# Competitor Cross-Reference Tool

The **NILAB Competitor Cross-Reference Tool** is an interactive web application designed to help engineers and system designers quickly find the most suitable NILAB linear motor as a direct alternative to products from **LinMot** and **Dunkermotoren**.

## What the Tool Does

Starting from a competitor motor model — or from a manually entered rated force value — the tool identifies the best-matching NILAB motors from the **NL**, **GD**, and **GDI** product families. The matching algorithm is based on continuous rated force (Fr), which is the primary selection criterion for linear direct-drive motors in servo applications.

For each suggested alternative, the tool provides:

| Item |
|---|
| **Electrical performance data** — rated force Fr [N], peak force Fp [N], and force constant Kf [N/A] |
| **Mechanical dimensions** — stator length Lm [mm], rod/slider diameter [mm], and flange dimensions [mm × mm] |
| **Dimensional comparison** — a scaled SVG diagram showing the flange footprint of the competitor motor overlaid with the NILAB alternative, allowing an immediate visual assessment of the installation envelope difference |
| **Delta table** — numerical differences in flange width, flange height, and stator length between the competitor and the NILAB motor |
| **Direct link** to the NILAB interactive datasheet for detailed electrical and thermal characterisation |

## Competitor Coverage

== LinMot ==
The tool covers the complete LinMot **P01 and P10 series** (PS01-23, PS01-37, PS01-48, PS10-54, PS10-70). An important note for LinMot comparisons: the flange dimensions shown for LinMot motors refer to the **PF01 aluminum T-slot extrusion profile**, which is the actual installation footprint required in the machine frame — not the motor body diameter. This makes the dimensional advantage of NILAB motors immediately visible.

== Dunkermotoren ==
The tool covers the **ST11, ST25, ST38, and XT38 ServoTube series**, including both standard and high-force variants.

## NILAB Product Families

| Family | Slider Ø | Fr range | Flange | Notes |
|---|---|---|---|---|
| **NL** (Miniature) | 4 / 8 / 12 mm | 0.6 – 39 N | 15×34 → 35×63 mm (rectangular) | Compact design for precision applications; external servo drive required |

| Family | Slider Ø | Fr range | Flange | Notes |
|---|---|---|---|---|
| **GD** (Green Drive Standard) | 16 / 25 / 35 mm | 13 – 269 N | 66×66 → 88×88 mm (square) | High-dynamics tubular motor; external servo drive required |
| **GDI** (Green Drive ISO 15552) | 25 / 35 mm | 50 – 259 N | 70×70 mm (square) | ISO 15552 standard flange — direct drop-in replacement for pneumatic cylinders; no adapter required |

# How to Use the Tool

| Item |
|---|
| Select the competitor brand (**LinMot** or **Dunkermotoren**) |
| Choose a specific model from the dropdown list, or enter a rated force value manually |
| Optionally filter the NILAB family (NL / GD / GDI / ALL) |
| Review the suggested alternatives — the **best match** is highlighted at the top |
| For each alternative, examine the flange footprint diagram and the Δ table to assess mechanical compatibility |
| Follow the **→ Datasheet** link for full electrical characterisation including force-velocity curves and thermal derating |

# Access the Tool

The tool is available at the following address: https://www.ni-lab.online/new_websmart/crossref.php

No login or registration is required. The tool runs entirely in the browser.

# Notes on Data Sources

NILAB motor data (Fr, Fp, Kf, Lm, flange dimensions) is sourced directly from the NILAB engineering database and this DokuWiki. Competitor data is sourced from publicly available datasheets and catalogues (LinMot catalogue Ed.16; Dunkermotoren public product datasheets). All data was verified as of May 2026. For the most up-to-date competitor specifications, always refer to the respective manufacturer's official documentation.

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