

KURAKI

KBT

11W·A
13·A

TABLE TYPE CNC HORIZONTAL BORING & MILLING MACHINE



Splendid New Design for Higher Work Efficiency

KBT-11W·A

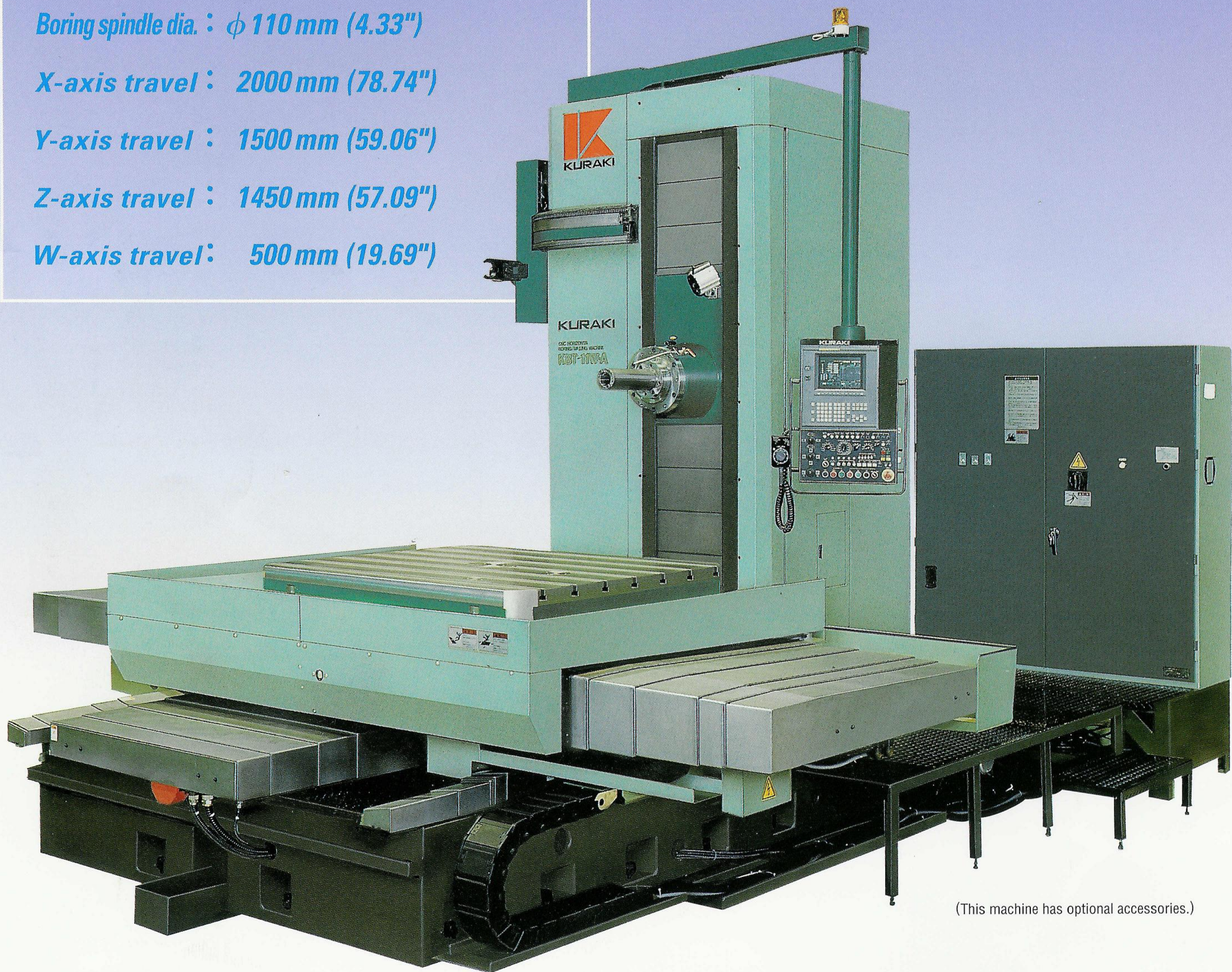
Boring spindle dia. : $\phi 110$ mm (4.33")

X-axis travel : 2000 mm (78.74")

Y-axis travel : 1500 mm (59.06")

Z-axis travel : 1450 mm (57.09")

W-axis travel : 500 mm (19.69")



(This machine has optional accessories.)

1 Higher rigidity and higher accuracy

- ◆ Substantial improvement in rigidity of bed, column, saddle (11W·A), column base (13·A), and table.
- ◆ Large diameter internal gear with ball screw + Scale feedback.
- ◆ Large diameter gear + double pinion system for table drive.
- ◆ Table indexing 0.001° (optional 0.0001°)
Direct detection + Locate pin at every 90° position.
- ◆ High accuracy positioning of even large and heavy workpieces.

2 Higher speeds

- ◆ Higher spindle speed, feedrate, table rotation speed, and tool change speed.

 ***More Powerful, Faster Speed, and Higher Accuracy***

KBT-13·A

Boring spindle dia. : ϕ 130 mm (5.12")

X-axis travel : 3000 mm (118.11")

Y-axis travel : 2000 mm (78.74")

Z-axis travel : 1300 mm (51.18")

W-axis travel : 700 mm (27.56")



(This machine has optional accessories.)

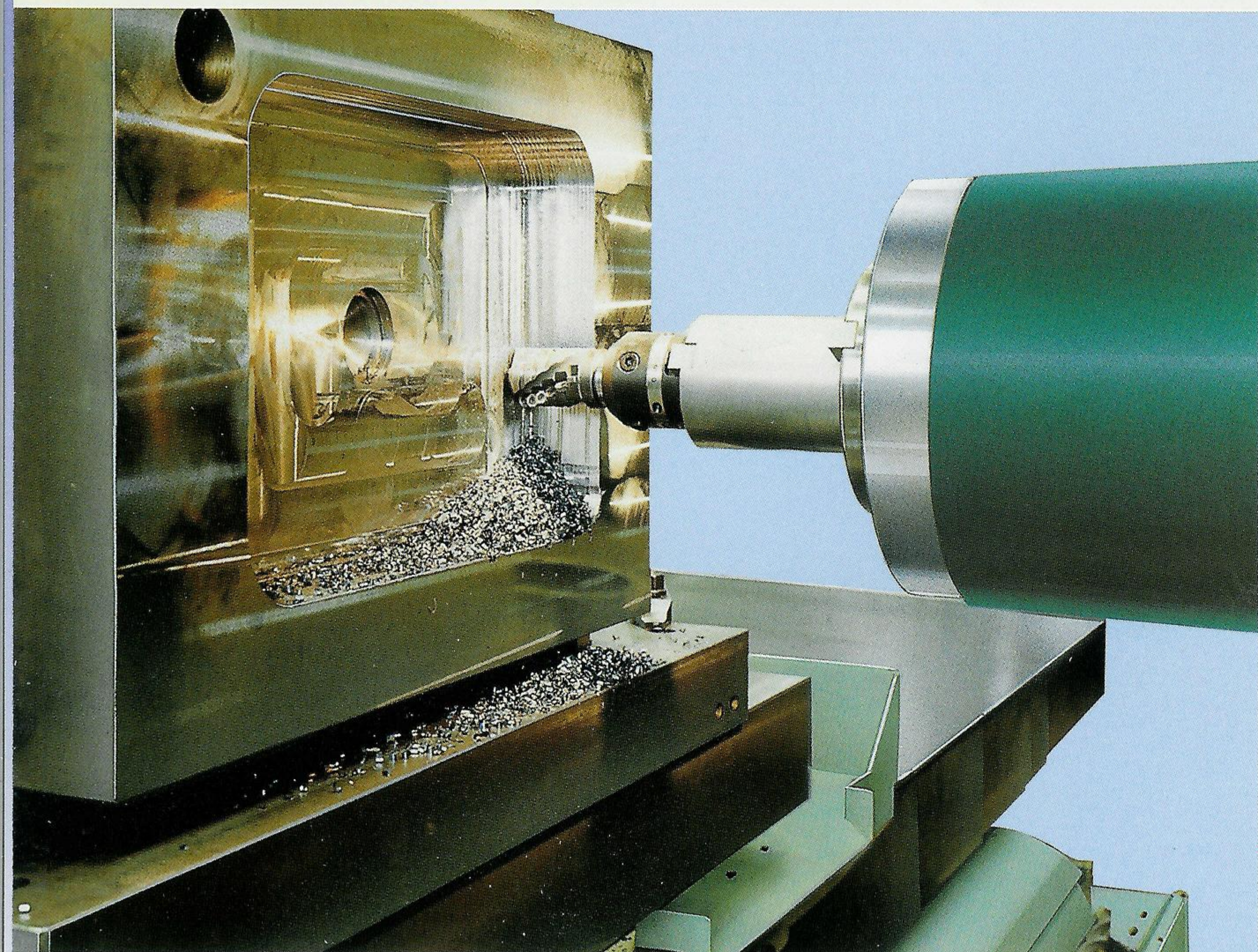
3 Easier operation

- ◆ Compact light-weight centralized pendant operation panel.
- ◆ Push button switch type spindle orientation, push button switch type table indexing.

4 Wide variations according to your applications

KBT-13·A

- ◆ Rotary table, plane table, and combined table.
- ◆ High power type available.



Spindle delivering heavy-duty cutting capability

- Long nose spindle head
- Ultra-precision paired bearings built in
- NC controlled boring spindle (W axis)
- Long nose spindle head allows close access to the workpiece and provides heavy-duty cutting with a minimum of quill extension.
- Use of ultra-precision paired spindle bearings ensures high-speed, heavy-duty, and high-accuracy machining.
- NC controlled boring spindle (W-axis) is capable of providing a variety of machining such as drilling cycles for heavy workpieces and 2-step drilling for deep holes.

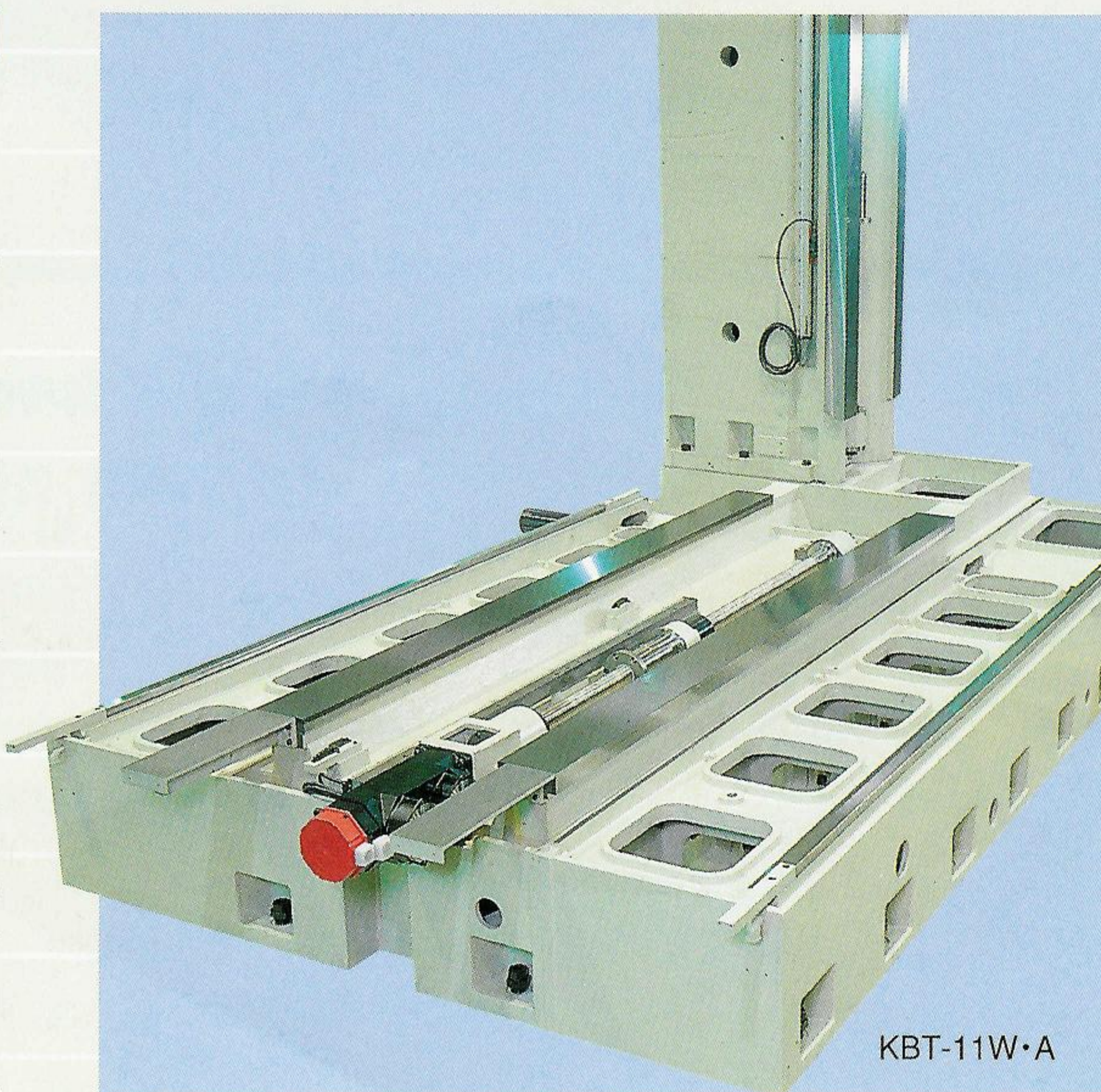


Easy chip and coolant disposal

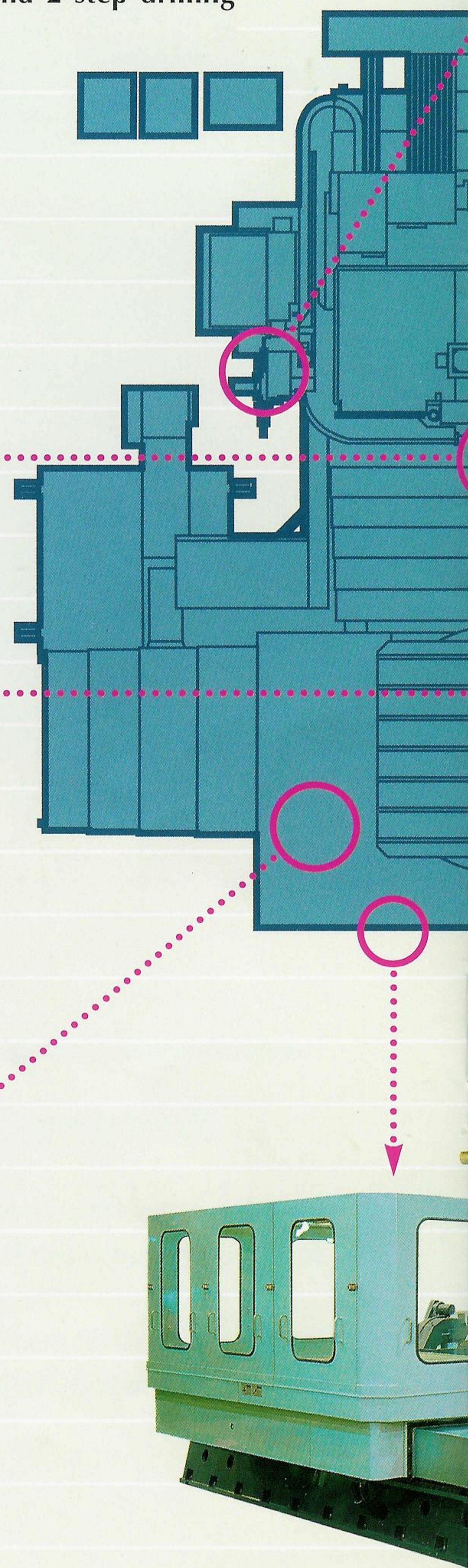
- Chip conveyor built in bed
- Chip conveyor built in the bed collects and disposes chips and coolant efficiently, improving productivity.

High accuracy positioning

- Large diameter ball screws
- Direct connection of motor and ball screw
- Use of wear-resistant synthetic resin for slideways
- All ball screws are supported with double angular thrust bearings and pretensioned to minimize the elongation by heat and heavy loads.
- Backlash is greatly reduced by direct connection of ball screws to the servomotors.
- Each slideway is hardened and ground, and the counterpart is coated with wear-resistant synthetic resin to ensure longtime high accuracy after precision fitting.

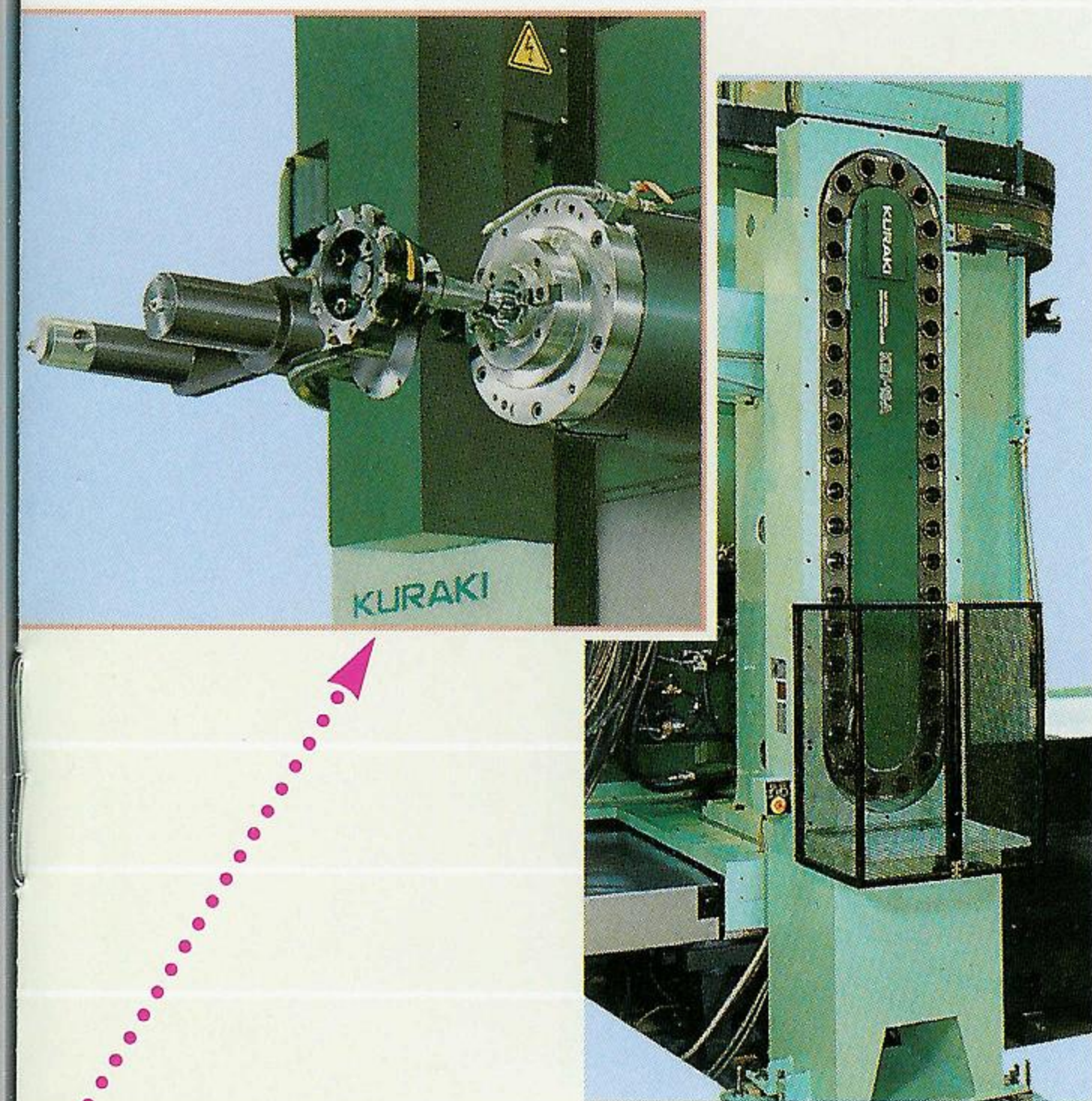


KBT-11W-A



Splash guard A type (option)

Technologies Present High Accuracy and High Rigidity.

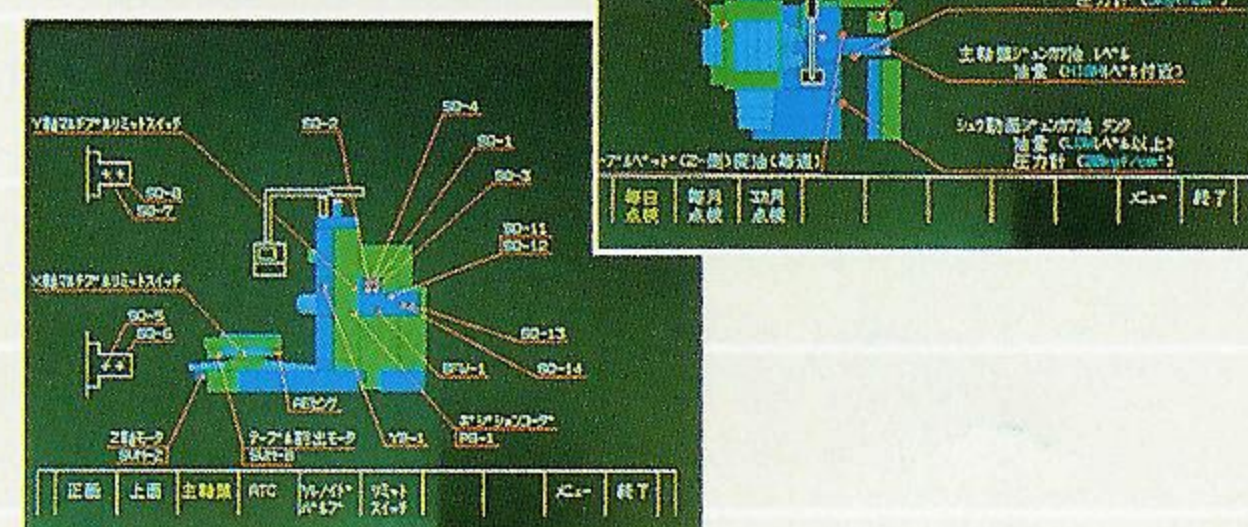
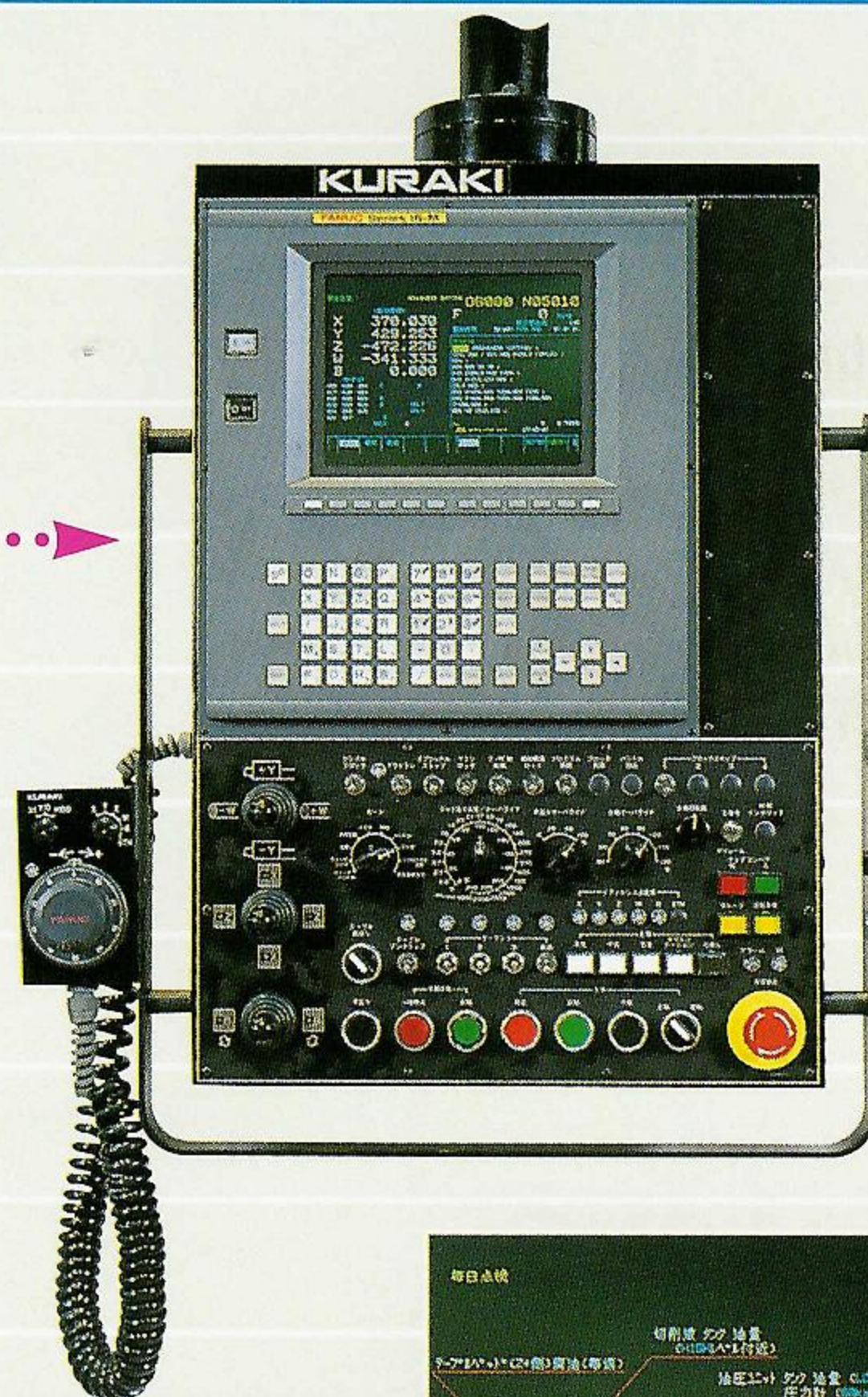


Automatic tool changer

- Standard storage capacity : 40 tools
- Separate type tool magazine
- Large diameter and heavy tools changeable

- A separate type tool magazine does not affect the machining accuracy. Heavy tools can be changed, thus enabling a longtime continuous operation for any workpieces.
- Optional 60 / 90 / 120-tool magazines are available.
- The magazine rotate and interrupt function (option) allows the operator to check a tool edge or change tools in magazine during automatic operation.

Easy-to-operate control panel



- Safe, uncluttered operating area
- Centralized pendant operation panel for CNC and conventional control
- Portable manual pulse generator

- Pendant operation panel with easy access arrangement of switches and levers provides both CNC and conventional controls. It is flexible enough for full production runs or one-piece machining.

Versatile Options Than Meet All Your Manufacturing Needs.

Standard Accessories

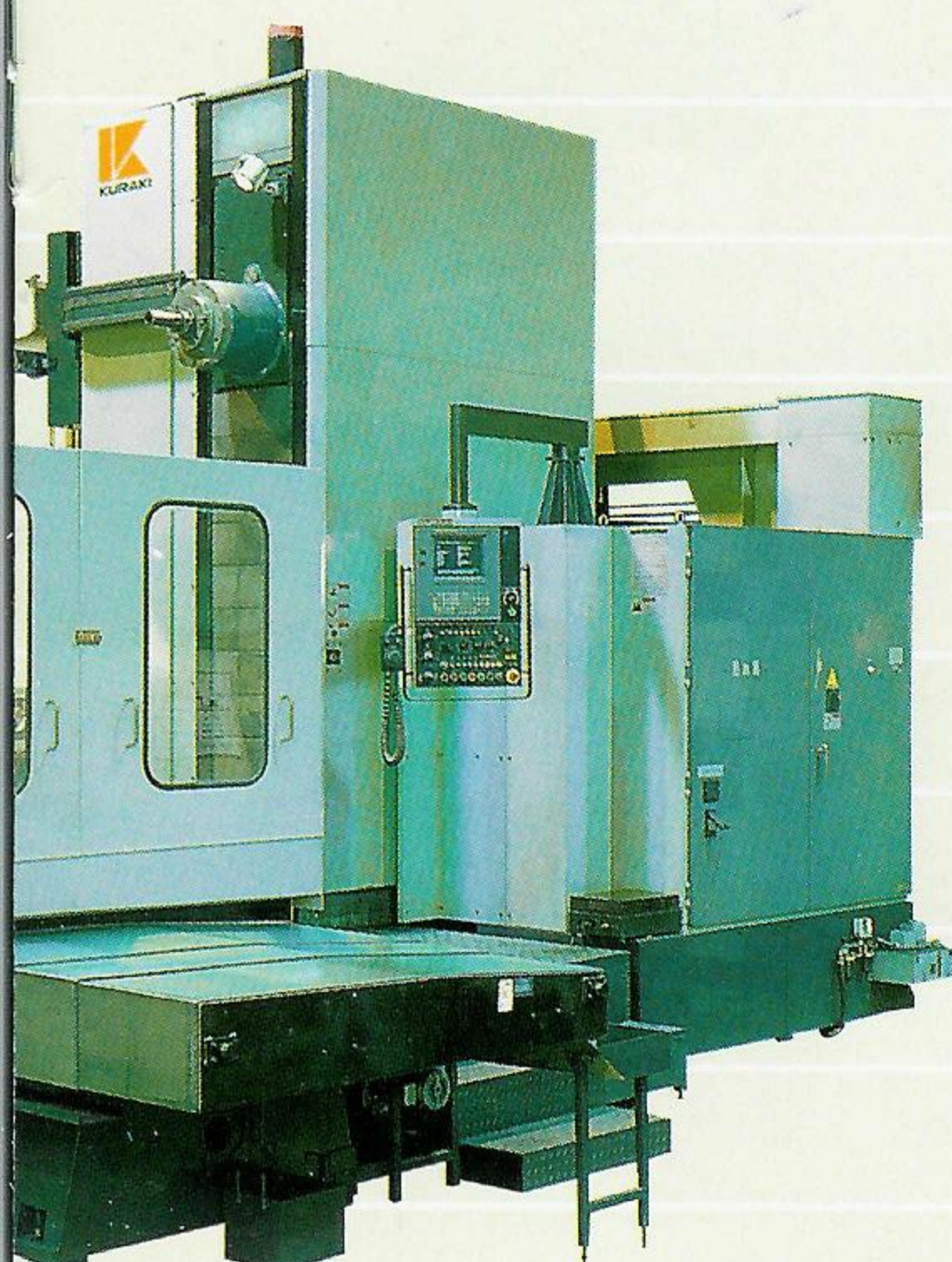
- ① Coil type chip conveyor
- ② Spindle cooling device
- ③ Chip cover for slide ways
- ④ NC indexing table every 0.001° (every 90° indexing by locate pin)
- ⑤ Table index push button switch (every 90°)
- ⑥ Spindle orientation push button switch
- ⑦ Manual pulse generator
- ⑧ Work light & Signal light
- ⑨ Power shut off device
- ⑩ Manual spindle speed setting device
- ⑪ Monolever type jog feed
- ⑫ Electric spare parts
- ⑬ Self-diagnosis function
- ⑭ Tool & tool box for reassembly
- ⑮ Leveling block and foundation plate
- ⑯ Scale feed back system (X, Y, Z)

Optional Accessories

- ① Coolant device A / pit type (nozzle 2 pc's / pump 400W)
- ② Coolant device B / (with lift type chip conveyor)
- ③ Additional coolant nozzle (total 4 pc's)
- ④ Oil mist spray
- ⑤ External air blow system
- ⑥ Equipment for oil hole holder (not include tool holder)
- ⑦ Chip bucket for lift type chip conveyor
- ⑧ Oil mist collector system (for coolant through spindle)
- ⑨ Splash guard type A (table side)
- ⑩ Splash guard type B (column side)
- ⑪ Vertical milling attachment
- ⑫ Rigid tap (spindle orientation is required)
- ⑬ Interruption for magazine rotation
- ⑭ Manual handle interruption
- ⑮ Optional block skip addition total 4 pc's
- ⑯ 3 colors signal light (green / yellow / red)
- ⑰ Warming up function
- ⑱ Auto tool length measurement
- ⑲ Centering system automatic type (Ring sensor type or Renishaw optical type)
- ⑳ Macro pattern cycle (Common variable 200 pc's is required)

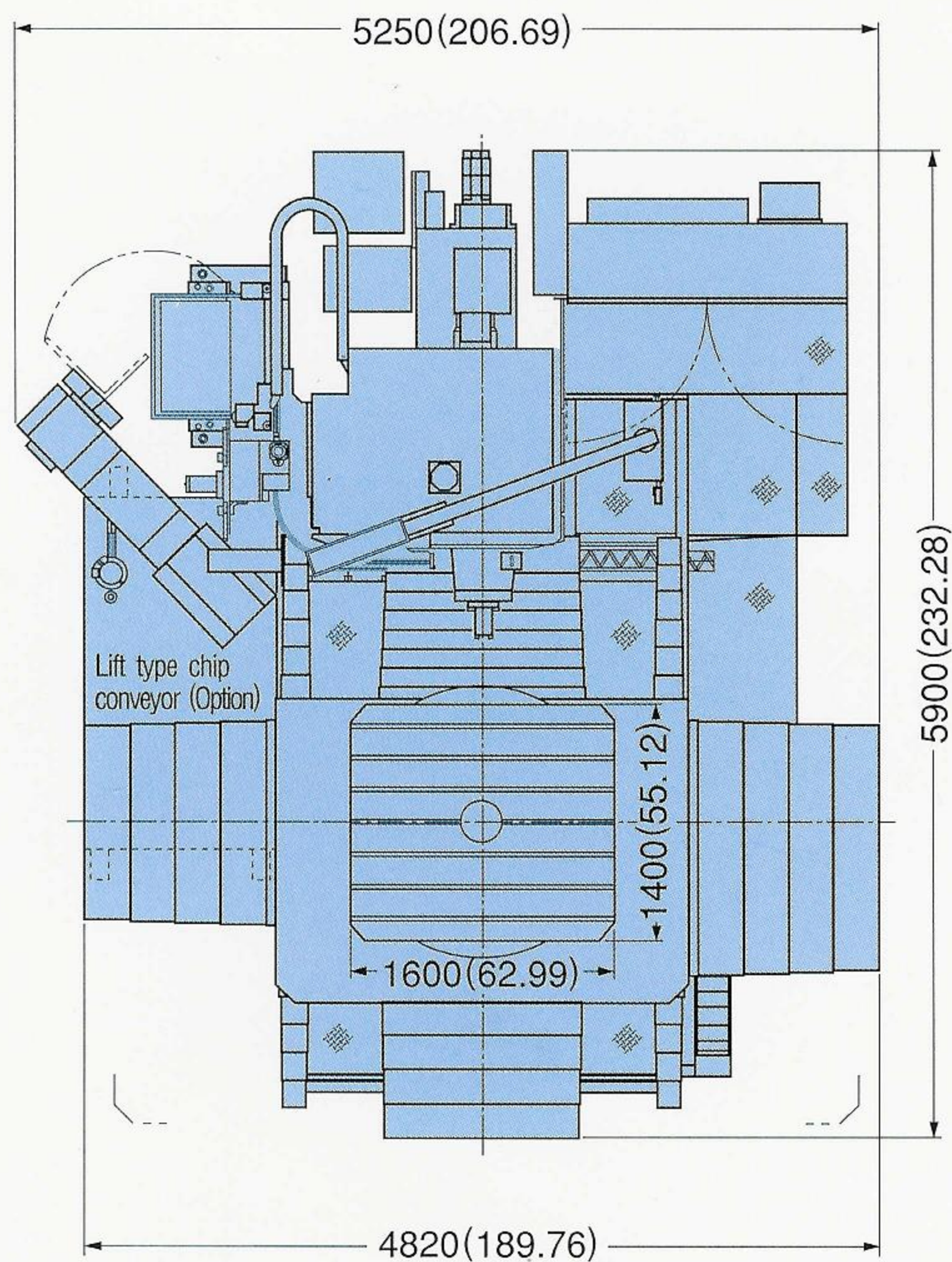
Special Specifications

- ① Spindle motor power up
11W-A : 22 / 18.5kw (30 / 25HP)
13-A : 26 / 22kw (35 / 30HP)
- ② Coolant through spindle
- ③ X stroke
11W-A : 2500mm (98.42")
13-A : 4000mm (157.48")
- ④ Y stroke
11W-A : 1800mm (70.86")
13-A : 2300mm (90.55")
- ⑤ ATC 60, 90, 120 tools

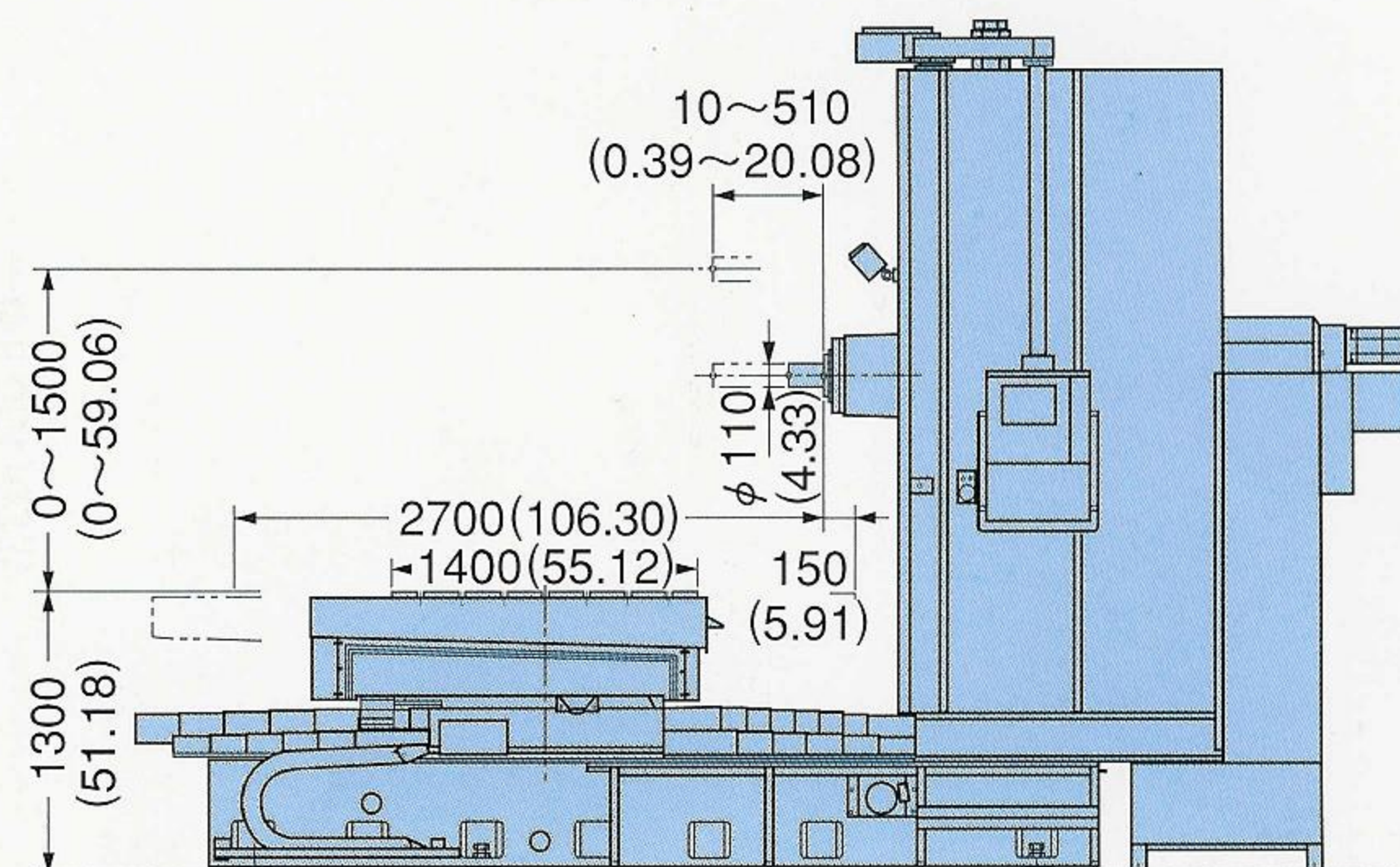
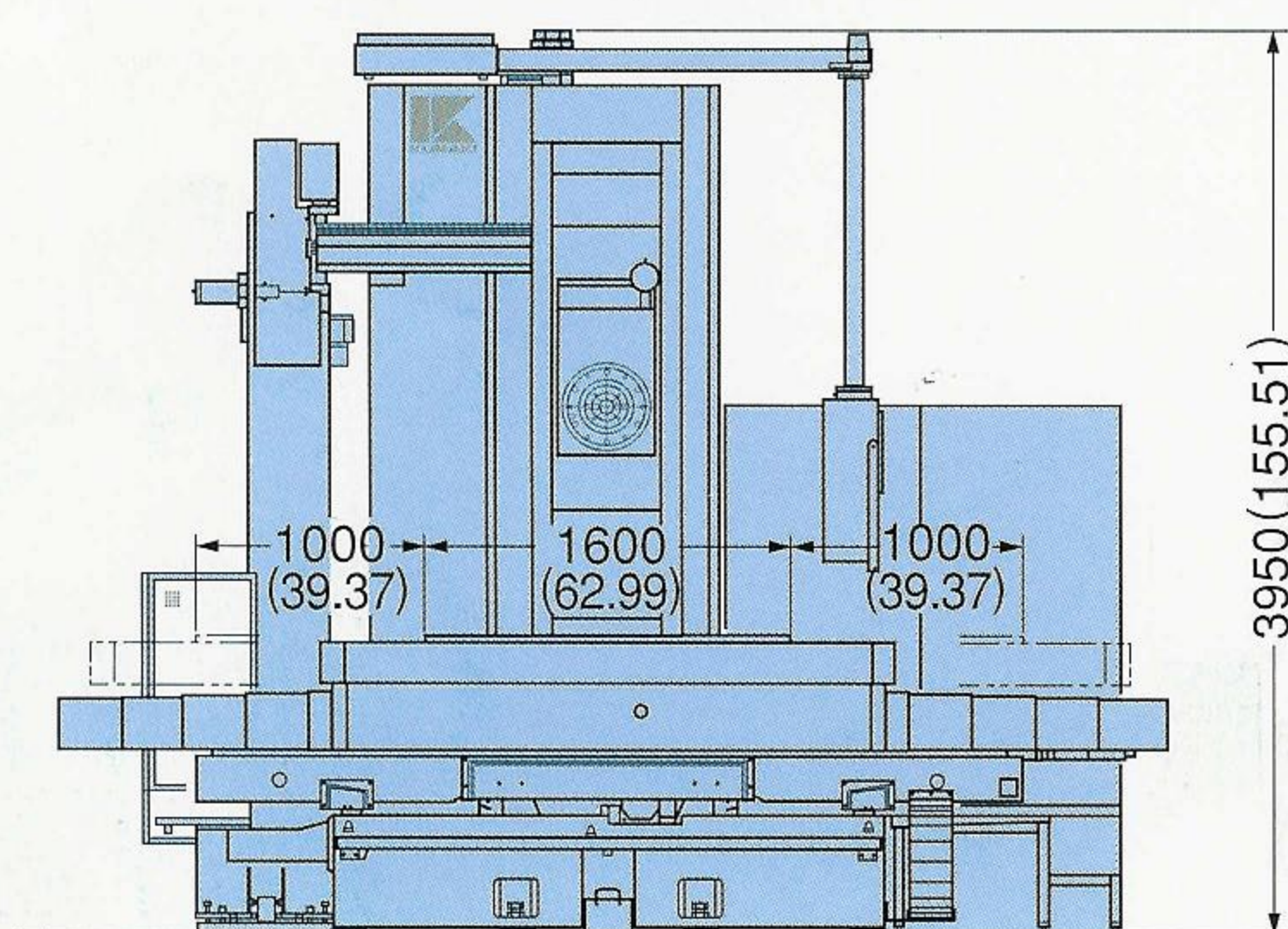
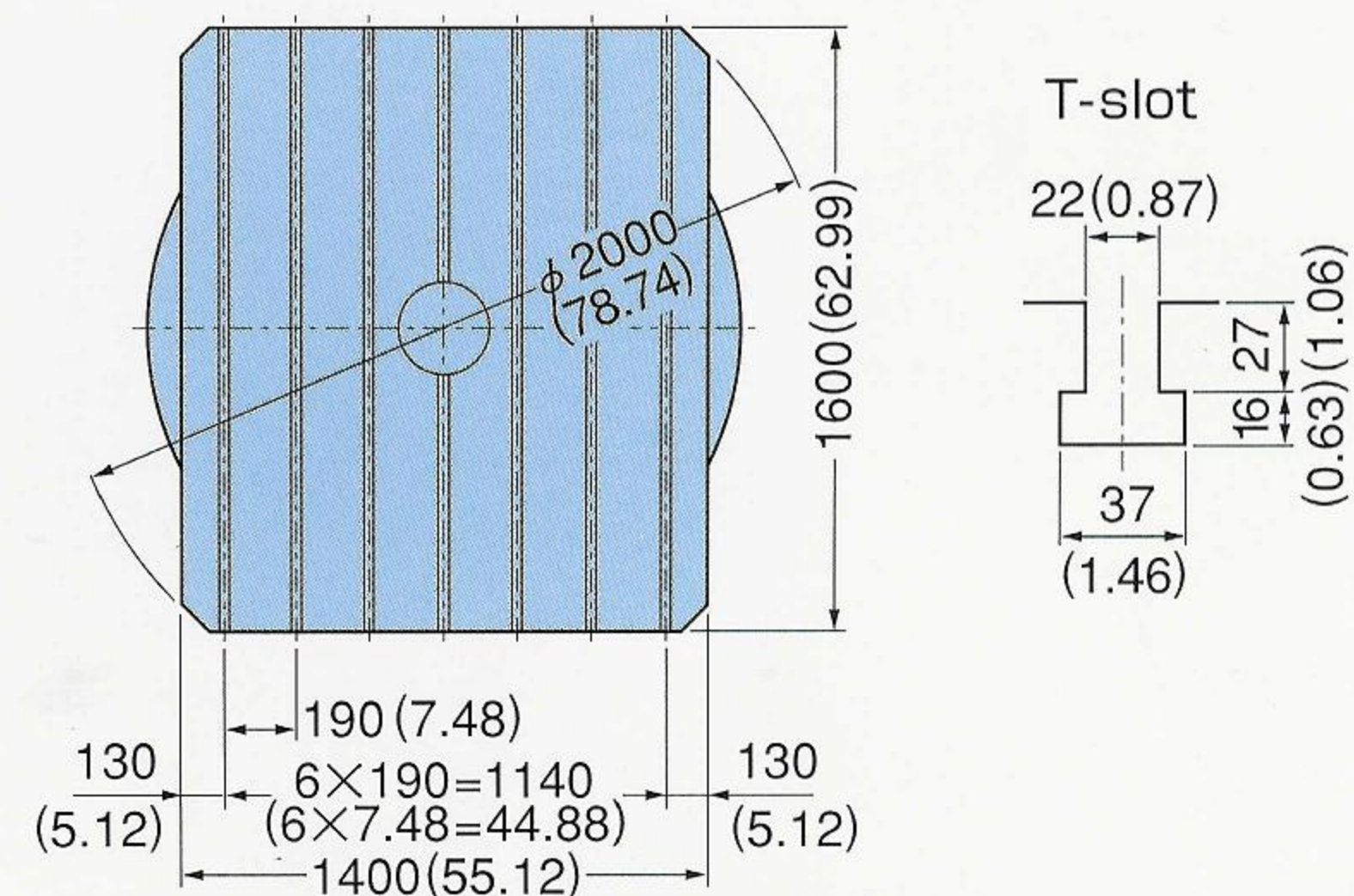


KBT-11W · A Overall Dimensions · Standard Specifications

unit : mm (inch)



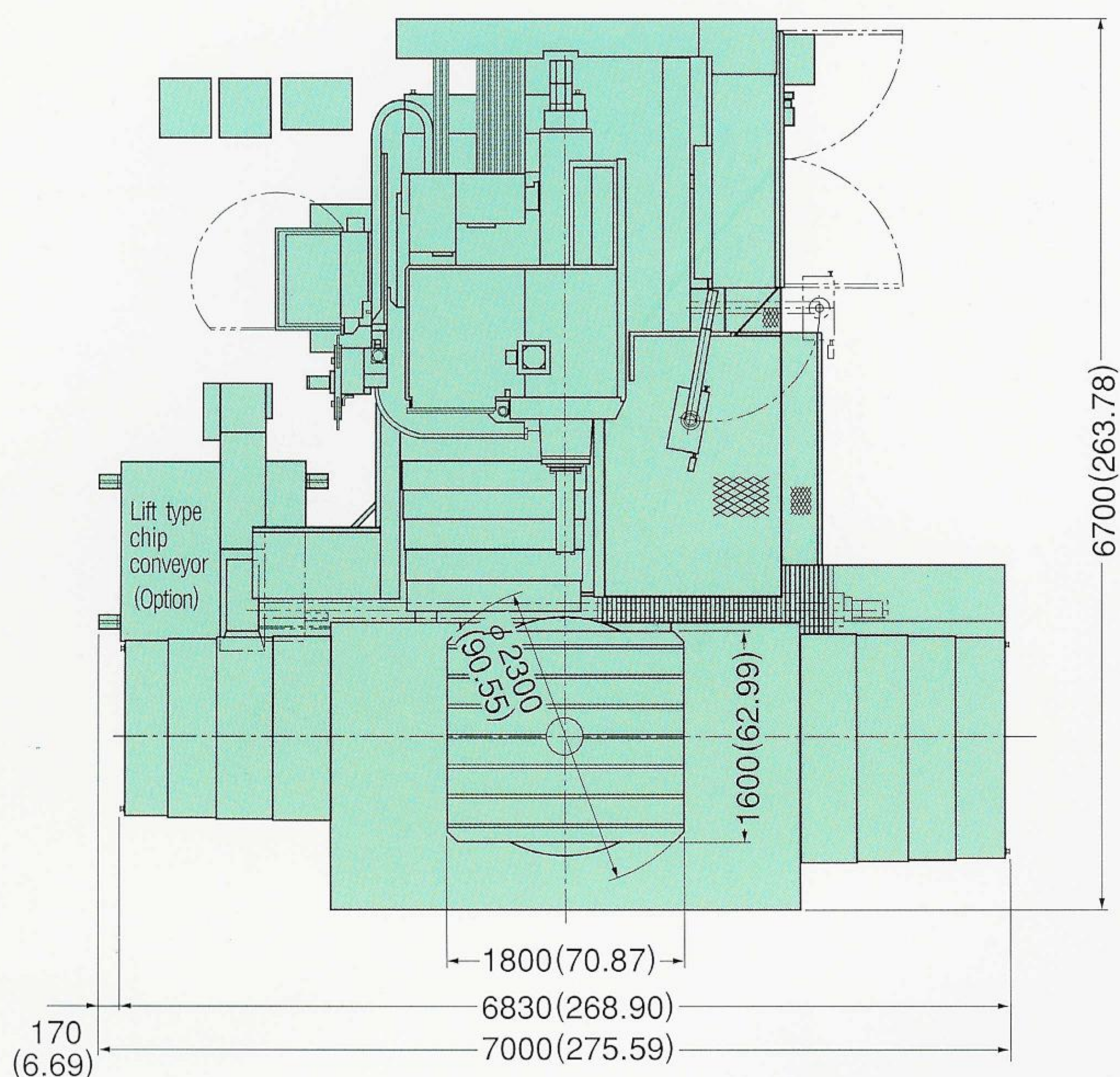
■ Table dimensions



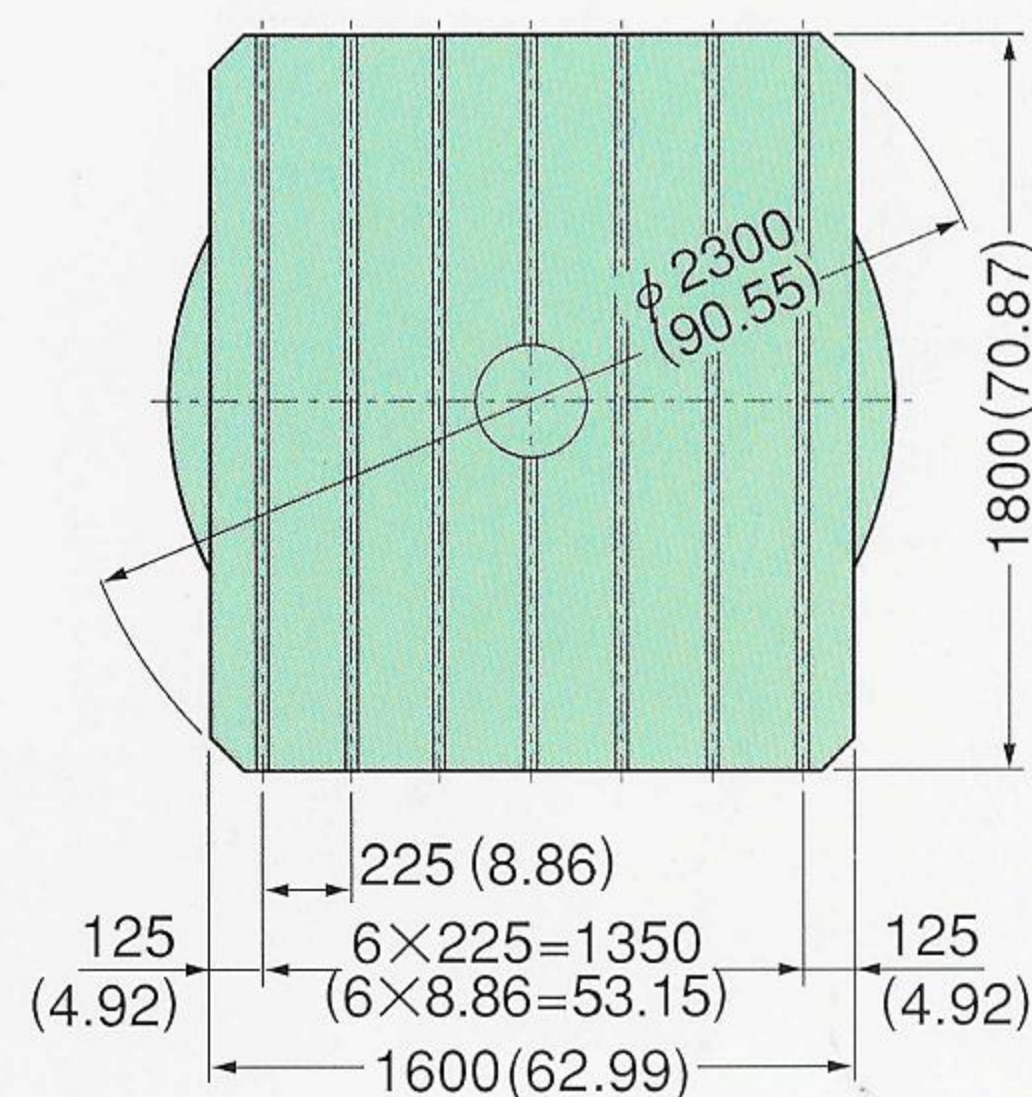
● STROKE			● AUTOMATIC TOOL CHANGER (ATC)		
X axis travel (table longitudinal)	mm (inch)	2000 (78.74)	Tool shank		MAS BT50
Y axis travel (spindle vertical)	mm (inch)	1500 (59.06)	Pull stud		MAS P50T-1 (45°)
Z axis travel (table cross)	mm (inch)	1450 (57.09)	Tool storage capacity	pc's	40
W axis travel (spindle axial)	mm (inch)	500 (19.69)	Max. tool diameter [adjacent pocket empty]	mm (inch)	125 (4.92) [230 (9.06)]
Distance from table top to spindle center	mm (inch)	0~1500 (0~59.06)	Max. tool length	mm (inch)	400 (15.75)
Distance from table center to spindle nose	mm (inch)	550~2000 (21.65~78.74)	Max. tool weight	kg (lbs)	25 (55)
● TABLE			Tool selection		At random
Table work space	mm (inch)	1400×1600 (55.12×62.99)	● MOTORS		
Table maximum loading capacity	kg (lbs)	6500 (14300)	Spindle motor	kW (HP)	18.5 (25):30min/15 (20):cont
Table top profile (T slots)	mm (inch)	22 (0.87)×7	Feed motor	kW (HP)	X,Y:3.3(4.5)/Z:7.3(9.7) W:3.8(5.1)/B:4.4(5.9)
Table auto indexing	°	0.001 (every 90° index by locate pin)	Hydraulic motor	kW (HP)	2.2 (3.0)
● SPINDLE HEAD			Lubrication pump motor	kW (HP)	0.06 (0.08)
Boring spindle diameter	mm (inch)	110 (4.33)	Spiral conveyor motor	kW (HP)	0.4 (0.53)
Spindle speed (for every 1min ⁻¹)	min ⁻¹	5 ~ 3000	Spindle oil cooler motor	kW (HP)	2.0 (2.7)
Spindle speed change range	step	3	● VOLTAGE		
Spindle taper		7/24 taper No.50	Power capacity	kVA	53 (include options)
● FEED			Air pressure source		0.5MPa(5kgf/cm ²) 250L/min(atm.)
Rapid traverse (X · Y · Z)	m (inch)/min	12 (472.44)	● DIMENSIONS		
Rapid traverse (W)	m (inch)/min	6 (236.22)	Machine height	mm (inch)	3950 (155.51)
Feed rate	mm (inch)/min	1~6000 (0.04~236.22)	Floor space	mm (inch)	5900×5250 (232.28×206.69)
Jog feed	mm (inch)/min	2~4000 (0.08~157.48) [24 steps]	Machine weight (incl. NC unit)	kg (lbs)	29000 (63800)
Table revolution (B axis)	min ⁻¹	2			

KBT-13 · A Overall Dimensions · Standard Specifications

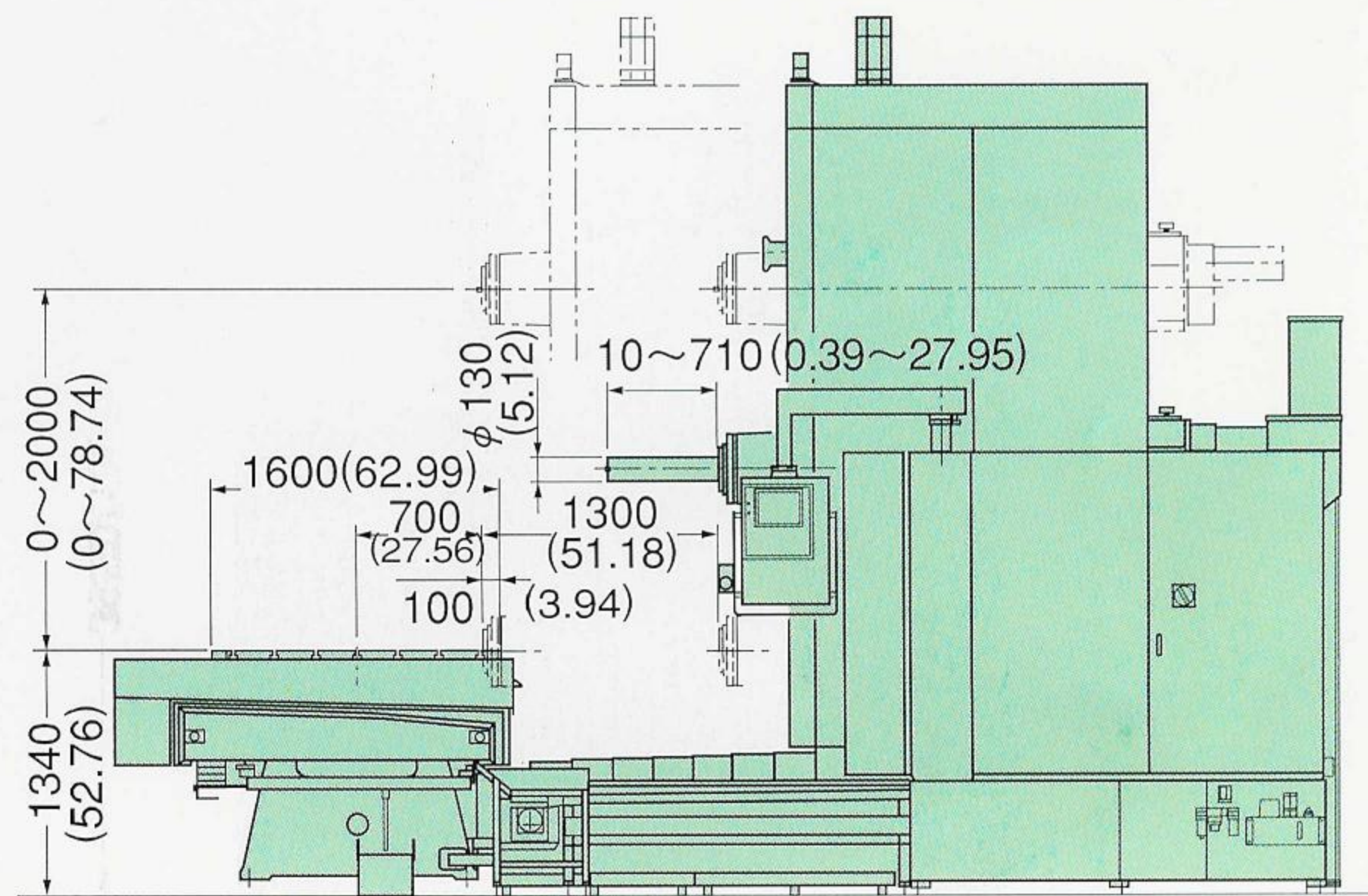
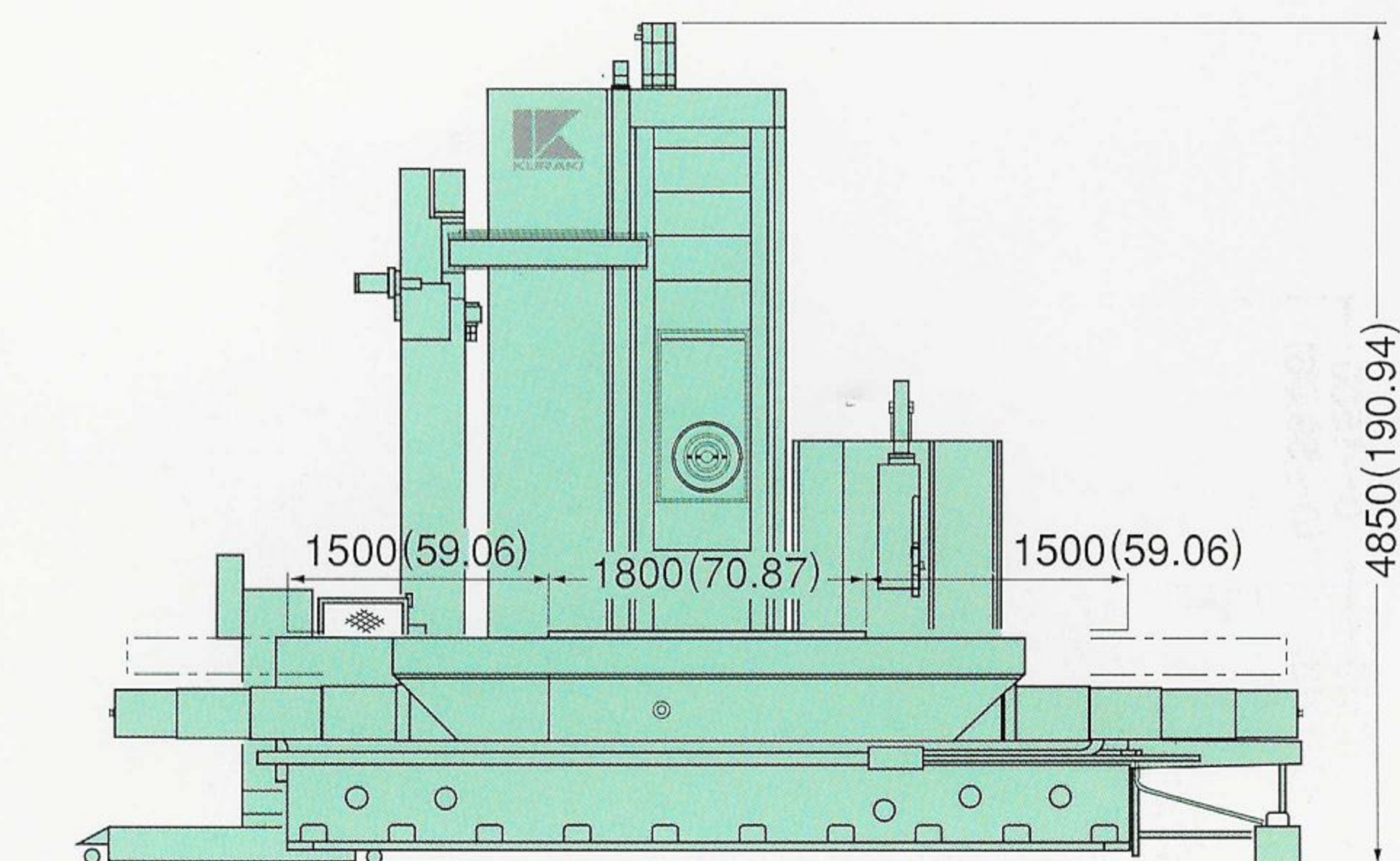
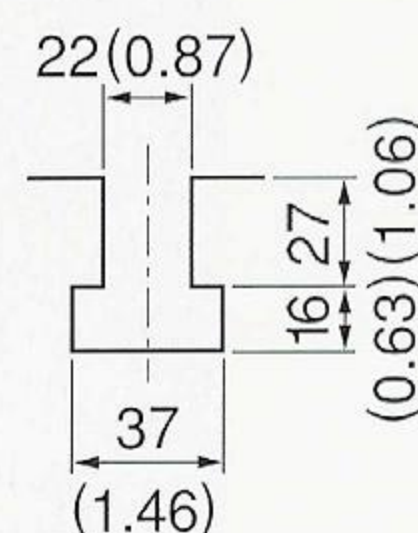
unit : mm (inch)



■ Table dimensions



T-slot



● STROKE			● AUTOMATIC TOOL CHANGER (ATC)		
X axis travel (table longitudinal)	mm (inch)	3000 (118.11)	Tool shank		MAS BT50
Y axis travel (spindle vertical)	mm (inch)	2000 (78.74)	Pull stud		MAS P50T-1 (45°)
Z axis travel (column cross)	mm (inch)	1300 (51.18)	Tool storage capacity	pc's	40
W axis travel (spindle axial)	mm (inch)	700 (27.56)	Max. tool diameter [adjacent pocket empty]	mm (inch)	125 (4.92) [230 (9.06)]
Distance from table top to spindle center	mm (inch)	0~2000 (0~78.74)	Max. tool length	mm (inch)	400 (15.75)
Distance from table center to spindle nose	mm (inch)	700~2000 (27.56~78.74)	Max. tool weight	kg (lbs)	25 (55)
● TABLE			Tool selection		At random
Table work space	mm (inch)	1600×1800 (62.99×70.87)	● MOTORS		
Table maximum loading capacity	kg (lbs)	12000 (26400)	Spindle motor	kW (HP)	22 (30):30 min / 18.5 (25):cont
Table top profile (T slots)	mm (inch)	22 (0.87)×7	Feed motor	kW (HP)	X,Z:7.3 (9.7) / Y,W:3.3 (4.5) B:5.3 (7.1)
Table auto indexing	°	0.001 (every 90° index by locate pin)	Hydraulic motor	kW (HP)	2.2 (3.0)
● SPINDLE HEAD			Lubrication pump motor	kW (HP)	0.06 (0.08)
Boring spindle diameter	mm (inch)	130 (5.12)	Spiral conveyor motor	kW (HP)	0.4 (0.53)
Spindle speed (for every 1 min ⁻¹)	min ⁻¹	5 ~ 2500	Spindle oil cooler motor	kW (HP)	1.2 (1.6) / 2 set
Spindle speed change range	step	3	● VOLTAGE		
Spindle taper		7/24 taper No.50	Power capacity	kVA	65 (include options)
● FEED			Air pressure source		0.5MPa (5kgf/cm ²) 250L/min (atm.)
Rapid traverse (X · Y · Z)	m (inch) / min	10 (393.70)	● DIMENSIONS		
(W)	m (inch) / min	6 (236.22)	Machine height	mm (inch)	4850 (190.94)
Feed rate	mm (inch) / min	1 ~ 4000 (0.04 ~ 157.48)	Floor space	mm (inch)	6700×6830 (263.78×268.89)
Jog feed	mm (inch) / min	2 ~ 4000 (0.08 ~ 157.48) [24 steps]	Machine weight (incl. NC unit)	kg (lbs)	33000 (72600)
Table revolution (B axis)	min ⁻¹	1.4			

KBT-11W·A / KBT-13·A

TABLE TYPE CNC HORIZONTAL
BORING & MILLING MACHINE

CNC CONTROL (FANUC 16M)

Standard Specifications

- Controlled axis (X,Y,Z,W,B) 5axis
- Setting unit
X,Y,Z,W : 0.001mm B : 0.001deg
- Interpolation unit
X,Y,Z,W : 0.0005mm B : 0.0005deg
- Max. command value ± 8 digits
- Positioning
- Linear interpolation
- Multi-quadrant circular interpolation
- Rapid feed
- Tangential speed constant control
- Feed per minute
- Feed rate override 0-240% (each 10%)
- Rapid traverse override low 25,50,100%
- Exact stop, tapping mode, exact stop mode, cutting mode
- Dwell
- Reference point return manual, automatic
(G27,28,29,30)
- 2nd reference point return
- Machine coordinate system selection (G53)
- Work coordinate system selection (G54-59)
- Work coordinate presetting (G92.1)
- Local coordinate system setting (G52)
- Coordinate system setting (G92)
- Absolute / incremental programming
- Decimal point input / calculator type decimal point input
- S function
- T function
- M function
- Auxiliary function
- Program number 4 digits
- Program name 16 characters
- Program number search
- Main program/subprogram subprogram : fourfold nesting
- Sequence number 5 digits
- Sequence number search
- Tape code EIA/ISO automatic
- Optional block skip (/)
- Circular interpolation radius programming
- Tool length compensation
- Tool offset memory A (can not use simultaneously with B or C)
- No. of tool offset 64
- Backlash compensation
- Mirror image
- Buffer register
- Machine lock all axis
- W, Z axis command cancel
- Auxiliary function lock
- Dry run
- Single block
- 10.4" color LCD / MDI
- Clock function
- Part program storage length 80m
- Registerable programs (names) 125
- Self-diagnosis function
- Over travel
- Stored stroke check 1
- Single direction positioning
- Reader/puncher interface 1
- Canned cycles (G73,74,76,G80-89,G98,G99)
(G76 & 87 is available only in case equipped with spindle orientation)
- Cutter compensation C
- Stored pitch error compensation
- Restart of program
- Manual handle feed (1st)
- Working time, parts number display
- Alarm message display
- Spindle load meter display
- Alarm history display
- Operation history display
- Help function
- Maintenance display
- Inch / metric conversion
- Directory display punch by group
- Part program storage & editing
- Expanded part program editing
- Background editing

Optional Specifications

- Helical interpolation
- Helical interpolation B
- Hypothetical interpolation
- Polar coordinate interpolation
- Cylindrical interpolation
- Involute interpolation
- Threading, synchronous cutting
- Inverse time feed
- One digit F code feed
- Linear acceleration / deceleration before cutting feed interpolation
- Linear acceleration / deceleration after cutting feed interpolation
- Bell shape acceleration / deceleration
after cutting feed interpolation
- Automatic corner override
- Automatic corner deceleration
- Floating reference point return
- Additional work coordinate system 48 / 300 sets
- Polar coordinate command
- Cutting feed constant control
- Inch / metric conversion
- Tool life management 512 pairs
- Optional angle chamfering / corner R
- Programmable mirror image
- 3d tool offset
- Tool offset amount memory B
- Tool offset amount memory C
- Additional tool offset pairs 99/200/400/499/999
- Inclination compensation
- Straightness compensation
- Scaling
- Coordinate system rotation
- Skip function
- Multistep skip function
- High speed skip function
- Custom macro B
- Interruption type custom macro
- Addition of custom macro V : 600 pc's
- High speed cycle machining
- Sequence number comparison and stop
- Manual number command
- Graphic display function
- Machining hour stamp function
- Registerable program :
400 pc's (part program storage length 80/160m)
1000 pc's (part program storage length 320m & over)
- Tape storage length
160/320/640/1280/2560/5120m
- Playback
- Stored stroke check 2
- Stroke check before move
- Absolute positioning detection
- Background display
- Portable tape reader
- Remote buffer interface
- Data protection key
- Programmable data input
- Tool offset (G45-G48)



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