

## More power in the same package

The new linear motors in the High Performance Series have the same package dimensions as the standard versions, with significantly increased performance. An increase in peak force of 50%, continuous force of 70%, and 20% in speed means nearly double the nominal performance.



### Double the nominal performance

The increased power comes from optimization of the motor windings, the magnet circuit, and heat dissipation. Additionally, in the last few years, additional advances have been made in magnet materials, so that a great part of the performance increase can be attributed to the use of stronger magnets.

With High Performance motors, the user has nearly double the available power, with only a 10% increase in price.

### Mechanical compatibility

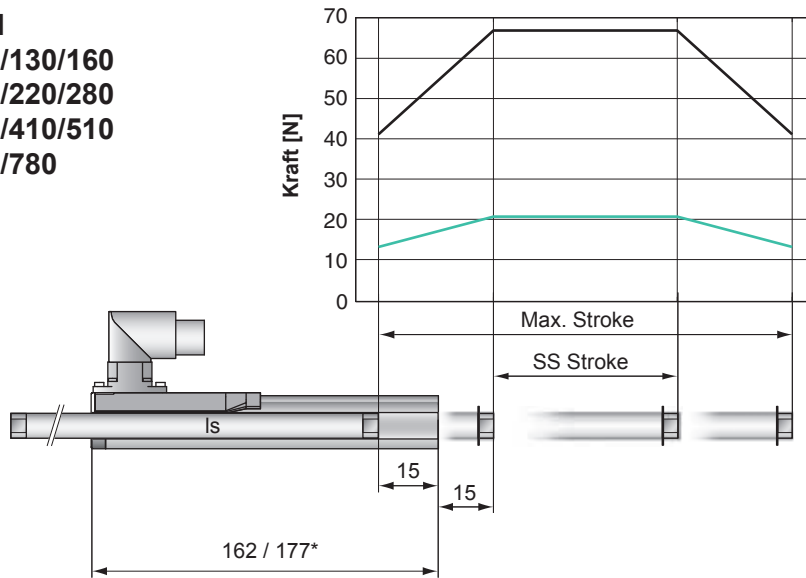
The higher performance with the same form factor allows trouble-free increases in performance for existing machines and systems, without needing to rework the mechanical design. Older machines, too, can be upgraded without a problem. Additionally, with the new linear motors, highly dynamic applications can be realized in a small space, which was previously not possible, or only possible with forced cooling.

### Dynamics like never before

High Performance linear motors set a new standard for extremely dynamic motions that have previously been obtainable only with mechanical cam disks.

The new High Performance motors are used, for example, in packaging machines, as a drive for flexible high-performance loaders for light products. The linear motor pushes 3 products per second a distance of 220 mm into the packaging. With six loaders running in parallel, this results in a machine performance of over 1000 products per minute.

**Peak Force: 67N**  
**Max. Stroke: 100/130/160**  
**200/220/280**  
**350/410/510**  
**690/780**



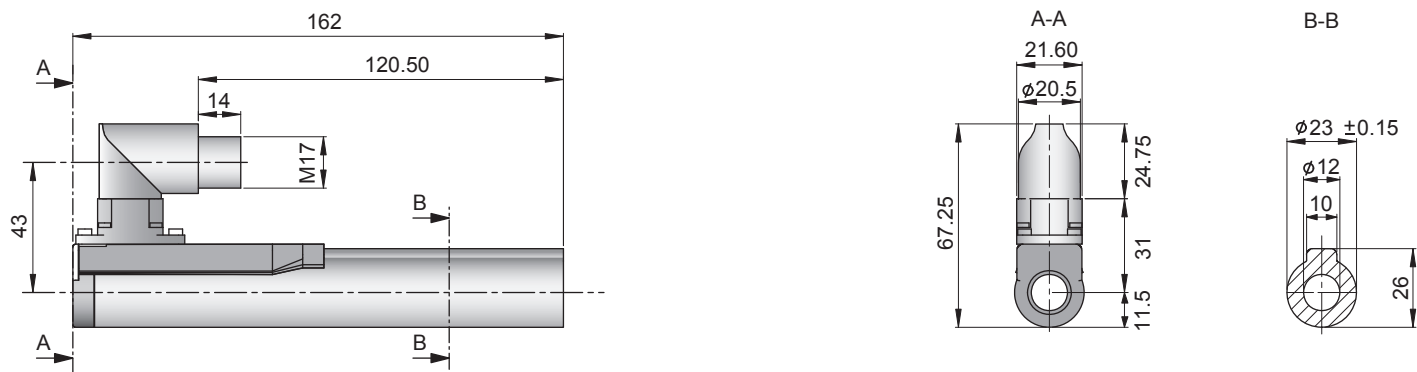
— E1100, 72VDC &  
 E1001, 72VDC  
 — E100, 48VDC

Dimensions in mm  
 \*Cable Type

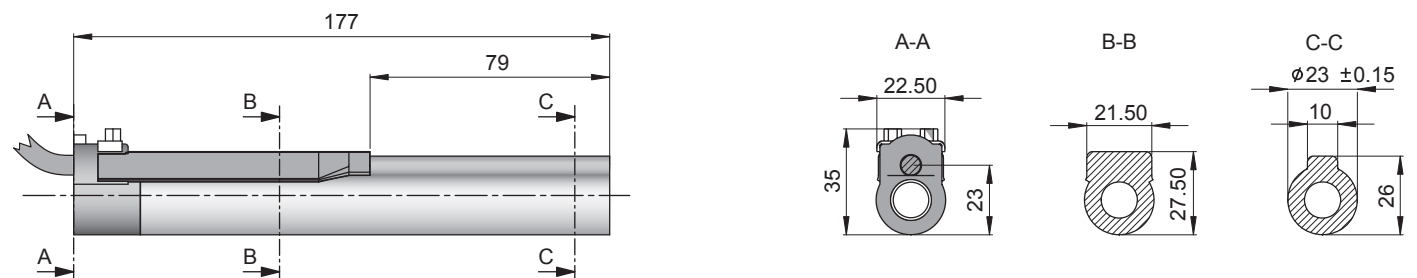
## Motor Spezifikation

	P01-	Connector Type						Cable Type					
		23x80F-HP-R						23x80F-HP-R20					
Extended Stroke ES	mm (in)	100	130	160	200	220	280	350	410	510	690	780	
Standard Stroke SS	mm (in)	40	70	100	140	160	220	290	350	450	630	720	
Peak Force E1100 / E1001	N (lbf)							67 (15.1)					
Peak Force E100	N (lbf)							21 (4.7)					
Cont. Force	N (lbf)							15 (3.5)					
Cont. Force Fan cooling	N (lbf)							25 (5.6)					
Border Force	%							63					
Force Constant	N/A (lbf/A)							9 (2.0)					
Max. Current @ 72VDC	A							7.5					
Max. Current @ 48VDC	A							7.5					
Max. Velocity @ 72VDC	m/s (in/s)							7.3 (287)					
Max. Velocity @ 48VDC	m/s (in/s)							4.9 (193)					
Phase Resis. 25/110 °C	Ohm							4.2/5.5					
Phase Inductance	mH							0.6					
Thermal Resistance	°K/W							5.6					
Thermal Time Const.	sec							1600					
Stator Diameter	mm (in)							23 (0.91)					
Stator Length	mm (in)							162/177* (6.38/6.97*)					
Stator Mass	g (lb)							265 (0.58)					
Slider Diameter	mm (in)							12 (0.47)					
Slider Length	mm (in)	170	200	230	270	290	350	420	480	580	760	850	
Slider Mass	g (lb)	125	150	175	210	230	280	340	390	475	625	700	
Position Repeatability	mm (in)							±0.05 (±0.0020)					
Linearity	%							±0.1					
Repeatability with EPS	mm (in)							±0.01 (±0.0004)					
Linearity with EPS	mm (in)							±0.01 (±0.0004)					

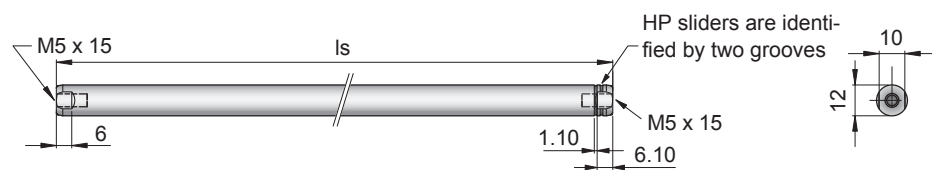
## PS01-23x80F-HP-R



## PS01-23x80F-HP-R20



## PL01-12x.../...-HP



$l_s$	170mm	200mm	230mm
	270mm	290mm	350mm
	420mm	480mm	580mm
	760mm	850mm	

Linear Motor	Stator	Slider
Type	Art. Nr.	Type
P01-23x80F/40x100-HP	-->	& PL01-12x170/130-HP
P01-23x80F/70x130-HP	-->	& PL01-12x200/160-HP
P01-23x80F/100x160-HP	-->	& PL01-12x230/190-HP
P01-23x80F/140x200-HP	-->	& PL01-12x270/230-HP
P01-23x80F/160x220-HP	--> PS01-23x80F-HP-R	& PL01-12x290/250-HP
P01-23x80F/220x280-HP	--> PS01-23x80F-HP-R20	& PL01-12x350/310-HP
P01-23x80F/290x350-HP	-->	& PL01-12x420/380-HP
P01-23x80F/350x410-HP	-->	& PL01-12x480/440-HP
P01-23x80F/450x510-HP	-->	& PL01-12x580/540-HP
P01-23x80F/630x690-HP	-->	& PL01-12x760/720-HP
P01-23x80F/720x780-HP	-->	& PL01-12x850/810-HP

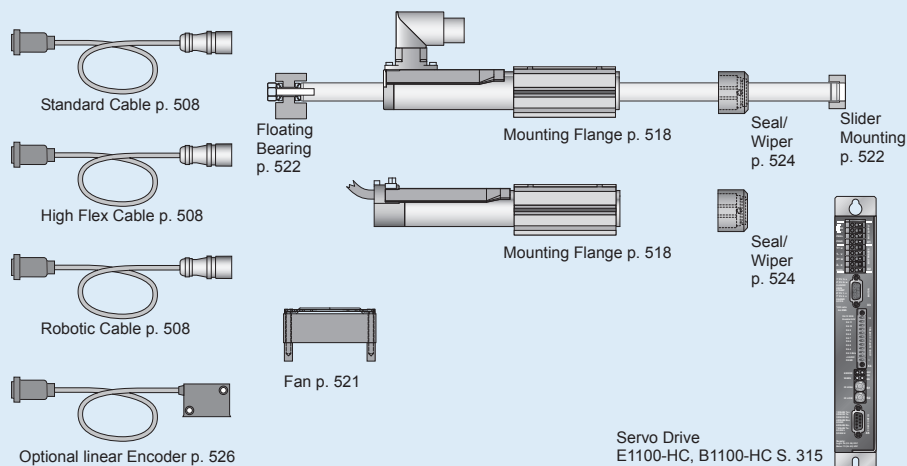
## Connectors

### Motor Connector Wiring

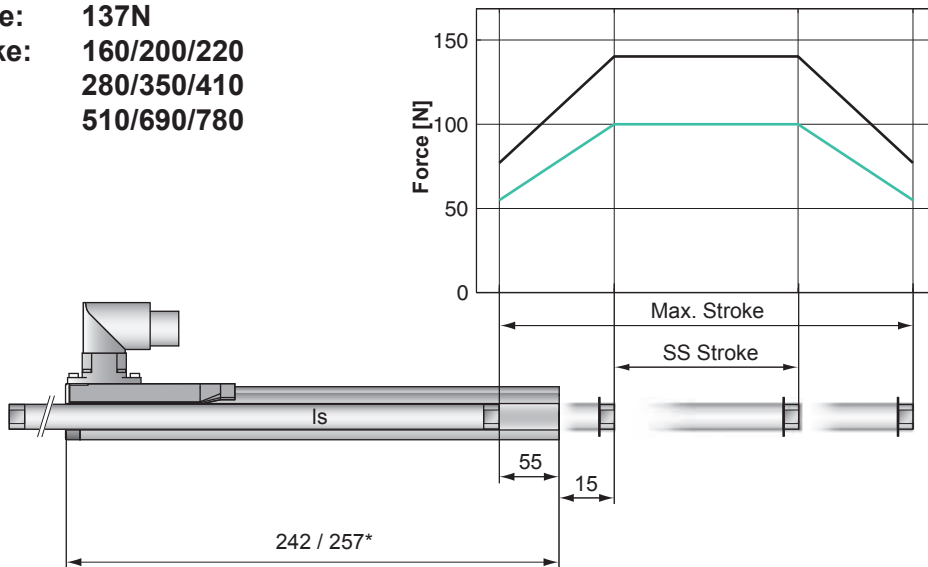
Cable Length:  
P01-23x80...-HP-R20 0.2m

Ph 1+	red	1
Ph 1-	pink	2
Ph 2+	blue	3
Ph 2-	gray	4
+5VDC	white	A
GND	inner Shield	B
Sine	yellow	C
Cosine	green	D
Temp.	black	E
Shield	outer Shield	Case

## Accessoires



**Peak Force:** 137N  
**Max. Stroke:** 160/200/220  
 280/350/410  
 510/690/780



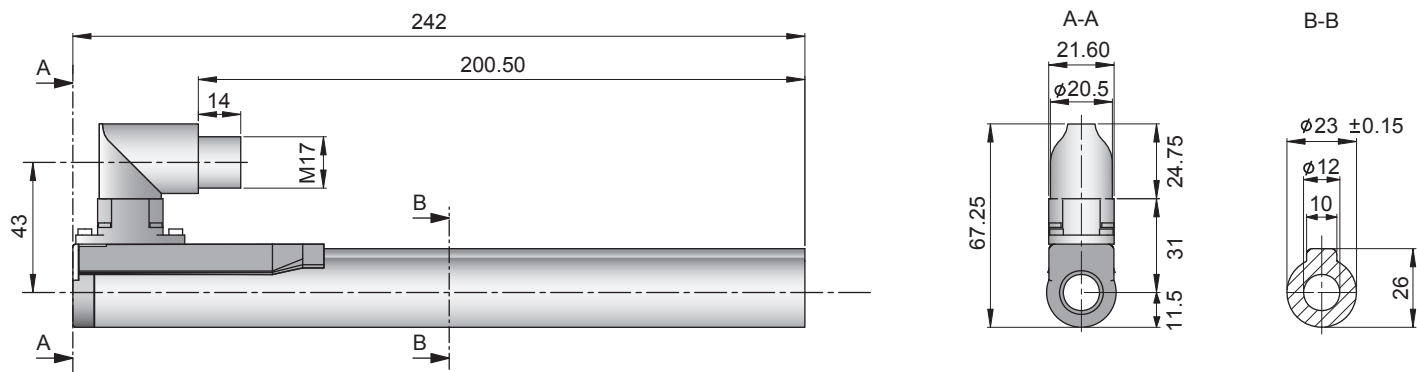
— E1100HC, 72VDC  
 — E1100, 72VDC & E1001, 72VDC

Dimensions in mm  
 \*Cable Type

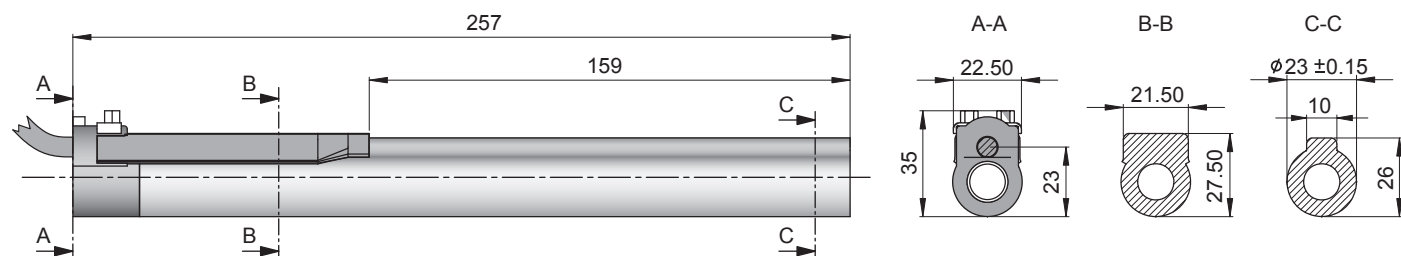
## Motor Specification

	P01-	Connector Type					Cable Type				
		23x160H-HP-R					23x160H-HP-R20				
Extended Stroke ES	mm (in)	160	200	220	280	350	410	510	690	780	
Standard Stroke SS	mm (in)	20	60	80	140	210	270	370	550	640	
Peak Force E1100 - HC	N (lbf)						137 (30.8)				
Peak Force E1100 / E1001	N (lbf)						100 (22.5)				
Cont. Force	N (lbf)						31 (7.0)				
Cont. Force Fan cooling	N (lbf)						48 (10.7)				
Border Force	%						56				
Force Constant	N/A (lbf/A)						12.5 (2.81)				
Max. Current @ 72VDC	A						11				
Max. Current @ 48VDC	A						10				
Max. Velocity @ 72VDC	m/s (in/s)						5.3 (208)				
Max. Velocity @ 48VDC	m/s (in/s)						3.5 (138)				
Phase Resist. 25/80 °C	Ohm						3.8/5.1				
Phase Inductance	mH						0.54				
Thermal Resistance	°K/W						2.7				
Thermal Time Const.	sec						1300				
Stator Diameter	mm (in)						23 (0.91)				
Stator Length	mm (in)						242/257* (9.53/10.12*)				
Stator Mass	g (lb)						450 (0.99)				
Slider Diameter	mm (in)						12 (0.47)				
Slider Length	mm (in)	230	270	290	350	420	480	580	760	850	
Slider Mass	g (lb)	175	210	230	280	340	390	475	625	700	
Position Repeatability	mm (in)						±0.05 (±0.0020)				
Linearity	%						±0.1				
Repeatability with EPS	mm (in)						±0.01 (±0.0004)				
Linearity with EPS	mm (in)						±0.01 (±0.0004)				

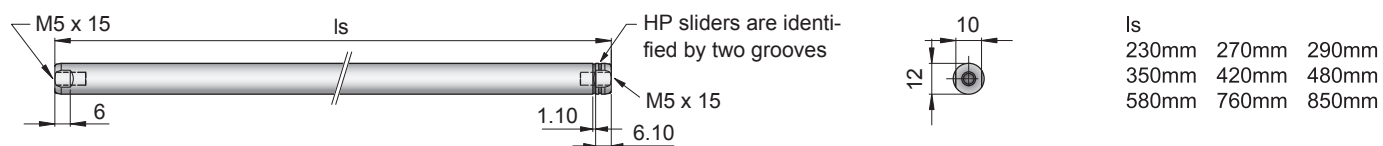
## PS01-23x160H-HP-R



## PS01-23x160H-HP-R20



## PL01-12x.../...-HP



Linear Motor	Art. Nr.	Stator	Art. No.	Slider	Art No.
Type		Type		Type	
P01-23x160H/20x160-HP	-->			& PL01-12x230/190-HP	0150-1519
P01-23x160H/60x200-HP	-->			& PL01-12x270/230-HP	0150-1520
P01-23x160H/80x220-HP	-->			& PL01-12x290/250-HP	0150-1521
P01-23x160H/140x280-HP	-->	PS01-23x160H-HP-R	0150-1254	& PL01-12x350/310-HP	0150-1522
P01-23x160H/210x350-HP	-->	PS01-23x160H-HP-R20	0150-1255	& PL01-12x420/380-HP	0150-1523
P01-23x160H/270x410-HP	-->			& PL01-12x480/440-HP	0150-1524
P01-23x160H/370x510-HP	-->			& PL01-12x580/540-HP	0150-1525
P01-23x160H/550x690-HP	-->			& PL01-12x760/720-HP	0150-1526
P01-23x160H/640x780-HP	-->			& PL01-12x850/810-HP	0150-1527

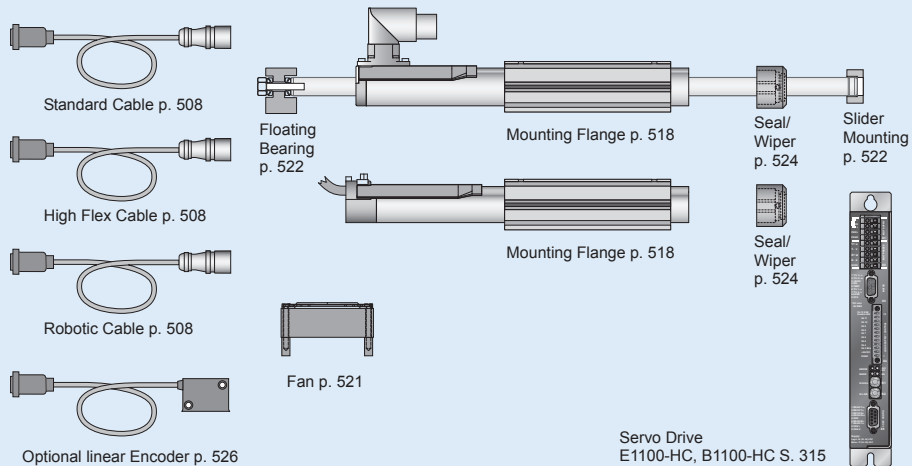
## Connectors

### Motor Connector Wiring

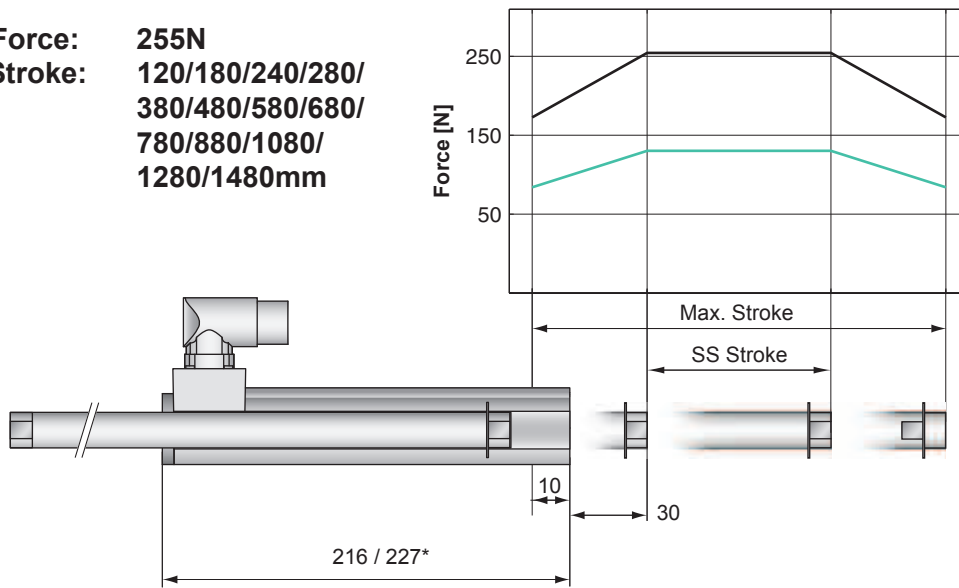
Cable Length:  
P01-23x160...-HP-R20 0.2m

Ph 1+	red	1
Ph 1-	pink	2
Ph 2+	blue	3
Ph 2-	gray	4
+5VDC	white	A
GND	inner Shield	B
Sine	yellow	C
Cosine	green	D
Temp.	black	E
Shield	outer Shield	Case

## Accessoires



**Peak Force: 255N**  
**Max. Stroke: 120/180/240/280/  
 380/480/580/680/  
 780/880/1080/  
 1280/1480mm**



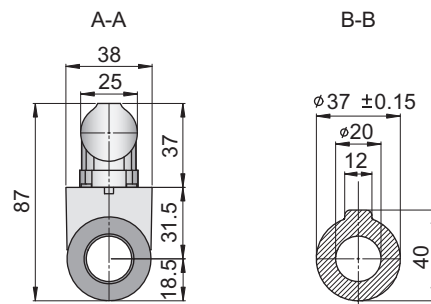
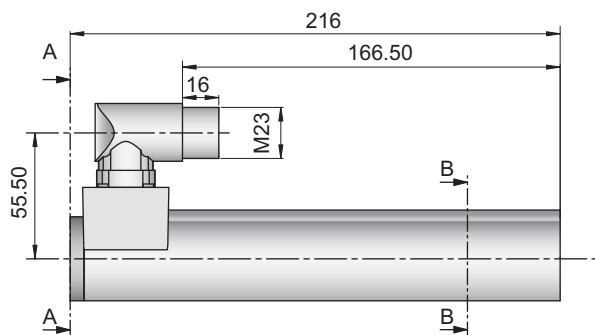
— E1100-HC, 72VDC  
 — E1100, 72VDC & E1001, 72VDC

Dimensions in mm  
 \*Cable Type

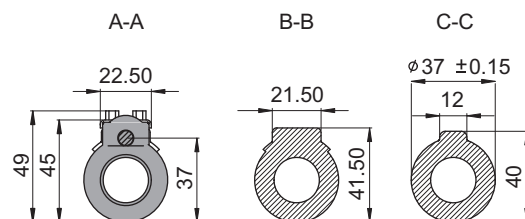
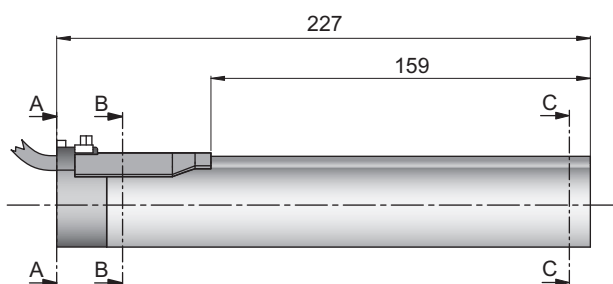
## Motor Specification

	P01-	Connector Type							Cable Type						
		37x120F-HP-C							37x120F-HP-C20						
Extended Stroke ES	mm (in)	120	180	240	280	380	480	580	680	780	880	1080	1280	1480	
Standard Stroke SS	mm (in)	40	100	160	200	300	400	500	600	700	800	1000	1200	1400	
Peak Force E1100 - HC	N (lbf)								255 (57.3)						
Peak Force E1100 / E1001	N (lbf)								136 (30.6)						
Cont. Force	N (lbf)								51 (11.5)						
Cont. Force Fan cooling	N (lbf)								92 (20.7)						
Border Force	%								67						
Force Constant	N/A (lbf/A)								17 (3.83)						
Max. Current @ 72VDC	A								15						
Max. Current @ 48VDC	A								15						
Max. Velocity @ 72VDC	m/s (in/s)								3.9 (154)						
Max. Velocity @ 48VDC	m/s (in/s)								2.6 (102)						
Phase Resis. 25/110 °C	Ohm								2.35/3.2						
Phase Inductance	mH								1.6						
Thermal Resistance	°K/W								3.2						
Thermal Time Const.	sec								3100						
Stator Diameter	mm (in)								37 (1.46)						
Stator Length	mm (in)								216/227* (8.5/8.94*)						
Stator Mass	g (lb)								740 (1.63)						
Slider Diameter	mm (in)								20 (0.79)						
Slider Length	mm (in)	240	300	360	400	500	600	700	800	900	1000	1200	1400	1600	
Slider Mass	g (lb)	510	650	800	880	1110	1350	1580	1810	2040	2270	2740	3170	3640	
Position Repeatability	mm (in)								±0.05 (±0.0020)						
Linearity	%								±0.1						
Repeatability with EPS	mm (in)								±0.01 (±0.0004)						
Linearity with EPS	mm (in)								±0.01 (±0.0004)						

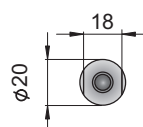
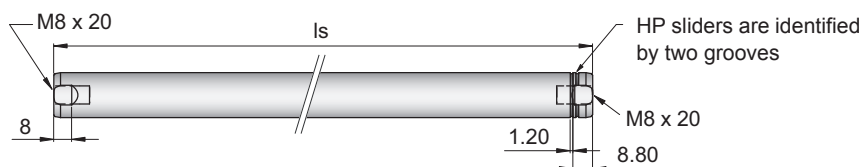
## PS01-37x120F-HP-C



## PS01-37x120F-HP-C20



## PL01-20x.../...-HP



1s	240mm	300mm	360mm
	400mm	500mm	600mm
	700mm	800mm	900mm
	1000mm	1200mm	
	1400mm	1600mm	

Linear Motor		Stator		Slider	
Type	Art. Nr.	Type	Art. No.	Type	Art No.
P01-37x120F/40x120-HP	-->			& PL01-20x240/180-HP	0150-1505
P01-37x120F/100x180-HP	-->			& PL01-20x300/240-HP	0150-1506
P01-37x120F/160x240-HP	-->			& PL01-20x360/300-HP	0150-1507
P01-37x120F/200x280-HP	-->			& PL01-20x400/340-HP	0150-1508
P01-37x120F/300x380-HP	-->			& PL01-20x500/440-HP	0150-1509
P01-37x120F/400x480-HP	-->	PS01-37x120F-HP-C	0150-1251	& PL01-20x600/540-HP	0150-1510
P01-37x120F/500x580-HP	-->	PS01-37x120F-HP-C20	0150-1252	& PL01-20x700/640-HP	0150-1511
P01-37x120F/600x680-HP	-->			& PL01-20x800/740-HP	0150-1512
P01-37x120F/700x780-HP	-->			& PL01-20x900/840-HP	0150-1513
P01-37x120F/800x880-HP	-->			& PL01-20x1000/940-HP	0150-1514
P01-37x120F/1000x1080-HP	-->			& PL01-20x1200/1140-HP	0150-1515
P01-37x120F/1200x1280-HP	-->			& PL01-20x1400/1340-HP	0150-1516
P01-37x120F/1400x1480-HP	-->			& PL01-20x1600/1540-HP	0150-1517

## Connectors

### Motor Connector Wiring

Cable Length:  
P01-37x120...-HP-C20 0.2m

Ph 1+	red	A
Ph 1-	pink	B
Ph 2+	blue	C
Ph 2-	grey	D
+5VDC	white	E
GND	inner Shield	F
Sine	yellow	G
Cosine	green	H
Temp.	black	L
Shield	outer Shield	Case

## Accessoires

