

EDGE XL

CNC ROUTER

PRE-INSTALL DOCUMENT



PRE-INSTALL PACKAGE

Overview of Installation Requirements		
Topic	Overview	Detailed Information Page
ELECTRICAL REQUIREMENTS	(220VAC +/- 5%), 100 AMPS, 3-PHASE, 60HZ. This is a dedicated drop to the panel. Consult with a licensed electrician. Customer supplied. Customer is required to consult with a <u>licensed electrician to install required ground rod.</u>	4
INTERNET CONNECTION	High speed internet connection with access for remote administration using TeamViewer. Customer supplied.	4
MAIN WATER SUPPLY	1" supply line. Minimum 15 GPM @ 35 PSI. Water must be filtered to 50 microns. Piping/fittings must be PVC, stainless steel, or copper. No black pipe or galvanized pipe/fittings allowed. Customer supplied.	5
VACUUM PUMP WATER INLET	Line #1 - ½" Supply line. Minimum 4 GPM @ 35 PSI supplied. Piping/fittings must be PVC, stainless steel, or copper. No black pipe or galvanized pipe/fittings allowed. Customer supplied. Line #2 - Center Water Line Connection ¾" Supply line. Minimum 4 GPM @ 35 PSI supplied. Piping/fittings must be PVC, stainless steel, or copper. No black pipe or galvanized pipe/fittings allowed. Customer supplied. See page 7	5
WATER OUTLET	6- 3" drains at the rear of the machine. 2- 1 ¼" drains at the front of the machine. Customer supplied.	5
AIR REQUIREMENTS	20 CFM at 100 psi. <u>All air supplied must be dry.</u> Customer supplied.	6
FOUNDATION	The machine needs to be mounted on a flat floor. The slope cannot exceed 1" difference from one end of the work envelope to the other. The machine must be placed on, at a minimum, a 4" thick concrete floor with available space measuring 250" x 210" . The surface must be flat, and quality of the concrete should meet the requirements of the C20/25 standard (approximately 3,000 – 3,500 PSI).	6
OVERHEAD DOOR	<u>Must be at least 10' wide and 10' tall. If not, please contact your Project Manager asap.</u>	
OVERHEAD CLEARANCE	12' clearance without any obstructions.	7
TEMPERATURE	The system is designed to operate within a temperature range of 50° F - 113° F	7
MACHINE FLUIDS	Mobile EP00 ISO VG68 (Drawbar hydraulic fluid) ISO VG 10 (Spindle chiller fluid) (All fluids can be purchased from BACA)	7
AVAILABLE FOR PURCHASE	Basic Tooling Package	7

*The above summary is an overview of the installation requirements. Please see detailed information in remainder of this document. *

CUSTOMER RESPONSIBILITY SCHEDULE

Day	Work Preformed	Customer Supplied Resources Required
1-3	Unload, Unpack, and Place Machine	<ul style="list-style-type: none"> Minimum 25K forklift with 10ft forks. To unload from truck Also, either a 10K forklift with 10' forks or skates to get the machine through the door and into the building. A 10k forklift with 10' forks, or a 2 ½-ton minimum crane to assemble the machine. Two 1-ton cranes are not sufficient. <p>Customer is responsible for getting system off the truck and moved into the location where it will be assembled by BACA technicians.</p> <ul style="list-style-type: none"> Area where system will be located should be clear, clean, and flat. Trenching must be completed before install.
4-5	Connect electrical Connect air	<ol style="list-style-type: none"> Electrical <ol style="list-style-type: none"> <u>NO ELECTRICAL SHOULD BE MOUNTED DIRECTLY BEHIND THE MACHINE</u> 100amp MAIN Disconnect to be mounted to the right rear of the machine Air <ol style="list-style-type: none"> Requires a minimum of 20 CFM at 100 PSI. Must have a dryer between compressor and machine, provided by the customer. Should be ran near the left rear side of the machine.

6-7	Connect Water Run Internet cable	<ol style="list-style-type: none"> 1. Water <ol style="list-style-type: none"> a. External water must be a minimum of 15 GPM @ 35 PSI filtered to 50 microns, 1" supply line to connect to right rear side of the machine. b. Secondary water Supply \must be a minimum of 5 GPM @ 35 PSI of clean tap water, 3/4" supply to connect to the right rear side of the machine. c. NO black pipe or galvanized fittings d. Each supply line should have a shutoff near the machine 2. Internet <ol style="list-style-type: none"> a. Must have a wired connection b. Cat6 or better cable c. Should be ran to the right rear side of the machine d. Female ethernet connection end mounted inside the machine by an electrician
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These time frames are subjected to the readiness of all items defined in the Pre-install document. Any additional time requested by the customer, due to lack of readiness, will be charged accordingly.

Machine Build & Install Timeline:

- 1 week (5 days) to build the machine
- 1 week (5 days) to install the machine
- 1 week (5 days) of on-site training

Everything must be ready for the installers once they arrive, to maintain this schedule. If anything is delayed, please contact your Project Manager.

The machine operator is required to have their schedule clear during allotted training time. They should be 100% focused on training during this time.

1. ELECTRICAL REQUIREMENTS – Consult a Licensed Electrician

The BACA Edge XL CNC Router requires a power circuit and an internet connection. It is the customer's responsibility to contract a qualified licensed electrician to run AND connect the electrical power to the machine. BACA Systems installers are prohibited from performing any electrical work from the facility to the machinery.

Electrical services available must be routed to the area near the machine location before scheduled installation date. Below are the details on the internet connection and the power the customer is to provide the following services and connections:

A. System Power

(220VAC +/- 5%), 3-phase, protected by a circuit breaker or fused disconnect for 100 amps. If customer facility has a different voltage, the customer is responsible for a step-up/down transformer to supply (220VAC +/- 5%). Consult BACA project manager for more details. Must Be Copper. (Terminal lugs are not large enough to handle aluminum.)

B. Internet Connection

A wired high-speed internet connection is needed. The Cat 6 cable will be connected to the BACA Sink Pro+ control panel. Access through customer's firewall shall allow for remote administration using TeamViewer. (TeamViewer is supplied by BACA). **WIFI will not be sufficient.**

C. Ground Rod

Customer is required to have a licensed electrician install the ground rod.

Ground Rod



Electrical Disconnect



2. WATER REQUIREMENTS

Recommended Guidelines for Optimal Pool Chemistry				
Water Chemical	Min.	Ideal	Max.	Testing Frequency
Free Chlorine w/Minerals (ppm)	0.5	0.5-1.0	1	weekly
Free Chlorine w/o Minerals (ppm)	1	2-4	5	at least twice per week
pH	7.2	7.4-7.6	7.8	at least twice per week
Total Alkalinity (ppm)	80	80-120	120	weekly
Calcium Hardness (ppm)	200	200-400	400	weekly

*ppm refers to parts per million
**Free Chlorine w/Minerals refers to the amount of chlorine that should be present when using a FROG® Fresh Mineral Water System

*Failure to maintain water chemistry at these values will cause damage to internal components of the machine and void the warranty *

Water Connections:

The BACA Edge XL CNC Router requires three (3) different water utilities. It is the customer's responsibility to provide these water sources and connect them to the machine as required. Below are the water requirements:

A. External Water Connection

This water is used to cool the cutting tool through the external halo. It can be clean tap water or recycled process water (commonly referred to as "gray water") and must be filtered to 50 microns. Filtration may be required. The water supplied should **always** be a minimum of 15 GPM at 35 PSI. Failure to satisfy this requirement will lead to multiple shutdown faults. The customer supplied connection of this water is at the right rear of the machine and requires a 1" supply. **Piping/fittings must be PVC, stainless steel or copper.** No black pipe or galvanized pipe/fittings allowed.



The white pipe with filter is the external water connection.

The blue pipe is the center water connection.

The red pipe is the vacuum water connection.

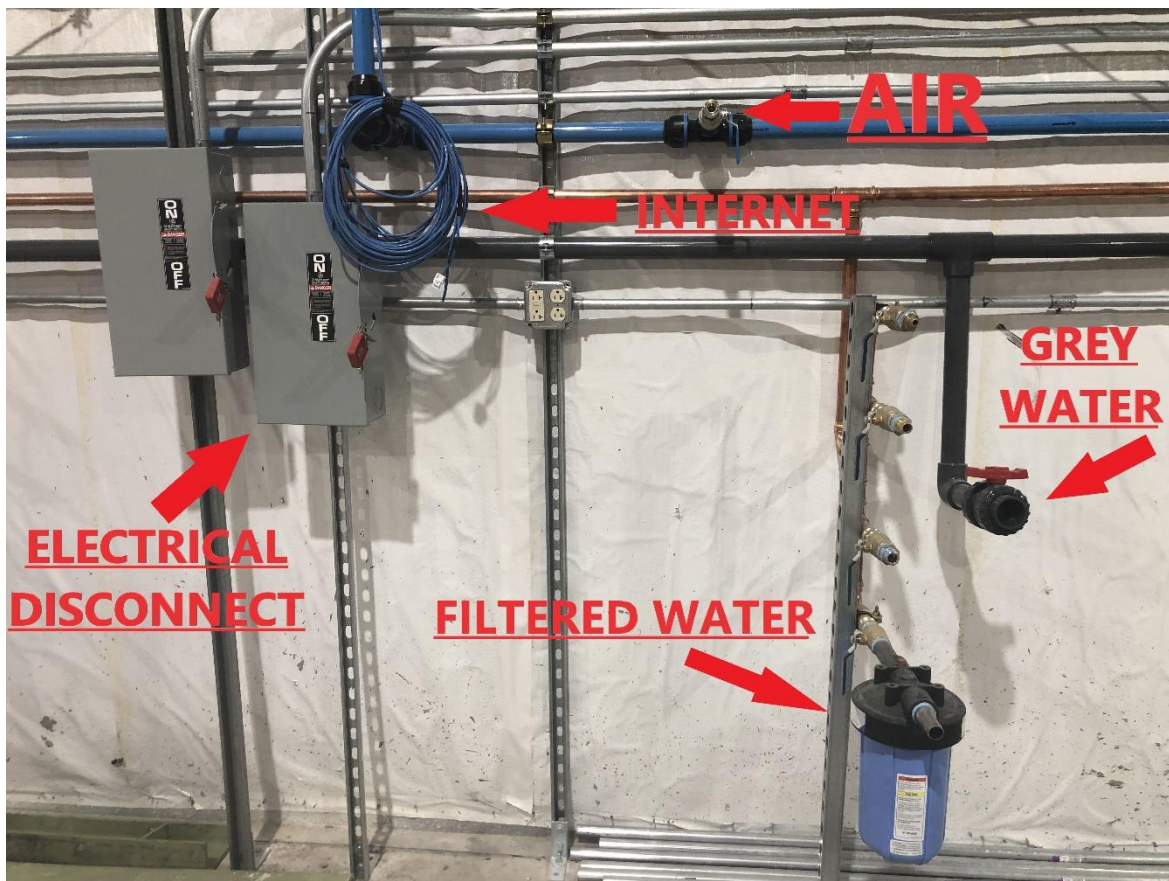
B. Secondary Water Supply This water is used to cool the cutting tool through the interior of the tool. It must be clean tap water. The water supplied should **always** be a minimum of 5 GPM at 35 PSI. Failure to satisfy this requirement will lead to multiple shutdown faults. The customer supplied connection of this water is at the right rear of the machine and requires a 3/4" supply line. **Piping/fittings must be PVC, stainless steel or copper.** No black pipe or galvanized pipe/fittings allowed.

C. Water Outlet Drain



Six (6) 3" NPT fittings and two (2) 1-1/4" NPT fittings are located on the bottom of the machine. This water can be recycled into the gray water system. **It is the customers' responsibly to supply and attach the necessary components for drainage.**

3. AIR REQUIREMENTS



The BACA Edge XL CNC Router requires a single air connection. Main system requires 20 CFM @ 100 PSI and this customer supplied connection is made at the left rear side of the machine. It uses a standard air quick disconnect fitting. The air **MUST** be running through a dryer after the air compressor. This will help minimize water in the air system.

4. FOUNDATION REQUIREMENTS

The BACA Edge XL CNC Router shall be placed on a **FLAT** concrete floor. Below are the minimum recommended foundation details:

A. Minimum required concrete floor

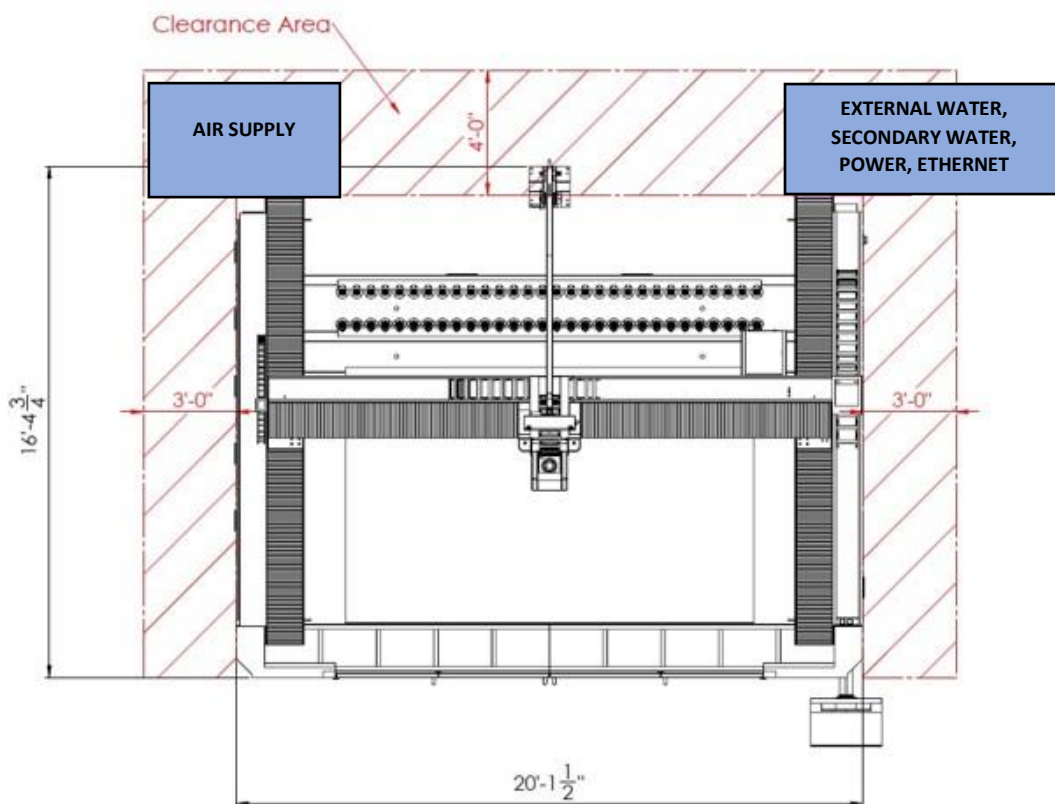
210" x 250" and 4" thick

B. The quality of the concrete should meet the requirements of the C20/25 standard (approximately 3,000 – 3,500 PSI).

The floor does not have to be level, but it does need to be flat. The BACA Edge XL CNC Router has the ability to compensate for a slightly sloped floor and anything in excess a 1" slope across the machine footprint should be discussed with BACA Systems. The customer must verify and confirm that there are no utilities (power, water, air, heat, etc.) in the floor under the entire system footprint (BACA installers will be installing concrete lags into the floor).

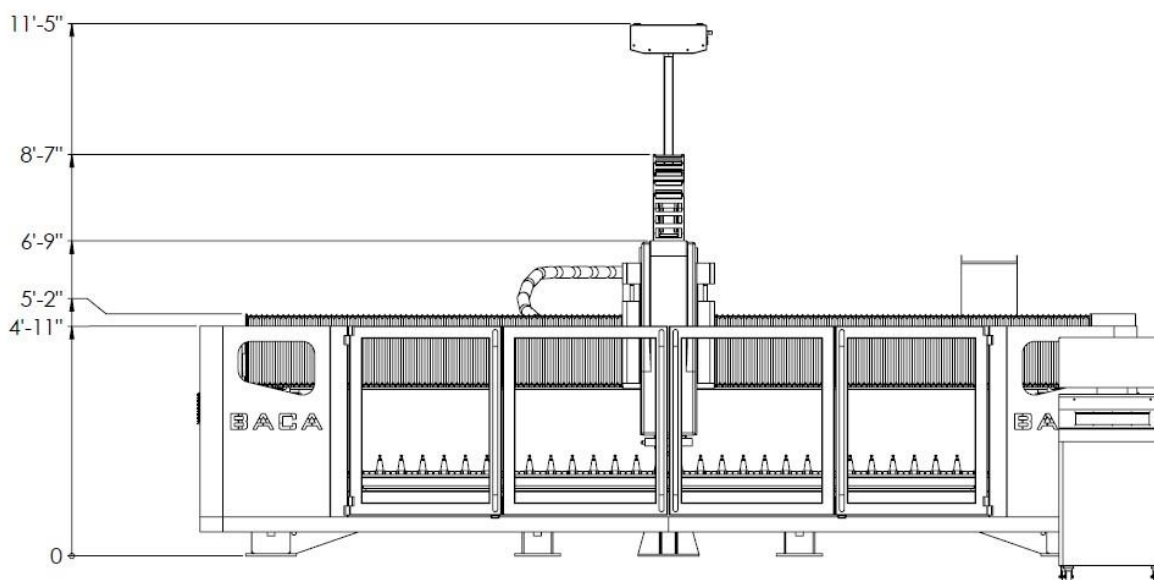
5. SPACE REQUIREMENTS AND EQUIPMENT MOUNTING

When the machine is being placed in the building, there must be 48" minimum from the back edge of the machine to any wall. The sides of the machine require 36" minimum clearance.



If the designated area does not meet these requires, please contact the project manager.

The BACA Edge XL CNC Router requires a minimum of 12' of overhead clearance for the overhead laser projector. This means that all stationary girders, lights, crane rails, etc. must be above 12'.



The BACA Edge XL CNC Router is a wet process machine and depending on the work being done, there is always a possibility for water to spill over the sides of the machine. Adequate drainage should be provided for accommodating this spillage.

6. ENVIRONMENTAL REQUIREMENTS

The BACA Edge XL CNC Router is designed to operate in an environment with a temperature range between 50° F and 113° F. For facilities that have conditions that fall outside of this temperature range, additional climate control equipment may be required.

7. LUBRICATION OIL PUMP

The BACA Edge XL CNC router is designed to be lubricated with Mobile EP00 oil. The system is automatically lubricated with an automated lubrication oil pump. **The oil reservoir will need to be topped off weekly.** It is the customer's responsibility to refill the oil reservoir. The Mobile EP00 oil may be purchased from BACA Systems.

A 35lb bucket of EP00 will arrive with the BACA Edge XL CNC, as well as a hand pump and dolly to facilitate filling the oil reservoir.

One (1) gallon of ISO VG68 and one (1) gallon of ISO VG 10 will also be supplied with the machine.

8. Basic Tooling Package

A Basic Tooling Package is available for purchase or the customer can purchase these items from a private party. BACA Systems will setup 1 set of tools (7 positions), router bit, core bit for standard operation. All additional tool sets are customers responsibility for setup after all other training is completed.

Items Needed:

Title	UOM	Quantity
Vacuum Pod 200 x 200	EA	8.00
Vacuum Pod 40 x 100 x 300	EA	4.00
Vacuum Pod 500 x 100	EA	4.00
Vacuum Pod 250 x 500	EA	4.00
1-3/8" Thin Wall Core Bit	EA	2.00
High Speed Finger Bit	EA	2.00
Heavy Duty UHS Stubbing	EA	1.00
Stubbing Wheel Adaptor	EA	1.00
6mm Sinkit Bit	EA	1.00
Z30 P1 80 Series	EA	1.00
Z30 P2 80 Series	EA	1.00
Z30 P3 80 Series	EA	1.00
T30-8 P1 80 Series	EA	1.00
T30-8 P2 80 Series	EA	1.00
T30-8 P3 80 Series	EA	1.00
T30-8 P4 80 Series	EA	1.00
T30-8 Express 5 80 Series	EA	1.00
T30-8 Express 6 80 Series	EA	1.00
T30-8 Express 7 80 Series	EA	1.00
Super Zee	EA	1.00
1-1/2 Gas Cone Holder BT40	EA	12.00
Cone 1/2 Gas Holder BT40	EA	5.00

Additional Items Needed For A Successful Installation:

- 8' table
- 8' ladder
- Step ladder
- Chair
- An extension cord long enough to reach the center of the machine
- WIFI and password
- Garden hose
- Nonadjustable spray handle for garden hose.
- Several ¼ slab or larger scrap stone pieces for calibration and training
- 2- 4x4 x1' pieces of pressure treated lumber
- 45-gallon trash can
- Trash bags for trash can
- Tooling, cones, and pods, if not purchased from BACA.
- Straight Floor squeegee
- Hand Squeegee
- Red Nonpermanent glass pencils (Granquartz 105190)

All required fluids for the machine may also be purchased through BACA Systems.

9. ADDITIONAL CUSTOMER RESPONSIBILITIES

As described above, **the customer shall provide all power, water, drain, and air utilities.** All utilities must be ran and landed in the BACA Edge XL CNC Router by the customer, under direction from the BACA Systems installer.

Customer shall determine where the system will be installed before the arrival of the installers. System layout drawings are provided. **Customer is responsible for placing the machine as provided in the drawing.**

Any customer delay in providing and connecting utilities could impact the overall length of time to conclude install. Any delay in install completion could result in another trip by BACA Systems and the additional travel and labor expenses will be the responsibility of the customer. **All utilities shall be ready for the BACA Edge XL CNC Router and the installers on the first day of the installation.**

Customer shall be prepared for the system to arrive on a truck/trailer. Customer shall be prepared to unload from both sides of the truck.

Customer supplied forklift shall be **25,000** lbs. payload minimum. The forklift's forks must be a minimum of 8' long. The lift forks will need to have a minimum spread of 26" (from inside of the left fork to the inside of the right fork). A second forklift of at least **10,000** lbs. capacity with 10' forks or machine skates to get the machine in the building and into place

A second forklift of at least **10,000** lbs. capacity with 8' forks or a 2 ½-ton minimum crane for machine assembly.

There are two (2) female threaded 1-1/4" bulkheads on each side of the drain pan on the front of the machine and six (6) female threaded 3" bulkheads in the rear of the machine to drain water out. The customer is responsible for providing piping to discharge the water away from the machine into the trenches or other desired location. It is recommended to do this, although not required.

10. Tooling Setup

BACA Systems will train and setup 1 set of tooling along with basic tools such as router bit, core bit, and z wheels along with 1 profile. BACA Systems will also assist in supervising a second tool set to make sure that the operator is proficient in tool setup. Any additional tool setup will be done after training on customers own time to not interrupt the overall training goals.

An electric pressure washer is highly recommended in place of the garden hose and nozzle

I HAVE READ AND CONFIRM THAT ALL PRE-INSTALL REQUIREMENTS ABOVE AND LISTED IN THE BACA SYSTEMS PRE-INSTALL DOCUMENT HAVE BEEN COMPLETED AND THE FACILITY IS READY FOR THE INSTALLATION OF THE **BACA Edge XL SYSTEM**. IF ALL PRE-INSTALL REQUIREMENTS ARE NOT COMPLETED BY THE TIME OF INSTALLATION DATE CUSTOMER WILL INCUR ANY ADDITIONAL COSTS ASSOCIATED WITH ANY DELAYS, TRAVEL ARRANGEMENTS OR RESCHEDULING OF INSTALLATION & TRAINING.

Signature: _____

Date: _____