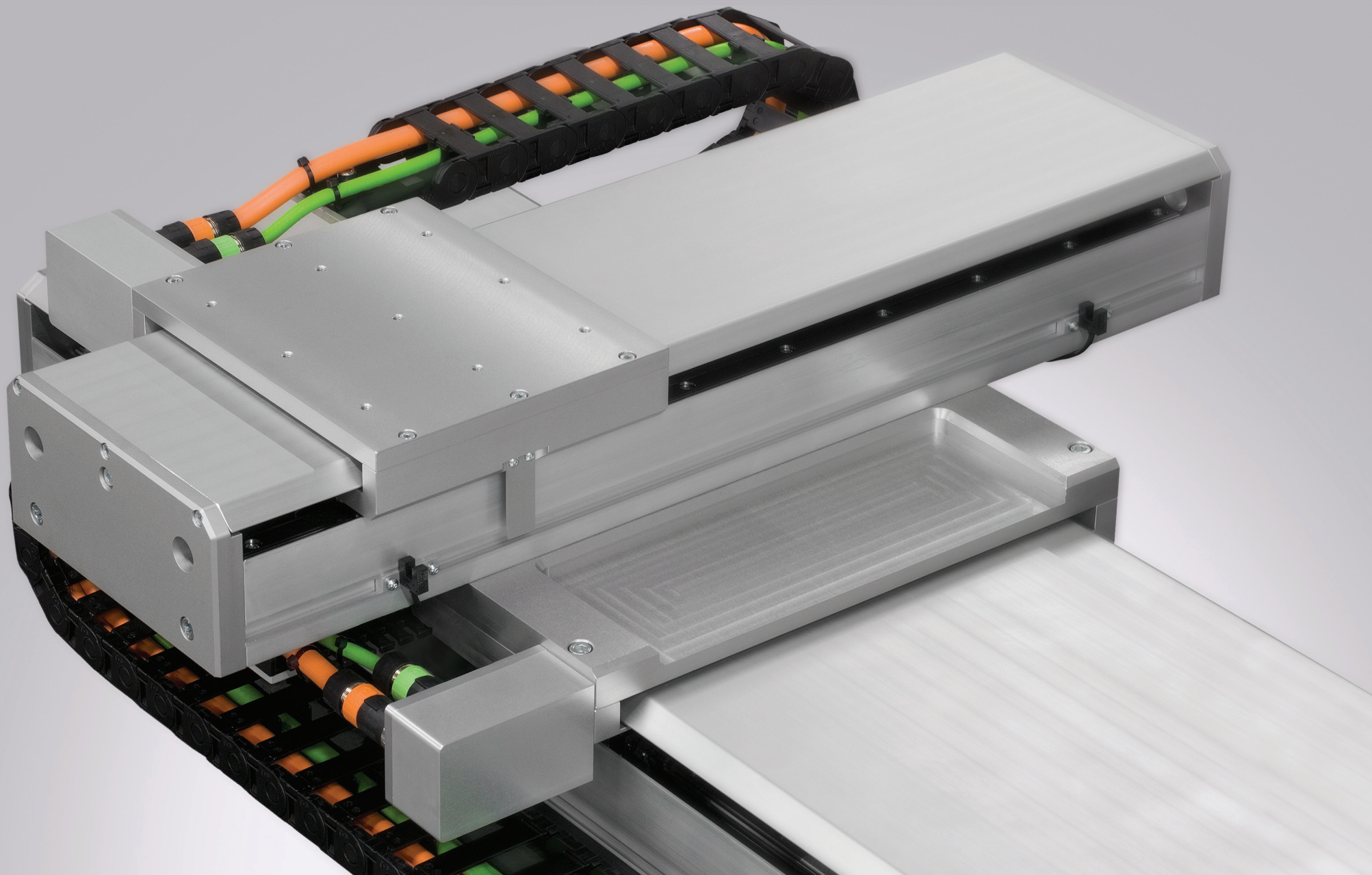




OMRON

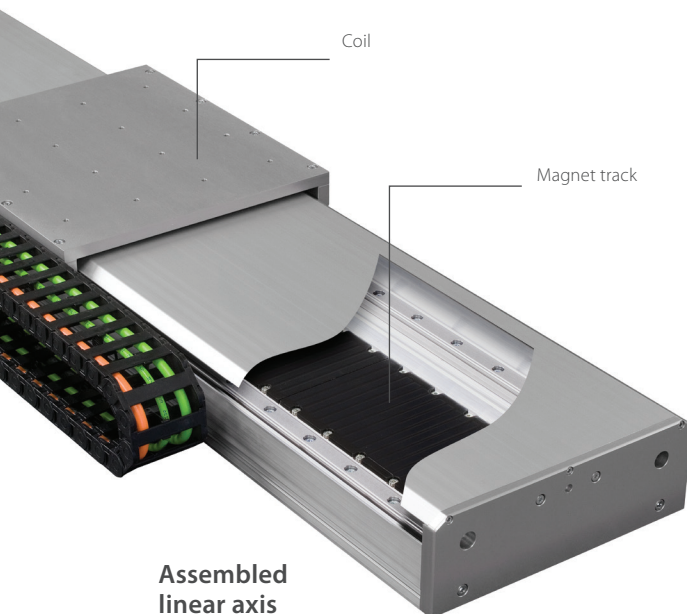
CUSTOMISED SOLUTIONS FOR LINEAR MOTOR AXIS TECHNOLOGY

Sub-micron precision and 10G acceleration capability

Linear direct drive

Linear axis technology is the ideal solution when you need accurate positioning and repeatability at high speed in the same application. In comparison with rotary systems such as ball-screws, the linear motor provides direct-drive control avoiding mechanical complexity. The result is a system with direct position measurement and less weight, providing higher precision and acceleration than traditional mechanical systems. Ultimately this system will significantly increase machine production and manufacturing quality.

Omron's linear motor axis product range provides a robust design and construction ensuring constant performance and long product life in rugged conditions. The mechanical parts are protected by a highly enclosed construction and the linear system is delivered as an assembled item ready to be installed in the machine.



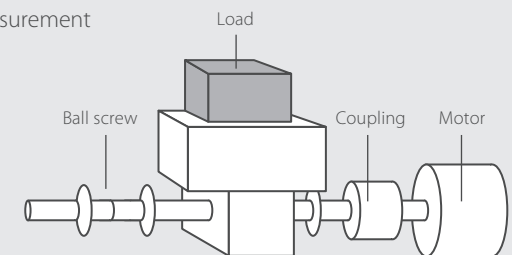
Considering the product's entire lifetime, investing in direct-drive technology goes far beyond simple purchase price investigations. Proper sizing and product integration help to significantly shorten development time and to subsequently improve cycle times, while maintaining high quality and lifetime expectations. State of the art absolute encoder technology allows for smooth product installation. Along with extended re-lubrication cycles and robust sub-component selections OMRON's linear motor axis requires very limited effort in terms of resources and aftersales maintenance costs.

Machine simplification

The direct-drive control allows for mechanical simplification. You will benefit from the suppression of mechanical components such as couplers and gears. By using linear axis technology you will reduce maintenance costs thanks to this machine's simplicity. This rigid solution eliminates mechanical flexion and backlash, providing better performance. You will reach sub-micron precision and higher acceleration in your solution.

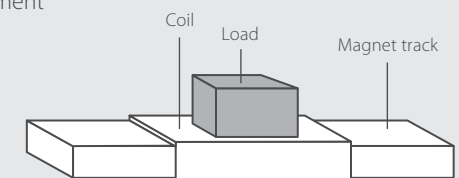
MECHANICAL SYSTEM

- Indirect position measurement
- Flexion
- Backlash
- Non linearity

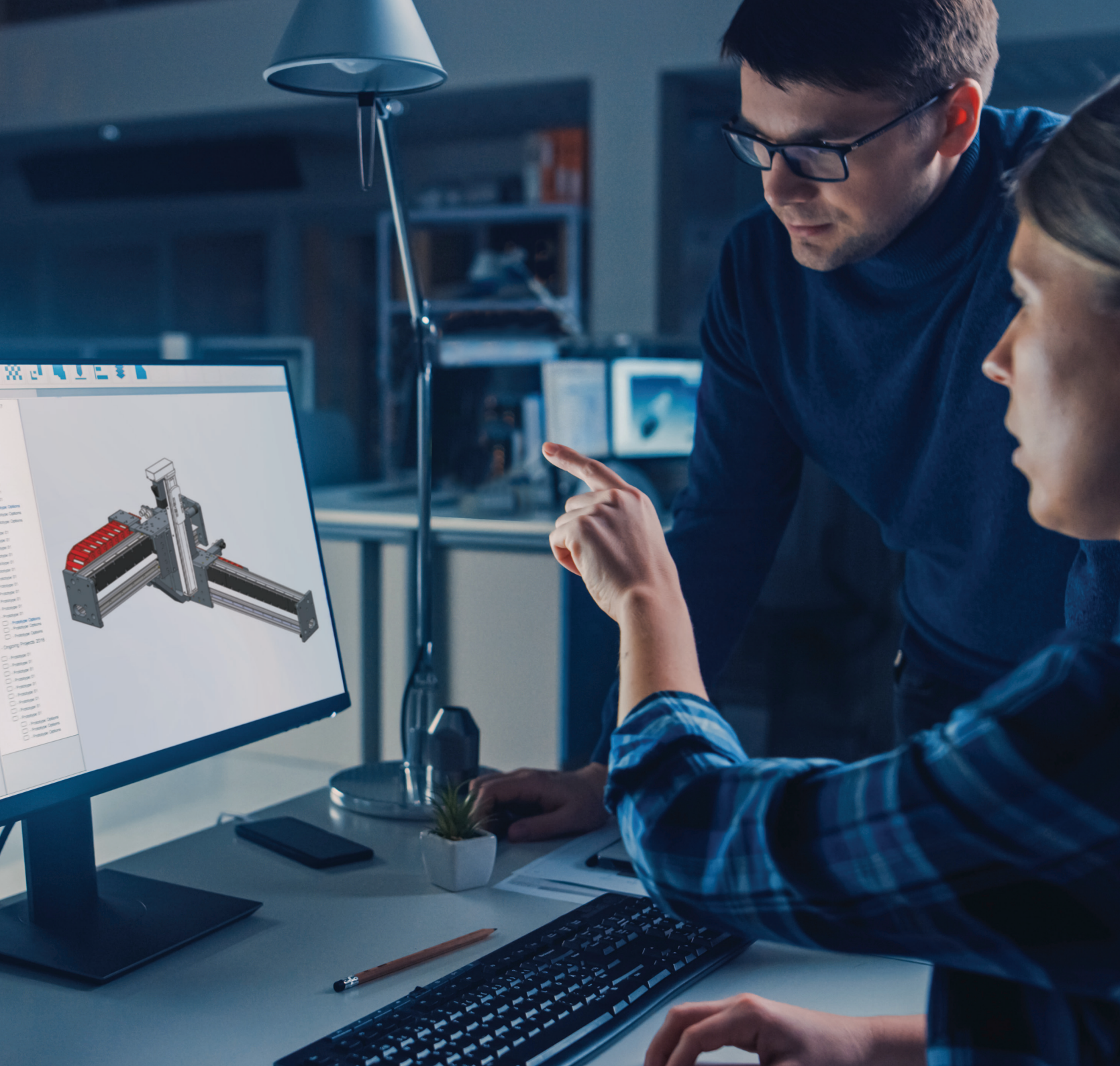


LINEAR TECHNOLOGY

- Direct position measurement
- Low maintenance cost
- No backlash
- No mechanical flexion



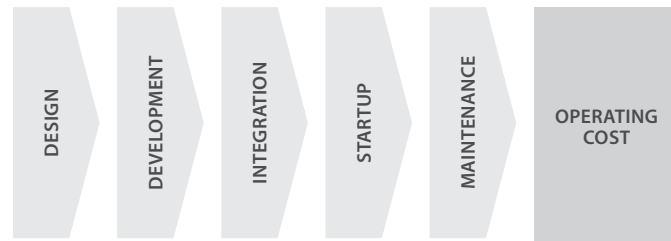
++ Acceleration
++ Accuracy



Your needs, our focus

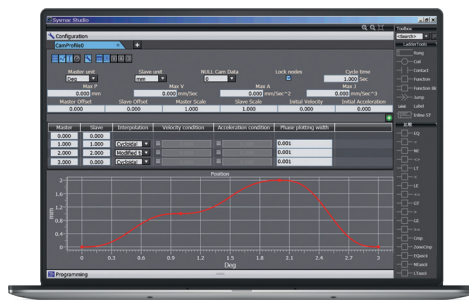
We are more than happy to design and produce individual customised solutions to meet your machine specifications. From simple Linear Motor Axis to complex Cartesian Systems such as Pick & Place and Gantry solutions.

Linear Motor Axis do not need maintenance! All these benefits starting with initial research and design, purchase and start-up costs and finally 24/7 uptime as well as your system's low maintenance requirements will set your application apart from your competitors and let you pass these savings on to your client base.

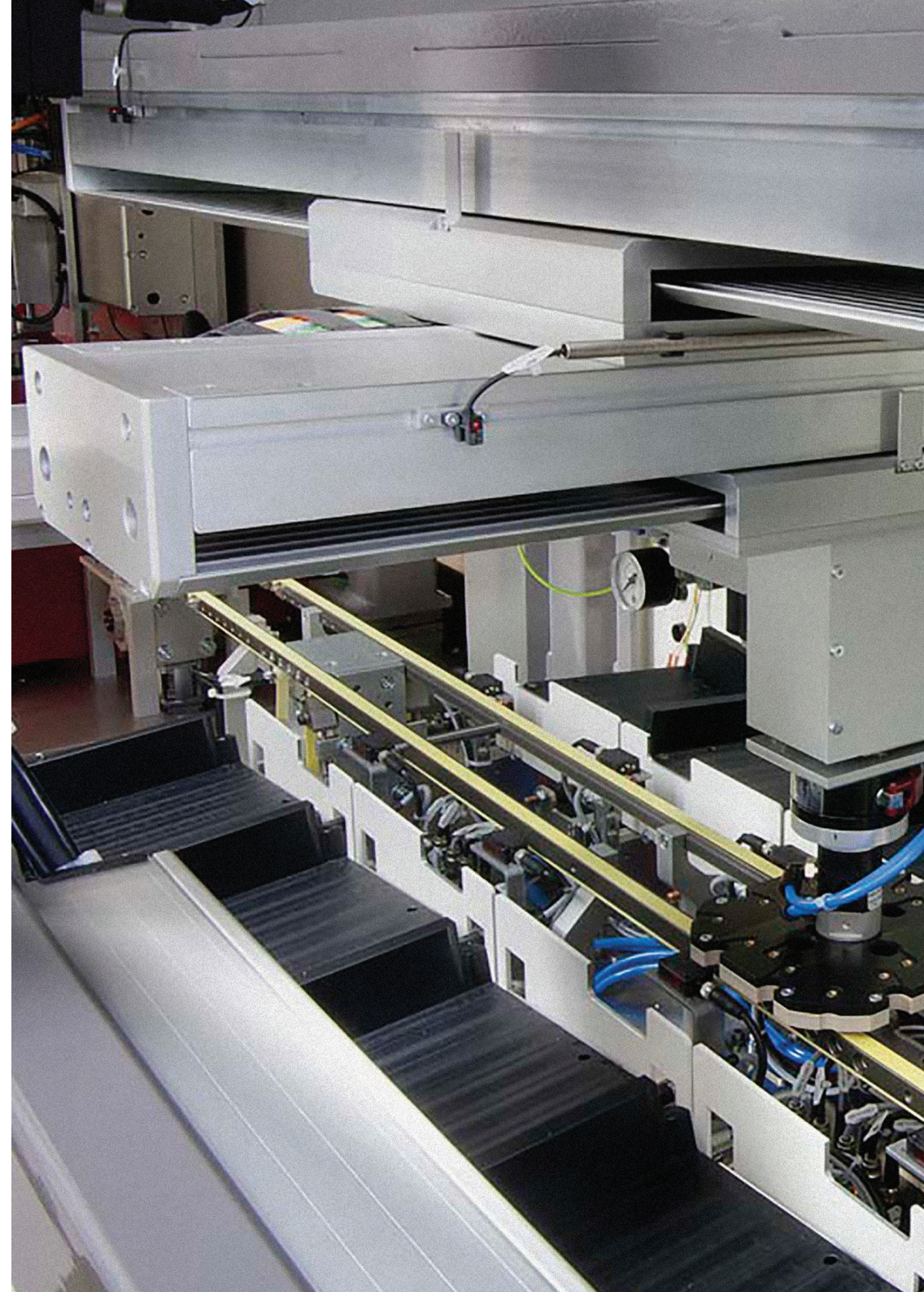


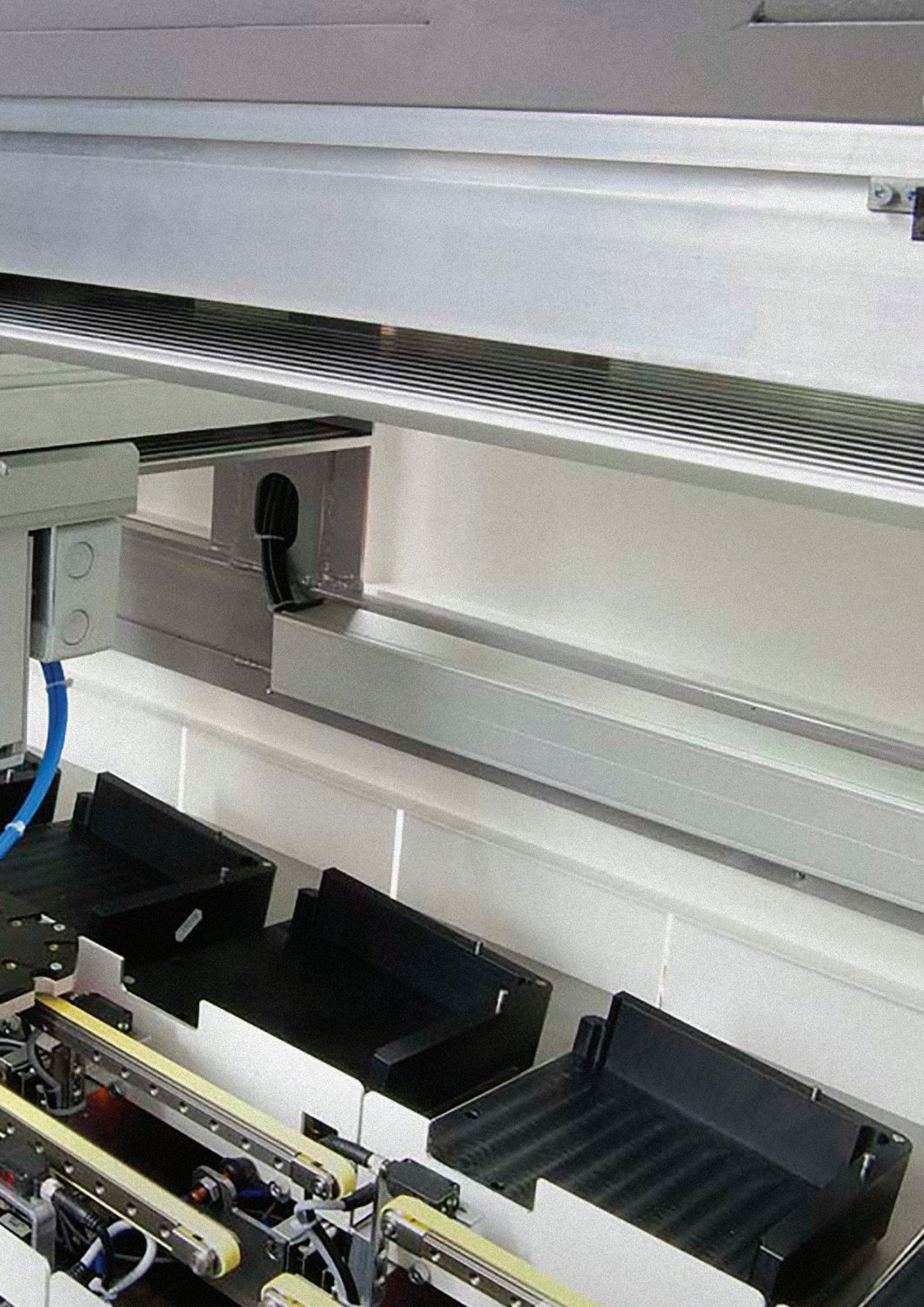
Reduced 'Total Cost of Ownership'

Omron provides an integrated and complete solution: visualization, controller, safety, servo drive and linear axes system within one Integrated Development Environment. You will reduce engineering time by using the rich set of Motion Function Blocks available in our controllers to develop synchronous and coordinated motion applications.

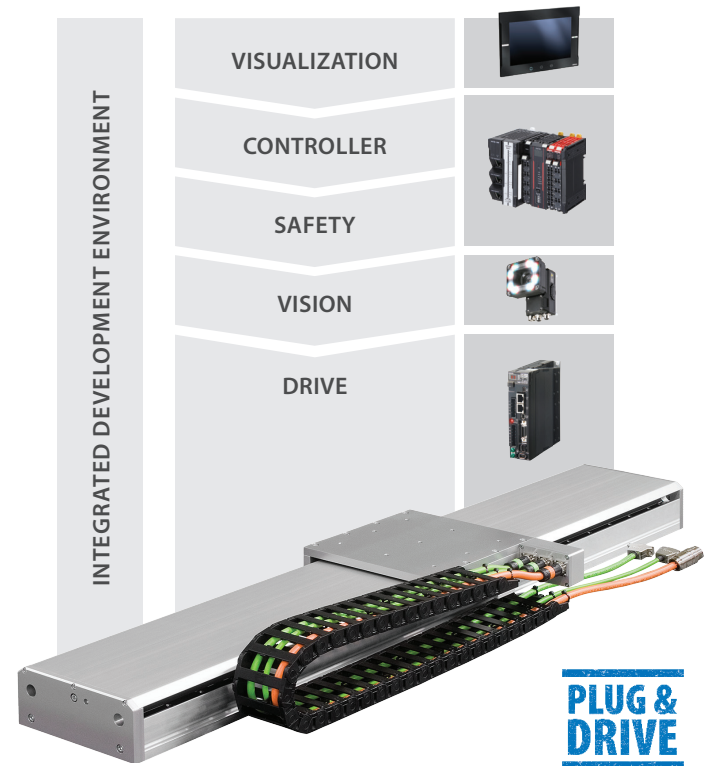


Sysmac Studio Integrated Development Environment





This complete portfolio provides a more efficient and economical solution.

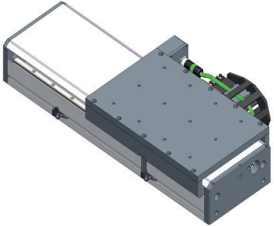
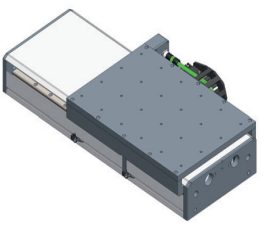
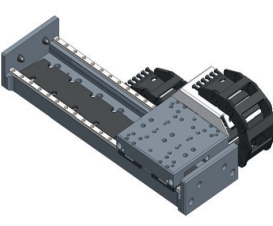
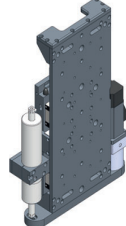


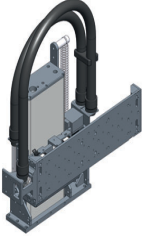
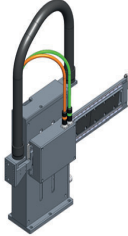
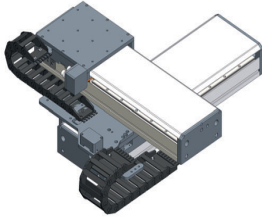
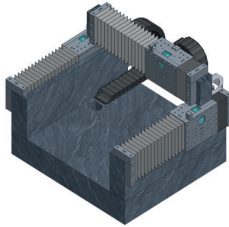
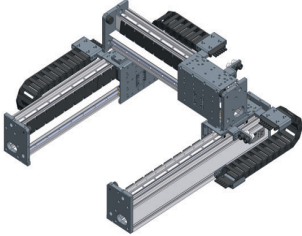
Omron provides an integrated and complete solution

Omron is continuously looking to provide solutions to simplify commissioning efforts. Thus the pre-assembled linear system and automatic motor setup dramatically reduce commissioning time. You just Plug & Drive...

Note: For detailed information about your customer specific linear motor axis, Pick & Place unit, cross table or gantry solution, please contact your local Omron sales representative.

Customized linear motor axis and cartesian systems

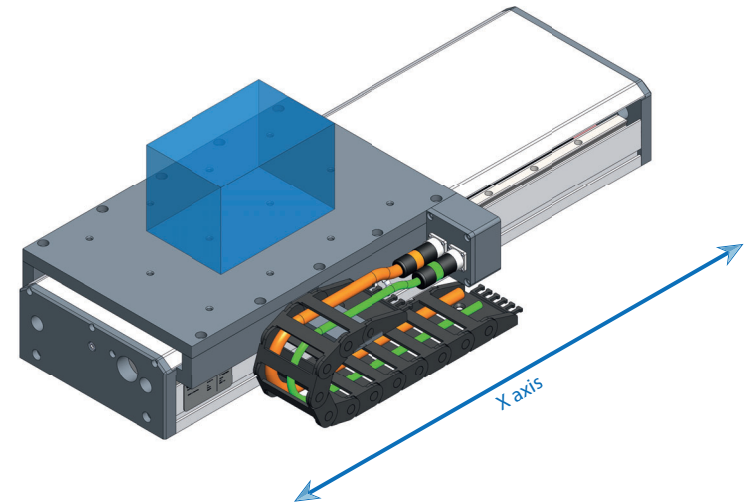
Industry			Applications & specifications	Horizontal linear axis			Vertical linear axis
Food & Beverage	Digital	Automotive					
				R88L-EA-AF-0615	R88L-EA-AF-1118	R88L-EA-MF-0303	R88L-EA-ZF-0306
			Picking				●
			Palletizing	●	●		●
			Tightening nuts				●
			Assembling			●	●
			Deburring and polishing				
			Sealing	●	●	●	
			Printing	●	●		
			Material handling	●	●	●	●
			Cutting				
			Sealing	●	●	●	●
			Additional robot axis (below SCARA or 6-axis robot)	●	●		
			Max. peak force	1,000 N	2,400 N	105 N	210 N
			Max. payload	100 kg	200 kg	20 kg	9.5 kg
			Options	• High-performance cable chain • Multiple coils • Wide range of encoder options	• High-performance cable chain • Multiple coils • Wide range of encoder options	• 2-coils option	• Turn unit option • Double compensation
			Page	8-9	10-11	14-15	16-17

Pick & Place		Cross tables	Gantry system	
				
R88L-ES-PP	R88L-ES-PM	R88L-ES-XY	R88L-ES-GT	R88L-ES-GF
•	•		•	•
				•
•	•		•	•
•	•	•	•	•
			•	
•	•	•	•	•
		•		•
•	•	•		•
			•	•
•	•	•	•	•
210 N (X-axis) / 600 N (Z-axis)		2,000 N (X-axis) / 800 N (Y-axis)		800 N (X-axis) / 400 N (Y-axis)
5 kg		50 kg		40 kg
-		• Motors from R88L-EA-AF family are groupable • Max. Y-axis stroke 926 mm		• Second coil option • Vertical axis option • Second beam option
18-19		22		24-25

Horizontal linear axis

R88L-EA-AF-0615

- 500 N constant force / 1,000 N peak force on 60 mm magnet track size
- Six bearing blocks to handle high payloads up to 100 kg
- Renishaw Resolute standard feedback system

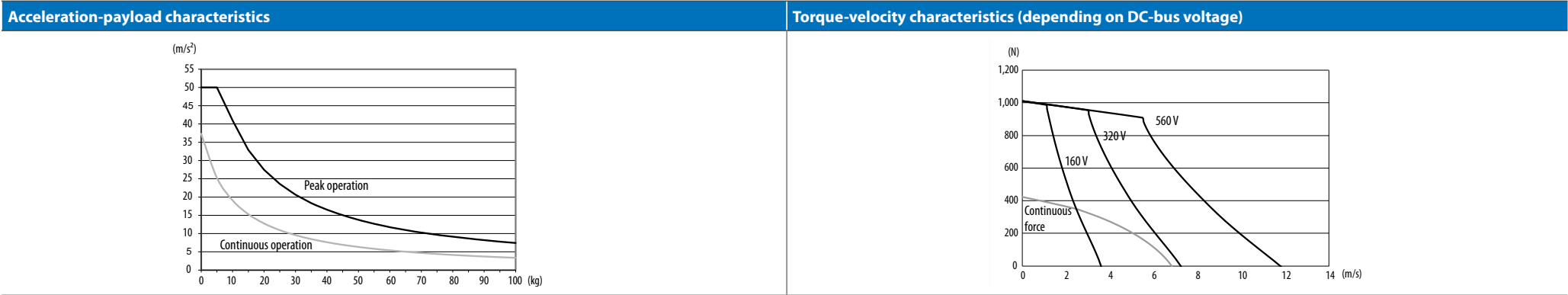
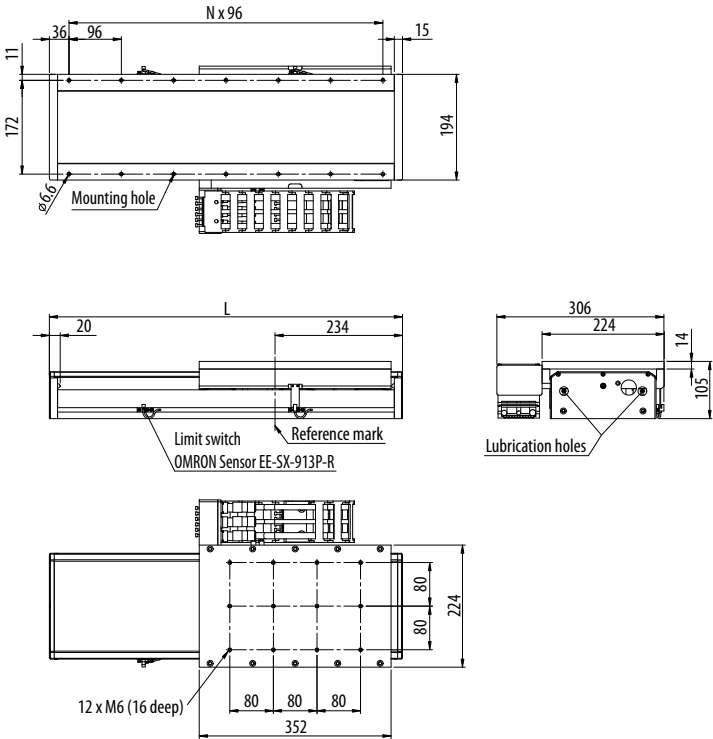


Specifications

Model	R88L-EA-AF-0615-[] [] [] []	X-axis	Model	R88L-EA-AF-0615-[] [] [] []	
Motor	Peak force	1,000 N	Standard encoder	Type	Renishaw Resolute Optical, absolute, Panasonic protocol
	Peak current	10.4 Arms		Resolution	50 nm
	Constant force	500 N		Accuracy	±5 µm/m
	Continuous current	4.7 Arms	Required items	Drives	400 V: R88D-KN50F-ECT-L
	Motor force constant	112 N/Arms		Cables	Encoder cable: R88A-CRKN-[] Power cable: R88A-CAWL-[]
	BEMF	92 V/m/s		Bearings/relubrication	THK SSR15XW THK MG70, AFB-LF, 1000 km, 12 months
	Motor constant	30.82 N/√W	Maintenance	Cable management	Cable chain, Igus radius 38 mm, 1 Mio cycles cable life time
	Phase resistance	4.3 Ω		Protection class	Aluminum extrusion cover, IP20
	Phase inductance	32 mH	Others	Encoder reading head supply	5 VDC, max. 250 mA
	Electrical time constant	7.5 ms		Insulation class	Class B
Mechanics	Pole pitch	24 mm		Max. bus voltage	560 VDC
	Weight of the moving part	10.7 kg		Insulation resistance	500 VDC, min. 10 MΩ
	Max. payload	100 kg		Ambient humidity	20 to 80% (non-condensing)
	Uni-directional repeatability	±1 µm		Altitude	1,000 m
	Max. allowable speed	5 m/s		Max. allowable magnet temperature	70°C
	Min. stroke	158 mm			
	Max. stroke	1,982 mm			
	Stroke increment	96 mm			

Dimensions and Motor Curves

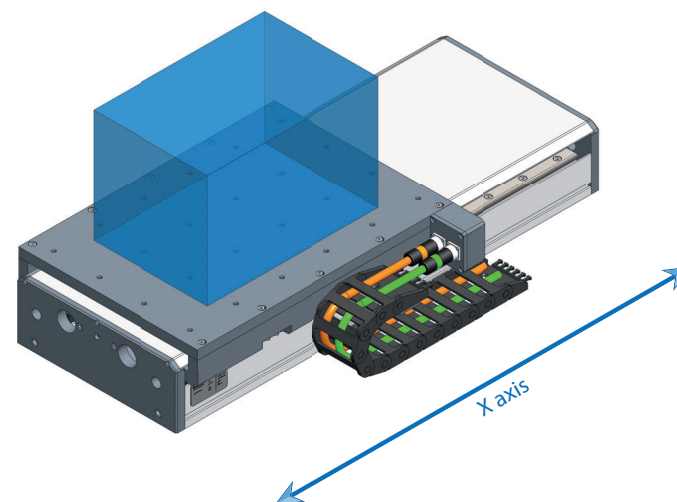
Model	Effective stroke	L	N	Moving part weight	Complete axis weight
R88L-EA-AF-0615-0158	158 mm	552 mm	5	10.7 kg	22.7 kg
R88L-EA-AF-0615-0254	254 mm	648 mm	6		24.4 kg
R88L-EA-AF-0615-0350	350 mm	744 mm	7		26.1 kg
R88L-EA-AF-0615-0446	446 mm	840 mm	8		27.9 kg
R88L-EA-AF-0615-0542	542 mm	936 mm	9		29.6 kg
R88L-EA-AF-0615-0638	638 mm	1,032 mm	10		31.3 kg
R88L-EA-AF-0615-0734	734 mm	1,128 mm	11		33.1 kg
R88L-EA-AF-0615-0830	830 mm	1,224 mm	12		34.8 kg
R88L-EA-AF-0615-0926	926 mm	1,320 mm	13		36.5 kg
R88L-EA-AF-0615-1022	1,022 mm	1,416 mm	14		38.3 kg
R88L-EA-AF-0615-1118	1,118 mm	1,512 mm	15		40.0 kg
R88L-EA-AF-0615-1214	1,214 mm	1,608 mm	16		41.7 kg
R88L-EA-AF-0615-1310	1,310 mm	1,704 mm	17		43.5 kg
R88L-EA-AF-0615-1406	1,406 mm	1,800 mm	18		45.2 kg
R88L-EA-AF-0615-1502	1,502 mm	1,896 mm	19		46.9 kg
R88L-EA-AF-0615-1598	1,598 mm	1,992 mm	20		48.7 kg
R88L-EA-AF-0615-1694	1,694 mm	2,088 mm	21		50.4 kg
R88L-EA-AF-0615-1790	1,790 mm	2,184 mm	22		52.1 kg
R88L-EA-AF-0615-1886	1,886 mm	2,280 mm	23		53.9 kg
R88L-EA-AF-0615-1982	1,982 mm	2,376 mm	24		55.6 kg



Horizontal linear axis

R88L-EA-AF-1118

- 1,140 N constant force / 2,400 N peak force on 110 mm magnet track size
- Six bearing blocks to handle high payloads up to 200 kg
- Renishaw Resolute Absolute encoder with Panasonic protocol as standard. Other encoder options are possible



Specifications

Model	R88L-EA-AF-1118-□□□□	X-axis	Model	R88L-EA-AF-1118-□□□□	
Motor	Peak force	2,400 N	Standard encoder	Type	Renishaw Resolute Optical, absolute, Panasonic protocol
	Peak current	15.0 Arms		Resolution	50 nm
	Constant force	1,140 N		Accuracy	±5 µm/m
	Continuous current	6.5 Arms	Required items	Drives	400 V: R88D-KN50F-ECT-L
	Motor force constant	186 N/Arms		Cables	Encoder cable: R88A-CRKN-[] Power cable: R88A-CAWL-[]
	BEMF	152 V/m/s			
	Motor constant	50.79 N/√W	Maintenance	Bearings/relubrication	THK SSR25XW THK MG70, AFB-LF, 1000 km, 12 months
	Phase resistance	4.4 Ω		Cable management	Cable chain, Igus radius 38 mm, 1 Mio cycles cable life time
	Phase inductance	35 mH			
	Electrical time constant	8 ms	Others	Protection class	Aluminum extrusion cover, IP20
	Pole pitch	24 mm		Encoder reading head supply	5 VDC, max. 250 mA
Mechanics	Weight of the moving part	22.7 kg		Insulation class	Class B
	Max. payload	200 kg		Max. bus voltage	560 VDC
	Uni-directional repeatability	±1 µm		Insulation resistance	500 VDC, min. 10 MΩ
	Max. allowable speed	5 m/s		Ambient humidity	20 to 80% (non-condensing)
	Min. stroke	158 mm		Altitude	1,000 m
	Max. stroke	2,078 mm		Max. allowable magnet temperature	70°C
	Stroke increment	96 mm			

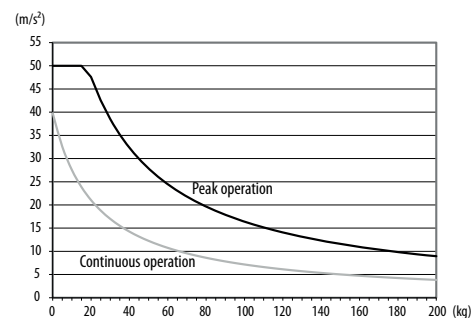
Dimensions and Motor Curves

Model	Effective stroke	L	N	Moving part weight	Complete axis weight
R88L-EA-AF-1118-0158	158 mm	648 mm	6	22.7 kg	47.4 kg
R88L-EA-AF-1118-0254	254 mm	744 mm	7		50.7 kg
R88L-EA-AF-1118-0350	350 mm	840 mm	8		53.9 kg
R88L-EA-AF-1118-0446	446 mm	936 mm	9		57.2 kg
R88L-EA-AF-1118-0542	542 mm	1,032 mm	10		60.5 kg
R88L-EA-AF-1118-0638	638 mm	1,128 mm	11		63.7 kg
R88L-EA-AF-1118-0734	734 mm	1,224 mm	12		67.0 kg
R88L-EA-AF-1118-0830	830 mm	1,320 mm	13		70.3 kg
R88L-EA-AF-1118-0926	926 mm	1,416 mm	14		73.5 kg
R88L-EA-AF-1118-1022	1,022 mm	1,512 mm	15		76.8 kg
R88L-EA-AF-1118-1118	1,118 mm	1,608 mm	16		80.1 kg
R88L-EA-AF-1118-1214	1,214 mm	1,704 mm	17		83.3 kg
R88L-EA-AF-1118-1310	1,310 mm	1,800 mm	18		86.6 kg
R88L-EA-AF-1118-1406	1,406 mm	1,896 mm	19		86.9 kg
R88L-EA-AF-1118-1502	1,502 mm	1,992 mm	20		93.1 kg
R88L-EA-AF-1118-1598	1,598 mm	2,088 mm	21		96.4 kg
R88L-EA-AF-1118-1694	1,694 mm	2,184 mm	22		99.7 kg
R88L-EA-AF-1118-1790	1,790 mm	2,280 mm	23		102.9 kg
R88L-EA-AF-1118-1886	1,886 mm	2,376 mm	24		106.2 kg
R88L-EA-AF-1118-1982	1,982 mm	2,472 mm	25		109.5 kg
R88L-EA-AF-1118-2078	2,078 mm	2,568 mm	26		112.7 kg

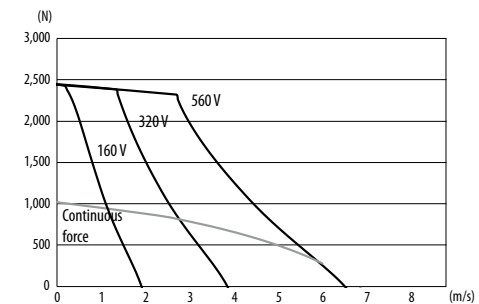
Technical drawing of the R88L-EA-AF series linear motor. The side view shows a motor with a total length of N x 96 mm, a mounting bracket width of 13 mm, a base width of 254 mm, and a total height of 280 mm. The front view shows a motor with a total length of L mm, a mounting bracket width of 20 mm, a base width of 282 mm, and a total height of 126 mm. The front view also shows a limit switch (OMRON Sensor EE-SX-913P-R) and a reference mark.

Technical drawing of the R88L-EA-AF series linear motor showing a top view. The motor has a total width of 397 mm, a mounting bracket width of 314 mm, and a total height of 126 mm. The front view shows a motor with a total length of L mm, a mounting bracket width of 20 mm, a base width of 282 mm, and a total height of 126 mm. The front view also shows a limit switch (OMRON Sensor EE-SX-913P-R) and a reference mark. The side view shows a motor with a total length of N x 96 mm, a mounting bracket width of 13 mm, a base width of 254 mm, and a total height of 280 mm.

Acceleration-payload characteristics



Torque-velocity characteristics (depending on DC-bus voltage)

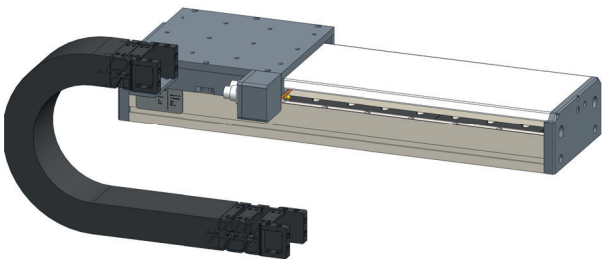


Options for R88L-EA-AF linear motor axis family

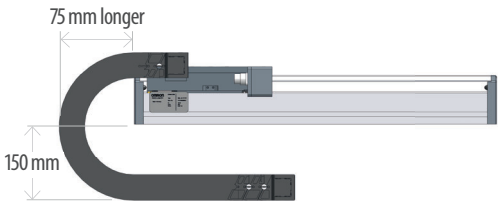
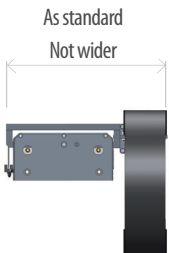
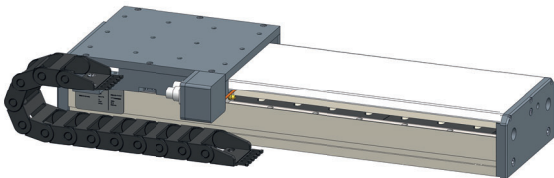
High-performance cable chain

- High-performance cable chain option allows up to 10 Mio cycles possible

High-performance cable chain



Standard cable chain



4 more cables possible



Specifications	
Bending radius	100 mm. Causes little wear on cables
Chain type	Igus E6.35.050.100.0. Smooth and quiet operation
Life time	Up to 10 Million double cycles (go and return)

Encoder types

Model	Standard	Options			
	0005	none	0001	0002	0003
Encoder type	Optical, absolute	Optical, incremental	Optical, incremental	Optical, incremental	Magnetical, incremental
Manufacturer	Renishaw	Numerik Jena	Numerik Jena	Numerik Jena	Siko
Manufacturer item code	Resolute	LIA20-C001-KZ	LIA20-L301-KZ	LIA20-K001-KZ	LE100/1
Output signal	Panasonic protocol	1V ptp	TTL/line driver	TTL/line driver	1V ptp
Resolution	50 nm	50 nm	1 µm	5 µm	2.5 µm
Phase finding	Not required	Hall sensor	Wake 'n' shake	Wake 'n' shake	Hall sensor
Max. speed ^{*1}	5 m/s	5 m/s	2.6 m/s	5 m/s	5 m/s
Required accessories ^{*2}	Cable encoder to servo drive: R88A-CRKN-□□□-CR-E	Serial converter: R88A-SC01K-E Serial converter cable to servo drive: R88A-CRKN-□□□-CR-E Linear encoder cable to serial converter: R88A-CFKA-□□□-CR-E Hall and temperature sensors cable to serial converter: R88A-CFKB-□□□-CR-E	Cable encoder to servo drive: R88A-CRKN-□□□-CR-E	Cable encoder to servo drive: R88A-CRKN-□□□-CR-E	Serial converter: R88A-SC01K-E Serial converter cable to servo drive: R88A-CRKN-□□□-CR-E Linear encoder cable to serial converter: R88A-CFKA-□□□-CR-E Hall and temperature sensors cable to serial converter: R88A-CFKB-□□□-CR-E

Model	Options				
	0004	000B	000D	000E	000G
Encoder type	Optical, incremental	Magnetical	Magnetical	Optical	Optical
Manufacturer	Numerik Jena	Siko	Siko	Renishaw	Renishaw
Manufacturer item code	LIA20-M301-KZ	MSK1000	MSK5000	Resolute	Resolute
Output signal	TTL/line driver	TTL/line driver	TTL/line driver	BISS C	DRIVE CLiQ
Resolution	0.5 µm	5 µm	1 µm	50 nm	50 nm
Phase finding	Wake 'n' shake	Wake 'n' shake	Wake 'n' shake	Not required	Not required
Max. speed ^{*1}	1.3 m/s	5 m/s	3 m/s	5 m/s	5 m/s
Required accessories ^{*2}	Cable encoder to servo drive: R88A-CRKN-□□□-CR-E	Cable encoder to servo drive: R88A-CRKN-□□□-CR-E	Cable encoder to servo drive: R88A-CRKN-□□□-CR-E	Cable encoder to servo drive: R88A-CRKN-□□□-CR-E	Cable encoder to servo drive: R88A-CRKN-□□□-CR-E

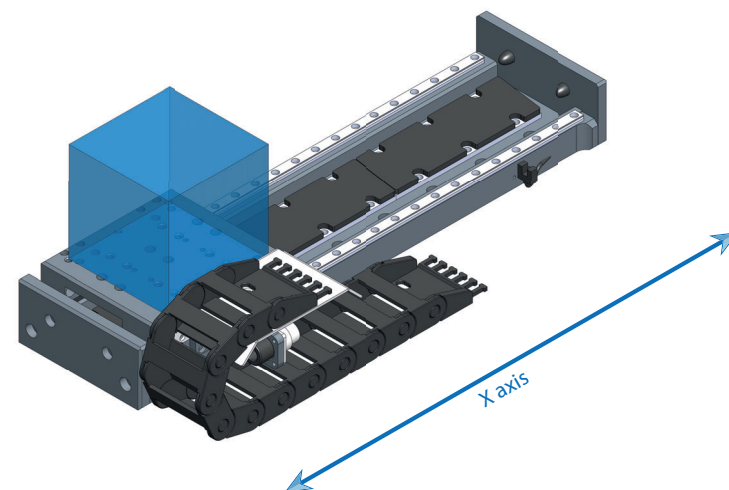
*1 Max. speed can depend on encoder system or mechanical bearing limitation.

*2 Required accessories to make the encoder work on G5 linear servo drives.

Horizontal linear axis

R88L-EA-MF-0303

- Thin design moving carriage only 56 mm high
- Easy stackable to create H-Gantry solutions
- Strokes up to 890 mm

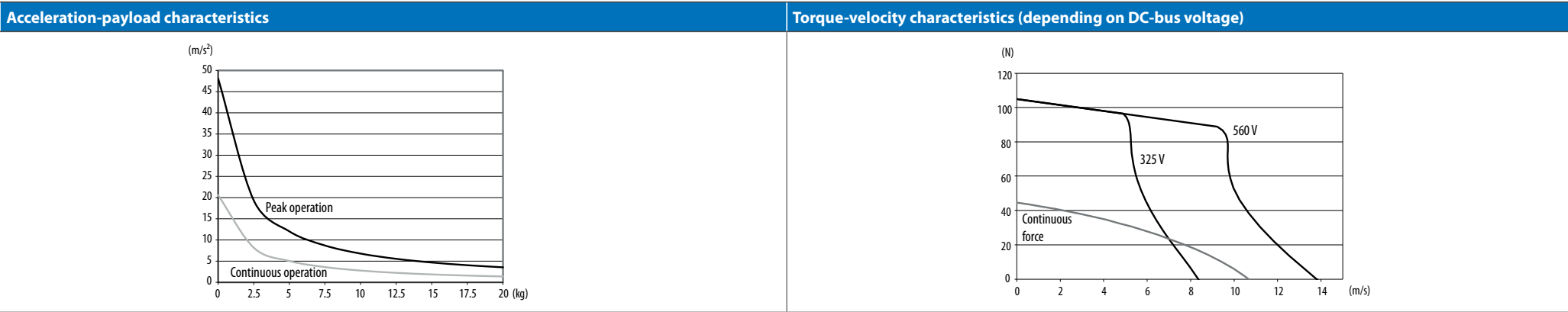
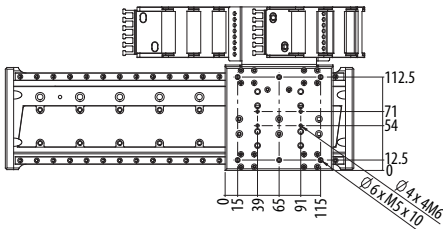
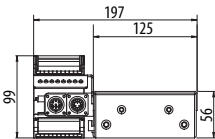
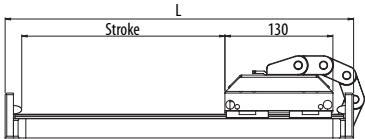
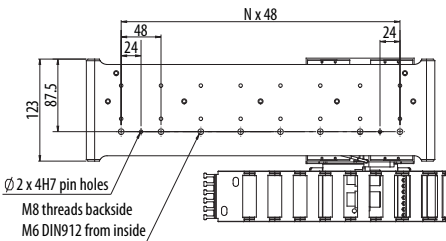


Specifications

Model	R88L-EA-MF-0303-□□□□	X-axis	Model	R88L-EA-MF-0303-□□□□	
Motor	Peak force	105 N	Standard encoder	Type	Renishaw Resolute Optical, absolute, Panasonic protocol
	Peak current	3.1 Arms		Resolution	50 nm
	Constant force	48 N		Accuracy	±5 μm/m
	Continuous current	1.3 Arms	Required items	Drives	230 V: R88D-KN02H-ECT-L / 400 V: R88D-KN06F-ECT-L
	Motor force constant	39.7 N/Arms		Cables	Encoder cable: R88A-CRKN-[] Power cable: R88A-CAWL-[]
	BEMF	32 V/m/s		Bearings/relubrication	THK SRS9N QZ THK MG70, AFB-LF, 1000 km, 12 months
	Motor constant	9.75 N/√W	Maintenance	Cable management	Cable chain, Igus radius 38 mm, 1 Mio cycles cable life time
	Phase resistance	5.34 Ω		Protection class	IP00
	Phase inductance	34.7 mH	Others	Encoder reading head supply	5 VDC, max. 250 mA
	Electrical time constant	6.5 ms		Insulation class	Class B
Mechanics	Pole pitch	24 mm		Max. bus voltage	560 VDC
	Weight of the moving part	1.7 kg		Insulation resistance	500 VDC, min. 10 MΩ
	Max. payload	20 kg		Ambient humidity	20 to 80% (non-condensing)
	Uni-directional repeatability	±1 μm		Altitude	1,000 m
	Max. allowable speed	2 m/s		Max. allowable magnet temperature	70°C
	Min. stroke	90 mm			
	Max. stroke	890 mm			
	Stroke increment	50 mm			

Dimensions and Motor Curves

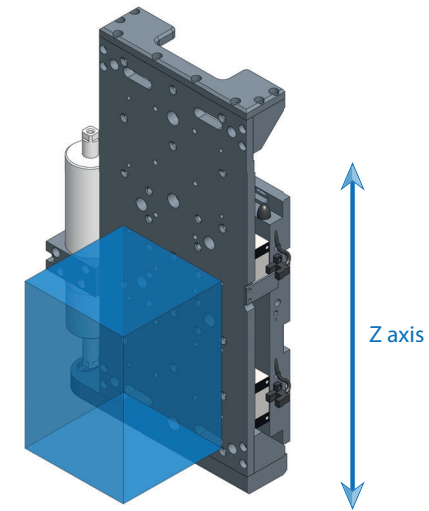
Model	Effective stroke	L	N	Moving part weight	Complete axis weight
R88L-EA-MF-0303-0090	90 mm	270 mm	4	1.7 kg	4.0 kg
R88L-EA-MF-0303-0140	140 mm	320 mm	5		4.4 kg
R88L-EA-MF-0303-0190	190 mm	370 mm	6		4.7 kg
R88L-EA-MF-0303-0240	240 mm	420 mm	7		5.0 kg
R88L-EA-MF-0303-0290	290 mm	470 mm	8		5.4 kg
R88L-EA-MF-0303-0340	340 mm	520 mm	9		5.7 kg
R88L-EA-MF-0303-0390	390 mm	570 mm	10		6.0 kg
R88L-EA-MF-0303-0440	440 mm	620 mm	11		6.4 kg
R88L-EA-MF-0303-0490	490 mm	670 mm	12		6.7 kg
R88L-EA-MF-0303-0540	540 mm	720 mm	13		7.1 kg
R88L-EA-MF-0303-0590	590 mm	770 mm	14		7.4 kg
R88L-EA-MF-0303-0640	640 mm	820 mm	15		7.7 kg
R88L-EA-MF-0303-0690	690 mm	870 mm	16		8.1 kg
R88L-EA-MF-0303-0740	740 mm	920 mm	17		8.4 kg
R88L-EA-MF-0303-0790	790 mm	970 mm	18		8.7 kg
R88L-EA-MF-0303-0840	840 mm	1,020 mm	19		9.1 kg
R88L-EA-MF-0303-0890	890 mm	1,070 mm	20		9.4 kg



Vertical linear axis

R88L-EA-ZF-0306

- Up to 9 kg payload, magnetic weight compensation, no compressed air required
- Flat packaging, 54 mm flat
- Moving magnet concept, very long product lifetime



Specifications

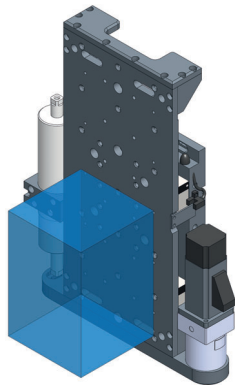
Model	R88L-EA-ZF-0306-□□□□	Z-axis	Model	R88L-EA-ZF-0306-□□□□	
Motor	Peak force	210 N	Standard encoder	Type	Renishaw Resolute Optical, absolute, Panasonic protocol
	Peak current	6.1 Arms		Resolution	50 nm
	Constant force	96 N		Accuracy	±5 µm/m
	Continuous current	2.4 Arms	Required items	Drives	230 V: R88D-KN04H-ECT-L / 400 V: R88D-KN10F-ECT-L
	Motor force constant	39.7 N/Arms		Cables	Encoder cable: R88A-CRKN-[] Power cable: R88A-CAWL-[]
	BEMF	32 V/m/s		Bearings/relubrication	THK SS15XV THK MG70, AFB-LF, 1000 km, 12 months
	Motor constant	13.78 N/√W	Maintenance	Cable management	Static cables
	Phase resistance	2.68 Ω		Protection class	No cover, IP20
	Phase inductance	17.4 mH		Encoder reading head supply	5 VDC, max. 250 mA
	Electrical time constant	6.5 ms	Others	Insulation class	Class B
Mechanics	Pole pitch	24 mm		Max. bus voltage	560 VDC
	Coil used	R88L-EC-FW-0306-ANPC		Insulation resistance	500 VDC, min. 10 MΩ
	Weight of the moving part	2.3 kg to 3.8 kg		Ambient humidity	20 to 80% (non-condensing)
	Max. payload	9.5 kg (without turn unit option)		Altitude	1,000 m
	Uni-directional repeatability	±1 µm		Max. allowable magnet temperature	70°C
	Max. allowable speed	5 m/s			
	Min. stroke	50 mm			
	Max. stroke	300 mm			

Dimensions and Motor Curves

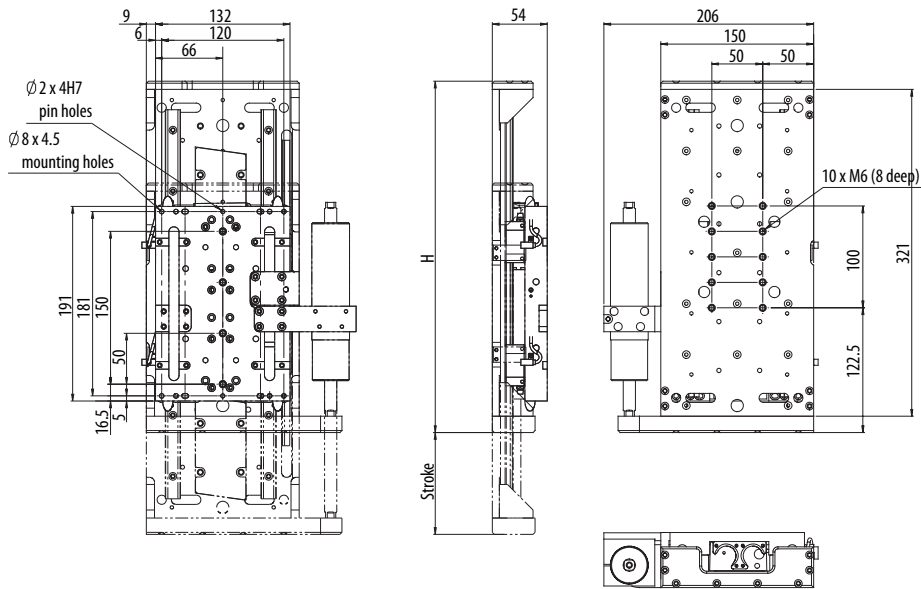
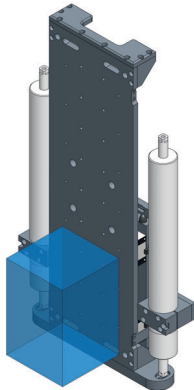
Model	Effective stroke	H	Max. payload compensation	Moving part weight	Complete axis weight
R88L-EA-ZF-0306-0605	50 mm	295 mm	9.5 kg	2.3 kg	5.2 kg
R88L-EA-ZF-0306-0610	100 mm	345 mm	8.9 kg	2.9 kg	6.1 kg
R88L-EA-ZF-0306-0615	150 mm	395 mm	8.2 kg	3.5 kg	7.0 kg
R88L-EA-ZF-0306-0620	200 mm	445 mm	7.4 kg	4.1 kg	7.9 kg
R88L-EA-ZF-0306-0625	250 mm	495 mm	6.6 kg	4.7 kg	8.8 kg
R88L-EA-ZF-0306-0630	300 mm	545 mm	6.0 kg	5.3 kg	9.7 kg

Options

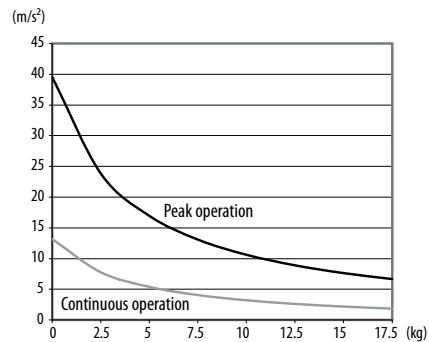
Turn unit



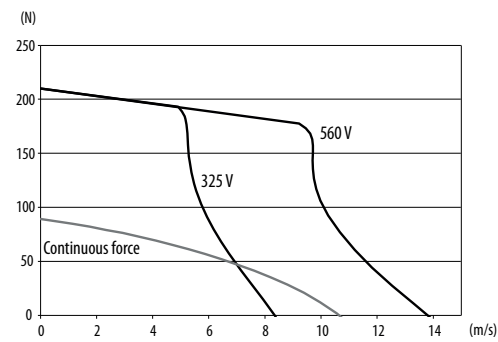
Double compensation increases compensation force by max 60 N



Acceleration-payload characteristics for R88L-EA-ZF-0306-0605



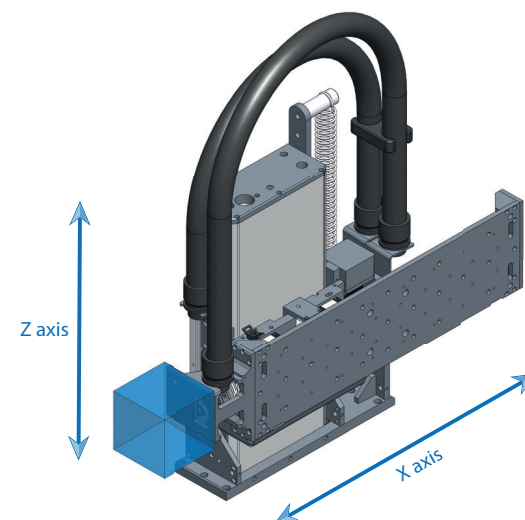
Torque-velocity characteristics (depending on DC-bus voltage)



Pick & Place

R88L-ES-PP

- Max. payload up to 5 kg
- Weight compensation by external pull spring
- Up to 206 mm vertical and 300 mm horizontal stroke

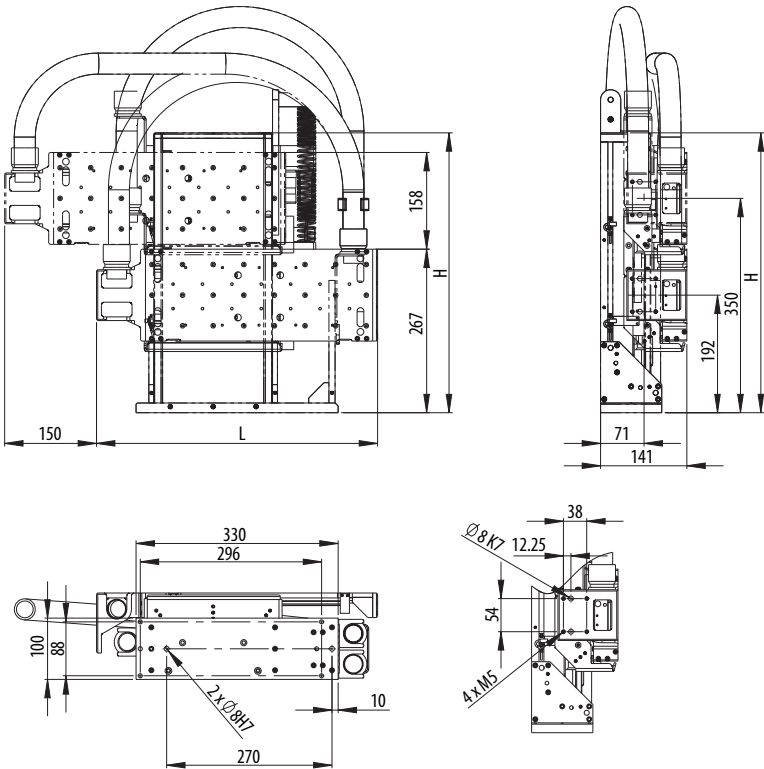


Specifications

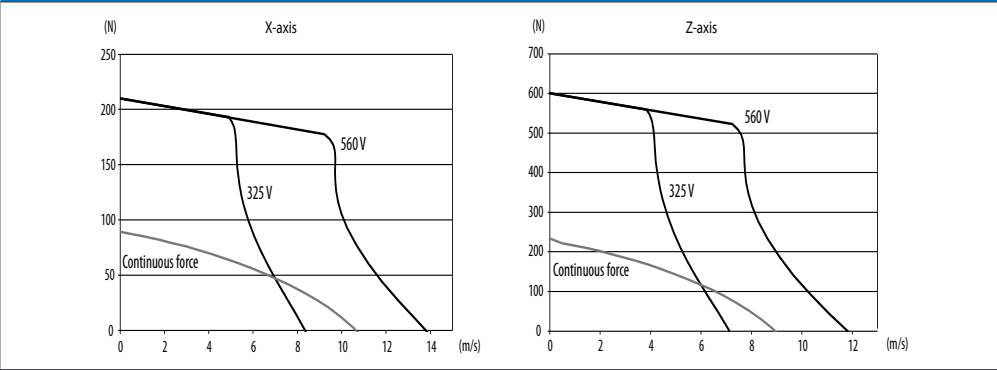
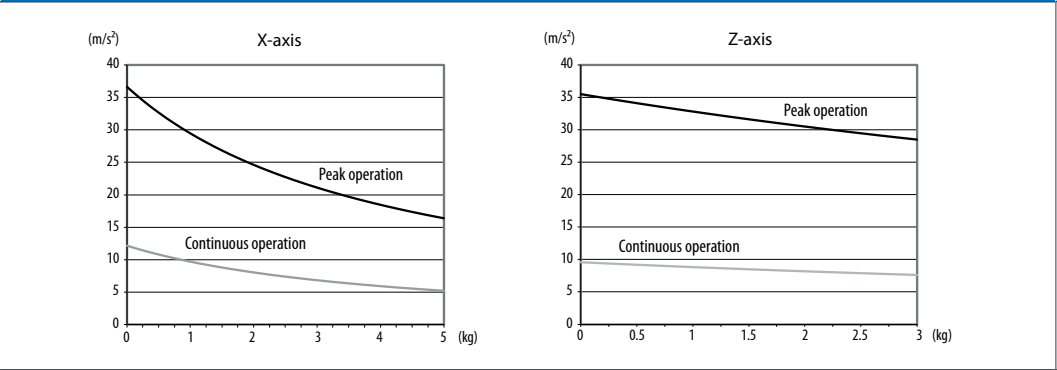
Model	R88L-ES-PP-□□□□-□□□□	X-axis	Z-axis	Model	R88L-ES-PP-□□□□-□□□□	
Motor	Peak force	210 N	600 N	Standard encoder	Type	Renishaw Resolute Optical, absolute, Panasonic protocol
	Peak current	6.1 Arms	15 Arms		Resolution	50 nm
	Constant force	96 N	240 N		Accuracy	±5 μm/m
	Continuous current	2.5 Arms	5.2 Arms	Required items	Drives	230 V: R88D-KN04H-ECT-L (X-axis) / R88D-KN10H-ECT-L (Z-axis)
	Motor force constant	39.7 N/Arms	46.5 N/Arms		Cables	2 x encoder cable: R88A-CRKN-[] 2 x power cable: R88A-CAWK-[]
	BEMF	32 V/m/s	38 V/m/s		Bearings/relubrication	THK SSR15XV / XV THK MG70, AFB-LF, 1000 km, 12 months
	Motor constant	13.78 N/√W	23.87 N/√W	Maintenance	Cable management	2 cable hoses ID 32 mm, 1 cable hose for customer tools
	Phase resistance	2.68 Ω	1.23 Ω		Protection class	IP20
	Phase inductance	17.4 mH	9.2 mH		Encoder reading head supply	5 VDC, max. 250 mA
	Electrical time constant	6.5 ms	7.5 ms	Others	Insulation class	Class B
Pole pitch	24 mm		Max. bus voltage		560 VDC	
Coils used	R88L-EC-FW-0306	R88L-EC-FW-0609	Insulation resistance		500 VDC, min. 10 MΩ	
Weight of the moving part	4.2 kg	12.5 kg	Ambient humidity		20 to 80% (non-condensing)	
Max. payload	5 kg		Altitude		1,000 m	
Uni-directional repeatability	±10 μm		Max. allowable magnet temperature		70°C	
Max. allowable speed	2 m/s					
Stroke	300 mm	110 mm (up to 206 mm)				
Weight compensation	Pull spring, factory adjustable to various payloads					

Dimensions and Motor Curves

Model	Effective stroke	L	H	Moving part weight	Product weight
R88L-ES-PP-D158-B100	100 mm (X-axis) 158 mm (Z-axis)	409 mm	457 mm	2.6 kg (X-axis) 10.9 kg (Z-axis)	21.5 kg
R88L-ES-PP-D158-B150	150 mm (X-axis) 158 mm (Z-axis)	459 mm		3.0 kg (X-axis) 11.3 kg (Z-axis)	22.0 kg
R88L-ES-PP-D158-B200	200 mm (X-axis) 158 mm (Z-axis)	509 mm		3.4 kg (X-axis) 11.7 kg (Z-axis)	22.5 kg
R88L-ES-PP-D158-B250	250 mm (X-axis) 158 mm (Z-axis)	559 mm		3.8 kg (X-axis) 12.1 kg (Z-axis)	23.0 kg
R88L-ES-PP-D158-B300	300 mm (X-axis) 158 mm (Z-axis)	609 mm		4.2 kg (X-axis) 12.5 kg (Z-axis)	23.5 kg
R88L-ES-PP-D206-B100	100 mm (X-axis) 206 mm (Z-axis)	409 mm	505 mm	2.6 kg (X-axis) 10.9 kg (Z-axis)	22.4 kg
R88L-ES-PP-D206-B150	150 mm (X-axis) 206 mm (Z-axis)	459 mm		3.0 kg (X-axis) 11.3 kg (Z-axis)	22.9 kg
R88L-ES-PP-D206-B200	200 mm (X-axis) 206 mm (Z-axis)	509 mm		3.4 kg (X-axis) 11.7 kg (Z-axis)	23.4 kg
R88L-ES-PP-D206-B250	250 mm (X-axis) 206 mm (Z-axis)	559 mm		3.8 kg (X-axis) 12.1 kg (Z-axis)	23.9 kg
R88L-ES-PP-D206-B300	300 mm (X-axis) 206 mm (Z-axis)	609 mm		4.2 kg (X-axis) 12.5 kg (Z-axis)	24.4 kg



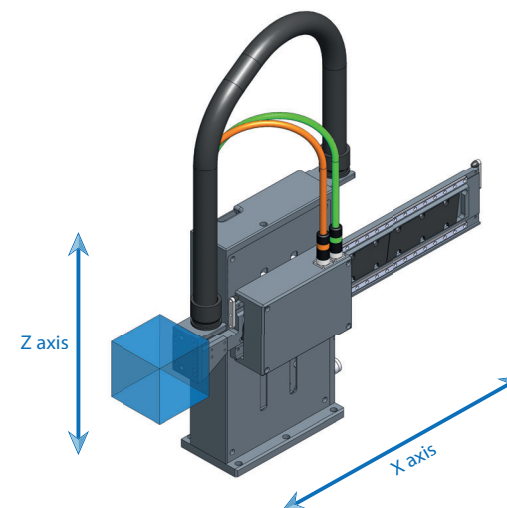
Acceleration-payload characteristics for R88L-ES-PP-□□□□-B300 Torque-velocity characteristics (depending on DC-bus voltage)



Pick & Place

R88L-ES-PM

- Max. payload up to 3 kg
- Moving magnet design in both axes
- All bearing blocks equipped with grease reservoir



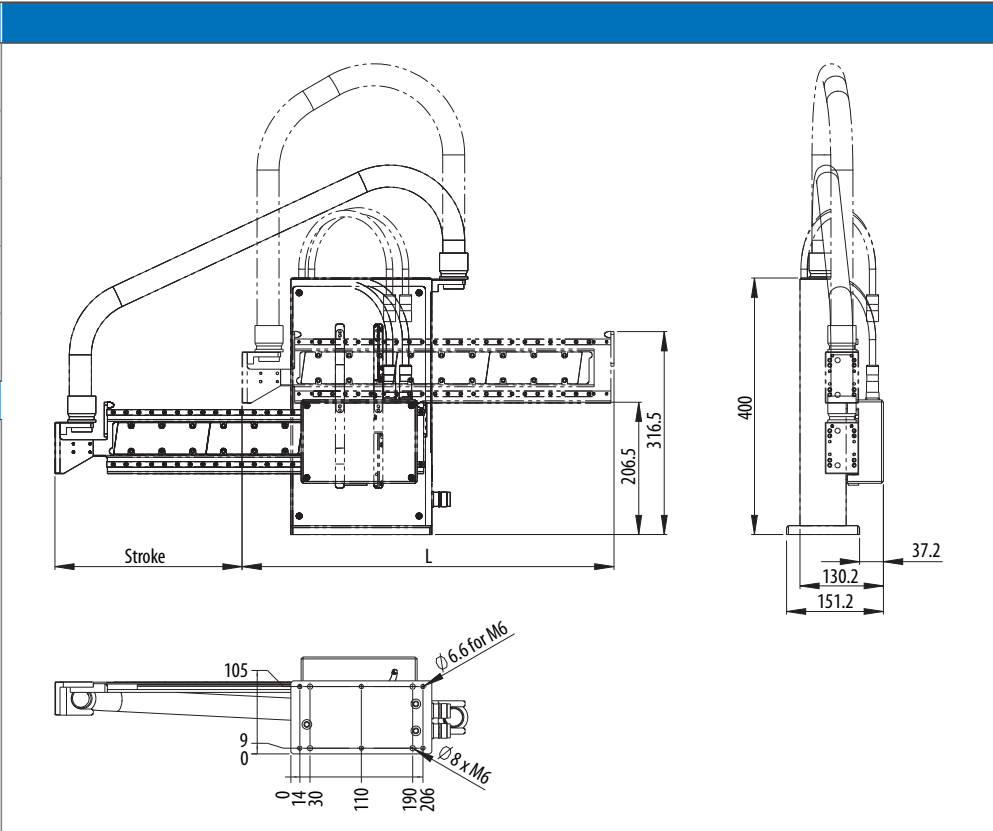
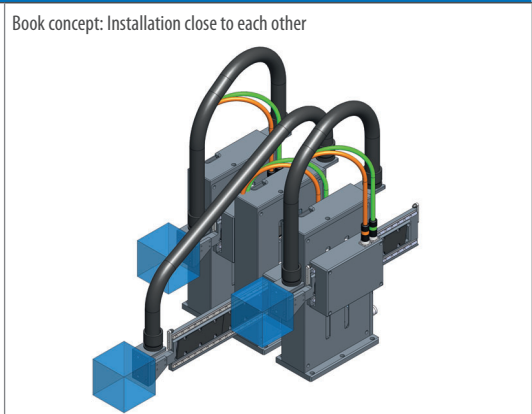
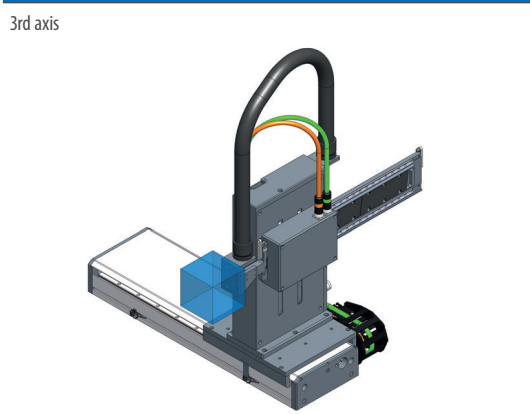
Specifications

Model	R88L-ES-PM-C110-□□□□	X-axis	Z-axis	Model	R88L-ES-PM-C110-□□□□	
Motor	Peak force	210 N	400 N	Standard encoder	Type	Renishaw Resolute Optical, absolute, Panasonic protocol
	Peak current	6.1 Arms	10 Arms		Resolution	50 nm
	Constant force	96 N	160 N		Accuracy	±5 μm/m
	Continuous current	2.4 Arms	3.4 Arms	Required items	Drives	230 V: R88D-KN04H-ECT-L (X-axis) / R88D-KN08H-ECT-L (Z-axis) 400 V: R88D-KN10F-ECT-L (X-axis) / R88D-KN15F-ECT-L (Z-axis)
	Motor force constant	39.7 N/Arms	46.5 N/Arms		Cables	2 x encoder cable: R88A-CRKN-[] 2 x power cable: R88A-CAWL-[]
	BEMF	32 V/m/s	38 V/m/s		Bearings/relubrication	THK SRS9N / THK SSR15XV, QZ relubrication reservoir
	Motor constant	13.78 N/√W	19.49 N/√W		Cable management	1 cable hose for customer tools
	Phase resistance	2.68 Ω	1.83 Ω	Maintenance	Protection class	IP20
	Phase inductance	17.4 mH	13.7 mH		Encoder reading head supply	5 VDC, max. 250 mA
	Electrical time constant	6.5 ms	7.5 ms	Others	Insulation class	Class B
Pole pitch	24 mm		Max. bus voltage		560 VDC	
Mechanics	Coils used	R88L-EC-FW-0306	R88L-EC-FW-0606		Insulation resistance	500 VDC, min. 10 MΩ
	Weight of the moving part	1.8 kg to 2.8 kg	6.9 kg to 7.9 kg		Ambient humidity	20 to 80% (non-condensing)
	Max. payload	3 kg			Altitude	1,000 m
	Uni-directional repeatability	±10 μm			Max. allowable magnet temperature	70°C
	Max. allowable speed	2 m/s				
	Stroke	92 mm to 292 mm	110 mm			
	Weight compensation	Pull spring, factory adjustable to various payloads				

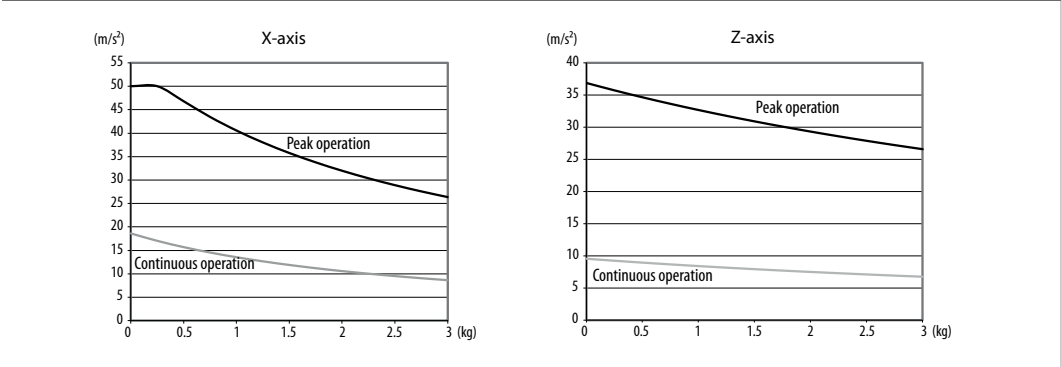
Dimensions and Motor Curves

Model	Effective stroke	L	Moving part weight	Product weight
R88L-ES-PM-C110-B100-0001	92 mm (X-axis) 110 mm (Z-axis)	380 mm	1.8 kg (X-axis) 6.9 kg (Z-axis)	17.8 kg
R88L-ES-PM-C110-B150-0001	142 mm (X-axis) 110 mm (Z-axis)	430 mm	2.05 kg (X-axis) 7.15 kg (Z-axis)	18.1 kg
R88L-ES-PM-C110-B200-0001	192 mm (X-axis) 110 mm (Z-axis)	480 mm	2.3 kg (X-axis) 7.4 kg (Z-axis)	18.4 kg
R88L-ES-PM-C110-B250-0001	242 mm (X-axis) 110 mm (Z-axis)	530 mm	2.55 kg (X-axis) 7.65 kg (Z-axis)	18.7 kg
R88L-ES-PM-C110-B300-0001	292 mm (X-axis) 110 mm (Z-axis)	580 mm	2.8 kg (X-axis) 7.9 kg (Z-axis)	19.0 kg

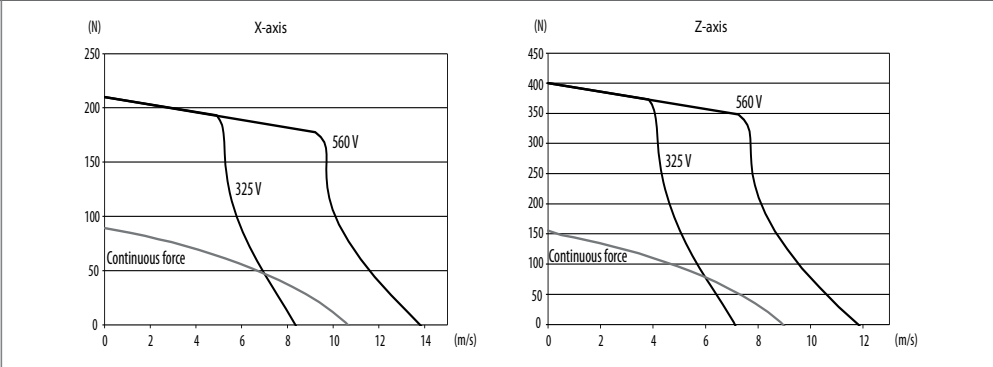
Options



Acceleration-payload characteristics for R88L-ES-PM-C110-B300-0001



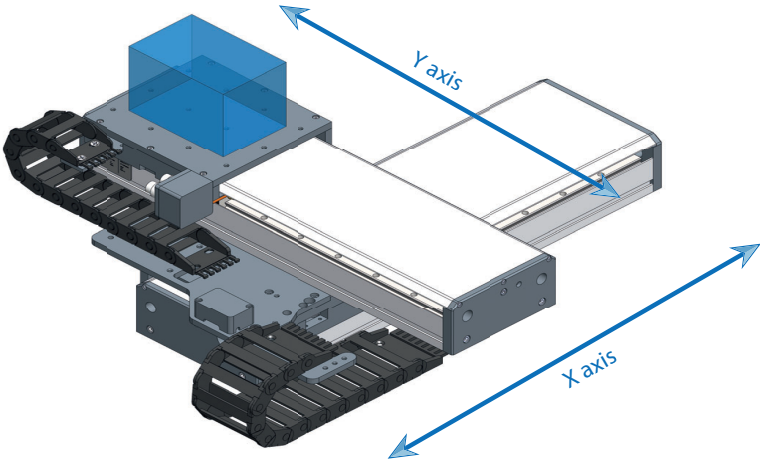
Torque-velocity characteristics (depending on DC-bus voltage)



Cross tables

R88L-ES-XY

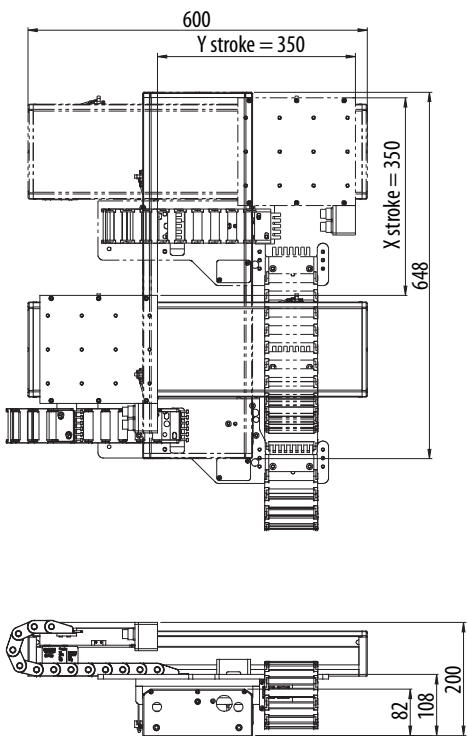
- All R88L-EA-AF linear motor axis individually pairable
- Cross beam linear motor axis up to 830 mm stroke
- Plug & Play out of the box delivery including all cables



Example - Specifications

Model	R88L-ES-XY	X-axis	Y-axis
Motor	Peak force	600 N	210 N
	Peak current	15 Arms	6.1 Arms
	Constant force	240 N	96 N
	Continuous current	5.2 Arms	2.4 Arms
Mechanics	Weight of the moving part	18.3 kg to 28.4 kg	3.9 kg
	Max. payload	10 kg	
	Uni-directional repeatability	±10 µm	
	Max. allowable speed	5 m/s	
	Stroke	158 mm to 2,078 mm	158 mm to 830 mm
Standard encoder		Renishaw Resolute Optical, absolute, Panasonic protocol 50 nm resolution, ±5 µm/m accuracy	
Required items	Drives	230 V: R88D-KN10H-ECT-L (X-axis) / R88D-KN04H-ECT-L (Y-axis) 400 V: R88D-KN20F-ECT-L (X-axis) / R88D-KN10F-ECT-L (Y-axis)	
	Cables	2 x encoder cable: R88A-CRKN-[] 2 x power cable: R88A-CAWL-[]	
Maintenance	Bearings/relubrication	THK SSR25XW, THK SSR15XV, THK SSR15XW THK MG70, AFB-LF, 1000 km, 12 months	
	Cable management	Cable chain, Igus radius 38 mm, 1 Mio cycles cable life time	

Dimensions



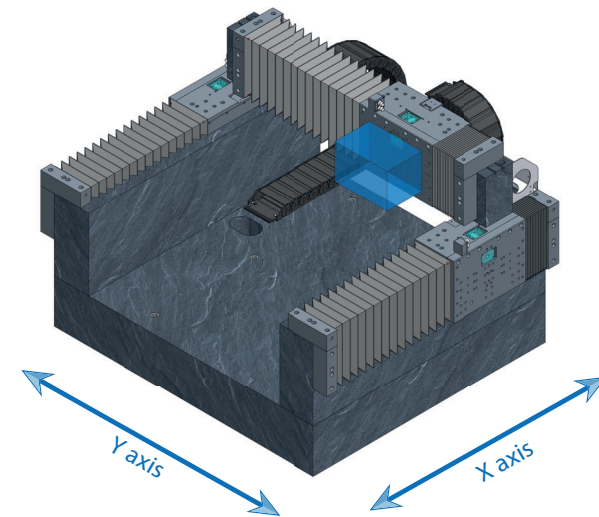
Gantry system

R88L-ES-GT

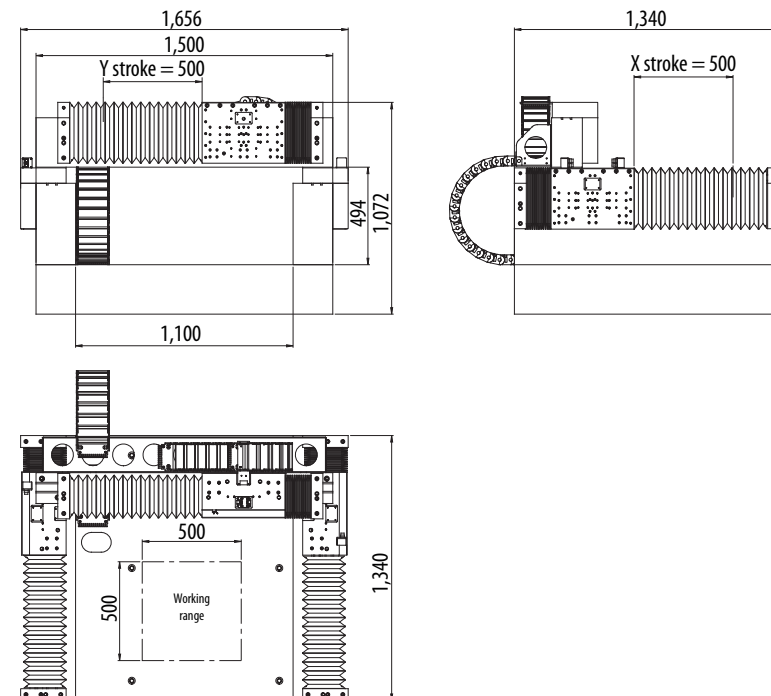
- Built on granite base for best precision and damping behaviour
- Granite cross beam for great temperature stability
- Both axes bellows protected for dust, chips or small component environment

Example - Specifications

Model	R88L-ES-GT	X-axis	Y-axis
Motor	Peak force	2 x 4,800 N	2,000 N
	Peak current	2 x 15 Arms	25 Arms
	Constant force	2 x 2,240 N	760 N
	Continuous current	2 x 6.5 Arms	8.2 Arms
Mechanics	Weight of the moving part	280 kg	30 kg
	Max. payload	50 kg	
	Uni-directional repeatability	±2 µm	
	Max. allowable speed	2 m/s	
	Stroke example	500 mm x 500 mm	
Standard encoder		Renishaw Resolute Optical, absolute, Panasonic protocol 50 nm resolution, ±5 µm/m accuracy	
Required items	Drives	230 V: 2 x R88D-KN15H-ECT-L (X-axis) / R88D-KN15H-ECT-L (Y-axis) 400 V: 2 x R88D-KN20F-ECT-L (X-axis) / R88D-KN30F-ECT-L (Y-axis)	
	Cables	3 x encoder cable: R88A-CRKN-[] 3 x power cable: R88A-CAWL-[]	
Maintenance	Bearings/re lubrication	THK SSR35XW (X-axis), THK SSR25XW (Y-axis) THK MG70, AFB-LF, 1000 km, 12 months	
	Cable management	Cable chain, Igus radius 100 mm or longer, 10 Mio cycles cable life time	



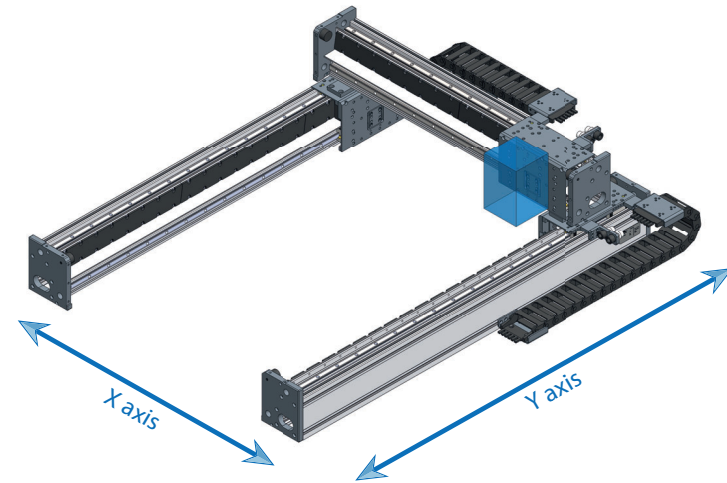
Dimensions



Gantry system

R88L-ES-GF

- Tapped t-head design for easy mechanical integration also for one off projects
- Cable chains have same outer dimensions as linear motor axis
- 'Built your own Gantry'. No OMRON support required



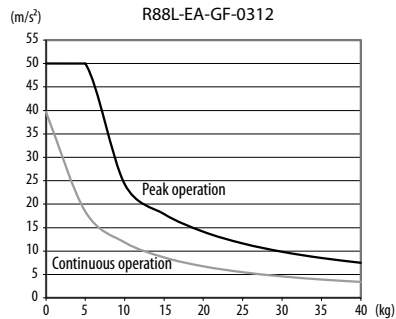
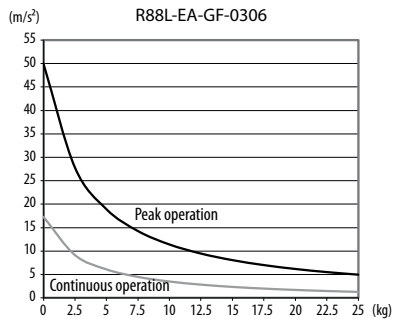
Specifications

Model		R88L-EA-GF-0306	R88L-EA-GF-0312	Model	R88L-ES-GF	
Motor	Peak force	210 N	420 N	Standard encoder	Type	Renishaw Resolute Optical, absolute, Panasonic protocol
	Peak current	6.1 A _{rms}	12.4 A _{rms}		Resolution	50 nm
	Constant force	96 N	240 N		Accuracy	±5 µm/m
	Continuous current	2.4 A _{rms}	6 A _{rms}	Required items	Drives	230 V: R88D-KN10H-ECT-L (X-axis) / 2 x R88D-KN04H-ECT-L (Y-axis) 400 V: R88D-KN20F-ECT-L (X-axis) / 2 x R88D-KN10F-ECT-L (Y-axis)
	Motor force constant	39.7 N/A _{rms}	39 N/A _{rms}		Cables	3 x encoder cable: R88A-CRKN-[] 3 x power cable: R88A-CAWL-[]
	BEMF	32 V/m/s	32 V/m/s		Bearings/re lubrication	THK SSR15XV (X-axis), THK SSR15XW (Y-axis), THK MG70, AFB-LF, 1000 km, 12 months
	Motor constant	13.78 N/√W	19.49 N/√W		Cable management	Cable chain, Igus radius 100 mm or longer, 1 Mio cycles cable life time
	Phase resistance	2.68 Ω	1.35 Ω	Maintenance	Protection class	IP20
	Phase inductance	17.4 mH	9 mH		Encoder reading head supply	5 VDC, max. 250 mA
	Electrical time constant	6.5 ms	6.5 ms	Others	Insulation class	Class B
Mechanics	Pole pitch	24 mm	24 mm		Max. bus voltage	560 VDC
	Coils used	R88L-EC-FW-0306	R88L-EC-FW-0312		Insulation resistance	500 VDC, min. 10 MΩ
	Weight of the moving part	3 kg	4.5 kg		Ambient humidity	20 to 80% (non-condensing)
	Max. payload	25 kg	40 kg		Altitude	1,000 m
	Uni-directional repeatability	±5 µm	±5 µm		Max. allowable magnet temperature	70°C
	Max. allowable speed	5 m/s	5 m/s			
	Stroke	62 mm to 926 mm	62 mm to 830 mm			

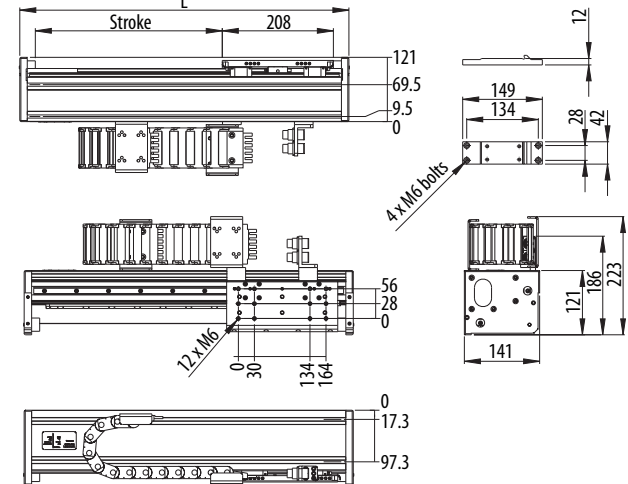
Dimensions and Motor Curves

Model	Effective stroke	L	Moving part weight	Product weight
R88L-EA-GF-0306-0062	62 mm	328 mm	3.0 kg	7.8 kg
R88L-EA-GF-0306-0158	158 mm	424 mm		9.2 kg
R88L-EA-GF-0306-0254	254 mm	520 mm		10.7 kg
R88L-EA-GF-0306-0350	350 mm	616 mm		12.1 kg
R88L-EA-GF-0306-0446	446 mm	712 mm		13.6 kg
R88L-EA-GF-0306-0542	542 mm	808 mm		15.0 kg
R88L-EA-GF-0306-0638	638 mm	904 mm		16.5 kg
R88L-EA-GF-0306-0734	734 mm	1,000 mm		17.9 kg
R88L-EA-GF-0306-0830	830 mm	1,096 mm	4.5 kg	19.3 kg
R88L-EA-GF-0306-0926	926 mm	1,192 mm		20.8 kg
R88L-EA-GF-0312-0062	62 mm	424 mm		10.7 kg
R88L-EA-GF-0312-0158	158 mm	520 mm		12.2 kg
R88L-EA-GF-0312-0254	254 mm	616 mm		13.6 kg
R88L-EA-GF-0312-0350	350 mm	712 mm		15.1 kg
R88L-EA-GF-0312-0446	446 mm	808 mm		16.5 kg
R88L-EA-GF-0312-0542	542 mm	904 mm		18.0 kg
R88L-EA-GF-0312-0638	638 mm	1,000 mm		19.4 kg
R88L-EA-GF-0312-0734	734 mm	1,096 mm		20.8 kg
R88L-EA-GF-0312-0830	830 mm	1,192 mm		22.3 kg

Acceleration-payload characteristics



R88L-EA-GF-0306



R88L-EA-GF-0312

