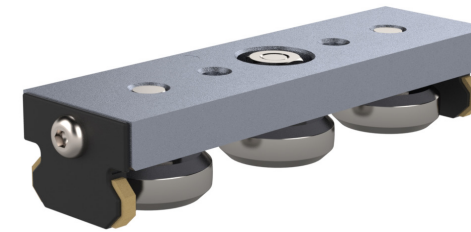


# UTILITRAK LINEAR GUIDES

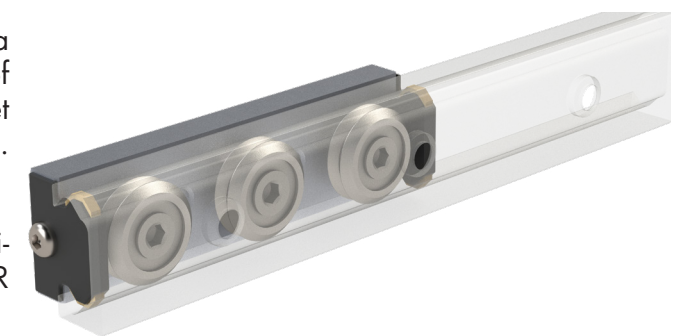
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The UtiliTrak linear guide system from Bishop-Wisecarver is designed for commercial applications which can benefit from ease of installation, narrow footprint and minimal maintenance.



UtiliTrak offers high reliability in a compact design. It can be mounted to an unmachined surface and has a wide tolerance for misalignment when running parallel guides. Material and seal options ensure an option for a wide variety of applications including hostile environments and high temperatures.

UtiliTrak Industry standard V technology offers a low maintenance solution reducing the life cost of the system. Benefits include low friction and quiet operation as well as high speeds and acceleration.



The VC range offers a default choice for most applications with alternative formats in SW, PW and CR options for more specialised requirements:

- **VC** – Carbon steel hybrid DualVee technology, simple design, ideal for the majority of commercial applications
- **SW** – Carbon steel combining DualVee V wheels and MadeWell Crown rollers where additional compliance in alignment is required
- **PW** – Based on aluminium channel and polymer overmoulded wheels, suitable for low load applications where weight is a consideration, and/or corrosion resistance is required
- **CR** – Stainless steel track mounted to an aluminium channel, suited to heavier applications where corrosion resistance is a pre-requisite

## Features and benefits



Harsh Environments



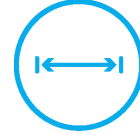
Low noise



High temperatures



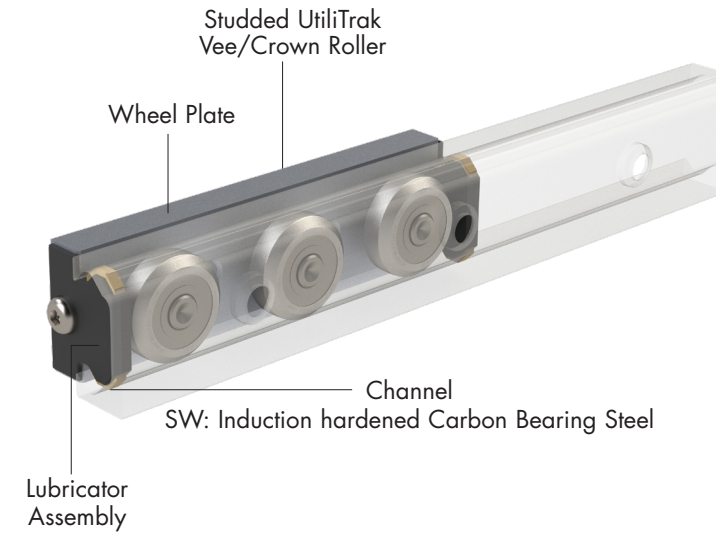
Smooth running



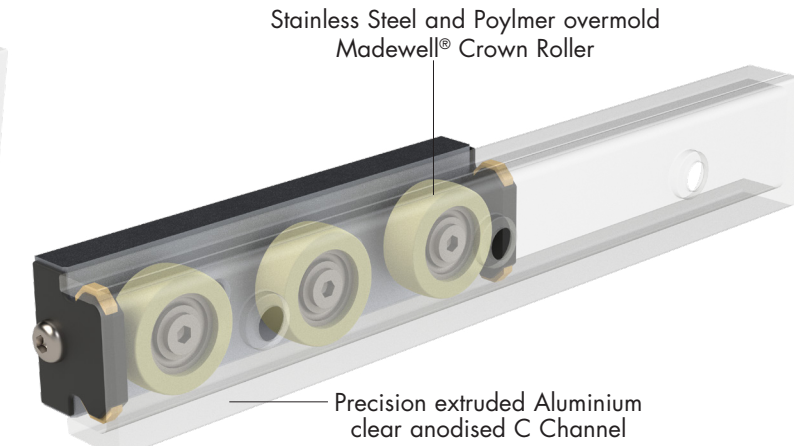
Unlimited travel lengths

		VC Series	PW Series		SW Series		CR Series
		Vee/Crown	Crown	90° Vee	Crown	90° Vee	90° Vee
<b>Overview</b>	Compatible Channel	90° Vee Channel Open 'C' Channel	Open 'C' Channel	90° Vee Channel	Open 'C' Channel	90° Vee Channel	90° Vee Composite Channel
	Compatible Wheel Plate	90° Vee/Crown	Crown Roller	90° Vee	Crown Roller	90° Vee	90° Vee
	Loading Direction	Vee is Axial & Radial Crown is Radial Only	Radial Only	Axial & Radial	Radial Only	Axial & Radial	Axial & Radial
	Optional Brake	Yes	Yes	Yes	Yes	Yes	Not Available
	Available Sizes	1, 2, 3	0, 1, 2	0, 1, 2	1, 2, 3	1, 2, 3	1, 2, 3
<b>Channel</b>	Material(s)	Carbon Steel	Aluminum	Aluminum	Carbon Steel	Carbon Steel	Stainless Steel & Aluminum
	Standard Coating	Polyurethane Paint Black Oxide (2019)	Clear Anodise	Clear Anodise	Polyurethane Paint Black Oxide (2019)	Polyurethane Paint Black Oxide (2019)	Clear Anodise
	Hardened	Yes	No	No	Yes	Yes	Yes
	Finish	Precision Ground	Extruded	Extruded	Precision Ground	Precision Ground	Polished
<b>Wheel Plate</b>	# of Wheels	3, 4, 5	3, 4, 5	3, 4, 5	3, 4, 5	3, 4, 5	3
	Bearings	Double Row Angular Contact	Single Row Deep Groove	Single Row Deep Groove	Double Row Angular Contact	Double Row Angular Contact	Double Row Angular Contact
	Wheel Material	Carbon Steel	Polymer Overmold Stainless Steel	Polymer Overmold Stainless Steel	Carbon Steel	Carbon Steel	Stainless Steel
	Wheel Material Grade	52100	Polyacetal & 440C	Polyacetal & 440C	52100	52100	440C
	Max Angular Misalignment	+/- 2°	+/- 7°	0°	+/- 7°	0°	0°
	Wheel Bottom Hex Feature (Size 2 and 3)	Not Available	Standard	Standard	Standard	Optional	Not Available
	Preloaded Adjustment Hex	Metric	Metric	Metric	Metric	Inch	Metric
	Lubrications	Molded Nylon End Caps	Molded Nylon End Caps	Molded Nylon End Caps	Molded Nylon End Caps	Molded Nylon End Caps	Stamped Stainless Steel Center Mounted
	Wheel Protection	Sealed	Sealed	Sealed	Sealed	Sealed Seal/Shield Washroom	Sealed Seal/Shield
	Wheel Versions	Carbon Steel	Corrosion Resistant	Corrosion Resistant	Carbon Steel	Carbon Steel Corrosion Resistant Food/Pharma High/Low Temp. Vacuum Washdown	Corrosion Resistant

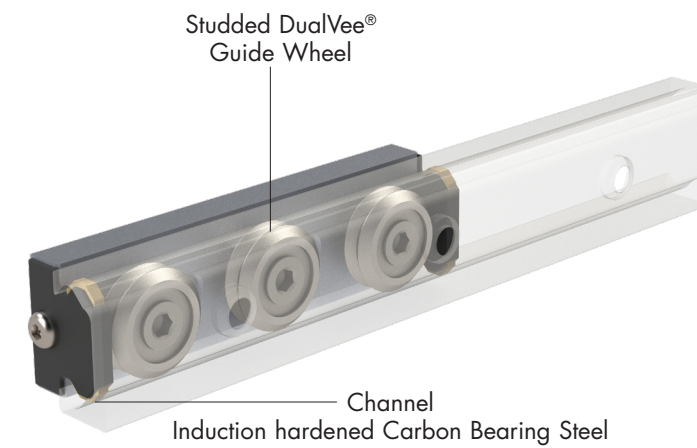
VC WHEEL PLATE IN 90° VEE CHANNEL



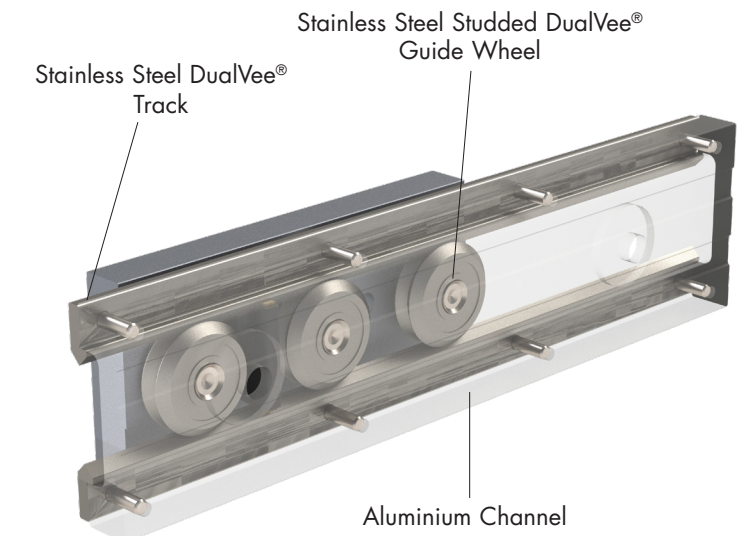
PW CROWN WHEEL PLATE IN OPEN C CHANNEL



SW WHEEL PLATE WITH VEE WHEELS IN CHANNEL



CR WHEEL PLATE IN COMPOSITE CHANNEL



## VC Series 3 Wheel Carriage Assemblies

### VC Series

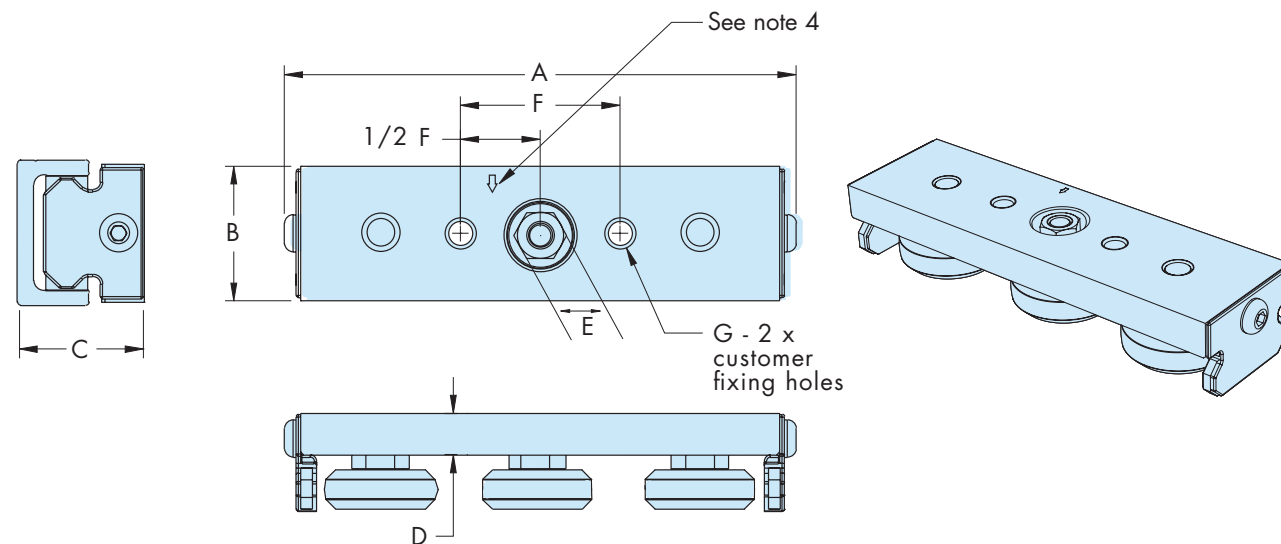
- Simple installation
- Can be used with both V and C channel profiles
- Up to 2° misalignment in C channel profiles
- Eccentric bearing for easy wheel plate adjustment
- Wheels fitted with nitrile seals
- Low rolling resistance
- Low noise
- High speed capacity
- Butt-joining precision ground channel for unlimited travel lengths

### Dimensions

UtiliTrak® Size	VC Series 3 Part No.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)
1	UTVC1XWPA	113.5	24	26.3	8.8	10	40	M6x1
2	UTVC2XWPA	144.2	38	35	11.8	13	45	M8x1.25
3	UTVC3XWPA	201.3	55	50	15.8	15	60	M10x1.5

### Load Capacity

UtiliTrak® Size	Radial $F_R^{*4}$ (N)	Axial $F_A$ (N)	$M_p$ (Nm)	$M_y$ (Nm)	$M_R$ (Nm)	Mass (g)
VC Series 3 Wheel Carriage						
1	2440	719	18	30.5	7	121
2	5300	1475	58	100	22.7	348
3	11800	5100	229	346	118	999



### Notes:

- See V Channel on page 7.
- See Open Channel on page 9.
- See page 17 for Load / Life formulas.
- Arrow indicates optimal direction of load orientation. Indicated  $F_R$  load capacity is reduced for loads in the opposite direction for 3 and 5 wheel carriages.

## VC Series 4 and 5 Wheel Carriage Assemblies

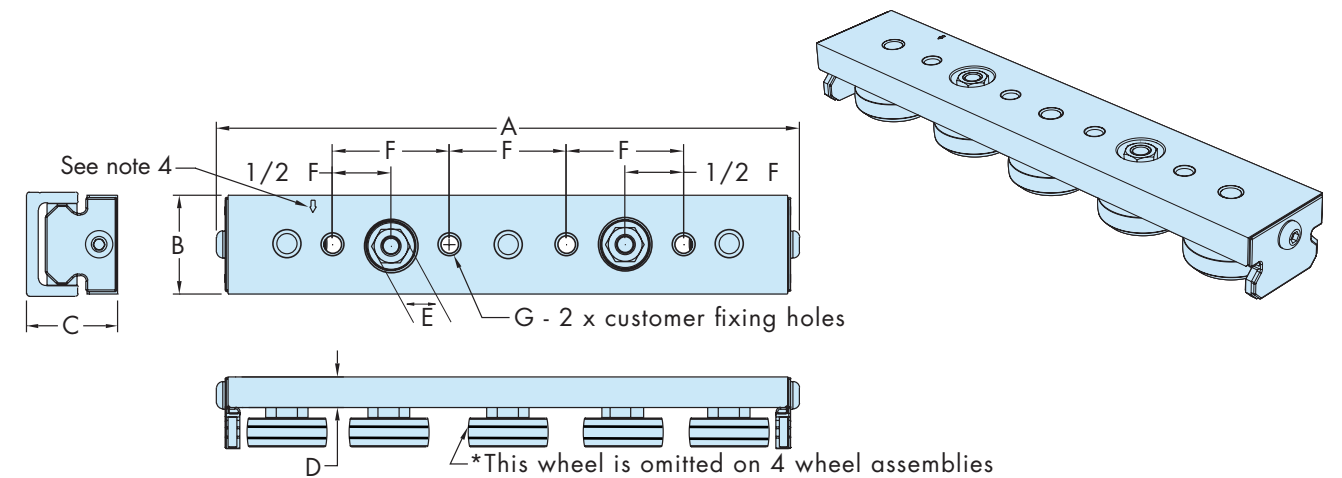
### Dimensions

UtiliTrak® Size	VC Series 4 Part No.	VC Series 5 Part No.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)
1	UTVC1XWPA4	UTVC1XWPA5	166.5	24	26.3	8.8	10	35	M6x1
2	UTVC2XWPA4	UTVC2XWPA5	224.2	38	35	11.8	13	45	M8x1.25
3	UTVC3XWPA4	UTVC3XWPA5	317.3	55	50	15.8	15	60	M10x1.5

### Load Capacity

UtiliTrak® Size	Radial $F_R$ (N)	Axial $F_A$ (N)	$M_p$ (Nm)	$M_y$ (Nm)	$M_R$ (Nm)	Mass (g)	Radial $F_R^{*4}$ (N)	Axial $F_A$ (N)	$M_p$ (Nm)	$M_y$ (Nm)	$M_R$ (Nm)	Mass (g)
	VC Series 4 Wheel Carriage						VC Series 5 Wheel Carriage					
1	2440	862	32.3	45.8	9.8	173	2900	1014	32.3	45.8	12.6	193
2	5300	1770	107	150	31.8	503	6300	2080	107	150	40.9	573
3	11800	6122	408	519	165.2	1446	14040	7140	408	519	212.4	1632

Application loads are generally less than the maximum capacity shown. It is strongly recommended that load and life are determined using the calculations shown on page 17.



### Notes:

- See V Channel on page 7.
- See Open Channel on page 9.
- See page 17 for Load / Life formulas.
- Arrow indicates optimal direction of load orientation. Indicated  $F_R$  load capacity is reduced for loads in the opposite direction for 3 and 5 wheel carriages.

## PW/SW Series 3 Wheel Carriage Assemblies

### PW Series

- Vee style carriage assembly for PW Series aluminum channel
- Light to medium duty transport applications
- Low noise
- Lightweight and corrosion resistant

### SW Series

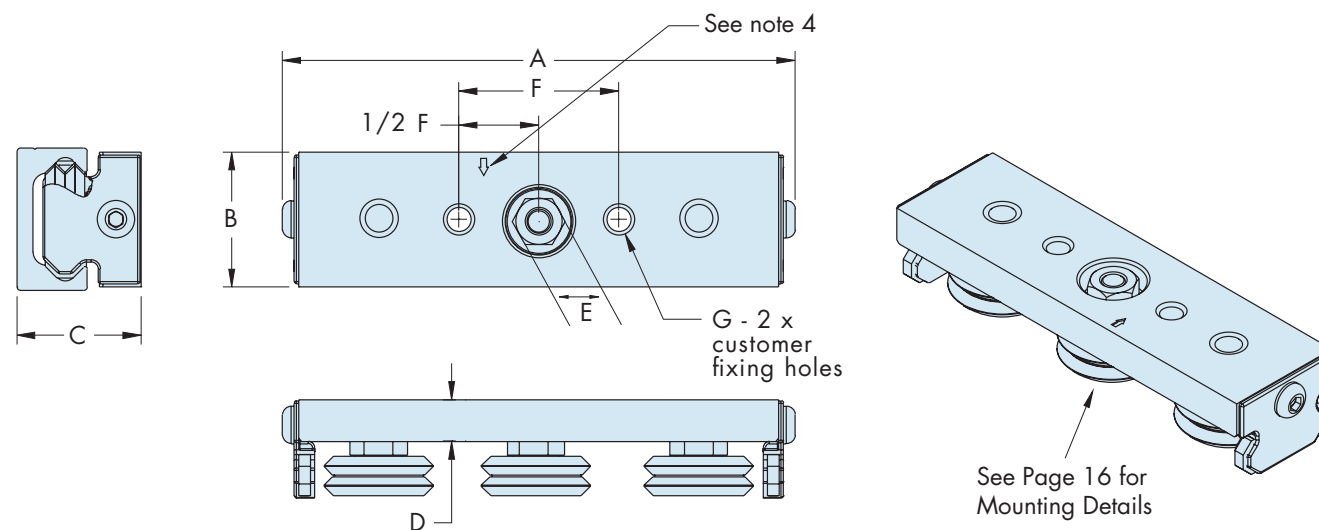
- Vee style carriage assembly for SW Series steel channel
- Medium to heavy duty transport applications
- High speed capability
- Smooth antifriction operation

### Dimensions

UtiliTrak® Size	PW <sup>4</sup> Part No.	VC/SW <sup>1</sup> Part No.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)
0	UTOWPAP	-	79.9	18	22	7.9	8	22	M4x0.7
1	UT1WPAP	UT1WPAX	113.5	24	26.3	8.8	10	40	M6x1
2	UT2WPAP	UT2WPAX	144.2	38	35	11.8	13	45	M8x1.25
3	-	UT3WPAX	201.3	55	50	15.8	15	60	M10x1.5

### Load Capacity

UtiliTrak® Size	Radial F <sub>R</sub> (N)	Axial F <sub>A</sub> (N)	M <sub>P</sub> (Nm)	M <sub>V</sub> (Nm)	M <sub>R</sub> (Nm)	Radial F <sub>R</sub> <sup>*5</sup> (N)	Axial F <sub>A</sub> (N)	M <sub>P</sub> (Nm)	M <sub>V</sub> (Nm)	M <sub>R</sub> (Nm)
	PW Series Wheel Carriage					SW Series Wheel Carriage				
0	53	38	0.6	0.6	0.2	-	-	-	-	-
1	107	76	2.0	2.0	0.5	2440	719	18	30.5	7
2	142	94	3.6	3.2	1.2	5300	1475	58	100	22.7
3	-	-	-	-	-	11800	5100	229	346	118



### Notes:

1. See page 17 for Load / Life formulas.
2. See page 16 for mounting orientation.
3. PW wheel carriages have polymer outer Vee wheels over moulded on stainless steel bearings.
4. Arrow indicates optimal direction of load orientation. Indicated F<sub>R</sub> load capacity is reduced for loads in the opposite direction for 3 and 5 wheel carriages.

## VC/PW/SW Series Vee Channel

### PW Series

- Matched component for PW Series Vee wheel carriage assemblies
- 6063-T6 aluminum alloy channel
- Lightweight

### VC/SW Series

- Matched component for VC and SW Series Vee wheel carriage assemblies
- Carbon bearing steel with hardened raceways
- Running surface smooth to Ra 0.8µm

### Dimensions

UtiliTrak® Size	PW Part No.	VC/SW Part No.	H (mm)	J (mm)	K (mm)	L Max <sup>1</sup>	M (mm)	N Dia x Depth (Counterbore)	O (Mounting Hole)	P (mm)
0	UTTA0	-	11	4	20	3600	See formula below	8.3 x 3	4.8	80
1	UTTA1	UTTS1	15	4	26	3600		10.0 x 2.8	5.8	80
2	UTTA2	UTTS2	19.7	4.5	40	3600		14.3 x 3	8.8	80
3	-	UTTS3	30	8	58	3600		14.3 x 5	8.8	80

### Weights

UtiliTrak® Size	Channel Weight (kg/m)	Wheel Carriage Weight (g)	Channel Weight (kg/m)	Wheel Carriage Weight (g)
	PW Series		SW Series	
0	0.3	46	-	-
1	0.5	92	1.46	114
2	0.93	243	2.7	330
3	-	-	5.91	943

### To Calculate M:

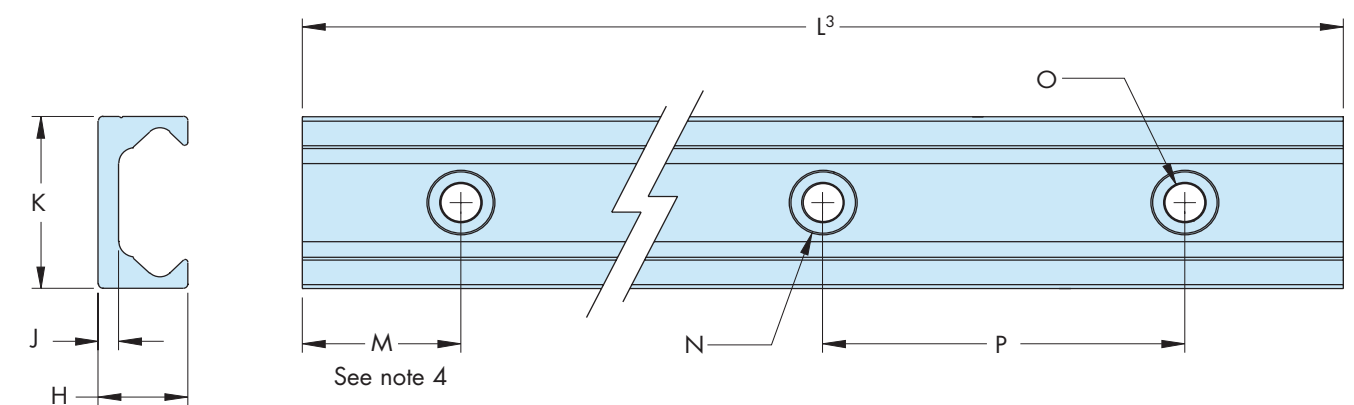
**Step 1:** Calculate number of hole spaces

$$\frac{\text{Length (in mm)} - X}{80} = \# \text{ of hole spaces (round down to nearest whole number)}$$

- X = 14 (size 0)
- X = 16 (size 1)
- X = 18 (size 2)
- X = 20 (size 3)

**Step 2:** Calculate M

$$\frac{\text{Length} - (\# \text{ of spaces} \times 80)}{2} = M \quad (\text{Note 4})$$



### Notes:

1. "L" is maximum one piece length.
2. For ordering add length in mm after Part Number Ex. UTTA0-1000 (one metre length).
3. Overall length +/- 2 mm.
4. Customer to advise 'M' dimensions when ordering, otherwise end hole position will be equal at both ends.



## PW/SW Series Crown Roller 3 Wheel Carriage Assemblies

### PW Series

- Crown roller style carriage assembly for PW Series aluminum channel
- Intended for radial loads only
- Low noise
- Lightweight and corrosion resistant

### SW Series

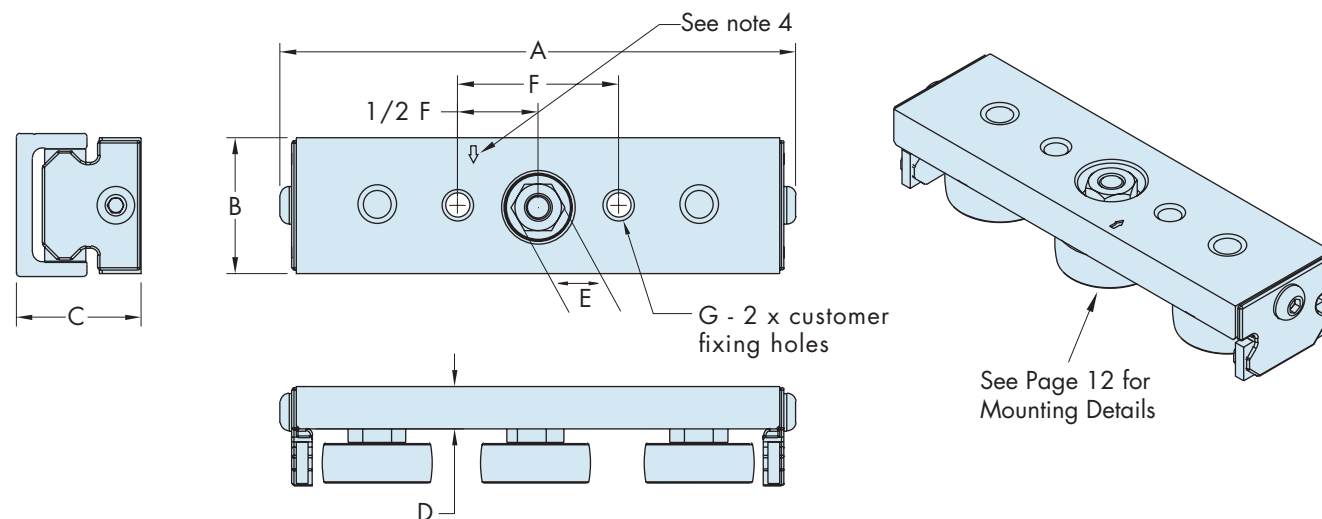
- Crown roller style carriage assembly for SW Series steel channel
- Intended for radial loads only
- High speed capability
- Smooth antifriction operation

### Dimensions

UtiliTrak® Size	PW <sup>4</sup> Part No.	SW <sup>1</sup> Part No.	A (mm)	B (mm)	C Min-Max	D (mm)	E (mm)	F (mm)	G (mm)
0	UTOWPAPR	-	79.9	18	22-23.1	7.9	8	22	M4x0.7
1	UT1WPAPR	UT1WPAXR	113.5	24	26.0-27.6	8.8	10	40	M6x1
2	UT2WPAPR	UT2WPAXR	144.2	38	34.7-37.4	11.8	13	45	M8x1.25
3	-	UT3WPAXR	201.3	55	46.9-53.4	15.8	15	60	M10x1.5

### Load Capacity

UtiliTrak® Size	Radial F <sub>R</sub> (N)	Axial F <sub>A</sub> (N)	M <sub>p</sub> (Nm)	M <sub>y</sub> (Nm)	M <sub>r</sub> (Nm)	Radial F <sub>R</sub> <sup>*5</sup> (N)	Axial F <sub>A</sub> (N)	M <sub>p</sub> (Nm)	M <sub>y</sub> (Nm)	M <sub>r</sub> (Nm)	C (N)
	PW Series Wheel Carriage					SW Series Wheel Carriage					
0	53	0	0	0.6	0	-	-	-	-	-	-
1	107	0	0	2.0	0	2440	0	0	30.5	0	5600
2	142	0	0	3.2	0	5300	0	0	100	0	10200
3	-	-	-	-	-	11800	0	0	346	0	21600



### Notes:

1. See page 17 for Load / Life formulas.
2. See page 16 for mounting orientation.
3. PW wheel carriages have polymer outer wheels over moulded on stainless steel bearings.
4. Arrow indicates optimal direction of load orientation. Indicated F<sub>R</sub> load capacity is reduced for loads in the opposite direction for 3 and 5 wheel carriages.

## VC/PW/SW Series Open Channel

### PW Series

- Matched component for PW Series MadeWell™ crown roller carriage assemblies
- 6063-T6 aluminum alloy channel
- Lightweight and corrosion resistant

### VC/SW Series

- Matched component for SW Series crown roller carriage assemblies
- Carbon bearing steel with hardened raceways
- Running surface smooth to Ra 0.8µm

### Dimensions

UtiliTrak® Size	PW Part No.	SW Part No.	H	J	K	L Max <sup>1</sup>	M	N Dia x Depth (Counterbore)	O (Mounting Hole)	P
0	UTTRA0	-	11	4	20	3600	See formula below	8.3 x 3	4.8	80
1	UTTRA1	UTTRS1	15	4	26	3600		10.0 x 2.8	5.8	80
2	UTTRA2	UTTRS2	19.7	4.5	40	3600		14.3 x 3	8.8	80
3	-	UTTRS3	30	8	58	3600		14.3 x 5	8.8	80

### Weights

UtiliTrak® Size	Channel Weight (kg/m)	Wheel Carriage Weight (g)	Channel Weight (kg/m)		Wheel Carriage Weight (g)	
			PW Series	SW Series	PW Series	SW Series
0	0.29	47	-	-	-	-
1	0.43	94	1.33	121	-	-
2	0.8	246	2.47	320	-	-
3	-	-	5.36	910	-	-

### To Calculate M:

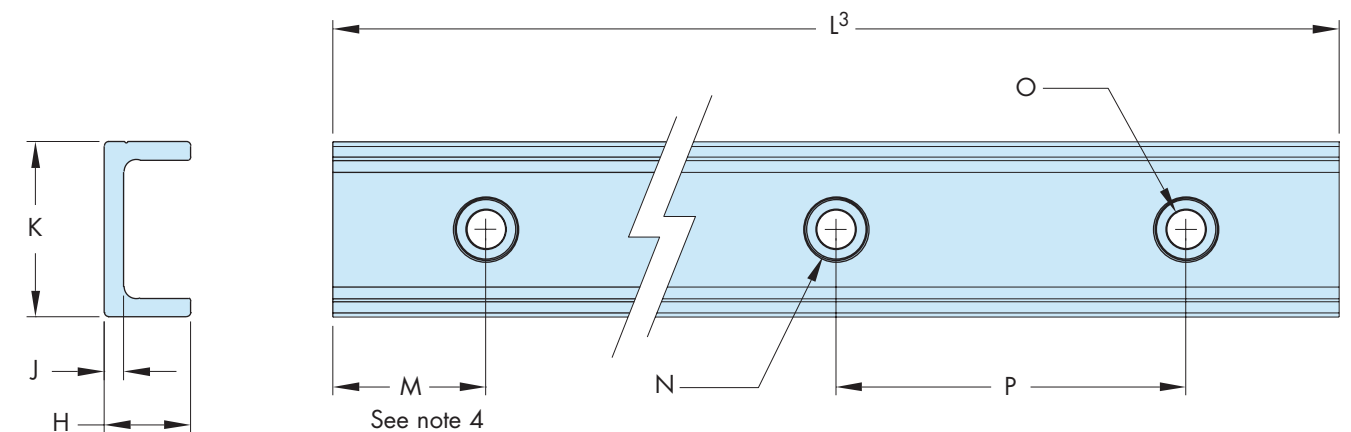
**Step 1:** Calculate number of hole spaces  

$$\frac{\text{Length (in mm)} - X}{80} = \# \text{ of hole spaces (round down to nearest whole number)}$$

- X = 14 (size 0)
- X = 16 (size 1)
- X = 18 (size 2)
- X = 20 (size 3)

**Step 2:** Calculate M

$$\frac{\text{Length} - (\# \text{ of spaces} \times 80)}{2} = M \quad (\text{Note 4})$$



### Notes:

1. "L" is maximum one piece length.
2. For ordering add length in mm after Part Number Ex. UTTRA0-1000 (one metre length).
3. Overall length +/- 2 mm.
4. Customer to advise 'M' dimensions when ordering, otherwise end hole position will be equal at both ends.

## SW Series 4 and 5 Wheel Carriage Assemblies

- Vee style extended carriage for SW Series steel channel
- UtiliTrak's® highest load capacity
- Larger surface area

### Dimensions

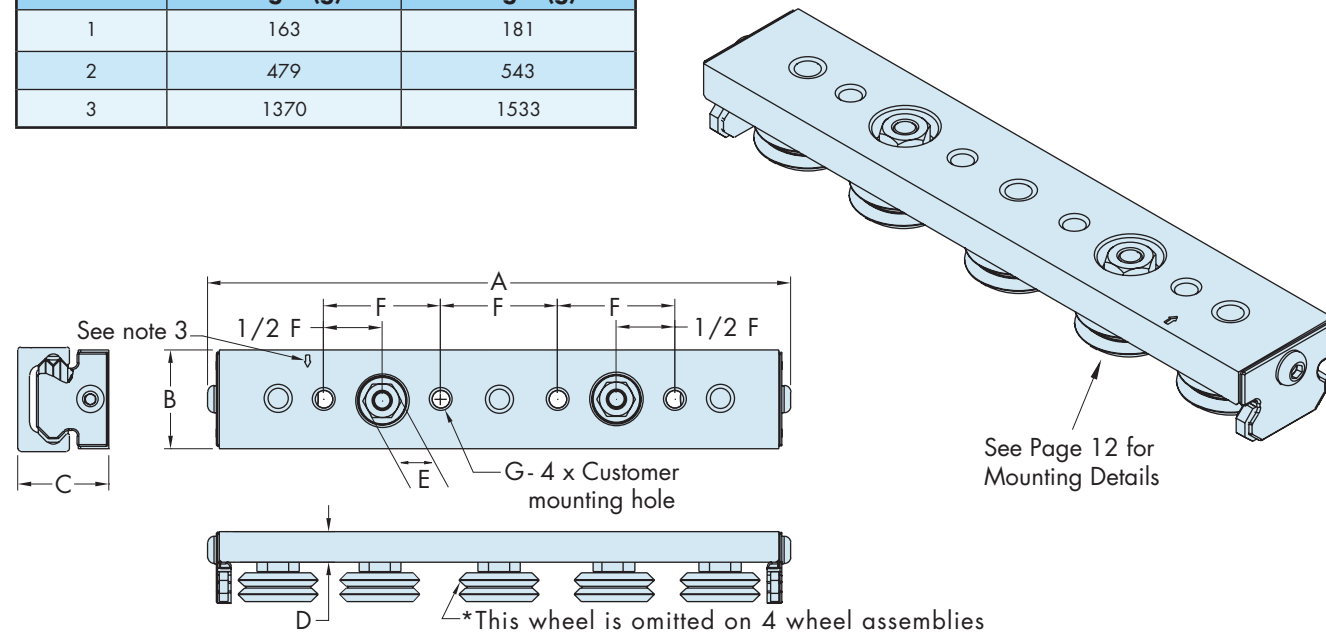
UtiliTrak® Size	4-Wheel <sup>1</sup> Part No.	5-Wheel <sup>1</sup> Part No.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)
1	UT1WPAX-4A	UT1WPAX-5A	166.5	24	26.3	8.8	10	35	M6x1
2	UT2WPAX-4A	UT2WPAX-5A	224.2	38	35	11.8	13	45	M8x1.25
3	UT3WPAX-4A	UT3WPAX-5A	317.3	55	50	15.8	15	60	M10x1.5

### Load Capacity

UtiliTrak® Size	Radial $F_R$ (N)	Axial $F_A$ (N)	$M_P$ (Nm)	$M_Y$ (Nm)	$M_R$ (Nm)	Radial $F_R^{*4}$ (N)	Axial $F_A$ (N)	$M_P$ (Nm)	$M_Y$ (Nm)	$M_R$ (Nm)
	4-Wheel Carriage					5-Wheel Carriage				
1	2440	862	32.3	45.8	9.8	2900	1014	32.3	45.8	12.6
2	5300	1770	107	150	31.8	6300	2080	107	150	40.9
3	11800	6122	408	519	165.2	14040	7140	408	519	212.4

### Weight

UtiliTrak® Size	SW Series Only	
	4-Wheel Carriage Weight (g)	5-Wheel Carriage Weight (g)
1	163	181
2	479	543
3	1370	1533



### Notes:

1. See page 17 for Load / Life formulas.
2. See page 16 for mounting orientation.
3. Arrow indicates optimal direction of load orientation. Indicated  $F_R$  load capacity is reduced for loads in the opposite direction for 3 and 5 wheel carriages.

## SW Series Crown Roller 4 and 5 Wheel Carriage Assemblies

- Crown roller style extended carriage for SW Series steel channel
- UtiliTrak's® highest load capacity
- Larger surface area

### Dimensions

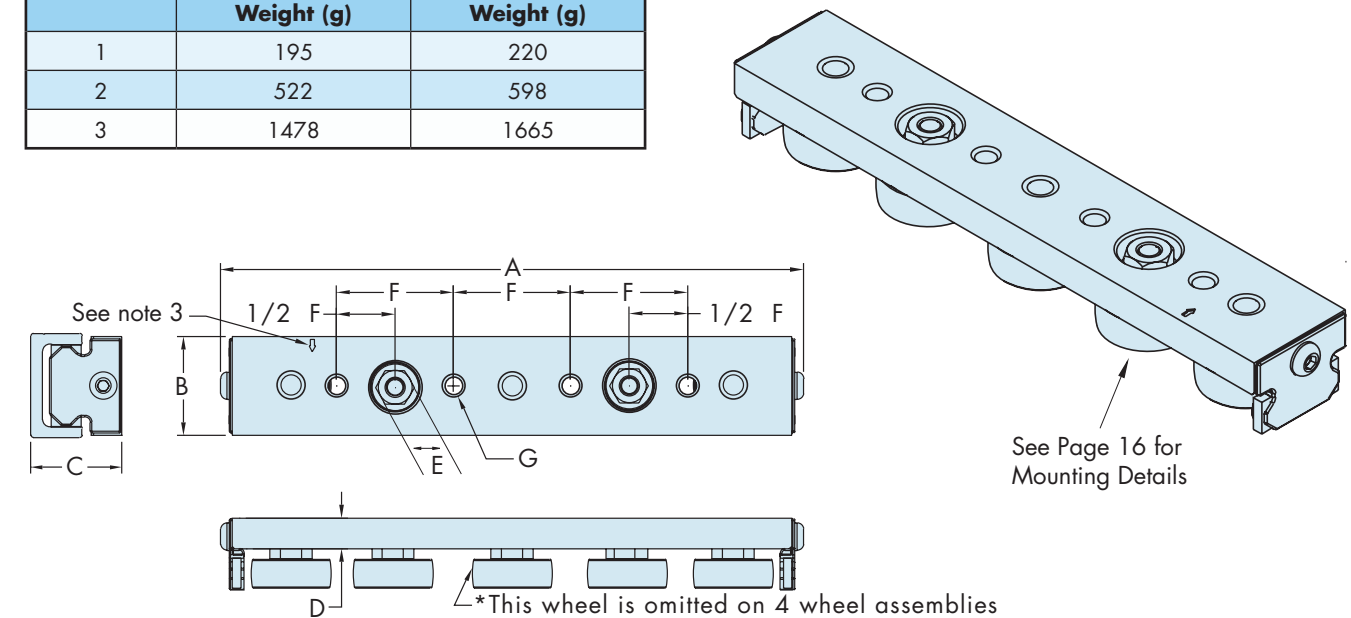
UtiliTrak® Size	4-Wheel <sup>1</sup> Part No.	5-Wheel <sup>1</sup> Part No.	A (mm)	B (mm)	C (Min-Max)	D (mm)	E (mm)	F (mm)	G (mm)
1	UT1WPAXR-4A	UT1WPAXR-5A	166.5	24	26.0 - 27.6	8.8	10	35	M6x1
2	UT2WPAXR-4A	UT2WPAXR-5A	224.2	38	34.7 - 37.4	11.8	13	45	M8x1.25
3	UT3WPAXR-4A	UT3WPAXR-5A	317.3	55	46.9 - 53.4	15.8	15	60	M10x1.5

### Load Capacity

UtiliTrak® Size	Radial $F_R$ (N)	Axial $F_A$ (N)	$M_P$ (Nm)	$M_Y$ (Nm)	$M_R$ (Nm)	Radial $F_R^{*4}$ (N)	Axial $F_A$ (N)	$M_P$ (Nm)	$M_Y$ (Nm)	$M_R$ (Nm)
	4-Wheel Carriage					5-Wheel Carriage				
1	2440	0	0	45.8	0	2900	0	0	45.8	0
2	5300	0	0	150	0	6300	0	0	150	0
3	11800	0	0	519	0	14040	0	0	519	0

### Weight

UtiliTrak® Size	SW Series Only	
	4-Wheel Carriage Weight (g)	5-Wheel Carriage Weight (g)
1	195	220
2	522	598
3	1478	1665



### Notes:

1. See page 17 for Load / Life formulas.
2. See page 16 for mounting orientation.
3. Arrow indicates optimal direction of load orientation. Indicated  $F_R$  load capacity is reduced for loads in the opposite direction for 3 and 5 wheel carriages.

## CR Series Stainless Steel Wheel Carriage Assemblies

### CR Series 3 Wheel Carriage Assembly

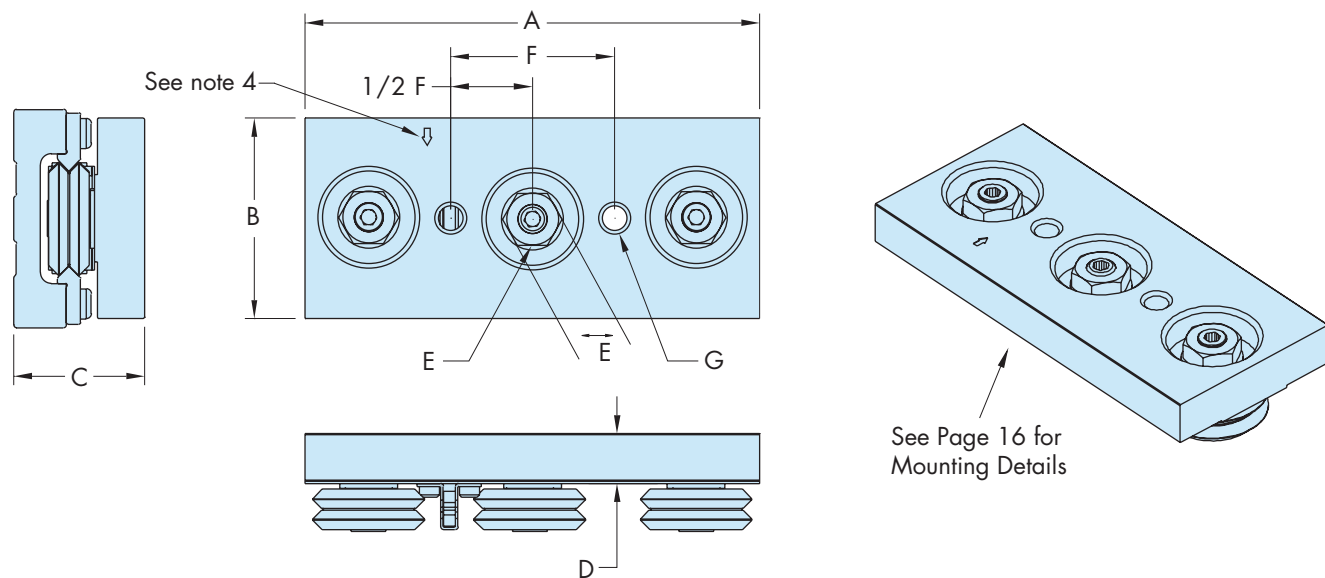
- Vee style carriage assembly for stainless steel composite (CR Series) channel
- 440°C stainless steel, corrosion resistant
- Available in 3-wheel assembly only

### Dimensions

UtiliTrak® Size	Part Number	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)
1	UTCCA1-SS	100	38	28	10.1	7	40	M6x1
2	UTCCA2-SS	125	55	36	13.7	13	45	M8x1.25
3	UTCCA3-SS	170	80	50	19.6	17	60	M10x1.5

### Load Capacity

UtiliTrak® Size	Radial $F_R$ (N)	Axial $F_A$ (N)	$M_P$ (Nm)	$M_Y$ (Nm)	$M_R$ (Nm)
1	1111	750	14	21	3
2	2671	1749	40	61	9
3	5739	4763	146	176	35



### Notes:

1. Clean room or high temperature guide wheel options are available. Contact HepcoMotion for a quotation.
2. Direction of arrow on carriage plate indicates how the load should be oriented to achieve radial loading on the two concentric guide wheels.
3. For clean room/high temperature compatible guide wheels, add "-227" to the end of the Part Number. Load capacities for the 227 option are reduced, please refer to Hepco's Technical department for further details.
4. Arrow indicates optimal direction of load orientation. Indicated  $F_R$  load capacity is reduced for loads in the opposite direction for 3 and 5 wheel carriages.

## CR Series Stainless Steel Composite Channel Assemblies

- Matched component for CR Series wheel carriage assemblies
- Induction heat treated 420 stainless steel DualVee® track mounted to an extruded aluminum channel
- Corrosion resistant
- Several standard lengths to choose from

### Dimensions

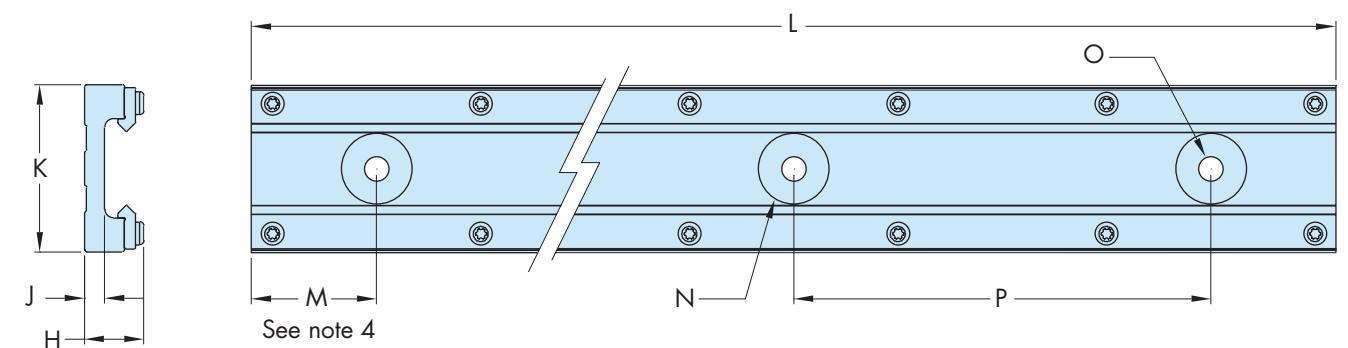
UtiliTrak® Size	Part Number <sup>2</sup>	H (mm)	J (mm)	K (mm)	L Max	M (mm)	N Dia x Depth (Counterbore)	O (Mounting Hole)	P (mm)
1	UTCTPA1-length-SS	17.7	5.9	40	3495	45	18.8 x 2	6.9	100
2	UTCTPA2-length-SS	21.3	7.3	60	3390	45	25.4 x 3	8.8	150
3	UTCTPA3-length-SS	29.5	9.0	85	3415	82.5	28.6 x 5	10.5	250

### Standard Lengths (mm)

Size 1	Size 2	Size 3
190	240	415
290	390	665
390	540	915
490	690	1165
590	840	1415
690	990	1665
790	1140	1915
890	1290	2165
990	1440	2415
1090	1590	2665
1990	2190	2915
2990	2790	3165
3490	3390	3415

### Weight

UtiliTrak® Size	Channel Weight (kg/m)	Carriage Weight (g)
1	1.457	136
2	2.591	385
3	4.884	1107



### Notes:

1. Contact HepcoMotion for quotation on non-standard channel lengths.
2. "Length" equals channel length in mm in the middle of the UT channel Part Number.
3. Channel length tolerance is  $\pm 2$  mm.
4. Customer to advise 'M' dimensions when ordering, otherwise end hole position will be equal at both ends.

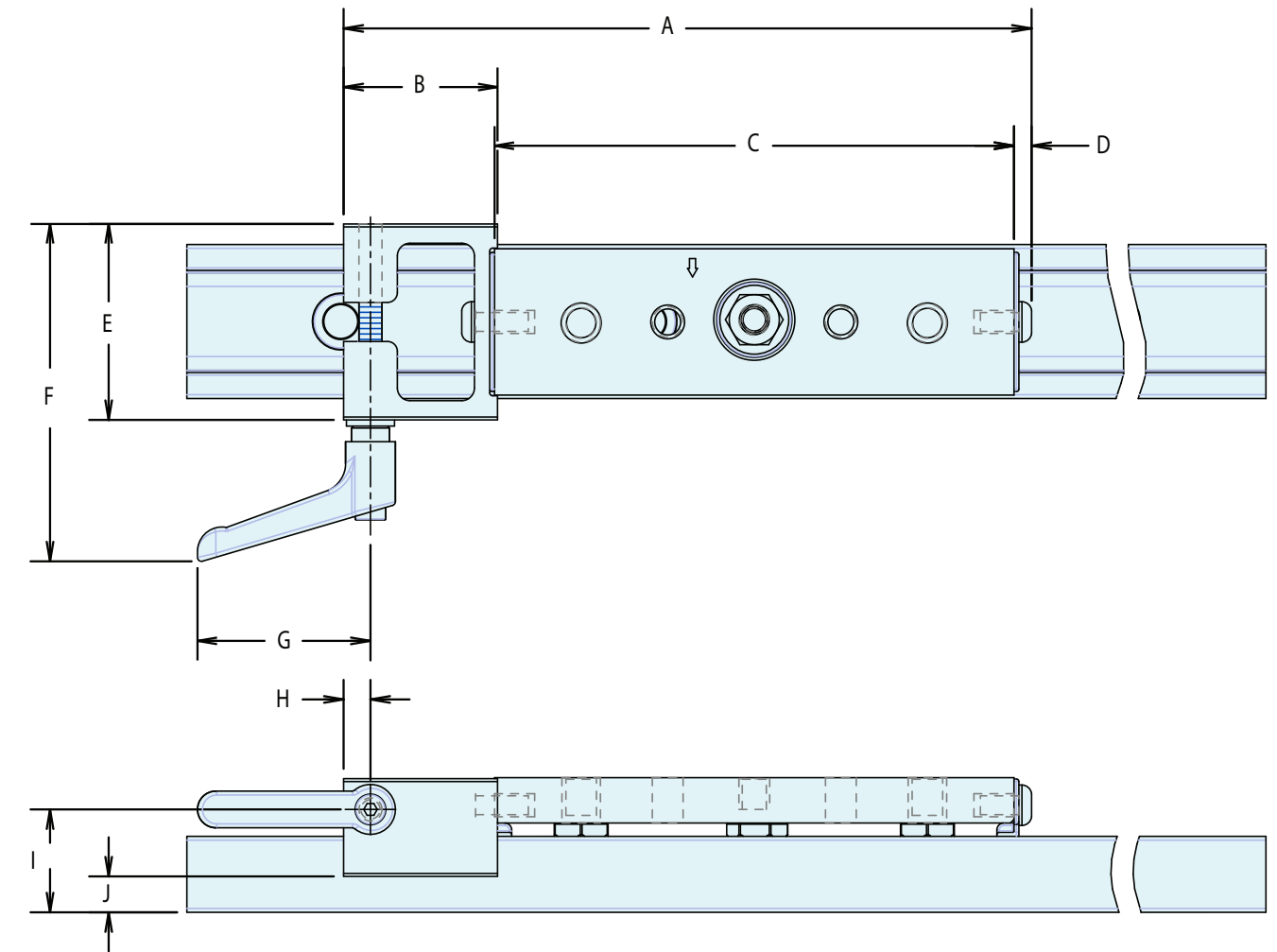
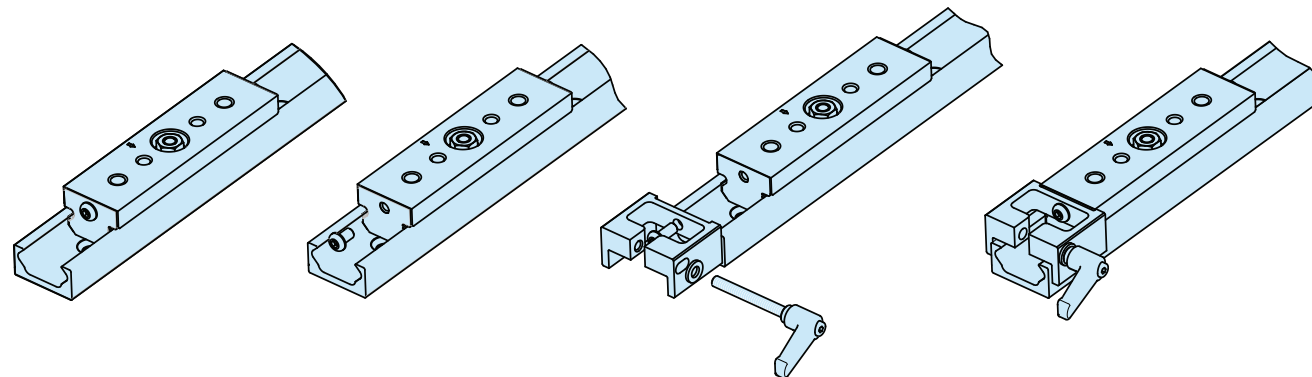


## Key Features

- Four available designs for UtiliTrak® sizes 0, 1, 2 & 3
- Brakes fit on VC, SW & PW series carriages. They can be manually locked at any user-selected position on the UtiliTrak® rail
- A compact brake system ideal for applications where handle arm access space is limited
- Easily retrofitted by end-user to existing UtiliTrak® systems or factory pre-assembled on new systems
- An additional brake assembly can be installed at the opposite end of the wheel plate for adding braking strength
- The brake block assembly fits over the existing lubricator end caps
- Simple two-component assembly (brake block and handle)
- The brake block is fabricated from aluminium and hard anodized for corrosion resistance, abrasion resistance, good gripping/braking action, and long life
- Brake system components are positioned below the carriage's payload mounting surface
- Angular position of the handle arm can be adjusted to any position without affecting the brake engagement status or level of braking force



The brake block mounts to either end of the UtiliTrak® carriage and has a pair of brake arms that straddle the UtiliTrak® rail. The handle is mounted on one side of the brake block. The brake system is engaged by turning the handle clockwise, which causes the brake block to clamp to the rail. When the carriage needs to be moved again, the brake system can be disengaged by simply turning the handle counterclockwise until the brake arms no longer contact the rail.



Size	Part Number	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	I (mm)	J (mm)
0	UT0BRKCLMPK	106.17	30.00	73.30	2.92	26.47	63.20	44.96	6.99	15.42	0.81
1	UT1BRKCLMPK	144.24	35.00	105.80	3.47	36.80	73.54	44.96	6.99	18.70	4.61
2	UT2BRKCLMPK	178.82	40.01	134.20	4.57	50.90	87.63	44.96	6.99	26.73	9.33
3	UT3BRKCLMPK	250.90	56.01	189.20	5.66	66.47	113.44	62.99	11.00	37.78	17.92

## System Adjustment

Carriage adjustment is pre-set at the factory, but is easily field adjusted by rotating the eccentric guide wheels. This allows modification of running characteristics such as friction and breakaway force.

1. Adjustment should be performed while the carriage is engaged with the channel.
2. Looking down on the top of the carriage, as shown in Fig. 1, the eccentric stud is locked into place with a hex nut.



3. Loosen the eccentric wheel/stud assembly by turning the hex nut counter-clockwise with a socket wrench.
4. When the wheel/stud assembly is loose enough, it can be rotated with a wrench, as shown in Fig. 2. Rotating the eccentric wheel's stud will adjust the wheel location into or out of contact with the channel.

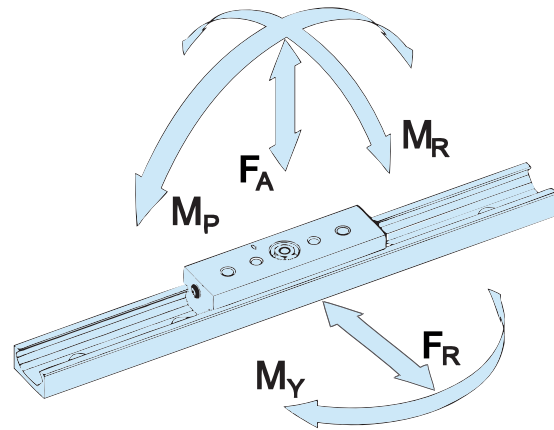


5. Begin with a small adjustment to the setting and re-tighten the stud by turning the hex nut clockwise. If the setting is too loose, the carriage will exhibit excessive play, such as rocking. If the setting is too tight, the carriage will exhibit excessive friction. Move the carriage up and down the entire channel length to ensure that it does not feel too loose or tight at any given location along the channel. It may take a couple of attempts to find the proper setting for your system. Take care not to over preload PW Series polymer wheel carriages. It is important that the carriage setting is correctly adjusted prior to operation.

## Loading Details

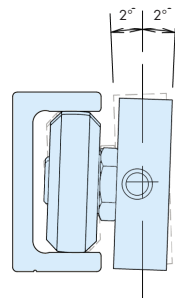
The UtiliTrak® Vee guides accept loads in all. As such, it is good engineering practice to orient the slide such that the two outside wheels support the load radially. Each carriage assembly includes an arrow pointing towards the optimal direction of load orientation. Loads oriented in this direction will produce a radial load on each of the concentrically mounted (outer) guide wheels.

The crown roller assembly should be subjected to radial loads only.

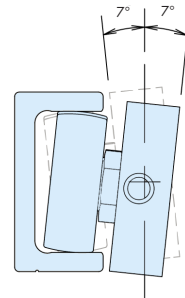


## Misalignment Capabilities

V/Crown Wheel up to 2° misalignment



Crown Wheel up to 7° misalignment



## Load Capacity

The load capacity ratings in this guide are based on one million revolutions of the outer race. As with any linear bearing technology, UtiliTrak® sizing should be done conservatively. If the guide selection is such that load capacities are marginal, it may be appropriate to consider the next larger size. Our applications engineers are available to assist with the evaluation of any application specific loading parameters.

## Lubrication

The rolling elements within DualVee® guide wheels are permanently lubricated and sealed against the operating environment. The contact surfaces between the wheel and channel, however, require lubrication to maximise the life and speed capacity of the guide. All UtiliTrak® carriages come complete with lubricators, consisting of an oil saturated felt within a housing. Lubricators should be periodically checked and re-oiled to ensure that a sufficient coating of lubricant is maintained on the channel guideway surfaces.

## Load/Life Calculations

The summation of applied loads divided by system load capacities (Max) should be less than or equal to one:

$$L_F = \frac{F_R}{F_{R(MAX)}} + \frac{F_A}{F_{A(MAX)}} + \frac{M_R}{M_{R(MAX)}} + \frac{M_Y}{M_{Y(MAX)}} + \frac{M_P}{M_{P(MAX)}} \leq 1$$

With an equivalent applied load, the system life can now be calculated:

$$Life_{km} = \left( \frac{L_C}{L_F} \right)^3 A_F$$

## Adjustment Factor Table

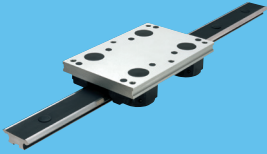
Environmental Conditions	Adjustment Factor $A_F$
No shock, no vibration, clean working environment	0.71 - 1.0
Light shock, light vibration	0.41 - 0.7
Shocks, vibrations, harsh environment	0.1 - 0.4

## Life Constant Table

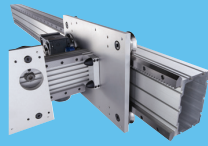
Wheel Size	Travel Distance in km per $10^6$ Revolutions
0	41
1	55
2	87
3	130

# HepcoMotion®

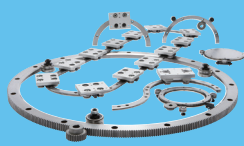
ADVANCED LINEAR SOLUTIONS



**GV3**  
Linear Guidance and  
Transmission System



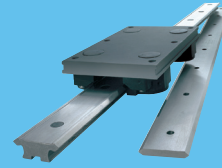
**HDS2**  
Heavy Duty Slide  
System



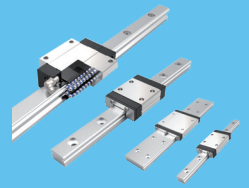
**PRT2**  
Ring Slides and  
Track System



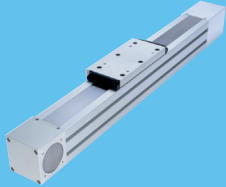
**HDRT**  
Heavy Duty Ring Slides  
and Track System



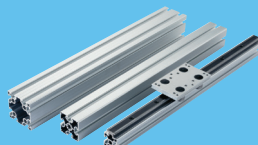
**SL2**  
Stainless Steel Based  
Slide System



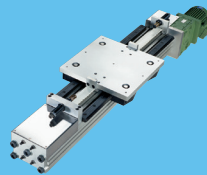
**HLG**  
Hepco Ball Guides



**SBD**  
Sealed Belt  
Drive



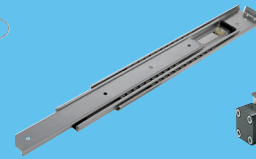
**MCS**  
Aluminium Frame  
and Machine  
Construction System



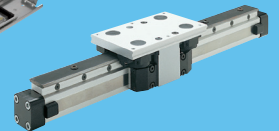
**HDLS**  
Heavy Duty Driven  
Linear System



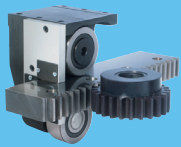
**DLS**  
Linear Transmission and  
Positioning System



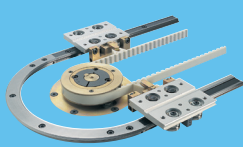
**HTS**  
Telescopic Ball  
Bearing Slides



**HPS**  
Powerslide-2 Guided  
Rodless Cylinder



**MHD**  
Heavy Duty Track Roller  
Guidance System



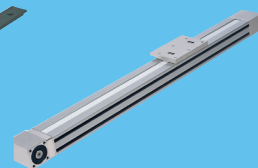
**DTS**  
Driven Track  
System



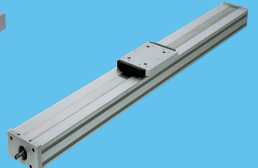
**Hepco  
Ball Screws**



**SimpleSelect®**  
Vee Slide Linear  
Guidance Systems



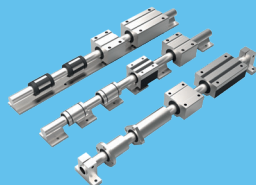
**PDU2**  
Profile Driven Unit



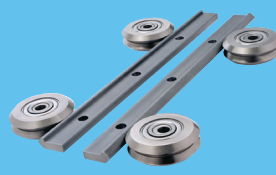
**PSD 120**  
Profile Screw  
Driven Unit



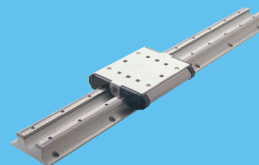
**Shaft**  
Precision Steel and  
Aluminium Shaft



**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:

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