ELECTRICAL, ELECTRONIC AND AUTOMATION

Course Title: 5 AXIS CNC MILLING — Course Code: MMF 136

Course Background / Summary:

Machining technology is progressing quickly, with advances in hard milling, high-speed machining, chip thinning, live tooling on lathes, and many more. Five-axis Machining centers form the latest in the series, providing infinite possibilities for the part sizes, shapes, and complex profiles that cannot be machined in a single setup. Its multidirectional approach to cutting tools ensures increased productivity, accuracy, rigidity, and improved surface finish. Five-axis machining will enable single setup machining of sophisticated design components having widespread applications in aerospace, die/mold, energy, and automotive sectors. This course is systematic training in 5-axis machining with hands-on practice to realize the benefits of machining multiple faces of the component in a single setup.

Designed for the CNC machining personnel with an operational understanding of a 3-axis CNC Milling and a working knowledge of 5-axis CNC milling. This class will include both theory and hands-on lab time. This is an advanced course, and attendees will need to have good programming knowledge and experience already and should have attended (or been up to the level of) our 3-Days Fanuc Milling Course. The course is ideal for anybody upgrading from a 3- or 4-axis machine to a 5-axis machine.

Course Objectives:

- Understand machining a component with 5-axis programming
- Effective manufacturing with a single setup
- Reduced error due to a smaller number of settings
- Carry out CNC machining in 5 axis machines

Target Audience:

- ·Machines Operators and Suppliers
- ·Teaching staff (including vocational and technical teachers)
- Industrial workers

Course Duration: 3 Days

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Course Contents

1.0 Introduction and general layout of a 5-axis machine

2.0 Operator, keyboard, and soft key explanations X-, Y-, Z- with A- and C- (B) rotary axis configuration

3.0 Setting datums and work shifts

4.0 Applying tool offsets and using radius offsets

5.0 Using G68.2 for 3D work coordinate rotation

6.0 Setting datums and work shift Tool Centre Point (TCP) explanation.

7.0 3-Dimensional cutter compensation

8.0 Plane selection for helical and 3D use

9.0 Using Sub Programs and Sub Routines - M98 and G65 Call

10.0 M code description and use

11.0 Setting ethernet or memory card for drip-feeding programs.

MANUFACTURING