Press Release
Oct. 25, 2022

Matsuura

5-Axis Vertical Machining Centers

「*MX-330*」「*MX-420 PC10*」
「*MAM72-35V*」「*MAM72-42V PC32*」

World Premiere

Matsuura Machinery Corporation premiered the newly designed ***MX-330***, ***MX-420 PC10***, and ***MAM72-35V***, ***MAM72-42V PC32***, 5-axis vertical machining centers, to be released in February 2023. Mass production shipment begins July 2023.

As a solution to solve labor shortages and maintain cost competitiveness in the manufacturing industry, Matsuura launched the ***MAM72 Series*** with the innovative multi-pallet system in 1991 enabling variable part/variable production and extended unmanned operation.

In addition, as a 5-axis entry level machine delivering rapid return on investment for Matsuura's primary market, job-shop customers, the ***MX Series*** was launched to the market in 2010 with the keywords "Security" and "Ease-of-use" for simple and reliable 5-axis machining.

With the growth of customer demand for unmanned operation, floor pallet systems were added to all ***MX series*** models, which have gained a high reputation due to their user-friendly operability, competitive machining capability and excellent cost performance. Matsuura's 5-axis machining center series with multi-pallet systems provide automated and unmanned operation and have built a solid customer base in various industries worldwide.

The newly-designed ***MX-330*** and ***MAM72-35V*** improve production efficiency and usability, while offering high productivity and manpower savings. Based on the motto, "THE REASON TO BE CHOSEN", Matsuura fused our latest innovative technology, Advanced MIMS (Matsuura Intelligent Meister System), which was developed from the concepts: Secure, Simple, Accuracy, Automation, and Environment.)

In addition, to meet the diverse processing needs of our customers, the newly designed ***MX-420 PC10*** and ***MAM72-42V PC32*** are simultaneously released with an expansion of the maximum workpiece size while maintaining the small footprint of the ***MX-330 PC10*** and ***MAM72-35V PC32***.

Matsuura will exhibit the newly designed ***MX-330 PC10*** and ***MAM72-42V PC32*** at JIMTOF2022, the 31st Japanese International Machine Tool Fair, November 8-13 at Tokyo Big Sight.

MX-330 PC10 **User Testimonials**

"***MX-330*** changed the way we manufacture parts"
- DM precision -

Now Playing on the ***Matsuura Media Library*** URL: https://www.matsuura.co.jp

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Main Features

(1) Workload reduction by ease-of-use operability; New Matsuura Operating System enables secure and reliable unmanned operation

(2) Ensuring stable and high accuracy machining in extended unmanned operation; New automation system maximizes your operation efficiency

(3) Productivity improvement by reduction of machine downtime; new visualizing system for high reliable night/weekends unmanned operation

Workload reduction by ease-of-use operability;
New Matsuura Operating System enables secure and reliable unmanned operation

The user interface was updated for the first time in 10 years, and the newly developed Operating System, as standard, enables intuitive operability. The main screen dispalys all necessary information for automatic operation, such as machining schedule, machining progress (start/end time display), tool life, machining program and tool management pre-check. Machine status can be seen at a glance facilitating secure and reliable unmanned operation.

In addition, to prevent delivery delays due to machine setup time or machine stops caused by human errors in machining schedule setups, all machining data (programs, instructions, images, work offsets, machining time, etc.) can now be managed as one (up to 1,000 project data can be set into one machine), enabling easy and reliable night/weekends unmanned operation.

Operation efficiency has been further improved by enlarging the operation area in the NC screen (conventional 12 inch to 13.7 inch).

Fig.1. Main screen of New Operating System

Ensuring stable and high accuracy machining in extended unmanned operation;
New automation system maximizes your operation efficiency

To further increase the productivity of extended unmanned operation in Matsuura's 5-axis machining and multi-pallet systems, the "coolant system" and the "sludge collection" are available as options to ensure stable high accuracy machining.

The "coolant system" monitors the state of coolant in the machine (amount of coolant, concentration, temperature, pH value, etc.) and automatically supplies the required amount of coolant to maintain the set amount and concentration during extended unmanned operation.

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The new system prevents unexpected machine stops due to lack of coolant and eliminates the need to replenish coolant on weekends (*available water-soluble coolant only).

The “sludge collection" removes more than 90% of the sludge in the tank which can shorten the life of tools and coolant (available castings and aluminum sludge only) and reduces running costs by prolonging the life of tools and coolant, contributing to a cleaner work environment by eliminating the odor of spoiled coolant.

To reduce issues with chips during machining and minimize cleaning time inside the machine, flat areas and bolts have been reduced to manage chip accumulation.

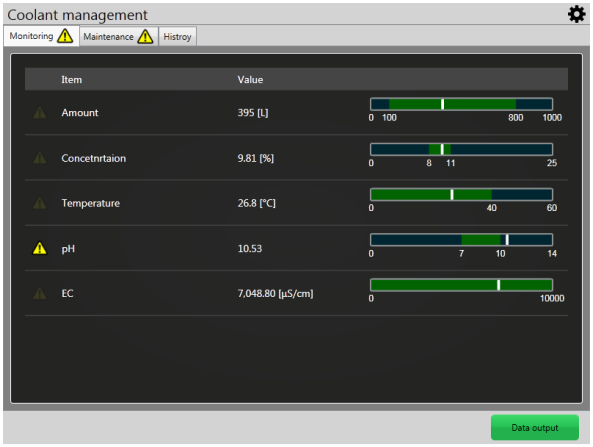

Fig. 2. Screen of coolant system

Productivity improvement by reduction of machine downtime; New visualizing system for reliable night/weekends unmanned operation

To optimize production efficiency, the "Operation Status Monitoring" is installed as standard for visualizing operation status on the NC screen.

To reduce machine downtime, the “monitoring camera” and the "Matsuura Remote Monitoring System" are available as options enabling reliable unmanned operation. The system quickly provides alerts when the machine stops or alarms sound. Customers may access the pallet management screen from a remote location and immediately respond to sudden schedule changes. "Machine Information Output (MT Connect)" can be selected as an option for visualizing the operation status of the entire factory, including machines from other manufacturers.

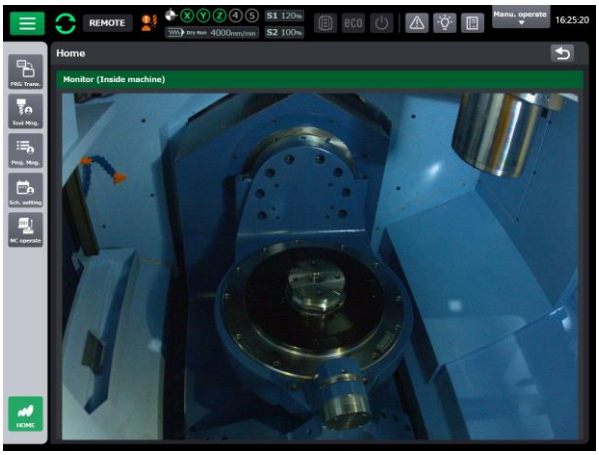

Fig. 3. Screen of monitoring camera

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MX-330 / MX-420 PC10 **Features**

1. MAXIA Spindle (from heavy duty machining to high speed machining)
   - 1.1. 15,000 min^{-1} (5.5/7.5kW, 65Nm) [Standard]
   - 1.2. 15,000 min^{-1} (7.5/15kW, 119Nm) [Option]
   - 1.3. 20,000 min^{-1} (15/18.5kW, 108Nm) [Option]
2. Rapid traverse rate (A/C) :20/40min^{-1} (*conventional to 17/33min^{-1})
3. Operability / Accessibility
   - 3.1. Distance from floor to table top surface : 1,000mm [39.37in.] (with table)
     1,020mm [40.16in.] (with pallet)
   - 3.2. Distance from machine front to table center : 385mm [15.16in.]
   - 3.3. Front door opening width : 650mm [25.59in.]
     (Opening width sufficient for the maximum workpiece depth 420mm [16.54in.])
4. ***MX-330*** Simple automation (Option)
   - 4.1. Pallet (CAPTO C6): PC10 (floor pallet system) + 90-tool magazine
   - 4.2. Pallet (CAPTO C6) + 3 ports for fixture hydraulic system
   - 4.3. Robot interface + auto door
5. Usability
   - 5.1. ***Matsuura G-Tech 31i*** (iHMI, 15-inch touch panel screen)
   - 5.2. Operator assisting software "***MiMS*** (Matsuura Intelligent Meister System)" [Standard]
   - 5.3. Operation status monitoring function (Operating data storage perid: 1 month) [Standard]
   - 5.4. Collision prevention function "Intelligent Protection System" [Option]

     *Installed as standard on the NC screen (previously requiring an external PC). This function prevents collision from programming errors during auto operation and human errors during manual operation.

Main Specification

		<New>	<New >	<Reference>	<Reference>
Item	Unit	***MX-330***	***MX-420 PC10***	***MX-520***	***MX-850***
Travel (X/Y/Z axis)	mm [in.]	435/465/560 [17.13/ 18.31 /22.05]	435/465/560 [17.13/ 18.31 /22.05]	630/560/510 [24.80/ 22.04 /20.07]	900/780/650 [35.43/ 30.70 /25.59]
Travel (A/C axis)	deg	-125 ~ +10/360	-125 ~ +10/360	-125 ~ +10/360	-125 ~ +30/360
Rapid traverse rate (X/Y/Z axis)	m/min [ipm]	40/40/40 [1574.8]	40/40/40 [1574.8]	40/40/40 [1574.8]	40/40/40 [1574.8]
Rapid traverse rate (A/C axis)	min^{-1}	20/40	20/40	33/50	20/40
Spindle speed	min^{-1}	15,000	15,000	12,000	12,000
Spindle motor power	kW	5.5/7.5	5.5/7.5	7.5/11	15/22
Spindle torque	Nm	65	65	120	187
Pallet type	pallets	PC10(opt)	PC10(std)	PC4(opt)	PC4(opt)
Working Surface (with pallet changer)	mm [in.]	D250 [D9.84] (D130) [D5.12]	- (D130) [D5.12]	D300(std) [D11.81] D500(opt) [D19.68] (D400) [D15.75]	D500(std) [D19.68] D700(opt) [D27.55] (D630) [D24.80]
Max. workpiece size (with pallet changer)	mm [in.]	D420 x H320* [D16.53 x H12.59] (D330 x H300) [D12.99 x H11.81]	- (D420 x H300*) [D16.54 x H11.81]	D710 x H350* [D27.95 x H13.77] (D520 x H330) [D20.47 x H12.09]	D850 x H450* [D33.46 x H17.71] (D850 x H385*) [D33.46 x H15.16]
Loading capacity (with pallet changer)	kg [lb.]	80 [176] (80) [176]	- (80) [176]	200 [440] (175) [385]	500 [1102] (400) [881]

* Bullet shaped

MAM72-35V / MAM72-42V PC32 **Features**

1. **MAXIA** Spindle (from heavy duty machining to high speed machining)
   - 1.1. 12,000 min^{-1} (18.5/22kW, 191Nm) [Standard]
   - 1.2. 15,000 min^{-1} (18.5/22kW, 150Nm) [Option]
   - 1.3. 20,000 min^{-1} (15/18.5kW, 108Nm) [Option]
2. High-speed high-precision high-rigidity built-in 4^{th}/5^{th} axes of dedicated design
   - 4.1. Rapid traverse rate (B/C): 50 min^{-1} (4^{th}-axis), 100 min^{-1} (5^{th}-axis)
   - 4.2. Drive system: Direct drive motor
   - 4.3. Rotary scale provided as standard
3. Operability / Accessibility
   - 3.1. Distance from floor to pallet top surface : 1,000mm [39.37in.]
   - Distance from machine front (oil pan edge) to pallet center : 450mm [17.72in.]
   - Distance from machine front to spindle center : 280mm [11.02in.]
4. ***MAM72-35V*** for variable-part variable-volume production & extended unmanned operation
   - 4.1. Matrix magazine :130 ~ 330 tools (330-tool magazine base) [Option]
   - : 370 ~ 530 tools (530-tool magazine base) [Option]
   - 4.2. Multi-pallet system : Tower pallet system (PC32/40) [Option]
   - 4.3. Chip removal system: Spiral chip conveyor, lift-up chip conveyor [Option]

   **MAM72-42V* equipped to 130 tools (330-tool magazine base), PC32, Spiral chip conveyor as standard
5. Usability
   - 5.1. ***Matsuura G-Tech 31i*** (iHMI, 15-inch touch panel screen)
   - 5.2. Operator assisting software "***MiMS*** (Matsuura Intelligent Meister System)" [Standard]
   - 5.3. Operation status monitoring function (Operating data storage perid: 1 month) [Standard]
   - 5.4. Collision prevention function "Intelligent Protection System" [Standard]

     *Installed as standard on the NC screen (previously requiring an external PC).
   - 5.5. Improved work efficiency by layout daily maintenance devices centrally in one place.

Main Specification

		<New>	<New>	<Reference>	<Reference>
Item	Unit	***MAM72-35V***	***MAM72-42V PC32***	***MAM72-52V PC15***	***MAM72-70V***
Travel (X/Y/Z axis)	mm [in.]	550/440/580 [21.65/ 17.32 /22.83]	550/440/580 [21.65/ 17.32 /22.83]	1010/540/610 [39.76/ 21.25 /24.01]	1200/720/710 [47.24/ 28.34 /27.95]
Travel (B/C axis)	deg	-125 ~ +65/360	-125 ~ +65/360	-125 ~ +30/360	-125 ~ +30/360
Rapid traverse rate (X/Y/Z axis)	m/min [ipm]	60/60/60 [2,362.2]	60/60/60 [2,362.2]	60/60/60 [2,362.2]	60/60/60 [2,362.2]
Rapid traverse rate (4/5 axis)	min^{-1}	50/100	50/100	50/100	50/100
Spindle speed	min^{-1}	12,000(BT40)	12,000(BT40)	15,000(BT40)	15,000(BT40)
Spindle motor power	kW	18.5/22	18.5/22	15/22	15/22
Spindle torque	Nm	191	191	150	150
Pallet type	pallets	PC2(std) PC32/40(opt)	PC32(std)	PC15(std)	PC2(std) PC6/18(opt)
Working Surface	mm [in.]	D130 [D5.12]	D130 [D5.12]	D400 [D15.74]	500x500 [19.69x19.69]
Max. workpiece size	mm [in.]	D350 x H315 [D13.77 x H12.40]	D420 x H315* [D16.54 x H12.40]	D520 x H400 [D20.47 x H15.74]	D700 x H500 [D27.56 x H19.68]
Loading capacity	kg [lb.]	60 [132]	80 [176]	300 [660]	500 [1100]

* Bullet shaped

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