TECNOTION®
THE LINEAR MOTOR COMPANY

APPLICATION EXAMPLES

4. In-line coupled coil units on single track

Two coil units, mechanically in-line, powered by one servo amplifier.

Advantages: Higher force without increasing coil width. Cost efficient for applications with long tracks.

Disadvantages: Only possible when using aligned motors with identical K-factor.

How to simulate: Like the single moving coil, but with the "moving mass" and "friction force" parameters divided in half, due to the use of two coil units.

5. Gantry / Portal

Three coil units, one of which is stacked on top of the others.

Advantage: Stable construction along entire movement range.

Disadvantage: Multiple coil units to control makes concept more costly and complex.

How to simulate: Top axis like the single moving coil, bottom axis as a moving coil with the "moving mass" and "friction force" parameters divided in half.

6. Crosstable

Two stacked moving coil units.

Advantages: Cost effective way to facilitate XY-positioning.

Disadvantage: Becomes increasingly unbalanced as the upper coil unit moves farther away from the center.

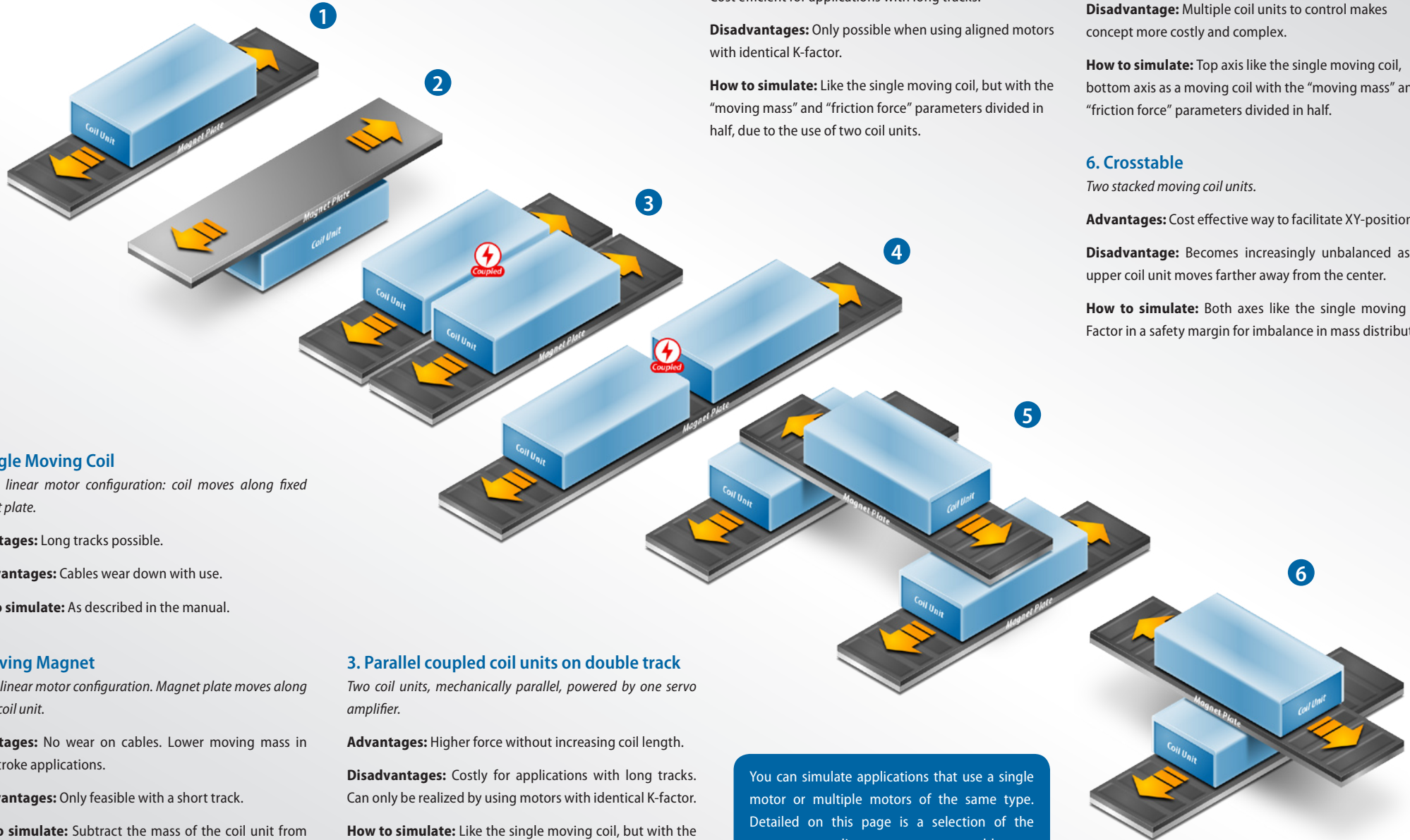**How to simulate:** Both axes like the single moving coil. Factor in a safety margin for imbalance in mass distribution.

1. Single Moving Coil

Default linear motor configuration: coil moves along fixed magnet plate.

Advantages: Long tracks possible.

Disadvantages: Cables wear down with use.

How to simulate: As described in the manual.

2. Moving Magnet

Inverse linear motor configuration. Magnet plate moves along a fixed coil unit.

Advantages: No wear on cables. Lower moving mass in short stroke applications.

Disadvantages: Only feasible with a short track.

How to simulate: Subtract the mass of the coil unit from the "moving mass" parameter and add the total mass of the magnet plates.

3. Parallel coupled coil units on double track

Two coil units, mechanically parallel, powered by one servo amplifier.

Advantages: Higher force without increasing coil length.

Disadvantages: Costly for applications with long tracks. Can only be realized by using motors with identical K-factor.

How to simulate: Like the single moving coil, but with the "moving mass" and "friction force" parameters divided in half, due to the use of two coil units.

You can simulate applications that use a single motor or multiple motors of the same type. Detailed on this page is a selection of the most common linear motor setups and how to simulate them.