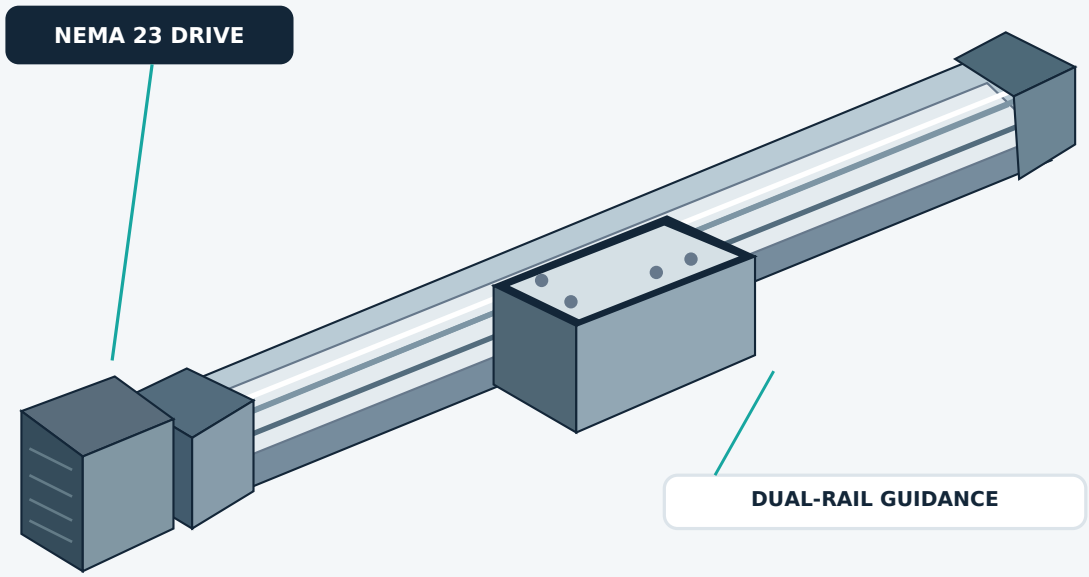
FPB45

Belt-Driven Linear Motion Stage

Dual-guide linear actuator for long-stroke horizontal automation, supplied in a NEMA 23 stepper-motor configuration with a synchronous belt transmission.

45 mm	15 kg	3.5 m	80 mm
PROFILE WIDTH	HORIZONTAL LOAD*	MAX. STROKE	BELT TRAVEL / REV.



Conceptual illustration - not a manufacturing or installation drawing.

SYSTEM DESCRIPTION

The FPB45 uses a continuous toothed belt and a supported moving carriage on a compact aluminum profile. Its layout is intended for transfer, positioning, material handling and multi-axis gantry assemblies. Motor position and stroke are selected for each order.

Typical uses

CNC support axes, conveying, inspection fixtures, dispensing, pick-and-place and laboratory automation.

Configuration boundary

Published limits depend on the drive, motor, load, acceleration and mounting orientation. Confirm the selected build before design freeze.

* Maximum published horizontal payload is a rating, not a simultaneous full-speed guarantee.

TECHNICAL SPECIFICATIONS

Published configuration data

PARAMETER	FPB45 SPECIFICATION
Drive and guidance	Synchronous belt, dual-rail carriage
Main profile width	45 mm
Standard effective stroke	100-2000 mm
Extended / maximum stroke	Up to 3500 mm; confirm order
Published positioning accuracy	±0.05 mm
Belt travel per revolution	80 mm
Max. horizontal payload	15 kg (configuration dependent)
Retailer advertised max. speed	1400 mm/s (not full-load rated)
Default motor format	NEMA 23 stepper motor
Alternative motor option	400 W AC servo (configuration option)
Nominal module length	L = S + 250 mm
Stepper electrical specifications	Motor-specific; confirm before wiring

MOTION UNDER LOAD

Selection guide

The following stepper-motor values are published as horizontal reference speeds for selected loads. They are not acceleration profiles or guaranteed cycle-time figures.

HORIZONTAL PAYLOAD	STEPPER REFERENCE SPEED	INTERPRETATION
5 kg	1000 mm/s	Catalog reference
10 kg	800 mm/s	Catalog reference
15 kg	Not specified	Verify by testing / supplier

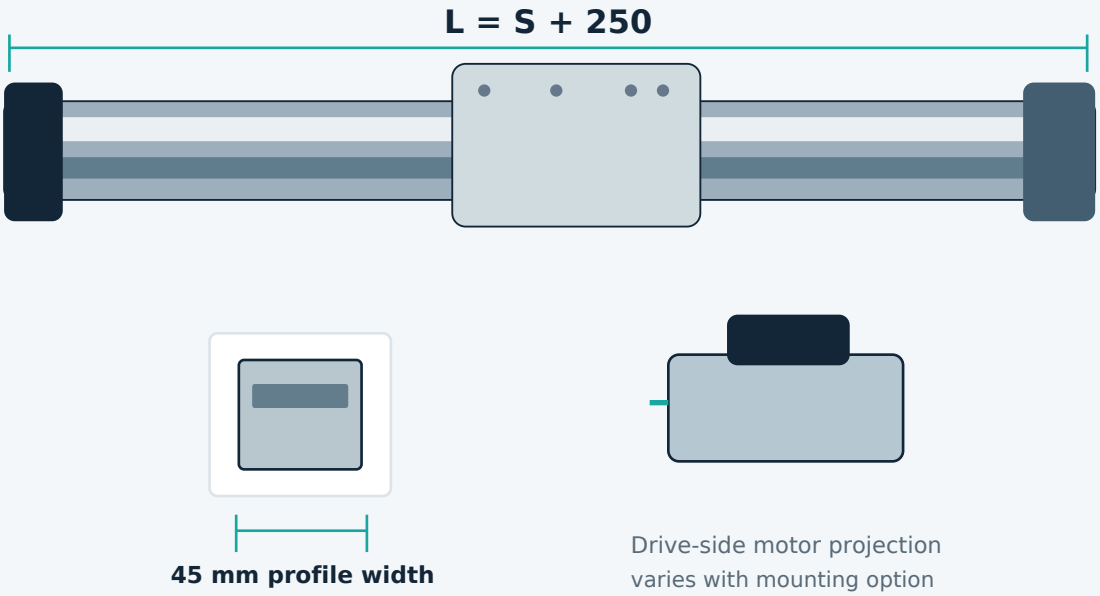
IMPORTANT PERFORMANCE DISTINCTION

Maximum unloaded speed, horizontal payload rating and servo-drive figures must not be combined into a single operating point. For vertical axes, separately size holding/braking and falling-load protection.

DIMENSIONAL REFERENCE

All dimensions in mm

SIDE VIEW / MODULE LENGTH



S = selected working stroke. L denotes the module length along the linear axis.

LENGTH BY STROKE

Based on L = S + 250 mm

EFFECTIVE STROKE S	MODULE LENGTH L
100 mm	350 mm
300 mm	550 mm
500 mm	750 mm
700 mm	950 mm
1000 mm	1250 mm
1500 mm	1750 mm
2000 mm	2250 mm
2500 mm*	2750 mm
3500 mm*	3750 mm

* Stroke lengths above the standard 2000 mm range require order confirmation. The module dimension does not include side-mounted motor clearance, power cable bend radius or fastener access.

Schematic only. Obtain the exact CAD/dimension drawing for hole pattern and collision checks.

MOTOR & CONTROL INTEGRATION

The standard NEMA 23 interface defines a motor frame format, not its winding, holding torque, current, pinout or driver voltage. Confirm the actual motor nameplate and matching driver before commissioning.

Motor and controller

Select a compatible current-controlled stepper driver. Verify phase wiring, pulse/direction logic, supply voltage and grounding.

Feedback and homing

Set travel limits and a repeatable home routine. Limit sensors, encoder, controller, power supply and cable chain are order-dependent.

MECHANICAL INSTALLATION CHECKLIST

01

Support the full stage length

Use a flat, rigid, aligned mounting surface; do not introduce rail twist.

02

Check moving clearances

Allow room for the carriage, motor, cables and load over the entire stroke.

03

Size the drive for the duty cycle

Account for payload, acceleration, friction, reflected inertia and travel speed.

04

Protect end-of-travel

Implement homing, soft limits and independent protective stops where needed.

05

Validate the loaded motion

Test repeatability, belt tracking, motor temperature and missed-step risk.

APPLICATION NOTE

For personnel-accessible equipment and vertical installations, provide appropriate guarding, braking and independent safety controls. This document does not replace a drawing or machine safety assessment.