

A close-up, angled view of a HEPCO HPS Powerslide-2 guided rodless cylinder. The main body is a light grey or silver color, featuring a series of circular mounting holes along its length. A dark grey or black mounting bracket is attached to the side. The background is a solid, vibrant red.

HEPCO

HPS
Powerslide-2
guided rodless
cylinder

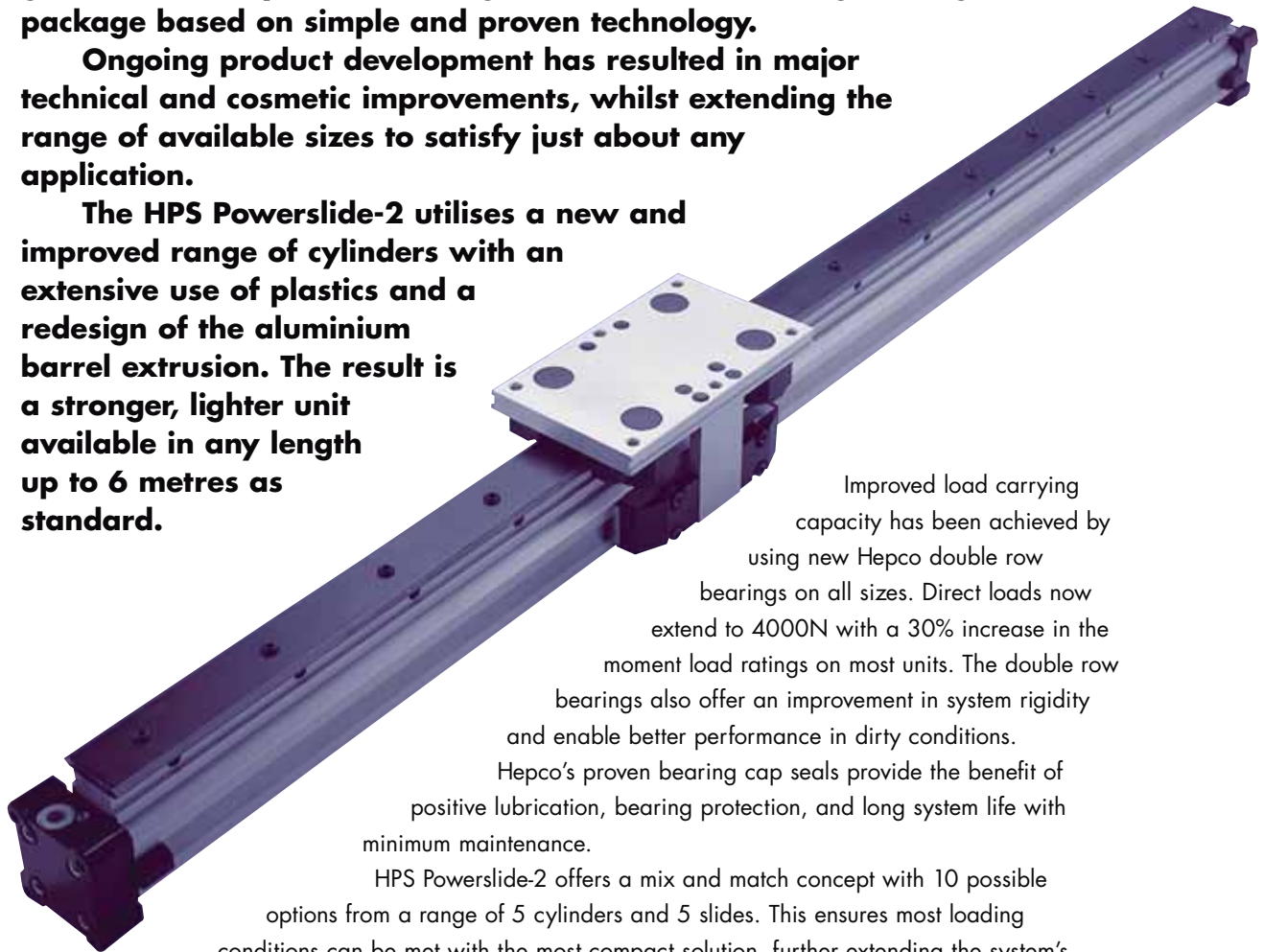
NEW SHOCK ABSORBER MOUNTING OPTIONS
SEE PAGE 6

Introducing the Hepco HPS Powerslide-2

The original Hepco Powerslide was the first ever bearing-based guided rodless cylinder, offering the user a reduced engineering package based on simple and proven technology.

Ongoing product development has resulted in major technical and cosmetic improvements, whilst extending the range of available sizes to satisfy just about any application.

The HPS Powerslide-2 utilises a new and improved range of cylinders with an extensive use of plastics and a redesign of the aluminium barrel extrusion. The result is a stronger, lighter unit available in any length up to 6 metres as standard.



Improved load carrying capacity has been achieved by using new Hepco double row bearings on all sizes. Direct loads now extend to 4000N with a 30% increase in the moment load ratings on most units. The double row bearings also offer an improvement in system rigidity and enable better performance in dirty conditions. Hepco's proven bearing cap seals provide the benefit of positive lubrication, bearing protection, and long system life with minimum maintenance.

HPS Powerslide-2 offers a mix and match concept with 10 possible options from a range of 5 cylinders and 5 slides. This ensures most loading conditions can be met with the most compact solution, further extending the system's potential areas of application. Furthermore, for the more hostile environment or food industry applications a corrosion resistant version is available.

Features and Benefits

- Hardened slideway for long life
- Self cleaning 'vee' bearing system well suited to harsh environments
- Reduced engineering package saves design and installation time
- Strong aluminium barrel available up to 6m can be used as a self supporting beam
- Mix and match family of cylinders and slides saves time and cost
- Purpose made carriage plate for simple mounting of customer components
- Simple mounting methods reduce installation costs
- Proximity sensing on all free barrel faces for installation flexibility
- Corrosion resistant option for harsh/food environments
- Cap seals provide lubrication with low maintenance
- Improved direct and moment load capacities

Proximity Switches

		Part Number		
		HPS	RSO/ISN	J
Prefix	<u>HPS</u> denotes product range	_____		
Part No./ Switch Type	<u>RS</u> denotes Reed Switch <u>C</u> for normally closed <u>O</u> for normally open <u>IS</u> denotes Inductive Switch <u>N</u> for NPN <u>P</u> for PNP	_____		
Options	<u>J</u> denotes 100mm jack plug lead (see Switch Cable) <u>U</u> denotes 5m unterminated lead	_____		
Switch Cable	2.5m or 5m with female plug connector (order with Proximity Switch option J above)	HPS SC 2.5/5		

Note: switch options HPS RSC J and HPS ISN J are not available

Accessories

Slide Bearing Adjustment Tools

Slide bearings are factory set and should not require adjustment under normal working conditions, however for planned maintenance (see service packs below) it may be necessary to dismantle and readjust the slide mechanism. Details of this procedure are given in a separate Slide Maintenance Instructions leaflet supplied with each unit purchased.

Adjusting Wrench

Requires partial system disassembly before adjustment can take place, however is the preferred means of adjustment due to the extra control given.

AT 25

Part No. AT 25 for HPS 16/25, 25/25, 25/35, 32/35
AT 34 for HPS 25/44, 32/44, 40/44, 40/60, 50/60
AT 54 for HPS 50/76

Socket Tool

For use in conjunction with a standard metric Allen Key - allows bearing adjustment without cap seal removal.

RT 8

Part No. RT 8 for HPS 16/25, 25/25, 25/35, 32/35
RT 10 for HPS 25/44, 32/44, 40/44, 40/60, 50/60
RT 14 for HPS 50/76

Service Packs

For the Slide System: Includes 4 replacement Cap Seals for the bearings, plus a Slide Bearing Adjustment Tool (adjusting wrench).

Order by quoting the first part of the main cylinder part no. plus SSP **e.g. HPC 16/25 SSP**

For the Cylinder: Includes cleaning tool, grease, replacement inner and outer bands cut to length, plus all 'O' rings and seals required to repair or carry out planned maintenance.

Order by quoting all of the main cylinder part no. including stroke length, plus CSP **e.g. HPS 16/25 2040 V CSP**

Shock Absorbers are also available - please ask Hepco for full details.

Ordering Details

HPS Powerslide-2 can be specified in any stroke length up to 6 metres as standard (longer on application). See page 3 for the available

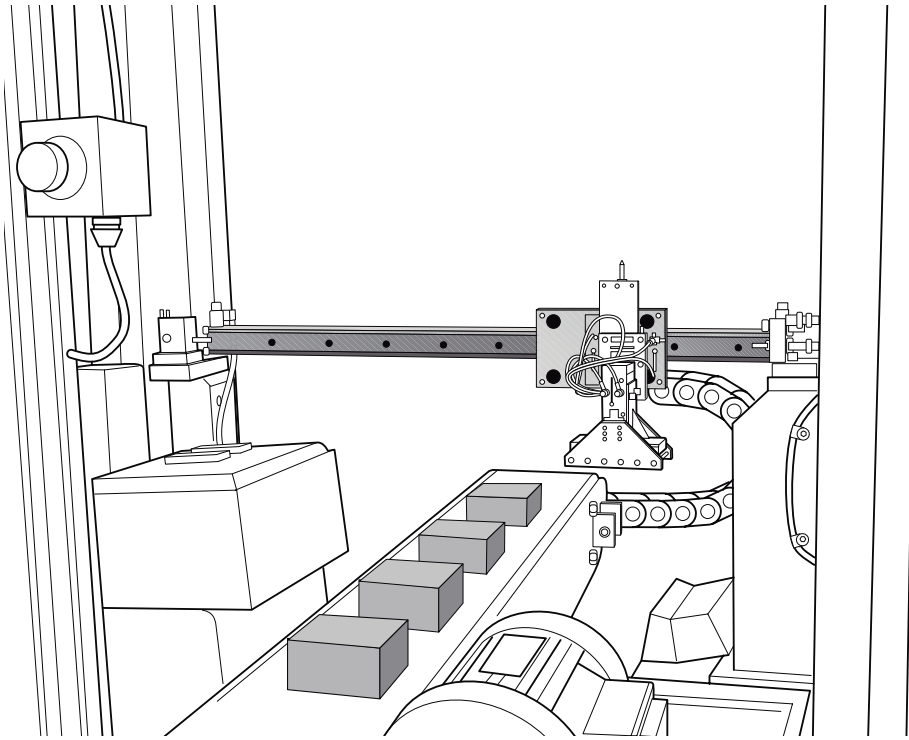
cylinder/slide combinations. A number of options, including a Corrosion Resistant System are available, together with accessories and service packs.

		Part Number			
Main Cylinder		HPS	16/25	2150	V
Prefix	<u>HPS</u> denotes Standard version <u>HPC</u> denotes Corrosion Resistant version				
Size	e.g. <u>16</u> denotes Cylinder Diameter (mm) e.g. <u>25</u> denotes Slide Width (mm) (see page 3 for available combinations)				
Length	e.g. <u>2150</u> denotes required Stroke Length (see drawing on page 3 for total unit length)				
Options	<u>V</u> denotes Viton® Seals option <u>S</u> denotes Slow Speed Grease option (Options should be left blank if standard seals and grease are required - see page 5 for relevant conditions)				

		HPS	ECM	16
Prefix	<u>HPS</u> denotes Standard version <u>HPC</u> denotes Corrosion Resistant version			
Part No.	<u>ECM</u> denotes End Cap Mounting			
Size	<u>16</u> denotes the Cylinder Diameter (see page 6 for range of cylinder sizes)			

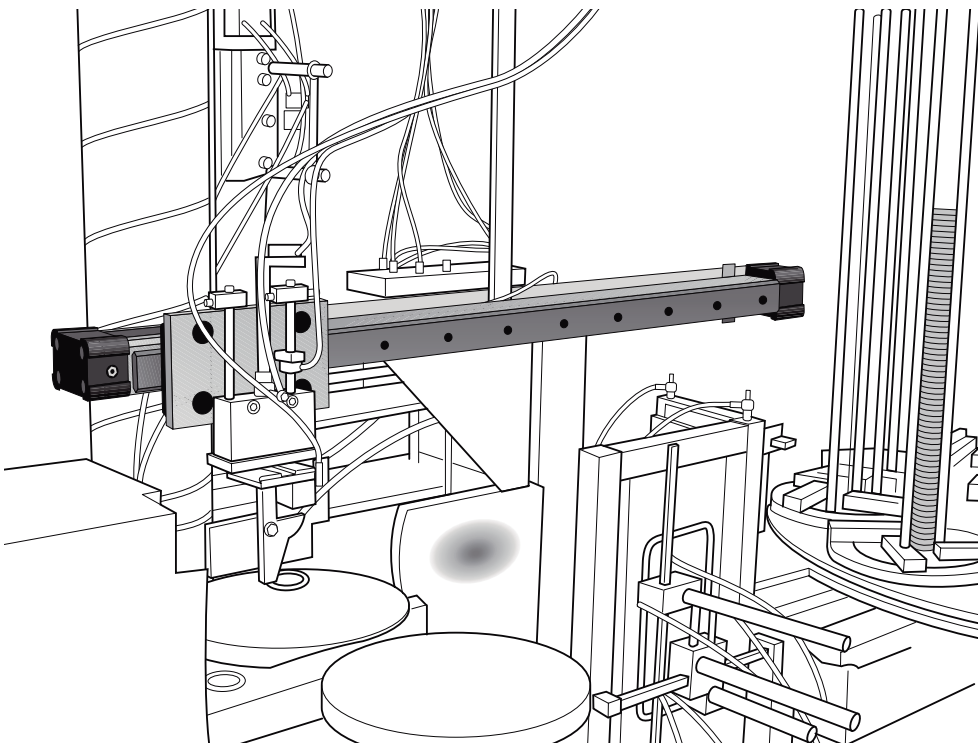
		HPS	MSS	25	A
Prefix	<u>HPS</u> denotes Standard version <u>HPC</u> denotes Corrosion Resistant version				
Part No.	<u>MSS</u> denotes Mid Section Support				
Size	<u>25</u> denotes the Cylinder Diameter (see page 6 for range of cylinder sizes)				
Suffix	<u>A</u> denotes Through Hole Fixing <u>B</u> denotes Blind Hole Fixing				

Application Examples



HPS 40/60 1750 is used as a pick and place unit to transfer components from one conveyor to another. The HPS Powerslide-2 unit is used as a self-supporting

beam between two End Cap Mountings. High speed, high duty operation.

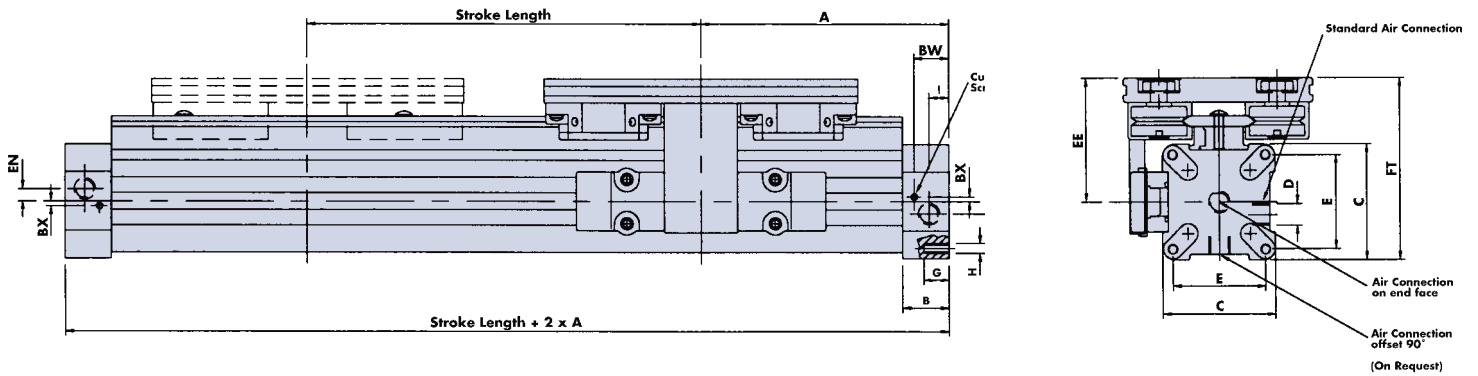


HPS 32/44 2000 is used in a paint spraying application for plastic components. A gripper attached to the carriage plate picks up the component, the carriage moves to mid stroke where the component is

sprayed, then the carriage moves to end of stroke and the item is placed on a drying carousel. A high speed, high duty operation in a hostile paint spray environment.

Data and Dimensions

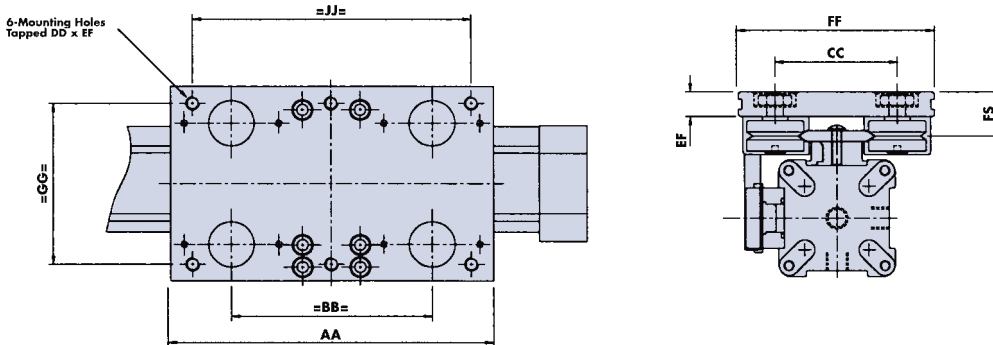
Cylinder



Part no.	Cyl. Dia.	A	B	C	D	E	G	H	I	BW	BX	EE	EN	FT
HPS 16/25	16	65	14	30	M5	18	9	M3	5.5	10.8	1.8	49	3	64
HPS 25/25	25	100	22	41	G 1/8	27	15	M5	9	17.5	2.2	53	3.6	73.5
HPS 25/35	25	100	22	41	G 1/8	27	15	M5	9	17.5	2.2	52.5	3.6	73
HPS 25/44	25	100	22	41	G 1/8	27	15	M5	9	17.5	2.2	58	3.6	78.5
HPS 32/35	32	125	25.5	52	G 1/4	36	15	M6	11.5	20.5	2.5	58.5	5.5	84.5
HPS 32/44	32	125	25.5	52	G 1/4	36	15	M6	11.5	20.5	2.5	64	5.5	90
HPS 40/44	40	150	28	69	G 1/4	54	15	M6	12	21	3	75	7.5	109.5
HPS 40/60	40	150	28	69	G 1/4	54	15	M6	12	21	3	74	7.5	108.5
HPS 50/60	50	175	33	85	G 1/4	70	15	M6	14.5	27	-	81	11	123.5
HPS 50/76	50	175	33	85	G 1/4	70	15	M6	14.5	27	-	93	11	135.5

The Part No. refers firstly to the cylinder diameter (mm), followed by the slide width (mm) - see page 9 for ordering details
For corrosion resistant option, part no.s will begin HPC

Carriage Plate



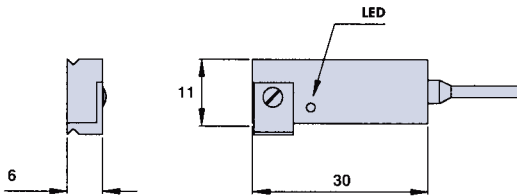
Part no.	Cyl. Dia.	AA	BB	CC	DD	EF	FF	FS	GG	JJ
HPS 16/25	16	120	65	46.4	M6X1	12	80	20.7	64	100
HPS 25/25	25	145	90	46.4	M6X1	11	80	19.7	64	125
HPS 25/35	25	156	100	56.4	M6X1	12.5	95	21.5	80	140
HPS 25/44	25	190	118	72.3	M8X1.25	15	116	26.2	96	164
HPS 32/35	32	156	100	56.4	M6X1	12.5	95	21.5	80	140
HPS 32/44	32	190	118	72.3	M8X1.25	15	116	26.2	96	164
HPS 40/44	40	190	118	72.3	M8X1.25	15	116	26.2	96	164
HPS 40/60	40	240	167	88.3	M8X1.25	17	135	28.5	115	216
HPS 50/60	50	240	167	88.3	M8X1.25	17	135	28.5	115	216
HPS 50/76	50	280	178	119.1	M10X1.5	20	185	39	160	250

Proximity Switches

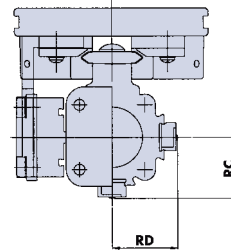
Proximity switches with LED, type HPSIS (Inductive Switch) and HPSRS (Reed Switch) are available for the HPS Powerslide-2. These may be fitted to both the free barrel faces for ease of design and installation. Switches may be specified with either a

5m unterminated cable, or a 100mm cable with jack plug. When specifying the jack plug type switch, additional cable (2.5m or 5m) should be ordered (see Ordering Details section).

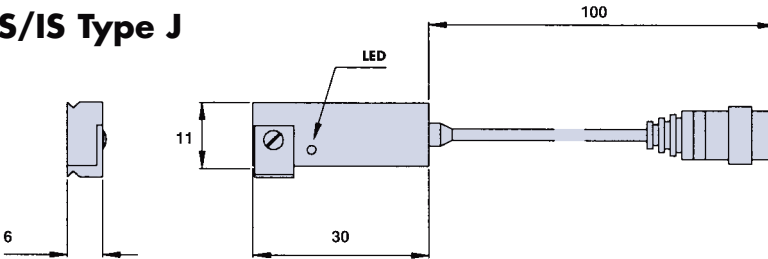
RS/IS Type U



RS/IS



RS/IS Type J

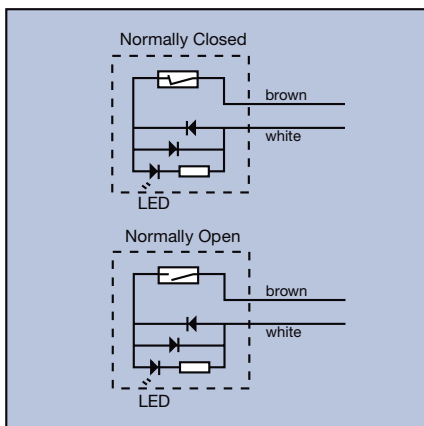


Type	RS	IS
Switch design	Closing or opening	Closing
Output type	-	pnp or npn
Voltage	10 to 70V AC	10 to 30V DC
Max current rating	200mA	200mA
Hysteresis	ca. 8mm	ca. 3mm

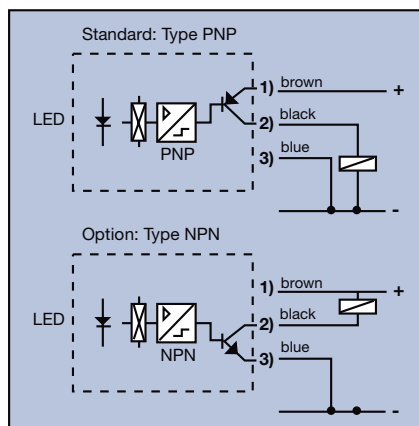
Proximity Switch HPS RS/IS used with Cylinder Dia.

Dimension	16	25	32	40	50
RC	20	25	31	36	43
RD	20	27	34	39	48

RS



IS



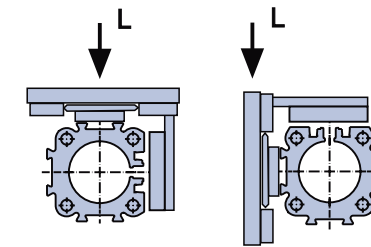
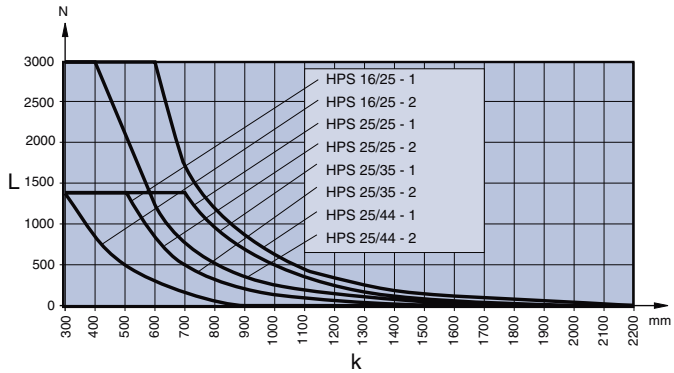
Mounting and Support

Mid Section Supports

The use of Mid Section Supports will prevent beam deflection caused by the applied load, and oscillation created by the driving force.

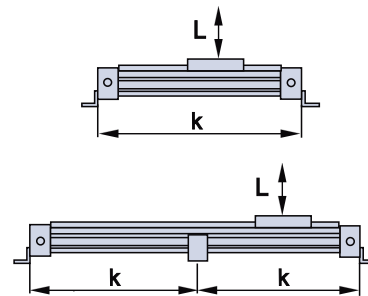
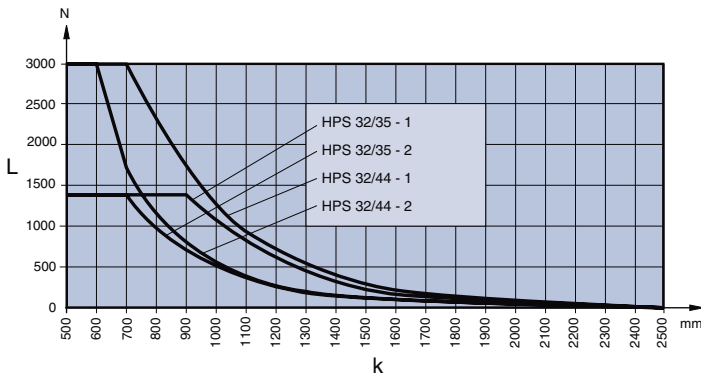
The graphs below show the maximum distance between supports at various loadings, in either

vertical or horizontal carriage applications. The maximum recommended deflection between spans is 0.5mm. Where linear speeds >0.5m/s are required, the span between supports should be no more than 1 metre.

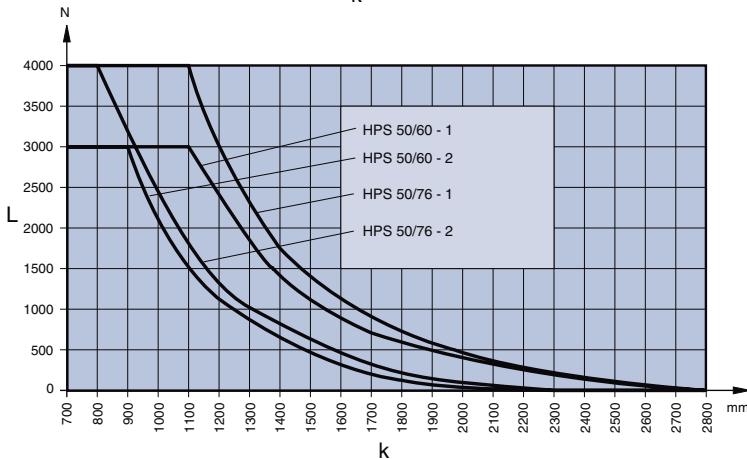
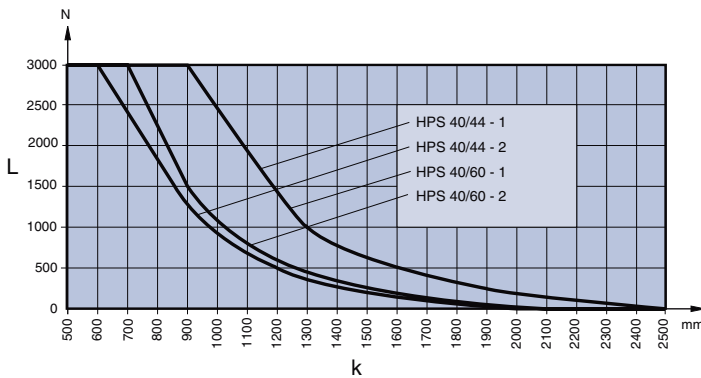


Application Type 1 (horizontal carriage)

Application Type 2 (vertical carriage)



k = maximum unsupported span length
L = Load on carriage (newtons)



Technical Data

Loads, Forces, Moments

Maximum moment and direct load capabilities are given in the table below.

Values are based on shock-free duty and slide lubrication according to instructions.

Where the corrosion resistant option is being specified, the 'max allowed' capacities will be reduced.

Contact Hepco's Technical Department for details.

Part No.	Cyl. Dia.	Force (N) at 6 bar	Cushion Length (mm)	Max. allowed Moment Load (Nm)		Max. allowed Torque (Nm)	Max. allowed Direct Load (N)		HPS Powerslide-2 Mass (kg)	
				M	Ms		L1	L2	for 0 stroke	increase 100mm stroke
HPS 16/25	16	78	14	63	14	45	1400	1400	1.63	0.24
HPS 25/25	25	250	17	63	14	63	1400	1400	2.2	0.4
HPS 25/35	25	250	17	70	20	70	1400	1400	2.5	0.4
HPS 25/44	25	250	17	175	65	175	3000	3000	4.1	0.5
HPS 32/35	32	420	20	70	20	70	1400	1400	3.4	0.6
HPS 32/44	32	420	20	175	65	175	3000	3000	4.9	0.7
HPS 40/44	40	640	27	175	65	175	3000	3000	6.1	1.1
HPS 40/60	40	640	27	250	90	250	3000	3000	8.2	1.3
HPS 50/60	50	1000	30	250	90	250	3000	3000	9.9	1.4
HPS 50/76	50	1000	30	350	140	350	4000	4000	16.4	1.8

Relating Load Applied to Life

It is important to satisfy both load and life requirements when looking at an application. In many instances it will not be necessary to calculate the life of a system, but if a high number of strokes

coupled with a heavy load are evident then life can be an important factor. This is also particularly relevant in short stroke or moment load applications.

Calculating System Life

To calculate system life, first use the formula below for load factor (Lf), then use the resulting figure in formula (1) (2) or (3) as appropriate.

$$L_f = \frac{M}{M_{max}} + \frac{M_s}{M_{s,max}} + \frac{M_v}{M_{v,max}} + \frac{L_1}{L_{1,max}} + \frac{L_2}{L_{2,max}}$$

Lf should not exceed 1 for any combination of loads.

1) For HPS 16/25, 25/25, 25/35, 32/35

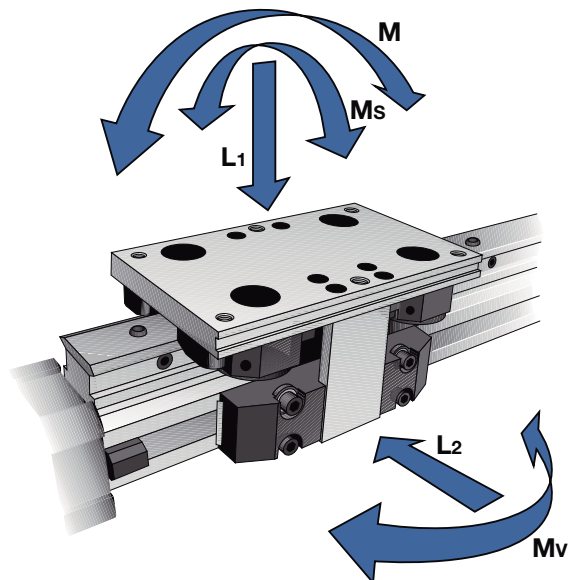
$$LIFE(km) = \frac{100}{(L_f)^3}$$

2) For HPS 25/44, 32/44, 40/44, 40/60, 50/60

$$LIFE(km) = \frac{400}{(L_f)^3}$$

3) For HPS 50/76

$$LIFE(km) = \frac{800}{(L_f)^3}$$



Examples

Example 1

Load/life example: HPS 25/44

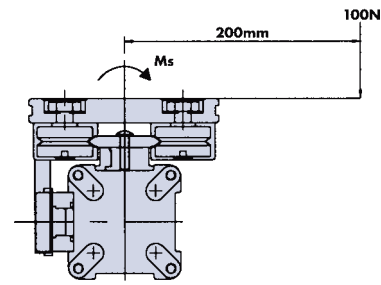
Moment $M_s = 100\text{N} \times 0.2\text{m} = 20\text{Nm}$

$L_1 = 100\text{N}$

$$L_F = \frac{M_s}{M_{s_{\max}}} + \frac{L_2}{L_{2_{\max}}} = \frac{20}{65} + \frac{100}{3000} = 0.341$$

$$\text{LIFE(km)} = \frac{400}{(L_F)^3}$$

$$\text{LIFE(km)} = \frac{400}{(0.341)^3} = 10000 \text{ km}$$



Example 2

Load/life example: HPS 25/25

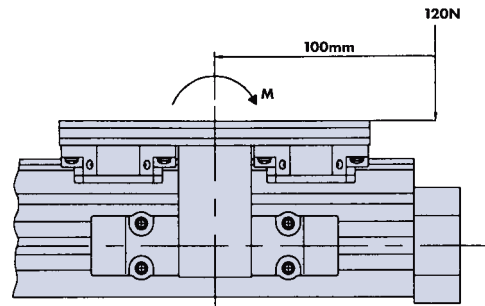
Moment $M = 120\text{N} \times 0.1\text{m} = 12\text{Nm}$

$L_1 = 120\text{N}$

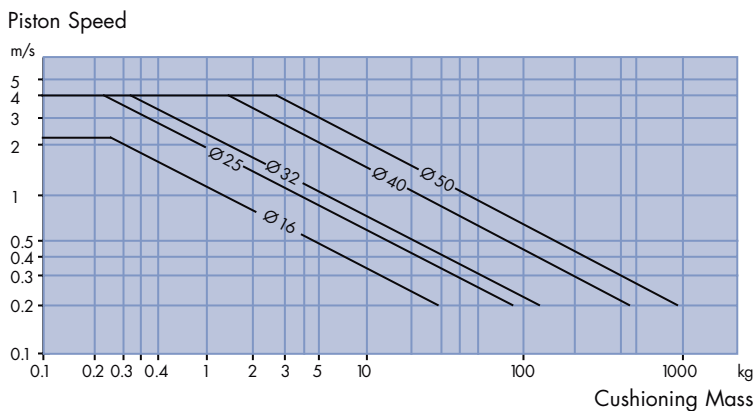
$$L_F = \frac{M}{M_{\max}} + \frac{L_2}{L_{2_{\max}}} = \frac{12}{63} + \frac{120}{1400} = 0.28$$

$$\text{LIFE(km)} = \frac{100}{(L_F)^3}$$

$$\text{LIFE(km)} = \frac{100}{(0.28)^3} = 4500 \text{ km}$$



Cushioning Diagram

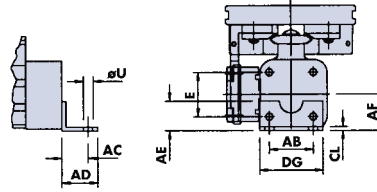


For piston speeds greater than 1m/s, Viton® seals are recommended. If the approved limits on the cushioning diagram are exceeded, additional shock absorbers are advisable.

For piston speeds of less than 0.2m/s, slow speed grease should be specified when ordering (see page 9). Maximum seal life will be achieved when piston speeds do not exceed 1m/s.

Mounting and Support

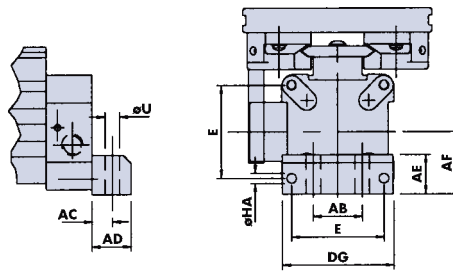
End Cap Mountings Size HPS 16, 25, 32



Part no.	Use with Cyl. Dia.	E	ØU	AB	AC	AD	AE	AF	CL	DG
HPS ECM16	16	18	3.6	18	10	14	12.5	15	1.6	26
HPS ECM25	25	27	5.8	27	16	22	18	22	2.5	39
HPS ECM32	32	36	6.6	36	18	26	20	30	3	50

For corrosion resistant option, part no.s will begin HPC

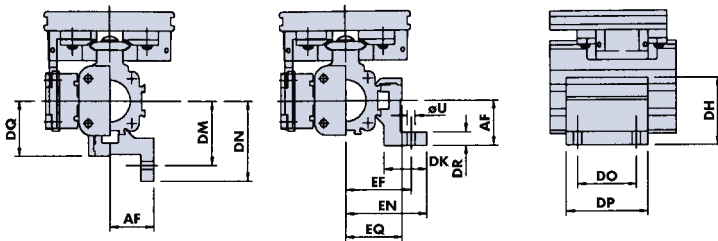
End Cap Mountings Size HPS 40, 50



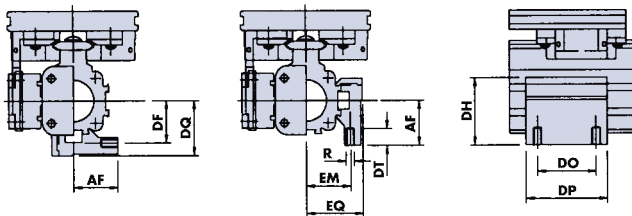
Part no.	Use with Cyl. Dia.	E	ØU	AB	AC	AD	AE	AF	DG	ØHA
HPS ECM40	40	54	9	30	12.5	24	24	38	68	7
HPS ECM50	50	70	9	40	12.5	24	30	48	86	7

See page 9 for End Cap Mounting Ordering Details

Mid Section Supports - Type A (Through Hole Fixing)



Mid Section Supports - Type B (Blind Hole Fixing)



For further details of direct mounting for Hepco SH shock absorbers please contact Hepco

Part no. Type A	Part no. Type B	Use with Cyl. Dia.	R	ØU	AF	DF	DH	DK	DM	DN	DO	DP	DQ	DR	DT	EF	EM	EN	EQ
HPS MSS16A	HPS MSS16B	16	M3	3.4	15	20	29.2	24	32	36.4	18	30	27	6	6.5	32	20	36.4	27
HPS MSS25A	HPS MSS25B	25	M5	5.5	22	27	38	26	40	47.5	36	50	34.5	8	10	41.5	28.5	49	36
HPS MSS32A	HPS MSS32B	32	M5	5.5	30	33	46	27	46	54.5	36	50	40.5	10	10	48.5	35.5	57	43
HPS MSS40A	HPS MSS40B	40	M6	7	38	35	61	34	53	60	45	60	45	10	11	56	38	63	48
HPS MSS50A	HPS MSS50B	50	M6	7	48	40	71	34	59	67	45	60	52	10	11	64	45	72	57

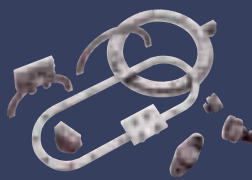
See page 9 for Mid Section Support Ordering Details



GV3



HDS



RTS



HDLS



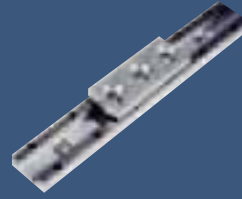
HPS



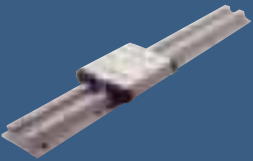
SL2



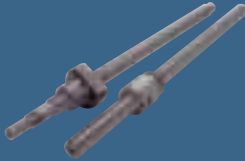
DLS



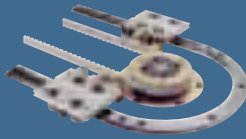
Utilitrak



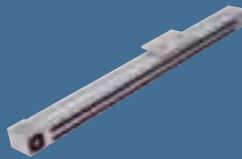
LoPro



FB



DTS



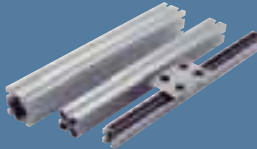
PDU



Dual-Vee



SH



MCS

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Guiding You Towards the Future

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