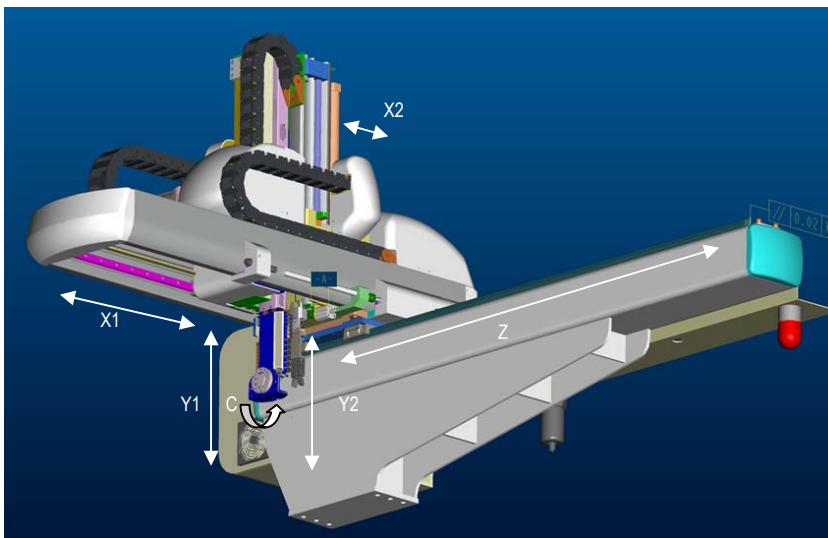


PRICE PAGE (Budgetary Cost Summary)

Item : HYBRID-V-200D (Take Out Robot for 120 ~ 220 Tons IMM)

- Double Arm Model : Main Arm (Servo) + Sprue Arm (Pneumatic)
- Descent Arm (Y Axis) : Digital AC Servo Operation
 - Aluminum Extrusion, Telescopic, Timing Belt Driven, Yaskawa Servo Motor / Drive, NSK Linear Guide
- Traverse Stroke (Z Axis) : Digital AC Servo Operation
 - Steel Frame, Timing Belt Driven, Yaskawa Servo Motor / Drive, NSK LinearMotionGuide
- Kick Stroke (X Axis) : Digital AC Servo Operation
 - Double Arm Support, Timing Belt Driven, Yaskawa Servo Motor / Drive, NSK LinearMotionGuide
- 90 Deg Wrist Flip for flat placement of Parts (C-Axis) : Pneumatic Drive (Festo Actuator)
- HYNC-700 Touch Screen Controller with movable wheeled cart. (Detail Information is Attached)
- Body Attached Control Box (Servo Amplifier, DC Power Volt Generator, Servo Control Board, Molding Machine Interface board, Main Control Board, Noise Filter Etc)
- Custom Engineered Adaptor Plate to fit molding machines
- SPI Robot/IMM Electrical Interface : Euomap 12
- One Vacuum circuits (Sensor included)
- One Gripper Circuit with Monitoring Sensor input
- One Pressure Circuit with Monitoring Sensor input
- One Printed Manual
- Individually Packaged in Wood Pallet

Budgetary Price for HYBRID-V-200D : \$ 29,500.00 / Unit



ROBOT SPECIFICATION

X1 : 650 mm (25.6 Inch) : AC Servo

X2 : 150 mm (5.9 Inch) : Pneumatic

Y1 : 800 mm (31.5 Inch) : AC Servo

Y2 : 800 mm (31.5 Inch) : Pneumatic

Z : 1500 mm (59.0 Inch) : AC Servo

C : 90 Deg

Max Payload : 5 Kg (11 lb) *

* Recommended

Optional Information is attached.



5988 Mid Rivers Mall Dr. Saint Louis , MO 63304, USA

Tel : 1-636-578-6059 , Fax : 1-866-232-5594 , Homepage : www.hyrobots.com (DATE : 5/26/2009)

Mechanical features for HYBRID Series Robots

- ✓ Unique Double Arm Model with combination of 3 Axis Servo and 1 Axis servo Hybrid Style Robot. One Robot comes with Two Robot function.
- ✓ Traverse Beam is a high strength, thick walled, steel tubing with precision machined surface provide maximum rigidity and durability with high precision robot position..
- ✓ True AC Digital Brushless Servo Motor ensure each step of robot operation under precision and high speed. Independent AC digital servo amplifiers ensure flexibility ,simultaneous and coordinated motion



- ✓ NSK Linear runner block bearings, fully enclosed on precision-machined rails provide high strength and precision operation of robot.
- ✓ Festo Actuator for 90 Deg Wrist Rotation for parts placement on conveyor or stacking machines.
- ✓ Festo Actuator for Sub Arm Descent and Kick Operation
- ✓ Aluminum extruded profile descent arm for light weight with high strength.
- ✓ Vacuum generator with sensing switch at the end of robot arm, it is easy to reach and confirm sensing.
- ✓ Pneumatic circuits for part and sprue grip.
- ✓ Removable alignment pins, When used will positively locate the end of arm tool to the vertical arm

Vertical Axis

Main Arm comes with True AC Digital servo motor with the multiplying effect of a belt drive with two stage synchronized telescopic vertical motion of the HYRobotics HYBRID Series Robot comes with Yaskawa AC brushless servo motor with optical encoder ensures accurate positioning and flexible part handling, such as part stacking, insert picking at the product release point.

Sub Arm comes with two stage Telescopic Motion with Festo Actuator Operation.

Kick Axis

Dual crosswise support arm design for added rigidity and stability. Main arm for Digital AC brushless servo motor with optical encoder ensures greater part handling versatility.

Sub Arm comes with Festo Pneumatic Operation with one touch stroke and position adjustment.

Traverse Axis

Digital AC brushless servo motor with optical encoder provides fast, smooth and accurate performance. This permits part placement into “beside the press” equipment such as: floor-mounted de-gating systems, weigh scales, hot stamping presses and indexing along a conveyor.



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CONTROLLER FEATURES

HYNC-700 : 5.7 Inch Touch Screen Controller. (FOR NEXIA, ZEST, HYBRID ROBOT)

Main specification

- HYNC-700 Provide easy and simplified motion control for sophisticated injection molding Robot Automation using color touch screen , servo Jog button, and play back step by step motion control. New concept Robot control technology will allow easy plant automation and minimize your set up time and thus maximize your profit.
 - ✓ Powerful hand held control pendant with full color touch screen.
 - ✓ Developed specially for the molding industry by automation engineer with years of experience in the filed.
 - ✓ Programming required no special skill or knowledge with 4 Basic Take out Step.
 - ✓ Expandable up to 80 Step with Add position & Motion, User output and User input.
 - ✓ Mold take our Routine are made by teaching the robot via menu driven programming.
 - ✓ Complex task like parts stacking, palletized insert loading and post process operation are easily accomplished by entering the basic data for the task.
 - ✓ Input, output and logic circuits allow easy integration with other equipment.
 - ✓ Adjustable speed controls in both auto (while robot is in operation) and manual mode.
 - ✓ Minimal floor space required, stand for control pendant may be replaced with beam mounted switches and hanger.
 - ✓ Simultaneous and coordinated motion control for each Axis.
 - ✓ Programmable sprue placement during outbound or return traverse motion.
 - ✓ Programmable posture control at product extract side.
 - ✓ Programmable fixed mold half or moving mold half product extraction.
 - ✓ Languages: English, Spanish and Korean
 - ✓ Conveyor or secondary equipment start signal.
 - ✓ Defective product rejecting circuit.
 - ✓ K Motion and J Motion is available.
 - ✓ Movable Controller for Precision Adjustment in mold view.



| HYBRID Series Optional Specifications (Budgetary cost & not included in quote) | | |
|---|---------------------|-------|
| Mechanical Options: | Unit Cost | Check |
| <ul style="list-style-type: none"> S-Arm for Separate Runner Removal for 3 Plate Molds Application, Vertical and Kick comes with Pneumatic Operation | Included | |
| <ul style="list-style-type: none"> Servo posture & wrist (A & C Axis Servo Posture with harmonic Drive) for Main Arm. | \$ 11,900.00 | |
| <ul style="list-style-type: none"> 90 Degree Chuck Swivel (A Axis) : Pneumatic for Main Arm | \$ 2,550.00 | |
| <ul style="list-style-type: none"> 180 Degree Chuck Swivel (A Axis) : Pneumatic for Main Arm | \$ 2,950.00 | |
| <ul style="list-style-type: none"> Traverse Stroke Extension (500 mm) : L Type | \$ 1,850.00 | |
| <ul style="list-style-type: none"> Additional Vacuum generator with Sensing System (Up to 4) | \$ 650.00 | |
| <ul style="list-style-type: none"> Additional Pressure circuit (Up to 4) | \$ 380.00 | |
| <ul style="list-style-type: none"> Automatic Pump for central lubrication systems | \$ 2800.00 | |
| <ul style="list-style-type: none"> Robot Spare Part Kit (4 Proximity Sensor, 2 Chuck Rotation Sensor, 5 Solenoid Valve, 6 Relay) | \$ 950.00 | |
| <ul style="list-style-type: none"> Gate Cutting Pressure circuit (End of Traverse Beam) : Hardware is not included | \$ 1,250.00 | |
| <ul style="list-style-type: none"> Safety guarding, Heavy wire mesh, Black Extruded Steel supports , swing door : Price upon request | | |

| Electrical Standard / Options | Cost | Check |
|---|------------------|-------|
| <ul style="list-style-type: none"> Red Strobe Light (End of Traverse Beam) : \$ 350.00 Value | Standard | |
| <ul style="list-style-type: none"> LED Target / Current Counter (End of Traverse Beam) : 4 Digit : \$ 1,850.00 Value | Standard | |
| <ul style="list-style-type: none"> Single Phase, 3KVA Transformer (Required for voltage above 220 VAC) : \$ 450.00 Value | Standard | |
| <ul style="list-style-type: none"> Indexing Conveyor Control(Every cycle it will generate pulse signal for indexing conveyor) \$ 250.00 Value | Standard | |
| <ul style="list-style-type: none"> Insert Molding / Stacking Program with User input \$ 850.00 Value | Standard | |
| <ul style="list-style-type: none"> SPI (Euromap 12) Version Plug (Molding Machines Side : Wiring is not included) | \$ 185.00 | |
| <ul style="list-style-type: none"> Additional Paper copy of Operation, Maintenance manual | \$ 35.00 | |
| <ul style="list-style-type: none"> Downstream Automation Communication wire in Plastics Box (5 meter : 16') from Robot Board | \$ 350.00 | |



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Systems that work, designed and built by people who know and care, HYROBOTICS!

CE CERTIFIED ROBOTICS

ISO9001:2000

| End of Arm Tooling : (From 80 ~ 1000 Tons IMM) | Cost | Check |
|--|--------------------|-------|
| <ul style="list-style-type: none"> • Custom End of Arm Tooling : Price upon Request | | |
| <ul style="list-style-type: none"> • Standard End of Arm tooling (4 Point Suction) : 30 mm Suction Cups , 4 Point, Frame, Stems <ul style="list-style-type: none"> ○ For 50 ~ 250 Tons Machines \$ 250.00 Value | Standard | |
| <ul style="list-style-type: none"> • Sprue Gripper with Sensor (Narrow) : Standard \$ 185.00 Value | \$ 185.00 | |
| <ul style="list-style-type: none"> • Sprue Gripper with Sensor (Wide Style) | \$ 195.00 | |
| <ul style="list-style-type: none"> • 8" x 9" Frame Size for user with small parts (32 Suctions cups 8 Stem, 3 Bracket with some accessories) <ul style="list-style-type: none"> ○ For 50 ~ 250 Tons Machines | \$ 260.00 | |
| <ul style="list-style-type: none"> • 8" x 9" Frame Size (Angle adjustable : 32 Suctions cups 8 Stem, 3 Bracket , 8 Angle Adjustable bracket with some accessories) <ul style="list-style-type: none"> ○ For 50 ~ 250 Tons Machines | \$ 360.00 | |
| <ul style="list-style-type: none"> • 10" x 12" Frame Size for user with small parts (32 Suctions cups 8 Stem, 3 Bracket with some accessories) <ul style="list-style-type: none"> ○ For 250 ~ 400 Tons Machines | \$ 280.00 | |
| <ul style="list-style-type: none"> • 10" x 12" Frame Size (Angle adjustable : 32 Suctions cups 8 Stem, 3 Bracket , 8 Angle Adjustable bracket with some accessories) <ul style="list-style-type: none"> ○ For 250 ~ 400 Tons Machines | \$ 380.00 | |
| <ul style="list-style-type: none"> • 20" x 10" Frame Size (Custom Padded Finger x 2ea, 6 Suction Cups with 6 Stems, 1 Sprue Gripper , 4 Frame) <ul style="list-style-type: none"> ○ For 400 ~ 650 | \$ 1,850.00 | |
| <ul style="list-style-type: none"> • 30" x 15" Frame Size (Custom Padded Finger x 2ea , 8 Suction Cups with 8 Stems, 2 Sprue Gripper , 4 Frame) <ul style="list-style-type: none"> ○ For 650 ~ 1000 | \$ 2,850.00 | |
| <ul style="list-style-type: none"> • 40" x 20" Frame Size (Custom Padded Finger x 2ea , 10 Suction Cups with 10Stems, 2 Sprue Gripper, 4 Frame) <ul style="list-style-type: none"> ○ Over 1000 Tons. | \$ 3,850.00 | |



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| | |
|---|-------------------------|
| Supervise Installation / Interface and Training | |
| Customer Responsibilities | |
| <ul style="list-style-type: none"> Complete Molding Machine information, including robot-mounting pattern, must be received with purchase order Customer is responsible for any modifications to the injection-molding machine in order to Install HYRobotics Robot. This includes modifications to the stationary platen, such as drilling and tapping robot-mounting holes, as well as modifications to the operator's gate or the rear guard required to accommodate the robot. The quoted fee includes all labor and living expenses for one HYRobotics field service technician to perform wiring, testing, start-up and training at customer's location. Customer is responsible for uncrating of the robot. Under the supervision of HYRobotics engineer , mounting of the robot to the injection-molding machine recommended. Unpack and mount the robot to molding machines. HYRobotics will supply a custom engineered mounting adaptor and mounting hardware in the quotation. | |
| 1 Unit Installation Fee (For Standard Robot Only : 100 ~ 600 Tons Size) : 2 Days (SPI Interface Inspection, Checking Out, Adjustment and on sight training with demonstration of robot.) <ul style="list-style-type: none"> Standard Rate : \$650.00 / Days Operation and Basic Programming Training at HYRobotics : \$ 425.00 / Persons | 1,850.00 |
| Travel Expenses / Airfare and Rental Car | Billed As Actual |
| Robot Interface | |
| Customer is responsible for providing a current robot interface package, preferably one in compliance with SPI's "Recommended guideline for Robot/Injection Molding Machine Electrical Interface." A copy of the guideline is available upon request. Please consult the injection molding machine manufacturer for the availability of a robot interface package. In the event a current robot interface is not available, the following signals from the molding machine are generally required. Please consult factory if signals are not available. | |
| <ul style="list-style-type: none"> IMM is in full automatic , Mold open complete, Mold closed complete, Safety door closed, Ejectors forward , Ejector backward , In addition, the following signals from the robot are available to the molding machine: | |
| <ul style="list-style-type: none"> Mold open authorize or the ability to permit clamp motion, Mold closed authorize or the ability to permit clamp motion, Ejectors forward authorize, Ejectors backward authorize, Cycle Start (Option) An additional fee may be required if a non-standard interface or other functions are required. | |
| Power Requirements and Air Consumption | |
| 220 AC or 480 AC | |
| 6 Kgf/cm ³ (80 PSI) Air Pressure Required. | |
| Dry air must be supplied to the robot | |
| NOTE: Any moisture or lubrication in the air supply will VOID the warranty with regards to the effected components | |



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Delivery

Four weeks if from stock. Eight to Ten weeks if from non stock. Consult factory for specific delivery dates. All shipments times start at receipt of purchase order and down payment.

Terms and Payment Agreement

All prices are F.O.B. St.Louis MO ; Freight Collect. Standard payment terms are 25% with written purchase order; 75% net 30 days from the date of shipment. Upon acceptance of this quotation, you authorize HYRobotics to file a UCC Financing Statement along with a signed Security Agreement for the equipment described in this proposal. All sales are subject to HYRobotics's standard "Terms and Conditions" attached.

Warranty

The unit(s) is (are) covered by a twenty-four (24) month parts and Twelve (12) month labor service warranty after shipment, applicable only to the original customer after shipment from our facility, providing the problem is due to manufacturing defect.

The end-of-arm tooling and its original components have a (3) month warranty effective on the installation date

Order Confirmation

Pricing, specifications and deliveries are subject to our final confirmation.

Acceptance

Equipment pricing is valid for 30 days

End-of-Arm tooling and Secondary pricing is valid for 30 days



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