

Pearson Machine Group Firm Proposal



ERECT



PACK



SEAL



PALLETIZE

Integrate

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Note: Thank you for the opportunity to provide the following firm proposal.

Once an order is placed the project scope will be captured in the Order Specification Document (OSD). This document (OSD) is the scope defining document for the order. All other documents or references such as P. O., Proposal, specification will not be considered as build requirements if not listed as such on the OSD document. The OSD will be reviewed and signed off with the customer before proceeding with the order.

1. Proposed Solution

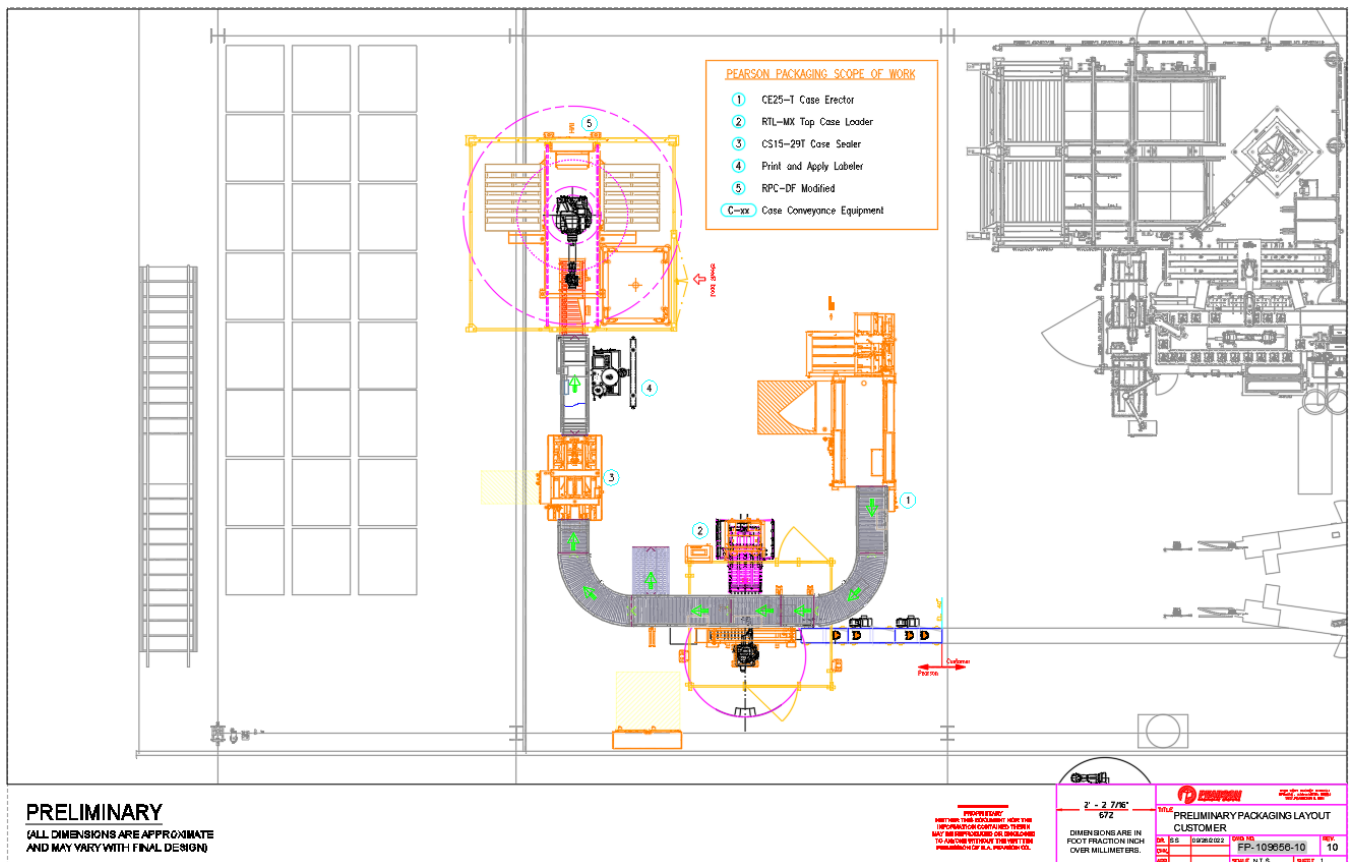
1.1. Solution Overview

To address the customer's end-of-line packaging needs, Pearson Packaging Systems proposes a case packing solution including a Case Erector, Robotic Top Load Case Packer, Case Sealer, Robotic Palletizer, OEM Print and Apply Labeler, and all associated conveying. This robust, flexible solution can pack cases in a wide variety of formats and pack patterns with maximum uptime. Some of the key differentiating features of this system include:

- Case erecting, packing, sealing, and palletizing using proven technologies customized for each product and pattern
- High speed Fanuc robot provides extremely high uptime and reliability
- Common operator experience on all equipment with Pearson's User Centric Design
- Configurable pallet patterns via the HMI

1.2. Floor Plan

The floorplan (Reference FP-109656-10) attached to this proposal, represents the solution being further discussed in this proposal.



1.3. System Pricing and Shipment

Any requested changes not included in this quotation and/or engineering data provided altering the project scope will be billed at standard rates and may affect delivery date.

Description	Qty	Ext Price
Model CE25-T Case Erector- Tape	1	Included
Range, Oversize Case Width Capabilities to 16.75 inches	1	
Model RTL-MX Robotic Top Case Loader	1	Included
Programming, Import Customer Supplied Data Structures and AOIs	1	Included
Programming, IP Address Re-Assignment	1	Included
Programming, Rung Comments, Every Rung	1	Included
Model CS15-29T Case Sealer- Tape	1	Included
AMS/NMS, Beacon, Banner, 4-light LED With Horn	1	Included
Operator, Auxiliary Fortress Operator Station	1	Included
Clamp, Case Indexing Clamp	1	Included
Sensor, Discharge High Level Function Addition	1	Included
Model RPC-DF Compact Palletizing Cell	1	Included
Same Options as RTL-MX	1	Included
Case and Product Conveying	1	Included
Markem-Imaje 2200 Print and Apply Series Labeler	1	Included
MFT 750 IP3 Layer Sheet Inserter	1	Included

System Hardware Total:

3M Specifications, Requirements, & Future Accommodations

3M Specifications Requirements, Documentation Requirements
 RPC AGV Accommodations

System Specifications Total:

1.4. System Description

Model CE25-T Case Erector- Tape

Pearson's CE25-T Case Erector forms and bottom seals RSC, HSC and CSSC cases using pressure-sensitive tape at production rates of up to 25 cases per minute.

STANDARD FEATURES

Heavy Duty Welded Tubular Frame

User Centric Design 4.0:

Allen Bradley PanelView 1000+ Color HMI

Icon Based HMI Navigation, Graphical Fault Recovery and Guided Change Over Instructions

Changeover Features Including Quick Release Lock Handles, Scales and Pointers

Preventive Maintenance and Output Testing

Electrical and Pneumatic Schematics included in HMI

Internal LED Lighting

HMI Remote Access Capable

Allen-Bradley CompactLogix L24ER PLC with Two (2) Ethernet Ports

Allen-Bradley Drives

Ergonomically-Friendly Powered Horizontal Case Magazine

Standard Magazine Length 4ft (3ft Active Capacity)

Opposed Vacuum Cup Case Erecting

Pneumatic Minor Flap Folding

Discharge High-Level Photo Eye

Fully Interlocked Perimeter Guard Package Routed to Node Block

Quick Disconnect Electrical Components (Discrete I/O with Distribution Cables)

24 Volt D.C. Controls

NEMA 4 Electrical Enclosure

UL Certified Control Panel

Dekka 22 High Speed Soft Touch "C" Clip Pressure Sensitive Tape System

4 Light Beacon with Horn

IO Link
GracePort with 110V outlet and Ethernet port
Dynamic Machine Lighting
Allen Bradley SensaGuard non-contact guard door interlocks
Stratix 2000 Ethernet Switch, Non Managed
Category 3 safety circuit

Machine Manual in Digital Format

STANDARD MACHINE RANGE

Case Length: 8in (203 mm) - 24in (610 mm)
Case Width: 5.5in (139 mm) - 16in (406 mm)
Case Depth: 3in (76 mm) - 18.5in (470 mm) RSC cases
Case Depth: 6in (152 mm) - 18.5in (470 mm) HSC cases
Case Open Depth: 6in (152 mm) - 21in (533 mm)
Knocked Down Case Length: 13in (330 mm) - 40in (1016 mm)
Knocked Down Case Width: 8in (203 mm) - 29in (737 mm)

STANDARD MACHINE SPECIFICATIONS

Speed: Up to 25 Cases/Min
Electrical Voltage: 460 VAC, 3 Phase, 60 Cycle
Operating Temperature Range: 45F (7.22C) - 90F (32.22C)
Length: 10ft 6in (3048 mm)
Width: 5ft 3in (1600 mm)
Height: 5ft 6in (1676 mm)
Weight: 1,920 lbs. (865 kg)

Standard Elevations:

Discharge Conveyor: 22" min. - 27.25" max.
Magazine Load: 21.5"
Leg Adjustment: 0.75" to 6"

Floor Plan: 638004L (Left Hand) / 638004R (Right Hand)

ADDTL. INFORMATION

Machines to be operated outside of the specified temperature range will require evaluation and potentially additional options.

Maximum CPM rates are dependent on case sizes and installed options. Larger cases will run at slower rates. Consult factory for approximate case rates.

Tape mil thickness of 2.5 to 3.2mil required

J03508 Increase machine case width capabilities 0.75 inches. This includes a .75" stretch of the frame and all width related components like shafts, adjusting screws, magazine bed, magazine components, etc. New maximum KDL will be 40.75 inches

Model CS15-29T Case Sealer- Tape

Pearson's CS15-29T top seals a wide range of RSC and CSSC corrugated cases using pressure sensitive tape at production rates of 15 - 29 cases per minute.

STANDARD FEATURES

Formed Sheet Metal Frame
Fast Changeover Supported by Scales, Pointers, Quick Release Handles
Allen-Bradley MicroLogix 1400 PLC
Quick Disconnect Electrical Components
24 Volt D.C. Controls
NEMA 4 Electrical Enclosure
UL Listed Control Panel
Pneumatic Minor Flap Folding
Synchronous Drive System
Side Belt Drive with Compensating Independent Roller System
Dekka 2" tape head
Sealed Bearings
Pneumatic Cylinders
Category 3 safety circuit
Stratix 2000 Ethernet Switch, Non Managed
Machine Manual in Digital Format

STANDARD MACHINE RANGE

Case Length: 6in (152mm) - 24in (610mm)
Case Width: 4.5in (114mm) - 16in (406mm)
Case Depth: 3in (76mm) - 18.5in (470mm)
Case Open Depth: 5in (127mm) - 26.5in (673mm)
Case Flap: 2in (51mm) - 8in (203mm)

STANDARD MACHINE SPECIFICATIONS

Speed: 15 - 29 Cases/Min depending on Case Size, Style, and Configuration
Electrical Voltage: 110 VAC, 1 Phase, 60 Hz
Operating Temperature Range: 45F (7.22C) - 90F (32.22C)
Length: 5ft 10in (1778mm)
Width: 3ft 9.5in (1155mm)
Height: 4ft 7.38in (1405mm)
Weight: 700lbs (318kg)

Standard Elevations:

Case Conveyer Infeed/Discharge: 22"
Leg Adjustment: 0.625" to 6"

Floor Plan Drawing: D624540

ADDTL. INFORMATION

Machines to be operated outside of the specified temperature range will require evaluation and potentially additional options

The continuous motion sealer runs at 15 CPM for the maximum standard case length of 24in. Case rates up to 29 CPM are possible for shorter length cases.

CSSC cases can be run without additional options required.

Minimum case gaps of 15in (381mm) required. (Pearson metering options available.)

Incoming cases must be supplied on a live roller conveyor at 35 FPM.

Tape mil thickness of 2.5 to 3.2mil required.

Maximum allowable over-pack is 1/16in (1.5mm).

Maximum allowable head space in the case is 1/16in (1.5mm). The use of offset scoring increases the maximum allowable head space to 1/8in (3mm).

Exception to head space on FOL cases may be given. Engineering must review samples to confirm the exception.

Max Case Weight: 30lbs (13.5 Kg)

J12060 Beacon, Banner, 4-light LED With Horn

J12786 Operator, Auxiliary Fortress Operator Station mounted to machine frame

J03976 Cases trigger photo-eyes that control an indexing clamp for case gapping. This option should be selected anytime the customer anticipates cases accumulating upstream of this machine. NOTE: Case height cannot exceed case length and total accumulated case weight cannot exceed 22.5Kg (50 lbs.). This option is for models that already have air on the machine as standard. Line thrust load, into this clamp, is limited to 50 lbs. Customer should contact Pearson Packaging to discuss the application of this option or if other case metering options would need to be considered.

J03715 This option adds discharge high level photo eye functionality to machine. This feature must be used in addition with one of the Infeed Metering Stop options. Customer is responsible for shutting down infeed conveying to the Sealer, as the metering function cannot be used to hold back line pressure during this condition. See Case Metering Option Description for accumulated case weight limitations.

Model RTL-MX Robotic Top Loader

Functioning Description

The highly flexible Pearson Packaging Systems Model RTL-HV pick and place system top loads a broad range of products into cartons, trays or cases in a variety of pack patterns. The basic operation of this Top Load Case Packer is as follows:

Bagged products will be received from the customer being placed on the conveyor with the mask snout leading and the bag folded over. Empty RSC cases are conveyed into the cell. If a base sheet is required, the case will stop in front of the sheet inserter for a base sheet to be added. The case advances to the flap funnel station and is contained for product loading. The bag will advance to a servo indexing belt. Once the bag is loaded into the open pocket, the servo will index one pocket width and be ready to receive the next one. Once the loaded pockets reach the robot, the robot will use a fork style tool designed to fit within the pockets and slide the products off the servo belt onto a fixed collation table bed. Once the SKU array is formed, the products will be compressed, the table bed will open, and the robot tool will invert and push the products into the case directly below it. The flap containment will lift, the case will exit the cell, and the next case will enter the loading position.

The robotic packing system standard features for the RTL-MX

- Pearson User Centric Design Graphical HMI
- FANUC M-10iD/16S Robot and Controller
- Icon based HMI navigation, graphical fault recovery and guided change over instructions
- Allen Bradley PanelView plus 1000 HMI
- UL Listed control panel (robot controller not UL Listed)

- 460 volt, 3 phase, 60Hz, 60A Breaker
- 80 PSI clean dry air
- 24 VDC power supply for all inputs and outputs
- NEMA 4 electrical system, with a flange-mounted disconnect
- Allen-Bradley CompactLogix Programmable Logic Controller
- Indexing Servo Belt with Kinetix servo motion controllers
- Full perimeter guard package
- Large case size range (see “MACHINE RANGE” below)
- All motor starters and associated circuit breakers
- Expert after sale service and technical support.

MACHINE RANGE (this custom equipment will be designed to the case, product and related speed ranges reflected in this proposal unless otherwise stated)

Model RPC-DF Dual Floor Robotic Palletizing Cell

Functioning Description

The highly flexible Pearson Packaging Systems Dual Floor Palletizer palletizes a broad range of packages onto two pallet stations in a variety of patterns. The basic generic operation of a Compact Palletizer is as follows:

A pallet is manually introduced into the cell by an operator into the two stations. Sealed RSC cases arrive from the customer traveling length parallel to flow and are accumulated on the zoned motor driven roller infeed. Packages are conveyed into the pick area where the robot picks a single package using motorized vacuum and places it on the pallet build station according to the pallet pattern. When required by the recipe, a layer sheet is picked and placed in the unit load. The process repeats until the unit load is complete. Once a full pallet is complete, the robot begins palletizing on the second pallet position automatically. The cell will notify the operator, who then manually removes the full pallet and replaces it with an empty pallet. The pallet station is then reset, and the now empty pallet is available to the robot for palletizing after the second station load is complete.

The Compact Palletizer standard features:

- Pearson User Centric Design Graphical HMI
- M-710iC/50H Robot and R-30iB Plus controller with enhanced iPendant programming pendant.
- Icon based HMI navigation, graphical fault recovery and guided change over instructions
- Allen Bradley PanelView 7 Plus HMI
- 24 VDC power supply for all inputs and outputs
- Central support structure for reduced install time and easy placement by forklift
- 460 VAC 3 Phase input voltage
- NEMA 12 electrical system, with the exception of the robot controller cabinet, with a door-mounted disconnect
- Allen-Bradley CompactLogix Programmable Logic Controller with an Ethernet Interface for Robot communication
- All motor starters and associated circuit breakers
- Adjustable End of Arm tooling for handling sealed RSC cases
- Case Infeed: Cases are fed into the Compact Palletizer on mild steel zoned Motor Driven Roller (MDR) conveyor.
- Expert after sale service and technical support.

Options included in this Quotation:

- Sheet Magazine
- Required guarding accommodations for proper safety purposes.
- Operator access door and Magazine access doors with safety interlocks.
- Modification to robot base and support structure for revised cell layout.
- Pallet positioning verification when loaded and unloaded by AGV

MACHINE RANGE (this custom equipment will be designed to the case, product and related speed ranges reflected in this proposal unless otherwise stated)
is required to support customized solutions.

Product and Case Conveying

Functioning Description

Product Infeed Conveyor: Modular Plastic Belt Conveyors will deliver the products from the customer's equipment into the Robotic Top Load cell. This conveyor will be constructed from mild steel, will utilize modular plastic belt and will include fixed guide rails. Conveyor elevation is estimated at 40".

Case Roller Conveyor: Hytrol zero back pressure motor driven roller conveyor will transport and buffer empty and full cases from the case erector to palletizer. Conveyor will be constructed from Mild Steel. TOR elevation of 24".

Transportation Conveyor: Belted roller conveyor will transport sealed cases across the print and apply labeler. Conveyor will be constructed from mild steel and have a TOR elevation of 24".

OEM Equipment

Markem-Imaje 2200 Print and Apply System:

- Best-in-class efficiency and reliability
- Non-stick label pad and contact parts for easy cleaning
- Minimized Energy Use
- Modular design
- Print head and rollers can be changed without the use of tools
- Safe design: no additional guarding required



Multi-feeder Friction Feeder:

- MFT 750ip3 Model for layer sheets greater than 500 mm width
- Premium performance and durability
- Easy interface to PLC
- Ease of use and maintenance
- Tailored to corrugated sheets



System Integration

Pearson Packaging Systems integration (OEM equipment and conveying) of the system illustrated in the referenced layout consists of the following:

- System CAD layout – Engineering will fit the proposed equipment into the customer’s room space provided referencing the proposed project scope, component footprints and line elevation changes in AutoCAD.
- Engineering and programming – Electrical and mechanical engineering will complete detail drawings and electrical schematics, as well as program the line integration, as needed. Documentation/manuals, drawings and schematics will be prepared and provided to the customer.
- Project Management – Project management will coordinate the scheduling of the integration from purchase to shipment.
- Procurement – Procurement will purchase the equipment, materials and on-site service (if applicable) for each piece of OEM equipment.
- Logistics (Equipment Received) – Assembly will accept delivery, uncrate, and set up all components.
- Assembly – The assembly team will stage all equipment, establish elevations, establish transfer points, and handshake with other machinery.
- Electrical, Control, and Utilities – Electricians and assembly will provide all necessary utilities to equipment along with cabling drives and sensors and actuators, as needed.
- Debug and testing – Engineering and assembly will verify that all components run at specified rates, as well as perform any necessary change-overs while confirming quality assurance. This team will test all controls and defaults prior to a pre-shipment FAT/demo.
- Pre-shipment FAT/Demo for Approval – Assembly, project management and engineering will conduct a pre-shipment demonstration (or video for approval) for the customer to approve machinery prior to shipment. They will demonstrate full rates, special devices and transfers. A post-demonstration punch list will be generated and corrected (if applicable) prior to shipment.
- Logistics (Equipment Disassembly) – Assembly and shipping will disassemble equipment, tag equipment for rebuild in the field, break electrical points and conduit (if applicable), crate and arrange shipment with the customer.
- Drop ship items will be tested at the OEM facility and shipped direct to the customer’s site to be set-up, verified and interfaced with the system controls scheme.
- Entire system solution controls will be validated.
- Project management, Service and Engineering stay engaged through commissioning.

SEE NEXT PAGE

2. Product and Speed Matrix

2.1. Product, Case, and Pallet Specifications

Case Data									
Description	Case Style	Length (in)	Width (in)	Depth (in)	Open Depth (in)	KDL (in)	KDW (in)	Case Rate	Case Weight
24pk	RSC	23.375	16.375	6.00	14.1875	39.75	22.38	1.0	16.00
48pk Unbagged	RSC	23.00	16.00	10.50	18.5	39.00	26.50	1.0	32.00

Product Data					
Product Weight	Product Length	Product Width	Product Height	Incoming Orientation (A-H)	Rate (PPM)
0.67	13.00	10.00	5.00	B	20
0.67	13.00	10.00	5.00	B	20

Packing Data					
Pack Pattern	Pattern (Rows)	Pattern (Columns)	Layers per Case	Products Per Case	Product Case Weight
AOE	2	12	1	24	16.08
AOE	8	3	2	48	32.16

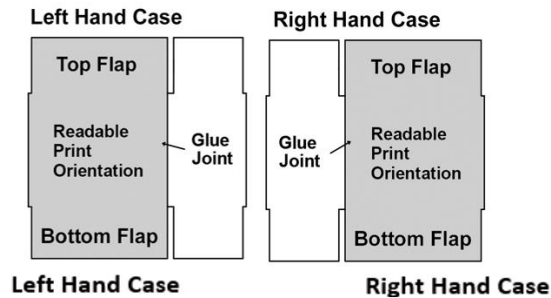
Pallet Pattern Information							
Incoming Case Orientation	Number of Cases per Layer	Number of Layers	Base Sheet	Layer Sheet	Top Cover	Load Height	Load Weight
EW	5	8	N/A	N/A	N/A	47.5	640
EW	5	4	N/A	N/A	N/A	47.5	640

- Layer Sheet dimensions will require MFT 750 IP3 model to achieve desired dimensions.

2.2. Product and Case Assumptions and Qualifications

- Customer provided board samples for engineering and testing purposes must be corrugated blanks compliant with the standards of the Fiberbox Association and PMMI (B155-TR2.1, TR2.2, TR2.3). All materials shall be in good condition, meeting or exceeding specified "Burst Strength" or ECT (edge crush test) specification and show no signs of delamination, severe deformation or other damage. Partitions should hold similar dimensional tolerances, and shall not be bundle-tied to avoid damage and warping.

- **Production Test Samples:** Test samples provided to Pearson must accurately represent production product running at the customer's plant. This includes, but is not limited to, the physical properties, product dimensions, weight, shape, firmness, and packaged product volume consistency.
- **Products:** The customer is responsible for the integrity of the product packed, (i.e. open bags or cartons, under-weights, etc.). The Pearson Packaging Systems equipment can in no way differentiate faulty products from acceptable products and cannot be held responsible for the resulting nonconformance to standards.
- Products must arrive at the packing system with proper time spacing and orientated with the snout pointed upward and the bottom of the snout leading and spacing from the leading edge of one package to the leading edge of the next package of no less than 2 second.
- Backpressure generated by the product must be eliminated for successful indexing of the packaging operations.
- **Case Hand:** The diagram below identifies the Right Hand / Left Hand configuration of the case. Each Case Erector is configured for *either* RH or LH, not both.



- **Cases:** All cases supplied for top loading will be virgin, RSC style corrugated cases with sufficient internal space to allow for automatic loading. All cases to be loaded will arrive at this system with case bottoms properly sealed, resulting in a rectangular and flat case bottom and a rectangular case opening. Top flaps on arriving cases will be fully vertical with unbroken score lines, and presented with the length dimension parallel to flow.
- **Cases:** All cases supplied for palletizing will be virgin, RSC style corrugated. Case rigidity, structural integrity and flap closure sealing allows for robotic handling without need for bottom support and will be presented with the length dimension parallel to flow.
- **Pallets:** A single wooden GMA pallet style of size 40" x 48" will be used within palletize cell. Pallets to be of good quality with flat build surfaces and structural integrity so as not to induce an unstable pallet load. All pallets to be of good quality with flat build surfaces and structural integrity so as not to induce an unstable pallet load and capable of automated conveyor transport. Pallets to be in accordance with the ANSI Standard for Pallets, Slip Sheets, and Other Bases for Unit Loads, MH1-2016.

3. Project Scope Assumptions and Qualifications

- This price quote is based on project requirement information and test materials provided by the customer to date, as defined in this proposal or its attachments.
- Overall system rate is dictated by operator availability. During manual pallet exchange the palletizing cell does not operate and excessive pallet exchange time or lack of upstream product accumulation may cause production stops.
- This price quote is contingent on Pearson Engineering inspection of actual production samples including products, cases, trays, layers, pads or any other materials to be handled by the equipment or system quoted.
- The customer is responsible for the accuracy of the layout drawing provided to Pearson and for verifying that there are no building or equipment interferences.
- A dry contact relay (type TBD) is provided as a signal that the equipment is ready to receive product. The customer must use this signal to stop upstream equipment when the system is not ready.
- The operating environment will be maintained within the specifications given for the robot and controller. Robot controller is not NEMA rated.
- The electrical system is rated NEMA4.
- The equipment quoted will be constructed to Pearson Packaging Systems' electrical and mechanical standards. No consideration has been given to any other specifications or requirements unless otherwise stated in this proposal. Compliance with any specific project specification may incur additional cost.
- All equipment will be painted, mild steel unless otherwise indicated.
- Installation supervision from Pearson Packaging Systems is available for quoting and recommended.
- All equipment is FCA PPS site of build.
- This quotation is valid for ten days from the date of issue.

3.1. Customer Responsibility:

- All site preparation work for the purpose of installing the equipment shall be performed by the customer. This includes concrete and utilities, as well as rigging services.
- **Concrete validation and preparation:** For robotic installations, all floor preparations to be completed prior to mounting robots. This includes a foundations strong enough to withstand the forces associated with the motions for the specific robot. An appropriate engineered solution must take in to account size, PSI rating, thickness, and reinforcement to be determined by a qualified source.
- All receiving, unloading and uncrating shall be performed by the customer.
- All equipment transport within customer facility shall be performed by the customer.
- All equipment utilities shall be routed to the equipment by the customer.
- All modifications to existing equipment shall be performed by the customer.
- Customer shall provide qualified staff for training, who will then be responsible for all machinery operation after installation.
- Customer shall provide any devices and controls required for performing quality checks upstream and preventing defective products or cases from entering the system.
- Any changes to the products, cases, pallets, or any materials handled by the system or the addition of new products not addressed herein make this quotation subject to change in price and scope.

- Test materials are to be provided at no cost to Pearson Packaging Systems. This includes all associated freight and handling to and from Pearson. Pearson will advise quantity and dates required in order to make committed shipping date.
- Before Pearson technicians arrive for installation assistance the following must be completed:
- Machines and conveyors placed and leveled. They should not be permanently anchored until the Pearson technician has verified that they are positioned correctly.
- All utilities must be connected

Concrete specifications for floor mounted robotic installations

The robot must be mounted to a baseplate or foundation that is strong enough to support the robot and withstand the reaction forces associated with acceleration and deceleration.

Concrete is the primary base material used with anchors. Two types of concrete are acceptable including poured-in-place and pre-cast. Poured-in-place concrete is concrete that is poured at the site. This type of concrete will have reinforcement added if it is to be used as a structural member. The average compressive strength of poured-in-place concrete is between 2000 and 6000 psi. Pre-cast concrete is concrete that has been pre-manufactured as walls or panels, then delivered to the job and assembled in place.

Minimum concrete specifications for typical robotic applications:

Compressive strength 4000 psi (27.6 Mpa)

Thickness, minimum 8.0 inch (200mm)

The minimum concrete specifications are intended for concrete that is suitable to accept 0.75" (20mm) diameter chemical anchors at an embedment depth of 6.75" (171mm). Robot mounting requirements vary per application based upon the type of robot and the associated mounting configuration. Installation instructions must be properly followed to ensure the integrity of the system. Reference the appropriate documentation prior to installation.

It may be possible to provide customized solutions to best meet the needs of specific applications. As a general rule, larger diameter fasteners resist higher loads. In addition, the required concrete thickness increases as the fastener diameter increases. Therefore, by increasing the quantity of fasteners and decreasing the fastener diameter, concrete less than the minimum thickness may be acceptable.

Engineering

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- **Machine Delivery Date:** The date the machine(s) arrive to the client's site.

Appendix A - Construction Levels

The following is for informational purposes. Specific construction levels per machine will be designated in the individual machine specification subsections. Machines are mild steel unless otherwise noted.

Mild Steel

Intended for dry environments. All fabricated steel parts, including the frame, are made from mild steel and powder coated.

- Mild steel powder coated frame
- Mild steel and aluminum manufactured parts
- Guide rods are steel 60 case
- Painted or plated bearings, skate wheels and rollers
- Painted or plated gearboxes, blowers, and motors (Including servos where applicable)
- Standard black oxide or no finish sprockets, pulleys and gears
- Standard chain
- Electrical components IP40 rated or greater
- Electrical fittings IP40 or greater
- Mild steel powder coated Main Electrical Enclosure (Non-sloped)
- All other enclosures are NEMA 4X mild steel powder coat and/or fiberglass
- Top entry into electrical enclosures allowed
- Zinc plated or stainless steel fasteners
- Stainless steel or plastic sliding adjustment contact surfaces (some legacy machines are excluded from this, consult PPS).
- Mild steel feet or zinc plated adjustment screw, with stainless insert in plastic feet
- Valves, IP40 minimum
- Aluminum finish – none
- Standard glue heads and hoses (Glue models only)
- Standard cylinders
- Stainless steel drive shafts
- Mild steel collars and couplings

Stainless Steel

not offered on all machines, consult PPS

Intended for dry, non-caustic, non-clean design environment but will accept exterior surface condensing water moisture. Specifically designed to protect components from oxidation, but does not include protection from airborne corrosives. Cleaning must be done with a damp cloth.

- Stainless steel frame
- Stainless steel and aluminum manufactured parts
- Guide rods stainless steel or armoloy coated mild steel
- Bearings are stainless steel, composite, or polymer with stainless steel or corrosion resistant inserts
- Stainless or plated skate wheels and rollers
- Painted or plated gearboxes, blowers, and motors (Including servos where applicable)
- Stainless steel, plastic, or plated sprockets, pulleys and gears
- Nickel plated chain
- Electrical components IP41 rated or greater
- Electrical fittings IP41 or greater
- Stainless steel NEMA 4X Main Electrical Enclosure (Non-sloped)
- All other enclosures NEMA 4X stainless steel or composite (Non-sloped)
- No top entry into electrical enclosures
- Stainless steel fasteners
- Stainless steel or plastic sliding adjustment contact surfaces (some legacy machines are excluded from this, consult PPS).
- Stainless steel feet or zinc plated adjustment screw, with stainless insert in plastic feet
- Valves, IP41 minimum
- Aluminum finish – none
- Standard glue heads and hoses (Glue models only)
- Standard cylinders
- Stainless steel drive shafts
- Stainless or plated collars and couplings

Washdown, Low Pressure

(4.3psi or less at 10 ft)

not offered on all machines, consult PPS

Construction upgrade package for stainless steel machines. Intended for non-caustic, non-clean environment. Low pressure water option specifically designed to protect against low pressure jets of water from all directions (limited ingress).

Lead times for this option may add 3-5wks to overall build cycle.

- Stainless steel frame
- Stainless steel and aluminum manufactured parts
- Guide rods stainless steel or armoloy coated mild steel
- Bearings are stainless steel, composite, or polymer with stainless steel or corrosion resistant inserts
- Stainless or plated skate wheels and rollers
- Epoxy painted or stainless steel gearboxes, blowers, and motors (Including servos where applicable)
- Stainless steel, nickel plated cad plated or plastic sprockets, pulleys and gears
- Nickel plated chain
- Electrical components IP65 rated or greater
- Electrical fittings IP65 or greater (plastic or aluminum)
- Stainless steel NEMA 4X Main Electrical Enclosure (Non-sloped)
- All other enclosures NEMA 4X stainless steel or composite (Non-sloped)
- No top entry into electrical enclosures
- Stainless steel fasteners
- Stainless steel or plastic sliding adjustment contact surfaces (some legacy machines are excluded from this, consult PPS).
- Stainless steel feet or zinc plated adjustment screw, with stainless insert in plastic feet
- Valves, IP65 minimum
- Aluminum finish – none
- Water wash glue heads and hoses (Glue models only)
- Aluminum or stainless steel pneumatic cylinders
- Stainless steel drive shafts
- Stainless steel collars and couplings
- Brady thermal engraved labels on exterior machine devices

Appendix B – Specifications Requirements

Section Heading	Line #	Description	Action	Pearson's Qualifications & Assumptions	OPTION NUMBER
S-12-2500-5606-1 - Control Panels	Panel and Equipment Requirements	2.3.5	A Panduit Verisafe absence of voltage tester (AVT) must be installed at point of entry for any enclosure having a power source greater than 150VAC. If the panel disconnect is located within the panel, it must be contained in a separately- labeled enclosure.	Up-charge	Panduit voltage indicator and main disconnect in separate enclosure are quoted.
S-12-2500-5606-1 - Control Panels	Panel and Equipment Requirements	2.4.2	Control panel nameplates must be engraved 2 or 3 ply matte plastic material. Reverse-engraved, or 3M Grafoplast™ PVC exterior nameplates with adhesive (series Si2K4yyxxx) may also be used. When specifically requested by 3M, or when a control panel is to be located in a clean room environment, reverse- engraved, or 3M Grafoplast™ nameplates must be used.	Up-charge	Standard machine nameplate is made of Brady Thermal Label material. Phenolic engraved nameplate with Pearson standard vergiage is quoted.
S-12-2500-5606-1 - Control Panels	Wiring	4.6.1	Control wires terminated at screw terminals which are not compression clamping or box type must have insulated open-ended spade-type lugs. This includes lead wires on individual devices such as solenoid valves having	Up-charge	Spring clamp terminals are standard. Screw type terminals are quoted.

			adjacent terminal strips. Only one wire per spade lug is allowed.		
S-12-2500-5606-1 - Control Panels	Wiring	4.6.2	Wires leaving a panel-mounted device for external connection must terminate at terminal blocks within the panel if 10 AWG or smaller wire is used.	Up-charge	I/O wired to terminals is quoted.
S-12-2500-5606-1 - Control Panels	Wiring	4.6.4	The control panel must contain a minimum of 20% spare terminals.	Up-charge	20% spare screw type terminals are quoted.
Valley Electrical 2019A	Programmable Controllers	XV.	Allen-Bradley Family - ControlLogix 1756 Platform only (Valley MUST specify)	Up-charge	The CompactLogix L24ER is standard for the CE25, MicroLogix 1400 standard for the CS15 and the CompactLogix L30ER is standard for the RTL and RPC. ControlLogix L71 is quoted for each machine.
S12-2500-5574-1 - Electrical Specification	Wiring Methods	2.3.4	Dividers must be used to separate circuit types. See Section 3.9, Routing and Grouping of Conductors for more information.	Clarification	See section 3.9 for comments.
S12-2500-5574-1 - Electrical Specification	Wires and Cables	3.3.1	Single conductor control wiring must be 600 VAC, 14 AWG minimum, 19 strand, THHN or THWN.	Exception	MTW is standard for single conductors used.
S12-2500-5574-1 - Electrical Specification	Wires and Cables	3.7.6.1.	PVC electrical tape must be 3M Brand "Scotch Super 33 Plus" or "Super 88".	Up-charge	Motor connection using wire nuts and Scotch Super 33 Plus tape is quoted.

S-12-2500-5606-1 - Control Panels	Wiring	4.6.1	Control wires terminated at screw terminals which are not compression clamping or box type must have insulated open-ended spade-type lugs. This includes lead wires on individual devices such as solenoid valves having adjacent terminal strips. Only one wire per spade lug is allowed.	Up-charge	Spring clamp terminals are standard. Screw type terminals are quoted.
S-12-2500-5606-1 - Control Panels	Wiring	4.6.2	Wires leaving a panel-mounted device for external connection must terminate at terminal blocks within the panel if 10 AWG or smaller wire is used.	Up-charge	I/O wired to terminals is quoted.