

Facing Methods

➡ Project 34-02-A:

This program is **incorrect**.

Explanation:

The tool nose radius offset has been turned on in block N3. When the tool moves away from point **C** to point **D**, in block N5, the 1 mm distance is not sufficient. The minimum motion distance must be **twice** the size of the tool nose radius, in this case, $2 \times 0.8 = 1.6$ mm. The control will issue an error condition that overcutting (gouging) will occur.

➡ Project 34-02-B:

This program is **correct**.

Explanation:

The error in 34-02-A has been corrected in block N5. The 3 mm tool motion is sufficient for all three common tool nose radius sizes (R0.4, R0.8, and R1.2).

➡ Project 34-02-C:

This program is **correct**.

Explanation:

There is no tool nose radius offset applied for the face cut, so the tool completes the face correctly, then uses the offset for the finishing toolpath only.

➡ Project 34-02-D:

This program is **incorrect**.

Explanation:

The facing cut takes place with tool nose radius offset in effect (block N3). The G41 means the tool has to be to the left of every motion, until the offset is changed or canceled. Which also means, the tool will be to the left of the motion to point **D**, and never reaches its intended target point **C**.

