

PANTHER PREP GUIDE

Getting Ready for Your CAMaster



CAMaster

High-Performance CNC Machinery

MADE IN THE USA



CAMaster PANTHER

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Looking Ahead . . . Prepping for Your Machine

Thank you again for choosing CAMaster. We value your trust in our company and look forward to building and delivering your Panther machine. In the interim, we hope you'll find the following information helpful as you prepare for the arrival of your machine.

Shipping and Receiving

You will receive an email from CAMaster when your machine is completed. The email will contain instructions for processing your remaining balance and ask you to provide/confirm ship-to location (if applicable). Once these requirements are satisfied, we will prep your machine for shipment or pick-up (as specified in your quotation) and provide a shipment or pick-up date. If shipped, we will email you a bill of lading with carrier and tracking information once processed. Also, if shipped, **please note that the freight carrier is not responsible for unloading your machine.** As such, a forklift is required for unloading. Please see **Page 10 *Handling CNC Equipment*** for more information.

CAMaster recommends a forklift with a minimum 5,000 lbs. lifting capacity and 6-8 ft fork extensions.

Basic Shop Preparation

Machine Space and Location

- Please see **Page 7** for dimensions and weight for your machine.
- If you haven't already done so, please consider doorway/entry clearances between your dock, shop and installation location.
- When determining final machine placement, CAMaster recommends a minimum of 36" clearance around the machine perimeter. Also, please consider space for material loading/unloading along with material staging. Please see **Page 11 *Final Positioning of your Router*** for more information.
- Other items to consider when selecting your installation location and layout include:
 - Electrical connections for machine as well as options/accessories/supporting equipment
 - Control PC/monitor/keyboard location (to be located no farther than 10' from Control Box end of your machine)
 - Dust/chip collector location and related ductwork
 - Vacuum pump location (if applicable)
 - Compressor location (if applicable)
 - Misc. cabinetry/storage for tooling, wrenches, clamping/work holding tools/fixtures, etc. (if applicable)

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Electrical Requirements

- CNC System: Please see **Page 8**
- Vacuum Pumps (if purchased from CAMaster): Please see **Page 9**
- Other Accessories
 - Air Compressor (required for air-assist, ATC, pop-up pins, blast gates)
 - Dust/Chip Collection (if applicable)

Dust/Chip Collection

- Dust Boot Connections – 4” inlet.

Compressor Requirements

- Machines equipped with Counter Balance (air assist) and/or Pop-up Pins require 90 PSI static pressure. Connection is made by using 1/4” male ARO type quick-connect hose coupler.
- Machines equipped with ATC and Counter Balance (air assist) and/or Pop-up Pins require min. 100 PSI and 10 CFM. Single connection (for all) is made by using 1/4” male ARO type quick-connect hose coupler.

Misc. Considerations - Spoil Board and Work holding

In most cases, it's necessary to utilize a spoil board over the machine table top. We recommend that you put a plan together and acquire required materials (including a surfacing/spoil board tooling) prior to receiving your machine. Our starter bit set comes with the tool that you need. The spoilboard should be ULDF or LDF, which can be sourced from most cabinet supply shops.

Work holding strategies can vary tremendously depending upon application, machine/options configurations, personal preference, etc. Common strategies typically involve vacuum, screws, clamping (various), t-tracks clamps, press-fit jigs, adhesives (double-stick tape, glue, and spray adhesives) and polymer/composite nails.

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Software Familiarization

- **CAD/CAM Software - Vectric**

Your new CAMaster machine will come with Vectric V-carve Pro software (unless otherwise specified). A download link will be emailed to you with instructions on how to create an account with Vectric & Co. and start using your software.

- **Control Software – CAMaster Smartcore PLC**

Your machine Control PC will arrive pre-loaded with CAMaster Smartcore software. Advance copies of Smartcore are not available as our configuration will only operate on your control PC. That said, you'll be provided a full run-down of the Smartcore interface as part of your online orientation after you receive your machine.

- **CAD/CAM Software – Other**

- i. Fusion 360 <http://www.autodesk.com/products/fusion-360/overview>
- ii. EnRoute <http://enroutesoftware.com/>
- iii. KCD (cabinet) <http://www.kcdsoftware.com/>
- iv. Mozaik (cabinet) <http://www.mozaiksoftware.com/>

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Resources and Useful Videos

CAMaster Support
support@camaster.com
770-334-2144

CAMaster Website
www.camaster.com

CAMheads Forum
www.camheads.org

Vectric Software Support
www.support.vectric.com

Vectric Software Design Tutorials
<https://www.youtube.com/channel/UCqkhkxqPPLdtYy8ybykTlzQ>

Spindle Information
www.hsdusa.com

Busch Mink Pump
<https://www.buschvacuum.com/us/en/products/mink/mink-mi-mm/mink-mm-1202-1322-ap>

Oneida Air Systems
<http://www.oneida-air.com>

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Dimensions & Weights

PT-404

	Single Head	ATC with lathe
Overall Dimensions	73" x 93" x 85"	90" x 93" x 85"
Overall Weight	1900 lbs.	2000 lbs.

PT-408

	Single Head	ATC with lathe
Overall Dimensions	73" x 141" x 85"	90" x 141" x 85"
Overall Weight	2200 lbs.	2300 lbs.

PT-510

	Single Head	ATC with lathe
Overall Dimensions	84" x 165" x 85"	101" x 165" x 85"
Overall Weight	2500 lbs.	2600 lbs.

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Electrical Requirements – CNC System

- Electrical power to the CNC system is provided by customer.
- System power should be supplied through an easily accessible fused service disconnect switch or circuit breaker.
- All system accessories such as vacuum hold down, dust collection, etc. should also be connected with an adequate service disconnect or breaker.
- U.L. approved or equivalent over current, spike, or surge protection should always be used to connect equipment such as the Control PC and other accessories requiring 120v up to 15 amps. Any equipment requiring 120v over 15 amps should be supplied by fused service disconnect switch or breaker.
- Any electrical work should be done by a qualified, licensed electrician.
- All customer electrical inputs must meet NEC and local electrical codes.
- The CNC System should be properly grounded.
- Service disconnect should be accessible at all times during System operation. Service disconnect should never be locked during System operation.

Electrical - CNC

6 HP HSD ATC Spindle	220v/40A SINGLE PHASE	Control Box – 3 wire Direct Connection	Control PC 110v/15A	Std. 3 Prong
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*** Requires Dedicated Circuit**

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Electrical - Vacuum

Black Box Vacuum

Model	Volts/Amps	Plug Type	CFM	In. Hg.
Hurricane	220-230v/30A	NEMA L6-30P Locking	400	10

Klein single phase Regenerative Blower

Model	208- 230V	cfm	In. Hg	Decibels [dB]
10 HP	64.0 amps - 1 PH	365	9.8	74

Busch Mink Pump

Model	208- 230V	cfm	In.Hg	Decibels [dB]
7.5 HP	35.0 amps – 3 PH	170	27	80
7.5 HP	60.0 amps – 1 PH	170	27	80

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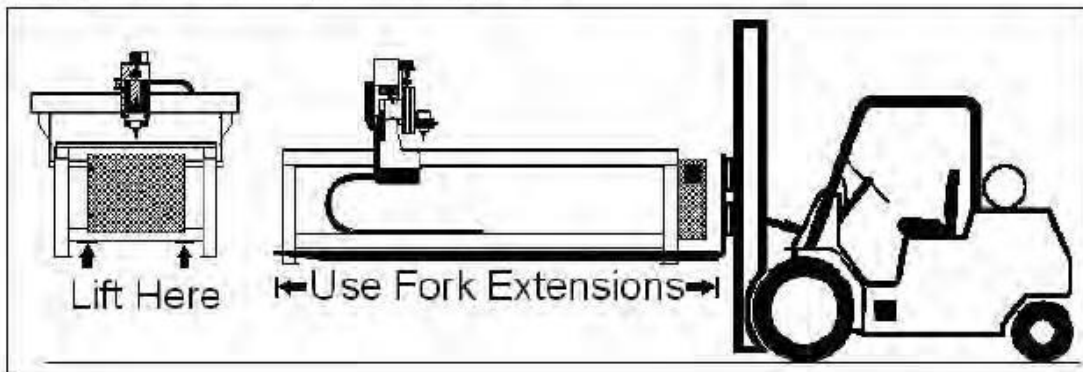
Handling CNC Equipment



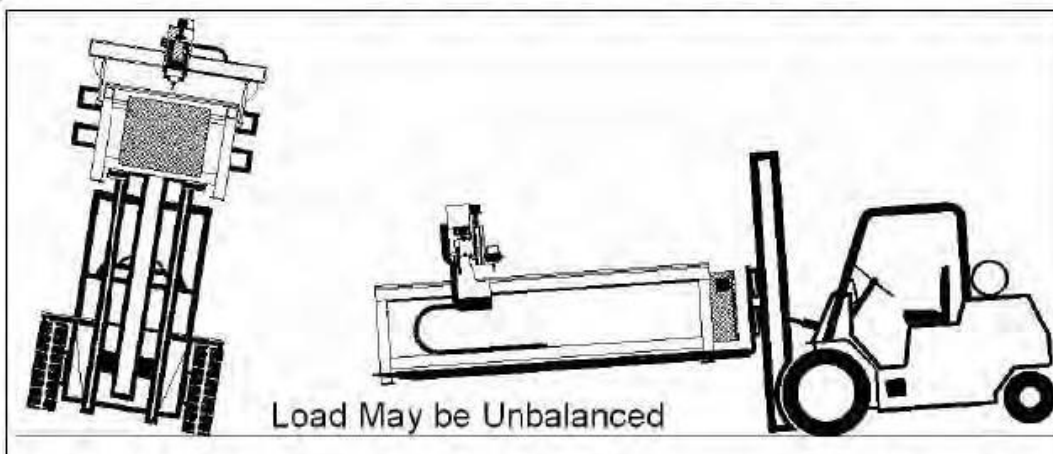
Warning: Forklift or other equipment should be operated by trained, operating personnel only with good understanding of materials handling safety policy, and procedures. Any forklift or other equipment operator should be completely familiar with the equipment, its operation, and functions before unloading or moving any CNC system or equipment.



Important: Use fork lift with fork extensions for unloading and moving the CNC equipment when required. See picture.



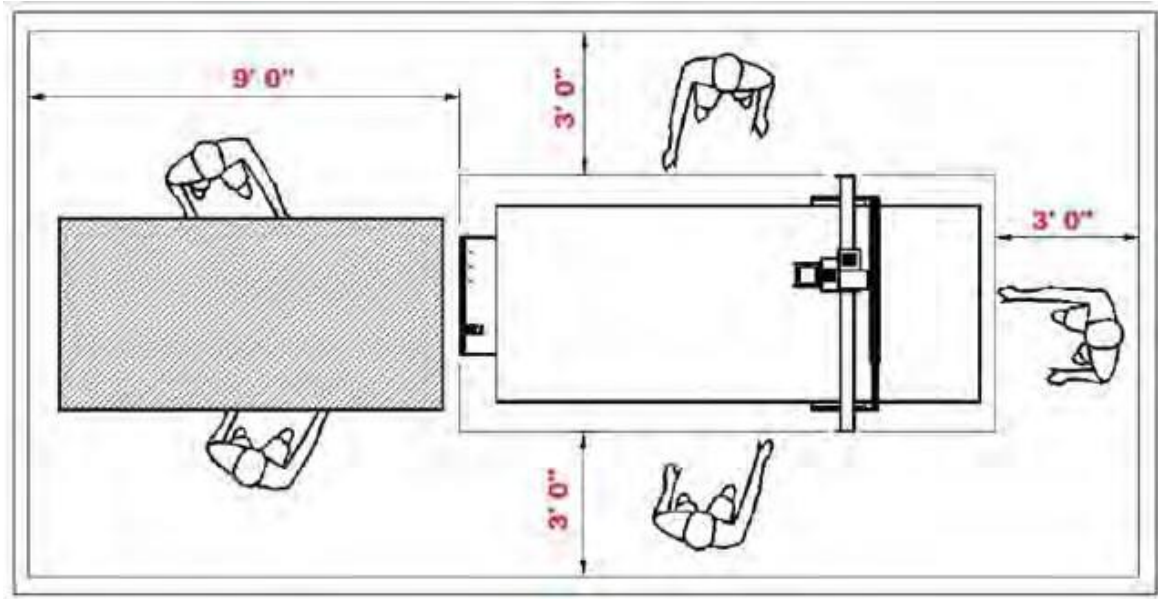
Warning: CNC equipment may not be balanced. Use caution when moving or unloading so as not to damage CNC equipment, fork lift, or operator. See picture.



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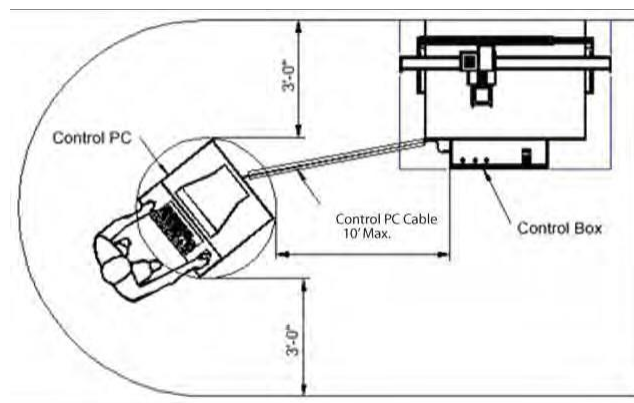
Positioning your CNC Router

Allow for adequate spacing around the equipment for loading/unloading of materials, clamping material, access to vacuum valves. CAMaster recommends an access path of at least 3 feet on three sides of the CNC Equipment and a material staging area extending 9 feet (4' x 8' format or larger) from the loading end of the equipment.



Positioning your Control PC

The control PC is part of the CNC system that requires an area for access by the system operator. CAMaster provides an optional industrial stand complete with monitor, keyboard, on/off and e-stop buttons. The optional monitor stand comes with 10' of cabling to allow you to move the stand around the machine. We recommend that this stand resides at the front left side of your machine, nearest your factory XY datum.



Static Reduction in CNC Dust Collection Systems

Dust collection systems are one of the primary generators of static in woodshops. This static becomes very problematic when the dust collection system is connected to a CNC cutting tool. For those CAMaster owners that have experienced issues caused by static discharge, getting a reasonably priced solution is often difficult to come by. The following should give those users a viable option.

Static is generated by air and dust movement in a non-conductive hose. The following instructions explain the use of light gauge home improvement store type galvanized 4" ducting in place of the often used flexible plastic dust hose. The advantages of metal ducting are as follows:

- Metal ducting is installed grounded and "drains" any static charge carried inside by the particles
- Increases flow due to less restriction than flexible hoses
- Gives a reliable ground path out to the flex hose at the machine and allows it to be grounded well
- Properly installed, it forms an anchor point for the flex hose to attach to

When you install a metal duct system to a CNC machine you should:

- Use as large diameter pipe as can be connected to the dust collector housing, reducing diameter as distance increases
- Run the metal duct as far as possible, i.e., run it out to over the CNC table in the center 8' to 10' high
- Screw the fittings to the collector housing and to each other
- Tape the joints to reduce leakage
- Verify that the dust collector itself is actually grounded to the electrical system ground
- Make sure that the metal duct is grounded by adding a ground wire to the electrical system or collector housing (if needed)
- Use a 4" flexible dust hose with an embedded wire. **DO NOT USE AN ALL PLASTIC HOSE**
- Use the shortest length of flexible hose that allows full movement to table extremities
- Make sure that the embedded wire from the flex hose is attached to the metal duct with a screw and crimp connector
- In high altitude, low humidity, or problematic locations an additional stranded wire run thru the hose may be required. This must also be connected to the ground screw along with the embedded wire from the flex hose
- Do not allow the dust foot end of this wire to come in contact with the metal parts of the CNC machine

Note: Along with the dust hose drain wires, it may also be beneficial to make sure that the dust hose itself has been insulated from any of the CNC components by at least 1/2". This can be done by providing a support near the top of the X or Z plates that work both as a strain relief AND an insulator. When cutting high static producing materials the charge inside the hose can build high enough to discharge thru the hose onto the frame. This problem most often comes to light when surfacing and an errant (charged) hose comes in contact with the machine.

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High-Performance CNC Machinery

ADDRESS:

149 Wansley Dr.
Cartersville, GA 30121

PHONE:

Toll Free: 866.405.7688
Local: 770.334.2448

FAX:

770.334.2434

TECH SUPPORT:

770.334.2144

WEBSITE:

CAMaster.com



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