

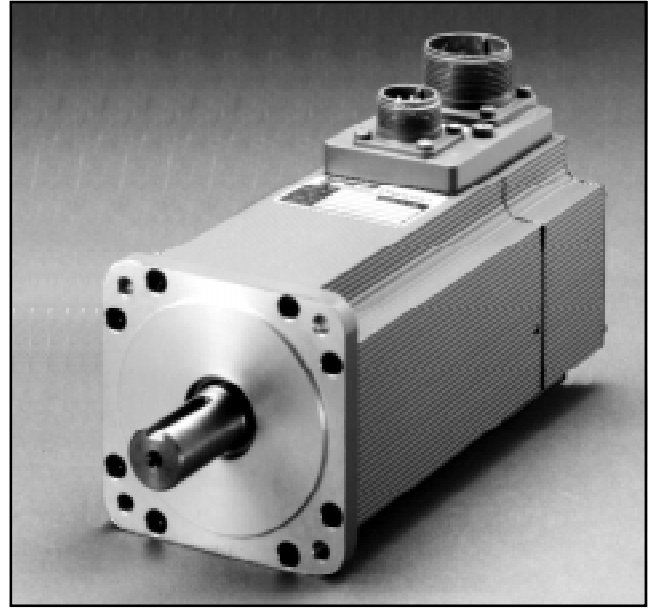
High-performance motors for use with SVA & SVAHX drives

Parker's MD series servo motors provide exceptional performance in relation to size and are a perfect match for the SVA drive range. Currently available with NEMA 34 size flanges and in two frame lengths, MD motors offer peak torques up to 14Nm and maximum speeds up to 5000 rpm.

MD motors use neodymium-iron-boron magnets in a 6-pole rotor design. An incremental encoder with a resolution of 1024 lines/rev (4096 counts/rev after decoding) provides feedback for position control and commutation. A separate six-step encoder is used for initial commutation at power-up.

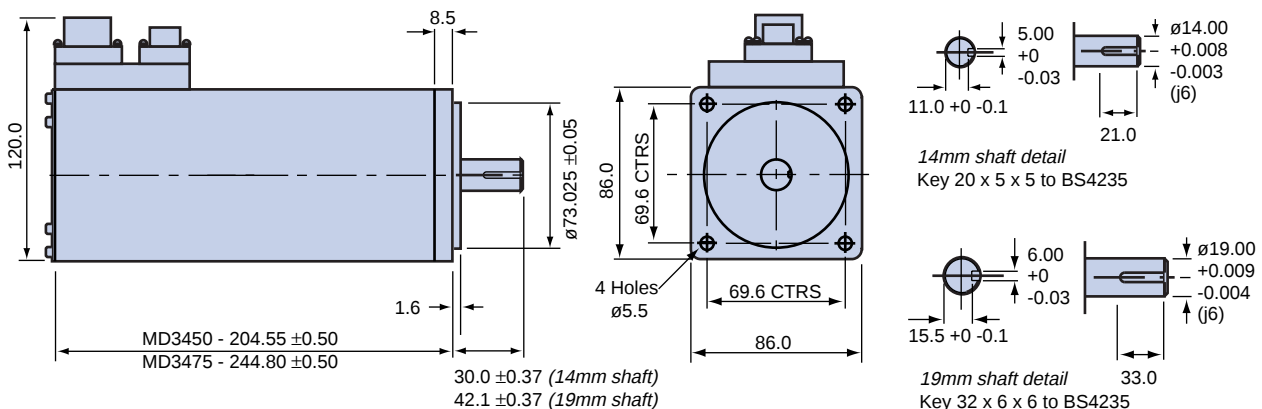
Separate MS-style connectors are used for the motor and encoder connections. Alternative shaft diameters provide additional applications flexibility, the larger 19mm shaft being recommended for toothed-belt applications where radial loads are higher. The motors are EMC and LVD compliant and are rated at IP54.

The SVA1200S drive may also be used in conjunction with the SM233AE motor. For further details and dimension drawings of the SM series motors, please see "SM, NeoMetric and J series motors" later in this catalogue.

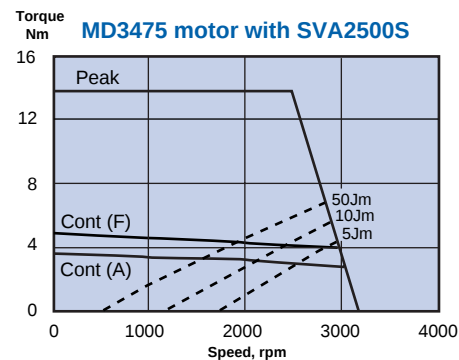
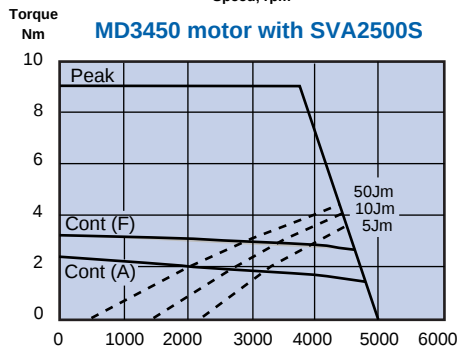
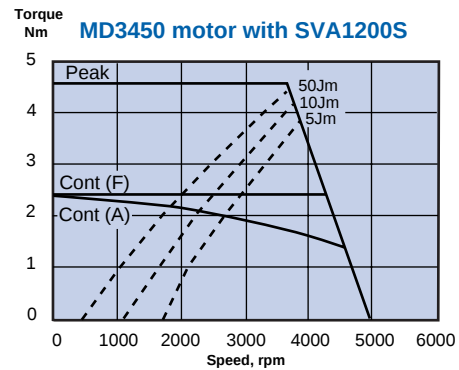
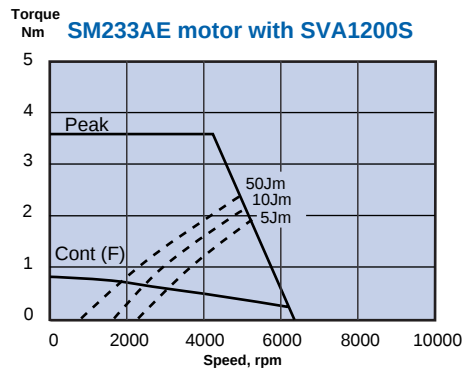


Motor specifications	Units	SM233AE	MD3450	MD3475
Stall torque, flange mounted	Nm	1.13	3.1	4.3
Rated speed	rpm	5800	5000	3250
Rotor inertia	kg-mm ²	132	160	240
Mechanical time constant	mS	5.4	1.5	1.13
Thermal time constant	min	23	30	40
Torque constant	Nm/A rms	0.58	0.76	1.16
Voltage constant	V/1000rpm	50.68	65	99.4
Encoder resolution	lines/rev counts/rev	1000 4000	1024 4096	1024 4096
Weight	kg	1.8	4.6	6.0
Operating ambient temp. range	°C	0-40°	0-40°	0-40°
Sealing		IP54	IP54	IP54
Terminations		MS connectors	MS connectors	MS connectors

MD Motor dimensions Tolerances $\pm 0.12\text{mm}$ unless otherwise stated



The 14mm shaft option is suitable for in-line coupling (e.g. leadscrew or gearbox) and for toothed belts up to 15mm wide. For toothed belt transmissions utilising the full motor power, the 19mm shaft is recommended.



Continuous curves: (A) in free air, (F) flange-mounted.

Data relates to operation in 20°C ambient and 230V supply, single phase for SVA1200S, three phase for SVA2500S. Peak torque knee speed will be reduced by approximately 15% for SVA2500S on single phase supply

Power dump curves are based on using the BRM05/01 dump with MD motors and no external dump with the SM233 motor

Power dump dissipation curves

In addition to torque-speed data, the performance graphs give an indication of the safe operating area of the power dump circuit in repetitive start-stop operation. The data is based on a 'worst case' system performing repeated trapezoidal moves with no dwell in between. The time at maximum speed is as short as the thermal rating of the motor will allow. Under these conditions, for any given load inertia, the power in the ballast resistor depends on the peak torque during deceleration and the maximum speed.

The broken lines represent different load inertias as a ratio of the motor inertia J_m . When the application requirements have been calculated, plot the point representing peak

torque and maximum speed on the performance graph. If this point lies to the left of the corresponding inertia line, the resistor rating will not be exceeded. If it lies to the right, there is not necessarily a problem but further calculation is required to establish the dump power more accurately - please consult your supplier. For example, a peak torque of 3Nm and a maximum speed of 2500rpm are acceptable with the MD3450 motor and SVA1200S drive when driving a load equal to 10 times the motor inertia.

Note that this information is for general guidance purposes only and will not apply to applications in which the duty cycle is light.

Ordering codes

Drives

SVA1200S	Analogue input drive, 3.1A continuous
SVAHX1200S/232	Drive/controller, 3.1A continuous, RS232 communications
SVAHX1200S/485	Drive/controller, 3.1A continuous, RS485 communications
SVA2500S	Analogue input drive, 6.3A continuous
SVAHX2500S/232	Drive/controller, 6.3 A continuous, RS232 communications
SVAHX2500S/485	Drive/controller, 6.3A continuous, RS485 communications

Power Dump Resistor

BRM 05/01 250W continuous, 2.5kW peak

Motors

SM233AE-NGSN	SM23 motor with encoder
MD3450/14/230V	3450 motor with encoder, 14mm shaft
MD3450/19/230V	3450 motor with encoder, 19mm shaft
MD3475/14/230V	3475 motor with encoder, 14mm shaft
MD3475/19/230V	3475 motor with encoder, 19mm shaft

Cables

SVAC-SM-0300	3 metre cable set for SM233 motor
SVAC-SM-0750	7.5 metre cable set for SM233 motor
SVAC-0300	3 metre cable set for MD motors
SVAC-0750	7.5 metre cable set for MD motors
SVAC-1500	15 metre cable set for MD motors
SVAC-3000	30 metre cable set for MD motors