

HDS2 Catalogue Amendments

The following amendments apply to the following catalogue: Catalogue No. HDS2 01 UK



Text in **RED** shows the amended data.

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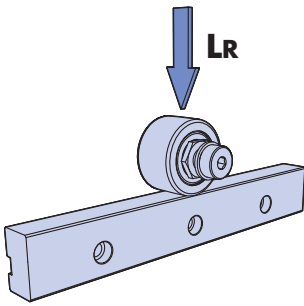
E-mail: sales@hepcotion.com



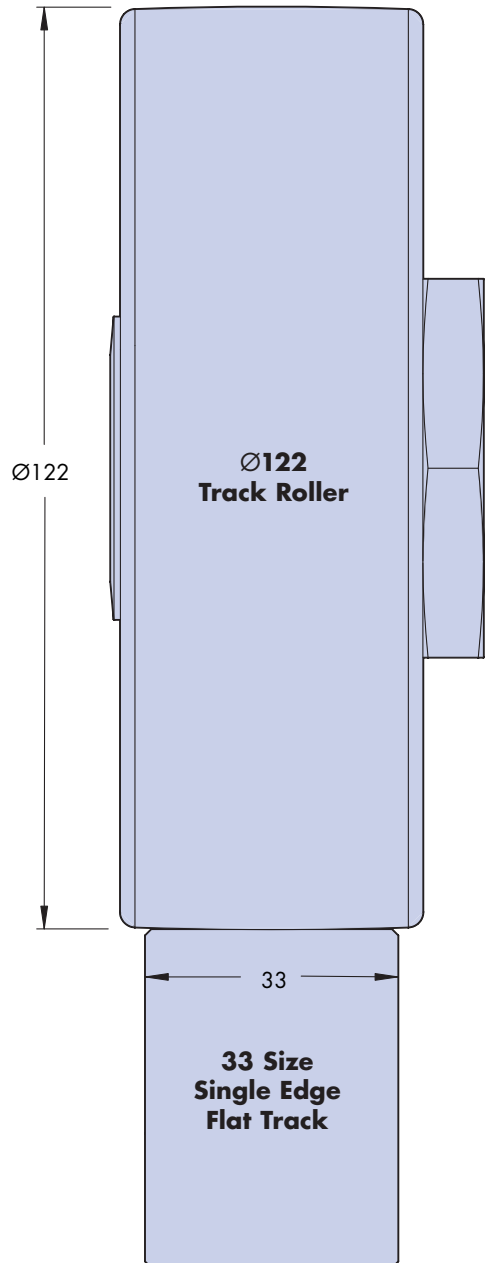
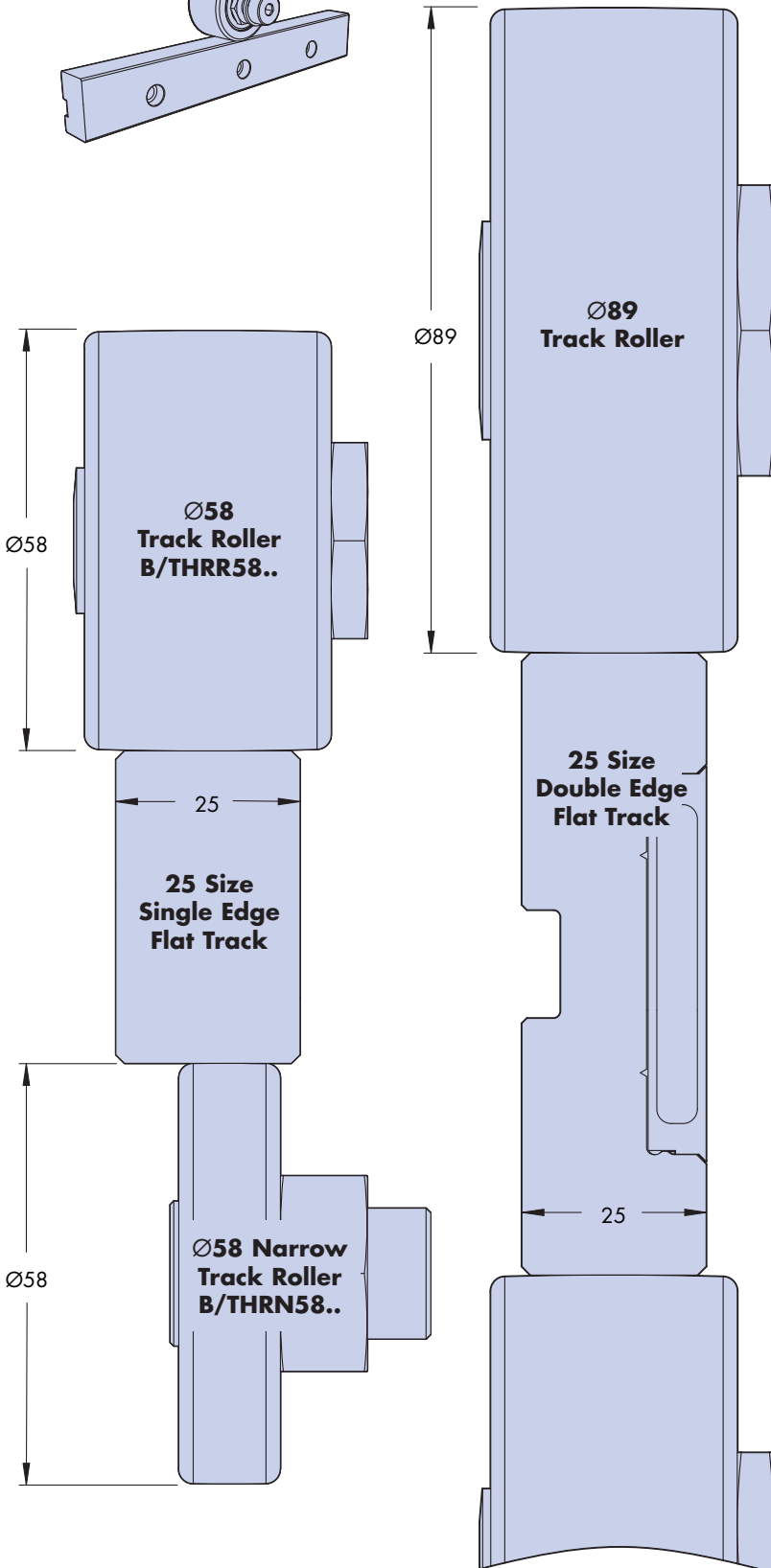
INVESTOR IN PEOPLE



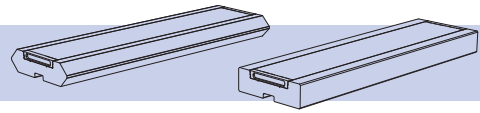
Full Size Illustrations For Initial Selection



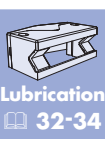
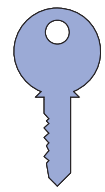
Track Roller		Load Capacity
Ø	Part No.	LR
58	B/THRN58	5 000N
58	B/THRR58	10 000N
89	B/THRR89	20 000N
122	B/THRR122	30 000N
144	B/THRR144	80 000N



V Slides & Flat Tracks



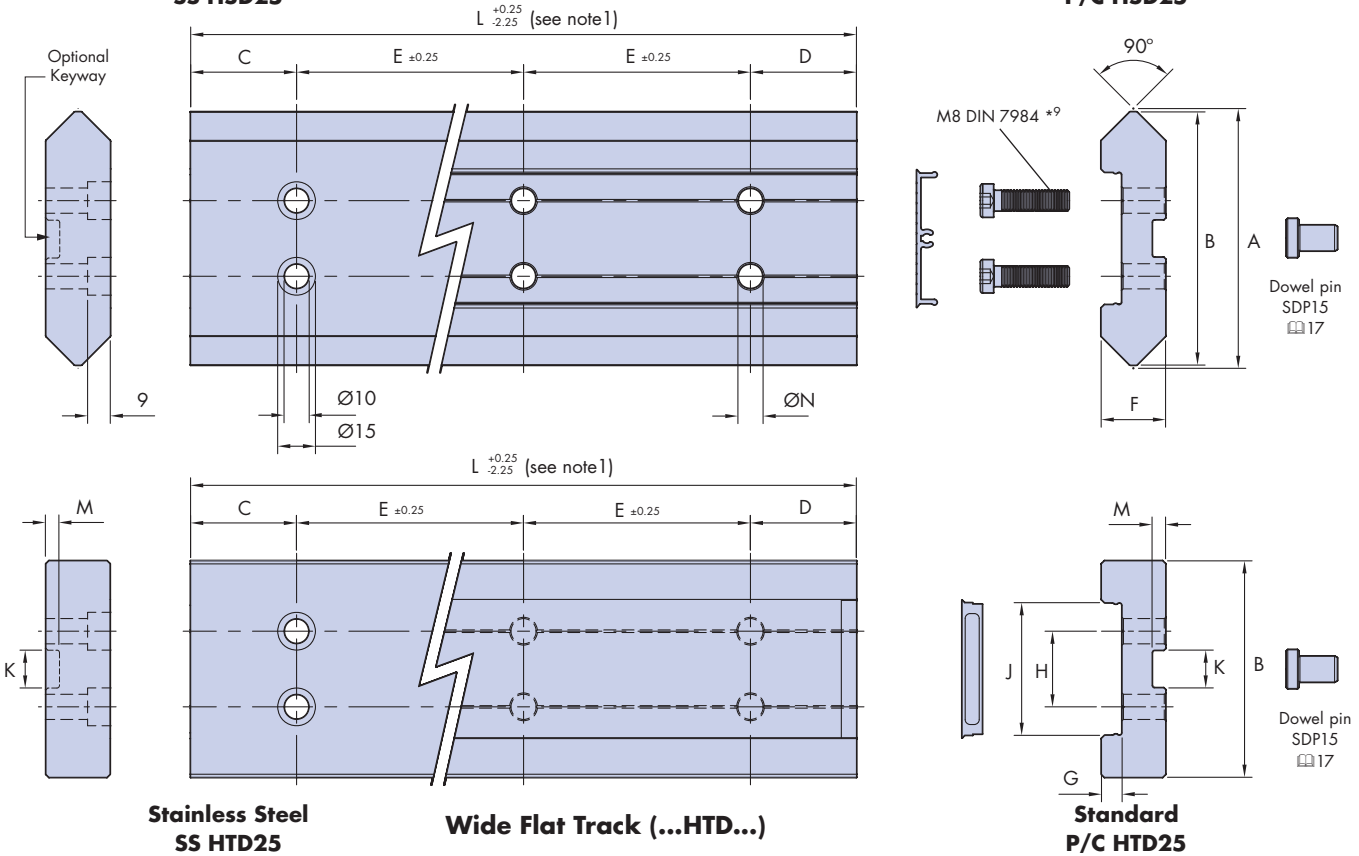
Hepco double edge slides and wide flat tracks have built in parallelism for ease of setting. Both are supplied with flush fitting plastic covers and end caps to prevent entrapment of debris. Double edge slides and wide flat tracks are supplied with a keyway for locating to a key register, Hepco dowel pins or back plates. Stainless steel versions are available and have a slightly different design, without the central recess or plastic cover and with mounting holes and counterbores to suit M8 cap head screws to DIN912.



Stainless Steel SS HSD25

Double Edge V Slide (...HSD...)

Standard P/C HSD25



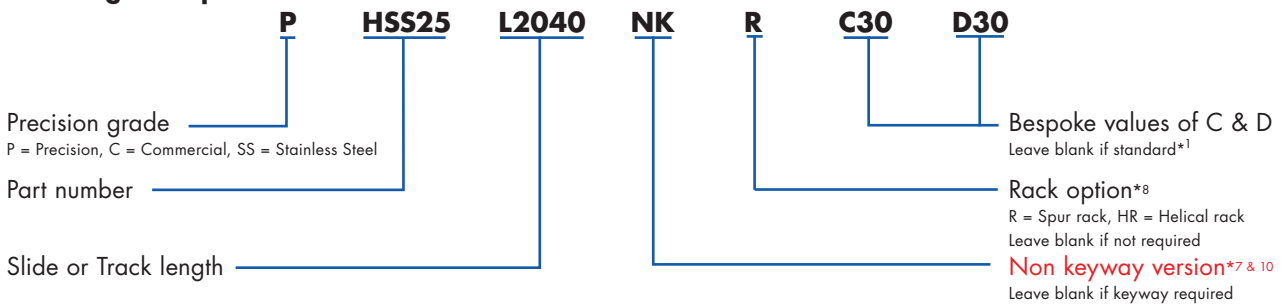
Stainless Steel SS HTD25

Wide Flat Track (...HTD...)

Standard P/C HTD25

Part Number	A	B	C	D	E	F	G	H	J	K	L	M	N	kg/m ~
CHSD 25	103	100.4	43	43	90	25.4	8.2	30	52.6	15	4046	5.35	10	13.5
SS/PHSD 25	102.4	100	43	43	90	25	8	30	52.6	15	4046	5.15	10	13.5
CHTD 25	-	85.8	43	43	90	25.4	8.2	30	52.6	15	4046	5.35	10	12.5
SS/PHTD 25	-	85.4	43	43	90	25	8	30	52.6	15	4046	5.15	10	12.5

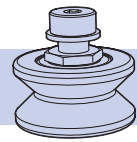
Ordering Example



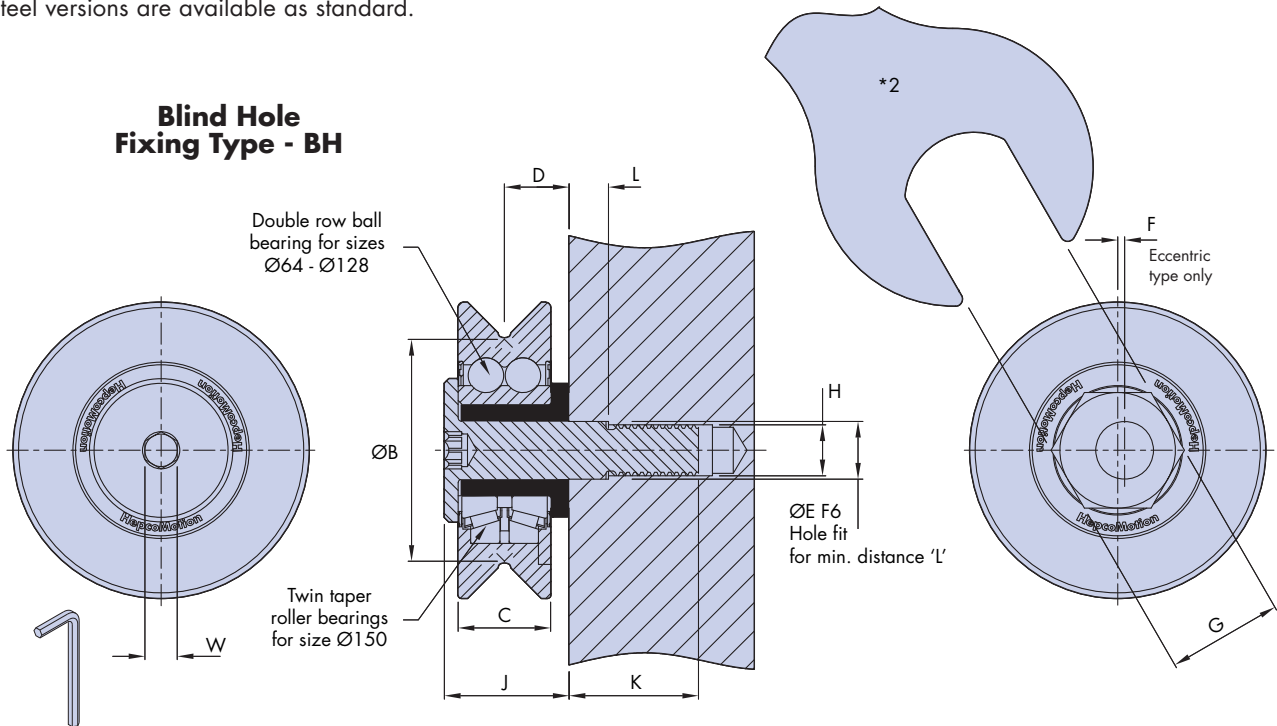
Notes:

- Single edge slides & flat tracks for corner mounting to Hepco beams should be ordered without keyway 'NK' 24. The keyway version is useful for customers own location requirements and is necessary when using Hepco back plates 16 & 25.
- HSS & HTS 25 slide and flat tracks have an option of 2.5 or 3 module spur rack. 2.5 module rack is supplied as standard when 'R' is added to the part number. If 3 module rack is required add 3 after 'R' to confirm size required. Helical racks are not available for stainless steel slides or flat tracks.
- M8 low head cap screws are available from Hepco in the following lengths: 30mm (part no. FS8-30) for use without back plate, 40mm (part no. FS8-40) for use with low back plates & 60mm (part no. FS8-60) for use with high back plates. HSS and HTS slides and tracks can use widely available standard M8 & M12 cap screws DIN 912.
- Standard double edge V slides and flat tracks are not available in 'NK' version.

V Bearings



Hepco HJR bearings use double row ball bearings on sizes 64 to 128 and twin taper roller bearings on size 150. These provide high axial and radial load capacity. The design allows for easy assembly, and bearings can be removed from a system with a single screw. Each bearing has a chemically blacked, high tensile steel journal and bush and is available in concentric and eccentric (adjustable) forms. Each bearing is available with either a blind or through-hole fixing. Stainless steel versions are available as standard.



Part Number		For Use With V Slide		ØB ±0.015	C	D	ØE F6	F	G	H	J	K	L
	ØA												
BHJR..	64	HSS 25	HSD 25	41	34	22	16	1.25	27	M10	43	26	10
THJR..	64	HSS 25	HSD 25	41	34	22	16	1.25	27	M12	-	-	-
BHJR..	95	HSS 25	HSD 25	72	34	22	20	2	40	M16	44	41	11.5
THJR..	95	HSS 25	HSD 25	72	34	22	20	2	40	M16	-	-	-
BHJR..	120	HSS 25	HSD 25	96	40	28	25	3	50	M24	54	56	17
THJR..	120	HSS 25	HSD 25	96	40	28	25	3	50	M24	-	-	-
BHJR..	128	HSS 33	-	96	40	28	25	3	50	M24	54	56	17
THJR..	128	HSS 33	-	96	40	28	25	3	50	M24	-	-	-
BHJR..	150	HSS 33	-	118	60	40	38	2	65	M36	80	70	21
THJR..	150	HSS 33	-	118	60	40	38	2	65	M36	-	-	-

Mounting Plate Screw Lengths

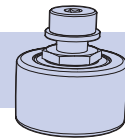
Part Number	T ¹	
	min	max
THJR 64 ... 12	6.5	12.5
THJR 64 ... 17	11.5	17.5
THJR 64 ... 22	16.5	22.5
THJR 64 ... 27	21.5	27.5
THJR 95 ... 16	9	16
THJR 95 ... 22	16	22
THJR 95 ... 27	21	27
THJR 95 ... 32	26	32

Part Number	T ¹	
	min	max
THJR 120 ... 17	6.5	17
THJR 120 ... 27	16.5	27
THJR 120 ... 37	26.5	37
THJR 128 ... 17	6.5	17
THJR 128 ... 27	16.5	27
THJR 128 ... 37	26.5	37
THJR 150 ... 25	6.5	25
THJR 150 ... 40	21.5	40

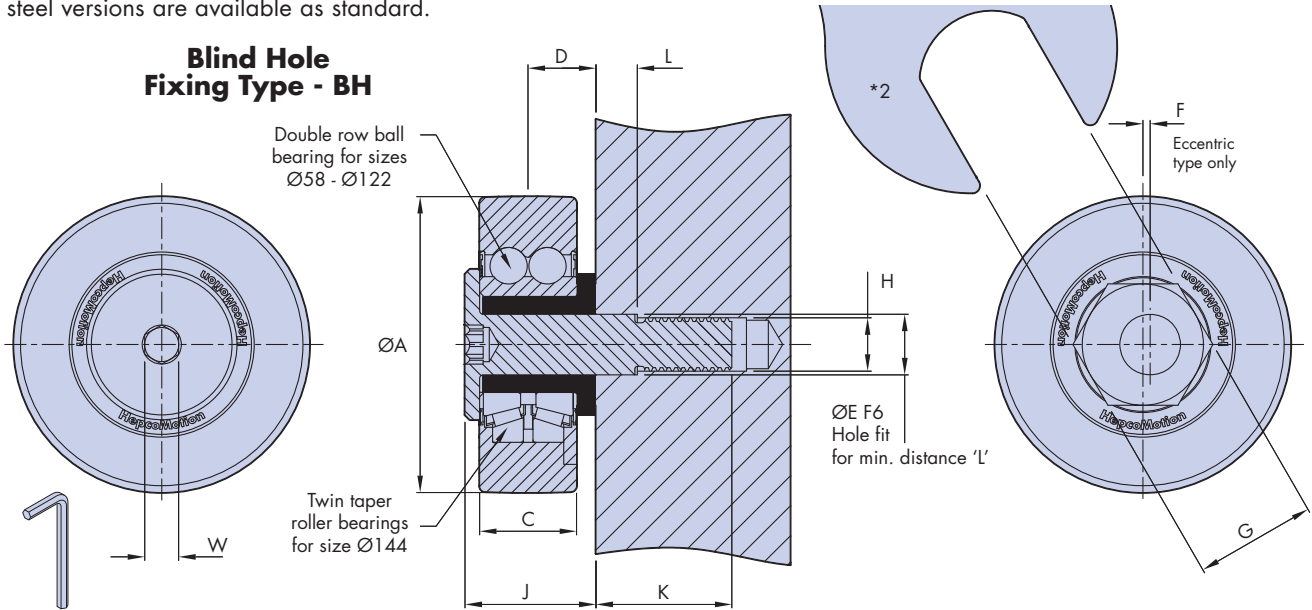
Notes:

- When using THJR bearings, the part number must be selected to suit the required plate thickness, T. Choose from the tables above.
- Adjustment tools for V bearing and track rollers are available. Please order part number AT54 for HJR64, AT95 for HJR95. AT128 for HJR120/HJR128, and AT150 for HJR150.

Track Rollers



Hepco HRR track rollers use double row ball bearings on sizes 58 to 122 and twin roller bearing on size 144, these provide high radial load capacity. The design allows for easy assembly, and track rollers can be removed from a system with a single screw. Each track roller has a chemically blacked, high tensile steel journal and bush and is available in concentric and eccentric (adjustable) forms. Each track roller is available with either a blind or through-hole fixing. Stainless steel versions are available as standard.



Part Number		For Use With Flat Track		C	D	ØE F6	F	G	H	J	K
	ØA										
BHRR..	58	HTS 25	HTD 25	34	22	16	1.25	27	M10	43	26
THRR..	58	HTS 25	HTD 25	34	22	16	1.25	27	M12	-	-
BHRR..	89	HTS 25	HTD 25	34	22	20	2	40	M16	44	41
THRR..	89	HTS 25	HTD 25	34	22	20	2	40	M16	-	-
BHRR..	122	HTS 33	-	40	28	28	3	50	M24	54	56
THRR..	122	HTS 33	-	40	28	28	3	50	M24	-	-
BHRR..	144	HTS 33	-	60	40	38	2	65	M36	80	70
THRR..	144	HTS 33	-	60	40	38	2	65	M36	-	-

Mounting Plate Screw Lengths

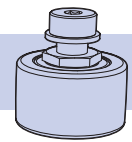
Part Number	T ¹	
	min	max
THRR 58 ... 12	6.5	12.5
THRR 58 ... 17	11.5	17.5
THRR 58 ... 22	16.5	22.5
THRR 58 ... 27	21.5	27.5
THRR 89 ... 16	9	16
THRR 89 ... 22	16	22
THRR 89 ... 27	21	27
THRR 89 ... 32	26	32

Part Number	T ¹	
	min	max
THRR 122 ... 17	6.5	17
THRR 122 ... 27	16.5	27
THRR 122 ... 37	26.5	37
THRR 144 ... 25	6.5	25
THRR 144 ... 40	21.5	40

Notes:

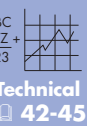
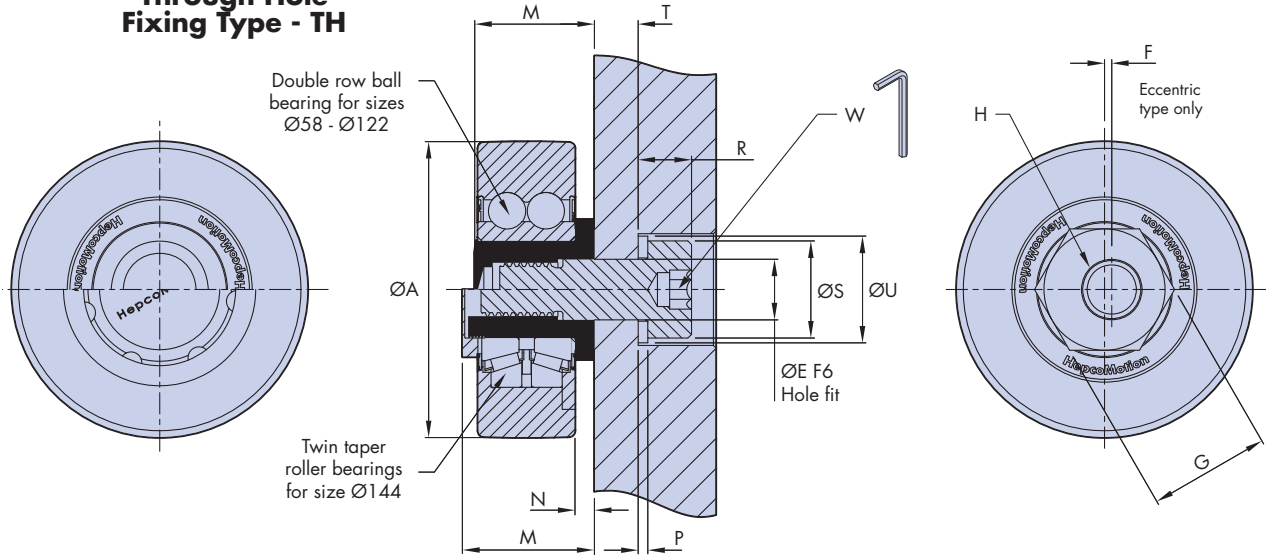
- When using THRR Track rollers, the part number must be selected to suit the required plate thickness, T. Choose from the tables above.
- Adjustment tools for V bearing and track rollers are available. Please order part number AT54 for HRR58, AT95 for HRR89, AT128 for HRR122, and AT150 for HRR144.
- Load capacities stated are for steel bearings, stainless steel versions have a 25% lower capacity.
- With THRN58 a washer is supplied. Fixing screw lengths depend on application and are not included. Use M10 screws in material condition 8.8 or stronger.
- The quoted static and dynamic load capacities are based on industry standard calculations. These do not accurately reflect performance, and are only provided for comparison with other systems. Please use max working load figures and the load/life calculations on 42-44 to determine system performance.
- The narrow track roller is designed to bear on the back face of single edge slides or flat tracks as illustrated opposite. It is specifically intended for use with 25 size V slides and flats tracks in conjunction with either 64 or 95 size bearings and their track roller equivalents. Most other combinations can also be accommodated by using a spacer under the mounting face of either the narrow, or standard wide track roller. Please visit our website www.HepcoMotion.com/hdsdatauk and select datasheet No.3 HDS2 Narrow Track Rollers.
- SS versions of the size 144 track roller contains a steel twin taper roller bearing, protected by nitrile seals.

Track Rollers



All track rollers are greased for life and incorporate nitrile seals to inhibit ingress of liquids and contaminants. Customers are strongly recommended to provide lubrication to the interface between the track roller and the flat track by specifying Hepco roller cap wipers or lubricators which contact the surface of the flat track or the track roller.

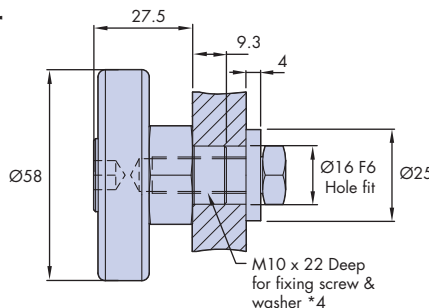
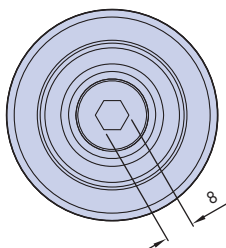
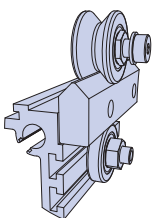
Through Hole Fixing Type - TH



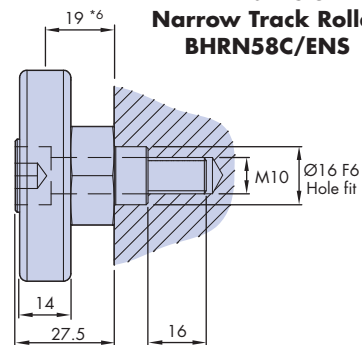
L	M	N	P	R	ØS	ØU	W	kg~	Max Working Radial Load Capacity*3 (N)	Static (Co) & Dynamic (C) Radial Load Capacities*5	
										Co (N)	C (N)
10	-	5	-	-	-	-	10	0.63	10 000	13 271	21 989
-	40	5	2.5	13.5	24	28	8	0.63	10 000	13 271	21 989
11.5	-	5	-	-	-	-	12	1.4	20 000	30 185	43 025
-	40	5	3	17	30	34	10	1.4	20 000	30 185	43 025
17	-	8	-	-	-	-	14	2.9	30 000	48 535	65 970
-	50	8	4	22	40	44	14	2.9	30 000	48 535	65 970
21	-	10	-	-	-	-	19	7.3	80 000	218 000	150 018
-	80	10	5	33	60	66	22	7.3	80 000	218 000	150 018

Narrow track rollers incorporate a single row ball bearing, and have a different mounting design. Maximum working load capacity is 5kN. They are ideally suited to captivate a system by running on the rear face of a single edge slide or track, see example below.

Through Hole Narrow Track Roller THRN58C/ENS



Blind Hole Narrow Track Roller BHRN58C/ENS



Ordering Example

SS = stainless steel option, Leave blank if not required,*3&7

Part number: THRR = through hole
BHRR = blind hole

Bearing diameter

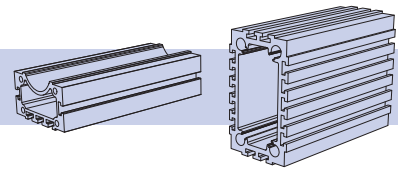
SS THRR 89 C NS 16


Plate thickness*1 & tables left. Leave blank for BHRR

NS = nitrile seals

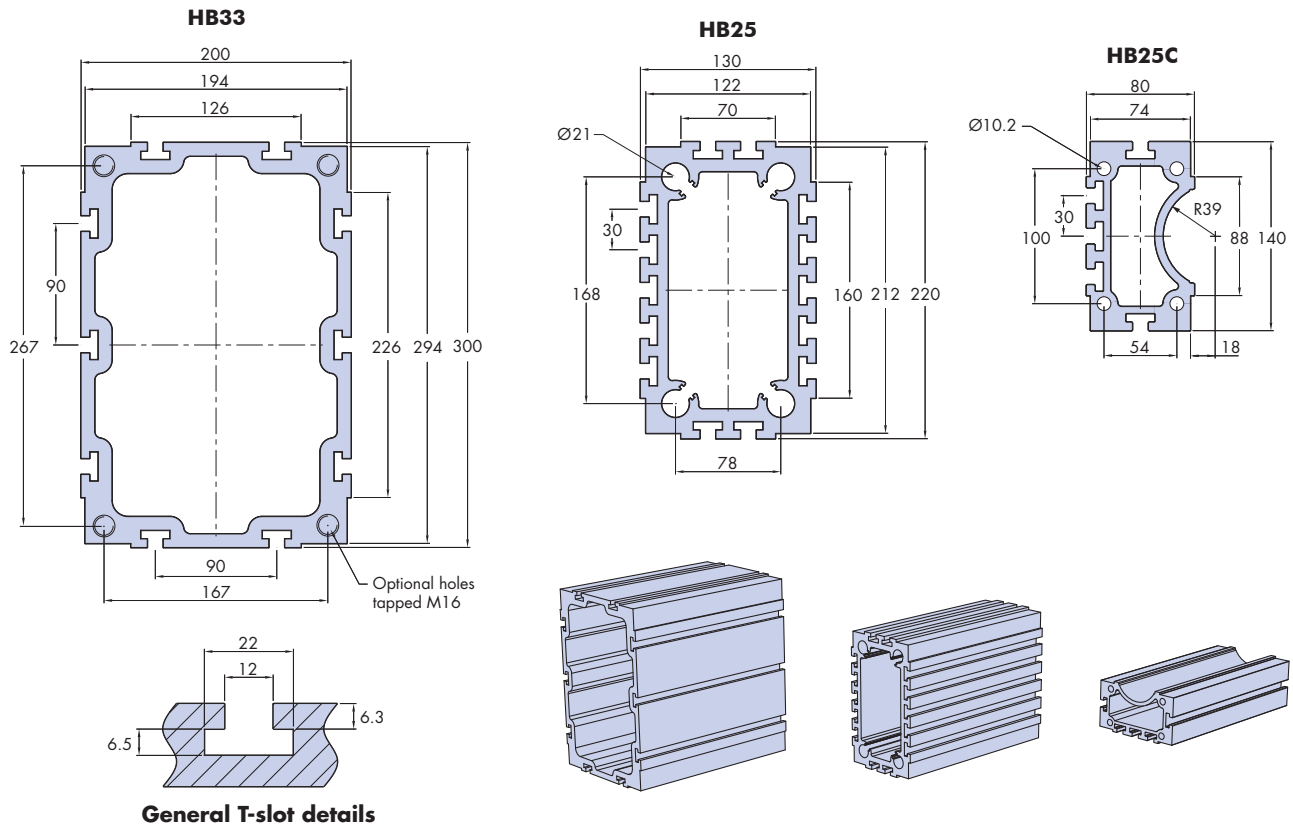
Journal type: E = eccentric
C = concentric


Construction Beams



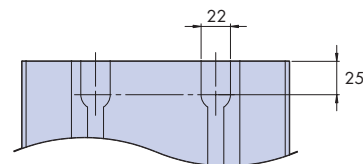
The design of Hepco construction beams enables slides and flat tracks to be factory assembled directly to the corner faces of the beam or, to be mounted at the many T-slot positions in conjunction with back plates and T-nuts  24&25. Very high stiffness allows the beams to be used as self supporting construction elements.

The recess in the HB25C beam has been designed to accommodate a screw drive. Beams are manufactured from high strength aluminium alloy to precision extrusion tolerances and are supplied clear anodised. Beam deflection can be calculated using simple beam theory requiring second moment of inertia figures which are given in the table below. For further details of calculations please visit www.HepcoMotion.com/hdsdatauk and select datasheet No. 2 Beam Deflection Calculations.



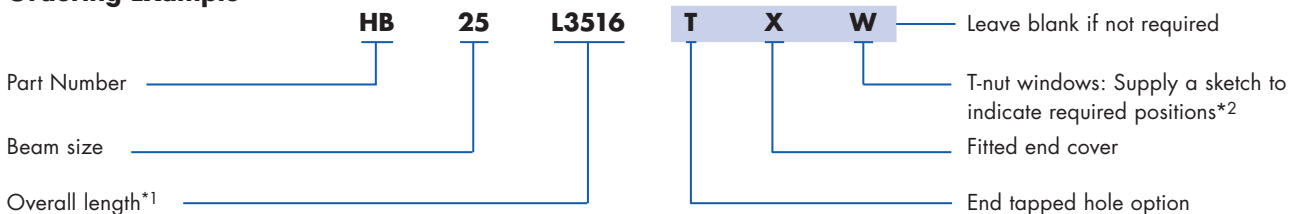
Beam	Second Moment Of Inertia		
	Vertical X-X	Horizontal Y-Y	
HB 25C	2.8×10^6	10.2×10^6	11.3kg/m
HB 25	4.7×10^7	1.8×10^7	24kg/m
HB 33	16.9×10^7	8.4×10^7	37.5kg/m

Beam second moment of inertia figures, are stated in mm⁴.




General T-slot Window Details*2

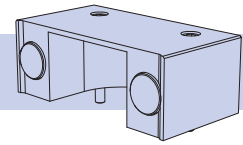
Ordering Example



Notes:

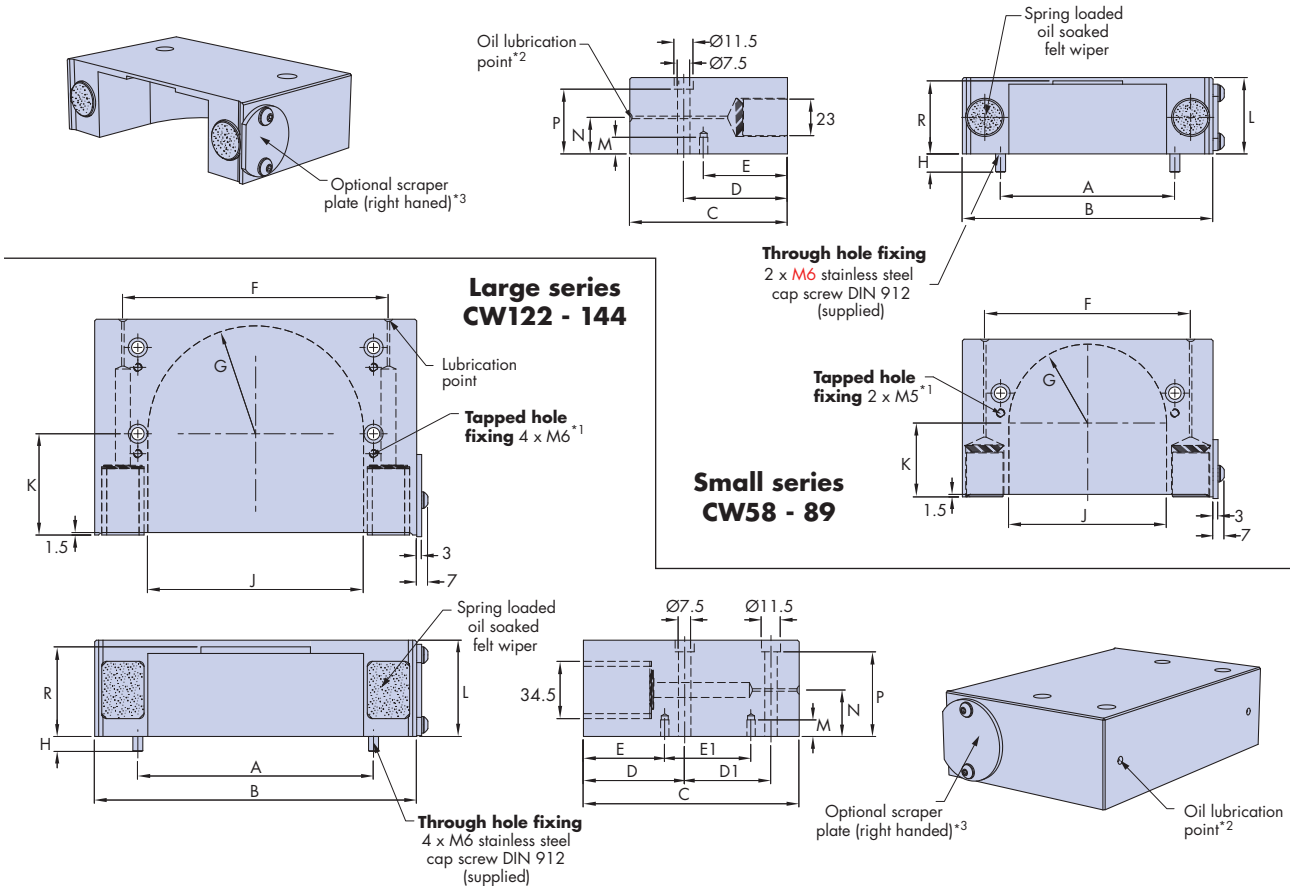
- Beams are cut to customer's length requirements with machine finished ends. They may be requested matched in length and should be ordered minimum 5mm longer than the corresponding slides or tracks. Beams are available in one piece up to 6m long. Special high strength joining systems can be readily supplied to achieve beams of unlimited length. Customers attaching carriage plates or other components directly to the ends of the beam which require a higher than normal squareness are requested to specify this requirement when ordering.
- Where access to beam end will be blocked, customers using high strength T-nuts  38 can specify T-nut windows at either end of any T-slot to enable nuts to be inserted. Supply a sketch to indicate required positions.
- Fitted aluminium end covers are supplied clear anodised and are secured via pan head screw DIN7985. Covers are not compatible with end tapped hole option.
- Plastic T-slot cover compatible with all construction beams is available, please specify the number required and length. Example; 14 x TC12 L3000.

Roller Cap Wipers



Roller cap wipers encapsulate the track roller when engaged with the flat track and provide constant lubrication to the contact faces thereby increasing the life of the system. They inhibit ingress of debris and improve safety and appearance. Lubricant is applied to the surface of the track by means of sprung loaded oil impregnated felt wipers. Roller cap wipers are made from impact resistant plastic and are easily removed from the system to give access for adjustment of the track rollers. Two methods of attachment are provided, either from above or from below.

Fixing positions should be calculated from the contact face of the flat track using dimensions E/E1 and D/D1 as relevant. Alternatively see [41](#).



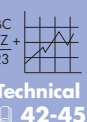
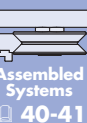
Part Number	For Use With Track Roller	Dimensions (mm)																	kg
		A	B	C	D	D1	E	E1	F	G	H	J	K	L	M	N	P	R	
CW 58	.HRR58.	74	120	64	47	-	37	-	93	32	11	64	29	46	15	22	39	44	0.23
CW 89	.HRR89.	105	151	95	62.5	-	50.5	-	124	47.5	11	95	44	46	15	22	39	44	0.35
CW 122	.HRR122.	142	194	130	61	52	49	52	160	65	9	130	61	58	17	28	51	54	1.04
CW 144	.HRR144.	165	216	152	72	52	60	52	184	76	13	152	72	84	17	40	77	80	1.78

Ordering Example

Part Number **CW** **89** **LS** **LS** = Left handed scraper*3
 Roller Ø **RS** = Right handed scraper
 Leave blank if not required

Notes:

- For adjustment purposes, the holes in the mounting plate for the tapped hole fixing method should be drilled Ø7mm for the small series roller cap wiper and Ø8mm for the large series.
- Lubrication intervals depends on stroke, duty and environment [49](#) for lubricants. Threaded inserts can be incorporated at a number of positions to enable roller cap wipers to be linked to a central lubrication point or lubrication canister [37](#).
- Optional scrapers in hardened stainless steel are adjustable for maximum exclusion of debris in harsh environments. It is normal to specify scrapers only for the outermost ends of the roller cap wipers within a system.



Mix & Match Component Compatibility

Lubrication Devices Mix & Match



CW 64/95
CW 120/128/150



HDLB25/33S
HDLB33SX




CW 58/89
CW 122/144




HDLB25/33R
HDLB33RX

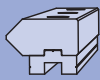
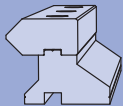
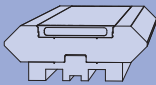
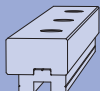
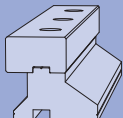
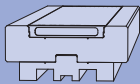
V Bearings



Track Rollers




x = Not Compatible


		Part Number	.HJR64...	.HJR95...	.HJR120...	.HJR128...	.HJR150...	.HRR58..	.HRR89..	.HRR122..	.HRR144..
V Slides & Back Plates		.HSS25.. + .HLN25..	HDLB25S or CW64	HDLB25S or CW95	HDLB33S	x	x	HDLB25R or CW58	HDLB25R or CW89	HDLB33R	x
		.HSS33.. + .HLN33..	HDLB25S	HDLB25S	HDLB33S	HDLB33S	x	x	HDLB25R or CW58	HDLB25R or CW89	HDLB33R
		.HSS25.. + .HHN25..	HDLB25S or CW64	HDLB25S or CW95	HDLB33S or CW120	x	x	HDLB25R	HDLB25R	x	x
		.HSS33.. + .HHN33..	HDLB25S	HDLB25S	HDLB33S	HDLB33S or CW128	HDLB33SX or CW150	HDLB25R or CW58	HDLB25R or CW89	HDLB33R	HDLB33RX
		.HSD25.. + .HLW25..	HDLB25S or CW64	HDLB25S or CW95	HDLB33S	x	x	x	x	x	x
		.HSD25.. + .HHW25..	HDLB25S or CW64	HDLB25S or CW95	HDLB33S or CW120	x	x	x	x	x	x
Flat Tracks & Back Plates		.HTS25.. + .HLN25..						HDLB25R or CW58	HDLB25R or CW89	HDLB33R	x
		.HTS33.. + .HLN33..						HDLB25R or CW58	HDLB25R or CW89	HDLB33R	x
		.HTS25.. + .HHN25..						HDLB25R or CW58	HDLB25R or CW89	HDLB33R or CW122 ²	x
		.HTS33.. + .HHN33..						HDLB25R or CW58	HDLB25R or CW89	HDLB33R or CW122 ²	HDLB33RX or CW144 ³
		.HTD25.. + .HLW25..						HDLB25R or CW58	HDLB25R or CW89	HDLB33R	x
		.HTD25.. + .HHW25..						HDLB25R or CW58	HDLB25R or CW89	HDLB33R or CW122	x

Notes:


- Track rollers, roller cap wipers and roller lubricators are only compatible with single edge V slides, when used on the back face of the slide.
- Roller cap wiper CW122 is only compatible with HTS25 + HHN25 and HTS33 + HHN33 when running on the front face of the flat track.
- Roller cap wiper CW144 is only compatible with HTS33 + HHN33 when running on the front face of the flat track.



Indicates back face of HSS25/33 slide






Indicates front face of HTS25 flat track



Indicates front face of HTS33 flat track

Installation


This page covers general installation of V bearings  and track roller systems . Further installation details and details of bearing block systems  can be found on our website www.HepcoMotion.com/hsddatauk and select data sheet No. 4 HDS2 bearing blocks.

V Slides and Flat Tracks (Without Hepco Back Plates)

For optimum performance and accuracy, slides and tracks should be mounted on a flat surface. Single edge V slides and single edge flat tracks should be set parallel in a system either by clamping the back faces against parallel registers, or by locating the keyways onto Hepco dowel pins or purpose made key sections. Double edge V slides and wide flat tracks may be located in a similar manner utilising the keyway if precise straightness or positional location is required.

V Slides and Flat Tracks (With Hepco Back Plates)

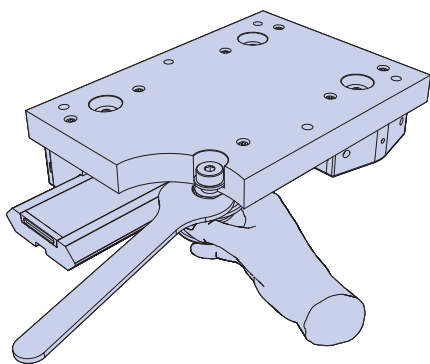
Installation of slides or tracks mounted on back plates is similar to the above procedure. Either the edge of the back plate itself or the keyway can be utilised to provide a datum reference. If the edge of the back plate is used, it is important to ensure that the depth of register affords running clearance for the V bearings, cap wipers and bearing blocks. It is advisable to set the assembled elements against the loaded side of the keys/dowels in order to overcome any slight clearances.

Customers mounting single edge V slides or single edge flat tracks in parallel are recommended to specify the jacking screw alignment facility available for use both with and without the Hepco construction beam ( 17 for installation details). Customers may also specify the location T-nut HTNM8L for locating assembled elements to construction beams. N.B. Location T-nuts should be used in only one or other of the two large keyways in the wide plate HLW25.

Drilling (V slides and Flat Tracks)

It is recommended that holes in the mounting surface should be drilled using the slide or track as a template unless an accurate means of pre-drilling is available.


V Bearings/Cap Wipers and Track Rollers (See figure below left)



The mounting surfaces for the V bearings should be flat and in the same plane. The bearing elements should be assembled to the mounting surface or carriage with the concentric bearings on the side taking the greatest load. In the case of more than two bearing assemblies engaged on the datum (concentric) side of the slide or track, all bearing assemblies in between the two outermost concentric assemblies should be eccentric type to allow precise engagement and sharing of the load. All bearings on the opposite side should be the eccentric type.

The concentric bearings should be fully tightened and the eccentrics semi-tightened then adjusted to their outermost position. The complete carriage assembly minus any additional components should be counterbalanced through its centre of gravity by means of a length of rope. N.B. It is recommended that a lifting eye in the appropriate position be provided for this purpose.

With the carriage in its counterbalanced condition the eccentric bearings opposite the concentrics should be rotated using the Hepco adjusting wrench until engaged with the slide or track such that there is no detectable play and minimal preload. The bearings should be checked for preload by rotating between forefinger and thumb such that the bearing skids against the slide or track without application of undue force. The adjusted bearings should then be fully tightened and checked again for preload. The process as described should be repeated for any pairs of eccentric bearings fitted in between the outermost ones. The carriage assembly may then be checked for free running by pushing back and forth along the slide.

The carriage should be withdrawn from the slide to enable bearing cap wipers to be fitted if required. (Roller cap wipers can be fitted without the necessity to withdraw the carriage). The carriage should be returned to the slide with cap wipers adjusted to achieve maximum compression of the felt wipers without the slide contacting the plastic body. The carriage assembly should then be checked for running quality in the non-counterbalanced condition. On completion of adjustment, the chamber of the small series bearing cap wipers only, should be charged with grease  49.

Important: Additional preload imposed on the system by incorrect adjustment or misalignment will reduce the load capacity and life of the system. Customers are advised to make allowances for this.

Bearing Adjustment and Carriage Removal

Bearing adjustment can take place with cap wipers in place and without the need to remove the carriage from the slide or track. First remove the front cover from the cap wiper body to expose the eccentric bearings, this will allow access for the adjustment wrench. Adjustment for the bearings themselves is as described above, again adjustment should take place with the carriage in its counterbalanced state.

Carriage removal can take place without the need to slide the carriage to the end of the slide or track. Remove the front covers from the cap wipers covering the concentric bearings, this will allow access for the adjustment wrench. With the wrench in place, unscrew the bearing stud from the bearing, once removed the bearing can be removed from the carriage. Remove the cap wiper body and the carriage can now be lifted clear from the slide. Replacement is the reversal of this procedure, the advantage of this method is that the eccentric bearings are not affected therefore adjustment should not be required.

