

PURCHASING DIVISION  
CITY OF WORCESTER  
MASSACHUSETTS 01608-1895  
ROOM 201 - CITY HALL  
PHONE (508) 799-1220

**SEALED BID INVITATION**  
**(Supplies, Material, Equipment, Services)**

AN EQUAL OPPORTUNITY AFFIRMATIVE ACTION EMPLOYER

<b>SEALED BID NO. 8086-M4</b>
<b>DATE: September 28, 2023</b>
<b>CITY OF WORCESTER</b> <b>Christopher J. Gagliastro, MCPPO</b> <b>Purchasing Director</b>
<b>BUYER: Maureen McKeon</b>

**NOTICE TO BIDDERS**  
**TERMS AND CONDITIONS**

All bids are subject to the terms and conditions and specificity herein set forth except where specifically deleted by the City of Worcester in Section No. 6 below.

**COMPLETE ORIGINAL COPY (including ALL pages) OF THIS BID MUST BE SUBMITTED IN A SEALED ENVELOPE:**

DATE: October 18, 2023

TIME: 10:00 A.M. LOCAL TIME

PLACE: Purchasing Division, Room 201, City Hall, Worcester, Massachusetts

MARK SEALED ENVELOPE **"Sealed Bid No. 8086-M4, Engineering & Technologies Academy (ETA) Equipment – Doherty Memorial High School/DPF"**

The name and address of the bidder must appear in the upper left hand corner of the envelope. The City of Worcester is not responsible for bids not properly marked.

**GENERAL**

1. This Bid Invitation covers: furnish, deliver and install ETA (Engineering & Technologies Academy) equipment as per the attached requirements and specifications of the City of Worcester.
2. A certified check or bid bond made payable to the "City Treasurer, City of Worcester" in the Amount of \$ N/A must accompany this bid.
3. All bids received will be publicly opened and read in the Bid Room at City Hall at date and time shown above.  
**NO BID WILL BE ACCEPTED AFTER TIME AND DATE SPECIFIED**
4. A performance bond in the amount of \$ N/A of the total dollar award is required.
5. A payment bond in the amount of \$ N/A of the total dollar award is required.
6. All terms and conditions are applicable to this proposal except the following section numbers which are hereby deleted from this invitation: 39 to 43
7. **Questions pertaining to this bid must be directed to Maureen McKeon via email at [mckeonmp@worcesterma.gov](mailto:mckeonmp@worcesterma.gov)**

Other: Please go to [www.worcesterma.gov/finance/purchasing-bids/bids/closed-bids](http://www.worcesterma.gov/finance/purchasing-bids/bids/closed-bids) to obtain bid results.

8. The following meanings are attached to the defined words when used in this bid form.
  - a. The word "City" means The City of Worcester, Massachusetts.
  - b. The word "Bidder" means the person, firm or corporation submitting a bid on these specifications or any part thereof.
  - c. The word "Contractor" means the person, firm or corporation with whom the contract is made by carrying out the provisions of these specifications and the contract
  - d. The words "Firm Price" shall mean a guarantee against price increases during the life of the contract.
9. Any prospective bidder requesting a change in or interpretation of existing specifications of terms and conditions must do so within five (5) days (Saturdays, Sundays and Holidays excluded) BEFORE scheduled bid opening date. All requests are to be in writing to the Purchasing Division (or e-mailed at: [mckeonmp@worcesterma.gov](mailto:mckeonmp@worcesterma.gov)). No changes will be considered or any interpretation issued unless the request is in our hands within five (5) days (Saturdays, Sundays and Holidays excluded) BEFORE scheduled bid opening date.
10. The contractor will be required to indemnify and save harmless the City of Worcester, for all damages to life and property that may occur due to his negligence or that of his employees, subcontractors, etc., during this contract.
11. The Contract Agreement will be in the form customarily employed by the City of Worcester and is on file in the Purchasing Division at City Hall.
12. Bids which are incomplete, not properly endorsed, or signed, or otherwise contrary to these instructions will be rejected as informal by the Purchasing Agent. **Conditional bids will not be accepted.**
13. The Bidder must certify that no official or employee of the City of Worcester, Massachusetts is pecuniarily interested in this proposal or in the contract which the bidder offers to execute or in expected profits to arise therefrom, unless there has been compliance with provisions of G.L. C. 43 Sec. 27, and that this bid is made in good faith without fraud or collusion or connection with any other person submitting a proposal.
14. As the City of Worcester is exempt from the payment of Federal Excise Taxes and Massachusetts Sales Tax, prices quoted herein are not to include these taxes.
15. All prices are to be firm F.O.B. Destination, City of Worcester, Massachusetts, unless otherwise indicated by the City. **Time reserved for award is ninety days.**
16. In case of error in the extension prices quoted herein, the unit price will govern.
17. It is understood and agreed that should any price reductions occur between the opening of this bid and delivery of any order, the benefit of all such reductions will be extended to the City.
18. The City of Worcester reserves the right to reject any and all bids, wholly or in part, and to make awards in a manner deemed in the best interest of the City.
19. Awards will be made to the bidder quoting the lowest net price in accordance with the specifications.
20. The supplier will be bound by all applicable statutory provisions of law of the Federal Government, the Commonwealth of Massachusetts, the City of Worcester, and the Department of Public Safety of the Commonwealth of Massachusetts.
21. Any bid withdrawn after time and date specified, the bidder shall forfeit deposit on bid as liquidated damages.
22. The contractor will not be permitted to either assign or underlet the contract, not assign either legally or equitably any monies hereunder, or its claim thereto without the previous written consent of the City Treasurer and of the Purchasing Agent of the City of Worcester.
23. If this bid shall be accepted by the City, and the bidder shall fail to contract as aforesaid and to give a bond in the amount as specified in Section 4, within ten (10) days, (not including Sunday or a legal Holiday) from the date of the mailing of a notice from the City to him/her, according to the address given herewith, that the contract is ready for signature, the City may by option determine that the bidder has abandoned the contract and thereupon the

proposal and acceptance shall be null and void and the bid security accompanying this proposal shall become the property of the City as liquidated damages.

24. When quoting, the bidder shall submit a signed copy of this bid form, and if bid accepted by the City shall constitute part of the contract of purchase. Do not detach any part of this form 30B (Sealed Bid Goods & Services) when submitting a bid. Bidder must sign and return complete form 30B (Sealed Bid Goods & Services).
25. If in the judgment of the Purchasing Agent any property is needlessly damaged by an act or omission of the contractor or his/her employees, servants or agent, the amount of such damages shall be determined by the Purchasing Agent of the City of Worcester and such amount shall be deducted from any money due the contractor or may be recovered from said contractor in actions at law.
26. It is agreed that deliveries and/or completion are subject to strikes, lockouts, accidents and/or Acts of God.

#### **INSURANCE AND WORKER'S COMPENSATION**

27. COMMERCIAL GENERAL LIABILITY INSURANCE: Contractor to supply the City of Worcester with certificates of insurance evidencing general liability coverage of not less than \$ 1,000,000.00 per occurrence / \$ 2,000,000.00 aggregate.
28. AUTOMOBILE LIABILITY INSURANCE: Contractor to supply the City of Worcester with certificates of insurance evidencing automobile liability coverage, bodily injury and property damage combined single limit, of \$ 1,000,000.00 (all owned, hired, and non-owned autos).
29. COMPENSATION INSURANCE: The contractor shall furnish the City of Worcester with certificates showing that all of his/her employees who shall be connected with this work are protected under statutory worker's compensation insurance policies.
30. The Contractor shall carry public liability insurance with an insurance company satisfactory to the City so as to save the City harmless from any and all claims for damages arising out of bodily injury to or death of any person or persons, and for all claims for damages arising out of injury to or destruction of property caused by accident resulting from the use of implements, equipment or labor used in the performance of the contractor or from any neglect, default or omission, or want of proper care, or misconduct on the part of the Contractor or for anyone of his employ during the execution of the contract.
31. Prior to starting on this contract, the Contractor shall deposit with the Contracting Officer certificates from the insurer to the effect that the insurance policies required in the above paragraphs have been issued to the Contractor. The certificates must be on a form satisfactory to the Purchasing Agent.
32. Except as may otherwise be stated herein, the Contractor shall also carry bodily injury and property damage insurance in an amount not less than those set forth above covering the operation of all motor powered vehicles owned or operated by the Contractor and engaged in this contract.

#### **DISCOUNT**

33. Prompt-pay discounts will be considered when determining the low bid except when prompt-pay discounts are for a period of less than 30 days. In this event prompt-pay discounts will not be taken into consideration when determining low bid.
34. Time, in connection with discount offered, will be computed from date of completion and/or delivery and acceptance at destination, or from date correct bill or voucher properly certified by the contract is received if the latter date is later than the date of completion and acceptance and/or delivery and acceptance.

#### **GUARANTEE**

35. The bidder to who a contract is awarded guarantees to the City of Worcester all equipment, materials and or workmanship for a period of one (1) year after final inspection and acceptance and shall replace promptly any defective equipment, materials and/or workmanship required without additional cost to the City.

## **DELIVERIES AND COMPLETION**

36. It is understood and agreed that in the event of failure on the part of the bidder to indicate date of delivery and/or completion, delivery and/or completion will be made within twelve (12) days from date of notification. Should the successful bidder fail to make delivery or complete contract within time specified, the City reserves the right to make the purchase on such orders at the open market and charge any excess over contract price to the account of the successful bidder, who shall pay the same.
37. The contractor shall familiarize himself with the location and facilities for storage.
38. The City through its Purchasing Division reserves the right to divert delivery from one location to another, and to allow for any change in operating conditions or for any other cause not now foreseen and to proportion deliveries according to available storage facilities.

## **SAMPLING AND ANALYSIS**

39. Each bidder must state the commercial name of the product quoted, name, and address of operator or agent from whom the product will be purchased and in addition shall furnish an analysis of the product, date of analysis, by whom made and their address.
40. Samples of the product to be delivered may be taken by a representative of the City, either prior to delivery or while it is being delivered in the storage facilities at destination, or will be taken from the storage facilities to which the product has been delivered as determined from time to time by the Purchasing Agent. Bidder agrees to furnish the necessary manual labor, without additional cost required to assemble the physical samples, which is to be performed under the direction of the City representative.
41. The representative of the City taking the samples shall be given the opportunity, while sampling, to affix his or her signature to the delivery slip each item represented in his/her sample.
42. Any product after the sampling and analysis, not found meeting the requirements of the contract shall be sufficient cause for the cancellation of the contract at the option of the Purchasing Agent.
43. If any product is found that does not meet the analysis submitted by the bidder in his/her proposal, the Purchasing Agent may, at his or her option, exercise his/her right to reject the product and require that all or any part thereof shall be removed promptly by and at the expense of the contractor and replace it forthwith with a product satisfactory to the Purchasing Agent, or to retain the product and compensate the contractor in an amount as determined by the Purchasing Agent and the City Manager.
44. It is understood and agreed that it shall be a material breach of any contract resulting from this bid for the Contractor to engage in any practice which shall violate any provisions of Massachusetts General Laws, Chapter 151B, relative to discrimination in hiring, discharge, compensation, or terms, conditions or privileges of employment because of race, color, religious creed, national origin, sex, age or ancestry.
45. The undersigned as bidder, declares that the only parties interested in this proposal as principals are named herein; that this proposal is made without collusion with any other person, firm or corporation, that no officer or agent of the City is directly or indirectly interested in this bid; and he/she proposes and agrees that if this proposal is accepted he/she will contract with the City in accordance with the specifications, also the terms and conditions as spelled out in this bid form.
46. No Person, including but not limited to corporations, partnerships, limited partnerships or limited liability corporations, shall be eligible to receive a contract under this invitation to bid and/or requires for proposal if that person has been convicted of any felony offense involving the distribution of controlled substances as that term is defined under Chapter 94C of the General Laws and, for contracts to be performed for on-site services to the Worcester Public Schools, if that person or any person to be employed by that person in the performance of such on-site services has been convicted of a "sex offense" or a "sex offense involving a child" or a "sexually violent offense" or would meet the definition of "sexually violent predator" as those terms are defined in Section 178C of the General Laws and who must register with the sex offender registry board.



47. The Contractor shall at all times enforce strict discipline and good order among his employees and shall not employ for work or services relating to this contract any unfit person or anyone not skilled in the task assigned to him. In light of the fact that the performance of this contract requires the Contractor and its employees to have significant interaction with the public, the Contractor shall require all employees who may perform services under this contract to conduct themselves in a courteous, professional manner. If the Contractor is notified by the Contract Officer that any person engaged upon the work is incompetent, unfaithful, disorderly, discourteous, or otherwise unsatisfactory, then such person shall be discharged from providing services or work pursuant to this contract. Without limiting the generality of the foregoing, intimidation, threats and/or violent conduct of any kind or nature directed to members of the public are absolutely prohibited. Failure to comply with this requirement shall be grounds for termination of the contract.
48. The Contractor's performance may be evaluated on an ongoing basis including but not limited to consideration of complaints received from members of the public. In order to facilitate this evaluation, the Contractor shall provide the City with documents and records upon request. The Contractor shall further obtain from its employees authorization that appropriate City personnel may obtain all available criminal offender information ("CORI") from the Criminal History Systems Board. A high number of unresolved complaints, any number of complaints that are particularly severe, or employment of individuals who have been convicted of assault or other violent crimes shall be grounds for the early termination or non-renewal of the contract by the City.
49. The procurement officer shall award the contract to the lowest responsible and responsive bidder. The term "responsible bidder" means "a person who has the capability to perform fully the contract requirements, and the integrity and reliability which assures good faith performance." Consistent with its duty to maintain public order and promote public safety, the City has determined that this contract is of a type and nature so as to be particularly sensitive due, at least in part, to the contractor's inherent access and dealings with the members of the general public. Therefore, the City has concluded that additional scrutiny is justified as it determines whether a particular bidder is responsible, having the integrity and reliability to properly perform the requested services. This may entail consideration of the contractor's system of oversight, training and supervision of its employees, including but not limited to its requirement of a high standard of customer service and courtesy in its dealings with the public. The bidder's care and diligence in hiring and assigning its employees will also be considered. In making its determination, the City reserves the right to examine any and all information at its disposal, including but not limited to prior City contracts, the experiences and information obtained from current and former customers (whether identified by the bidder as references or not), as well as other sources available to the City, including but not limited to court documents, newspapers, financial reports (such as DUNS), and certain police data and reports.
50. The Contractor, acting through its owner(s) or any of its employees, or its agents or sub-contractors and any of their employees, shall not engage in any behavior, whether during the course of its duties under this contract or at any other time, that is illegal, criminal or otherwise shocking or offensive to the general public. The determination whether any particular behavior is illegal, criminal or shocking to the general public shall rest in the sound judgment of the Contracting Officer or the City Manager. In making such determination, the Contracting Officer or the City Manager shall apply the general standards of the community. No criminal conviction or formal charges shall be required to make such determination. Such behavior need be something more than trivial and something which would cause the general public to have concerns either about the safety of individuals coming in contact with the Contractor or about the character and integrity of the individuals with which the City does business. Violation of this provision shall be grounds for immediate and unilateral termination of this contract by the City upon five days' notice as otherwise provided herein

GIVE FULL NAMES AND RESIDENCES OF ALL PERSONS INTERESTED IN THE FOREGOING PROPOSAL.

(NOTICE: Give first and last name in full; in case of corporations, give corporate name and names of President, Treasurer, and Manager; and in case of firms give names of the individual members)

Name	Address	Zip Code
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

KINDLY FURNISH THE FOLLOWING INFORMATION REGARDING BIDDER:

(1)	If a Proprietorship
Name of Owner _____	
Business Address _____	
Zip Code _____	Telephone No. _____
Home Address _____	
Zip Code _____	Telephone No. _____

(2)	If a Partnership	
Full names and addresses of all partners		
<u>Name</u>	<u>Address</u>	<u>Zip Code</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
Business Address _____		Zip Code _____
Tel. No. _____		

(3) If a Corporation

Full Legal Name \_\_\_\_\_

State of Incorporation \_\_\_\_\_ Qualified in Massachusetts ? Yes \_\_\_\_\_ No \_\_\_\_\_

Principal Place of Business \_\_\_\_\_

Street P.O. Box

City/Town State Zip

Telephone No. \_\_\_\_\_

Place of Business in Massachusetts \_\_\_\_\_

Street P.O. Box

City/Town State Zip

Telephone No. \_\_\_\_\_

GIVE THE FOLLOWING INFORMATION REGARDING SURETY COMPANY

Full Legal Name of Surety Company \_\_\_\_\_

State of Incorporation \_\_\_\_\_ Admitted in Massachusetts ? Yes \_\_\_\_\_ No \_\_\_\_\_

Principal Place of Business \_\_\_\_\_

Street P.O. Box

City/Town State Zip

Place of Business in Massachusetts \_\_\_\_\_

Street P.O. Box

City/Town State Zip

Telephone No. \_\_\_\_\_

NOTE

The Office of the Attorney General, Washington, D.C. requires the following information on all bid proposals amounting to \$1,000.00 or more.

F.I.D. Number of bidder \_\_\_\_\_

This number is regularly used by companies when filing their "EMPLOYER'S FEDERAL TAX RETURN, U.S." Treasury Department Form 941.

AUTHORIZED SIGNATURE OF BIDDER \_\_\_\_\_ TITLE \_\_\_\_\_  
PLEASE SIGN

DATE \_\_\_\_\_ BID SECURITY \$ \_\_\_\_\_

The name of Customer Service Representative and the Contract Administrator responsible for servicing this account in the event of contract award are:

NAME (PLEASE PRINT) *Customer Service Rep.* \_\_\_\_\_ TEL. NO. \_\_\_\_\_

NAME (PLEASE PRINT) *Contract Administrator* \_\_\_\_\_ TEL. NO. \_\_\_\_\_

FAX NUMBER \_\_\_\_\_ FAX # \_\_\_\_\_

E-MAIL (Customer Service Rep.): \_\_\_\_\_

E-MAIL (Contract Administrator): \_\_\_\_\_

UNDER MASSACHUSETTS GENERAL LAWS, CHAPTER 30B: SECTION 10, THE FOLLOWING CERTIFICATION MUST BE PROVIDED:

Section 10. A person submitting a bid or a proposal for the procurement or disposal of supplies, or services to any governmental body shall certify in writing, on the bid or proposal, as follows:

" The undersigned certifies under penalties of perjury that this bid or proposal has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals."

(Please Print) \_\_\_\_\_  
Name of Person Signing Bid

\_\_\_\_\_  
Signature of Person Signing Bid

\_\_\_\_\_  
Company

**No award will be made without vendor certification of the above.**

Bidders must state and identify the product offered, such as manufacturer's name, trade name, brand name and quality next to each item. WE MUST KNOW WHAT HAS BEEN OFFERED.

The quantities shown herein are estimated only and the Contractor will be required to furnish all quantities ordered by the City during the period of the contract.

YES    ☒    NO

Delivery to be made to: Worcester, MA, as required

This Bid includes addenda numbered \_\_\_\_\_

<b>NO PRICE ADJUSTMENTS ALLOWED. PRICES QUOTED ARE FINAL. CHECK BEFORE SIGNING!</b>
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Item No.	Quantity	Description	Mfg.	Model No.	Unit Price	Total Amount
		<p><b>Furnish, deliver and install ETA Equipment as per the attached requirements and specifications of the City of Worcester Public Schools.</b></p> <p><b>Any and all questions regarding this bid must be directed to Maureen McKeon at <a href="mailto:mckeonmp@worcesterma.gov">mckeonmp@worcesterma.gov</a></b></p>				See Pricing Sheets

TERMS, PROMPT-PAY DISCOUNT \_\_\_\_\_ % 30 DAYS, NET 45 DAYS.

DELIVERY AND/OR COMPLETION TO BE MADE AS REQUIRED BY THE CITY/WPS.

NAME OF BIDDER \_\_\_\_\_

## **SCOPE OF SERVICES / SPECIFICATIONS – ETA EQUIPMENT, DOHERTY MEMORIAL HIGH SCHOOL / DPF**

**Bid#: 8086-M4**

The City of Worcester is requesting Public Sealed Bids for Robotic Mechanical Arms, CNC Machines, and software and workbenches required to operate the machinery ('the Equipment') for the Engineering & Technology Academy at the new Doherty Memorial High School ('the School'), scheduled to open August 2024. Equipment is specified in the Bid Forms provided.

### **INTERPRETATION OF BID DOCUMENTS**

The intent of the City of Worcester is to receive bids for Equipment for the new Doherty Memorial High School.

No oral interpretation will be made to any bidder. Every interpretation requested shall be made in writing to the City of Worcester Assistant Purchasing Director, Maureen McKeon, via email: [mckeonmp@worcesterma.gov](mailto:mckeonmp@worcesterma.gov)

### **THE SUBMISSION MUST INCLUDE:**

1. Doherty Memorial High School Equipment Bid Form.
  - Completed Vendor Information, Lead Times and Shipping & Installation pricing at the top of each page.
  - Note the City of Worcester is Tax Exempt - Exemption Certification No. 04-6001418
  - Note that the Bid Form is arranged by piece of equipment; all associated accessories, software, and supportive workbenches must be included with each piece.
2. Warranty Information for each item
3. Page 3: Contact Information
4. Page 4: Vendors shall have been in business for at least 3 years prior to the date of this IFB and shall be able to provide references for installations of similar size and scope. Vendors must have completed three (3) projects within the last three (3) years of similar scope and size to be considered for award.
5. Equals: No Equals will be accepted. Doherty Memorial HS needs to maintain continuity with the currently used Intelitek curriculum and equipment for this Chapter 74 Program. Bids must be for equipment as Specified. The Equipment selected for bidding represents both high quality and superior durability thereby providing the City with maximum value for the necessary equipment.

### **AWARDS**

Contracts resulting from this bid will be awarded to the lowest responsible and responsive bidder.

The contract shall be binding on heirs, successors, or assignees in the event of change in management, through sale or by other means. The contract shall not be sublet, assigned, or transferred without the written permission of the City.

The contract period shall extend until six months after Project completion and City sign-off, during which time additional quantities of the items provided by the Vendor may be purchased by the City at the same or lower cost than the amount specified in the bid, up to those allowable under MGL c. 30B.

### **DELIVERY SCHEDULE**

The Equipment will be delivered and installed at the school during the month of May 2024.

### **SCHOOL LAYOUT**

The School is composed of six floors, accessible via two elevators, as shown in the 'DHS Receiving Plans'. Delivery will be through the loading dock if necessary, or through the overhead door located on the same floor (Ground Floor) as the ETA department where the Equipment will be installed. Equipment will be placed as shown on the 'DMHS ETA Equipment Plans'.

**DELIVERY, INSTALLATION AND SERVICES**

1. The Vendor will furnish, assemble, and install the equipment so that it is ready for use.
2. The Vendor will perform all warranty work during the term of the standard manufacturers' warranty.
3. Deliveries must occur on the exact day and time arranged. Any deviation to this schedule must be approved by BlueLine Design prior to delivery; deliveries that arrive at an unscheduled time will not be accepted.
4. All bid prices submitted will be understood to mean an inside delivered and installed price, including unpacking and assembly of items, to be completed and set in place to each designated room or area, as shown on FF&E Plans provided by BlueLine Design.
5. All boxes and wrapping materials must be removed from the School by the Vendor after delivery, and the Equipment and premises left clean and ready for use.
6. Any accidental damage incurred to the work of others during installation will be repaired or replaced by the Construction Manager, at the expense of the Vendor. The cost of the repairs and/or replacement will be deducted from payments due the Vendor. Vendors will be afforded the opportunity to review the damages with the construction manager in advance of the repairs and/or replacement.

**POST-INSTALLATION**

The Vendor and/or installer will walk through the installation with the Receiving Coordinator at the end of installation. Any outstanding issues will be noted and must be addressed to the School's satisfaction during the month of installation; completion of Punch List items and submission of project closeout submittals shall be provided within 30 calendar days of the date of installation. Payment to the Vendor will not be authorized by BlueLine Design until all outstanding issues have been resolved.

**BID DOCUMENTS**

The bidder is to familiarize him/herself thoroughly with the documents enumerated herewith, as it is conclusively understood that all bids are based upon full compliance with the various provisions contained in said documents.

**VENDOR INFORMATION**

<b>CONTACT NAME:</b>	
<b>COMPANY NAME:</b>	
<b>COMPANY TAX ID #:</b>	
<b>YEARS IN BUSINESS:</b>	
<b>CONTACT PHONE NUMBER:</b>	
<b>CONTACT MOBILE PHONE NUMBER:</b>	
<b>CONTACT EMAIL:</b>	
<b>AUTHORIZED SIGNATURE:</b>	

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Authorized Signature

Date



**REFERENCE FORM**

**Please furnish the names of 3 clients for whom you have completed installations during the past 3 years. Additional pages may be attached:**

**Bidder:**

**Reference 1:**

Address:

Contact Name/Email and Phone:

Year Completed and Amount of Contract:

Description of Installation:

**Reference 2:**

Address:

Contact Name/Email and Phone:

Year Completed and Amount of Contract:

Description of Installation:

**Reference 3:**

Address:

Contact Name/Email and Phone:

Year Completed and Amount of Contract:

Description of Installation:



# SCORBOT-ER 4u Educational Robot

The SCORBOT-ER 4u robot is a versatile and reliable system for educational use. The SCORBOT-ER4u robot arm can be mounted on a tabletop, pedestal or linear slidebase.

The robot's speed and repeatability make it highly suited for both stand-alone operations and integrated use in automated workcell and FMS applications such as robotic welding, machine vision and CNC machine tending. The optional RoboCell 3D simulation software lets students design and control industrial workcells.



## Standard Features

- Mechanical arm
- Controller-USB
- USB communication cable
- Software CD
- Plastic dust covers
- Documentation for all software and hardware components
- This system is certified for CE safety compliance.

## Optional Accessories

- DC servo motor kit
- Gravity parts feeder
- Linear conveyor
- Linear slidebase for small robots
- MicroASRS
- Multi-purpose gripper adapters
- Rotary index table
- Teach Pendant for USB Controller
- Linear Table
- XY-Table
- Motor Kit

## Applications (samples)

- ER4 u with Machine Tending (Milling/Turning/Laser Engraver)
- ER4 u with Assembly and/or Quality control

## Specifications

### Mechanical structure

Vertically articulated

### Number of Axes

5 axes plus servo gripper

### Axis Movement

Axis 1: Base rotation  
Axis 2: Shoulder rotation  
Axis 3: Elbow rotation  
Axis 4: Wrist pitch  
Axis 5: Wrist roll

### Range

310°  
158°  
260°  
260°  
Unlimited (mechanically);  
±570° (electrically)

### Effective Speed

20°/sec  
26.3°/sec  
26.3°/sec  
83°/sec

### Maximum Operating Radius

610 mm (24")

### End Effectors

DC servo gripper, with optical encoder, parallel finger motion; Measurement of object's size by means of Gripper sensor and software.

### Maximum Gripper Opening

75 mm (3") without rubber pads  
65 mm (2.6") with rubber pads

### Homing

Fixed position on each axis found by means of micro switches

### Feedback

Optical encoder on each axis

### Actuators

12 VDC servo motors

### Transmission

Gears, timing belts, lead screw

### Maximum Payload

Default parameters 1Kg (2.2 lbs)  
Reduce velocity increase weight up to 2.5Kg (5.5 lbs)

### Position Repeatability

±0.18 mm (0.007") at TCP (tip of gripper)

### Weight

10.8 kg (23.8 lb)

### Maximum Path Velocity

700 mm/sec (27.6"/sec)

Ambient Operating Temperature

2°-40°C (36°-104°F)

# SCORBOT-ER 4u Educational Robot

## USB Controller

### Dimensions

- 315(L)x223(W)x117(H) mm (12.4"x8.8"x4.6")

### Weight

- 7 kg (15.4 lb)

### Ambient Operating Temperature

- 0°C-55°C (32°F-131°F)

### Type of Control

- Real-time
- PID (Proportional, Integral, Differential)
- PWM (Pulse-Width Modulation)

### Communications

- USB connection to PC, Plug-and-Play without rebooting
- Integrated RS232 port for Teach Pendant connection

### Microcontroller

- Full featured, NEC V853 RISC 32-bit microcontroller

### Inputs

- 8 digital inputs PNP/NPN (High/Low) configurable, 0-24VDC max.
- 4 analog inputs (8-bit resolution): input voltage 0-10VDC

### Outputs

8 digital outputs:

- 1 - 4: relays, 1.0A max.
- 5 - 8: sink/source configurable open collectors

Sink: 15VDC, 0.5A max. for each output

Source: 15VDC, 50mA max. for all outputs combined

2 analog outputs (8-bit resolution): output voltage 0-10VDC, 20mA max

### LED Indicators

- Main power, bicolor: green: power on; no communication with PC red: power on; no communication with PC flashing: power on; PC USB communications timeout Motors Power ON (green), Emergency (red) 8 digital inputs (green), 8 digital outputs (orange)

### User Power Supply

- 12VDC 0.1A max.

### Power Requirements

- 110/220VAC (+15%, -10%), 2A max, 50/60Hz

### Internal Power Supplies

- Servo: 24V (depending on input voltage & load)
- Digital: 5V, +15V, -12V

## Ordering Information

### Hardware

Scorbot-ER 4u Robotic Arm	00-0413-0000
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### Software

RoboCell virtual simulation control	63-7000-0100
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### Curriculum & Courseware Bundles

(See E-learning data sheet for details)

Scorbot-ER 4u Fundamentals	77-3046-0000
Scorbot-ER 4u Advanced	77-3048-0000
Scorbot-ER 4u Materials Handling I	77-8082-0000
Scorbot-ER 4u Materials Handling II	77-8083-0000
Scorbot-ER 4u Automated Welding	77-3001-0000
Robotics & Material Handling I w/ER4U	ROB-ER4U-MAT
Robotics Automation Technology Skills Project	RAT-ER4U-1000
Robotics Automation Project Parts	RAT-ER4U-ACC1
Scorbot ER4u Welding LAB ER4U	ROB-WELD-ER4U

### Robotics Accessories

End Effector Attachment for ER4U Gripper	00-0609-0000
End Effector Attachment for DC Servo Gripper	00-0616-0000
Teach Pendant	00-1710-0000
Conveyor	10-5803-000
Rotary Table	00-1009-0000
Linear Slide base	00-1020-0000
Linear Slide base	00-1021-0000
Linear Positioning Table 300mm	00-1013-0000
XY Positioning Table 24V	00-1014-0000
MOBILE Workbench 1500x1140MM	00-1293-0000

### Hardware Bundles

<b>SCORBOT-ER4u, Introductory Package</b>	<b>ROB-ER4U-INTRO</b>
---	-----------------------

Includes

- SCORBOT-ER 4u
- Gripper attachment for round and square parts
- Teach Pendant
- Conveyor Belt tabletop
- Photoelectric Sensor for Belt Conveyor
- Gravity Feeder w/ Part Present Switch
- Robocell Software

<b>SCORBOT-ER4u, Standard Package</b>	<b>ROB-ER4U-STND</b>
---------------------------------------	----------------------

Includes

- ROB-ER4U-PACK Introductory package
- I/O Experiment Table
- Rotary Index Table (24V)
- Photoelectric Sensor for Rotary Index Table
- Workbench 1800x800mm (Formica Top)
- Intro package plus

<b>SCORBOT-ER4u, Advanced Package</b>	<b>ROB-ER4U-ADV</b>
---------------------------------------	---------------------

Includes

- ROB-ER4U-PACK Introductory package
- I/O Experiment Table
- Rotary Index Table (24V)
- Photoelectric Sensor for Rotary Index Table
- Workbench 1500x800mm (slotted aluminum top)
- Adapter Mounting Plate for ER4u
- Viewflex - Machine Vision (Stand 1000mm)
- Marked Aluminum Cylinder
- Parts Bin



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Figure 1: I/O Experiment Table

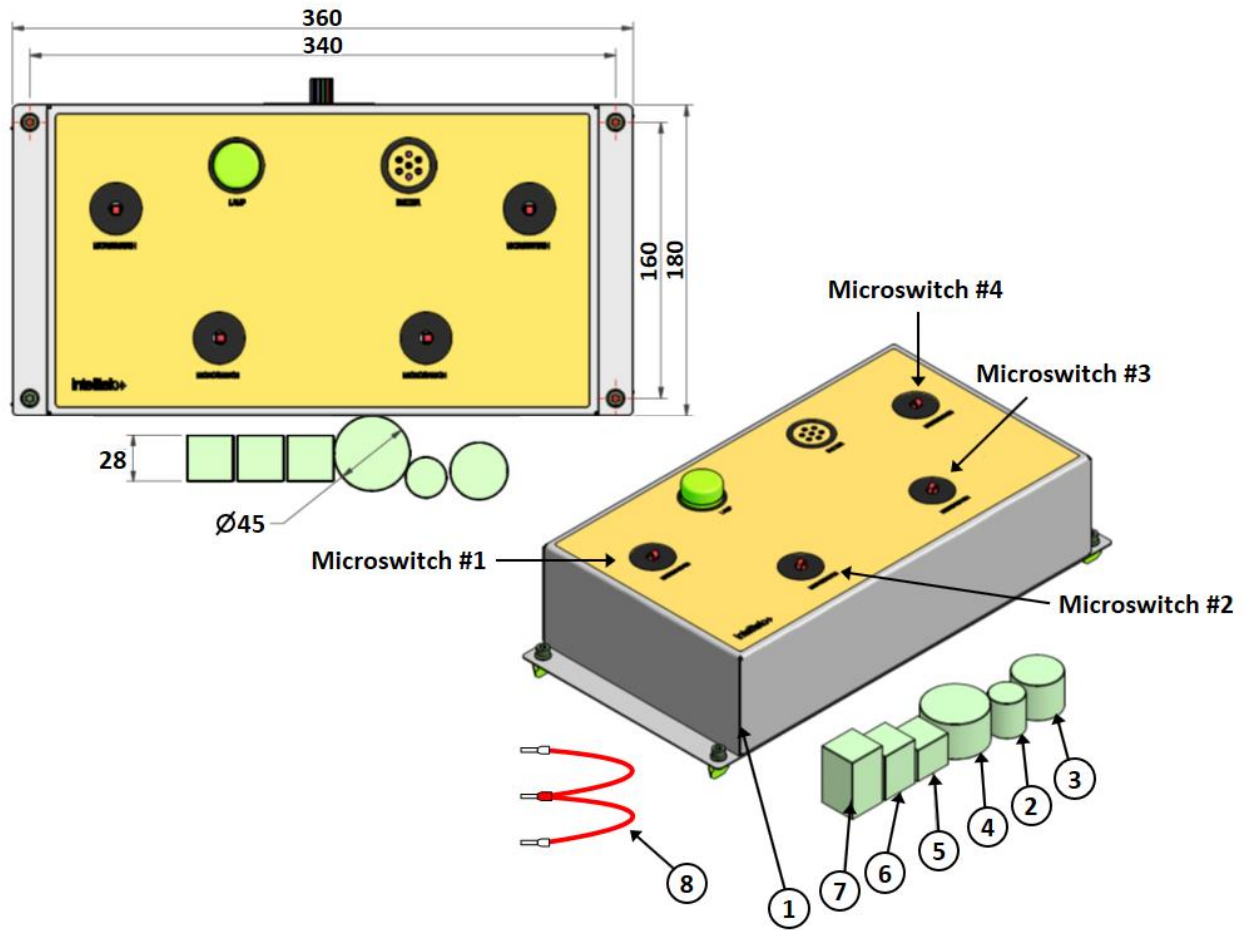


Table 1: Parts List

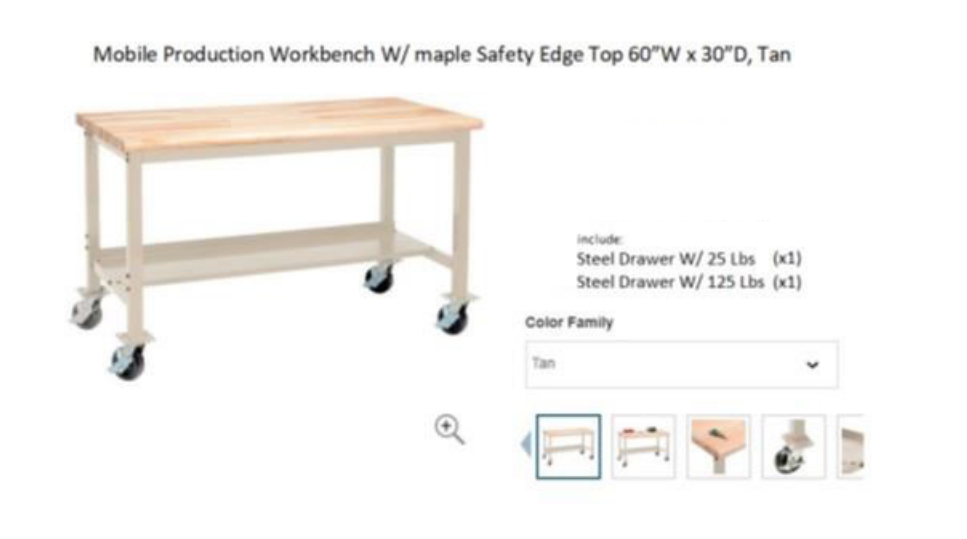
Item	Qty	Part Number	Description
1	1	015005	Experiment Table
2	1	113018	Bar Round PVC, D=25mm
3	1	113019	Bar Round PVC, D=35mm
4	1	113020	Bar Round PVC, D=45mm
5	1	113021	Square Prism PVC 28x28x25mm
6	1	113022	Square Prism PVC 28x28x35mm
7	1	113023	Square Prism PVC 28x28x45mm
8	1	32-5400-0557	Red Power Jumper (for USB Controller)

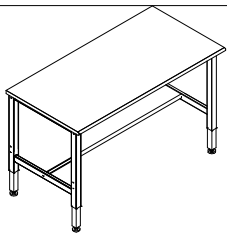
**Intelitek #10-5596-0000    Cat# WG253989TN (Set)**

11-06-2022   Y.A

Workbench, 60"W x 30"D, Tan (Set)

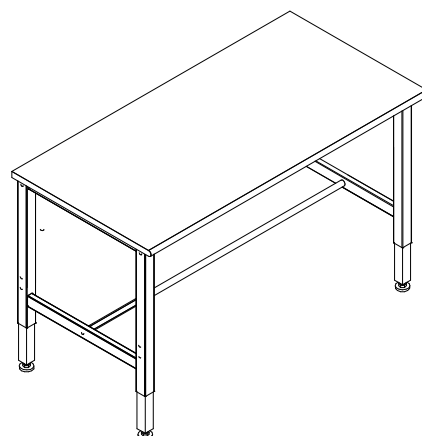
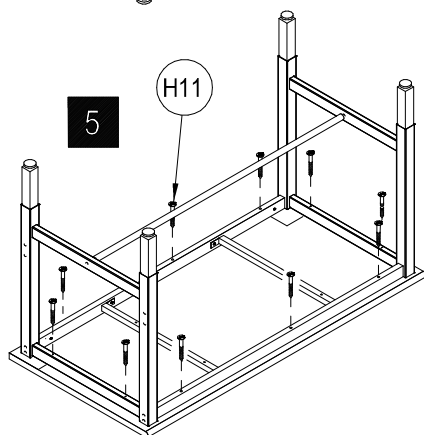
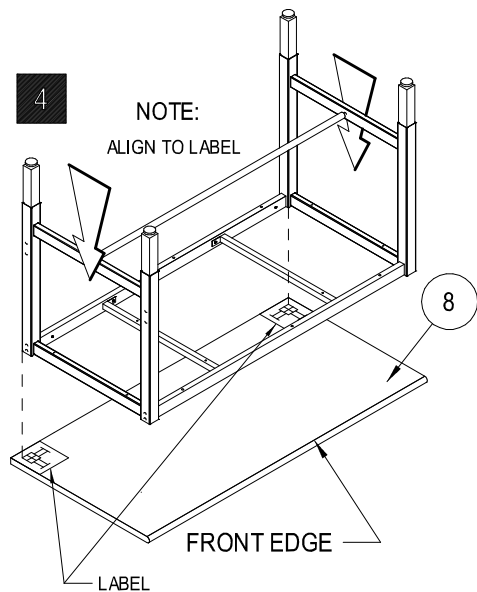
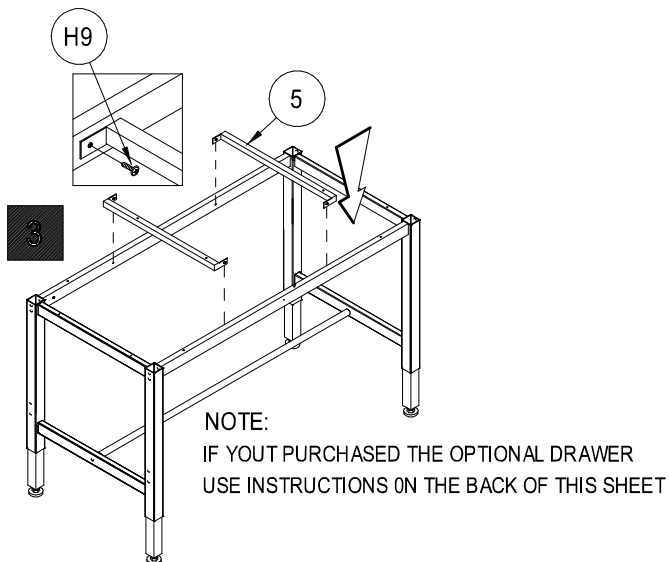
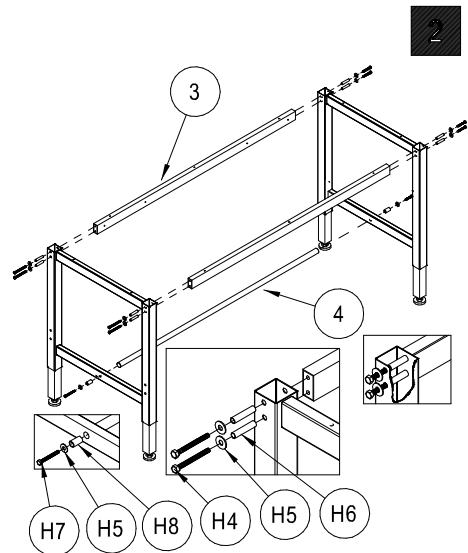
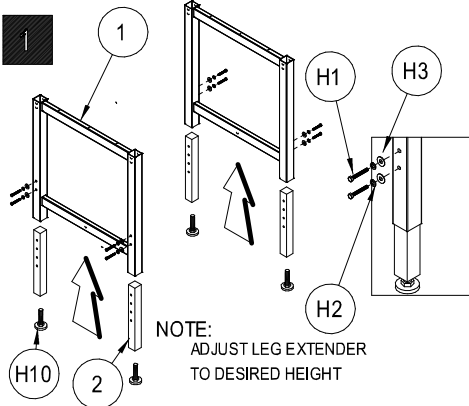
PART #	Description	Quantity
253989TN	Mobile Production Workbench W/ maple Safety Edge Top 60"W x 30"D, Tan	1
249374TN	Steel Drawer W/ 25 Lbs Capacity, 17-1/4"W x 20"D, Tan	1
249375TN	Steel Drawer W/ 125 Lbs Capacity, 17-1/4"W x 20"D, Tan	1





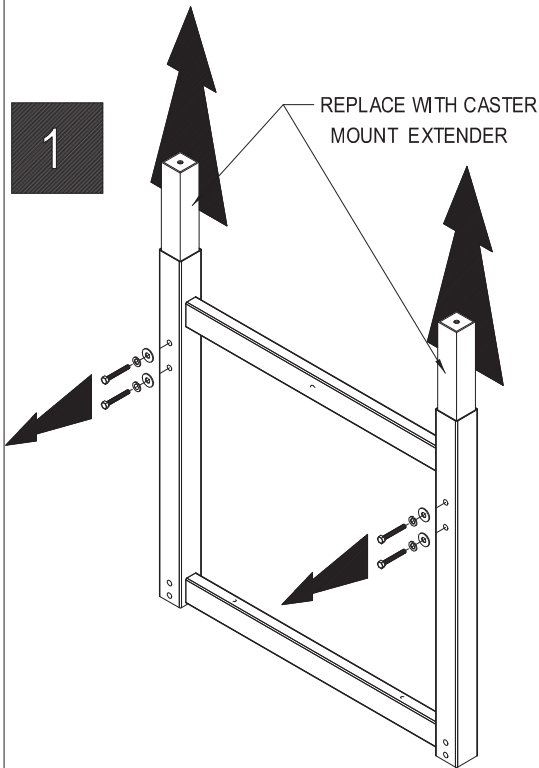
# ADJUSTABLE HEIGHT WORKBENCH ASSEMBLY INSTRUCTION



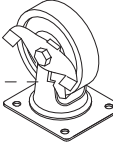
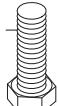
CONTENTS	
REF.	QTY.
1	2
2	4
3	2
4	1
5	2
6	1
H1	8
H2	8
H3	8
H4	8
H5	12
H6	8
H7	2
H8	2
H9	4
H10	4
H11	10
1	1

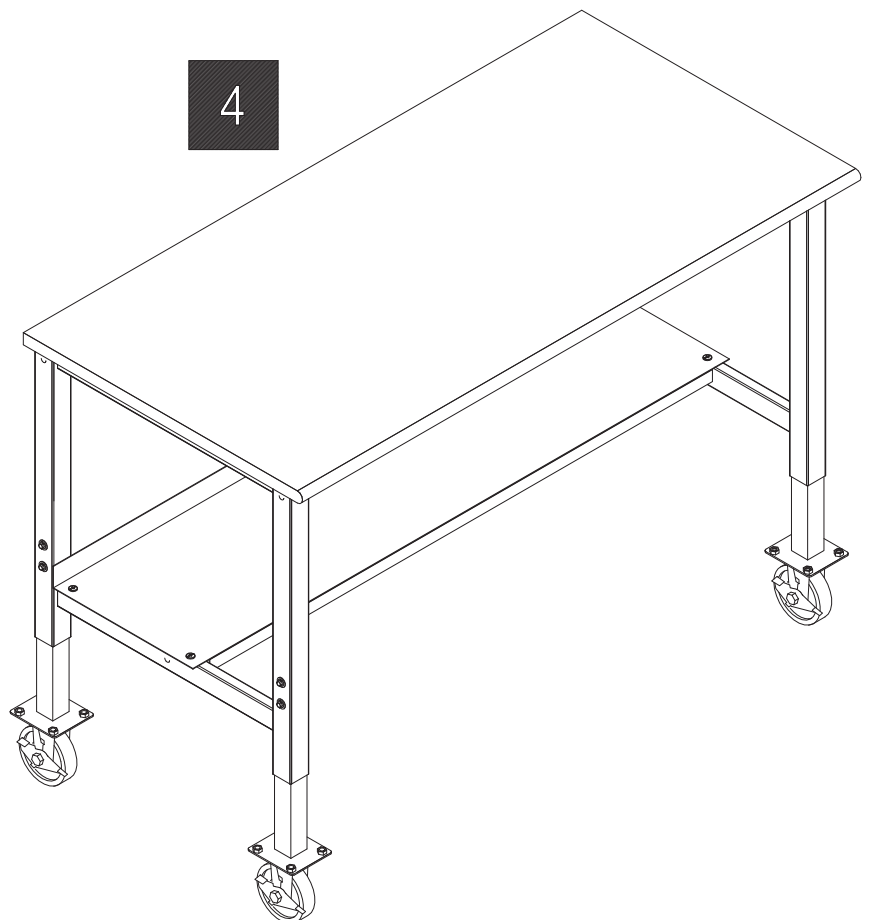
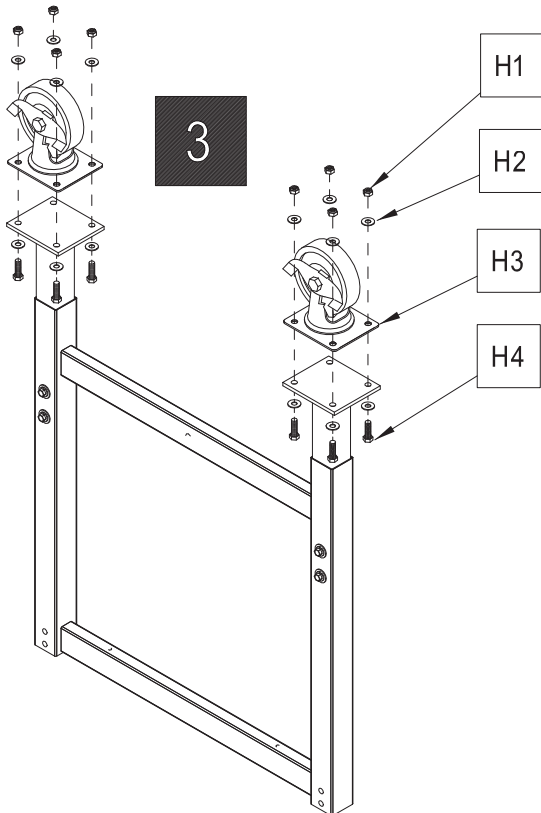
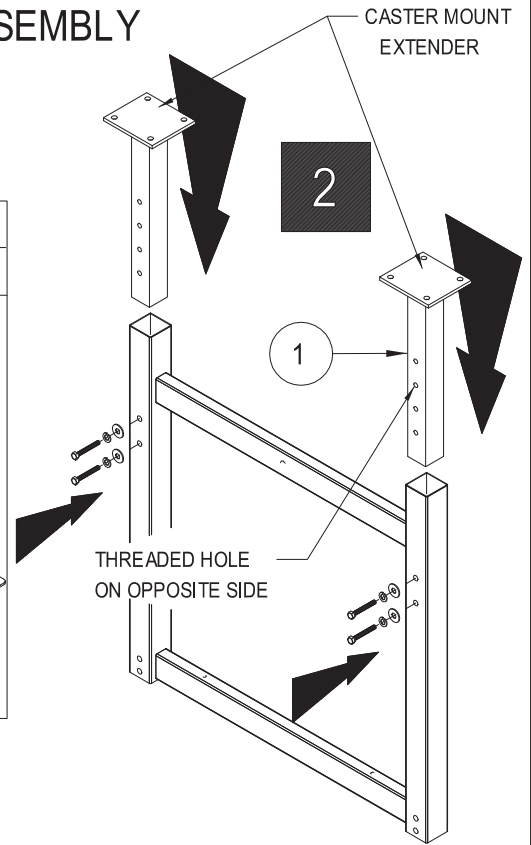


# OPTIONAL CASTER MOUNT ASSEMBLY

## ASSEMBLY INSTRUCTION



CONTENTS		
REF.	QTY.	DESCRIPTION
1	4	LEG EXTENDER
H1	16	
H2	32	
H3	4	
H4	16	



NOW THAT YOU HAVE ASSEMBLED THE NEW MOBILE LEG, FOLLOW THE BENCH ASSEMBLY INSTRUCTION PACKED WITH THE BENCH.

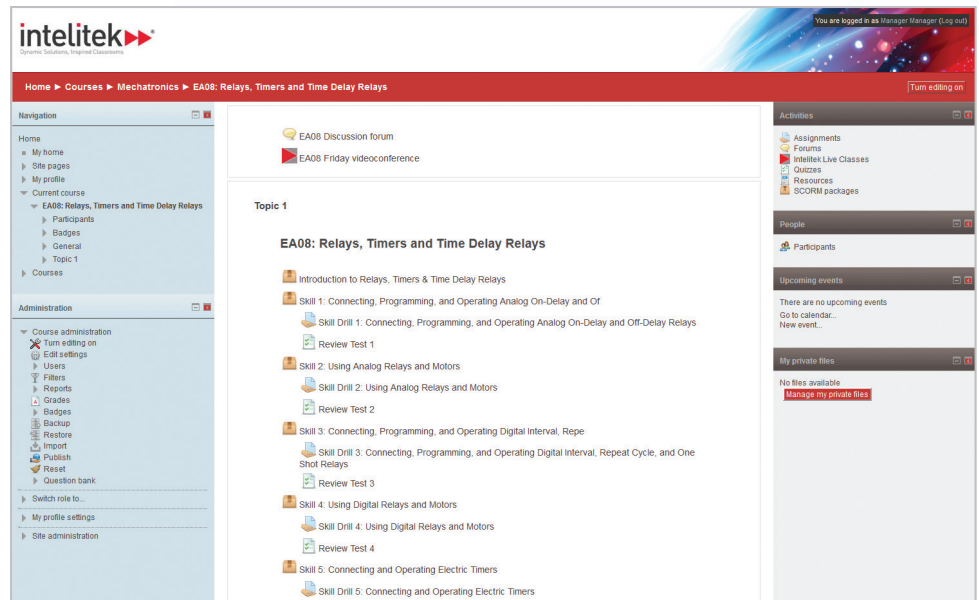


# LearnMate® Learning Management System

LearnMate LMS is a revolutionary tool that delivers curriculum using multiple instructional strategies, providing a responsive and proactive environment for differentiated instruction.

As a hosted SaaS solution, LearnMate enables classrooms to always deliver the best technology including 99.9% reliable servers and the most popular, versatile LMS available.

Combined with our library of over 2500 hours of content, Intelitek's comprehensive e-learning solutions are transforming the career and technical education classroom.



## Flexible Hosting in the Cloud

LearnMate offers a flexible, maintenance-free solution for delivering your e-learning content.

### Flexible hosting solutions for that include:

- SaaS model with 1- or 3-year terms
- 99.9% uptime
- Secured system
- Free support
- Complete backup solution
- Custom domain names
- 10 GB yearly storage for user's materials

## Harnessing the most proven LMS for education

LearnMate harnesses Moodle™ 2.6, with its established user and developer community.

- Compatible with existing Moodle servers
- Familiar solution for IT staff
- Cost-effective and flexible program development

## Content Delivery

Deliver SCORM (Sharable Content Object Reference Model)-compliant and AICC (Aviation Industry Computer-Based Training Committee)-compliant content.

In addition to online lessons, LearnMate courses can include multiple other activities and resources, including:

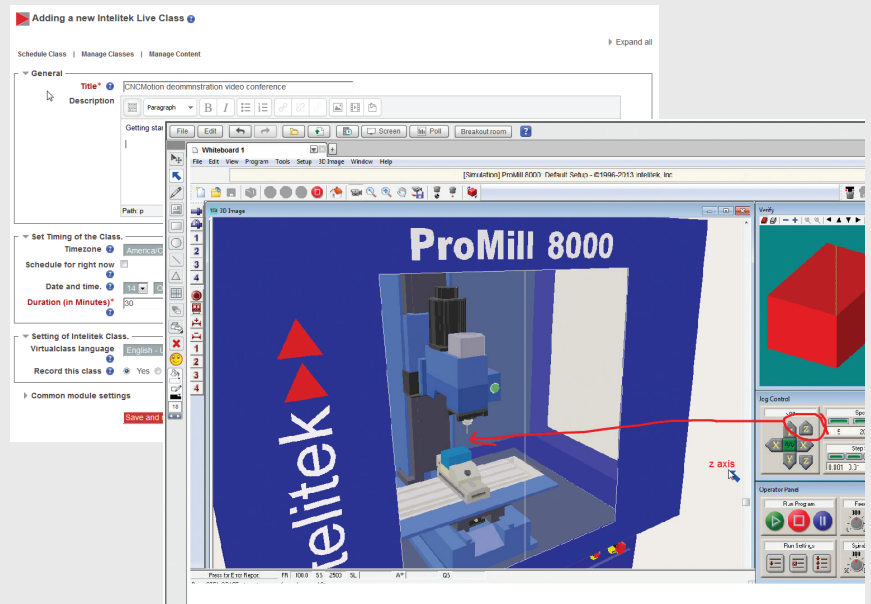
- Assessments
- Assignments (offline and online)
- Web, HTML and text pages
- Multi-lingual support
- Files for downloading or online viewing
- Supports all popular browsers
  - ◇ Internet Explorer, Firefox, Safari, Chrome
- Supports mobile devices
  - ◇ Android, iOS and Windows
- IMS Learning Tools Interoperability (LTI)
  - ◇ External Tool functionality enables seamless integration with LTI-compliant resources and websites
- IMS content package
  - ◇ Import and export content in the widely used IMS standard
- Book module
  - ◇ Create a multi-page resource in a book-like format, with printable chapters
- Certificates

- Launch software directly from content
  - ◇ Virtual software such as RoboCell® and CNCMotion® can be launched directly from each content course.
- Database activity module
  - ◇ Enables teachers and students to build and display searchable databases
- Workshop peer assessment activity
- Accessible resources for users
  - ◇ Quick access to task-specific instructions.
  - ◇ Video demos of common tasks.
  - ◇ Glossaries available with content
- Repositories
  - ◇ Upload files, access previously uploaded files and easily bring content into courses from external repositories, such as Flickr or Google Docs.
  - ◇ Easy drag-and-drop management with thumbnail view, permissions.
- Social and Collaborative Learning
  - ◇ Forums, real-time chat and e-mail for instructors, administrators and students.
  - ◇ Share resources and collaborate.
  - ◇ Group discussions and projects enable interaction among students and instructors.
  - ◇ Post assignments, create topics, get instant feedback from students.
  - ◇ Online learning community
  - ◇ Wikis and blogs enhance students' educational experience.

# Deliver live synchronous instruction

Live Class adds the capability to deliver live synchronous instruction and activities to your class.

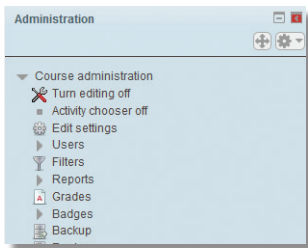
- Synchronous distance learning fully integrated into LearnMate courses.
- Instantaneous training can be broadcast from any site with internet connection, and delivered to any number of remote sites.
- High-quality live video and audio transmission, recording and playback.
- Interaction via chat, "hand-raising" and screen sharing.
- Picture-in-picture display of participants' video.
- Multiple whiteboards with interactive editing tools
- Client for Android and IOS mobile devices.



## Classroom Management

### ■ Easy Course Administration

- ◇ Set maximum number of enrolled users.
- ◇ Backup and archive courses.
- ◇ Automate complete site backups.



### ■ Easy Student Self-enrollment

- ◇ Self-enrollment reduces work for instructors.

### ■ Robust Gradebook

- ◇ View grades for all students.
- ◇ Configure gradebook settings.

### ■ Flexible User Groups

- ◇ Organize students in the same class.
- ◇ Administer one course for separate classes.
- ◇ Manual or automatic grouping.
- ◇ Grade assignments by group.
- ◇ Manage multiple instructors and/or teaching assistants

### ■ Outcomes Management

- ◇ Map outcomes to courses.
- ◇ Outcome Mappings: Details all outcome-activity mappings site-wide for a select standard.

### ■ Reports

- ◇ Course and Activity Reports provide data such as student participation, activity usage, course logs, test results, assignment grades and number of users who selected a specific choice.
- ◇ Detailed student progress tracking
- ◇ View on-screen, print or export to spreadsheet.
- ◇ Average Assessment Grades for school, district, state or country.
- ◇ Certificates Issued course- wide or site-wide.
- ◇ Test Comparison compares pre and post-test scores.
- ◇ Licensing Reports show the total number of licenses allotted and used for an organization or course.

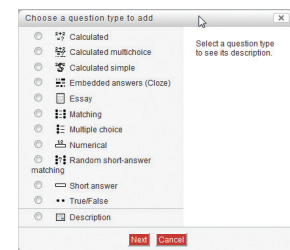
## Assessment Delivery

### ■ Supports a secure assessment environment:

- ◇ Password protection.
- ◇ Limiting assessment-taking to specific IP.

### ■ Shuffling of questions and answers.

### ■ Multiple question types:



- ◇ Calculated.
- ◇ Essay.
- ◇ Matching and Ordering.
- ◇ Multiple choice.
- ◇ True/False.

### ■ Optional feedback for responses.

### ■ Use of all types of media in question stems, responses and feedback.

## Ordering Information

### Hosted Model

LM7 hosting, 1st year 100 users, setup & support	77-1201-0000
LM7 hosting; Annual Support 1 Year	50-1201-0001
LM7 hosting Annual Support; 3 Year Agreement	50-1201-0003
LM7, Live Class & Whiteboard; 1 Class	77-1401-0000
LM7, Live Class & Whiteboard; 3 Classes	77-1401-0002

### Local Server Installation - 3 Year Maintenance Agreement

LM7 Local server setup w/ 3 years support agreement	77-1200-0000
LM7 Local support- additional 3 years agreement	50-1200-0003

### Local Server Installation

LM7 Local Server Setup without support agreement	77-1200-0001
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# Robotics & Materials Handling

## SCORBOT-ER 4u

Robotics and Materials Handling courses features the SCORBOT-ER 4u robotic system and accessories such as a conveyor belt, rotary table, parts feeder, as well as I/O devices such as an experiment table, photoelectric sensor and microswitches.

### Course Information

#### Type

Robotics and Materials Handling (RMH) 1	Lab
Robotics and Materials Handling (RMH) 2	Virtual and Lab
Languages	English
Hours of instruction per course	15

### Robotics & Materials Handling 1

In Robotics and Materials Handling 1 students work with SCORBASE for Controller-USB software to develop and write robot programs for manipulating objects and other automated tasks.

#### Course Outline

- Introduction to Robotics
- Robotic Control Software
- Recording Robot Positions
- Writing and Running a Robot Program
- Cartesian Coordinates
- Inputs and Program Jumps
- Outputs
- Joint and XYZ Coordinate Systems
- Relative Positions
- Loops, Polling, and Counters
- Subroutines
- Contact and Non-Contact Sensors
- Servo Control of the Conveyor
- I/O Control of the Conveyor











Activity 1: Robotics - Activity 1: Robotics

1 / 468

#### Activity 1: Robotics

In Robotics and Materials Handling 1 Hardware (Lab), you learned the basics of programming a robot through various means to perform various tasks. The Robotics and Materials Handling 2 (Virtual) module will introduce you to further aspects of the ER 4u robot. Additionally, this module will allow you to explore simulated robotic programming using an online simulation of the ER 4u robot.

This activity includes the following topics:

- Applications of Industrial Robots
- Using Simulation Software



### Robotics & Materials Handling 2

In Robotics and Materials Handling 2 Students work with RoboCell, a 3D-solid modeling robotic simulation software, to program and operate the SCORBOT-ER 4u robot.

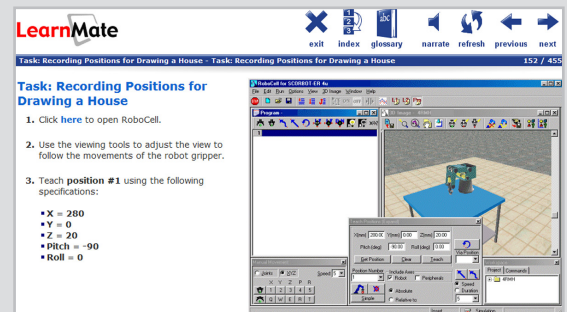
#### Course Outline

- Basic Robotic Programming Tools
- Manipulating Blocks Project
- Programming the Robot to Execute Circular Movements
- Drawing a House
- Roll and Pitch
- Block Alignment Project
- Feeders and Templates
- Peripheral Devices
- Linear Slidebase Project
- Programming Using Encoder Values
- Conditional Branching
- Programming with Conditional Branching
- Analog Inputs and Outputs
- Programming a Sorting System Project

## Robotics & Materials Handling SCORBOT-ER 4u (continued)

Robotics and Materials Handling include LearnMate®, Intelitek's innovative e-learning platform. Self-paced interactive LearnMate content may be deployed stand-alone or through the robust learning management system (LMS). The LearnMate e-learning suite provides everything needed for the ultimate blended learning experience:

- SCORM-compliant interactive content
- Anytime, anywhere accessibility
- Student and class management
- Grade tracking
- Skill/competency reporting mapped to national academic skill standards



## Ordering Information

### Curriculum

Robotics Materials Handling I with ER4u, LM course 77-8082-0000

Robotics Materials Handling II with ER4u, LM course 77-8083-0000

### Hardware & Hardware Bundles

(see hardware data sheets for details)

SCORBOT-ER4u Robotic Arm	00-0413-0000
SCORBOT-ER4u, Introductory Package	ROB-ER4U-PACK
SCORBOT-ER4u, Standard Package	ROB-ER4U-STND
SCORBOT-ER4u, Advanced Package & Quality Control Station	
ROB-ER4U-ADV	

### #? Projects

Yo-Yo	10-7001-1001
Shape Sorter	10-7005-1000

### Courseware Bundles

#### Robotics & Materials Handling I - LAB

ROB-ER4U-MAT

INCLUDES:

- SCORBOT-ER4u, Standard Package
- SCORBOT-ER4u, Advanced Package & Quality Control Station
- Robotics & Material Handling I w/ER4U
- Robotics Automation Technology Skills Project
- Robotics Automation Project Parts
- Scorbot-ER 4u Fundamentals
- Scorbot-ER 4u Advanced
- Scorbot-ER 4u Materials Handling I
- Scorbot-ER 4u Materials Handling II

#### Robotics Automation Project Parts

RAT-ER4U-ACC1

- LM7 Content, Robotics & Automation Project
- Assembly, Project, Competition Sensor Box
- Assembly, Project, Pneumatic Block Feeder, 12V
- Assembly, Project, I/O Interface
- Assembly, Project, Components For Workcell
- Assembly, Project, Power Supply, 12V
- Assembly, Project, E-Stop/Light Stack
- Assembly, Project, Energy Chain w/Robot Mount
- Install Guide Robotic Workcell

#### Robotics Automation Technology Skills Project

RAT-ER4U-1000

- RAT-ER4U-ACC1 Project bundle
- SCORBOT-ER 4u
- LSB 1.0m, Belt, TT
- Teach Pendant
- Linear Conveyor-24V w/ Power Supply and Sensor



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# ScorBase | RoboCell

## Robotic Control and Simulation Software

Robotics control and simulation software provides a comprehensive and intuitive tool for programming and operating robotics workcells. The software allows students to experiment with a variety of simulated workcells for CNC machines, welding cells, and Flexible Manufacturing Systems (FMS) with robot. The Cell Setup application allows a user to create a new virtual robotic cell, or modify an existing cell. Advanced students can design 3D objects and import them into the software for use in virtual workcells.

### SCORBASE

SCORBASE provides user friendly interface and visible robotic program execution. The software has several operational levels, each with progressively more functions, making the software suitable for both novice and advanced users.

#### Standard Features

##### Position Recording

- Positions can be recorded both online & offline
- Positions can be absolute or relative
- Position coordinates may be for robot arm, peripheral axes, or both

##### Manual Control of Robot & Peripheral Axes

- Movement by joints and Cartesian coordinates at selectable speeds
- Movement control from dialog box, keyboard and teach pendant
- Graphic image of robot; user clicks on axis arrows to move robot axes.

##### Program Execution

- Programs can be executed both online & offline
- Options to execute one command, single cycle or continuous cycle
- Command currently being executed is highlighted in program window

##### Real-Time Data Display

- Real-time, continuous display of robot and peripheral positions (encoder values and XYZ coordinates) and I/Os
- Real-time, continuous display of home switches' status, joint angles, command value (PWM) and position error
- Dynamic charts present encoder values, command value (PWM) and position error

#### User Interface

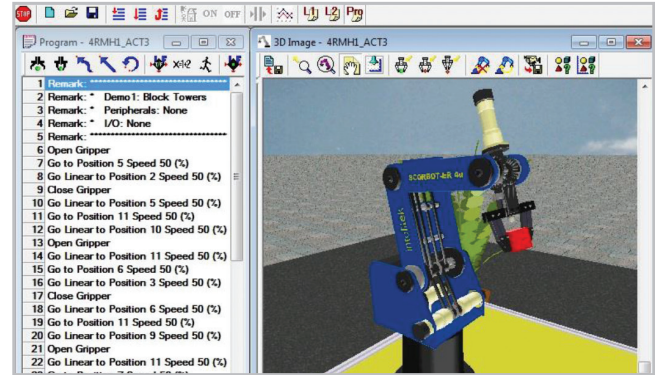
- Industrial functions in an intuitive interface designed for training environments 3 operating modes: Online: SCORBASE communicates with the controller. The robot, peripheral axes and I/Os execute all commands. Offline: SCORBASE does not communicate with the controller, even though it may be connected; axes do not move; I/Os are not switched, but different I/O states can be simulated by user (useful for testing/debugging programs). Optional ROBOCELL software integrates SCORBASE robotic control software with interactive 3D graphic simulation.

#### Programming

- SCORBASE robotic language integrated with Visual Basic Script language which adds new facilities, for sample serial communication and calling an external program.
- SCORBASE for Controller USB-PRO enables multitasking facility (up to 100 concurrent programs). Advanced students can write on C++ language their programs for control of the SCORBOT-ER 4u.

#### Interface Languages

- SCORBASE for Controller USB: English, Spanish, Portuguese, German, Korean, Vietnamese, Polish SCORBASE for Controller USB-PRO: English. SCORBASE can be easily translated into any user language



#### Computer Requirements

- Intel Core i5 2400 GHz 2400 GHz or higher
- 4GB RAM
- 200MB available disk space
- Windows 10
- Mouse, USB, CD Drive

#### Related Products

##### Hardware

For Controller USB:

- SCORBOT-ER 4u
- ASRS-36U
- ASRS-36Ux2

##### Software

- OpenCIM/OpenFMS – Computer Integrated Manufacturing software
- ViewFlex - machine vision system

##### Optional Accessories

- Teach pendant, belt conveyor, rotary table, linear slidebases, XY positioning table, parts feeders, sensors, I/O experiment table.

##### Curriculum

- Robotics and Materials Handling I with SCORBOT-ER 4U



## ROBOCELL

RoboCell integrates Scorbace robotic control software with interactive 3D solid modeling simulation software. RoboCell's virtual robots and devices accurately replicate the actual dimensions and functions of SCORBOT equipment.

### Standard Features

#### Robotic Workcell Setup

- Interactive graphic setup enables creation of virtual robotic workcells
- Simple point and click manipulation of object for placement and definition
- Peripheral axis placement and connection
- Part definitions and properties
- Definition and connection of sensors and I/O devices
- Definition of parts in storage devices and feeders; feeders can supply any quantity of any part
- Definition of CNC machines, control of machine doors and machine cycle time
- Predefined welding cell; user can modify.
- CAD file import utility for user-defined parts and objects
- Setup module can be activated directly from SCORBASE module

#### Programming & Control

- Fully integrated with SCORBASE robotics control software, an intuitive tool for programming & operating robotic workcells

### Dynamic 3D Simulation

- Fully functional 3D graphic display module provides dynamic simulation and tracking of the robot and devices in the workcell
- Simulation of robot movements and gripper part manipulation
- Simulation of peripheral axes: conveyor belts, XY tables, rotary tables, linear slidebases
- Simulation of CNC mills and lathes: moveable machine parts such as door, chuck and spindle
- Simulation of automated welding system: welding of multiple parts of varying shapes
- Simulation of parts: objects fall according to laws of gravity
- Simulation of different types of sensors
- Detection and response to impact conditions and axis limits
- Point and click on screen to move the robot and teach position
- Display of robot origin, work envelope and gripper position
- Display of coordinates of workcell objects and devices: absolute positions or positions relative to robot origin
- Display of names of robot, workcell objects and devices

### Computer Requirements

- Intel Core i5 2400 GHz 2400 GHz or higher
- 4GB RAM
- 200MB available disk space
- Windows 10
- Mouse, USB, CD Drive

### Related Products

#### Hardware

- SCORBOT-ER 4u

#### Software

- SCORBASE

#### Curriculum

For SCORBOT-ER 4u

- Fundamentals of Robotics for SCORBOT-ER 4u
- Robotics and Materials Handling 1 with SCORBOT-ER 4u (laboratory)
- Robotics and Materials Handling 2 with SCORBOT-ER 4u
- Automated Welding with SCORBOT-ER 4u
- Advanced Robotic Programming with SCORBOT-ER 4u

### Ordering Information

#### Software

RoboCell/SCORBASE USB Pro - ER 4u	63-7000-0100
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#### Hardware (SCORBASE included)

Scorbot-ER 4u	00-0413-0000
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## CNC Routers

The JobMaster CNC Router machines and accompanying project based curriculum are turnkey solutions to provide an introduction to CNC machining in the Technical Education Classroom. The CNC Routers are also a great peripheral for any woodshop, engineering lab or maker space.

Intelitek's bundles for CNC router machines ship with everything needed to get started quickly including starter material, all relevant CAD/CAM software and sample G-Code projects. Just follow the easy to use getting started guide and cut!

The curriculum, delivered on the LearnMate LMS, is based on Intelitek's experience in both CNC and educational training. The courseware allows users to design and cut their own complex projects quickly. Users can create large and small structures and have a hands on approach to turning 2D materials into 3D objects.



### Benefits

- Allows visualization of assembly of 2D object in 3D space.
- Provides students the ability to create impressive large scale projects at a very low cost.
- Fast Paced project based learning allows students to produce results quickly to keep them motivated.
- Cut most projects in under 30 minutes.
- Teaches G-Code, an industry standard, that's used with other CNC mills and lathes.
- Make impressive projects using up to 4ft x 8ft sized materials.
- Includes 40 Seats of V-Carve Pro CAD/CAM software for an entire class to use.

### Solution to Teach Students:

- Custom Fabrication
- Machinery Manufacturing
- Equipment Manufacturing
- Production Facilities
- Plate Production
- Hobbyist Jobs

### ProRouter Bundles Typically Include:

- Router Table
- Porter Cable Router or Spindle
- Controller with Mach3 Software
- VCarve Pro CAD Software with 40 User License for Education
- 7 pc Starter Bit Kit
- Dust Collector/Dust Foot
- Spare Pieces of MDF
- PC with Software installed
- 8 hours of "Getting Started Curriculum"

### Mach3 Control Software

Mach3 has become the popular choice of control software for CNC light duty routers. Feature rich, it provides a great solution for a CNC control package. Mach3 works on most Windows PC's to control the motion of the router by processing G-Code into physical movements. Mach3 offers many advanced features found in more complex control systems.

### VCarve Pro Software

VCarve Pro provides a powerful but intuitive software solution for cutting parts on the JobMaster Routers. VCarve Pro creates the files used by the router to bring projects to life. This software works with 3D / 2D files created by your favorite CAD software and popular graphics files like JPEG and SVG for those more artistically inclined.

VCarve Pro includes the functionality demanded for complex work while remaining incredibly easy to use. The software is used by cabinet makers, wood workers, sign makers, prop makers, plastic fabricators, and hobbyists and in many other applications.



# JobMaster CNC Routers

## Specifications - Power Requirements

ProRouter with Porter Cable:	110V, 20A (Machine only)
ProRouter with Spindle:	220V, 15A (Machine only)
Computer:	110V system on a dedicated circuit

## Express CNC Router Curriculum

Intelitek's Express Curriculum is a direct, project driven course that enables students to bring objects they create to life quickly and motivates them to complete other projects. Students will learn terminology related to CNC as well as how to setup the router using Mach3™ control software. This is followed up by five projects using Vectric VCarve Pro to produce amazing results.

### Course Outline

- Getting Started with Routers
- Basic Terminology
- Axis of Travel
- Securing the Work Piece
- Installing a Tool
- Spoil board
- Dust Collection
- Mach3 Layout
- Homing the Router
- Jogging the Router
- Setting Part Zero
- G-Code Editing
- Cutting a Sample Part
- Introduction to Vectric VCarve Pro
- Making a Gear Clock Drawing
- Importing Pictures
- Importing a Drawing DXF/DWG/SVG
- 3D Dinosaur Project

## Software Included Features:

- 2D Design & Layout Tools
- Layer control, lines, snap grid
- True Shape Nesting, Test editing
- File import DWG, DXF, EPS, AI, PDF
- Image file import: BMP, JPG, TIF, GIF
- 2-D Profiling with interactive tabs/bridges
- Lead and ramp options
- Program pierce height/cut height
- Automatic cutting sequence
- Visual G-Code display/Real-time display
- Error message display

## PC Controller

PC with Software pre-installed including:

- 19 inch Flat Screen Monitor
- Keyboard and Laser Mouse
- AMDA 6 – 3.9 GHz
- 8 Gigabytes DDR3 Memory
- 120 Gig solid state Hard Drive
- 4 USB 2.0 Ports, 2 USB 3.0 Ports
- Video output- VGA, DVI, and HDMI
- Windows Operating System
- All fully interfaced and tested with Customer's Machine

## Model/Specifications

Model:	ProRouter 2x00
Position Speeds (X,Y,Z):	800, 800, 600 IPM
Step Resolution:	.0005" (0.01mm)
Positioning Accuracy:	(+/-) .002" (0.05mm)
Cutting Accuracy:	(+/-) .005" (0.13mm)
Axis Drive System (X,Y):	Rack & Pinion
Axis Drive System (Z):	Rack & Pinion
Maximum Tools:	Porter Cable or Spindle
Gantry Clearance:	Up to 6" (152mm)
Sizes Available:	30" x 30" (76cm x 76cm) 4' x 4' (1.2m x 1.2m) 4' x 8' (1.2m x 2.4m) 5'x10' (1.5m x 3m)

## Ordering Information

### ProRouter Bundles:

Each ProRouter Starter Bundle includes a 110V, 3.25HP Porter Cable Router, and each ProRouter Advanced Bundle includes a 220V, 3kw HSP Spindle. All bundles include: a Desktop PC with Windows, 19" Monitor, Mach3 Control Software, 7pc Starter Bit Kit, 220V 2Hp 30 Micron Dust Collector & Dust Foot, MTC Z Setter, 1 license of VCarve Pro (40 Seats for education), 2 pieces of MDF, and 8 hours of "Getting Started Curriculum" including G-code Projects. **REQUIRES LMS ADD-ON.**

ProRouter 2000 Starter Bundle, 110V (4'x4')	CNC-2000-STND
ProRouter 2000 Advanced Bundle, 220V (4' x 4')	CNC-2000-STND-2
ProRouter 2100 Starter Bundle, 110V (4' x 8')	CNC-2100-STND
ProRouter 2100 Advanced Bundle, 220V (4'x8')	CNC-2100-STND-2

### CNC ProRouters:

Each ProRouter machine includes a 110V, 3.25HP Porter Cable Router, a Desktop PC with Windows, 19" Monitor, USB Keyboard/Optical Mouse, Ethernet Connection, Mach3 Control Software, 7pc Starter Bit Kit, Dust Foot, MTC Z Setter, and 1 license of VCarve Pro (40 Seats for education)

ProRouter (30" x 30")	<b>ETA 1.B.2</b>	00-6118-0000
ProRouter (4'x4')	<b>ETA 1.B.1</b>	00-2044-0220
ProRouter (4'x8')		00-2048-0220
ProRouter (5'x10')		00-6116-0000

### CNC Curriculum and LearnMate 7 Hosting:

LM7 Content, Intro to CNC Routers VCarve Pro	88-8160-0001
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### ProRouter Optional Upgrades and Accessories:

A range of additional component upgrades and accessories are available (Spindles, vacuum beds, vacuum pumps, router bit kits, etc.). Please contact your local sales rep for details.



📍 18 Tsienneto Rd, Derry, NH 03038 USA

☎ 603-413-2600

✉ info@intelitek.com

🌐 www.intelitek.com





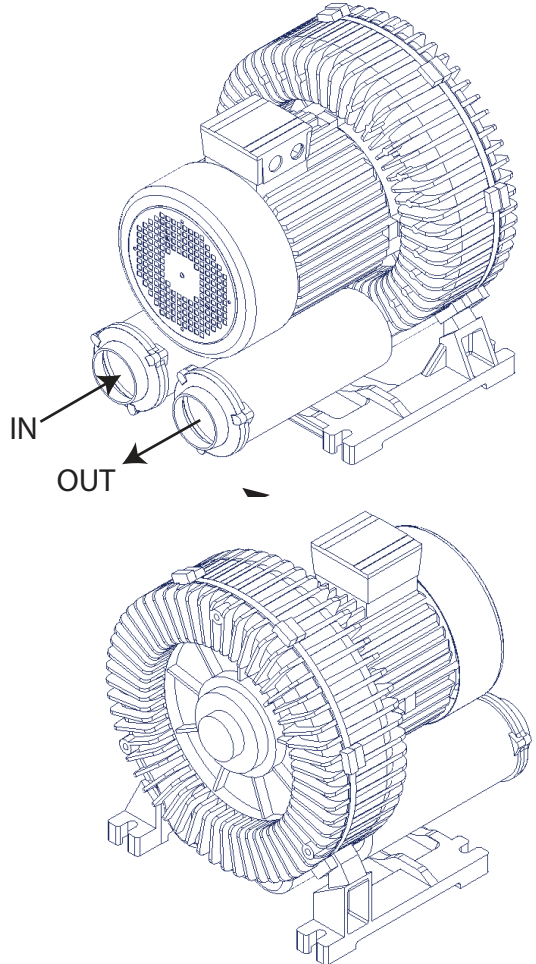
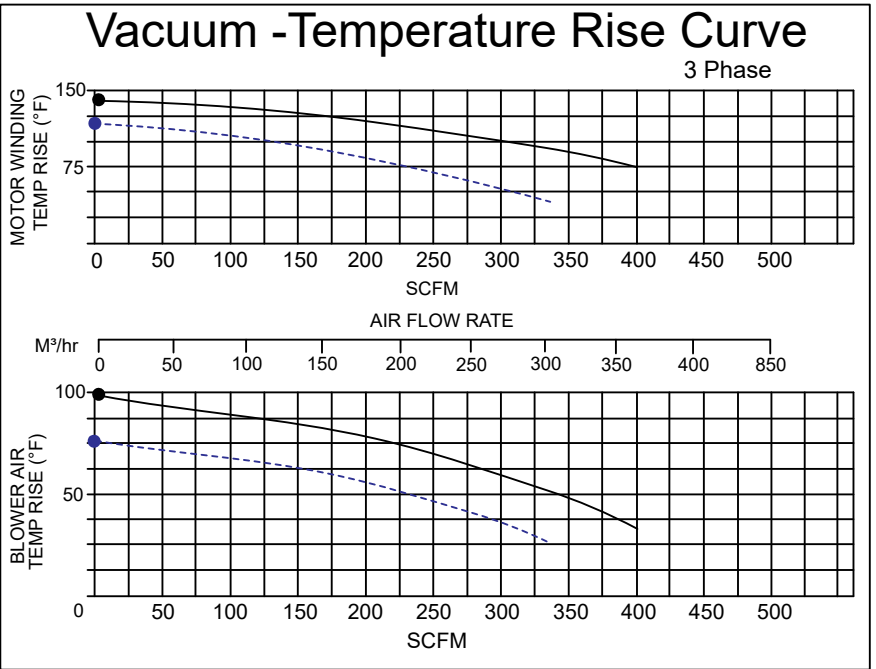
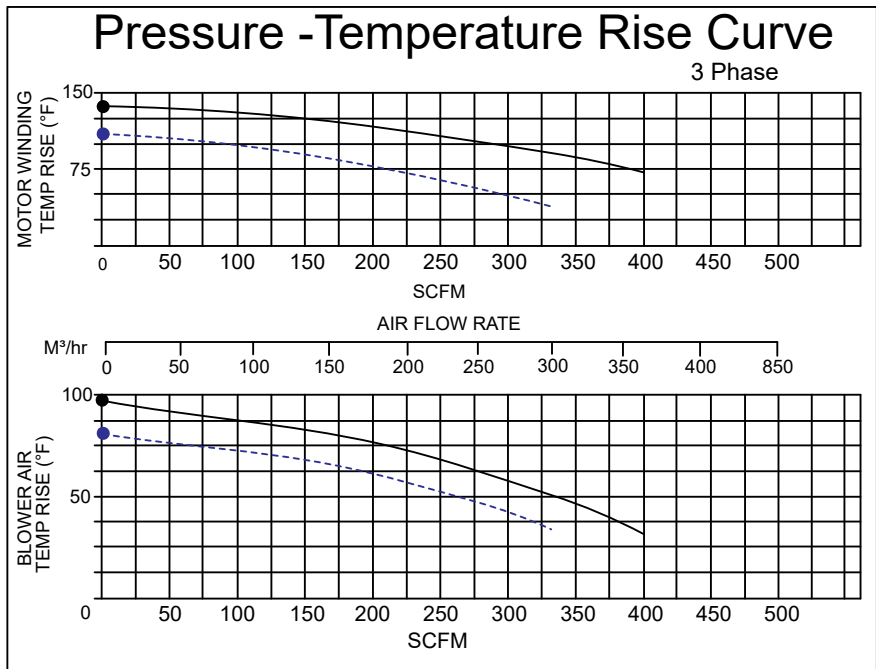
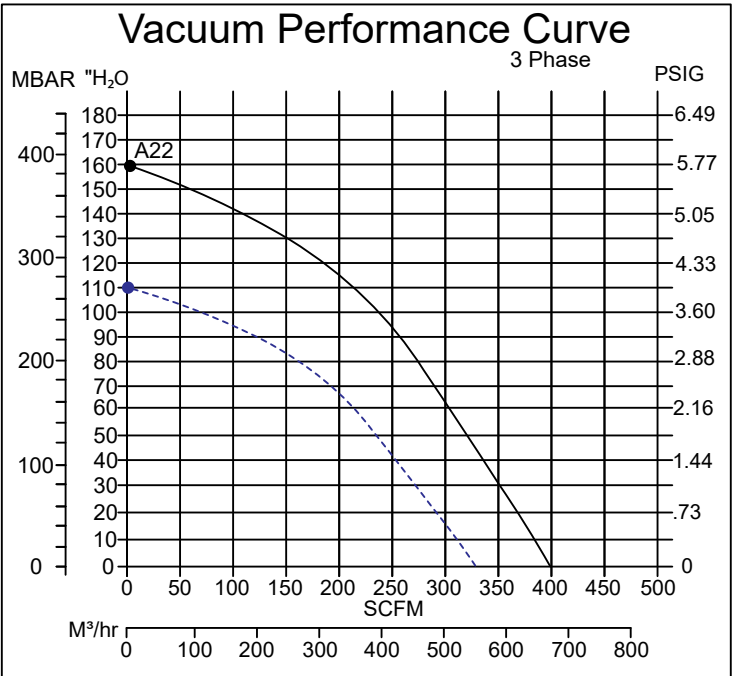
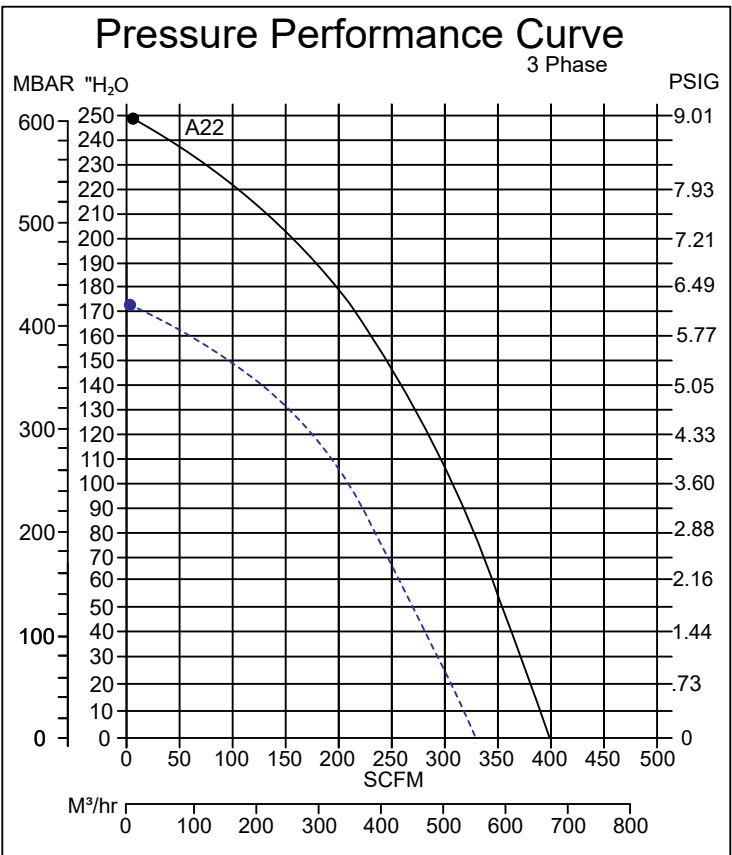
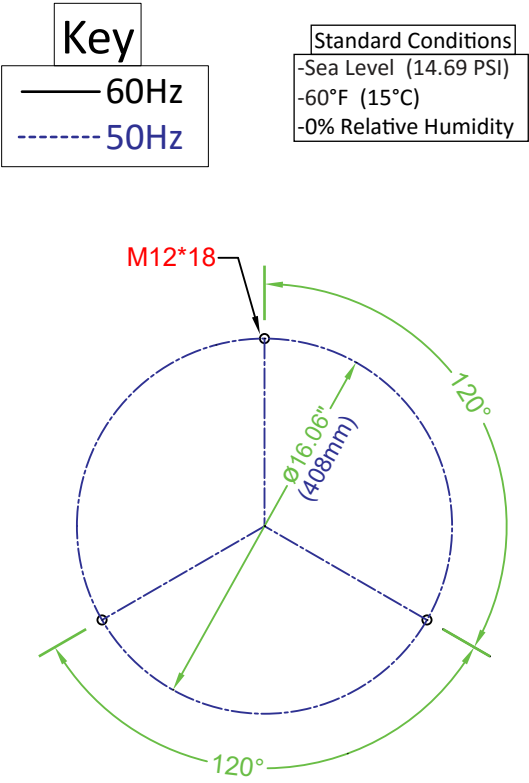
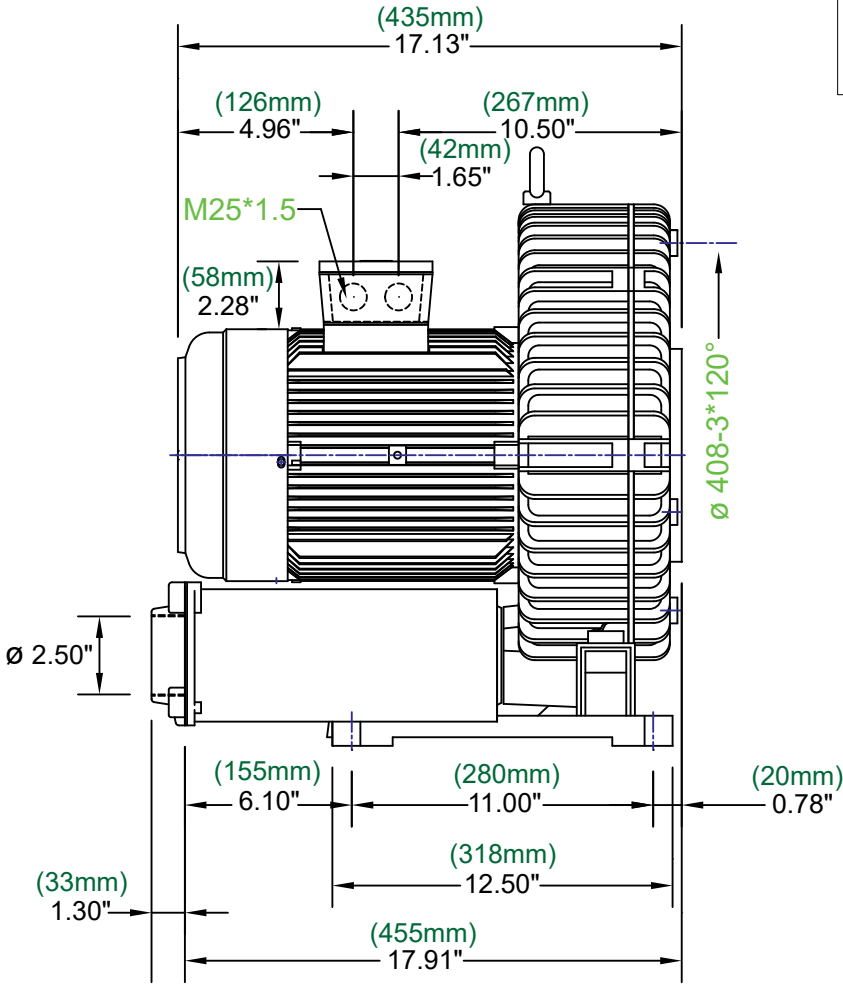
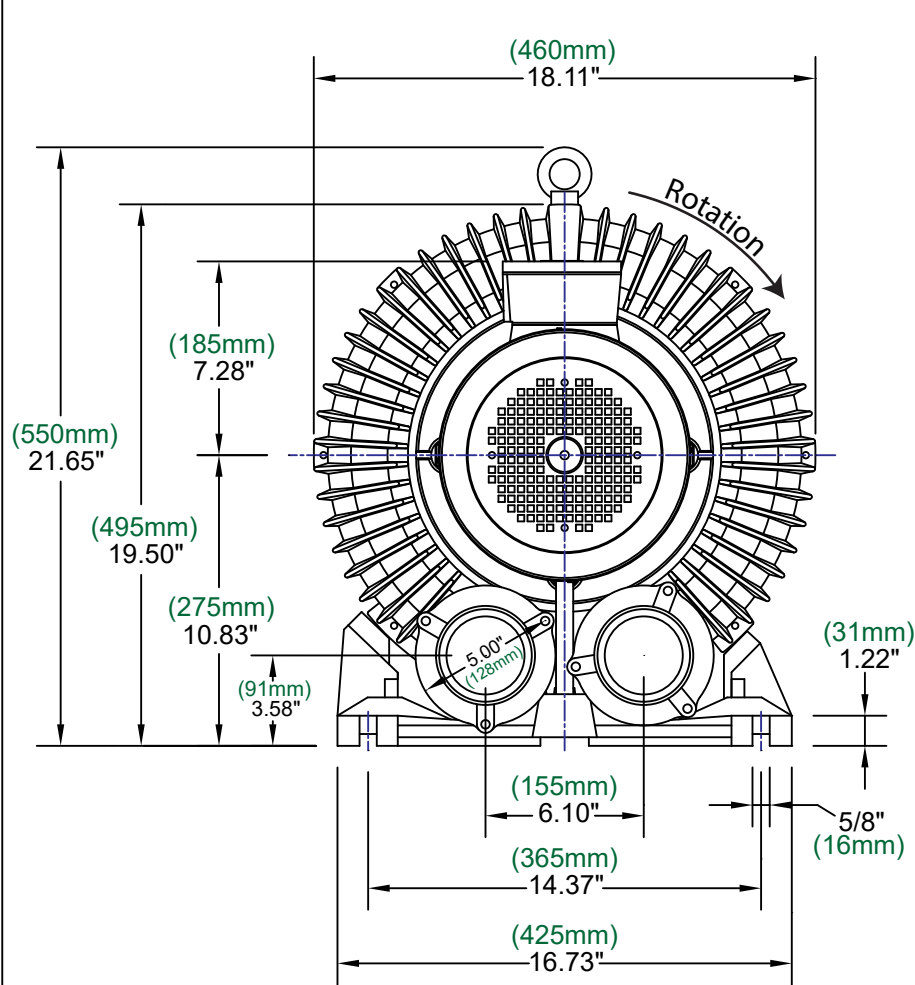
# ETA 1.B.1 Vacuum Pump

atlantic blowers

Phase	Model Number	Curve Number	Frequency (Hz)	KW	HP	Max Flow (SCFM)	Max Pressure ("H <sub>2</sub> O)	Maximum Vacuum	Sound Level (db)	Inlet Diameter	Voltage	Current (A)	Weight (lbs)
3	AB-1000	A23	60Hz	11.00	15.00	399	248	158	80	2.50"	220-275/380-480	39.0Δ/22.5Y	212
			50Hz	9.30	12.50	333	172	110	75		200-240/345-415	32.5Δ/18.8Y	

\*\*Sound db measured at 3 ft.

MODEL NO. : AB-1000 SINGLE STAGE



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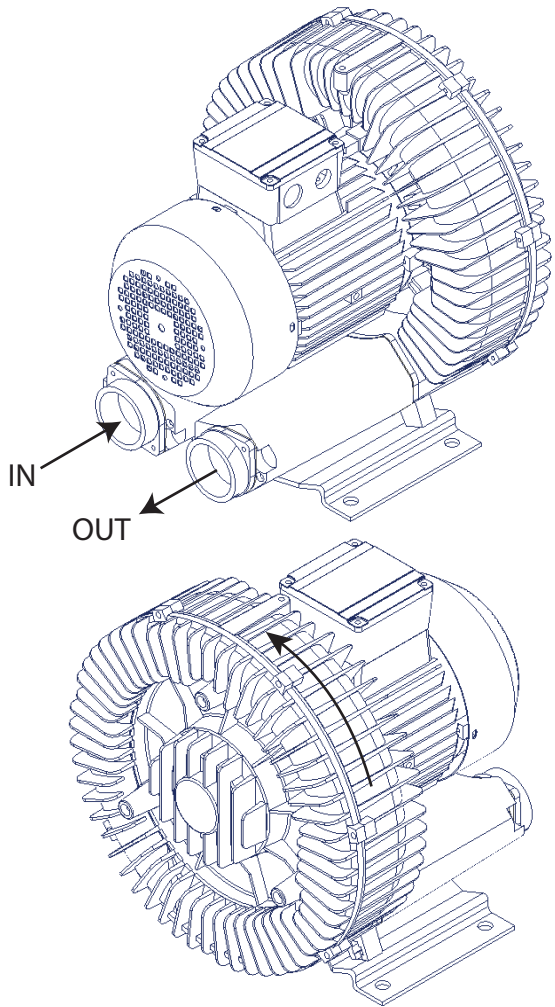
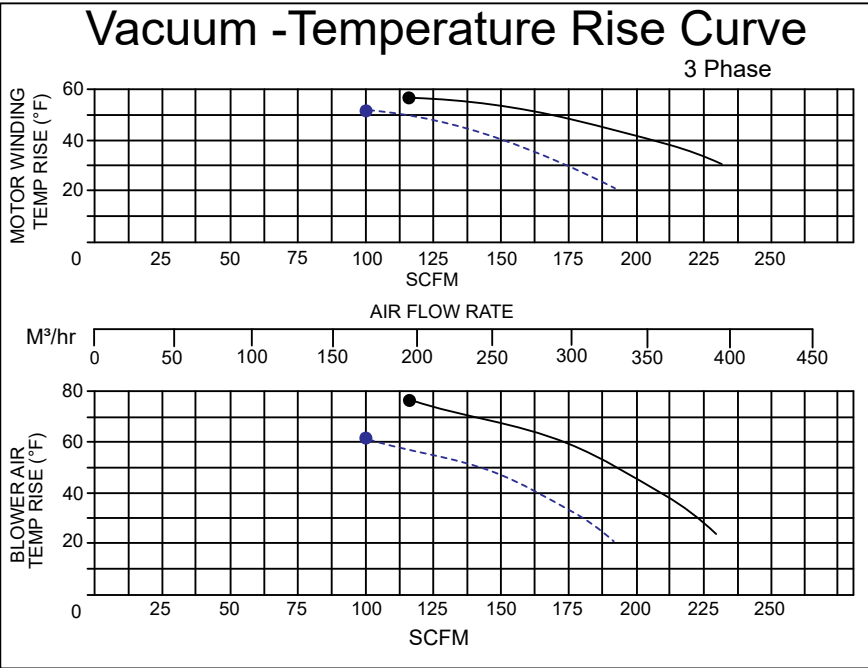
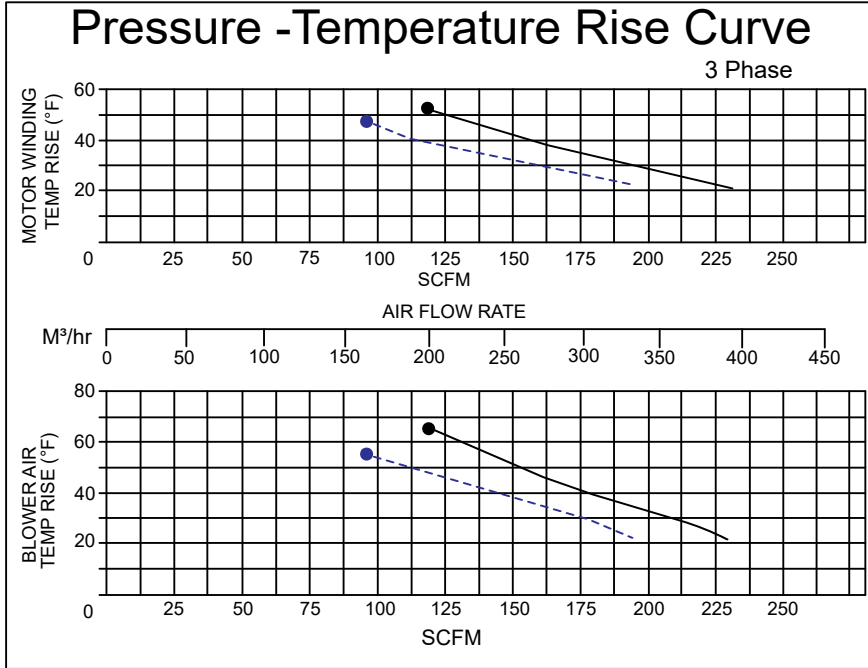
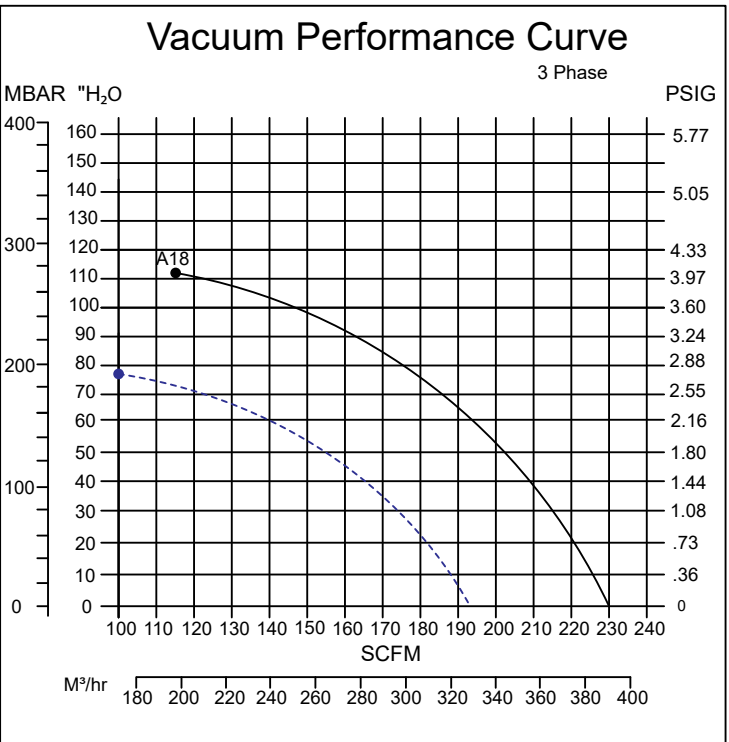
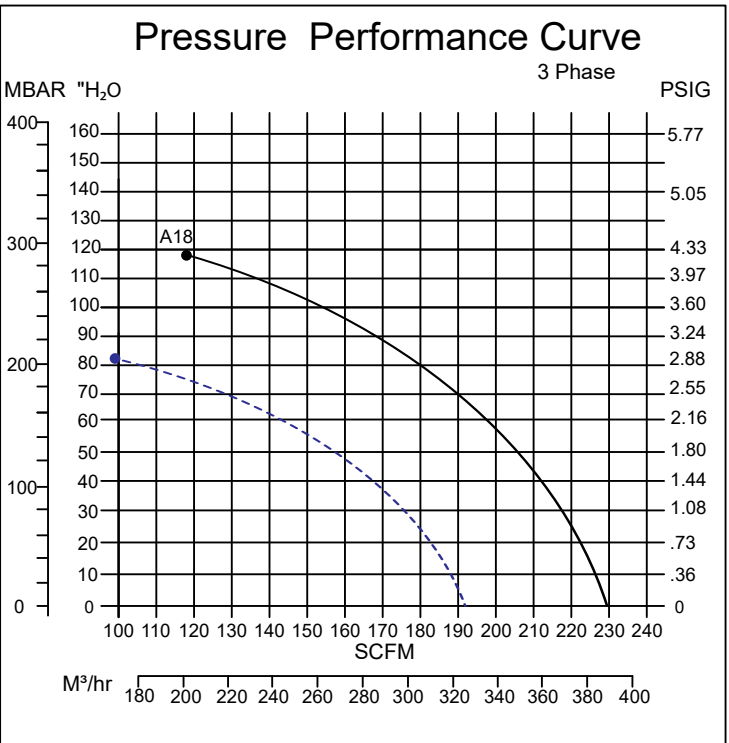
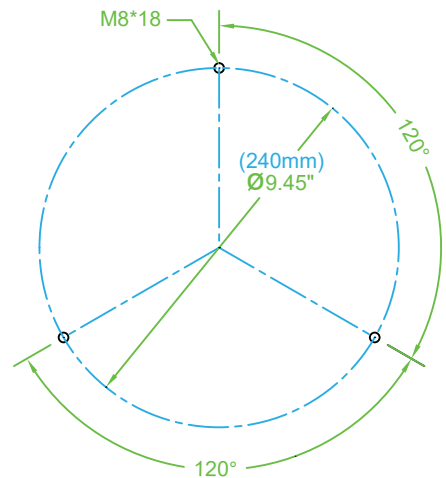
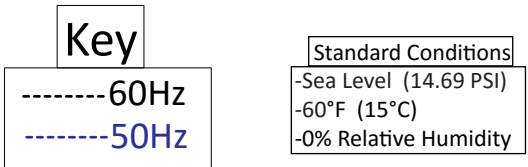
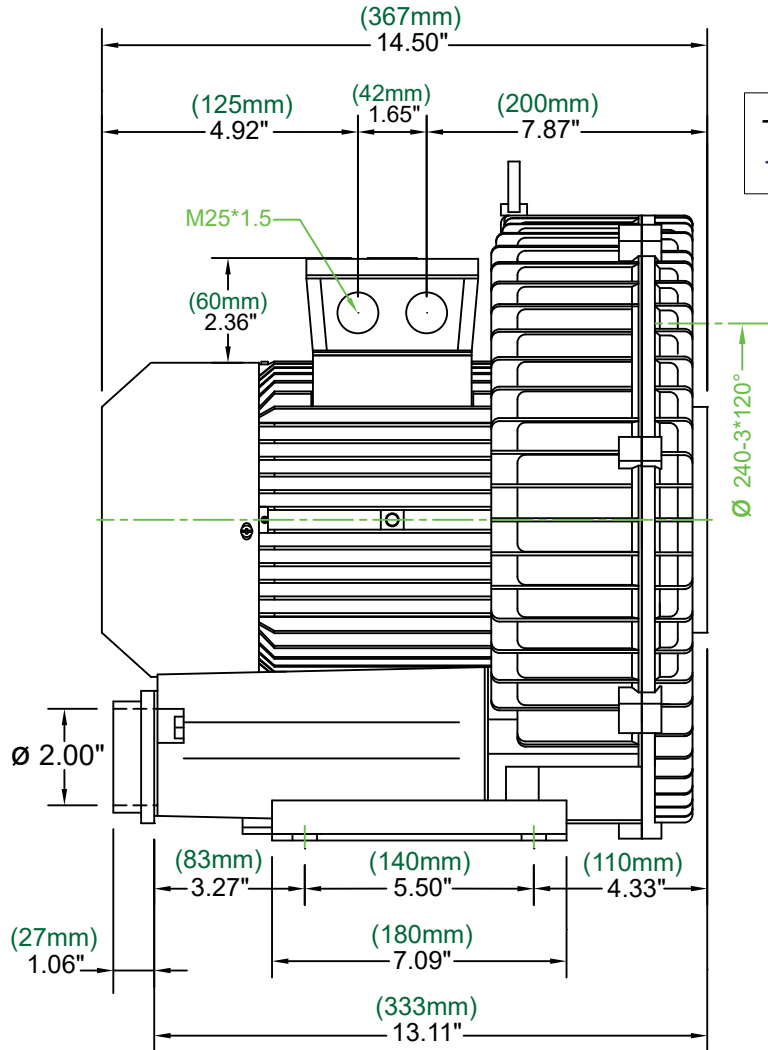
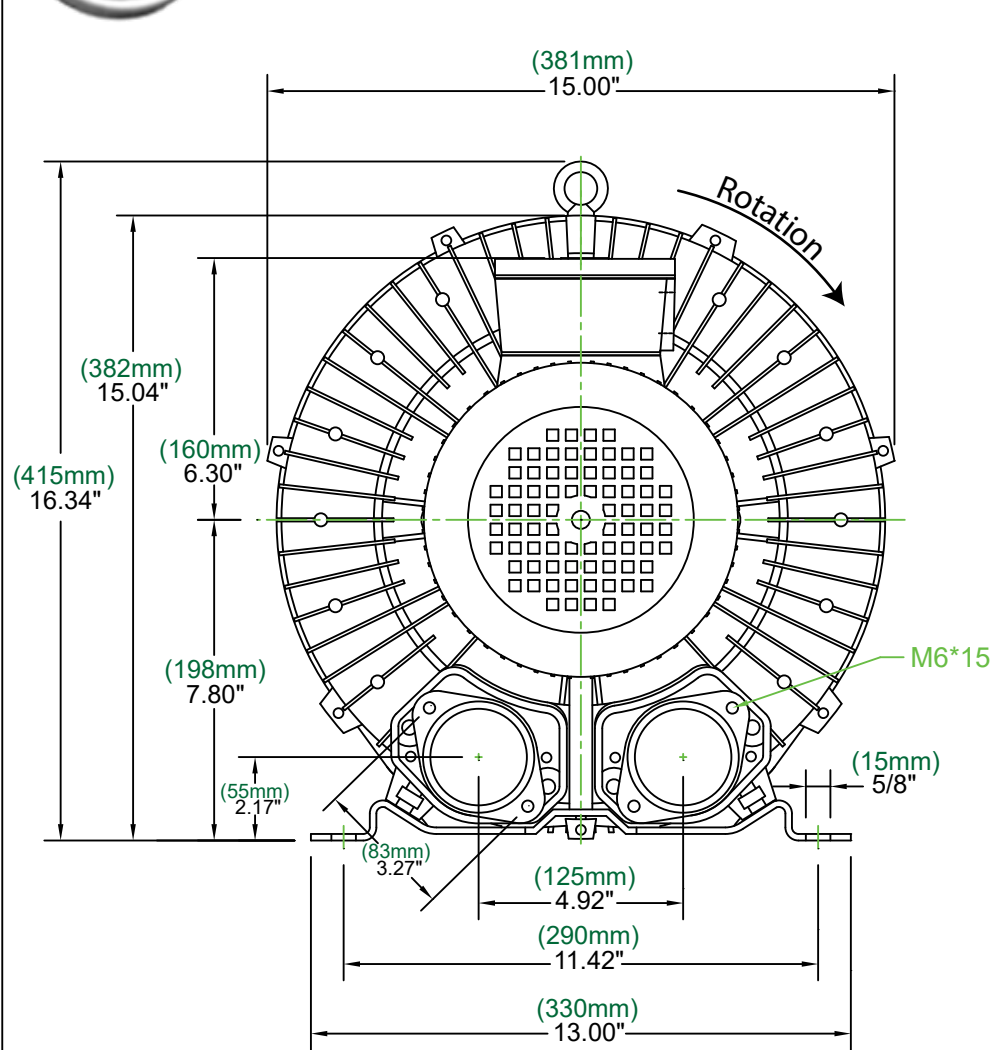
# ETA 1.B.2 Vacuum Pump

atlantic blowers

Phase	Model Number	Curve Number	Frequency (Hz)	KW	HP	Max Flow (SCFM)	Max Pressure ("H <sub>2</sub> O)	Maximum Vacuum	Sound Level (db)	Inlet Diameter	Voltage	Current (A)	Weight (lbs)
3	AB-600	A18	60Hz	3.70	5.00	230	118	112	72	2.00"	220-275/380-480	13.5Δ/7.8Y	90
			50Hz	3.40	4.50	192	82	78	69		200-240/345-415	12.2Δ/7.2Y	

\*\*Sound db measured at 3 ft.

## MODEL NO. : AB-600 SINGLE STAGE



### Disclaimer

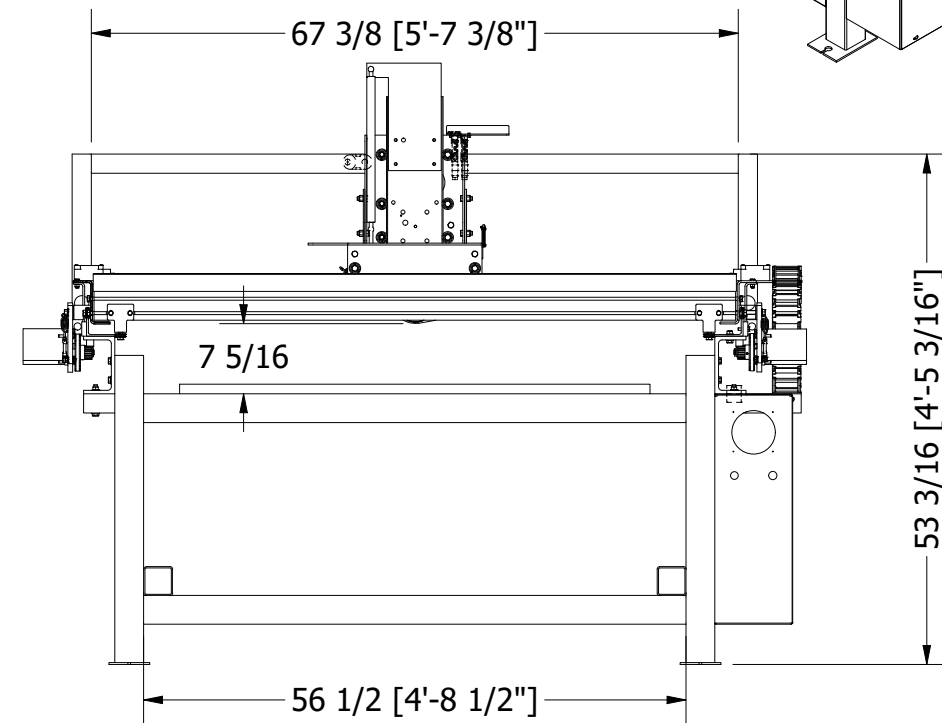
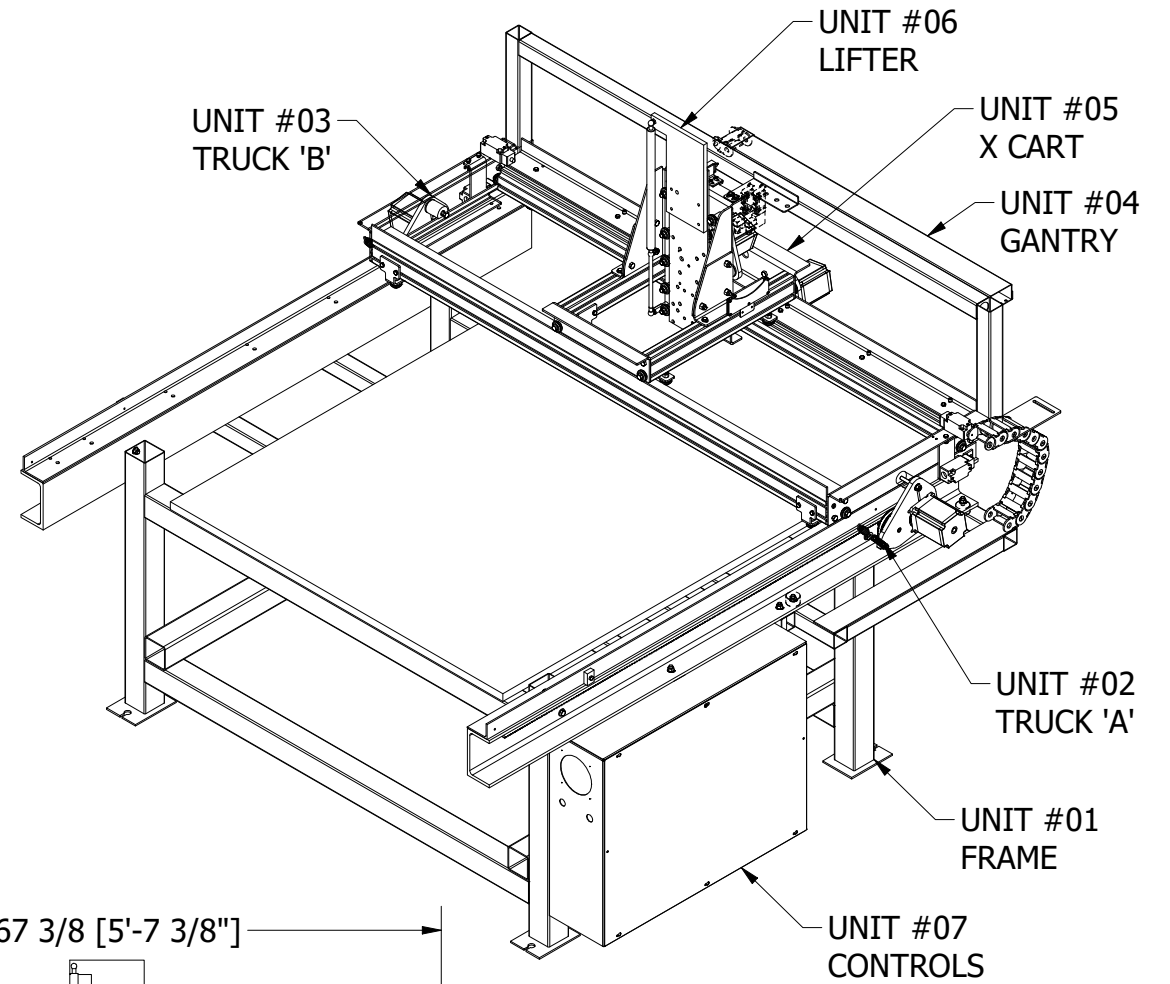
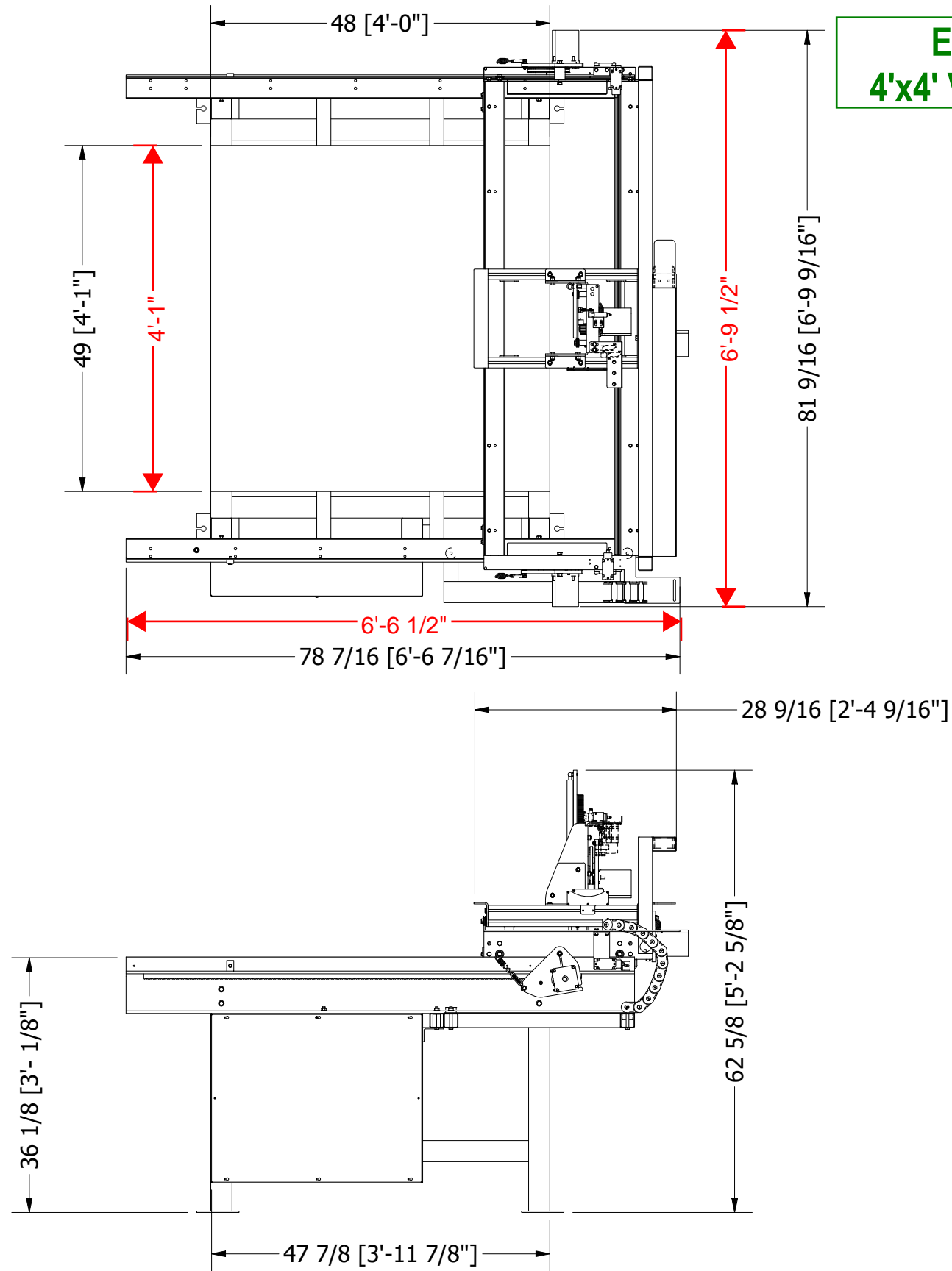
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REV	DATE	DESCRIPTION OF CHANGE	DRN	APP
-	3/22/2021	WorkInProgress	JAR	JAR

ERP# A001520

ETA 1.B.1  
4'x4' Vacuum Bed



COMPANY:  
**LONE STAR CUTTING SOLUTIONS**

NAME: **KEYSHEET TEMPLATE**  
MACHINE: **GMRTR**

SIZE DWG NO  
**B GMRTR\_V2\_4X4-00**

DRAWN DATE  
JAR 3/22/2021

WT:=678.217 lbmass

SHEET 1 OF 1

SHOWN ON:

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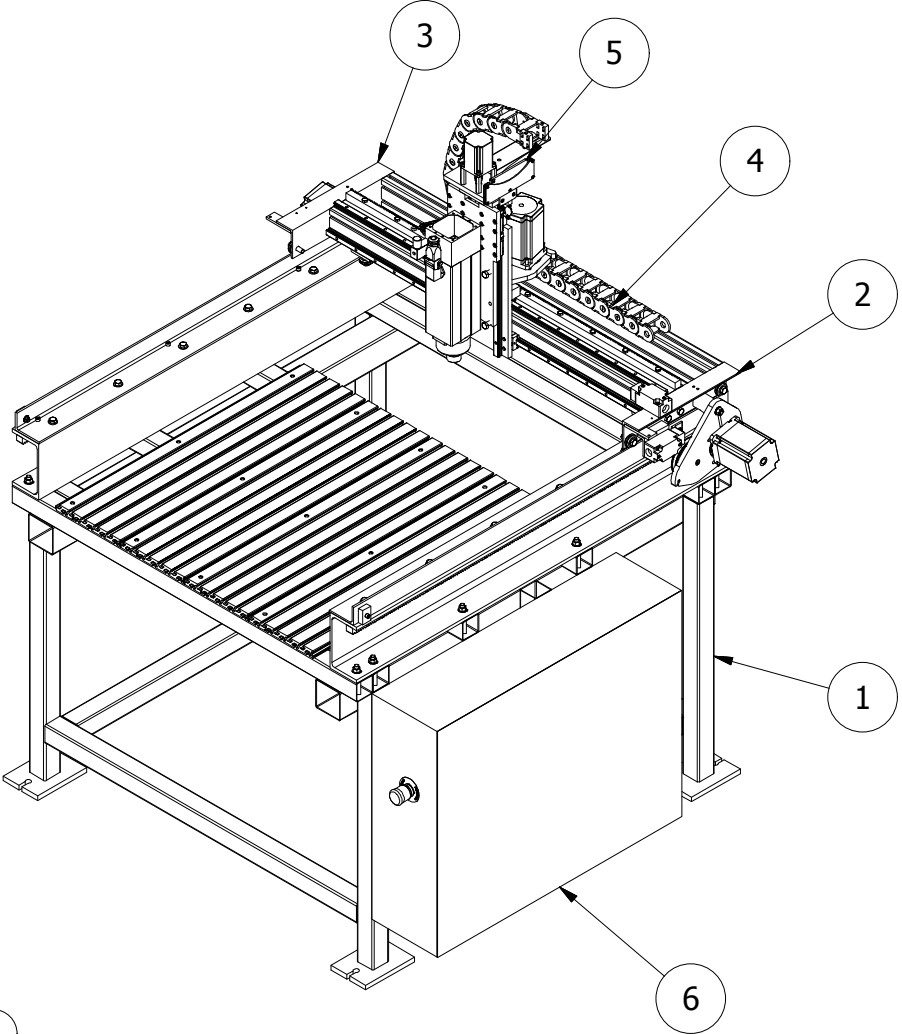
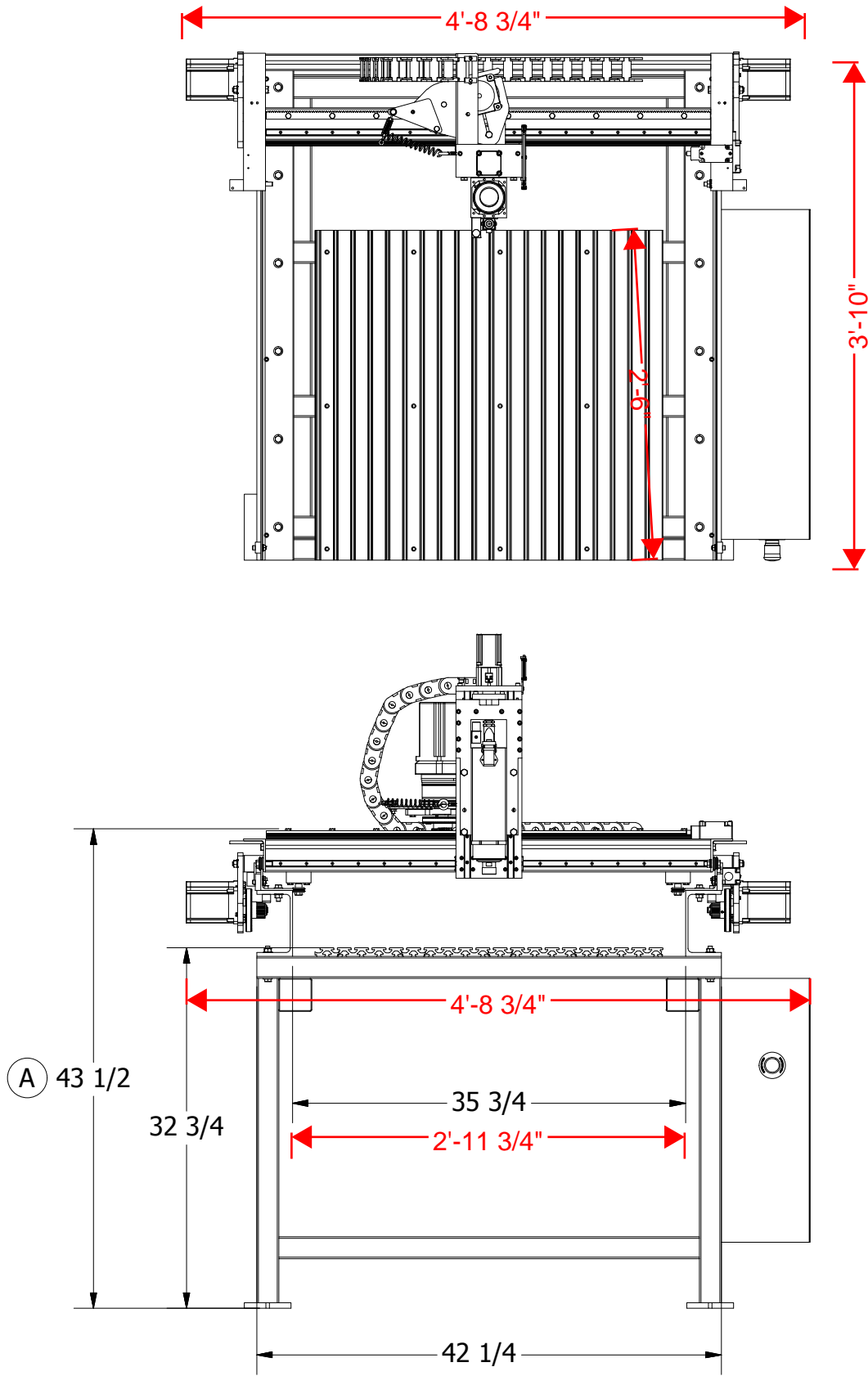
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REV	DATE	DESCRIPTION OF CHANGE	DRN	APP
-	10/09/17	RELEASE	JAR	JAR
A	10/10/17	HEIGHT REVISED	JAR	JAR

ERP# A000181

ETA 1.B.2  
30" x 30" Vacuum Bed



PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	ERP#
1	EZMINI-01	FRAME	A000114
2	EZMINI-02	TRUCK A	A000115
3	EZMINI-03	TRUCK B	A000116
4	EZMINI-04	GANTRY	A000117
5	EZMINI-05	X CART Z COMBO	A000118
6	EZMINI-07	CONTROL BOX	A000119



COMPANY:

**LONE STAR CUTTING SOLUTIONS**

NAME: **30x30 KEYSHEET**

MACHINE: **EZ MINI**

SIZE DWG NO

**B EZMINI-00**

DRAWN JAR	DATE 10/9/2017	WT:=385.773 lbmass	SHEET 1 OF 1
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## VCarve Pro

After searching for the best and easiest to use CAD/CAM software for CNC routers, Intelitek chose VCarve Pro to create the files used by the router to bring projects to life. This software works with 3D / 2D files created by your favorite CAD software and popular graphics files like JPEG and SVG for those more artistically inclined.



## Mach3

Mach3 has become the popular choice of CNC light duty routers; feature rich and provides a great solution for a CNC control package. Mach3 works on most Windows PC's to control the motion of the router by processing G-Code into physical movements. While offering many advanced features found in more complex control systems.

# Express CNC Router Curriculum

Intelitek's brand new express curriculum is a direct, project driven course that enables students to bring objects they create life quickly and motivates them to complete other projects. They will learn terminology related to CNC. Setting up the router using Mach3™ control software. This is followed up by five projects using Vectric VCarve Pro to produce amazing results.

## Course Outline

### Getting Started Routers

- Basic Terminology
- Axis of Travel
- Securing the Work Piece
- Installing a Tool
- Spoil board
- Dust Collection
- Mach3 Layout
- Homing the Router
- Jogging the Router
- Setting Part Zero
- G-Code Editing
- Cutting a Sample Part

### Introduction to Vectric VCarve Pro

#### Making a Sign

- Setting the Part Size
- Creating a Border
- Creating Text
- Cutting a Part
- Making a Gear Clock
- Drawing
- Closing Objects
- Patterning
- Fillets
- Modifying Lines
- Cutting a Part

#### Importing a Picture

- Importing Pictures
- Creating Vectors
- Feature Recognition
- Adding Depth
- Cutting Parts

#### Importing a Drawing DXF/DWG/SVG

- Import a DXF
- Engraving
- Pocketing
- Contouring

#### 3D Dinosaur Project

- Importing Individual Parts
- Layout Board
- Part Spacing
- Creating Joints
- Running Parts

# ProMill 8000 CNC Machining Center

The ProMill 8000 is a versatile CNC machining center that enables you to deliver robust instruction in computer numerical control and advanced manufacturing for your students.

The ProMill 8000 is an AC servo motor 3-axis, PC-based mill with an optional 4th rotary axis. The mill requires no assembly, arriving at your facility ready to run on an Ethernet port on a standard PC. Like larger industrial machines, the ProMill 8000 uses EIA, ISO, and FANUC™-compatible G&M code programs to cut parts in a variety of materials.

## Standard Features

- Ethernet-based control
- AC servo axis motors
- Brushless spindle motor
- Full enclosure with automatic safety door lock
- 12-Tool automatic tool changer
- Automatic diagnostics and power cut off protection
- PC-based CNC software
- Pneumatic drawbar
- Coolant-ready
- Jog pendant-ready
- 4th-axis ready
- Robotic integration-ready with 6 inputs, 6 outputs
- No assembly required

## Included Accessories

- Pneumatic drawbar
- Internal work light
- One shot lubrication system
- ProMill accessory package:
  - ◇ (1) 10-pc. Clamping kit
  - ◇ (1) 4-flute, HSS end mill - 3 mm
  - ◇ (1) 4-flute, HSS end mill - 1/8"
  - ◇ (1) ISO 20 tool holder
  - ◇ (1) ER16 collet - 4 mm
  - ◇ (1) ISO 20 Tool holder nut wrench
  - ◇ (1) Tool Holder wrench, 30mm
  - ◇ (1) Open-end wrench Set, 3-pc
  - ◇ (1) Allen wrench set, 6-pc
  - ◇ (1) 2M Ethernet cable
  - ◇ (1) Storage box
  - ◇ Misc. accessories

## Specifications

### Axis Travel

X Axis, max	280 mm	11"
Y Axis, max	152 mm	6"
Z Axis	270 mm	10.625"

### Work Area

Table Size	550x160 mm	21.6"x6.3"
No. of T-Slots	3	
T-slot size	12 mm	0.47"
Max. table load	35 Kg	77 lbs

### Spindle

Motor Type	Brushless	
Motor power	1.34 hp, 1000 w	
Spindle speed	100 – 5000 RPM	
Spindle taper	ISO20	
Max. tool diam.	10 mm	0.375"
Throat	232 mm	9.130"

### Accuracy

Position accuracy	0.038 mm	0.0015"
Repeatability	0.010 mm	0.0004"

### Dimensions

Machine size		
Width	1280 mm	50.40"
Depth	895 mm	35.23"
Height	1845 mm	72.64"
Shipping size		
Width	1420 mm	55.91"
Depth	1060 mm	41.73"
Height	2035 mm	80.12"

### Weight (approximate)

Machine weight	510 Kg	1124 lbs
Shipping weight	570 Kg	1256 lbs



### Axis Drive Motors

Axis motor type	AC servo	
X axis	400w	
Y axis	400w	
Z axis	750w	
Rapid feed rate	5000 mm/min	197 ipm
Feed rate	2540 mm/min	100 ipm

### Air Supply Requirements

620 kPa (90 psi)  
1/4" NPT female connection provided

### Control Software

EIA RS274-D standard G & M code compatible  
FANUC® compatible  
CAD/CAM compatible  
Advanced NC code editing  
Real-time or simulated graphic tool path verification

## Power Requirements

### United States

115 VAC (+5%/-10%) 60 Hz, 20A

### International

230 VAC (+5%/-10%) 50 Hz, 8A

# ProMill 8000 CNC Machining Center

## Curriculum

LM7 Content, CNC Milling Imp/Met	88-3147-0000
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## Hardware

ProMill 8000 ATC - 110 VAC	00-5509-0110
ProMill 8000 ATC - 220 VAC	00-5509-0220

## ProMill 8000 Bundles

### **Starter Bundle, 110/220 VAC, Imp/Met** **HW-PM8K-STRT**

- ProMill 8000 AC with 12 Tool ATC
- 4" Vise
- ISO 20 Tool Holder
- 58-pc Clamping Kit
- ER16 Collet set
- Advanced End Mill Package

### **Standard Bundle, 110/220 VAC, Imp/Met** **HW-PM8K-STND**

- ProMill 8000 AC with 12 Tool ATC
- 4" Vise
- ISO 20 Tool Holder
- 58-pc Clamping Kit
- ER16 Collet set
- Advanced End Mill Package
- Jog Pendant Handwheel
- Stock Package, Wax, 3" x 2" x 1.5" - 50 Pcs

### **Advanced Bundle, 110/220 VAC, Imp/Met** **HW-PM8K-ADV**

Includes all Standard Bundle items, plus:

- Coolant system
- 4th-Axis Rotary Worktable with Tailstock
- 3-Jaw Chuck, 80mm
- Engraving Package
- Computer / Monitor Stand

## Software

CNCBase for Intelitek CNC and Fanuc Emulator	Included
CNCMotion® Simulation Software	63-6789-1000
SpectraCAD Engraver	63-6723-0000
SpectraCAM Milling	63-6733-0000

## Options and Accessories

Jog Pendant Handwheel	10-1111-1000
4" (100mm) Precision Vise	10-1111-6000
4" (100mm) Vice with Angle Adjustment	10-1108-2000
58-Piece Hold Down Set	10-1111-5000
ISO 20 Tool Holder with Nut	10-1111-9000
Tool Holder Set	10-1111-7000
Machinists Kit	10-5812-0000
End Mill Set, 3 Piece, Imperial	10-1113-3000
End Mill Set, 3 Piece, Metric	10-1113-2000
Advanced End Mill Set, 14 Piece, Imperial	10-1113-5000
Advanced End Mill Set, 12 Piece, Metric	10-1113-4000
Engraving Tool Set, 3 Piece, Imperial	10-1113-7000
Engraving Tool Set, 3 Piece, Metric	10-1113-6000
Engraving Tool Set, 7 Piece, Metric	10-1108-6000
ER16 Collet - 10mm	10-1113-0000
ER16 Collet - 4mm	10-1112-4000
ER16 Collet - 7mm	10-1112-7000
ER16 Collet - 3/8"	10-1130-5000
ER16 Collet - 5/16"	10-1130-4000
ER16 Collet - 1/4"	10-1130-3000
ER16 Collet - 3/16"	10-1130-2000
ER16 Collet - 1/8"	10-1130-1000
ER16 Metric Collet Set, 8 Piece (3,4,5,6,7,8,9,10mm)	10-1112-2000
ER16 Metric Collet Set, 8 Piece (2x 3,6,8,10mm)	10-1115-0000
ER16 Imp Collet Set, 5 Piece (1/8", 3/16", 1/4", 5/16", 3/8")	10-1130-0000
Table-mounted 4-station Automatic Tool Changer	10-1113-1000
Table-mounted ATC Package	10-1115-2000
4th Axis Package, 100 mm (4") Rotary Worktable	10-1115-3000
3" (80mm) 3-Jaw Chuck for Rotary Positioner	10-1109-3000
3" (80mm) 4-Jaw Chuck for Rotary Positioner	10-1106-3000
Dual-axis Pneumatic Vise	10-1110-7000
Single-axis Pneumatic Vise	10-1110-8000
Basic Air Compressor and Conditioning System	324325
Coolant System - 110 VAC	10-5817-0110
Mobile Workbench with 3 Drawer Cabinet, 96"	10-5592-0000
Mobile Workbench with 2 Drawers, Casters, 60"	10-5596-0000

## Projects

Project, 4-Cavity Mold	CNC-PROJ-4CAV
Project, Planetary Gearbox	CNC-PROJ-PLAN1
Project Kit, CO2 Car, 50 students	CNC-PROJ-CO2
Project Kit, Precision Measuring Device, 50 students	CNC-PROJ-PMD
Project Kit, Golf Putter, 50 students	CNC-PROJ-PUTT
Project Kit, Yo-Yo, 50 students	CNC-PROJ-YOYO
Project, Sterling Engine	10-9603-0000

**intelitek** 

📍 18 Tsienneto Rd, Derry, NH 03038 USA

☎ 603-413-2600

@ info@intelitek.com

🌐 www.intelitek.com



# ETA 1.F

## 324325 Basic Air Compressor & Conditioning System 110V

### Limited One Year Warranty

The product from date of purchase

\_\_/\_\_/\_\_ on sales invoice is covered by a limited 1 year warranty. This warranty is void if the unit is misused as determined by seller. If the unit is found to have been used with incorrect voltage requirement, has water inflow, man-made damage or other phenomena outside the normal use warranty is void. Additional cost may apply if technical series are required.

### EXCLUSIONS

Warranty does not cover products subject to following:

1. Improper setup, installation or storage
2. Lack of proper maintenance/service
3. Accident, damage abuse or misuse
4. Any modifications by customer or 3rd party
5. Acts of God

Application of exclusion will be determined at the sole discretion of SMTmax

### About SMTmax

Located in the city of Chino, Ca. SMTmax has been a retailer for dependable, affordable and trustworthy dental products since 2008. We provide a wide variety of products. Various dental air compressors, vacuum pumps, suction units, ect.

Our friendly staff and dedicated service team is always happy to help. All our products have a one year warranty. Check out our website at [www.smtmax.com](http://www.smtmax.com)



5675 Kimball Ct.  
Chino, Ca 91710

Phone: 909-393-8700

Fax: 909-393-8766

Web: [smtmax.com](http://smtmax.com)



## Dental Air Compressor Manual



SMTmax  
5675 Kimball Ct.  
Chino, Ca 91710



### Reliable Dental Products

Tel: 909-393-8700

(this product has been shipped completely assembled)

#### UNPACKING:

1. Carefully remove any accessories from the box. Make sure that all items listed in the packing list are included.
2. Do not discard packing material until you have carefully inspected and are satisfied with condition of compressor.
3. Please call immediately if missing or damaged parts 909-393-8700

#### IDEAL PLACEMENT:

1. Requires adequate air flow
2. Maximize longevity of air compressor do not operate compressor in dusty area.

#### INSTALLING AIR COMPRESSOR

1. Connect your air supply house to our 1/4" air hose female thread connector or 1/4" female quick connector.
2. Make sure drain valve is off & pressure switch is in the OFF position.
3. Connect your air compressor muffler to the motor to reduce the noise level
4. Ensure correct power supply for your compressor

#### TEST RUN:

Turn the air compressor to OFF position. Plug into electrical source. Then start the air compressor by turning the power switch to the ON position. The pressure will gradually rise and stop at 110-120 psi. At this point wait 2-3 minutes to make sure the air compressor has no leaks. If the air compressor has no leaks connect your airline into the air compressor. Then do the same to make sure there is no leak on your end. If there is any leak please find where the leakage is coming from. DO NOT OPERATE WITH A LEAK OR PROPER START TO MOTOR.

#### DAILY OPERATION

##### Starting Air Compressor

1. Turn power switch ON
2. Let motor run until air tank is full. The motor will turn OFF around 115-120psi
3. Operate air tool normally

##### SHUTTING DOWN Air Compressor

1. Turn the power switch OFF
2. Unplug the power cord from electric socket. If you have an main switch for your air compressor please turn it off when not used.
3. If you have the manual coalscent dryer you must open the valve while there is no air inside the tank at end of day.

#### ADJUSTING PRESSURE SWITCH

The pressure switch is used to control the automatic stop/start function of air compressor. If pressure of the pressure switch must be adjusted proceed with following steps to activation valve.

(Pressure will stop running at 8 bar & start running at 6 bar)

1. Open main power switch control box.
2. Adjust the setting screw for the maximum pressure. Turn setting screw clockwise to heighten pressure.
3. Gradual adjustments should make the activation pressures within the range set by the manufacture.

#### MAINTANCE

1. Air compressors without automatic tank drain system must be drained every 1-2 weeks.
  - remove all air from compressor
  - Locate the drain plug by following the YELLOW DOWN arrow. Unscrew the drain plug. Water will flow out. We suggest that you place a something to catch water as it drains.
2. Manual Coalscent dryer, you must change the filter every 6 months
3. Automatic dessicant dryer must have dessicant beds changed once a year.

# intelitek

## CNC Milling Technology


The CNC Milling Technology course introduces students to the fundamentals of CNC (Computer Numerical Control) milling. Students learn the core skills of CNC milling by working with the BenchMill 6100 or the ProMill 8000 to accurately machine a series of complex parts. Activities challenge students to develop and edit programs, and machine assorted parts. Each project teaches job setup, drawing construction, tool path generation, tool path verification and NC code generation. Students use the skills they learn to produce a part on the machine.

### Course Information

Type	Virtual; Lab
Units of measurement	Imperial; Metric
Hardware	BenchMill 6100, ProMill 8000
Languages	English
Hours of instruction	15
Catalog #	88-3147-0000

### Course Outline

- Introduction and Safety
- CNCBase Control Software
- Mounting the Workpiece
- Tooling
- Reference Positions
- Verifying a Program
- Running a Program
- Fundamentals of NC Programming
- Programming the House (Project #1)
- Machining Project #1
- Arc Programming
- Programming the Star (Project #2)
- Machining Project #2
- Programming Your Initials (Project #3)
- Final Project



### Machining Center Components

Your machining center is a vertical mill that is controlled by a computer. The system consists of:

- The **milling machine**
- A **computer and control software**

CNCMotion allows you both to simulate the actions of the milling machine as well as control the real one!

Move on to the next page, where you will learn more about the components of the actual machine.



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CNC Milling curriculum for the BenchMill 6100 or ProMill 8000 is delivered through LearnMate®, Intelitek's learning management system (LMS). LearnMate, fully hosted in the cloud, provides an easy-to-implement and easy-to-use LMS for education organizations of all types that provides the best technology and capabilities without the burden of IT support and maintenance. LearnMate provides everything needed for the ultimate blended learning experience:

- SCORM-compliant interactive content
- Anytime, anywhere accessibility
- Student and class management
- Flexible content leasing options for continuous updates



### Activity 1: Introduction to CNC

Welcome to the CNC Milling Technology course!

CNC Machining is very common in the manufacturing industry, and we hope that this course offers you with an insightful prelude to this important class of technology.

At any time, you can click the [Home button](#) to return to the machine selection page.

This activity includes the following topics:

- What is CNC?
- What is a Mill?
- The components of your mill



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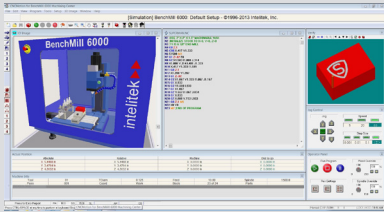
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📞 603-413-2600

✉ info@intelitek.com

🌐 www.intelitek.com

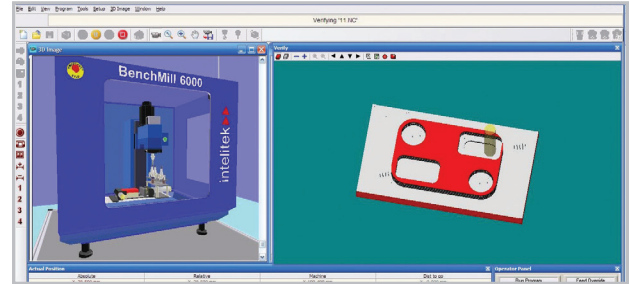
Intelitek's e-learning curriculum combines interactive simulation with world-class hardware. Lab courses feature interactive on-line curriculum and robust hardware for the ultimate hybrid learning experience! Curriculum is fully integrated with our lab equipment, including the ability to launch software directly from the content.





# CNCBase & CNCMotion CNC Machine Control Software

Intelitek's CNC control software is an ideal tool for learning the fundamentals of CNC machining. CNCBase has a user-friendly interface and its online help enables users of all levels learn to write NC programs and operate CNC machines. CNCMotion integrates interactive 3D simulation with CNCBase for dynamic simulation and graphic tracking of CNC mills and lathes. The software accepts standard FANUC-compatible EIA RS274D G&M codes.



## CNCBase®

### Standard Features

- Programming and control
  - ◇ EIA RS274-D standard G&M code compatibility
  - ◇ CAD/CAM compatibility
  - ◇ Advanced NC code editing functions, including automatic block numbering, comment management and code verification
  - ◇ Absolute and incremental programming
  - ◇ Canned cycles for drilling & boring
  - ◇ Programmable tool offsets & cutter compensation
  - ◇ Metric and imperial units
  - ◇ NC code color editor
  - ◇ Unlimited number of simultaneously open programs
  - ◇ Unlimited number of program blocks
- Programming verification
  - ◇ Quick verification of G&M code to ensure correct and complete syntax during program editing
  - ◇ Graphic verification of the tool path
  - ◇ Estimate Runtime command to calculate the approximate amount of time necessary to machine your part, and the approximate distance the machine travels
- Real-time data display
  - ◇ Real-time display of current hardware setup, including cross-slide and tool positions, tool in use, machining parameters
  - ◇ Real-time display of program execution, including block being executed and program run time
- Manual hardware control
  - ◇ Movement along each axis at customized speed and step settings
  - ◇ Spindle activation and speed control
  - ◇ Movement control from dialog box & keyboard
  - ◇ Manual override of spindle speed and feed rate
  - ◇ Configurable soft limits for safe machining
  - ◇ Parameters easily viewed & manipulated
  - ◇ Setup tool library
- Two operating modes:
  - ◇ Online: CNCBase communicates with the controller
  - ◇ Simulation: Offline, you can simulate the machining process with graphic verification and simulated machining

## CNCMotion®

### Standard Features

- Graphic setup
  - ◇ Interactive graphic setup enables customization of machines, including various machine tools and fixtures
  - ◇ Definitions and properties of clamps, vises and chucks; fixtures can be pneumatically or manually operated
  - ◇ Definitions and tool offsets for up to 20 predefined and user-defined tools
  - ◇ Definition of manual tool holders/posts, or automatic tool changer/tool turret
  - ◇ Definitions and properties of workpieces: material, color and size
  - ◇ Definitions verified during setup to ensure compatibility with actual hardware and physical environment
  - ◇ Tooling options and accessories simulated on-screen
- Dynamic 3D simulation
  - ◇ Dynamic simulation and graphic tracking of machine during manual operation and program execution
  - ◇ Simulates cross-slide, spindle & tool movements
  - ◇ Simulates in real time the changing form of work piece during the entire machining process
- Simulates real-world conditions, including axis limits, impact, automatic and emergency stops, and shield-engaged stops
- Enables experimentation with virtual parts of different shapes, sizes and materials, such as wax, brass, wood and aluminum
- Point & click workpiece origin definition
- Full control of feed rate and spindle speed during simulation
- Display of current tool coordinates and state of hardware components
- Control the display zoom, rotate, pan, drag, and redirect
- 3D tool path verification during machining
- Simultaneously display three different 3D views of the machine
- Programming and control
  - ◇ Fully integrated with CNCBase control software, an intuitive tool for programming and operating CNC machines
  - ◇ FANUC emulator replicates standard industry control. Switch between Intelitek and FANUC control with the click of the mouse

### Milling Options

- All standard-size tooling
- 4" precision vise
- Single axis air vise
- Dual axis air vise
- Clamping kit
- 4-station ATC for BenchMill 6100 or ProMill 8000
- 12-tool carousel ATC for ProMill 8000
- Rotary worktable (4th axis) with 3-jaw chuck
- Coolant system
- Lubrication system
- Automatic shield opener

### Turning Options

- All standard-size tooling
- 3-jaw chuck
- Air chuck
- 4-station automatic tool turret
- Tailstock
- Coolant system
- Lubrication system
- Automatic shield opener

## CNC Machine Control Software (continued)

### FANUC™ 21i Emulator

The FANUC 21i Emulator is an in both CNCBase and CNCMotion control software.

The FANUC emulator replicates the FANUC 21i CNC controller. This controller and its subset, the FANUC 16i and 18i controllers, are the popular CNC controls used in industry.

Whether you are operating the actual machine or the virtual machine simulator, you can teach industrial CNC controls in addition to the G & M codes offered on our CNC machines.

The FANUC 21i control and simulator are available for any of the following machines:

- BenchMill 6100 CNC Milling Center
- BenchTurn 7100 CNC Turning Center
- ProMill 8000 CNC Machining Center
- ProTurn 9000 CNC Turning Center

## Ordering Information

### CNC Software

CNCMotion® Simulation Software	63-6001-2000
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### CNC Machines (include CNCBase)

BenchMill 6100 - 110 VAC	00-5505-N110
BenchMill 6100 - 220 VAC	00-5505-N220
BenchTurn 7100 - 110 VAC	00-5504-N110
BenchTurn 7100 - 220 VAC	00-5504-N220
ProMill 8000 ATC - 110 VAC	00-5509-0110
ProMill 8000 ATC - 220 VAC	00-5509-0220
ProTurn 9000 - 110 VAC	00-5501-0110
ProTurn 9000 - 200 VAC	00-5501-0220

### CNC Bundles\*

BenchMill 6100 Starter Bundle, 110/220 VAC, Imp/Met	HW-BM6K-STRT
BenchMill 6100 Standard Bundle, 110/220 VAC, Imp/Met	HW-BM6K-STND
BenchMill 6100 Advanced Bundle, 110/220 VAC, Imp/Met	HW-BM6K-ADV
BenchTurn 7100 Starter Bundle, 110/220 VAC, Imp/Met	HW-BT7K-STRT
BenchTurn 7100 Advanced Bundle, 110/220 VAC, Imp/Met	HW-BT7K-ADV
ProMill 8000 Starter Bundle, 110/220 VAC, Imp/Met	HW-PM8K-STRT
ProMill 8000 Standard Bundle, 110/220 VAC, Imp/Met	HW-PM8K-STND
ProMill 8000 Advanced Bundle, 110/220 VAC, Imp/Met	HW-PM8K-ADV
ProTurn 9000 Starter Bundle, 110/220 VAC, Imp/Met	HW-PT9K-STRT
ProTurn 9000 Advanced Bundle, 110/220 VAC, Imp/Met	HW-PT9K-ADV

\*include machine, accessories, software and curriculum. See hardware data sheets for details.

### CNC Curriculum

LearnMate Content, Lab/Virtual, CNC Milling, Imp/Met	88-3147-0000
LearnMate Content, Lab/Virtual, CNC Turning Imp/Met	88-3148-0000



📍 18 Tsienneto Rd, Derry, NH 03038 USA

📞 603-413-2600

✉ info@intelitek.com

🌐 www.intelitek.com

# BenchTurn 7100 CNC Turning Center

The BenchTurn 7100 is a benchtop CNC turning machine for learning environments. The 7100 comes equipped with 2-axis stepper motors, ball screws, a variable speed brushless spindle motor, limit/home switches, and an MT3 taper spindle with MT2 taper tailstock. This system requires no assembly, arriving at your facility ready to run on an Ethernet port on a standard PC, and fits comfortably into any classroom without sacrificing features. Like larger industrial machines, the BenchTurn 7100 uses EIA, ISO, and FANUC™-compatible G&M code programs to cut parts in a variety of materials.



## Standard Features

- Ethernet-based control
- Brushless spindle motor
- Full enclosure with automatic safety door lock
- Tailstock
- Automatic diagnostics and power cut off protection
- PC-based CNC software
- Coolant-ready
- Jog pendant-ready
- Robotic integration-ready with 6 inputs, 6 outputs
- No assembly required

## Included Accessories

- 4" 3-jaw chuck with key
- 4-station automatic tool turret
- One shot lubrication system
- Internal work light

## Accessory kit includes:

- (1) Chuck key
- (1) Chuck jaw set
- (2) Dead centers
- (1) 4-pc. Allen wrench set
- (1) 2-pc. Open-end wrench set
- (1) 2M Ethernet cable
- (1) Storage box
- Misc. accessories

## Specifications

### Axis Travel

X Axis, max	75 mm	2.96"
Z Axis	250 mm	9.84"

### Work Area

Swing over bed	200 mm	7.87"
Swing over cross slide	100 mm	3.94"
Max dist. between centers	360 mm	14.17"
Bed width	100 mm	3.94"

### Spindle

Motor Type	Brushless
Motor power	500 W / 0.67 HP
Spindle speed	100-3000 RPM
Spindle taper	MT3

### Tooling

Automatic tool position	4
Tool post angle	360 deg.
Tailstock taper	MT2
Tailstock travel	50 mm
	1.97"

### Accuracy

Position accuracy	0.015 mm	0.0006"
Repeatability	0.010 mm	0.0004"

### Dimensions

#### Machine size

Width	1093 mm	43.00"
Depth	864 mm	34.00"
Height	565 mm	22.25"

#### Shipping size

Width	1435 mm	56.50"
Depth	1020 mm	40.15"
Height	960 mm	37.75"

### Weight (approximate)

Machine weight	170 Kg	353 lbs
Shipping weight	220 Kg	485 lbs

### Axis Drive Motors

Axis motor type	Stepper	
X axis	1.35 N-m	192 oz-in
Z axis	1.35 N-m	192 oz-in
Rapid feed rate	2000 mm/min	79 ipm
Feed rate	500 mm/min	20 ipm

### Air Supply\*

\*Only required for optional pneumatic accessories:  
620 kPa (90 psi)  
1/4" NPT female connection provided

### Control Software

EIA RS274-D standard G & M code compatible  
FANUC® compatible  
CAD/CAM compatible  
Advanced NC code editing  
Real-time or simulated graphic tool path verification

### Power Requirements

#### United States

115 VAC (+5%/-10%) 60 Hz, 20A

#### International

230 VAC (+5%/-10%) 50 Hz, 8A



# BenchTurn 7100 CNC Turning Center

## Options and Accessories

Coolant System



Air Chuck for BenchTurn 7100



TiN-coated Cutter, 7-pc set, 10mm x 10mm



Jog Pendant Handwheel



MT2 Tailstock Chuck



4-Jaw Chuck with Flange (3.9")



3-drawer mobile workbench 60"



Rolling Center, Tailstock MT2



## Ordering Information

### Hardware

BenchTurn 7100 - 110 VAC	00-5504-N110
BenchTurn 7100 - 220 VAC	00-5504-N220

#### **Starter Bundle, 110/220 VAC, Imp/Met**

**HW-BT7K-STRT**

Includes:

- CNC BenchTurn 7100
- 10 x 10mm Cutter Tool Holder
- TiN-coated Tip
- Drill Chuck for Tailstock
- Rolling Center
- LM7 Content, Vir, CNC Turning w/BenchTurn 7100

#### **Advanced Bundle, 110/220 VAC, Imp/Met**

**HW-BT7K-ADVN**

Includes all Starter Bundle items, plus:

- 4-jaw Chuck
- Handwheel - Manual Control
- Coolant System

### Software

CNCMotion® Simulation & Design Software	63-6001-2000
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### Curriculum

CNC Turning Content, Lab/Vir, Imp/Met	88-3148-0000
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### Accessories

4-Jaw Chuck with 3.9" (100mm) Flange	10-1106-7000
Pneumatic Air Chuck	10-1110-9000
TiN-coated Cutter w/Inserts, 10 mm, 7-Pc Set	10-1110-1000
Cutter Insert Replacements 7-pc Set,	10-1110-2000
Pneumatic Shield Opener with Sensors	10-1110-5000
Tailstock Chuck MT2 Taper 1/2" (13mm)	10-1105-7000
Rolling Center, Tailstock MT2 Taper	10-1106-6000
Basic Air Compressor and Conditioning System	324325
Jog Pendant Handwheel	10-1111-1000
Coolant System - 110 VAC	10-1108-1110
Coolant System - 220 VAC	10-1108-1220
Mobile Workbench with 3-Drawer Cabinet, 96"	10-5592-0000
Project Kit, Chess Set	10-7551-0000
Project Kit, Sterling Engine	10-9603-0000

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📍 18 Tsienneto Rd, Derry, NH 03038 USA

📞 603-413-2600

✉ info@intelitek.com

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# CNC Turning Technology

The CNC Turning Technology course introduces students to the fundamentals of CNC (Computer Numerical Control) turning. Students learn the core skills of CNC turning by working with BenchTurn 7100 or ProTurn 9000. Students learn the CNC process through a series of projects. Activities challenge students to develop and edit programs, and machine assorted parts. Each project teaches job setup, drawing construction, tool path generation, tool path verification and NC code generation. Students use the skills they learn to produce a part on the machine.

## Course Information

Type	Virtual; Lab
Units of measurement	Imperial; Metric
Hardware	BenchTurn 7100, ProTurn 9000
Languages	English
Hours of instruction	15
Catalog #	88-3148-0000

## Course Outline

- Introduction and Safety
- CNC Control Software
- Securing the Workpiece
- Tooling
- Reference Positions
- Verifying a Program
- Running a Program
- Fundamentals of NC Programming
- Programming a Taper
- Machining Project #1
- Arc Programming
- Programming Project #2
- Machining Project #2
- Project #3
- Final Project

## Objectives

In this activity you will accomplish the following:

- Define the term computer numerical control (CNC).
- Explore applications of CNC in industry.
- Follow a typical CNC turning process.
- Identify the components of your turning center.
- Review safety procedures for working with a turning center.

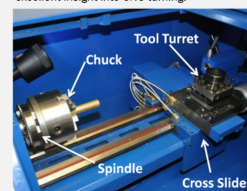


CNC Turning curriculum for the BenchTurn 7100 or ProTurn 9000 is delivered through LearnMate®, Intelitek's learning management system (LMS). LearnMate, fully hosted in the cloud, provides an easy-to-implement and easy-to-use LMS for education organizations of all types that provides the best technology and capabilities without the burden of IT support and maintenance. LearnMate provides everything needed for the ultimate blended learning experience:

- SCORM-compliant interactive content
- Anytime, anywhere accessibility
- Student and class management
- Flexible content leasing options for continuous updates

## Your Turning Center

In this course, you will learn about CNC lathes through use of a BenchTurn 7x00 Turning Center. While lathe operation may vary from lathe to lathe, the concepts used to operate a CNC lathe are the same for all lathes. Working with the BenchTurn 7x00 (or the simulated equivalent) will provide you with an excellent insight into CNC turning.



Emergency Stop Button

Safety Shield



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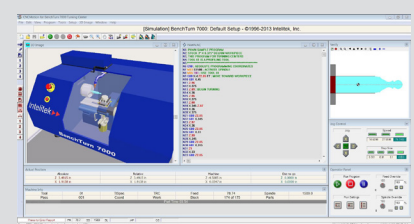
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Intelitek e-learning curriculum combine interactive simulation with world-class hardware. Lab courses feature interactive on-

line curriculum and robust hardware for the ultimate hybrid learning experience! Curriculum are fully integrated with our lab equipment, including the ability to launch software directly from the content.





Model 10-5592-0000 - Mobile Workbench  
Overall Dimensions 30"D x 96"W x 31"H



Light gray bench with bright blue drawers and a 8' bullnose butcher block top

WORKBENCH CONSISTING OF:

BTOP-96BN BUTCHER BLOCK TOP RADIUS EDGE 96X30

WBLBS BOTTOM SHELF 12" 2 PC 17.5MM

WBLL/M29. LEG INDL.8MM GRAY

MP DRAWER, 3 in.165LB CAPACITY, BLUE

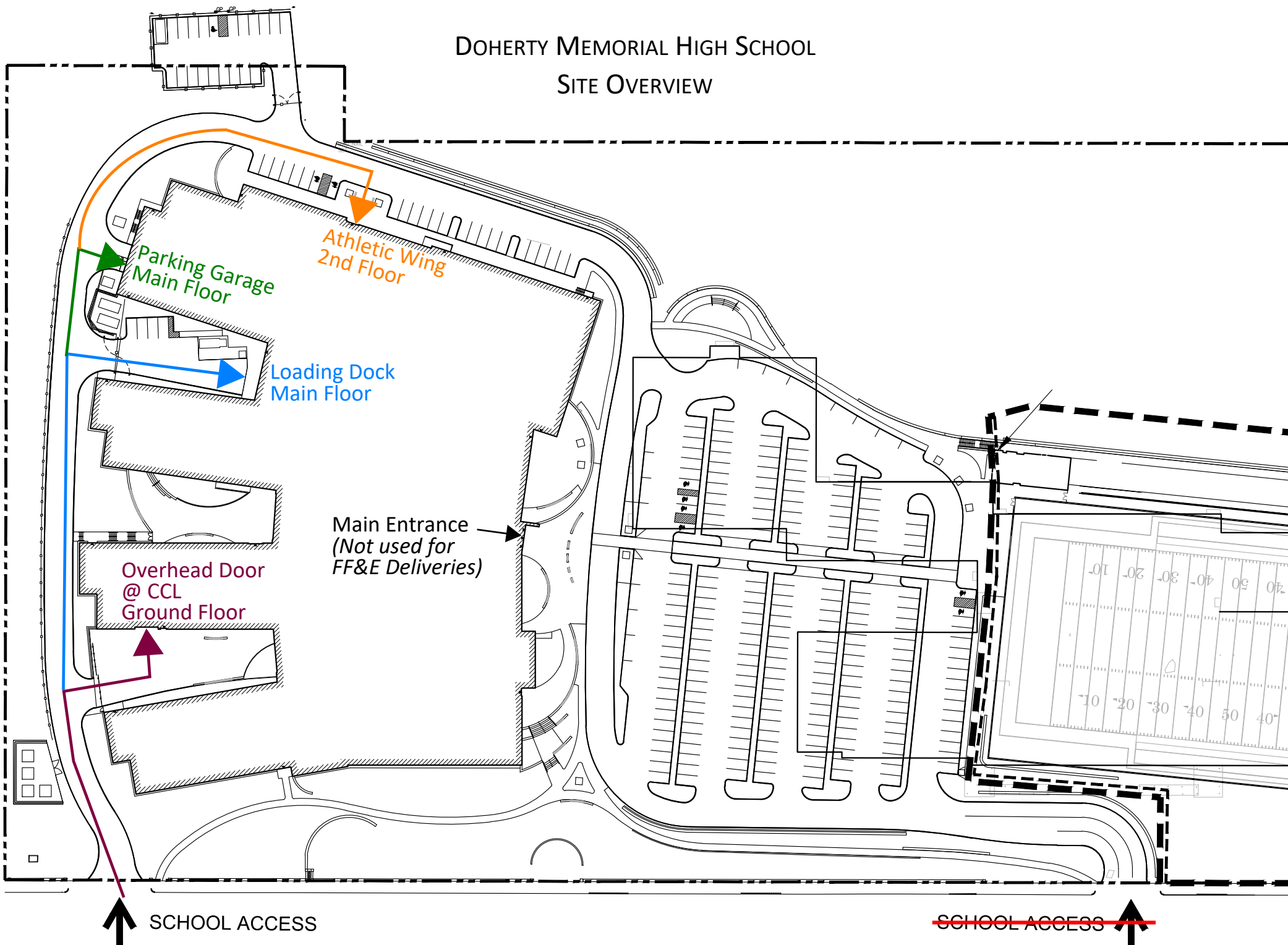
MP DRAWER, 5 in.165LB CAPACITY, BLUE

MP DRAWER, 7 in.165LB CAPACITY, BLUE

MP450 MP HOUSING, 22.2W X 28.5D X 21.7H GRAY

# DOHERTY MEMORIAL HIGH SCHOOL

## SITE OVERVIEW

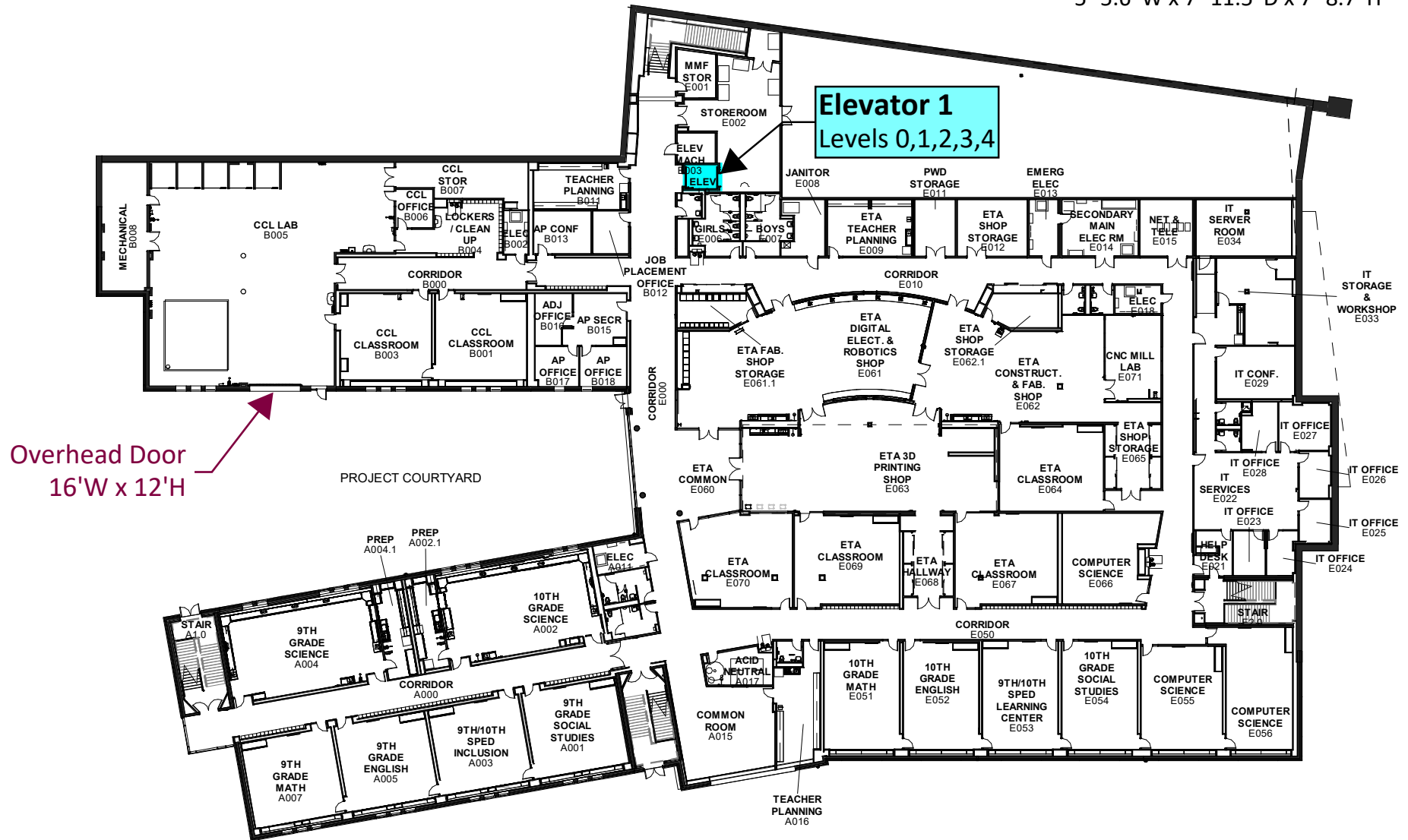


HIGHLAND STREET

# DOHERTY MEMORIAL HIGH SCHOOL

## ELEVATOR 1

DOOR OPENING SIZE: 4'W x 7'H  
CAB CLEAR INSIDE DIMENSIONS:  
5'-5.6"W x 7'-11.5"D x 7'-8.7"H

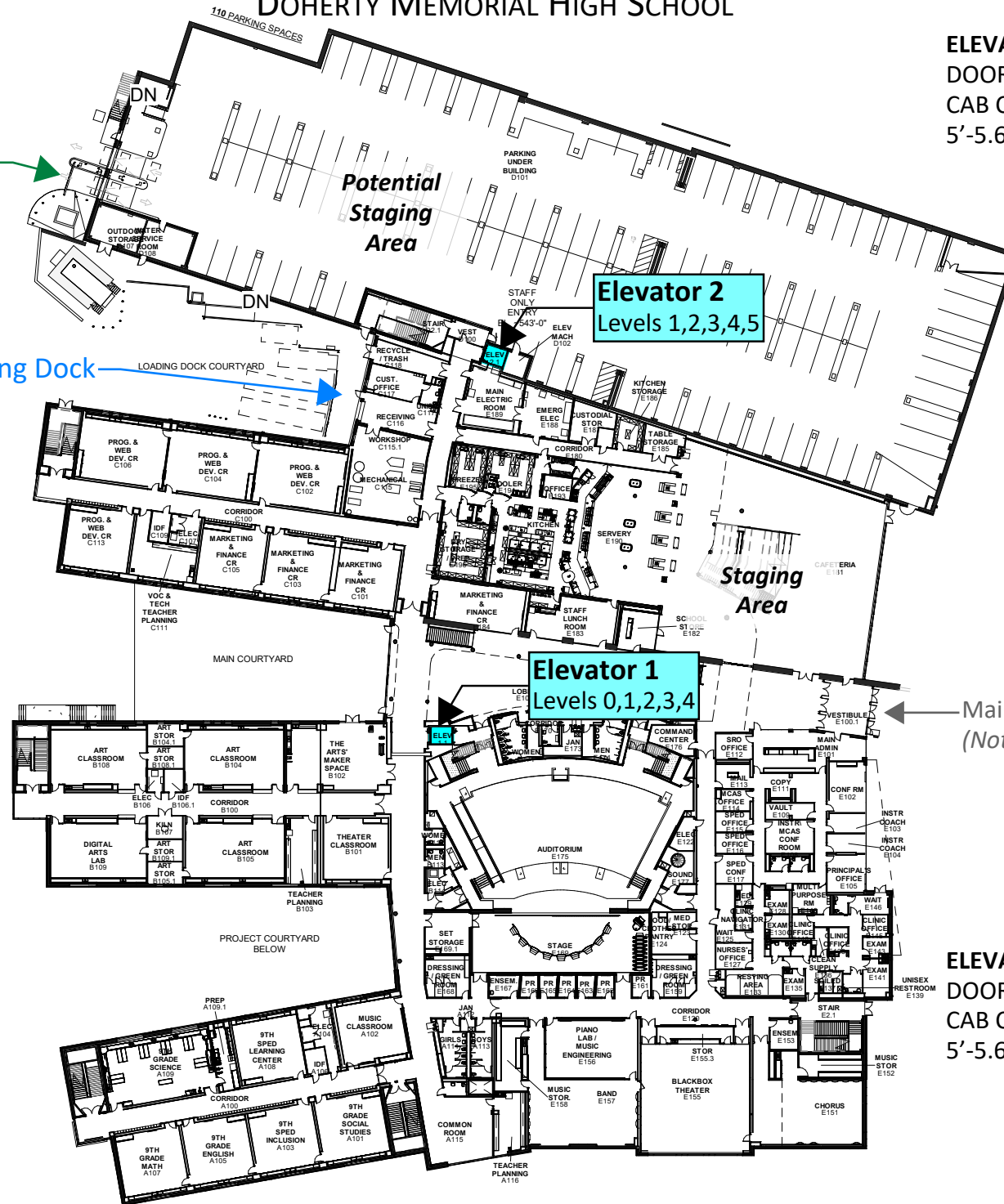


GROUND FLOOR PLAN

# DOHERTY MEMORIAL HIGH SCHOOL

Parking Garage  
Entrance  
~10'W x 8'-9"H

Loading Dock



## ELEVATOR 2

DOOR OPENING SIZE: 4'W x 7'H  
CAB CLEAR INSIDE DIMENSIONS:  
5'-5.6"W x 7'-10.9"D x 7'-8.7"H

Elevator 2  
Levels 1,2,3,4,5

Elevator 1  
Levels 0,1,2,3,4

Main Entrance  
(Not used for FF&E Deliveries)

## ELEVATOR 1

DOOR OPENING SIZE: 4'W x 7'H  
CAB CLEAR INSIDE DIMENSIONS:  
5'-5.6"W x 7'-11.5"D x 7'-8.7"H

## FIRST FLOOR PLAN

# DOHERTY MEMORIAL HIGH SCHOOL



**Elevator 2**  
Levels 1,2,3,4,5

**Elevator 1**  
Levels 0,1,2,3,4

## ELEVATOR 2

DOOR OPENING SIZE: 4'W x 7'H  
CAB CLEAR INSIDE DIMENSIONS:  
5'-5.6"W x 7'-10.9"D x 7'-8.7"H

## ELEVATOR 1

DOOR OPENING SIZE: 4'W x 7'H  
CAB CLEAR INSIDE DIMENSIONS:  
5'-5.6"W x 7'-11.5"D x 7'-8.7"H

## SECOND FLOOR PLAN



# DOHERTY MEMORIAL HIGH SCHOOL

Parking Garage  
Entrance  
~10'W x 8'-9"H

Loading Dock  
LOADING DOCK COURTYARD

Potential  
Staging  
Area

Elevator 2  
Levels 1,2,3,4,5

Staging  
Area

Elevator 1  
Levels 0,1,2,3,4

Main Entrance  
(Not used for FF&E Deliveries)

**ELEVATOR 2**  
DOOR OPENING SIZE: 4'W x 7'H  
CAB CLEAR INSIDE DIMENSIONS:  
5'-5.6"W x 7'-10.9"D x 7'-8.7"H

**ELEVATOR 1**  
DOOR OPENING SIZE: 4'W x 7'H  
CAB CLEAR INSIDE DIMENSIONS:  
5'-5.6"W x 7'-11.5"D x 7'-8.7"H

## FIRST FLOOR PLAN





## **CORI COMPLIANCE / GENDER IDENTITY & EXPRESSION**

Vendors entering into contracts with the City of Worcester must affirm that their policies regarding CORI information are consistent with the CORI hiring standards set by the City of Worcester. The City's CORI hiring policy may be downloaded from City of Worcester website [www.worcesterma.gov](http://www.worcesterma.gov). Questions pertaining to the City's CORI hiring policy are to be directed to the Equal Employment Opportunity Officer, Executive Office of Human Resources at [hr@worcesterma.gov](mailto:hr@worcesterma.gov)

### **CERTIFICATION**

#### **All Vendors must check one of the three lines below.**

1.        \_\_\_\_\_ CORI checks are not performed on any Applicants.
2.        \_\_\_\_\_ CORI checks are performed on some or all Applicants. The Vendor, by affixing a signature below, affirms under penalties of perjury that its CORI policy is consistent with the standards set forth with the CORI hiring standards set by the City of Worcester.
3.        \_\_\_\_\_ CORI checks are performed on some or all Applicants. The Vendor's CORI policy is not consistent with the standards set forth with the CORI hiring standards set by the City of Worcester. (a copy of the Vendor's written CORI policy must accompany this form).

\_\_\_\_\_  
(Typed or printed name of person  
signing quotation, bid or proposal)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name of Business

A Vendor with a CORI policy that does NOT conform to the City standards must check Line 3. Vendors who check Line 3 will not be permitted to enter into contracts with the City, absent a waiver granted by the City. For any waiver to be granted, a written request should accompany bid submission explaining in detail why the vendor fails or refuses to comply with the City's CORI hiring standards.

#### **Gender Identity Standards Applicable to Vendors**

The city will do business only with vendors that have adopted and employ Gender Identity policies, practices and standards that are consistent with city standards.

The city may review all vendors' Gender Identity policies and practices for consistency with city standards.

By signing this bid, vendor confirms that their Gender Identity policies, practices and standards are consistent with those of the City of Worcester. For further information please refer to the Ordinance Relative to Gender Identity and Expression found at [www.worcesterma.gov](http://www.worcesterma.gov) or call the LGBTQ Liaison/Director of Human Rights & Disabilities at 508-799-8486.

## **IMPORTANT NOTICE TO BIDDERS**

### **City of Worcester Environmentally Preferable Purchasing Policy**

The purchase and use of products and services can have a profound impact on the environment. The City of Worcester recognizes the positive impact that it can make on the environment through the purchasing decisions that it makes. It is the intent of the City of Worcester to integrate environmental considerations into every aspect of acquisition. Although the environment may not be the core of our professional mission, the integration of these factors will result in economic, health, and environmental gains that will further our goals.

#### **Overall Statement of Policy**

The City will seek to reduce the environmental damages associated with purchases by increasing acquisition of environmentally preferable products and services to the extent feasible, consistent with price, performance, availability, and safety considerations.

Environmental factors will be taken into account as early as possible in the acquisition-planning and decision-making process.

Responsibility for environmentally preferable purchasing will be shared among the program, acquisition, and procurement personnel.

#### **Definitions**

*"Recycled Material"* means material and by-products which have been recovered or diverted from solid waste for the purpose of recycling. It does not include those materials and by-products generated from, and commonly reused within, an original manufacturing process.

*"Post-Consumer Recycled Material"* means material and by-products which have served their intended end-use by a consumer and have been recovered or diverted from solid waste. It does not include those materials and by-products generated from, and commonly reused within, an original manufacturing process.

*"Environmentally preferable products"* means products that have a lesser or reduced effect on human health and the environment when compared with competing products that serve the same purpose.

#### **Policy Statement**

Bidders able to supply products containing recycled materials or environmentally preferable products which meet performance requirements are encouraged to offer them in bids and proposals. To this extent, the City reserves the right to award under the following circumstances:

- When the bidder submits an offer to supply an environmentally preferable product or recycled material.
- When the bidder documents the offer of environmentally preferable products or recycled materials.
- An environmentally preferred product or recycled material may be considered best value even when the price is greater than that of a non-environmentally preferred product or service by an amount not to exceed ten per cent.

**VENDOR/SERVICE PROVIDER CERTIFICATION**

TO BE AWARDED A VENDOR/SERVICE CONTRACT, ALL PARTS OF THIS FORM THAT APPLY TO YOUR BID MUST BE COMPLETED AND SUBMITTED WITH YOUR BID.

Bidder is a Minority Business Enterprise (MBE) - see reverse for definition Yes\_\_\_\_\_ No\_\_\_\_\_

Bidder is a Woman Business Enterprise (WBE) - see reverse for definition Yes\_\_\_\_\_ No\_\_\_\_\_

IF SUBCONTRACTING any portion of the service covered by this bid, the successful bidder shall demonstrate a good faith effort to seek and use TEN PERCENT (10%) Minority and FIFTEEN PERCENT (15%) Women-owned Businesses.

A. YOUR INTENT TO SUBCONTRACT. CHECK (✓) THE APPROPRIATE BOX:

☐

No work will be subcontracted. Complete Section "C" only.

☐

Some work will be subcontracted. Complete Section "B" and "C"

B. LIST SUBCONTRACTORS Engaged to do any portion of this Bid.

Check (✓) the appropriate box and give complete information.

☐

MBE

☐

WBE

☐

OTHER \_\_\_\_\_

Firm Name: \_\_\_\_\_

Street Address: \_\_\_\_\_

City/State/Zip \_\_\_\_\_

Work subcontracted: \_\_\_\_\_ Dollar Value \$ \_\_\_\_\_

Check (✓) the appropriate box and give complete information.

☐

MBE

☐

WBE

☐

OTHER \_\_\_\_\_

Firm Name: \_\_\_\_\_

Street Address: \_\_\_\_\_

City/State/Zip \_\_\_\_\_

Work subcontracted: \_\_\_\_\_ Dollar Value \$ \_\_\_\_\_

C. ITEM/SERVICE BID ON: \_\_\_\_\_ BID NO.: \_\_\_\_\_

Firm Name: \_\_\_\_\_

Street Address: \_\_\_\_\_

City/State/Zip \_\_\_\_\_

**For purposes of the City’s classification and reporting program, the following definitions apply:**

**Minority Business Enterprise (MBE)** – a for profit enterprise, regardless of size, physically located in the United States or its trust territories, which is owned, operated and controlled by minority group members. “Minority group members” are U.S. citizens who are African-American, Latin American, Native American, Asian-Pacific American and Asian-Indian American. “Ownership” by minority individuals means the business is at least 51% owned by such individuals or, in the case of a publicly owned business, at least 51% of the stock is owned by one or more such individuals. Further, those minority group members control the management and daily business operations.

**Women Business Enterprise (WBE)** – a for profit enterprise, regardless of size, physically located in the United States or its trust territories, which is owned, operated and controlled by women group members. “Ownership” by women means the business is at least 51% owned by women or, in the case of a publicly owned business, at least 51% of the stock is owned by one or more women. Further, those women group members control the management and daily business operations.

STATE LAW MANDATES THAT TO DO BUSINESS WITH THE CITY OF WORCESTER the Massachusetts Revenue Enforcement and Protection Program of 1983 requires that the following be supplied with your bid:

DATE: \_\_\_\_\_

Pursuant to Mass. G.L. Ch. 62C, Section 49A, I certify under the penalties of perjury that I, to my best knowledge and belief, have filed all Massachusetts State Tax Returns and paid all Massachusetts State and City Taxes required under law.

COMPANY NAME: \_\_\_\_\_

STREET ADDRESS: \_\_\_\_\_

CITY OR TOWN: \_\_\_\_\_

STATE: \_\_\_\_\_

ZIP CODE: \_\_\_\_\_

TELEPHONE NO.: \_\_\_\_\_

FAX NO. \_\_\_\_\_

SOCIAL SECURITY OR FEDERAL IDENTIFICATION NO.: \_\_\_\_\_

AUTHORIZED SIGNATURE: \_\_\_\_\_

**FAILURE TO COMPLETE THIS FORM MAY RESULT IN REJECTION OF BID AND/OR REMOVAL FROM CITY BID LIST.**

#### **RIGHT TO KNOW**

Any vendor who receives an order or orders resulting from this invitation agrees to submit a Material Safety Data Sheet (MSDS) for each toxic or hazardous substance or mixture containing such substance, pursuant to M.G.L. C111f 228, 9 and 10 and the regulations contained in 441 CMR SS21.06 when deliveries are made. The vendor agrees to deliver all containers properly labeled pursuant to M.G.L. C111F S7 and the regulation contained in 441 CMR S21-05. Failure to submit a MSDS and/or labels on each container will place the vendor in noncompliance with the purchase order and/or contract. Failure to furnish MSDS's and/or labels on each container may result in Civil or Criminal penalties, including bid debarment and action to prevent the vendor from selling said substances, or mixtures containing said substances within the Commonwealth. All vendors furnishing substances or mixtures subject to Chapter 1.1F or M.G.L. are cautioned to obtain and read the law and rules and Regulations referenced above. Copies can be obtained from the State House Book Store, Secretary of State, State House, Room 117, Boston, MA (617) 727-2834 for \$2.00 plus \$.65 postage. In addition, copy of "Right to Know" law is available in Purchasing Department for review.

## WAGE THEFT PREVENTION CERTIFICATION

By the Revised Ordinances, Chapter 2, Section 39, the city of Worcester has established requirements for certain contracts in an effort to prevent wage theft. Prospective contractors must provide the following certification and disclosures with their bids/proposals. The City will not award a contract without receipt of this completed certification.

**INSTRUCTIONS:** A prospective contractor shall **(a)** check Box 1 *OR* Box 2, as applicable, **(b)** check Boxes 3-5, **(c)** sign this form certifying compliance with the Wage Theft Prevention Ordinance, and **(d)** submit the completed form with its bid/proposal. For multi-year contracts, the successful bidder/proposer shall submit the completed form annually to the Purchasing Director.

Pursuant to the Wage Theft Prevention Ordinance, successful bidders/proposals shall post in conspicuous places the Mass. Wage and Hour Laws notice informing employees of the protections of G.L. c. 149, Sec. 151, and the Fair Labor Standards Act (FLSA). The notice may be found at <http://www.mass.gov/ago/docs/workplace/wage/wagehourposter.pdf>

ALL BIDDERS/PROPOSERS MUST CERTIFY THAT [check either Box 1 or Box 2, as applicable]

1. ☐ Neither this vendor/contractor nor any prospective subcontractor has been subject to a federal or state criminal or civil judgment, administrative citation, final administrative determination, order or debarment resulting from a violation of G.L. c. 149, G.L. c. 151, or FLSA, within three (3) years prior to the date of this bid/proposal submission.

**OR**

2. ☐ This vendor/contractor, or a prospective subcontractor, has been subject to a federal or state criminal or civil judgment, administrative citation, final administrative determination, or debarment resulting from a violation of G.L. c. 149, G.L. c. 151, or FLSA, within three (3) years prior to the date of this bid/proposal submission. The firm shall provide a copy of the same with the bid/proposal.

ALL BIDDERS/PROPOSERS MUST CERTIFY EACH OF THE FOLLOWING

3. ☐ Within five (5) days of receiving notice, the vendor/contractor shall report and provide a copy of any federal or state criminal or civil judgment, administrative citation, final administrative determination, order or debarment resulting from a violation of G.L. c. 149, G.L. c. 151, or FLSA imposed on this firm or on any prospective subcontractor while any bid/proposal to the City is pending and, if awarded a contract, during the term of the contract provide the same to the Purchasing Director.

4. ☐ A vendor/contractor awarded a contract that has disclosed under paragraph 3 above shall, upon request, furnish monthly certified payrolls for the City contract as the Purchasing Director instructs and shall, at the discretion of the Purchasing Director, obtain a wage/payment bond or other suitable insurance as required by the Wage Theft Prevention Ordinance. Vendors/contractors subject to a state or federal debarment for violation of the above laws or prohibited from contracting with the Commonwealth are prohibited from contracting with the City, and upon a finding or order of debarment or prohibition, the City may terminate the contract.

5. ☐ The contractor shall post notices provided by the City in conspicuous places informing employees of the protections of the Wage Theft Prevention Ordinance, and applicable local, state and federal law.

The undersigned certifies under the pains and penalties of perjury that the contractor is in compliance and agrees to remain in compliance with the provisions of the Wage Theft Prevention Ordinance for the term of its contract with the City.

**Signed:**

\_\_\_\_\_  
Print Name & Title

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Date