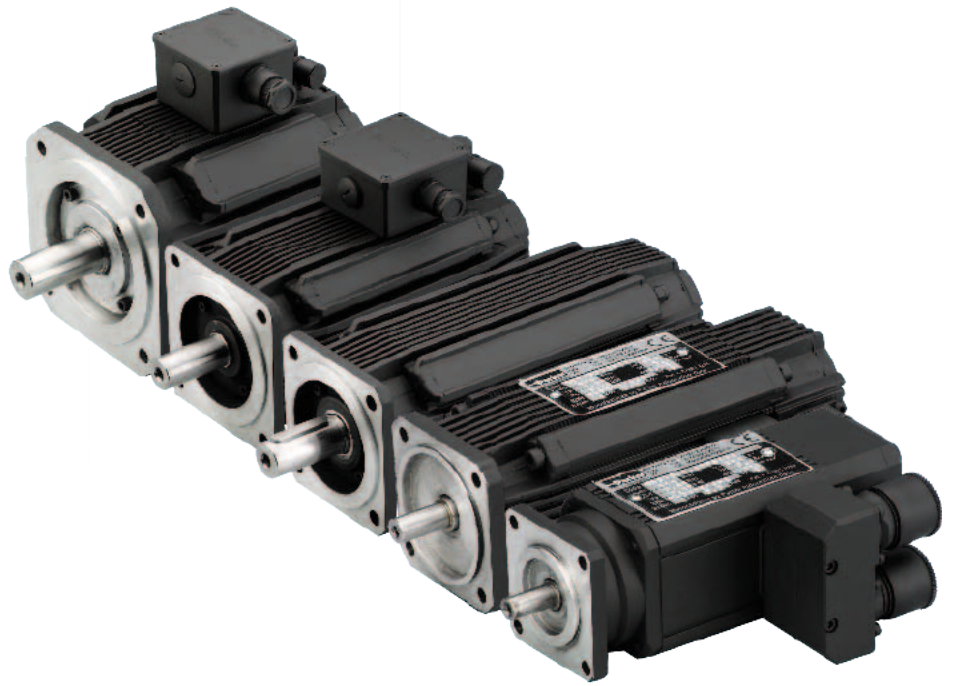
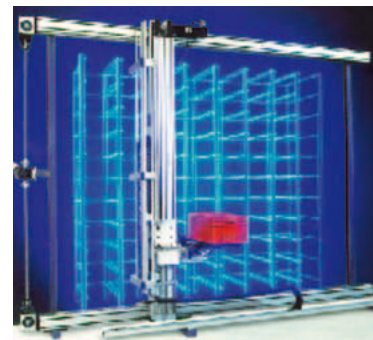


aerospace  
climate control  
**electromechanical**  
filtration  
fluid & gas handling  
hydraulics  
pneumatics  
process control  
sealing & shielding



## MB / MH Series

Servo Motors from 0.2 to 285 Nm



ENGINEERING YOUR SUCCESS.



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**FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.**

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- To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

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# Parker Hannifin

## The global leader in motion and control technologies

### A world class player on a local stage

#### Global Product Design

Parker Hannifin has more than 40 years experience in the design and manufacturing of drives, controls, motors and mechanical products. With dedicated global product development teams, Parker draws on industry-leading technological leadership and experience from engineering teams in Europe, North America and Asia.

#### Local Application Expertise

Parker has local engineering resources committed to adapting and applying our current products and technologies to best fit our customers' needs.

#### Manufacturing to Meet Our Customers' Needs

Parker is committed to meeting the increasing service demands that our customers require to succeed in the global industrial market. Parker's manufacturing teams seek continuous improvement through the implementation of lean manufacturing methods throughout the process. We measure ourselves on meeting our customers' expectations of quality and delivery, not just our own. In order to meet these expectations, Parker operates and continues to invest in our manufacturing facilities in Europe, North America and Asia.

#### Electromechanical Worldwide Manufacturing Locations

##### Europe

Littlehampton, United Kingdom  
Dijon, France  
Offenburg, Germany  
Filderstadt, Germany  
Milan, Italy

##### Asia

Wuxi, China  
Chennai, India

##### North America

Rohnert Park, California  
Irwin, Pennsylvania  
Charlotte, North Carolina  
New Ulm, Minnesota



Offenburg, Germany

#### Local Manufacturing and Support in Europe

Parker provides sales assistance and local technical support through a network of dedicated sales teams and authorized technical distributors throughout Europe.

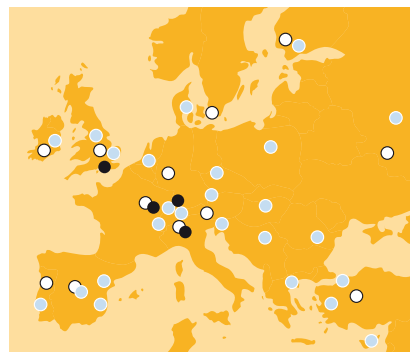
For contact information, please refer to the Sales Offices on the back cover of this document or visit [www.parker.com](http://www.parker.com)



Milan, Italy



Littlehampton, UK



- Electromechanical Manufacturing
- Parker Sales Offices
- Distributors



Dijon, France

# Servo Motor - MB / MH

## Overview

### Description

The MB / MH <sup>(1)</sup> series caters for torques in the range of 0.2 to 285 Nm, speeds up to 10 000 min<sup>-1</sup> and includes a total of 75 models available across 6 frame sizes. Thanks to the high quality and performance of the Neodymium-Iron-Boron magnets, and also the encapsulation method used to fasten them to the shaft, the MB / MH series of motors can achieve very high accelerations and withstand high overload without the risk of demagnetisation or detachment of the magnets. Furthermore, shaft and flange size flexibility on all models provides the user with the possibility to optimise their motor selection for any given application. Adequate mechanical over-sizing, low inertia in an extra-strong mechanism and a broad range of models permits the application of the MB / MH series in all fields where high dynamic performance and utmost reliability are crucial features.

Typical applications include any type of automatic machinery, especially in the product packaging and handling industry, and wherever the demand exists for axis speed and position synchronisation.

### Features

- Large set of feedback option
- Customization
- Increase inertia option
- ATEX certification for MB/MH105/145
- Options
  - Flying cables
  - Terminal box (power and resolver)
  - External encoder
  - Increased inertia
  - Brake
  - Feedback - resolver/incremental/ SinCos/absolute encoder
  - Thermal protection (PTC for MB and KTY for MH)
  - Second shaft

### Application

- Food, Pharma & Beverage
- Packaging Machines
- Material Forming
- Material Handling
- Factory Automation
- Life Science Diagnostic
- Automotive Industry / In-Plant
- Printing Industry
- Textile Machines
- Robotics
- Servo Hydraulic Pumps



### Technical Characteristics - Overview

<b>Motor Type</b>	Permanent magnets synchronous servo motor
<b>Rotor Design</b>	Rotor with surface rare earth magnets
<b>Power supply</b>	230 VAC or 400 VAC
<b>Operating temperature</b>	-10/+40 °C
<b>Number of poles</b>	4 for M_ 56-70 8 for M_ 105-145-205-265
<b>Power Range</b>	0.05...67 kW
<b>Torque Range</b>	0.2...285 Nm
<b>Speed Range</b>	0...10 000 min <sup>-1</sup>
<b>Mounting</b>	Flange with smooth holes B14, B3 option
<b>Shaft End</b>	Plain keyed shaft Plain smooth shaft (option)
<b>Cooling</b>	Natural ventilation Self-ventilation (option for size 105-145-205) Forced ventilation (option for size 105-145-205) Water cooled (option for size 145)
<b>Protection Level (IEC60034-5)</b>	IP64 IP65 (option)
<b>Feedback sensor</b>	Resolver Absolute EnDat or Hiperface Incremental Encoder
<b>Voltage Supply</b>	230 / 400 VAC
<b>Temperature Class</b>	Class F
<b>Connections</b>	Connectors Flying cables Terminal Box (see table option for combination)
<b>Marking</b>	CE
<b>Standards</b> In compliance with:	73/23/CEE and 93/68/CEE EN60034-1 EN60034-5 EN60034-5/A1 EN60034-9 EN60034-14

<sup>(1)</sup> MB for drives: TPD-M, SLVD-N, TWIN-N, SPD-N, Hi-Drive, MH for drive: Compax3

## Technical Characteristics

### MB / MH Motors, Size 56 - 0.2...0.6 Nm

#### 230 VAC

Model	Size	Stall		Nominal			Peak Torque <sup>(1)</sup>	Inertia		Ke <sup>(2)(3)</sup>	Kt <sup>(2)(3)</sup>
		Torque <sup>(1)</sup>	Current	Torque <sup>(1)</sup>	Speed	Current		No brake	With brake		
		T <sub>065</sub> (T <sub>105</sub> ) [Nm]	I <sub>065</sub> [A]	T <sub>n065</sub> [Nm]	n [min <sup>-1</sup> ]	I <sub>n065</sub> [A]	T <sub>max</sub> [Nm]	J [kgmm <sup>2</sup> ]	J [kgmm <sup>2</sup> ]	Ke [Vs]	Kt [Nm/A <sub>rms</sub> ]
M_56 25 0,2	56	0.2 (0.40)	0.27	0.21	2500	0.26	1.3	11	28	0.48	0.83
M_56 50 0,2			0.46	0.19	5000	0.42				0.28	0.48
M_56 100 0,2			0.84	0.15	10000	0.60				0.15	0.26
M_56 25 0,4		0.4 (0.80)	0.49	0.40	2500	0.46	2.5	16	33	0.52	0.91
M_56 50 0,4			0.84	0.35	5000	0.71				0.30	0.53
M_56 100 0,4			1.52	0.21	10000	0.81				0.17	0.29
M_56 25 0,6		0.6 (1.14)	0.67	0.60	2500	0.63	3.6	21	38	0.57	0.99
M_56 50 0,6			1.21	0.51	5000	0.98				0.32	0.55
M_56 100 0,6			2.18	0.18	10000	0.71				0.18	0.31

#### 400 VAC

Model	Size	Stall		Nominal			Peak Torque <sup>(1)</sup>	Inertia		Ke <sup>(2)(3)</sup>	Kt <sup>(2)(3)</sup>
		Torque <sup>(1)</sup>	Current	Torque <sup>(1)</sup>	Speed	Current		No brake	With brake		
		T <sub>065</sub> (T <sub>105</sub> ) [Nm]	I <sub>065</sub> [A]	T <sub>n065</sub> [Nm]	n [min <sup>-1</sup> ]	I <sub>n065</sub> [A]	T <sub>max</sub> [Nm]	J [kgmm <sup>2</sup> ]	J [kgmm <sup>2</sup> ]	Ke [Vs]	Kt [Nm/A <sub>rms</sub> ]
M_56 50 0,2	56	0.2 (0.40)	0.27	0.19	5000	0.24	1.3	11	28	0.48	0.83
M_56 95 0,2			0.46	0.16	9500	0.36				0.28	0.48
M_56 50 0,4		0.4 (0.80)	0.49	0.34	5000	0.40	2.5	16	33	0.52	0.91
M_56 95 0,4			0.84	0.23	9500	0.48				0.30	0.53
M_56 50 0,6		0.6 (1.14)	0.67	0.50	5000	0.54	3.6	21	38	0.57	0.99
M_56 95 0,6			1.21	0.25	9500	0.51				0.32	0.55

<sup>(1)</sup> Data referred to motor suspend in horizontal position in free still air, 20 °C ambient temperature

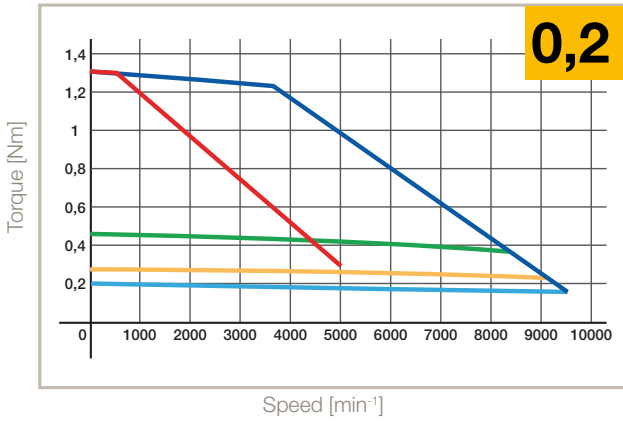
<sup>(2)</sup> Data measured at 20 °C. When "hot" consider 5 % derating

<sup>(3)</sup> Tolerance data ±10 %

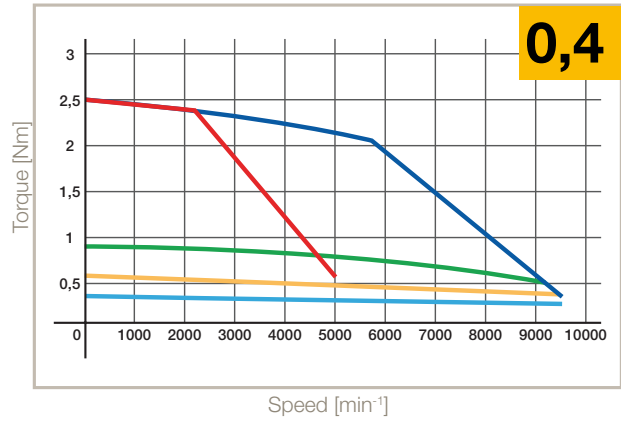
Speed Torque Curves

MB/MH56

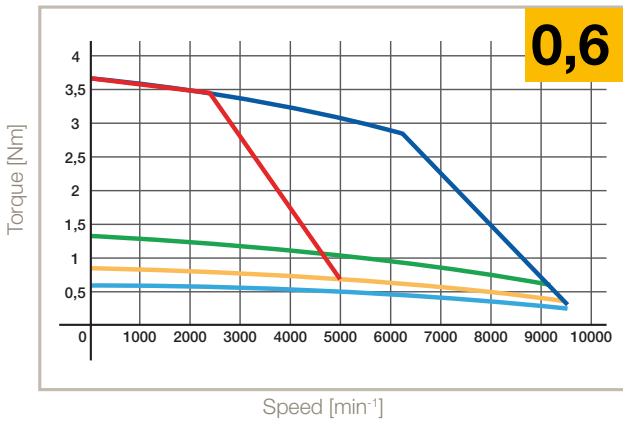
5000 min<sup>-1</sup> 230 V - 9500 min<sup>-1</sup> 400 V



5000 min<sup>-1</sup> 230 V - 9500 min<sup>-1</sup> 400 V



5000 min<sup>-1</sup> 230 V - 9500 min<sup>-1</sup> 400 V



- S1 65 K, ΔT
- S3 10 %, 5 min, 400 V
- S3 10 %, 5 min, 230 V
- S3 50 %, 5 min
- S3 20 %, 5 min

## MB / MH Motors, Size 70 - 0.5...2.5 Nm

### 230 VAC

Model	Size	Stall		Nominal			Peak Torque <sup>(1)</sup>	Inertia		Ke <sup>(2)(3)</sup>	Kt <sup>(2)(3)</sup>
		Torque <sup>(1)</sup>	Current	Torque <sup>(1)</sup>	Speed	Current		No brake	With brake		
		T <sub>065</sub> (T <sub>105</sub> ) [Nm]	I <sub>065</sub> [A]	T <sub>n065</sub> [Nm]	n [min <sup>-1</sup> ]	I <sub>n065</sub> [A]	T <sub>max</sub> [Nm]	J [kgmm <sup>2</sup> ]	J [kgmm <sup>2</sup> ]	Ke [Vs]	Kt [Nm/A <sub>rms</sub> ]
M_70 20 0,5	70	0.5 (0.9)	0.44	0.5	2000	0.43	2.8	26	55	0.67	1.17
M_70 38 0,5			0.72	0.4	3800	0.66				0.41	0.71
M_70 75 0,5			1.37	0.4	7500	1.00				0.22	0.38
M_70 20 01		1.0 (1.6)	0.84	1.0	2000	0.80	5.1	40	69	0.72	1.25
M_70 38 01			1.39	0.8	3800	1.23				0.42	0.72
M_70 75 01			2.65	0.5	7500	1.43				0.23	0.39
M_70 20 1,5		1.5 (2.2)	1.23	1.5	2000	1.18	6.8	54	83	0.73	1.27
M_70 38 1,5			2.25	1.4	3800	1.96				0.42	0.72
M_70 75 1,5			4.07	0.7	7500	1.85				0.23	0.39
M_70 20 02		2.0 (2.7)	1.55	1.9	2000	1.47	8.4	68	97	0.78	1.36
M_70 38 02			2.82	1.7	3800	2.40				0.43	0.75
M_70 75 02			5.36	0.6	7500	1.74				0.23	0.39
M_70 20 2,5		2.5 (3.1)	1.90	2.4	2000	1.82	9.8	81	11	0.79	1.36
M_70 38 2,5			3.56	2.1	3800	3.01				0.42	0.73
M_70 75 2,5			6.77	0.6	7500	1.77				0.22	0.38

### 400 VAC

Model	Size	Stall		Nominal			Peak Torque <sup>(1)</sup>	Inertia		Ke <sup>(2)(3)</sup>	Kt <sup>(2)(3)</sup>
		Torque <sup>(1)</sup>	Current	Torque <sup>(1)</sup>	Speed	Current		No brake	With brake		
		T <sub>065</sub> (T <sub>105</sub> ) [Nm]	I <sub>065</sub> [A]	T <sub>n065</sub> [Nm]	n [min <sup>-1</sup> ]	I <sub>n065</sub> [A]	T <sub>max</sub> [Nm]	J [kgmm <sup>2</sup> ]	J [kgmm <sup>2</sup> ]	Ke [Vs]	Kt [Nm/A <sub>rms</sub> ]
M_70 37 0,5	70	0.5 (0.9)	0.44	0.5	3700	0.41	2.8	26	55	0.67	1.17
M_70 70 0,5			0.72	0.4	7000	0.55				0.41	0.71
M_70 37 01		1.0 (1.6)	0.84	0.9	3700	0.74	5.1	40	69	0.72	1.25
M_70 70 01			1.39	0.6	7000	0.85				0.42	0.72
M_70 37 1,5		1.5 (2.2)	1.23	1.3	3700	1.07	6.8	54	83	0.73	1.27
M_70 70 1,5			2.25	0.8	7000	1.27				0.42	0.72
M_70 37 2,0		2.0 (2.7)	1.55	1.7	3700	1.32	8.4	68	97	0.78	1.36
M_70 70 2,0			2.82	0.9	7000	1.35				0.43	0.75
M_70 37 2,5		2.5 (3.1)	1.90	2.1	3700	1.60	9.8	81	110	0.79	1.36
M_70 70 2,5			3.56	1.2	7000	1.73				0.42	0.73

<sup>(1)</sup> Data referred to motor suspend in horizontal position in free still air, 20 °C ambient temperature

<sup>(2)</sup> Data measured at 20 °C. When "hot" consider 5 % derating

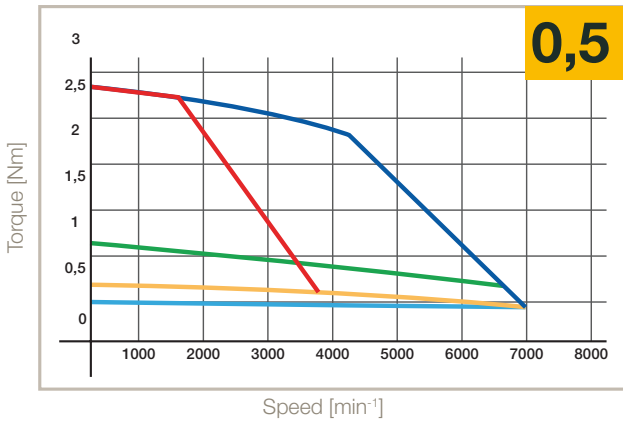
<sup>(3)</sup> Tolerance data ±10 %



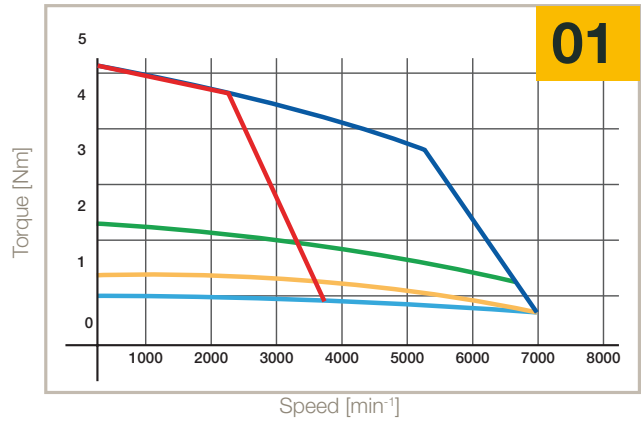
Speed Torque Curves

MB/MH70

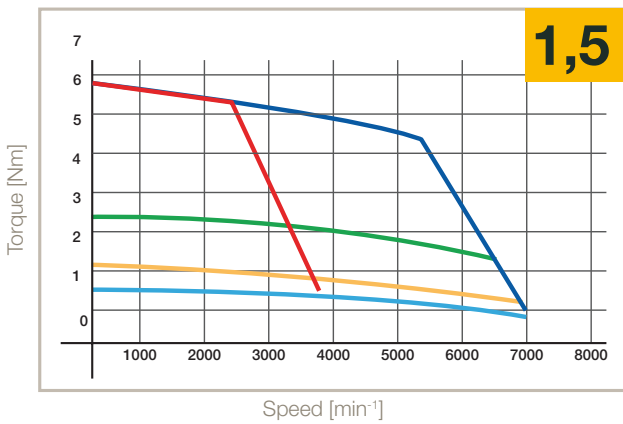
3800 min<sup>-1</sup> 230 V - 7000 min<sup>-1</sup> 400 V



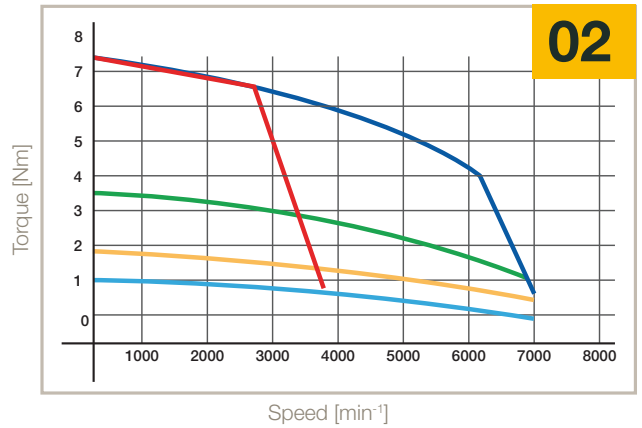
3800 min<sup>-1</sup> 230 V - 7000 min<sup>-1</sup> 400 V



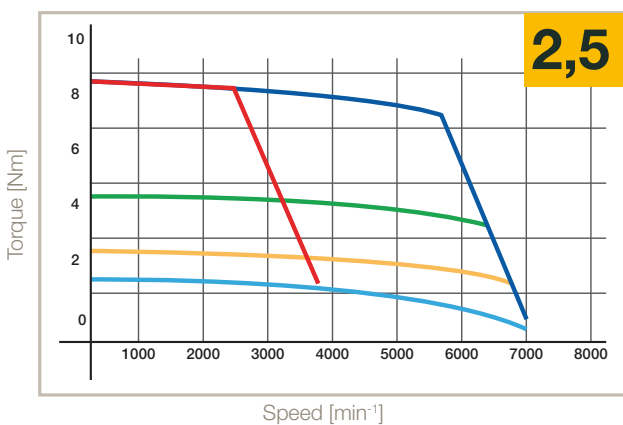
3800 min<sup>-1</sup> 230 V - 7000 min<sup>-1</sup> 400 V



3800 min<sup>-1</sup> 230 V - 7000 min<sup>-1</sup> 400 V



3800 min<sup>-1</sup> 230 V - 7000 min<sup>-1</sup> 400 V



- S1 65 K, ΔT
- S3 10 %, 5 min, 400 V
- S3 10 %, 5 min, 230 V
- S3 50 %, 5 min
- S3 20 %, 5 min

## MB / MH Motors, Size 105 - 2.2...8 Nm

### 230 VAC

Model	Size	Stall		Nominal			Peak Torque <sup>(1)</sup>	Inertia		Ke <sup>(2)(3)</sup>	Kt <sup>(2)(3)</sup>
		Torque <sup>(1)</sup>	Current	Torque <sup>(1)</sup>	Speed	Current		No brake	With brake		
		T <sub>065</sub> (T <sub>105</sub> ) [Nm]	I <sub>065</sub> [A]	T <sub>n065</sub> [Nm]	n [min <sup>-1</sup> ]	I <sub>n065</sub> [A]	T <sub>max</sub> [Nm]	J [kgmm <sup>2</sup> ]	J [kgmm <sup>2</sup> ]	Ke [Vs]	Kt [Nm/A <sub>rms</sub> ]
M_105 16 02	105	2.2 (3.5)	1.5	2.2	1600	1.4	11.0	190	253	0.9	1.63
M_105 25 02			2.1	2.1	2500	2.0				0.6	1.11
M_105 30 02			2.8	2.1	3000	2.6				0.5	0.83
M_105 50 02			4.3	1.8	5000	3.5				0.3	0.55
M_105 16 04		4.0 (6.1)	2.6	4.0	1600	2.5	19.5	340	403	1.0	1.65
M_105 25 04			3.8	3.7	2500	3.5				0.7	1.13
M_105 30 04			5.0	3.6	3000	4.4				0.5	0.85
M_105 50 04			7.4	2.7	5000	5.0				0.3	0.58
M_105 16 06		6.0 (8.3)	3.9	5.9	1600	3.7	26.2	480	543	1.0	1.65
M_105 25 06			5.6	5.5	2500	5.0				0.7	1.15
M_105 30 06			7.4	5.2	3000	6.4				0.5	0.87
M_105 50 06			11.2	3.6	5000	6.7				0.3	0.58
M_105 16 08		8.0 (10.0)	5.2	7.8	1600	5.0	31.7	620	683	1.0	1.65
M_105 25 08			7.5	7.2	2500	6.6				0.7	1.15
M_105 30 08			9.7	6.8	3000	8.2				0.5	0.88
M_105 50 08			14.2	4.4	5000	7.9				0.4	0.61

### 400 VAC

Model	Size	Stall		Nominal			Peak Torque <sup>(1)</sup>	Inertia		Ke <sup>(2)(3)</sup>	Kt <sup>(2)(3)</sup>
		Torque <sup>(1)</sup>	Current	Torque <sup>(1)</sup>	Speed	Current		No brake	With brake		
		T <sub>065</sub> (T <sub>105</sub> ) [Nm]	I <sub>065</sub> [A]	T <sub>n065</sub> [Nm]	n [min <sup>-1</sup> ]	I <sub>n065</sub> [A]	T <sub>max</sub> [Nm]	J [kgmm <sup>2</sup> ]	J [kgmm <sup>2</sup> ]	Ke [Vs]	Kt [Nm/A <sub>rms</sub> ]
M_105 30 02	105	2.2 (3.5)	1.5	2.1	3000	1.4	11.0	190	253	0.9	1.63
M_105 45 02			2.1	1.9	4500	1.8				0.6	1.11
M_105 60 02			2.8	1.7	6000	2.2				0.5	0.83
M_105 30 04		4.0 (6.1)	2.6	3.6	3000	2.3	19.5	340	403	1.0	1.65
M_105 45 04			3.8	3.0	4500	2.8				0.7	1.13
M_105 60 04			5.0	2.4	6000	3.0				0.5	0.85
M_105 30 06		6.0 (8.3)	3.9	5.3	3000	3.4	26.2	480	543	1.0	1.65
M_105 45 06			5.6	4.1	4500	3.8				0.7	1.15
M_105 60 06			7.4	3.0	6000	3.7				0.5	0.87
M_105 30 08		8.0 (10.0)	5.2	6.9	3000	4.4	31.7	620	683	1.0	1.65
M_105 45 08			7.5	5.2	4500	4.9				0.7	1.15
M_105 60 08			9.7	3.6	6000	4.4				0.5	0.88

<sup>(1)</sup> Data referred to motor suspend in horizontal position in free still air, 20 °C ambient temperature

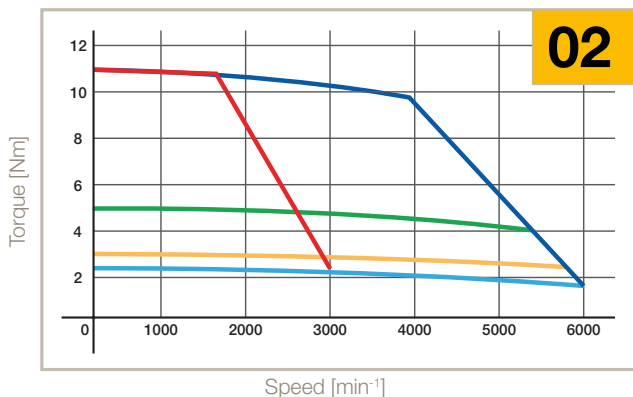
<sup>(2)</sup> Data measured at 20 °C. When "hot" consider 5 % derating

<sup>(3)</sup> Tolerance data ±10 %

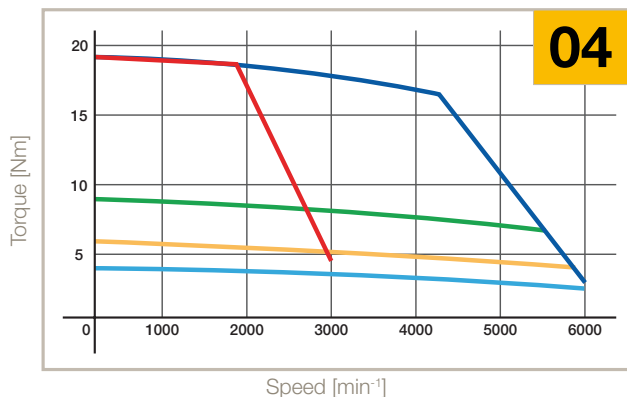
**Speed Torque Curves**

**MB/MH105**

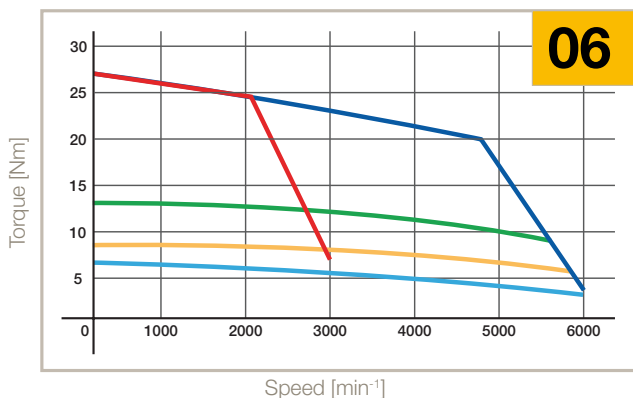
3000 min<sup>-1</sup> 230 V - 6000 min<sup>-1</sup> 400 V



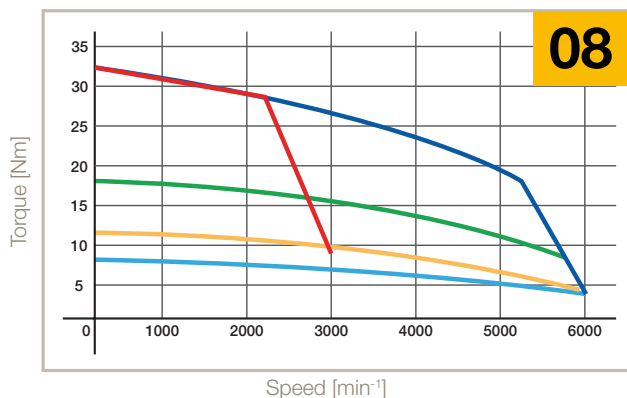
3000 min<sup>-1</sup> 230 V - 6000 min<sup>-1</sup> 400 V



3000 min<sup>-1</sup> 230 V - 6000 min<sup>-1</sup> 400 V



3000 min<sup>-1</sup> 230 V - 6000 min<sup>-1</sup> 400 V



- S1 65 K, ΔT
- S3 10 %, 5 min, 400 V
- S3 10 %, 5 min, 230 V
- S3 50 %, 5 min
- S3 20 %, 5 min

## MB / MH Motors, Size 145 - 4.5...28 Nm

### 230 VAC

Model	Size	Stall		Nominal			Peak Torque <sup>(1)</sup>	Inertia		Ke <sup>(2)(3)</sup>	Kt <sup>(2)(3)</sup>
		Torque <sup>(1)</sup>	Current	Torque <sup>(1)</sup>	Speed	Current		No brake	With brake		
		T <sub>065</sub> (T <sub>105</sub> ) [Nm]	I <sub>065</sub> [A]	T <sub>n065</sub> [Nm]	n [min <sup>-1</sup> ]	I <sub>n065</sub> [A]	T <sub>max</sub> [Nm]	J [kgmm <sup>2</sup> ]	J [kgmm <sup>2</sup> ]	Ke [Vs]	Kt [Nm/A <sub>rms</sub> ]
M_145 5,5 04	145	4.5 (9)	1.1	4.6	550	1.1	28	780	975	2.1	3.65
M_145 11 04			2.3	4.6	1100	2.4				1.2	2.03
M_145 16 04			3.4	4.5	1600	3.3				0.8	1.42
M_145 25 04			4.7	4.3	2500	4.5				0.6	1.01
M_145 40 04			8.1	4.1	4000	7.2				0.4	0.60
M_145 5,5 08		8.7 (16)	2.0	8.7	550	2.0	49	1050	1245	2.7	4.69
M_145 11 08			3.7	8.7	1100	3.6				1.4	2.49
M_145 16 08			5.4	8.6	1600	5.2				1.0	1.70
M_145 25 08			8.2	8.1	2500	7.4				0.7	1.14
M_145 40 08			12.3	7.0	4000	9.7				0.4	0.76
M_145 5,5 15		15.0 (27)	3.3	15.0	550	3.2	86	1600	1795	2.9	4.94
M_145 11 15			6.2	14.7	1100	5.9				1.5	2.59
M_145 16 15			9.1	14.3	1600	8.5				1.0	1.78
M_145 25 15			14.2	13.6	2500	12.5				0.7	1.14
M_145 40 15			21.3	10.9	4000	15.0				0.4	0.76
M_145 5,5 22		22.0 (37)	4.7	21.9	550	4.6	117	2150	2345	2.9	5.03
M_145 11 22			8.9	21.3	1100	8.4				1.5	2.65
M_145 16 22			13.1	20.8	1600	12.1				1.0	1.80
M_145 25 22			20.8	19.1	2500	17.6				0.7	1.13
M_145 40 22			31.1	13.4	4000	18.6				0.4	0.76
M_145 5,5 28		28.0 (45)	5.9	27.8	550	5.8	143	2700	2895	2.9	5.07
M_145 11 28			11.3	26.9	1100	10.6				1.5	2.65
M_145 16 28			17.0	26.2	1600	15.5				1.0	1.78
M_145 25 28			26.5	23.2	2500	21.4				0.7	1.13
M_145 40 28			39.6	14.1	4000	19.7				0.4	0.76

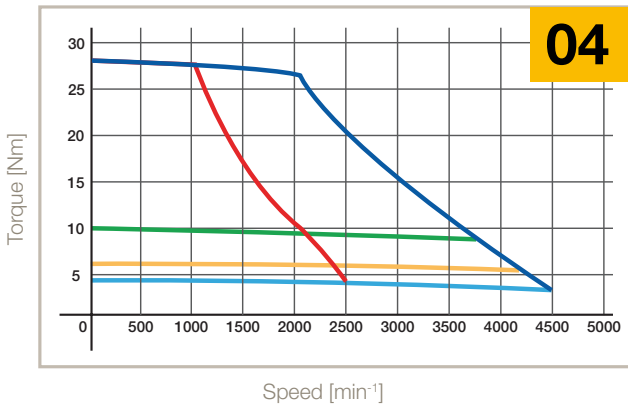
### 400 VAC

Model	Size	Stall		Nominal			Peak Torque <sup>(1)</sup>	Inertia		Ke <sup>(2)(3)</sup>	Kt <sup>(2)(3)</sup>
		Torque <sup>(1)</sup>	Current	Torque <sup>(1)</sup>	Speed	Current		No brake	With brake		
		T <sub>065</sub> (T <sub>105</sub> ) [Nm]	I <sub>065</sub> [A]	T <sub>n065</sub> [Nm]	n [min <sup>-1</sup> ]	I <sub>n065</sub> [A]	T <sub>max</sub> [Nm]	J [kgmm <sup>2</sup> ]	J [kgmm <sup>2</sup> ]	Ke [Vs]	Kt [Nm/A <sub>rms</sub> ]
M_145 10 04	145	4.5 (9)	1.1	4.5	1000	1.1	28	780	975	2.1	3.65
M_145 20 04			2.3	4.5	2000	2.3				1.2	2.03
M_145 30 04			3.4	4.3	3000	3.2				0.8	1.42
M_145 45 04			4.7	3.9	4500	4.0				0.6	1.01
M_145 10 08			8.7 (16)	2.0	8.7	1000				1.9	49
M_145 20 08		3.7		8.4	2000	3.5	1.4	2.49			
M_145 30 08		5.4		7.9	3000	4.8	1.0	1.70			
M_145 45 08		8.2		7.1	4500	6.6	0.7	1.14			
M_145 10 15		15.0 (27)		3.3	14.8	1000	3.1	86	1600	1795	
M_145 20 15			6.2	13.7	2000	5.5	1.5				2.59
M_145 30 15			9.1	12.7	3000	7.5	1.0				1.78
M_145 45 15			14.2	9.8	4500	9.1	0.7				1.14
M_145 10 22			22.0 (37)	4.7	21.4	1000	4.5				117
M_145 20 22		8.9		19.4	2000	7.6	1.5	2.65			
M_145 30 22		13.1		17.3	3000	10.1	1.0	1.80			
M_145 45 22		20.8		11.6	4500	10.8	0.7	1.13			
M_145 10 28		28.0 (45)		5.9	27.1	1000	5.6	143	2700	2895	
M_145 20 28			11.3	23.9	2000	9.4	1.5				2.65
M_145 30 28			17.0	21.1	3000	12.5	1.0				1.78
M_145 45 28			26.5	10.0	4500	9.4	0.7				1.13

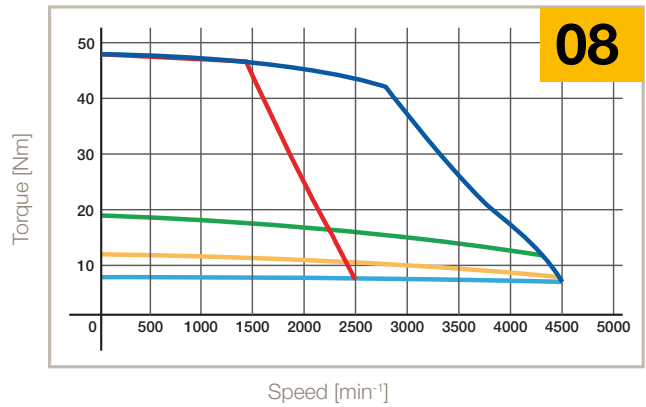
### Speed Torque Curves

#### MB/MH145

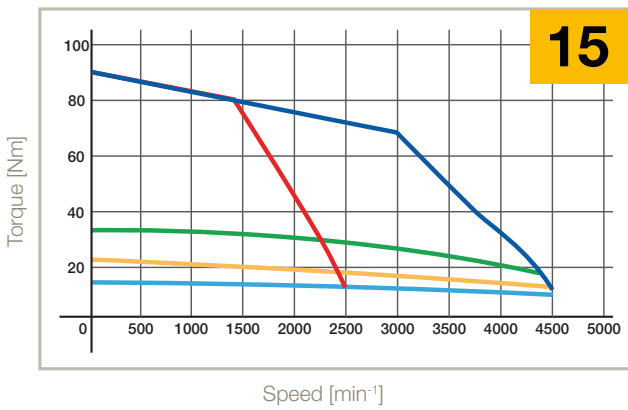
2500 min<sup>-1</sup> 230 V - 4500 min<sup>-1</sup> 400 V



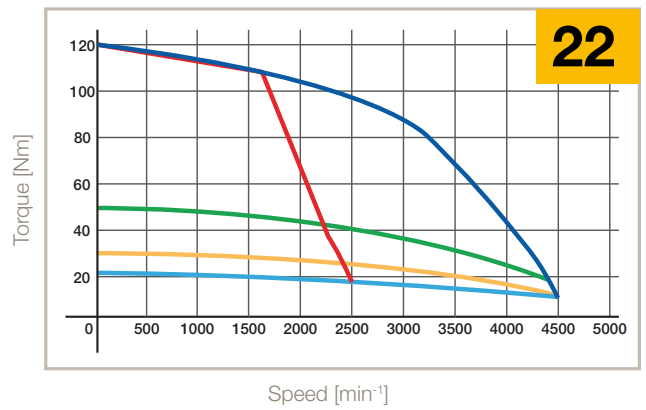
2500 min<sup>-1</sup> 230 V - 4500 min<sup>-1</sup> 400 V



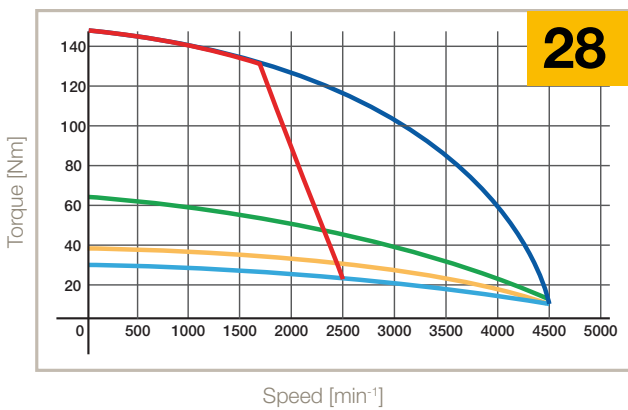
2500 min<sup>-1</sup> 230 V - 4500 min<sup>-1</sup> 400 V



2500 min<sup>-1</sup> 230 V - 4500 min<sup>-1</sup> 400 V



2500 min<sup>-1</sup> 230 V - 4500 min<sup>-1</sup> 400 V



- S1 65 K, ΔT
- S3 10 %, 5 min, 400 V
- S3 10 %, 5 min, 230 V
- S3 50 %, 5 min
- S3 20 %, 5 min

(1) Data referred to motor suspend in horizontal position in free still air, 20 °C ambient temperature  
 (2) Data measured at 20 °C. When "hot" consider 5 % derating  
 (3) Tolerance data ±10 %

## MB / MH Motors, Size 205 - 15...90 Nm

### 230 VAC

Model	Size	Stall		Nominal			Peak Torque <sup>(1)</sup>	Inertia		Ke <sup>(2)(3)</sup>	Kt <sup>(2)(3)</sup>
		Torque <sup>(1)</sup>	Current	Torque <sup>(1)</sup>	Speed	Current		No brake	With brake		
		T <sub>065</sub> (T <sub>105</sub> ) [Nm]	I <sub>065</sub> [A]	T <sub>n065</sub> [Nm]	n [min <sup>-1</sup> ]	I <sub>n065</sub> [A]	T <sub>max</sub> [Nm]	J [kgmm <sup>2</sup> ]	J [kgmm <sup>2</sup> ]	Ke [Vs]	Kt [Nm/A <sub>rms</sub> ]
M_205 11 15	205	15 (22)	6.3	14.7	1150	6.2	69	3500	4035	1.4	2.38
M_205 17 15			8.6	14.4	1700	8.3				1	1.74
M_205 5,5 28		28 (39)	6.9	28.6	550	6.9	123	5000	5535	2.5	4.35
M_205 11 28			13.0	28.2	1150	12.7				1.3	2.31
M_205 17 28			20.1	27.6	1700	19.3				0.9	1.50
M_205 5,5 50		50 (70)	12.4	51.3	550	12.3	222	8000	8535	2.5	4.35
M_205 11 50			22.1	50.0	1150	21.3				1.4	2.45
M_205 17 50			33.1	48.0	1700	30.8				0.9	1.63
M_205 5,5 70		70 (98)	16.8	71.1	550	16.5	310	11 000	11 535	2.6	4.49
M_205 11 70			30.7	68.6	1150	29.3				1.4	2.45
M_205 17 70			46.1	65.0	1700	41.7				0.9	1.63
M_205 5,5 90		90 (126)	22.1	90.9	550	21.8	398	14 000	14 535	2.5	4.35
M_205 11 90			44.3	87.0	1150	41.8				1.3	2.18
M_205 17 90			59	81.7	1700	52.4				0.9	1.63

### 400 VAC

Model	Size	Stall		Nominal			Peak Torque <sup>(1)</sup>	Inertia		Ke <sup>(2)(3)</sup>	Kt <sup>(2)(3)</sup>
		Torque <sup>(1)</sup>	Current	Torque <sup>(1)</sup>	Speed	Current		No brake	With brake		
		T <sub>065</sub> (T <sub>105</sub> ) [Nm]	I <sub>065</sub> [A]	T <sub>n065</sub> [Nm]	n [min <sup>-1</sup> ]	I <sub>n065</sub> [A]	T <sub>max</sub> [Nm]	J [kgmm <sup>2</sup> ]	J [kgmm <sup>2</sup> ]	Ke [Vs]	Kt [Nm/A <sub>rms</sub> ]
M_205 20 15	205	15 (22)	6.3	14.1	2000	5.9	69	3500	4035	1.4	2.38
M_205 30 15			8.6	13.4	3000	7.7				1	1.74
M_205 10 28		28 (39)	6.9	28.2	1000	6.8	123	5000	5535	2.5	4.35
M_205 20 28			13.0	27.3	2000	12.3				1.3	2.31
M_205 30 28			20.1	25.7	3000	18.0				0.9	1.50
M_205 10 50		50 (70)	12.4	50.4	1000	12.1	222	8000	8535	2.5	4.35
M_205 20 50			22.1	47.0	2000	20.1				1.4	2.45
M_205 30 50			33.1	41.7	3000	26.8				0.9	1.63
M_205 10 70		70 (98)	16.8	69.4	1000	16.1	310	11 000	11 535	2.6	4.49
M_205 20 70			30.7	62.9	2000	26.9				1.4	2.45
M_205 30 70			46.1	52.3	3000	33.7				0.9	1.63
M_205 10 90		90 (126)	22.1	88.2	1000	21.2	398	14 000	14 535	2.5	4.35
M_205 20 90			44.3	78.3	2000	37.7				1.3	2.18
M_205 30 90			59.0	61.6	3000	39.7				0.9	1.63

<sup>(1)</sup> Data referred to motor suspend in horizontal position in free still air, 20 °C ambient temperature

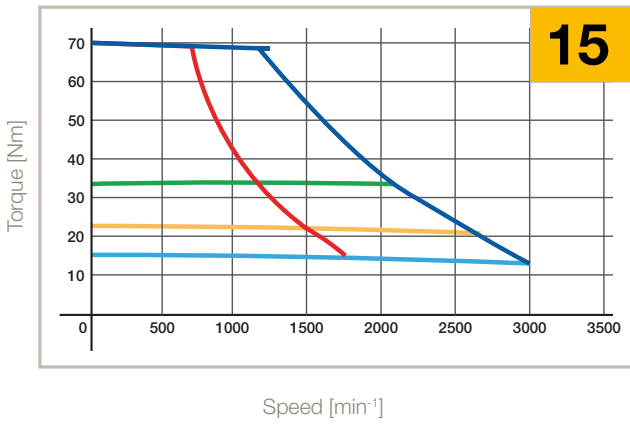
<sup>(2)</sup> Data measured at 20 °C. When "hot" consider 5 % derating

<sup>(3)</sup> Tolerance data ±10 %

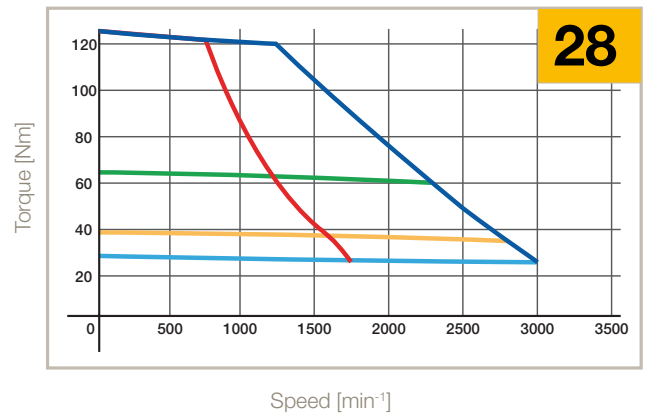
**Speed Torque Curves**

**MB/MH205**

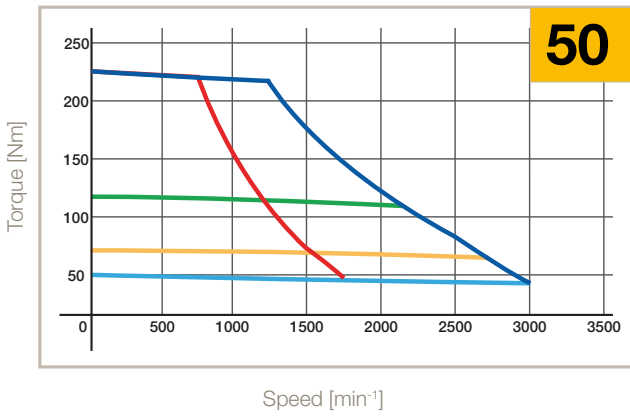
1700 min<sup>-1</sup> 230 V - 3000 min<sup>-1</sup> 400 V



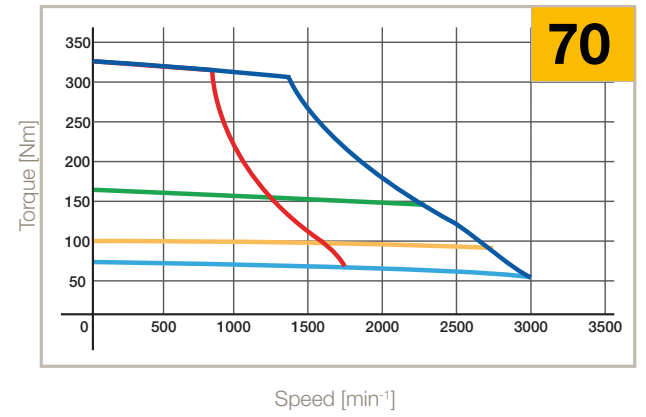
1700 min<sup>-1</sup> 230 V - 3000 min<sup>-1</sup> 400 V



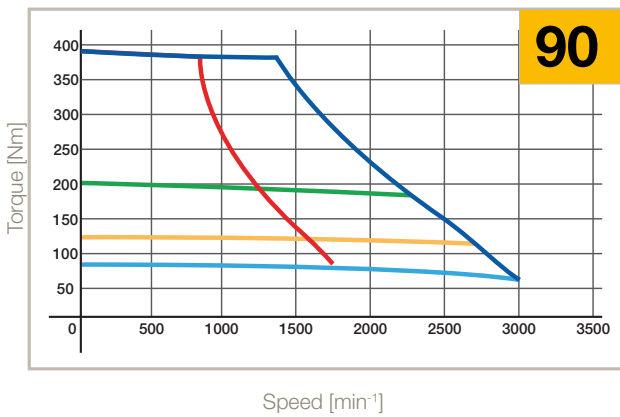
1700 min<sup>-1</sup> 230 V - 3000 min<sup>-1</sup> 400 V



1700 min<sup>-1</sup> 230 V - 3000 min<sup>-1</sup> 400 V



1700 min<sup>-1</sup> 230 V - 3000 min<sup>-1</sup> 400 V



- S1 65 K, ΔT
- S3 10 %, 5 min, 400 V
- S3 10 %, 5 min, 230 V
- S3 50 %, 5 min
- S3 20 %, 5 min

## MB / MH Motors, Size 265 - 75...270 Nm

### 400 VAC

Model	Size	Stall		Nominal			Peak Torque <sup>(1)</sup>	Inertia		Ke <sup>(2)(3)</sup>	Kt <sup>(2)(3)</sup>
		Torque <sup>(1)</sup>	Current	Torque <sup>(1)</sup>	Speed	Current		No brake	With brake		
		T <sub>065</sub> (T <sub>105</sub> ) [Nm]	I <sub>105</sub> [A]	T <sub>n105</sub> [Nm]	n [min <sup>-1</sup> ]	I <sub>n105</sub> [A]	T <sub>max</sub> [Nm]	J [kgmm <sup>2</sup> ]	J [kgmm <sup>2</sup> ]	Ke [Vs]	Kt [Nm/A <sub>rms</sub> ]
M_265 10 75	265	75 (94)	20	94	1000	20.1	235	22 000	30 100	2.86	4.71
M_265 20 75		74 (92)	39	92	2000	39				1.43	2.35
M_265 30 75			59	87	3000	55				0.95	1.57
M_265 10 150		142 (176)	37	176	1000	37	451	36 000	44 100	2.86	4.71
M_265 20 150		144 (179)	86	170	2000	81				1.27	2.09
M_265 30 150		141 (175)	112	144	3000	92				0.95	1.57
M_265 10 220		206 (255)	54	254	1000	54	657	49 000	61 960	2.86	4.71
M_265 20 220		206 (255)	108	231	2000	98				1.43	2.35
M_265 30 220		205 (254)	162	185	3000	118				0.95	1.57
M_265 10 285		267 (332)	64	325	1000	62	857	63 000	75 960	3.18	5.23
M_265 20 285		267 (332)	159	288	2000	138				1.27	2.09
M_265 30 285		269 (334)	213	215	3000	137				0.95	1.57

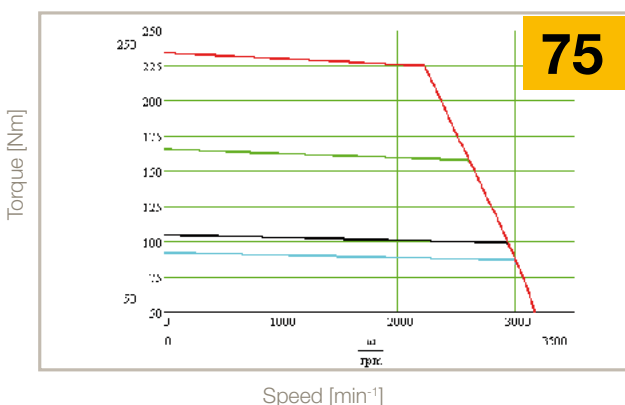
<sup>(1)</sup> Data referred to motor suspend in horizontal position in free still air, 20 °C ambient temperature

<sup>(2)</sup> Data measured at 20 °C. When "hot" consider 5 % derating

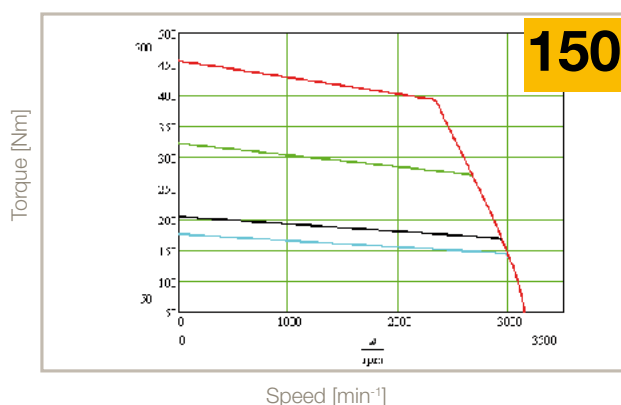
<sup>(3)</sup> Tolerance data ±10 %

### Speed Torque Curves

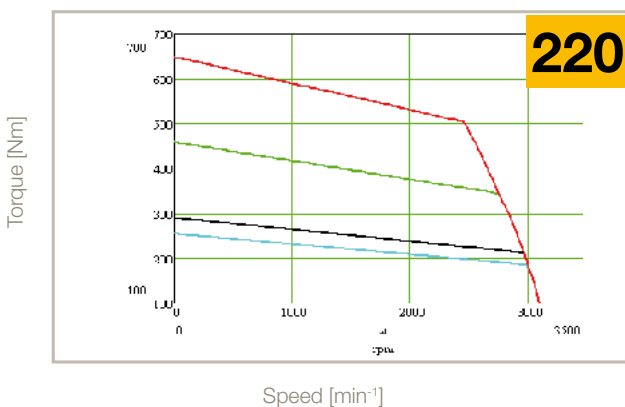
3000 min<sup>-1</sup> 400 V



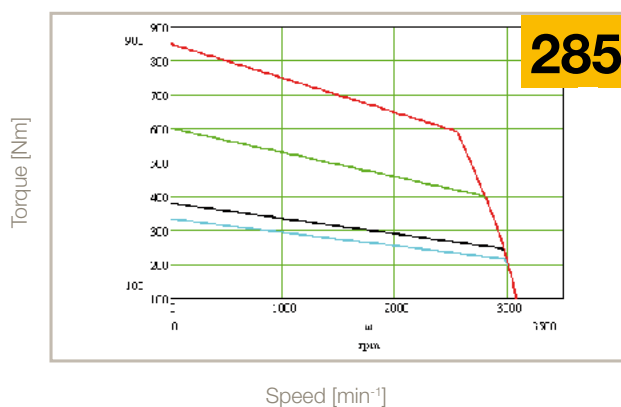
3000 min<sup>-1</sup> 400 V



3000 min<sup>-1</sup> 400 V



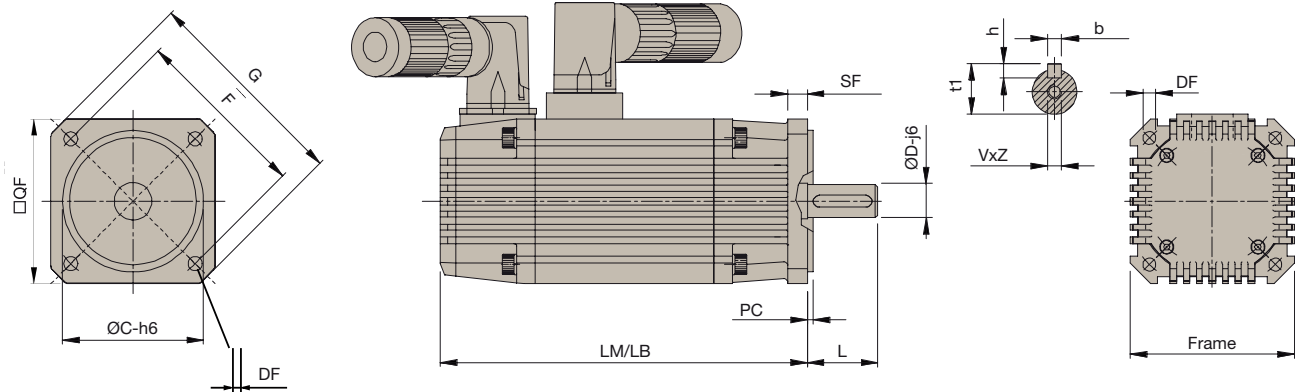
3000 min<sup>-1</sup> 400 V



— S1 65 K, ΔT                      — S3 10 %, 5 min  
— S3 50 %, 5 min                      — S3 20 %, 5 min



## Dimensions



Motor - Size		LM/LB	Weight	DxL	bxh	t1	VxZ	C	F	DF	G	SF	PC	QF	Order code QF			
MB / MH	56	0,2	135/181.5	0.7	9x20 11x23	3x3 4x4	10.2 12.5	M4x10	40	63	5.5	74	6.5	2.5	56	5		
		0,4	150.5/201.5	1														
		0,6	170.5/221.5	1.3														
	70	0,5	158/214	2	11x23 14x30	4x4 5x5	12.5 16	M4x10 M4x12.5	60	75	6	90	8.5	2.5	70	5		
		01	188/244	2.8														
		1,5	218/274	3.5														
		02	248/304	4.3														
		2,5	278/334	5.1														
	105	02	186/250	5	19x40 24x50	6x6 8x7	21.5 27	M6x16 M8x19	95	115	9.5	140	10	3.5	105	5		
		04	229/293	7					95	115	9.5	140	10	3.5	105	4		
		06	273/337	9					80	115	9.5	140	10	3.5	105	9		
		08	317/381	11					110	115	9.5	140	10	3.5	105	6		
	145	04	200/274	8	19x40 24x50 28x60	6x6 8x7	21.5 27 31	M6x16 M8x19 M10x22	130	165	11.5	200	12	3.5	145	5		
		08	231/305	12					130	165	11.5	200	12	3.5	145	4		
		15	292/366	18														
		22	354/428	23														
		28	416/490	28														
	205	15	239/338	20	38x80 42x110	10x8 12x8	41 45	M12x32 M16x40	180	215	14	250	18	4	205	5		
		28	273/372	29														
		50	342/441	44														
70		411/510	59															
90		480/579	74															
265	75	340/475	89	48X110	14x9	51.5	M16x40	250	300	19	342	35	4	264	5			
	150	447/582	126															
	220	554/689	164															
	285	661/796	203															

**LM:** Motor length without brake with resolver  
**LB:** Motor length with brake with resolver  
**DxL:** Shaft  
**bxh:** Key  
**t1:** Overall shaft height  
**VxZ:** Shaft hole depth

mm for dimensions, kg for weight

**C:** Center  
**F:** Distance between center of holes clamp  
**DF:** Fixing holes  
**G:** Dimension in diagonal  
**SF:** Flange thickness  
**PC:** Centering depth  
**QF:** Flange square

## Options

Parker Mx family motors are available with standard and custom options to adapt motor on your application. If the option for your application is not listed, please consult our technical department.

### Holding Brake

All MB, MH motors are available with an optional holding brake. Two different brake types exist, standard holding brake (option A) and special brake (option B) depending on the features of your application needs. Incorporated into the motor is the fail-safe holding brake (supply voltage 24 VDC  $\pm$ 10 %) which is applied when no voltage is present. Because of the power taken by the brake, torque values must be reduced by 5 % (10 % for size 265). The holding brake shall be used with the motor only at a standstill and not for dynamic braking. When used normally they are maintenance free.

Holding Brake <sup>(1)</sup>	Option	Voltage [V]	Current @20 °C [A]	Torque @20 °C [Nm]	Added Length [mm]	Added Weight [kg]	Torque derating of motor
M_56_A	A	24 $\pm$ 10 %	0.32	0.6	51	0.8	5 %
M_56_B	B				n.a.		
M_70_A	A	24 $\pm$ 10 %	0.53	2	56	1.1	5 %
M_70_B	B				n.a.		
M_105_A	A	24 $\pm$ 10 %	1.1	10	64	3	5 %
M_105_B	B				n.a.		
M_145_A_04	A	24 $\pm$ 10 %	1.8	4	74	5	5 %
M_145_A_08				8			
M_145_A_15				15			
M_145_A_22				22			
M_145_A_28				28			
M_145_B	B	24 $\pm$ 10 %	0.75	22	74	5	5 %
M_205_A	A	24 $\pm$ 10 %	1.35	90	99	14	5 %
M_205_B	B	24 $\pm$ 10 %	1.2	120	99	14	5 %
M_265_A_75	A	24 $\pm$ 10 %	2.9	225	135	30	10 %
M_265_A_150				450		35	
M_265_A_220							
M_265_A_285							
M_265_B	B				n.a.		

<sup>(1)</sup> If more than one option is required, please check with our technical department the feasibility.

### Fan cooling

For high duty cycle applications, Parker offer 3 different types of cooling option: servo-ventilated, self ventilated and water cooled. With servo-ventilated the motors (order Code M\_SV), an increase of 25 % torque and current based on nominal values (except for the maximum torque and current data) is provided. The servo-ventilated 205 motor is equipped with an external condenser for starting the fan.

With the self-ventilated option (order Code M\_V), the torque is increased proportionally to the nominal speed.

For water-cooled motors (order code M\_W, available only for size 145), consider a performance increase of approx. 100 % in the torque and current, except peak data.

Motor MB / MH	Option <sup>(1)</sup>	Voltage	Current [A]	Frequency [Hz]	Speed [min <sup>-1</sup> ]	Added Length [mm]	Added Weight [kg]	Torque increasing of motor
105	SV	24 VDC $\pm$ 10 %	0.17	n.a.	3000	64	1	25 %
	V	n.a.	n.a.	n.a.	n.a.	34	0.25	Depending of speed
145	SV	230 VAC Single Phase $\pm$ 10 %	0.35	50	3000	97	2	25 %
	V	n.a.	n.a.	n.a.	n.a.	44	0.55	Depending of speed
205	SV	230 VAC Single Phase $\pm$ 10 %	0.22	50	3000	109	2.2	25 %
	V	n.a.	n.a.	n.a.	n.a.	54	1.1	Depending of speed
265	SV	230 VAC Single Phase $\pm$ 10 %	0.22	50	3000	109	2.2	25 %

<sup>(1)</sup> If more than one option is required, please check with our technical department the feasibility.

## Feedback options

M\_ motors are available with standard resolver feedback, but for different type of application we can offer the following types of feedback:

- Incremental Encoder with hall sensors
- Hiperface absolute encoder (single or multi-turn)
- EnDat absolute encoder (single or multi-turn)

### Resolver

Poles	2
Transformation ratio	0.5
Operating temperature	-50...+150 °C
Motor associations	all sizes

### Incremental Encoder with Hall Sensor

Code	A1	A2	A3	B1	C4
Resolution [C/T]	2000	2048	4096	3000	5000
Poles	8			4	8
System Accuracy	±32"	±32"	±16"	±22"	±13"
Voltage	+5 VDC ±5 % - 200 mA				
Reference Mark	Yes				
Max Speed [min <sup>-1</sup> ]	6000				
Output Circuit	Line drive differential mode 20 mA				
Operating Temperature	-20...+100 °C	-20...+85 °C	-20...+100 °C		
M_ Motors Associations					
M_56	-	-	-	-	-
M_70	-	-	-	Δ 10 mm	-
M_105	✓	✓	✓	-	✓
M_145	✓	✓	✓	-	✓
M_205	✓	✓	✓	-	✓
M_265	-	-	-	-	-

- Not possible

✓ Possible without increment

Δ Possible with increment motor length

### Hiperface Absolute Encoder

Code	S1	S2	A6	A7
Type	Optical			
Turn	Single	Multi	Single	Multi
Incremental Signals	1 V <sub>PP</sub>			
Line Count	1024			
Resolution	32 768 (15 bit)		32 768 (15 bit)	
Absolute rotation	1	4096	1	4096
System Accuracy	±45"			
Power Supply	8 VDC			
Max Speed [min <sup>-1</sup> ]	6000			
Temperature	-20...+115°C			
Safety integrity level:	SIL2 (IEC 61508), SILCL2 (IEC 62061)		Not Available	
<b>MB / MH Motors Associations</b>				
M_56	-	-	-	-
M_70	Δ 10 mm	Δ 10 mm	Δ 10 mm	Δ 10 mm
M_105	Δ 19 mm	Δ 19 mm	Δ 19 mm	Δ 19 mm
M_145	Δ 19 mm	Δ 19 mm	Δ 19 mm	Δ 19 mm
M_205	Δ 19 mm	Δ 19 mm	Δ 19 mm	Δ 19 mm
M_265	-	-	-	-

- Not possible

✓ Possible without increment

Δ Possible with increment motor length

### EnDat Absolute Encoder

Code	B9	C1	D5
Type	Inductive	Optical	
Turn	Multi	Single	Multi
Incremental Signals	1V <sub>PP</sub>		
Line Count	32	512	
Positions per revolutions	131 072 (17 bit)	8192 (13 bit)	
Distinguishable revolutions	4096	1	4096
System Accuracy	±400"	±60"	
Power Supply	5 VDC		
Max Speed [min <sup>-1</sup> ]	12 000		7 000
Temperature	-20...+115 °C	-40...+115 °C	-30...+115 °C
Absolute position values	EnDat 2.1	EnDat 2.2	
Safety integrity level:	not available		
<b>M_ Motors Associations</b>			
M_56	-	-	-
M_70	-	-	-
M_105	Δ 19 mm	Δ 19 mm	Δ 19 mm
M_145	✓	Δ 19 mm	Δ 19 mm
M_205	Δ 19 mm	Δ 19 mm	Δ 19 mm
M_265	-	-	✓

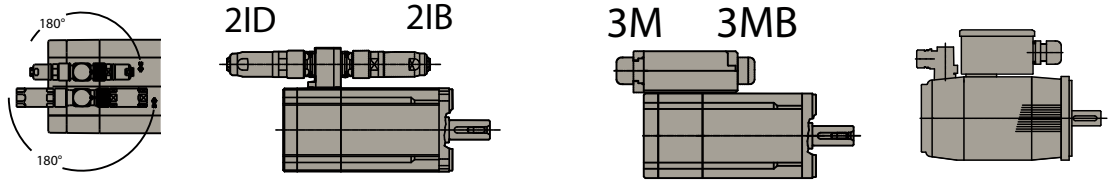
- Not possible
- ✓ Possible without increment
- Δ Possible with increment motor length

### Technical specifications for High inertia

Option Inertia	Added ...	Unit	105				145				205					265			
			02	04	06	08	04	08	15	22	28	15	28	50	70	90	75	150	205
M	Inertia	[kgmm <sup>2</sup> ]	140				790				4400					on request			
	Length	[mm]	0				0				0					on request			
	Weight	[kg]	0.340				0.990				2.065					on request			
ML	Inertia	[kgmm <sup>2</sup> ]	530		n.a.		1770		n.a.		12 100			n.a.		n.a.			
	Length	[mm]	64		n.a.		74		n.a.		99			n.a.		n.a.			
	Weight	[kg]	1.5		n.a.		3.3		3.6		n.a.		7.6		11.9		n.a.		n.a.

## Layout and connectors

M\_ motors are available with different combinations of connectors and layout, depending of size of motor and the application




	2x Parallel upright connectors 2I	2x Forward facing connectors 2IB	2x Rear facing connectors 2ID	Terminal box rear facing 3M	Terminal box forward facing 3MB	Terminal box forward facing 3I
MB_56	-	✓	✓	-	-	-
MB_70	✓	-	-	✓	✓	-
MB_105	✓	-	-	✓	✓	-
MB_145	✓	-	-	✓	✓	✓
MB_205	-	-	-	✓	✓	✓
MB_265	-	-	-	✓	-	-
MH_56	-	✓	✓	-	-	-
MH_70	✓	-	-	-	-	-
MH_105	✓	-	-	-	-	-
MH_145	-	-	-	-	-	✓
MH_205	-	-	-	-	-	✓
MH_265	-	-	-	✓	-	-
ME_70	✓	-	-	-	-	-
ME_105	✓	-	-	-	-	-
ME_145	✓	-	-	-	-	✓
ME_205	-	-	-	-	-	✓
ME_265	-	-	-	✓	-	-

- Not possible
- ✓ Possible without increment
- Δ Possible with increment motor length

## Shaft

M\_ motors are available with or without key option; shafts are available in different sizes suitable for your existing machine or gearbox

## Increased Safety

M\_ motors size 105 and 145 are also available with increased safety which conform to ATEX.... directive 94/9/CE  II 2G Ex e II T3 with environment temperature between -20 and +40 °C  
Only with drive HIDX. The feature and characteristics of the MBX motors are different from the standard version. For more info please consult technical department of Parker EME.

## Custom options

### Flange and shafts

In addition to the standard product it is possible to specify a fully customized mechanical interface for the motor ie flange, shaft and mounting holes. This option requires technical collaboration between the customer and Parker.

### KIT (frameless) options

We can also supply our motors as only stator + rotor. Our mechanical team will develop / propose the right solution for your mechanical application which integrates into the existing elements of the machine.

A second output shaft / external encoder mount

Certain applications need a second shaft on the rear of motor; for this reason with M\_ motors we offer alternative solutions for adding existing feedback or other mechanical accessories. For more details contact your Parker sales engineer.

## Order Code

### MB / MH Motors

To ensure that you select the correct motor we recommend that you have the following information.

- Diagram speed / time of load cycle to identify the type of the cycle (S1, S3 or others)
- Information about inertia load system
- Check the duty cycle - acceleration/deceleration
- Calculate the average torque and peak torque of the system
- Calculate the average speed and maximum speed of the cycle
- Check the temperature and altitude of environment / application
- Check the mechanical compatibility

With these preliminary data you can start to choose the motor (with the correct drive) for your application.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Order example	<b>MB</b>	<b>x</b>	<b>A</b>	<b>V</b>	<b>205</b>	<b>11</b>	<b>28</b>	<b>5</b>	<b>9</b>		<b>2IB</b>			<b>64</b>	<b>A1</b>			<b>2</b>

#### 1 Type Of Motor (mandatory field)

<b>ME</b>	Motor with Encoder ME Series
<b>MB</b>	Motor with Resolver MB Series
<b>MH</b>	Motor with Resolver MH Series

#### 2 EX Protection

empty field	Standard motor no EX Certification
<b>x</b>	Motor with EX Certification (increased protection safety) (only for 105 and 145 without the holding brake at 3000 min <sup>-1</sup> ) (only with HIDX...)

#### 3 Brake Option

empty field	No Brake Option
<b>A</b>	Motor with Holding Brake (brakes when the supply voltage is 0)
<b>B</b>	Motor with BINDER Holding Brake (size145 up to 15Nm and 205)

#### 4 Cooling Option

empty field	no cooling option
<b>V</b>	Motor with shaft-drive fan cooling
<b>SV</b>	Motor with (single-phase) motorised fan cooling
<b>W</b>	Water cooled motor (only size 145)

#### 5 Motor Frame Size (mandatory field)

<b>56</b>	Torque range 0.2...0.6 Nm
<b>70</b>	Torque range 0.5...2,5 Nm
<b>105</b>	Torque range 2.2...8 Nm
<b>145</b>	Torque range 4.5...28 Nm
<b>205</b>	Torque range 15...90 Nm
<b>265</b>	Torque range 75...265 Nm

#### 6 Winding (mandatory field)

<b>nn</b>	min <sup>-1</sup> (x100) except for size 205 1150 min <sup>-1</sup> which is only 11
-----------	--

#### 7 Motor Torque (mandatory field)

<b>nn</b>	Torque in Nm
-----------	--------------

#### 8 Flange (mandatory field)

<b>5</b>	B5 Flange
<b>6</b>	116 mm Flange, only for frame 105
<b>9</b>	96 mm Flange, only for frame 105

#### 9 Shaft (mandatory field)

<b>9</b>	9x20 mm for size 56
<b>11</b>	11x23 mm for size 56/70
<b>14</b>	14x30 mm for size 70
<b>19</b>	19x40 mm for size 105/145
<b>24</b>	24x50 mm for size 105/145
<b>28</b>	28x60 mm for size 145
<b>38</b>	38x80 mm for size 205
<b>42</b>	42x110 mm for size 205
<b>48</b>	48x110 mm for size 265
<b>A*</b>	Special shaft under request

#### 10 Key Shaft option

empty field	Shaft with key
<b>S</b>	Shaft without key

#### 11 Layout - Connectors (mandatory field)

<b>2I</b>	Interconnectron rotatables receptacles (not for size 56 - 265 and 205 with brake)
<b>3M</b>	Terminal Box - opposite shaft glands
<b>3MB</b>	Terminal Box -toward shaft glands
<b>2IB</b>	90° Interconnectron receptacles - forward facing
<b>2ID</b>	90° Interconnectron receptacles - rear facing
<b>3I</b>	Terminal Box + Interconnectron 90° (not for size 56 - 265)
<b>3MBS</b>	Terminal Box + Interconnectron 90° (only for size 265)

#### 12 Female connectors option

empty field	With Female / flying connectors
<b>W</b>	Without Female / flying connectors

#### 13 Form Option

empty field	no Foot Mount Option
<b>3</b>	B3 - Foot Mount Option

#### 14 Protection Degree (mandatory field)

<b>64</b>	IP64
<b>65</b>	IP65

**15 Feedback**

empty field	Resolver (Standard) not for ME motors
<b>A1</b>	Tamagawa OIH48 2000 ppr / on request - No Stock
<b>A2</b>	Tamagawa OIH48 2048 ppr for size 105/145/205
<b>A3</b>	Tamagawa OIH48 4096 ppr for size 105/145/205
<b>A6</b>	Stegman SRS50 Hiperface Single-Turn for size 70/105/145/205
<b>A7</b>	Stegman SRM50 Hiperface Multi-Turn for size 70/105/145/205
<b>B1</b>	Encoder 3000 ppr + Hall - TAMAGAWA OIH35
<b>B9</b>	SinCos EnDat Encoder Multi-Turn - HEIDENHAIN EQI1331
<b>C1</b>	SinCos EnDat Encoder Single-Turn - HEIDENHAIN EQI1113
<b>C4</b>	Encoder 5000 ppr + Hall - TAMAGAWA OIH48
<b>D5</b>	SinCos EnDat Encoder Multi-Turn - HEIDENHAIN EQN1325
<b>S1</b>	SinCos Hiperface Encoder Single-Turn - STEGMANN SRS50S
<b>S2</b>	SinCos Hiperface Encoder Multi-Turn - STEGMANN SRS50S

**16 Option Inertia**

empty field	Standard Inertia
<b>M</b>	Medium Inertia
<b>ML</b>	High Inertia

**17 Special Option**

empty field	No Special Option
<b>1Bxx</b>	Motor with 2-side output shaft Where xx is the diameter of second shaft
<b>Exx</b>	Prearrangement for external encoder mounting; where xx is the model of feedback

**18 Voltage**

<b>0A</b>	24 V
<b>0B</b>	34 V
<b>0C</b>	48 V
<b>0D</b>	50 V
<b>0E</b>	60 V
<b>0F</b>	72 V
<b>0G</b>	74 V
<b>0</b>	80 V
<b>0H</b>	96 V
<b>1A</b>	108-110 V
<b>1D</b>	120 V
<b>1B</b>	125 V
<b>1C</b>	150 V
<b>1</b>	180 V
<b>2</b>	220-230 V
<b>2A</b>	222 V
<b>2B</b>	200 V
<b>3</b>	330 V
<b>4</b>	380-400 V
<b>4A</b>	425 V
<b>4C</b>	460 V
<b>4B</b>	490 V

Cables and connectors are part of the accessories required for Parker motors; for different combination we offer propose different types of cables for signals and power. Below you will find the code structure.

### Motor Power Cable for MB Motors

	1	2	3	4	5	6	7
Order example	CAVOMOT	A	1,5x	5	PM-	I	40

<b>1 Cable</b>	<b>CAVOMOT</b>	Power cable drive - motor
<b>2 Brake wire</b>	<b>empty field</b>	without brake wire
	<b>A</b>	Brake wire
<b>3 Section [mm<sup>2</sup>]</b>	<b>1,5x</b>	1,5 mm <sup>2</sup>
	<b>2,5x</b>	2,5 mm <sup>2</sup>
	<b>4x, 6x, 10x</b>	4 mm <sup>2</sup> , 6 mm <sup>2</sup> , 10 mm <sup>2</sup>
	<b>25x</b>	25 mm <sup>2</sup> (not for "PM" type)
<b>4 Length [m]</b>	<b>1, ...</b>	Length in metre
<b>5 Application Type</b>	<b>PF-</b>	Standard cable
	<b>PM-</b>	Highflex cable
<b>6 Motor Connector</b>	<b>M</b>	Military Connector (Mil) (all layout except 08 and 5]
	<b>8</b>	Military Connector (Mil) (all layout 8]
	<b>I</b>	Interconnectron Connector (all layout)
	<b>3</b>	Terminal Connection Box (all layout except 3M/3MB/3MC/3MA)
	<b>S</b>	Terminal Connection Box layout 3M/3M/3MC/3MA
	<b>SY</b>	Terminal Connection for MBX motors (Cable no ATEX)
	<b>SL</b>	Terminal connection box layout 6i only for MB / MH205 motor
	<b>F</b>	Fast Connector
	<b>A</b>	Amphenol Connector (layout 0P, 1A, 1C, 2DA, ...)
	<b>T</b>	Trilogy Connector
	<b>SL</b>	Terminal connection box layout 6i only for MB / MH205 motor
	<b>PRM</b>	Patch Cord Military Connector (Mil) (all layout except 08]
<b>7 Motor Size</b>	<b>40..265</b>	Motor Size

### Feedback Cable for MB Motors

	1	2	3	4	5
Order example	CAVORES	4	PM-	I	SLVDN

<b>1 Signal Cable type</b>	<b>CAVORES</b>	Resolver
	<b>CAVOENC</b>	Incremental encoder
	<b>CAVOABS</b>	Absolute Encoder EnDat+SinCos
	<b>CAVOHIP</b>	Absolute Encoder Hiperface+SinCos
	<b>CAVOSIN</b>	SinCos Encoder
	<b>CAVOHAL</b>	SinCos Encoder + Hall sensor
<b>2 Length [m]</b>	<b>1, ...</b>	Length in metre
<b>3 Application Type</b>	<b>PM</b>	Moving Application
<b>4 Motor Connector</b>	<b>M</b>	Military Connector (Mil) (all layout except 08]
	<b>8</b>	Military Connector (Mil) (all layout 8]
	<b>I</b>	Interconnectron Connector (all layout)
	<b>S</b>	Terminal Connection Box layout 3M/3M/3MC/3MA and motor MBX
	<b>F</b>	Fast Connector
	<b>A</b>	Amphenol Connector (layout 0P, 1A, 1C, 2DA, ...)
	<b>T</b>	Trilogy Connector
	<b>NX</b>	Motors NX2-3-4-6-8 type NX----AKR7---
	<b>E</b>	Free signal cable for EX motors
	<b>PRM</b>	Patch Cord Military Connector (Mil) (all layout except 08]
<b>5 Drive Type</b>	<b>LVD</b>	LVD Drive
	<b>HPD</b>	HPD Drive
	<b>SLVD</b>	SLVD and SLVD-N Drive
	<b>SLVDN</b>	SLVD-N Drive
	<b>TPD</b>	TPD-M
	<b>SPD/TWIN</b>	TWIN-N and SPD-N Drive or wire without connector drive side
	<b>HIDRIVE</b>	Hi-Drive
	<b>631</b>	Servodrives 631
	<b>638</b>	Servodrives 638
	<b>637F</b>	Servodrives 637F



## Motor Power Cable for MH Motors

	1	2
Order example	<b>MOK</b>	<b>55/02</b>

1	Cable
<b>MOK</b>	Motor cable <sup>(2)</sup>
2	Type
	<b>for MH56 / MH70 / MH105 <sup>(3)</sup></b>
<b>55/....<sup>(1)</sup></b>	1.5 mm <sup>2</sup> ; up to 13.8 A
<b>54/....<sup>(1)</sup></b>	1.5 mm <sup>2</sup> ; up to 13.8 A Moving application
<b>56/....<sup>(1)</sup></b>	2.5 mm <sup>2</sup> ; up to 18.9 A
<b>57/....<sup>(1)</sup></b>	2.5 mm <sup>2</sup> ; up to 18.9 A Moving application
	<b>for MH145 / MH205 <sup>(4)</sup></b>
<b>60/....<sup>(1)</sup></b>	1.5 mm <sup>2</sup> ; up to 13.8 A
<b>63/....<sup>(1)</sup></b>	1.5 mm <sup>2</sup> ; up to 13.8 A Moving application
<b>59/....<sup>(1)</sup></b>	2.5 mm <sup>2</sup> ; up to 18.9 A
<b>64/....<sup>(1)</sup></b>	2.5 mm <sup>2</sup> ; up to 18.9 A Moving application
<b>61/....<sup>(1)</sup></b>	6 mm <sup>2</sup> ; up to 32.3 A Moving application
<b>62/....<sup>(1)</sup></b>	10 mm <sup>2</sup> ; up to 47.3 A Moving application

MOK55 and MOK54 are also possible for linear motors LXR406, LXR412 and BLMA.

## Length code for cables

<sup>(1)</sup> Length code 1 (Example: SSK01/09 = length 25 m)

Length [m]	1,0	2,5	5,0	7,5	10,0	12,5	15,0	20,0	25,0	30,0	35,0	40,0	45,0	50,0
Order code	01	02	03	04	05	06	07	08	09	10	11	12	13	14

<sup>(2)</sup> Color according to DESINA

<sup>(3)</sup> with motor connector

<sup>(4)</sup> with cable eye for motor terminal box

## Feedback Cable for MH Motors

	1
Order example	<b>REK42/02</b>

1	Signal Cable type
	<b>for MH-Motors</b>
<b>REK42/....<sup>(1)</sup></b>	Resolver cable <sup>(2)</sup>
<b>REK41/....<sup>(1)</sup></b>	Resolver cable <sup>(2)</sup> Moving application
<b>GBK24/....<sup>(1)</sup></b>	SinCos© Feedback cable <sup>(2)</sup> Moving application
<b>GBK38/....<sup>(1)</sup></b>	EnDat 2.1 Feedback cable <sup>(2)</sup> Moving application
<b>GBK23/....<sup>(1)</sup></b>	Encoder cable <sup>(2)</sup>
	<b>for linear motors</b>
<b>GBK33/....<sup>(1)</sup></b>	Feedback cable for LXR Moving application
<b>GBK32/....<sup>(1)</sup></b>	Feedback cable for BLMA Moving application



# Parker's Motion & Control Technologies

At Parker, we're guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements. It means looking at customer applications from many angles to find new ways to create value. Whatever the motion and control technology need, Parker has the experience, breadth of product and global reach to consistently deliver. No company knows more about motion and control technology than Parker. For further info call 00800 27 27 5374.



## AEROSPACE

### Key Markets

- Aircraft engines
- Business & general aviation
- Commercial transports
- Land-based weapons systems
- Military aircraft
- Missiles & launch vehicles
- Regional transports
- Unmanned aerial vehicles

### Key Products

- Flight control systems & components
- Fluid conveyance systems
- Fluid metering delivery & atomization devices
- Fuel systems & components
- Hydraulic systems & components
- Inert nitrogen generating systems
- Pneumatic systems & components
- Wheels & brakes



## CLIMATE CONTROL

### Key Markets

- Agriculture
- Air conditioning
- Food, beverage & dairy
- Life sciences & medical
- Precision cooling
- Processing
- Transportation

### Key Products

- CO<sub>2</sub> controls
- Electronic controllers
- Filter driers
- Hand shut-off valves
- Hose & fittings
- Pressure regulating valves
- Refrigerant distributors
- Safety relief valves
- Solenoid valves
- Thermostatic expansion valves



## ELECTROMECHANICAL

### Key Markets

- Aerospace
- Factory automation
- Food & beverage
- Life science & medical
- Machine tools
- Packaging machinery
- Paper machinery
- Plastics machinery & converting
- Primary metals
- Semiconductor & electronics
- Textile
- Wire & cable

### Key Products

- AC/DC drives & systems
- Electric actuators
- Controllers
- Gantry robots
- Gearheads
- Human machine interfaces
- Industrial PCs
- Inverters
- Linear motors, slides and stages
- Precision stages
- Stepper motors
- Servo motors, drives & controls
- Structural extrusions



## FILTRATION

### Key Markets

- Food & beverage
- Industrial machinery
- Life sciences
- Marine
- Mobile equipment
- Oil & gas
- Power generation
- Process
- Transportation

### Key Products

- Analytical gas generators
- Compressed air & gas filters
- Condition monitoring
- Engine air, fuel & oil filtration & systems
- Hydraulic, lubrication & coolant filters
- Process, chemical, water & microfiltration filters
- Nitrogen, hydrogen & zero air generators



## FLUID & GAS HANDLING

### Key Markets

- Aerospace
- Agriculture
- Bulk chemical handling
- Construction machinery
- Food & beverage
- Fuel & gas delivery
- Industrial machinery
- Mobile
- Oil & gas
- Transportation
- Welding

### Key Products

- Brass fittings & valves
- Diagnostic equipment
- Fluid conveyance systems
- Industrial hose
- PTFE & PFA hose, tubing & plastic fittings
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects



## HYDRAULICS

### Key Markets

- Aerospace
- Aerial lift
- Agriculture
- Construction machinery
- Forestry
- Industrial machinery
- Mining
- Oil & gas
- Power generation & energy
- Truck hydraulics

### Key Products

- Diagnostic equipment
- Hydraulic cylinders & accumulators
- Hydraulic motors & pumps
- Hydraulic systems
- Hydraulic valves & controls
- Power take-offs
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects



## PNEUMATICS

### Key Markets

- Aerospace
- Conveyor & material handling
- Factory automation
- Food & beverage
- Life science & medical
- Machine tools
- Packaging machinery
- Transportation & automotive

### Key Products

- Air preparation
- Compact cylinders
- Field bus valve systems
- Grippers
- Guided cylinders
- Manifolds
- Miniature fluidics
- Pneumatic accessories
- Pneumatic actuators & grippers
- Pneumatic valves and controls
- Rodless cylinders
- Rotary actuators
- Tie rod cylinders
- Vacuum generators, cups & sensors



## PROCESS CONTROL

### Key Markets

- Chemical & refining
- Food, beverage & dairy
- Medical & dental
- Microelectronics
- Oil & gas
- Power generation

### Key Products

- Analytical sample conditioning products & systems
- Fluoropolymer chemical delivery fittings, valves & pumps
- High purity gas delivery fittings, valves & regulators
- Instrumentation fittings, valves & regulators
- Medium pressure fittings & valves
- Process control manifolds



## SEALING & SHIELDING

### Key Markets

- Aerospace
- Chemical processing
- Consumer
- Energy, oil & gas
- Fluid power
- General industrial
- Information technology
- Life sciences
- Military
- Semiconductor
- Telecommunications
- Transportation

### Key Products

- Dynamic seals
- Elastomeric o-rings
- EMI shielding
- Extruded & precision-cut, fabricated elastomeric seals
- Homogeneous & inserted elastomeric shapes
- High temperature metal seals
- Metal & plastic retained composite seals
- Thermal management

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