

Coupling of iron core motors

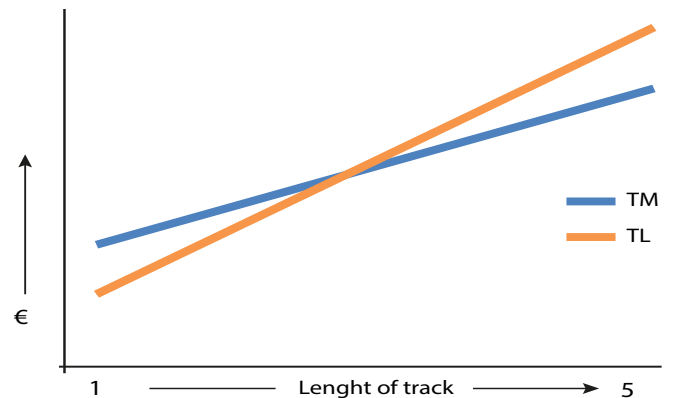
an effective method to increase the available force

Introduction

Does your machine need a power upgrade or do you want to expand an existing design? Coupling two Iron core motors is an easy and effective way of increasing the available force. Herewith you are not just limited to using identical motors. Various combinations can be made, as long as the motor force constant is the same. This note discusses some details of a 'coupled application'.

Advantages of technical solutions like a coupling of motors are usually highly case-specific. Are you thinking about a solution with either one large motor or a couple of smaller ones? We have listed some common benefits.

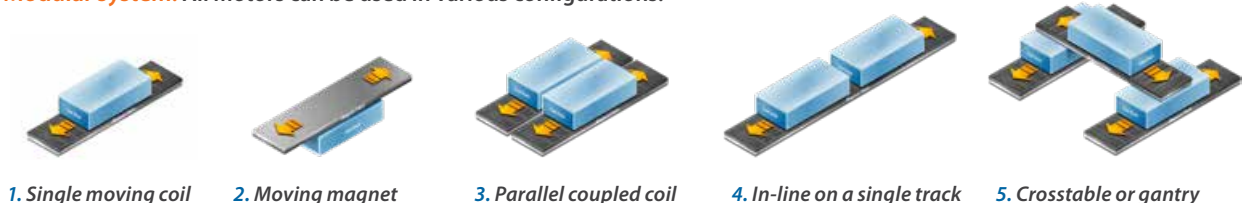
Advantages
+ Split Forces applied to large constructions
+ Double the power with familiar hardware
+ Provide scalable Force for existing machinery
+ Easy stock management with just one type of motor
Cost effective
+ Lower costs for long strokes by saving on a narrow magnet track
+ Two forcers on one drive can save the cost of an extra drive



Cost effective

Besides the clear advantages of 'more force' in a coupled motors application, there are important cost and logistics advantages. Keeping inventory of a similar coil assembly in stock for multiple machines and applications reduces cost and filed support issues. Existing designs can have multiple force capabilities standardizing on existing parts. As iron core motor cost is a function of magnet size using dual coils of a smaller motor significantly adds value. This advantage becomes more apparent for longer magnet tracks.

Modular system. All motors can be used in various configurations:



1. Single moving coil

2. Moving magnet

3. Parallel coupled coil

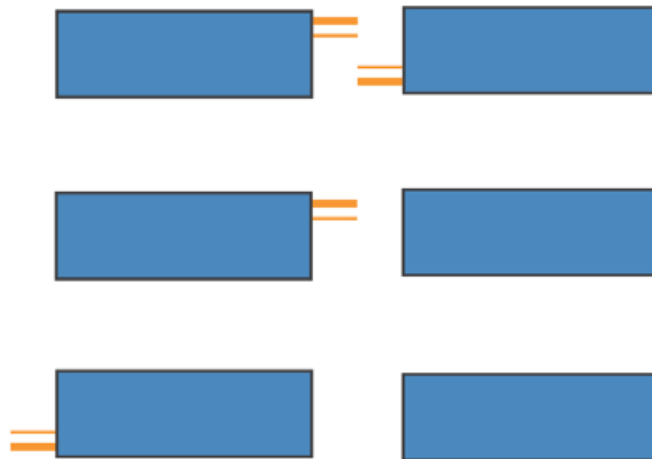
4. In-line on a single track

5. Crosstable or gantry

Conditions
! Always connect motors to the drive in parallel
! Use the correct spacing between the motors
! Motors must have an identical motor force constant

Possible Couplings

Though the motors always have to be connected to a drive in parallel, mechanically it is possible to align them in series or parallel. Motors can move on different magnet tracks to provide even force to a larger gantry or move on the same magnet track to improve the force in one line. In both cases the total force of all motors equals the sum of individual forces.



[End note]

Our team of Application Engineers can support in your challenges. Please contact us at:

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If you want to know more about the coupling possibilities of ironless linear motors, then take a look into this topic:

[Coupling of ironless motors](#)

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