



Pre-Installation Information



Pre-Installation Information

Use this table to make sure the location is prepared for the machine installation. Tell your Haas Factory Outlet (HFO) when the location is prepared.

Installation Checklist

Specification	Task	Completed?	Date Completed
Foundation	The foundation meets the specifications.	Yes/No	
Anchor (Optional)	You have the anchors	Yes/No	
	The cores are drilled.	Yes/No	
	The anchors are installed.	Yes/No	
Machine / Optional Components Location	You downloaded the Machine Layout Document.	Yes/No	
	The machine location is prepared.	Yes/No	
	The building entrance is large enough for the machine.	Yes/No	
	You have the equipment to lift or move the machine.	Yes/No	
Electrical	The input voltage supply is correct.	Yes/No	
	The correct wire size is installed.	Yes/No	
	The correct supply circuit-breaker is installed.	Yes/No	
Compressed Air	The air pressure supply and pressure are correct.	Yes/No	
	The power output of the compressor is correct.	Yes/No	
	The compressor duty rating and capacity are correct.	Yes/No	
Coolant	The coolant type is correct.	Yes/No	
	The coolant concentration is correct.	Yes/No	

Pre-Installation Information - Introduction

Your machine installation is easier and faster if the installation site is correctly prepared. Gather this information:

- Get the machine dimensions from haascnc.com/start. Select the machine model to find this information.
- Make sure that your floor is correct for the machine. Refer to the “Foundation Requirements” in this document for more information. If you must pour a new foundation, make sure that you have sufficient time for the concrete to reach 28-day strength.
- Clear the installation location. Make a clear path to bring the machine to the location.

- Make sure that you have the correct electrical wiring and air conduit to the machine location.
- Schedule the installation date and time. Tell your HFO so that they can send a technician.
- If you have questions about this procedure, contact your HFO for more information.

Placement and Preparation

Foundation

You must put your machine on a solid and stable concrete foundation. The standard 6" (150 mm) concrete floor in industrial buildings is usually sufficient. Refer to these specifications:

- The concrete must be poured directly on the grade.
- The concrete must be 3,500 psi (240 bar) at 28-day strength.
- The concrete aggregate must be 1" (25 mm) mix.
- The steel reinforcement must be 40 ksi (2700 bar) tensile strength.
- The excavation must be cut near flat ground. Remove any loose material in the excavation. This prevents settling.
- Refer to an authority to get the correct building codes and regulations.



Note: The EC-1600 must be on a 12" (300 mm) foundation.

Anchor (Optional)

Anchoring is not necessary for correct performance.

Machine anchor kits are available from your HFO. These kits do not meet building, seismic, or stationary equipment installation specifications. Contact a specialist if you need to meet these specifications.

Go to diy.haascnc.com/start for the Anchoring Instructions. Select the machine model to find this information.

Go to diy.haascnc.com/start for the anchor footprint of your model. Select the machine model to find this information.

Machine Placement

You can use a forklift, roller dolly, or an overhead crane to move your machine. Be sure to use a lifting device with sufficient capacity.

Go to diy.haascnc.com/start for lifting instructions. Select the machine model to find this information.

Go to diy.haascnc.com/start for machine dimensions and weights. Select the machine model to find this information.

Refer to this list when you plan your machine placement:

- Put the machine onto a continuous concrete slab.
- The leveling feet of the machine must be 12" (300 mm) from the edge of the concrete slab.
- Be sure to prevent vibration from other machines or other sources.
- Do not put the machine on inappropriate surfaces. This includes asphalt, brick, wood or dirt.
- If you plan to put the machine on a floor other than the ground level, consult with a structural expert.

You must have access to the control cabinet for safety and regular operations. Make sure you have a space of 3' (1 m) between the control cabinet and any structures.

Your HFO service technician completes the final leveling procedure.

Optional Component Location

When you move your machine into the correct position, you must have sufficient space for these optional components:

- Chip Conveyor - You must have space to remove and install the conveyor for maintenance.
- Servo Bar 300 - You must have space on the spindle side of the machine.
- External Transformers.

Go to haascnc.com/start for the Chip Conveyor and Servo Bar 300 dimensions. Select the machine model to find this information.

Electrical

Electrical Requirements For Haas Machines

General	<ul style="list-style-type: none"> • The electrical power supplied must meet the applicable safety codes and ordinances. • An authorized electrician must make the connection from the main breaker to the machine. • Go to haascnc.com/start for the location of the electrical input to the control cabinet of the machine model. Select the machine model to find this information.
Ground	<ul style="list-style-type: none"> • A separate ground wire must be connected to the chassis of the machine. The wire must have the same conductor size as the input power. The wire must use the same conduit as the input power. • The ground wire is required for operator safety and correct operation. • Do not use a conduit as a ground wire. • The ground wire must be supplied from the main building ground. • Do not use a cold-water pipe or ground rod to supply the machine ground buss.
Three Phase Power	<ul style="list-style-type: none"> • Many machines have three-phase power. This can be Wye or Delta type. • You must ground the power source. One leg or center leg for Delta. Neutral for Wye. • All phases must be balanced. Voltages must stay constant within +/- 10%.
Single Phase Power	<ul style="list-style-type: none"> • Some machines let you use single-phase power. Refer to the "Machine Electrical Specifications" table that follows. • The supplied power must be 240 V AC and stay constant within +/- 6%.
Wire Size	<ul style="list-style-type: none"> • The wire size requirements are applicable for wire lengths up to 100 feet (30 meters). Refer to the "Machine Electrical Specifications" table that follows. • Refer to the local electrical codes for any lengths greater than 100 feet (30 meters).
Service Breaker	<ul style="list-style-type: none"> • Make sure the circuit breaker that goes to the machine meets with the Haas Specification. Refer to the "Full Load Amps" column in the "Machine Electrical Specification" table that follows. • Use the next larger-size industrial-grade breaker that meets your local codes and regulations.
Phase Converters	<ul style="list-style-type: none"> • Do not use a phase converter unless it is necessary. • Phase converters can cause the machine to operate at less than full power.
480 V Power	<ul style="list-style-type: none"> • A high voltage converter (380 - 480 V AC) internal transformer is available for most models. It is not available on ST-40/45 with the XP spindle option. • For U.S.A. and Canada only: The ST-40/45 with the XP spindle option has an external, floor-mounted isolated transformer. • For areas that do not include U.S.A. or Canada: You must get an external isolated transformer.

Machine Electrical Specification

Vertical Machining Center							
Machine Model	Spindle RPM	Spindle Drive	HP / KW	Continuous / Peak KVA	Input AC Voltage 3 Phase	Full Load Amps	Wire Size AWG
Mini Mill 2 with SMTC	6000	Belt	7.5 / 5.6	9 / 14	208	25	#10
					354-488	20	#10
Super Mini Mill/Super Mini Mill 2	10,000/15,000	Belt	15 / 11.2	14 / 20	195-260	40	#8
					354-488	20	#10
VF-1-VF12 - 40 Taper	8100/10,000	Gearbox	20 / 14.9	14 / 20	195-260	40	#8
					354-488	20	#10
VF-1-VF12 - 40 Taper	8100/10,000/15,000	Inline	30 / 22.4	28 / 40	195-260	70	#4
					354-488	35	#8
VF-2SS/3SS/4SS/6SS, VM-2/3/6	12,000	Inline	30 / 22.4	28 / 40	195-260	70	#4
					354-488	35	#8
UMC-750, UMC750SS	8100/12,000/15,000	Inline	30 / 22.4	28 / 40	195-260	70	#4
					354-488	35	#8
VF-3YT, VF5-VF12 - 50 Taper	7500-10,000	Gearbox	30 / 22.4	28 / 40	195-260	70	#4
					354-488	35	#8
DT-1, DM-1	15,000	Inline	15 / 11.2	28 / 40	195-260	70	#4
					354-488	35	#8
GR-510, GR-712	8100	Inline	15 / 11.2	14 / 20	195-260	40	#8
					354-488	20	#10
	15,000	Belt	15 / 11.2	14 / 20	195-260	40	#8
					354-488	20	#10

Turning Centers							
Machine Model	Spindle RPM	Spindle Drive	HP / KW	Continuous / Peak KVA	Input AC Voltage 3 Phase	Full Load Amps	Wire Size AWG
TL-3	1800	Belt	18 / 13.4	14 / 20	195-260	35	#8
					354-488	18	#10
			30 / 22.4	28 / 40	195-260	70	#4
					354-488	35	#8
TL-3B	650	Gearbox	30 / 22.4	28 / 40	195-260	70	#4
					354-488	35	#8
ST-10/10Y	6000	Belt	15 / 11.2	14 / 20	195-260	35	#8
					354-488	18	#10
ST-15/15Y	4000	Belt	20 / 14.9	14 / 20	195-260	40	#8
					354-488	20	#10
ST-20/20Y	4000	Belt	20 / 14.9	14 / 20	195-260	40	#8
					354-488	20	#10

Turning Centers							
Machine Model	Spindle RPM	Spindle Drive	HP / KW	Continuous / Peak KVA	Input AC Voltage 3 Phase	Full Load Amps	Wire Size AWG
ST-20SS/20SSY	5000	Belt	30 / 22.4	28 / 40	195-260	70	#4
ST-25SS ST-25SSY					354-448	35	#8
ST-25/25Y, ST-30/30Y	3400	Belt	30 / 22.4	28 / 40	195-260	70	#4
					354-488	35	#8
ST-30/30Y	3400	Gearbox	30 / 22.4	28 / 40	195-260	70	#4
					354-488	35	#8
ST-30SS ST-30SSY	4500	Belt	30 / 22.4	28 / 40	195-260	70	#4
					354-488	35	#8
ST-35/35Y	3200	Belt	40 / 30	28 / 40	195-260	70	#4
	2400	Gearbox			354-488	35	#8
DS-30/30Y	4000	Belt	30 / 22.4	28 / 40	195-260	70	#4
					354-488	35	#8
DS-30SS DS-30SSY	4800	Belt	30 / 22.4	28 / 40	195-260	70	#4
					354-488	35	#8
ST-40/40L	2400	Gearbox	40 / 30	28 / 40	195-260	70	#4
					354-488	35	#8
ST-40/40L with XP	2400	Gearbox	55 / 41	37 / 68	195-260	105	#1 / 0
					354-488	53	#4
ST-45/45L	1400	Gearbox	40 / 30	28 / 40	195-260	70	#4
					354-488	35	#8
ST-45/45L with XP	1400	Gearbox	55 / 41	37 / 68	195-260	105	#1 / 0
					354-488	53	#4
ST-50	1200	Gearbox	55 / 41	37 / 68	195-260	125	#1 / 0
					354-488	80	#4
ST-55	1000	Gearbox	55 / 41	37 / 68	195-260	105	#1 / 0
					354-488	53	#4

Horizontal Machining Centers							
Machine Model	Spindle RPM	Spindle Drive	HP / KW	Continuous / Peak KVA	Input AC Voltage 3 Phase	Full Load Amps	Wire Size AWG
EC-400	8000	Inline	20 / 14.9	14 / 20	195-260	40	#8
EC-400PP					354-488	20	#10
EC-500	12,000	Inline	30 / 22.4	28 / 40	195-260	70	#4
					354-488	35	#8
EC-1600	7500/10,000	Gearbox	30 / 22.4	28 / 40	195-260	70	#4
EC-1600ZT					354-488	35	#8


Vertical/Turning Centers 1-Phase							
Machine Model	Spindle RPM	Spindle Drive	HP / KW	Continuous / Peak KVA	Input AC Voltage 1-Phase	Full Load Amps	Wire Size AWG
OM-1A, OM-2A	30,000	Belt	5 / 3.7	4 / 7	240	20	#10
OL-1	6000	Belt	7.5 / 5.6	4 / 7	240	20	#10

Vertical/Turning Centers 3-Phase, 1-Phase								
Machine Model	Spindle RPM, Drive	HP / KW / Continuous / Peak KVA	Input AC Voltage 3-Phase	Full Load Amps	Wire Size AWG	Input AC Voltage 1-Phase	Full Load Amps	Wire Size AWG
TM-1-3, TM-1-3P	4000/6000, Belt	7.5 / 5.6 / 9 / 14	208	25	#10	240	40	#8
			354-488	13	#10	N/A	N/A	N/A
Mini Mill, Mini Mill 2	6000, Belt	7.5 / 5.6 / 9 / 14	208	25	#10	240	40	#8
			354-488	13	#10	N/A	N/A	N/A
TL-1-2	2000/3000, Belt	12 / 8.9 / 9 / 14	208	25	#10	240	40	#8
			354-488	13	#10	N/A	40	#8

Air Requirements

Air Pressure

Your machine must have an air supply at a minimum pressure and volume to operate correctly. Refer to the table that follows. Go to haascnc.com/start for the location of the air inlet. Select the machine model to find this information.

 **Note:** If you make auxiliary air connections, they must be on the input (unregulated) side of the air filter/regulator or air shutoff valve.


- Supply compressed air with a minimum of a 2 hp (1.5 kW) compressor with a minimum of 20-gallon (75 L) tank, made for continuous duty.
- Your compressor must have 2 hp (1.5 kW) for each machine (e.g., an installation of 5 machines requires a 10 hp (7.5 kW) compressor).

Machine Series (Includes all of the models)	Minimum Requirements	Inline Air Line	Coupler	Minimum Air Pressure*
OL, OM	2 scfm (57 L/min)	3/8"	3/8"	80 psi (5.5 bar)
EC-400/500 and High Air Usage Options**	9 scfm (255 L/min)	1/2"	1/2"	100 psi (6.9 bar)
All other machines	4 scfm (113 L/min)	3/8"	3/8"	80 psi (5.5 bar)

* If incoming air pressure is higher than 135 psi (8.6 bar), you need to supply an air-pressure regulator.

** The Tool Air Blast consumes 8 - 15 scfm (227 - 425 L/min) more. The Auto Air Gun, pallet changers, and other optional components each consumes 6 scfm (170 L/min) more. Machines with any of these options require a 1/2" ID (12.7 mm) input line, 1/2" Coupler, and an appropriately sized compressor.

Coolant

 **Caution:** Do not use straight or "neat" mineral oil products as coolant. These products cause damage to the tubing and seals on the machine. If you use a minimum-quantity lubrication system, use only the recommended oils.

- Go to our Machine Tool Coolant resource on diy.haascnc.com/start. The Machine Tool Coolant Video Series gives you complete information about coolant maintenance.
- The machine coolant must be one of these types:
 - soluble oil coolant
 - semi-synthetic coolant
 - synthetic coolant