This data sheet interacts with

GV3, SL2 & PRT2 Catalogues

HepcoMotion®
ADVANCED LINEAR SOLUTIONS

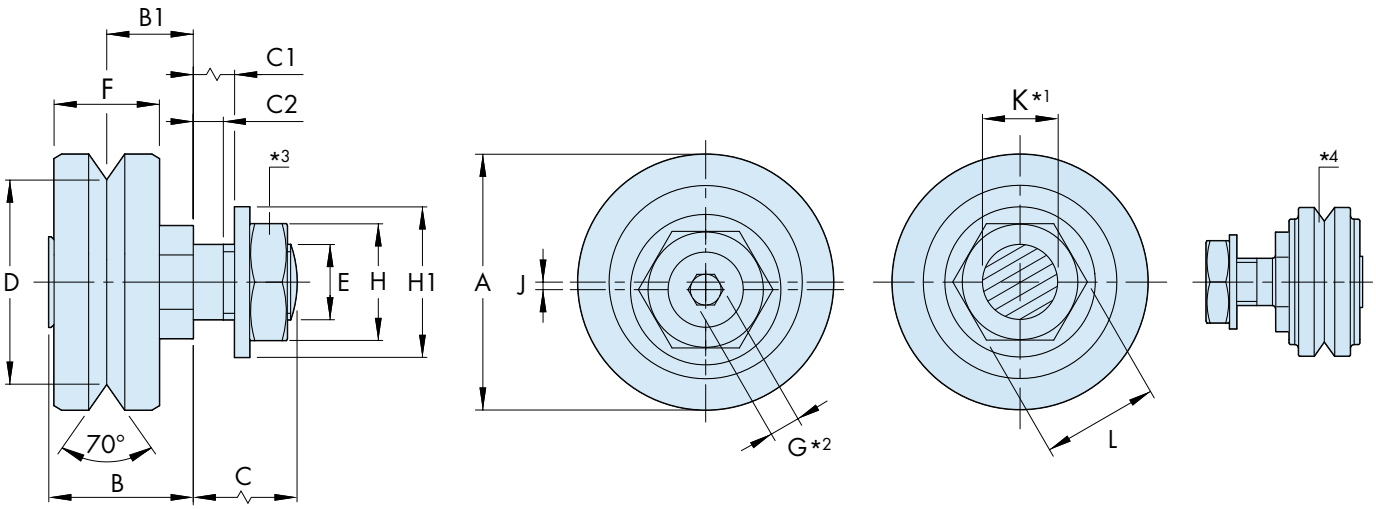
Axial Stiffness Bearings

HepcoMotion Axial Stiffness bearings have been developed for applications where system height needs to be stable under deflection and vibration. They are stiffer under axial (LA) loading and are also more resistant to any relaxation in system preload than a similar system using standard HepcoMotion Double Row type (DR) bearings. This makes them well suited to precise applications, particularly busy ones.

DR type should remain the first choice for heavily loaded systems, however, for light and moderately loaded systems, Axial Stiffness type (AS) bearings can provide performance benefits.

The size 40 AS bearing complements the range by providing enhanced load capacity and life, whilst minimising system size. Axial Stiffness bearing sizes 25 and 34 are also available in stainless steel, interchangeable with standard GV3, SL2 and PRT2 bearings, and compatible with standard carriages plates and lubrication devices. Please refer to the table overleaf for information on compatibility with Hepco slides.

The following bearing formats are available, with a through-hole fixing and nitrile seals:



Part Number	A	B	B1	C		C1		C2		D	E	F	G	H	H1	J		K*1	L
				Short Axle	Long Axle	Short Axle	Long Axle	Short Axle	Long Axle	±0.025	Metric Fine					...E...	...DE...	+ 0.00 − 0.03	
... UJ 20 ...	20	11.7	6.75	7.4	14	3.4	10	2.4	2.5	15.27	M6x0.75	9	2.5	10	13	0.7	2.6	6	11
... UJ 25 ...	25	15.5	9	9.8	19	3.8	13	3.4	4.9	20.27	M8x1	11	3	13	17	0.75	2.75	8	13
... UJ 34 ...	34	19.2	11.5	13.8	22	6.6	14.8	5.2	5.9	27.13	M10x1.25	14	4	17	21	1	3.6	10	15
... UJ 40 ...	40	20.5	11.5	18.6	26.8	8.6	16.8	6.5	7.2	32	M14x1.5	15.9	6	22	28	1	5.5	14	24

To help facilitate bearing type selection, key attributes of Hepco Twin, Double Row and Axial Stiffness bearings are compared in the chart below:

Bearing Type	Max Working Load Axial	Max Working Load Radial	Speed	Smoothness	Tolerance to Misalignment	Mass	System Height	Tolerance to Debris	Stiffness Under Axial Load
Twin									
Double Row									
Axial Stiffness									

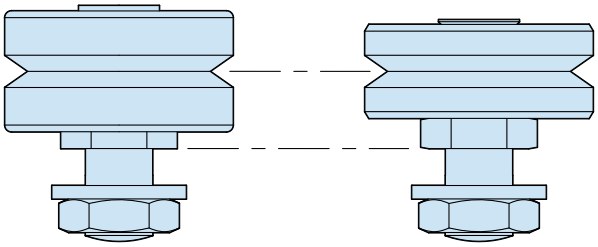
Notes:

1. It is recommended that holes to suit bearing mounting axles should be reamed to tolerance F6 for a sliding fit. Please note that dimension K for the size 40 AS bearing has a tolerance of +0.000/–0.011. All other sizes are as stated in the table.
2. All eccentric Through Fixing type bearing axles are supplied with sockets for adjustment as shown in the GV3 Catalogue (Standard Bearings page 34).
3. Nuts for the Through Fixing type bearings are chemically blacked on the concentric version and bright zinc plated on the eccentrics for identification purposes.
4. The size 20 AS bearing has an alternative outer ring design, shown in the right-hand view of diagram above.
5. The preferred choices of slide to use with each bearing are quoted. For information on capatibility with other slide sizes, please contact Hepco's technical department.
6. When ordering individual components for the first time, an Adjusting Wrench and Socket Tool should also be ordered. These are only available from Hepco.

Axial Stiffness Bearings

Visual Comparison and Interchangability of Size 25 and 34 Bearings

Twin and Double Row types **Axial Stiffness type**



Load / Life Calculations

The maximum axial (L_A) and radial (L_R) working load capacities, in Newtons, for all sizes of Hepco AS type bearings, are given in the table below. Values are based on shock-free duty.

All bearings are greased internally for life. Customers should provide lubrication to the interface between bearings and slide. This can be achieved using Hepco Slide Lubricators or Cap Seals. Lubrication maximises load capacity and life.

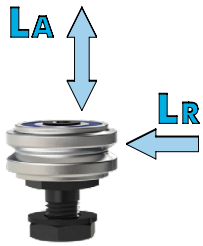
To calculate system life, the load factor L_F should first be calculated by using the equation below and capacities in the table provided. L_F should not exceed 0.5 for any combination of loads on Axial Stiffness bearings.

Life, in kilometres, can then be calculated using the second equation. The value for Basic Life is also taken from the table.

Part Number	Maximum Working Load (N)		Basic Life (km)
	$L_{A(max)}$	$L_{R(max)}$	
... UJ 20 ...	320	800	65
... UJ 25 ...	370	1350	85
... SS ... UJ 25 ...	290	1080	70
... UJ 34 ...	710	2000	570
... SS ... UJ 34 ...	570	1600	425
... UJ 40 ...	1200	2300	640

$$L_F = \frac{L_A}{L_{A(max)}} + \frac{L_R}{L_{R(max)}} \leq 0.5$$

$$\text{Life (km)} = \frac{\text{Basic Life}}{(0.03 + 0.97L_F)^3}$$



Compatible Slides, Lubrication Devices, Adjusting Tools and Tightening Torques

Part Number	...20...	...25...	...34...	...40...
Preferred Slide Size[*5]	NV & V	NS & S	NM & M	NM & M
Slide Lubricator	LB20	LB25	LB44	LB44
Cap Seal	-	CS25	CS34	-
Adjusting Wrench[*6]	AT18	AT25	AT34	AT40
Socket Tool[*6]	RT6	RT8	RT10	RT14
Fixing Nut Torque	7Nm	18Nm	33Nm	33Nm

Ordering Details

(R) (SS) SUJ 25 C DR NS

R = PRT2 version (Leave blank for GV3/SL2)

Stainless steel option [Size 25 and 34 only] (Leave blank if not required)

Fixing type: **SUJ** = Short axle, **LUJ** = Long axle

Part number (~ Bearing diameter in mm)

Nitrile Sealed Bearing (As standard for Axial Stiffness bearings)

Double Row Bearing (As standard for Axial Stiffness bearings)

Journal type: **C** = Concentric (fixed), **E** = Eccentric (adjustable, GV3/SL2 only), **DE** = Double Eccentric (adjustable, PRT2 version only)

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