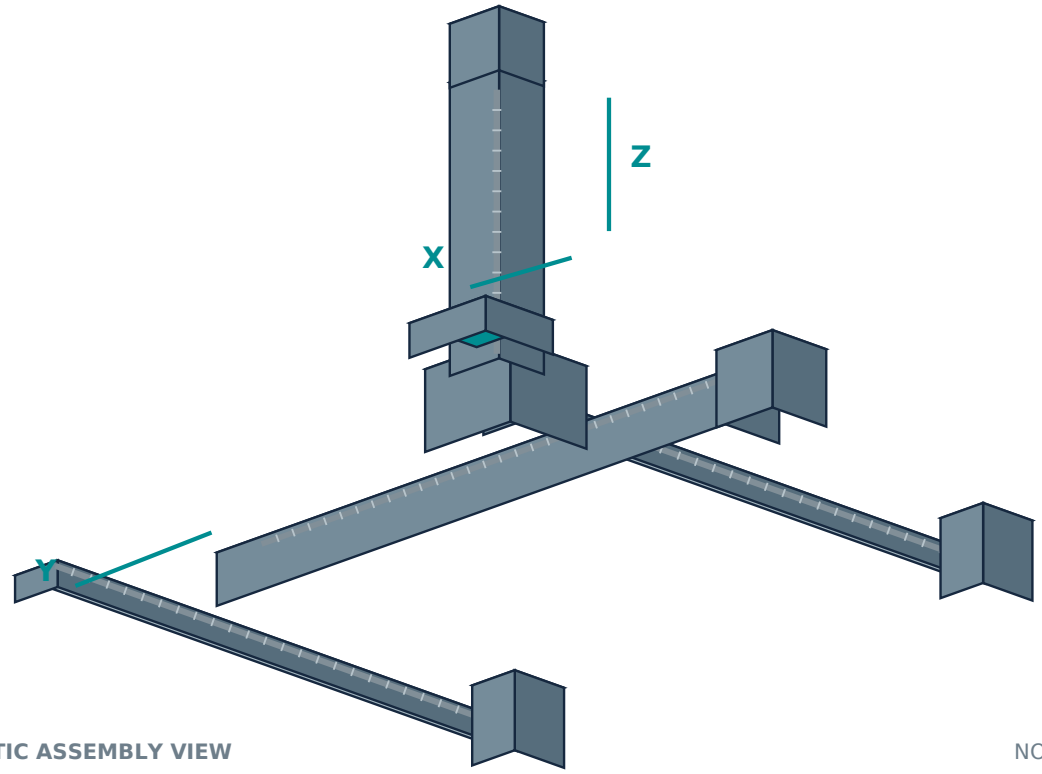
MOTION CONTROL

# FSK40 XYZ GANTRY

## BALL-SCREW LINEAR STAGE

**X = 100 mm | Y = 100 mm | Z = 50 mm**

NEMA 23 stepper-motor drive / modular 3-axis positioning




SCHEMATIC ASSEMBLY VIEW

NOT TO SCALE

| X AXIS / LISTED STROKE | Y AXIS / LISTED STROKE | Z AXIS / LISTED STROKE |
|---|---|---|
| 100 mm | 100 mm | 50 mm |

Four linear stages form a three-axis gantry: one X stage, two parallel Y stages and one Z stage. The listed configuration uses ball screws and NEMA 23 stepper motors.

**SPECIFICATION BASIS** Retailer-listed configuration; integrated system ratings require confirmation.

# System Specifications

Catalog configuration, component scope and declared limits

## Listed motion-system characteristics

| | |
|---|---|
| **Product / series** | FSK40 XYZ Gantry Linear Stage |
| **Axis layout** | 3 axes; 4 individual linear guide stages |
| **Listed stroke X / Y / Z** | 100 / 100 / 50 mm |
| **Selectable travel - X axis** | 100 to 1000 mm |
| **Selectable travel - Y axis** | 100 to 1000 mm |
| **Selectable travel - Z axis** | 50 to 500 mm |
| **Transmission** | Ball screw; G1605 or G1610 options |
| **Drive motor** | NEMA 23 stepper motor (frame designation) |
| **Positioning accuracy** | +/- 0.03 mm (seller-declared) |
| **Limit switch mounting** | Side M4 mounting location on each guide |

## Catalog kit composition

| ITEM | QTY | DESCRIPTION |
|---|---|---|
| Linear guide stages | **4 pcs** | X: 1 / Y: 2 / Z: 1 |
| Limit switches | **6 pcs** | Wiring and arrangement to be checked |
| Connection panel kit | **1 set** | Mounting and axis connection hardware |
| Cable drag chain | **Included** | For guided cable routing |

**CONFIGURATION NOTE**

The sales listing does not establish the complete motor electrical rating, assembled gantry load limit, total envelope dimensions or supplied controller/driver set.

# Axis & Drive Reference

Nominal travel selection and motion conversion information

## Stroke selection

**X AXIS**

**100 mm**

Selectable: 100 - 1000 mm

**Y AXIS**

**100 mm**

Selectable: 100 - 1000 mm

**Z AXIS**

**50 mm**

Selectable: 50 - 500 mm

## Ball-screw transmission options

### G1605

Nominal lead:

**5 mm / revolution**



### G1610

Nominal lead:

**10 mm / revolution**



## Travel resolution - illustrative calculation

**Linear movement / full step = screw lead / motor full steps per revolution**

If a 1.8-degree motor is used (200 full steps / revolution):

G1605: 5 / 200 = 0.025 mm per full step

G1610: 10 / 200 = 0.050 mm per full step

Examples only; not a positioning-accuracy or repeatability claim.

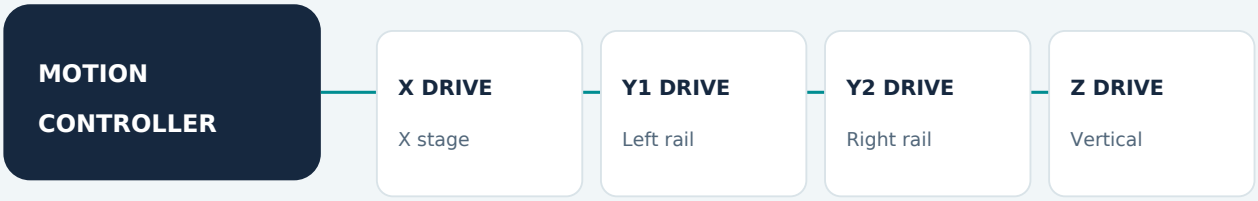
## Values requiring assembly-specific confirmation

- Overall XYZ assembly dimensions, rail reference lengths and mounting-hole coordinates
- Permissible Z-axis payload, XY moving mass and allowable moment loads
- Loaded speed, acceleration, motor torque, holding/parking behavior and backlash
- Axis orthogonality, gantry alignment and assembled positioning repeatability

# Integration & Commissioning

Practical interface guidance for the four-stage XYZ assembly

## Control arrangement - conceptual




Independent X, Y1, Y2 and Z drive channels are a conceptual architecture. Verify the actual number of supplied motors, drivers and the intended Y-gantry synchronization method.

## Essential commissioning checks

- Verify the as-delivered screw lead, each motor nameplate and controller I/O before wiring.
- Set a consistent home direction for X, Y and Z; confirm every installed limit switch.
- Square both Y rails mechanically; verify coordinated movement before mounting the X beam.
- Use a guarded homing procedure for dual Y, with fault handling for skew or missed steps.
- Support the Z axis against unintended descent when motor torque or power is lost.
- Begin at reduced speed and acceleration; test full travel for cable clearance and collisions.

**ENGINEERING LIMITATION**

The +/- 0.03 mm positioning figure is a listed specification, not a verified integrated XYZ-system tolerance. Electrical wiring, payload, overall dimensions, speed and mechanical clearances must be confirmed for the purchased configuration before commissioning.

**APPLICATIONS**

Positioning, inspection, dispensing, engraving and other automated motion tasks, subject to verified payload, rigidity and process-force limits.