The Best Partner for Your Success
Further progress to the new MITSUBISHI standard CNC

Higher cost-performance for realizing higher-grade machines

**[High-speed]**
Cycle time reduced with higher machining-control performance

**[High-accuracy]**
High-accuracy tapping with high-speed compensation control of spindle and servo

**[Multi-axis control]**
Multi-axis control and two-part systems for compatibility with various machines

**[Easy operation]**
Simple programming system for machining center and lathe

**[Nano interpolation]**
Smoother cutting surface is achieved with one-nanometer position interpolation

**[Customize]**
Development tools for providing a CNC with customized solutions

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**M70v TypeA**
- Max. number of part systems ................................................... 2
- Max. number of axes .................................................................... 11
- Max. number of NC axes (in total for all the part systems) 8
- Machining center system .......................................................... 8
- Lathe system ............................................................................. 9
- Number of simultaneous contouring control axes ................. 4
- Least command increment ...................................................... 0.1 micrometer
- Least control increment ......................................................... 1 nanometer
- Max. PLC program capacity ....................................................... 32,000 steps

**M70v TypeB**
- Max. number of part systems ................................................... 1
- Max. number of axes .................................................................... 9
- Max. number of NC axes (in total for all the part systems) 5
- Machining center system .......................................................... 5
- Lathe system ............................................................................. 5
- Number of simultaneous contouring control axes ................. 5
- Least command increment ...................................................... 0.1 micrometer
- Least control increment ......................................................... 1 nanometer
- Max. PLC program capacity ....................................................... 20,000 steps

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The Best Partner for Your Success
MITSUBISHI CNC

M70V series
Versatile lines boasting compact size and less wiring

**Operation panel I/O unit**
(Max.: 96 inputs/96 outputs)

**High-speed optical communication**

**Machine Operation Panel**

**Ethernet**

- Personal computer
- RIO 1 (Max.: 256 inputs/256 outputs)
- RIO 2 (Max.: 96 inputs/96 outputs)
- Manual pulse generator

**Drive units**
- Multi-hybrid drive unit | MDS-OM2 Series
- High-performance drive unit | MDS-O/D2/DH2 Series
- Ultra-compact drive unit with built-in power supply | MDS-O/D3 Series

**Servo motors**
- Medium-inertia motor | HF Series
- Low-inertia motor | HF-KP Series
- Direct drive motor | TM-RB Series
- Rotary detector | MBA Series

**Spindle motors**
- High-performance spindle motor | SJ-D Series
- Low-inertia and high-speed spindle motor | SJ-VL Series
- Tool spindle motor | HF-KP Series
- Built-in spindle motor | HF-SIP Series
- Detector for C axis | MBE Series

**Operation panel I/O unit**
(Max.: 96 inputs/96 outputs)

<Display front side>
- USB memory interface
- CF card interface

**High-speed optical communication**

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**CNC Basic Performance**

**Higher-grade CNC performance attained**

### Basic Performance

- **Machining program**
  - Capacity: Machining program capacity is greatly enhanced to the standard of 500K (1,280m).
  - Processing speed: TypeA: 33.7k blocks/minute, TypeB: 16.8k blocks/minute
- **Built-in PLC function**
  - Multi-program: Up to 20 PLC program files can be registered, which are executed according to priority. A PLC program can be split into each process and developed.
  - High-speed PLC engine installed (TypeA): TypeA is equipped with a high-speed PLC engine, helping enhance the performance.

### Multi-part Systems Multi-axis

A maximum of two part systems and 11 axes can be controlled for both the machining center and lathe.

**Machining Center**

![Machining Center Diagram](image1)

**Compound Lathe**

![Compound Lathe Diagram](image2)

### Nano Control

- **Position Loop of Spindle Control**
  - The least control increment is one nanometer, the command increment is ±99999.9999, and the rapid traverse rate is 1000m/min.
  - All processing from the analysis of machining programs to servo commands is performed in nanometers.
- **Speed command fluctuation reduced**
  - In nano control, the position command calculation fraction of the interpolation calculation is small, so fluctuations in speed command due to the fractions is reduced. This reduces acceleration fluctuations, resulting in finer lines at the time of repeated acceleration/deceleration.

### Interpolation calculation accuracy improved

- Even with one-micron-unit commands in the machining program, interpolation is in nanometer units. As the calculation accuracy of a block intersection is improved, lines on the surface are finer.

### Increased Production Efficiency

**Remarkable reduction in cycle time**

- **OMR-DD Control (high-speed synchronous tapping)**
  - A high-speed error-compensation function is used for controlling the spindle and servo, enabling accurate tapping.
  - This function is available with MDS-D2/DH2, MDS-DM2 (one axis only) and MDS-DJ.
- **Position Loop of Spindle Control**
  - High traceability to command (High-gain control II), which has been developed in servo axis control, is now available for the spindles, contributing to shorter machining time and higher accuracy.
- **Spindle/C-axis control**
  - The spindle’s constant position loop control has eliminated the zero point return time when switching from the spindle to C-axis.

### Orientation time is reduced

Deceleration is performed with the maximum torque to minimize the spindle orientation time.

**High-speed Machining Mode**

- **Super Smooth Surface**
  - By reading ahead some blocks in a program that contains successive fine travel distances, the program can be rapidly executed at up to 33.7k blocks/minute. (8.4k blocks/minute for TypeB)

### SSS Control

- **SSS Control**
  - By judging shapes in large from command points, unnecessary deceleration is reduced even when fine steps exist; thereby, realizing smooth and deviation free die-mold machining. Machining time can be shorter by 5 to 30% relative to our conventional system, especially more effective at a higher feed rate.

(Note) This function is available with MDS-D2/DH2, MDS-DM2 (one axis only) and MDS-DJ.
Full of useful functions for combined machining

### Multi-part System Program Management (TypeA)
Separate programs, used in each part system, can be managed under a common name in the multi-part system. This function facilitates management of the process programs that are simultaneously executed in the multi-part systems.

### Inclined Axis Control
- Even when the control axes configuring a machine are mounted at an angle other than 90 degrees, this function enables it to be programmed and controlled in the same way as with an orthogonal axis.
- The inclination angle is set using a parameter, and axes are controlled using the movement amounts of the axes which are obtained through conversion and compensation using this angle.

### Polar Coordinate Interpolation
- This function converts the commands programmed for the orthogonal coordinate axes into linear axis movements (tool movements) and rotary axis movements (workpiece rotation) to control the contours.
- It is useful for tasks such as cutting linear cutouts on the outside diameter of the workpiece and grinding camshafts.

### Milling Interpolation (TypeA)
This function converts the commands programmed for the orthogonal coordinate axes into linear axis movements (tool movements) and rotary axis movements (workpiece rotation) to control the contours. This enables milling operations using a lathe without a Y axis.

### Hobbing (TypeA)
- G code format is available for hobbing.
- A spur gear can be machined by synchronously rotating the hob axis and the workpiece axis in a constant ratio. A helical gear can be machined by compensating the workpiece axis according to the gear torsion angle for the Z axis movement.

### Mixed Control (cross axis control) (TypeA)
The control axes of each part system can be exchanged using a program command. This enables the axis defined as the axis of the 1st part system to be operated as the axis of the 2nd part system.

### Balance Cut (TypeA)
- Deflection can be minimized by holding tools simultaneously from both sides of the workpiece and using them in synchronization to machine the workpiece (balance cutting).
- The machining time can be reduced by machining with two tools.

### Control Axis Synchronization Across Part Systems (TypeA)
The control axes of each part system can be exchanged using a program command. This enables the axis defined as the axis of the 1st part system to be operated as the axis of the 2nd part system.

### 2-part System Synchronous Thread Cutting (TypeA)
- 2-part system synchronous thread cutting allows the 1st part system and the 2nd part system to perform thread cutting simultaneously for the same spindle.
- 2-part system synchronous thread cutting has two commands; command (G76.1) for cutting threads in two places simultaneously, which is known as “2-part system synchronous thread cutting cycle I”; and command (G76.2) for cutting a thread using the two part systems simultaneously, which is known as “2-part system synchronous thread cutting cycle II”.

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System Configuration Example

Optimum performance for various applications

Machining Center System

**Compact Milling Machine**
The compact operation board, in which the control unit is integrated, and the ultra-compact drive units achieve downsizing of the control board and machine.

**Tapping Machine**
The multi-hybrid drive unit optimally controls the spindle motor for tapping to bring out the function of high-speed tapping OMR-DD. An NC five-axis control (simultaneous four-axis) enables control of the tilt table.

**Multi-axis Machining Center (TypeA compatible)**
A system with a maximum of 11 axes and two part systems achieves optimal control even for a compound axis configuration that includes a synchronization axis and a peripheral axis, such as in a large machine or a line dedicated machine.

Lathe System

**Compact Lathe**
The compact operation board, in which the control unit is integrated, and the ultra-compact drive units achieve downsizing of the control board and machine.

**Milling-enabled Lathe (TypeA compatible)**
Even without a Y axis, the milling function enables contour control machining on the side or face of a workpiece. Furthermore, the tool spindle motor contributes to downsizing of the turret.

**Compound Multi-axis Lathe (TypeA compatible)**
Up to four spindles can be controlled by a system with a maximum of 11 axes and two part systems. Owing to the drive units that drive three servo axes/two spindles, we offer an optimal system construction for machines of various axis configurations.
Enhanced operability with greater ease of use

**Easy Operation**

**HMI for Easier and More Visible Use**

- **Screen structure linked to operation processes**
  Operation processes are divided into three steps, “Monitor”, “Setup”, and “Edit”, and necessary information is aggregated into three screens. These screens can be displayed by touching a single button on the keyboard.

- **Pop-up screens**
  Tabs allow the user to select necessary operations from the operation menu, and pop-up screens allow the user to access desired information while the original screen remains displayed. For displays with a touch panel, a keyboard can be displayed on the screen.

- **2-part system display**
  The Monitor screen of the 2nd part system can be displayed together with the 1st part system. Switching screens is not necessary.

- **Menu customization function**
  Menu keys on the bottom of the screen can be freely arranged. Frequently used menu keys can be put together on the first page.

- **Auto-scale adjustment of the graphic check function**
  When the automatic graphic check function is enabled, by selecting a file, the scale is automatically adjusted to draw the whole machining path. (In single-plane display mode)

- **3D solid program check**
  The added 3D solid model check function allows more realistic cutting check.*

**Operation Support**

- **Manual/Automatic backup function**
  - Batch backup of the NC data into the CF card/USB memory inserted in the front interface of the display is possible.
  - Data is automatically backed-up at a certain interval set by the parameter.

- **Operability of program restart function improved**
  Even if a machining program is stopped for reasons such as tool breakage, the program can be restarted when it has been stopped using only the INPUT operation.

- **Operability of operation search improved**
  Using the program edit screen, it is possible to execute a program from the line specified by the cursor. The operation search immediately detects the edited part to check the content of operation.

- **Menu list**
  Menu list buttons are newly introduced. With these buttons, the screen desired for display can be called up directly. The selected screen's function outline is also displayed.

- **Guidance function**
  By pressing the help button, guidance (operation procedure/parameter descriptions/alarm descriptions/G code format) regarding the currently displayed screen will be shown.

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*Available with M70V TypeA (M System) only.

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**Memory Card/USB Memory Interface**

A compact flash memory card (CF card) /USB memory interface is located on the front of the display. In using CF card, the card slot can be completely covered by a lid so as to prevent foreign materials from entering (IP67).

**Front IC Card Mode**

- It is possible to directly search and run the machining programs from the CF card. Subprogram calls are also available.
- The machining programs in the CF card can be edited directly.

**Easy to Change Languages**

- Display languages can be switched with a single parameter operation.
- Easy to change languages of the guidance function using a CF card (English + Two more languages are selectable)
- Support for 17 languages, securing reliable use worldwide.

**Ethernet Communication**

By connecting a personal computer and an CNC via Ethernet, the machining programs and parameters can be input and output.

**Downtime Reduction**

Various support functions minimize downtime

**Data Backup Function**

It is possible to backup NC data collectively and periodically to a CF card /USB memory on the front of the display. This backup data is helpful for restoring the system in the case of an accident.

**Program Restart Function**

It is possible to restart a program even when a machining program is interrupted due to tool breakup or power outages by automatically searching the block that was last executed before the interruption.

**Tapping Retract**

Even when tapping is interrupted due to emergency stops or power outages, retraction of the tool out of a workplace can be automatically carried out upon restarting operation.

**Vertical Axis Drop Prevention Function at Power Failure**

The drive system instantly detects a power failure, and the gravity axis is retracted so as to prevent a crash with a workplace.

**Ground Fault Detection for Each Motor**

Ground fault detection, which was formerly centrally performed by a power supply unit, has changed so that the fault can be detected per motor. As detecting a faulty axis is possible, the restore time is shorter.

**Drive Unit with Higher Oil-proof**

A cooling fan for the radiator fin outside the panel is molded so as to further prevent the oil from entering. The absence of a fan inside the drive unit contributes to the avoidance of electric circuit failures caused by inhaled dust and oil-mist.

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Simple Programming Functions

Simple programming tools, "NAVI MILL" and "NAVI LATHE"

**Interface Design with Overall View**

Intuitively view system configuration and machining programs.

**LIST VIEW**

LIST VIEW displays objects such as programs, processes, file data and parameters.

**OPERATION VIEW**

OPERATION VIEW displays the items corresponding to the object selected in LIST VIEW. Data can be input easily referencing the guidance drawing for input items.

**Automatic Setting of Cutting Conditions**

Simply input the tool number. The cutting conditions for each process are automatically set based on previously registered tool files and cutting-condition files.

**Checker and Guidance Functions**

Detects input errors for troubleshooting.

- **Message guidance**
  Troubleshooting options for input errors are displayed.

- **Parameter guidance**
  Displays parameter details and setting range.

- **Tool guidance**
  Displays primary data of the tool data previously registered in the tool file.

**Customize Machining Programs**

Machining programs using macro programs enable commands to be added between processes via the editing screen. Machine tool builders can customize the macro program of each process according to machine specifications and machining know-how.

**Menu**

- **NAVI MILL**

  - Turning
  - Face milling
  - Index milling
  - Grooving
  - Boring
  - Reaming
  - Keyway
  - Trapezoid grooving
  - Holing by milling
  - Thread cutting

- **NAVI LATHE**

  - Turning
  - Milling
  - Assist

Create machining programs on a personal computer

**NC Explorer (Data Transfer Tool)**

By connecting the NC and host personal computer via Ethernet, data such as machining programs can easily be shared. This tool is free of charge. Please contact us.

**NC Trainer / NC Trainer plus (MITSUBISHI CNC Training Tool)**

- NC Trainer is an application for operating the screens of MITSUBISHI CNC M70V Series and machining programs. This application can be used for learning operating CNC and checking the operations of the machining programs.
- NC Trainer plus can also be used for checking the PLC program and custom screens.

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<Custom screen development>
Make your CNC more user-friendly by developing original screens

**NC Designer (Screen Design Tool)**
- Simply by locating parts of various functions on the screen, it is possible to create custom screens easily.
- It is possible to check the performance of custom screens on a personal computer.

**Develop screen configuration**
- Resource window: Controls information such as character strings, fonts and images is managed here, available among multiple controls.
- GUI screen edit area: By locating controls offered by NC Designer, it is possible to design screens easily.
- GX (Graphical User Interface) window: GX parts used for screen creation with NC Designer. Standard parts such as buttons and NC dedicated controls are available.
- Message window

**GX Developer (Sequence Programming Tool)**
- The MELSEC programming tool, offering a wide array of functions and easy use, allows for convenient program design and debugging. Linking with a simulator or other utility allows for the efficient creation of desired programs.

**Onboard Ladder Editor**
- Operability of ladder editing/monitoring on the NC display is widely improved. Various functions are enhanced, such as divided screens, the search function and the monitoring screen.

<Sequence program development> Editable on both personal computers and HMI screens

More comfortable development environment

<Easy setup>
Offering a wide range of support tools, from machine design to setup

**Servo Selection Tool**
- By selecting the machine configuration model and inputting the machine specifications, the optimal servo motor meeting specifications can be selected. Other selection functions which fully support drive system selection are also available. This tool is free of charge. Please contact us.
- Main functions:
  - Servo motor capacity selection, regeneration resistor capacity selection, spindle/acceleration/deceleration time constant adjustment, power supply capacity selection, power supply facility capacity calculation, etc.

**Setup Installer**
- Register the desired display language.

**NC Configurator2 (Parameter Setup Support Tool)**
- The NC data file necessary for NC control and machine operation (such as parameters, tool data and common variables) can be edited on a personal computer.
- Please contact us to purchase a full function version. (A limited function version is also available free of charge.)
- Main functions:
  - Machine specifications can be selected. Other selection functions which can be edited on a personal computer. By connecting a personal computer to the NC unit when necessary, various data can be checked and set using the same HMI as the standard NC screen.

**NC Analyzer (Servo Adjustment Support Tool)**
- Servo parameters can be automatically adjusted by activating the motor using machining programs for adjustment or vibration signals, and measuring/analyzing the machine characteristics.
- Main functions:
  - Block diagram measurement display, speed loop gain adjustment, position loop gain adjustment, notch filter setting, acceleration/deceleration time constant adjustment, velocity adjustment and extra waveform measurement.

**NC Monitor (Remote Monitoring Tool)**
- An identical NC display screen can be displayed on a personal computer. By connecting a personal computer to the NC unit when necessary, various data can be checked and set using the same HMI as the standard NC screen.

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Network Functions / Extendibility

A wide range of support features according to various machine configurations

CC-Link
The NC unit can be connected to a network to serve as the master/local station of the MELSEC CC-Link.

Optical Communication Repeater Unit
The optical cable can be extended to a maximum of 90m by connecting up to two optical servo communication repeater units between the CNC unit and a servo drive unit.

Mitsubishi Factory Automation Solutions
● Our cultivated Factory Automation technologies and experience contribute to offer the best suited systems for users.
● Our FA solutions support high and low hierarchy components, a network and even applications that control the components and network required for a manufacturing floor.

Displays & Keyboards

<table>
<thead>
<tr>
<th>Keyboard</th>
<th>8.4-type</th>
<th>10.4-type</th>
<th>10.4-type touch panel</th>
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<td>220</td>
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<td>clear keys</td>
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<td>FCU7-KB47</td>
<td>10.4-type clear keys</td>
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<tr>
<td>FCU7-KB48</td>
<td>10.4-type touch panel</td>
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</tbody>
</table>

The internal components of the keyboard are protected against water and oil (IP65F). The interface for the CF card is mounted on the front panel of the display.

Control Unit
The control unit is integrated into the back side of the display.

MITSUBISHI CNC Machine Operation Panel

FCU7-KB021: Key switch 55 points, LED 55 points MITSUBISHI standard key layout

FCU7-KB026: Rotary switches (spindle override), cutting override, Select switch (memory protection), Emergency stop push-button

- The internal components of the machine operation panel are protected against water and oil (IP65F).
- Refer to the product brochure for details.

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**Drive System**

### Servo Motors

- **HF Series**
  - Medium-inertia, high-accuracy and high-speed motors.
  - High-inertia machine accuracy is warranted. Suitable for machine requiring quick acceleration.
  - Range: 2 to 9 [kW]
  - Maximum speed: 4,000 to 5,000 [rpm]
  - Supports three types of detectors with a resolution of 200,000. 1 million or 16 million pulses.

- **High-Performance New Type Spindle Motor SJ-D Series**
  - Motor energy loss has been significantly reduced by optimizing the magnetic circuit.
  - High-speed spindle motors with low inertia have been achieved: high-speed, lower vibration and improved durability.
  - Product line:
    - Low-inertia SJ-D Series 5.5 [kW]

- **Low-inertia, High-speed Spindle Motor SJ-VL Series**
  - The spindle dedicated to tapping machines requiring faster drilling and tapping.
  - The low-inertia reduces acceleration/deceleration time, resulting in higher productivity. In addition, when driven by a multi-hybrid drive unit (MDM-SP Series), the motor contributes to downsizing of the cabinet, and enables high-speed machining.
  - Product line:
    - Low-inertia normal SJ-VL Series 3 to 11 [kW]
    - Low-inertia hollow shaft SJ-VL Series 3.7 to 11 [kW]

- **Built-in Spindle Motor**
  - Electricity loss is minimized by providing better utilization of high-speed rotation.
  - Motor control axis has been reduced, resulting in shorter overall motor length.
  - As feedback communication is serial, the resolution is significantly increased (Max: 4 million pulses).
  - The adjustment POC has been eliminated to achieve adjustment-free conditions. The standard gap has been reduced to 0.3mm.

### Linear Servo Motor LM-F Series

- Use in clean environments is possible since no ball screws are used and therefore contamination from grease is not an issue.
- Elimination of transmission mechanism which include backlash, enables smooth and quiet operation even at high-speeds.
- Dimensions:
  - Length: 230 to 1,010 [mm]
  - Width: 120 to 240 [mm]

### Direct Drive Servo Motor TM-RB Series

- High-torque direct-drive combined motor with a high-gain control system provides quick acceleration and positioning, which makes rotation smoother.
- Suitable for a rotary axis that drives a table or spindle head.
- Compared with a conventional rotary axis with a deceleration gear, this motor has higher accuracy and is maintenance-free, having no wear or backlash.
- Range: Maximum torque: 36 to 1,280 [Nm]

### Spindle Motors

- **High-performance Spindle Motor SJ-V Series**
  - A wide range of spindle motors is available, including standard, high-speed and wide-range output units, all of which are supported by diversified machine tool needs.
  - Product line:
    - Normal: SJ-V Series 0.75 to 55 [kW]
    - Wide-range constant output SJ-V2 Series 5.5 to 185 [kW]
    - High-speed SJ-V2 Series 2.2 to 23 [kW]
    - Hollow-shaft SJ-V2 Series 3.7 to 18.5 [kW]

### Linear Servo Motor LM-F Series

- **High-torque direct-drive combined motor**
  - Suitable for high-speed rotation (6,000r/min).
  - Motor serves as a compact and high-output motor such as smallness and high-output, this motor has higher accuracy and is maintenance-free, having no wear or backlash.
  - Range: Maximum speed: 6,000 [r/min]

### Tool Spindle Motor (HF-KP/FP-SP Series)

- Taking advantage of the characteristics of a servo motor such as low-inertia and high-speed, this motor serves as a compact and high-output spindle motor which is capable of high-speed rotation (6,000r/min).
- This motor contributes to downsizing of spindles such as the rotary tool spindle.
- Product line:
  - Small capacity: HF-KP Series 2.4 to 3.0 [kW]
  - Medium capacity: HF-SP Series 2.4 to 4.0 [kW]

### Built-in Spindle Motor

- **IPM Spindle Motor**
  - In answer to demands for downsizing and higher efficiency, an IPM motor has been introduced for further energy savings.
  - Reduction in acceleration/deceleration time contributes to shorter cycle times.

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**Specifications**

### Drive Units

- **High-performance Servo/Spindle Drive Units MDS-DZ/DH2 Series**
  - All-in-one compact drive units with built-in power supplies contribute to reducing control panel sizes.
  - High-speed optical communication enables a shorter position interpolation cycle and direct communication between drives, promoting further high-speed and high-accuracy machining.
  - High-efficiency and low-power power modules enable unit downsizing. A line of drive units driving a maximum of two spindles is available, contributing to a reduction in control panel size.
  - STO (safe torque off) is now available.

- **Multi-hybrid Drive Units MDS-DM2 Series**
  - All-in-one compact drive units with built-in power supplies contribute to reducing control panel sizes.
  - High-speed optical communication enables a shorter position interpolation cycle and direct communication between drives, promoting further high-speed and high-accuracy machining.
  - High-efficiency and low-power power modules have enabled unit downsizing, which also leads to a reduction in control panel size.
  - STO (safe torque off) is now available.

### Specifications

<table>
<thead>
<tr>
<th>Specifications</th>
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<th>Lathe system</th>
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<tbody>
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<tr>
<td>Linear interpolation</td>
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<tr>
<td>Max. high-speed synchronous tapping</td>
<td>500k [2,128N]</td>
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<tr>
<td>Max. high-speed synchronous tapping (with a change in direction)</td>
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<td>Graphic check rotary axis drawing</td>
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<tr>
<td>Mixed mode control (spindle axis)</td>
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<tr>
<td>Control axis synchronization across part systems</td>
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<tr>
<td>Slew cut</td>
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<tr>
<td>Slew part system synchronous threading</td>
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<td>High-speed machining mode (GSP2) Max (3.6m/min)</td>
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</table>

### (Note) Please contact us for availability of STO as a whole system.

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**Drive Units**

- With the latest current control circuit, basic performance is drastically enhanced (high-gain control). A combination of high-speed servo motor and high-accuracy detector helps enhance overall drive performance.
- High-speed optical communication enables a shorter position interpolation cycle and direct communication between drives, promoting further high-speed and high-accuracy machining.
- STO (safe torque off) is now available.

**Multi-hybrid Drive Units MDS-DM2 Series**

- All-in-one compact drive units with built-in power supplies contribute to reducing control panel sizes.
- High-speed optical communication enables a shorter position interpolation cycle and direct communication between drives, promoting further high-speed and high-accuracy machining.
- STO (safe torque off) is now available.

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**Specifications**

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<th>Machine Center system</th>
<th>Lathe system</th>
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**Note:**

- Additional software is required.
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- High-speed optical communication enables a shorter position interpolation cycle and direct communication between drives, promoting further high-speed and high-accuracy machining.
- STO (safe torque off) is now available.
Safety Warning
To ensure proper use of the products listed in this catalog, please be sure to read the instruction manual prior to use.