SITE SURVEY & PREPARATION GUIDE

for the Prism & Prism Prime Engraver

Congratulations on your Prism or Prism Prime purchase. Ohio Gravure Technologies wants to provide you with the best possible service before, during and after installation of your new equipment. To help us achieve this, we are providing this *Site Survey and Preparation Guide*. We hope this guide answers the questions you will have about equipment requirements and other items of interest.

Important! Some of the items in this list require sending information to Ohio Gravure Technologies. This information must be returned as soon as possible. Failure to return the information could delay shipment or slow down the installation of equipment.

The objective of this Site Survey and Preparation Guide is a smooth installation. By satisfying the criteria and requirements presented in this guide, you will be well on your way.

What Is In This Guide

This Site Survey and Preparation Guide is designed to provide details necessary in defining and preparing a site for your new Ohio Gravure Technologies equipment. Use this information with the *Site Preparation Checklist* to ensure that all of the equipment needs are met. When the checklist is complete, you will have:

- chosen a suitable location for the system
- learned of the specific power requirements
- become aware of the system's environmental requirements

This guide is divided into sections:

- The first section, *Cylinder Specifications and Screen Information,* ensures that your cylinders will fit into the drive option ordered.
- The next section, *Site Requirements,* contains information on preparing your site for your engraver and for a Collage computer
- The next section details *Unloading Requirements* and information on *Moving the Machine*
- The next section, *Cylinder Information*, contains information on preparing cylinders
- The last section contains specifications for engravers and cylinders.

If You Have Questions

This guide contains information on Ohio Gravure Technologies equipment, but we know there may be questions that are not answered by this guide. Specific questions on your order may be directed to your Ohio GT representative or contact Ohio GT customer support.

Site Preparation Checklist

Before the equipment arrives, verify that: Complete

1. You have sent cylinder drawings to verify compatability for chucks or cones. See *Cylinder Specifications* on page 3 ❑

   You have sent your input voltage requirements. See *Machine Input Voltage Requirement* on page 4 ❑

2. A loading dock or other suitable location is available for delivery and uncrating of the equipment. See *Unloading Requirements* on page 11. ❑

   If no loading dock is available to unload the equipment, contact Ohio Gravure Technologies's Customer Support or your agent.

3. Lifting equipment is available for: ❑
   - lifting the equipment off the skid
   - moving the equipment to its final position

   Refer to page 10 for information on the physical dimensions and weight of the engraver.

4. An adequate path exists for moving the equipment from the loading dock to its permanent location. Remember door openings if they are in the path. ❑

5. Electrical requirements (see *Electrical Requirements* on page 7)

   A. Sufficient power and electrical sources exist to meet the specifications for all system components and options. ❑

   B. The distance from the UPS and the Ohio GT equipment is 10 m (32 ft.) or less. ❑

   C. The voltage and amperage rating of the power line(s) match the input power requirements of the equipment. ❑

   D. A dedicated ground line is within 3 m (10 ft.) of any PC's purchased. See *Special Requirement for PC Equipment* on page 8. ❑

6. Equipment location (see *Environmental Requirements* on page 8)

   A. Adequate temperature and humidity controls are available to maintain the environmental requirements. See *Table 2 Equipment Cooling Requirements* on page 1-8. ❑

   B. The location for equipment meets the vibration requirements. See *Table 3 Vibration Specifications* on page 9. ❑

   C. The structure/location is capable of handling the load of the equipment. ❑

7. Your copper plating and finishing equipment is adequate for producing cylinders for engraving. See *Cylinder Plating and Finishing* on page 15. ❑

When all conditions are met, please sign this checklist and fax a copy to Ohio Gravure Technologies (+1 937 439 1592) or scan and email to service@ohiogt.com

Customer Signature _____ Date _____

Company Name _____ Address _____

Machine Input Voltage Requirement

The Prism engraver requires 220 or 230 or 240 VAC (+/- 3%) single phase, 50 or 60 Hz. It is important that the machine is wired for *your* specific input voltage.

Please complete below and fax to Ohio Gravure Technologies (+1 937 439 1592) or email to service@ohiogt.com

My Input Voltage is

- ❑ 220V
- ❑ 230V
- ❑ 240V

Customer Signature _____ Date _____

Company Name _____ Address _____

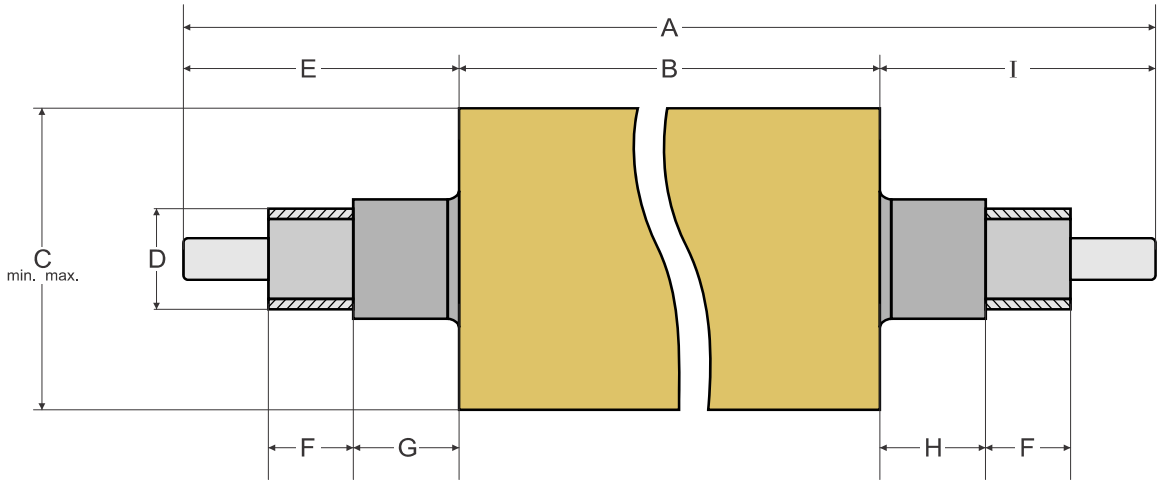
If you have already provided this information, thank you.

See page 7 for more information on electrical requirements.

Cylinder Specifications & Screen Information

By providing us with the exact specifications for the cylinders you will use in your new Prism, we can ensure the cylinders will fit with the specific fixtures on your machine. It is best if you can send us drawings of your cylinders. If you cannot, please provide the following information. All dimensions should be in millimeters.

Shafted Cylinders



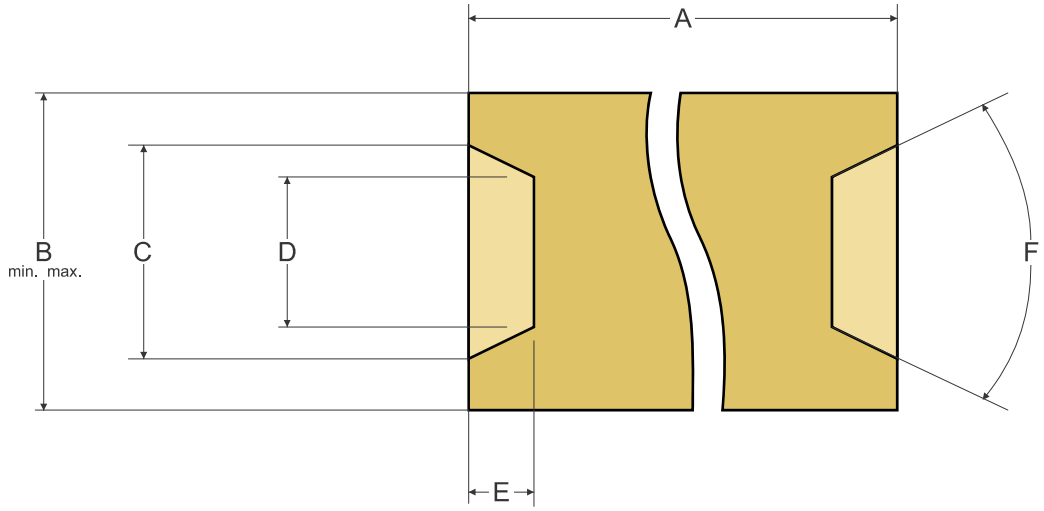
Cylinder ID	A	B	min. C	max.	D	E	F	G	H	I

Please fax to Ohio Gravure Technologies (+1 937 439 1592) or email to service@ohiogt.com

Customer Signature _____ Date _____

Company Name _____ Address _____

Shaftless (Hollow) Cylinders



Cylinder #	Press	A	min. B	max.	C	D	E	F

Common Screen/Angle/Stylus

Please let us know your most common screens, angles, and stylii. These will be programmed into the machine during factory ATP acceptance testing.

Screen	Angle	Stylus	Full µ	Hilight µ	Channel µ	Mid1 µ	Mid2 µ

Please fax to Ohio Gravure Technologies (+1 937 439 1592) or email to service@ohiogt.com

Customer Signature _____ Date _____

Company Name _____ Address _____

Site Requirements

This section provides information on the site requirements for a Prism engraver and for a Collage Layout System computer.

Engraver

The following are the requirements for the engraver. See engraver dimensions on page 16.

Electrical Requirements

If you have any questions on the electrical requirements or if you do not have the electrical service available to you as listed below, contact your Ohio GT representative.

Circuits Required for Prism Engraver

The Prism requires the following:

	Power	Voltage	Frequency/Fuse
Power Supply	5.00 kVa	1x220V +/- 3%	50/60 +/- 1% 25A
	5.00 kVa	1x230V +/- 3%	50/60 +/- 1% 25A
	5.00 kVa	1x240V +/- 3%	50/60 +/- 1% 25A

Table 1 Electrical Requirements

Maximum wire length from the UPS to Ohio GT's equipment is 10 meters (32 feet). Minimum wire size for this length is 3 mm (#8 A.W.G.). If your application requires a length longer than 10 meters, please contact your Ohio Gravure Technologies representative.

Every power device (UPS) must have its own dedicated ground line. Ohio GT recommends the ground line be attached by its own clamp to the building frame whenever possible. Failure to ground to the building frame may cause voltage spikes on the ground line, possibly damaging the equipment or causing intermittent operation problems.

UPS Information

Voltage must be isolated through adouble conversion type of Uninterruptible Power Supply (UPS). Connection of input power source to UPS and from Ohio GT's equipment to UPS is the customer's responsibility.

An independent earth ground must be provided at the input power source to the UPS.

This guide will assist you in determining the UPS size needed for your system:

Equipment	Power Req'd	Circuit Req'd	UPS*
Prism Engraver	3.5 kVA	30 A	5 kVA
Collage Layout Workstation	1.0 kVA	15 A	1.4 kVA

Table 2 UPS Requirements

**Double Conversion Type required*

Special Requirement for PC Equipment

A dedicated ground line must be located within 10 m (30 ft.) of any PC system. See drawings referenced below.

System Grounding

See included drawings for Ohio Gravure Technologies grounding practices:

- 9400-0002 — 100-240 VAC 50/60 Hz UPS Installation

Environmental Requirements

Areas with Ohio Gravure Technologies equipment should be kept clean and orderly.

Air Quality

Proper operation of the engraver requires air quality that matches a typical urban environment as designated by ISO 9, room air:

ISO 14644-1 cleanroom standards

Class	maximum particles/m^3						FED STD 209E equivalent
	≥0.1 µm	≥0.2 µm	≥0.3 µm	≥0.5 µm	≥1 µm	≥5 µm	
ISO 9	1.0×10^9	2.37×10^8	1.02×10^8	35,200,000	8,320,000	293,000	Room air

Table 3 Air Quality Standards

Allowing a few more particles in a factory setting is reasonable, but excessively dirty environments will cause problems with the engraver.

While all parts of the engraver with fans or blowers require clean air, the engrave head is extremely sensitive to dirty air. Excessive build-up of dirt in the engrave head will cause it to cease working properly.

Engrave head repair because of excessive dirt is not covered under warranty.

Air Conditioning/Humidity Requirements

Recommended operating temperature range	20-25° C (68-77° F)
Recommended relative humidity	40-65% non-condensing

Table 4 Environmental Temperature

Heat Dissipation

To help assist you in determining the air conditioning needed, the cooling requirements for the equipment are as follows: (BTU = British Thermal Units 3412 BTU's = 1KWhr)

Prism Engraver	12,000 Cooling BTU

Table 5 Equipment Cooling Requirements

Floor Load

Floor bowing under load	0.2 mm/m Execution according to DIN 18202

Table 6 Floor Load Requirements

Do not use intermediate floors or support beams as machine foundation

Vibration Specifications

Your Ohio GT equipment should be placed in a location free from excessive vibration. Vibration can be generated by nearby equipment or cylinder carts with metal wheels and from installing the equipment on inadequate flooring. Refer to the following table for vibration requirements.

Maximum allowable floor vibration	**Peak to Peak Amplitude**		**Frequency**
	Micons	**Micro inches**	
	3.8 µm	150	2-8 Hz
	2.5 µm	100	9-15 Hz
	1.5 µm	60	16-21 Hz
	1.0 µm	40	>21 Hz

Table 7 Vibration Specifications

Vibration measurements are taken using an accelerometer. Contact an instrumentation company that has an accelerometer to evaluate your site.

Lighting Considerations

The following is a recommended minimum standard for illumination:

The room containing the engraver should have a minimum of 2153 lumen/m^2 (200 foot-candles).

Noise

The engraver generates a sound of 85 to 90 db when engraving. The Prism enclosures provide a sound barrier to this noise. Ohio GT does not recommend operating the engraver with the enclosures open. If using the machine with the enclosures open, we suggest some type of ear plugs for your operator.

We do not recommend placing the Collage PC in the same room as the engraver.

Communication

Ethernet for Collage Interface to engraver (included with Collage computer).

Recommended: Internet connection, ideally via Collage computer, for TeamViewer remote support.

Collage Computer(s)

This portion details requirements for the Collage layout system.

Environmental Requirements

Lighting Considerations

The Collage PC should be placed in a room with lower light levels. Bright light will make it more uncomfortable for the operator who is sitting in front of the equipment for the day. Direct sunlight should be avoided. If the room has windows, curtains or blinds should be available to reduce the sunlight.

Air Conditioning/Humidity Requirements

Recommended operating temperature range is: 20-25° C (68-77° F)

Recommended relative humidity is: 40-65% non-condensing

Ohio GT strongly encourages that the room with the Collage layout workstation be temperature controlled.

Magnetic Fields

Avoiding placing the Collage workstations near electromagnetic fields. These fields can cause problems with the hard disk, computer monitor, and magnetic media (if used).

Noise

Ohio GT recommends that Collage layout workstations be placed in a location away from the engravers. The engraver generates noise during engraving that may be distracting to the Collage operator. Collage systems should be placed in a separate room to avoid this noise.

Ergonomics

The Collage layout workstation is the centerpiece of the Ohio GT system and the starting point for all cylinder layouts for engraving.

The person(s) assigned to operate the Collage layout workstation will be spending a large part of their day in front of the workstation. Because of the nature of the job, eye and back fatigue are possible. To reduce eye fatigue, position the equipment so the operator can look away and focus on something in the distance. Keeping the lighting levels down will also help prevent eye fatigue. For back fatigue, a chair providing good back support is a good start.

Unloading Requirements

The following information concerns how the equipment will show up at your door. If you have any questions about the shipping arrangements, contact Ohio GT Customer Support.

Ohio GT strongly recommends that you hire **professional movers** to remove the equipment from the truck and move the equipment to the final location.

For installation of the machine, an Ohio GT service technician must be on site, otherwise Ohio Gravure Technologies, Inc, refuses all responsibilities.

Domestic (U.S., Canada, and Mexico)

All equipment is shipped from Ohio Gravure Technologies in an enclosed truck. The easiest method for unloading is with a loading dock. If you do not have a loading dock, contact Ohio GT's Contract Administrator to arrange for a flat bed truck.

International (All other countries)

Machines are wrapped in anti-static plastic wrap, secured to a skid, and enclosed in a solid wood crate. Shipment from Ohio GT is normally by ocean going container. A loading dock allows the easiest removal of the equipment from the container. If you do not have a loading dock, contact Ohio GT.

Size of the Machine

Model	Length	Width	Height
Prism & Prism Prime Engraver	4.376 m (doors closed) 4.658 m (doors opened)	1.078 m	1.355 m
Prism XL & Prism Prime XL Engraver	5.339 m (doors closed) m (doors opened)	1.078 m	1.355 m

Table 8 Machine Size

Weight of the Machine

Model	Net weight	Gross weight
Prism Engraver	4,081 kg	4,728 kg

Table 9 Machine Weight

Net weight is the machine alone. Gross weight is the crated weight.

For complete machine specifications, see pages 17 and 18.

How the Machine is Packed

To avoid damage, the machine is securely packed. Doors are secured with packing material between the door frames to protect them from rubbing during transit. There are no pressure points between packing material and cables.

During transport, no loose parts are allowed to be on the machine. All parts transported with the machine are fastened properly.

Small parts (e.g., cables) are packed separately.

The engrave head is packed separately.

Machine Crate

The engraver is bolted down to a skid sufficient for its weight. The machine and skid are completely encased in a sturdy, well-build wooden shipping crate. The crate is placed into the shipping container (if applicable). When shipping is handled by Ohio GT, the shipping container (if applicable) is reserved for our equipment.

The crate is clearly marked with warning notices about proper handling. Ensure that these warnings are fully complied with.

Arrival At Your Site

This section provides information on moving and installing the engraver.

For installation of the machine, an Ohio GT service technician must be on site, otherwise Ohio Gravure Technologies, Inc, refuses all responsibilities.

Equipment needed

DO NOT lift or move the crate or the machine with a crane!!
Severe and unrecoverable damage to the machine could result.

At least one forklift with a lifting capacity sufficient for the weight of the engraver must be available to move the engraver off the skid. One or more dollies with sufficient capacity may also be needed to aid in moving the machine into its final position.

Removal of the Crate

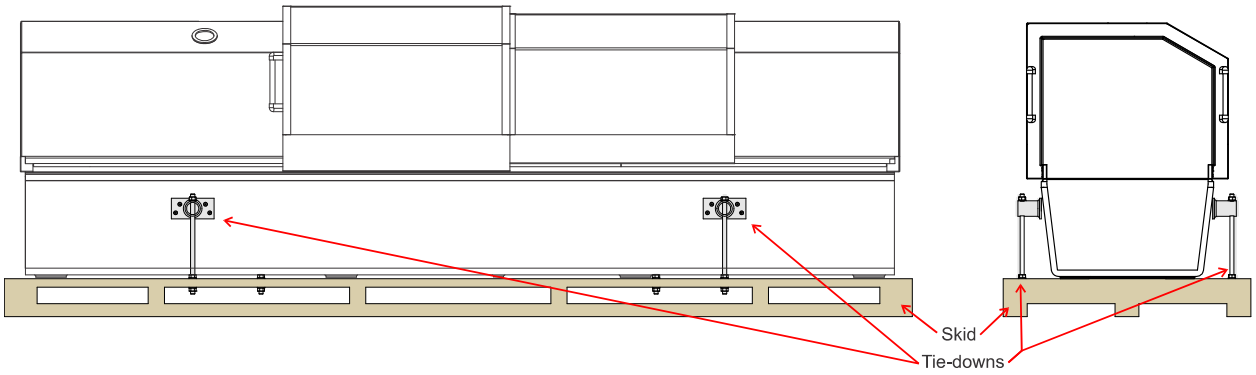
Do not remove the crate until the Ohio GT service technician is on site.

When the crate with the engraver is available for inspection, carefully inspect the top and sides of the crate for damage. If any damage to the crate is found, do not proceed. Contact your insurance company or Ohio GT customer support. It is the customer's responsibility to note on the shipping documents any damage to the crate or any packaging.

If no damage is found, carefully remove the top and sides of the crate. Retain these pieces until the engraver has been installed and accepted as working.

About the Skid

The Prism engraver **must be moved on the skid** that it was shipped with. The skid is held to the machine using four tie-downs, two on each side. After the machine arrives at your facility and is uncrated, keep the machine tied down to the skid as it is moved to its final location.



Moving the Machine Into Position

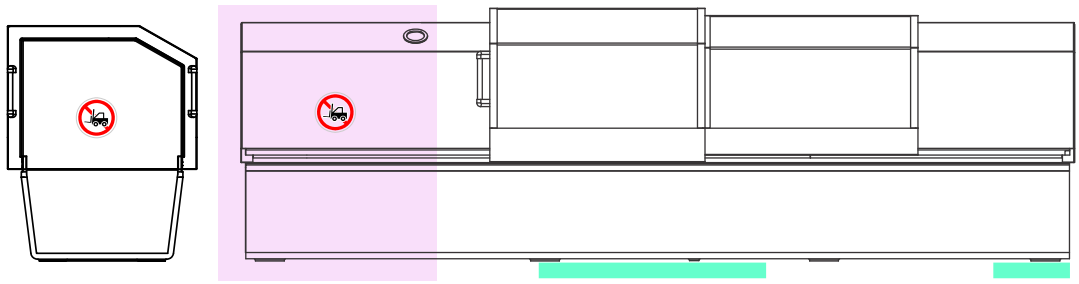
Professional riggers experienced in moving heavy machinery must be used to move the Prism from the loading dock to its final location.

Use a forklift which is rated to move the weight of the machine.

DO NOT lift or move the crate or the machine with a crane!! Severe and unrecoverable damage to the machine could result.

DO NOT lift the machine by using a forklift at the electronics end of the machine.

Important! Do not lift the machine using a forklift at the end with the electronics (this is the end with the Prism logo.) Use the forklift at the other end of the machine or in the center.



After the machine has been uncrated, move the machine on its skid close to its final location.

Remove the tie-down bars from all four sides and from the skid.

The tie-down bars bolted to the sides of the engraver should be removed from the engraver.

Shock Indicators

Shock indicators are attached to the outside of the engraver. These should be carefully inspected.

If an indicator shows the machine was subjected to excessive shock, do not proceed. Contact Ohio GT.

Not Tripped Tripped

Cylinder Information

Cylinder Plating and Finishing

The following information pertains to cylinder plating and finishing. This process is important to the engraving and printing quality of the cylinder.

Copper Hardness

Acceptable copper hardness is:

- 90-95 Rockwell on the Rockwell "B" scale

or

- 200-240 Vickers *see following note*

Note: It is important to understand that measured copper hardness does not indicate how well a cylinder will engrave. Grain structure has a large influence on the engravability of copper. Poor grain structure of the copper will cause hard copper to engrave poorly. Grain structure can be evaluated during engraving. How clean a cell engraves shows the grain structure of the copper. A small amount of burr around a cell indicates good grain structure.

Cylinder Preparation

While there are no standards for preparing a new steel cylinder before plating, many people grind the steel cylinder before plating. This removes machining marks on the cylinder. These marks can alter the way copper plates onto the cylinder. If the copper thickness is too thin, the machining marks can be seen in the engraving.

You may also want to use the same process when preparing to plate over copper, as machining marks in copper may also be seen in the engraving

Cylinder Finishing

Both conventional grinding and machine finishing with diamond tools can be used. We recommend using all the stones when finishing with conventional grinding methods. Skipping stones increases the chance of grinding particles being left in the copper. Grinding particles can chip the diamond stylus, ruining the cylinder. To help prevent this, all coarse stone marks must be removed by the finer stones.

Polishing paste can be used immediately before engraving to remove any tarnish. Thoroughly remove all polishing paste before coating the cylinder with a lubricant. Polishing paste could damage the stylus if not completely removed.

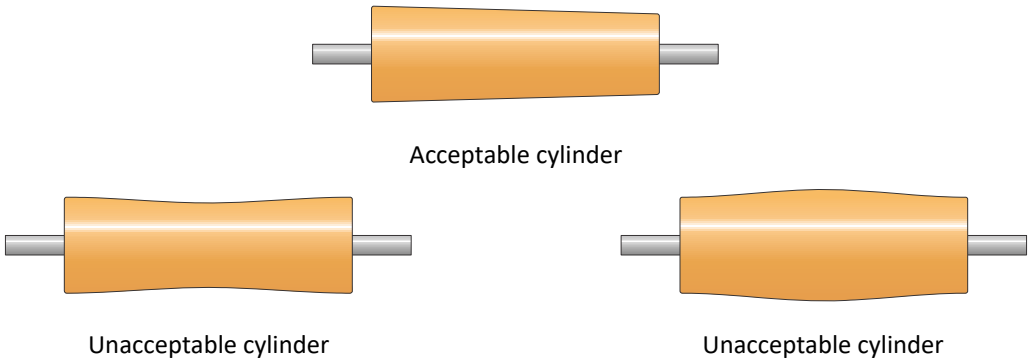
Cylinder Concentricity

Cylinder concentricity plays a major role in engraving and printing quality. *Total indicated runout* or *TIR* creates problems during engraving. Printed density differences around the cylinder occur when TIR is present.

For best results, we strongly recommend holding the TIR to 0.05 mm (0.002 in) or less.

Cylinder Taper

Any cylinder taper can cause problems. The engraver is capable of engraving when minimal diametrical taper is present. Diametrical taper must be no more than 0.075 mm (0.003 in) over the cylinder length. Concave or convex tapers on the cylinder are unacceptable.



General

The following information are suggestions that you may wish to consider in planning your room layout and space requirements.

Storage

Different types of tools are provided with the engravers. To prevent these tools from being misplaced or coming up missing, a lockable storage cabinet is recommended.

A storage cabinet will also allow the various cylinder adapters used on the machine to be stored away safely. These adapters include cones, bearings, bearing shims and live centers

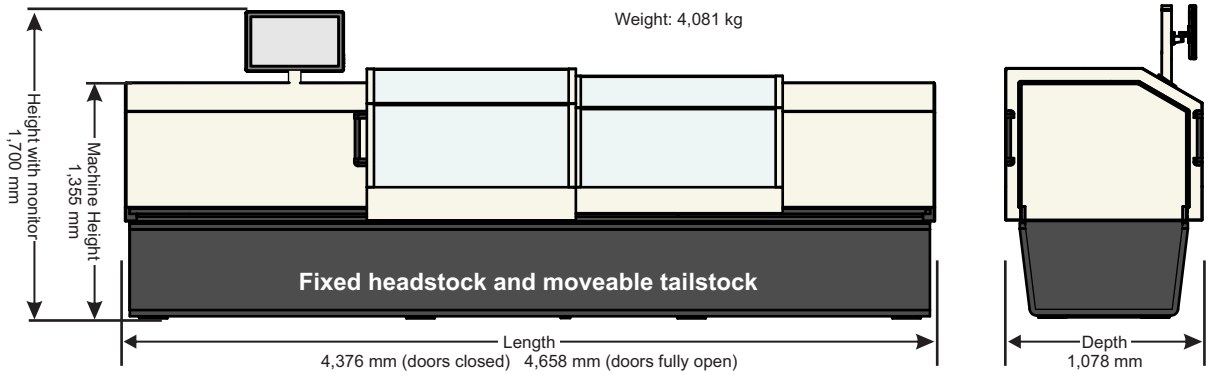
Depending on your safety codes, you may also need a cabinet suitable for the storage of flammable materials. The supplied lubricants (oil, grease) and the cylinder lubricant (Micropel) can be stored here.

Specifications

The following pages include specifications for the engraver, machine clearances, and machine connections location.

PRISM ENGRAVER
Specifications

Machine Dimensions and Weight

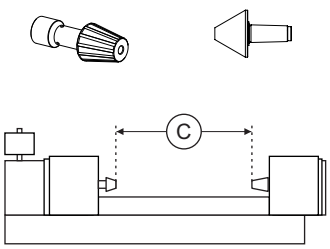


Cylinder Fixturing Options

Hollow Cylinder

Headstock: Direct Cone

Tailstock: Live Center



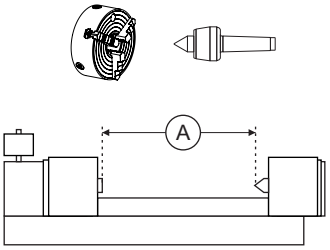
Max Overall Shafted
(A) —
Max Face Length
(C) 1850 mm

Bore range
55 - 125 mm

Shafted Cylinder

Headstock: 3-Jaw Chuck (200mm)

Tailstock: Pointed Live Center

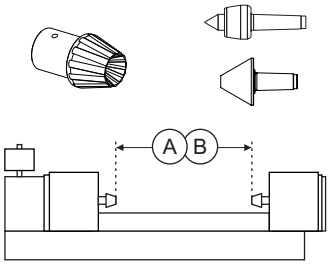


Max Overall Shafted
(A) 1900 mm
Max Face Length
(B) 1700 mm
Chuck throat diameter:
55 mm
Shaft diameter
10 - 100 mm
Max swallow depth: 79 mm

Both Shafted and Hollow

Headstock: Inner/Outer Cone

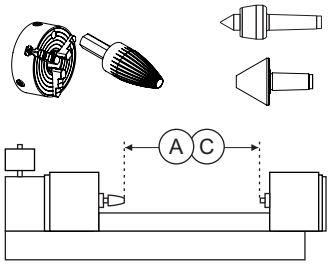
Tailstock: Two Live Centers



Max Overall Shafted
(A) 1900 mm
Max Face Length
(B) 1850 mm
(C) 1850 mm
Bore Range (diameter)
Outer 75 - 115 mm
Shaft diameter
Inner 26 - 68 mm

Hollow Cylinders

Headstock: 3-Jaw Chuck with Cone/Arbor
Tailstock: Two Live Centers



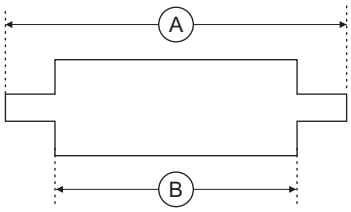
Max Overall Shafted
(A) 1900 mm
Max Face Length
(C) 1600 mm

Bore Range
41 - 114 mm

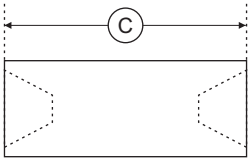
Cylinder Data

Circumference range	350 - 1200 mm (1)
Weight maximum	500 kg
Allowable cylinder taper (2)	75 µm
Allowable runout	50 µm
Copper hardness	190 to 230 HV
Deviation of copper hardness	+/-5 HV

Shafted Cylinders



Hollow Cylinders



(1) Maximum physical cylinder sizes. Engraveable Circumferences depend upon applied engrave head, engraving frequency, screen, and screen angle range.
See Site Survey 9800-3143 for complete machine details *Weight does not include cylinder

Ohio Gravure Technologies Inc. reserves the right to change any specification herein without prior notice.

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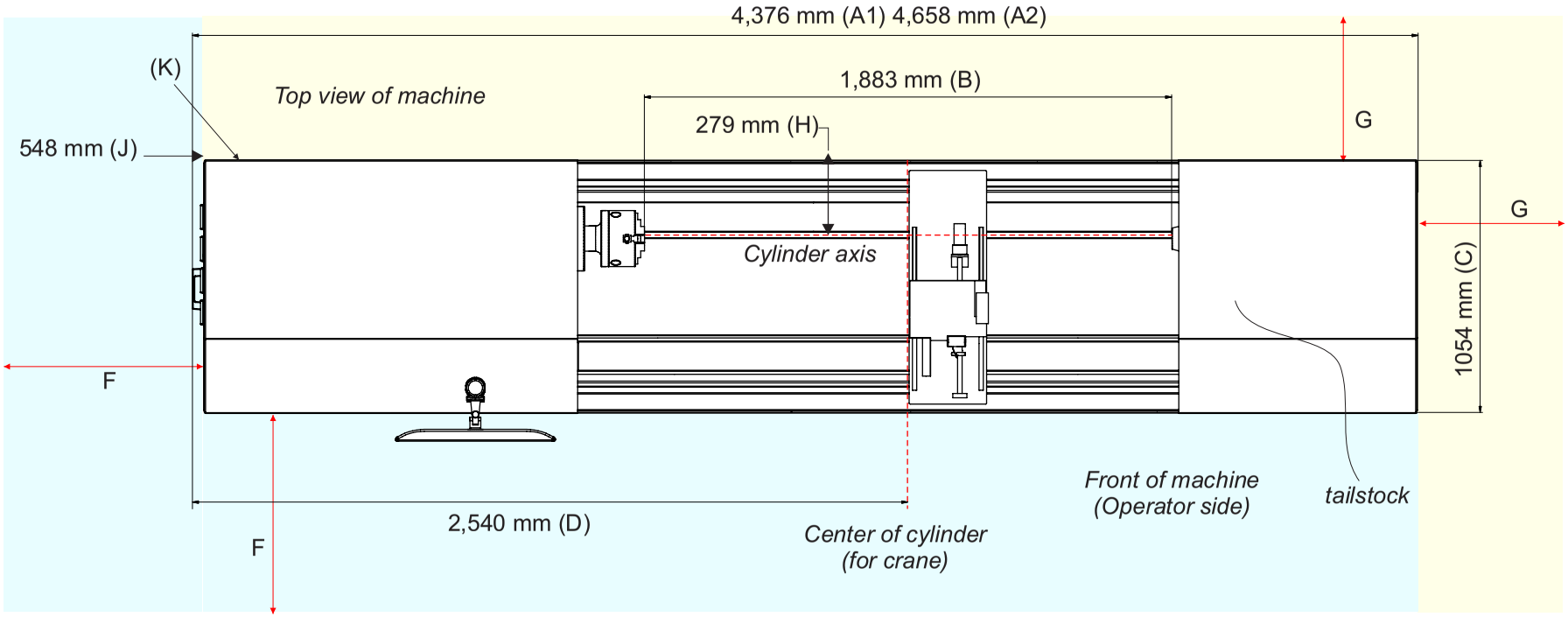
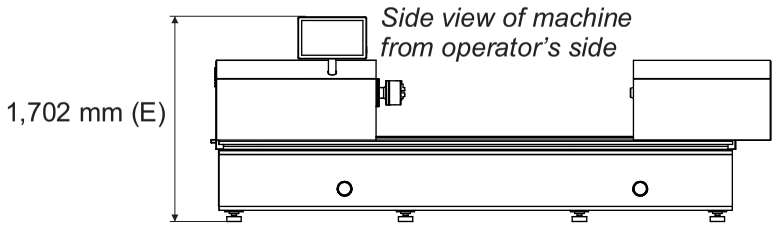
OHIO GRAVURE TECHNOLOGIES

Dimensions and Clearances

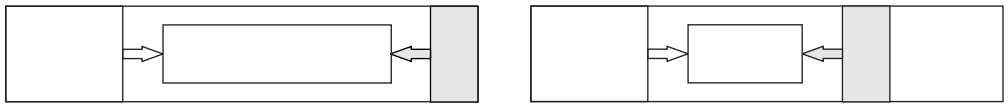
GRAVOSTAR PRISM

Weight: 5688 kg





Headstock is stationary. Only the tailstock moves.



A1: Machine length (doors closed)

A2: Machine length (doors opened)

B: Distance from edge to edge, chuck to live center

C: Machine width

D: Distance from left edge to cylinder center

E: Distance to top of monitor post

F: Recommended clearance, front and left side: 1.5 meter

G: Recommended clearance, back and right side: 1 meter

H: Distance from back of machine to cylinder axis

J: Distance from end of machine to power and network connections

K: Power and network connection.
Recommended network: 1 GB
Minimum network: 100 MB

Illustration shows optional chuck on headstock

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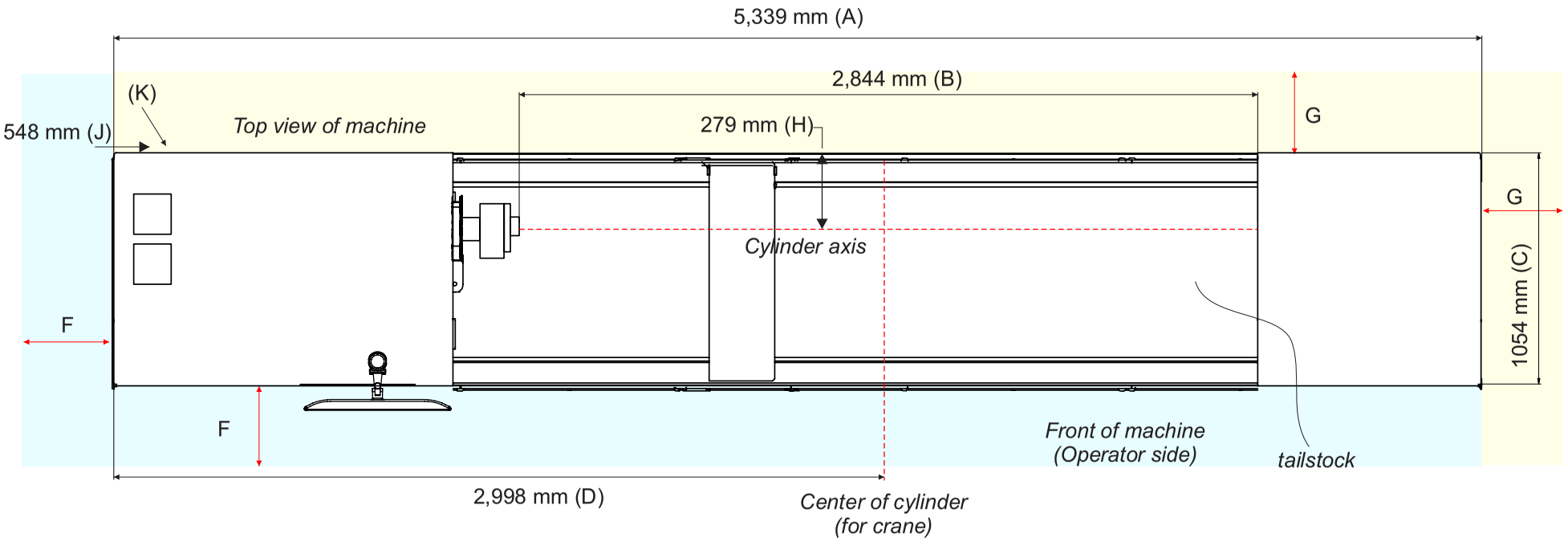
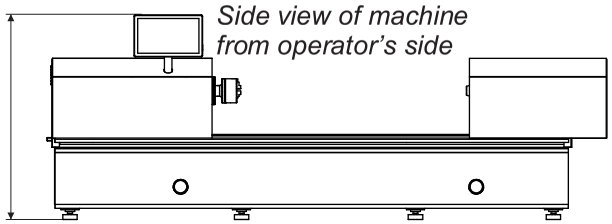
OHIO GRAVURE TECHNOLOGIES

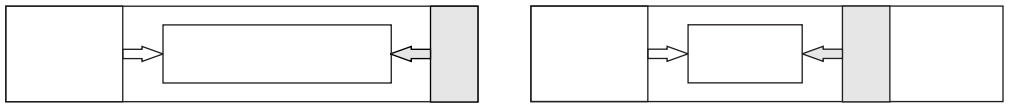
Dimensions and Clearances

GRAVOSTAR PRISM XL





Headstock is stationary. Only the tailstock moves.



A: Machine length (doors closed)

B: Distance from edge to edge, chuck to live center

C: Machine width

D: Distance from left edge to cylinder center

F: Recommended clearance, front and left side: 1.5 meter

G: Recommended clearance, back and right side: 1 meter

H: Distance from back of machine to cylinder axis

J: Distance from end of machine to power and network connections

K: Power and network connection.
Recommended network: 1 GB
Minimum network: 100 MB

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REVISION			
REV	DESCRIPTION	ECO	DATE
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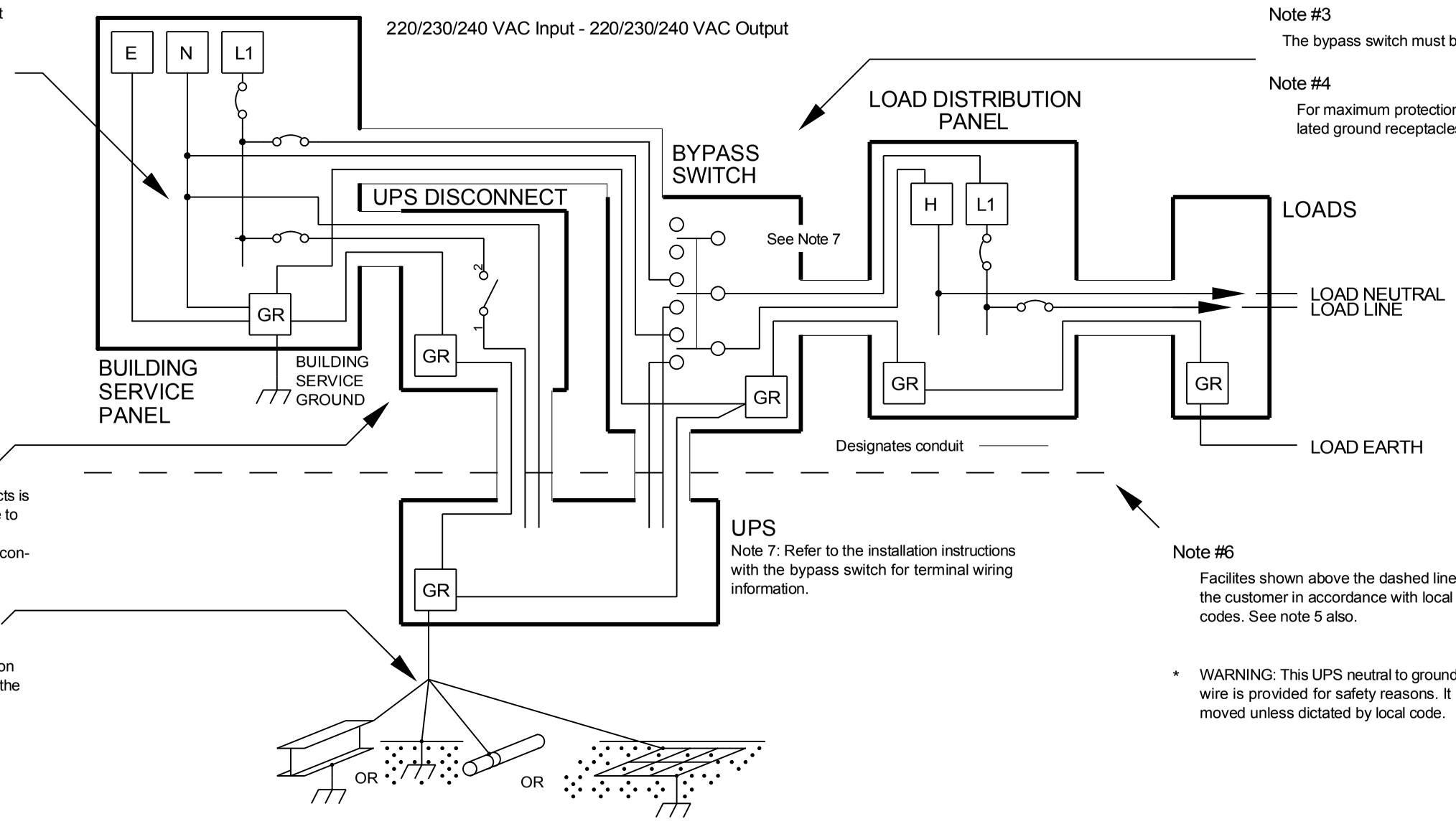
Note #1

UPS and the external service bypass switch must be assigned separate circuit breakers (or fuses) at the Building Service Panel. The UPS circuit breaker (or fuse) specifications are in Table 1.



Note #2

If the Building Service Panel or UPS Fuse Disconnects is some distance from the UPS, a disconnect will have to be installed within sight of the UPS. Best Service Bypass Switches are avalliable with an optional disconnect switch or circuit breaker for the UPS AC input.

Note #3

The bypass switch must be within sight of UPS

Note #4

For maximum protection against ground noise, use isolated ground receptacles.

Note #5

The customer must provide local earth according to national and local regulations. For maximum protection use all of the methods shown for the local earth on the UPS.

Note #6

Facilites shown above the dashed line are provided by the customer in accordance with local building/electrical codes. See note 5 also.

* WARNING: This UPS neutral to ground or earth bond wire is provided for safety reasons. It must not be removed unless dictated by local code.

This earth connection must be made.

NOTE: You must use the specified AC Input service*. The line service requirments for the UPS are calculated for nominal AC input voltage and full rated load with the battery charger operating on maximum charge. Use applicable local or national codes when determing size of circuit breaker or fuse.

* = Circuit breaker or fuse size should correspond to service requirment. Use next larger available circuit breaker or fuse rating if exact match cannot be found.

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ENGR	
APPROVALS	DATE

OHIO GRAVURE TECHNOLOGIES

TITLE: 220V 50Hz 850VA UPS INSTALLATION

SCALE | RELEASE DATE | SHT N O 1 OF 1

SIZE: B | DWG NO . 9400-0002 | REV: A

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