

DualVee®

 **BISHOP  
WISECARVER**

**HepcoMotion®**  
ADVANCED LINEAR SOLUTIONS



# DualVee®

## Guide Wheels and Track

[HepcoMotion.com](http://HepcoMotion.com)

# EXPERTLY DESIGNED, DELIVERED TO PERFORM

The DualVee<sup>®</sup> linear slide system from Bishop-Wisecarver provides a cost effective and highly durable solution in a wide range of applications. Based on double row angular contact bearing technology, the original DualVee<sup>®</sup> design has provided reliable and versatile guidance in many industries and operating environments. The single edge track design is available in 4 sizes, is straightforward to install and features all the key benefits of V guide technology.

## PERFECT FOR HARSH AND EXTREME ENVIRONMENTS

With Bishop-Wisecarver's DualVee<sup>®</sup> Technology, you can be confident of a product that is well-proven in a wide range of industries and environments. DualVee<sup>®</sup> is well suited to harsh conditions and critical environments – exceeding reliability expectations.

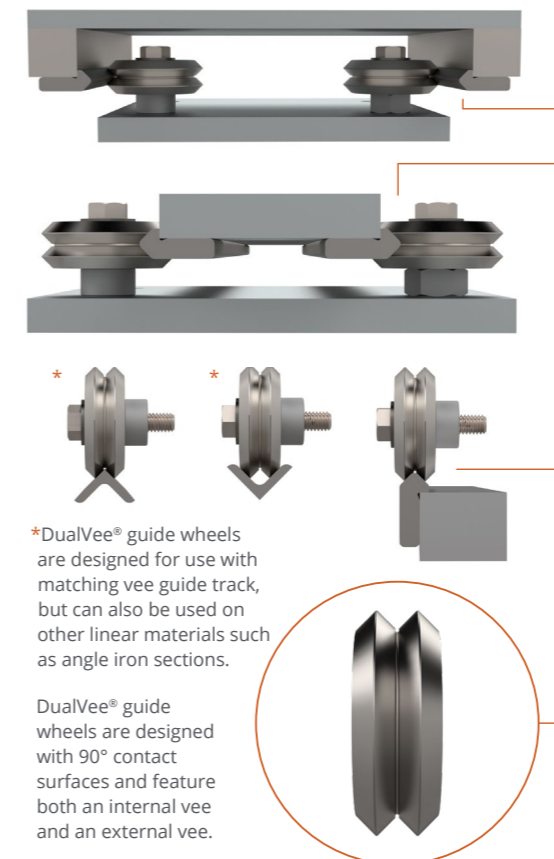
### Our Motion Products and Solutions Are Also Perfect For:

 HARSH ENVIRONMENTS	 LONG LENGTH	 LOW NOISE	 HIGH/LOW TEMPERATURE	 LOW TOTAL COST OF OWNERSHIP
 SMOOTH, LOW FRICTION MOTION	 WET ENVIRONMENTS	 FOOD GRADE	 CLEAN ROOM	 VACUUM

## DESIGN AND BENEFITS

- Double row angular contact ball bearing arrangement for dynamic loading
- 90° Dual Vee design allows for natural wiping action and clearing of debris
- Eccentric wheels, bushings, & journals allow for fitting without the need of high cost precision machining for mounting holes
- Wheels & track are replaceable, making maintenance simple and easy
- Sealed, shielded, or seal/shield combination to protect against contamination such as dirt, dust, metal chips, wood chips, textile fibre, food, slurry, and deionised water
- Smooth, low friction motion
- Unlimited butt-joining of track for long travel lengths, speeds up to 5.5 m/s and acceleration up to 5 g's
- Temperature ranges from -70°C to +260°C
- Track can be mounted to a variety of base materials with no need for precision ground or machined surfaces
- **NEW** Lock nut options to maintain wheel-to-track fit-up in moderate vibration settings, such as vehicle mounting
- **NEW** Solid lubricant option for enhanced ingress protection and extended life

Example mounting and running surfaces



\*DualVee<sup>®</sup> guide wheels are designed for use with matching vee guide track, but can also be used on other linear materials such as angle iron sections.

DualVee<sup>®</sup> guide wheels are designed with 90° contact surfaces and feature both an internal vee and an external vee.

# TABLE OF CONTENTS

DualVee <sup>®</sup> Guide Wheels Overview	4
Original Guide Wheels	5
SWA Series	6
SWS Series	7
SWI Series	8
Bushings	9
Journals	10
Track (Single Edge)	11
Wheel Covers	12
Track Lubricators	14
MinVee <sup>®</sup> Linear Guide Overview	15
Wheel Plates	16
Track (Double Edge)	17
Track Support	18

### Support

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# DUALVEE® GUIDE WHEELS

## For Any Application



Carbon Steel      Stainless Steel      Stainless Steel High Temperature      Stainless Steel Low Temperature      Studded Wheel Assemblies



Stainless Steel Washdown Wheels      Stainless Steel Vacuum Wheel      Stainless Steel Food/Pharma Wheel      **NEW** Stainless Steel Solid Lubricant Wheel      Polymer Studded Wheel Assemblies

WHEEL VERSION	PART NUMBER SCHEME	APPLICATION CONDITIONS	APPLICATION EXAMPLES	AVAILABLE SIZES	PROTECTION	WHEEL MATERIAL	BALL RETAINER MATERIAL	GREASE	TEMPERATURE RANGE
									(°C)
Original Guide Wheels Carbon	W_	• General purpose • Factory floor conditions	• Automation • Automotive • Woodworking • Printing • Packaging • Paper/textiles	0, 1	Shield	52100 Steel	Nylon 6,6	Shell Alvania EP2	-35° to +120°
	W_X			0,1,2, 3, 4, 4XL	Seal/shield	52100 Steel	Nylon 6,6	Shell Alvania EP2	-30° to +100°
Original Guide Wheels Stainless	W_S SX	• Corrosive conditions	• Medical • Laboratory • Food & beverage	1	Seal	440C Stainless	Nylon 6,6	Shell Alvania EP2	-30° to +100°
				2, 3, 4, 4XL	Seal/shield	440C Stainless	Nylon 6,6	Shell Alvania EP2	-30° to +100°
Studded Polymer Wheels	SWI_P	• Corrosive conditions • Low noise requirements	• Electronics • Medical • Laboratory	0,1, 2	Shield	Polymer (overmold) 440C Stainless	300 Stainless	Kluberplex BEM034-132	-20° to +120°
Vacuum Wheels	W_S S VAC	• Vacuum environments	• Material science	1, 2	Shield	440C Stainless	304 Stainless	Lubcon Ultratherm 2000	-35° to +250°
Washdown Wheels	WDW_S SX	• Washdown conditions • Hygienic environments	• Food processing • Food packaging	2, 3	Double seal	440C Stainless	Nylon 6,6	Klubersynth UH1 14-151	-30° to +100°
Food/Pharma Wheels	W_S SX H1	• Washdown conditions • Food equipment • Pharma equipment	• Food processing • Food packaging • Pharmaceutical	2, 3	Seal/shield	440C Stainless	Nylon 6,6	Klubersynth UH1 14-151	-30° to +80°
NEW Solid Lubricant	W_S SX H1 SL	• Washdown conditions • Wet / humid conditions • Food equipment • Pharma equipment	• Food processing • Food packaging • Medical device manufacturing	1, 2, 3, 4	Seal/shield	440C Stainless	304 Stainless Steel	H1 Food Grade Oil-Filled Polymer Matrix	-40° to +80°
Extreme Temperature Wheels	W_S S 227	• High temp. conditions • Corrosive conditions	• Baking • Welding • Plasma cutters	0,1, 2, 3, 4	Shield	440C Stainless	304 Stainless	Krytox® GPL227	-30° to +260°
	W_S S 300	• Low temp. conditions • Subzero conditions • Corrosive conditions	• Aerospace • Refrigeration • Flash freezing	0,1, 2, 3, 4	Shield	440C Stainless	304 Stainless	Kluber Isoflex PDL 300A	-70° to +110°

Wheel hardness between 56 - 64 HRC  
Shield material is 300 series stainless steel  
Seal material is NBR  
Seal/shield materials are 300 series stainless steel and NBR combination

Wheels can be assembled with user specified grease lubricants; call for more information  
Shell Alvania is owned by Royal Dutch Shell  
Ultratherm is owned by Lubcon  
Kluberplex, Klubersynth, and Isoflex are owned by Kluber Lubrication  
Krytox® is owned by DuPont

# ORIGINAL GUIDE WHEELS

## Product Features

From factory automation projects to OEM designs, **DualVee Motion Technology®** components and assemblies provide the design flexibility for virtually any guided motion application. Based on the **DualVee®** guide wheel, this technology offers a level of reliability that is unmatched in the industry.

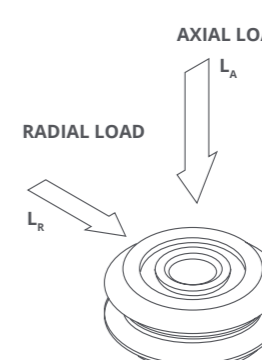
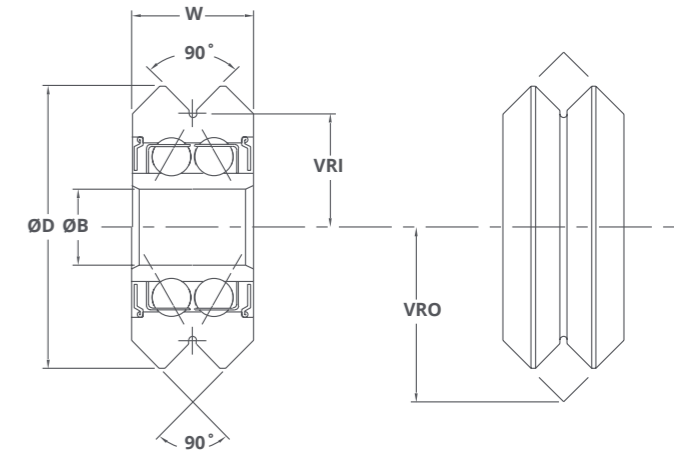
DUALVEE WHEEL SIZE	OUTER DIAMETER	WIDTH	BORE DIAMETER	VEE RADIUS INSIDE	VEE RADIUS OUTSIDE	WEIGHT (g)	COMPATIBLE TRACK SIZE
	D	W	B	VRI	VRO		
0	Ø14.83	6.35	Ø4.00+0.000/-0.008	5.94	9.12	5.1	0 (Double Edge; see MiniVee)
1	Ø19.58	7.87	Ø4.76+0.000/-0.008	7.95	11.89	11.1	1
2	Ø30.73	11.13	Ø9.53+0.000/-0.008	12.70	18.26	39.0	2
3	Ø45.80	15.88	Ø12.00+0.000/-0.008	19.05	27.00	130.2	3
4	Ø59.94	19.05	Ø15.00+0.000/-0.008	25.4	34.93	276.0	4
4XL	Ø75.39	25.4	Ø22.00+0.000/-0.008	31.75	44.45	575.0	4

\*All dimensions are in mm

MATERIALS INCLUDE  
Stainless steel | Carbon steel

DUALVEE WHEEL SIZE	WORKING RADIAL LOAD CAPACITY $L_r$	WORKING AXIAL LOAD CAPACITY $L_a$
	N	N
0	650	123
1	1220	252
2	2650	625
3	5900	1701
4	9700	4001
4XL	14300	6552

Specific load ratings vary by wheel version, see the Technical Data catalogue for details.

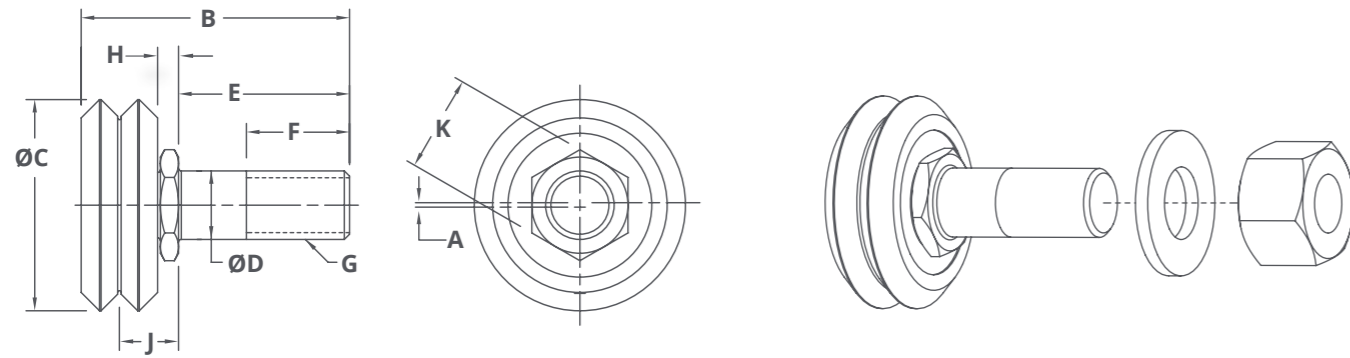


## Working Load Capacities

Working load capacities are based on empirical data on guide wheels used in general applications with static and dynamic load conditions. Guide wheels can routinely achieve travel life of one million cycles or higher when these specified load capacities are observed.

# SWA SERIES

## Studded Guide Wheels | Thru-Hole Style



Dimensions											
SIZE	ADJUSTABILITY	ECCENTRIC OFFSET	OVERALL LENGTH	WHEEL DIAMETER	JOURNAL DIAMETER	JOURNAL LENGTH	THREAD LENGTH	THREAD	HEX THICKNESS	VEE HEIGHT	HEX SIZE
		A	B	C	D <sup>1</sup>	E	F	G	H <sup>2</sup>	J	K
0	Concentric	---	18.8	Ø14.83	Ø3.97	9.9	6.1	M4 x 0.7	2.03	5.2	11.0
	Eccentric	.61									
1	Concentric	---	25.4	Ø19.58	Ø5.97	15.0	8.9	M6 x 1.0	2.11	6.05	12.0
	Eccentric	.61									
2	Concentric	---	39.1	Ø30.73	Ø9.97	24.9	15.0	M10 x 1.5	2.64	8.2	14.0
	Eccentric	.97									
3	Concentric	---	49.96	Ø45.80	Ø11.97	30.0	17.9	M12 x 1.75	3.48	11.4	19.0
	Eccentric	1.50									
4	Concentric	---	62.92	59.94	Ø15.96	40.1	24.1	M16 x 2.0	3.10	12.6	22.0
	Eccentric	1.50									

\*All dimensions are in mm

### Notes:

- Tolerance for Journal Diameter (D) are: +0/-0.01
- Tolerance for Hex Thickness (H) are: +/-0.02
- Stud material is AISI 303 stainless steel.
- Nut and washer material are 18-8 stainless steel.
- Total weight and load capacity are based upon the wheel version selected, see the Technical Data catalog for additional specifications.
- See the Technical Data catalog for additional wheel dimensions and specifications.

### Part Number Scheme:

PREFIX	ADJUSTABILITY	SIZE	WHEEL VERSION
SWA	C (Concentric)	0	Blank
	E (Eccentric)	1	X
		2	SSX
		3	SSXH1
		4	SS227
			SS300
			SSVAC
			WD#SSX*

### Part Number Example:

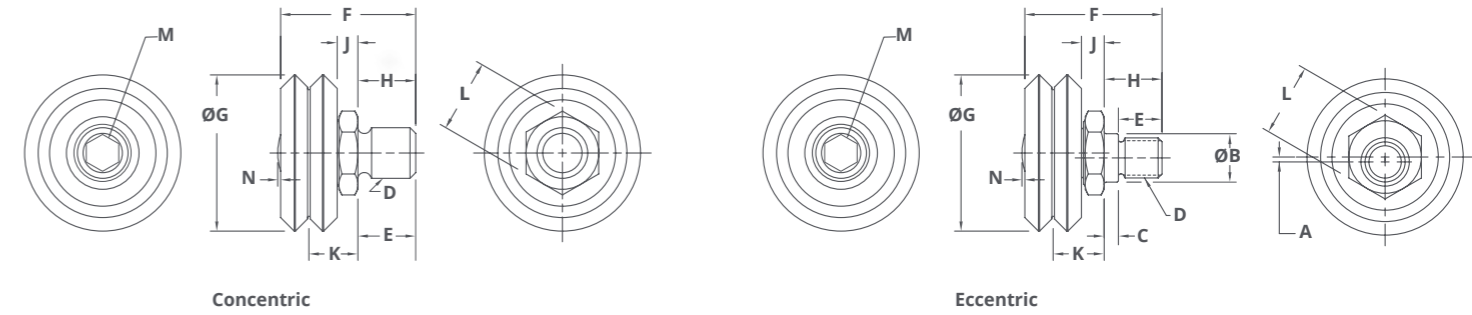
SWAE3SS227 = Studded Wheel Assembly, Eccentric, Size 3, Corrosion Resistant SS227 High Temperature Wheel Version

\*Washdown wheel version uses a different Part Number Scheme: SWA\_WD#SSX. The underscore is for the adjustability variable.

Polymer wheel versions are unavailable in the SWA series.

# SWS SERIES

## Studded Guide Wheels



Dimensions														
SIZE	ADJUSTABILITY	ECCENTRIC OFFSET	ECCENTRIC SHOULDER DIAMETER	ECCENTRIC SHOULDER LENGTH	THREAD	THREAD LENGTH	OVERALL LENGTH	WHEEL DIAMETER	JOURNAL LENGTH	HEX THICKNESS	VEE HEIGHT	HEX SIZE	OPTIONAL END HEX SIZE	MATERIAL PROTRUSION
		A	B <sup>1</sup>	C	D <sup>1</sup>	E	F	G	H	J <sup>2</sup>	K	L	M <sup>3</sup>	N
0	Concentric	---	---	---	M6 x 1.0	7.62	16.95	Ø14.83	7.62	2.97	6.15	9.53	---	.43
	Eccentric	.61	Ø5.56	2.16	M5 x 0.8	5.46								
1	Concentric	---	---	---	M8 x 1.25	8.10	19.33	Ø19.58	8.10	3.36	7.30	11.11	---	.64
	Eccentric	.61	Ø6.30	2.16	M6 x 1.0	5.94								
2	Concentric	---	---	---	M10 x 1.5	11.38	26.57	Ø30.73	11.38	4.07	9.63	14.29	6.0	---
	Eccentric	.97	Ø9.53	2.79	M8 x 1.25	8.59								
3	Concentric	---	---	---	M12 x 1.75	15.11	36.68	Ø45.80	15.11	5.69	13.63	19.05	8.0	---
	Eccentric	1.50	Ø10.72	4.32	M10 x 1.5	10.80								
4	Concentric	---	---	---	M14 x 2.0	19.00	44.88	Ø59.94	19.00	6.83	16.36	22.23	10.0	---
	Eccentric	2.01	Ø12.70	4.50	M12 x 1.75	14.50								

\*All dimensions are in mm

### Notes:

- Tolerances for Eccentric Hex Diameter (B) are: +.05/-0.00
- Tolerance for Shoulder Thickness (J) are: +/-0.02
- End hex provides easy external means for adjustment.
- Stud material is AISI 303 stainless steel.
- See the Technical Data catalog for recommended mounting geometry.
- Increased vibration resistance and anti-loosening locknuts are available for mounting eccentric SWS/SWI guide wheels. Please contact HepcoMotion for information.

### Part Number Scheme:

PREFIX	ADJUSTABILITY	SIZE	WHEEL VERSION	OPTION END HEX	SUFFIX
SWS	C (Concentric)	0	Blank	Blank	A
	E (Eccentric)	1	X	H	
		2	SSX		
		3	SSXH1		
		4	SS227		
			SS300		
			SSVAC		
			WD#SSX*		

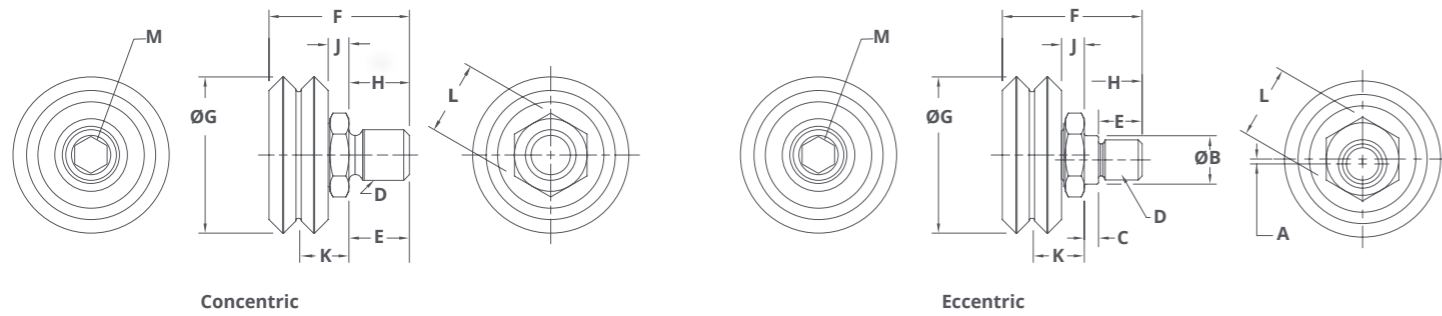
### Part Number Example:

SWSE2SS300HA = Studded Wheel Swaged, Eccentric, Size 2, Corrosion Resistant SS300 Wheel Version, with Optional End Hex

\*Washdown wheel version uses a different Part Number Scheme: SWS\_WD#SSXA. The underscore is for the adjustability variable.

Polymer wheel versions are unavailable in the SWS series.

Studded Guide Wheels



Dimensions													
SIZE	ADJUSTABILITY	ECCENTRIC OFFSET	ECCENTRIC SHOULDER DIAMETER	ECCENTRIC SHOULDER LENGTH	THREAD	THREAD LENGTH	OVERALL LENGTH	WHEEL DIAMETER	JOURNAL LENGTH	HEX THICKNESS	VEE HEIGHT	HEX SIZE	END HEX SIZE
0	Concentric	---	---	---	M6 x 1.0	7.62	16.95	Ø14.83	7.62	2.97	6.15	11.0	---
	Eccentric	.81	Ø5.56	2.16	M5 x 0.8	5.46							
1	Concentric	---	---	---	M8 x 1.25	8.10	19.33	Ø19.58	8.10	3.36	7.30	12.0	---
	Eccentric	.84	Ø6.30	2.16	M6 x 1.0	5.94							
2	Concentric	---	---	---	M10 x 1.5	11.38	26.57	Ø30.73	11.38	4.07	9.63	14.0	4.0
	Eccentric	.97	Ø9.53	2.78	M8 x 1.25	8.59							

\*All dimensions are in mm

Notes:

- Tolerances for Eccentric Shoulder Diameter (B) are: +.05/-0.0
- Tolerance for Vee Height (K) are: +/- .10
- End hex provides easy external means for adjustment.
- See the Technical Data catalog for recommended mounting geometry.
- Increased vibration resistance and anti-loosening locknuts are available for mounting eccentric SWS/SWI guide wheels. Please contact HepcoMotion for information.

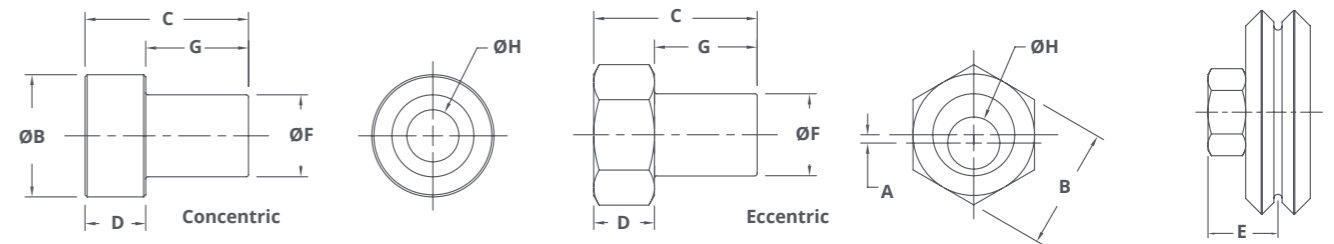
Part Number Scheme:

PREFIX	ADJUSTABILITY	SIZE	WHEEL VERSION
SWI	C (Concentric)	0	P
	E (Eccentric)	1	
		2	

Part Number Example:

SWIE1P = Studded Wheel Integrated, Eccentric, Size 1, Polymer

Mounting for Original Guide Wheels



Dimensions											
SIZE	HEAD PROFILE	ADJUSTABILITY	ECCENTRIC OFFSET	HEAD SIZE	OVERALL HEIGHT	HEAD THICKNESS	MOUNTING SURFACE TO WHEEL VEE	WHEEL MOUNTING DIAMETER	WHEEL MOUNTING LENGTH	MOUNTING HOLE	RECOMMENDED MOUNTING HARDWARE
			A	B	C	D <sup>1</sup>	E	F	G	H	SCREWS
1	Standard	Concentric	---	Ø11.18	13.8	6.22	10.16	Ø4.75	7.62	Ø4.0	M4
		Eccentric	.30	11.99							
1	Low	Concentric	---	Ø11.18	9.7	2.11	6.05	Ø4.75	7.62	Ø4.0	M4
		Eccentric	.18	11.99							
2	Standard	Concentric	---	Ø14.22	17.5	6.65	12.22	Ø9.51	10.80	Ø6.0	M6
		Eccentric	.61	14.00							
2	Low	Concentric	---	Ø14.22	13.4	2.64	8.20	Ø9.51	10.80	Ø6.0	M6
		Eccentric	.61	14.00							
3	Standard	Concentric	---	Ø19.05	25.1	9.47	17.42	Ø11.99	15.62	Ø8.0	M8
		Eccentric	1.07	19.00							
3	Low	Concentric	---	Ø19.05	19.1	3.48	11.43	Ø11.99	15.62	Ø8.0	M8
		Eccentric	1.07	19.00							
4	Standard	Concentric	---	Ø22.35	29.9	11.10	20.62	Ø14.99	18.80]	Ø10.0	M10
		Eccentric	1.52	22.00							
4	Low	Concentric	---	Ø22.35	21.9	3.10	12.62	Ø14.99	18.80]	Ø10.0	M10
		Eccentric	1.52	22.00							
4XL	Standard	Concentric	---	Ø31.75	39.5	14.35	27.05	Ø21.99	25.15	Ø14.0	M14
		Eccentric	1.52	30.00							
4XL	Low	Concentric	---	Ø30.00	30.3	5.11	17.81	Ø21.99	25.15	Ø14.0	M14
		Eccentric	1.52	30.33							

\*All dimensions are in mm

Notes:

- Tolerance for Head Thickness (D) is: +/- .03
- All size 1 bushings feature a Ø7.92 +/- 0.13 bearing step to ensure proper clearance to the guide wheel seal or shield. This is included in dimension D above. See images below:
- Bushing material is AISI 303 stainless steel.
- See the Technical Data catalog for recommended mounting geometry.



Part Number Scheme for Standard Head Height:

PREFIX	ADJUSTABILITY	SIZE	SUFFIX
MB	Blank (Concentric)	1	SS
	X (Eccentric)	2	
		3	
		4	
		4XL	

Part Number Example:

MBX4SS = Metric Bushing, Standard Head Height, Eccentric, Size 4, Stainless Steel

Part Number Scheme for Low Head Height:

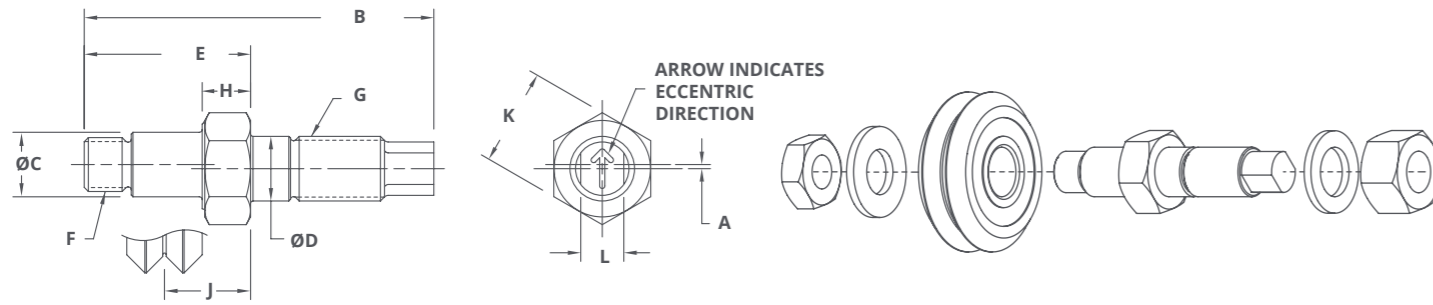
PREFIX	SIZE	SERIES	ADJUSTABILITY
M	1	PWB	C (Concentric)
	2		X (Eccentric)
	3		
	4		
	4XL		

Part Number Example:

M2PWBC = Metric Bushing, Size 2, Low Head Height, Concentric

# JOURNALS

## Mounting for Original Guide Wheels



Dimensions														
SIZE	ADJUSTABILITY	ECCENTRIC OFFSET	OVERALL LENGTH	WHEEL MOUNTING DIAMETER	JOURNAL MOUNTING DIAMETER	JOURNAL LENGTH	WHEEL MOUNT THREAD	JOURNAL MOUNT THREAD	HEX THICKNESS	VEE HEIGHT	HEX SIZE	WRENCH FLATS	MOUNTING PLATE THICKNESS	
													A	B
0	Concentric	---	36.8	Ø3.99	Ø6.35	17.65	8-32	1/4-28	6.35	9.53	9.53	3.18	3.18	9.53
	Eccentric	.25												
1	Concentric	---	39.1	Ø4.75	Ø6.35	19.94	10-32	1/4-28	6.35	10.29	11.11	3.18	3.18	9.53
	Eccentric	.30												
2	Concentric	---	55.2	Ø9.52	Ø9.53	28.17	5/16-24	3/8-24	7.14	12.70	14.29	6.35	4.75	12.70
	Eccentric	.61												
3	Concentric	---	66.6	Ø12.99	Ø11.10	34.93	7/16-20	7/16-20	9.53	17.46	19.05	6.35	6.35	15.88
	Eccentric	1.07												
4	Concentric	---	77.9	Ø15.00	Ø12.70	39.75	1/2-20	1/2-20	11.10	20.62	22.23	7.92	9.53	19.05
	Eccentric	1.52												
4XL	Concentric	---	103.4	Ø21.99	Ø19.05	51.94	3/4-16	3/4-16	14.35	23.88	31.75	11.10	19.05	28.58
	Eccentric	1.5												

\*All dimensions are in mm

### Notes:

- Tolerance for Journal Mounting Diameter (D) are: +00/-0.05
- Journal assemblies are supplied with mounting nuts and washers, without guide wheel.
- Flat washers are stainless steel.
- Journal material is AISI 303 stainless steel.
- Nuts are Nylon locking zinc plated carbon steel.
- Engraved arrow is on the eccentric version only.

### Part Number Scheme:

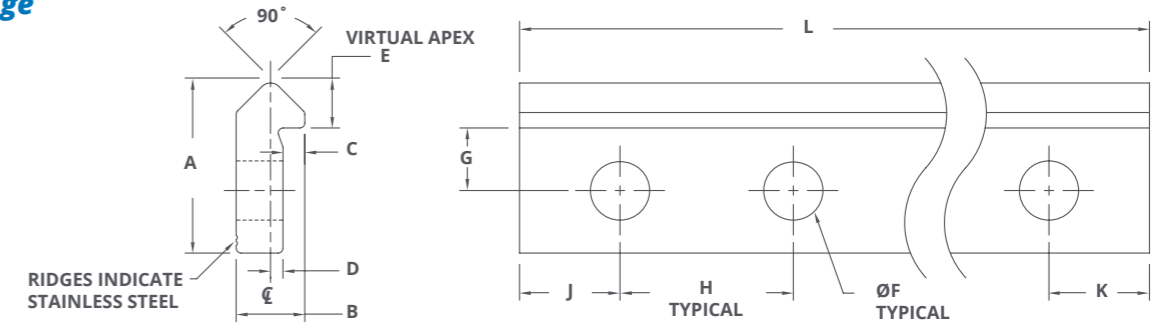
PREFIX	ADJUSTABILITY	SIZE	SUFFIX
MJ	C (Concentric)	0	A
	X (Eccentric)	1	
		2	
		3	
		4	
		4XL	

### Part Number Example:

MJX2A = Journal, Eccentric, Size 2, Assembly

# TRACK

## Single Edge



Dimensions											
SIZE	OVERALL WIDTH	OVERALL HEIGHT	UNDERCUT DEPTH	UNDERCUT TO VEE	SHOULDER TO VEE APEX	HOLE DIAMETER	SHOULDER TO HOLE	HOLE SPACING	HOLE END SPACING 1	HOLE END SPACING 2	OVERALL LENGTH
	A	B	C	D	E	F	G <sup>1</sup>	H <sup>2</sup>	J <sup>3</sup>	K <sup>3</sup>	L <sup>4</sup>
1	11.10	4.75	1.57	.79	3.18	4.5	4.0	45	20.5	20.5	Standard Versions or User Specified
2	15.88	6.35	2.39	.79	4.75	6.0	5.6	90	43	43	
3	22.23	8.71	2.77	1.57	6.35	8.0	8.0	90	43	43	
4	26.97	11.10	3.18	2.36	7.92	9.5	9.5	90	43	43	

\*All dimensions are in mm

### Notes:

- Tolerance for Shoulder to Hole (G) is: +/-0.13
- Tolerance for Hole Spacing (H) are non-cumulative and is: ±0.2
- Tolerance for Hole End Spacing 1 & 2 (J & K) are: +/-0.005 [+/-0.13]
- Tolerances for Overall cut Length (L) are: ±1.5mm
- Carbon steel track material is AISI 1045, available soft at Hrc 22-25, or induction hardened to Hrc 53 minimum.
- Stainless steel track material is AISI 420, available soft at Hrc 20-22, or induction hardened to Hrc 40 minimum.
- Track finish is polished and oiled for corrosion resistance.
- Maximum single piece track lengths are 6096mm (except T4SS maximum length 5790mm)
- Cutting charge applies

### Part Number Scheme:

PREFIX	HARDENED	SIZE	MATERIAL	LENGTH IN MM	NUMBER OF HOLES
T	Blank	1	Blank	See Chart	See Chart
	S	2	SS		
		3			
		4			

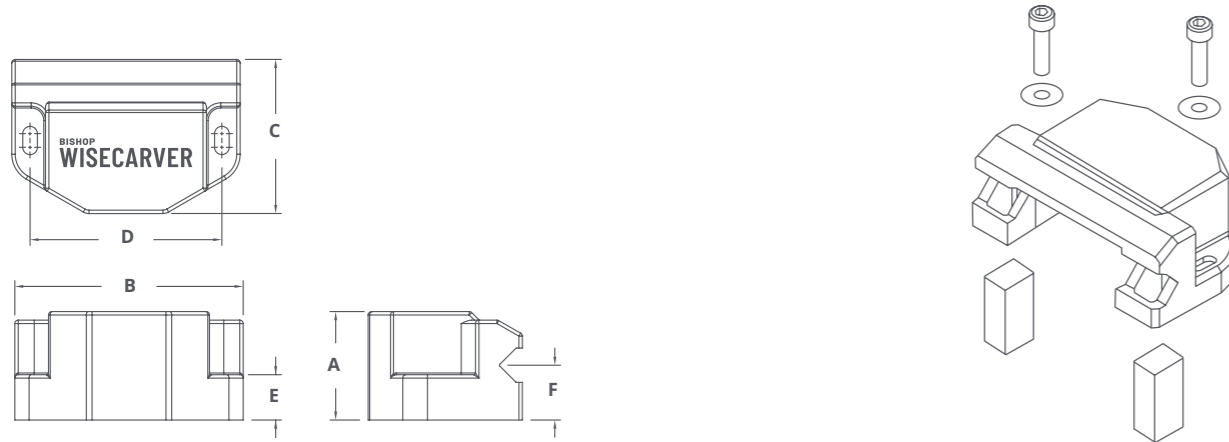
### Part Number Example:

T3-2246-25 represents a size 3 track, carbon steel hardened, 2246mm long, with a total of 25 holes along the length  
 TS2SS-446-5 represents a size 2 track, stainless steel unhardened, 446mm long, with a total of 5 holes along the length

Dimensions											
STANDARD LENGTHS AND HOLES											
SIZE	LENGTH	# OF HOLES	SIZE	LENGTH	# OF HOLES	SIZE	LENGTH	# OF HOLES	SIZE	LENGTH	# OF HOLES
1	311	7	2	446	5	3	446	5	4	446	5
	581	13		806	9		806	9			
	851	19		1166	13		1166	13			
	1121	25		1526	17		1526	17			
	1391	31		1886	21		1886	21			
	1661	37		2246	25		2246	25			

# WHEEL COVERS

## SWA Series Studed Wheels & Bushings



### Dimensions

SIZE	MOUNTING COMPATIBILITY	OVERALL HEIGHT	OVERALL LENGTH	OVERALL WIDTH	SLOT SPAN	BASE THICKNESS	MOUNTING SURFACE TO TRACK VEE	MOUNTING HARDWARE	
		A	B	C	D	E	F	SCREWS	WASHERS
2	Standard Profile Bushings	24.1	50.8	34.3	42.7	10.1	12.2	M3 x 0.5 x 16 mm	M3
	Low Profile Bushings SWA Series	20.1	50.8	34.3	42.7	6.1	8.2	M3 x 0.5 x 12 mm	
3	Standard Profile Bushings	34.0	67.8	50.2	59.4	15.3	17.5	M3 x 0.5 x 20 mm	M3
	Low Profile Bushings SWA Series	28.0	67.8	50.12	59.4	9.4	11.5	M3 x 0.5 x 19 mm	
4	Standard Profile Bushings	40.1	88.9	63.5	78.0	19.3	20.7	M4 x 0.7 x 25 mm	M4
	Low Profile Bushings SWA Series	32.1	88.9	63.5	78.0	11.3	12.7	M4 x 0.7 x 20 mm	

\*All dimensions are in mm

### Notes:

1. Wheel cover material is black ABS.
2. Lubricator felt material is white wool.
3. Lubricant is light weight synthetic oil.
4. Mounting hardware is stainless steel.

### Part Number Scheme:

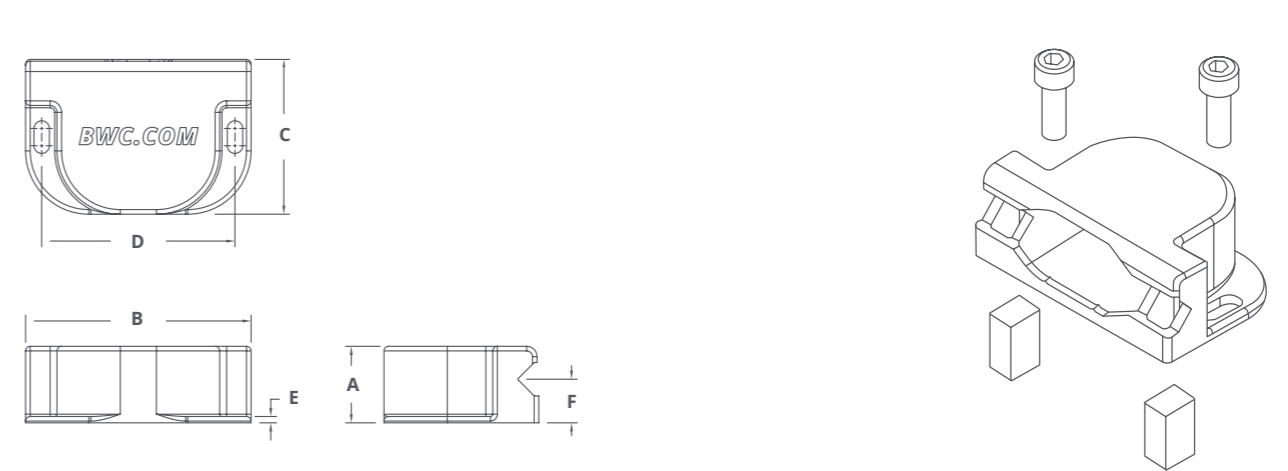
PREFIX	SIZE	VERSION	SUFFIX
WC	2	Blank	A
	3	LP	
	4		

### Part Number Example:

WC4LPA = Wheel Cover, Size 4, Low Profile, Assembly

# WHEEL COVERS

## SWS/SWI Series Studed Wheels & Bushings



### Dimensions

SIZE	MOUNTING COMPATIBILITY	OVERALL HEIGHT	OVERALL LENGTH	OVERALL WIDTH	SLOT SPAN	BASE THICKNESS	MOUNTING SURFACE TO TRACK VEE	MOUNTING HARDWARE
		A	B	C	D	E	F	SCREWS
1	SWS/SWI Series	13.3	38.0	24.4	31.8	1.4	7.3	M3 x 0.5 x 10 mm
2	SWS/SWI Series	16.9	49.8	34.2	42.7	1.4	9.6	M3 x 0.5 x 10 mm
3	SWS/SWI Series	23.24	67.3	50.0	59.4	1.4	16.6	M3 x 0.5 x 10 mm
4	SWS/SWI Series	29.3	87.9	64.78	77.8	1.4	16.4	M4 x 0.7 x 12 mm

\*All dimensions are in mm

### Notes:

1. Wheel cover material is black Nylon.
2. Lubricator felt material is white wool.
3. Lubricant is light weight synthetic oil.
4. Mounting hardware is stainless steel.

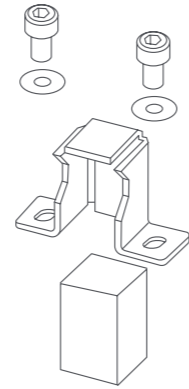
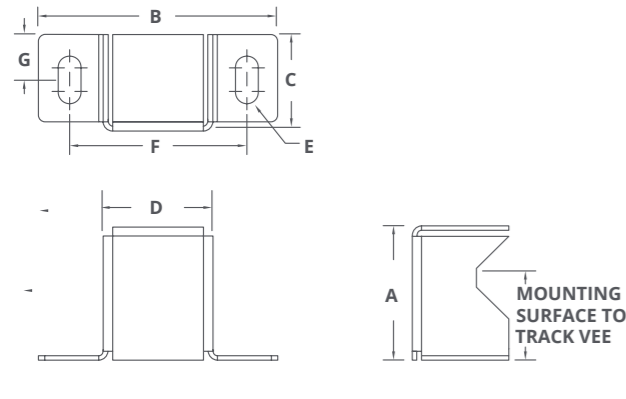
### Part Number Scheme:

PREFIX	SIZE	VERSION	SUFFIX
WC	1	SWI	A
	2		
	3		
	4		

### Part Number Example:

WC1SWIA = Wheel Cover, Size 1, Studed Wheels Integrated, Assembly

## TRACK LUBRICATORS



Dimensions													
SIZE	MOUNTING COMPATIBILITY	OVERALL HEIGHT	OVERALL LENGTH	OVERALL WIDTH	HOLDER LENGTH	SLOT DIAMETER	SLOT SPAN	SLOT CENTER	MOUNTING SURFACE TO TRACK VEE		MOUNTING HARDWARE		
		A	B	C	D	E	F	G	MIN.	MAX.	SIZE	SCREWS	WASHERS
0	Studded Wheels	9.1	17.0	7.6	5.8	Ø2.4	12.0	2.92	5.2	6.2	0	M2 x 0.4 x 4 mm	M2
1 & 2	Bushings Standard Journals	17.5	28.0	11.4	12.0	Ø3.0	20.0	4.6	9.4	12.7	1	M2 x 0.4 x 5 mm	M2
	Bushings Low SWA Series	13.5	28.0	11.4	12.0	Ø3.0	20.0	4.6	5.41	8.7	2	M3 x 0.5 x 6 mm	M3
	SWS Series	14.7	28.6	11.4	12.0	Ø3.0	20.3	4.6	6.9	9.9			
3 & 4	Bushings Standard Journals	30.5	46.7	18.8	21.3	Ø4.3	34.0	7.4	16.2	22.0	3	M3 x 0.5 x 6 mm	M3
	Bushings Low SWA Series	21.3	46.7	18.8	21.3	Ø4.3	34.0	7.4	11.4	13.2	4	M4 x 0.7 x 8 mm	M3
	SWS Series	25.8	46.7	18.8	21.3	Ø4.3	34.0	7.4	13.0	17.3			

\*All dimensions are in mm

### Notes:

1. Felt holder material is AISI 300 stainless steel.
2. Lubricator felt material is white wool.
3. Lubricant is light weight synthetic oil.
4. Mounting hardware is stainless steel.

### Part Number Scheme:

PREFIX	SIZE	VERSION	SUFFIX
TL	1	Blank	A
	2	LP	
	3	BWP	
	4		

### Part Number Example:

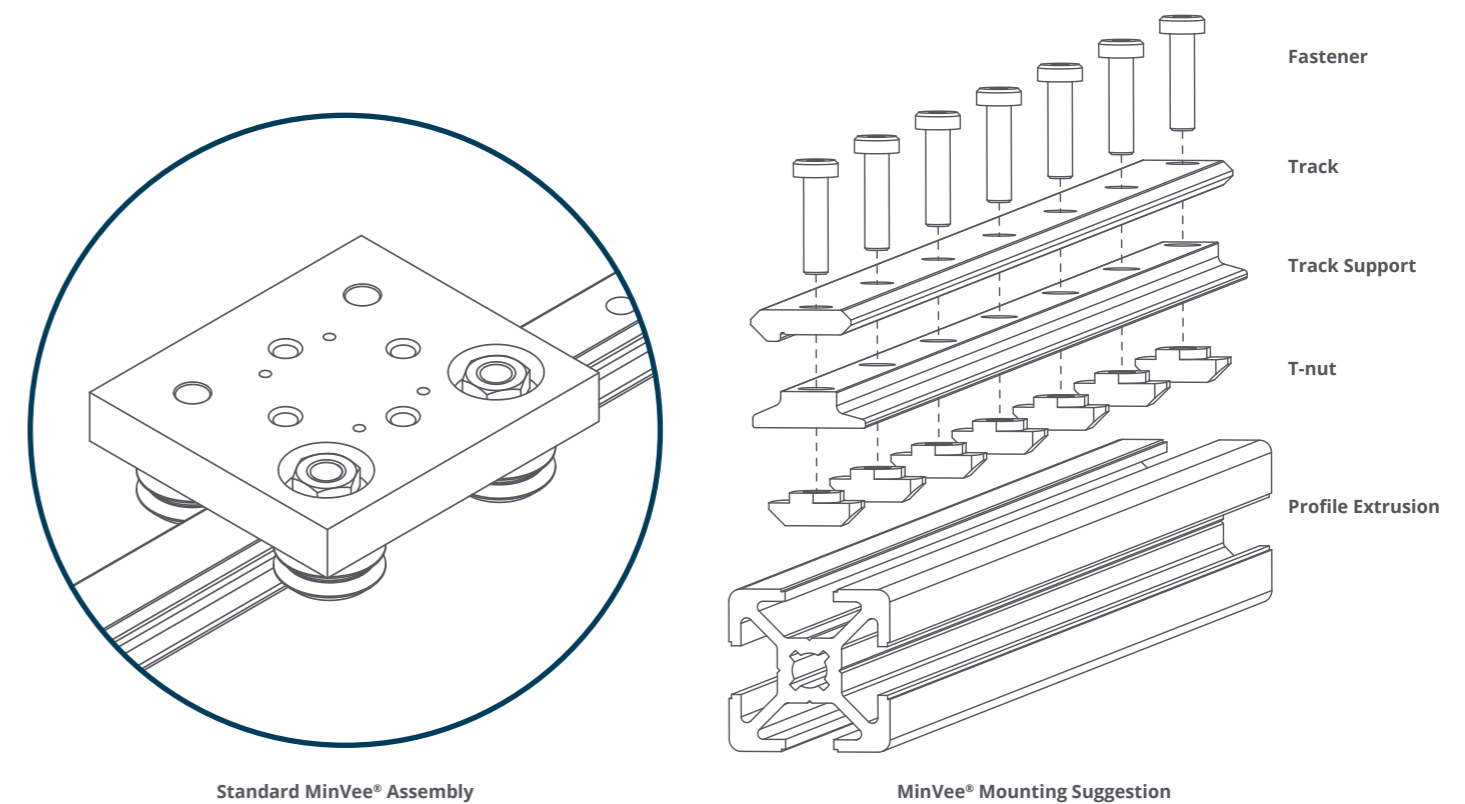
TL1LPA = Track Lubricator, Size 1, Low Profile, Assembly  
 \*Size 0 uses a different Part Number Scheme: MV0TLA.

## MINVEE® PRODUCT OVERVIEW

**MinVee®** linear slide systems from Bishop-Wisecarver Corporation are miniature guides consisting of a compact 44.5mm wide by 50.8mm long wheel plate with AISI 52100 carbon steel or polymer wheels and double vee-edge guide tracks.

When used with available 6063-T6 aluminum track support extrusion, assembled height is 20mm. **MinVee®** double edge track is available in AISI 1045 carbon steel in six standard lengths up to 927mm with mounting holes predrilled. Axial working capacities are 540N for steel wheels and 67N for polymer wheel versions.

**MinVee®** is ideal for use in semiconductor, laboratory, and medical applications with compact space requirements.



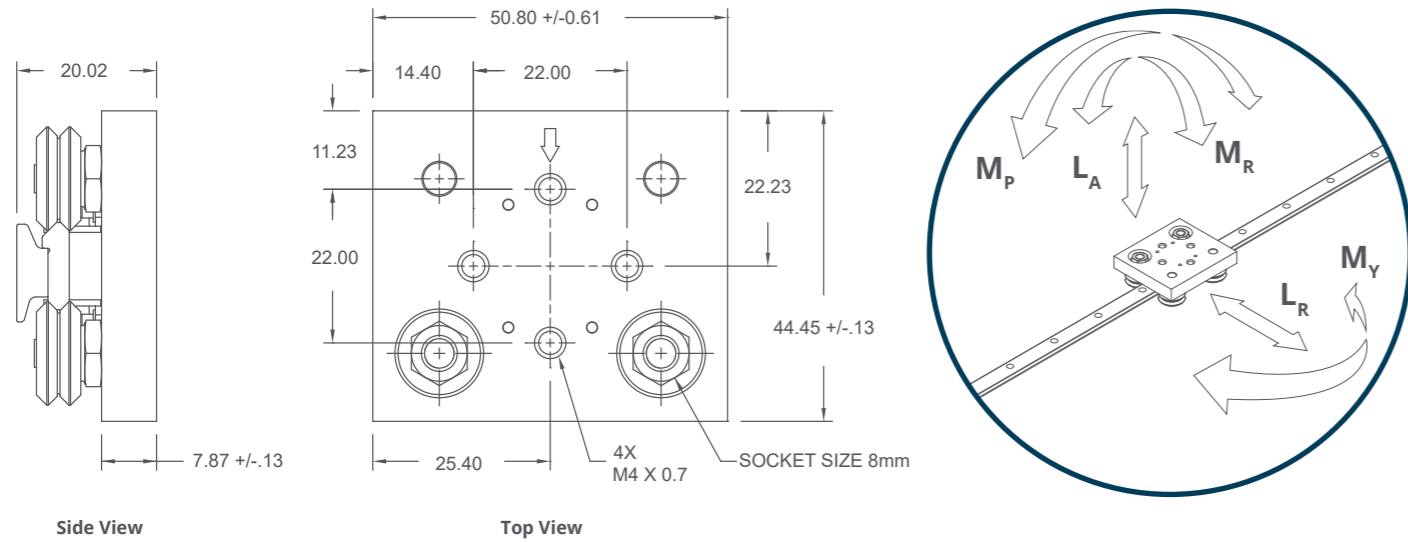
Standard MinVee® Assembly

MinVee® Mounting Suggestion



**Wheel Plates**

- 6061-T6 clear anodized aluminum wheel plate with stainless steel lubricator housing and felt lubrication pads
- Two (2) concentric and two (2) eccentric DualVee® studded wheels
- Carbon steel, stainless steel, or polymer over-molded stainless steel bearings
- Optional vibration-resistant lock nuts **NEW**

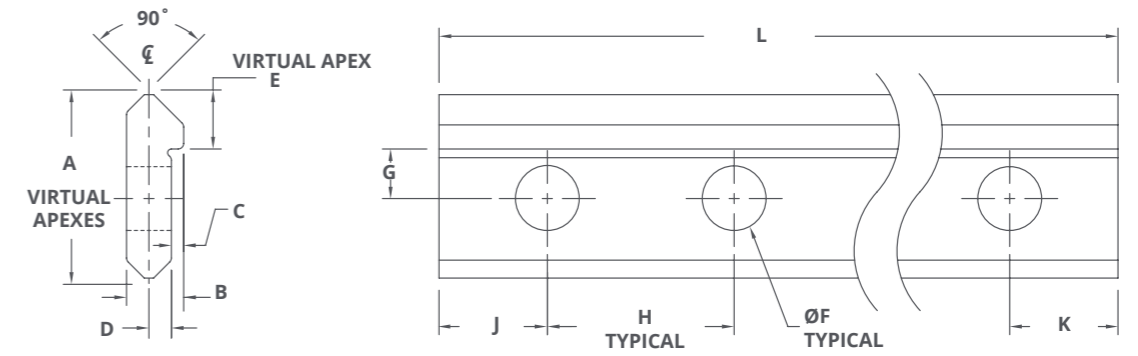


Dimensions										
STOCK CODE*	WHEEL VERSION	TEMPERATURE RANGE	MAXIMUM SPEED	MAXIMUM ACCELERATION	PITCH MOMENT (M <sub>p</sub> )	YAW MOMENT (M <sub>y</sub> )	ROLL MOMENT (M <sub>r</sub> )	WORKING AXIAL LOAD CAPACITY (L <sub>a</sub> )	WORKING RADIAL LOAD CAPACITY (L <sub>r</sub> )	WEIGHT IN GRAMS (g)
MV0WPAP	Polymer Overmolded AISI 440C Stainless Steel, Shielded	-20°C to 120°C	1m/s	29 m/s <sup>2</sup>	1.4 Nm	4.5 Nm	1 Nm	66.7 N	65 N	72
MV0WPA	AISI 52100 Carbon Steel, Shielded	-35°C to 120°C			7.9 Nm	8.6 Nm	6.2 Nm	540 N	490 N	84
MV0WPAX	AISI 52100 Carbon Steel, Sealed	-30°C to 100°C	5m/s	49 m/s <sup>2</sup>						
MV0WPA-SS227	AISI 440C Stainless Steel, High Temperature, Shielded	-30°C to 260°C			6.5 Nm	7.1 Nm	5.1 Nm	444 N	408 N	

\*All dimensions are in mm

Wheel plate assemblies are made from clear anodized 6061-T6 aluminum and include stainless steel lubricator housings with felt track wipers  
 Working load capacities are based on 100 km service life (at 23°C and 50% humidity)  
 \* For vibration-resistant lock nut option, replace "WPA" with "WPLA" in stock code. Prevailing torque lock nuts are 304 stainless steel, resistant to high/low temp. and chemicals.

**Double Edge**



Dimensions											
SIZE	OVERALL WIDTH	OVERALL HEIGHT	UNDERCUT DEPTH	UNDERCUT TO VEE	SHOULDER TO VEE APEX	HOLE DIAMETER	SHOULDER TO HOLE	HOLE SPACING	HOLE END SPACING 1	HOLE END SPACING 2	OVERALL LENGTH
	A	B	C	D	E	F	G <sup>1</sup>	H <sup>2</sup>	J <sup>3</sup>	K <sup>3</sup>	L <sup>4</sup>
0	13.1	3.9	.8	1.5	4.0	Ø4.0	3.5	45.0	10.0	10.0	Standard Versions or User Specified

\*All dimensions are in mm

STANDARD LENGTHS AND HOLES		
SIZE	LENGTH	# OF HOLES
0	155	4
	290	7
	425	10
	560	13
	695	16
	830	19

**Notes:**

1. Tolerance for Shoulder to Hole (G) is: +/-0.13
2. Tolerance for Hole Spacing (H) are non-cumulative and is: +/-0.2
3. Tolerance for Hole End Spacing 1 & 2 (J & K) are: +/-0.13
4. Tolerances for Overall cut Length (L) are: ±1.5mm
5. Track material is AISI 1045 carbon steel, available soft at Hrc 22-25, or induction hardened to Hrc 53 minimum.
6. Track finish is polished and oiled for corrosion resistance.
7. Maximum single piece track lengths are 6096mm hardened, or 6706mm soft.

**Part Number Scheme:**

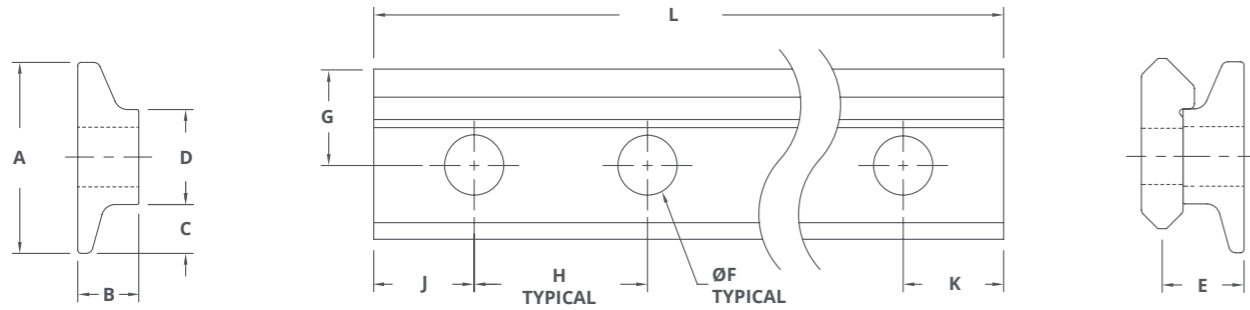
PREFIX	HARDENED	SIZE	VERSION	LENGTH IN MM	DASH	NUMBER OF HOLES
TD	Blank	0	-	See Chart	-	See Chart
	S					

**Part Number Example:**

T050 - 560 -13 = Track Double Edge, Soft, Size 0, 622.3mm long, 13holes.

# MINVEE® TRACK SUPPORT

## Double Edge



### Dimensions

SIZE	OVERALL WIDTH	OVERALL HEIGHT	SURFACE TO EDGE	SURFACE WIDTH	VEE HEIGHT	HOLE DIAMETER	SHOULDER TO HOLE	HOLE SPACING	HOLE END SPACING 1	HOLE END SPACING 2	OVERALL LENGTH
	A	B	C	D	E	F	G <sup>1</sup>	H <sup>2</sup>	J <sup>3</sup>	K <sup>3</sup>	L <sup>4</sup>
0	14.0	4.5	0.36	7.0	6.0	Ø4.4	6.9	45.0	10.0	10.0	Standard Versions or User Specified

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### STANDARD LENGTHS AND HOLES

SIZE	LENGTH	# OF HOLES
0	155	4
	290	7
	425	10
	560	13
	695	16
	830	19

### Notes:

1. Tolerance for Shoulder to Hole (G) is: +/-0.13
2. Tolerance for Hole Spacing (H) are non-cumulative and is: +/-0.2
3. Tolerance for Hole End Spacing 1 & 2 (J & K) are: +/-0.13
4. Tolerances for Overall cut Length (L) are: ±1.5mm
5. Track support material is 6063-T6 aluminum with anodized finish.
6. Track support holes and cut to length ends are unfinished bare aluminum.
7. Maximum single piece track length is 3048mm.

### Part Number Scheme:

PREFIX	SIZE	DESCRIPTION	DASH	LENGTH IN MM	DASH	NUMBER OF HOLES
MV	0	TS	-	See Chart	-	See Chart

### Part Number Example:

MVOTS - 425 - 10 = Track support, Size 0, 425mm long, 10 holes

# HepcoMotion®

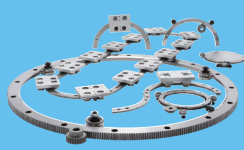
ADVANCED LINEAR SOLUTIONS



**GV3**  
Linear Guidance and  
Transmission System



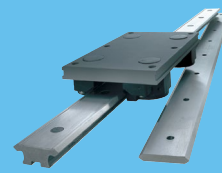
**HDS2**  
Heavy Duty Slide  
System



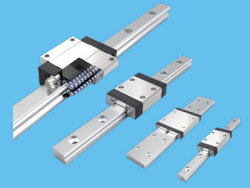
**PRT2**  
Ring Slides and  
Track System



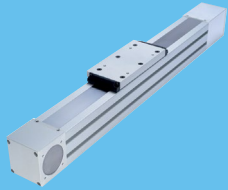
**HDRT**  
Heavy Duty Ring Slides  
and Track System



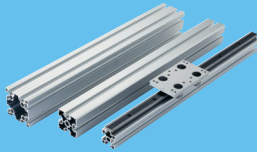
**SL2**  
Stainless Steel Based  
Slide System



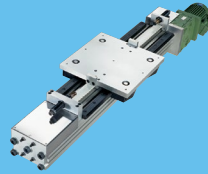
**HLG**  
Hepco Ball Guides



**SBD**  
Sealed Belt  
Drive



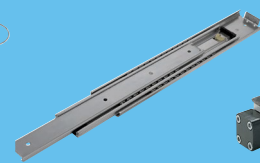
**MCS**  
Aluminium Frame  
and Machine  
Construction System



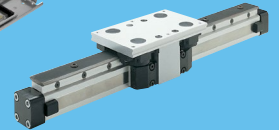
**HDLS**  
Heavy Duty Driven  
Linear System



**DLS**  
Linear Transmission and  
Positioning System



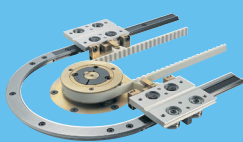
**HTS**  
Telescopic Ball  
Bearing Slides



**HPS**  
Powerslide-2 Guided  
Rodless Cylinder



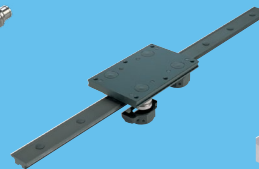
**MHD**  
Heavy Duty Track Roller  
Guidance System



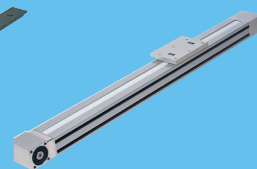
**DTS**  
Driven Track  
System



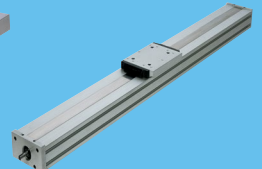
**Hepco  
Ball Screws**



**SimpleSelect®**  
Vee Slide Linear  
Guidance Systems



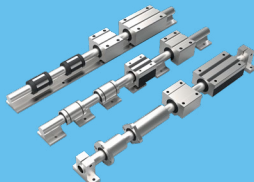
**PDU2**  
Profile Driven Unit



**PSD120**  
Profile Screw  
Driven Unit



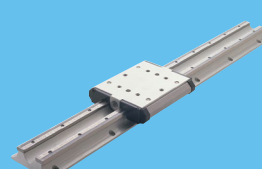
**Shaft**  
Precision Steel and  
Aluminium Shaft



**Ball Bushings**  
Linear Bearing  
System



**DUALVEE®**  
Single Edge Slide System



**LoPro®**  
Aluminium Based  
Slide System



**UtiliTrak®**  
Lightweight U Channel  
Guideway

For further information on HepcoMotion® products and details of worldwide representation, please visit:

**HepcoMotion.com**

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Email: [info.es@hepcotion.com](mailto:info.es@hepcotion.com)

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(Also covering  
French-speaking Switzerland)  
[www.hepcotion.com/fr](http://www.hepcotion.com/fr)  
Tel: +33 (0) 1 34 64 30 44  
Email: [info.fr@hepcotion.com](mailto:info.fr@hepcotion.com)

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