Achieves stable machining accuracies that are unsurpassed as a general purpose horizontal machining center with superb thermal deformation control system, based on Okuma’s original Thermo-Friendly Concept.

This high-performance machine gives improved productivity with a large machining area, high-speed rapid feedrate, and reduced running costs thanks to longer spindle service life, easier maintenance, and outstanding lubrication control.
Improved productivity

Examples of powerful machining

- 15,000 min⁻¹ (VAC 26/18.5 kW) spindle (optional)
- Speedy 2-pallet rotary-shuttle APC
- With less non-cutting time
- Quick ATC
- With more reliability
- Thermo-Friendly Concept

Fast feeds (X-Y-Z axes)

- With a lighter column
- Stronger motor on each axis
- X-Y-Z axes: 4.6 kW (6.3 hp)
- Rapid traverse: 60 m/min (2,362 ipm)
- Max rapid traverse acceleration: 0.7 G
- High-speed application ball screws
- X-Y-Z axes: 4.5, Screw lead: 25 mm (0.9 in.)

Speedy 2-pallet rotary-shuttle APC

- Pallet change time: 7 sec
- Also compatible with multipallet APC and FMS (Flexible Manufacturing System)

Superb machining with rich array of spindle variations

- Standard: 8,000 min⁻¹; VAC 10/11 kW (20/15 hp), 270 N·m (199 ft·lb)
- Wide-range: 15,000 min⁻¹; VAC 26/18.5 kW (35/25 hp), 199 N·m (147 ft·lb)
- High-speed: 25,000 min⁻¹; VAC 15/11 kW (20/15 hp), 29.1 N·m (21 ft·lb), 35,000 min⁻¹; VAC 15 kW (20 hp), 4.1 N·m (3 ft·lb)
- High-speed: 20,000 min⁻¹; VAC 30/22 kW (40/30 hp), for aluminum: 57 N·m (42 ft·lb)

High-accuracy machining

“Working with temperature changes”

Manageable Deformation—Accurately Controlled

Thermo-Friendly Concept

The “Thermo-friendly” concept enables remarkable machining accuracy through original structural design and thermal deformation control technology. If frees you from troublesome dimensional compensation and warm-up. Exhibits excellent dimensional stability even during consecutive operation over long periods and environmental temperature change in the plant.

High-speed application ball screws

- Max rapid traverse acceleration: 0.7 G
- Rapid traverse: 60 m/min (2,362 ipm)
- X-Y-Z axes: 4.6 kW (6.3 hp)

Stronger motor on each axis

- X-Y-Z axes: 4.6 kW (6.3 hp)

Strengthened brackets

Integration of ball screw bracket

High accuracy

- Ball screw brackets on both ends have been strengthened (integrated into the casting)
- Further enhancement of accuracy by cooling the Y-axis motor bracket

High-precision index table

- Highly-accurate positioning with taper cone type pallet seat.

Highly rigid 3-point supported bed

- Uses highly rigid 3-point spindle support

Note: The “actual data” referred to in this brochure represents examples, and may not be obtained due to differences in specifications, tooling, cutting, and other conditions.
**Eco-friendly equipment — easy on the operator & the machine**

**Chip handling**
- Chip discharge from right under the spindle with center trough design
- Wide chip catch (approx 2 times) increases chip collection efficiency
- Immediate discharge of hot chips

- Chips discharged by conveyor
  - In-machine chip conveyor (standard)
  - Chip discharge from right under the spindle with center trough design

**User-friendly operation**
- Column traverse system provides an easy access to the spindle and workpiece.
- Overhead door (lets light in, eliminates coolant drops)

**Chip handling**
- Chip flush/wash system eliminates accumulated chips and keeps machining chamber neat and clean.

- Machine specifications:
  - Spindle speed
    - Spindle speed
      - Taper No. 40
    - Spindle speed
      - 70 (ø2.76)
    - Spindle speed
      - 50~15,000
  - Tool dimensions
    - Max tool size
      - 15/11 (20/15), 15 (20)
    - Max tool size
      - ø2.36, ø2.76

**Chip handling**
- Chip flush/wash system eliminates accumulated chips and keeps machining chamber neat and clean.

- Eco-friendly equipment
  - 50% less lubricating oil than previous model
  - Reduced noise
    - Uses guideway with retainer
    - Super lubricating oil pump control

- Comparison of lubricating oil consumption (with Okuma products)
  - Retainer quideways
    - Total
    - 30%
  - Adjusted lube oil discharge
    - Previous model
    - Total
    - 30%

- Machine Specifications
  - Standard spindle
    - 8,000 min⁻¹
    - 15/11 kW (10 min/cont), 270 N·m
    - 7/24 taper No. 40

- Standard Specifications /Accessories
  - Chip air blower (nozzle)
  - Spindle/spindlehead cooler
  - Internal chip conveyor (hinge)
  - Coolant system (tank)
### Pallet size
(standard metric tap pallet)

- **Area A**: Cover interference with optional touch sensor
- **Area B**: Spindlehead
- **Area C**: Workpiece clamp

### Optional Specifications & Accessories

- **Spindles available**
  - 15,000 min⁻¹ (26/18.5 kW) HSK-A63
  - 20,000 min⁻¹ (30/22 kW) HSK-A63
  - 25,000 min⁻¹ (15/11 kW) HSK-A63
  - 35,000 min⁻¹ (15 kW) HSK-F63

- **Dual-contact spindle**: HSK, BSK-P/LSB, Super BT

- **ATC magazine capacity**
  - 40, 60 (optional)

- **Absolute scale encoder**: X-Y-Z axes

- **Multi-pallet APC**: 9-, 10-, 12-pallet, FMS

### Working ranges

**Note**: Edge locations are optional

#### Working ranges

- **X-axis**: ±2,500, 3,000
- **Y-axis**: ±1,350
- **Z-axis**: ±1,000

#### Max work dimensions

- **Z-axis feed**: ±2,000, 2,500

### Spindle torque / output diagram

- **Wide-range efficient machining from light alloys (Al) to steel**
  - 15,000 min⁻¹ (30/22 kW) HSK-A63
  - 20,000 min⁻¹ (30/22 kW) HSK-A63
  - 25,000 min⁻¹ (15 kW) HSK-A63
  - 35,000 min⁻¹ (15 kW) HSK-A63

- **For high speed machining of aluminum**
  - 15,000 min⁻¹ (20 kW) HSK-A63

### Matrix Magazines (optional)

- **Setup stations**
  - 100-tool ATC
  - 152-tool ATC

### Multi-pallet APC (optional)

### Recommended chip conveyors

- Please contact an Okuma sales representative for details.

### Chip shape

- **In-machine chip disposal**
  - Hinge type (standard)
  - Hinge type
  - Scraper type
  - Scraper type (with drum filter)
  - Scraper + scraper (with drum filter)

### Off-machine chip disposal

- **Chip bucket for above**
- **Chip pan**
- **Off-machine chip discharge**
- **Chip disposal**

### Tool life management

- **Auto zero offset**
- **Overload monitoring**
- **Auto tool length compensation**
- **Tool breakage detection**
- **Tool life management**
- **Auto tool length compensation**

### Recommended chip conveyors

- Please contact an Okuma sales representative for details.

### Material

- **Steel, PC, AL / Nonferrous metals, Mixed (general case)**

### Setup stations

- **Chip shape**
  - Hinge type (standard)
  - Hinge type
  - Scraper type
  - Scraper type (with drum filter)
  - Scraper + scraper (with drum filter)

### Recommended chip conveyors

- Please contact an Okuma sales representative for details.

### Chip shape

- **In-machine chip disposal**
  - Hinge type (standard)
  - Hinge type
  - Scraper type
  - Scraper type (with drum filter)
  - Scraper + scraper (with drum filter)

- **Off-machine chip disposal**
  - Hinge + scraper (with drum filter)

### Recommended chip conveyors

- Please contact an Okuma sales representative for details.

---

**Note**: The minus Z and Y-axis limit area is a spindle / pallet interference zone.
OSP-P200MA—With the more advanced functions

- **Machining Navi**
  - Search for optimum cutting conditions
  - Machining Navi M3 shows several candidate cutting speeds
  - Machining Navi M4 automatically changes to optimum spindle speed

- **Collision Avoidance System**
  - Collisions prevented in any situation

- **Advanced One-Touch IGF**
  - Program create, machining parts, various operations can be done directly from machining order tables
  - Operation is simple even without memorizing G/M codes

- **One-Touch Spreadsheet**
  - Now you can use Excel® files on an NC controller
  - Enter system/common variables straight from Excel sheets

- **Standard Specifications**
  - Basic Specifications
    - Control: X, Y, Z simultaneous 3-axis, spindle control (1 axis)
    - Position feedback: OSP full range absolute position feedback (zero point return not required)
    - Coordinate functions: Machine coordinate system (1 set), work coordinate system (20 sets)
    - Min / Max inputs: 8-digit decimal, *9999.999 - 0.001 mm (3997.0078 - 0.0001 m), 0.001
    - Decimal: 1, 10, 1 mm (0.0001, 1 in.) (1 µm, 1 mm (0.0001, 1 in.))
    - Feed: Overide: 0 to 200%
    - Spindle control: Direct spindle speed commands (50) override 30 - 200%, multi-point indexing
    - Tool compensation: Tool length/tool dia compensation (100 sets)
    - Display: 15-inch color display operation panel, OSP-Mkn X
  - Automatic diagnostics and display of program, operation, machine, and NC system faults
  - Program capacity: Program storage: 2 GB, output buffer: 2 MB
    - Program operations: Program management, editing, multitasking, scheduled program, fixed cycles, G-/M-code macros, arithmetic, logic statements, math functions, variables, branch commands, coordinate calculate, area calculate, coordinate convert, programming help
  - Operation: Machine operation
    - MDX, manual (rapid traverse, manual cutting feed, pulse handle), load meter, operation help, alarm help, sequence return, manual interrupt/auto return, pulse handle overlap, parameter I/O, self-diagnostics, PLC monitor
    - MachMan: Machining management: machining results, machine utilization, fault data compile & report, external output
    - Com. Net: USB ports, Ethernet
  - High speed/accuracy
    - *Communications / Networking

- **Optional Specifications**
  - Kit Spec
    - Kit
      - OSP-P200MA
      - I-MAP
      - MC-M8
      - F1-enter
      - NC control
      - D/M operation
      - Tool length/tool dia compensation (100 sets)
      - Direct spindle speed commands (S5) override 30~200%, multi-point indexing
      - Decimal: 1, 8-digit decimal, 1 µm, 1 mm (0.0001, 1 in.)
      - Machine coordinate system (1 set), work coordinate system (20 sets)
      - Hi-G control
  - Tool conversion
    - F1-digit feed
    - Programmable tool limits
    - Ass. input
    - Ass. cutting compensation (100 sets)
    - Tool compensation: Tool length/tool dia compensation (100 sets)
    - Display: 15-inch color display operation panel, OSP-Mkn X
    - Automatic diagnostics and display of program, operation, machine, and NC system faults
    - Program capacity: Program storage: 2 GB, output buffer: 2 MB
    - Program operations: Program management, editing, multitasking, scheduled program, fixed cycles, G-/M-code macros, arithmetic, logic statements, math functions, variables, branch commands, coordinate calculate, area calculate, coordinate convert, programming help
    - Operation: Machine operation
      - MDX, manual (rapid traverse, manual cutting feed, pulse handle), load meter, operation help, alarm help, sequence return, manual interrupt/auto return, pulse handle overlap, parameter I/O, self-diagnostics, PLC monitor
      - MachMan: Machining management: machining results, machine utilization, fault data compile & report, external output
      - Com. Net: USB ports, Ethernet
      - High speed/accuracy
        - *Communications / Networking

- **Versioning**
  - NML Normal kit
  - 3D, Real 3-D simulation kit
  - IGF: Advanced One-Touch GFF-M
  - E: Economy; D: Deluxe
  - Kit
    - OSP-P200MA
    - Real 3-D simulation
    - I-MAP
    - Mid-block restart
    - Advanced One-Touch IGF-M
    - Tool length/tool dia compensation
    - 3-D tool compensation
    - Collision Avoidance System (CAS)
    - Machining Navi (cutting condition search)
    - Auto program schedule update
    - Program notes (MSG)
    - Coordinate system selection
    - Helical cutting
    - Synchronized Tapping (rigid tapping)
    - Programmable travel limits
    - Arbitrary angle chamfering
    - Cut depth/Tool path compensation (100 sets)
    - Programmable mirror image
    - Drawing enlarge/reduce
    - Tool life management
    - Auto power shut-off
    - Sequence stop
    - Mid-block restart
    - Advanced One-Touch IGF-M
    - Real 3-D simulation
    - I-MAP
    - Simple load monitor
    - NC operation monitor
    - Cycle time reduction
    - Manual gauging (job selected)

- **One-Touch Spreadsheet**
  - Now you can use Excel® files on an NC controller
  - Enter system/common variables straight from Excel sheets

- **Advanced One-Touch IGF**
  - Program create, machining parts, various operations can be done directly from machining order tables
  - Operation is simple even without memorizing G/M codes

- **Collision Avoidance System**
  - Collisions prevented in any situation

- **One-Touch Spreadsheet**
  - Now you can use Excel® files on an NC controller
  - Enter system/common variables straight from Excel sheets