



Spring Cohort 2015

# Pier 9 CNC Shop Introduction

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# CNC Overview



# CNC Overview

## Tools, Software, & How to Learn





# CNC Overview

## Tools, Software, & How to Learn How To Use It (Benefit)...



## CNC Overview

- Equipment
- 8,000
- 700
- Manufacturing Teams
- “Pier 9 University”



# CNC Overview

## Tools, Software, & How To Learn





# Haas CNC Mill

# CAM Software for Haas CNC Mill

- [cam.autodesk.com](http://cam.autodesk.com)
  - Inventor HSM Pro 2015
    - Download trial version & use codes to activate
    - Inventor Professional
  - Fusion 360 CAM
    - Cloud-based CAD/CAM software
  - Both great for beginners



# CAM Software for Haas CNC Mill

- Delcam

- FeatureCAM

- Powerful and widely used

- ArtCAM

- Engraving, signage, and coin making
    - Recent AiR Moon Carvings

- Download trials and see Tool Library Instructable for network license information.

# CAM Software for Haas CNC Mill

- Post-Processors
  - Copy from network drive – Folder 'CNC Data'

# How to Learn the Haas CNC Mill

- Step 1
  - Complete steps 1 – 12 in [Learn CNC The Hard Way Instructable](#)
  - Schedule time with Dan or Joey to review tool paths
- Step 2
  - Take Haas CNC mill
  - <http://vimeo.com/channels/shoptraining>
- Step 3
  - Cut example part



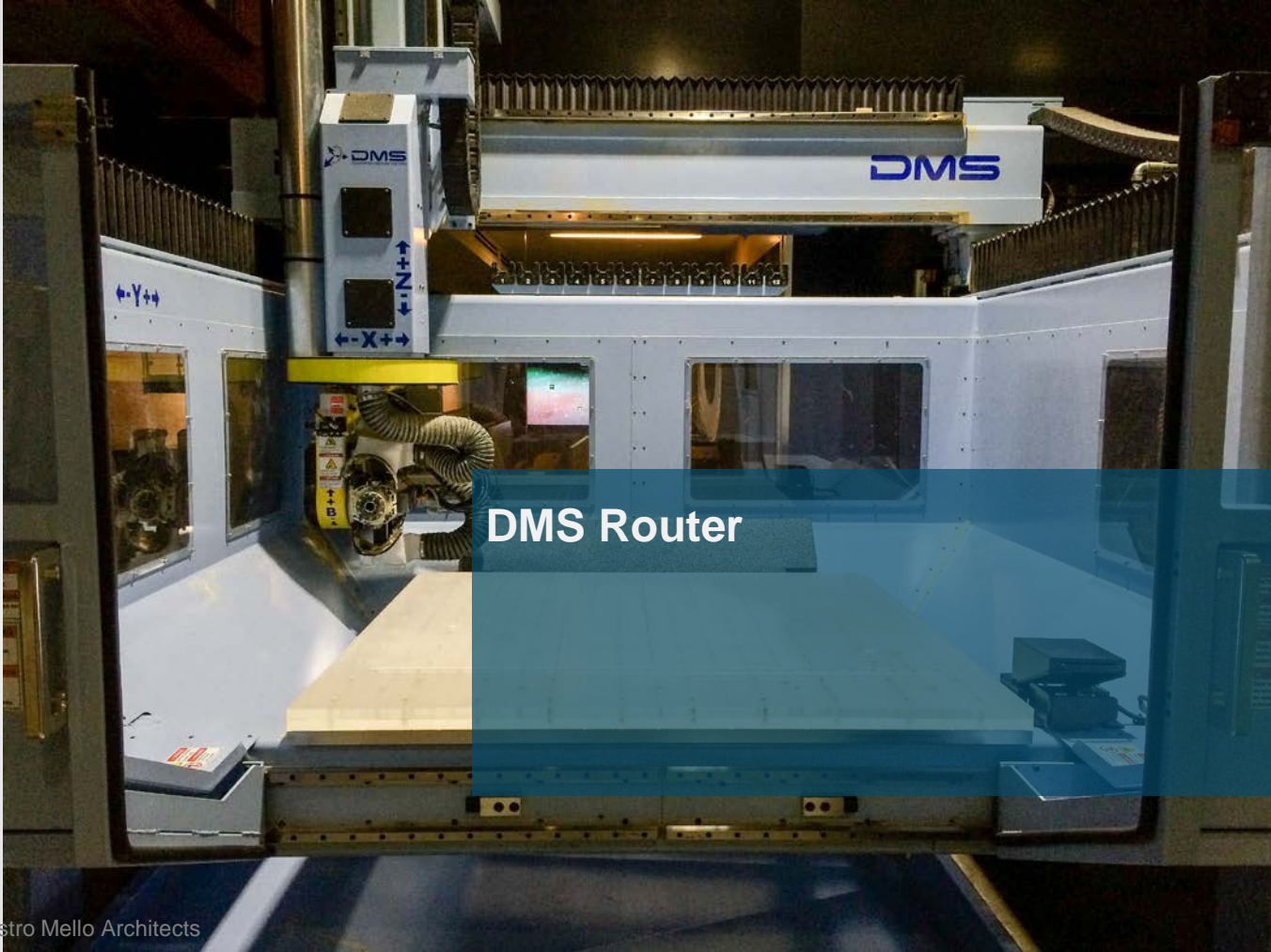
## Haas CNC Lathe

# CAM Software for Haas CNC Lathe

- [cam.autodesk.com](http://cam.autodesk.com)
  - HSM Works inside SolidWorks
    - CNC Laptops
- [Delcam](http://delcam.com)
  - FeatureCAM

# How to Learn the Haas CNC Lathe

- Step 1
  - [NextGenCAM.com](http://NextGenCAM.com)
    - HSM Works Turning
- Step 2
  - Take Haas CNC lathe course
- Step 3
  - Cut example part



## DMS Router

Image courtesy of Castro Mello Architects

# CAM Software for DMS Router

- [cam.autodesk.com](http://cam.autodesk.com)
  - Inventor HSM Pro 2015
    - Download trial version & use codes to activate
    - Inventor Professional
  - Fusion 360 CAM
    - Cloud-based CAD/CAM software
  - Both great for beginners



# CAM Software for DMS Router

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- FeatureCAM

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    - Recent AiR Moon Carvings

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# How to Learn the DMS Router

- Step 1
  - [NextGenCAM.com](http://NextGenCAM.com)
    - 3D tool paths
- Step 2
  - Take **ShopBot** class
- Step 3
  - Cut example part



# CNC Overview

## Tools, Software, & How to Learn How To Use It (Benefit)...



# How To Use It (Benefit)...

- Be prepared
  - Watch videos
  - Take notes
  - Take the class
  - Generate tool paths at your desk
  - Handout for CNC (**requirement**)
- Report broken tools – Dan, Joey, or Martin

# How To Use It (Benefit)...

- Distractions while CNC machining
  - What does that look like?
- Machine rapid speeds
  - 5% rapid at all times
- Get a lot of rest
- Enjoy the process & take your time

# Review



# What Is the CNC Shop...



**What Is the CNC Shop...**  
**What Are the Tools & Software...**





**What Is the CNC Shop...**  
**What Are the Tools & Software...**  
**How To Use It (Benefit)...**



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