

INSTRUCTIONAL EQUIPMENT REQUEST

2021-2022



LPC ADMINISTRATIVE SERVICES - REQUISITION INFORMATION PAGE

Internal Use
IE #: 2021-18
Total \$: 96,413.63

Requester Name: Scott Miner - Welding Faculty **Division Name:** PATH

The equipment is: A Replacement An Upgrade New Equipment/Technology

SECTION 1: EQUIPMENT DESCRIPTION

Describe the specific equipment requested and how it will be used to replace, upgrade or provide new technology to LPC from what is currently in place:

This request is for a new technology and equipment.
This equipment has been requested multiple times before and has not been purchased. Approximately four or five years ago I began requesting a piece of equipment like this. This is a work cell that contains a robot that does welding. These are critical workplace skills that our students are not getting exposed to or have an opportunity to learn about because this equipment has not become available on our campus. Our campus currently offers nothing in the way of robotics in any discipline. It didn't just happen overnight but robotics is a big part of manufacturing, and our college program has nothing in anyway to connect to that common place technology and many manufacturing environment, not just welding. Many of our students are coming to our college with robotic experience that they picked up in high school, but technology and applications that we do not provide here at the community college. As we move towards entering a new state of the art facility in the fall of 2023, our program must begin transitioning to manufacturing of tomorrow, and this piece of equipment is a critical aspect of that. One of our full-time faculty members is proposing taking a year sabbatical to become trained to be able to teach this technology to our students of the future. Without actual hardware the course and information will be nothing but PowerPoint, and YouTube videos. This equipment comes with one week of training the trainer instruction for department faculty

We get calls from Alumni, "I got a job and they have a robot, can you help me out?"
To teach advanced manufacturing we need advanced manufacturing equipment.
The jobs of tomorrow are here today.

Equipment Location Building: L800 **Room:** 810

Location Comments:

SECTION 1: EQUIPMENT DESCRIPTION (continued)

If applicable, describe the legal requirement, mandate, or safety concern for purchase of this equipment, making specific reference to the legal requirement or regulation:

One of the important aspects of all robotic operations, is the safety of the operator and the human beings around it. This equipment has specifically been designed with this aspect taken into account, with an interlock enclosure that will shut off the machine if any door or entry point is violated. These concepts are important for students to witness see understand and be able to apply in industrial setting or production environment. The safety devices employed upon this piece of equipment meet or exceed requirements of OSHA.

SECTION 2: LPC MISSION STATEMENT AND LPC PLANNING PRIORITIES

LPC MISSION STATEMENT:

Las Positas College provides an inclusive, learning-centered, equity-focused environment that offers educational opportunities and support for completion of students' transfer, degree, and career-technical goals while promoting life-long learning.

LPC PLANNING PRIORITIES:

- ❖ Implement the integration of all ACCJC standards throughout campus structure and processes.
- ❖ Establish a knowledge base and an appreciation for equity; create a sense of urgency about moving toward equity; institutionalize equity in decision-making, assessment, and accountability; and build capacity to resolve inequities.
- ❖ Increase student success and completion through change in college practices and processes: coordinating needed academic support, removing barriers, and supporting focused professional development across the campus.

Specify how the equipment supports *LPC's Mission Statement and Planning Priorities:*

This equipment will provide Las Positas College welding students and inclusive, learning center, equity focused environment it offers educational opportunities and support for completion of students transfer, degree, and career technical goals while promoting lifelong learning.

This equipment will provide students with increased student success in completion through changes in our college practices and processes, coordinating needed academic support, removing barriers, and supporting focused professional development for faculty and staff.

SECTION 3: EDUCATIONAL ITEMS – PROGRAM REVIEW

Specify the educational programs this equipment supports:

This equipment will be used by the welding technology and manufacturing student.

This equipment may support Shop Ironworkers apprenticeship program on campus. This equipment ~~will~~ support engineering technology at Las Positas College.

may

Will this equipment be a part of your upcoming Program Review or was it included last year? Please explain using the exact words from your Program Review. If not, explain why.

The need to move in the direction of automation and robotics has been stated multiple times and program reviews over the years. As mentioned previously this material and equipment has been requested before not been provided. This is something that's vital to our program into that point the college moving forward if our college actually support careers of tomorrow and opportunities today. Other welding programs around the state have this type of equipment and are teaching this technology. These are the jobs of tomorrow that employers are looking for today.

SECTION 4: TEACHING AND LEARNING

In detail describe evidence and data that equipment provides much needed benefit and enhancement to teaching beyond current capabilities.

This is a technology that is utilized extensively in manufacturing environment around the world. This has been an aspect of our program in our department that we have tried to pursue for a number of years. If the college wishes to provide career oriented life long learning, this is a great way to endorse that idea.

A full-time faculty member is proposing to take a year sabbatical to become proficient in this technology so that we can provide in-depth courses around welding and manufacturing using robotics.

Having a piece of technology and equipment that can accompany the uptick in professional development required to teach this subject is vital for faculty and students.

Describe in detail the impact this equipment will have on learning:

Students currently have no Avenue on our campus to pursue or learn about robotics in any environment but most importantly manufacturing. This has been a growing trend over a number of years and our students are slowly being left behind due to the lack of technology in this area that are college and district is able to provide. if this were equipment was made available students and could begin training for careers that employees and employers are looking for right now. We have a number of students that have left to college with no robotic experience and had to pick that up on the job, as we offered none of that type of training here at the college. Furthermore offering this at the college would also offer the opportunity for local manufacturers to train their current workforce in robotics and consider investing and using robotics within their current work plans.

Each academic year, this equipment will impact: ²⁰ _____ # of classes/sections ¹⁰⁰ _____ # of students

SECTION 5: OUTCOMES (SLOs)

Using your documented SLOs, specify how the equipment will enable student learning outcomes to be achieved beyond current capability.

This equipment would allow us to create some student learning outcomes that currently do not exist within our department, or frankly on our campus. The goal of this would be to offer certification testing not only in manual welding like we currently do but to also offer it in a robotic arena as well. Certified robotic arc welding is a clearly defined career path in many manufacturing areas and industries. While we currently do not have any student learning outcomes with respect to robotics this equipment would provide the opportunity for us to make some industry relevant changes in update to our SLO's.

SECTION 6: TOTAL COST OF OWNERSHIP (FINANCIAL & SUSTAINABILITY)

What is the potential life span of the requested equipment?

The potential lifespan of this equipment like most things in the welding environment is anywhere from 10 to 15 years depending upon the amount of use, and within our department most importantly the amount of maintenance and preventative maintenance that occurs. One of the aspects of teaching about this type of equipment is to teach students about stewardship and taking care of the equipment and making sure that it is available for not only other students within their class but other students in future classes as well. We feel we are good stewards of the college assets.

If new storage is needed what are the storage requirements, location requirements, and costs associated with the new equipment: (NOTE: Specific storage costs should be detailed in the "Part A: Initial Start-up Costs" section below.)

There is no additional storage required for this equipment. It is actually designed to fold up into the move through a door so that this can be taken into a regular classroom it does not require use only within the welding laboratory. The robot can be used to teach and taught in an environment outside ~~welding~~.

welding.

If this equipment replaces old equipment but the old equipment will not be retired, are there on-going storage requirements, location requirements, and costs associated with the old equipment? If so, provide details.

New equipment and does not replace anything

What will be required to maintain the equipment, such as regular servicing or upkeep? (Specific on-going costs should be detailed in the “Part B: On-Going Annual Operating Costs” sections below as applicable.)

Regular upkeep and maintenance as well as stewardship is part of the teaching process in what we do in our laboratory. It is important that operators of equipment care for and be able to make simple repairs to keep the machine up and running and productive, and our search we provide that as part of the learning process here within the program and department.

Explain how this equipment meets or exceeds basic sustainability efforts and/or provides renewable resources to the college:

This equipment is designed to be manufactured from recyclable materials. At the end of an expected lifespan this piece of equipment can be deconstructed into individual recyclable items. This equipment is all housed within one movable enclosure that houses all equipment component.

Part A: Initial Start-up Costs

<u>Item</u>	<u>Cost</u>	<u>Comments</u>
Equipment or Materials	87450	
Taxes (9.5%)	8965	
Shipping or Delivery Charge	1000	
Installation Costs *		
Miscellaneous Costs:		
Facilities Modifications		
Operator Training		
Maintenance & Repair Training		
Storage		
Other: _____		
Vendor Discount		
Grand Total:		97415

Part B: On-Going Annual Operating Costs

<u>Item</u>	<u>Cost</u>	<u>Comments</u>
Annual Service or Maintenance	0	Students and lab technician
Estimated Parts Replacement Per Year	200	
Outside Standardization or Calibration Costs		
Storage Costs		
New Supply Costs		
Maintenance & Repair Labor		Welding technician
Licensing or Software		
Other: _____		
Annual Operating Costs:		

Indicate the source of funding for on-going annual operating costs:

As with all repairs within the welding shop the cost would be absorbed within the welding department supply budget.

Part C: Incremental Labor Costs

OPERATOR:

Indicate the key operator: Welding faculty and student

Is this in their current scope of duties? Yes

Indicate cost to train key operator (include in Initial Start-up Costs above): Faculty training included

Indicate amount of time per month key operator will use equipment: This will be used in many of our courses t

MAINTENANCE & REPAIRS:

Indicate the person performing maintenance and repairs: Welding lab technician

Is this in their current scope of duties? Yes it is

Indicate cost to train for maintenance and repairs: Zero

Indicate amount of time per month maintenance will be required: Ongoing

SIGNATURE APPROVALS

Funded requesters will be expected to respond to a brief RAC feedback survey by a requested deadline.

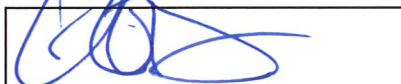
- *Requests for computer-related equipment and printers will be reviewed by the LPC IT Department.*

REQUESTOR

Scott Miner

Date 9/21/2021

DIVISION DEAN/MANAGER



Date 9/21/21

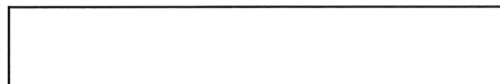
ADMIN SERVICES, VP



Date

Admin Services will route as needed

IT MANAGER



Date

M&O DIRECTOR



Date



Office of Administrative Services

(Wait 5-10s)

Reset

Submit

Requisition Request Form

R _____ - _____

Fiscal Year	Vendor ID #	Vendor Name	Date Required		
21-22		AIRGAS	FALL 2021		
Deliver To	Room #	Return Copy of Requisition To			
SCOTT MINER	810	PATH DIVISION OFFICE / S. MINER			
Seq	Item #	Description	Qty	Unit Price	Extended Cost
1	AD2446-	CLASSMATE M	1	69,800	\$ 0.00
2					\$ 0.00
3		EDUCATIONAL WELDPRO PKG	1	9,300	\$ 0.00
4					\$ 0.00
5		GRIPPER PACKAGE		8,350	\$ 0.00
6					\$ 0.00
7					\$ 0.00
8					\$ 0.00
9					\$ 0.00
10					\$ 0.00
11					\$ 0.00
12					\$ 0.00
13					\$ 0.00
14					\$ 0.00
15				87,450	\$ 0.00
Comments				Subtotal	\$ 0.00
				10.25% Tax	8963.63
				Shipping	
				Total Cost	\$ 0.00
FOAP to be Charged				%	Amount
				100	
FUND	ORG	ACCOUNT	PROGRAM		
FUND	ORG	ACCOUNT	PROGRAM		

SCOTT A MINER 9/8/2021 Requestor (print name) Date

E. Bell 9/22/21 Dean (signature) Date

Kristina Whalen 9/23/21 Vice President (signature) Date

OFFICE OF ADMINISTRATIVE SERVICES USE ONLY

Reviewed: _____ Verified: _____ Approved: _____
Administrative Services Administrative Services Officer VP, Administrative Services

PO Number: _____ Budget Transfer #: _____ Entered: _____

TR 4/6/20



ClassMate® M

SYSTEM FIRM PROPOSAL

September 9, 20221

Las Positas Community College

Proposal Number: 210909-1532slo

Submitted By: Sebastian Lovett

EXPERIENCE. INNOVATION. QUALITY

SUBJECT: Proposal Number 210909-1532slo

Dear Scott,

Lincoln Electric Automation is pleased to submit this proposal covering your requirement for a robotic welding system.

One of Lincoln Electric's many core competencies is providing complete welding and training systems to our customers as well as assistance and support. These unique systems improve quality, lower costs, and help customers enhance their working environments. Through design, integration, world-class customer service, and unparalleled welding expertise, we are the industry leader in automated arc welding and tooling solutions. We have served industries as diverse as automotive, aerospace, transportation, shipbuilding, petrochemical and heavy industry.

We hope that our proposal and the enclosed literature will answer any questions or concerns you may have. If you have any further questions after reviewing this information, please call me at (216) 308-1329.

We look forward to assisting you on this project in any way we can.

Sincerely,
Sebastian Lovett
Project Manager, Proposals/Educational



WE'RE HERE WHEN YOU NEED US

**Lincoln Electric Automation
Cleveland Automation**

**22221 Saint Clair Avenue
Cleveland, Ohio 44117**

**+1 888-935-3878 TOLL FREE
+1 216-383-2667 PHONE
+1 216-383-4727 FAX**

1 Notice to Recipients

CONFIDENTIAL: DO NOT DISTRIBUTE

This document may only be reproduced as required for internal use by recipient in evaluation of this proposal.

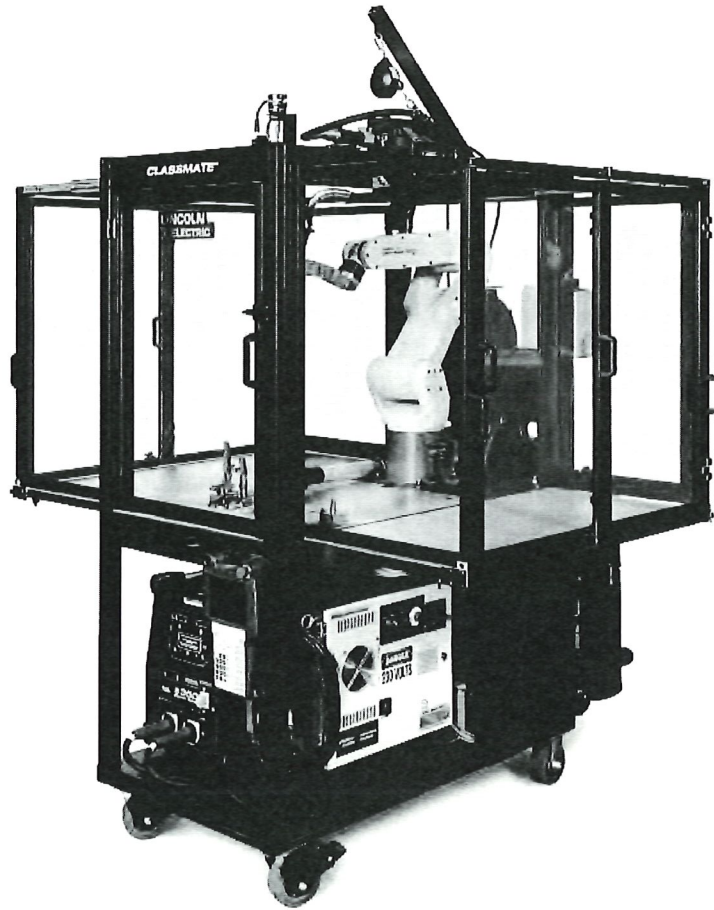
In consideration of Lincoln Electric Automation's preparation of this proposal and disclosure of certain proprietary information, its recipient agrees to treat as confidential all of Lincoln Electric Automation's proprietary information disclosed herein. Such proprietary information includes, but is not limited to, all technical requirements, specification, prints, and information relating to the description and operation of the system which is the subject of this proposal, its components, equipment, options and related services, designs, processes, techniques, documentation, pricing, installation, and safety.

The recipient further acknowledges that Lincoln Electric Automation's proprietary information is unique and valuable, was developed or acquired by Lincoln Electric Automation at substantial expense, and is the subject of efforts by Lincoln Electric Automation to maintain the secrecy thereof. The recipient agrees not to reverse engineer, to use or to disclose this proprietary information to any person or party without the prior written consent of Lincoln Electric Automation. This agreement is effective between the recipient and Lincoln Electric Automation regardless of whether the parties enter into a contract for sale of the goods or services that are the subject matter of this proposal.

CORONAVIRUS NOTICE

THIS PROPOSAL IS CONTINGENT ON A LACK OF IMPACT BY THE CORONAVIRUS PANDEMIC. Given the existence of the coronavirus pandemic, The Lincoln Electric Company will use its best efforts to manufacture, staff and service this project to meet the scheduled delivery date(s). However, The Lincoln Electric Company reserves its right to extend the delivery date/time if The Lincoln Electric Company is unable to perform or its subcontractors or suppliers fail to perform on time due to illness, supply shortages or governmental restraints on business, travel and/or assembly. In the event of such a suspension/delay, The Lincoln Electric Company shall not be in default for failure to perform and shall not be liable for loss, damage, detention or delay. To the extent that the project is suspended by the Buyer, The Lincoln Electric Company reserves its right to seek additional costs associated with the suspension.

2 System Concepts



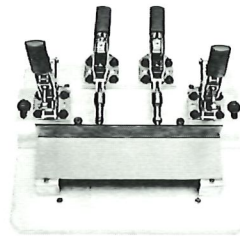
ClassMate® M
ROBOTIC WELDING TRAINER



POWER WAVE®
R450 ROBOTIC
POWER SOURCE



X-TRACTOR® MINI
PORTABLE
WELDING FUME
EXTRACTOR



3-IN-1
WELDING FIXTURE



PROJECT BASED
LESSON PLANS

3 System Specifications

Product Number	AD2446-1
Weight – lb (kg)	1000 lb.
H x W x D – in (mm)	94.23 x 68.23 x 70.24 in. (2393 x 1733 x 1784 mm) (sides expanded); 32.5 in. (826 mm) (sides folded)
Input Voltage	120VAC for Robot operation and programming

Power Wave® R450 and AutoDrive® 4R100 Product Specifications

Product Number	Power Wave R450: K3451-1 AutoDrive 4R100: K3002-2
Output Range	5-550A
Rated Output – Current/Voltage/ Duty Cycle	GMAW: 550A/41.5V/40% GMAW: 450A/36.5V/100%
Input Voltage	208/230/380-415/460/575/3/50/60VAC

Robot Specifications

FANUC ARC Mate® 50iD/7L	<ul style="list-style-type: none"> · Six Axis Mechanical Unit · 7 kg Maximum Payload · 0.911 m Reach
FANUC R-30iB Mate Controller	<ul style="list-style-type: none"> · 6-channel servo amplifier · RIA compliant E-stop unit · Integrated operator panel (includes Auto/T1 mode switch, Estop and cycle start push buttons) · RIA-compliant color haptic iPendant with non touch panel and USB2.0 port
FANUC Robotics LR ArcTool® Software	Compliant with RIA R15.06 Safety Requirements

Safety/Weld Cell Controls

- CSA/UL certification ready system – PLEASE NOTE: Obtaining CSA/UL certification is the responsibility of the customer
- Fully integrated ANSI/RIA 15.06-2012 compliant operator safety devices including door safety switches
- RIA compliant robotic controller operator panel, robotic software and pendant

Complete System Documentation

Electronic manuals and tools (Available upon request)	operations manuals maintenance guides, spare parts lists, calibration numbers and serial numbers, print, and supplier references and specifications
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4 Training Systems Proposal

AD2446-1 ClassMate® M

1. Robotic System - Specifications:
 - a. Height: 81.23 inches
 - b. Length: 67 inches
 - c. Width: 70 inches (sides expanded), 32 inches (sides folded)
 - d. Weight: 1000 lbs
 - e. Work surface area: 2,329 sq.in.
 - f. Robot controller input voltage 120VAC
 - g. CSA/UL certification ready system.
 - i. PLEASE NOTE Obtaining CSA/UL certification is the responsibility of the customer
 - h. Fully integrated ANSI/RIA 15.06-2012 compliant operator safety devices including a door safety switch
 - i. RIA compliant robotic controller operator panel
2. Power Source & Wire Feeder:
 - a. Power Wave® R450
 - b. AutoDrive® 4R100
3. FANUC Robot - ARC Mate® 50iD/7L
 - a. Six Axis Mechanical Unit
 - b. 7 kg Maximum Payload
 - c. 911mm (36") Reach
 - d. ARCMate R30iB+ Controller
4. FANUC Educational Bundle Includes 17 distinct software:
 - Bump Box Software - Constant Path - Through Arc Seam Tracking (TAST)
 - Touch Sensing - Automatic Error Recovery with Fast Fault Recovery
 - Lincoln Electric Weld Equipment Library - Menu Utility - Panel Wizard
 - Password Protection - Torch Guard - Fault and Incident Reporting
 - Lincoln Weld Equipment Library - DCS Speed and Position Package
 - 4D Graphics - Lincoln America Package - Integrated PMC - KAREL
5. Other Features includes:
 - a. Hand shields (PPE), Qty. 10
 - b. Complete System Documentation (Digital Copies)
 - c. Robotic 3-in-1 welding fixture
 - d. Education Cell Project Based Lessons - Book 1
 - e. X-Tractor® Mini Portable Welding Fume Extractor
 - f. Lettering Program (pre-set programs)
 - g. 2 instructor-seats in Basic Robotic Programming (5 days at LE Automation, Cleveland, OH)
6. Shipping Pre-paid
 - Shipping truck selected based on availability of loading dock

Total Investment

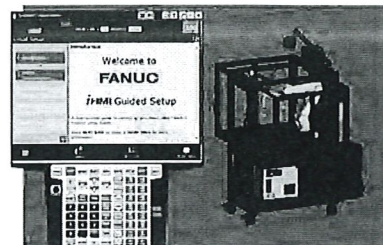
\$69,800.00

5 Optional Equipment and Services

Educational WeldPRO Package

Features included:

1. WeldPro Offline Programming Software
2. Cert training program with 15 WeldPro seats
3. WeldPro training for instructor (1.5 day course at LE Automation, Cleveland, OH)
4. Functional WeldPro 3D system model for WeldPro programming



Optional Investment

\$9,300.00

Additional New WeldPro License (EA) WeldPro License

\$450.00

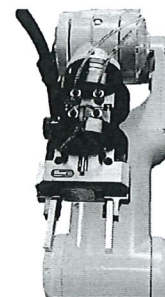
Renewal After First Year (EA)

\$250.00

Gripper Package

Increase your curriculum by adding pick-and-place material handling capabilities. Features included:

1. Quick change pneumatic gripper for teaching dual operation
2. Manual Tool Changer allows a quick changeover from torch to gripper



Optional Investment

\$8,350.00

Jumpstart Package

Features included:

1. One-on-one training with an expert for one day at your facility with your robot
2. Includes coupons to practice a variety of welds and programming techniques
3. Premium Welding Gear Ready-Paks (PPE) for instructors, Qty. 2

Optional Investment

\$5,950.00

6 Financials & Delivery

General

All Prices based on agreement to Assumptions and Customer Responsibilities below and Terms and Conditions at www.lincolnelectric.com/automation-terms.

Shipping from Lincoln Electric Automation to the customer dock is included in this proposal. Title to the shipment to the Buyer at the time the carrier accepts the shipment. Prices do NOT include state and local taxes. UCC Filing may be required.

This quote is valid for 30 days, and is governed by Seller's Terms and Conditions of Sale attached hereto and/or located at the website indicated below. Any reference to Buyer's request for quote incorporates only the technical information described therein. ALL TERMS AND CONDITIONS IN BUYER'S REQUEST FOR PROPOSAL/QUOTE ARE DEEMED MATERIAL ALTERATIONS AND ARE HEREBY EXPRESSLY REJECTED. Lincoln Electric is not liable for clerical errors.

Lead Time:

Typical lead time for this system is 8-12 weeks. Lead-time is defined as acceptance of PO to build completion at Lincoln Electric. Actual timeline may vary, and is to be determined based on production schedule at the time an order is received and confirmed. Additional duration for tooling, programming, runoff, shipment, and installation should be considered based on purchased options.

Payment Terms:

Automation Division terms for a robotic system or parts order are 60% due with order and 40% due net-30 days after shipment, unless otherwise approved by Lincoln Electric Automation Management.

Order Cancellation Charges:

If an order is cancelled after work has been started on the order, cancellation charges will be assessed in accord with the percent completion of the order.

7 Assumptions & Customer Responsibilities

Weld Quality:

Weld quality is a function of product tolerances and condition. Variance outside the range of that qualified in any process development activity may cause degradation in weld quality. In general, gaps are not to exceed one-half of the wire diameter. Surface defects such as rust may also affect weld quality and process speeds.

Robot Programming, System Functionality Run Off, and Weld Development:

The Scope of robot programming, system functionality run off, and Weld Development is defined by what is listed in this quote. All verbal and written communications must be appended to this quotation to be included in the scope of the project. Any verbal or written communication surrounding robot programming and system functionality run off not documented or appended in this quote will not be honored. This option includes system functionality verification and basic programming of customer part(s).

Unanticipated Project Modifications:

During the design, construction and implementation phases of a project, changes to the project scope may occur. Changes resulting from a divergence from the initially agreed upon project parameters (including but not limited to part and part tooling redesign, system performance factors including throughput and equipment changes) will need to be carefully reviewed by the Project Management team and may result in a renegotiation of the delivery date and/or proposed system price in order to recover the additional costs associated with the increased labor and materials.

Flooring Requirements:

Lincoln Electric will provide individual components weights and dimensions. For standard systems, special concrete considerations are typically not required if the floor is in good condition. Because of the variables involved, Lincoln Electric recommends that the customer contract a civil engineer to analyze the load carrying capacity of the soil and any isolation requirements for larger systems or if the existing concrete is questionable.

Robotic Programming Training

For robotic systems, pricing includes two (2) training credits that can be applied to the 5-day Robotic Basic Training in Cleveland, Ohio. Training credits remain valid for up to two (2) years from the date of purchase. The Robotic Basic Training class is a pre-requisite prior to attending our Intermediate or Advanced Robotic Training, as well as the Robotic Service Training classes. Travel and living expenses, robotic packages, and welding/cutting equipment are not included. Cancellations are accepted prior to two weeks before a pre-scheduled training session. Company cancellations within two weeks of a pre-scheduled training session will forfeit one training slot. No-show students forfeit all remaining company training slots.



8 Customer Service

WE'RE HERE WHEN YOU NEED US 24/7/365

Lincoln Electric technician experts are ready to help you around the clock. From installation to equipment refurbishment—our technicians have the expertise to address your specific needs. All of our customer support technicians, training experts, and manufacturing facilities are based in the United States. We're here for you when you need us.

Installation & Startup Support:

Lincoln Electric can speed up the process of starting production. We offer engineers with extensive experience in installation to help ensure a smooth and efficient start-up. Benefits include increases in performance and uptime, increases in reliability and efficiency and reductions in installation time and start-up time. If not explicitly described in the main proposal, please reach out to your local Lincoln Electric representative to see if these benefits can be added to your system.

Preventative Maintenance:

Lincoln Electric takes a very proactive approach to avoiding potential crashes, extending robot life, and ensuring optimal performance of your robotic system. The experts at Lincoln Electric offer an extensive Preventive Maintenance service that includes a detailed inspection, cleaning, lubricating, and testing to confirm that your robot is in the highest performing condition. After completing a full inspection, we will recommend and replace any worn parts if needed. Benefits include unparalleled 60 point inspections to improve the life cycle of your robot system, improved robot uptime productivity, reduced cost of ownership and peace of mind knowing your investment is running in top form

Repairs:

At Lincoln Electric, we understand that teaching is a sequential process, and a down robot can bring learning to a halt. This is exactly why we make customer service a top priority. Our experienced and knowledgeable service staff will work diligently with you to find the ideal solution for your robotic issues. Our service personnel have decades of experience and knowledge, and have set the industry standard for great service. This select group of individuals are the best in the industry and are on-call 24 hours a day, 7 days a week to respond in a moment's notice. With continuous training and improvement, our customer service engineers stay ahead of new technology, allowing us to provide world-class service anywhere Lincoln Electric systems are installed.

Parts:

We understand the smallest part can have a huge impact if the part is no longer functioning. Many parts and supplies we provide have a 24-hour turnaround time to keep your downtime to a minimum. Just give us a call; we will get you what you need.