Universal Small Cell (USC)

Main Applications:

- Assembly
- Arc Welding
- Cutting
- De-burring
- Grinding
- Trimming

What is a Universal Small Cell?

The USC is a small robotic cell ready to be integrated with different application process equipment. The Universal Small Cells are used as a building block to develop a complete robotic solution.

Why use the USC as a building block?

There are many common elements to every robotic application; the USC provides a solution to these common elements.
The Common elements include:

1. Determining the cell layout and floor space requirements.
2. Designing the cell, fencing and equipment bases, etc.
3. Developing the cell safety requirements.
4. Developing the operator interaction with the cell: loading, unloading, cycle initiation, etc.

Cell specific requirements:

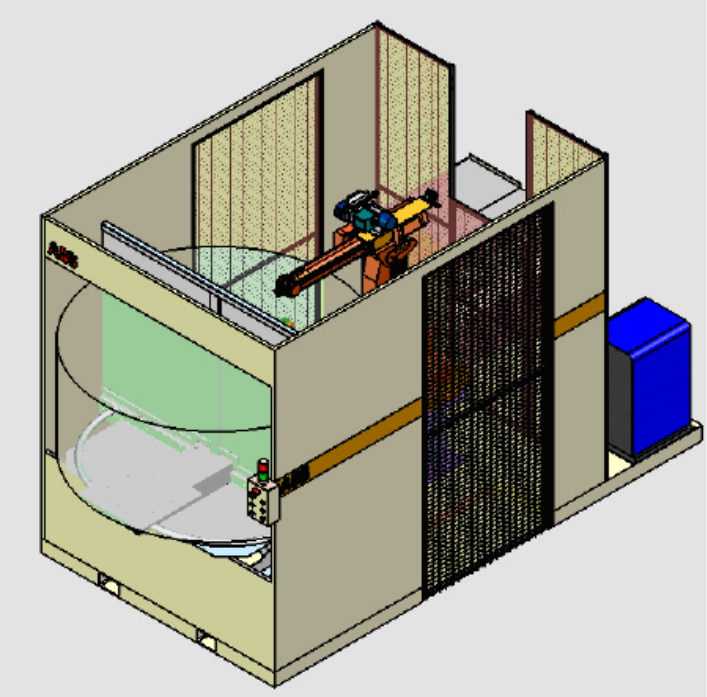
- Developing the robotic process equipment needs.
- Developing the tooling and part fixturing requirements.

ABB has addressed the common elements on a robotic cell design. ABB's pre-engineered solution simplifies making a robot cell operational. It provides the following benefits to the customer by:

- Reducing the customer's mechanical engineering design cost.
- Reducing the customer's electrical engineering design cost.
- Reduced material cost; volume production of the USC reduces the purchase cost of materials.
- Volume production reduces the assembly labor to produce theses cells.

The base cell features:

- One IRB1410, IRB1600 or 2400 robot equipped with IRC 5 controller.
- 180° manual index two station positioner.



- Cell safety equipment and perimeter guarding which complies with ANSI/RIA 15.06/1999.
- Standard Man/Machine (HMI) Interface via the IRC5 graphical teach pendant.
- Metal mounting base (transportable with fork lift pockets).
- Dual Cell doors with interlock device.
- A standard operator pushbutton panel.
- A small cell foot print to reduce floor space requirements.

USC is composed entirely of modular equipment; these production cells can be used independently or combined together to form mini-assembly zones, an assembly line or a complete workshop.

Flexibility, Reusability and High Productivity

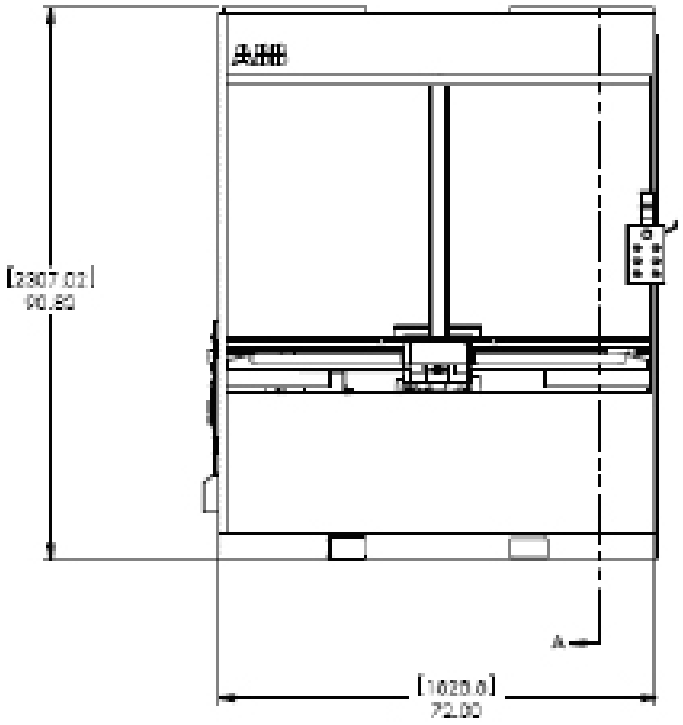
If your new production parts are modified, added or specifications changed, fixtures can be changed or modified on one station or both. The robot can either process new or different parts while maintaining maximum flexibility of the cell.

ABB's USCs are available in a virtual computer format as identical replicas of the real cell in RobotStudio software and can be programmed offline on a personal computer.

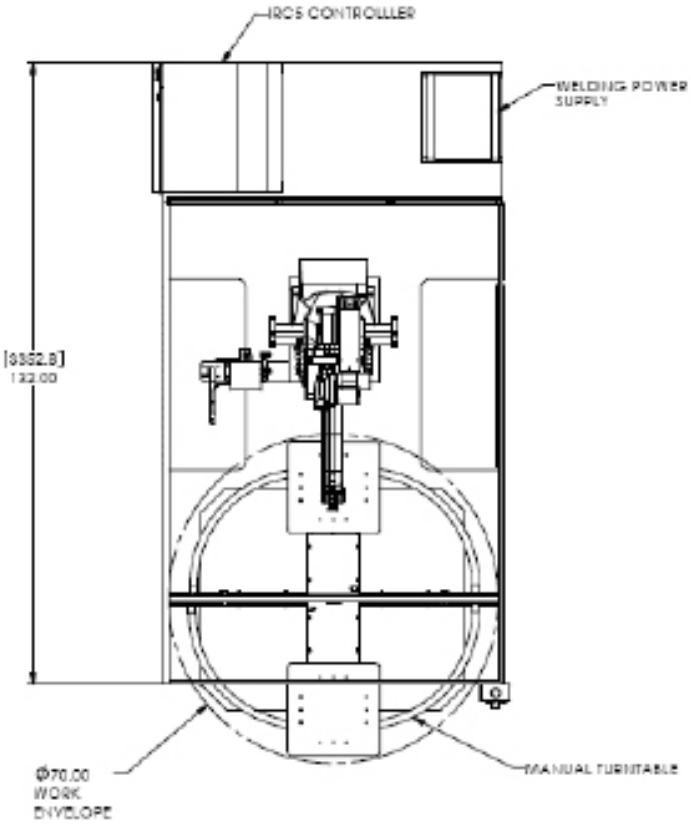
Universal Small Cell

Specifications	Table
Handling capacity Per Side (Station)	150 Kg./ 330 Lbs.
Max Fixture Diameter Per side (Station)	1M./39.36 Inches
Max Fixture length Per side (Station)	1.6M/ 62.99 Inches
Max Speed	Manually rotated station interchange
Ave interchange time	5 seconds
Max load diff	150 kg/330 Lbs.

Manual indexes 180 degrees for two station operation



Cell Layout



Production Cycle Description

Operator unloads and loads one fixture while the robot processes on thwwwxture. When both the operator and robot have completed their operations, the operator indexes and the cycle starts again. It can produce either 2 identical parts or 2 different pars of type A and tpe B

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