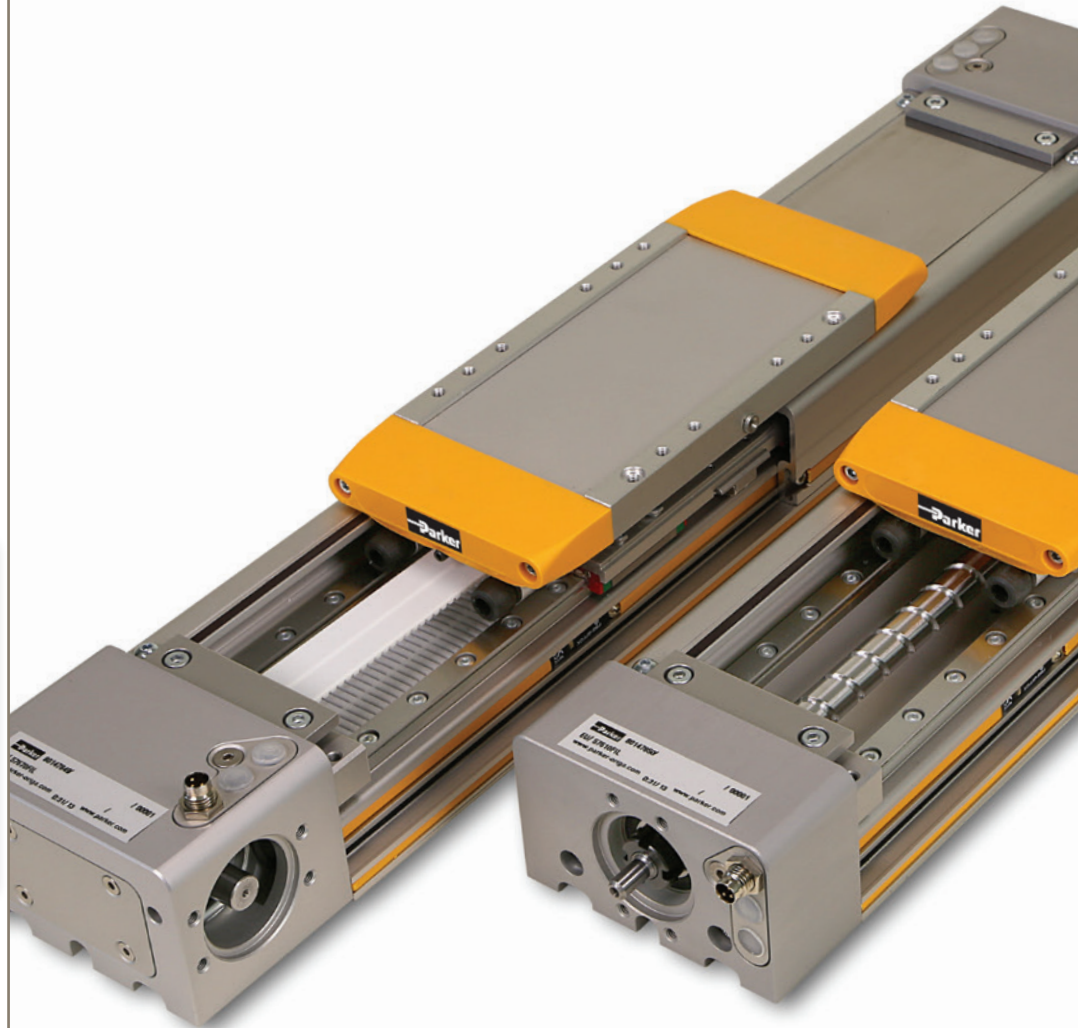
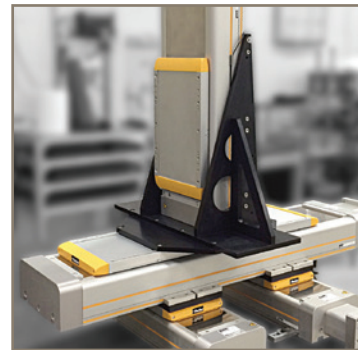


aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



HMR Series Positioners

High Moment Rodless Linear Actuators



ENGINEERING YOUR SUCCESS.

HMR Series Positioners

Driving Cost & Complexity out of Machine Design

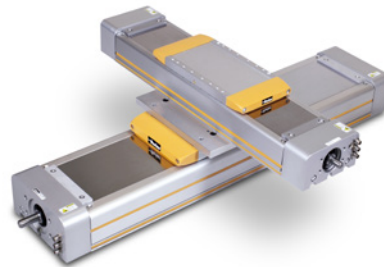
Parker Hannifin's **H**igh **M**oment **R**odless (HMR) Series electric linear actuator is one of the most user friendly and versatile actuator lines on the market today.

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.

All HMR actuators feature an aluminum extruded base that can be configured out of a reinforced profile for long unsupported lengths, or with a basic profile to reduce system cost when the actuator is fully supported.



HMR Series actuators are available in five different frame sizes and a range of belt-driven and screw-driven configurations, making them extremely versatile and easy to integrate into any machine design.



HMR in Multi-Axis Applications

HMR actuators have been designed for ideal functionality in multi-axis configurations.

This can include base to carriage mounting, carriage to carriage mounting, and a number of pre-configured mounting plates that are available for quick and easy multi-axis configurations.

Please contact us for more information..

HMR Solutions for Challenging Conditions

If your installation needs to withstand harsh environmental conditions or meet a critical design specification, please contact us.

We offer many non-standard design options not covered in this brochure that will help match the HMR to your specific application requirements, including:

- **Purge ports for positive/negative air pressure**
- **Mounting of customer motors**
- **Base and carriage pinning**
- **Parallel motor mount**
- **And much more...**

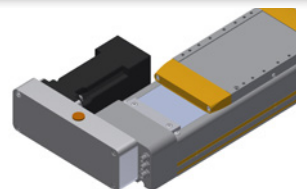
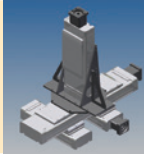


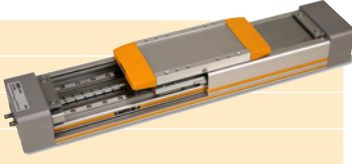
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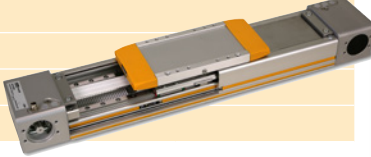
4-7	HMR Positioners are used in a wide range of material handling and machine automation functions; configure the HMR product with the features and performance best suited to your application requirements.	
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*If you don't find exactly what you are looking for in this brochure, please contact us for information on additional HMR configurations, other suitable Parker products, and to discuss your requirements with an application engineer.
1-800-245-6903*

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Free Access Sizing and Selection Software...

Use Parker EL Sizing software to assist your design process. The program is free and can be downloaded from our website.

Visit www.parkermotion.com/hmr to download the latest version.



Download Free CAD Drawings

Take advantage of our online CAD platform and easily integrate any configuration to accelerate your designing process.






Visit www.parkermotion.com to download your unique configuration.

Need more Information? Visit our Website...

Complete up-to-date technical assistance can be found on the web at www.parkermotion.com. This includes all the latest information on current products, new product introductions, local assistance and support, plus a comprehensive "Engineering Reference Library" including: complete product catalog data, product selection wizards, performance charts and graphs, engineering data and calculations, CAD drawings, local service and support directory, on-line purchasing, application stories, and videos.

HMR Series Positioners

Product Overview At-a-Glance

		HMR Screw-		
		Actuator Size		
		HMRS08	HMRS11	HMRS15
Frame Width (mm)		85	110	150
Max Thrust Force —N (lbs)		820 (184)	2,200 (495)	2,600 (585)
Maximum Payload N (lbs) *		1,800 (405)	4,450 (1,000)	8,800 (1,978)
Maximum Linear Speed — m/s (in/s)		0.6 (24)	0.8 (32)	1.0 (39)
Maximum Acceleration — m/s ² (in/s ²)		10 (394)	10 (394)	10 (394)
Repeatability (unidirectional) — μm		± 20	± 20	± 20
Maximum Order Stroke Length ⁽¹⁾ – mm (in)		1,200 (47)	1,500 (59)	2,000 (98)
Protection Class IP54 w/optional cover		IP20/54	IP20/54	IP20/54
Xpress Motor and Gearhead Options (2)	 Motor Mounting Kit	•	•	•
	 Gearhead Mounting Kit	•	•	•
	 Mounted Gearhead w/Motor Mounting Kit	•	•	•
	 Mounted Motor (w/o Gearhead)	•	•	•
	 Mounted Gearhead and Motor	•	•	•
Standard Design Options	Tandem Carriage	•	•	•
	Bi-parting Carriage			

* Rated for 2,540km (100 million inches) life (1)- Longer lengths available —please consult factory

Driven Actuators

HMR Belt-Driven Actuators

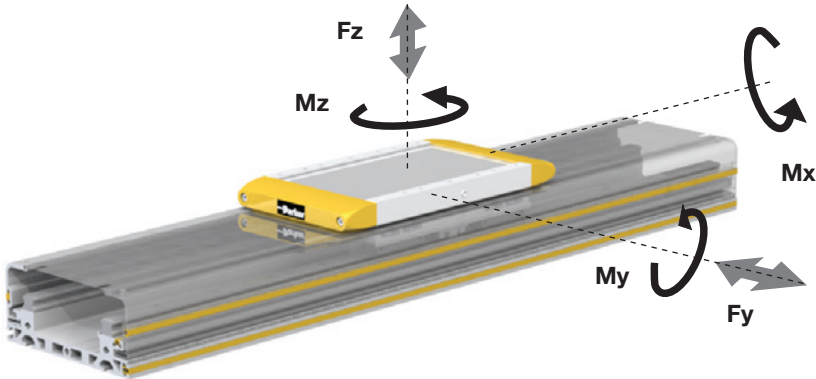
HMRS18		HMRS24		HMRB08		HMRB11		HMRB15		HMRB18		HMRB24	
180	240	85	110	150	180	240							
4,800 (1,079)	5,500 (1,236)	295 (66)	630 (142)	1,050 (236)	1,300 (292)	4,000 (900)							
16,200 (3,642)	26,600 (5,980)	1,800 (405)	4,450 (1,000)	8,800 (1,978)	16,200 (3,642)	26,600 (5,980)							
1.2 (49)	1.6 (63)	2 (79)	2 (79)	5 (197)	5 (197)	5 (197)							
10 (394)	10 (394)	30 (1,181)	30 (1,181)	50 (1,969)	50 (1,969)	50 (1,969)							
± 20	± 20	± 50	± 50	± 50	± 50	± 50							
2,100 (134)	2,300 (157)	3,000 (118)	4,000 (157)	6,000 (236)	6,000 (236)	6,000 (236)							
IP20/54	IP20/54	IP20/54	IP20/54	IP20/54	IP20/54	IP20/54							
•	•	•	•	•	•	•							
•	•	•	•	•	•	•							
•	•	•	•	•	•	•							
•	•												
•	•	•	•	•	•	•							
•	•	•	•	•	•	•							
		•	•	•	•	•							

HMR Series Positioners

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



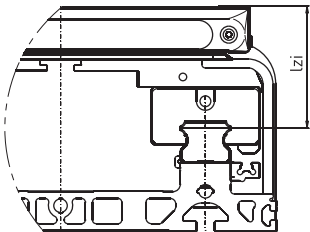
Calculating Load Factors - Combined Normal and Moment Load

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

$$L = \frac{F_y}{F_{y(max)}} + \frac{F_z}{F_{z(max)}} + \frac{M_x}{M_{x(max)}} + \frac{M_y}{M_{y(max)}} + \frac{M_z}{M_{z(max)}} \leq 1$$

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

Internal lever arm l_{zi}



Dimensions - Internal lever arm l_{zi}

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



For additional assistance in sizing a HMR for your application, download your free copy of Parker's EL Sizing tool at www.parkermotion.com/hmr.

Loading Specifications (Max)

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

Rated Life			HMR08	HMR11	HMR15	HMR18	HMR24
2540 km	F _Y / F _Z	N	1,800	4,450	8,800	16,200	26,600
		lb	405	1,001	1,980	3,645	5,985
2540 km Tandem	F _Y / F _Z	N	2,700	6,675	13,200	24,300	39,900
		lb	608	1,508	2,970	5,468	8,978
8000 km	F _Y / F _Z	N	1,250	3,000	6,000	11,000	18,200
		lb	281	675	1,350	2,475	4,095
8000 km Tandem	F _Y / F _Z	N	1,875	4,500	9,000	16,500	27,300
		lb	422	1,013	2,025	3,713	6,143
2540 km	M _X	Nm	45	155	430	940	2,150
		in-lb	398	1,372	3,806	8,320	19,029
	M _Y	Nm	80	200	560	1,230	2,430
		in-lb	708	1,770	4,956	10,886	21,507
	M _Z	Nm	80	200	560	1,230	2,430
		in-lb	708	1,770	4,956	10,886	21,507
2540 km Tandem	M _X	Nm	68	235	645	1,410	3,225
		in-lb	602	2,080	5,708	12,480	6,426
	M _Y	Nm	120	300	840	1,845	3,645
		in-lb	1,062	2,655	7,435	16,330	32,261
	M _Z	Nm	120	300	840	1,845	3,645
		in-lb	1,062	2,655	7,435	16,330	32,261
8000 km	M _X	Nm	30	105	290	640	1,460
		in-lb	266	929	2,567	5,664	12,922
	M _Y	Nm	55	135	380	840	1,660
		in-lb	487	1,195	3,363	7,435	14,692
	M _Z	Nm	55	135	380	840	1,660
		in-lb	487	1,195	3,363	7,434	14,692
8000 km Tandem	M _X	Nm	45	160	435	960	2,190
		in-lb	398	1,416	3,850	8,497	19,383
	M _Y	Nm	80	205	570	1,260	2,490
		in-lb	708	1,814	5,045	11,152	22,038
	M _Z	Nm	80	205	570	1,260	2,490
		in-lb	708	1,814	5,045	11,152	22,038

HMRS Screw-Driven Actuators

Actuators for Accurate, High-Thrust Positioning Applications

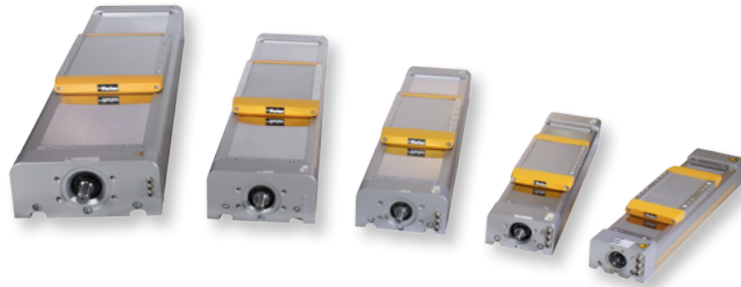
The HMRS is the screw driven version of the HMR family. The large diameter ball screw assembly allows this positioner to achieve very high thrust force capacity.

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.

Advantages:

- High dynamic control for precision positioning
- High thrust capacity
- High payload capacity
- High moment load capacity

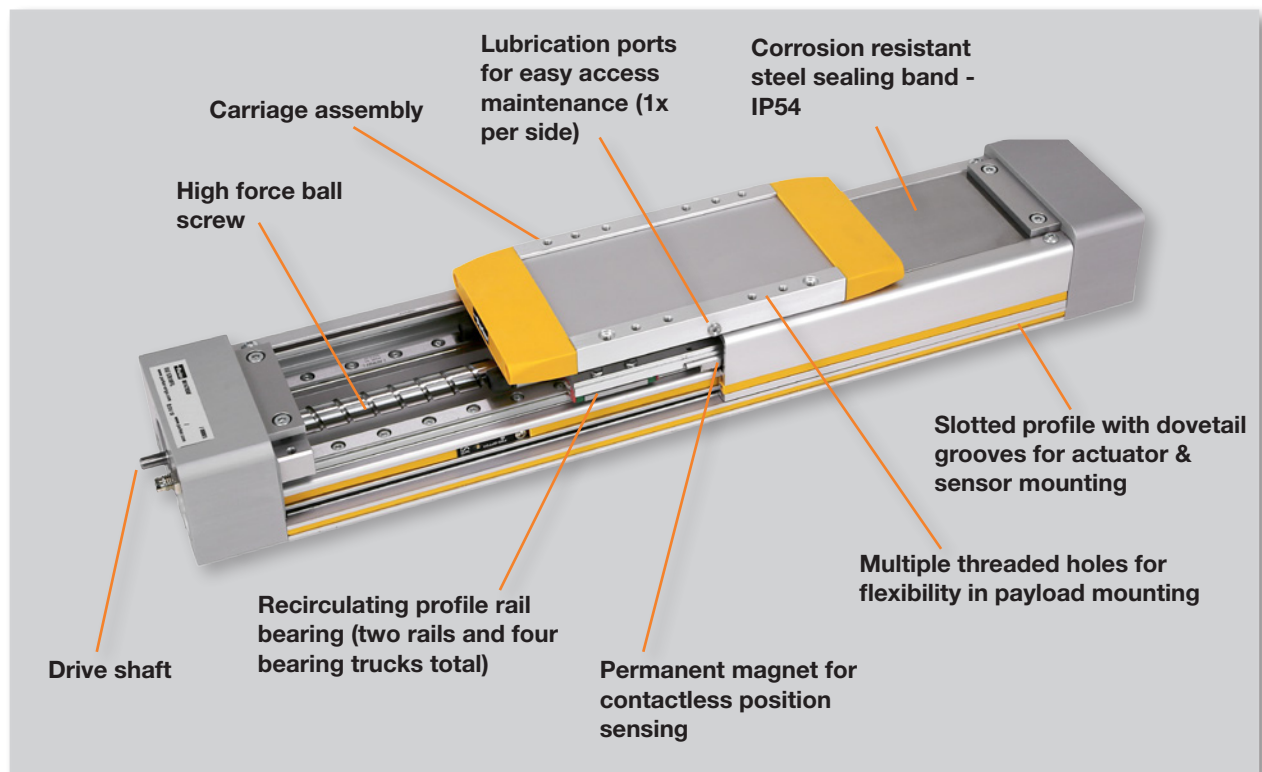


- Easy installation
- Highly configurable design
- Ideal in multi-axis applications

Features:

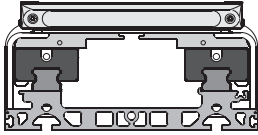
- 5 different frame sizes to choose from
- Basic or reinforced profiles for supported or unsupported applications
- Tandem carriage with second carriage for higher load capabilities

- Long available strokes
- Complete motor and drive packages
- Easy lube feature for reduced maintenance
- Ambient operating temperature range -20°C to +80°C
- IP 54 Rating

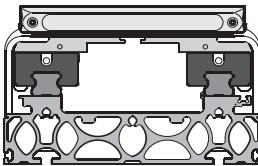


Choose from a Wide Range of Standard Options for Maximum Design Flexibility in a Pre-assembled Solution

Base Profile Option

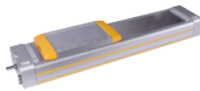


Basic profile - for applications where actuator is fully supported, this option provides a lower profile option.



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

Carriage Options



Standard carriage

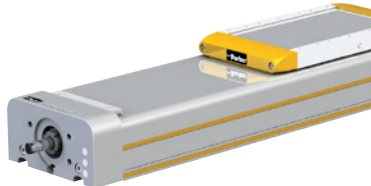


Tandem carriage- for higher load capabilities

Protective Cover Option



IP20 rated without protective cover



IP54 rated with seal strip cover assemblies—ideal for harsh environments

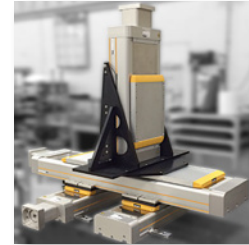
Actuator Mounting Options



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.

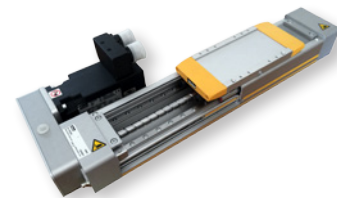
Multi-axis Systems



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

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

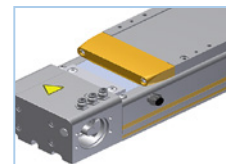
Options and Accessories



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

In addition to the standard configurable options highlighted on the following pages, 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**



HMRS Screw-Driven Actuators

General 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/s ²	10							
Repeatability (unidirectional)		µm	± 20							
Order Stroke (Max) ⁽¹⁾		mm	1,200				1,500			
Thrust Force (Max)	F_{Amax}	N	820				2,200			
		lbs	185				495			
Thrust Force @ 2540 km Life	F_{Amax}	N	820		650		1,550		1,150	
		lbs	185		146		349		259	
Torque on Drive Shaft (Max)	M_{Amax}	Nm	0.7		1.7		1.9		6.1	
		in-lb	6.2		15.0		16.8		54.0	
Torque on Drive Shaft @ 2540 km Life	M_{Amax}	Nm	0.7		1.3		1.3		3.1	
		in-lb	6.2		11.5		11.5		27.4	
Torque — No Load	M_0	Nm	0.2		0.2		0.3		0.4	
		in-lb	1.8		1.8		2.7		3.5	
Inertia										
@ Zero Stroke	J_0	kgmm ²	4				13			
Per Meter of Stroke	J_{OS}	kgmm ² /m	14				45			
Per 1 kg Moved Mass	J_m	kgmm ² /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	
			1.0		0.7		1.6		1.3	
Ambient Temperature Range		°C	-20 to +80							
IP Rating ⁽³⁾			IP 54							

Note- For force and moment load specifications, see page 7

⁽¹⁾ Longer lengths available - please consult factory

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

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

HMRS15				HMRS18				HMRS24			
20 x 5		20 x 20		25 x 10		25 x 25		32 x 10		32 x 32	
5		20		10		25		10		32	
20				25				32			
100				100				100			
0.25		1		0.5		1.25		0.5		1.6	
				10							
				± 20							
2,000				2,100				2,300			
2,600				4,800				5,500			
585				1,080				1,238			
1,800		2,160		3,300		3,960		3,500		4,880	
405		486		743		891		788		1098	
2.2		9		8.3		20.8		9.5		30.4	
19.5		79.7		73.5		184.1		84.1		269.0	
1.6		7.5		5.7		17.1		6.1		27	
14.2		66.4		50.4		151.3		54.0		239.0	
0.7		0.9		0.9		1		1		1.1	
6.2		8.0		8.0		8.9		8.9		9.7	
				35				96			
14				245				639			
107											
0.6		10.1		2.5		15.8		2.5		25.9	
B	C	R	S	B	C	R	S	B	C	R	S
5.2	6.1	7.1	7.9	8.9	10.0	11.2	12.3	16.5	18.1	20.5	22.2
12.1	13.9	15.5	17.2	15.5	17.7	19.1	21.4	25.6	28.3	30.7	33.4
0	1	0	1	0	1	0	1	0	1	0	1
2.6	1.8	4.7	3.7	9.2	7.3						
-20 to +80											
IP 54											

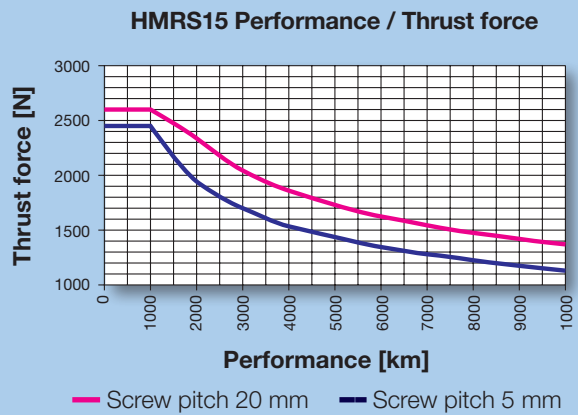
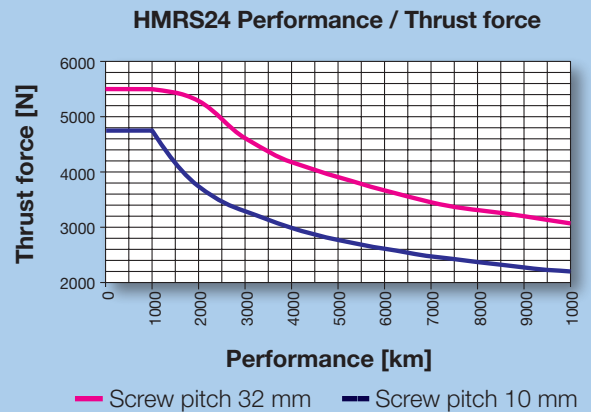
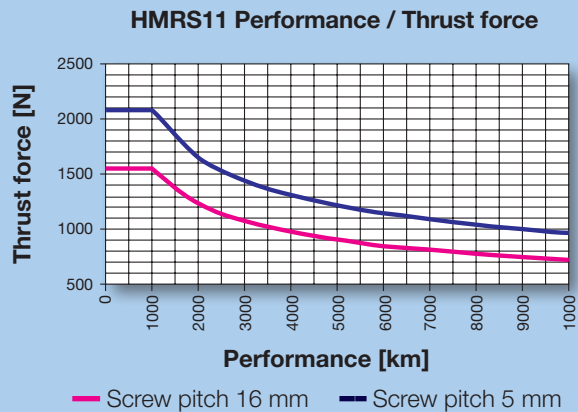
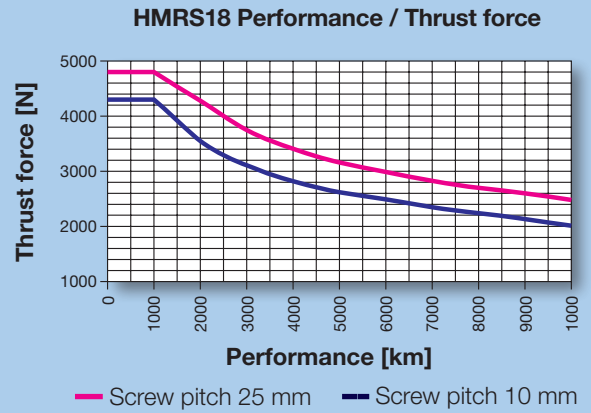
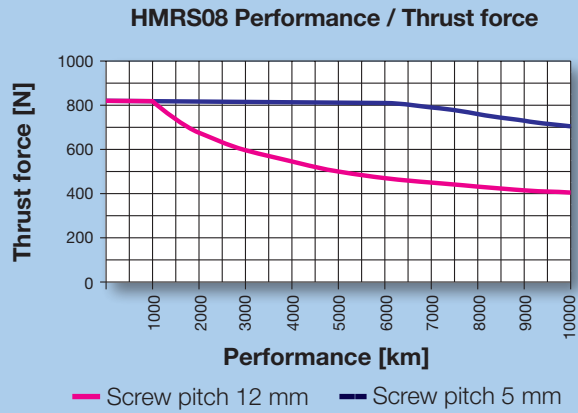
HMRS Screw-Driven Actuators

Stroke dependent speed

Actuator Size			HMRS08		HMRS11		HMRS15		HMRS18		HMRS24	
Screw Diameter (mm)			12		16		20		25		32	
Screw Lead (mm)			5	12	5	16	5	20	10	25	10	32
Max. permissible speed at order stroke (mm/s)	200	[mm]	250	600	250	800	250	1,000	500	1,250	500	1,600
	400	[mm]	250	600	250	800	250	1,000	500	1,250	500	1,600
	600	[mm]	152	366	197	631	250	1,000	500	1,250	500	1,600
	800	[mm]	102	245	132	424	169	678	382	956	423	1,354
	1000	[mm]	73	176	95	304	122	486	277	694	312	997
	1200	[mm]	55	132	71	228	91	366	211	526	239	765
	1400	[mm]	-	-	56	178	71	285	165	413	189	605
	1600	[mm]	-	-	45	143	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	

Thrust/Life Curve

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



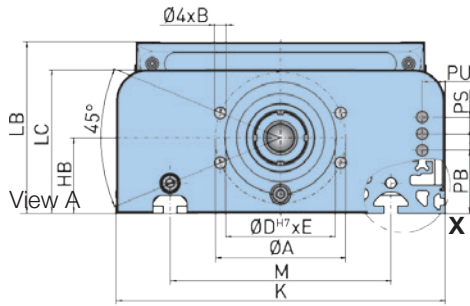
HMRS Screw-Driven Actuators

Dimensions – (mm)

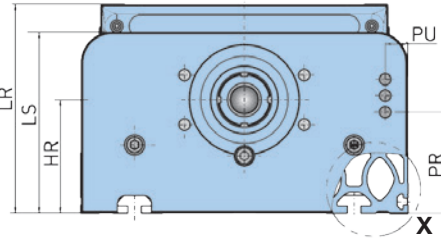
HMR actuators can be configured with either "Basic" or "Reinforced" profiles based on application demands. Basic profiles are suitable for applications where the actuator is secured to a machine base and constantly supported. Reinforced profiles can be utilized in applications with unsupported spans. See pages 18–19 for mounting support requirements.

Dimensions

"Basic" profile



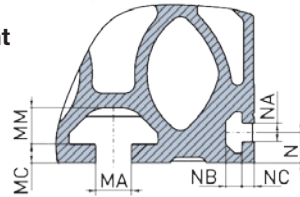
"Reinforced" profile



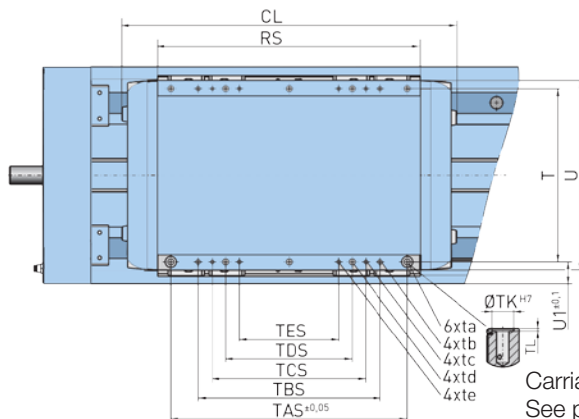
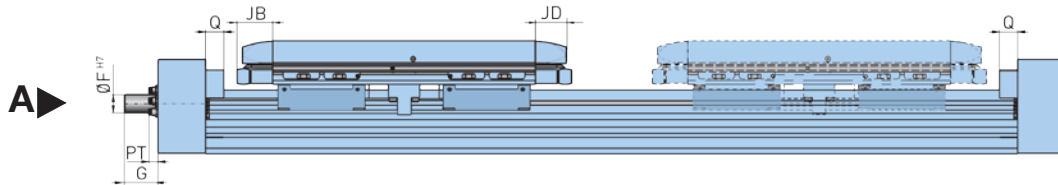
3-PIN M8 connections

View X

T-slot attachment



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



Carriage dimensions

Carriage pinning option
See page 59 for dowel sleeve information.

Dimensions – (mm)

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	-	-	70.0	M5x12	-
HMRS18 [mm]	40.0	34.0	311.0	231.0	150.0	202.0	M6x12	170.0	M5x10	122.0	M5x10	90.0	M6x12	-
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	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]	-	7.0	1.5	135.0	15.0
HMRS18 [mm]	-	9.0	1.5	165.0	15.0
HMRS24 [mm]	M5x10	12.0	1.5	210.0	24.0

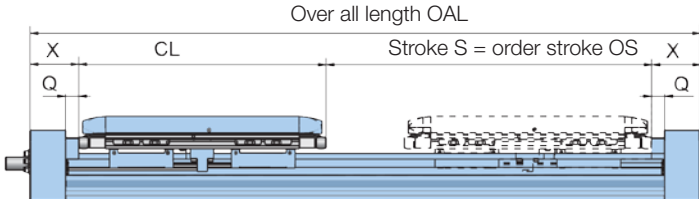
HMRS Screw-Driven Actuators

Order Stroke – (mm)

Order stroke dependent dimensions

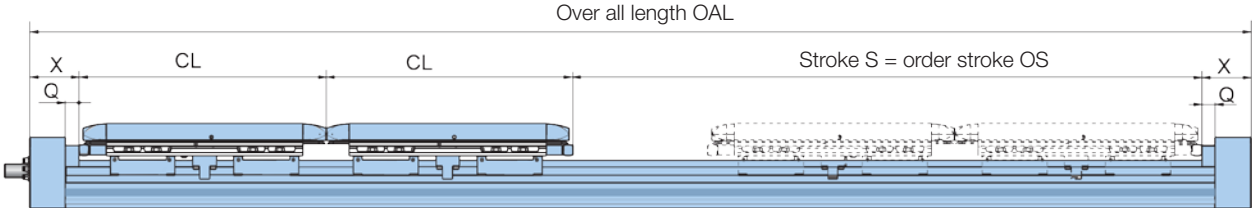
- ES = Effective Stroke
- SS = Safety Stroke
- CD = Carriage distance
- CL = Carriage length Standard
- S = Stroke
- OS = Order Stroke
- OAL = Over All Length

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.

Weight, Mass, and Inertia

Weight and mass HMRS

			HMRS08				HMRS11				HMRS15															
Product size			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												
Product size			Moving mass																							
Version of carriage (see order code)			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

			HMRS18				HMRS24											
Product size			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								
Product size			Moving mass															
Version of carriage (see order code)			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: $m_{tot} = m_0 + m_c + \text{order stroke} * m_{mt}$

Inertia HMRS

			HMRS08				HMRS11				HMRS15															
Product size			Pitch (see order code)																							
Pitch (see order code)			5				12				5				16				5				20			
Inertia actuator. 0 - order stroke	J_0	[kgmm ²]	4				13				14															
Inertia actuator per 1 meter	J_{mt}	[kgmm ² /m]	14				45				107															
Inertia per 1 kg moving mass	J_{kg}	[kgmm ² /kg]	0.6				3.7				0.6				6.5				0.6				10.1			

Inertia HMRS

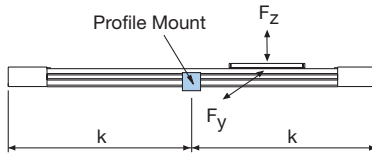
			HMRS18				HMRS24											
Product size			Pitch (see order code)															
Pitch (see order code)			10				25				10				32			
Inertia actuator. 0 - order stroke	J_0	[kgmm ²]	35				96											
Inertia actuator per 1 meter	J_{mt}	[kgmm ² /m]	245				639											
Inertia per 1 kg moving mass	J_{kg}	[kgmm ² /kg]	2.5				15.8				2.5				25.9			

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

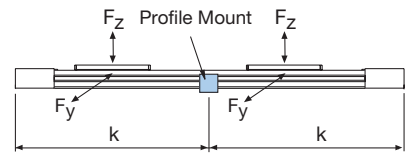
HMRS Screw-Driven Actuators

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.

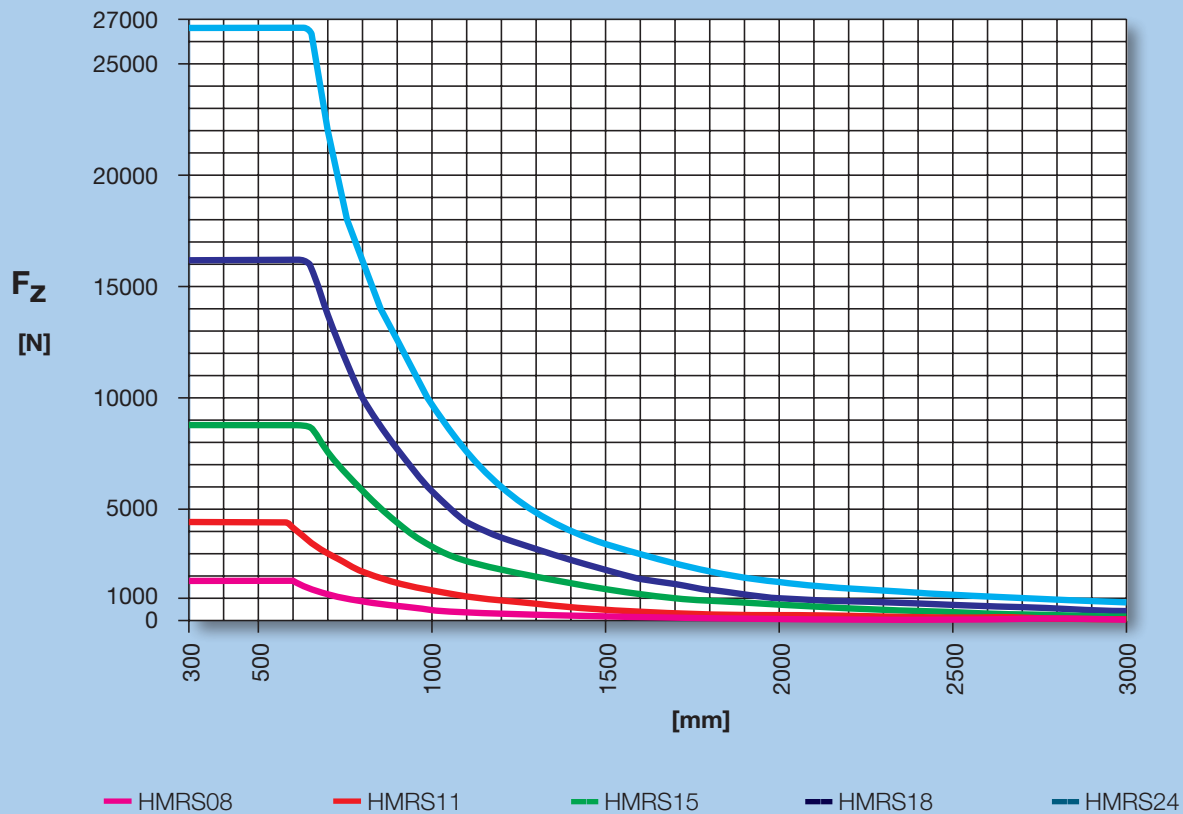


The greater the load and/or the longer the unsupported length between mounts, the more the actuator is susceptible to deflection.



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:

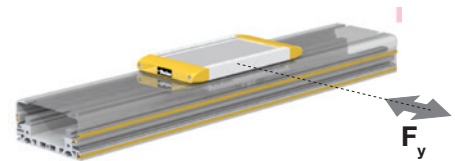
For a 3,160 N load the distance "d" between supporting elements is 700 mm.
For mounting accessories see "Actuator Mounting" on pages 60-61.

Maximum Permissible Unsupported Length

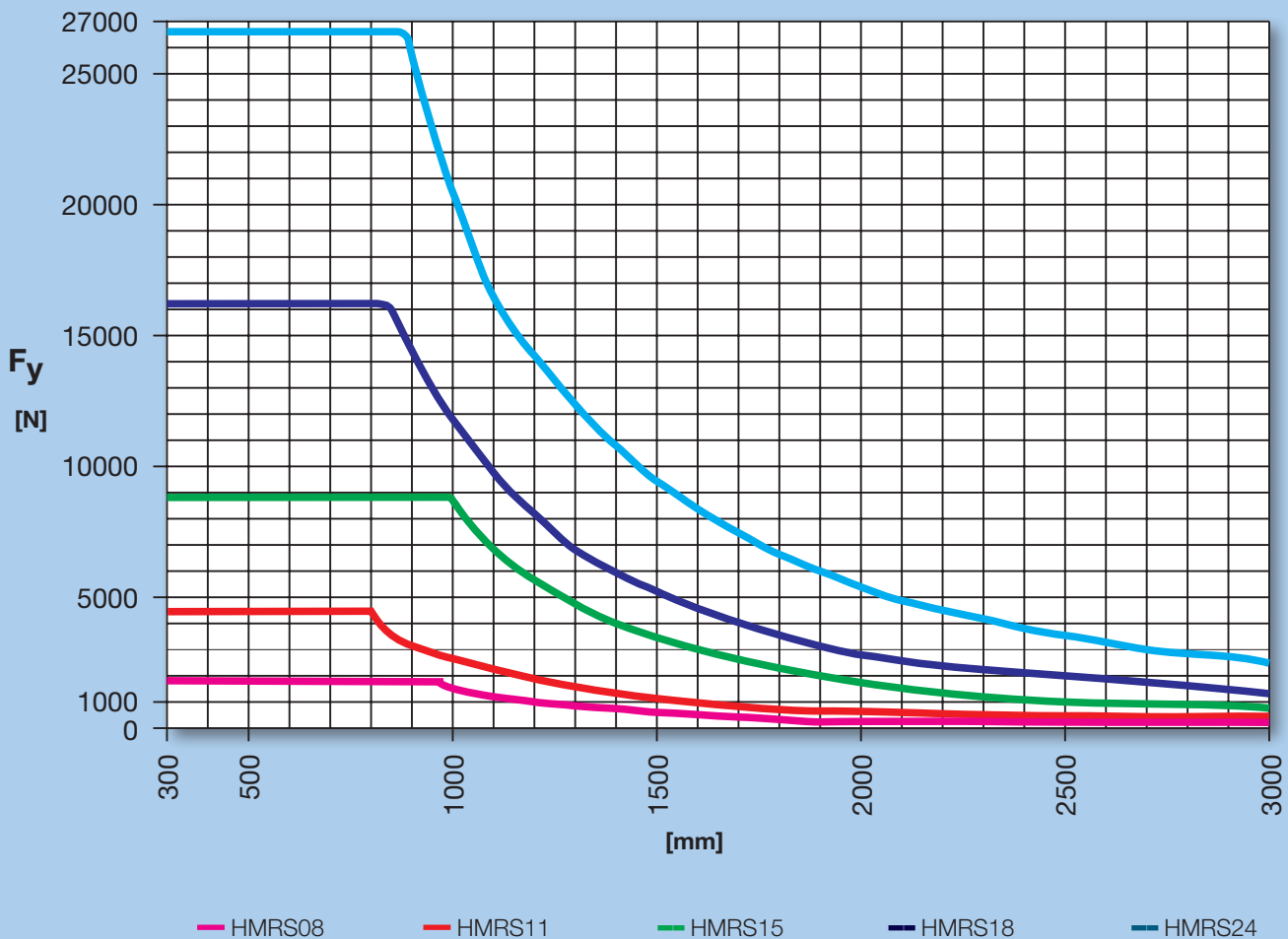
Determining actuator mounting placement

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)



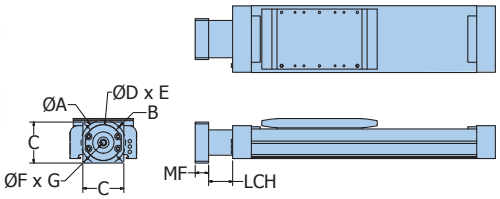
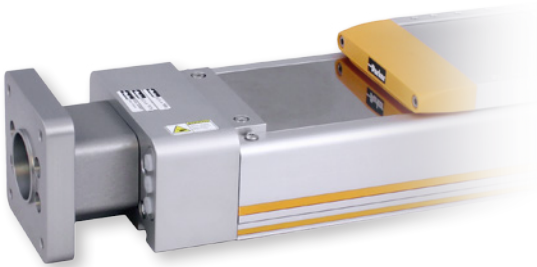
Example F_y HMR 11:

For a 3,160 N load the distance "d" between supporting elements is 900 mm.
For mounting accessories see "Actuator Mounting" on pages 60-61.

HMRS Screw-Driven Actuators

Gearhead Mounting Kit Options

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



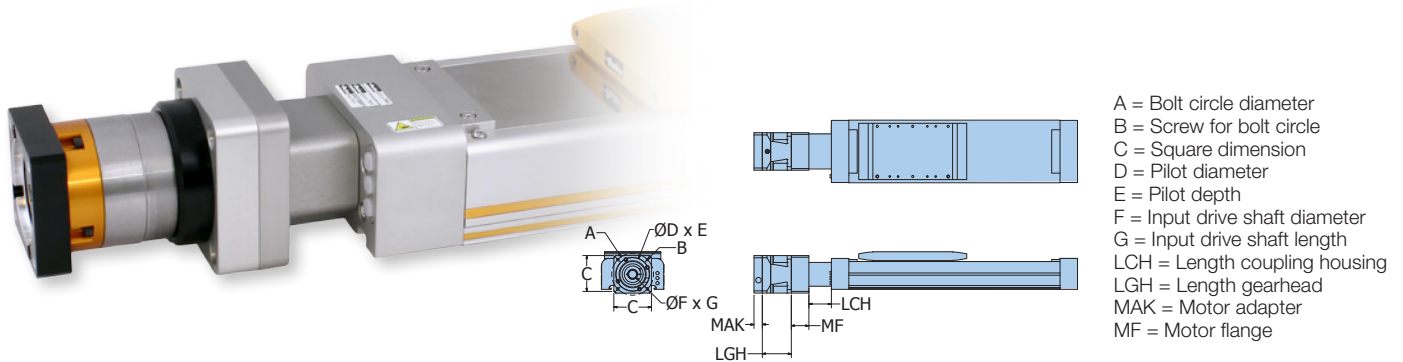
- A = Bolt circle diameter
- B = Screw for bolt circle
- C = Square dimension
- D = Pilot diameter
- E = Pilot depth
- F = Input drive shaft diameter
- G = Input drive shaft length
- LCH = Length coupling housing
- MF = Motor flange

Actuator Size	① 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
	A7	70	M5x0.8	60	50	15	16	40		35
HMRS11	C0	44	M4x0.7	60	35	6	12	25	37	20
	C1	62	M5x0.8	80	52	8	16	40		35
	BX	70	M5x0.8	60	50	10	16	25		20
HMRS15	A7	70	M5x0.8	85	50	15	16	40	54	30
	A8	100	M6x1	90	80	20	22	52		42
	C1	62	M5x0.8	84	52	12	16	40		30
	C2	80	M6x1	92	68	5	22	46		36
	BX	70	M5x0.8	85	50	5	16	25		20
	BY	100	M6x1	92	80	15	20	40		30
HMRS18	A8	100	M6x1	100	80	30	22	52	70	40
	C2	80	M6x1	92	68	6	22	46		30
	BY	100	M6x1	92	80	15	20	40		30
	BZ	130	M8x1.25	115	110	25	24	50		40
HMRS24	A9	130	M8x1.25	115	110	25	32	68	85	40
	C3	108	M8x1.25	125	90	17	32	70		40
	BZ	130	M8x1.25	115	110	5	24	50		20

¹ When ordering with actuator, use order code ① to specify appropriately sized gearhead mounting kit. See ordering information, page 31.

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.



Actuator Size	⑨ Order Code ¹	⑩ 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		48.5	19	20	
HMRS11	Fx	A3	100	M6x1	82	80	5	14	30	59.8	18	35		
	Fx	AB	66.68	M4x0.7	62	38.10	4	6.35	20.8	59.8	16.5	35		
	Fx	AC	66.68	M5x0.8	62	38.15	4	9.53	20.8	59.8	16.5	35		
	Fx	AD	66.68	M5x0.8	62	38.15	4	9.53	31.8	59.8	16.5	35		
	Fx	AE	98.43	M5x0.8	86.8	73.03	7	12.70	37.1	59.8	22.5	35		
	Fx	AF	98.43	M5x0.8	86.8	73.03	7	12.70	31.8	59.8	22.5	35		
	Fx	AH	63	M5x0.8	62	40	4	9	23	59.8	16.5	35		
	Fx	AN	70	M5x0.8	62	50	4	14	30	59.8	16.5	35		
	Fx	B6	63	M4x0.7	62	40	4	9	23	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	
		AC	66.68	M5x0.8	57	38.11	6	9.53	20.8		48.5	26	20	
		AD	66.68	M5x0.8	57	38.11	6	9.53	31.8		48.5	26	20	
		B6	63	M5x0.8	55	40	8	9	23		48.5	19	20	
		Kx	AB	66.68	M4x0.7	62	38.10	4	6.35		20.8	67	16.5	35
		Kx	AC	66.68	M4x0.7	62	38.10	4	9.53		20.8	67	16.5	35
		Kx	AD	66.68	M5x0.8	62	38.10	8.5	9.53		31.8	67	22.5	35
		Kx	AE	98.43	M6x1	85	73.05	10	12.70		37.1	67	30	35
		Kx	AF	98.43	M5x0.8	80	73.05	7	12.70		31.8	67	22.5	35
		Kx	AH	63	M5x0.8	62	40	4	9		23	67	16.5	35
	Kx	AN	70	M5x0.8	62	50	11	14	30	67	22.5	35		
Kx	B6	63	M4x0.7	62	40	4	9	23	67	16.5	35			

¹ When ordering with actuator, use order code ⑨ (see page 31) 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 ⑩ (see page 31) to specify appropriately sized motor mounting kit.

HMRS Screw-Driven Actuators

Mounted Gearhead with Motor Mounting Kit Options

(continued from previous page)

Actuator Size	⑨ Order Code ¹	⑩ 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		59.8	18	30
	Fx	AB	66.68	M4x0.7	62	38.10	4	6.35	20.8		59.8	16.5	30
	Fx	AC	66.68	M5x0.8	62	38.15	4	9.53	20.8		59.8	16.5	30
	Fx	AD	66.68	M5x0.8	62	38.15	4	9.53	31.8		59.8	16.5	30
	Fx	AE	98.43	M5x0.8	86.8	73.03	7	12.70	37.1		59.8	22.5	30
	Fx	AF	98.43	M5x0.8	86.8	73.03	7	12.70	31.8		59.8	22.5	30
	Fx	AH	63	M5x0.8	62	40	4	9	23		59.8	16.5	30
	Fx	AN	70	M5x0.8	62	50	4	14	30		59.8	16.5	30
	Fx	B6	63	M4x0.7	62	40	4	9	23		59.8	16.5	30
	Gx	A2	63	M5x0.8	90	40	3	11	23		69.5	20	42
	Gx	A3	100	M6x1	90	80	10	14	30		69.5	20	42
	Gx	A4	115	M8x1.25	100	95	10	19	40		69.5	28.5	42
	Gx	AB	66.68	M5x0.8	90	38.15	3	6.35	20.8		69.5	20	42
	Gx	AC	66.68	M5x0.8	90	38.15	3	9.53	20.8		69.5	20	42
	Gx	AD	66.68	M5x0.8	90	38.15	3	9.53	31.8		69.5	20	42
	Gx	AE	98.43	M5x0.8	90	73	10	12.70	37.1		69.5	20	42
	Gx	AF	98.43	M5x0.8	90	73	10	12.70	31.8		69.5	20	42
	Gx	AH	63	M5x0.8	90	40	3	9	23		69.5	20	42
	Gx	AL	100	M6x1	90	80	10	16	40		69.5	20	42
	Gx	AN	70	M5x0.8	90	50	10	14	30		69.5	20	42
	Gx	AP	90	M6x1	90	70	10	19	40		69.5	20	42
	Gx	B1	90	M5x0.8	90	60	10	11	23		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		69.5	20	42
	Kx	AB	66.68	M4x0.7	62	38.1	4	6.35	20.8		67	16.5	30
	Kx	AC	66.68	M4x0.7	62	38.1	4	9.53	20.8		67	16.5	30
	Kx	AD	66.68	M5x0.8	62	38.1	8.5	9.53	31.8		67	22.5	30
	Kx	AE	98.43	M6x1	85	73.05	10	12.70	37.1		67	30	30
	Kx	AF	98.43	M5x0.8	80	73.05	7	12	31.8		67	22.5	30
	Kx	AH	63	M5x0.8	62	40	4	9	23		67	16.5	30
	Kx	AN	70	M5x0.8	62	50	11	14	30		67	22.5	30
	Kx	B6	63	M4x0.7	62	40	4	9	23		67	16.5	30
	Lx	A2	63	M5x0.8	90	40	3	11	23		85.5	20	36
	Lx	A3	100	M6x1	90	80	10	14	30		85.5	20	36
	Lx	A4	115	M8x1.25	100	95	10	19	40		85.5	28.5	36
	Lx	AB	66.68	M4x0.7	90	38.15	3	6.35	20.8		85.5	20	36
	Lx	AC	66.68	M5x0.8	90	52	10	9.53	20.8		85.5	20	36
	Lx	AD	66.68	M5x0.8	90	52	10	9.53	31.8		85.5	20	36
	Lx	AE	98.43	M5x0.8	90	73.03	10	12.70	37.1		85.5	28.5	36
	Lx	AF	98.43	M5x0.8	90	73	10	12.70	31.8		85.5	20	36
	Lx	AH	63	M5x0.8	90	40	10	9	23		85.5		36
	Lx	AL	100	M6x1	90	80	10	16	40		85.5	28.5	36
Lx	AN	70	M5x0.8	90	50	10	14	30		85.5	20	36	
Lx	AP	90	M6x1	90	70	10	19	40		85.5	28.5	36	

(continued from previous page)

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

¹ When ordering with actuator, use order code ⑨ (see page 31) 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)

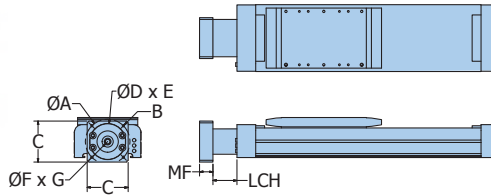
1 = ratio 3:1 **2** = ratio 5:1 **3** = ratio 10:1
 * 3:1 ratio not available on "J" PV040TA gearhead

² Use order code ⑩ (see page 31) to specify appropriately sized motor mounting kit.

HMRS Screw-Driven Actuators

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	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		20
	AC	66.68	M5x0.8	60	38.10	10	9.53	20.8		20
	AD	66.68	M5x0.8	60	38.10	15	9.53	31.8		27
	AE	98.43	M6x1	85	73.03	15	12.70	37.1		33
	AF	98.43	M5x0.8	85	73.03	15	12.70	31.8		27
	AG	75	M5x0.8	70	60	10	11	23		20
	AH	63	M5x0.8	60	40	10	9	23		20
	AN	70	M5x0.8	60	50	15	14	30		25
	B0	75	M6x1	70	60	15	14	30		25
	B1	90	M5x0.8	75	60	10	11	23		20
	B2	90	M5x0.8	75	60	15	14	30		25
	B3	95	M6x1	80	50	15	14	30		25
	B6	63	M4x0.7	60	40	10	9	23		20
	B7	70	M5x0.8	60	50	15	8	30		25
	B8	70	M5x0.8	60	50	15	12	30		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		15
	AC	66.68	M5x0.8	60	38.10	10	9.53	20.8		15
	AD	66.68	M5x0.8	60	38.10	15	9.53	31.8		25
	AE	98.43	M6x1	85	73.03	20	12.70	37.1		33
	AF	98.43	M5x0.8	85	73.03	15	12.70	31.8		27
	AG	75	M5x0.8	70	60	10	11	23		20
	AH	63	M5x0.8	60	40	5	9	23		15
	AL	100	M6x1	92	80	15	16	40		36
	AN	70	M5x0.8	60	50	15	14	30		25
	B0	75	M6x1	70	60	15	14	30		25
	B1	90	M5x0.8	80	60	10	11	23		20
	B2	90	M5x0.8	80	60	15	14	30		25
	B3	95	M6x1	80	50	15	14	30		25
	B7	70	M5x0.8	60	50	15	8	30		25
	B8	70	M5x0.8	60	50	15	12	30		25

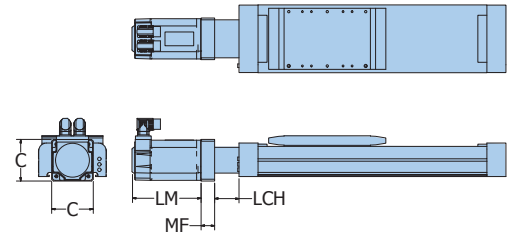
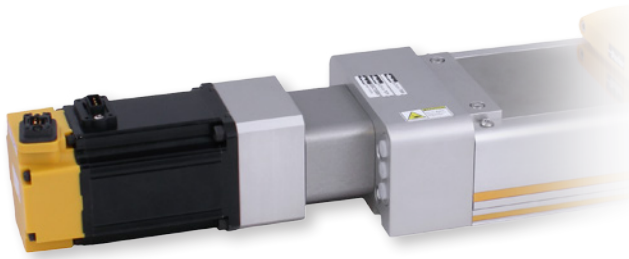
HMRS15	A2	63	M5x0.8	84	40	3	11	23	54	20
	A3	100	M6x1	92	80	5	14	30		20
	A4	115	M8x1.25	100	95	15	19	40		30
	AE	98.43	M6x1	85	73.03	15	12.70	37.1		25
	AF	98.43	M5x0.8	85	73.03	10	12.70	31.8		20
	AL	100	M6x1	92	80	15	16	40		30
	AN	70	M5x0.8	85	50	5	14	30		20
	AP	90	M6x1	84	70	15	19	40		30
	B0	100	M6x1	85	60	5	14	30		20
	B2	90	M5x0.8	85	60	5	14	30		20
HMRS18	A3	100	M6x1	92	80	5	14	30	70	20
	A4	115	M8x1.25	100	95	15	19	40		30
	AF	98.43	M5x0.8	90	73.03	10	12.70	31.8		20
	AK	130	M8x1.25	115	110	25	24	40		40
	AL	100	M6x1	92	80	15	16	40		30
	AP	90	M6x1	90	70	15	19	40		30
	B0	75	M6x1	90	60	10	14	30		20
	B2	90	M6x1	90	60	10	14	30		20
HMRS24	A4	115	M8x1.25	110	95	5	19	50	85	20
	AK	130	M8x1.25	115	110	5	24	40		20
	AQ	165	M10x1.5	142	130	15	28	60		30

¹ When ordering with actuator, use order code  to specify appropriately sized motor mounting kit. See ordering information, page 31.

HMRS Screw-Driven Actuators

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	⑩	Mounted Motor	C	LCH	LM	MF
	Order Code ¹	Order Code ¹					
HMRS08	00	K0	BE233FJ-KPSN	60		143.2	27
	00	K1	BE233FJ-KPSN with Brake (CM233FJ-115027)	60		178	27
	00	K2	BE344LJ-KPSN	85	28	188	27
	00	K3	BE344LJ-KPSB	85		231	27
	00	K4	PM-FBL04AMK	60		108.2	25
	00	K5	PM-FBL04AMK2 (w/ Brake)	60		148.2	25
HMRS11	00	K0	BE233FJ-KPSN	60		143.2	25
	00	K1	BE233FJ-KPSN with Brake (CM233FJ-115027)	60		178	25
	00	K2	BE344LJ-KPSN	85		188	27
	00	K3	BE344LJ-KPSB	85	37	231	27
	00	K4	PM-FBL04AMK	60		108.2	25
	00	K5	PM-FBL04AMK2 (w/ Brake)	60		148.2	25
	00	M0	MPP0923D1E-KPSN	92		178	36
	00	M1	MPP0923D1E-KPSB	92		212.5	36
HMRS15	00	K2	BE344LJ-KPSN	85		188	20
	00	K3	BE344LJ-KPSB	85		231	20
	00	K4	PM-FBL04AMK	85		108.2	20
	00	K5	PM-FBL04AMK2 (w/ Brake)	85		148.2	20
	00	K6	PM-FCL10AMK	84		152.7	30
	00	K7	PM-FCL10AMK2 (w/ Brake)	84		193	30
	00	M0	MPP0923D1E-KPSN	92	54	178	30
	00	M1	MPP0923D1E-KPSB	92		212.5	30
	00	M2	MPP1003D1E-KPSN	100		174.5	30
	00	M3	MPP1003D1E-KPSB	100		223	30
	00	M4	MPP1003R1E-KPSN	100		174.5	30
00	M5	MPP1003R1E-KPSB	100		223	30	

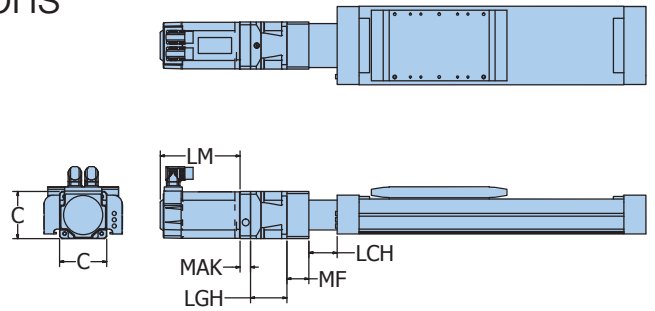
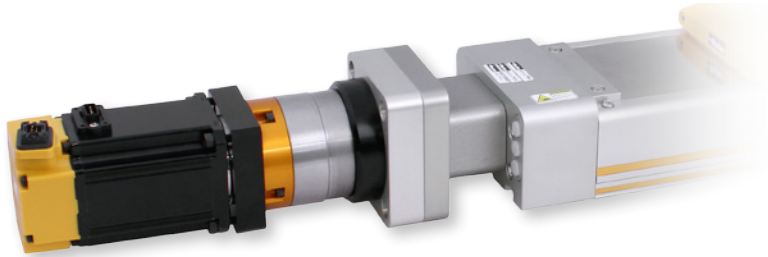
HMRS18	00	K2	BE344LJ-KPSN	90	70	188	20
	00	K3	BE344LJ-KPSB	90		231	20
	00	K6	PM-FCL10AMK	90		152.7	30
	00	K7	PM-FCL10AMK2 (w/ Brake)	90		193	30
	00	M0	MPP0923D1E-KPSN	92		178	30
	00	M1	MPP0923D1E-KPSB	92		212.5	30
	00	M2	MPP1003D1E-KPSN	100		174.5	30
	00	M3	MPP1003D1E-KPSB	100		223	30
	00	M4	MPP1003R1E-KPSN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

¹ When ordering with actuator, use order code ⑨ to specify no gearhead mounting kit, and order code ⑩ to specify mounted motor. See ordering information, page 31.

HMRS Screw-Driven Actuators

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	Order Code ^①	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		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		59.8	178	16.5	35
	Fx	K2	BE344LJ-KPSN	60		59.8	188	22.5	35
	Fx	K3	BE344LJ-KPSB	60		59.8	231	22.5	35
	Fx	K4	PM-FBL04AMK	60		59.8	108.2	16.5	35
	Fx	K5	PM-FBL04AMK2 (w/ Brake)	60		59.8	148.2	16.5	35
	Jx	K0	BE233FJ-KPSN	60		48.5	143.2	26	20
	Jx	K1	BE233FJ-KPSN with Brake (CM233FJ-115027)	60		48.5	178	26	20
	Kx	K0	BE233FJ-KPSN	80		67	143.2	22.5	35
	Kx	K1	BE233FJ-KPSN with Brake (CM233FJ-115027)	80		67	178	22.5	35
	Kx	K2	BE344LJ-KPSN	80		67	188	22.5	35
	Kx	K3	BE344LJ-KPSB	80		67	231	22.5	35
	Kx	K4	PM-FBL04AMK	80		67	108.2	22.5	35
	Kx	K5	PM-FBL04AMK2 (w/ Brake)	80		67	148.2	22.5	35

¹ When ordering with actuator, use order code ^① (see page 31) 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 ^② (see page 31) to specify appropriately sized motor mounting kit.

Actuator Size	⑨	⑩	Mounted Motor	Dimensions					
	Order Code ¹	Order Code ²		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		59.8	178	16.5	30
	Fx	K2	BE344LJ-KPSN	85		59.8	188	22.5	30
	Fx	K3	BE344LJ-KPSB	85		59.8	231	22.5	30
	Fx	K4	PM-FBL04AMK	85		59.8	108.2	16.5	30
	Fx	K5	PM-FBL04AMK2 (w/ Brake)	85		59.8	148.2	16.5	30
	Gx	K2	BE344LJ-KPSN	90		69.5	188	20	42
	Gx	K3	BE344LJ-KPSB	90		69.5	231	20	42
	Gx	K6	PM-FCL10AMK	90		69.5	152.7	20	42
	Gx	K7	PM-FCL10AMK2 (w/ Brake)	90		69.5	193	20	42
	Gx	M0	MPP0923D1E-KPSN	90		69.5	178	20	42
	Gx	M1	MPP0923D1E-KPSB	90		69.5	212.5	20	42
	Gx	M2	MPP1003D1E-KPSN	90		69.5	174.5	28.5	42
	Gx	M3	MPP1003D1E-KPSB	90		69.5	223	28.5	42
	Gx	M4	MPP1003R1E-KPSN	90		69.5	174.5	28.5	42
	Gx	M5	MPP1003R1E-KPSB	90		69.5	223	28.5	42
	Kx	K0	BE233FJ-KPSN	84		67	143.2	22.5	30
	Kx	K1	BE233FJ-KPSN with Brake (CM233FJ-115027)	84		67	178	22.5	30
	Kx	K2	BE344LJ-KPSN	84		67	188	22.5	30
	Kx	K3	BE344LJ-KPSB	84		67	231	22.5	30
	Kx	K4	PM-FBL04AMK	84		67	108.2	22.5	30
	Kx	K5	PM-FBL04AMK2 (w/ Brake)	84		67	148.2	22.5	30
	Lx	K2	BE344LJ-KPSN	92		85.5	188	20	36
	Lx	K3	BE344LJ-KPSB	92		85.5	231	20	36
	Lx	K6	PM-FCL10AMK	92		85.5	152.7	28.5	36
	Lx	K7	PM-FCL10AMK2 (w/ Brake)	92		85.5	193	28.5	36
	Lx	M0	MPP0923D1E-KPSN	92		85.5	178	28.5	36
	Lx	M1	MPP0923D1E-KPSB	92		85.5	212.5	28.5	36
	Lx	M2	MPP1003D1E-KPSN	92		85.5	174.5	28.5	36
	Lx	M3	MPP1003D1E-KPSB	92		85.5	223	28.5	36
	Lx	M4	MPP1003R1E-KPSN	92		85.5	174.5	28.5	36
	Lx	M5	MPP1003R1E-KPSB	92		85.5	223	28.5	36

¹ When ordering with actuator, use order code ⑨ (see page 31) 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 ⑩ (see page 31) to specify appropriately sized motor mounting kit.

(continued next page)

HMRS Screw-Driven Actuators

Mounted Gearhead and Motor Options

(continued from previous page)

Actuator Size	⑨	⑩	Mounted Motor	Dimensions					
	Order Code ¹	Order Code ²		C	LCH	LGH	LM	MAK	MF
HMRS18	Gx	K2	BE344LJ-KPSN	100		69.5	188	20	40
	Gx	K3	BE344LJ-KPSB	100		69.5	231	20	40
	Gx	K6	PM-FCL10AMK	100		69.5	152.7	20	40
	Gx	K7	PM-FCL10AMK2 (w/ Brake)	100		69.5	193	20	40
	Gx	M0	MPP0923D1E-KPSN	100		69.5	178	20	40
	Gx	M1	MPP0923D1E-KPSB	100		69.5	212.5	20	40
	Gx	M2	MPP1003D1E-KPSN	100		69.5	174.5	28.5	40
	Gx	M3	MPP1003D1E-KPSB	100		69.5	223	28.5	40
	Gx	M4	MPP1003R1E-KPSN	100		69.5	174.5	28.5	40
	Gx	M5	MPP1003R1E-KPSB	100		69.5	223	28.5	40
	Lx	K2	BE344LJ-KPSN	92	70	85.5	188	20	30
	Lx	K3	BE344LJ-KPSB	92		85.5	231	20	30
	Lx	K6	PM-FCL10AMK	92		85.5	152.7	28.5	30
	Lx	K7	PM-FCL10AMK2 (w/ Brake)	92		85.5	193	28.5	30
	Lx	M0	MPP0923D1E-KPSN	92		85.5	178	28.5	30
	Lx	M1	MPP0923D1E-KPSB	92		85.5	212.5	28.5	30
	Lx	M2	MPP1003D1E-KPSN	92		85.5	174.5	28.5	30
	Lx	M3	MPP1003D1E-KPSB	92		85.5	223	28.5	30
	Lx	M4	MPP1003R1E-KPSN	92		85.5	174.5	28.5	30
	Lx	M5	MPP1003R1E-KPSB	92		85.5	223	28.5	30
HMRS24	Hx	M6	MPP1154B1E-KPSN	115		90.2	203.2	24	40
	Hx	M7	MPP1154B1E-KPSB	115		90.2	251.7	24	40
	Hx	M8	MPP1154P1E-KPSN	115		90.2	203.2	24	40
	Hx	M9	MPP1154P1E-KPSB	115		90.2	251.7	24	40
	Hx	MA	MPP1424C1E-KPSN	115		90.2	223.7	35	40
	Hx	MB	MPP1424C1E-KPSB	115	85	90.2	275.3	35	40
	Hx	MC	MPP1424R1E-KPSN	115		90.2	223.7	35	40
	Hx	MD	MPP1424R1E-KPSB	115		90.2	275.3	35	40
	Mx	M6	MPP1154B1E-KPSN	125		110	203.2	35	40
	Mx	M7	MPP1154B1E-KPSB	125		110	251.7	35	40
	Mx	M8	MPP1154P1E-KPSN	125		110	203.2	35	40
	Mx	M9	MPP1154P1E-KPSB	125		110	251.7	35	40

¹ When ordering with actuator, use order code ⑨ (see page 31) 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 ⑩ (see page 31) to specify appropriately sized motor mounting kit.

HMRS Ordering Information

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 page 14 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 on pages 10-11 of catalog)
------	--

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.**

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-GPCHX)
N	NPN, 3 Wire, N.C., 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.**

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 pages 21-23 for frame size availability and dimensions)

⑩ Gearhead and Motor Mounting Kits

Gearhead Mounting Kit

(see page 20 for availability and dimensions)

Motor Mounting Kit (Including Flange and Coupling For Direct Drive Motor or Flange on Mounted Gearhead)

(see pages 24-25 & 28-30 for availability and dimensions)

Mounted Motor (Mated to Mounted Gearhead)

(see pages 26-27 for availability and dimensions)

HMRB Belt-Driven Actuators

Actuators for High Speed, Long Stroke Positioning Applications

The HMRB is the belt driven version in the HMR family. The steel reinforced timing belt used on this positioner features a round tooth profile for greater energy efficiency and smoother overall motion, as compared to traditional belt profiles. The HMRB is ideal for long travel lengths and high speed dynamic positioning.

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

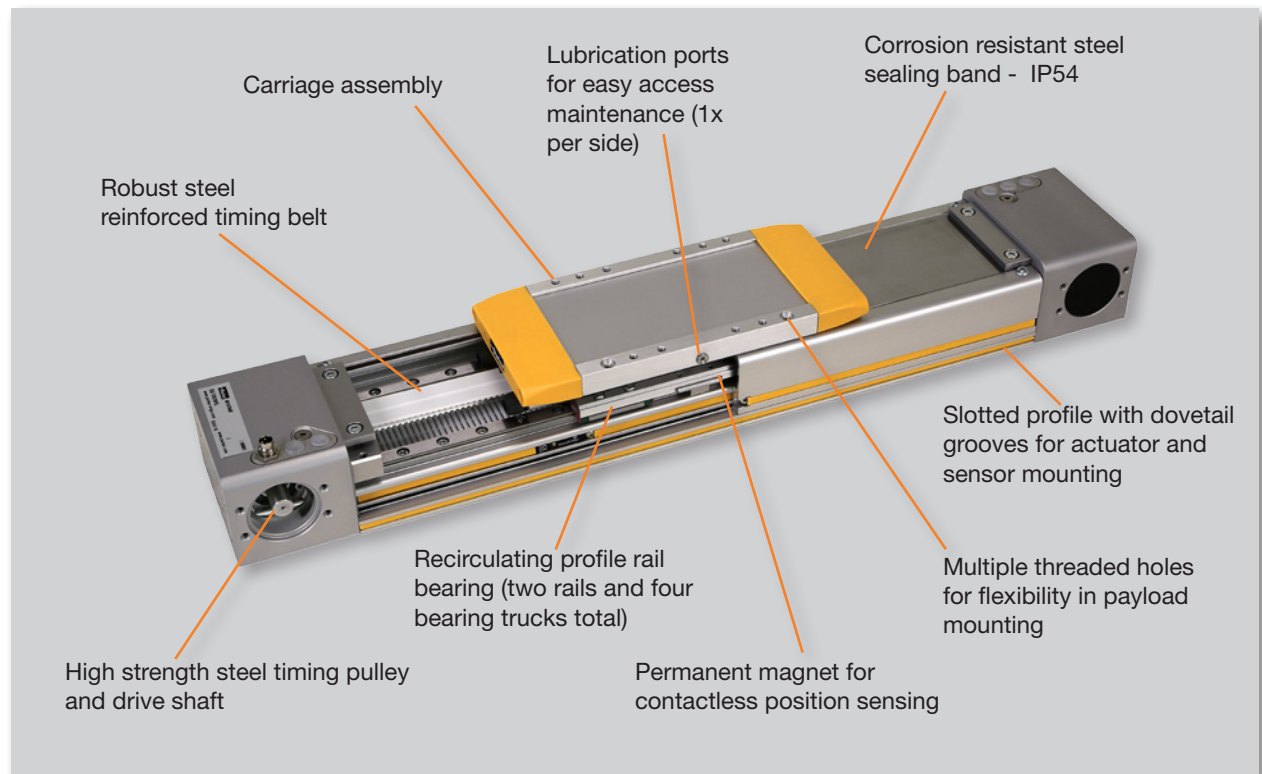


Advantages:

- High dynamic control for precision positioning
- High payload capacity
- High speed operation
- Easy installation
- Highly configurable design
- Ideal in multi axis applications

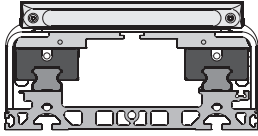
Features:

- 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
- Bi-parting carriage for centering applications
- Long available strokes
- Complete motor and drive packages
- Ambient operating temperature range -20°C to +80°C
- IP 54 Rating

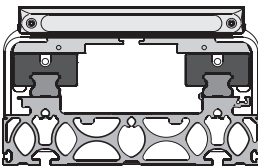


Choose from a Wide Range of Standard Options for Maximum Design Flexibility in a Pre-assembled Solution

Base Profile Option



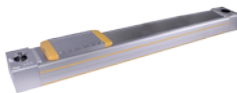
Basic profile - for applications where actuator is fully supported, this option provides a lower profile option.



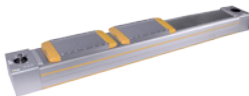
Reinforced profile - for long un-supported spans (i.e.- gantry style applications).

Carriage Options

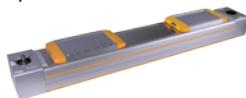
Carriage Options



Standard carriage

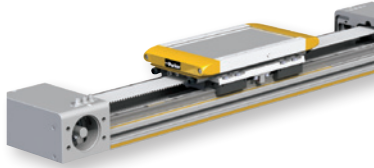


Tandem carriage- for higher load capabilities

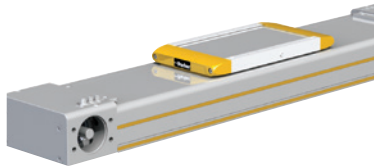


Bi-parting carriage- for opposing synchronized movements

Protective Cover Option



IP20 rated without protective cover



IP54 rated with seal strip cover assemblies—ideal for harsh environments

Motor Mounting Option



The HMRB belt driven positioner is designed to optimize flexibility in machine design. As such the drive and motor mounting can be positioned at any one of four different positions around the axis of motion. This option is configurable through the part number.

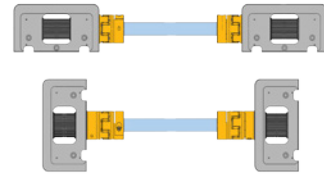
Multi-axis Systems



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

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

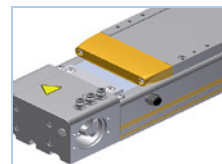
Options and Accessories



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

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

- **Dual axis with link shaft**
- **Purge ports**
- **Longer than cataloged stroke**
- **...and many more**



HMRB Belt-Driven Actuators

General Specifications

Actuator Size			HMRB08				HMRB11			
Belt drive orientation (see p. 47 for details)			090°/270°		000°/180°		090°/270°		000°/180°	
Travel Distance per Revolution	s_{lin}	mm	66				90			
Pulley Diameter		mm	21.01				28.65			
Linear Speed (Max)	v_{max}	m/s	2							
Acceleration (Max)	a_{max}	m/s ²	30							
Repeatability (unidirectional)		μm	± 50							
Order Stroke (Max) ⁽¹⁾		mm	3,000				4,000			
Thrust Force (Max)	F_{Amax}	N	295				630			
		lbs	66				142			
Thrust force (F_A)- corresponding to velocity (v)	F_A ($v < 1$ m/s)	N	295				630			
	F_A ($v < 2$ m/s)	N	295				550			
	F_A ($v < 3$ m/s)	N	-				-			
	F_A ($v < 4$ m/s)	N	-				-			
	F_A ($v < 5$ m/s)	N	-				-			
Thrust force (F_A)- corresponding to order stroke (OS)	F_A (OS < 1 m)	N	250				630			
	F_A (OS < 2 m)	N	140				550			
	F_A (OS < 3 m)	N	100				385			
	F_A (OS < 4 m)	N	-				295			
	F_A (OS < 5 m)	N	-				-			
	F_A (OS < 6 m)	N	-				-			
Torque on Drive Shaft (Max)	M_{Amax}	Nm	3.1				9.0			
		in-lb	27.4				80.0			
Torque ⁽²⁾ — No Load	M_0	Nm	1.0				1.2			
		in-lb	8.9				10.6			
Inertia										
@ Zero Stroke	J_0	kgmm ²	14				52			
Per Meter of Stroke	J_{OS}	kgmm ² /m	10				41			
Per 1 kg Moved Mass	J_m	kgmm ² /kg	110				205			
Unit Weight (by Order Code Option)			B	C	R	S	B	C	R	S
@ Zero Stroke	m_0	kg	2.4	2.7	3.1	3.4	4.4	4.8	6.1	6.5
Per Meter of Stroke	m_{OS}	kg/m	3.0	4.0	4.0	5.0	5.4	6.4	7.6	8.6
Carriage (by Order Code Option) ⁽³⁾	m_C	kg	0		1		0		1	
			0.9		0.7		1.7		1.3	
Ambient Temperature Range		°C	-20 to +80							
IP Rating ⁽⁴⁾			IP 54							

Note- For force and moment load specifications, see page 7

⁽¹⁾ Longer lengths available - please consult factory

⁽²⁾ For bi-parting options, double the listed values

⁽³⁾ For tandem and bi-parting carriage weight add mass from column '0' and '1'

⁽⁴⁾ For unit with protective covers - IP20 without covers

HMRB15				HMRB18				HMRB24			
090°/270°		000°/180°		090°/270°		000°/180°		090°/270°		000°/180°	
100		125		130		150		160		224	
31.83		39.79		41.38		47.74		50.93		71.30	
5											
50											
± 50											
6,000											
1,050		630		1,300		1,000		4,000		3,750	
236		142		292		225		899		843	
1,050		630		1,300		1,000		4,000		3,750	
990		630		1,300		1,000		4,000		3,380	
930		630		1,300		1,000		3,650		3,140	
890		630		1,300		1,000		3,370		2,950	
840		630		1,300		1,000		3,200		2,800	
1,050		630		1,300		1,000		4,000		3,750	
820		490		1,000		775		4,000		3,360	
570		340		710		550		3,370		2,440	
445		265		550		430		2,860		1,880	
365		215		450		350		2,350		1,540	
305		185		380		295		2,000		1,300	
17.0		13.0		27.0		24.0		101.0		134.0	
150.5		115.1		239.0		212.4		894.0		1,186.0	
1.2				2.0				5.5			
10.6				17.7				35.4			
102		145		297		394		1,178		2,758	
79				134		222		689		900	
253		396		428		570		649		12,71	
B	C	R	S	B	C	R	S	B	C	R	S
6.7	7.5	9.4	10.3	11.6	12.8	15.6	16.7	21.5	23.1	28.0	29.6
8.2	9.9	11.5	13.3	12.8	15.1	16.5	18.7	21.6	24.4	26.7	29.5
0		1		0		1		0		1	
2.7		1.9		4.6		3.7		9.0		7.2	
-20 to +80											
IP 54											

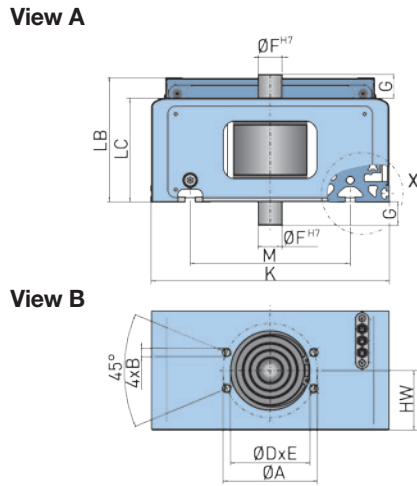
HMRB Belt-Driven Actuators

Dimensions – (mm)

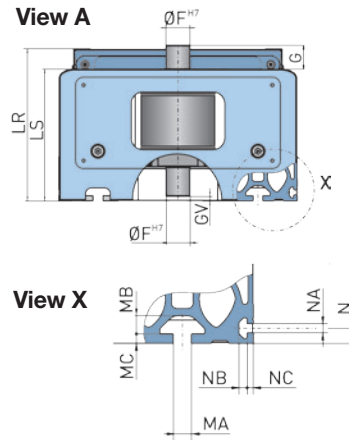
HMR actuators can be configured with either "Basic" or "Reinforced" profiles based on applications demands. Basic profiles are suitable for applications where the actuator is secured to a machine base and constantly supported. Reinforced profiles can be utilized in applications with unsupported spans. See pages 40–41 for mounting support instructions.

Dimensions - (000°/180° option shown)

"Basic" profile

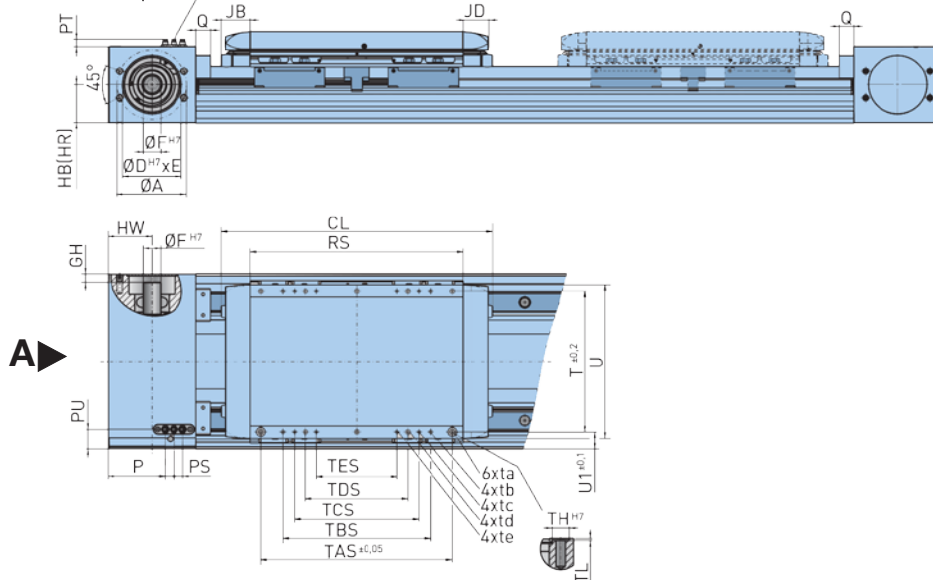


"Reinforced" profile



Dimensions carrier

B 3-PIN M8 connections



Dimensions – (mm)



Dimension table - HMRB

Size	Ø A	B	Ø D ^{H7}	E	Ø F ^{H7}	G	GV	GH	HB	HR	HW	K	LB	LC
HMRB08 [mm]	42.0	M4	34.0	2.5	10.0	13.5	2.5	3.0	26.5	37.5	25.0	85.0	60.0	52.5
HMRB11 [mm]	51.0	M6	39.0	1.2	12.0	20.0	0.0	5.0	30.0	50.0	31.0	110.0	69.5	60.5
HMRB15 [mm]	72.0	M8	54.0	2.1	15.0	19.3	7.0	5.5	36.5	60.5	45.0	150.0	90.0	74.0
HMRB18 [mm]	80.0	M8	64.0	4.0	18.0	21.8	1.5	8.0	45.0	68.0	50.0	180.0	111.5	93.5
HMRB24 [mm]	95.0	M10	80.0	2.5	24.0	24.0	4.0	11.0	52.5	80.5	60.0	240.0	125.0	104.5

Dimension table - HMRB

Product size	LR	LS	M	MA	MB	MC	N	NA	NB	NC	P	PS	PT	PU	Q
HMRB08 [mm]	71.0	63.5	50.0	5.2	4.5	1.5	4.5	3.4	3.0	2.5	23.8	12.0	9.0	12.0	16.0
HMRB11 [mm]	89.5	80.5	70.0	5.2	4.5	1.8	4.5	3.4	3.0	2.5	30.8	12.0	9.0	17.0	20.0
HMRB15 [mm]	114.0	98.0	96.0	6.2	6.8	3.0	6.5	5.2	4.6	3.5	48.0	12.0	9.0	21.0	20.0
HMRB18 [mm]	134.5	116.5	116.0	8.0	7.8	4.5	8.5	5.2	4.5	3.5	58.0	12.0	9.0	28.0	20.0
HMRB24 [mm]	153.0	132.5	161.0	10.0	10.2	5.3	8.5	5.2	4.5	3.5	78.0	12.0	9.0	28.6	20.0

Dimension table - carrier standard HMRB

Product size	JB	JD	CL	RS	T	TAS	ta	TBS	tb	TCS	tc	TDS
HMRB08 [mm]	33.5	30.0	195.0	128.0	74.0	97.0	M4x12	70.0	M4x12	40.0	M4x12	-
HMRB11 [mm]	37.5	34.0	225.0	150.0	96.0	122.0	M5x12	97.0	M5x12	65.0	M5x12	25.0
HMRB15 [mm]	37.5	34.0	266.0	191.0	120.0	170.0	M5x12	122.0	M5x12	-	-	70.0
HMRB18 [mm]	40.0	34.0	311.0	231.0	150.0	202.0	M6x12	170.0	M5x10	122.0	M5x10	90.0
HMRB24 [mm]	40.0	34.0	371.0	291.0	192.0	262.0	M8x16	202.0	M6x12	170.0	M5x10	140.0

Dimension table - carrier standard HMRB

Product size	td	TES	te	ØTK ^{H7}	TL	U	U1
HMRB08 [mm]	-	-	-	7.0	1.5	83.0	5.5
HMRB11 [mm]	M5x12	-	-	7.0	1.5	105.0	7.0
HMRB15 [mm]	M5x12	-	-	7.0	1.5	135.0	15.0
HMRB18 [mm]	M6x12	-	-	9.0	1.5	165.0	15.0
HMRB24 [mm]	M8x16	122.0	M5x10	12.0	1.5	210.0	24.0

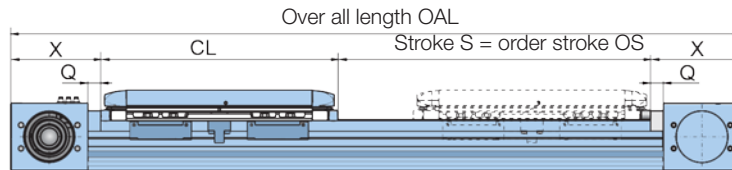
HMRB Belt-Driven Actuators

Dimensions – mm

Stroke depending dimensions

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

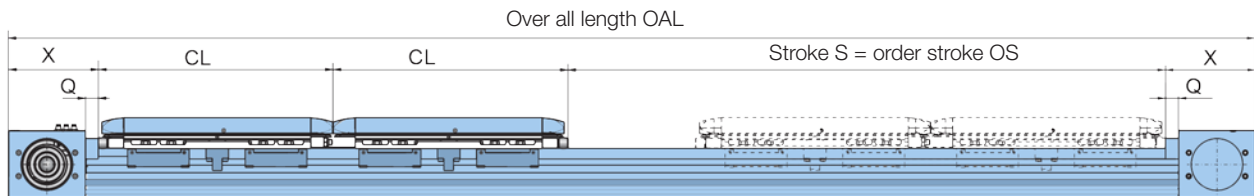
Option Carrier Standard



Order stroke OS = Effective stroke ES + 2 x Safety stroke SS

Over all length OAL = Order stroke OS + Carrier length CL + 2 x End cap length X

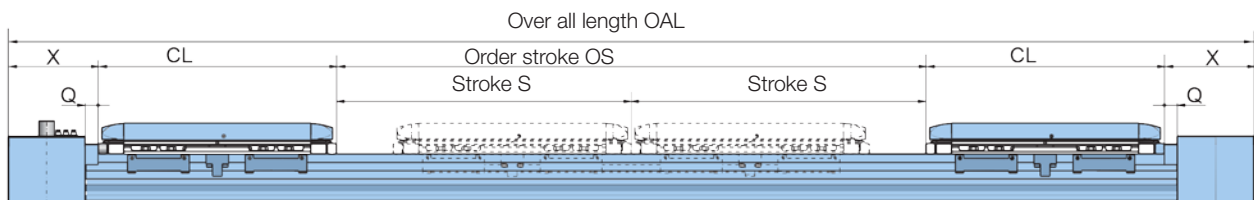
Option Carrier Tandem



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 End cap length X

Option Carrier Bi-part for opposite movements



Order stroke OS = 2 x Stroke S = 2 x Effective stroke ES + 4 x Safety stroke SS + Carrier distance CD (not shown)

Over all length OAL = Order stroke OS + 2 x Carrier length CL + 2 x End cap length X

Dimensions - Carriage and end cap HMRB

Product size	CL	Q	X
HMRB08 [mm]	195.0	16.0	74.0
HMRB11 [mm]	225.0	20.0	85.0
HMRB15 [mm]	266.0	20.0	110.0
HMRB18 [mm]	311.0	20.0	120.0
HMRB24 [mm]	371.0	20.0	140.0

Weight, Mass, and Inertia

Weight and mass HMRB

		HMRB08				HMRB11				HMRB15			
Product size		Weight of actuator											
Version actuator (see order code)		B	C	R	S	B	C	R	S	B	C	R	S
Weight. 0 - order stroke	m_o [kg]	2.4	2.7	3.1	3.4	4.4	4.8	6.1	6.5	6.7	7.5	9.4	10.3
Weight per 1 m order stroke	m_{mt} [kg/m]	3.0	4.0	4.0	5.0	5.4	6.4	7.6	8.6	8.2	9.9	11.5	13.3
		Moving mass carrier											
Version of carriage (see order code)		0		1		0		1		0		1	
Weight carriage*	m_c [kg]	0.9		0.7		1.7		1.3		2.7		1.9	

Weight and mass HMRB

		HMRB18				HMRB24			
Product size		Weight of actuator							
Version actuator (see order code)		B	C	R	S	B	C	R	S
Weight. 0 - order stroke	m_o [kg]	11.6	12.8	15.6	16.7	21.5	23.1	28.0	29.6
Weight per 1 m order stroke	m_{mt} [kg/m]	12.8	15.1	16.5	18.7	21.6	24.4	26.7	29.5
		Moving mass carrier							
Version of carriage (see order code)		0		1		0		1	
Weight carriage*	m_c [kg]	4.6		3.7		9.0		7.2	

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

Total mass HMRB: $m_{tot} = m_o + m_c + \text{order stroke} * m_{mt}$

Inertia HMRB

Product size		HMRB08		HMRB11		HMRB15							
Motor mounting position (see order code)		090°/270°	000°/180°	090°/270°	000°/180°	090°/270°	000°/180°						
Inertia													
Inertia 0 - order stroke	J_o [kgmm ²]	14		14		52		52		102		145	
Inertia per 1 m order stroke	J_{mt} [kgmm ² /m]	10		10		41		41		79		79	
Inertia per 1 kg moving mass	J_{kg} [kgmm ² /kg]	110		110		205		205		253		396	

Inertia HMRB

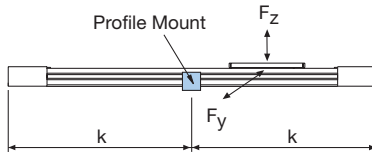
Product size		HMRB18		HMRB24					
Motor mounting position (see order code)		090°/270°	000°/180°	090°/270°	000°/180°				
Inertia									
Inertia 0 - order stroke	J_o [kgmm ²]	297		394		1,178		2,758	
Inertia per 1 m order stroke	J_{mt} [kgmm ² /m]	134		222		689		900	
Inertia per 1 kg moving mass	J_{kg} [kgmm ² /kg]	428		570		649		1,271	

Inertia total HMRB: $J_{tot} = J_o + \text{order stroke} * J_{mt} + m_c * J_{kg} + m * J_{kg}$

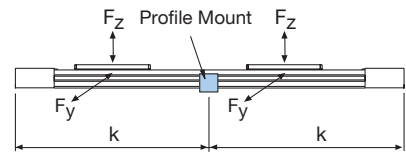
HMRB Belt-Driven Actuators

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.

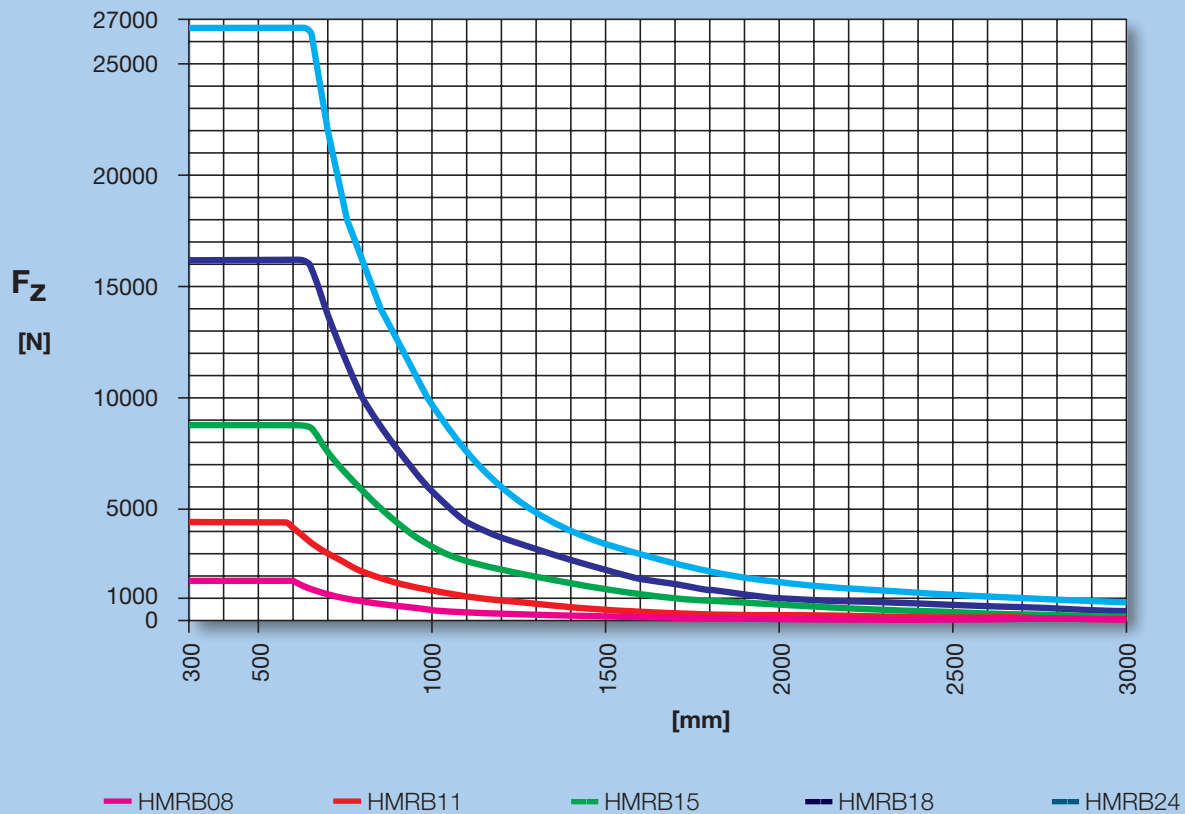


The greater the load and/or the longer the unsupported length between mounts, the more the actuator is susceptible to deflection.



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:

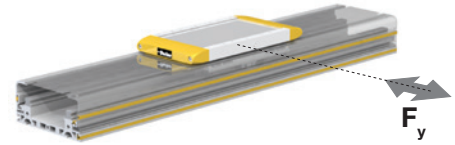
For a 3,160 N load the distance "d" between supporting elements is 700 mm.
 For mounting accessories see "Actuator Mounting" on pages 60-61.

Maximum Permissible Unsupported Length

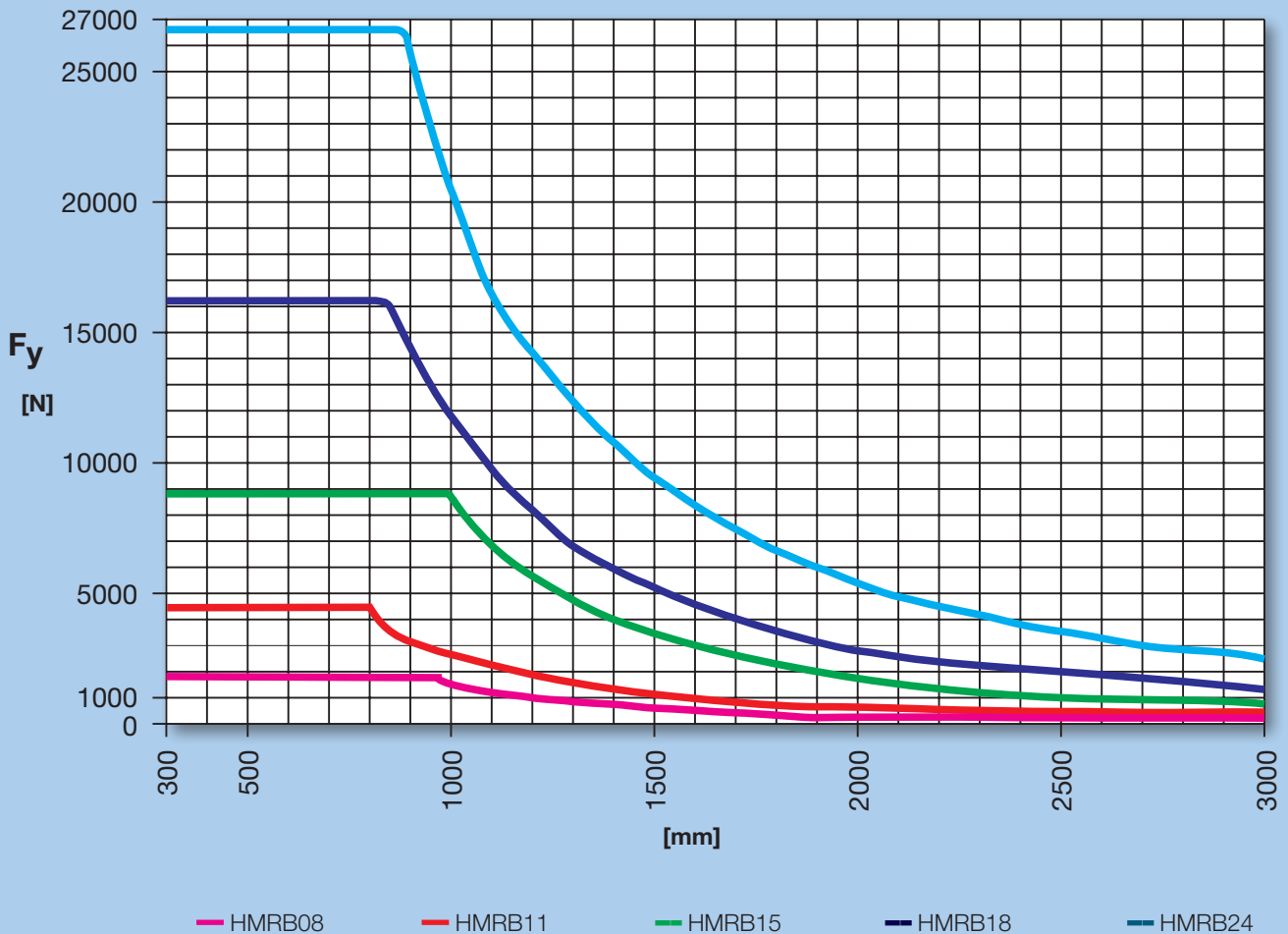
Determining actuator mounting placement

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)



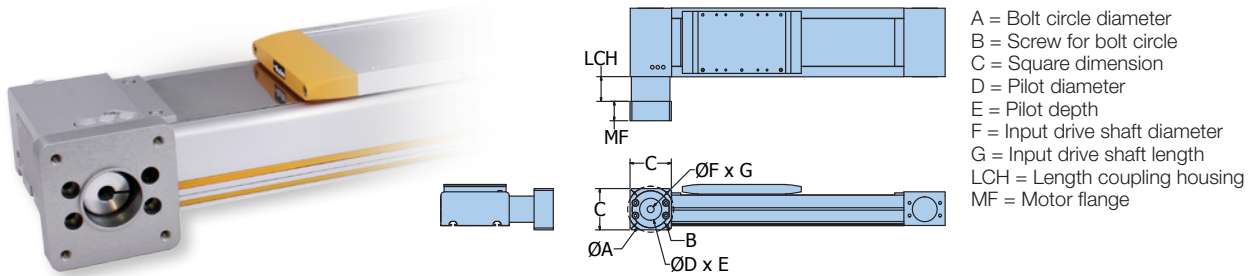
Example F_y HMR 11:

For a 3,160 N load the distance "d" between supporting elements is 900 mm.
For mounting accessories see "Actuator Mounting" on pages 60-61.

HMRB Belt-Driven Actuators

Gearhead Mounting Kit Options

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



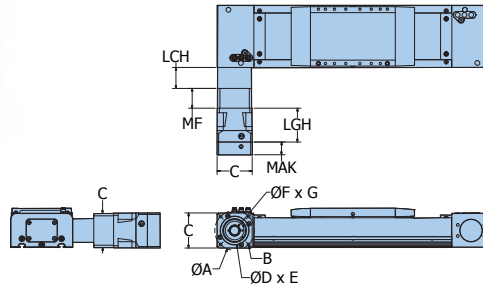
(see page 47 for LCH dimensions)

Actuator Size	① Order Code ¹	Dimensions							
		A	B	C	D	E	F	G	MF
HMRB08	C0	44	M4x0.7	60	35	6	12	25	20
	A7	70	M5x0.8	60	50	15	16	40	35
HMRB11	C0	44	M4x0.7	60	35	6	12	25	20
	C1	62	M5x0.8	80	52	8	16	40	35
	BX	70	M5x0.8	60	50	10	16	25	20
HMRB15	A7	70	M5x0.8	85	50	15	16	40	30
	A8	100	M6x1	90	80	20	22	52	42
	C1	62	M5x0.8	84	52	12	16	36	30
	C2	80	M6x1	92	68	5	22	46	36
	BX	70	M5x0.8	85	50	5	16	25	20
	BY	100	M6x1	92	80	15	20	40	30
HMRB18	A8	100	M6x1	100	80	30	22	52	40
	C2	80	M6x1	92	68	6	22	46	30
	BY	100	M6x1	92	80	15	20	40	30
	BZ	130	M8x1.25	115	110	25	24	50	40
HMRB24	A9	130	M8x1.25	115	110	25	32	68	40
	C3	108	M8x1.25	125	90	17	32	70	40
	BZ	130	M8x1.25	115	110	5	24	50	20

¹ When ordering with actuator, use order code ① to specify appropriately sized gearhead mounting kit, and order code ③ to specify drive shaft orientation. See ordering information, page 51.

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
 F = Input drive shaft diameter
 G = Input drive shaft length
 LCH = Length coupling housing
 LGH = Length gearhead
 MAK = Motor adapter
 MF = Motor flange

(see page 47 for LCH dimensions)

Actuator Size	⑨	⑩	A	B	C	D	E	F	G	LGH	MAK	MF
	Order Code ¹	Order Code ²										
HMRB08	Jx	AB	66.68	M4x0.7	55	38.10	3.5	6.35	20.8	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	40.05	8	9	23	48.5	19	20
HMRB11	Fx	A3	100	M6x1	82	80	5	14	30	59.8	18	35
	Fx	AB	66.68	M4x0.7	62	38.10	4	6.35	20.8	59.8	16.5	35
	Fx	AC	66.68	M5x0.8	62	38.15	4	9.53	20.8	59.8	16.5	35
	Fx	AD	66.68	M5x0.8	62	38.15	4	9.53	31.8	59.8	16.5	35
	Fx	AE	98.43	M5x0.8	86.8	73.03	7	12.70	37.1	59.8	22.5	35
	Fx	AF	98.43	M5x0.8	86.8	73.03	7	12.70	31.8	59.8	22.5	35
	Fx	AH	63	M5x0.8	62	40	4	9	23	59.8	16.5	35
	Fx	AN	70	M5x0.8	62	50	4	14	30	59.8	16.5	35
	Fx	B6	63	M4x0.7	62	40	4	9	23	59.8	16.5	35
	Jx	AB	66.68	M4x0.7	55	38.10	3.5	6.35	20.8	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	48.5	19	20
	Kx	AB	66.68	M4x0.7	62	38.10	4	6.35	20.8	67	16.5	35
	Kx	AC	66.68	M4x0.7	62	38.10	4	9.53	20.8	67	16.5	35
	Kx	AD	66.68	M5x0.8	62	38.10	8.5	9.53	31.8	67	22.5	35
	Kx	AE	98.43	M6x1	85	73.05	10	12.70	37.1	67	30	35
	Kx	AF	98.43	M5x0.8	80	73.05	7	12.70	31.8	67	22.5	35
Kx	AH	63	M5x0.8	62	40	4	9	23	67	16.5	35	
Kx	AN	70	M5x0.8	62	50	11	14	30	67	22.5	35	
Kx	B6	63	M4x0.7	62	40	4	9	23	67	16.5	35	

¹ When ordering with actuator, use order code ⑨ (see page 51) 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 ⑩ (see page 51) to specify appropriately sized motor mounting kit.

(continued on next page)

HMRB Belt-Driven Actuators

Mounted Gearhead with Motor Mounting Kit Options

(continued from previous page)

Actuator Size	⑨	⑩	A	B	C	D	E	F	G	LGH	MAK	MF
	Order Code ¹	Order Code ²										
HMRB15	Fx	A3	100	M6x1	82	80	5	14	30	59.8	18	30
	Fx	AB	66.68	M4x0.7	62	38.10	4	6.35	20.8	59.8	16.5	30
	Fx	AC	66.68	M5x0.8	62	38.15	4	9.53	20.8	59.8	16.5	30
	Fx	AD	66.68	M5x0.8	62	38.15	4	9.53	31.8	59.8	16.5	30
	Fx	AE	98.43	M5x0.8	86.8	73.03	7	12.70	37.1	59.8	22.5	30
	Fx	AF	98.43	M5x0.8	86.8	73.03	7	12.70	31.8	59.8	22.5	30
	Fx	AH	63	M5x0.8	62	40	4	9	23	59.8	16.5	30
	Fx	AN	70	M5x0.8	62	50	4	14	30	59.8	16.5	30
	Fx	B6	63	M4x0.7	62	40	4	9	23	59.8	16.5	30
	Gx	A2	63	M5x0.8	90	40	3	11	23	69.5	20	42
	Gx	A3	100	M6x1	90	80	10	14	30	69.5	20	42
	Gx	A4	115	M8x1.25	100	95	10	19	40	69.5	28.5	42
	Gx	AB	66.68	M5x0.8	90	38.15	3	6.35	20.8	69.5	20	42
	Gx	AC	66.68	M5x0.8	90	38.15	3	9.53	20.8	69.5	20	42
	Gx	AD	66.68	M5x0.8	90	38.15	3	9.53	31.8	69.5	20	42
	Gx	AE	98.43	M5x0.8	90	73.03	10	12.70	37.1	69.5	20	42
	Gx	AF	98.43	M5x0.8	90	73.07	10	12.70	31.8	69.5	20	42
	Gx	AH	63	M5x0.8	90	40	2.5	9	23	69.5	20	42
	Gx	AL	100	M6x1	90	80	10	16	40	69.5	20	42
	Gx	AN	70	M5x0.8	90	50	10	14	30	69.5	20	42
	Gx	AP	90	M6x1	90	70	10	19	40	69.5	20	42
	Gx	B1	90	M5x0.8	90	60	10	11	23	69.5	20	42
	Gx	B3	95	M6x1	90	50	10	14	30	69.5	20	42
	Gx	B6	63	M4x0.7	90	40	3	9	23	69.5	20	42
	Kx	AB	66.68	M4x0.7	62	38.1	4	6.35	20.8	67	16.5	30
	Kx	AC	66.68	M4x0.7	62	38.1	4	9.53	20.8	67	16.5	30
	Kx	AD	66.68	M5x0.8	62	38.1	8.5	9.53	31.8	67	22.5	30
	Kx	AE	98.43	M6x1	85	73.05	10	12.70	37.1	67	30	30
	Kx	AF	98.43	M5x0.8	80	73.05	7	12.70	31.8	67	22.5	30
	Kx	AH	63	M5x0.8	62	40	4	9	23	67	16.5	30
	Kx	AN	70	M5x0.8	62	50	4	14	30	67	22.5	30
	Kx	B6	63	M4x0.7	62	40	11	9	23	67	16.5	30
	Lx	A2	63	M5x0.8	90	40	3	11	23	85.5	20	36
	Lx	A3	100	M6x1	90	80	10	14	30	85.5	20	36
	Lx	A4	115	M8x1.25	100	95	10	19	40	85.5	28.5	36
	Lx	AB	66.68	M4x0.7	90	38.15	3	6.35	20.8	85.5	20	36
	Lx	AC	66.68	M5x0.8	90	52	10	9.53	20.8	85.5	20	36
	Lx	AD	66.68	M5x0.8	90	52	10	9.53	31.8	85.5	20	36
	Lx	AE	98.43	M5x0.8	90	73.03	10	12.70	37.1	85.5	28.5	36
	Lx	AF	98.43	M5x0.8	90	73	10	12.70	31.8	85.5	20	36
	Lx	AH	63	M5x0.8	90	40	10	9	23	85.5		36
	Lx	AL	100	M6x1	90	80	10	16	40	85.5	28.5	36
Lx	AN	70	M5x0.8	90	50	10	14	30	85.5	20	36	
Lx	AP	90	M6x1	90	70	10	19	40	85.5	28.5	36	

(continued from previous page)

Actuator Size	⑨	⑩	A	B	C	D	E	F	G	LGH	MAK	MF
	Order Code ¹	Order Code ²										
HMRB18	Gx	A2	63	M5x0.8	90	40	3	11	23	69.5	20	40
	Gx	A3	100	M6x1	90	80	10	14	30	69.5	20	40
	Gx	A4	115	M8x1.25	100	95	10	19	40	69.5	28.5	40
	Gx	AB	66.68	M5x0.8	90	38.15	3	6.35	20.8	69.5	20	40
	Gx	AC	66.68	M5x0.8	90	38.15	3	9.53	20.8	69.5	20	40
	Gx	AD	66.68	M5x0.8	90	38.15	3	9.53	31.8	69.5	20	40
	Gx	AE	98.43	M5x0.8	90	73	10	12.70	37.1	69.5	20	40
	Gx	AF	98.43	M5x0.8	90	73	10	12.70	31.8	69.5	20	40
	Gx	AH	63	M5x0.8	90	40	3	9	23	69.5	20	40
	Gx	AL	100	M6x1	90	80	10	16	40	69.5	20	40
	Gx	AN	70	M5x0.8	90	50	10	14	30	69.5	20	40
	Gx	AP	90	M6x1	90	70	10	19	40	69.5	20	40
	Gx	B1	90	M5x0.8	90	60.01	10	11	23	69.5	20	40
	Gx	B3	95	M6x1	90	50	10	14	30	69.5	20	40
	Gx	B6	63	M4x0.7	90	40	3	9	23	69.5	20	40
	Lx	A2	63	M5x0.8	90	40	3	11	23	85.5	20	30
	Lx	A3	100	M6x1	90	80	10	14	30	85.5	20	30
	Lx	A4	115	M8x1.25	100	95	10	19	40	85.5	28.5	30
	Lx	AB	66.68	M4x0.7	90	38.15	3	6.35	20.8	85.5	20	30
	Lx	AC	66.68	M5x0.8	90	52	10	9.53	20	85.5	20	30
	Lx	AD	66.68	M5x0.8	90	52	10	9.53	31	85.5	20	30
	Lx	AE	98.43	M5x0.8	90	73.03	10	12.70	37.1	85.5	28.5	30
	Lx	AF	98.43	M5x0.8	90	73	10	12.70	31.8	85.5	20	30
	Lx	AH	63	M5x0.8	90	40	10	9	23	85.5		30
Lx	AL	100	M6x1	90	80	10	16	40	85.5	28.5	30	
Lx	AN	70	M5x0.8	90	50	10	14	30	85.5	20	30	
Lx	AP	90	M6x1	90	70	10	19	40	85.5	28.5	30	
HMRB24	Hx	A4	115	M8x1.25	115	95	10	19	50	90.2	24	40
	Hx	AF	98.4	M5x0.8	115	73.03	10	12.70	31.8	90.2	24	40
	Hx	AK	130	M8x1.25	115	110	10	19	40	90.2	24	40
	Hx	AL	100	M6x1	115	80	10	16	40	90.2	24	40
	Hx	AQ	165	M10x1.5	140	130	10	28	60	90.2	35	40
	Hx	AP	90	M6x1	115	70	10	19	40	90.2	24	40
	Mx	A4	115	M8x1.25	115	95.05	10	19	50	110	24	40
	Mx	AF	98.4	M5x0.8	115	73	10	12.70	31.8	110	24	40
	Mx	AK	130	M8x1.25	115	110.01	10	19	40	110	35	40
	Mx	AL	100	M6x1	115	80	10	16	40	110	24	40
	Mx	AP	90	M6x1	115	70	10	19	40	110	35	40

¹ When ordering with actuator, use order code ⑨ (see page 51) 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

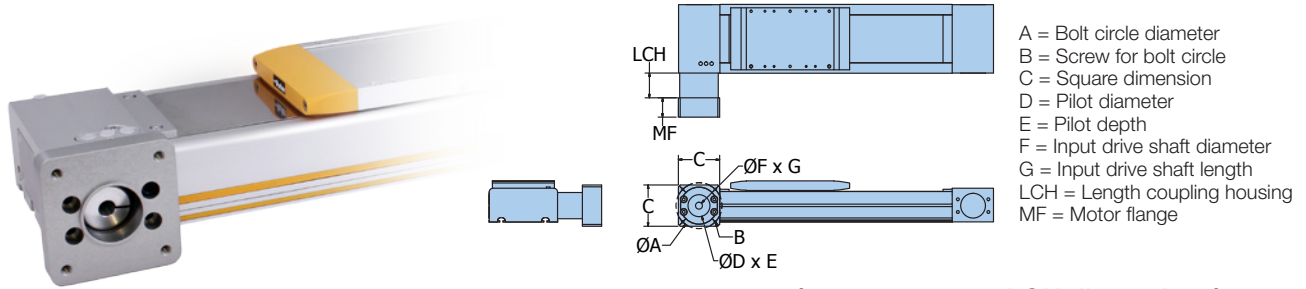
* 3:1 ratio not available on "J" PV040TA gearhead

² Use order code ⑩ (see page 51) to specify appropriately sized motor mounting kit.

HMRB Belt-Driven Actuators

Motor Mounting Kit Options

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



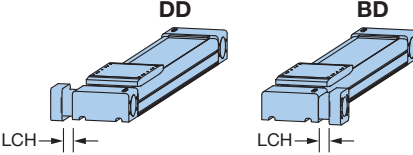
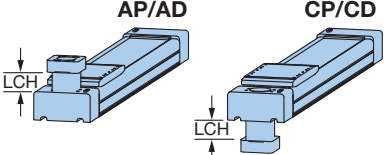
(see page 47 for LCH dimensions)

Actuator Size	Order Code ¹	Dimensions							
		A	B	C	D	E	F	G	MF
HMRB08	A2	63	M5x0.8	60	40	10	11	23	20
	AB	66.68	M4x0.7	60	38.10	10	6.35	20.8	20
	AC	66.68	M5x0.8	60	38.10	10	9.53	20.8	20
	AD	66.68	M5x0.8	60	38.10	15	9.53	31.8	27
	AE	98.43	M6x1	85	73.03	15	12.70	37.1	33
	AF	98.43	M5x0.8	85	73.03	15	12.70	31.8	27
	AG	75	M5x0.8	70	60	10	11	23	20
	AH	63	M5x0.8	60	40	10	9	23	20
	AN	70	M5x0.8	60	50	15	14	30	25
	B0	75	M6x1	70	60	15	14	30	25
	B1	90	M5x0.8	75	60	10	11	23	20
	B2	90	M5x0.8	75	60	15	14	30	25
	B3	95	M6x1	80	50	15	14	30	25
	B6	63	M4x0.7	60	40	10	9	23	20
	B7	70	M5x0.8	60	50	15	8	30	25
	B8	70	M5x0.8	60	50	15	12	30	25
HMRB11	A2	63	M5x0.8	60	40	5	11	23	15
	AB	66.68	M4x0.7	60	38.10	10	6.35	20.8	15
	AC	66.68	M5x0.8	60	38.10	10	9.53	20.8	15
	AD	66.68	M5x0.8	60	38.10	15	9.53	31.8	25
	AE	98.43	M6x1	85	73.03	20	12.70	37.1	33
	AF	98.43	M5x0.8	85	73.03	15	12.70	31.8	27
	AG	75	M5x0.8	70	60	10	11	23	20
	AH	63	M5x0.8	60	40	5	9	23	15
	AL	100	M6x1	92	80	15	16	40	36
	AN	70	M5x0.8	60	50	15	14	30	25
	B0	75	M6x1	70	60	15	14	30	25
	B1	90	M5x0.8	80	60	10	11	23	20
	B2	90	M5x0.8	80	60	15	14	30	25
	B3	95	M6x1	80	50	15	14	30	25
	B7	70	M5x0.8	60	50	15	8	30	25
	B8	70	M5x0.8	60	50	15	12	30	25

HMRB15	A2	63	M5x0.8	84	40	3	11	23	20
	A3	100	M6x1	92	80	5	14	30	20
	A4	115	M8x1.25	100	95	15	19	40	30
	AE	98.43	M6x1	85	73.03	15	12.70	37.1	25
	AF	98.43	M5x0.8	85	73.03	10	12.70	31.8	20
	AL	100	M6x1	92	80	15	16	40	30
	AN	70	M5x0.8	85	50	5	14	30	20
	AP	90	M6x1	84	70	15	19	40	30
	B0	100	M6x1	85	60	5	14	30	20
	B2	90	M5x0.8	85	60	5	14	30	20
HMRB18	A3	100	M6x1	92	80	5	14	30	20
	A4	115	M8x1.25	100	95	15	19	40	30
	AF	98.43	M5x0.8	90	73.03	10	12.70	31.8	20
	AK	130	M8x1.25	115	110	25	24	40	40
	AL	100	M6x1	92	80	15	16	40	30
	AP	90	M6x1	90	70	15	19	40	30
	B0	75	M6x1	90	60	10	14	30	20
B2	90	M6x1	90	60	10	14	30	20	
HMRB24	A4	115	M8x1.25	110	95	5	19	50	20
	AK	130	M8x1.25	115	110	5	24	40	20
	AQ	165	M10x1.5	142	130	15	28	60	30

¹ When ordering with actuator, use order code  to specify appropriately sized motor mounting kit. See ordering information, page 51.

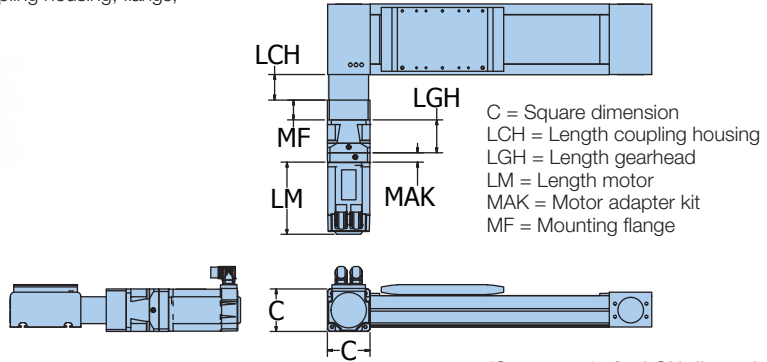
Coupling Housing LCH Dimensions (For all Gearhead and Motor Mounting Options)

Actuator Size	Order Code	LCH (mm)	
HMRB08	BD, DD	13	
	AP, CP, AD, CD	28	
HMRB11	BD, DD	15	
	AP, CP, AD, CD	37	
HMRB15	BD, DD	30	
	AP, CP, AD, CD	54	
HMRB18	BD, DD	42	
	AP, CP, AD, CD	70	
HMRB24	BD, DD	60	
	AP, CP, AD, CD	85	

HMRB Belt-Driven Actuators

Mounted Gearhead and Motor Options

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



*See page 47 for LCH dimensions

Actuator Size	⑨	⑩	Mounted Motor	C	LGH	LM	MAK	MF
	Order Code ¹	Order Code ²						
HMRB08	Jx	K0	BE233FJ-KPSN	60	48.5	143.2	26	20
	Jx	K1	BE233FJ-KPSN with Brake (CM233FJ-115027)	60	48.5	178	26	20
	Fx	K0	BE233FJ-KPSN	60	59.8	143.2	16.5	35
HMRB11	Fx	K1	BE233FJ-KPSN with Brake (CM233FJ-115027)	60	59.8	178	16.5	35
	Fx	K2	BE344LJ-KPSN	60	59.8	188	22.5	35
	Fx	K3	BE344LJ-KPSB	60	59.8	231	22.5	35
	Fx	K4	PM-FBL04AMK	60	59.8	108.2	16.5	35
	Fx	K5	PM-FBL04AMK2 (w/ Brake)	60	59.8	148.2	16.5	35
	Jx	K0	BE233FJ-KPSN	60	48.5	143.2	26	20
	Jx	K1	BE233FJ-KPSN with Brake (CM233FJ-115027)	60	48.5	178	26	20
	Kx	K0	BE233FJ-KPSN	80	67	143.2	22.5	35
	Kx	K1	BE233FJ-KPSN with Brake (CM233FJ-115027)	80	67	178	22.5	35
	Kx	K2	BE344LJ-KPSN	80	67	188	22.5	35
	Kx	K3	BE344LJ-KPSB	80	67	231	22.5	35
	Kx	K4	PM-FBL04AMK	80	67	108.2	22.5	35
	Kx	K5	PM-FBL04AMK2 (w/ Brake)	80	67	148.2	22.5	35

¹ When ordering with actuator, use order code ⑨ (see page 51) 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 ⑩ (see page 51) to specify appropriately sized motor mounting kit.

Actuator Size	⑨	⑩	Mounted Motor	C	LGH	LM	MAK	MF
	Order Code ¹	Order Code ²						
HMRB15	Fx	K0	BE233FJ-KPSN	85	59.8	143.2	16.5	30
	Fx	K1	BE233FJ-KPSN with Brake (CM233FJ-115027)	85	59.8	178	16.5	30
	Fx	K2	BE344LJ-KPSN	85	59.8	188	22.5	30
	Fx	K3	BE344LJ-KPSB	85	59.8	231	22.5	30
	Fx	K4	PM-FBL04AMK	85	59.8	108.2	16.5	30
	Fx	K5	PM-FBL04AMK2 (w/ Brake)	85	59.8	148.2	16.5	30
	Gx	K2	BE344LJ-KPSN	90	69.5	188	20	42
	Gx	K3	BE344LJ-KPSB	90	69.5	231	20	42
	Gx	K6	PM-FCL10AMK	90	69.5	152.7	20	42
	Gx	K7	PM-FCL10AMK2 (w/ Brake)	90	69.5	193	20	42
	Gx	M0	MPP0923D1E-KPSN	90	69.5	178	20	42
	Gx	M1	MPP0923D1E-KPSB	90	69.5	212.5	20	42
	Gx	M2	MPP1003D1E-KPSN	90	69.5	174.5	28.5	42
	Gx	M3	MPP1003D1E-KPSB	90	69.5	223	28.5	42
	Gx	M4	MPP1003R1E-KPSN	90	69.5	174.5	28.5	42
	Gx	M5	MPP1003R1E-KPSB	90	69.5	223	28.5	42
	Kx	K0	BE233FJ-KPSN	84	67	143.2	22.5	30
	Kx	K1	BE233FJ-KPSN with Brake (CM233FJ-115027)	84	67	178	22.5	30
	Kx	K2	BE344LJ-KPSN	84	67	188	22.5	30
	Kx	K3	BE344LJ-KPSB	84	67	231	22.5	30
	Kx	K4	PM-FBL04AMK	84	67	108.2	22.5	30
	Kx	K5	PM-FBL04AMK2 (w/ Brake)	84	67	148.2	22.5	30
	Lx	K2	BE344LJ-KPSN	92	85.5	188	20	36
	Lx	K3	BE344LJ-KPSB	92	85.5	231	20	36
	Lx	K6	PM-FCL10AMK	92	85.5	152.7	28.5	36
	Lx	K7	PM-FCL10AMK2 (w/ Brake)	92	85.5	193	28.5	36
	Lx	M0	MPP0923D1E-KPSN	92	85.5	178	28.5	36
	Lx	M1	MPP0923D1E-KPSB	92	85.5	212.5	28.5	36
	Lx	M2	MPP1003D1E-KPSN	92	85.5	174.5	28.5	36
	Lx	M3	MPP1003D1E-KPSB	92	85.5	223	28.5	36
	Lx	M4	MPP1003R1E-KPSN	92	85.5	174.5	28.5	36
	Lx	M5	MPP1003R1E-KPSB	92	85.5	223	28.5	36

¹ When ordering with actuator, use order code ⑨ (see page 51) 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
¹ 3:1 ratio not available on "J" PV040TA gearhead

² Use order code ⑩ (see page 51) to specify appropriately sized motor mounting kit.

(continued next page)

HMRB Belt-Driven Actuators

Mounted Gearhead and Motor Options

(continued from previous page)

Actuator Size	⑨	⑩	Mounted Motor	C	LGH	LM	MAK	MF
	Order Code ¹	Order Code ²						
HMRB18	Gx	K2	BE344LJ-KPSN	100	69.5	188	20	40
	Gx	K3	BE344LJ-KPSB	100	69.5	231	20	40
	Gx	K6	PM-FCL10AMK	100	69.5	152.7	20	40
	Gx	K7	PM-FCL10AMK2 (w/ Brake)	100	69.5	193	20	40
	Gx	M0	MPP0923D1E-KPSN	100	69.5	178	20	40
	Gx	M1	MPP0923D1E-KPSB	100	69.5	212.5	20	40
	Gx	M2	MPP1003D1E-KPSN	100	69.5	174.5	28.5	40
	Gx	M3	MPP1003D1E-KPSB	100	69.5	223	28.5	40
	Gx	M4	MPP1003R1E-KPSN	100	69.5	174.5	28.5	40
	Gx	M5	MPP1003R1E-KPSB	100	69.5	223	28.5	40
	Lx	K2	BE344LJ-KPSN	92	85.5	188	20	30
	Lx	K3	BE344LJ-KPSB	92	85.5	231	20	30
	Lx	K6	PM-FCL10AMK	92	85.5	152.7	28.5	30
	Lx	K7	PM-FCL10AMK2 (w/ Brake)	92	85.5	193	28.5	30
	Lx	M0	MPP0923D1E-KPSN	92	85.5	178	28.5	30
	Lx	M1	MPP0923D1E-KPSB	92	85.5	212.5	28.5	30
	Lx	M2	MPP1003D1E-KPSN	92	85.5	174.5	28.5	30
	Lx	M3	MPP1003D1E-KPSB	92	85.5	223	28.5	30
	Lx	M4	MPP1003R1E-KPSN	92	85.5	174.5	28.5	30
	Lx	M5	MPP1003R1E-KPSB	92	85.5	223	28.5	30
HMRB24	Hx	M6	MPP1154B1E-KPSN	115	90.2	203.2	24	40
	Hx	M7	MPP1154B1E-KPSB	115	90.2	251.7	24	40
	Hx	M8	MPP1154P1E-KPSN	115	90.2	203.2	24	40
	Hx	M9	MPP1154P1E-KPSB	115	90.2	251.7	24	40
	Hx	MA	MPP1424C1E-KPSN	115	90.2	223.7	35	40
	Hx	MB	MPP1424C1E-KPSB	115	90.2	275.3	35	40
	Hx	MC	MPP1424R1E-KPSN	115	90.2	223.7	35	40
	Hx	MD	MPP1424R1E-KPSB	115	90.2	275.3	35	40
	Mx	M6	MPP1154B1E-KPSN	125	110	203.2	35	40
	Mx	M7	MPP1154B1E-KPSB	125	110	251.7	35	40
	Mx	M8	MPP1154P1E-KPSN	125	110	203.2	35	40
	Mx	M9	MPP1154P1E-KPSB	125	110	251.7	35	40

¹ When ordering with actuator, use order code ⑨ (see page 51) 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 ⑩ (see page 51) to specify appropriately sized motor mounting kit.

HMRB Ordering Information

Select an order code from each of the numbered fields to create a complete HMR belt-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 B 15 B BD 0 - 1000 - A B 1 0 0 F1 A7

① Frame Size (Profile Width)

8	85 mm
11	110 mm
15	150 mm
18	180 mm
24	240 mm

② Actuator Design (see page 36 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 Motor Mounting Position and Drive Shaft Design (see page 47 for further detail)

BD	90° Front with Double Plain Shaft
DD	270° Back with Double Plain Shaft
AP	0° Up with Single Plain Shaft
CP	180° Down with Single Plain Shaft
AD	0° Up with Double Plain Shaft
CD	180° Down with Double Plain Shaft

④ Carriage Design

0	Standard
1	Tandem (Not available with ③ BD and DD options)
2	Bi-parting

⑤ Order Stroke

xxxx	4 digit input in mm (see max stroke by frame size on pages 34-35 of catalog)
------	--

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.**

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-GPCHX)
N	NPN, 3 Wire, N.C., 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.**

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 Gearhead

see pages 43-45 for frame size availability and dimensions

⑩ Gearhead and Motor Mounting Kits

Gearhead Mounting Kit

(see page 42 for availability and dimensions)

Motor Mounting Kit (Including Flange and Coupling For Direct Drive Motor or Flange on Mounted Gearhead)

(see pages 46-47 for availability and dimensions)

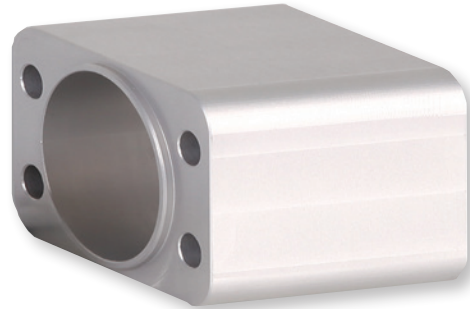
Mounted Gearhead and Motor

(see pages 48-50 for availability and dimensions)

HMR Options and Accessories



Limit and home sensors.
See page 54.



Coupling housings.
See page 56.



Couplings.
See page 57.



Shock absorbing bumpers.
See page 58.



**Toe clamp actuator
mounting options.**
See page 60.



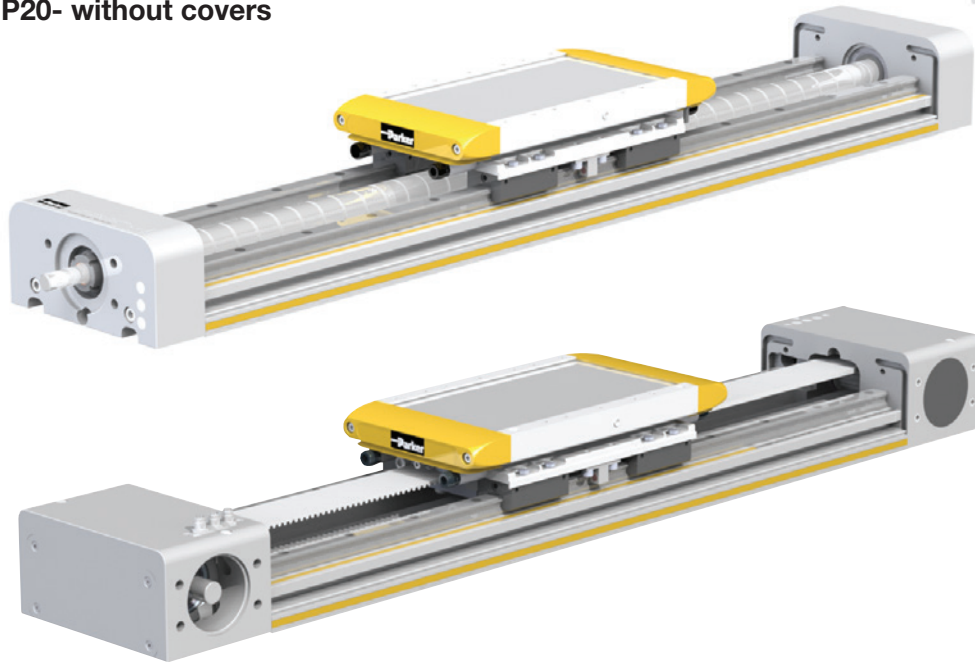
**T-nut actuator
mounting options.**
See page 60.

Protective Cover Options

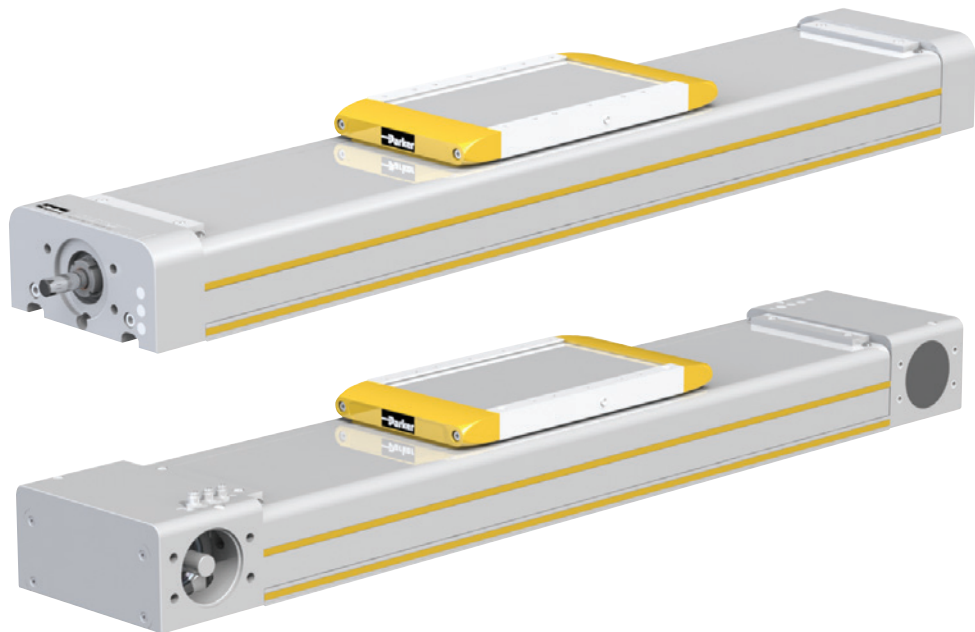
Two Versions Available: Covers can be field retro-fitted if initially configured without covers.

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

IP20- without covers



IP54- with covers



HMR Accessories

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 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:

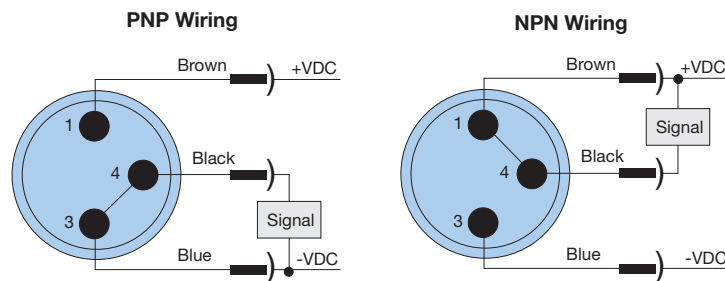
Electric current drain: 100 mA (max)

Switching current: 10 mA (max)

Supply voltage: 10 – 30 VDC

Switching Frequency: 1 kHz

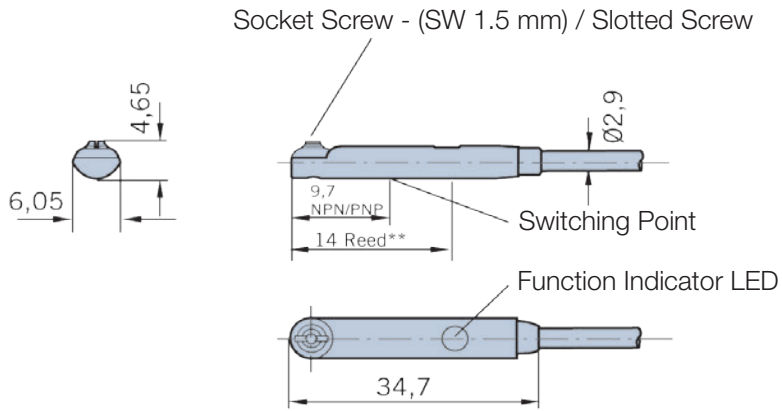
Magnetic LED Cylinder Sensors



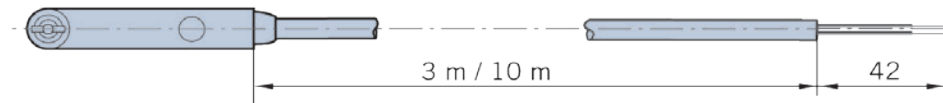
Model Number	Function	Logic	Cable
P8S-GPFAX	N.O.	PNP	3 m
P8S-GNFAX		NPN	
P8S-GPCHX	N.C.	PNP	0.3 m cable with M8 connector*
P8S-GNCHX		NPN	
P8S-GQFAX		PNP	3 m
P8S-GMFAX		NPN	
P8S-GQCHX	PNP	0.3 m cable with M8 connector*	
P8S-GMCHX	NPN		

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

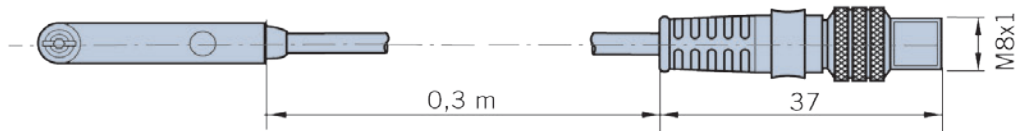
Limit & Home Sensor Dimensions



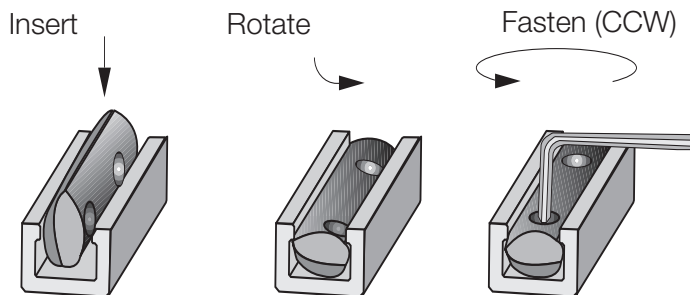
P8S-... cable with flying leads



P8S-... cable with M8 rotatable

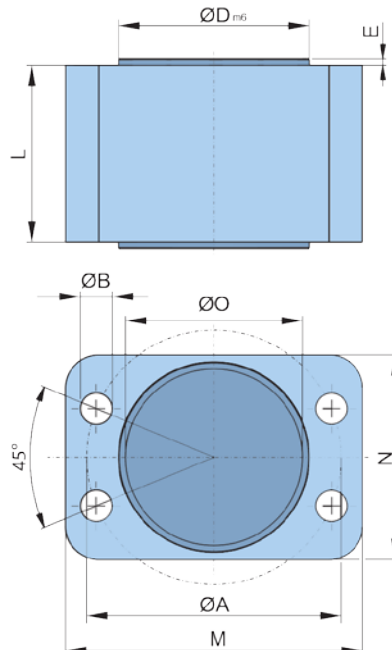


Installation for Magnetic T-Slot Sensors



HMR Accessories

Coupling Housing



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

Product size	$\varnothing A$	$\varnothing B$	$\varnothing D_{m6}$	E	$\varnothing O$	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)

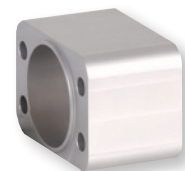
⁽¹⁾Suitable for HMRB with motor orientation 180° bottom and profile version Basic
(HMRBxxBCP; HMRBxxBCD; HMRBxxCCP; HMRBxxCCD)

Dimension table - Coupling housing short HMRB [mm]

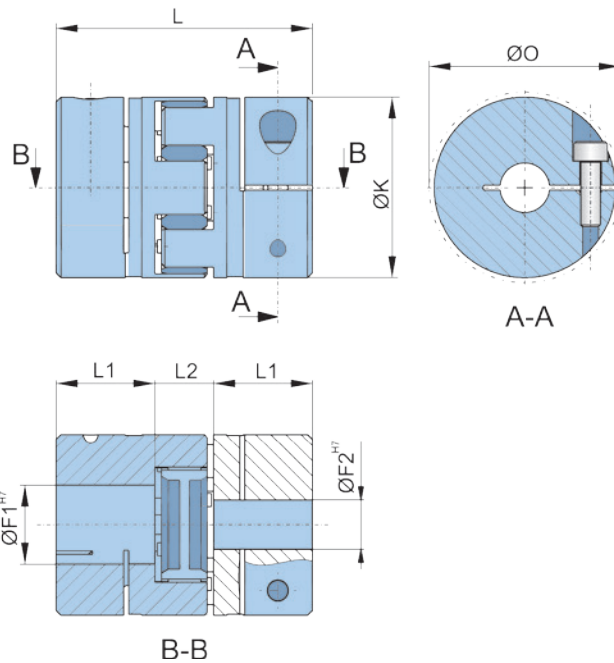
Product size	$\varnothing A$	$\varnothing B$	$\varnothing D_{m6}$	E	$\varnothing O$	L	M	N	Order no.
HMRB08 ⁽¹⁾	42	4.5	34	2	30	13	49	37	56567FIL
HMRB08 ⁽²⁾	42	4.5	34	2	30	17	49	37	56569FIL
HMRB11 ⁽¹⁾⁽²⁾	51	6.6	39	1	35	15	60	42	56565FIL
HMRB15 ⁽¹⁾⁽²⁾	72	9.0	54	2	50	30	84	58	56412FIL
HMRB18 ⁽¹⁾⁽²⁾	80	9.0	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



HMR Options and Accessories

Shock Absorbing Bumper

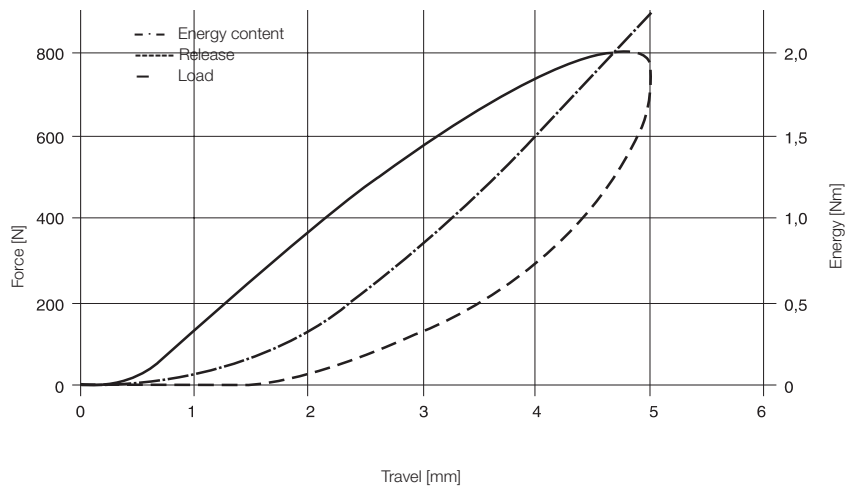
HMR actuators come factory installed with impact protection bumpers. These carriage mounted bumpers can compensate the energy released by unintentional impact and afford some protection against mechanical damage.

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

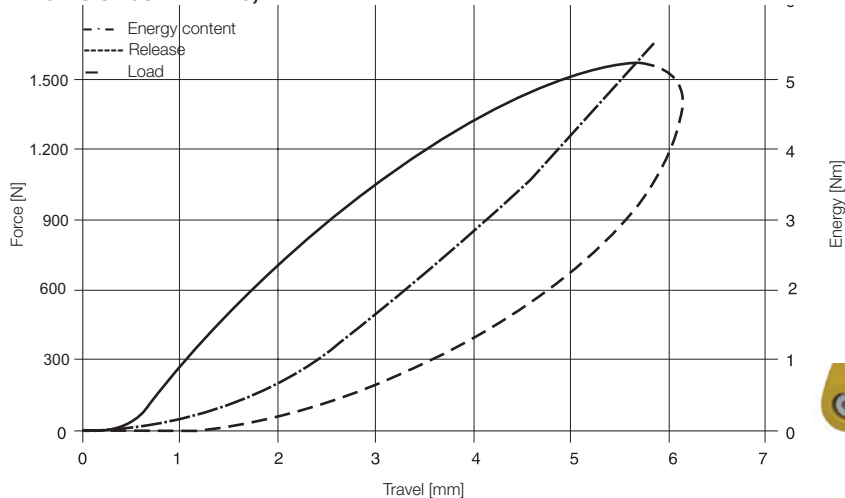
Shock absorbers for impact protection

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



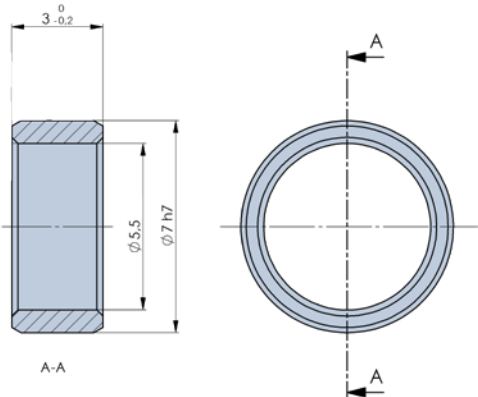
Distance-force and energy-distance characteristic curve (dynamic) – frame sizes HMRx18, HMRx24



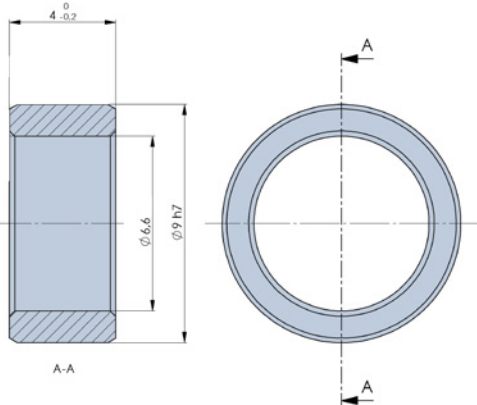
Dowel Sleeves

Dowel sleeves can be used to provide pinning functionality between the carriage mounting surface and the payload. These sleeves have a tightly tolerated 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 pages 14 & 36 for carriage mounting detail.

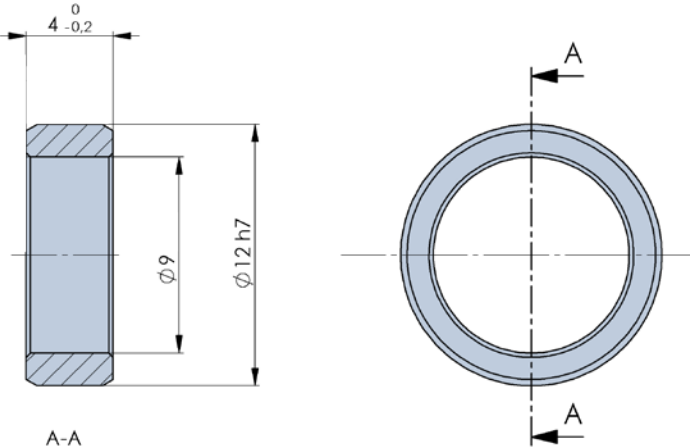
7mm Outer Diameter Dowel Sleeve



9mm Outer Diameter Dowel Sleeve



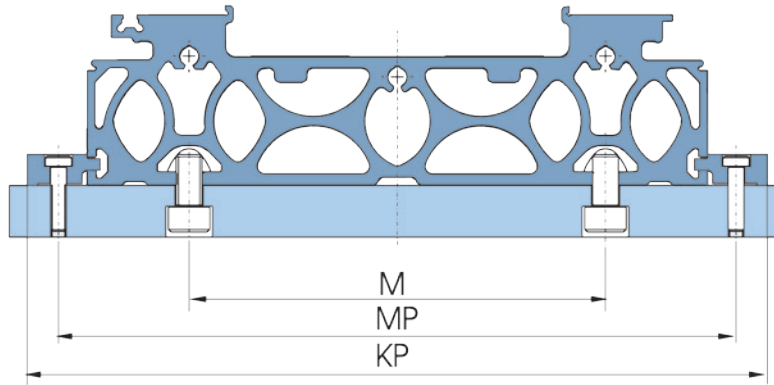
12mm Outer Diameter Dowel Sleeve



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
56460FIL	12mm Dowel Sleeve- 10 Pack	HMR24

HMR Series Positioners

Actuator Mounting



Dimension table - Product width HMR [mm]

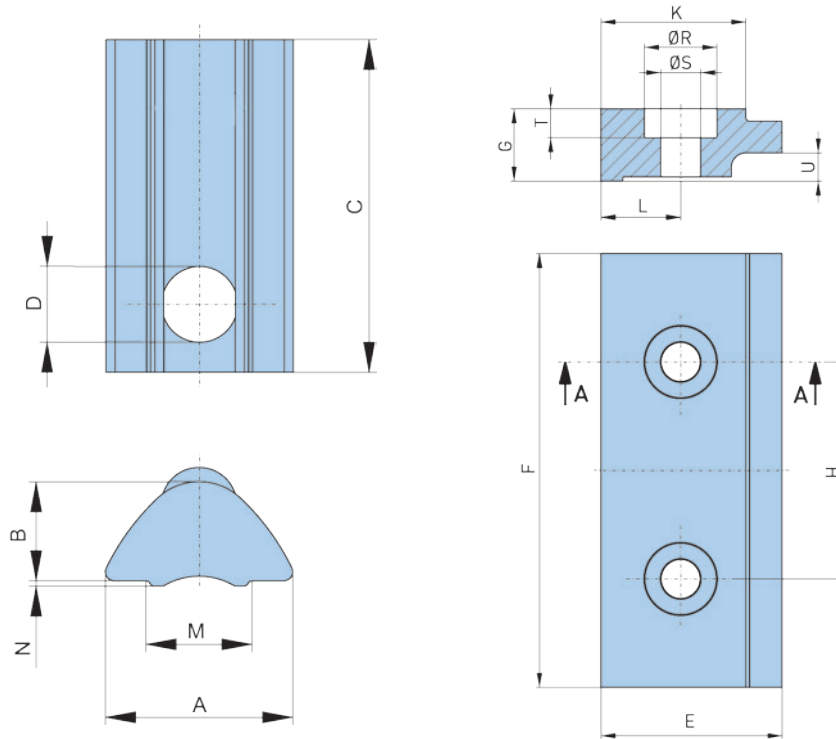
Product size	Toe-clamp mounting (mm)		T-nut mounting (mm)
	MP	KP	M
HMRx08	97	115	50
HMRx11	122	140	70
HMRx15	170	190	96
HMRx18	202	226	116
HMRx24	262	286	161

Holding force per mounting set [N]

Product size	Toe-clamp				T-nut			
	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

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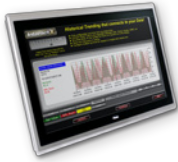
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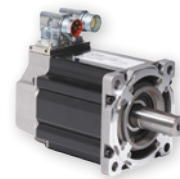
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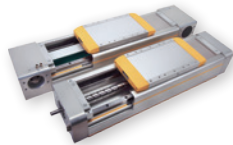
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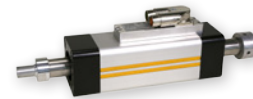
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Fax: +61 (0) 2 9634 3749

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Parker Hannifin Ind. Com Ltda.
Av. Lucas Nogueira Garcez 2181
Esperança
12325-900 Jacareí, SP
Tel: 12 3954 5100
Fax: 12 3954 5262
Email: automation.brazil@parker.com

Canada

Parker Hannifin (Canada) Inc.
160 Chisholm Dr
Milton, Ontario L9T 3G9
Tel: 905-693-3000
Fax: 905-876-1958
Email: miltoncustservice@parker.com

China

Parker Hannifin Motion & Control
(Shanghai) Co., Ltd
280 Yunqiao Rd. Jin Qiao Export
Processing Zone
Shanghai 201206, China
Tel: (86-21) 50312525
Fax: (86-21) 64459717

France

Parker Hannifin Manufacturing
France SAS
4 Boulevard Eiffel
CS 40090
21604 Longvic
France
Tel +33 (0) 3 80 42 41 40
Fax +33 (0) 3 80 42 41 30

Germany

Electromechanical Europe
Parker Hannifin GmbH & Co KG
Robert-Bosch-Strasse 22
D-77656 Offenburg
Germany
Tel: +49 (0) 781 509 0
Fax: +49 (0) 781 509 98176
Email: em-motion@parker.com

India

Parker Hannifin India Pvt. Ltd
Automation Group-SSD Drives Div.
133 & 151 Developed Plots Estate
Perungudi, Chennai 600 096
Tel: 044-4391-0799
Fax: 044-4391-0700

Italy

Parker Hannifin SpA
Via Gounod 1
20092 Cinsello Balsamo
Milano, Italy
Tel: +39 02 361081
Fax: +39 02 36108400
Email: em-motion@parker.com

Korea

Parker Hannifin Korea
9th Floor KAMCO Yangjae Tower
949-3 Dogok 1-dong Gangnam-gu
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Tel: 82-2-559-0454
Fax: 82-2-556-8187

Mexico

Parker Hannifin de Mexico
Eje uno Norte No.100
Parque Industrial Toluca 2000
Toluca, CP 50100 México
Tel: 52-722-275-4200
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Singapore

Parker Hannifin Singapore Pte Ltd
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Taiwan

Parker Hannifin Taiwan Co., Ltd
No. 40, Wuchiuan 3rd Road
Wuku Industrial Park
Taipei County, Taiwan 248
ROC
Tel: 886 2 2298 8987
Fax: 886 2 2298 8982

Thailand

Parker Hannifin (Thailand) Co., Ltd.
1265 Rama 9 Road
Suanluang, Bangkok 10250
Thailand
Tel: (66) 2 186 7000
Fax: (66) 2 374 1645

UK

Parker Hannifin Ltd.
Tachbrook Park Drive
Tachbrook Park
Warwick CV34 6TU
Tel: +44 (0) 1926 317970
Fax: +44 (0) 1926 317980

USA

Parker Hannifin Electromechanical
& Drives Division Main Office
9225 Forsyth Park Drive
Charlotte NC 28273 USA
Tel: (704) 588-3246
800-358-9070
Fax: (704) 588-3249
Email: emn_support@parker.com

Parker Hannifin Electromechanical
Automation Division
1140 Sandy Hill Road
Irwin, PA 15642
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