

# DIAMOND BB SERIES



## FACILITY REQUIREMENT MANUAL

**MC** MACHINERY  
SYSTEMS, INC.

a subsidiary of  Mitsubishi Corporation

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## FACILITY REQUIREMENT CHECK LIST

Please read and understand the following facility requirements for your new MC Press Brake System. Many future problems will be prevented by completely understanding these requirements. Please notify MC Machinery one week in advance of your scheduled installation date if any of the following requirements will not be completed upon the technicians' arrival.

- Rigging-An insured rigging company has been scheduled to offload and place the machine.
- Machine location.
  - Plan out the location of the machine and accessories. Please use Machine Installation as a guide.
  - Prepare the foundation in accordance with the specifications provided in this document.
  - The site where the machine is to be installed must be cleared of all obstructions. The floor must be clean and free of debris.
  - Uncrate all machine components.
  - Do not install the machine anchors until after the install technician has arrived. The install technician will direct you as to when the anchors need to be installed; unless you are anchoring the machine with J bolts then the foundation needs to be prepared before install. If not using J bolts then you must supply the following.
    - Anchors.
    - Hammer Drill.
    - Bits for anchoring the machine.

- Electrical requirements-Electricity must be supplied to the disconnect on the machine. The install technician will be ready for electricity on the day of the install.
- Transformer will be needed depending on the power at the machine.
- Powergy™ clean power system (optional). See page 21.
- Tooling for bending of customer's production parts. Please list manufacturer of tooling \_\_\_\_\_
- Material for Bending (Test pieces and production).
- A ladder will be needed on top of the machine.

When all requirements are complete this form must be faxed to Michael Brown or Chris Shrader at (630) 616-5940. The person whose signature appears below understands that if any items are incomplete when the technician arrives, MC Machinery reserves the right to reschedule the machine installation for the next available Monday and invoice for the additional airfare and travel time.

Signature \_\_\_\_\_ Title \_\_\_\_\_ Date \_\_\_\_\_

## **COMPANY CONTACTS**

### **INSTALL DEPARTMENT**

If you have any questions concerning this document, delivery dates, install dates, where your order is at in the credit process, or general questions concerning your order please call.

**Mark Johnson**

Manager, Installation Group  
Customer Service & Support  
Phone: (630) 616-5953  
Fax: (630) 616-4066  
Email: mark.johnson@mcmachinery.com

**Michael Brown**

Laser/ Brake/ Material Handling Install Supervisor  
Customer Service & Support  
Phone: (630) 616-4079  
Fax: (630) 616-4066  
Email: michael.brown@mcmachinery.com

## MAC FUNDING / CREDIT ANALYSIS SERVICES DIVISION

If you have any questions about where your order is at in the credit process, or you have questions about any of your order documents, please call Mac Funding.

### MACHINE ORDERS

**Jim Puett**

Senior Manager

Phone: (630) 860-4218

Fax: (630) 860-4718

Email: [jpuett@mac-funding.com](mailto:jpuett@mac-funding.com)

**Ma Yang**

Sr. Credit Analyst

Phone: (630) 860-4315

Fax: (630) 860-4718

Email: [myang@mac-funding.com](mailto:myang@mac-funding.com)

### MEXICO ORDERS

**Violeta Perez**

Credit Analyst

Phone: (630) 860-4226

Fax: (630) 860-4718

Email: [vperez@mac-funding.com](mailto:vperez@mac-funding.com)

## **TRAINING DEPARTMENT**

At the current time all Press Brake operation training is completed during the machine installation by the installer. If you should have any additional training needs please call the training department.

**Richard A. Caron**

Sr. Manager, Support Group  
Customer Service and Support  
Phone: (630) 616-5950  
Fax: (630) 616-4066  
Email: rich.caron@mcmachinery.com

**Chris Shrader**

Service Supervisor, Press Brake Customer  
Service and Support  
Phone: (630) 616-4804  
Fax: (630) 616-4066  
Email: [chris.shrader@mcmachinery.com](mailto:chris.shrader@mcmachinery.com)

**Adrienne Wysuph**

Administrative Assistant  
Customer Service and Support  
Phone: (630) 616-7701  
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Email: adrienne.wysuph@mcmachinery.com



## **PRESS BRAKE SERVICE DEPARTMENT**

To obtain service support or order parts after your machine has been installed, please call our level 1 service department at (630) 616-5900. Please choose option (1) for service or option (2) for parts.

In order to provide our customers with the fastest and highest quality of service, a level 1 operator will take your company name and machine information. This information will then be entered into our computer system with a description of the problem. You will then receive a call back from an experienced technician, who will not only help you resolve your problem but will also log the call into our computer system for future reference.

## **CONSUMABLE PRODUCTS GROUP “CPG”**

Please contact our consumable products group OEM consumables for press brake needs.

### **CPG PRESS BRAKE**

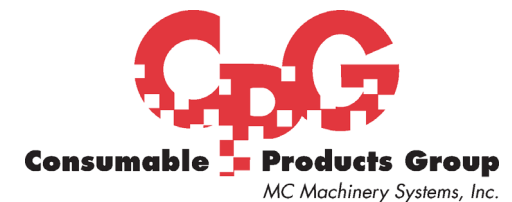
#### **George Johnson**

National Sales Manager  
Consumable Products Group  
Phone: (630) 616-2983  
Toll Free: (888) 297-9895  
Fax: (630) 616-2954  
Email: [george.johnson@mcmachinery.com](mailto:george.johnson@mcmachinery.com)

#### **Bernardo Olguin**

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Please visit our web-site for special offers [\*\*www.cpgedm.com\*\*](http://www.cpgedm.com)



## CHOOSING A MACHINE LOCATION

It is the customer's responsibility to prepare the machine location, per the listed specifications, before the delivery of the equipment. Preparing the machine location improperly can greatly affect the performance of your machine.

### FLOOR / FOUNDATION REQUIREMENTS

- The manufacturer recommends that the machine be installed according to chart below for reinforced concrete to minimize floor vibration.
- If the machine is installed on a foundation that is less, the customer must be aware that there could be an increase in the maintenance intervals due to shifting or settling of the foundation slab. In some cases an improper foundation can affect the accuracy of the machine.
- The floor where the machine is installed must be level to 0.039 inches over the entire length of the machine.
- If the ground is weak (bearing power of soil: 5000 kg/m<sup>2</sup>) use reinforced concrete to prepare the proper foundation.

FOUNDATION		
BB4013 BB6013 BB6020	150 mm or more	5.9in or more

## CLIMATE / ATMOSPHERE

Select machine installation place considering the followings:

1. Install machine in area where surrounding temperature should be in between 41°F – 104°F. Exceeding its range can cause problem to NC control unit and other electric appliances. It can cause damage to machine.
2. Install machine in area where surrounding humidity do not exceed 80% RH. Rapid temperature change causes water condensation, causing trouble to NC control unit and other electric appliances, and rusting to the machine. It can cause damage to machine.
3. Dust, water, oil mist, corrosive gas, and organic solvent should not be present near installation area. The NC control unit is equipped with a filter for air-intake of cooling unit. If dust, dirt gets clogged in cooling unit, cooling effect will be insufficient, causing damage to machine. Again, if machine is directly exposed to dust etc., it can cause damage to the machine.
4. Install machine in area where machine is not exposed to direct sunlight. If machine is exposed to direct sunlight, temperature of machine components increases, influencing machining precision. Exposed to direct sunlight can cause trouble to NC control resulting damage to machine.
5. Installation area should be free from electric noise. Electric welding machine, electric discharge machine etc. will generate electric noise. If there is no safety in electric supply voltage, high voltage fluctuations can cause an accident and damage to machine.

Select a location with sufficient space around the machine, considering not only the machine space but also the following:

- Punch/die replacement space
- Maintenance and servicing space about 3 feet in all directions surrounding the machine.
- Upper maintenance and servicing space of about 3 feet is required above the machine.
- Machine electric box's door opening should not be obstructed.

## RIGGING INFORMATION

Prior to the delivery of your machine you are required to contract a rigging company to uncrate and set the machine in place. Please make sure that the rigger that you contract is properly insured. Any damage caused by the rigger will be the responsibility of the rigger or the customer to repair.

## SHIPPING DIMENSIONS

DESCRIPTION	LENGTH	WIDTH	HEIGHT	NET WEIGHT Lbs.
BB4013	85"	90"	109"	7,716
BB6013	108"	81"	103"	9,920
BB6020	140"	84"	103"	11,023

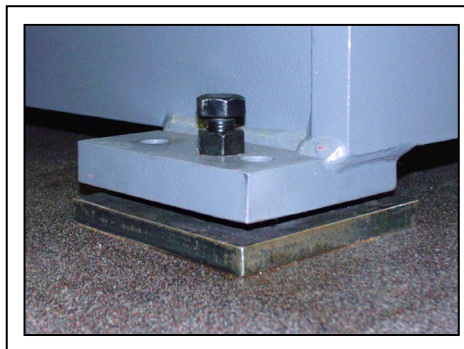


## EQUIPMENT DAMAGE

- It is the customer's responsibility to inspect the equipment for damage before signing the bill of lading.
- Record any damage on the bill of lading and make a copy that can be sent to MC Machinery.
- If a clean bill of lading is signed, the customer or rigger will assume responsibility for any damage that is present.
- Take pictures relevant to the damage and provide them to MC Machinery. If possible e-mail the pictures to Michael Brown: [michael.brown@mcmachinery.com](mailto:michael.brown@mcmachinery.com), this will help to quickly resolve any insurance claims.
- Notify Michael Brown of the Laser Installation Department immediately if damage is present. He can be reached at (630) 616-5900. If Michael Brown is not available please ask for Mark Johnson or Troy Hirsh, they can both also be reached at this number.

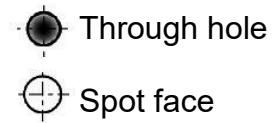
## MACHINE PLACEMENT

- Before the machine arrives, mark your floor using the attached drawings. This will allow your rigger to quickly and correctly place the machine.
- Use the lifting points provided to ensure the safe movement and placement of your equipment.
- The machine manuals are inside the electrical cabinet.
- The machine is to be rough leveled by the riggers and/or customer prior to install.
- The machine will be leveled to within 0.05mm/M (.02/3ft) or less across the X and Y directions by the installer.
- After the machine is installed you will want to anchor the machine to prevent movement. **DO NOT ANCHOR THE MACHINE UNTIL THE INSTALLER HAS CONFIRMED THAT THE INSTALLATION IS COMPLETED.**
- You will be placing 4 leveling pads under the machine. Two leveling screws are located in front of the machine and two leveling screws located in the back of the machine.

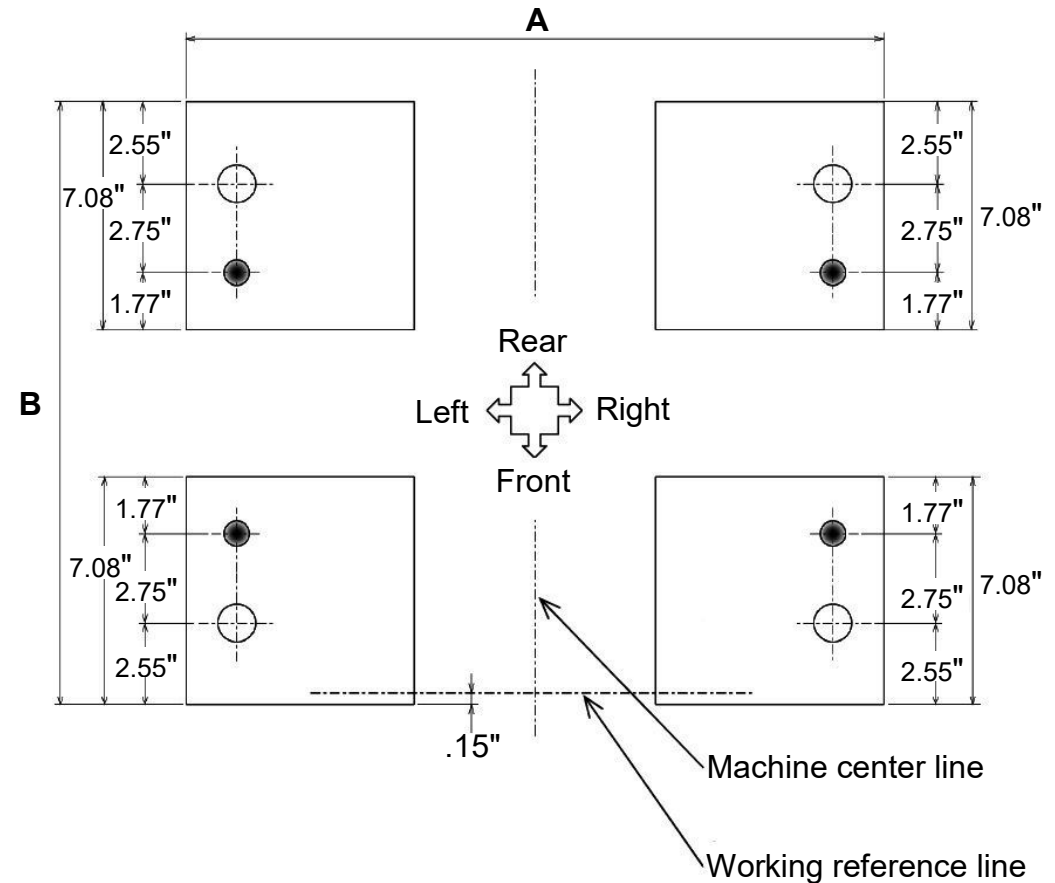


## FOUNDATION PLATE LAYOUT

- The plates are arranged in advance at the place where the press brake is installed.
- Unit: inch



	A	B
BB4013	61.41"	48.58"
BB6013	51.96"	50.39"
BB6020	81.88"	51.96"





## RIGGING MACHINE

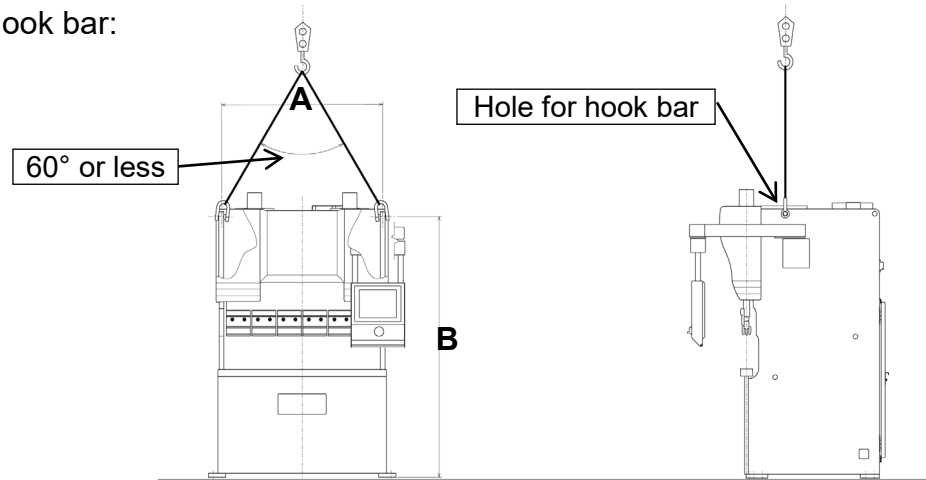
### WARNING

- There exists an extreme danger when the press brake is transported. Operators or companies possessing transportation work certificate should transport the press brake.
- The center of gravity is located at the upper side of the press brake machine. If the lower side of the machine is lifted by a forklift, the machine will be in unbalanced condition. Never lift the lower side of the machine by the forklift.

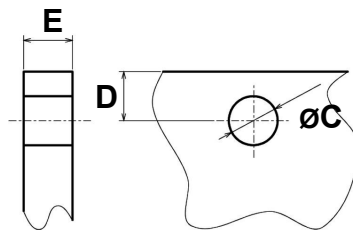
Observe the followings when the press brake is transported and suspended:

- A series of work operation from preparation to lift the press brake using ropes to its rope removal should be done by authorized person, possessing slinging operation license.
- Crane operation for lifting machine and equipments should be done by authorized person, possessing crane operation license. If crane operation is done by unauthorized person, who does not have knowledge of crane safety operation, there exists a possibility of an accident resulting in injury and damage to the machine.
- Use appropriate withstanding capacity wire ropes, shackle, lifting jigs etc., by considering machine dimensions and weight. Machine weight is mentioned in the machine nameplate. If machine is lifted by insufficient strength ropes, jigs etc., machine will fall down causing an accident resulting in injury and damage to the machine.
- Check the balance of machine in front-rear and left-right direction after lifting machine slightly. If machine is moved in unbalanced condition, machine will fall down causing an accident, resulting in injury and damage to the machine.
- When machine lifting operation is done by two or more persons, carry out operation by giving sufficient attention to each other, after proper signaling and communication with each other. If crane operation is done carelessly, causing an accident resulting in injury and damage to the machine.

- Confirm that tools or waste clothes etc. are not forgot in machine, before lifting the machine. During lifting, tools etc. will fall down from the machine, causing an accident resulting in injury or damage to the machine.
- Before lifting the machine, confirm that all parts are fixed. If all parts are not fixed, during machine lifting, they may cause damage to the machine.
- Hole position for hook bar:



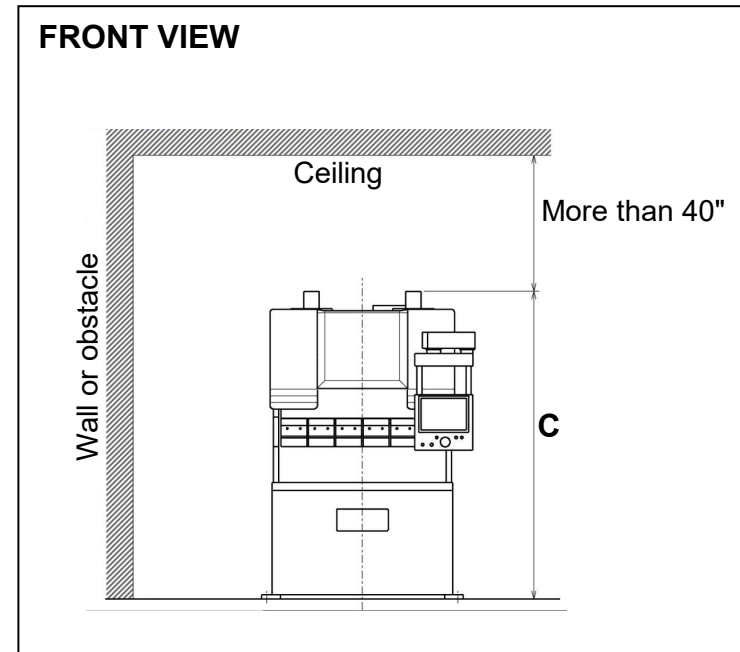
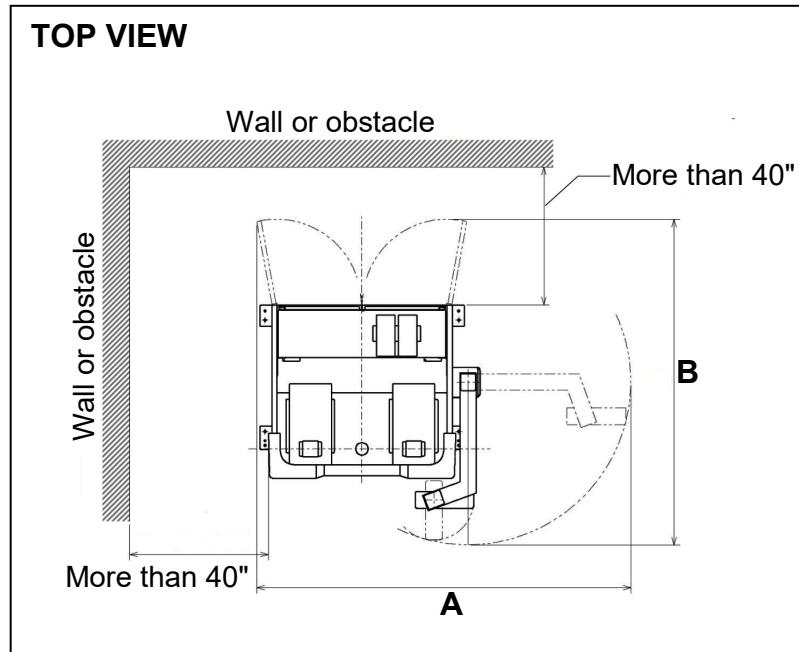
- Details of hole for hook bar:



Symbol	BB4013	BB6013	BB6020
A	53"	38"	69"
B	86"	86"	86"
C	2"	2"	2"
D	2"	2"	2"
E	2"	2"	2"
Machine weight	7,716 lbs.	9,920 lbs.	11,023 lbs.

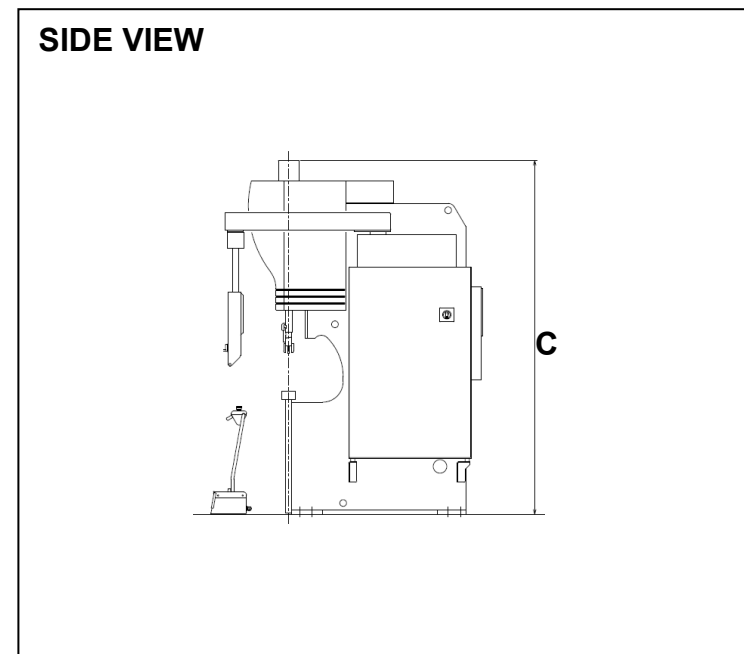
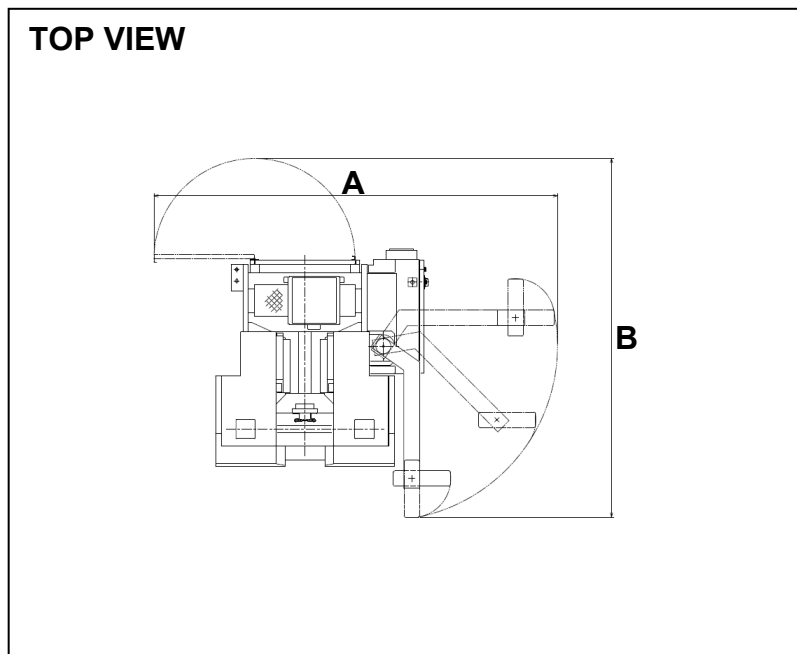
# MACHINE LAYOUT BB4013

Symbol	BB4013
A	113"
B	99"
C	94"



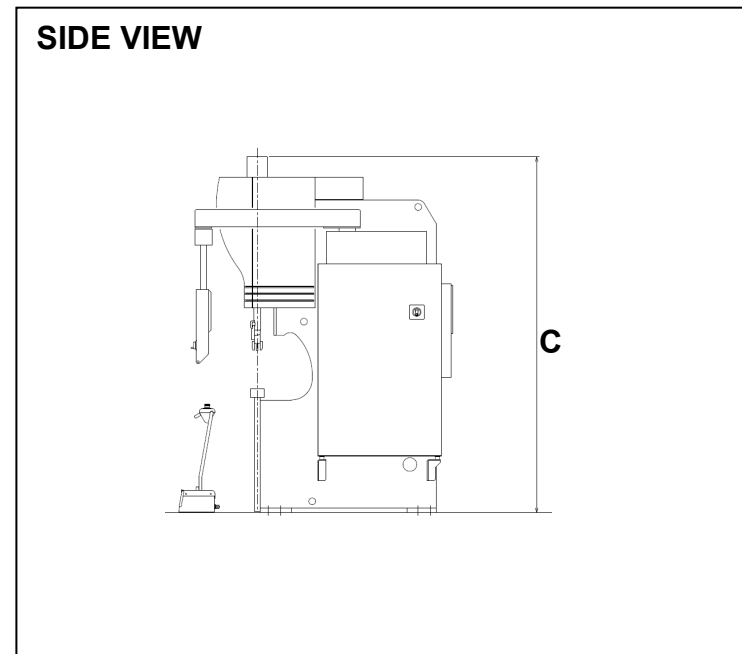
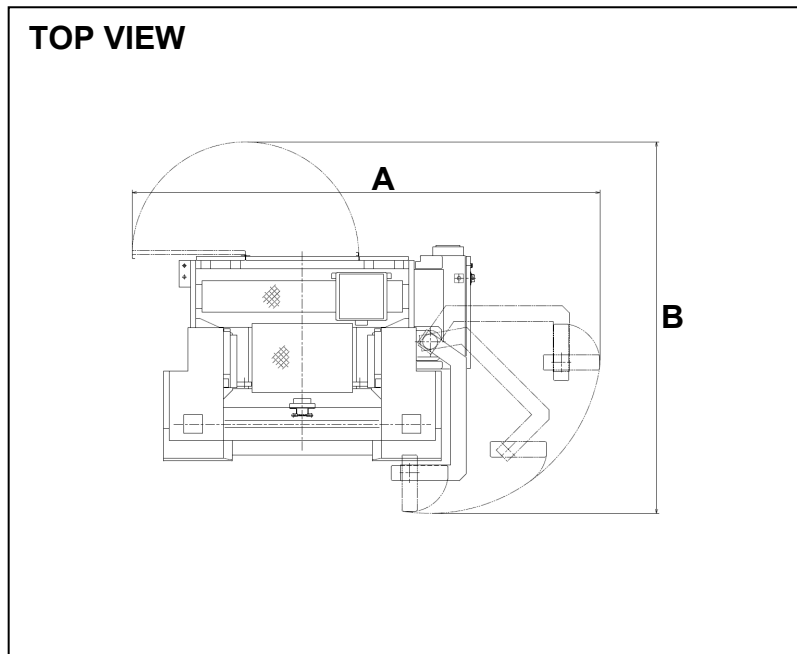
## MACHINE LAYOUT BB6013

Symbol	BB6013
A	126"
B	112"
C	102"



## MACHINE LAYOUT BB6020

Symbol	BB6020
A	147"
B	116"
C	102"



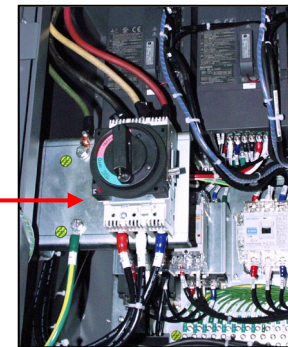
## POWER REQUIREMENTS

- Primary power supply connection should be done by direct and independent cables from power source. And its work should be done by persons possessing electric work certificate.
- Be sure to use primary voltage cable of correctly calculated rated specification for electric supply capacity. If appropriate cables are not used, there is a possibility of generation of fire, causing an accident resulting in injury and damage to the machine.
- If the power requirements or cable thickness fails to meet the specifications, the power source voltage will drop, causing various troubles to the machine.
- Power supply voltage: (AC208V) within  $\pm 10\%$ .
- Frequency (50/ 60Hz)  $\pm 1\text{Hz}$ .
- Quick voltage cut-off within 10 msec.
- Peak value of RMS voltage should be less than 200 % for less than 1.5 msec. in pulse.
- AC supply voltage waveform distortion should be less than 7%.
- Unbalance in phase voltage should be less than 5%.

The Powergy™ unit cleans and conditions the electricity that is supplied to your equipment. It also protects your machine from power spikes. It also protects your machine from power spokes. This is an optional piece of equipment that is not included with the machine. If you wish to purchase a Powergy™ Clean Power System please contact your salesman or call MC Machinery at (630)-616-5900.

POWER CAPACITY/ WIRING			
Machine Model	<b>BB4013</b>	<b>BB6013</b>	<b>BB6020</b>
Power Supply	46 A or more (15KVA)	58 A or more (21KVA)	58 A or more (21KVA)
Recommended earth leakage circuit Breaker capacity	75 A or more	75 A or more	75 A or more
Electric wiring	14mm <sup>2</sup> or more	22mm <sup>2</sup> or more	22mm <sup>2</sup> or more
Earth	Be sure to do proper earthing exclusively for NC (An earth bar should be prepared by your company) and proper earthing for power (Three-phase earth).		
* If the installation area fails to meet the above requirements, it can cause various problems to the machine. Consult our personnel prior to determining the installation area.			

In order to access the termination point for the 3 phase you will need to open the door located on the back of the machine in the top left corner.



## CLASS I

These appliances must have their chassis connect to electrical earth (US: ground) by an earth conductor (coloured green/yellow in most countries, green in the U.S., Canada and Japan). A fault in the appliance which causes a live conductor to contact the casing will cause a current to flow in the earth conductor. This current should trip either an overcurrent device (fuse or circuit breaker (CB)) or a residual-current device (RCD) also named as residual current circuit break (RCCB), or ground fault circuit interrupter (GFCI) or also, residual current operated circuit-breaker with integral overcurrent protection (RCBO), which will cut off the supply of electricity to the appliance.



Green/yellow ground



Class I symbol