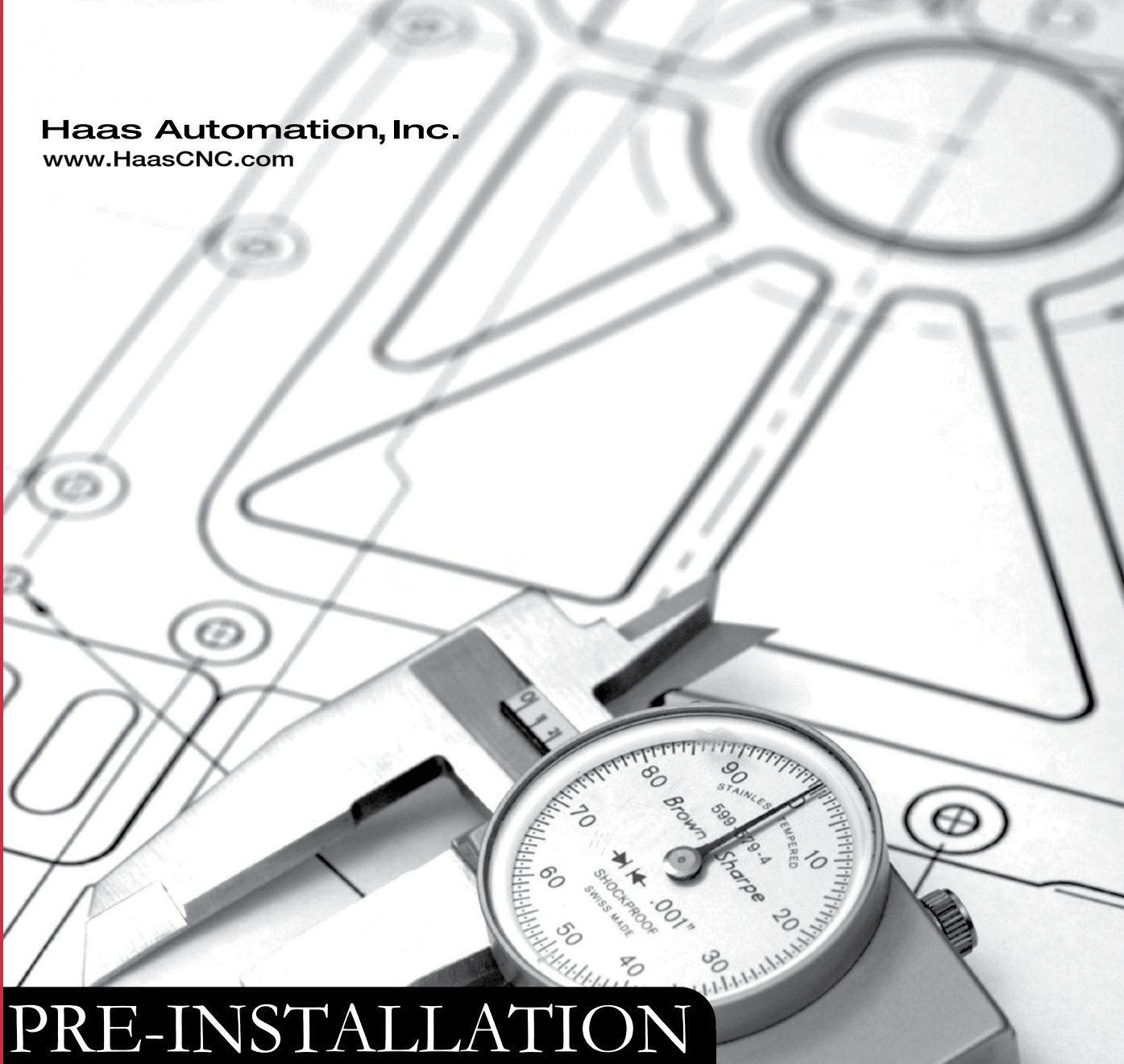


Haas Automation, Inc.
www.HaasCNC.com



PRE-INSTALLATION INFORMATION

AFFIX DEALER INFORMATION LABEL HERE



ALL CNC

Pre-Installation Information

Overview

The purpose of this document is to provide complete information to both Haas Factory Outlets (HFO) and customers necessary to ensure a smooth and efficient machine installation. Contact your Haas representative if you have questions beyond the scope of this guide.

Contents

Pre-Installation Preparation	3
Haas Factory Outlet (HFO) Responsibility.....	3
Customer Responsibility	3
Placement and Preparation	4
Foundation Requirements	4
Anchoring Overview	4
Machine Placement	4
Options and Accessories Placement	5
Machine Electrical Specifications	6
Electrical Notes	9
Additional Power Requirement (TSC/HPC 1000) .	9
Recommended Service and Wire Size	9
Compressed Air Requirements	10
Air Pressure	10
Air Flow (minimum requirements).....	10
Air Requirements Notes	10



Pre-Installation Information

Pre-Installation Preparation

Haas Factory Outlet (HFO) Responsibility

- Ensure that the customer is provided with the correct foundation, electrical and air requirements (this document).
- Provide the customer with the date the machine will be shipped from the factory and the expected arrival date at their facility.
- Make sure that the customer has access to information on coolant, lubrication (ES1008), anchoring (ES0095), and certifications as required.
- Schedule an HFO service technician to be on site for the duration of the installation.

Customer Responsibility

- Before your new Haas machine arrives, you should review the machine dimensions and site requirements, and prepare your shop for the machine delivery.
- Ensure that a proper machine foundation is present and fully cured by the scheduled time of installation (see “Foundation Requirements” section for details).
- Ensure that all electrical and air requirements are met.
- Schedule the installation date and time with the riggers and notify your HFO of the schedule.
- If, after reading the guide, you have any questions or you are unsure of what is required in any way please contact your HFO for clarification.



Pre-Installation Information

Placement and Preparation

Foundation Requirements

Machines must be set on a solid, sound and stable, steel bar-reinforced concrete slab poured directly on the grade. In general, the 6" (150 mm) concrete floor of industrial buildings is suitable for machine placement.

- Concrete shall be 3,500 psi (240 bar) at 28 day strength. Concrete aggregate shall be 1" (25 mm) mix.
- Steel reinforcing shall be 40 ksi (2700 bar) tensile strength.
- The excavation shall be cut neat against undisturbed soil. Any loose material in the excavation shall be removed so that the concrete bears on the undisturbed natural soil. This will help to prevent settling.
- Consult an expert to ensure compliance with local building codes and regulations.

Exceptions to this foundation requirement are the EC-1600 series and VS/HS series machines. For optimal performance these machines should be placed on a 12" (300 mm) foundation. The same material requirements listed above apply.

Anchoring Overview

Anchoring is not required for proper performance of Haas machines, but is recommended for optimal machine performance. The Haas machine anchor kits are specifically designed for this purpose. They are not intended to satisfy building, seismic or stationary equipment installation. Such requirements should be provided by an expert.

It is strongly recommended that the EC-1600 series and the VS/HS series machines are anchored with the supplied anchor kits.

Refer to ES0095 for anchoring instructions and the Haas website for the anchoring footprint of your specific model. Please contact your Haas Factory Outlet to obtain the correct anchoring kit (if not included with the machine).

Machine Placement

Haas machines may be moved into position by either forklift or roller dollies and, for some machines, an overhead lifting crane. Refer to ES0246 for details on lifting a Haas machine. Please refer to the Haas website (www.haascnc.com) for specific machine weights. These can be found in the "Machine Dimensions" link on the page for each model.

For optimal machine performance, the following guidelines should be followed when determining the final machine placement location:

- Place the machine onto one continuous concrete slab.
- Keep the leveling feet of the machine at least 12" (300 mm) from the edge of the concrete slab.
- Pay attention to potential vibration influence from nearby machinery or other external sources.
- Do not place the machine on unstable surfaces such as asphalt, brick, wood or dirt.
- Check with your building engineer if you are placing the machine on floors other than the ground level.
- If anchoring the machine, the anchor holes will need to be pre-drilled.

Access to the electrical control cabinet must be available at all times. A minimum space of 3' (1 m) is required between the control cabinet and any obstacle. It is necessary to have this unobstructed area surrounding the machine for the safety and ease of daily operations.

Final leveling will be completed by an HFO service technician at the time of installation.



Pre-Installation Information

Options and Accessories Placement

Some Haas machines can be equipped with the following options and accessories. When determining the placement of a machine with these items, the following points need to be considered:

- Chip Conveyor - Requires room in which to install the conveyor and to remove it for periodic maintenance.
- Servo Bar 300 – Requires room on the spindle side of the machine.
- VF-APCs – Requires space to the right of the machine for the APC load stations.

For all the items listed above, refer to the Haas website (www.haascnc.com). These can be found in the “Machine Dimensions” link on the page for each model.



Pre-Installation Information

Machine Electrical Specifications						
	Machine Model	Spindle	HP (kW)	Continuous kVA (Peak)	Voltage Range/ Fixed Tap	Machine Full Load Amps 3 Phase/(1 Phase)
Vertical Machining Centers	TM-1 to TM-3 TM-1P to TM-3P	6,000 rpm Belt Drive	7.5 (5,6)	9(14)	195-250	25/(40)
					366-425	13*
	Mini Mill Mini Mill 2	6,000 rpm Belt Drive	7.5 (5,6)	9(14)	195-250	25/(40)
					366-425	13/(20)
	Mini Mill 2 w/SMTC24	6,000 rpm Belt Drive	7.5 (5,6)	9(14)	195-250	25*
					366-425	20*
	Super Mini Mill Super Mini Mill 2	10,000 rpm Belt Drive	15 (11,2)	14(20)	195-260	40
					354-488	20
	40 Taper VF-1 to VF-12 (including SS and TR) UMC VM	8,100 rpm Inline Drive 10,000 rpm Inline Drive 12,000 rpm Inline Drive	30 (22,4)	28(40)	195-260	80
					354-488	40
8,100 rpm Gearbox 10,000 rpm Gearbox 15,000 rpm Belt Drive 30,000 rpm Belt Drive		20 (14,9)	14(20)	195-260	40	
				354-488	20	
50 Taper VF-3YT/50 to VF-12/50 VS	7,500 rpm Gearbox 10,000 rpm Gearbox	30 (22,4)	28(40)	195-260	80	
				354-488	40	
DT-1	12,000 rpm Inline Drive	15 (11,2)	28(40)	195-260	80	
				354-488	40	
Horizontal Machining Centers	EC-300 EC-400 incl. Pallet Pool EC-500	8,000 rpm Inline Drive	20 (14,9)	14(20)	195-260	40
					354-488	20
	12,000 rpm Inline Drive	30 (22,4)	28(40)	195-260	80	
				354-488	40	
	EC-1600 EC-1600ZYT	6,000 rpm Gearbox 10,000 rpm Gearbox	30 (22,4)	28(40)	195-260	80
					354-488	40
	HS Series	5,000 rpm Gearbox	30 (22,4)	28(40)	195-260	80
					354-488	40
Office Machines	OM-1A OM-2A	30,000 rpm Belt Drive	5 (3,7)	4(7)	195-254	(20)
	OL-1	6,000 rpm Belt Drive	5 (3,7)	4(7)	195-254	(20)

* No single phase operation available.



Pre-Installation Information

Machine Electrical Specifications						
	Machine Model	Spindle	HP (kW)	Continuous kVA (Peak)	Voltage Range/ Fixed Tap	Machine Full Load Amps 3 Phase/ (1 Phase)
Toolroom Lathes	TL-1	2,000 rpm Belt Drive 3,500 rpm Belt Drive	7.5 (5,6)	9(14)	195-260	25/(40)
					366-425	13*
	TL-2	2,000 rpm Belt Drive 3,500 rpm Belt Drive	12 (8,9)	9(14)	195-260	25/(40)
					366-425	13*
	TL-3	1,800 rpm Belt Drive	18 (13,4)	14(20)	195-260	40
					354-488	20
			30 (22,4)	28(40)	195-260	80
354-488					40	
TL-3B	650 rpm Gearbox	30 (22,4)	28(40)	195-260	80	
Turning Centers	ST-10 ST-10Y	6,000 rpm Belt Drive	15 (11,2)	14(20)	195-260	40
					354-488	20
	ST-20 ST-20Y	4,000 rpm Belt Drive	20 (14,9)	14(20)	195-260	40
					354-488	20
	ST-20/20T w/Big Bore, ST-20SS/SSY,	3,400 rpm Belt Drive 5,000 rpm Belt Drive	30 (22,4)	28(40)	195-260	80
					354-488	40
	ST-30SS/SSY ST-30/Y/ w/ GBX, DS-30/SS/Y/SSY	4,500 rpm Belt Drive 3,400 rpm Gearbox 4,000 rpm Belt Drive 4,800 rpm Belt Drive	30 (22,4)	28(40)	195-260	80
					354-488	40
	ST-30 w/Big Bore ST-40, ST-40L	2,400 rpm Gearbox 1,400 rpm Gearbox	40 (30)	28(40)	195-260	80
					354-488	40
ST-40, ST-40L w/XP	2,400 rpm Gearbox 1,400 rpm Gearbox	55 (41)	37(68)	195-260	120	
				354-488	60	
Routers	GR-510 GR-712	10,000 rpm Belt Drive	15 (11,2)	14(20)	195-260	40
					354-488	20
	5,000 rpm Belt Drive	20 (14,9)	14(20)	195-260	40	
				354-488	20	

*No single phase operation available.



Pre-Installation Information

Electrical Notes

- The preceding requirements are guidelines. The electrical power supplied to the machine must comply with all local codes and ordinances. A licensed electrician must make the connection from the main breaker to the machine.
- Most machines require three-phase power, which may be either wye or delta type. The power source must be grounded: leg or center leg for delta; neutral for wye.
- A separate earth ground is required for three-phase power. Conduit type ground will not be sufficient.
- All phases must be balanced and voltages must be within $\pm 10\%$.
- Some machines alternately allow single-phase power to be utilized (see previous pages). In these instances, the supplied power must be 240 VAC $\pm 6\%$.
- A phase converter should only be used if no other method will work. While the machine may function properly, there is the possibility that the phase converter may keep it from achieving advertised power.
- A factory installed high voltage (380-480 VAC) internal transformer is available on most models. The exception is for the XP spindle option on ST-40s, for which there is an external, floor mounted, isolated transformer only for the US and Canada. For all other regions an external isolated transformer must be sourced locally.
- Refer to the Haas website (www.haascnc.com) for the location of the electrical input to the control cabinet. This is found in the "Machine Dimensions" link on the page for each model.

Additional Power Requirement (TSC/HPC 1000)

- The optional 1000 psi (69 bar) through spindle/high-pressure coolant system requires separate, customer supplied 3-phase power (230V @ 20A or 480V @ 10A).

Recommended Service and Wire Size

- Discuss your specific power requirements with your HFO representative.
- The electrical service provided to the machine should be based on the machine's full load amps rating from the previous chart. The next-size-up industrial grade breaker should be used based on the local codes and regulations.
- The wire size recommendations below are based on wire lengths up to 100 feet (30 meters). Please consult local electrical codes regarding lengths greater than 100 feet (30 meters).
- The recommended wire size is based on the machine's full load amps rating. Refer to the chart below.

Machine Full Load Amps	Recommended Wire AWG
13 Amp to 25 Amp	#10
40 Amp	#8
80 Amp	#4
100 Amp	#2
120 Amp	#1/0

WARNING!

A separate earth ground wire of the same conductor size as the input power must be connected to the chassis of the machine. This ground wire is required for operator safety and proper operation. This ground must be supplied from the main plant ground. A local cold-water pipe or ground rod cannot be used to supply this ground.

The current requirements shown reflect the circuit-breaker size internal to the machine. This breaker has an extremely slow trip-time. It may be necessary to increase the external service breaker size by 20-25% for proper operation. See electrical requirements in this document



Pre-Installation Information

Compressed Air Requirements

Air Pressure

Haas requires a minimum air pressure of 100 psi (6,9 bar) be supplied to the machine. Refer to the Haas website (www.haascnc.com) for the location of the air inlet. This is found in the "Machine Dimensions" link on the page for each model.

The required input air line size is 3/8" ID (10 mm). The recommended method for attaching the air hose is directly to the barb fitting on the back of the machine, secured with a hose clamp. If a quick coupler is desired, use a 3/8" (10 mm) coupler for the 3/8" (10 mm) air hose.

NOTE: Auxiliary connections must be made on the input (unregulated) side of the air filter/regulator or air shutoff valve.

Air Flow (minimum requirements)

Machine Series (Includes all of the models in each series)	Minimum Requirement	Inlet Type
TM	4 scfm (113 L/min)	Factory Installed Air Regulator
Mini Mills	4 scfm (113 L/min)	Factory Installed Air Regulator
VF-1 to 5	4 scfm (113 L/min)	Direct air inlet - no regulator*
VF-6 to 12	4 scfm (113 L/min)	Factory Installed Air Regulator
VM3	4 scfm (113 L/min)	Direct air inlet - no regulator*
VM6	4 scfm (113 L/min)	Factory Installed Air Regulator
VS	4 scfm (113 L/min)	Factory Installed Air Regulator
UMC-750	4 scfm (113 L/min)	Direct air inlet - no regulator*
DT	4 scfm (113 L/min)	Factory Installed Air Regulator
GR	4 scfm (113 L/min)	Direct air inlet - no regulator*
EC	9 scfm (255 L/min)	Factory Installed Air Regulator
HS	9 scfm (255 L/min)	Factory Installed Air Regulator
OL, OM	1 scfm (28 L/min)	Factory Installed Air Regulator
TL	N/A	N/A
ST-10/40	4 scfm (113 L/min)	Factory Installed Air Regulator
ST-20/30/DS30	4 scfm (113 L/min)	Direct air inlet - no regulator*

**If incoming air pressure is greater than 125 psi (8,6 bar), a customer-supplied air pressure regulator may be required.*

Air Requirements Notes

- The air requirements should be supplied by a minimum 2 hp (1,5 kW) compressor with at least a 20-gallon (75 L) tank
- For multiple machine installations, there is a 2 hp (1,5 kW) requirement per machine (i.e., an installation of 5 machines requires a 10 hp (7,5 kW) compressor)
- The Auto Air Gun option consumes an additional 6 scfm (170 L/min). If the Auto Air Gun option is used during pneumatic operations air flow will need to be increased as outlined in the table above in order to operate the machine properly