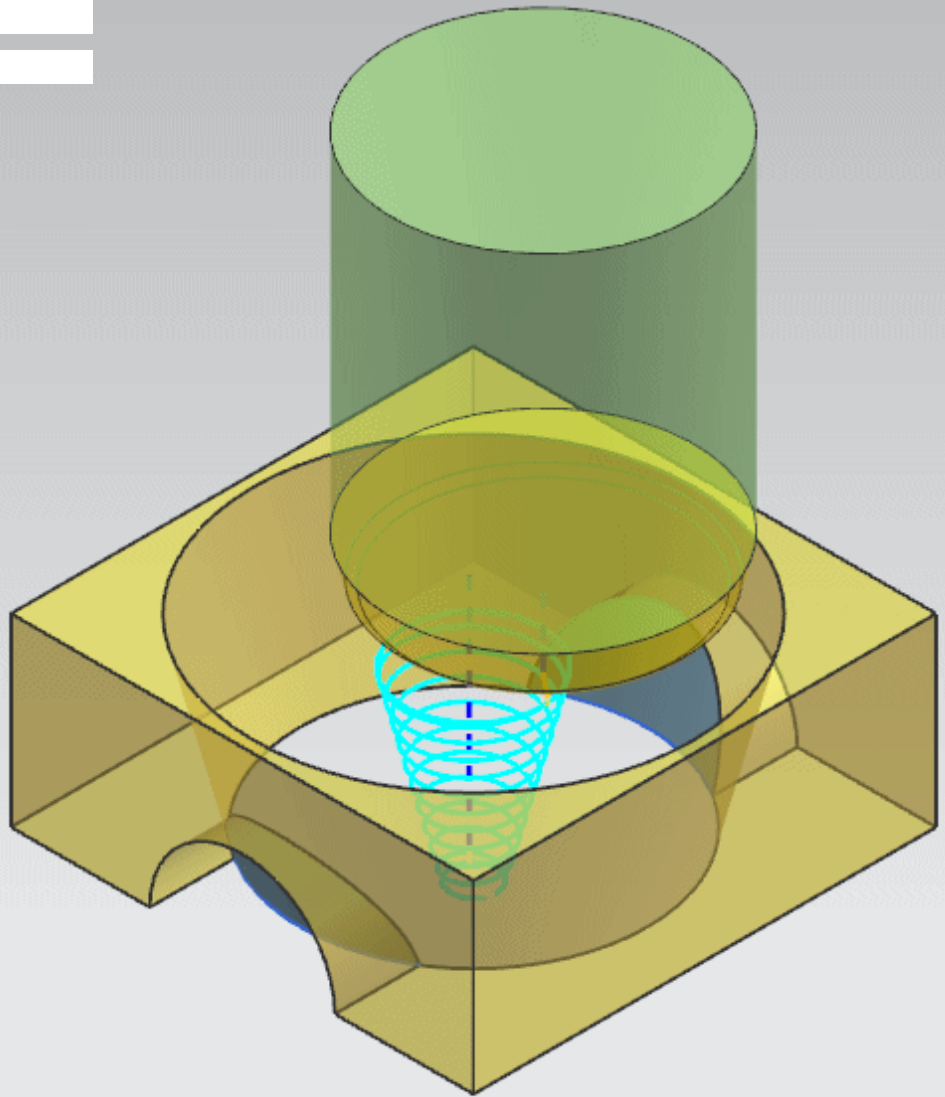


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NX CAM 10.0.3: Toward Drive Enhancement

Specifying Back Off Distance when using Toward Drive Projection Vector.

Answers for industry.

About NX CAM

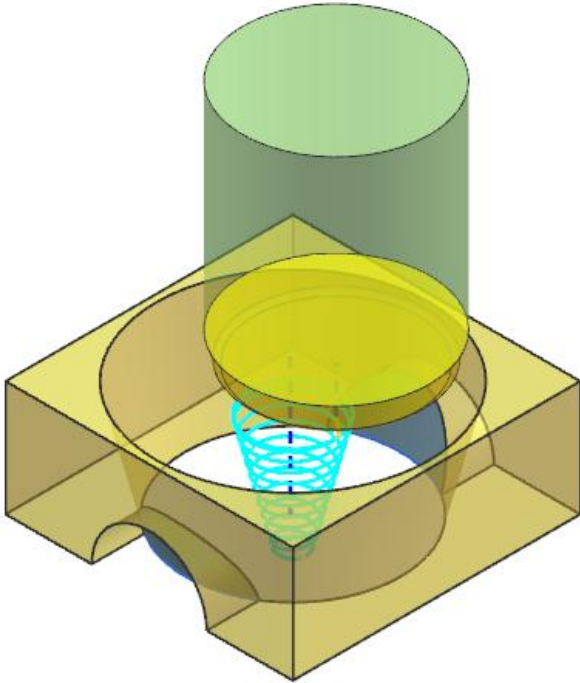
NX™ CAM software has helped many of the world's leading manufacturers and job shops produce better parts faster. You can also achieve similar benefits by making use of the unique advantages NX CAM offers.

This is one of many hands-on demonstrations designed to introduce you to the powerful capabilities in NX CAM 10.0.3. In order to run this demonstration, you will need access to NX CAM 10.0.3.

Visit the [NX Manufacturing Forum](#) to learn more, ask questions, and share comments about NX CAM.

Hands-on Demonstration: Toward Drive Enhancement

You can now control the Back Off Distance when using Toward Drive Projection Vector in fixed and variable axis milling operations. Previously, this value was hardcoded to 100% of the tool diameter, requiring you to sometimes use a smaller than desired tool to obtain a good tool path in a small space. By specifying a small Back Off Distance, you can now gain the desired machining efficiency and tool rigidity by using the largest possible tool to machine holes and slots.

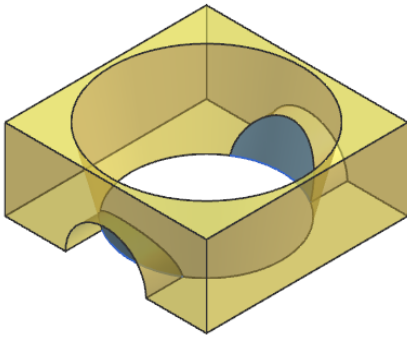


Prerequisites:



1. You will need access to **NX CAM 10.0.3** in order to run this demonstration.
2. If you haven't done so already, download and unzip **back_off_distance.7z**.

Demo:

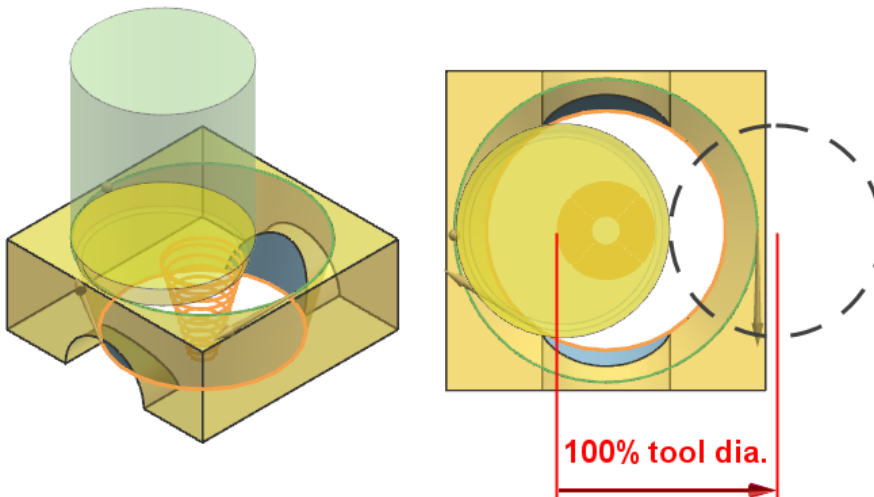
1. Open **back_off_distance.prt** in NX.




First, you will look at a common use case where the Back Off Distance needs to be decreased to accommodate as large a tool as possible in a hole or slot.

1. In the Operation Navigator, double-click **STREAMLINE_LEGACY** to edit the operation.
2. In the **Drive Method** section of the dialog box, click **Edit** .
3. In the **Preview** section of the dialog box, click **Display** .

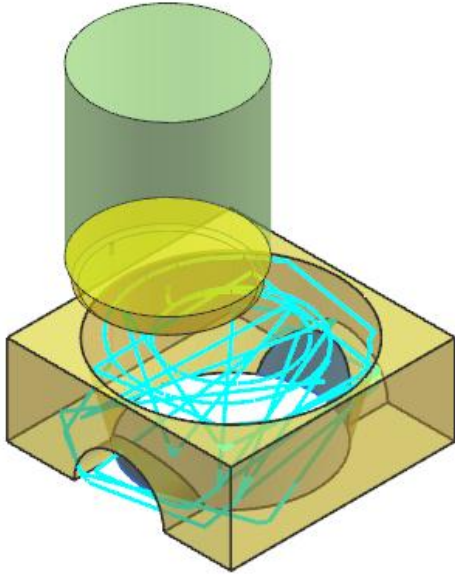
The points along the drive curves cannot be projected normal to the drive geometry using the hardcoded 100% tool diameter back off distance without causing the tool to collide with the opposite side of the hole.



4. Click **Cancel**.

5. Click **Verify** .
6. Select the **Replay** tab and click **Play** .

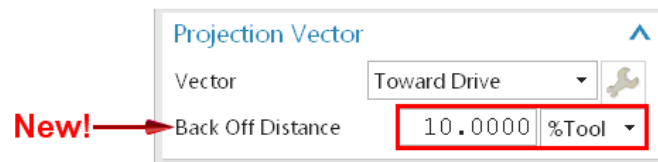
As a result, a bad tool path is created.



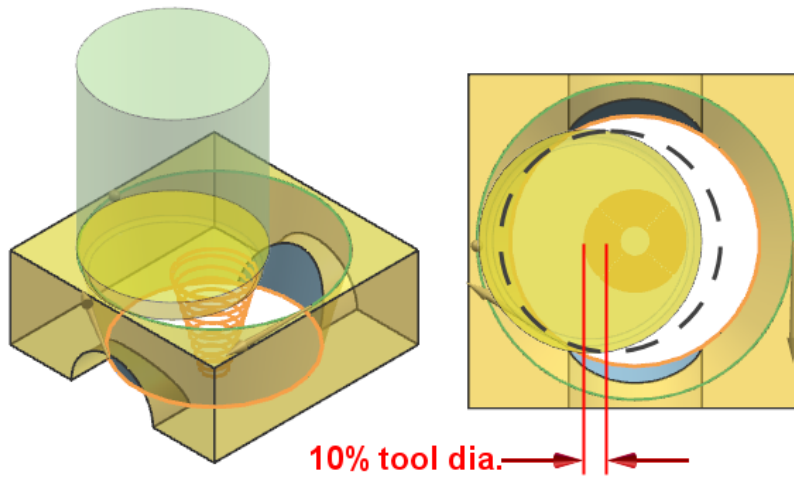
7. Click **OK**.

Now you will specify a smaller **Back Off Distance** and create a good tool path.

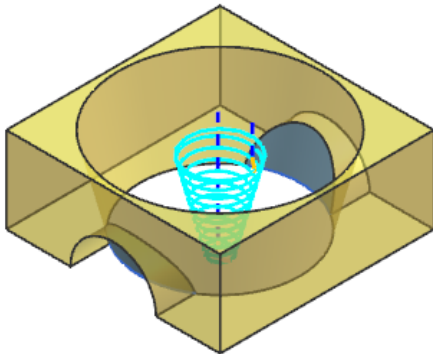
8. In the **Projection Vector** section of the dialog box, type **10.0000** (%Tool) in the **Back Off Distance** box and press the Enter key.



The points along the drive curves can now be projected normal to the drive geometry using the specified 10% tool diameter back off distance without causing the tool to collide with the opposite side of the hole.

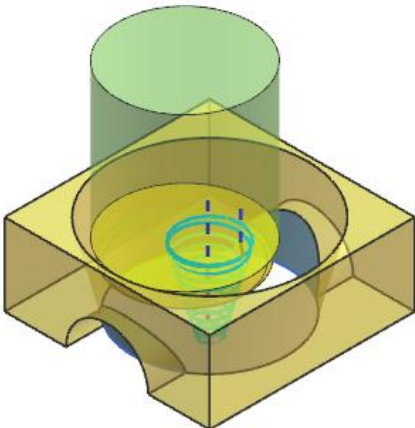


9. Click **Generate** .



10. Click **Verify** .

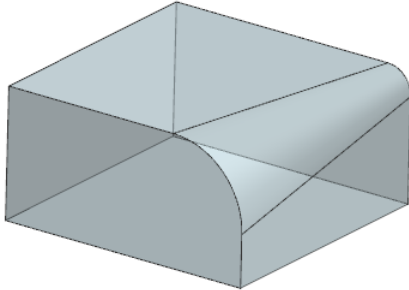
11. Set the **Animation Speed** to 7 and click **Play** .




12. Click **OK**.
13. Click **OK** in the operation dialog box.


Next, you will look at an example where the legacy operation requires the Back Off Distance to be increased.

14. Open **back_off_distance_1.prt** in NX.

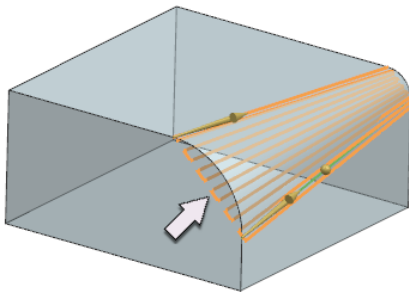


15. In the Operation Navigator, double-click **STREAMLINE_LEGACY** to edit the operation.

16. In the **Drive Method** section of the dialog box, click **Edit** .

17. In the **Preview** section of the dialog box, click **Display** .

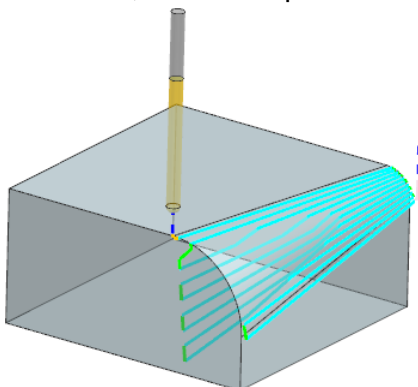
In this example, the drive part is too deep into the part at the large fillet radius end.



18. Click **Cancel**.

19. Click **Verify** .

As a result, a bad tool path is created.

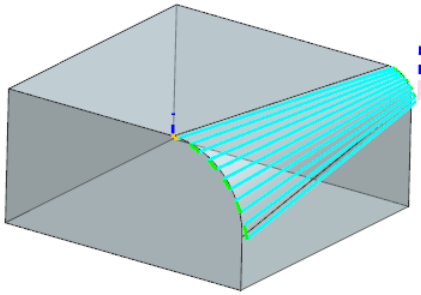


20. Click **Cancel**.

Now you will specify a larger **Back Off Distance** and create a good tool path.

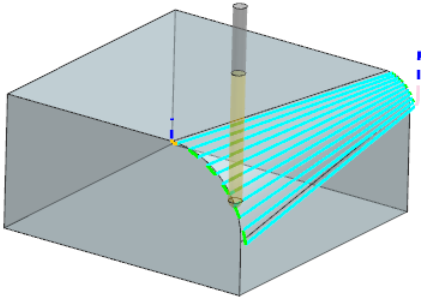
21. In the **Projection Vector** section of the dialog box, type **200.0000** (%Tool) in the **Back Off Distance** box and press the Enter key.

22. Click **Generate** .



23. Click **Verify** .

24. Click **Play** .



25. Click **OK**.

26. Click **OK** in the operation dialog box.

27. Close the parts without saving.

Siemens Industry Software

Headquarters

Granite Park One
5800 Granite Parkway
Suite 600
Plano, TX 75024
USA
+1 972 987 3000

Americas

Granite Park One
5800 Granite Parkway
Suite 600
Plano, TX 75024
USA
+1 314 264 8499

Europe

Stephenson House
Sir William Siemens Square
Frimley, Camberley
Surrey, GU16 8QD
+44 (0) 1276 413200

Asia-Pacific

Suites 4301-4302, 43/F
AIA Kowloon Tower, Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
+852 2230 3308

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03/15