

CATEGORY SELECTION GUIDE

Cylindrical Voice Coil Motors Category Selection Guide

Cylindrical voice-coil motors provide direct-drive linear force for compact, smooth and responsive motion. The catalog covers eight Product Platforms and 12 SKUs, using diameter, stroke, force, current, thermal condition and mechanical clearance to narrow candidates before confirming the SKU and controlled integration information.

CATEGORY SELECTION GUIDE

CATEGORY	CURRENT CATALOG	REVISION / ISSUE
Cylindrical Voice Coil Motors	8 Product Platforms / 12 SKUs	R01 2026-09-04

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01 | Category Scope and Objective

Product catalog and suitable use

Item	Current category
Product catalog	8 Product Platforms / 12 SKUs
Suitable use	Cylindrical voice-coil motors for direct-drive linear motion in precision OEM equipment, inspection, laboratory automation, optics and industrial motion platforms.

02 | Product Principle and Typical Applications

Direct-drive motion principle

Moving-coil linear force A cylindrical voice-coil motor produces linear force through a moving coil and fixed magnetic field. Direct drive avoids mechanical transmission backlash; stroke, force and thermal duty remain the primary checks.	
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Typical applications

01	Medical and laboratory equipment	Compact short-stroke positioning and force control after guidance and feedback are defined.
02	Optics and inspection	Rapid focus, inspection and alignment axes after stroke, force and thermal cycle checks.
03	Industrial motion platforms	Direct-drive linear motion where the envelope and driver interface support the required profile.

03 | Selection Inputs

Inputs to record before narrowing candidates

Input	Why it matters
Installation envelope	Diameter, mounting and axial space determine candidate Product Platforms.
Stroke	Match the required travel to published SKU values.
Continuous and peak force	Separate sustained duty from acceleration and settling transients.
Driver and thermal condition	Current and duty must match the driver and coil thermal cycle.
Guidance and feedback	Confirm guidance, alignment and position feedback before SKU confirmation.

04 | Product Platform Architecture

Diameter navigation groups

Small diameter navigation 2, 4 and 7 mm Product Platforms provide the smallest published cylindrical envelopes. Retain candidates by actual stroke, force and driver requirements.	Mid-size diameter navigation 30, 38 and 40 mm Product Platforms cover intermediate cylindrical envelopes with different stroke and force combinations.	Large diameter navigation 45 and 60 mm Product Platforms provide larger published envelopes and higher force options in the current catalog.
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05 | Product Platform Directory

Complete current Product Platform directory

All eight Product Platforms and their current SKUs are listed. Use diameter for mechanical navigation, then compare published stroke, force, current and clearance.

 2 mm Cylindrical Voice Coil Motor Product Platform 1 SKU	 4 mm Cylindrical Voice Coil Motor Product Platform 2 SKUs
 7 mm Cylindrical Voice Coil Motor Product Platform 1 SKU	 30 mm Cylindrical Voice Coil Motor Product Platform 4 SKUs
 38 mm Cylindrical Voice Coil Motor Product Platform 1 SKU	 40 mm Cylindrical Voice Coil Motor Product Platform 1 SKU
 45 mm Cylindrical Voice Coil Motor Product Platform 1 SKU	 60 mm Cylindrical Voice Coil Motor Product Platform 1 SKU

06 | Platform Comparison and Trade-offs

Platform-level published comparison

Values are SKU-specific and are not freely combinable. Confirm the exact SKU and force curve at the intended duty.

Product Platform	SKU count	SKU	Stroke	Continuous Force	Peak Force	Continuous Current	Coil Clearance
2 mm Cylindrical Voice Coil Motor	1 SKUs	ES-MT-C09-S043-V001	3.8	2.2	6.7	0.7	0.38
4 mm Cylindrical Voice Coil Motor	2 SKUs	ES-MT-C09-S044-V001ES-MT-C09-S044-V002	30 mm / 9.5 mm □0.5 / 9.5	6 N / 11 N	55 N / 31 N	1 A (coil at 100 °C) / 1 / 1.25 A (coil at 100 °C) / 1.25	0.5 mm / 0.38 mm
7 mm Cylindrical Voice Coil Motor	1 SKUs	ES-MT-C09-S042-V001	4	0.4	3.2	1	0.38
30 mm Cylindrical Voice Coil Motor	4 SKUs	ES-MT-C09-S040-V001ES-MT-C09-S040-V002ES-MT-C09-S040-V003ES-MT-C09-S040-V004	13 / 12 / 5	4.63 / 13 / 9.5	29.4 / 80 / 65	0.63 / 1.5 / 0.8	0.6 / 0.5
38 mm Cylindrical Voice Coil Motor	1 SKUs	ES-MT-C09-S037-V001	50	10	78	1	0.5
40 mm Cylindrical Voice Coil Motor	1 SKUs	ES-MT-C09-S038-V001	6	11	40	1	0.5
45 mm Cylindrical Voice Coil Motor	1 SKUs	ES-MT-C09-S041-V001	50	19	120	1	0.5
60 mm Cylindrical Voice Coil Motor	1 SKUs	ES-MT-C09-S039-V001	15	44	182	1.2	0.7

07 | SKU Refinement

Parameters used to move from Product Platform to SKU

Standard parameter	Selection role	Published values
Stroke	Match required travel to the published SKU value.	3.8 / 30 mm / 9.5 mm □ 0.5 / 9.5 / 4 / 13 / 12 / 5 / 50 / 6 / 15
Continuous Force	Use for sustained duty and thermal sizing.	2.2 / 6 N / 11 N / 0.4 / 4.63 / 13 / 9.5 / 10 / 11 / 19 / 44
Peak Force	Use where the published value exists for acceleration or settling transients.	6.7 / 55 N / 31 N / 3.2 / 29.4 / 80 / 65 / 78 / 40 / 120 / 182
Continuous Current	Match the driver and coil thermal condition.	0.7 / 1 A (coil at 100 °C) / 1 / 1.25 A (coil at 100 °C) / 1.25 / 1 / 0.63 / 1.5 / 0.8 / 1.2
Coil Clearance	Confirm with guide, alignment and mounting design.	0.38 / 0.5 mm / 0.38 mm / 0.6 / 0.5 / 0.7

Lightweight SKU refinement sequence

01	Confirm stroke and force Retain Product Platforms whose published Stroke and Continuous Force meet the motion requirement, then check Peak Force.
02	Confirm current and thermal cycle Match Continuous Current and duty to the driver and coil thermal condition.
03	Confirm mechanical clearance Confirm Coil Clearance, guidance, alignment and mounting for the retained SKU.
04	Confirm the SKU Open the Product Platform link, select the exact SKU and request controlled integration information.

08 | Engineering Information and Verification Notice

Application record checklist

01	Mechanical envelope	Record diameter, mounting, guide arrangement and axial space.
02	Motion duty	Record stroke, speed, acceleration, continuous force, peak force and cycle timing.
03	Electrical interface	Record driver, voltage, current, thermal cycle and wiring requirements.
04	Guidance and feedback	Record guide stiffness, alignment method and position-feedback needs.
05	Controlled engineering documents	Request the dimensional drawing, force curve and integration information for the selected SKU before design freeze.

Engineering use and verification

Before design freeze, verify the selected SKU against current mechanical, electrical, feedback, thermal and controlled engineering information. Do not infer an unstated force, stroke or interface value from a public SKU code or a single rated value.