Ecoline - Disabling V axis To Swap Faulty Drive

How to disable the V axis on an Ecoline with Beckhoff control to utilise in place of a faulty drive

Difficulty **Hard** | Duration **10 minute(s)**

Contents

Introduction

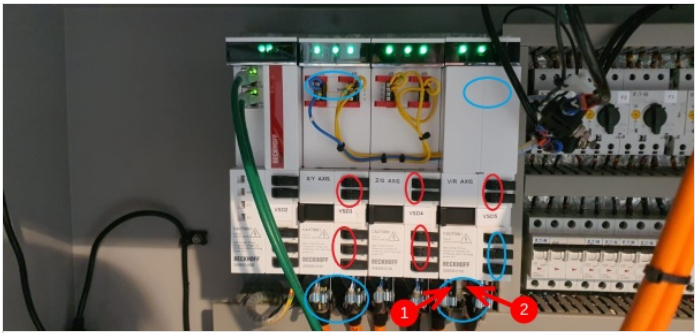
If a drive fails on an Ecoline, the V axis can be utilised to enable the Ecoline to still run as a machining centre, albeit with V notching now disabled. This is a better situation than no machining at all, as all factories have V notching capability in addition to an Ecoline

Step 1 - Physically move the V axis to a safe position

...The V axis needs to be clear of the gripper / x axis travel. This is the normal datum position

Step 2 - Physically move the motor connection

Remove the V axis motor cable (in this case cable 1)
Move the motor connection from the faulty axis to the V axis (in this case it is the R axis cable 2)

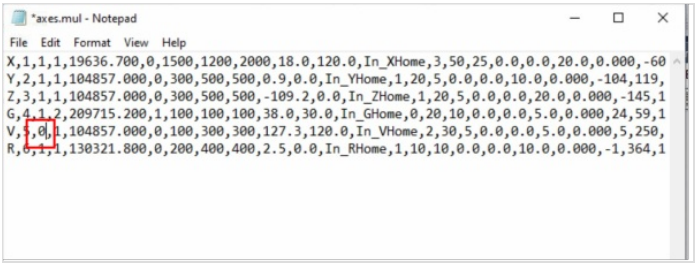


Step 3 - Backup the Original Project

Archiving a TwinCAT Project

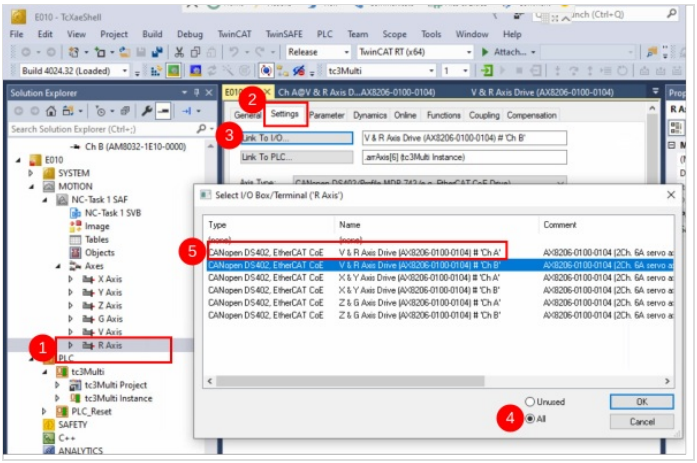
Step 4 - Take a copy of the axes.mul file

Take a copy of the axes.mul file first
Edit the second column next to V axis from 1 to 0

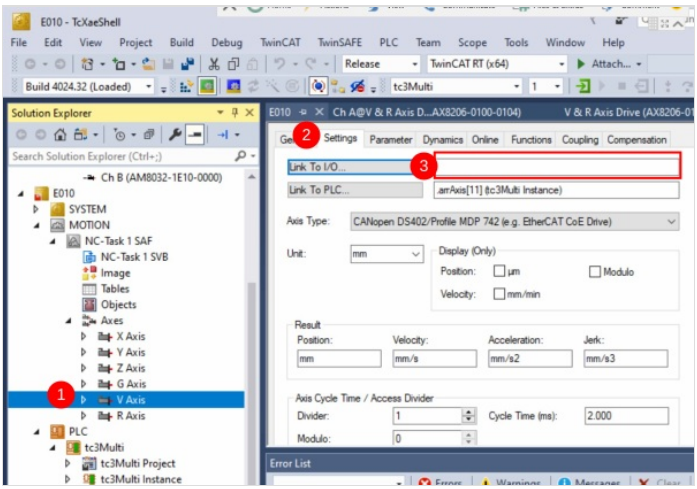


Step 5 - Remap the Faulty Axis to a Good Drive

1. Select faulty drive (in this case the R axis
2. Settings Tab
3. Link to IO
4. Select All, not just unused
5. Double click the Existing V axis (in this case Drive V&R Channel A)

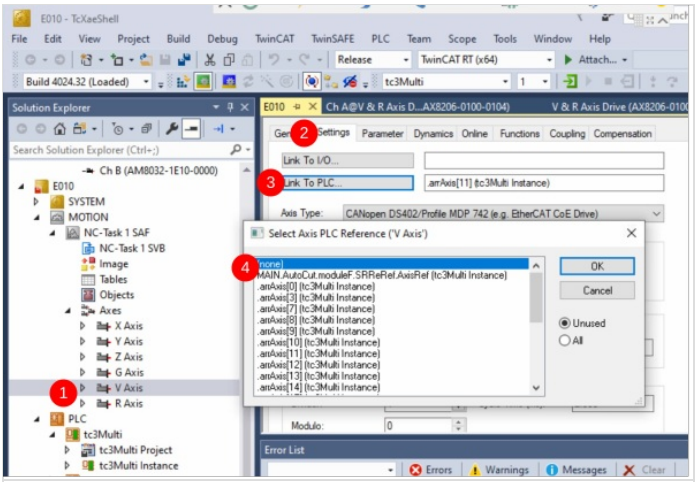


Step 6 - Check the V axis is now unmapped



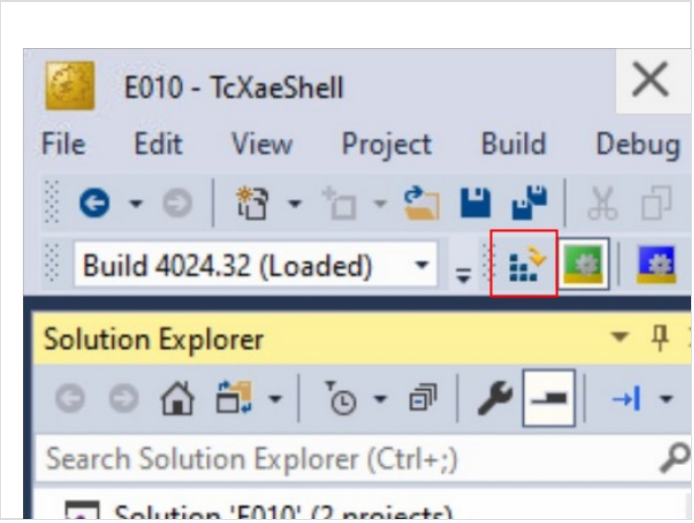
Step 7 - Unlink the V axis from the PLC

It is currently connected to axis 11
Map it to "none"



Step 8 - Activate configuration

Restart in Run Mode

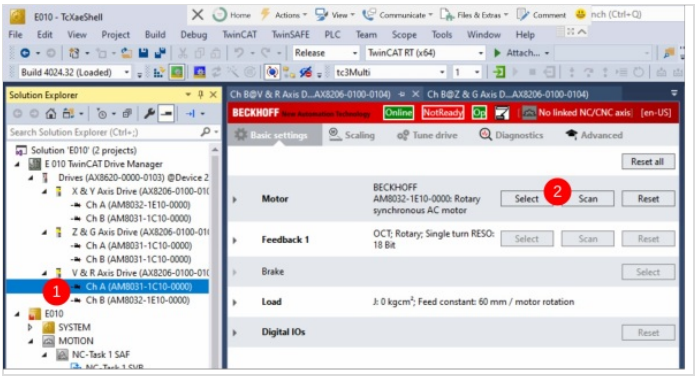


Step 9 - Rescan the motor on the axis

On Drive Manager, navigate to the V axis drive
Click Rescan Button

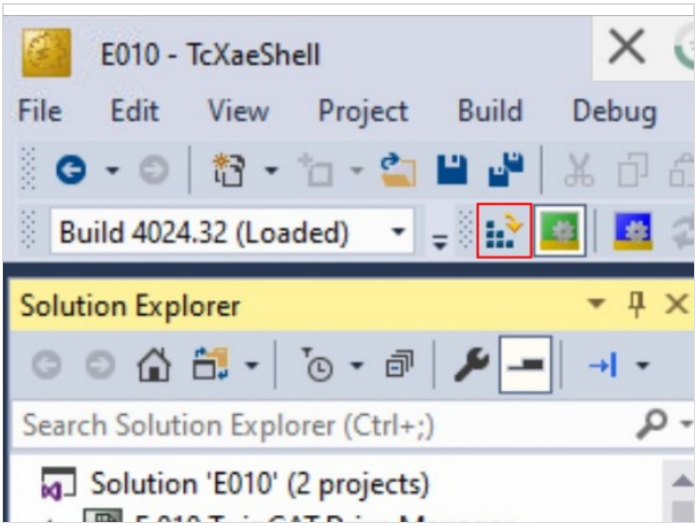
Repeat for the drive you have swapped it with

> ...This step ensures the drives do not throw an error because they detect the wrong motor type connected



Step 10 - Activate the configuration

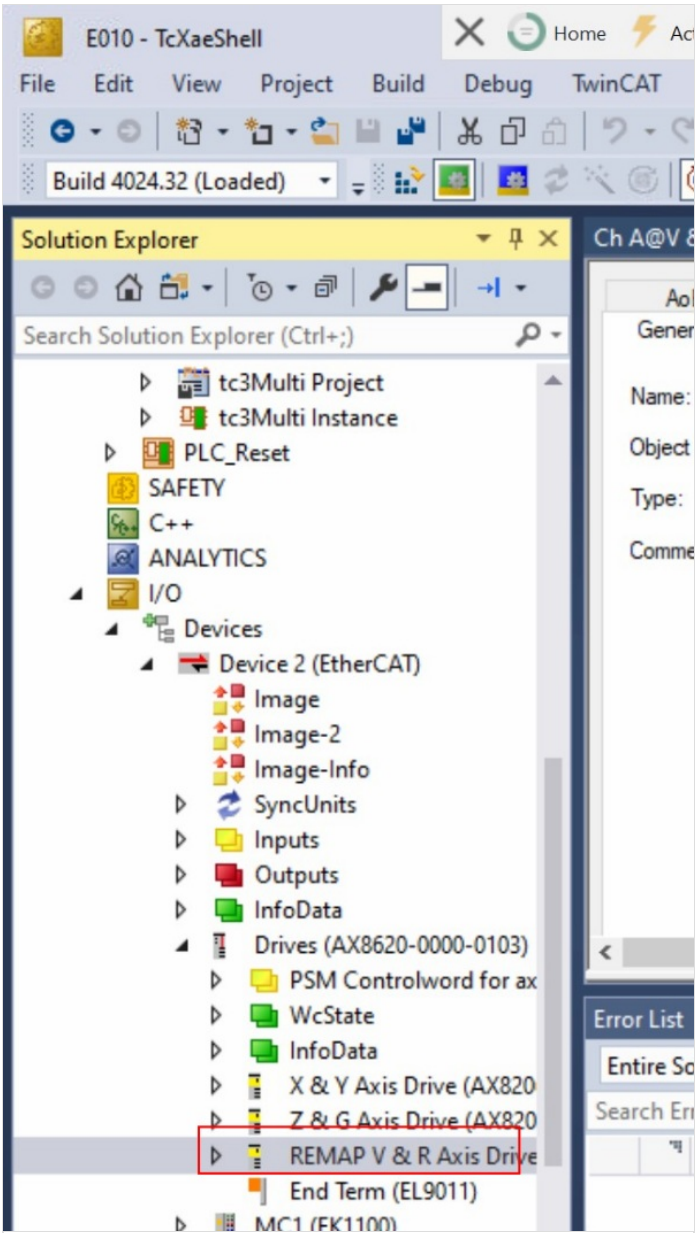
Restart in Run Mode



Step 11 - Rename the drive with a note

Add - REMAP on the end of the drive name

> ...This just adds as a reminder for when this whole process will need to be reversed when changing back again


E010 - TcXaeShell
Home
File
Edit
View
Project
Build
Debug
TwinCAT
Build 4024.32 (Loaded)
Solution Explorer
Search Solution Explorer (Ctrl+;)
tc3Multi Project
tc3Multi Instance
PLC_Reset
SAFETY
C++
ANALYTICS
I/O
Devices
Device 2 (EtherCAT)
Image
Image-2
Image-Info
SyncUnits
Inputs
Outputs
InfoData
Drives (AX8620-0000-0103)
PSM Controlword for ax
WcState
InfoData
X & Y Axis Drive (AX820
Z & G Axis Drive (AX820
REMAP V & R Axis Drive
End Term (EL9011)
Name:
Object
Type:
Error List
Entire So
Search Er

Step 12 - Click back to Drive Manager and enable the rename

When Drive Manager is activated, it will want to copy the name change over. Click Yes