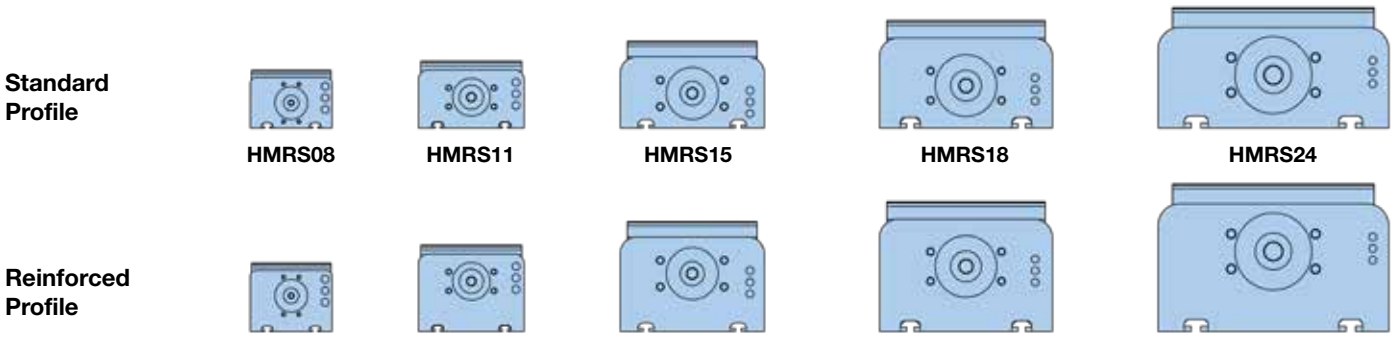
The HMRS Series

Screw-Driven Actuators
for Industrial, High-Thrust, High Payload Positioning Applications

- High dynamic control for precision positioning
- High thrust capacity
- High payload and moment load capacity
- Highly configurable design
- Ideal in multi-axis applications

Features

- 5 different frame sizes to choose from
- Basic or reinforced profiles for supported or unsupported applications
- Tandem carriage with second carriage for higher load capabilities
- Long available strokes
- Complete motor and drive packages
- Easy lube feature for reduced maintenance
- Ambient operating temperature range -20˚C to +80˚C
- IP54 Rating

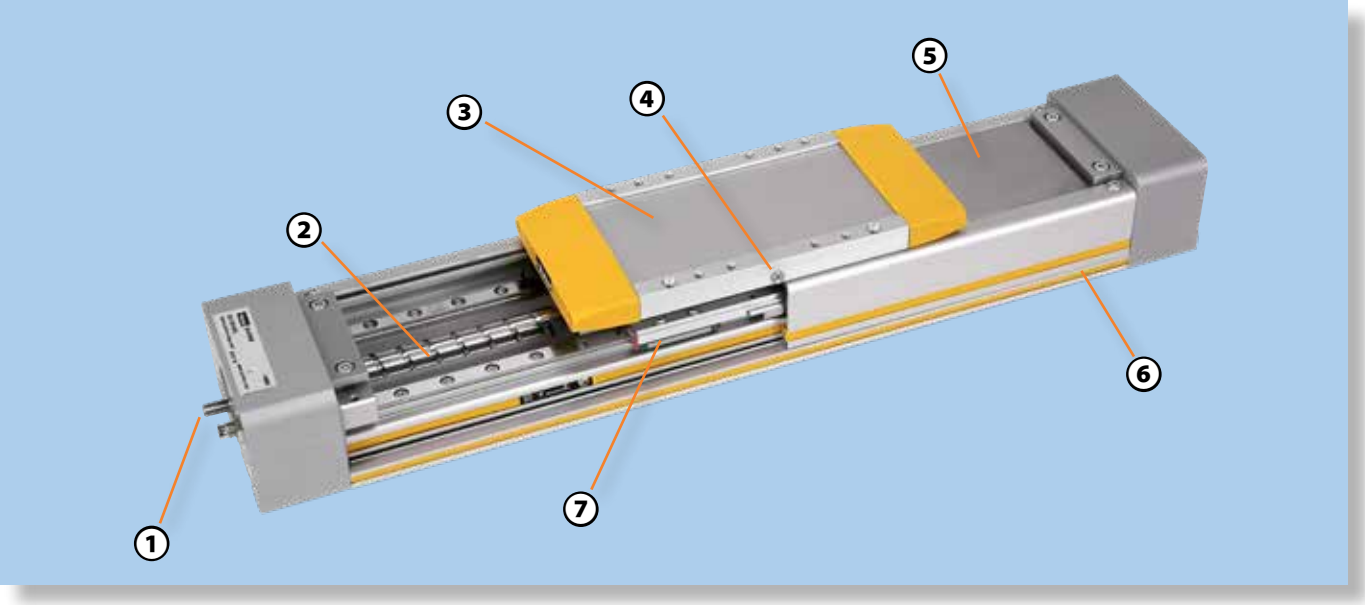


	HMRS08	HMRS11	HMRS15	HMRS18	HMRS24
Maximum Travel (mm)	1200	1500	2000	2100	2300
Maximum Payload (N)	1800	4450	8800	16200	26600
Maximum Acceleration (m/sec^2)	10	10	10	10	10

The HMRS is the screw driven version of the HMR family. The large diameter ball screw assembly allows this positioner to achieve very high thrust force capacity.

Having multiple screw lead options for every frame size promotes flexibility for diverse application demands. The HMRS can also achieve greater positional precision than the belt driven counterpart.

The compact design allows integration of the HMRS into any machine layout, providing superior dynamic performance with minimal space utilization.



① **Drive shaft**
Designed to pair with a large assortment of motor and gearhead options

② **High force ball screw**
Multiple lead options for every frame size, offering high thrust and high throughput

③ **Carriage assembly**
Low profile, high strength aluminum construction with threaded and pinning mounting options

④ **Lubrication ports**
Easy access maintenance (1x per side) allows for single point lubrication for all bearing trucks and the ball nut at any location along travel

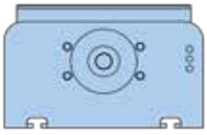
⑤ **Corrosion resistant steel sealing band**
Magnetically fastened to the actuator body and provides IP54 sealing

⑥ **Slotted profile**
Dovetail grooves for actuator & sensor mounting

⑦ **Recirculating profile rail bearing**
Two rails and four bearing trucks total for maximized payload capacity

Profile Options

Basic profile - for applications where actuator is fully supported, this option provides a lower profile option.



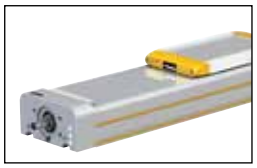
Reinforced profile - for long un-supported spans (i.e. gantry style applications).

Carriage Options

Standard carriage or tandem carriage for higher load capabilities

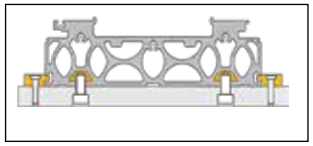
Cover Options

IP20 rated without protective cover, or IP54 rated protective cover with seal strip cover assemblies—ideal for harsh environments



Actuator Mounting Options

HMR actuators can be mounted from the underside into t-nuts in the bottom t-slots or via toe clamps into the t-slots on the side of the extrusion.

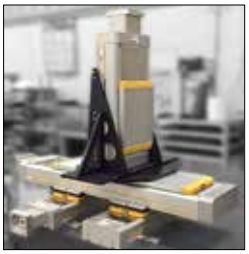


Pinning options are also available for mounting, carriage to base and carriage to carriage. Consult factory for additional information.

Multi-axis Systems

A wide range of adapter plates and intermediate drive shafts simplifies engineering and installation.

**Please consult factory for your individual system design.*

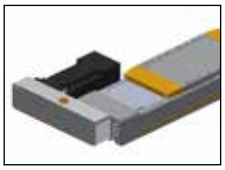


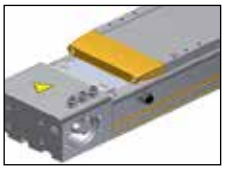
Other Options & Accessories

HMRS actuators can be outfitted with a variety of different options.

In addition to the standard configurable options highlighted in Options & Accessories, a list of commonly used non-standard options are highlighted below. Please contact us for assistance in choosing any of these or any other unique configurations.

- **Purge ports**
- **Parallel motor mount**
- **Longer than cataloged stroke**
- **...and many more**

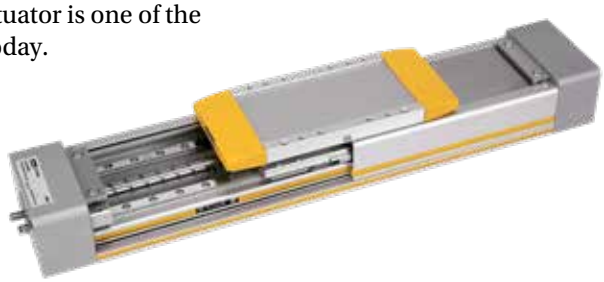




SPECIFICATIONS

HMRS Series (HMRS08 and HMRS11)

Parker's High Moment Rodless (HMR) Series electric linear actuator is one of the most user friendly and versatile actuator lines on the market today.



Guided by two square rail bearings, the HMR has enormous moment and payload capacity bundled in a low-profile, yet sleek package. With five different frame sizes, two different drive train options, multiple mounting, carriage and sensor options, and an IP54 protective cover option—along with a multitude of other customizable features—the HMR was truly designed with flexibility in mind.

Common Specifications

Actuator Size			HMRS08				HMRS11			
Screw Type			12 x 5		12 x 12		16 x 5		16 x 16	
Screw Lead	s_{lin}	mm	5		12		5		16	
Screw Diameter		mm	12				16			
Duty Cycle		%	100				100			
Linear Speed (Max)	v_{max}	m/s	0.25		0.6		0.25		0.8	
Acceleration (Max)	a_{max}	m/s²	10							
Repeatability (unidirectional)		µm	± 20							
Order Stroke (Max) (1)		mm	1200				1500			
Thrust Force (Max)	$F_{A_{max}}$	N lbs	820 185				2200 495			
Thrust Force @ 2540 km Life	$F_{A_{max}}$	N lbs	820 185		650 146		1550 349		1150 259	
Torque on Drive Shaft (Max)	$M_{A_{max}}$	Nm in-lb	0.7 6.2		1.7 15.0		1.9 16.8		6.1 54.0	
Torque on Drive Shaft @ 2540 km Life	$M_{A_{max}}$	Nm in-lb	0.7 6.2		1.3 11.5		1.3 11.5		3.1 27.4	
Torque — No Load	M_0	Nm in-lb	0.2 1.8		0.2 1.8		0.3 2.7		0.4 3.5	
Inertia										
@ Zero Stroke	J_0	kgmm²	4				13			
Per Meter of Stroke	J_{OS}	kgmm²/m	14				45			
Per 1 kg Moved Mass	J_m	kgmm²/kg	0.6		3.7		0.6		6.5	
Unit Weight (by Order Code Option)			**B**	**C**	**R**	**S**	**B**	**C**	**R**	**S**
@ Zero Stroke	m_0	kg	1.8	2.1	2.2	2.5	3.5	3.9	4.6	5.0
Per Meter of Stroke	m_{OS}	kg/m	3.7	4.7	4.8	5.7	6.6	7.6	8.8	9.9
Carriage (by Order Code Option) (2)	m_C	kg	**0** 1.0		**1** 0.7		**0** 1.6		**1** 1.3	
Ambient Temperature Range		°C	-20 to +80							
IP Rating(3)			IP 54							

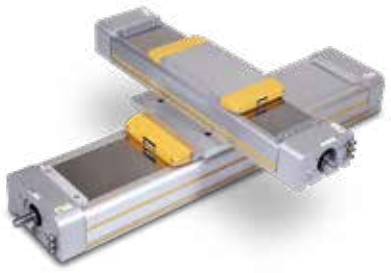
Note- For force and moment load specifications, see HMRS Loading Conditions

(1) Longer lengths available - please consult factory

(2) For tandem carriage weight add mass from column '0' and '1'

(3) For unit with protective covers - IP20 without covers

HMRS Series (HMRS15, HMRS18, and HMRS24)



Common Specifications

Actuator Size			HMRS15		HMRS18		HMRS24	
Screw Type			20 x 5	20 x 20	25 x 10	25 x 25	32 x 10	32 x 32
Screw Lead	s_{lin}	mm	5	20	10	25	10	32
Screw Diameter		mm	20		25		32	
Duty Cycle		%	100		100		100	
Linear Speed (Max)	v_{max}	m/s	0.25	1	0.5	1.25	0.5	1.6
Acceleration (Max)	a_{max}	m/s^2	10					
Repeatability (unidirectional)		µm	± 20					
Order Stroke (Max) [1]		mm	2000		2100		2300	
Thrust Force (Max)	$F_{A_{max}}$	N	2600		4800		5500	
		lbs	585		1,080		1,238	
Thrust Force @ 2540 km Life	$F_{A_{max}}$	N	1800	2160	3300	3960	3500	4880
		lbs	405	486	743	891	788	1098
Torque on Drive Shaft (Max)	$M_{A_{max}}$	Nm	2.2	9	8.3	20.8	9.5	30.4
		in-lb	19.5	79.7	73.5	184.1	84.1	269.0
Torque on Drive Shaft @ 2540 km Life	$M_{A_{max}}$	Nm	1.6	7.5	5.7	17.1	6.1	27
		in-lb	14.2	66.4	50.4	151.3	54.0	239.0
Torque — No Load	M_0	Nm	0.7	0.9	0.9	1	1	1.1
		in-lb	6.2	8.0	8.0	8.9	8.9	9.7
Inertia								
@ Zero Stroke	J_0	$kgmm^2$	14		35		96	
Per Meter of Stroke	J_{OS}	$kgmm^2/m$	107		245		639	
Per 1 kg Moved Mass	J_m	$kgmm^2/kg$	0.6	10.1	2.5	15.8	2.5	25.9
Unit Weight (by Order Code Option)			**B**	**C** **R** **S**	**B**	**C** **R** **S**	**B**	**C** **R** **S**
@ Zero Stroke	m_0	kg	5.2	6.1 7.1 7.9	8.9	10.0 11.2 12.3	16.5	18.1 20.5 22.2
Per Meter of Stroke	m_{OS}	kg/m	12.1	13.9 15.5 17.2	15.5	17.7 19.1 21.4	25.6	28.3 30.7 33.4
Carriage (by Order Code Option) [2]	m_C	kg	**0** 2.6	**1** 1.8	**0** 4.7	**1** 3.7	**0** 9.2	**1** 7.3
Ambient Temperature Range		°C	-20 to +80					
IP Rating[3]			IP 54					

Note- For force and moment load specifications, see HMRS Loading Conditions

[1] Longer lengths available - please consult factory

[2] For tandem carriage weight add mass from column '0' and '1'

[3] For unit with protective covers - IP20 without covers

HMRS Loading Specifications (Max) - HMRS08 and HMRS11

Life and loading characteristics shown for both belt and screw driven units.

Rated Life			HMR08	HMR11
2540 km	F_Y / F_Z	N (lb)	1800 (405)	4450 (1001)
2540 km Tandem	F_Y / F_Z	N (lb)	2700 (608)	6675 (1508)
8000 km	F_Y / F_Z	N (lb)	1250 (281)	3000 (675)
8000 km Tandem	F_Y / F_Z	N (lb)	1875 (422)	4500 (1013)
2540 km	M_X	Nm (in-lb)	45 (398)	155 (1372)
	M_Y	Nm (in-lb)	80 (708)	200 (1770)
	M_Z	Nm (in-lb)	80 (708)	200 (1770)
2540 km Tandem	M_X	Nm (in-lb)	68 (602)	235 (2080)
	M_Y	Nm (in-lb)	120 (1062)	300 (2655)
	M_Z	Nm (in-lb)	120 (1062)	300 (2655)
8000 km	M_X	Nm (in-lb)	30 (266)	105 (929)
	M_Y	Nm (in-lb)	55 (487)	135 (1195)
	M_Z	Nm (in-lb)	55 (487)	135 (1195)
8000 km Tandem	M_X	Nm (in-lb)	45 (398)	160 (1416)
	M_Y	Nm (in-lb)	80 (708)	205 (1814)
	M_Z	Nm (in-lb)	80 (708)	205 (1814)

HMRS Stroke dependent speed - HMRS08 and HMRS11

Actuator Size			HMRS08		HMRS11	
Screw Diameter (mm)			12		16	
Screw Lead (mm)			5	12	5	16
Max. permissible speed at order stroke (mm/s)	200	[mm]	250	600	250	800
	400	[mm]	250	600	250	800
	600	[mm]	152	366	197	631
	800	[mm]	102	245	132	424
	1000	[mm]	73	176	95	304
	1200	[mm]	55	132	71	228
	1400	[mm]	-	-	56	178
	1600	[mm]	-	-	45	143
	1800	[mm]	-	-	-	-
	2000	[mm]	-	-	-	-
	2200	[mm]	-	-	-	-
	2400	[mm]	-	-	-	-
	2600	[mm]	-	-	-	-
	2800	[mm]	-	-	-	-
	3000	[mm]	-	-	-	-
	3200	[mm]	-	-	-	-
	3400	[mm]	-	-	-	-
	3600	[mm]	-	-	-	-
	3800	[mm]	-	-	-	-
	4000	[mm]	-	-	-	-

HMRS Loading Specifications (Max) - HMRS15, HMRS18, HMRS24

Life and loading characteristics shown for both belt and screw driven units.

Rated Life			HMR15	HMR18	HMR24
2540 km	F_Y / F_Z	N (lb)	8,800 (1,980)	16,200 (3,645)	26,600 (5,985)
2540 km Tandem	F_Y / F_Z	N (lb)	13,200 (2,970)	24,300 (5,468)	39,900 (8,978)
8000 km	F_Y / F_Z	N (lb)	6,000 (1,350)	11,000 (2,475)	18,200 (4,095)
8000 km Tandem	F_Y / F_Z	N (lb)	9,000 (2,025)	16,500 (3,713)	27,300 (6,143)
2540 km	M_X	Nm (in-lb)	430 (3,806)	940 (8,320)	2,150 (19,029)
	M_Y	Nm (in-lb)	560 (4,956)	1,230 (10,886)	2,430 (21,507)
	M_Z	Nm (in-lb)	560 (4,956)	1,230 (10,886)	2,430 (21,507)
2540 km Tandem	M_X	Nm (in-lb)	645 (5,708)	1,410 (12,480)	3,225 (28,544)
	M_Y	Nm (in-lb)	840 (7,435)	1,845 (16,330)	3,645 (32,261)
	M_Z	Nm (in-lb)	840 (7,435)	1,845 (16,330)	3,645 (32,261)
8000 km	M_X	Nm (in-lb)	290 (2,567)	640 (5,664)	1,460 (12,922)
	M_Y	Nm (in-lb)	380 (3,363)	840 (7,435)	1,660 (14,692)
	M_Z	Nm (in-lb)	380 (3,363)	840 (7,434)	1,660 (14,692)
8000 km Tandem	M_X	Nm (in-lb)	435 (3,850)	960 (8,497)	2,190 (19,383)
	M_Y	Nm (in-lb)	570 (5,045)	1,260 (11,152)	2,490 (22,038)
	M_Z	Nm (in-lb)	570 (5,045)	1,260 (11,152)	2,490 (22,038)

HMRS Stroke dependent speed - HMRS15, HMRS18, HMRS24

Actuator Size			HMRS15		HMRS18		HMRS24	
Screw Diameter (mm)			20		25		32	
Screw Lead (mm)			5	20	10	25	10	32
Max. permissible speed at order stroke (mm/s)	200	[mm]	250	1,000	500	1,250	500	1,600
	400	[mm]	250	1,000	500	1,250	500	1,600
	600	[mm]	250	1,000	500	1,250	500	1,600
	800	[mm]	169	678	382	956	423	1,354
	1000	[mm]	122	486	277	694	312	997
	1200	[mm]	91	366	211	526	239	765
	1400	[mm]	71	285	165	413	189	605
	1600	[mm]	57	228	133	333	153	491
	1800	[mm]	47	187	109	274	127	406
	2000	[mm]	39	156	92	229	107	342
	2200	[mm]	33	132	78	195	91	291
	2400	[mm]	28	113	67	167	79	251
	2600	[mm]	-	-	58	145	68	219
	2800	[mm]	-	-	51	128	60	193
	3000	[mm]	-	-	45	113	53	171
	3200	[mm]	-	-	40	100	48	152
	3400	[mm]	-	-	-	-	43	137
	3600	[mm]	-	-	-	-	39	123
	3800	[mm]	-	-	-	-	35	112
	4000	[mm]	-	-	-	-	32	102

HMRS Weight, Mass, and Inertia

Weight and mass HMRS

Product size			**HMRS08**				**HMRS11**				**HMRS15**			
			Weight of actuator											
Version of actuator (see order code)			B	C	R	S	B	C	R	S	B	C	R	S
Weight actuator. 0 - order stroke	m_0	[kg]	1.8	2.1	2.2	2.5	3.5	3.9	4.6	5.0	5.2	6.1	7.1	7.9
Weight actuator per 1 meter	m_{mt}	[kg/m]	3.7	4.7	4.8	5.7	6.6	7.6	8.8	9.9	12.1	13.9	15.5	17.2
			Moving mass											
Version of carriage (see order code)			0		1		0		1		0		1	
Weight carriage*	m_c	[kg]	1.0		0.7		1.6		1.3		2.6		1.8	

Weight and mass HMRS

Product size			**HMRS18**				**HMRS24**			
			Weight of actuator							
Version of actuator (see order code)			B	C	R	S	B	C	R	S
Weight actuator. 0 - order stroke	m_0	[kg]	8.9	10.0	11.2	12.3	16.5	18.1	20.5	22.2
Weight actuator per 1 meter	m_{mt}	[kg/m]	15.5	17.7	19.1	21.4	25.6	28.3	30.7	33.4
			Moving mass							
Version of carriage (see order code)			0		1		0		1	
Weight carriage*	m_c	[kg]	4.7		3.7		9.2		7.3	

*For tandem carriage weight add mass from column '0' and '1'

Total mass HMRS: $m_{tot} = m_0 + m_C$ + order stroke * m_{mt}

Inertia HMRS

Product size			**HMRS08**		**HMRS11**		**HMRS15**	
Pitch (see order code)			**5**	**12**	**5**	**16**	**5**	**20**
Inertia actuator. 0 - order stroke	J_0	[kgmm²]	4		13		14	
Inertia actuator per 1 meter	J_{mt}	[kgmm²/m]	14		45		107	
Inertia per 1 kg moving mass	J_{kg}	[kgmm²/kg]	0.6	3.7	0.6	6.5	0.6	10.1

Inertia HMRS

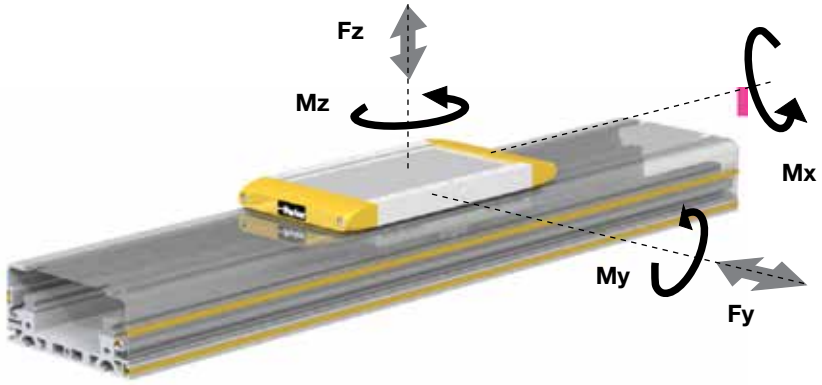
Product size			**HMRS18**		**HMRS24**	
Pitch (see order code)			**10**	**25**	**10**	**32**
Inertia actuator. 0 - order stroke	J_0	[kgmm²]	35		96	
Inertia actuator per 1 meter	J_{mt}	[kgmm²/m]	245		639	
Inertia per 1 kg moving mass	J_{kg}	[kgmm²/kg]	2.5	15.8	2.5	25.9

Total inertia HMRS: $J_{tot} = J_0$ + order stroke * $J_{mt} + m_C * J_{kg} + m * J_{kg}$

HMR Loading Conditions

Loading conditions, including external forces and moment loading, are application dependent. The center of gravity for the mass/payload attached to the carriage must be determined in order to properly size the ideal actuator for your application. Please note that when selecting the proper HMR actuator for your system the sum of all loading should not exceed "1" as per the formula below.

Loads, forces and bending moments



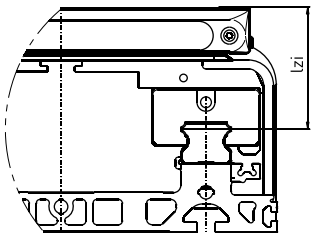
Calculating Load Factors - Combined Normal and Moment Load

The sum of combined loads (static and dynamic) must not exceed "1" at any time as shown in the formula below:

$$L = \frac{F_y}{Fy_{(max)}} + \frac{F_z}{Fz_{(max)}} + \frac{M_x}{Mx_{(max)}} + \frac{M_y}{My_{(max)}} + \frac{M_z}{Mz_{(max)}} \leq 1$$

$M = F \times d$ (Nm)
$M_x = M_{x\,static} + M_{x\,dynamic}$
$M_y = M_{y\,static} + M_{y\,dynamic}$
$M_z = M_{z\,static} + M_{z\,dynamic}$

Internal lever arm l_{zi}



Dimensions - Internal lever arm l_{zi}

Product size		l_{zi}
HMRx085	[mm]	33.0
HMRx110	[mm]	39.5
HMRx150	[mm]	50.0
HMRx180	[mm]	57.5
HMRx240	[mm]	68.0

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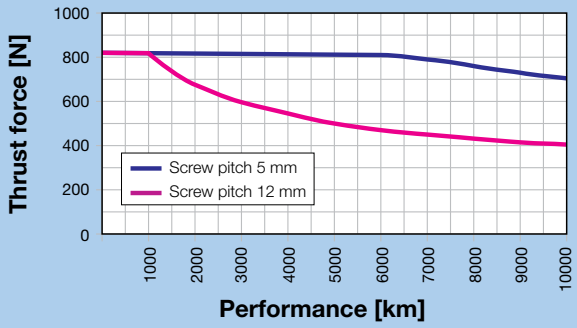
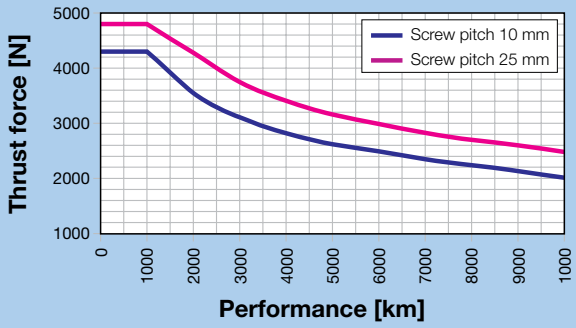
HMRS Thrust/Life Curve

Performance expectancy depends on the application's required force. An increase in force will reduce performance.

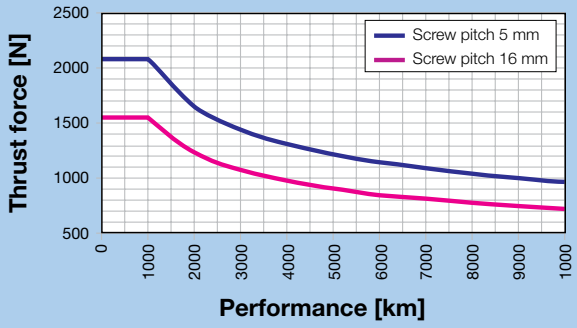
HMRS08 Performance / Thrust force



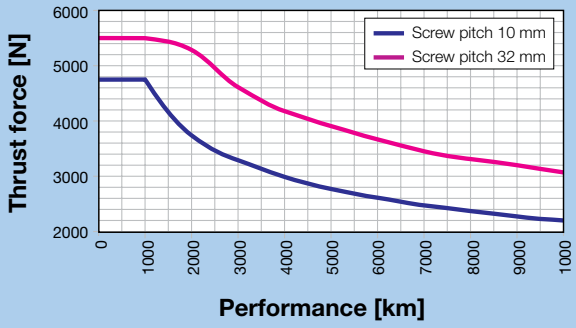
HMRS18 Performance / Thrust force



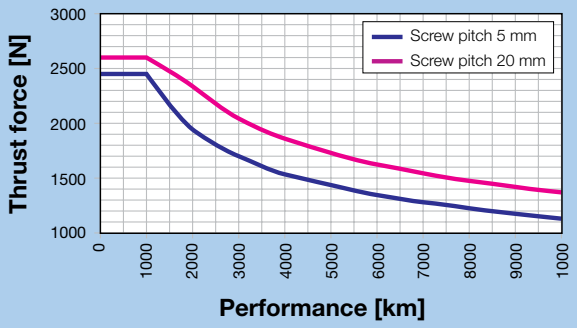
HMRS11 Performance / Thrust force



HMRS24 Performance / Thrust force



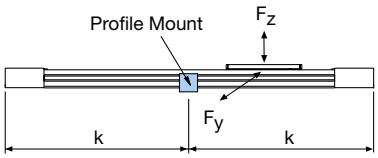
HMRS15 Performance / Thrust force



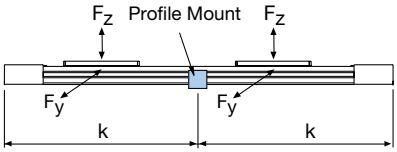
DIMENSIONS

HMRS Maximum Permissible Unsupported Length — *Determining actuator mounting placement*

HMR Series actuators need to be mounted onto a solid machine base or frame structure using appropriately positioned actuator mounts. This ensures that the actuator will not undergo excessive deflection based on the application's load and length requirements.

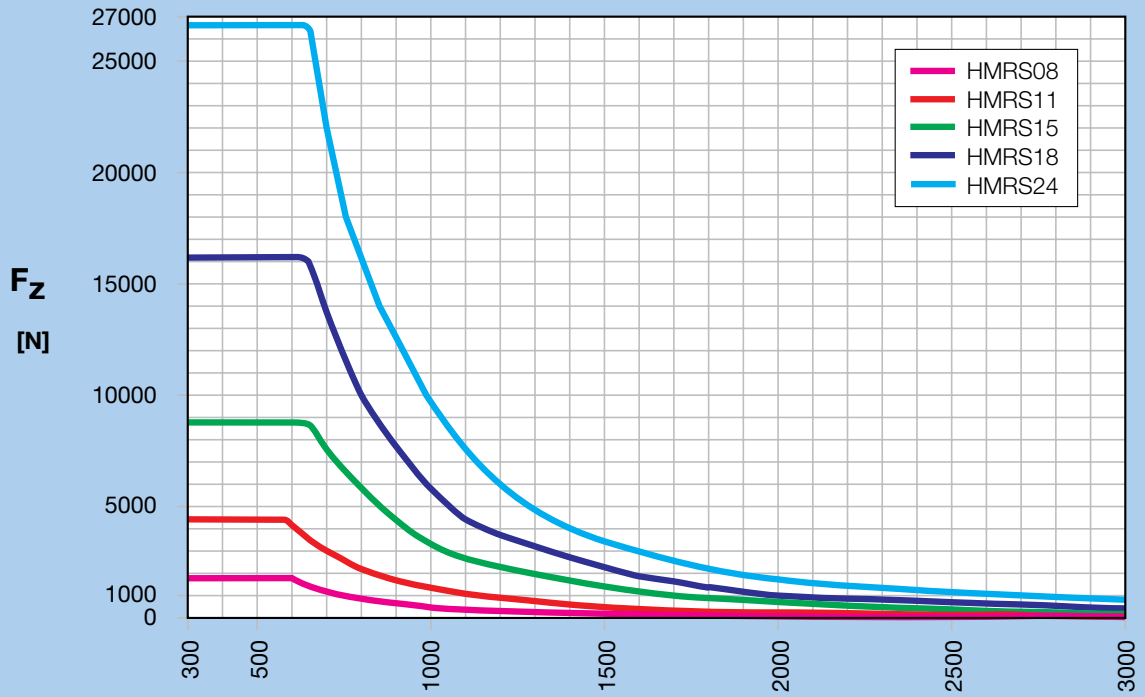


The greater the load and/or the longer the unsupported length between mounts, the more the actuator is susceptible to deflection.



Deflection is also dependent on the carriage orientation (F_Z for standard mounted actuator or F_y for a side mounted actuator).

Max. admissible loads [N] and supporting distances [mm] (self-supporting- *reinforced profile only*)



Example F_z HMR 11:

For a 3160 N load the distance "d" between supporting elements is 700 mm.
For mounting accessories see "Actuator Mounting" in Options & Accessories.

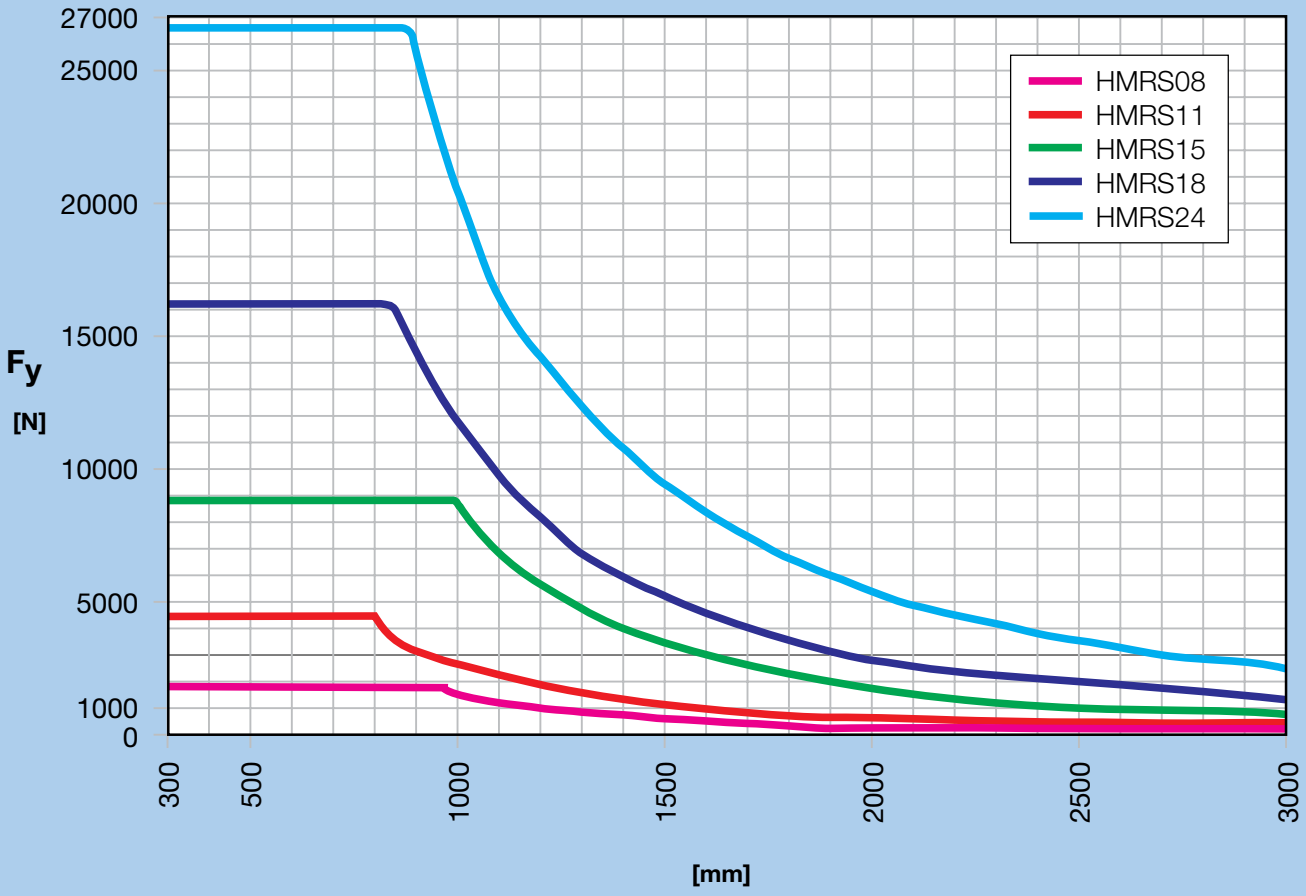
Maximum Permissible Unsupported Length

Determining actuator mounting placement

Use the appropriate deflection graph to ensure that the application load does not exceed the deflection curve. Supporting the actuator within the recommended maximum distance "k" will ensure that the installation will have a maximum deflection equal to 0.01% of distance "k."

To further reduce deflection, simply reduce the distance between actuator mounts as described in the examples below.

Max. admissible loads [N] and supporting distances [mm] (self-supporting- *reinforced profile only*)



Example F_y HMR 11:

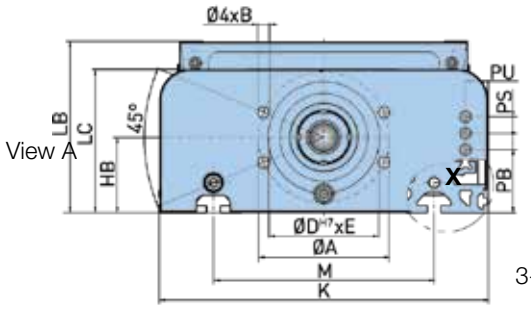
For a 3160 N load the distance "d" between supporting elements is 900 mm.
For mounting accessories see "Actuator Mounting" in Options & Accessories.

HMRS Dimensions – (mm)

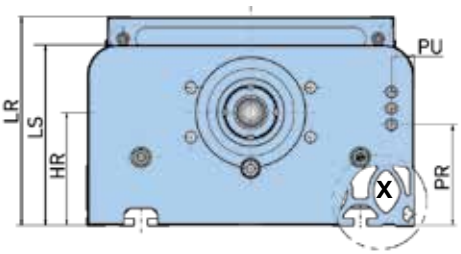
HMR actuators can be configured with either "Basic" or "Reinforced" profiles based on application demands. Basic profiles are suitable for applications where the actuator is secured to a machine base and constantly supported. Reinforced profiles can be utilized in applications with unsupported spans. See Maximum Permissible Unsupported Length for mounting support requirements.

Dimensions

"Basic" profile



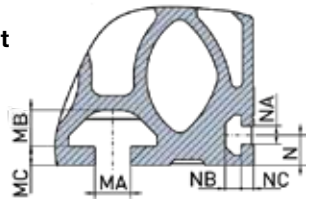
"Reinforced" profile



3-PIN M8 connections

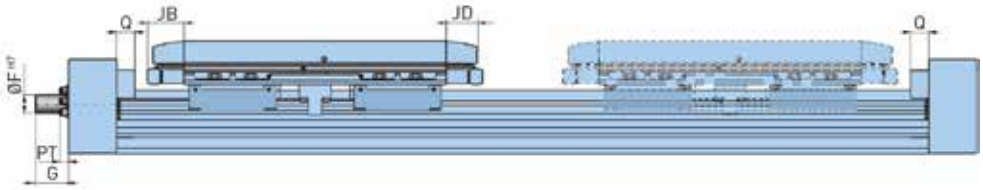
View X

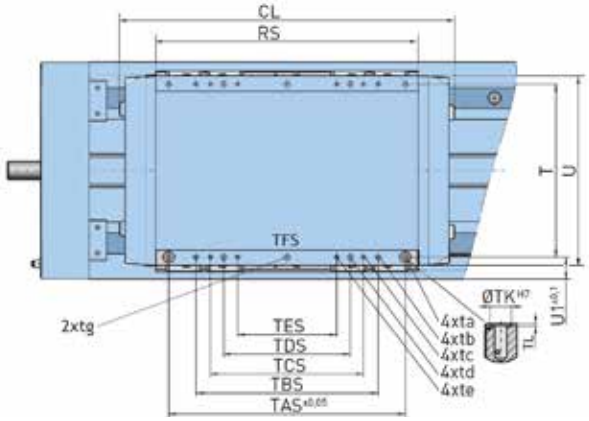
T-slot attachment



Note: The same T-slot profile is used for both profile types

A▶





Carriage pinning option
See Options & Accessories for dowel sleeve information.

Download 2D & 3D files from parker.com/emc

Dimension table - HMRS

Product size		ØA	B	ØD^{H7}	E	ØF^{H7}	G	HB	HR	K	LB	LC	LR	LS
HMRS08	[mm]	42.0	M4	34.0	3.0	6.0	11.0	26.0	37.0	85.0	60.0	52.5	71.0	63.5
HMRS11	[mm]	51.0	M6	39.0	5.0	10.0	18.0	32.0	52.0	110.0	69.5	60.5	89.5	80.5
HMRS15	[mm]	72.0	M8	54.0	4.0	12.0	31.0	36.0	60.0	150.0	90.0	74.0	114.0	98.0
HMRS18	[mm]	80.0	M8	64.0	2.5	15.0	33.0	44.0	67.5	180.0	111.5	93.5	134.5	116.5
HMRS24	[mm]	95.0	M10	80.0	2.5	20.0	37.0	55.0	83.0	240.0	125.0	104.5	153.0	132.5

Dimension table - HMRS

Product size		M	MA	MB	MC	N	NA	NB	NC	PB	PR	PS	PT	PU	Q
HMRS08	[mm]	50.0	5.2	4.5	1.5	4.5	3.4	3.0	2.5	19.3	30.3	12.0	9.0	7.1	16.0
HMRS11	[mm]	70.0	5.2	4.5	1.8	4.5	3.4	3.0	2.5	23.5	43.5	12.0	9.0	8.5	20.0
HMRS15	[mm]	96.0	6.2	6.8	3.0	6.5	5.2	4.6	3.5	15.0	39.0	12.0	9.0	15.0	20.0
HMRS18	[mm]	116.0	8.0	7.8	4.5	8.5	5.2	4.5	3.5	28.0	51.0	12.0	9.0	18.0	20.0
HMRS24	[mm]	161.0	10.0	10.2	5.3	8.5	5.2	4.5	3.5	46.0	74.0	12.0	9.0	16.5	20.0

Dimension table - carriage standard HMRS

Product size		JB	JD	CL	RS	T	TAS	ta	TBS	tb	TCS	tc	TDS	td	TES
HMRS08	[mm]	33.5	30.0	195.0	128.0	74.0	97.0	M4x12	70.0	M4x12	40.0	M4x12	-	-	-
HMRS11	[mm]	37.5	34.0	225.0	150.0	96.0	122.0	M5x12	97.0	M5x12	65.0	M5x12	25.0	M5x12	-
HMRS15	[mm]	37.5	34.0	266.0	191.0	120.0	170.0	M5x12	122.0	M5x12	110.0	M5x12	70.0	M5x12	-
HMRS18	[mm]	40.0	34.0	311.0	231.0	150.0	202.0	M6x12	170.0	M5x10	122.0	M5x10	110.0	M5x12	90.0
HMRS24	[mm]	40.0	34.0	371.0	291.0	192.0	262.0	M8x16	202.0	M6x12	170.0	M5x10	140.0	M8x16	122.0

Dimension table - carriage standard HMRS

Product size		te	TFS	tf	tg	ØTKH7	TL	U	U1
HMRS08	[mm]	-	-	-	-	7.0	1.5	83.0	5.5
HMRS11	[mm]	-	-	-	-	7.0	1.5	105.0	7.0
HMRS15	[mm]	-	-	-	M5x12	7.0	1.5	135.0	15.0
HMRS18	[mm]	M6x12	-	-	M6x12	9.0	1.5	165.0	15.0
HMRS24	[mm]	M5x10	110.0	M5x12	M8x16	12.0	1.5	210.0	24.0

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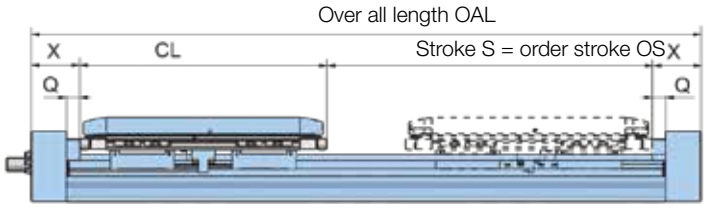
Virtual Engineer

HMRS Order Stroke – (mm)

Order stroke dependent dimensions

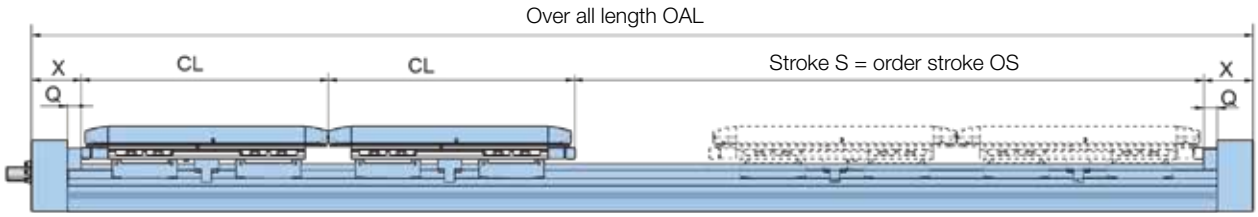
- ES = Effective Stroke
- SS = Safety Stroke
- CD = Carriage distance
- CL = Carriage length Standard
- S = Stroke
- OS = Order Stroke
- OAL = Over All Length

Standard design with one carriage



Order stroke OS = Effective stroke ES + 2 x Safety stroke SS
Over all length OAL = order stroke OS + carrier length CL + 2 x dimension end cap X

Tandem design with two carriages



Order stroke OS = Effective stroke ES + 2 x Safety stroke SS + Carrier distance CD (not shown)
Over all length OAL = Order stroke OS + 2 x carrier length CL + 2 x dimension end cap X

Dimensions - Carriage and end cap HMRS

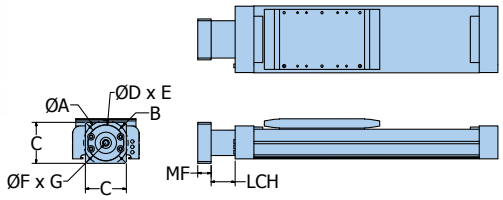
Product size		CL	Q	X
HMRS08	[mm]	195.0	16.0	54.0
HMRS11	[mm]	225.0	20.0	65.0
HMRS15	[mm]	266.0	20.0	62.0
HMRS18	[mm]	311.0	20.0	66.0
HMRS24	[mm]	371.0	20.0	73.0

Order Stroke Safety Distance:
The mechanical end position should not be used as a mechanical end stop, thus an additional ***Safety Distance*** at both ends of travel must be incorporated into the Order Stroke. The safety distance for servo-driven systems is equivalent to the travel distance per one revolution of the drive shaft. AC motor-driven systems with VFDs require a larger safety distance than servo systems. For further information and design assistance, please consult factory.

OPTIONS & ACCESSORIES

HMRS Screw Driven Actuators
Gearhead Mounting Kit Options

Gearhead Mounting Kits include a coupling housing, coupling, and flange.



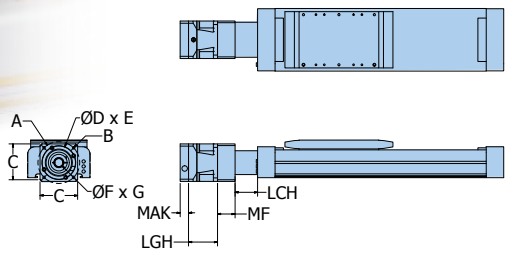
A = Bolt circle diameter
B = Screw for bolt circle
C = Square dimension
D = Pilot diameter
E = Pilot depth
F = Input drive shaft diameter
G = Input drive shaft length
LCH = Length coupling housing
MF = Motor flange

Actuator Size	⓪ Order Code [1]	Dimensions								
		A	B	C	D	E	F	G	LCH	MF
HMRS08	**C0**	44	M4x0.7	60	35	6	12	25	28	20
HMRS11	**A7**	70	M5x0.8	60	50	15	16	40	37	35
	C0	44	M4x0.7	60	35	6	12	25	37	20
	C1	62	M5x0.8	80	52	8	16	40	37	35
	BX	70	M5x0.8	60	50	10	16	25	37	20
HMRS15	**A7**	70	M5x0.8	85	50	15	16	40	54	30
	A8	100	M6x1	90	80	20	22	52	54	42
	C1	62	M5x0.8	84	52	12	16	40	54	30
	C2	80	M6x1	92	68	5	22	46	54	36
	BX	70	M5x0.8	85	50	5	16	25	54	20
	BY	100	M6x1	92	80	15	20	40	54	30
HMRS18	**A8**	100	M6x1	100	80	30	22	52	70	40
	C2	80	M6x1	92	68	6	22	46	70	30
	BY	100	M6x1	92	80	15	20	40	70	30
	BZ	130	M8x1.25	115	110	25	24	50	70	40
HMRS24	**A9**	130	M8x1.25	115	110	25	32	68	85	40
	C3	108	M8x1.25	125	90	17	32	70	85	40
	BZ	130	M8x1.25	115	110	5	24	50	85	20

[1] When ordering with actuator, use order code ⓪ to specify appropriately sized gearhead mounting kit. See Ordering Information.

HMRS Screw Driven Actuators
Mounted Gearhead with Motor Mounting Kit Options

Mounted Gearhead with Motor Mounting Kits include a coupling housing, coupling, flange, and gearhead with coupler and flange.



A = Bolt circle diameter
B = Screw for bolt circle
C = Square dimension
D = Pilot diameter
E = Pilot depth of the flange
F = Input drive shaft diameter
G = Input drive shaft length
LCH = Length coupling housing
LGH = Length gearhead
MAK = Motor adapter
MF = Motor flange

Actuator Size	⑨ Order Code [1]	⓪ Order Code [2]	Dimensions A	B	C	D	E	F	G	LCH	LGH	MAK	MF
HMRS08	Jx	AB	66.68	M4x0.7	55	38.10	3.5	6.35	20.8	28	48.5	15.7	20
	Jx	AC	66.68	M5x0.8	57	38.11	6	9.53	20.8		48.5	26	20
	Jx	AD	66.68	M5x0.8	57	38.11	6	9.53	31.8		48.5	26	20
	Jx	B6	63	M5x0.8	55	40	8	9	23	8	48.5	19	20
HMRS11	Fx	A3	100	M6x1	82	80	5	14	30	37	59.8	18	35
	Fx	AB	66.68	M4x0.7	62	38.10	4	6.35	20.8	37	59.8	16.5	35
	Fx	AC	66.68	M5x0.8	62	38.15	4	9.53	20.8	37	59.8	16.5	35
	Fx	AD	66.68	M5x0.8	62	38.15	4	9.53	31.8	37	59.8	16.5	35
	Fx	AE	98.43	M5x0.8	86.8	73.03	7	12.70	37.1	37	59.8	22.5	35
	Fx	AF	98.43	M5x0.8	86.8	73.03	7	12.70	31.8	37	59.8	22.5	35
	Fx	AH	63	M5x0.8	62	40	4	9	23	37	59.8	16.5	35
	Fx	AN	70	M5x0.8	62	50	4	14	30	37	59.8	16.5	35
	Fx	B6	63	M4x0.7	62	40	4	9	23	37	59.8	16.5	35
	Jx	AB	66.68	M4x0.7	55	38.10	3.5	6.35	20.8	37	48.5	15.7	20
	Jx	AC	66.68	M5x0.8	57	38.11	6	9.53	20.8	37	48.5	26	20
	Jx	AD	66.68	M5x0.8	57	38.11	6	9.53	31.8		48.5	26	20
	Jx	B6	63	M5x0.8	55	40	8	9	23	37	48.5	19	20
	Kx	AB	66.68	M4x0.7	62	38.10	4	6.35	20.8	37	67	16.5	35
	Kx	AC	66.68	M4x0.7	62	38.10	4	9.53	20.8	37	67	16.5	35
	Kx	AD	66.68	M5x0.8	62	38.10	8.5	9.53	31.8	37	67	22.5	35
	Kx	AE	98.43	M6x1	85	73.05	10	12.70	37.1	37	67	30	35
	Kx	AF	98.43	M5x0.8	80	73.05	7	12.70	31.8	37	67	22.5	35
	Kx	AH	63	M5x0.8	62	40	4	9	23	37	67	16.5	35
	Kx	AN	70	M5x0.8	62	50	11	14	30	37	67	22.5	35
	Kx	B6	63	M4x0.7	62	40	4	9	23	37	67	16.5	35

[1] When ordering with actuator, use order code ⑨ (see Ordering Information) to specify mounted gearhead size, ratio and orientation:
Gearhead size example: **F** = PS60 **G** = PS90 **H** = PS115 **J** = PV040TA **K** = PV60TA **L** = PV090TA **M** = PV115TA
Gearhead ratio and mounting orientation: (Replace "x" to specify)
1 = ratio 3:1 * **2** = ratio 5:1 **3** = ratio 10:1
* 3:1 ratio not available on "J" PV040TA gearhead

[2] Use order code ⓪ (see Ordering Information) to specify appropriately sized motor mounting kit.

Mounted Gearhead with Motor Mounting Kit Options

(continued from previous page)

Actuator Size	⑨ Order Code [1]	⓪ Order Code [2]	Dimensions										
			A	B	C	D	E	F	G	LCH	LGH	MAK	MF
HMRS15	Fx	A3	100	M6x1	82	80	5	14	30	54	59.8	18	30
	Fx	AB	66.68	M4x0.7	62	38.10	4	6.35	20.8	54	59.8	16.5	30
	Fx	AC	66.68	M5x0.8	62	38.15	4	9.53	20.8	54	59.8	16.5	30
	Fx	AD	66.68	M5x0.8	62	38.15	4	9.53	31.8	54	59.8	16.5	30
	Fx	AE	98.43	M5x0.8	86.8	73.03	7	12.70	37.1	54	59.8	22.5	30
	Fx	AF	98.43	M5x0.8	86.8	73.03	7	12.70	31.8	54	59.8	22.5	30
	Fx	AH	63	M5x0.8	62	40	4	9	23	54	59.8	16.5	30
	Fx	AN	70	M5x0.8	62	50	4	14	30	54	59.8	16.5	30
	Fx	B6	63	M4x0.7	62	40	4	9	23	54	59.8	16.5	30
	Gx	A2	63	M5x0.8	90	40	3	11	23	54	69.5	20	42
	Gx	A3	100	M6x1	90	80	10	14	30	54	69.5	20	42
	Gx	A4	115	M8x1.25	100	95	10	19	40	54	69.5	28.5	42
	Gx	AB	66.68	M5x0.8	90	38.15	3	6.35	20.8	54	69.5	20	42
	Gx	AC	66.68	M5x0.8	90	38.15	3	9.53	20.8	54	69.5	20	42
	Gx	AD	66.68	M5x0.8	90	38.15	3	9.53	31.8	54	69.5	20	42
	Gx	AE	98.43	M5x0.8	90	73	10	12.70	37.1	54	69.5	20	42
	Gx	AF	98.43	M5x0.8	90	73	10	12.70	31.8	54	69.5	20	42
	Gx	AH	63	M5x0.8	90	40	3	9	23	54	69.5	20	42
	Gx	AL	100	M6x1	90	80	10	16	40	54	69.5	20	42
	Gx	AN	70	M5x0.8	90	50	10	14	30	54	69.5	20	42
	Gx	AP	90	M6x1	90	70	10	19	40	54	69.5	20	42
	Gx	B1	90	M5x0.8	90	60	10	11	23	54	69.5	20	42
	Gx	B3	95	M6x1	90	50	10	14	30	54	69.5	20	42
	Gx	B6	63	M4x0.7	90	40	3	9	23	54	69.5	20	42
	Kx	AB	66.68	M4x0.7	62	38.1	4	6.35	20.8	54	67	16.5	30
	Kx	AC	66.68	M4x0.7	62	38.1	4	9.53	20.8	54	67	16.5	30
	Kx	AD	66.68	M5x0.8	62	38.1	8.5	9.53	31.8	54	67	22.5	30
	Kx	AE	98.43	M6x1	85	73.05	10	12.70	37.1	54	67	30	30
	Kx	AF	98.43	M5x0.8	80	73.05	7	12	31.8	54	67	22.5	30
	Kx	AH	63	M5x0.8	62	40	4	9	23	54	67	16.5	30
	Kx	AN	70	M5x0.8	62	50	11	14	30	54	67	22.5	30
	Kx	B6	63	M4x0.7	62	40	4	9	23	54	67	16.5	30
	Lx	A2	63	M5x0.8	90	40	3	11	23	54	85.5	20	36
	Lx	A3	100	M6x1	90	80	10	14	30	54	85.5	20	36
	Lx	A4	115	M8x1.25	100	95	10	19	40	54	85.5	28.5	36
	Lx	AB	66.68	M4x0.7	90	38.15	3	6.35	20.8	54	85.5	20	36
	Lx	AC	66.68	M5x0.8	90	52	10	9.53	20.8	54	85.5	20	36
	Lx	AD	66.68	M5x0.8	90	52	10	9.53	31.8	54	85.5	20	36
	Lx	AE	98.43	M5x0.8	90	73.03	10	12.70	37.1	54	85.5	28.5	36
	Lx	AF	98.43	M5x0.8	90	73	10	12.70	31.8	54	85.5	20	36
	Lx	AH	63	M5x0.8	90	40	10	9	23	54	85.5		36
	Lx	AL	100	M6x1	90	80	10	16	40	54	85.5	28.5	36
	Lx	AN	70	M5x0.8	90	50	10	14	30	54	85.5	20	36
	Lx	AP	90	M6x1	90	70	10	19	40	54	85.5	28.5	36

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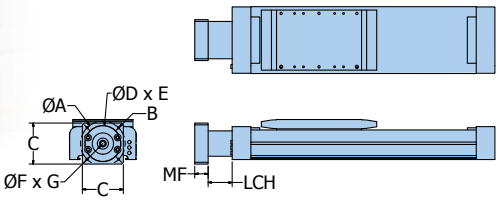
Actuator Size	⑨ Order Code [1]	⓪ Order Code [2]	Dimensions A	B	C	D	E	F	G	LCH	LGH	MAK	MF
HMRS18	Gx	A2	63	M5x0.8	90	40	3	11	23	70	69.5	20	40
	Gx	A3	100	M6x1	90	80	10	14	30	70	69.5	20	40
	Gx	A4	115	M8x1.25	100	95	10	19	40	70	69.5	28.5	40
	Gx	AB	66.68	M5x0.8	90	38.15	3	6.35	20.8	70	69.5	20	40
	Gx	AC	66.68	M5x0.8	90	38.15	3	9.53	20.8	70	69.5	20	40
	Gx	AD	66.68	M5x0.8	90	38.15	3	9.53	31.8	70	69.5	20	40
	Gx	AE	98.43	M5x0.8	90	73	10	12.70	37.1	70	69.5	20	40
	Gx	AF	98.43	M5x0.8	90	73	10	12.70	31.8	70	69.5	20	40
	Gx	AH	63	M5x0.8	90	40	3	9	23	70	69.5	20	40
	Gx	AL	100	M6x1	90	80	10	16	40	70	69.5	20	40
	Gx	AN	70	M5x0.8	90	50	10	14	30	70	69.5	20	40
	Gx	AP	90	M6x1	90	70	10	19	40	70	69.5	20	40
	Gx	B1	90	M5x0.8	90	60	10	11	23	70	69.5	20	40
	Gx	B3	95	M6x1	90	50	10	14	30	70	69.5	20	40
	Gx	B6	63	M4x0.7	90	40	2.5	9	23	70	69.5	20	40
	Lx	A2	63	M5x0.8	90	40	3	11	23	70	85.5	20	30
	Lx	A3	100	M6x1	90	80	10	14	30	70	85.5	20	30
	Lx	A4	115	M8x1.25	100	95	10	19	40	70	85.5	28.5	30
	Lx	AB	66.68	M4x0.7	90	38.15	3	6.35	20.8	70	85.5	20	30
	Lx	AC	66.68	M5x0.8	90	52	10	9.53	20	70	85.5	20	30
	Lx	AD	66.68	M5x0.8	90	52	10	9.53	31	70	85.5	20	30
	Lx	AE	98.43	M5x0.8	90	73.03	10	12.70	37.1	70	85.5	28.5	30
	Lx	AF	98.43	M5x0.8	90	73	10	12.70	31.8	70	85.5	20	30
	Lx	AH	63	M5x0.8	90	40	10	9	23	70	85.5		30
	Lx	AL	100	M6x1	90	80	10	16	40	70	85.5	28.5	30
	Lx	AN	70	M5x0.8	90	50	10	14	30	70	85.5	20	30
	Lx	AP	90	M6x1	90	70	10	19	40	70	85.5	28.5	30
HMRS24	Hx	A4	115	M8x1.25	115	95	10	19	50	85	90.2	24	40
	Hx	AF	98.40	M5x0.8	115	73.03	10	12.70	31.8	85	90.2	24	40
	Hx	AK	130	M8x1.25	115	110	10	19	40	85	90.2	24	40
	Hx	AL	100	M6x1	115	80	10	16	40	85	90.2	24	40
	Hx	AQ	165	M10x1.5	140	130	10	28	60	85	90.2	35	40
	Hx	AP	90	M6x1	115	70	10	19	40	85	90.2	24	40
	Mx	A4	115	M8x1.25	115	95.05	10	19	50	85	110	24	40
	Mx	AF	98.40	M5x0.8	115	73	10	12.70	31.8	85	110	24	40
	Mx	AK	130	M8x1.25	115	110.05	10	24	40	85	110	35	40
	Mx	AL	100	M6x1	115	80	10	16	40	85	110	24	40
	Mx	AP	90	M6x1	115	70	10	19	40	85	110	35	40

[1] When ordering with actuator, use order code ⑨ (see Ordering Information) to specify mounted gearhead size, ratio and orientation:
Gearhead size example: **F** = PS60 **G** = PS90 **H** = PS115 **J** = PV040TA **K** = PV60TA **L** = PV090TA **M** = PV115TA
Gearhead ratio and mounting orientation: (Replace "x" to specify)
1 = ratio 3:1 * **2** = ratio 5:1 **3** = ratio 10:1
* 3:1 ratio not available on "J" PV040TA gearhead

[2] Use order code ⓪ (see Ordering Information) to specify appropriately sized motor mounting kit.

Motor Mounting Kit Options

Gearhead Mounting Kits include a coupling housing, coupling, and flange.



A = Bolt circle diameter
B = Screw for bolt circle
C = Square dimension
D = Pilot diameter
E = Pilot depth
F = Input drive shaft diameter
G = Input drive shaft length
LCH = Length coupling housing
MF = Motor flange

Actuator Size	⓪ Order Code [1]	Dimensions								
		A	B	C	D	E	F	G	LCH	MF
HMRS08	A2	63	M5x0.8	60	40	10	11	23	28	20
	AB	66.68	M4x0.7	60	38.10	10	6.35	20.8	28	20
	AC	66.68	M5x0.8	60	38.10	10	9.53	20.8	28	20
	AD	66.68	M5x0.8	60	38.10	15	9.53	31.8	28	27
	AE	98.43	M6x1	85	73.03	15	12.70	37.1	28	33
	AF	98.43	M5x0.8	85	73.03	15	12.70	31.8	28	27
	AG	75	M5x0.8	70	60	10	11	23	28	20
	AH	63	M5x0.8	60	40	10	9	23	28	20
	AN	70	M5x0.8	60	50	15	14	30	28	25
	B0	75	M6x1	70	60	15	14	30	28	25
	B1	90	M5x0.8	75	60	10	11	23	28	20
	B2	90	M5x0.8	75	60	15	14	30	28	25
	B3	95	M6x1	80	50	15	14	30	28	25
	B6	63	M4x0.7	60	40	10	9	23	28	20
	B7	70	M5x0.8	60	50	15	8	30	28	25
	B8	70	M5x0.8	60	50	15	12	30	28	25
HMRS11	A2	63	M5x0.8	60	40	5	11	23	37	15
	AB	66.68	M4x0.7	60	38.10	10	6.35	20.8	37	15
	AC	66.68	M5x0.8	60	38.10	10	9.53	20.8	37	15
	AD	66.68	M5x0.8	60	38.10	15	9.53	31.8	37	25
	AE	98.43	M6x1	85	73.03	20	12.70	37.1	37	33
	AF	98.43	M5x0.8	85	73.03	15	12.70	31.8	37	27
	AG	75	M5x0.8	70	60	10	11	23	37	20
	AH	63	M5x0.8	60	40	5	9	23	37	15
	AL	100	M6x1	92	80	15	16	40	37	36
	AN	70	M5x0.8	60	50	15	14	30	37	25
	B0	75	M6x1	70	60	15	14	30	37	25
	B1	90	M5x0.8	80	60	10	11	23	37	20
	B2	90	M5x0.8	80	60	15	14	30	37	25
	B3	95	M6x1	80	50	15	14	30	37	25
	B7	70	M5x0.8	60	50	15	8	30	37	25
	B8	70	M5x0.8	60	50	15	12	30	37	25

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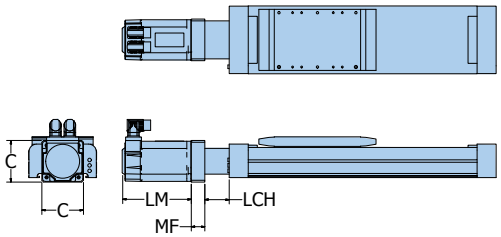
HMRS15	**A2**	63	M5x0.8	84	40	3	11	23	54	20
	A3	100	M6x1	92	80	5	14	30	54	20
	A4	115	M8x1.25	100	95	15	19	40	54	30
	AE	98.43	M6x1	85	73.03	15	12.70	37.1	54	25
	AF	98.43	M5x0.8	85	73.03	10	12.70	31.8	54	20
	AL	100	M6x1	92	80	15	16	40	54	30
	AN	70	M5x0.8	85	50	5	14	30	54	20
	AP	90	M6x1	84	70	15	19	40	54	30
	B0	100	M6x1	85	60	5	14	30	54	20
	B2	90	M5x0.8	85	60	5	14	30	54	20
HMRS18	**A3**	100	M6x1	92	80	5	14	30	70	20
	A4	115	M8x1.25	100	95	15	19	40	70	30
	AF	98.43	M5x0.8	90	73.03	10	12.70	31.8	70	20
	AK	130	M8x1.25	115	110	25	24	40	70	40
	AL	100	M6x1	92	80	15	16	40	70	30
	AP	90	M6x1	90	70	15	19	40	70	30
	B0	75	M6x1	90	60	10	14	30	70	20
	B2	90	M6x1	90	60	10	14	30	70	20
HMRS24	**A4**	115	M8x1.25	110	95	5	19	50	85	20
	AK	130	M8x1.25	115	110	5	24	40	85	20

[1] When ordering with actuator, use order code ⓪ to specify appropriately sized motor mounting kit. See Ordering Information.

Direct Motor Mount Options

Direct Motor Mounting options include a coupling housing, coupling, and flange.



C = Square dimension
LCH = Length coupling housing
LM = Length motor
MF = Mounting flange

Actuator Size	⑨ Order Code [1]	⓪ Order Code [1]	Mounted Motor	C	LCH	LM	MF
HMRS08	00	K0	BE233FJ-KPSN	60	28	143.2	27
	00	K1	BE233FJ-KPSN with Brake (CM233FJ-115027)	60	28	178	27
	00	K2	BE344LJ-KPSN	85	28	188	27
	00	K3	BE344LJ-KPSB	85	28	231	27
	00	K4	PM-FBL04AMK	60	28	108.2	25
	00	K5	PM-FBL04AMK2 (w/ Brake)	60	28	148.2	25
HMRS11	00	K0	BE233FJ-KPSN	60	37	143.2	25
	00	K1	BE233FJ-KPSN with Brake (CM233FJ-115027)	60	37	178	25
	00	K2	BE344LJ-KPSN	85	37	188	27
	00	K3	BE344LJ-KPSB	85	37	231	27
	00	K4	PM-FBL04AMK	60	37	108.2	25
	00	K5	PM-FBL04AMK2 (w/ Brake)	60	37	148.2	25
	00	M0	MPP0923D1E-KPSN	92	37	178	36
	00	M1	MPP0923D1E-KPSB	92	37	212.5	36
HMRS15	00	K2	BE344LJ-KPSN	85	54	188	20
	00	K3	BE344LJ-KPSB	85	54	231	20
	00	K4	PM-FBL04AMK	85	54	108.2	20
	00	K5	PM-FBL04AMK2 (w/ Brake)	85	54	148.2	20
	00	K6	PM-FCL10AMK	84	54	152.7	30
	00	K7	PM-FCL10AMK2 (w/ Brake)	84	54	193	30
	00	M0	MPP0923D1E-KPSN	92	54	178	30
	00	M1	MPP0923D1E-KPSB	92	54	212.5	30
	00	M2	MPP1003D1E-KPSN	100	54	174.5	30
	00	M3	MPP1003D1E-KPSB	100	54	223	30
	00	M4	MPP1003R1E-KPSN	100	54	174.5	30
	00	M5	MPP1003R1E-KPSB	100	54	223	30

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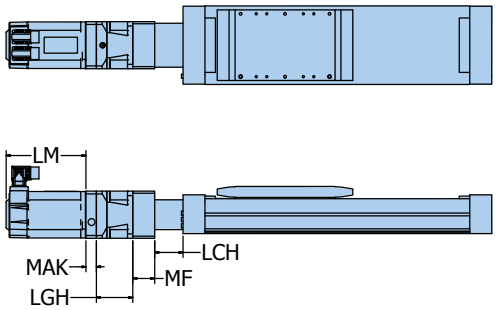
HMRS18	00	K2	BE344LJ-KPSN	90	70	188	20
	00	K3	BE344LJ-KPSB	90	70	231	20
	00	K6	PM-FCL10AMK	90	70	152.7	30
	00	K7	PM-FCL10AMK2 (w/ Brake)	90	70	193	30
	00	M0	MPP0923D1E-KPSN	92	70	178	30
	00	M1	MPP0923D1E-KPSB	92	70	212.5	30
	00	M2	MPP1003D1E-KPSN	100	70	174.5	30
	00	M3	MPP1003D1E-KPSB	100	70	223	30
	00	M4	MPP1003R1E-KPSN	100	70	174.5	30
	00	M5	MPP1003R1E-KPSB	100	70	223	30
	00	M6	MPP1154B1E-KPSN	115	70	203.2	40
	00	M7	MPP1154B1E-KPSB	115	70	251.7	40
	00	M8	MPP1154P1E-KPSN	115	70	203.2	40
	00	M9	MPP1154P1E-KPSB	115	70	251.7	40
HMRS24	00	M2	MPP1003D1E-KPSN	110	85	174.5	20
	00	M3	MPP1003D1E-KPSB	110	85	223	20
	00	M4	MPP1003R1E-KPSN	110	85	174.5	20
	00	M5	MPP1003R1E-KPSB	110	85	223	20
	00	M6	MPP1154B1E-KPSN	115	85	203.2	20
	00	M7	MPP1154B1E-KPSB	115	85	251.7	20
	00	M8	MPP1154P1E-KPSN	115	85	203.2	20
	00	M9	MPP1154P1E-KPSB	115	85	251.7	20
	00	MA	MPP1424C1E-KPSN	142	85	223.7	30
	00	MB	MPP1424C1E-KPSB	142	85	275.3	30
	00	MC	MPP1424R1E-KPSN	142	85	223.7	30
	00	MD	MPP1424R1E-KPSB	142	85	275.3	30

[1] When ordering with actuator, use order code ⑨ to specify no gearhead mounting kit, and order code ⓪ to specify mounted motor. See Ordering Information.

Mounted Gearhead and Motor Options

Mounted Gearhead and Motor options include a coupling housing, flange, and gearhead with coupler, flange, and motor.



C = Square dimension
LCH = Length coupling housing
LGH = Length gearhead
LM = Length motor
MAK = Motor adapter kit
MF = Mounting flange

Actuator Size	⑨ Order Code [1]	⓪ Order Code [2]	Mounted Motor	Dimensions C	LCH	LGH	LM	MAK	MF
HMRS08	Jx	K0	BE233FJ-KPSN	60	28	48.5	143.2	26	20
	Jx	K1	BE233FJ-KPSN with Brake (CM233FJ-115027)	60	28	48.5	178	26	20
HMRS11	Fx	K0	BE233FJ-KPSN	60	37	59.8	143.2	16.5	35
	Fx	K1	BE233FJ-KPSN with Brake (CM233FJ-115027)	60	37	59.8	178	16.5	35
	Fx	K2	BE344LJ-KPSN	60	37	59.8	188	22.5	35
	Fx	K3	BE344LJ-KPSB	60	37	59.8	231	22.5	35
	Fx	K4	PM-FBL04AMK	60	37	59.8	108.2	16.5	35
	Fx	K5	PM-FBL04AMK2 (w/ Brake)	60	37	59.8	148.2	16.5	35
	Jx	K0	BE233FJ-KPSN	60	37	48.5	143.2	26	20
	Jx	K1	BE233FJ-KPSN with Brake (CM233FJ-115027)	60	37	48.5	178	26	20
	Kx	K0	BE233FJ-KPSN	80	37	67	143.2	22.5	35
	Kx	K1	BE233FJ-KPSN with Brake (CM233FJ-115027)	80	37	67	178	22.5	35
	Kx	K2	BE344LJ-KPSN	80	37	67	188	22.5	35
	Kx	K3	BE344LJ-KPSB	80	37	67	231	22.5	35
	Kx	K4	PM-FBL04AMK	80	37	67	108.2	22.5	35
	Kx	K5	PM-FBL04AMK2 (w/ Brake)	80	37	67	148.2	22.5	35

[1] When ordering with actuator, use order code ⑨ (see Ordering Information) to specify mounted gearhead size, ratio and orientation:
Gearhead size example: **F** = PS60 **G** = PS90 **H** = PS115 **J** = PV040TA **K** = PV60TA **L** = PV090TA **M** = PV115TA
Gearhead ratio and mounting orientation: (Replace "x" to specify)
1 = ratio 3:1 * **2** = ratio 5:1 **3** = ratio 10:1
* 3:1 ratio not available on "J" PV040TA gearhead

[2] Use order code ⓪ (see Ordering Information) to specify appropriately sized motor mounting kit.

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Actuator Size	⑨ Order Code [1]	⓪ Order Code [2]	Mounted Motor	Dimensions C	LCH	LGH	LM	MAK	MF
HMRS15	Fx	K0	BE233FJ-KPSN	85	54	59.8	143.2	16.5	30
	Fx	K1	BE233FJ-KPSN with Brake (CM233FJ-115027)	85	54	59.8	178	16.5	30
	Fx	K2	BE344LJ-KPSN	85	54	59.8	188	22.5	30
	Fx	K3	BE344LJ-KPSB	85	54	59.8	231	22.5	30
	Fx	K4	PM-FBL04AMK	85	54	59.8	108.2	16.5	30
	Fx	K5	PM-FBL04AMK2 (w/ Brake)	85	54	59.8	148.2	16.5	30
	Gx	K2	BE344LJ-KPSN	90	54	69.5	188	20	42
	Gx	K3	BE344LJ-KPSB	90	54	69.5	231	20	42
	Gx	K6	PM-FCL10AMK	90	54	69.5	152.7	20	42
	Gx	K7	PM-FCL10AMK2 (w/ Brake)	90	54	69.5	193	20	42
	Gx	M0	MPP0923D1E-KPSN	90	54	69.5	178	20	42
	Gx	M1	MPP0923D1E-KPSB	90	54	69.5	212.5	20	42
	Gx	M2	MPP1003D1E-KPSN	90	54	69.5	174.5	28.5	42
	Gx	M3	MPP1003D1E-KPSB	90	54	69.5	223	28.5	42
	Gx	M4	MPP1003R1E-KPSN	90	54	69.5	174.5	28.5	42
	Gx	M5	MPP1003R1E-KPSB	90	54	69.5	223	28.5	42
	Kx	K0	BE233FJ-KPSN	84	54	67	143.2	22.5	30
	Kx	K1	BE233FJ-KPSN with Brake (CM233FJ-115027)	84	54	67	178	22.5	30
	Kx	K2	BE344LJ-KPSN	84	54	67	188	22.5	30
	Kx	K3	BE344LJ-KPSB	84	54	67	231	22.5	30
	Kx	K4	PM-FBL04AMK	84	54	67	108.2	22.5	30
	Kx	K5	PM-FBL04AMK2 (w/ Brake)	84	54	67	148.2	22.5	30
	Lx	K2	BE344LJ-KPSN	92	54	85.5	188	20	36
	Lx	K3	BE344LJ-KPSB	92	54	85.5	231	20	36
	Lx	K6	PM-FCL10AMK	92	54	85.5	152.7	28.5	36
	Lx	K7	PM-FCL10AMK2 (w/ Brake)	92	54	85.5	193	28.5	36
	Lx	M0	MPP0923D1E-KPSN	92	54	85.5	178	28.5	36
	Lx	M1	MPP0923D1E-KPSB	92	54	85.5	212.5	28.5	36
	Lx	M2	MPP1003D1E-KPSN	92	54	85.5	174.5	28.5	36
	Lx	M3	MPP1003D1E-KPSB	92	54	85.5	223	28.5	36
	Lx	M4	MPP1003R1E-KPSN	92	54	85.5	174.5	28.5	36
	Lx	M5	MPP1003R1E-KPSB	92	54	85.5	223	28.5	36

[1] When ordering with actuator, use order code ⑨ (see Ordering Information) to specify mounted gearhead size, ratio and orientation:
Gearhead size example: **F** = PS60 **G** = PS90 **H** = PS115 **J** = PV040TA **K** = PV60TA **L** = PV090TA **M** = PV115TA
Gearhead ratio and mounting orientation: (Replace "x" to specify)
1 = ratio 3:1 * **2** = ratio 5:1 **3** = ratio 10:1
* 3:1 ratio not available on "J" PV040TA gearhead

[2] Use order code ⓪ (see Ordering Information) to specify appropriately sized motor mounting kit.

(continued next page)

Mounted Gearhead and Motor Options

(continued from previous page)

Actuator Size	⑨ Order Code [1]	⓪ Order Code [2]	Mounted Motor	Dimensions C	LCH	LGH	LM	MAK	MF
HMRS18	Gx	K2	BE344LJ-KPSN	100	70	69.5	188	20	40
	Gx	K3	BE344LJ-KPSB	100	70	69.5	231	20	40
	Gx	K6	PM-FCL10AMK	100	70	69.5	152.7	20	40
	Gx	K7	PM-FCL10AMK2 (w/ Brake)	100	70	69.5	193	20	40
	Gx	M0	MPP0923D1E-KPSN	100	70	69.5	178	20	40
	Gx	M1	MPP0923D1E-KPSB	100	70	69.5	212.5	20	40
	Gx	M2	MPP1003D1E-KPSN	100	70	69.5	174.5	28.5	40
	Gx	M3	MPP1003D1E-KPSB	100	70	69.5	223	28.5	40
	Gx	M4	MPP1003R1E-KPSN	100	70	69.5	174.5	28.5	40
	Gx	M5	MPP1003R1E-KPSB	100	70	69.5	223	28.5	40
	Lx	K2	BE344LJ-KPSN	92	70	85.5	188	20	30
	Lx	K3	BE344LJ-KPSB	92	70	85.5	231	20	30
	Lx	K6	PM-FCL10AMK	92	70	85.5	152.7	28.5	30
	Lx	K7	PM-FCL10AMK2 (w/ Brake)	92	70	85.5	193	28.5	30
	Lx	M0	MPP0923D1E-KPSN	92	70	85.5	178	28.5	30
	Lx	M1	MPP0923D1E-KPSB	92	70	85.5	212.5	28.5	30
	Lx	M2	MPP1003D1E-KPSN	92	70	85.5	174.5	28.5	30
	Lx	M3	MPP1003D1E-KPSB	92	70	85.5	223	28.5	30
	Lx	M4	MPP1003R1E-KPSN	92	70	85.5	174.5	28.5	30
	Lx	M5	MPP1003R1E-KPSB	92	70	85.5	223	28.5	30
HMRS24	Hx	M6	MPP1154B1E-KPSN	115	85	90.2	203.2	24	40
	Hx	M7	MPP1154B1E-KPSB	115	85	90.2	251.7	24	40
	Hx	M8	MPP1154P1E-KPSN	115	85	90.2	203.2	24	40
	Hx	M9	MPP1154P1E-KPSB	115	85	90.2	251.7	24	40
	Hx	MA	MPP1424C1E-KPSN	115	85	90.2	223.7	35	40
	Hx	MB	MPP1424C1E-KPSB	115	85	90.2	275.3	35	40
	Hx	MC	MPP1424R1E-KPSN	115	85	90.2	223.7	35	40
	Hx	MD	MPP1424R1E-KPSB	115	85	90.2	275.3	35	40
	Mx	M6	MPP1154B1E-KPSN	125	85	110	203.2	35	40
	Mx	M7	MPP1154B1E-KPSB	125	85	110	251.7	35	40
	Mx	M8	MPP1154P1E-KPSN	125	85	110	203.2	35	40
	Mx	M9	MPP1154P1E-KPSB	125	85	110	251.7	35	40

[1] When ordering with actuator, use order code ⑨ (see Ordering Information) to specify mounted gearhead size, ratio and orientation:
Gearhead size example: **F** = PS60 **G** = PS90 **H** = PS115 **J** = PV040TA **K** = PV60TA **L** = PV090TA **M** = PV115TA
Gearhead ratio and mounting orientation: (Replace "x" to specify)
1 = ratio 3:1 * **2** = ratio 5:1 **3** = ratio 10:1
* 3:1 ratio not available on "J" PV040TA gearhead

[2] Use order code ⓪ (see Ordering Information) to specify appropriately sized motor mounting kit.

Limit & Home Sensors

The HMR uses Parker's Global Sensor line, which can be mounted in the longitudinal t-slots running along the actuator body. These sensors mount flush to the extrusion body, minimizing the overall width of the actuator.

Parker's Global Sensors feature short circuit protection, power up pulse protection, and reverse polarity protection.

The sensor cable can be concealed under the yellow T-slot covers which are provided with each unit.

For internally configured sensors, the cables are routed internally and exit and the end cap of the unit through industrially hardened M8 connectors.

In the event internal sensors are configured, they cannot be re-positioned in the field. The pre-set location is configured in the part number model code. Please consult factory for further assistance.

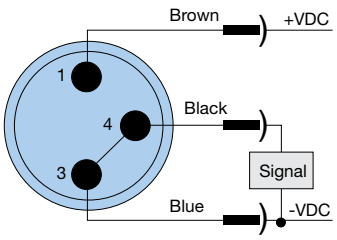
Permanent magnets integrated into the carriage assembly actuate the sensors as the carriage traverses it linear travel.

All actuators pre-configured with a sensor pack, come pre-configured with a 5 meter extension cable, with flying leads.

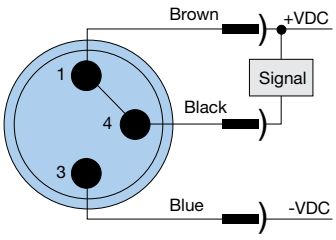
Common Specifications:

Electric current drain: 100 mA (max)
Switching current: 10 mA (max)
Supply voltage: 10 – 30 VDC
Switching Frequency: 1 kHz

PNP Wiring



NPN Wiring

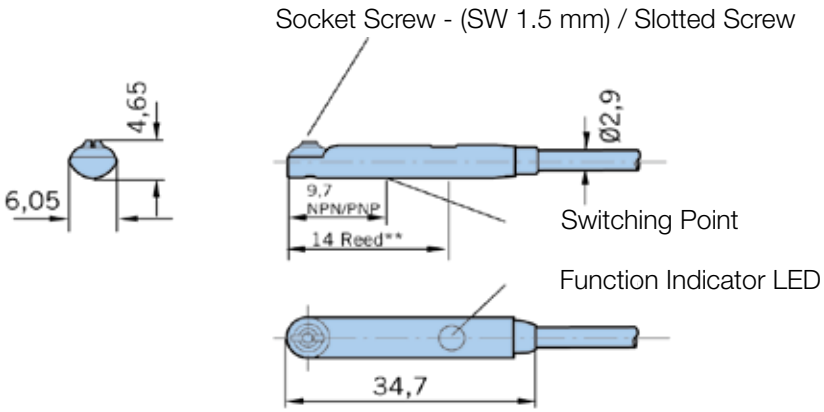


Magnetic LED Cylinder Sensors

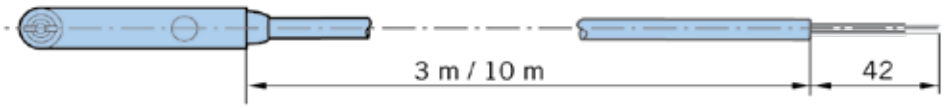
Model Number	Function	Logic	Cable
P8SAGPFAX	N.O.	PNP	3 m
P8SAGNFAX		NPN	
P8SAGPCHX		PNP	0.3 m cable with M8 connector*
P8SAGNCHX		NPN	
P8SAGQFAX	N.C.	PNP	3 m
P8SAGMFAX		NPN	
P8SAGQCHX		PNP	0.3 m cable with M8 connector*
P8SAGMCHX		NPN	

* 003-2918-01 is a 5 m extension cable to flying leads for these cables

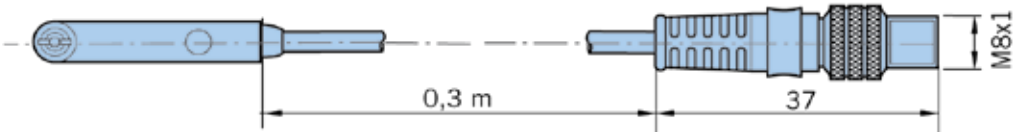
Limit & Home Sensor Dimensions



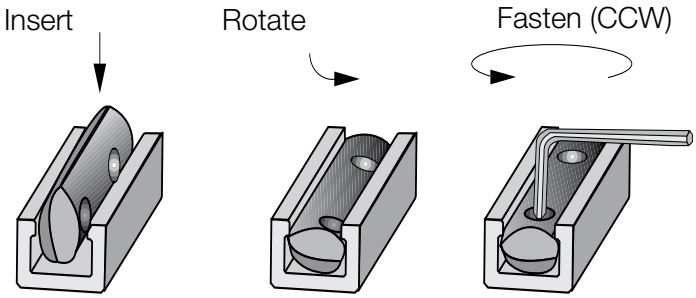
P8S-... cable with flying leads



P8S-... cable with M8 rotable



Installation for Magnetic T-Slot Sensors

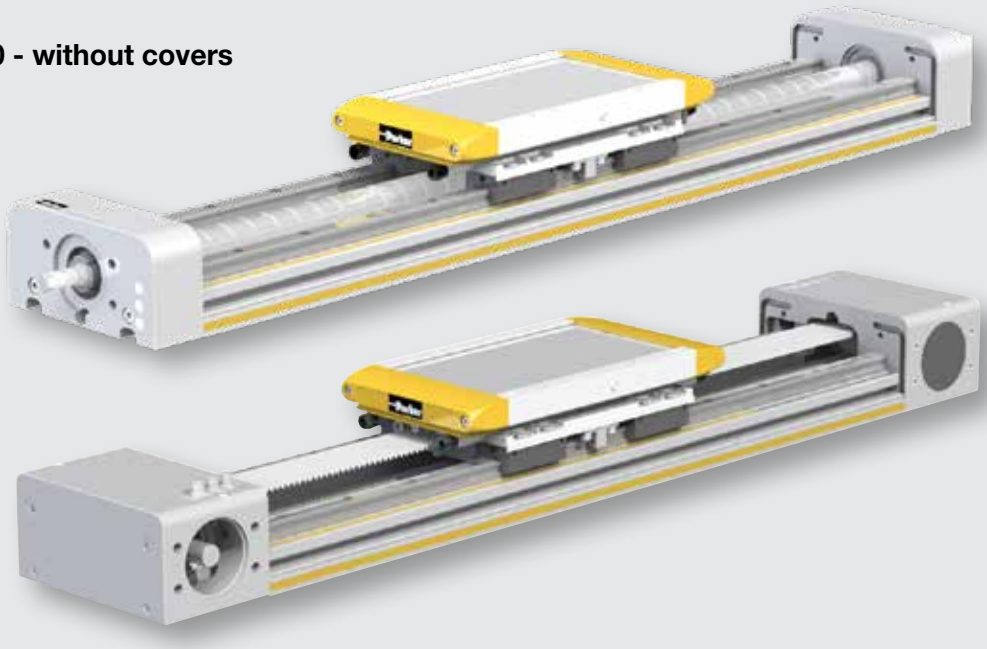


Protective Cover Options

Two versions available: Covers can be field retrofitted if initially configured without covers.

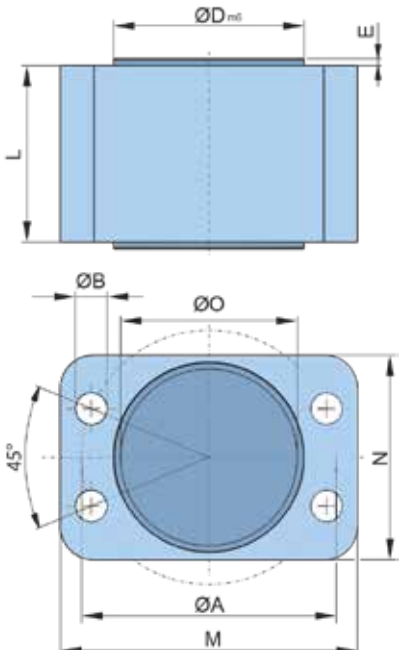
Consult maintenance manual or factory support for assistance in specifying replacement covers and installation procedures.

IP20 - without covers



IP54 - with covers

Coupling Housing



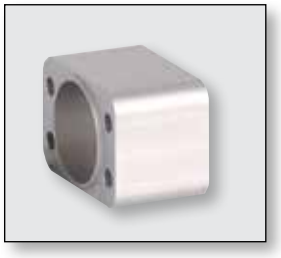
Dimension table - Coupling housing long HMRS / HMRB [mm]

Product size	Ø A	Ø B	Ø D_{m6}	E	Ø O	L	M	N	Order no.
HMRx08 (1)	42	4.5	34	2	30	28	49	37	56568FIL
HMRx11 (1)	51	6.6	39	1	35	37	60	42	56566FIL
HMRx15 (1)	72	9.0	54	2	50	54	84	58	50353FIL
HMRx18 (1)	80	9.0	64	2	60	70	90	68	50655FIL
HMRx24 (1)	95	11.0	80	2	77	85	107	85	56415FIL

(1)Suitable for all types of HMRS

(1)Suitable for HMRB with motor orientation 000° top (HMRBxxxAP; HMRBxxxAD)

(1)Suitable for HMRB with motor orientation 180° bottom and profile version Basic (HMRBxxBCP; HMRBxxBCD; HMRBxxCCP; HMRBxxCCD)



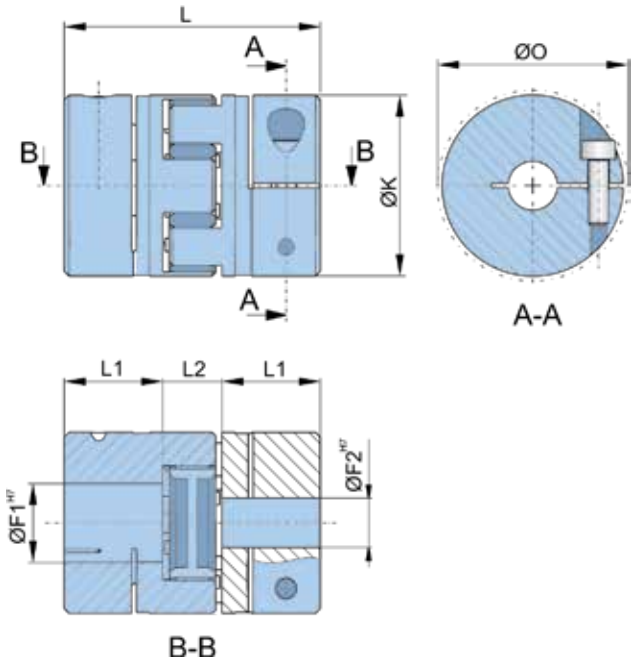
Dimension table - Coupling housing short HMRB [mm]

Product size	Ø A	Ø B	Ø D_{m6}	E	Ø O	L	M	N	Order no.
HMRB08 (1)	42	4.5	34	2	30	13	49	37	56567FIL
HMRB08 (2)	42	4.5	34	2	30	17	49	37	56569FIL
HMRB11 (1) (2)	51	6.6	39	1	35	15	60	42	56565FIL
HMRB15 (1) (2)	72	9.0	54	2	50	30	84	58	56412FIL
HMRB18 (1) (2)	80	9.0	64	2	60	42	90	68	56413FIL
HMRB24 (1) (2)	95	11.0	80	2	77	60	107	85	56414FIL

(1)Suitable for HMRB with motor orientation 090° front and 270° rear (HMRBxxxBD; HMRBxxxDD)

(2)Suitable for HMRB with motor orientation 180° bottom re-inforced profile (HMRBxxRCP; HMRBxxRCD; HMRBxxSCP; HMRBxxSCD)

Coupling



Ball screw

Dimension table - motor coupling HMRS [mm]

Product size	F_1	F_2	F	K	L	L_1	L_2	Ø O	Order no.
HMRS08	6	9	5 - 12	25	34	11	12	27.5	56562FIL
HMRS11	10	9	6 - 16	30	35	11	13	32.5	13210FIL
HMRS15	12	9	8 - 24	40	66	25	16	58.0	56400FIL
HMRS18	15	14	10 - 28	55	78	30	18	68.0	56402FIL
HMRS24	20	14	14 - 38	65	90	35	20	73.0	56510FIL

Belt

Dimension table - motor coupling HMRB [mm]

Product size	F_1	F_2	F	K	L	L_1	L_2	Ø O	Order no.
HMRB08	10	9	5 - 12	25	34	11	12	27.5	56563FIL
HMRB11	12	9	6 - 16	30	35	11	13	32.5	56560FIL
HMRB15	15	10	8 - 24	40	66	25	16	58.0	16239FIL
HMRB18	18	14	10 - 28	55	78	30	18	68.0	56411FIL
HMRB24	24	15	14 - 38	65	90	35	20	73.0	16260FIL

Shock Absorbing Bumper

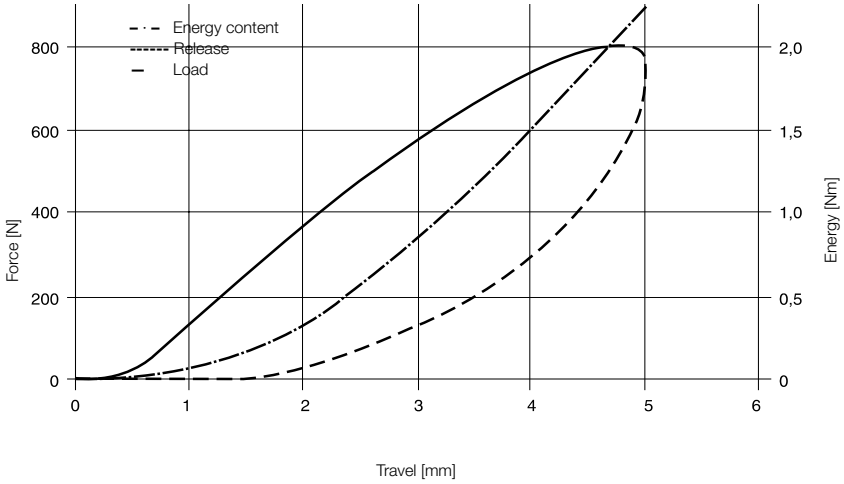
HMR actuators come factory installed with impact protection bumpers. These carriage-mounted bumpers can compensate the energy released by unintentional impact and afford some protection against mechanical damage.

Two bumpers (four total) are fitted to each side of the carriage.

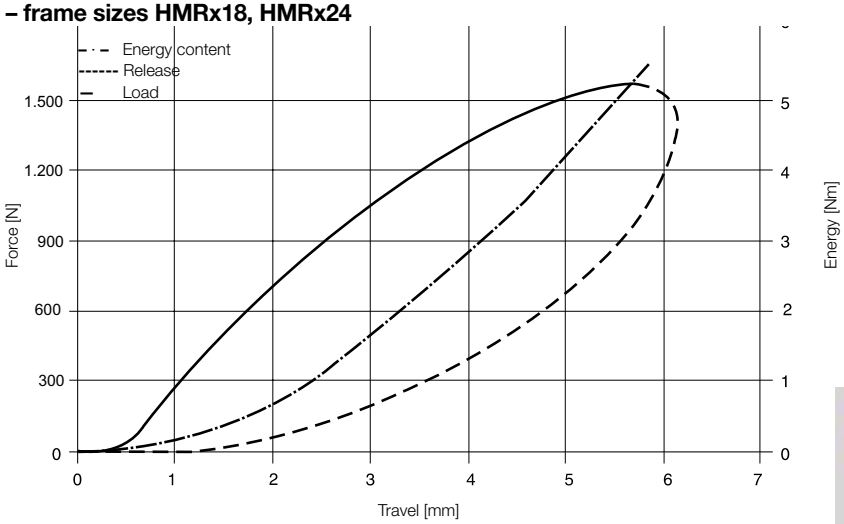
Shock absorbers for impact protection

Product size	HMRx08	HMRx11	HMRx15	HMRx18	HMRx24
Shock absorber	TA12-5	TA12-5	TA12-5	TA17-7	TA17-7
Energy absorption [Nm/stroke]	3.0	3.0	3.0	8.5	8.5

Distance-force and energy-distance characteristic curve (dynamic) – frame sizes HMRx08, HMRx11, HMRx15



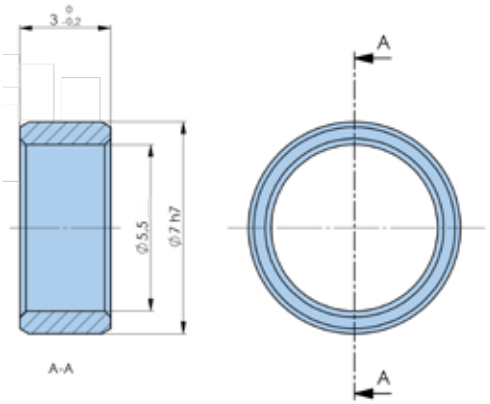
Distance-force and energy-distance characteristic curve (dynamic) – frame sizes HMRx18, HMRx24



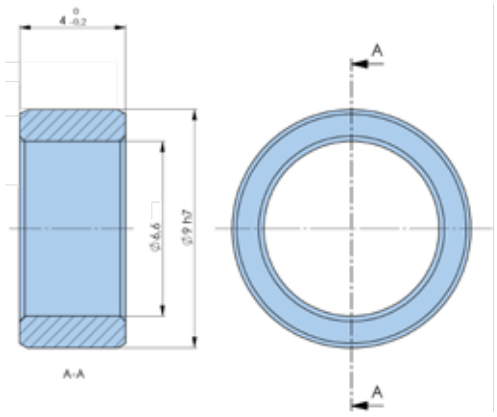
Dowel Sleeves

Dowel sleeves can be used to provide pinning functionality between the carriage mounting surface and the payload. These sleeves have a tightly toleranced outer diameter to accurately locate between the bore in the carriage and the end effector, but have a hollow center granting access to the threaded hole in the carriage underneath the pin bore. This means that these dowel pin bore can additionally function as a threaded connection to the carriage. See Dimensions for carriage mounting detail.

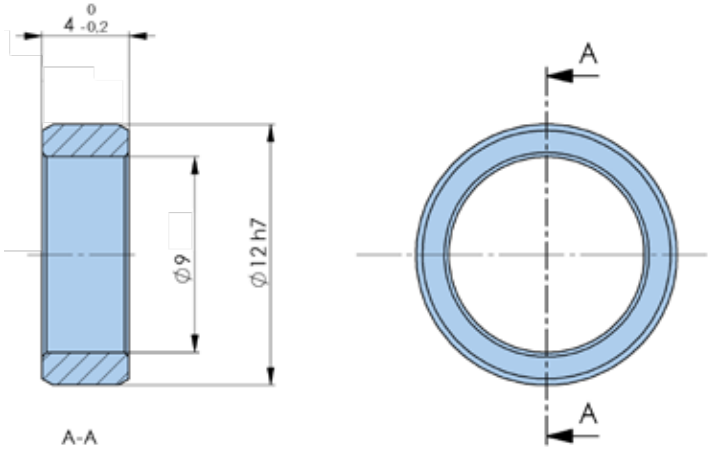
7mm Outer Diameter Dowel Sleeve



9mm Outer Diameter Dowel Sleeve

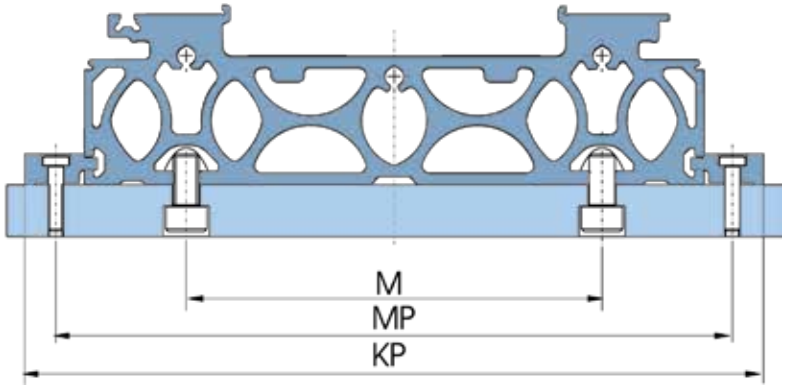


12mm Outer Diameter Dowel Sleeve



Part Number	Description	HMR Frame Size
56455FIL	7mm Dowel Sleeve- 4 Pack	HMRx08, HMRx11, HMRx15
56456FIL	7mm Dowel Sleeve- 10 Pack	HMRx08, HMRx11, HMRx15
56457FIL	9mm Dowel Sleeve- 4 Pack	HMRx18
56458FIL	9mm Dowel Sleeve- 10 Pack	HMRx18
56459FIL	12mm Dowel Sleeve- 4 Pack	HMR24

Actuator Mounting



Dimension table - Product width HMR [mm]

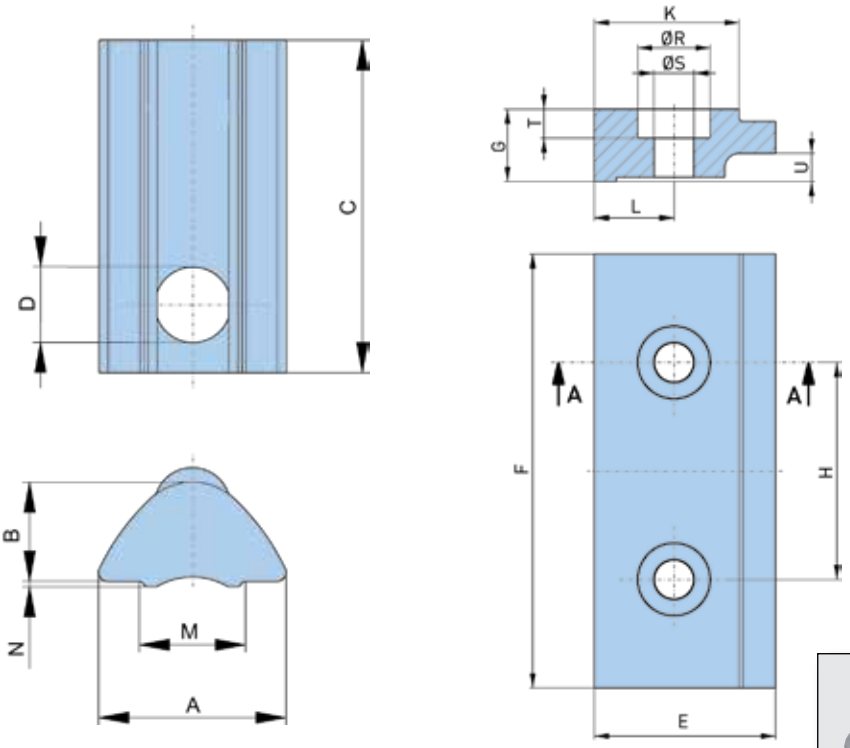
	Toe-clamp mounting (mm)		T-nut mounting (mm)
Product size	**MP**	**KP**	**M**
HMRx08	97	115	50
HMRx11	122	140	70
HMRx15	170	190	96
HMRx18	202	226	116
HMRx24	262	286	161

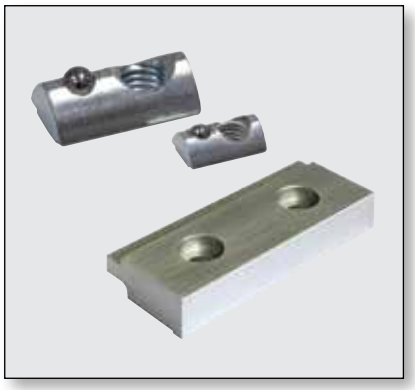
Holding force per mounting set [N]

	Toe-clamp				T-nut			
Product size	In longitudinal direction of the actuator*	Screw 2x	Tightening torque [Nm]	Max. load per screw	In longitudinal direction of the actuator*	Screw 1x	Tightening torque [Nm]	Max. load per screw
HMRx08	800	M4	3	900	1,000	M5	6	1,200
HMRx11	800	M4	3	900	1,000	M5	6	1,200
HMRx15	1,820	M5	6	1,200	1,600	M6	10	1,700
HMRx18	2,610	M6	10	1,700	2,700	M8	20	3,400
HMRx24	2,610	M6	10	1,700	3,200	M10	40	5,500

*A friction factor of 0.15 between profile and mounting surface was taken as a basis for the calculation of the forces that can be transmitted in longitudinal direction, Screw property class 8.8.

Actuator Mounting





Dimension table - T-nut mounting HMR [mm]

Product size	A	B	C	Ø D	M	N	Order no. *
HMRx08	8.0	4.0	11.5	M5	5.0	0.5	56351FIL
HMRx11	8.0	4.0	11.5	M5	5.0	0.5	56351FIL
HMRx15	10.5	6.4	22.5	M6	6.4	0.6	56352FIL
HMRx18	13.5	6.7	22.5	M8	8.5	1.0	56353FIL
HMRx24	16.5	8.9	28.5	M10	10.5	1.0	56354FIL

* Packing unit 10 pc

Dimension table - Toe-clamp mounting HMR [mm]

Product size	E	F	G	H	K	L	Ø R	Ø S	T	U	Order no. *
HMRx08	18.0	40.0	7.5	20.0	15.0	9.0	0.0	4.5	0.0	2.8	56363FIL
HMRx11	18.0	40.0	7.5	20.0	15.0	9.0	0.0	4.5	0.0	2.8	56363FIL
HMRx15	25.0	60.0	10.0	30.0	20.0	10.0	10.0	5.5	4.0	3.9	56355FIL
HMRx18	28.0	80.0	12.0	40.0	23.0	12.0	11.0	6.6	4.7	5.9	56356FIL
HMRx24	28.0	80.0	12.0	40.0	23.0	12.0	11.0	6.6	4.7	5.9	56356FIL

* Packing unit 1 pair (2 toe-clamps) and associated hardware

ORDERING INFORMATION
HMRS

Select an order code from each of the numbered fields to create a complete HMR screw-driven model order number. Include hyphens and non-selective characters as shown in example below.

			①	②	③	④		⑤		⑥	⑦	⑧			⑨	⑩
Order Number Example:	HMR	S	15	B	05	0	–	1000	–	A	B	1	0	0	F1	A7

① Frame Size (Profile Width)

08	85 mm
11	110 mm
15	150 mm
18	180 mm
24	240 mm

② Actuator Design (see Dimensions for further detail)

B	Basic Profile with Ball Bearing Guide, No Outer Cover
C	Basic Profile with Ball Bearing Guide, IP54 with Outer Cover
R**	Reinforced Profile with Ball Bearing Guide, No Outer Cover
S**	Reinforced Profile with Ball Bearing Guide, IP54 with Outer Cover

③ Screw lead by Frame Size (w/plain drive shaft)

05	5 mm lead for size 08, 11, 15
10	10 mm lead for size 18, 24
12	12 mm lead for size 08
16	16 mm lead for size 11
20	20 mm lead for size 15
25	25 mm lead for size 18
32	32 mm lead for size 24

④ Carriage Design

0	Standard
1	Tandem

⑤ Order Stroke

xxxx	4 digit input in mm (see max stroke by frame size in Specifications)

NOTE: If travel is less than 75mm either Home or Limit Sensors can be used, not both. If travel is less than 20mm, only a Home Sensor can be used.

⑥ Home Sensor* (one sensor)

0	No home sensor
A**	PNP, 3 Wire, N.O., Internal Mounting
K**	NPN, 3 Wire, N.O., Internal Mounting
C	PNP, 3 Wire, N.O., M8 Plug, 0.3 m Cable, External Mounting (P8S-GPCHX)
M	NPN, 3 Wire, N.O., M8 Plug, 0.3 m Cable, External Mounting (P8S-GNCHX)

*P/N 003-2918-01, 5 M extension cable included
***If internal switches are selected they cannot be manually re-positioned in the field.**
****Indicates longer lead time options**

⑦ Limit Sensor* (two sensors)

0	No home sensor
B**	PNP, 3 Wire, N.C., Internal Mounting
L*/*	NPN, 3 Wire, N.C., Internal Mounting
D	PNP, 3 Wire, N.C., M8 Plug, 0.3 m Cable, External Mounting (P8S-GQCHX)
N	NPN, 3 Wire, N.C., M8 Plug, 0.3 m Cable, External Mounting (P8S-GMCHX)

*P/N 003-2918-01, 5 M extension cable included
***If internal switches are selected they cannot be manually re-positioned in the field.**

⑧ Limit/Home Sensor Position*

0	No Home Sensor
1	10 mm
2	20 mm
3	30 mm
4	40 mm
5	50 mm
6	60 mm
7	70 mm
8	80 mm
9	90 mm
A	100 mm
B	110 mm
C	120 mm
D	130 mm
E	140 mm
F	150 mm
G	160 mm
H	170 mm
J	180 mm
K	190 mm
L	200 mm

*If limit and home sensors selected, this is the distance that limit sensors are positioned from both ends, home sensor positioned 50mm from limit sensor at drive end. If only home sensor selected, it is positioned this distance from the drive end.

⑨ Mounted Gearheads

(see Options & Accessories for frame size availability and dimensions)

⑩ Gearhead and Motor Mounting Kits

Gearhead Mounting Kit
(see Options & Accessories for availability and dimensions)

Motor Mounting Kit (Including Flange and Coupling For Direct Drive Motor or Flange on Mounted Gearhead
(see Options & Accessories for availability and dimensions)

Mounted Motor (Mated to Mounted Gearhead
(see Options & Accessories for availability and dimensions)