

How to configure Deviator application using NiLAB Starter

Parallel Motion window overview

Deviator application require that the pick and place push the product in the linear direction, then go vertical after pushing and then go back for successive deviation.

The positions can be programming using NiLAB Starter software in the Parallel motion window.

First step is activate the Dual axis mode (1) to have the online position of the 2 axis. The two axis must have subsequently nod id numbers, for example Motor 1 (Node ID = 1) and Motor 2 (Node ID = 2). When the Dual axis mode is active in the number field (2) and (3) are present the current positions of the two axis.

In order to load the current configuration you need to press the LOAD TARGET POS button (8) and to store the current configuration permanently you have to press the button STORE TARGET POS (9). The number fields (4) and (7) will be used to set the deviator rate in motion per minutes and the number of motion task (typically 4). In order to update the rate press the UPDATE RATE button (5).

The screenshot displays the 'Parallel Motion Configuration' window. At the top, there are tabs for 'Motion controller', 'Controller configuration', 'Scope', 'Motor parameter', 'Communication', 'Diagnostic', 'Expert', 'Parallel Motion', and 'Surveillance'. The main area is divided into several sections:

- Configuration Section:**
 - (1) **ACTIVATE DUAL AXIS MODE** (with a blue 'SET STEP 1' button)
 - MOTOR 1 POS: (2) mm
 - MOTOR 2 POS: (3) mm
 - Sequence rate: (4) pro minutes (with a blue 'SET STEP 2' button)
 - (5) **UPDATE RATE** button (with a blue 'SET STEP 3' button)
 - Single movement: (6) msec (with a blue 'SET STEP 4' button)
 - n. steps: (7) (with a blue 'SET STEP 5' button)
 - (8) **LOAD TARGET POS** button (with a blue 'SET STEP 6' button)
 - (9) **STORE TARGET POS** button (with a blue 'SET STEP 7' button)
- Warning Messages:**
 - (11)** This modes works only when the two axis are with subsequently nodeid
 - Update rate time and store are only possible when the two motors are disabled
- Step Configuration Table:**

ACTIVE STEP	TARGET M1 P	TARGET M2 P	(10) ACQUIRE STEP
<input checked="" type="checkbox"/>	60,000 mm	30,000 mm	ACQUIRE STEP 1
<input checked="" type="checkbox"/>	160,000 mm	130,000 mm	ACQUIRE STEP 2
<input checked="" type="checkbox"/>	130,000 mm	160,000 mm	ACQUIRE STEP 3
<input checked="" type="checkbox"/>	30,000 mm	60,000 mm	ACQUIRE STEP 4
<input type="checkbox"/>	180,000 mm	180,000 mm	ACQUIRE STEP 5
<input type="checkbox"/>	0,000 mm	0,000 mm	ACQUIRE STEP 6
<input type="checkbox"/>	0,000 mm	0,000 mm	ACQUIRE STEP 7
<input type="checkbox"/>	0,000 mm	0,000 mm	ACQUIRE STEP 8
<input type="checkbox"/>	0,000 mm	0,000 mm	ACQUIRE STEP 9
<input type="checkbox"/>	0,000 mm	0,000 mm	ACQUIRE STEP 10

How to acquire and store the motion points

Move the robot in the start position



Press button Acquire Step to capture the position of the two axis. If the number are with digits you can correct using the number field and press the SET STEP 1 to store.

Motion controller Controller configuration Scope Motor parameter Communication Diagnostic Expert Parallel Motion Surveillance

Parallel Motion Configuration

ACTIVATE DUAL AXIS MODE

MOTOR 1 POS: -57,940 mm

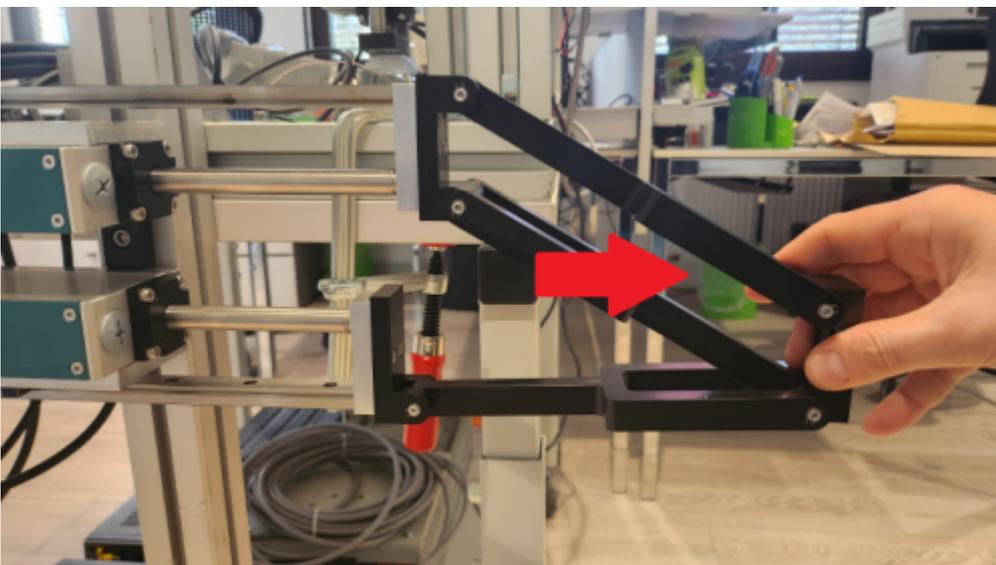
MOTOR 2 POS: -33,619 mm

Sequence rate: 50 pro minutes

UPDATE RATE

ACTIVE STEP	TARGET M1 P1	TARGET M2 P1	ACQUIRE STEP
<input type="checkbox"/>	60,000 mm	30,000 mm	ACQUIRE STEP 1
<input type="checkbox"/>	160,000 mm	130,000 mm	ACQUIRE STEP 2
<input type="checkbox"/>	130,000 mm	160,000 mm	ACQUIRE STEP 3
<input type="checkbox"/>	30,000 mm	60,000 mm	ACQUIRE STEP 4

Move the robot in the push position and store the second positions using ACQUIRE STEP 2 button.



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Parallel Motion Configuration

ACTIVATE DUAL AXIS MODE

MOTOR 1 POS: -57,940 mm

MOTOR 2 POS: -33,619 mm

Sequence rate: 50 pro minutes

UPDATE RATE

ACTIVE STEP	TARGET M1 P1	TARGET M2 P1	ACQUIRE STEP
<input type="checkbox"/>	60,000 mm	30,000 mm	ACQUIRE STEP 1
<input type="checkbox"/>	160,000 mm	130,000 mm	ACQUIRE STEP 2
<input type="checkbox"/>	130,000 mm	160,000 mm	ACQUIRE STEP 3
<input type="checkbox"/>	30,000 mm	60,000 mm	ACQUIRE STEP 4

Move the robot in the upper position and store the third positions using ACQUIRE STEP 3 button.



Move the robot in the starting position and store the fourth positions using ACQUIRE STEP 4 button.



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integrated_pick_and_place:deviator_application https://www.nilab.at/dokuwiki/doku.php?id=integrated_pick_and_place:deviator_application

Motion controller Controller configuration Scope Motor parameter Communication Diagnostic Expert Parallel Motion Surveillance

Parallel Motion Configuration

ACTIVATE DUAL AXIS MODE

MOTOR 1 POS: -57,940 mm
MOTOR 2 POS: -33,619 mm

Sequence rate: 50 pro minutes
UPDATE RATE

ACTIVE STEP	TARGET M1 P1	TARGET M2 P1	ACQUIRE STEP
<input type="checkbox"/>	60,000 mm	30,000 mm	ACQUIRE STEP 1
<input type="checkbox"/>	160,000 mm	130,000 mm	ACQUIRE STEP 2
<input type="checkbox"/>	130,000 mm	160,000 mm	ACQUIRE STEP 3
<input type="checkbox"/>	30,000 mm	60,000 mm	ACQUIRE STEP 4
	TARGET M1 P5	TARGET M2 P5	

Single movement n steps

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