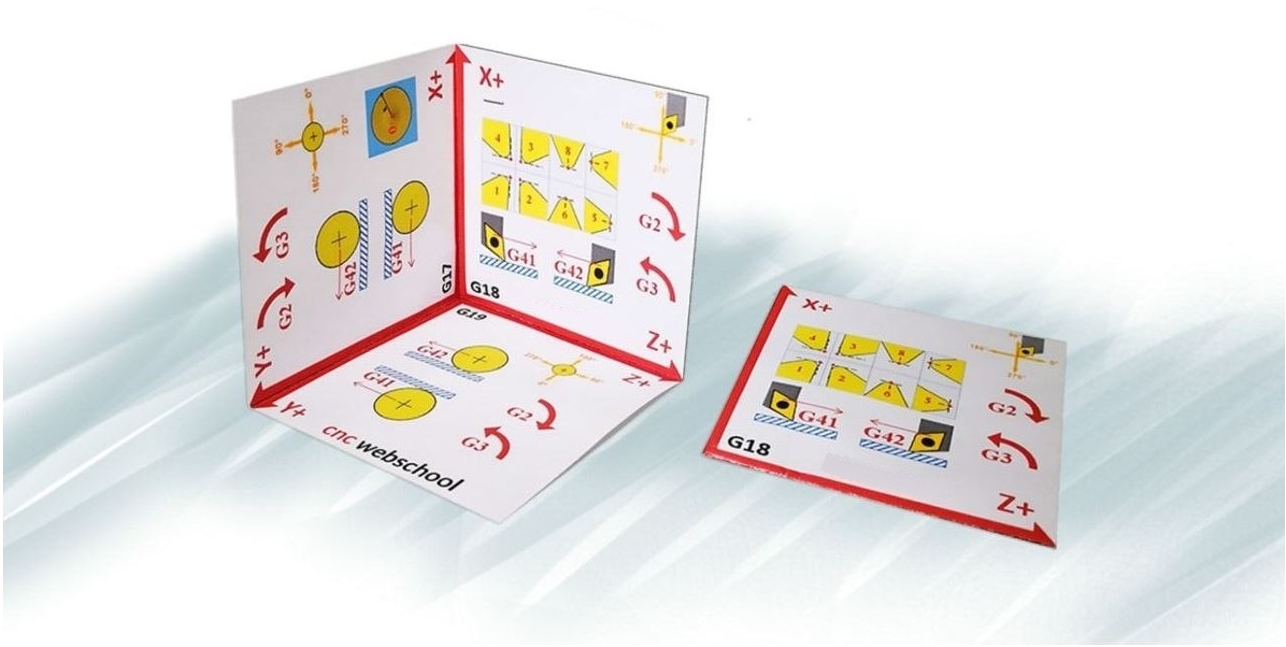
cnc webschool

knowledge to improve

Appendix 3: Programming

Pocket 3D Cartesian Coordinates System for CNC

Paper Size: A4



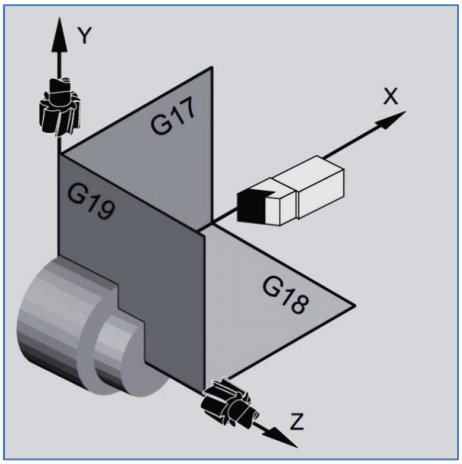
Contents

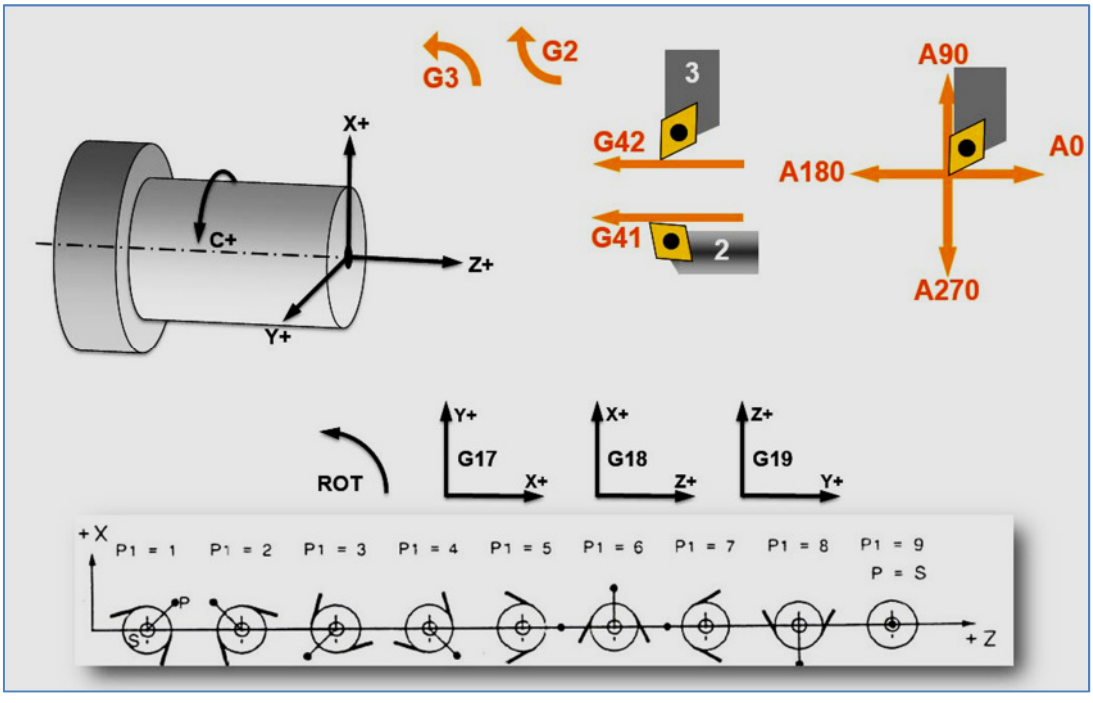
1 Introduction

The ISO Recommendation 841 defines the nomenclature and the positive movement directions of the axes to simplify programming and interchangeability of programs between different machines.
Machine tool manufacturers should always comply with this standard.

The programming scheme, already described during the course, is applied to the different work planes by placing the first axis of the plane on the abscissas (horizontal axis) and the second axis of the plane on the ordinates (vertical axis).
The first and second axes are indicated sequentially in the plan description (X-Y, Z-X, Y-Z).

G17 defines the X-Y work plane
G18 defines the Z-X work plane
G19 defines the Y-Z work plane





2 3D coordinate system to be cut out

Creates the 3D model programming scheme according to the positive directions of the axes present in the machine. Remember that the positive directions of the axes are referred to the tool that moves on the part.

The programming scheme helps you to choose the following parameters:
- clockwise and counter-clockwise directions of circular interpolations (G2, G3),
- determine the right and left position of the tool with respect to the workpiece and select the correct tool radius compensation function (G41, G42),
- identify the angle value in direct programming

Cut on the dotted lines and fold on the solid lines. **The printed part must remain on the inner sides of the cube.**