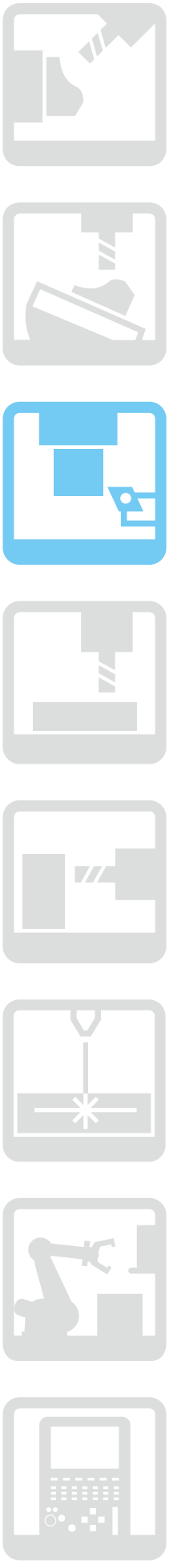


IVS-II
SERIES

200 II
200M II
300 II
300M II

Mazak

Unique Machine Design for Unsurpassed Productivity

IVS-II

Inverted Vertical Spindle CNC Turning Center

The inverted vertical spindle CNC turning center,designed for large lot/mass production applications,realizes unsurpassed productivity with minimum floor space requirements.The X-axis rapid traverse rate of 110000 mm/min (4330 IPM) realizes reduced non-cutting time. For convenient automatic production, work handling is performed by the headstock motion – standard equipment. A wide variety of work stockers can be utilized with the IVS series,so that an automatic production systemwith unsurpassed productivity can be realized for any production requirement.

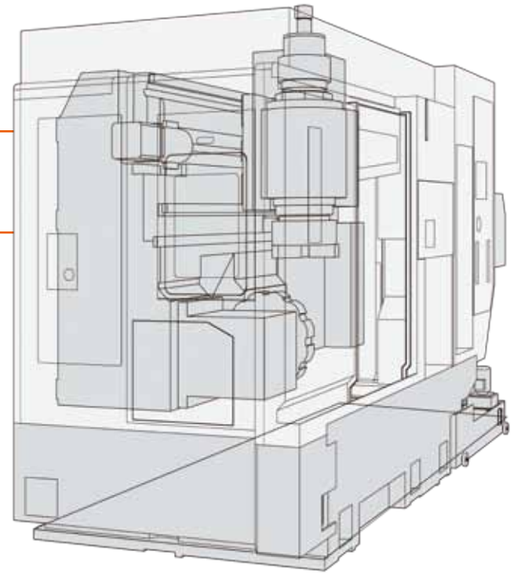
IVS-300 II

The IVS-200 II & 200M II with 8” chuck are designed to provide high productivity aluminum machining with minimum non-cutting time thanks to the rapid traverse rates of 110 m/min (4330 IPM) for the X-axis and 60 m/min (2362 IPM) for the Z-axis. The IVS-300 II & 300M II are equipped with a high-rigidity, high torque spindle.

	IVS-200 II	IVS-200M II	IVS-300 II	IVS-300M II
Chuck size	8”		10”,12”	
Feedrate	X-axis 110 m/min (4330 IPM) Z-axis 60 m/min (2362 IPM)		X-axis 60 m/min (2362 IPM) Z-axis 45 m/min (1771 IPM)	
Spindle	7000 rpm 26 kW (35 HP) [30 min.rating]		4000 rpm 26 kW (35 HP) [30 min.rating]	
Rotary tool spindle	-	4500 rpm 5.5 kW (7.5 HP) [10 min.rating]	-	4500 rpm 5.5 kW (7.5 HP) [10 min.rating]

High-rigidity, double column machine construction

The IVS II series is designed with high-rigidity machine construction – the inverted spindle is mounted on a double column.

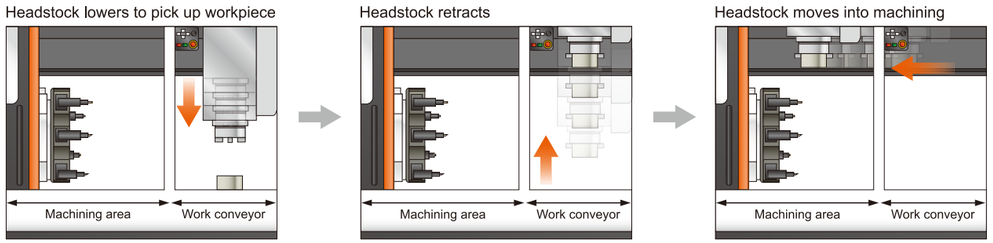


Smooth chip disposal

Machined chips smoothly fall directly into the chip conveyor and are moved outside the machine thanks to the inverted vertical spindle machine design.

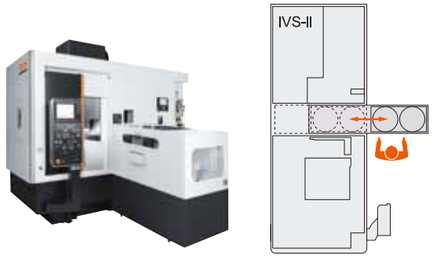
Work handling

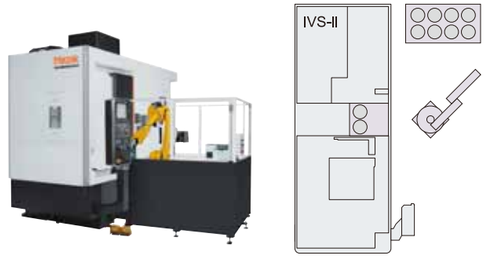
The movable headstock which functions as a workpiece loader/unloader is standard equipment resulting in a lower initial installation cost for an automated system.

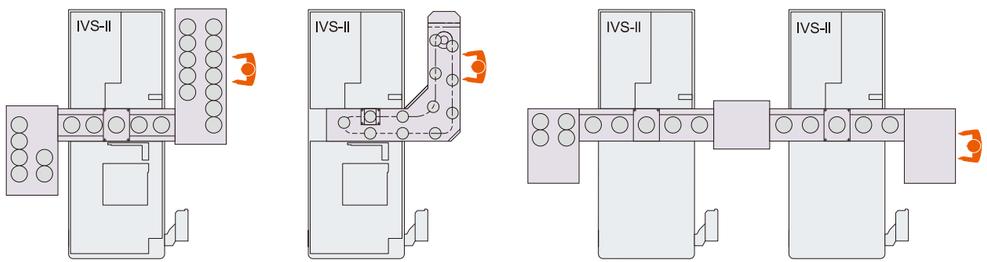


Wide variety of automated systems

A wide variety of work stockers are available which can be utilized by the IVS II series for unmanned operation. Systems can consist of single or multiple machines according to production requirements.The X- and Z-axes are outside of the machining envelope and the turret is located on the lower part of the machine base. Additionally, this double column machine design provides convenient installation of a work conveyor for unmanned operation for unsurpassed productivity with minimum floor space requirements.

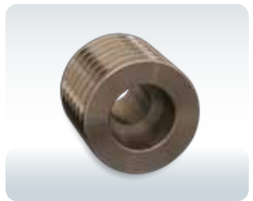






Applications

IVS-200 II

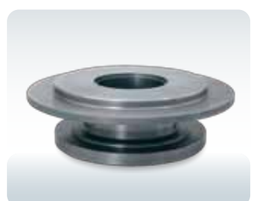


Workpiece	Pulley
Material	FC300
Machining time	2.86 min.

Workpiece	Cylinder liner
Material	FC230
Machining time	0.83 min.

IVS-300 II

Workpiece	Piston
Material	S45C
Machining time	4.62 min.



Workpiece	Adapter
Material	FCD300
Machining time	7.46 min.

Workpiece	Cylinder
Material	S45C
Machining time	3.43 min.

Workpiece	Piston
Material	S45C
Machining time	2.16 min.

Balanced cutting unit OPTION

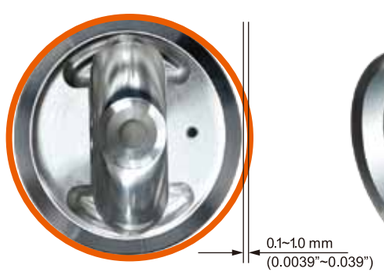
High accuracy parallelism is ensured thanks to balanced cutting – simultaneous turning of both sides of a disk brake rotor. Since the open/close movement of the balanced cutting unit is controlled by a servo motor, tool compensation is extremely convenient.

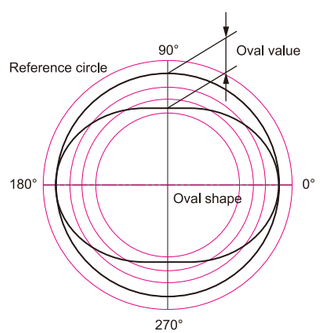
Tool plate OPTION

The tool plate is attached to the machine column on which multiple tools can be mounted. Tools are mounted using a T slot nut in the tool plate T slots.

Oval turning unit (option for machines equipped with FANUC CNC)

Oval turning is conducted by reciprocating tool motion in the radial direction by synchronizing the motion with the spindle. The movement of the oval turning unit is controlled by the CNC (Y-axis).



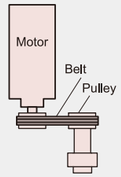


Higher Productivity

High-performance, integral spindle/motor

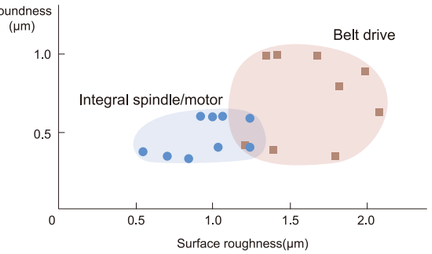
The integral spindle/motor provides the optimum cutting conditions over a wide range of spindle speeds.
This advanced unit ensures high acceleration as well as unsurpassed workpiece roundness and surface finish.

The faster the pulley speed, the faster the vibration of the belt drive unit increases.



Sources of vibration, such as belts and gears, are eliminated

● Roundness and surface finish

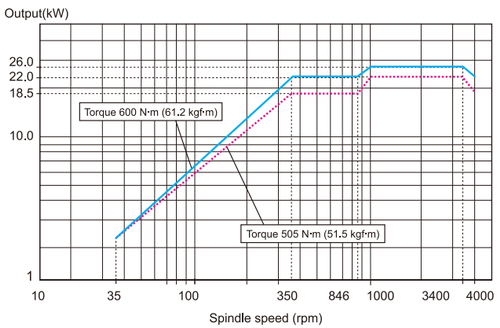


High-torque at low speeds plus rapid acceleration and deceleration

IVS-300 II
IVS-300M II

The spindle of the IVS-300II and 300MII features high torque at low speeds to provide exceptional performance.

● Torque･output diagram (For IVS-300 II , 300M II)

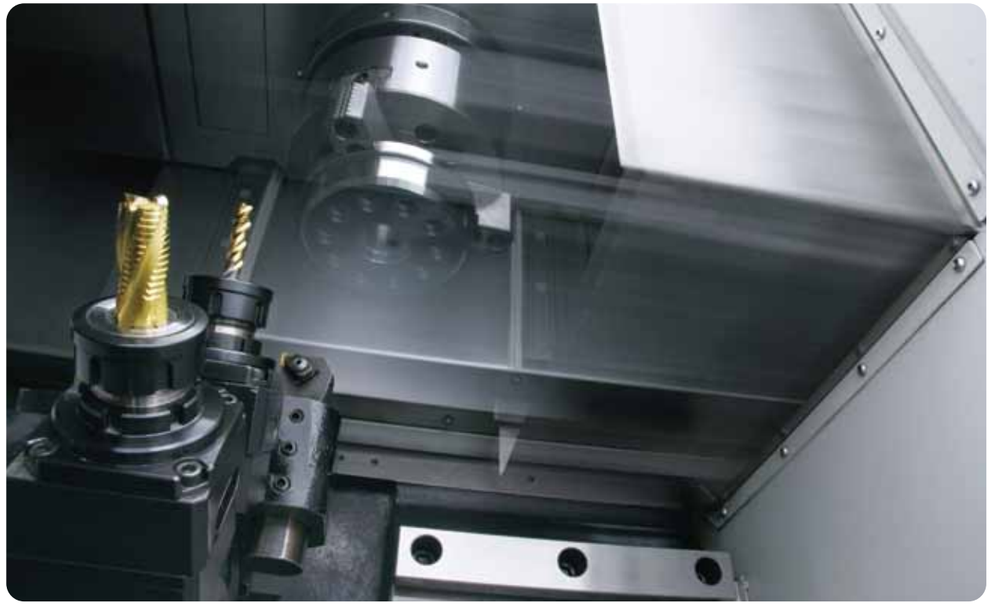


Spindle bore: ø88 mm (ø3.46")
30 min.rating
Cont.rating

Spindle speed	4000 rpm
Output	26 kW (35 HP) [30 min.rating]
	22 kW (29HP) [Cont.rating]
Torque	600 N·m
Spindle acceleration	0→3400 rpm (3.2 sec)

IVS-200 II and 200M II high-speed operation

High-speed rapid traverse rates: X-axis 110 m/min (4330 IPM), Z-axis 60 m/min (2362 IPM)

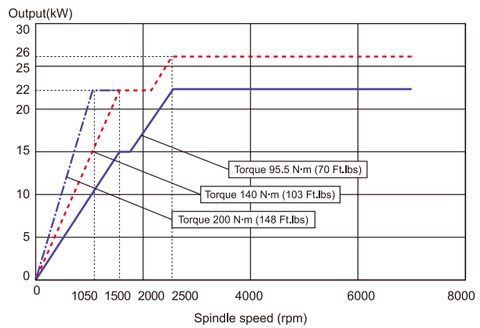


Highest spindle speed for this machine class with 8 inch chuck class

IVS-200 II
IVS-200M II

The IVS-200II 200 MII top spindle speed of 7000 rpm ensures high-productivity machining of aluminum workpieces

● Torque-output diagram (For IVS-200 II, 200M II)



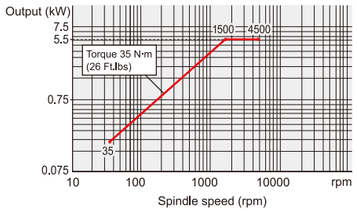
15 min.rating
30 min.rating
Cont.rating

Max. spindle speed	7000 rpm
Output	26 kW (35 HP) [30 min.rating]
	22 kW (29 HP) [Con.rating]
Torque	200 N·m (148 Ft.lbs) [15 min.rating]
Spindle acceleration	0→4250 rpm (1.8 sec) 0→5950 rpm (2.9 sec)

Higher Productivity

Rotary tool spindle

The rotary tool spindle of the IVS-200M II and IVS-300M II utilizes the same unit as the QUICK TURN NEXUS to ensure high machining efficiency.



Max. spindle speed		4500 rpm
Spindle output		AC 5.5 kW (7.5 HP) [10 min.rating]
Max. torque		35 N·m (26 Ft.lbs) [10 min.rating]
Machining capacity	Drill	ø20 mm (ø0.75")
	End mill	ø20 mm (ø0.75")
	Tap	M12 (1/2 UNC)

Turret

The IVS series is equipped with a non-lift 12 tool, high speed drum turret designed forminimum tool interference.

Machine		IVS-200 II IVS-300 II	IVS-200M II IVS-300M II
Turret	No. of tools	Bolt-on-type drum turret	VDI-type drum turret
	Turret type	12 (OD:6+ID:6)	12
	Tool size: O.D tool	□25 mm (1.00")	□25 mm (1.00")
	Tool size: I.D tool	ø40 mm (ø1.5")	ø40 mm (1.5")
	Tool size: Rotary tool – drill	-	Max. ø20 mm (ø0.75")
	Tool size: Rotary tool – tap	-	Max. M12 (1/2 UNC)
	Tool size: Rotary tool – end mill	-	Max. ø20 mm (ø0.75")
	Turret indexing time	0.2 sec /1 step	0.2 sec /1 step

Higher Accuracy

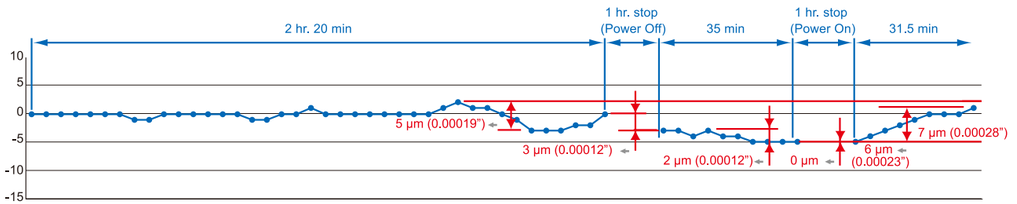
High-accuracy

To ensure high-accuracy machining, the IVS series features a headstock cooling system and ball screw core cooling system as well as X-axis scale feedback.

X-axis scale feedback – standard equipment

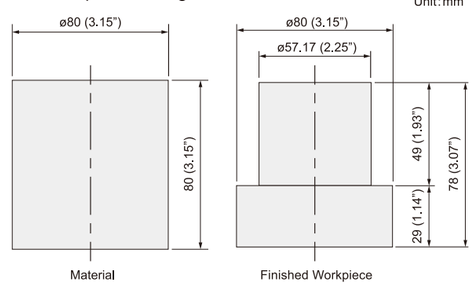
Ball screw core cooling system for X- and Z-axes

Continuous machining accuracy



Test Workpiece Configuration

Unit: mm



Cutting Conditions

Process	Cutting speed [m/min (SFM)]	Feedrate [mm/rev (IPR)]	D.O.C [mm (inch)]	No. of passes
Rough facing	300 (984")	0.3 (0.012")	0.8 (0.031")	1
O.D. rough	300 (984")	0.3 (0.012")	1 (0.039")	11
Finish facing	250 (820")	0.15 (0.006")	0.2 (0.008")	1
O.D. finish-1	250 (820")	0.15 (0.006")	0.2 (0.008")	1
O.D. finish-2	250 (820")	0.15 (0.006")	0.215 (0.0085")	1

Tool

Rough	Holder	PCLNR2525M-12
	Insert	CNMG120412HQ
Finish	Holder	PCLNR2525M-12
	Insert	CNMG120408GP

Note) Data shown above are for reference only – they may not be duplicated under different conditions – room temperature, workpiece material, tool material, cutting conditions and others.

Intelligent Machine

A variety of Intelligent Functions provides incomparable operator support for exceptional ease of operation and the optimum machine efficiency

Yamazaki Mazak has developed a variety of functions for the improvement of productivity, high accuracy machining and operator support. A variety of unique technologies has been developed that incorporate the expertise of experienced machine operators that realizes unsurpassed productivity and higher accuracy machining.

INTELLIGENT MACHINE®

ITS

Heat Displacement Control

INTELLIGENT THERMAL SHIELD

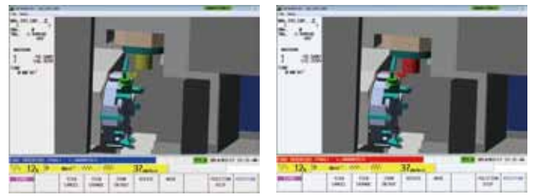
Unique Mazak heat displacement compensation system

ISS

Machine Interference Prevention

INTELLIGENT SAFETY SHIELD

When an operator manually moves the machine axes for setup, the MAZATROL MATRIX 2 CNC shows a synchronized 3D model on the CNC display. If any machine interference occurs, the machine motion immediately stops.



MVA

Verbal Messages

MAZAK VOICE ADVISER

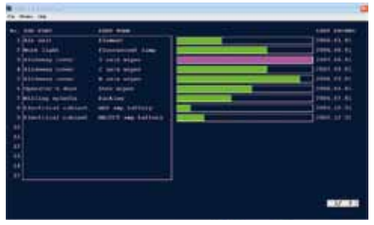
Verbal support for machine setup and safe conditions confirmation

IMS

Comprehensive Maintenance Monitor

INTELLIGENT MAINTENANCE SUPPORT

The INTELLIGENT MAINTENANCE SUPPORT function monitors the status of perishable items such as filters, cover wipers, and the operation history of several machine units. This information is useful to determine a preventative maintenance program to prevent unexpected machine downtime. Additionally, when the replacement time is reached for an item such as a filter, a pop-up window notifies the operator to ensure required maintenance is performed



Ease of Programming

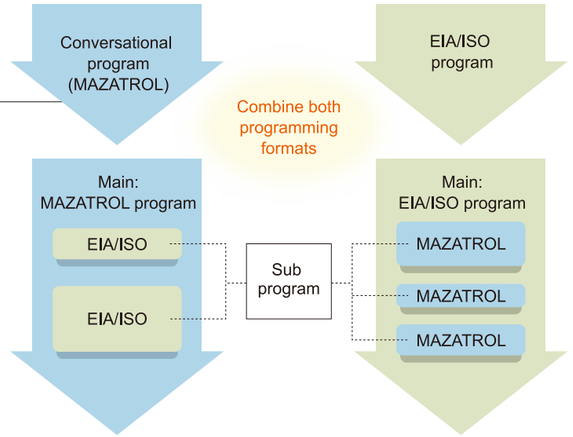
Simplified programming with the MAZATROL MATRIX NEXUS 2 CNC

The programming of a variety of workpieces can be complicated. However, conversational MAZATROL programs for this type of machining are simplified thanks to a variety of automatic functions. Since the number of program lines is considerably smaller when compared to EIA/ISO data, programs are quickly and easily checked and edited. The unsurpassed ease of operation of the MAZATROL MATRIX NEXUS 2 provides high productivity with higher efficiency.

Ability to use both conversational programming and EIA/ISO program format – standard

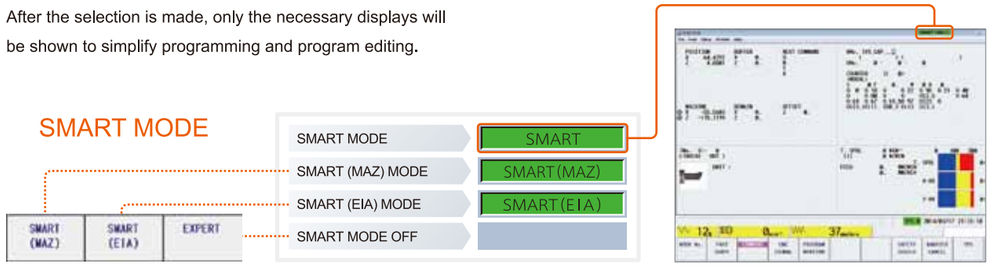
Both MAZATROL conversational programs and EIA/ISO format programs can be used.

Ability to use both conversational programming and EIA/ISO program format as sub-programs – standard equipment. Can be used in either method – Mazatrol main program with EIA/ISO sub-program or EIA/ISO main program with Mazatrol sub-program.



SMART menu keys minimize number of displays to reduce time required for programming

The type of programming to be performed is selected by menu key.
After the selection is made, only the necessary displays will be shown to simplify programming and program editing.



VIRTUAL MACHINING

Machine programs can be made with minimum errors and time required for test cuts thanks to the realistic machine 3D simulation displays than can be used for convenient program confirmation and checking for any machine interference.

Virtual machining of workpiece configuration

At-a-glance machining status

Virtual machining of machine configuration

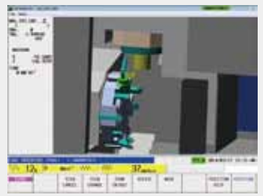
Interference easily confirmed

ISS

Machine Interference Prevention

INTELLIGENT SAFETY SHIELD

When an operator manually moves the machine axes for setup, the MAZATROL MATRIX NEXUS 2 CNC shows a synchronized 3D model on the CNC display.
If any machine interference occurs, the machine motion immediately stops.



Stops before machine interference occurs

The machine automatically detects interference between the turret and workpiece

Ease of Maintenance

Designed for convenient daily maintenance

Maintenance check screen

A graphical display shows the status of changing and refilling time of different items such as for coolant, lubrication oil and filters. Ensures machine operation by providing a convenient maintenance schedule.

Chuck pressure adjustment

Adjuster of chuck pressure is located near operation panel.

Maintenance area

Items requiring frequent access for maintenance are located on a single panel.

Environmentally Friendly

eco-friendly

Environmental considerations

The environment and our impact on our natural surroundings have always been important concerns of Yamazaki Mazak. This is shown by the fact that all factories in Japan where Mazak machine tools are produced are ISO 14001 certified, an international standard confirming that the operation of our production facilities does not adversely affect air, water or land.

IVS-300 II

Reduction of power consumption in stand-by state

Power consumption is reduced when the machine is in the stand-by state by automatically turning off the worklights, the CNC display and the optional chip conveyor.

Chip conveyor (Optional) / Automatic power off

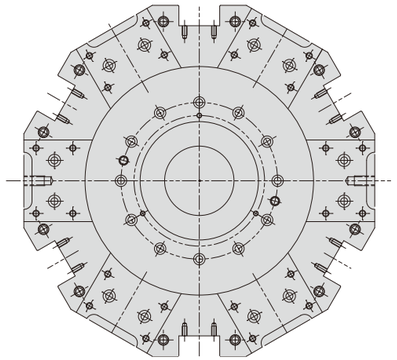
The optional chip conveyor is automatically shut off after a predetermined period for lower power consumption when the machine is in the stand-by state.

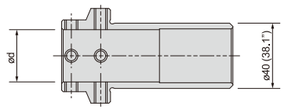
Tooling system

Unit: mm (inch)

IVS-200Ⅱ, 300Ⅱ

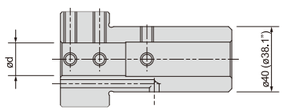
Turning holder
Provided are only holding blocks for outside turning tools to be directly mounted on the turret.



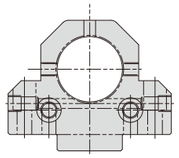


Boring Bar Socket

UNIT NO.	d	STD. QTY
53178011100	ø32 (ø1·1/4")	①
53178011200	ø25 (ø1")	①

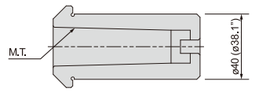


UNIT NO.	d
53178011301	ø20 (ø3/4")
53178011401	ø16 (ø5/8")
53178011501	ø12 (ø1/2")
53178011601	ø10 (ø3/8")
53178011701	ø8 (ø5/16")



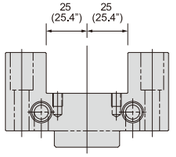
Boring Bar Holder

UNIT NO.	STD. QTY
53918000600	③



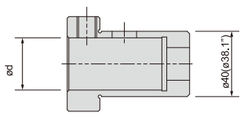
M.T. Drill Socket

UNIT NO.	M.T.	STD. QTY
53418003100	MT.3	
53418003200	MT.2	①
53418003300	MT.1	



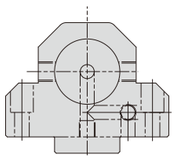
Facing holder

UNIT NO.	STD. QTY
53918000400	①



U-Drill Socket

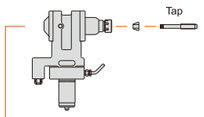
UNIT NO.	d
53208001200	ø32 (ø1·1/4")
53208001100	ø25 (ø1")
53208001000	ø20 (ø4/3")



U-Drill Holder

UNIT NO.
53918000800

IVS-200MⅡ,300MⅡ

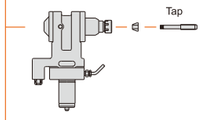


H-TYPE TAPPER (WITH TORQUE LIMITTER)

UNIT NO.	RUBBER COLLET
53208020600	M4~M10 (No.8 UNC~3/8UNC) M10~M12 (3/8 UNC~1/2UNC)

COLLET

UNIT NO.	COLLET
51408032400	M4~M10 (No.8 UNC~3/8UNC)
51408032500	M10~M12 (3/8 UNC~1/2UNC)

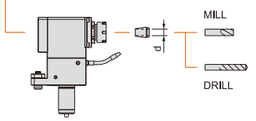


H-TYPE TAPPER

UNIT NO.	RUBBER COLLET
53208020400	M4~M10 (No.8 UNC~3/8UNC) M10~M12 (3/8 UNC~1/2UNC)

COLLET

UNIT NO.	COLLET
51408032400	M4~M10 (No.8 UNC~3/8UNC)
51408032500	M10~M12 (3/8 UNC~1/2UNC)



H-TYPE MILLING DRILL HOLDER
(WITH ø20 CHUCK COLLET)

UNIT NO.	MAX. MILLING SPEED	STD. QTY
53228000405	6000 rpm	①
53228000304	6000 rpm	

(For through tool coolant)

TAP

COLLET

UNIT NO.	COLLET
51408032400	M4~M10 (No.8 UNC~3/8UNC)
51408032500	M10~M12 (3/8 UNC~1/2UNC)

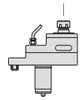
V-TYPE TAPPER (WITH TORQUE LIMITTER)

UNIT NO.	RUBBER COLLET
53208020500	M4~M10 (No.8 UNC~3/8UNC) M10~M12 (3/8 UNC~1/2UNC)

TAP

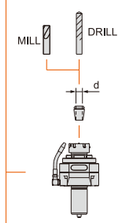
COLLET

UNIT NO.	COLLET
51408032400	M4~M10 (No.8 UNC~3/8UNC)
51408032500	M10~M12 (3/8 UNC~1/2UNC)



V-TYPE TAPPER

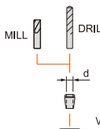
UNIT NO.	RUBBER COLLET
53208020300	M4~M10 (No.8 UNC~3/8UNC) M10~M12 (3/8 UNC~1/2UNC)



V-TYPE MILLING DRILL HOLDER
(WITH ø20 CHUCK COLLET)

UNIT NO.	MAX. MILLING SPEED
53228000602	6000 rpm
53228000502	6000 rpm

(For through tool coolant)

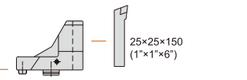


V-TYPE MILLING DRILL HOLDER
(WITH ø20 CHUCK COLLET)

UNIT NO.	MAX. MILLING SPEED	STD. QTY
53208030403	6000 rpm	②

LONG FACING HOLDER (L, R)

UNIT NO.
53918003800

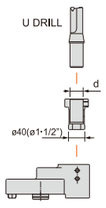


FACING HOLDER (L, R)

UNIT NO.	STD. QTY
53918003301	①

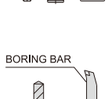
FACING HOLDER (L, R)

UNIT NO.	STD. QTY
53918003600	④



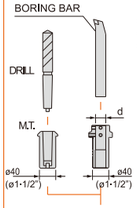
U DRILL SOCKET

UNIT NO.	d
53208001000	ø20 (ø4/3")
53208001100	ø25 (ø1")
53208001200	ø32 (ø1·1/4")



U DRILL SOCKET

UNIT NO.	d	STD. QTY
53918003201	ø40 (ø38.1")	①



DRILL SOCKET

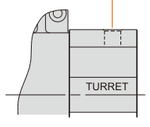
UNIT NO.	M.T.	STD. QTY
53418003300	NO.1	
53418003200	NO.2	①
53418003100	NO.3	

BORING BAR SOCKET

UNIT NO.	d	STD. QTY
51378001701	ø8 (ø5/16")	
51378001601	ø10 (ø3/8")	
51378001501	ø12 (ø1/2")	
51378001401	ø16 (ø5/8")	
51378001301	ø20 (ø3/4")	
51378001202	ø25 (ø1")	①
51378001103	ø32 (ø1·1/4")	①

BORING BAR HOLDER

UNIT NO.	d	STD. QTY
53918003101	ø40 (ø1·1/2")	②



CAP

UNIT NO.		STD. QTY
53518000600	PLUG	①

CHUCK COLLET

UNIT NO.	SPECIFICATION	TYPE
53628090100	ER32 ø2 (ø0.079")	ER32-2
53628090200	ER32 ø2.5 (ø0.098")	ER32-2.5
53628090300	ER32 ø3 (ø0.0118")	ER32-3
53628090400	ER32 ø3.5 (ø0.138")	ER32-3.5
53628090500	ER32 ø4 (ø0.157")	ER32-4
53628090600	ER32 ø4.5 (ø0.177")	ER32-4.5
53628090700	ER32 ø5 (ø0.197")	ER32-5
53628090800	ER32 ø6 (ø0.236")	ER32-6
53628090900	ER32 ø7 (ø0.276")	ER32-7
53628091000	ER32 ø8 (ø0.315")	ER32-8
53628091100	ER32 ø9 (ø0.354")	ER32-9
53628091200	ER32 ø10 (ø0.394")	ER32-10
53628091300	ER32 ø11 (ø0.433")	ER32-11
53628091400	ER32 ø12 (ø0.472")	ER32-12
53628091500	ER32 ø13 (ø0.512")	ER32-13
53628091600	ER32 ø14 (ø0.551")	ER32-14
53628091700	ER32 ø15 (ø0.591")	ER32-15
53628091800	ER32 ø16 (ø0.630")	ER32-16
53628091900	ER32 ø17 (ø0.669")	ER32-17
53628092000	ER32 ø18 (ø0.709")	ER32-18
53628092100	ER32 ø19 (ø0.748")	ER32-19
53628092200	ER32 ø20 (ø0.787")	ER32-20

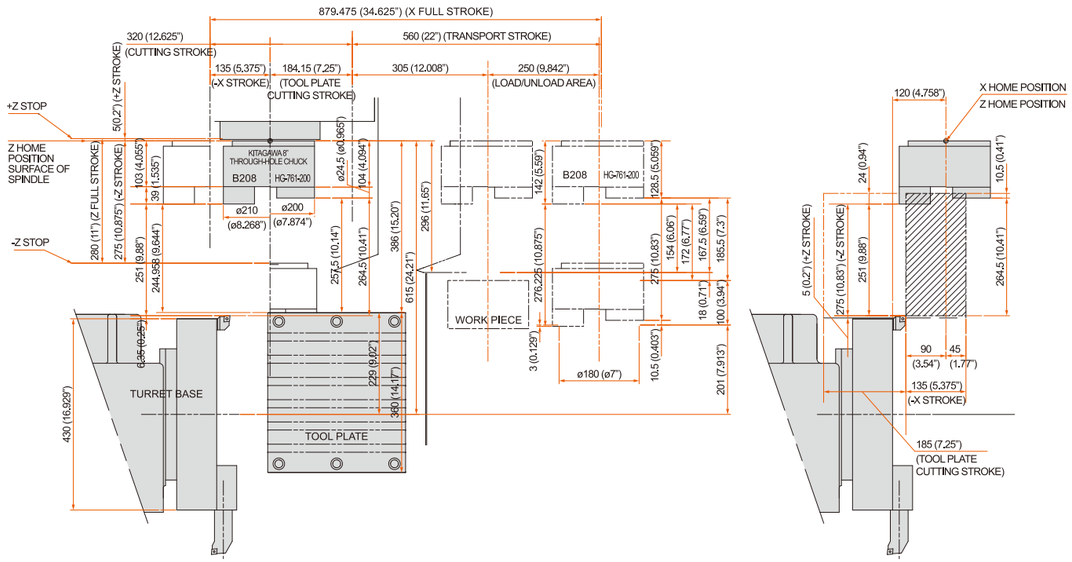
CHUCK COLLET (APPLICABLE TO THROUGH COOLANT)

UNIT NO.	SPECIFICATION	TYPE
53228010100	ER32 ø8 (ø0.315")	AR32-OH-8
53228010200	ER32 ø8.5 (ø0.335")	AR32-OH-8.5
53228010300	ER32 ø9 (ø0.354")	AR32-OH-9
53228010400	ER32 ø9.5 (ø0.374")	AR32-OH-9.5
53228010500	ER32 ø10 (ø0.394")	AR32-OH-10
53228010600	ER32 ø10.5 (ø0.413")	AR32-OH-10.5
53228010700	ER32 ø11 (ø0.433")	AR32-OH-11
53228010800	ER32 ø11.5 (ø0.453")	AR32-OH-11.5
53228010900	ER32 ø12 (ø0.472")	AR32-OH-12
53228011000	ER32 ø12.5 (ø0.492")	AR32-OH-12.5
53228011100	ER32 ø13 (ø0.512")	AR32-OH-13
53228011200	ER32 ø13.5 (ø0.532")	AR32-OH-13.5
53228011300	ER32 ø14 (ø0.551")	AR32-OH-14
53228011400	ER32 ø14.5 (ø0.571")	AR32-OH-14.5
53228011500	ER32 ø15 (ø0.591")	AR32-OH-15
53228011600	ER32 ø15.5 (ø0.610")	AR32-OH-15.5
53228011700	ER32 ø16 (ø0.630")	AR32-OH-16
53228011800	ER32 ø16.5 (ø0.650")	AR32-OH-16.5
53228011900	ER32 ø17 (ø0.669")	AR32-OH-17
53228012000	ER32 ø17.5 (ø0.689")	AR32-OH-17.5
53228012100	ER32 ø18 (ø0.709")	AR32-OH-18
53228012200	ER32 ø18.5 (ø0.728")	AR32-OH-18.5
53228012300	ER32 ø19 (ø0.748")	AR32-OH-19
53228012400	ER32 ø19.5 (ø0.768")	AR32-OH-19.5
53228012500	ER32 ø20 (ø0.787")	AR32-OH-20

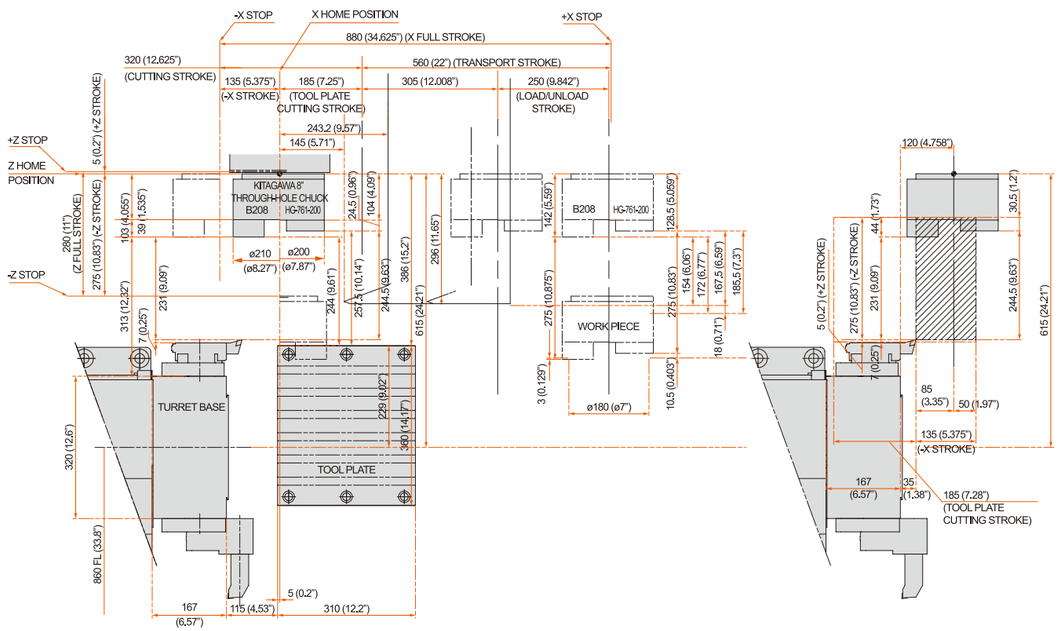
Stroke Diagram

Unit: mm (inch)

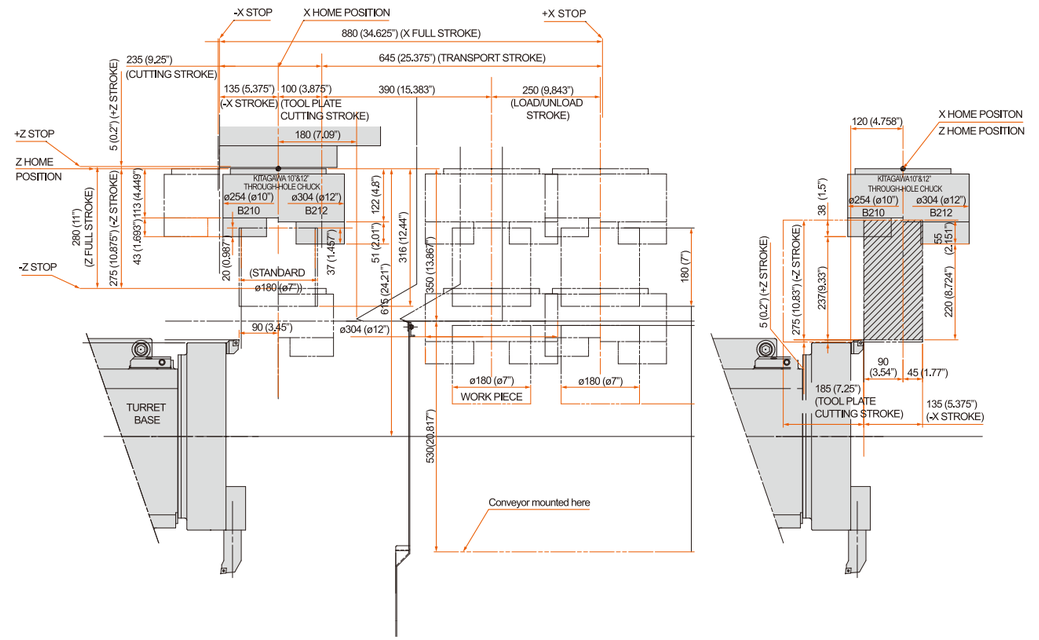
IVS-200 II



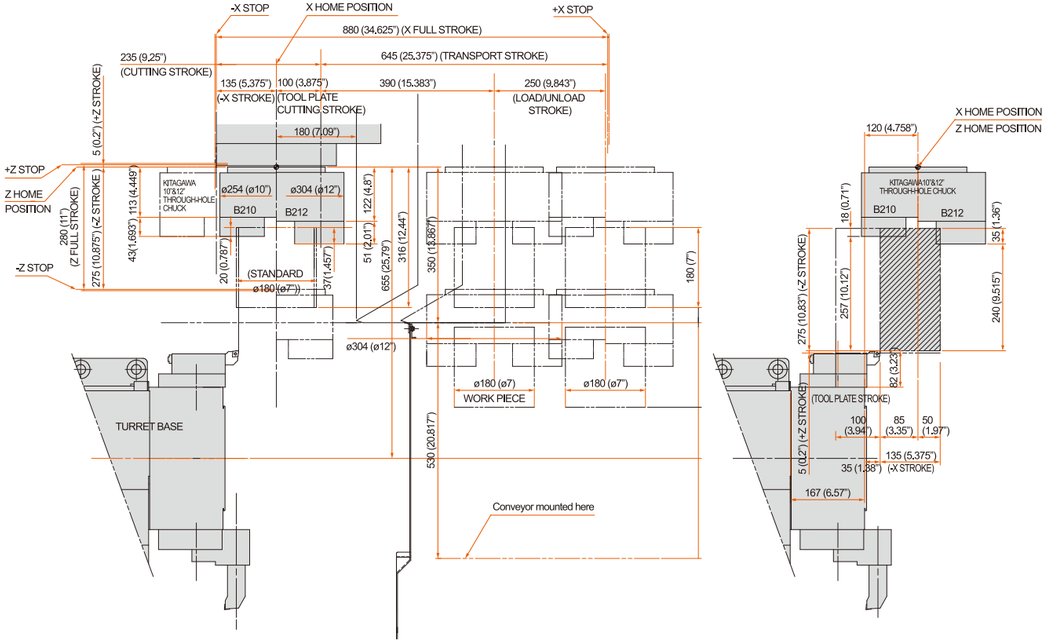
IVS-200M II



IVS-300 II



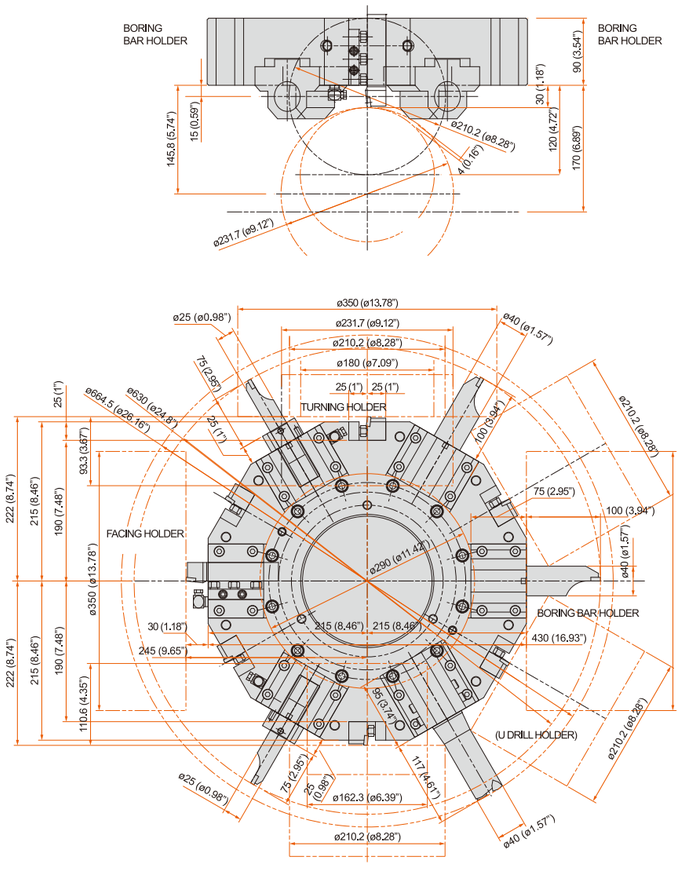
IVS-300M II



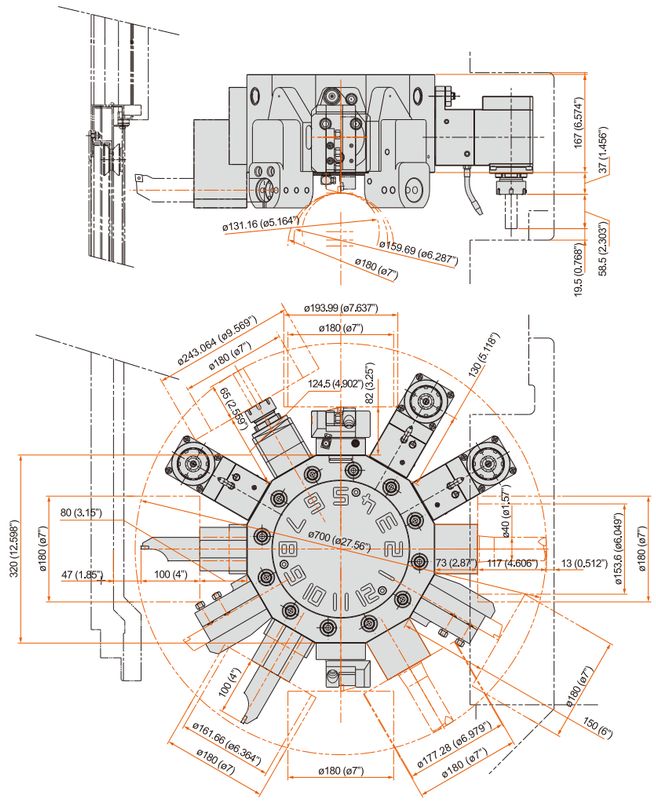
Tool Interference

Unit: mm (inch)

IVS-200 II,300II



IVS-200M II,300M II



IVS SERIES Standard Specifications

		IVS-200 II	IVS-200M II	IVS-300 II	IVS-300M II
Capacity	Maximum swing	ø280 mm (ø11.02")	ø280 mm (ø11.02")	ø350 mm (ø13.78")	ø350 mm (ø13.78")
	Maximum machining diameter *1	ø180 mm (ø7.09")	ø180 mm (ø7.09)	ø350 mm (ø13.78")	ø350 mm (ø13.78")
	Maximum machining length*1	100 mm (3.94")	100 mm (3.94")	180 mm (7.09")	180 mm (7.09")
Travel	X-axis travel	320 mm (12.6") + 560 mm (22.05") (stroke to conveyor)	320 mm (12.6") + 560 mm (22.05") (stroke to conveyor)	235 mm (9.25") + 645 mm (25.39") (stroke to conveyor)	235 mm (9.25") + 645 mm (25.39") (stroke to conveyor)
	Z-axis travel	280 mm (11.02")	280 mm (11.02")	280 mm (11.02")	280mm (11.02")
Spindle	Chuck size	8"	8"	10"/*12"	10"/*12"
	Spindle speed *2	7000 rpm	7000 rpm	4000 rpm	4000 rpm
	Number of spindle speed ranges	Stepless	Stepless	Stepless	Stepless
	Spindle nose	A2-6	A2-6	A2-8	A2-8
Turret	Turret type	12 position drum turret (Bolt-on type)	12 position drum turret (VDI & Bolt-on type)	12 position drum turret (Bolt-on type)	12 position drum turret (VDI & Bolt-on type)
	Number of tools	12 tools	12 tools	12 tools	12 tools
	Turning tool size	25 mm (1.0")	25 mm (1.0")	25 mm (1.0")	25 mm (1.0")
	Boring bar shank diameter	ø40 mm (ø1.5")	ø40 mm (ø1.5")	ø40 mm (ø1.5")	ø40 mm (ø1.5")
	Turret indexing time	0.2 sec / 1 step	0.2 sec / 1 step	0.2 sec / 1 step	0.2 sec / 1 step
Milling spindle	Max. rotary milling spindle speed	-	4500 rpm	-	4500 rpm
	Milling spindle capability	-	Drill:ø20 mm (ø0.75"), End mill:ø20 mm (ø0.75"), Tap:M12 × 2 (1/2. UNC)	-	Drill:ø20 mm (ø0.75"), End mill:ø20 mm (ø0.75"), Tap:M12×2 (1/2. UNC)
Feedrate	Rapid traverse rate : X-axis	110000 mm/min	11000 mm/min	60000 mm/min	60000 mm/min
	Rapid traverse rate: Z-axis	60000 mm/min	60000 mm/min	45000 mm/min	45000 mm/min
	Rapid traverse rate: C-axis	-	400 rpm	-	400 rpm
Motors	Spindle motor (30min. / Cont.rating)	26 kW (35 HP) / 22 kW (29 HP)	26 kW (35 HP) / 22 kW (29 HP)	26 kW (35 HP) / 22 kW (29 HP)	26 kW (35 HP) / 22 kW (29 HP)
	Rotary tool spindle motor (10min.rating)	-	5.5 kW (7.5 HP)	-	5.5 kW (7.5 HP)
	Coolant pump motor	0.25 kW	0.25 kW	0.25 kW	0.25 kW
Power requirement		42.9 kVA / 48.7 kVA	43.0 kVA / 48.7 kVA	44.1 kVA / 49.8 kVA	44.4 kVA / 50.1 kVA
	Air supply	0.5 MPa (73PSI), 200 L/min (7.06 ft³/min)	0.5 MPa (73 PSI), 200 L/min (7.06 ft³/min)	0.5 MPa (73 PSI), 200 L/min (7.06 ft³/min)	0.5 MPa (73 PSI), 200 L/min (7.06 ft³/min)
Coolant	Tank capacity	290 L (76.6 gal)	290 L (76.6 gal)	350 L (92.5 gal)	350 L (92.5 gal)
Machine size	Machine height	2807 mm (110.51")	2807 mm (110.51")	2807 mm (110.51")	2807 mm (110.51")
	Floor space requirement	3200 mm × 1235 mm (125.98" × 48.62")	3200 mm × 1235 mm (125.98" × 48.62")	3200 mm × 1285 mm (125.98" × 50.59")	3200 mm × 1285 mm (125.98" × 50.59")
	Weight	7000 kg (15432 lbs)	7000 kg (15432 lbs)	8000 kg (17637 lbs)	9000 kg (19841 lbs)

*1 Maximum machining diameter and maximum machining length vary according to the conditions of workpiece conveyor and workpiece dimensions.
*2 Spindle speed depends on chuck specifications.

MAZATROL MATRIX NEXUS 2 specifications

	MAZATROL	EIA / ISO
Number of controlled axes	Max.4 axes (simultaneous 4 axes)	
Least input increment	0.0001 mm, 0.00001 inch, 0.0001°	
Max. programmable value	±99999.9999 mm, ±9999.99999 inch, ±99999.9999°	
High precision control	Smooth high gain control, Scale feedback, Absolute position detection	
Interpolation	Positioning (Independent axes control, Linear interpolation), Linear interpolation,*Synchronized milling spindle tapping	
	-	*Polar coordinate interpolation, *Cylindrical coordinate interpolation, Thread cutting (uni-pitch, variable pitch), *Polygon cutting
Feed function	Rapid traverse, Cutting feed (per revolution, per minute), Feedrate clamp, Override (Rapid traverse, Cutting feed, External override, 2nd override, Override cancel) Automatic acceleration/deceleration feedrate (Linear acc./dec., time constant), Constant tangential speed control, Dry run	
Program registration	256, *512, *960 2 MB, *8 MB (user area 7.7 MB)	
Display	12 inch color SXGA TFT	
NC display languages	English, German, French, Italian, Spanish, Dutch, Norwegian, Swedish Finnish, Danish, Portuguese, Turkish, Polish, Czech, Romanian, Bulgarian Chinese (simplified), Chinese (traditional), Korean, Slovakian, Russian, Hungarian, Japanese, (simplified language switching)	
Windows languages	English, Chinese (simplified / traditional), Korean, Russian, Japanese (Selection)	
Data Input / Output	USB, *CF card	
Protocol	*MAZAK protocol, Network protocol	
Interface	Card BUS, Ethernet (1000 BASE-TX),*Profibus-DP,*EtherNet/IP,*SPRINT I/F,*CC-Link	
Spindle function	S code output (8-digit binary output, Analog output, Actual revolution speed binary output), Constant surface speed, Spindle revolution control (RPM clamp, high speed indication / speed change detection, Rotary speed display), Spindle override (0 - 150 %), Multiple orient	
Tool function	T code output (8-digit binary data, next tool, used tool),Tool life monitoring (Number of workpieces, time and wear compensation) Spare tool exchange, Tool management (Group number., Pocket number)	
Tool compensation	Tool tip R compensation, Tool wear compensation, Tool length compensation, Tool diameter compensation	
Number of registered tools	Max.4000 (Depends on machine specifications)	
Tool offset pairs	4000 (Depends on machine specifications)	
Miscellaneous functions	M code output (M 3-digit), simultaneous output of four 3-digit M codes, Second miscellaneous functions (B 3-digit output) High speed MSTB interface	
Coordinate system control	MAZATROL coordinate system	Machine coordinate system (Machine coordinate system, Machine coordinate system shift,zero point shift)Work coordinate system (Work coordinate system, Work coordinate system shift)
Manual operation	Rapid traverse, Cutting feed, Handle feed, Zero-point return, Manual control (machine lock, gear shift, barrier cancel), Manual spindle control (spindle start, stop, reverse, jogging)	
Automatic operation	Memory operation, MDI operation, Cycle start, NC reset, Single block, Feed hold, Single process, Optional block skip,Optional stop, Machine lock, Barrier cancel, Feed override,Spindle control, Dry run, Manual handle control, Tool path storage (TPS)	
	-	Hard disk memory operation, *Ethernet operation, *IC memory card operation
Background function	During automatic operation (Programming, Data input / output, Tool path check)	
Machine compensation	Backlash compensation, Pitch error compensation, Rotational axis pitch error compensation, Thermal distortion compensation	
Protection function	Emergency stop, Over travel, Barrier (stored stroke limit, chuck barrier, tool barrier), Interlock (cutting start, axis interlock), Alarm, VIRTUAL MACHINING, MAZAK VOICE ADVISER, INTELLIGENT SAFETY SHIELD	
Diagnosis functions	Alarm, Monitor (Memory, Servo, Spindle, Ladder), PLC, Alarm menu	
Measuring function	Coordinates measurement, Tool tip measurement, Automatic measurement (Tool set measurement, External measurement), Measurement data printout	

* option

Standard / Optional Equipment

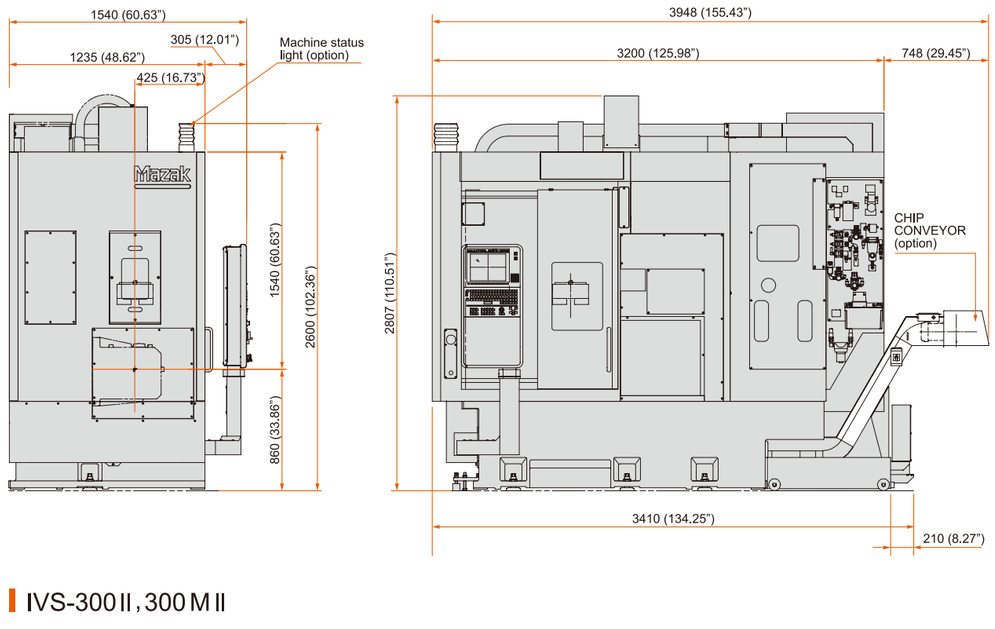
●:Standard ○:Optional

		IVS-200 II	IVS-200M II	IVS-300 II	IVS-300M II
Machine	Work right	●	●	●	●
	8" through-hole chuck B-208	○	○	–	–
	10" through-hole chuck B-210	–	–	○	○
	12" through-hole chuck B-212	–	–	○	○
	Spindle orient	○	–	○	–
	Spindle 0.001°indexing (without C-axis contouring)	–	●	–	●
	6000 rpm Rotary Tool Spindle	–	○	–	○
	Tool plate	○	○	–	–
Factory Automation Equipment	Automatic Tool Measurement – Tool Eye	○	○	○	○
	Automatic Chuck Jaw Open/Close	●	●	●	●
	Chuck Open/Close Confirmation	●	●	●	●
	Spindle Air Blast	○	○	○	○
	Double Foot-Pedal Switch	○	○	○	○
	Automatic Power Breaker	○	○	○	○
	Calendar-Type Automatic Power ON/OFF and Warm-up Operation	○	○	○	○
	Machining Completion buzzer	○	○	○	○
	Three-Color Machine Status Light	○	○	○	○
	Single-Color Status Light	○	○	○	○
High Accuracy Machining	X-Axis Scale Feedback System	●	●	●	●
	Z-Axis Scale Feedback System	○	○	○	○
	Coolant Temperature Control System	○	○	○	○
Safety Equipment	Hydraulic Pressure Interlock	●	●	●	●
	Front Door Interlock	●	●	●	●
	Ground Leakage Circuit Breaker	○	○	○	○
	Overload Detector	○	○	○	○
	Automatic fire extinguishing equipment	○	○	○	○
Coolant / Chip Disposal	Coolant system (250 W)	●	●	●	●
	Coolant Through Spindle System	○	○	○	○
	Shower Coolant	○	○	○	○
	Powerful Coolant (520 W)	○	○	○	○
	Powerful Coolant (1.1 kW (1.5 HP))	○	○	○	○
	Magnum Coolant (7.0 MPa (1015 PSI))	○	○	○	○
	Handheld coolant nozzle	○	○	○	○
	Mist collector	○	○	○	○
	Turret Air Blast	○	○	○	○
	Chip Conveyor (Hinged-Type)	○	○	○	○
	Chip Conveyor (CONSEP)	○	○	○	○
	Chip Bucket (Fixed type)	○	○	○	○
	Chip Bucket (Rotary type)	○	○	○	○
CNC	Absolute Position Detection	●	●	●	●
	External Measurement Interface	○	○	○	○
	Work Conveyor Interface	●	●	●	●
	Synchronized milling spindle tapping	○	○	○	○
	Re-threading function	○	○	○	○
	FANUC CNC	○	○	○	○

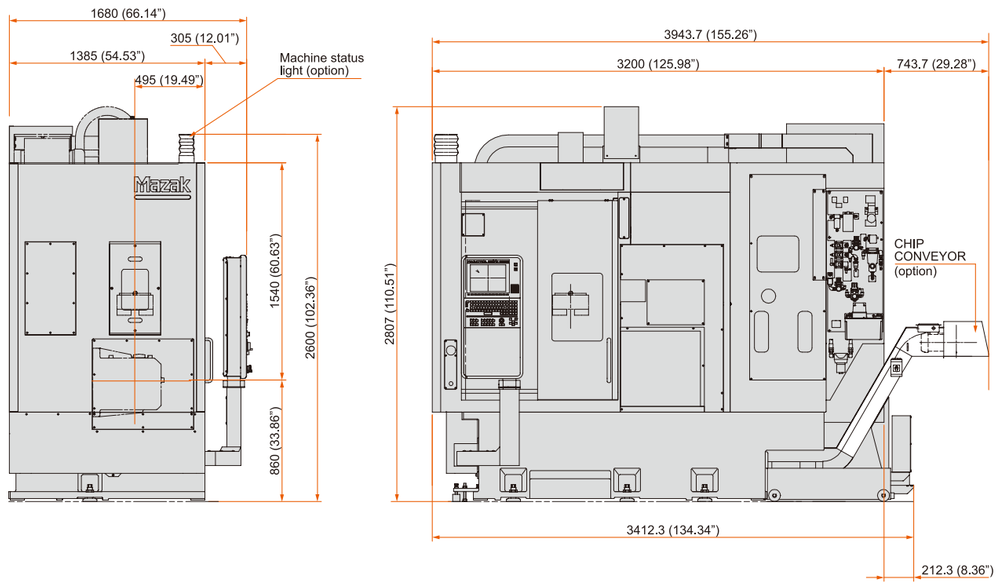
Machine Dimensions

Unit :mm (inch)

IVS-200 II , 200 M II



IVS-300 II , 300 M II



Mazak

IVS-II SERIES

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IVS-200II,300II SERIES 14.06.00 99J184514E0

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