FACTORY AUTOMATION FOR
PLASTICS MOLDING

Parts / Sprue Picking Robot

HYROBOTICS CORP.
Introduction

- HYROBOTICS CORP  
  - St. Louis, MO

- HYROBOTICS CO.LTD  
  - Incheon, South Korea
General Molding and Automation

The word “Plastic” means substances which have plasticity, and accordingly anything that is formed in a soft state and used in a solid state can be called a plastic. The main plastics forming methods are shown as follows:

**Plastic Molding Process**

- **Extraction Molding** (Pipe, etc.)
- **Injection Molding** (Bucket, Case, Box etc.)
- **Blow Molding Machines** (Container, Bottle)
- **Vacuum forming** (Package for eggs (thin film products))
- **Pressure Forming** (Suitcase (Thick film products))
- **Rotational Molding Machines** (Bottle, Doll)

**MOST POPULAR INJECTION PROCESS**

- **Vertical Injection Molding**
- **Horizontal Injection Molding**

**Size (Tonnage):**

| 30 | 50 | 80 | 100 | 120 | 150 | 200 | 250 | 350 | 450 | 550 | 650 | 750 | 850 | 1000 | 1200 | 1300 | 2000 | 3000 | 4000 |

*Technical data*
Robot Applications inside of the Mold

Two Plate Mold
- Sprue Picking Only
- Sprue Picking with Part Dropping
- Sprue and Parts Removal
- Sprue Picking with products connected
- Part Removal
- Part removal with the sprue or without the sprue

Three Plate Mold
- Sprue Picking
- Sprue and Parts Removal
- Sprue and Part Removal at the same time (Double Arm)

Insert Operation
- Parts Removal and 90 Deg flip and Insert one insert in the mold, Sprue picking.
- Parts Removal and 90 Deg flip and Insert multi insert to the mold, Sprue picking.

Technical data
Robot Applications outside the Mold

**Simple Operation**

Taking out the Sprue from the mold and dropping it. (Inside of the mold, Conveyor, Box)

Remove Parts, 90deg Rotation and Placing the parts (Conveyor, Box)

**Deburr and stacking**

Remove the parts from the mold place on the deburr station and move it to conveyor

Place the parts directly in boxes on the stacker

**Insert Operation**

Pickup the inserts from the loading station (Parts feeder or table) remove product, insert the inserts in the mold, and place the products on the conveyor.
Why IMM needs Robot and Sprue Picker?

- Less Labor Cost
- Safety Issue
- Fast Cycle time
- Consistency
- Parts Quality
- 24 Hour Operation
- Separate the Sprue from the Parts 100%
- Automatically recycle using Crusher and Hopper dryer.
- Tougher Jobs
- Cosmetic, No Ejector Marks.
Our Product Information

Swing type pneumatic picker.
- From 30 tons up to 450 Tons
- Three Models
  - A: Sprue Picker Only
  - X: Sprue Picker with 90 deg Wrist
  - XC: Picker (Part or Sprue) with 90 deg Wrist and Vacuum system
- Motion controlled by hand held micro processor control (Handy control)
  - Control has preprogrammed motion pattern or programmable with timer setup
  - 99 mold setups can be stored, setups retain motion patterns and timer values.
  - Mechanical stroke settings are not stored.

Installation
- Every unit includes complete installation hardware kit and detailed instructions.
- Steps
  - Mount unit on stationary platen.
  - Wire interface box to IMM control (SPI connector: Plug and Play).
  - Test.
  - Setup
- Installation Service Available.

Points of Interest
- Future Products
  - More swing type size (450, 750, Twin)
  - Traverse type
- Safety features
  - ANSI, RIA
  - Safety Circuit
  - Emergency Stop

Questions
Robot / Sprue Picker Sizing Correct Unit

- General
  - On catalogue
- Quick Layout
- Parts Size
  - Mold Size
  - Door Heights
  - Other
- See Sizing Worksheet.

Pros and Cons

✓ Pros
  - Very Attractive Pricing
  - Units / Parts in Stock
  - Self Installation

✓ Cons
  - New Brand
  - Limited Line
  - Self Installation