

Hotline-Support KOSY/MCS

Category 1: Machining of workpiece Error: **Invalid movement *- axis**

Basics

After starting the machining program or during its operation the message „Invalid movement *-axis“ appears. It means that the program wants to go to a position outside the range of travel of the machine.

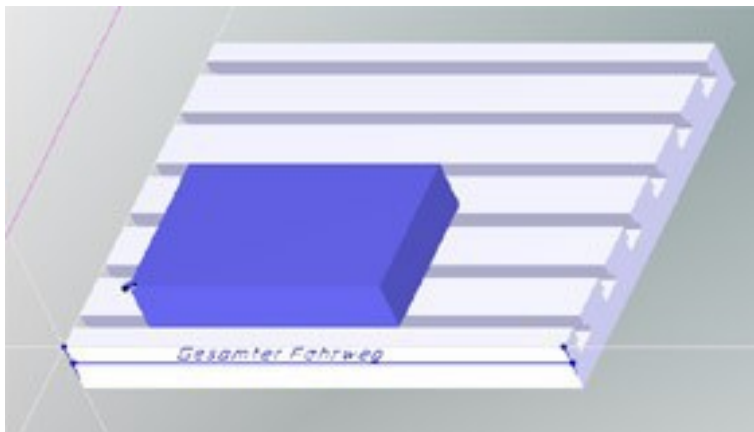
Possible causes of the error and its correction

1. Programming error

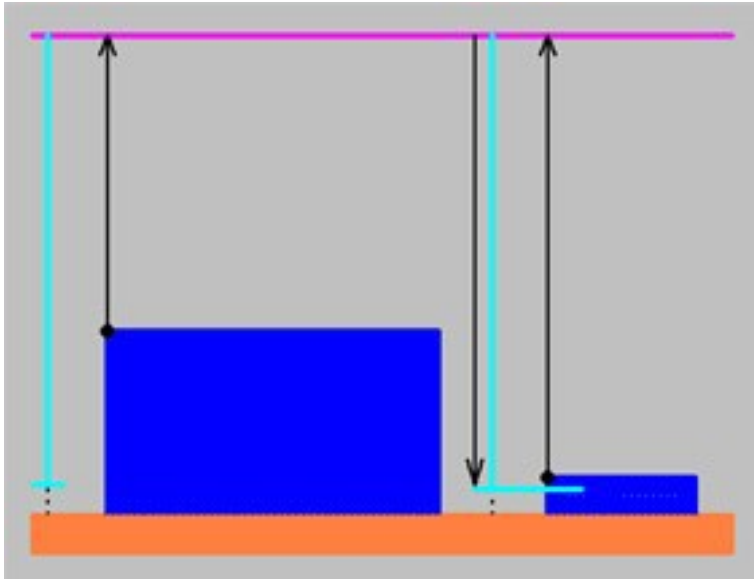
Most frequent cause: In the CNC-program or in the drawing a position is entered which the machine cannot reach, for example:



According to the drawing you want to go 250mm in X-axis, your machine, however, can go only 220mm. It becomes even more extreme, if the workpiece zeropoint (WZP) is set in position $x=30$ already and the whole range of travel is 220mm in X. In this case only 190mm are available for maximum travel in X from the WZP. The following picture shows it clearly.



It is even more significant in the Z-axis. See the following picture and a simple method for checking:



The total travel (cyan) is limited by the machine construction and the parameters, i.e. For example 100 mm. Take the following action, it doesn't matter if your workpiece is high or low:

1. Go to the WZP by manual control
2. Set the display to zero by CTRL+Z.
3. Make a reference run in Z (go to the top to the magenta line), by entering the CNC command G76 Z0
4. Read the Z-display.

Then:

High workpiece:

From the WZP you can go the maximum height as displayed in Z after the reference run. If your program contains a higher value for Z, the above error message appears. By the way, with CAD/CAM-programming the unclamping position has got a default value of 20mm, this may be too much with high workpieces, it may be that the Z-axis cannot go 20mm higher.

Low workpiece

From the WZP you can go into the workpiece only the difference between total travel and the value from the display after the reference run, e.g.: Total travel 100mm, display after reference run 90mm, maximum infeed 10mm. If your program contains a higher value for the infeed, the above error message appears.

This consideration helps also to know if you reach the surface of the Y-table. However, you can resort to another trick by clamping the tool less deeply – But attention, you still need a minimum of 10mm of the shaft.

2. Wrong parameters

The program has run well before, now comes this error message.

A modified parameter setting could be the reason. The parameters were influenced either by personal interventions or by new installation, they don't match the machine any longer.

Check the parameters:

1. Select the menu Parameters
2. Select machine or similar, depending on version
3. Edit parameters
4. Confirm the message telling you to be careful.

The following window appears:

KOSY - ACHTUNG !! Nur für Experten

Optionen | Werkzeugbehandlung | Drehen | Sicherheitseinstellungen
 Grundeinstellungen | Maschinendaten 1 | Maschinendaten 2 | U-Achse

Anschluß
 Serielle Schnittstelle : CDM 1

Formatwahl
 Standardformate Sonderformate

Standardformate
 X-/Y-Achse : 920 x 1280 (DIN A0)
 Z-Achse : 108 mm
 U-Achse : 360° (mm)

Sonderformate
 X-Achse (10 - 9000) : 880.00 [mm]
 Y-Achse (10 - 9000) : 1280.00 [mm]
 Z-Achse (10 - 9000) : 108.00 [mm]
 U-Achse (10 - 612000) : 360.00 [° [mm]]

Parameter A-/B-/N-/W-Achsen

Standardwerte

Betriebsarten

If you have marked standard formats, you must find and select your machine data for the X-/Y-axis from the pulldown-menu.

Otherwise select special formats and enter the travels for the axes. You will find these data either in your order, on the data sheet acc. to internet or from the following considerations:

After you have made a reference run, check the sphere of operation left on the guide rails of the axes. You can measure or estimate it. Enter a value that is a little bit smaller, because of the tolerance.