kW (30 min/cont)	Touch Setter M (manual), A (automatic)
Super Big-Bore spindle specifications	Chip discharge
LB35Ⅲ JIS A2-15 1,400 min^{-1}	Chip conveyor, (Side discharge, Rear discharge)*2, chip bucket, chip pan
Front bearing ø220, Spindle bore ø180	Coolant pump
30/22 kW (30 min/cont)	0.8 kW, high-pressure coolant unit, coolant sensors
LB45Ⅲ JIS A2-20 900 min^{-1}	High accuracy optional specifications
Front bearing ø320, Spindle bore ø260	Turcite® lining (X axis, Z axis)
45/37 kW (30 min/cont)	AbsoScale (X axis, Z axis, Y axis)
Tailstock	Temperature regulators (coolant, spindle temperature, hydraulic oil)
Dead center, threaded, MT 5	Other
Auto tailstock quill advance/retract confirm	Mist collector
Low tailstock thrust	High-speed NC double-column loader OGL
Tailstock thrust high/low switch	Raised machine height
Tailstock quill position detection (multi-sizing, high-accuracy sizing)	
Steadyrest*	
Fixed steadyrest	
Hydraullic steadyrest (Auto-centering)	

*1. LB45Ⅲ Standard with distance between centers of 3000, 4000
*2. For LB45Ⅲ, rear discharge available only with distance between centers 1,000.

Chip conveyor types and application

Name	Hinge type	Scraper type	Magnet scraper type	Hinge scraper type (with drum filter)
Application	● For steel	● For castings	● For castings	● For steel, castings, nonferrous metal
Features	● General use	● Magnet scraper for sludge processing ● Easy for maintenance ● Blade scraper	● Suitable with sludge ● Not suitable for nonferrous metals	● Filtration of long and short chips and coolant
Shape				

Note: Machine platform may be necessary depending on the type of conveyor.

Chuck preparation specs per chuck size

		Solid/hollow chuck					
	Chuck OD	12 inch	Big bore 12 inch	15 inch	18 inch	21 inch	24 inch
LB35Ⅲ	Standard spindle A2-8	●		●			
	Big-Bore spindle A2-11		● *1	●			
LB45Ⅲ	Standard spindle A2-11		● *1	●	●	●	●
	Big-Bore spindle A2-11			● *1	●	●	●
	Hollow chuck through-hole diameter	ø91	ø106	ø117.5 *2	ø117.5	ø140	ø165

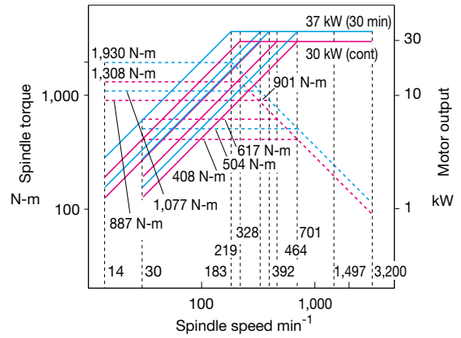
*1: Hollow only *2: ø100 with standard spindle
Technical consultation necessary for columns with no "●" mark

Torque diagram

30 min duty rating
Continuous duty rating

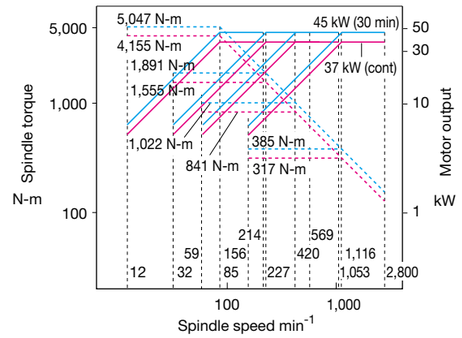
LB35Ⅲ High power standard spindle

- Spindle speed 3,200 min^{-1}
- Max output 37/30 kW (30 min/cont)
- Max torque 1,930/1,308 N-m (30 min/cont)



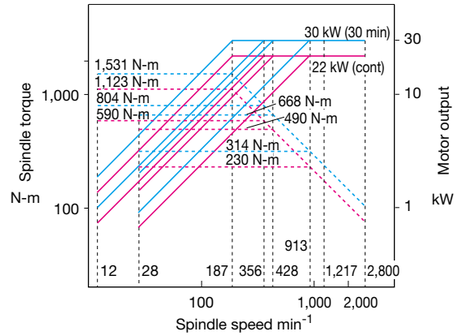
LB45Ⅲ High power standard spindle

- Spindle speed 2,800 min^{-1}
- Max output 45/37 kW (30 min/cont)
- Max torque 5,047/4,155 N-m (30 min/cont)



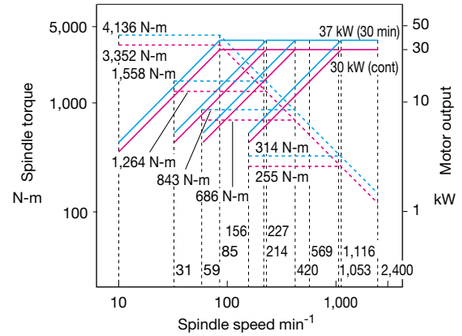
LB35Ⅲ Big-Bore spindle

- Spindle speed 2,800 min^{-1}
- Max output 30/22 kW (30 min/cont)
- Max torque 1,531/1,123 N-m (30 min/cont)



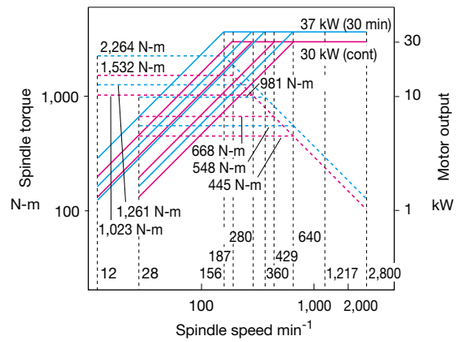
LB45Ⅲ Big-Bore spindle

- Spindle speed 2,400 min^{-1}
- Max output 37/30 kW (30 min/cont)
- Max torque 4,136/3,352 N-m (30 min/cont)



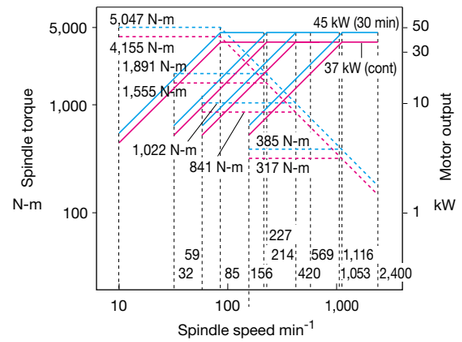
LB35Ⅲ High power Big-Bore spindle

- Spindle speed 2,800 min^{-1}
- Max output 37/30 kW (30 min/cont)
- Max torque 2,264/1,532 N-m (30 min/cont)



LB45Ⅲ High power Big-Bore spindle

- Spindle speed 2,400 min^{-1}
- Max output 45/37 kW (30 min/cont)
- Max torque 5,047/4,155 N-m (30 min/cont)



With revamped operation and responsiveness— ease of use for machine shops first!

Smart factories implement advanced digitization and networking (IoT) in manufacturing to achieve enhanced productivity and added value. The OSP has evolved tremendously as a CNC suited to advanced intelligent technology. Okuma's new control uses the latest CPUs for a tremendous boost in operability, rendering performance, and processing speed. The OSP suite also features a full range of useful apps that could only come from a machine-tool manufacturer, making smart manufacturing a reality.

Smooth, comfortable operation with the feeling of using a smart phone

Improved rendering performance and use of a multi-touch panel achieve intuitive graphical operation. Moving, enlarging, reducing, and rotating 3D models, as well as list views of tool data, programs, and other information can be accomplished through smooth, speedy operations with the same feel as using a smart phone. The screen display layout on the operation screen can also be changed to suit operator preferences and customized for the novice and/or veteran machinists.

"Just what we wanted."— Refreshed OSP suite apps

This became possible through the addition of Okuma's machining expertise based on requests we heard from real, machine-shop customers. The brain power packed into the CNC, built by machine tool manufacturer, will "empower shop floor" management.

S11

Increased productivity through visualization of motor power reserve

Spindle Output Monitor

The specified spindle output (red line: short time rating, green line: continuous rating) and the spindle output in current cutting (blue circle) are simultaneously displayed on the screen, for real-time view of power reserve during cutting.
This allows speeding up cutting by increasing the spindle speed or feed rate while monitoring the graph to ensure that the blue circle does not cross the lines.

SDF

Easy programing without keying in code

Scheduled Program Editor

Monitoring operating status even when away from the machine

E-mail Notification

Standard Specifications

Basic Specs	Control	Turning: X, Z simultaneous 2-axis, Multitasking: X, Z, C simultaneous 3-axis
	Position feedback	OSP full range absolute position feedback (zero point return not required)
	Min / Max inputs	8-digit decimal, ±99999.999 to 0.001 mm (±3937.0078 to 0.0001 in.), 0.001° Decimal: 1 µm, 10 µm, 1 mm (0.0001,1 in.) (1°, 0.01°, 0.001°)
	Feed	Override: 0 to 200%
	Spindle control	Direct spindle speed commands (S4) override 50 to 200%
		Constant cutting speed, optimum turning speed designate
	Tool compensation	Tool selection: 32 sets, tool offset: 32 sets
	Display	15-inch color LCD + multi-touch panel operations
	Self-diagnostics	Automatic diagnostics and display of program, operation, machine, and NC system problems
	Program capacity	Program storage: 2 GB, operation buffer: 2 MB
Operations	Programing	Program management, edit, multitasking, scheduled programs, fixed cycles, special fixed cycles, tool nose R compensation, M-spindle synchronized tapping, fixed drilling cycles, arithmetic functions, logic statements, trig functions, variables, branch statements, auto programming (LAP4), programming help
	Easy Operation	"Single-mode operation" to complete a series of operations Advanced operation panel/graphics facilitate smooth machine control
	Machine operations	MDI, manual (rapid traverse, pulse handle), load meter, operations help, alarm help, sequence, return, manual interrupt & auto return, threading slide hold, data I/O, spindle orientation (electric)
	MacMan	Machining Management: machining results, machine utilization, fault data compile & report, external output
Communications/Networks		USB ports, Ethernet
High speed/accuracy		Hi-G control, TAS-C (Thermal Active Stabilizer-Construction), SERVONAVI (Inertia Auto Setting) *LB45III only
Energy Saving	ECO suite	ECO Idling Stop, ECO Power Monitor

Optional Specifications

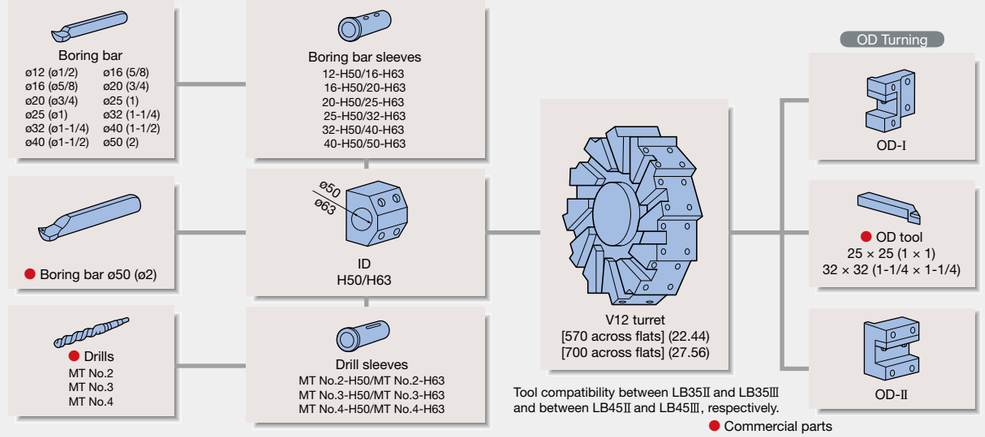
Item \ Kit Specs		NML E	NML D	3D E	3D D	OT-IGF E	OT-IGF D	OTM E	OTM D
New Operations									
Advanced One-Touch IGF-L *1						●	●		
Advanced One-Touch IGF-L Multitasking *1								●	●
Programming									
Circular threading			●		●		●		●
Program notes			●		●		●		●
User task 2 I/O variables, 8 ea									
Work coordinate system select	10 sets								
	50 sets								
	100 sets								
Tool compensation (Std: 32 sets)	Tool compensation 64 sets								
	Tool compensation 96 sets								
	Tool compensation 200 sets								
	Tool compensation 999 sets								
Common variables 1,000 sets (Std: 200 sets)									
Thread matching (spindle orientation required)									
Threading slide hold (G34, G35)									
Variable spindle speed threading (VSST)									
Inverse time feed									
Spindle synchronized tapping (rigid tapping)									
Milling machine specs	Coordinate convert	▲	▲	▲	▲		●		●
	Profile generate	▲	▲	▲	▲		●		●
	Helical profile cutting								
	Flat turning								
Monitoring									
Real 3-D simulation				●	●	●	●	●	●
Cycle time over check		●	●	●	●	●	●	●	●
Load monitor (spindle, feed axis)				●	●	●	●	●	●
Load monitor no-load detection (load monitor ordered)									
Tool life management			●		●		●		●
Tool life warning									
Operation end buzzer									
Chucking miss detection		Included in machine specs							
Work counters	Count only								
	Cycle stop								
	Start disabled								
Hour meters	Power ON								
	Spindle rotation								
	NC operating								
NC operation monitor (counter, totaling)		●	●	●	●	●	●	●	●
NC work counter (stops at full count with alarm)									
Status indicator (triple lamp) Type C [Type A, Type B]		●	●	●	●	●	●	●	●
Measuring									
In-process work gauging		Included in machine specs							
Z-axis automatic zero offset by touch sensor									
C-axis automatic zero offset by touch sensor									
Gauge data output	File output								
Post-process work gauging interface	Set levels (5-level, 7-level)								
	BCD								
	RS-232-C (dedicated channel)								
Touch setter [M, A]		Included in machine specs							

Item \ Kit Specs		NML E	NML D	3D E	3D D	OT-IGF E	OT-IGF D	OTM E	OTM D
External Input/Output and Communication Functions									
RS-232-C connector									
DNC link	DNC-T3								
	DNC-C/Ethernet								
	DNC-DT								
USB (additional)	2 additional ports possible								
Automation/Untended Operation									
Auto power shutoff MO2, alarm									
Warmup function (by calendar timer)									
Tool retract cycle									
External program selections	A (pushbutton) 8 types								
	B (rotary switch) 8 types								
	C (digital switch) BCD, 2-digit								
	C2 (external input) BCD, 4-digit								
Okuma loader (OGL) interface		Including loader specs							
Third party robot and loader interface	Type B (machine)								
	Type C (robot and loader)								
	Type D								
	Type E								
Cycle time reduction *2	Operation time reduction	●	●	●	●	●	●	●	●
	Chuck open/close during spindle rotation								
	Tailstock advance/retract during spindle rotation								
High-Speed/High-Accuracy Functions									
1/10 µm control *2									
AbsoScale detection *2									
Hi-Cut Pro		▲	▲	▲	▲			●	●
Energy saving ECO suite									
ECO Operation	Power monitoring (On-machine wattmeter)								
	Chip collector and mist collector during operation								
	Spindle power peak cutting								
Other Functions									
Collision Avoidance System (CAS)									
One-Touch Spreadsheet									
Machining Navi L-g									
Machining Navi T-g threading									
Harmonic spindle speed control (HSSC)		●	●	●	●	●	●	●	●
Spindle dead-slow cutting									
Spindle speed setting									
Manual cutting feed									
Short circuit breaker									
External M signals [2 sets, 4 sets, 8 sets, ( )]									
Edit interlock									
OSP-VPS (Virus protection system)									

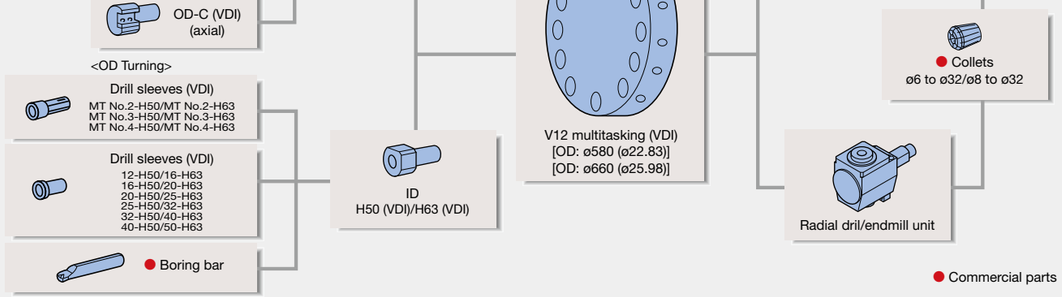
Kit full froms: NML: Normal, 3D: Real 3D simulation, OT-IGF: One-Touch IGF, OTM: One-Touch M, E: Economy, D: Deluxe
*1. Real 3-D Simulation included
*2. Engineering discussions required.
Note: ▲ Triangle items for M function (milling tool) machines only.

Tooling System

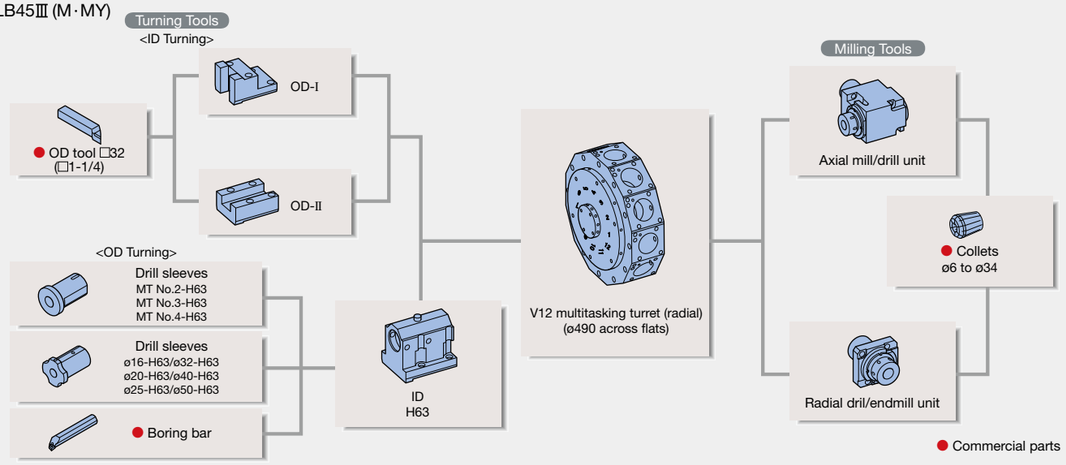
LB35Ⅲ/LB45Ⅲ



LB35Ⅲ (M)/LB45Ⅲ (M)



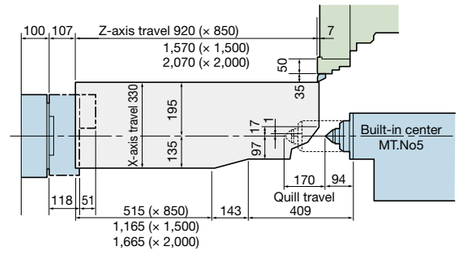
LB45Ⅲ (M·MY)



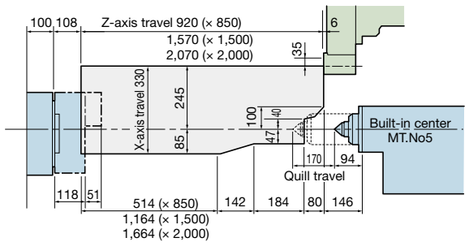
Working ranges

Unit: mm

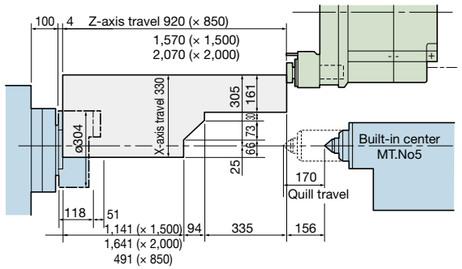
LB35Ⅲ OD-I



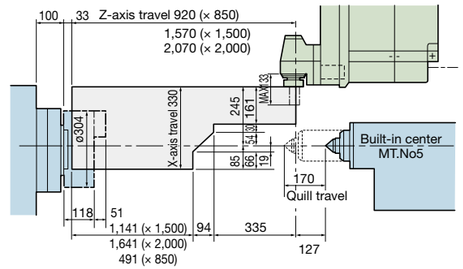
LB35Ⅲ ID-H50



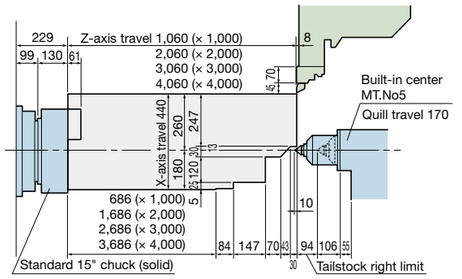
LB35Ⅲ (M) Axial drill/mill unit (VDI)



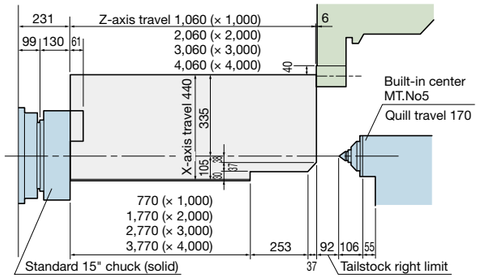
LB35Ⅲ (M) Radial drill/mill unit (VDI)



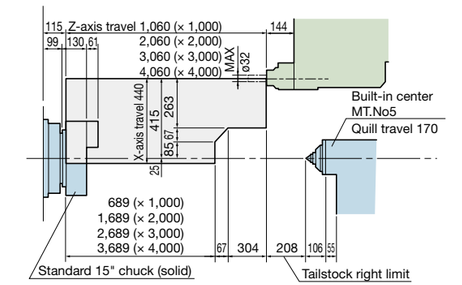
LB45Ⅲ OD-I



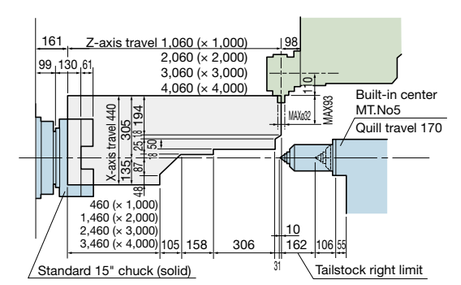
LB45Ⅲ ID-H63



LB45Ⅲ (M) Axial drill/mill unit (VDI)



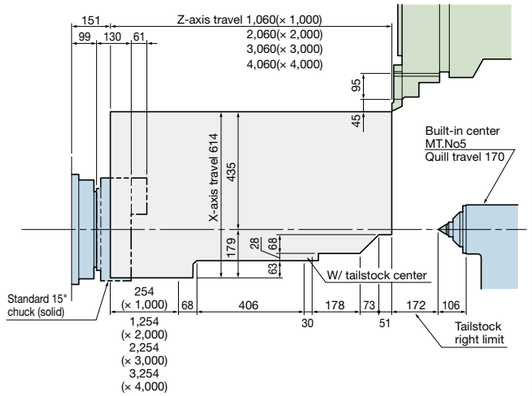
LB45Ⅲ (M) Radial drill/mill unit (VDI)



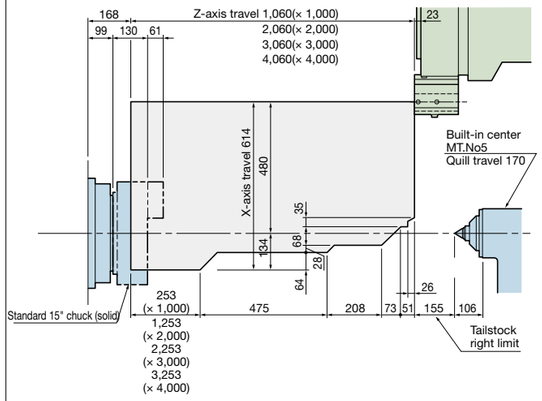
Working ranges

Unit: mm

LB45Ⅲ (MY) OD-I



LB45Ⅲ (MY) ID

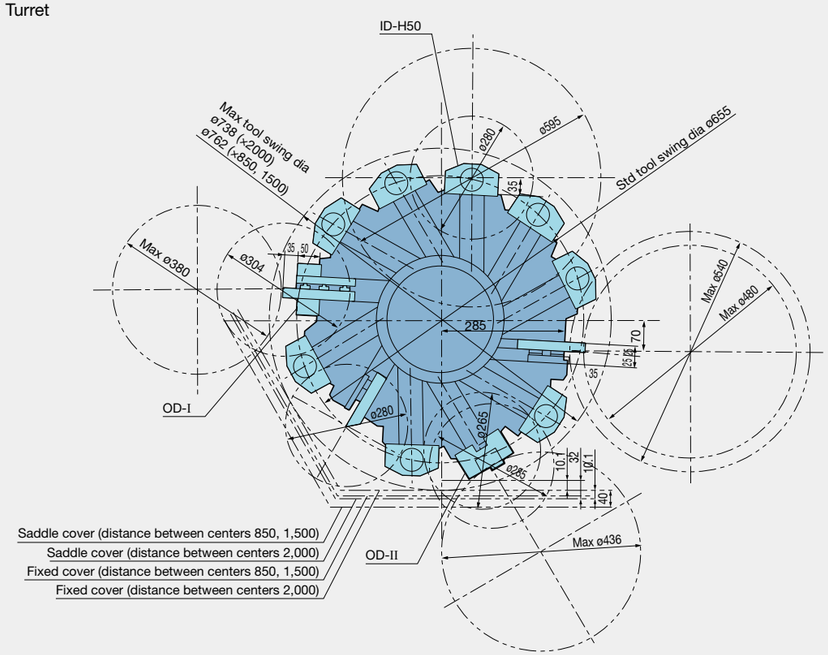


LB45Ⅲ (MY) Axial drill/mill unit

LB45Ⅲ (MY) Radial drill/mill unit

Tool Interference Drawings

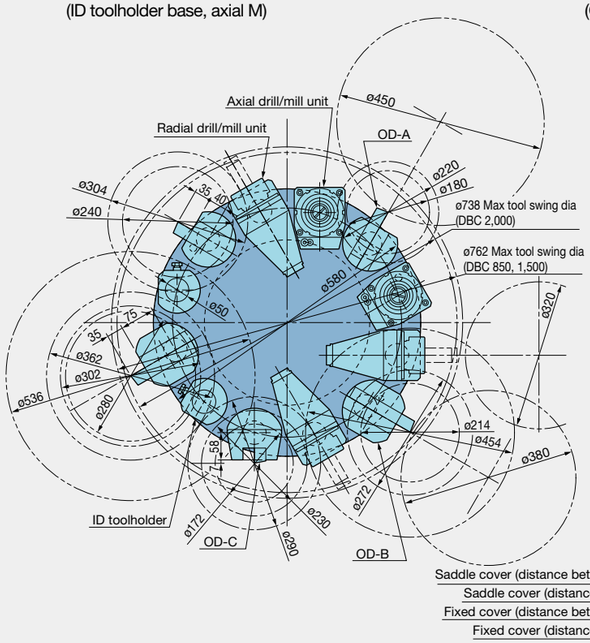
LB35Ⅲ V12 Turret



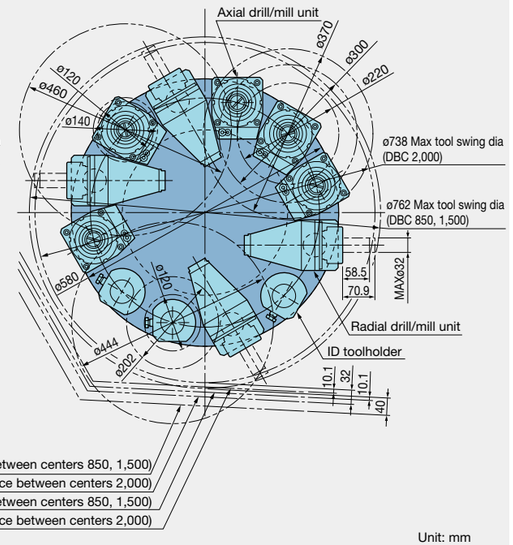
Unit: mm

LB35Ⅲ (M) Multitasking V12 Turret (VDI)

Axial tools
(ID toolholder base, axial M)



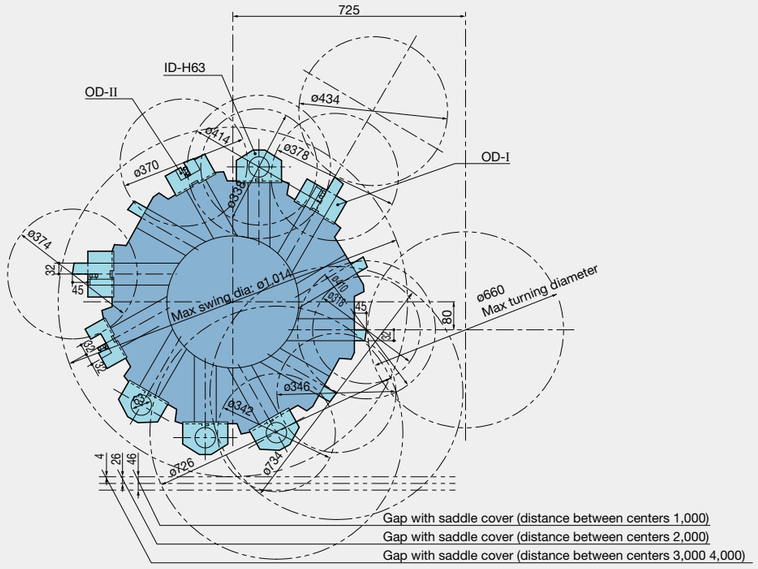
Radial tools
(OD toolholder base, radial M)



Unit: mm

Tool Interference Drawings

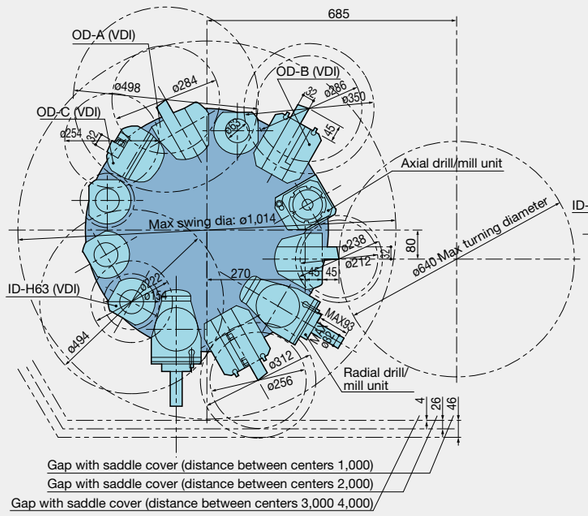
LB45Ⅲ V12 Turret



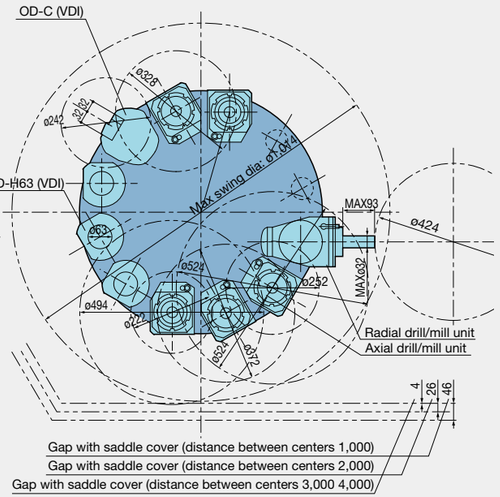
Unit: mm

LB45Ⅲ Multitasking V12 Turret (VDI)

Axial tools
(ID toolholders base, axial M)



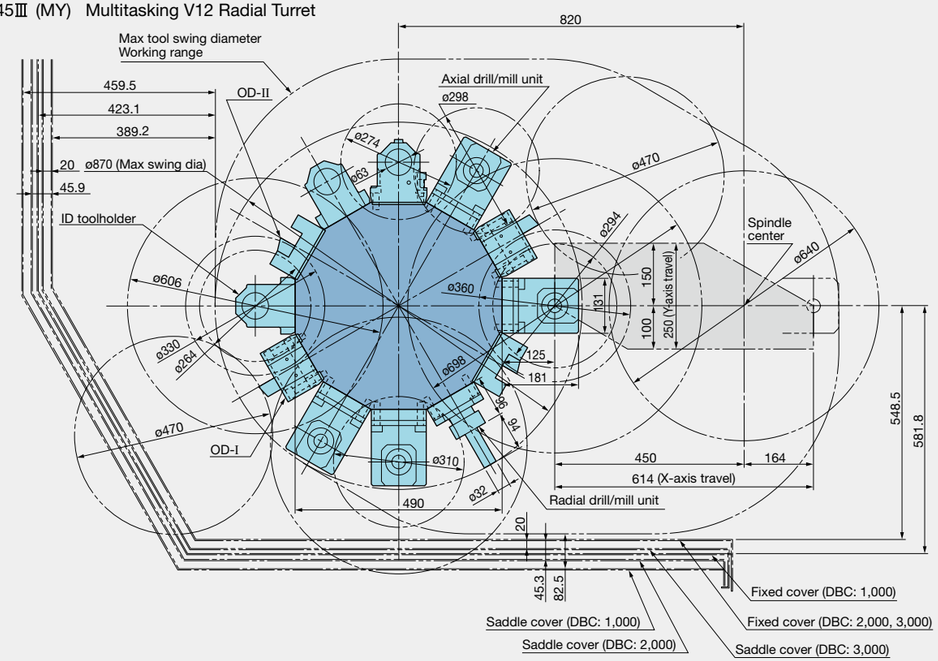
Radial tools
(OD toolholder base, Radial M)



Unit: mm

Tool Interference Drawing

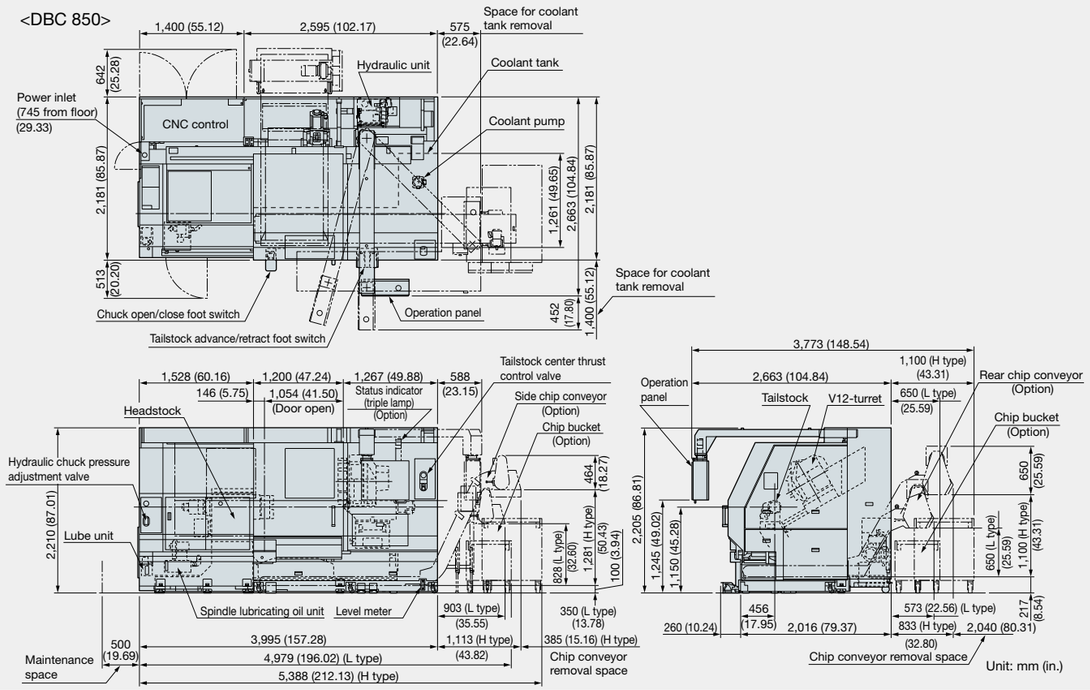
LB45Ⅲ (MY) Multitasking V12 Radial Turret



Unit: mm

Dimensional / Installation Drawings LB35Ⅲ / LB35Ⅲ(M)

<DBC 850>



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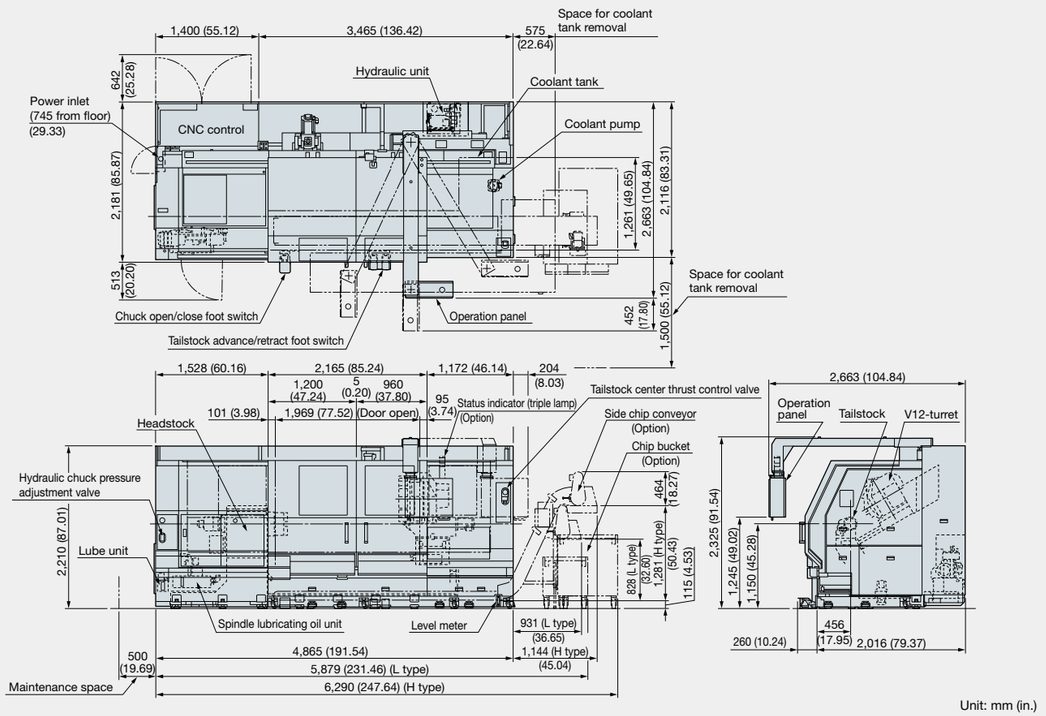

Unit: mm (in.)

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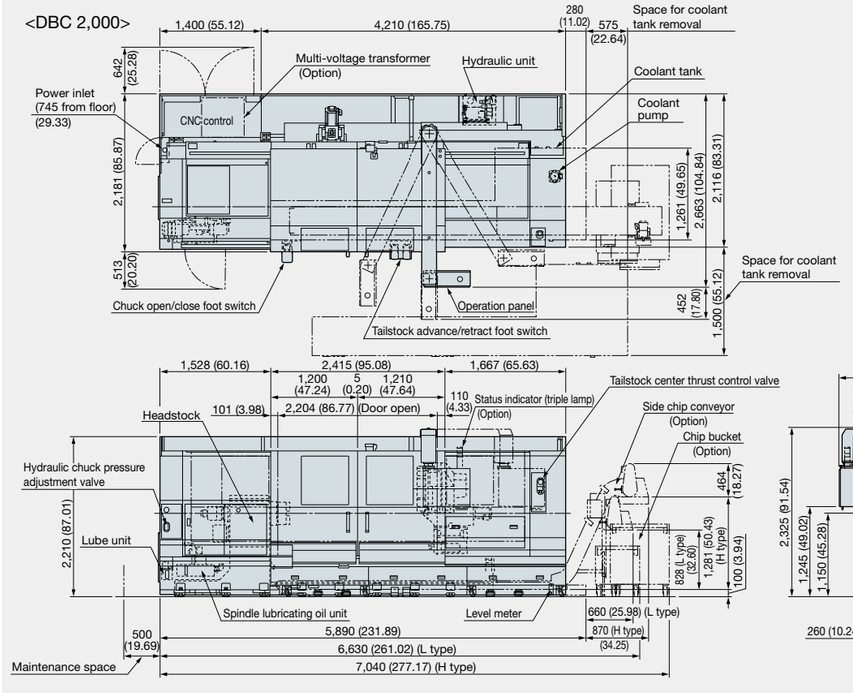

Unit: mm (in.)

Dimensional / Installation Drawings LB45Ⅲ / LB45Ⅲ(M)

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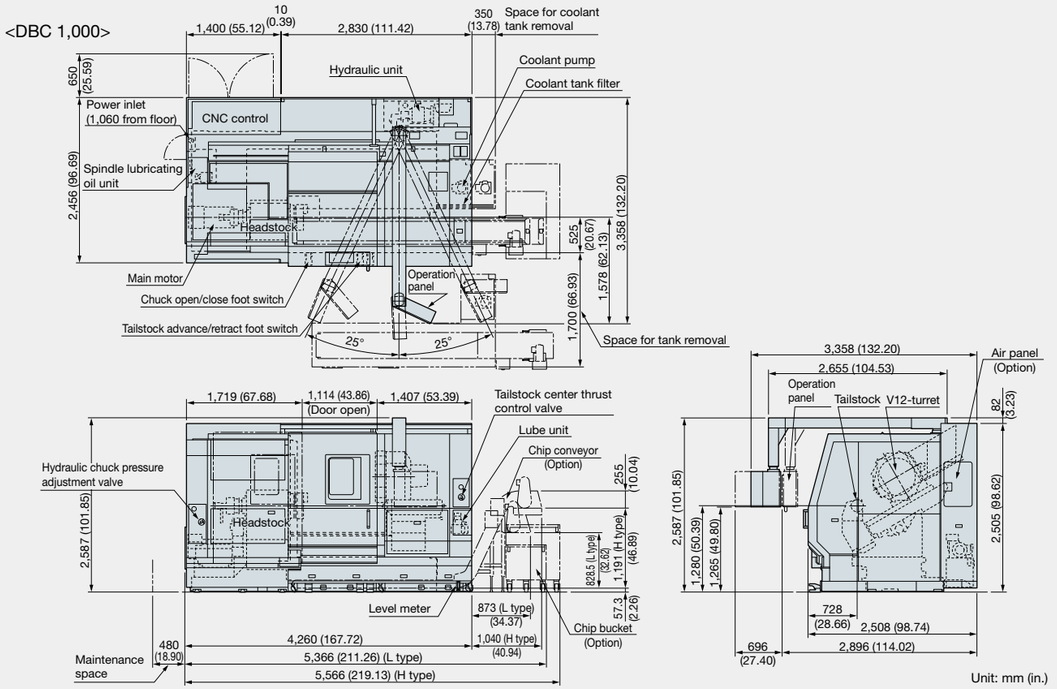

Unit: mm (in.)

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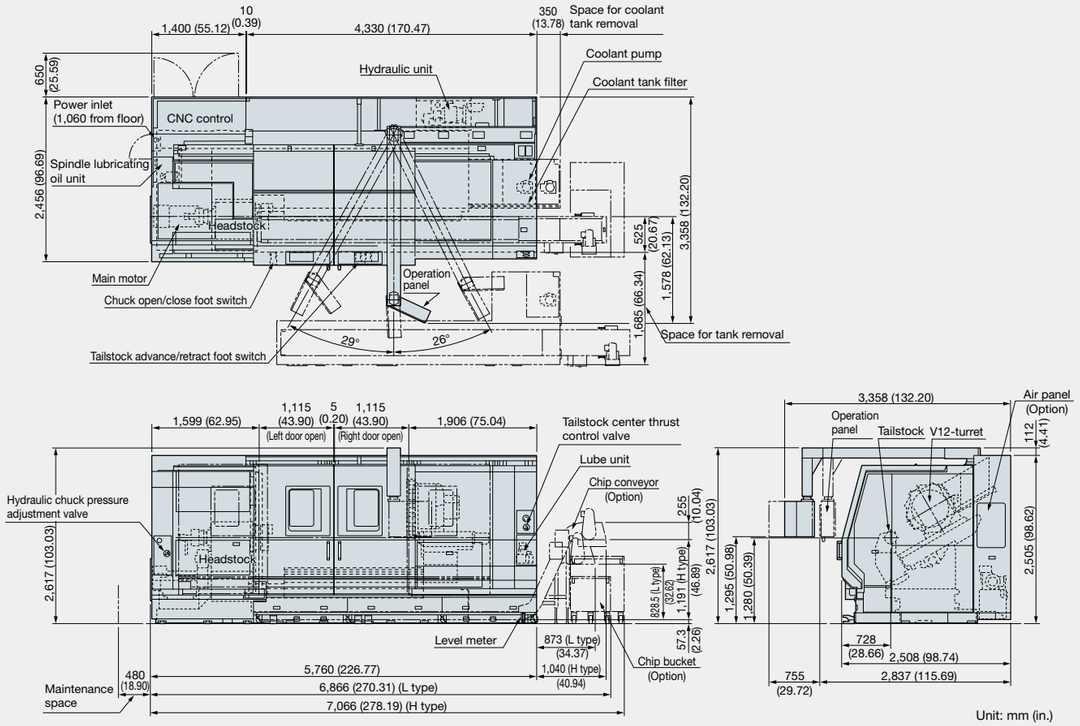

Unit: mm (in.)

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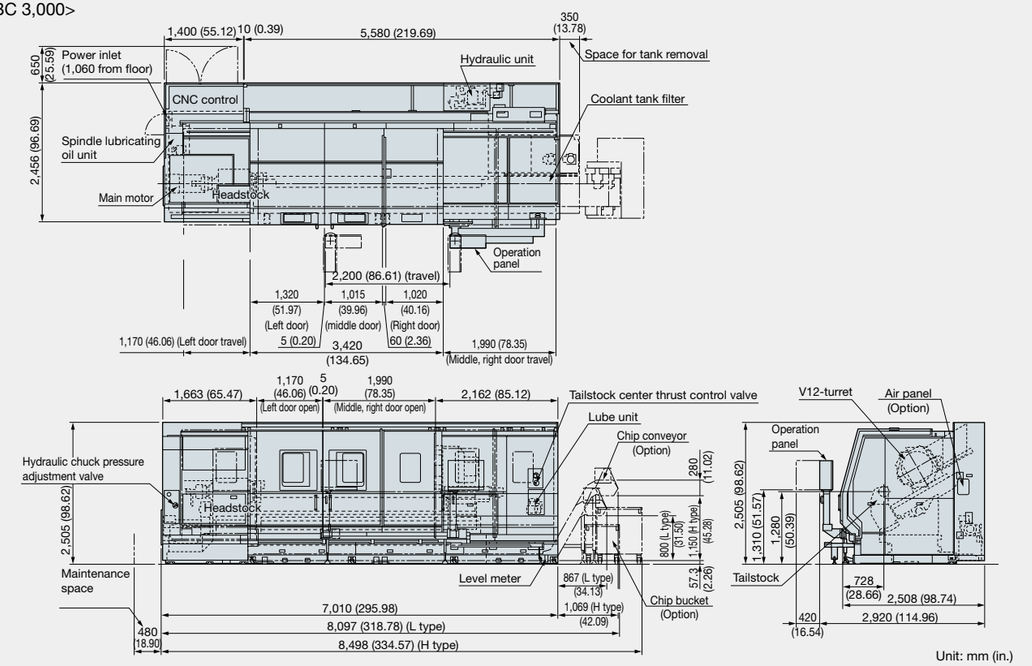

Unit: mm (in.)

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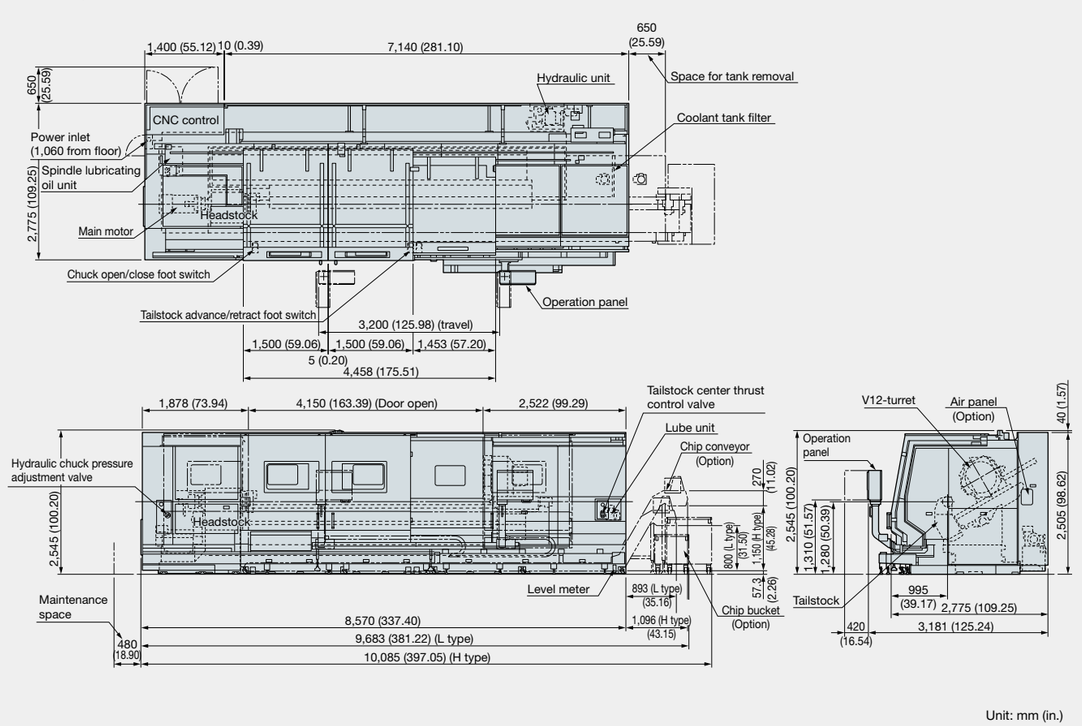

Unit: mm (in.)

Dimensional / Installation Drawings LB45Ⅲ (MY)

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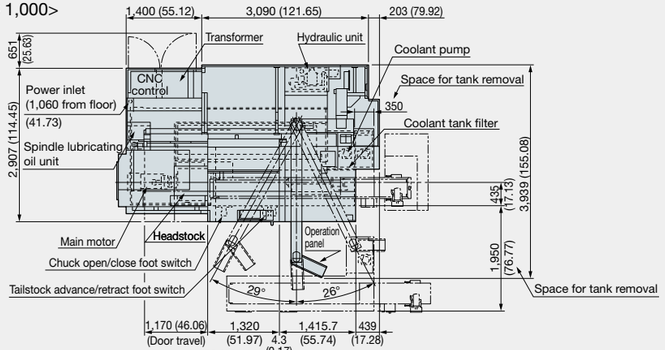

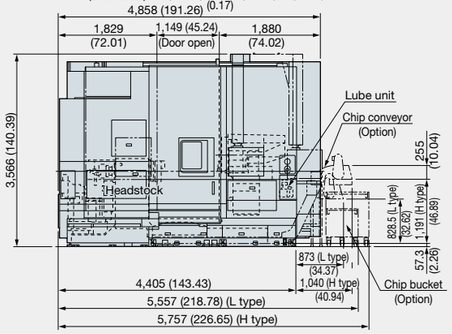

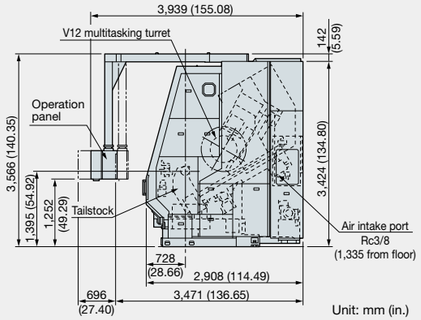

Unit: mm (in.)

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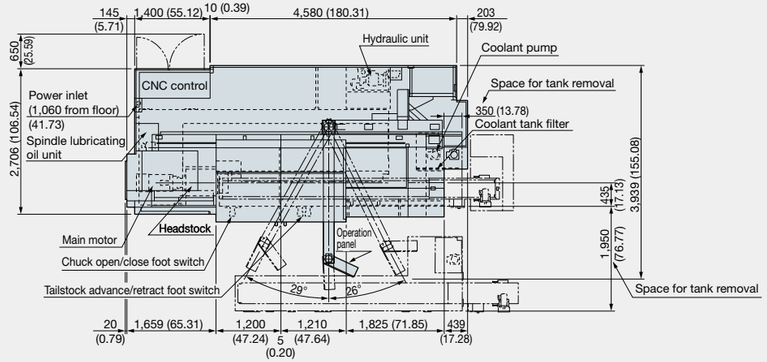

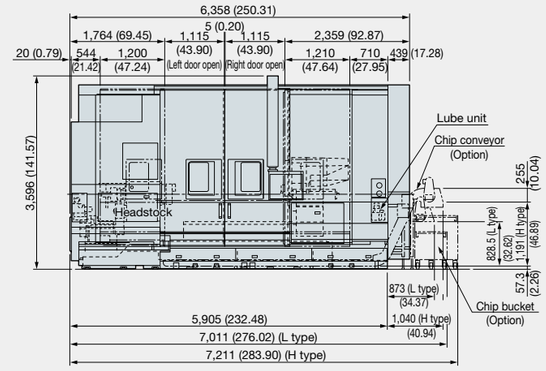

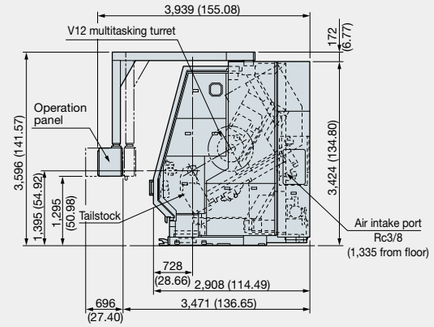

Unit: mm (in.)

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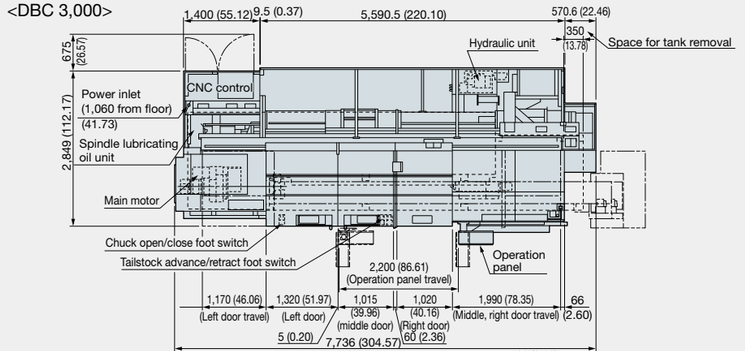

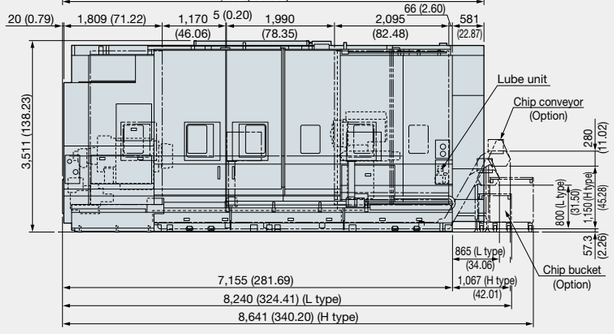

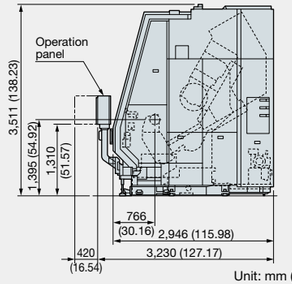

Unit: mm (in.)

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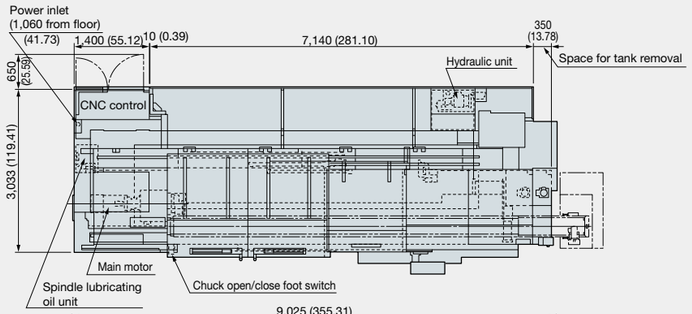

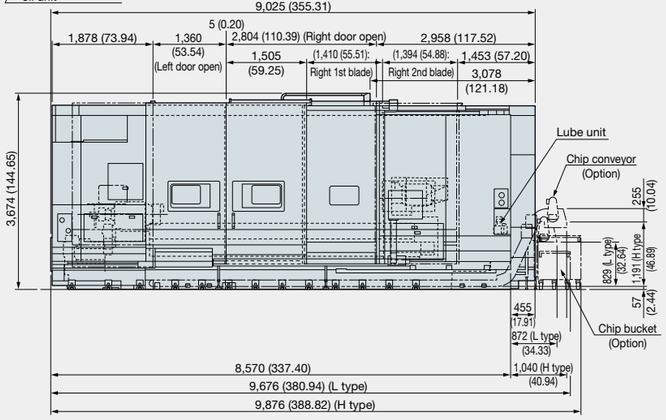

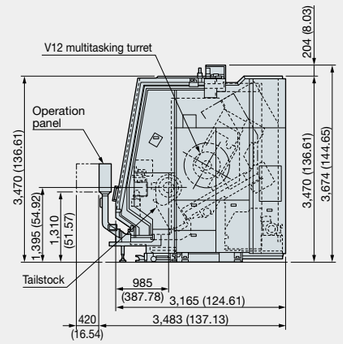

Unit: mm (in.)

LB35Ⅲ/LB45Ⅲ

When using Okuma products, always read the safety precautions mentioned in the instruction manual and attached to the product.

●The specifications, illustrations, and descriptions in this brochure vary in different markets and are subject to change without notice.

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