

# Miniature Disc Magnet Step Motors

- Unrivalled step motor acceleration and dynamic performance
- Very high starting frequencies, step rates and speed (to 15,000 RPM)
- Torque boost capability to twice rated enhances incremental motion performance
- Short axial-length and high power-to-size rating
- Low detent torque and superior microstep accuracy and resolution
- Optional encoder assures positioning and enables closed-loop use

API Motion's patented MSD series disc magnet step motors deliver acceleration and speed performance unobtainable from any other type of step motor. In applications with high dynamic incremental moves where maximum throughput is critical, these motors are the best, if not the only solution.

The Disc Magnet step motor's simplicity of design is its main virtue. The rotor is essentially a shaft and thin rare-earth magnet disc. This provides

a rugged, very low inertia structure capable of high acceleration rates.

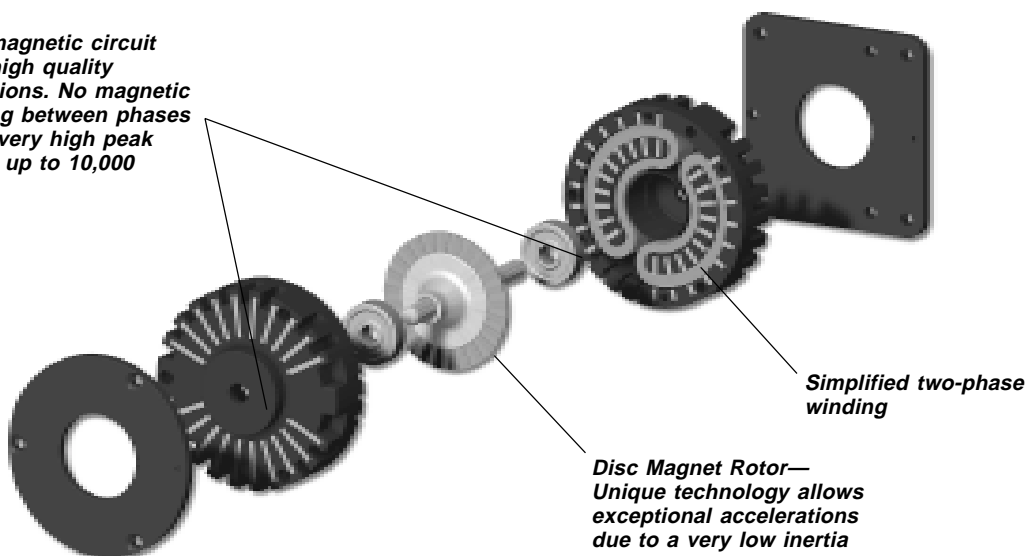
The design of the stator as separate lamination sections eliminates magnetic coupling between phases, so detent torque is low and positioning accuracy is high. Magnetic path length is minimized which keeps iron losses low. This maximizes efficiency and allows very high peak step rates.



## MSD Miniature Disc Magnet Motor Features

*Patented concept allowing rapid movements and exceptional dynamic behavior. Based on a thin disc magnet, this technology has a high number of steps per revolution*

*Short magnetic circuit using high quality laminations. No magnetic coupling between phases allows very high peak speeds up to 10,000 steps/s*



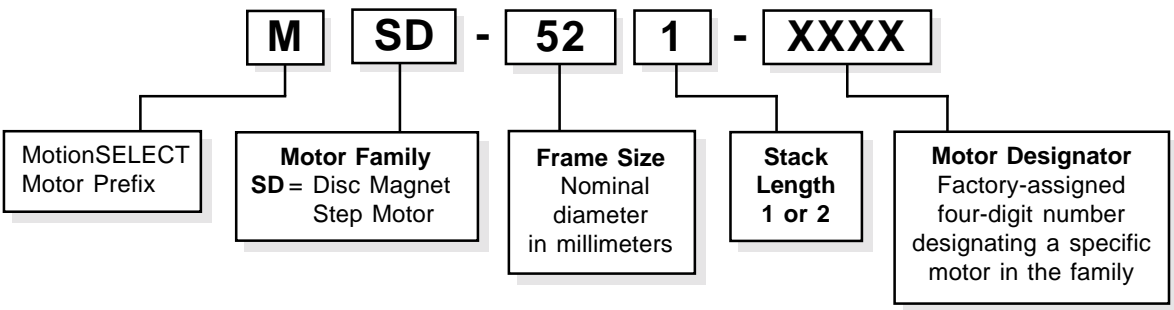
# MSD Miniature Disc Magnet Motors

## Non-Standard Versions

MSD disc magnet step motors are available in non-MotionSELECT versions. These models include larger higher torque models, alternate windings and alternate shaft and flange

configurations. For customized models contact your local API Motion distributor or us directly for assistance.

## Model Numbering System



Step Motor &  
Drive Solutions

## MotionSELECT Miniature Disc Magnet Motor Models

Model Number	Description
MSD-102-0001	10 mm Disc Magnet Step Motors
MSD-102-0002	10 mm Disc Magnet Step Motors
MSD-162-0021	16 mm Disc Magnet Step Motors
MSD-162-0022	16 mm Disc Magnet Step Motors
MSD-162-0023	16 mm Disc Magnet Step Motors
MSD-321-0038	32 mm Disc Magnet Step Motors
MSD-321-0052	32 mm Disc Magnet Step Motors
MSD-521-0002	52 mm Disc Magnet Step Motors
MSD-521-0003	52 mm Disc Magnet Step Motors
MSD-521-1014	52 mm Disc Magnet Step Motors
MSD-521-1002	52 mm Disc Magnet Step Motors
MSD-521-3014	52 mm Disc Magnet Step Motors
MSD-521-3016	52 mm Disc Magnet Step Motors