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Fusion Manufacture

Talk shop with the Fusion (formerly Fusion 360) Manufacture Community. Share tool strategies, tips, get advice and solve problems together with the best minds in the industry.

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Edit a machine for the setup sheet. For configuration the Emco Concept mill 55

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F-D-A 1319 Views, 7 Replies
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11 30 2019 06:42 AM

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Edit a machine for the setup sheet. For configuration the Emco Concept mill 55



Hello, can someone explain to me how to configure Emco Concept mill 55 data step by step. Is it confusing for me?

Data Emco Concept mill 55:

https://www.emco-world.com/fileadmin/user_upload/CNC_milling_center_training_purposes_Concept_MILL_5...

Travel in X longitudinal 190 mm (7.48")

Travel in Y latitudinal 140 mm (5.51")

Travel in Z vertical 260 mm (10.24")

Effective Z-stroke 120 / *190 mm (4.7 / 7.5")

Distance spindle nose - table 77 – 337 mm (3.03 x 13.26")

Table

Clamping area (L x W) 420 x 125 mm (16.54 x 4.92")

Max. table load 10 kg

2 T-slots DIN 650 11 mm (0.43")

T-slot spacing 90 mm (3.54")

Milling spindle

Bearing type roller bearing

Tool change (Option)

No. of tool stations 8

Max. tool weight 1 kg

Max. tool diameter 40 / *60 mm (1.6 / 2.4")

Motion speed tool swivel arm 10 m/min (0.39 ipm)

Tool clamping automatic

Milling spindle drive

Motor power 3 phase asynchronous motor 0,75 kW

Speed range 150 – 3500 rpm

Max. torque 3.7 Nm (2.72 ft/lbs)

Speed with optional engraving spindle 14000 min-1

Feed drive

3 phase step motor in X / Y / Z axis 0,5 µm / 0,5 µm / 0,5 µm

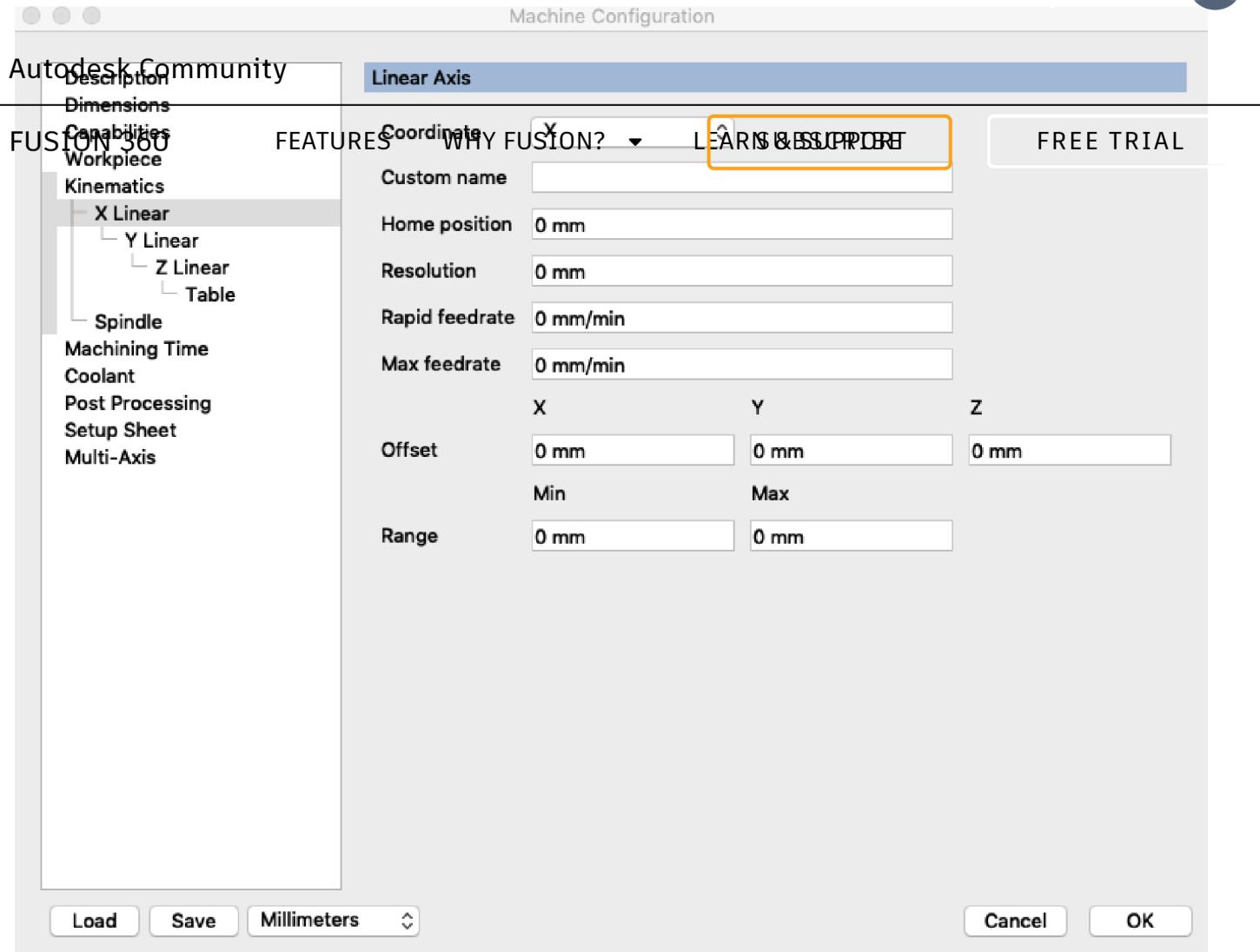
with resolution

Rapid motion speed and feed rate X / Y / Z 0 – 2 m / min (0 – 78.74 ipm)

Average positioning variation in 8 µm / 8 µm / 8 µm

VDI/DGQ 3441 in X / Y / Z

Feed power X / Y / Z [N]“ 800 / 800 / 1000



2) I have the solids of the clamp jaw and the table. How can I use it in setup? Can I add it to the configuration of my machine?



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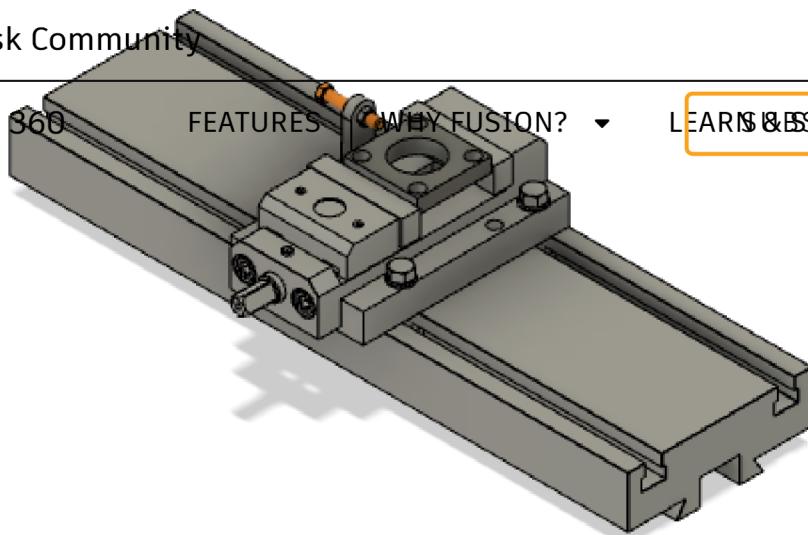
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3) How to configure the holders? To use the SK-30 cones in my tool store.

Library : [Untitled]

General Cutter Shaft Holder Feed & Speed Post Processor

Info

Description:
10mm Flat Endmill

Vendor:

Product ID:

Product Link:

Cancel OK



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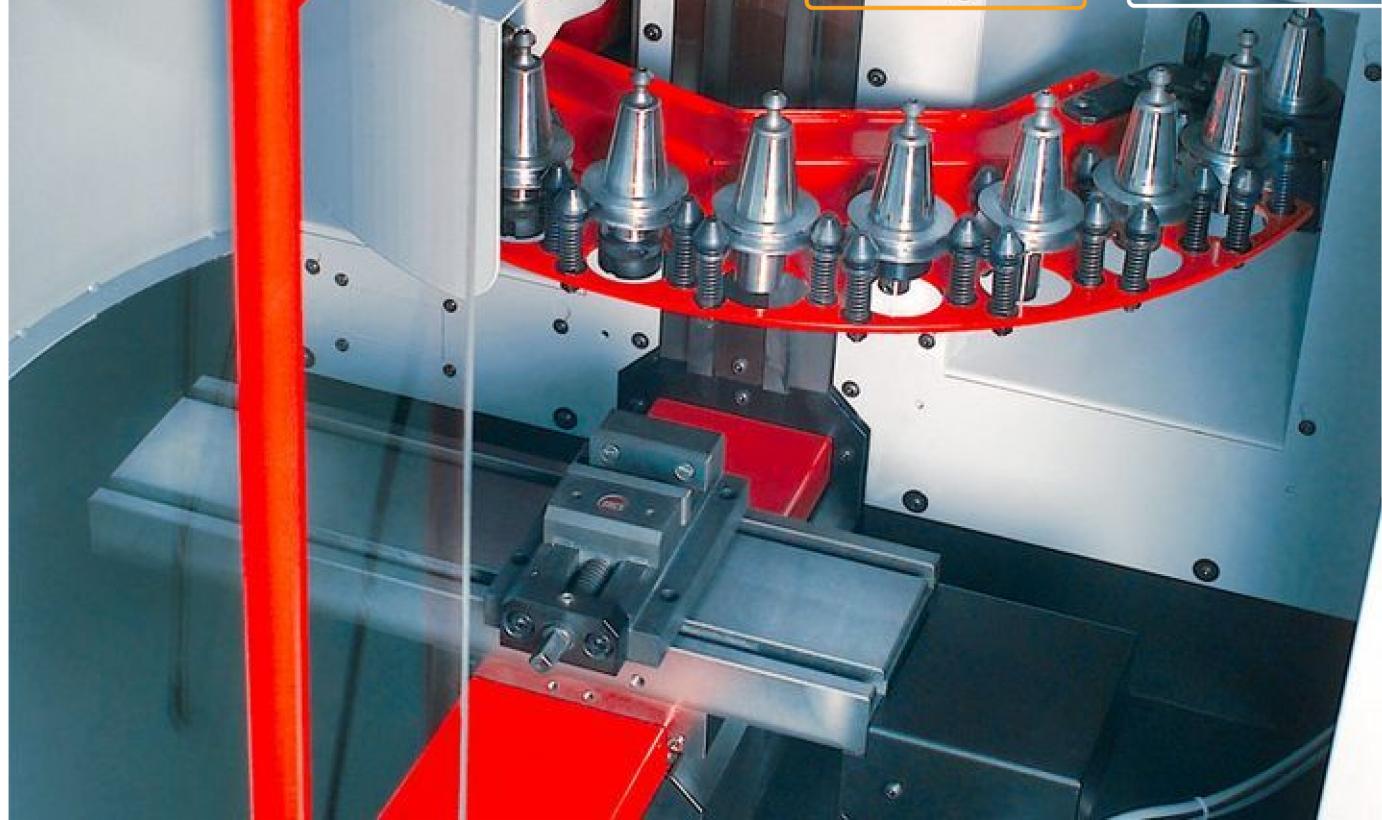
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7 REPLIES

Sort: OLDEST TO NEWEST

MESSAGE 2 OF 8

**All**

engineguy in reply to: F-D-A



11-30-2019 01:45 PM

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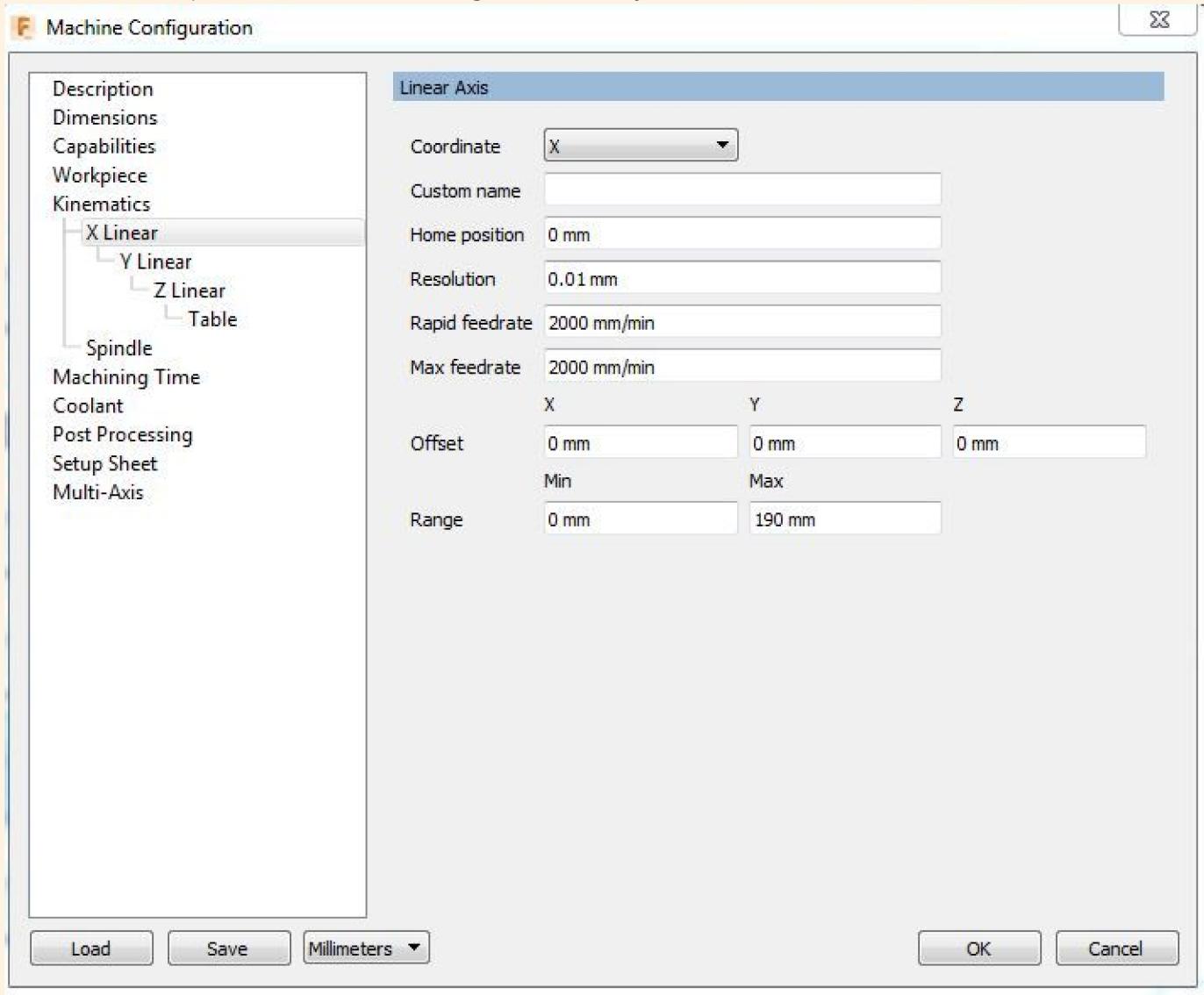
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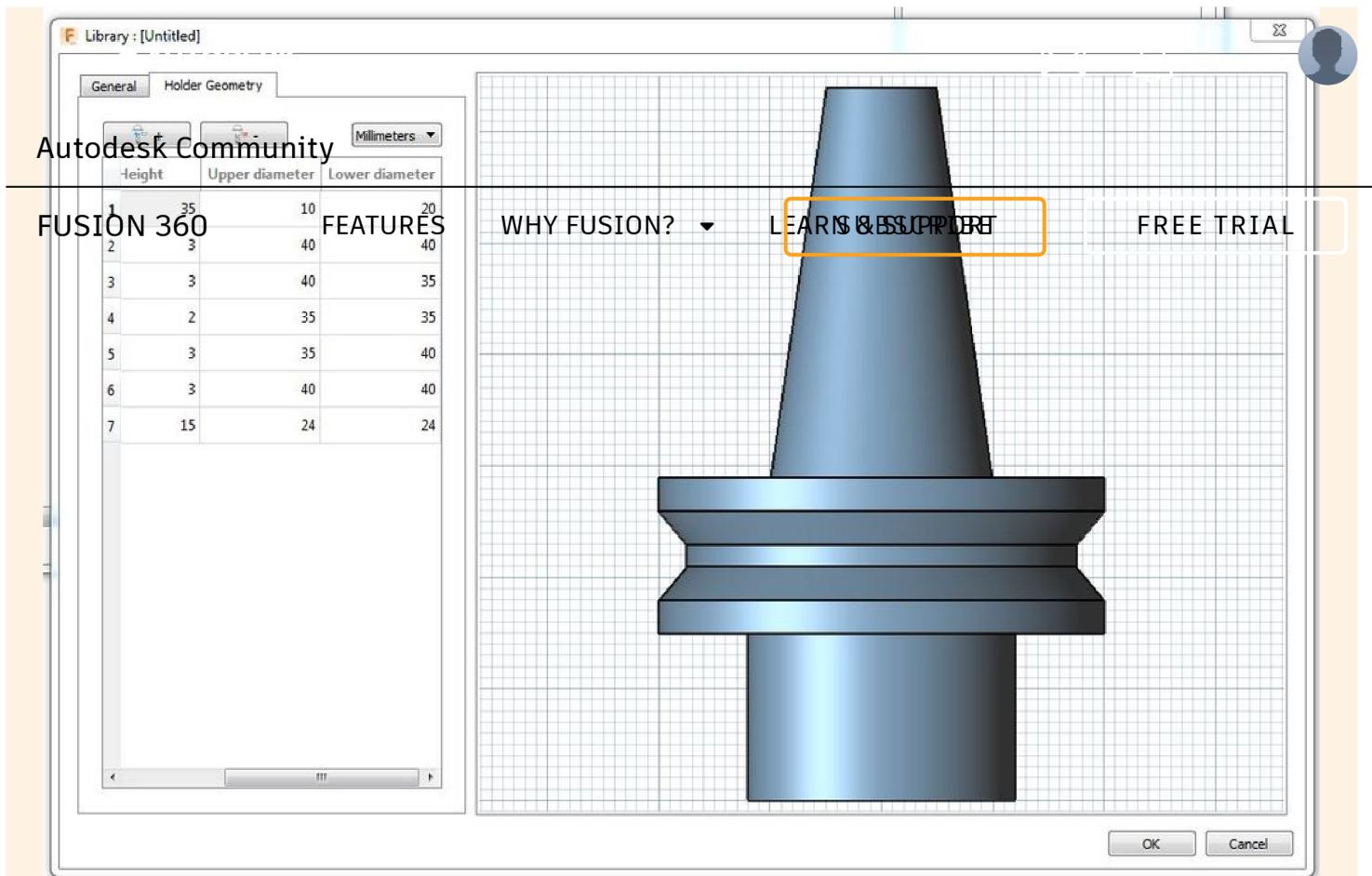
@ferminduaso

Hi, hope this helps you a little, a couple of images and a Screencast.
Here is an example of the Machine Configuration with your values entered.

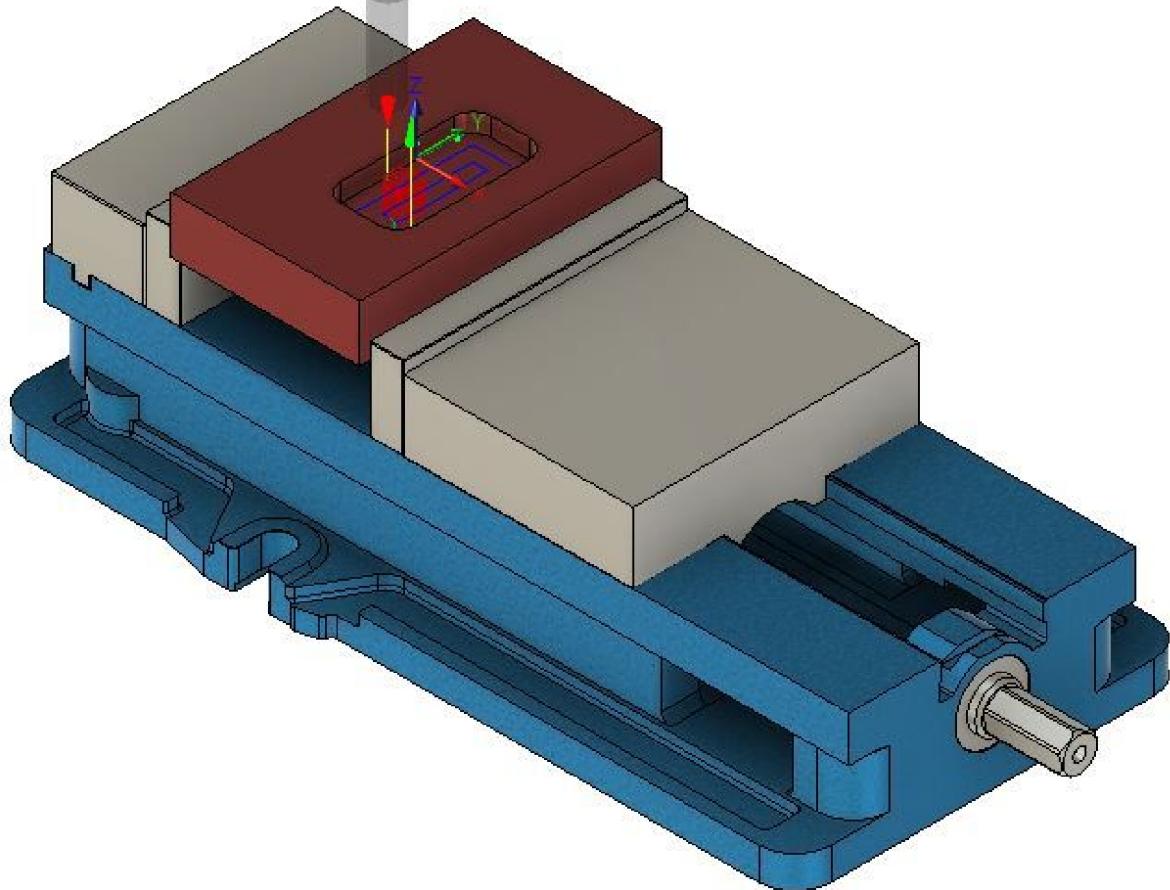


I will attach the .machine file for you in a Zip file.

Creating your tool holders requires some work, you need to go to your "Tool Library" and select + on the toolholder icon to add a toolholder, these you will build up using discs and cones, you don't need to do the 30 taper part of the tool holder as that will in real life be actually inside the spindle although there is no reason why not if you want to do it that way, you will need to have one of each type of holder that you possess, example an ER32mm Collet holder, or a 10mm sidelock (Weldon) type, you will need to actually measure each of them and create your holder as shown in the image below, from your image it looks like you already know where to go!



Next, your fixture, I see that you have already modeled your table and vise so that is a good start, when you create the model you want to machine it will need to match the coordinates of your Vise, look at the image below for how my sample setup looks.



When you do your setup you will select the "Relative Size Box" and no additional stock if that is actually the size of the material you are machining. you will have to use the "Move/Copy" facility to move your Vise jaws and your Model so that it fits properly in the jaws. See Screencast below 😊😊

Hope that is of some help to you, files attached below for you.

Regards
Rob



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CAM

MILLING

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FABRICATION

UTILITIES

Untitled

Simple Fixture Setup*(1)

100mm V

SETUP

2D

3D

DRILLING

MULTIAxis

ACTIONS

MANAGE

INSPECT

SELECT

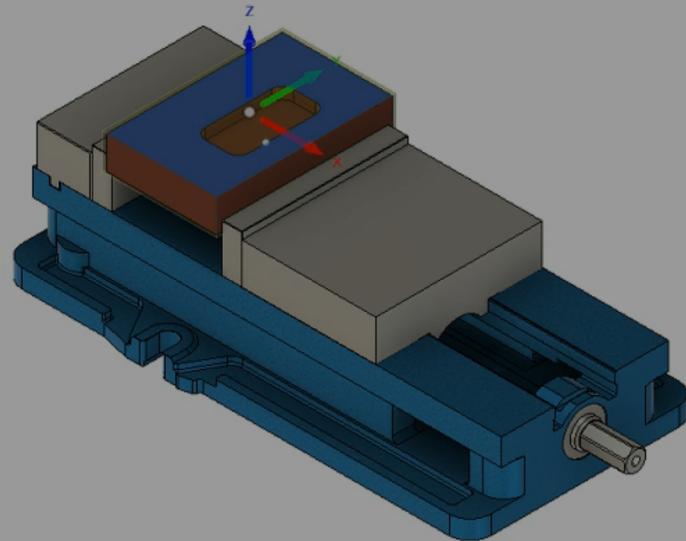
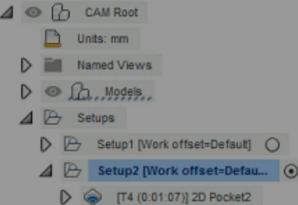
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F-D-A in reply to: engineguy

12-01-2019 06:18 AM



-> Description
*Description: Generic 3-axis
*Model: Emco Concept 55
*Vendor: EMCO
*CNC control: Sinumerik 840d

-> Description
*Depth: 0 mm
*Height: 0 mm
*Weight: 0 kg
*Width: 0 mm
-> Capacities
*milling= "yes"
*turning= "no"
*cutting= "no"
*Automatic tool Changer= "yes"
*Support tool preloader= "yes"
*Number of tool: 8
*Maximum feederete
*Maximum block processing speed

-> Workpiece X
*Maximum workpiece X:
*Maximum workpiece Y:
*Maximum workpiece Z:
*Weight capacity: 0 kg
-> Kinematics
->-> X Linear axis
*Coordinate= "X"
*Custom name=
*Home Position: 0 mm
*Resolution: 0
*Maximum Feedrate: 2mm/min

*Offset X: 0mm

*Offset Y: 0mm
*Offset Z: 0mm



*Range Min: 0 mm
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*Range Max: 0 mm

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->-> Y Linear axis
*Coordinate= "Y"
*Custom name=
*Home Position: 0 mm
*Resolution: 0
*Maximum Feedrate: 2mm/min

*Offset X: 0mm
*Offset Y: 0mm
*Offset Z: 0mm

*Range Min: 0 mm
*Range Max: 0 mm
->-> Z Linear axis
*Coordinate= "Z"
*Custom name=
*Home Position: 0 mm
*Resolution: 0
*Maximum Feedrate: 2mm/min

*Offset X: 0mm
*Offset Y: 0mm
*Offset Z: 0mm

*Range Min: 0 mm
*Range Max: 0 mm

->-> Table
*Manie Table on which to plane the parts

->-> Spindle
*Spindle type= Primary
*Orientation X: 0
*Orientation Y: 0
*Orientation Z: 1
*Spindle speed Min: 150
*Spindle speed Max: 3500

-> Machining time
Freedrate ratio (%): 100
Tool change time:

-> Coolant

> Post Processing
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Disabled= "no"

Flood= "no"
Mist= "no"

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Through Tool= "no"
Air= "yes"
Air Through Tool= "no"
Suction= "no"
Flood and Mist= "no"
Flood and Through= "no"

-> Setup Sheet
-> Multi-Axis

Emco Concept mill 55 - Vise and base Table v4.f3d

cone Emco v1.f3d

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MESSAGE 4 OF 8



10

ArjanDijk in reply to: engineguy

04-15-2020 05:03 AM

You can leave out the tool cone. It seems realistic, but is not. The relevant length is from the top holder flange to the bottom of the tool. Sometimes you can even compensate offset by this information in fusion and then its a good habit to not have the tool cone.

PS: I have the older version of this machine (PC mill55) running with WinCAM and Siemens. For now the machineconfig does not really help you apart from spindle speed. It could be useful to prevent overtravel what will have easily on this machine



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MESSAGE 5 OF 8



engineguy in reply to: ArjanDijk

04-15-2020 05:39 AM

@ArjanDijk

I have to disagree a liitle, yes, there is not a need for the full cone but the relevant length is from the "Guage" line and not the top of the flange, for example a BT30 and BT40 toolholder will have an extra 2mm above the top of the flange to the "Guage" line and the distance from there to the end of the tool is the correct length that the machine control needs to have input if the tool is not being measured by the machine control so to me it would be handy to have that small bit added to the toolholder, more realistic 😊😊

For example I used to have all my tools for the next job on a machine ready just to insert in the ATC and by using an external digital toolsetter to get all my tool lengths ready for the next job, job one ends, tools removed from ATC, next set of tools placed in ATC and tool lengths loaded, a few minutes at the machine and ready to go again 😊

Just an example, everyone should feel free to do it the way that is most comfortable for them 😊😊

RegardsRob

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MESSAGE 6 OF 8



ArjanDijk in reply to: engineguy

04-15-2020 05:44 AM

You are correct. You need the extra few mm. I didnt want to confuse more then nessecary 😊. The build in to configolders have that



Autodesk Community Inventor HSM and Fusion 360 CAM trainer and postprocessor builder in the Netherlands and Belgium.

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MESSAGE 7 OF 8



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bioffe01 in reply to: ArjanDijk

03-27-2022 09:32 AM

The order of axis is messed up in pc mill machine configuration. You should have Y first, than X, and Z separately. If not fixed it will create chaos at post-processing times.

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0 Likes

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MESSAGE 8 OF 8



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mw24396 in reply to: F-D-A

07-04-2023 12:49 PM

hey would you mind sharing the setup and 3d files? I have the same mill 😊

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