



Productivity Inc®

Makino V22 – PRE-INSTALLATION CHECKLIST – Rev 08/2008

Installation of your new Makino V22 can be smooth and rapid if preparations are made prior to the delivery of your machine. Please use the following checklist as an aid to your pre-installation procedures.

- Power Requirements for your machine: 460v/3 phase/15kVa (See attached Installation Req)
 Proper voltage per machine specifications should be ready at machine site. **Do NOT power up the machine.**
NOTE: The machine is pre-wired to 460v, however, it is a 460-230v multi-tap transformer and the machine actually runs on 208v. Any questions, please contact Productivity Service Department at 763-476-4092.
- Customer should furnish/have available the proper supply/ types of lubricants required for machine operation.

ITEM	CAPACITY	FLUID TYPE
Coolant/Cutting Fluid	100 litres	Water Soluble, Synthetic
Spindle Oil*	29 litres	Makino Spindle Oil (provided)
Hydraulic Fluid*	1 litre	Shell Tellus 32 (provided)
Oil Tank Lube*	7 litres	Tonna Oil S68
Grease*	3-4 cc/grease nipple	White Lithium Grease (provided)

*Your machine will arrive with these fluids in the machine. You do not need to purchase immediately. You will need to have Coolant on hand at the time of installation.

- Air lines should be routed to the machine location and operational for proper air pressure.

72-116 psi and 21.2 cfm of DRY air supplied through a minimum supply pipe of ¾" dia with no reducers or nozzles.
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- Machine location should be planned to allow enough room for access panels to be opened and serviced with ease. ****A minimum of 36" clearance around the machine is required for access and maintenance.**

➤ FOUNDATION REQUIREMENTS:

Isolated concrete pad: 2220 x 2700 mm, 300 mm thick, Steel bar reinforced (see attachment)
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- Weight requirements should be checked to insure that the surface below the machine will have sufficient strength for support and stability. The machine must be set on a solid, sound and stable, steel bar-reinforced concrete slab poured directly on the grade. In general, the 6" concrete floor on industrial buildings is suitable for machine placement.
- **The Makino V22 is best moved using a Fork Lift. Notify Hope if you plan to use a crane.** Upon arrival of your machine, uncrate and immediately check for visible damage.

SHIPPING WEIGHT	SHIPPING DIMENSIONS OF MACHINE
9,744# (machine)	94" L x 79" W x 96" H (machine crated)
606# (Temp Control)	34" L x 41" W x 62" H (Crated)
511# (Accessory)	67" L x 43" W x 27" H (crated)
450# (Accessory)	46" L x 33" W x 46" H (crated)
750# (transformer)	24" L x 30" W x 36" H (skid to ship separately from Makino)
Operational/Floor Space: 59.1" L x 78.7" W x 88.6" H** 9,744# (mach net 9,260#)	

- **Remove as much preservative from the machine as possible without having to power up (tables – slides, pulleys, etc.). We recommend kerosene to clean. Apply oil when finished to prevent rust.**

Any questions regarding machine installation should be directed to our service department for clarification. We hope this checklist will aid in a rapid installation of your new machine.

PLEASE FORWARD THIS TO THE APPROPRIATE PERSON. THANK YOU.

1.2 Carry-in and Installation Requirements

This section lists carry-in and installation requirements.

- 1) Machine outside dimensions and layout
Refer to Figures 2-1 and 2-2.
- 2) Installation requirements
Refer to Table 2-2.
- 3) Power sources
Refer to Table 2-3.
- 4) Requirements for recommended foundation
Refer to Table 2-4.

2. Carry-in and Installation Requirements

(1) Machine outside dimensions and layout

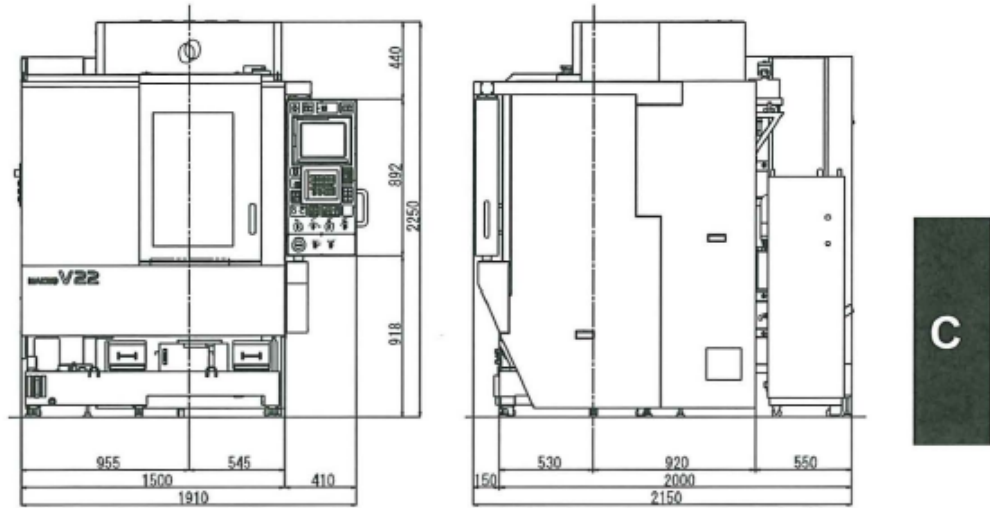


FIGURE 2-1 SIDE VIEW OF MACHINE

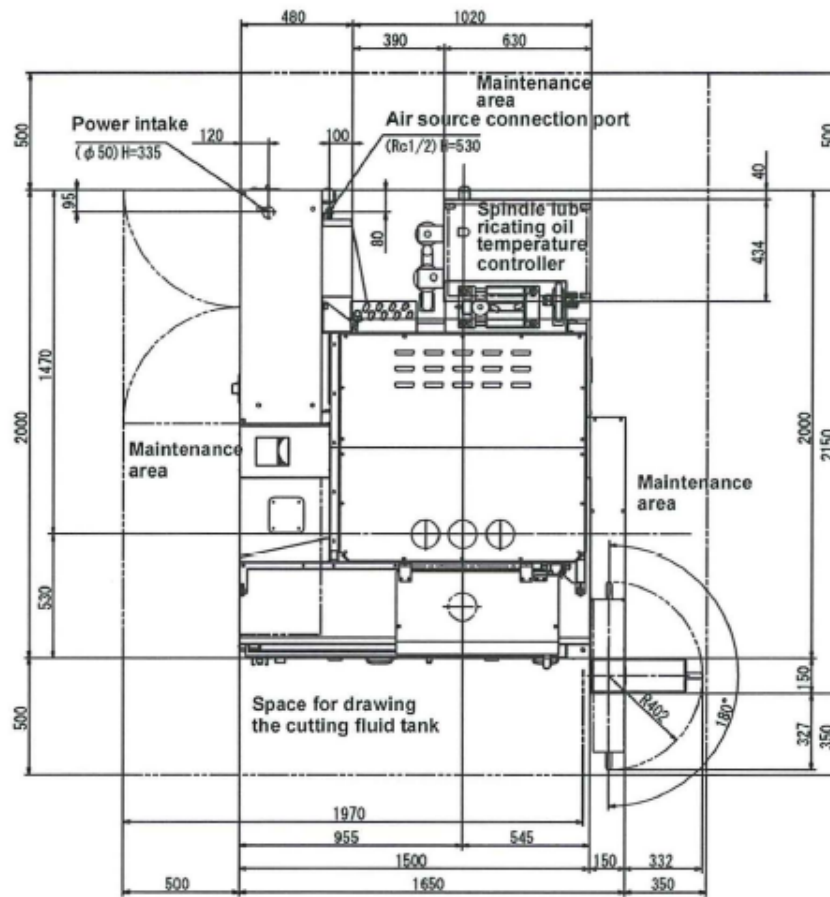


FIGURE 2-2 TOP VIEW OF MACHINE

(2) Machine dimensions at transportation

TABLE 2-1 MACHINE DIMENSIONS AT TRANSPORTATION

Item	Height	Width	Depth
Machine Body (ATC: 15 tools)	2250	1500	2150
Machine Body (ATC: 30 tools)	2250	1500	2150

(3) Installation requirements

TABLE 2-2 INSTALLATION LOCATION AND ENVIRONMENTAL CONDITION

Item	Description	Reference
Room temperature	10 to 40°C (Optimum temperature 20 ±1°C)	—
Ambient humidity	RH 35 to 70% (No condensation)	—
Temperature change	1°C or less in 30 min	—
Operating environment	Sufficient illumination	—
	No direct sunlight	—
	No dust	—
	Allocation of space for storing materials, machined products, and tools	—
	Allocation of space large enough for maintenance	—
	Allocation of space large enough to carry out work while the machine doors are opened	—
Power source	Availability of necessary power sources	Table 2-3
Foundation	Level and solid enough to support the machine	Table 2-4

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(4) Power source requirements

TABLE 2-3 POWER SOURCE REQUIREMENTS

Item	Specifications
Power source	200/220 VAC ±10% 50/60 Hz ±2%
Total of maximum power consumed in units	15 kVA
Feed breaker	50 A
Power cable	14 mm ² or more (insulated 600-V wire compliant with JIS C3307), or 8 mm ² or more (SP39-10021J: 600-V flame-retardant polyflex wire provided by Hitachi Cable Ltd.)

Item	Specifications
Air source	Pressure: 0.5 MPa or more Consumption: 600 liters/min (atmospheric pressure) or more Dew-point temperature: -20°C or less * Only clean air must be supplied. Equivalent to Class 2.5.2 specified by JIS B 8392-1 (ISO 8573-1). The number of maximum particles $0.001 < x \leq 0.005$ mm per 1 m^3 is less than 10 pcs. The number of maximum particles $0.0005 < x \leq 0.001$ mm per 1 m^3 is less than 1000 pcs. The number of maximum particles $0.0001 < x \leq 0.0005$ mm per 1 m^3 is less than 100,000 pcs. Pressure dew-point below +7°C (value at absolute pressure 0.8 MPa) Oil total concentration 0.1 mg/m^3 or less
Air dryer	Required unless it is provided separately

(5) Requirements for recommended foundation

TABLE 2-4 REQUIREMENTS FOR RECOMMENDED FOUNDATION

Item	Specifications
Floor loading capacity	3 ton/m ²
Thickness of foundation	300 mm
Levelness of floor	3 mm/m
The foundation must be 300 mm larger than the machine base.	