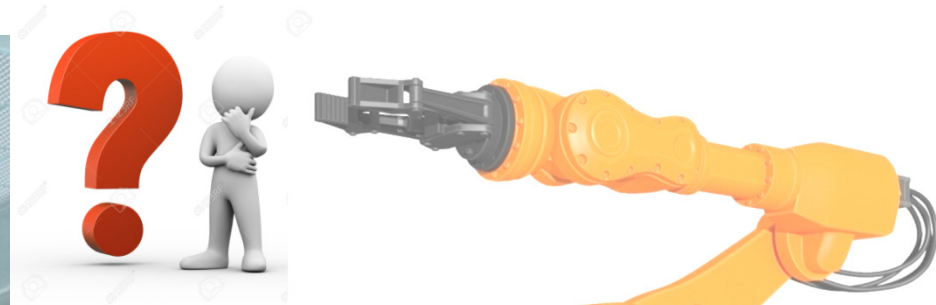





ROBOTICS



WHAT IS ROBOTICS.....?

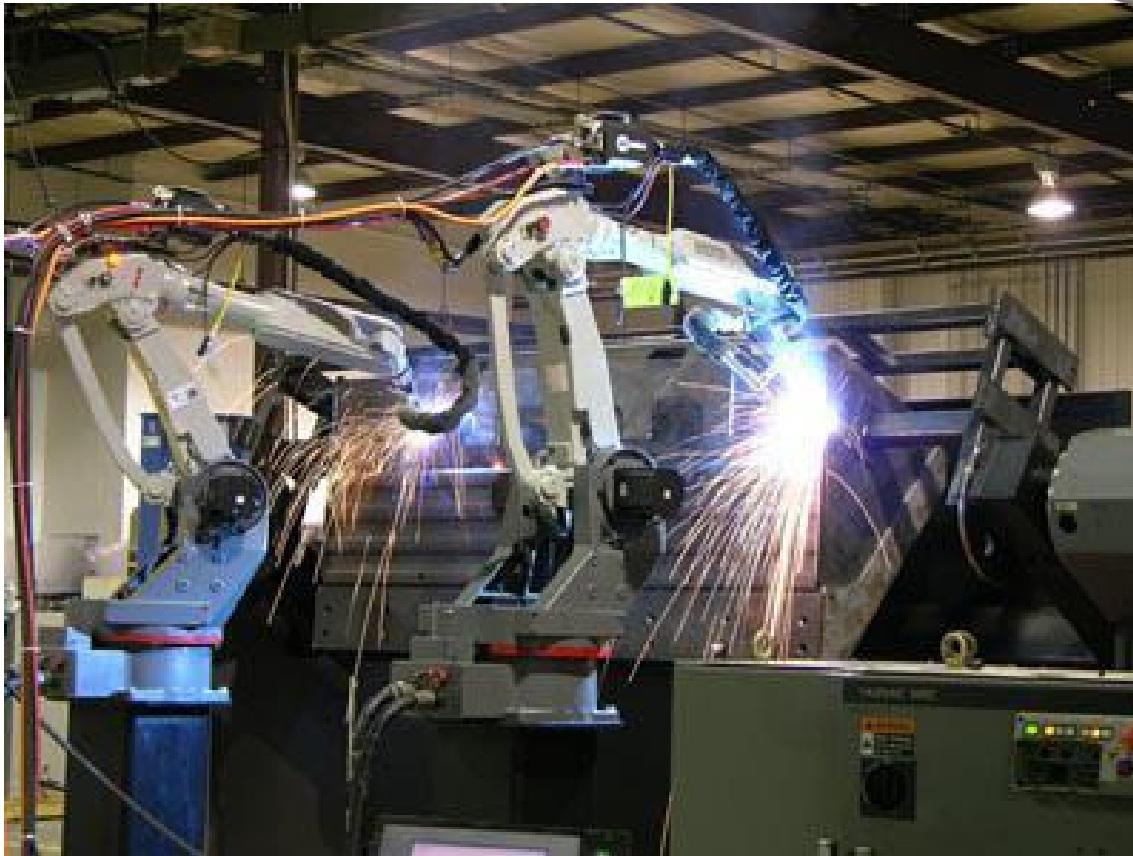


Robots are machines that can be used to do jobs. Some robots can do work by themselves. Other robots must always have a person telling them what to do.



WHY IS ROBOTICS NEED....?

Robotics is needed because we need:-



- Speed in work
- It Can work in hazardous /dangerous temperature
- Can do repetitive tasks
- Can do work with accuracy



INDUSTRIAL ROBOTS TRENDS & TYPES

Robots are used in many industries including 3D Printing, Amusement Parks, Agriculture, Assembly, Construction, Electronics, entertainment and theater, logistics & warehousing, manufacturing , medical , Mining transportation (AGV), space exploration sports and many more.

Factory automation, process automation and robotics-this trio will determine the agenda at industrial automation 2016. All three play an indispensable part in "integrated industry"



REASONS FOR AUTOMATING :-

1. To increase labor productivity
2. To reduce labor cost
3. To mitigate the effects of labor shortages
4. To reduce or remove routine manual and clerical tasks
5. To improve worker safety
6. To improve product quality
7. To reduce manufacturing lead time
8. To accomplish what cannot be done manually
9. To avoid the high cost of not automating



AUTOMATION PRINCIPLE :-

1. Understand the existing process
 - Input/output analysis
 - Value chain analysis
 - Charting techniques and mathematical modeling
2. Simplify the process
 - Reduce unnecessary steps and moves
3. Automate the process
 - Ten strategies for automation and production systems
 - Automation migration strategy



AUTOMATION STRATEGIES:-

1. Specialization of operations
2. Combined operations
3. Simultaneous operations
4. Integration of operations
5. Increased flexibility
6. Improved material handling and storage
7. On-line inspection
8. Process control and optimization
9. Plant operations control
10. Computer-integrated manufacturing



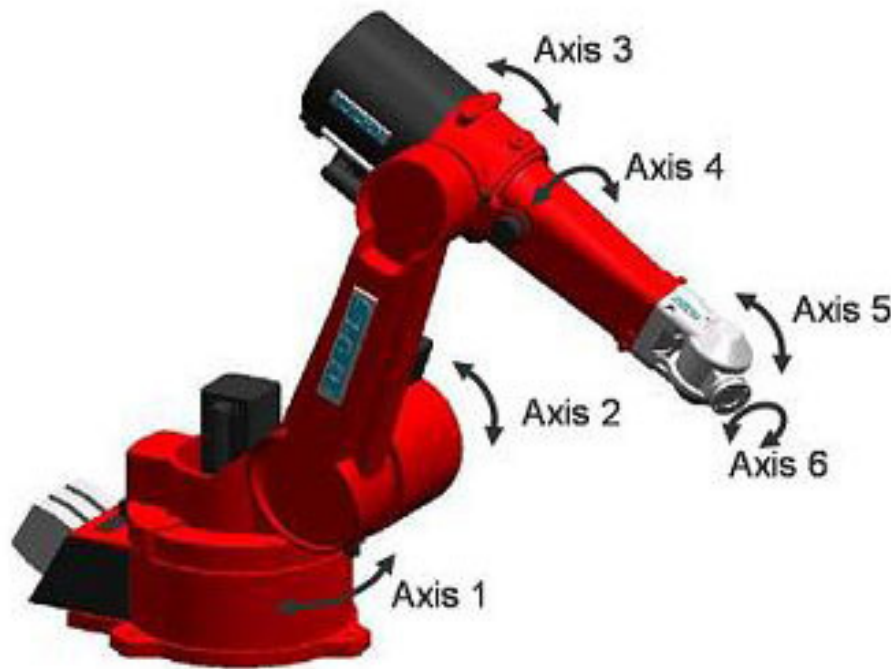
TYPES OF INDUSTRIAL ROBOTS



Factory automation, process automation and robotics-this trio will determine the agenda at industrial automation 2016. All three play an indispensable part in "integrated industry"



TYPES OF INDUSTRIAL ROBOTS



ARTICULATED ROBOT:-

Used for assembly operation, Die-casting, fettling machines, gas welding, arc welding and spray painting. it's a robot whose arm has minimum three rotary joints & maximum as per usage.





Robotics in Foundry Automation

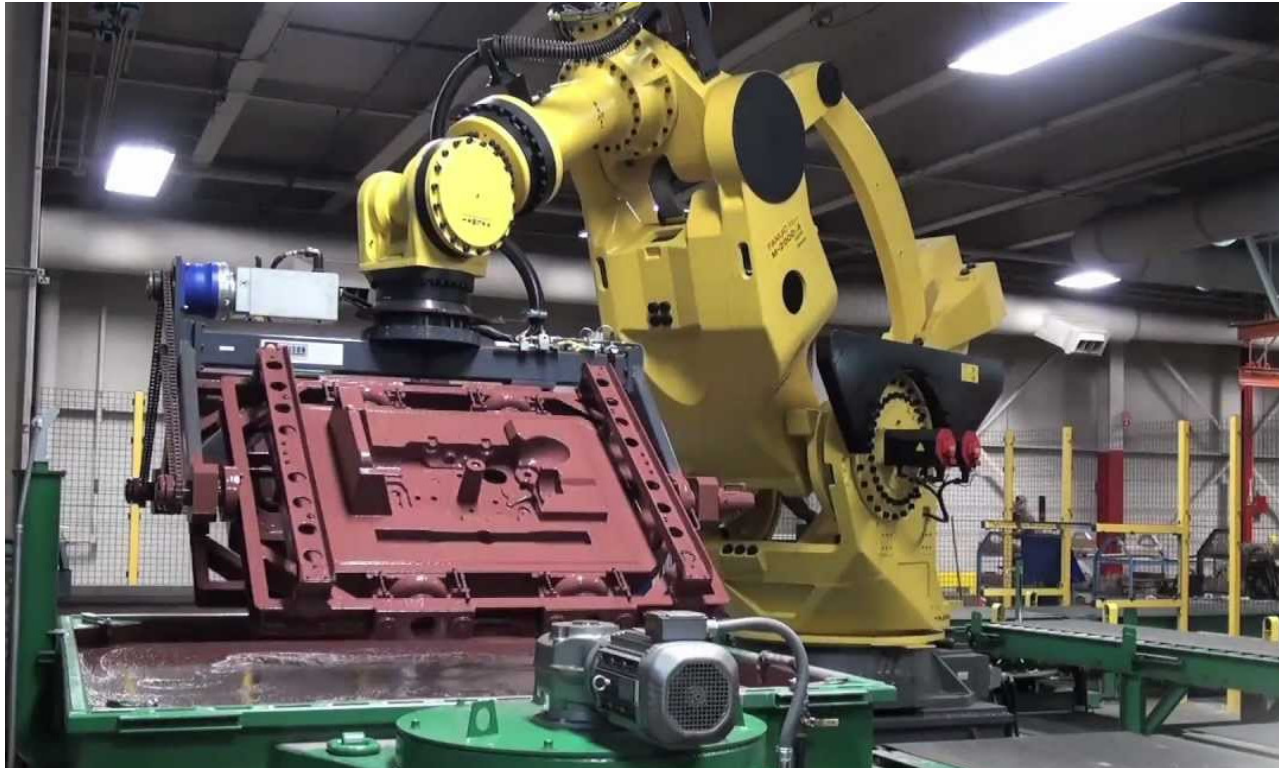


ROBOTICS IN FOUNDRY :-

Like many other industries, foundries are constantly on the lookout for new to boost their productivity, cut cost and increase quality. once the decision implement in robot technology no need to look any further: lower production costs and scrap rates, increased up-time and consistent, superior quality are the compelling benefits with robots.



ROBOTICS IN FOUNDRY :- Sand Core Process



- Core shooting
- Core assembling
- Core gluing
- Core cleaning
- Core handling



ROBOTICS IN FOUNDRY :- Casting Process



- Die-casting
- Sand casting
- Gravity-casting
- Lost-foam



ROBOTICS IN FOUNDRY :- Cleaning Process



- Deburring
- Deflasing
- Degating
- Premachining



ROBOTICS IN FOUNDRY :-

Machining

- Machine tool tending
- Secondary deburring
- Washing
- High pressure water jet washing



Palletising



Surface treatment

- Blasting
- Painting
- Corrosion protection

Quality

- X-ray
- Leakage test
- Dimensional accuracy



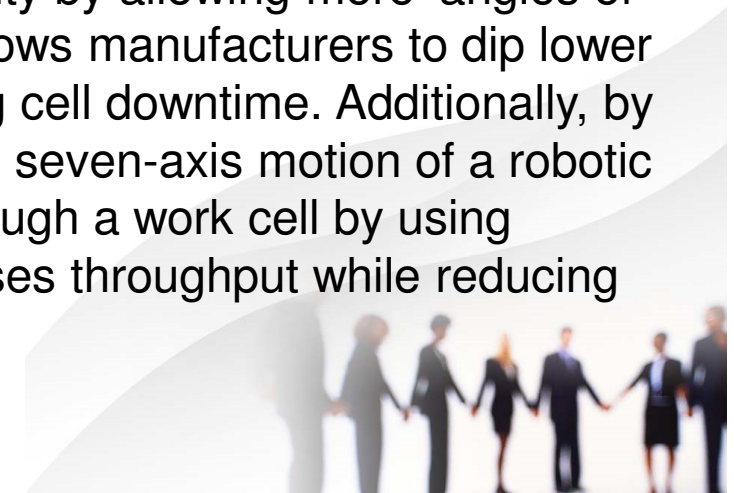
ROBOTICS IN FOUNDRY :-

- Pouring into Molds
- Cleaning
- Heat Treatment
- Inspection
- Finishing
- Automated Guided Vehicles
 - Automatic Storage
 - Moving Cores and patterns
 - Etc.



Automated ladling allows for greater part integrity. By controlling the speed and volume of shot being poured into the sprue, robots give manufacturers the control necessary to reduce the amount of gases introduced into the part. A sloppy aluminum pour that doesn't fill the sprue completely will draw oxygen and hydrogen into the metal, creating aluminum-oxide bubbles and making the casting more porous, reducing its integrity. In an automotive part such as a brake caliper, the aluminum-oxide pores create spaces within the part where oil can seep through and reduce the part's effectiveness.

Robots allow for the automation of the seventh axis ,or ladle, making pouring more consistent, reducing waste, and increasing part integrity by allowing more 'angles of attack' when pouring and dipping. Automation also allows manufacturers to dip lower into the furnace before it needs to be refilled, reducing cell downtime. Additionally, by combining the six axes of an articulated robot with the seven-axis motion of a robotic ladle, it's possible to create more intelligent paths through a work cell by using steadier motions to and from the furnace. This increases throughput while reducing waste from spilling.



Our Valuable Clients:-





innovations

that could change the way you

manufacture

