

## High Performance Linear Motors

### More power in the same package

The new linear motors in the High Performance Series P01-37x120F-HP have the same package dimensions as the standard versions, with nearly twice the nominal performance. An increase in peak force of 50%, continuous force of 70%, and 20% in speed means nearly double the nominal performance.

**+50% Peak Force**  
**+70% Continuous Force**



**High Performance  
Linear Motor Series  
P01-37x120F-HP**



**Standard  
Linear Motor  
Series P01-37x120**

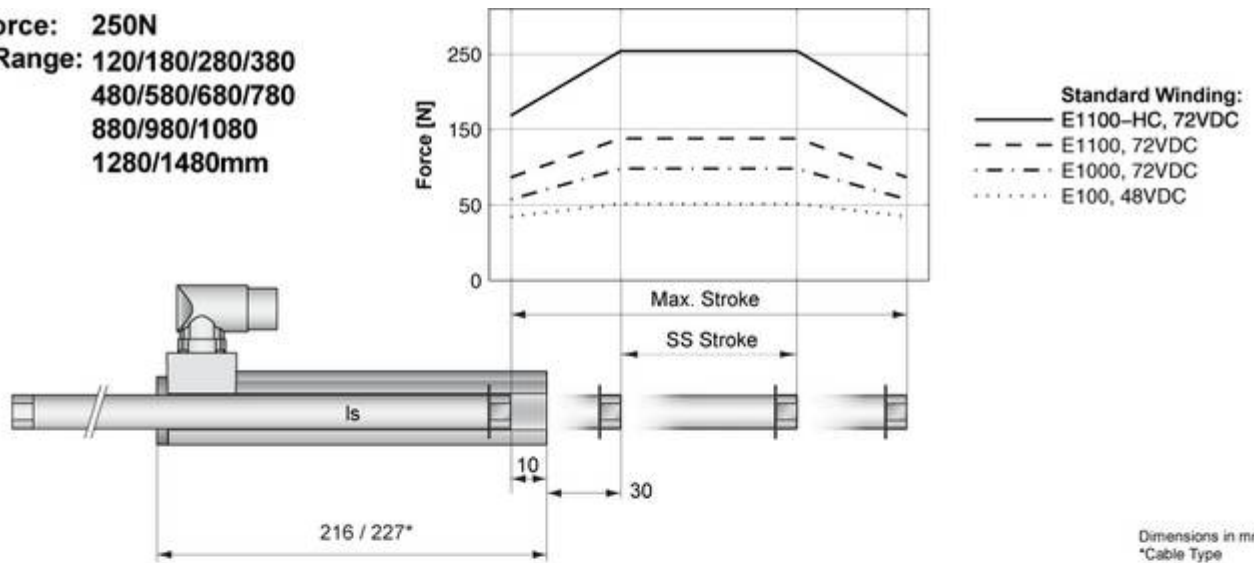
The increased performance was achieved with improvements in motor windings and a large number of optimizations in the magnet circuit and heat transfer. Additionally, in the last few years, additional advances have been made in magnet materials, so that a great part of the performance increase can be attributed to the use of stronger magnets. The user can obtain nearly double the nominal performance for an additional cost of only 10%.

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 on site without a problem. Additionally, with the new linear motors, new, highly dynamic applications can be realized in a small space, which was previously not possible, or only possible with forced cooling.

The new High Performance Linear Motors P01-37x120F-HP are available from stock starting in December 2007.

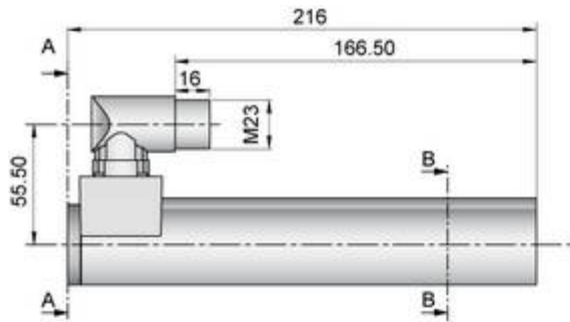
## Motor Data P01-37x120F-HP

**Peak Force: 250N**  
**Stroke Range: 120/180/280/380**  
**480/580/680/780**  
**880/980/1080**  
**1280/1480mm**

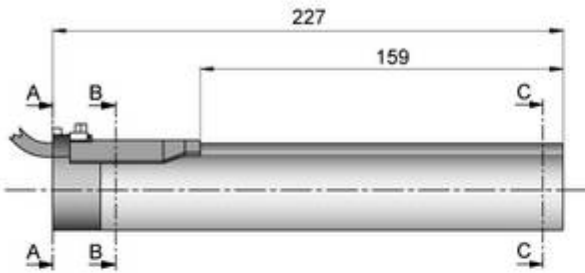
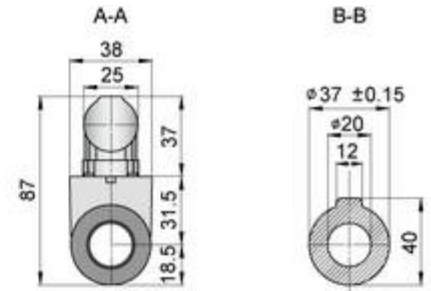


### Motor Specification

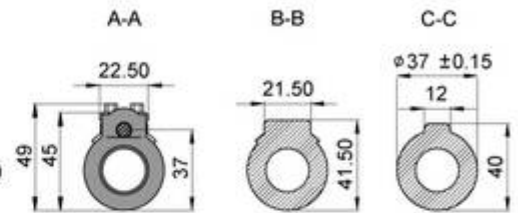
		Connector Type	Cable Type
		P01-37x120F-HP-C	P01-37x120F-HP-C20
Stroke Range	mm (in)	120 / 180 / 280 / 380 / 480 / 580 / 680 / 780 / 880 / 980 / 1080 / 1280 / 1480	
Stroke SS	mm (in)	40 / 100 / 200 / 300 / 400 / 500 / 600 / 700 / 800 / 900 / 1000 / 1200 / 1400	
Peak Force E100/1000	N (lbf)	51/102 (11.5/22.9)	
Peak Force E1100/-HC	N (lbf)	136/255 (30.6/57.3)	
Cont. Force	N (lbf)	51 (11.5)	
Cont. Force Fan cooling	N (lbf)	92 (20.7)	
Border Force	%	67	
Force Constant	N/A (lb/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 Resist. 25/80°C	Ohm	2.35 / 2.9	
Phase Inductance	mH	1.35	
Thermal Resistance	*K/W	1.7	
Thermal Time Const.	sec	1600	
Stator Diameter	mm (in)	37 (1.46)	
Stator Length	mm (in)	227 (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)	490 / 629 / 806 / 896 / 1094 / 1327 / 1559 / 1792 / 2024 / 2257 / 2722 / 3187 / 3652	
Position Repeatability	mm (in)	±0.05 (±0.0020)	
Linearity	%	±0.4	
Position Rep. with ES	mm (in)	±0.01 (±0.0004)	
Linearity with ES	mm (in)	±0.01 (±0.0004)	



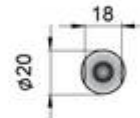
PS01-37x120F-HP-C



PS01-37x120F-HP-C20



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



Linear Motor Type	Art. No.	Stator Type	Art. No.	Slider Type	Art. No.
P01-37x120-HP/40x120-C	-->			& PL01-20x240/160	0150-1505
P01-37x120-HP/100x180-C	-->			& PL01-20x300/240	0150-1506
P01-37x120-HP/200x280-C	-->			& PL01-20x260/300	0150-1507
P01-37x120-HP/300x380-C	-->			& PL01-20x400/340	0150-1508
P01-37x120-HP/400x480-C	-->			& PL01-20x500/440	0150-1509
P01-37x120-HP/500x580-C	-->	PS01-37x120F-HP-C	0150-1251	& PL01-20x600/540	0150-1510
P01-37x120-HP/600x680-C	-->	PS01-37x120F-HP-C20	0150-1252	& PL01-20x700/640	0150-1511
P01-37x120-HP/700x780-C	-->			& PL01-20x800/740	0150-1512
P01-37x120-HP/800x880-C	-->			& PL01-20x900/840	0150-1513
P01-37x120-HP/900x980-C	-->			& PL01-20x1000/940	0150-1514
P01-37x120-HP/1000x1080-C	-->			& PL01-20x1200/1140	0150-1515
P01-37x120-HP/1200x1280-C	-->			& PL01-20x1400/1340	0150-1516
P01-37x120-HP/1400x1480-C	-->			& PL01-20x1600/1540	0150-1517

## Connectors

### Motor Connector Wiring

Cable Length:		P01-37...-C	P01-37...-C20	P01-37...
P01-37x120...	1.5m	A	B	1
P01-37x120...-C20	0.2m	C	D	2
Ph 1+	red	E	F	3
Ph 1-	pink	G	H	4
Ph 2+	blue	I	J	5
Ph 2-	gray	K	L	6
+5VDC	white	M	N	7
GND	inner Shield	O	P	8
Sine	yellow	Q	R	9
Cosine	green	S	T	10
Temp.	black	U	V	
Shield	outer Shield	Case		

## Accessoires in Databook No. 14

