

ROBOT PROGRAMMING

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Robots have revolutionised a huge variety of different manufacturing processes, however the programming of robots has historically been a slow and labour intensive process. This was not a problem when the robots were simply repeating many thousands of times a process that could be programmed using either a manual teach and learn approach or using a specialist offline robot programming application. However over time robots have become more flexible and the processes they have become involved in more complex. This, tied to the desire to introduce more flexible production facilities has driven the need to use modern CAD/CAM tools to quickly and easily program robots offline.



Today Robots are being used for a far more diverse series of manufacturing processes that all require offline programming including:-

- Machining
- Trimming
- Welding
- Water Jet Cutting
- Inspection
- Scanning
- Adhesive Layering
- Many Others



PowerMILL is the leading, 2, 3, 4 & 5 Axis milling software on the market today. PowerMILL's robust and reliable machining strategies can be used to program a robot as effectively as they can be used to program a conventional milling machine. This allows the users to rapidly take the existing CAD files of the part and program the robot to machine the part, trim off the flash or complete the next part of the manufacturing process. Once the part has been programmed using any of PowerMILL's machining strategies the programs can be quickly simulated before set-up sheets and post process tool paths are produced to send to the robot.



In many of these applications Robots provide a significant cost / performance advantage over conventional milling machines and routers as the working envelope of robot is far larger than that of a similarly priced machine tool or router. The configuration of a robot also means that the robot can easily rotate to allow the machining of a number of similar or different parts arranged radially around the robot, making it possible to load and unload parts as the robot continues to work. Robots flexibility means that the same robot can be used to load and unload parts as well as machine, trim, weld, inspect, scan or glue a part.