SRAM

2024 Road Components

SRAM RED AXS

SRAM RED E1

SRAM RED

SRAM FORCE AXS

SRAM FORCE

SRAM FORCE 1

SRAM RIVAL AXS

SRAM RIVAL

SRAM RIVAL 1

SRAM APEX

SRAM APEX 1

S-Series

XPLR

FRAME FIT SPECIFICATIONS

General Notes

All dimensions are in millimeters unless otherwise noted.

Images in this document are not to scale.

Your product's appearance may vary slightly from the images in this document.

Information in this document is subject to change without prior notice.

If you have any questions please contact your SRAM representative.

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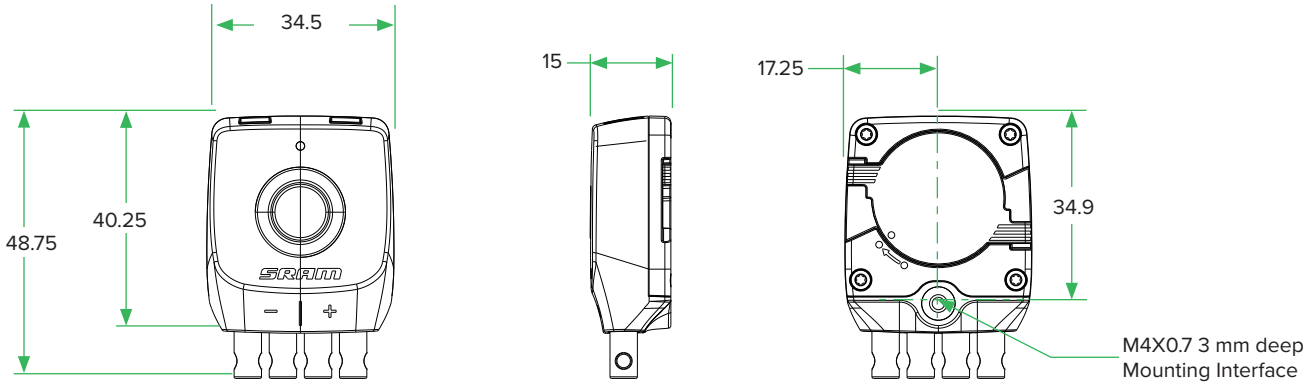
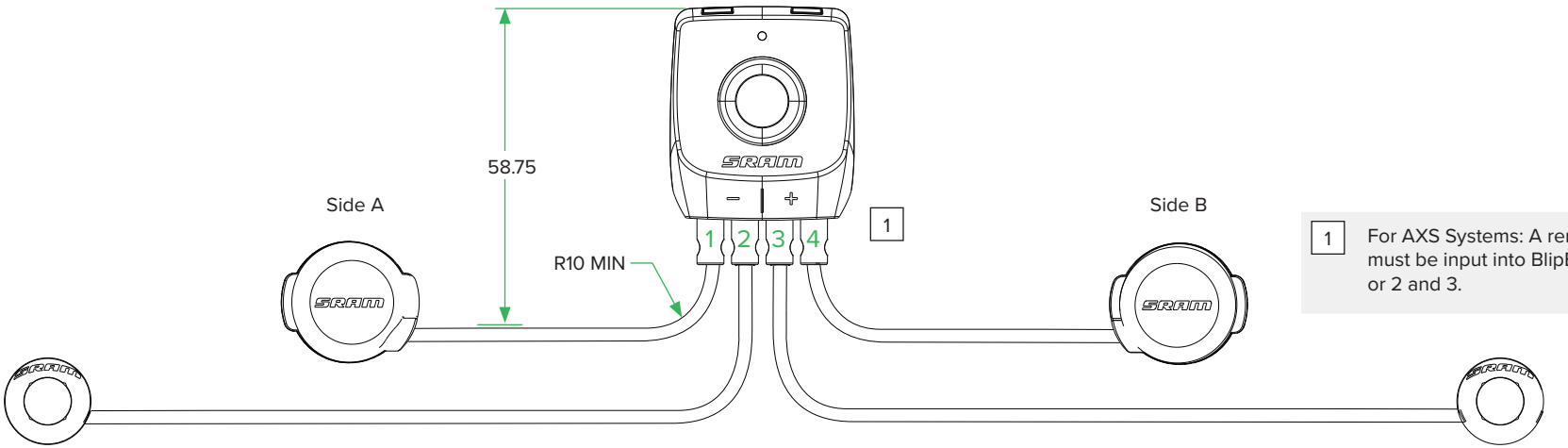
Custom Mounting without the Elastic Band Mounting Adapter



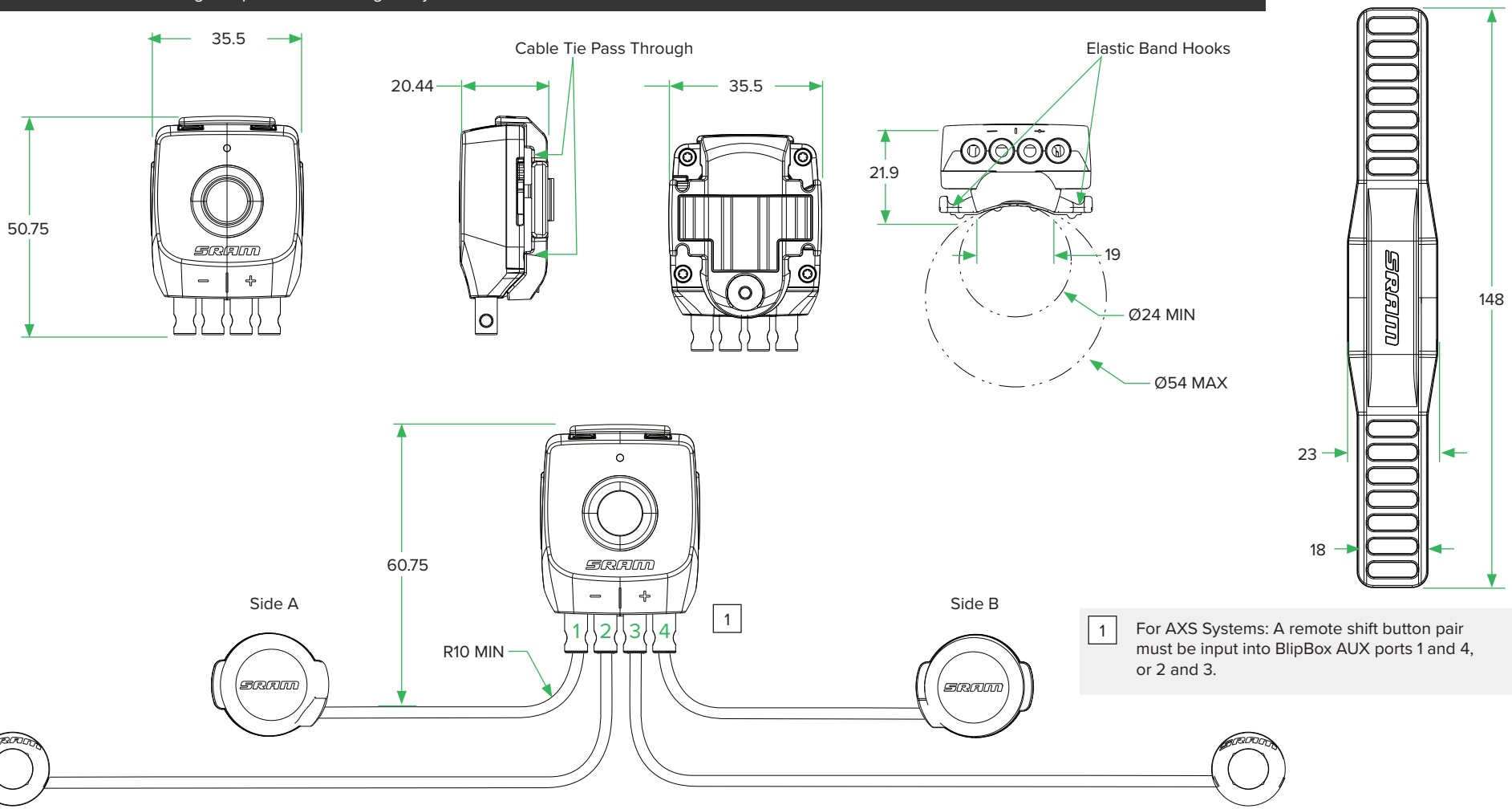


1 For AXS Systems: A remote shift button pair must be input into BlipBox AUX ports 1 and 4, or 2 and 3.

BlipBox

Dimensions with Elastic Band

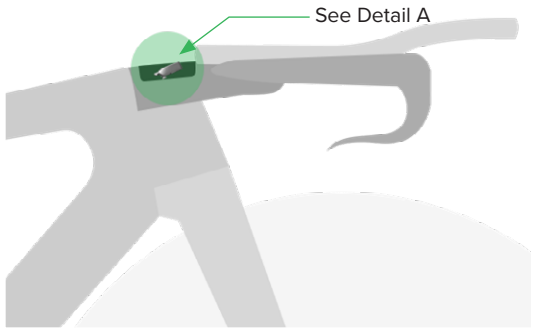
Elastic Band Mounting Adapter for Mounting to Cylindrical or Flat Surfaces



1 For AXS Systems: A remote shift button pair must be input into BlipBox AUX ports 1 and 4, or 2 and 3.

BlipBox

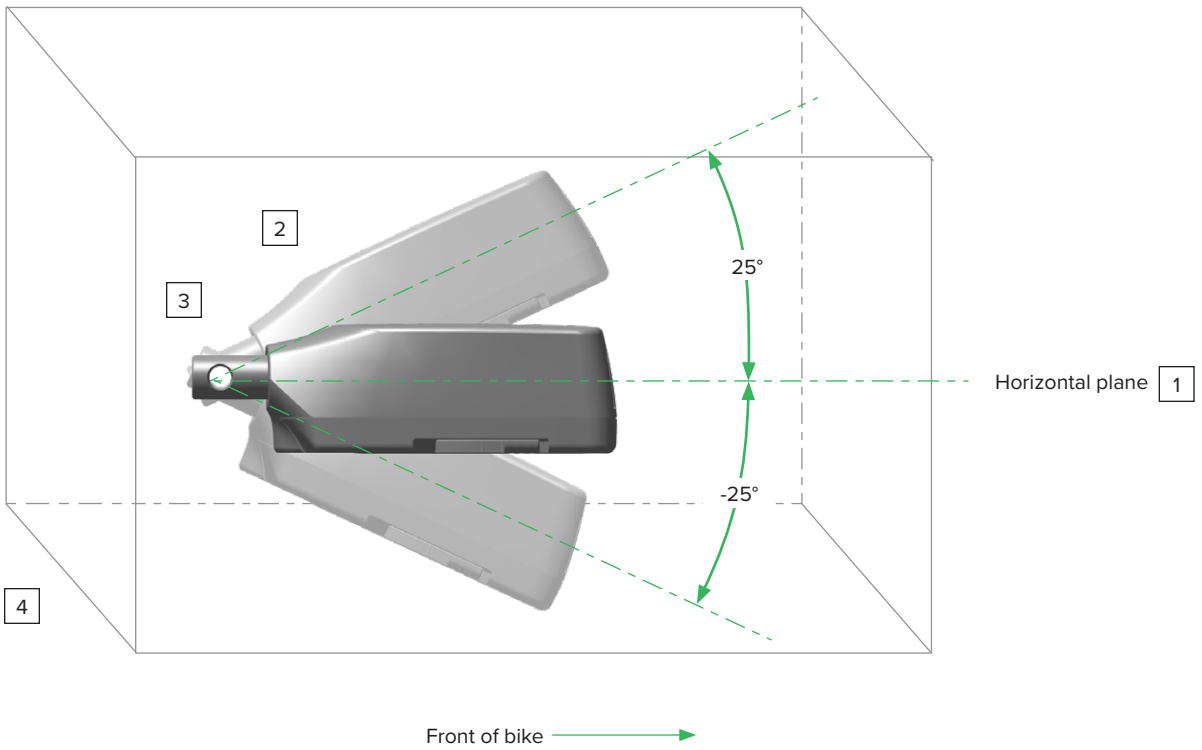
Enclosure Guidelines



BlipBox orientation for optimal performance in internal enclosure space:

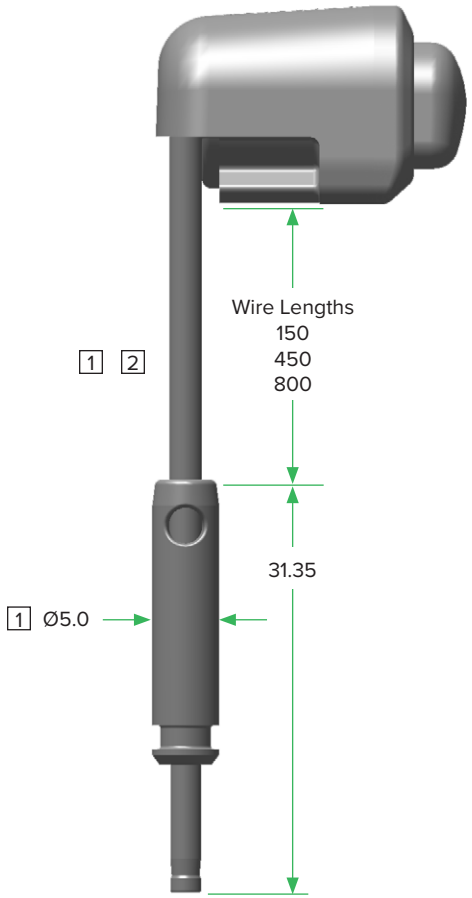
1. Must be mounted within ± 25 ° from the horizontal plane.
2. The button can face upward or downward.
3. The wire input ports can face forward or backward.
4. The enclosure should not be 3 or more sides of the following materials: carbon, carbon plastic, metal, or water-filled reservoir.

Detail A: Enclosure Guidelines and Mounting Angle

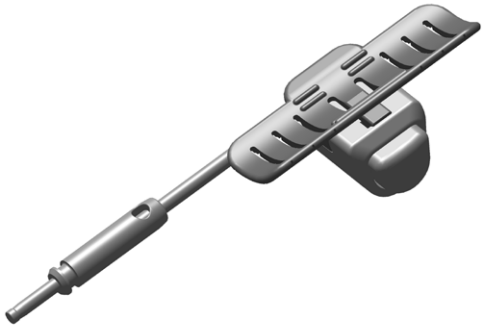


MultiClics

Remote Shift Buttons



MultiClics with Wing 3

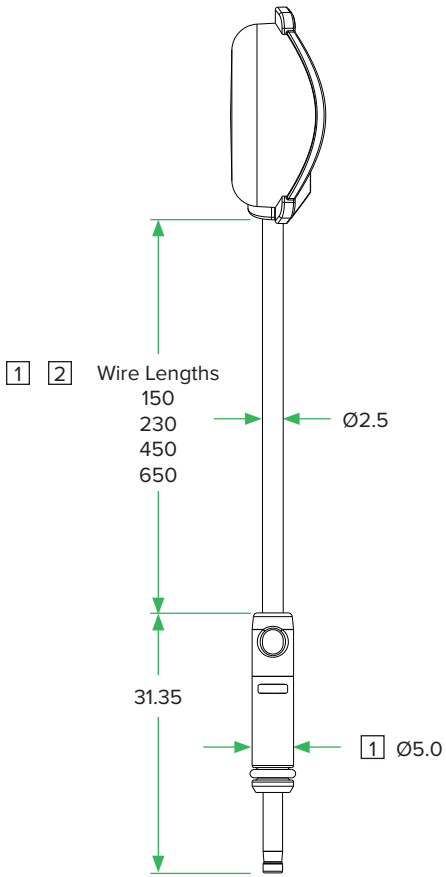


MultiClics with ClampClic for 24 mm Basebar 4

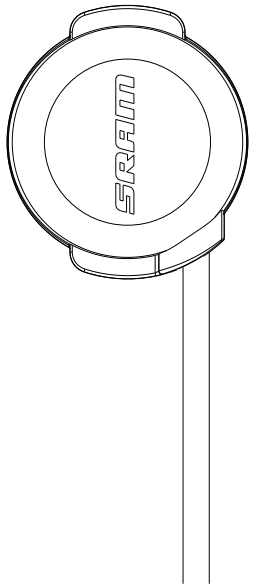
1	Consider the connector diameter and wire length when routing wires internally.
2	Choose the wire lengths based on application and desired location of the MultiClics.
3	Compatible with road drop bar or base bar.
4	Compatible with SRAM DB S-900 Aero HRD. Fits a base bar with an outer diameter of 24 mm.

Blips

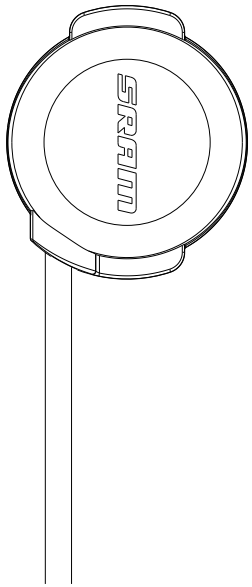
Remote Shift Buttons and Connector Dimensions



Left Shift Button



Right Shift Button

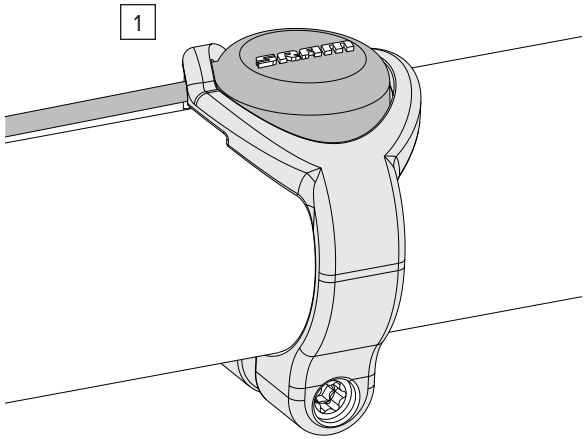


[1]	Consider the connector diameter and wire length when routing wires internally.
[2]	Choose the wire lengths based on application and desired location of the Blips.

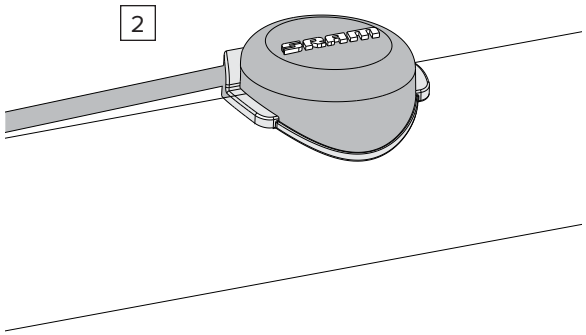
BlipClamp and BlipGrip

Remote Shifter Mounting

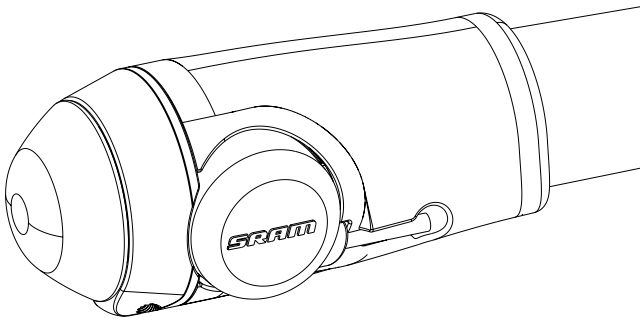
31.8 mm Bar



22.2-35 mm Bar



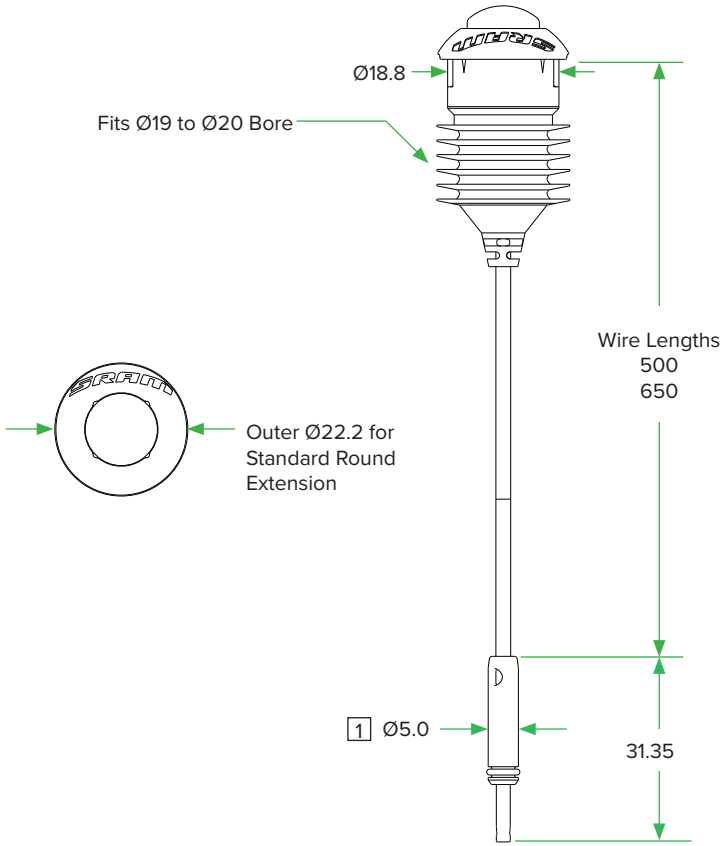
22.2mm TT Extensions



1	Button holder designed for 31.8 mm bar mounting.
2	Direct mount under the handlebar tape for 22.2 mm through 35 mm diameter bars.

Clics

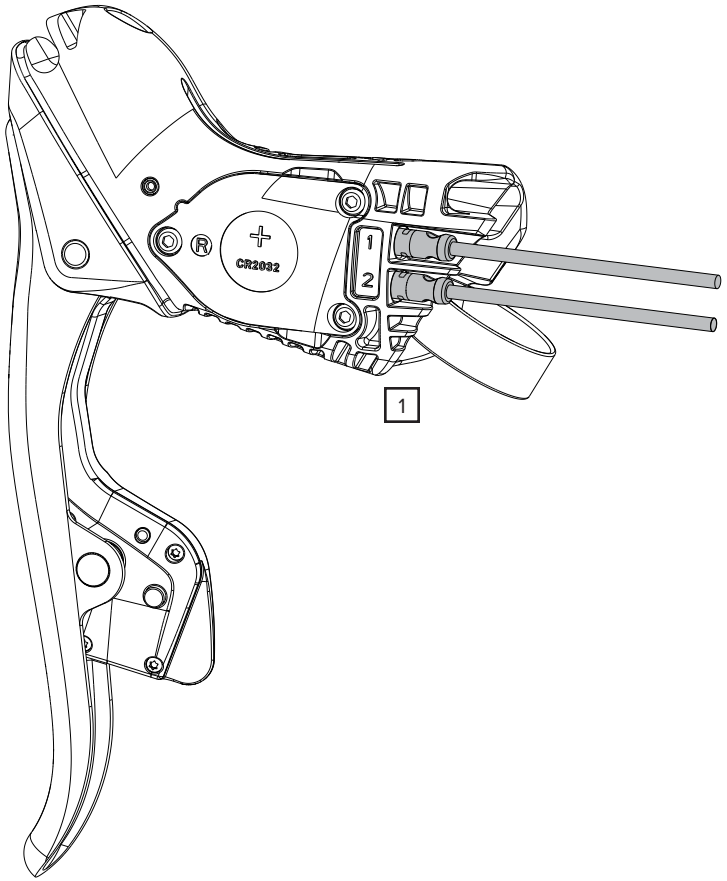
Extension Shift Buttons

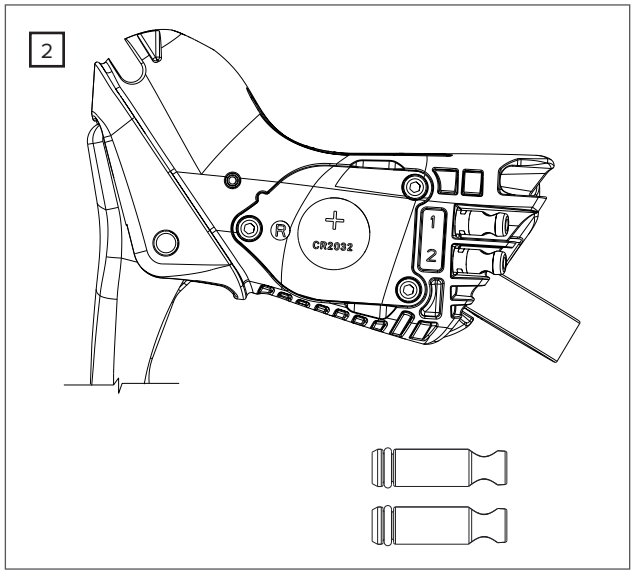


1	Consider the connector diameter and wire length when routing wires internally.
2	Internally mounted shifter setup requires the MultiClic, Blip, or Clic wires to be routed external of bar, stem, and frame materials a minimum total of 100 mm per side for all the wires. Routing under bar tape is acceptable within the 100 mm length.

Shift-Brake Levers

Remote Shifter Connections



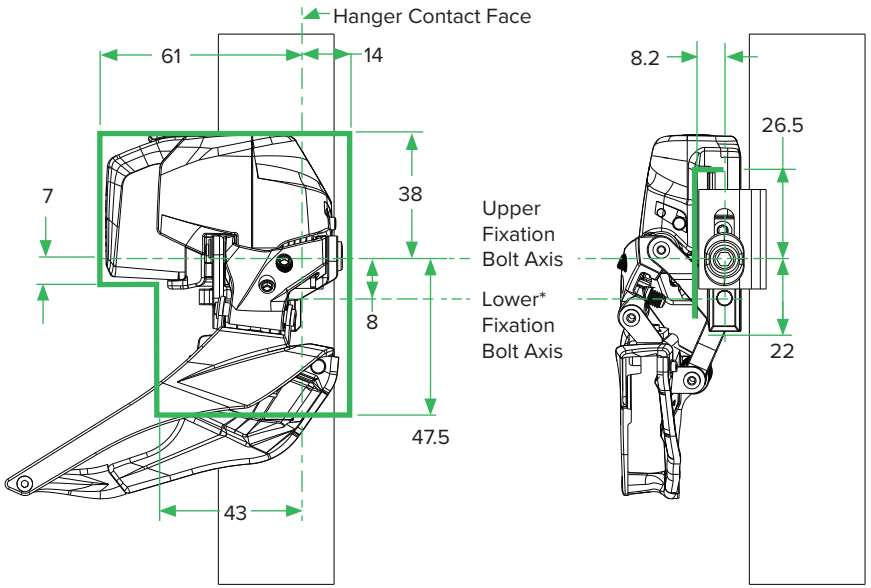


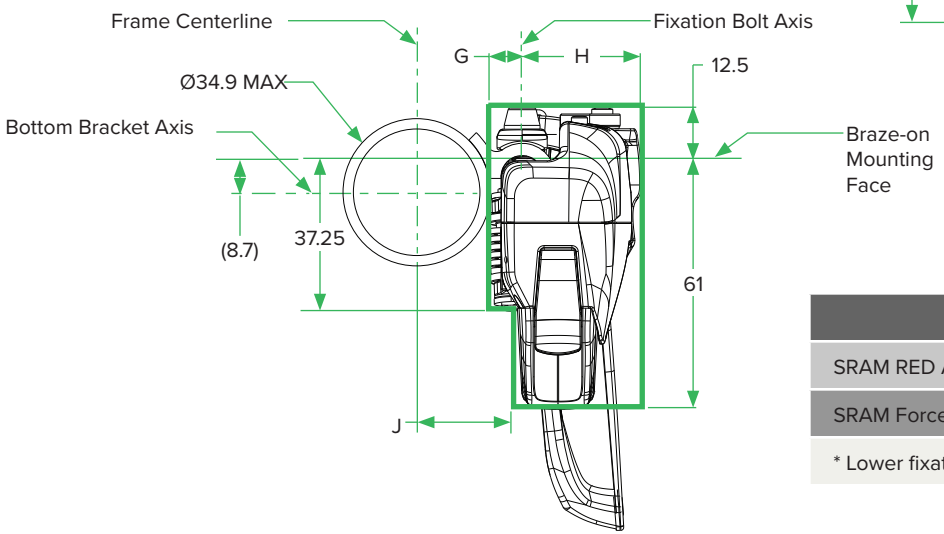
1	The left and right shifter brake each provide additional ports for auxiliary remote shifter buttons. SRAM Red eTap AXS has two ports, SRAM Force eTap AXS has one port, and SRAM Rival eTap AXS has no ports.
2	Use plugs when remote shifters are not in use.
3	Provide a small amount of slack in the wire for shifter brake repositioning.
4	Route the wires underneath the bar tape.

Front Derailleurs

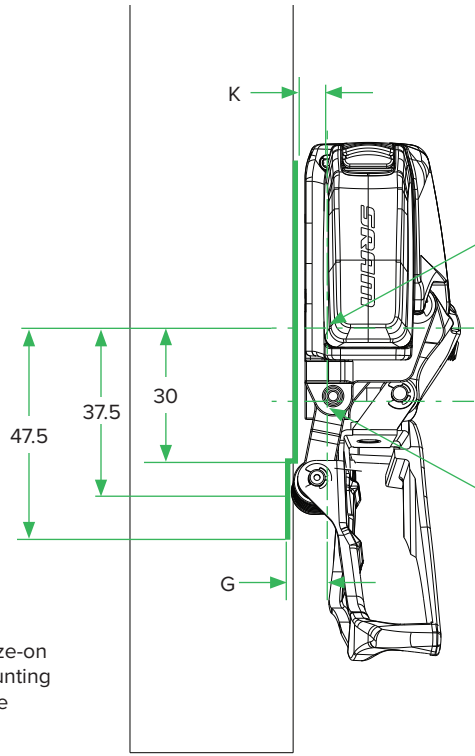
Front Derailleur Clearance

SRAM 12 Speed

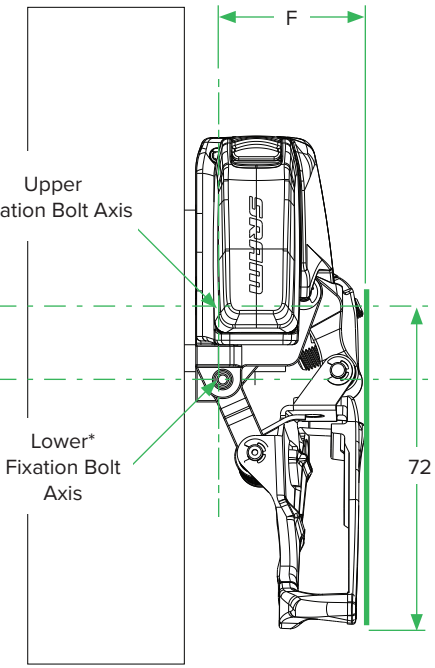




Front Derailleur in Low Gear



Front Derailleur in High Gear

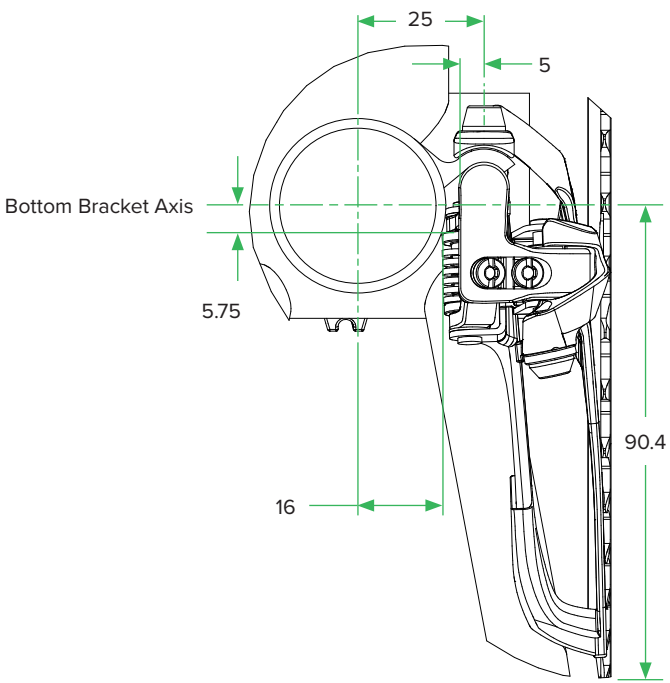


FD Type	F	G	H	J	K
SRAM RED AXS/SRAM Force AXS/ SRAM Rival AXS	33	9.1	29	23.5	5.5
SRAM Force AXS Wide/ SRAM Rival AXS Wide	35.5	6.6	31.5	26	5

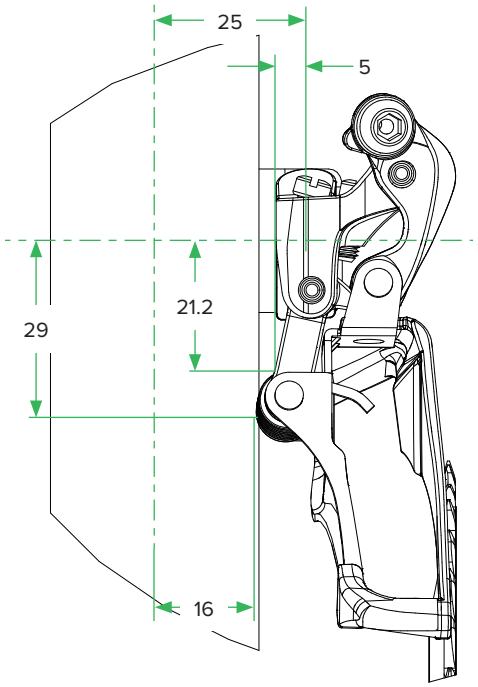
* Lower fixation bolt hole is only provided on the 2-hole front derailleur variant of FD-RED-E-D1 and FD-RED-E-E1.

Front Derailleur Clearance

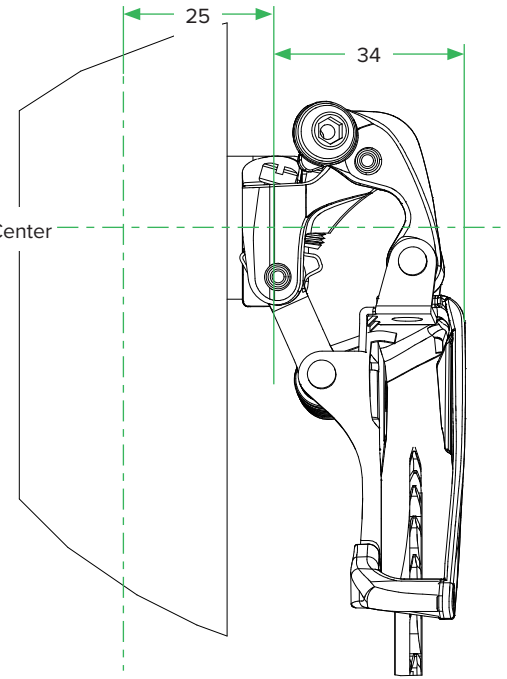
SRAM 11 Speed



Front Derailleur in Low Gear

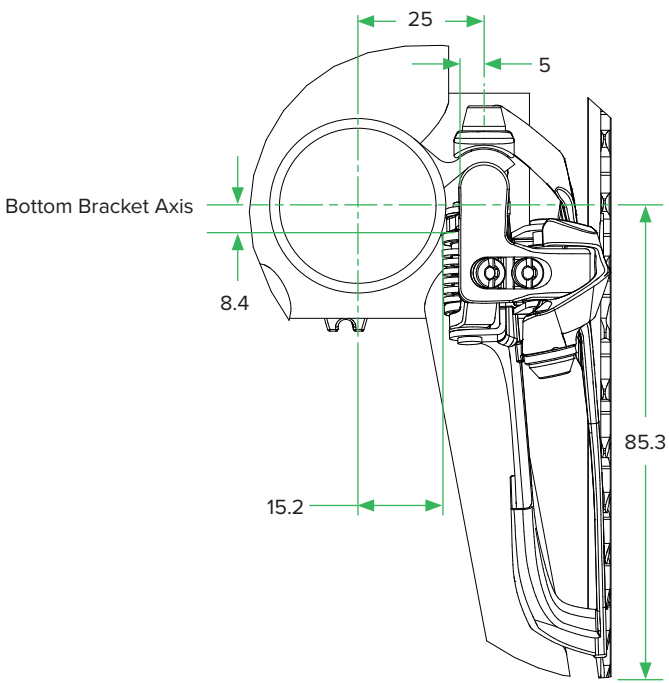


Front Derailleur in High Gear

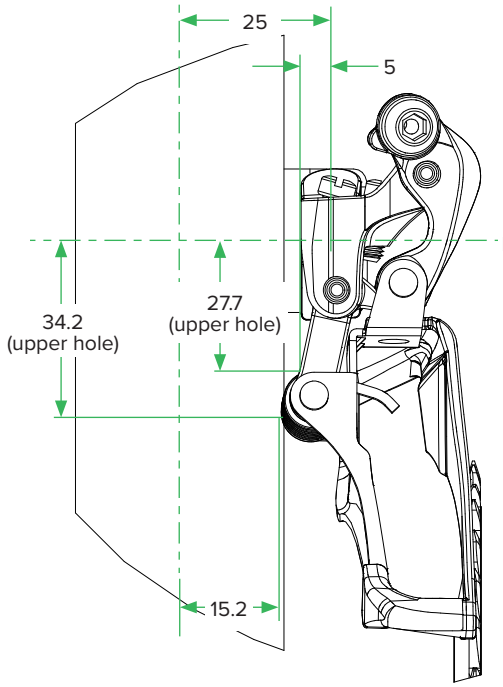


Front Derailleur Clearance

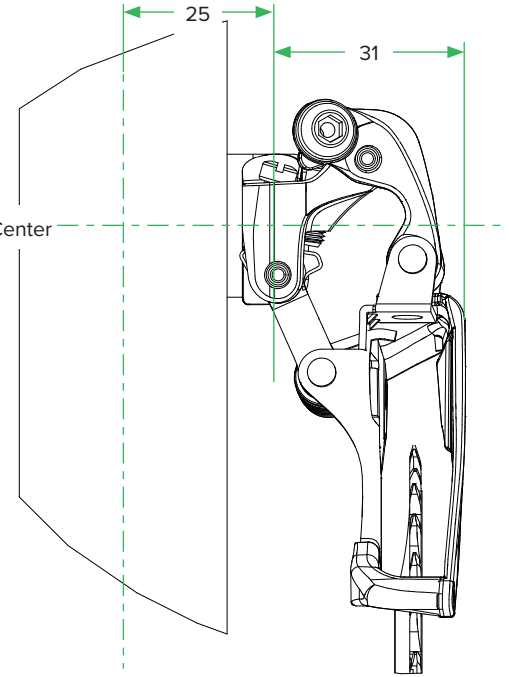
SRAM 10 Speed



Front Derailleur in Low Gear



Front Derailleur in High Gear



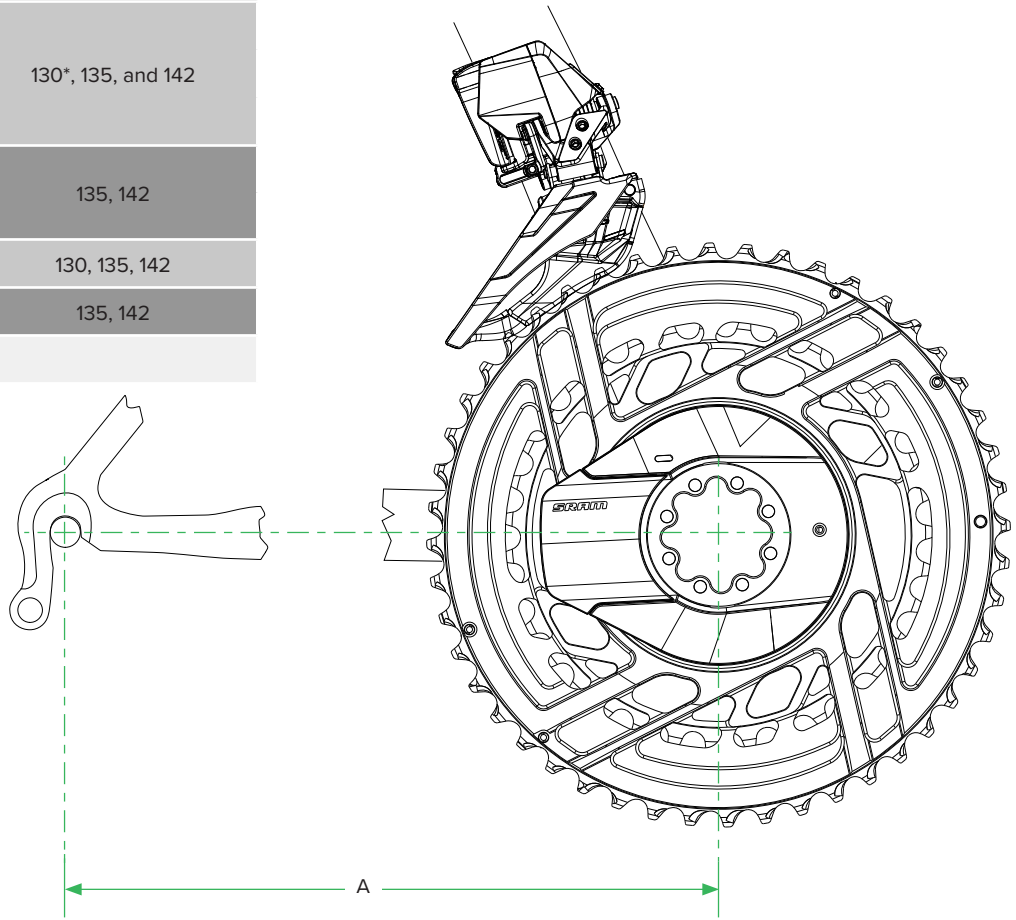
Frame Chainstay Information

SRAM 12 Speed

	Chainline (CL)	Chainring	Minimum Chainstay Length A (mm)	Over Locknut Dimension (OLD) [mm]
2x	Standard	56/43	400	130*, 135, and 142
		54/41	405	135, 142
		52/39		
		50/37		130*, 135, and 142
		48/35		
		46/33		
		43/30		135, 142
	Wide	43/30	415	
1x	Standard	36-68	395	130, 135, 142
	Wide	36-60		135, 142

* Compatible with Red-D1 and Force-D1 Only

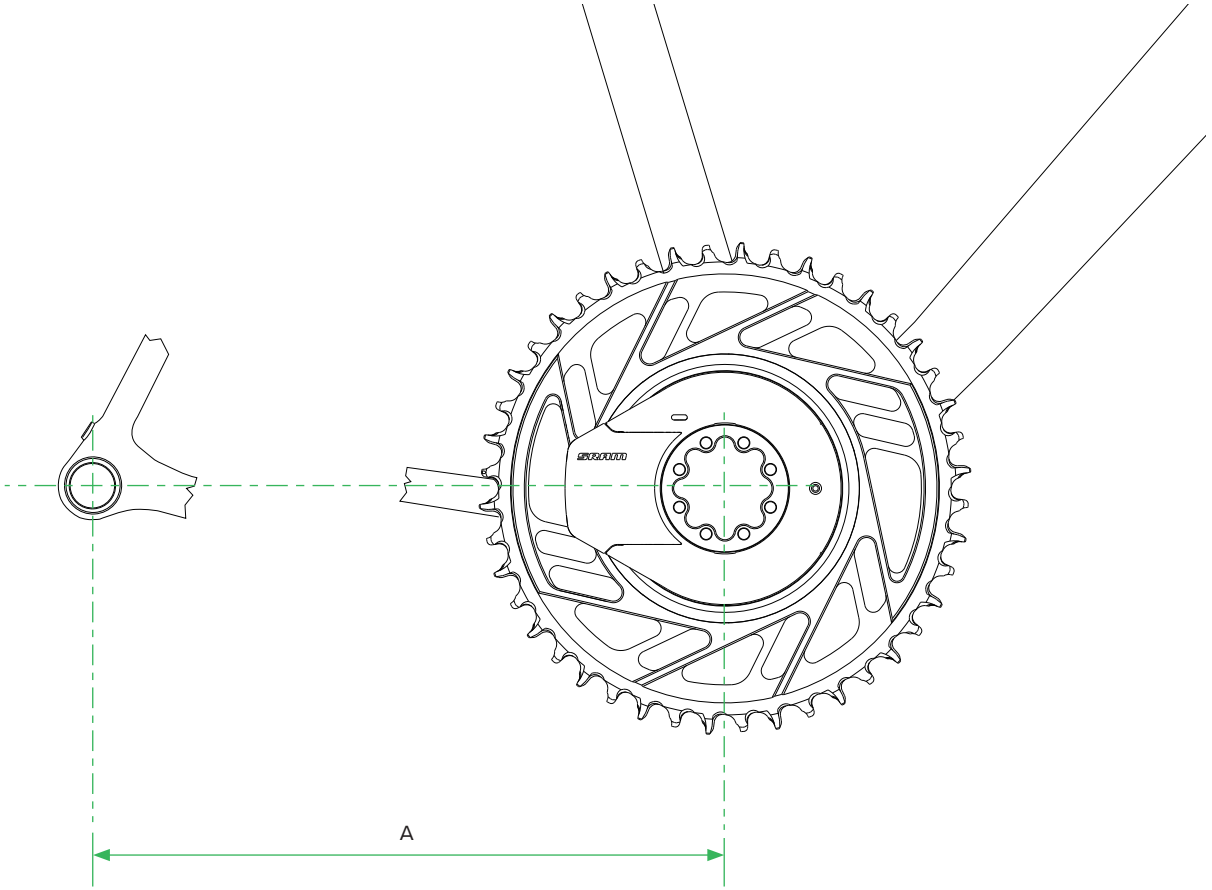
CL Standard	45 mm
CL Wide	47.5 mm



Frame Chainstay Information

SRAM 13 Speed

	Chainline (CL)	Chainline Dimension	Minimum Chainstay Length A (mm)	Over Locknut Dimension (OLD) [mm]
1x	Wide / XPLR	47.5	415	142
	Standard	45	405-415	142

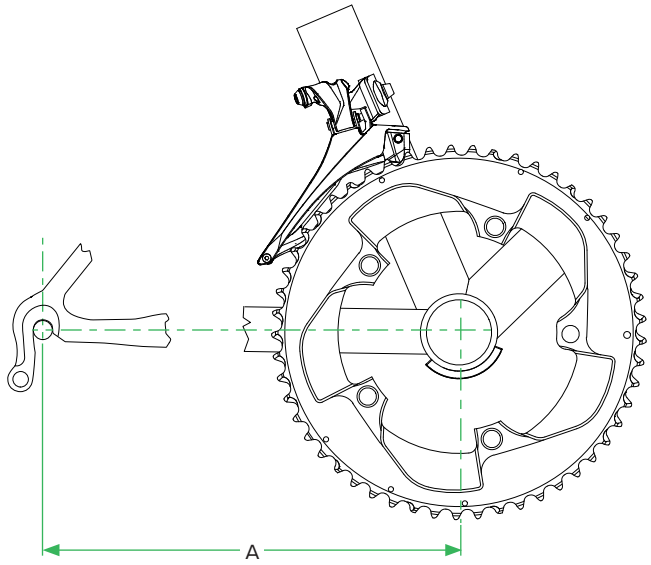


Frame Chainstay Information

SRAM 10 and 11 Speed

	Chainring	Minimum Chainstay Length A (mm)	
		130 OLD* frames 135 OLD frames w/ Wide Axle Cranks	135 OLD frames
2x11	55/42	395	430
	53/39	405	
	52/36		410
	50/34		405
	46/36		410
	46/34		405
2x10	55/42	395	430
	54/42		
	53/39	405	
	52/36		
	52/38		
	50/34		
	46/36		

*Over Locknut Dimensions



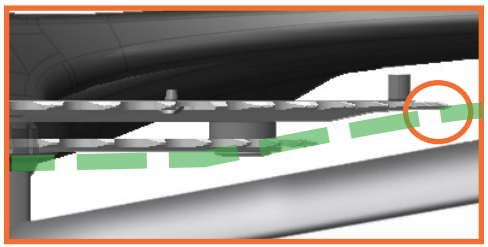
Potential problems with not following the minimum chainstay length

⚠WARNING CRASH HAZARD

When the chain is on the big chainring and smallest rear cog, increased chain angle, increased chain angle can cause the chain to derail outboard off of the large chainring under very high pedaling loads, which may lead to a crash and serious injury and/or death to the rider.

⚠WARNING CRASH HAZARD

When the chain is on the small chainring and smallest rear cog, reduced clearance between the chain and large chainring upshift rivets can cause the chain to unintentionally catch on the upshift rivets, which may lead to loss of control of the bicycle.

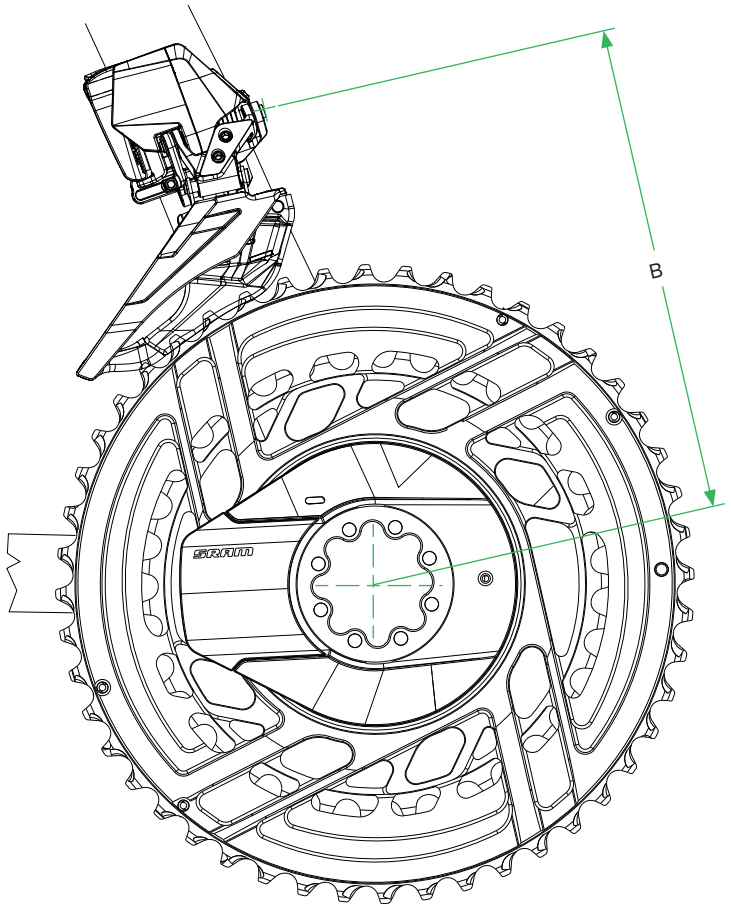


Braze-on Hanger Dimensions

SRAM 12 Speed

	Chainring Size	Upper Fixation Bolt Height B (mm)	Lower Fixation Bolt Height B (mm)
2x	56/43	162.5	154.5
	54/41	158.5	150.5
	52/39	154.5	146.5
	50/37	150.5	NA
	48/35	146.5	NA
	46/33	142.5	NA
	43/30	136.5	NA

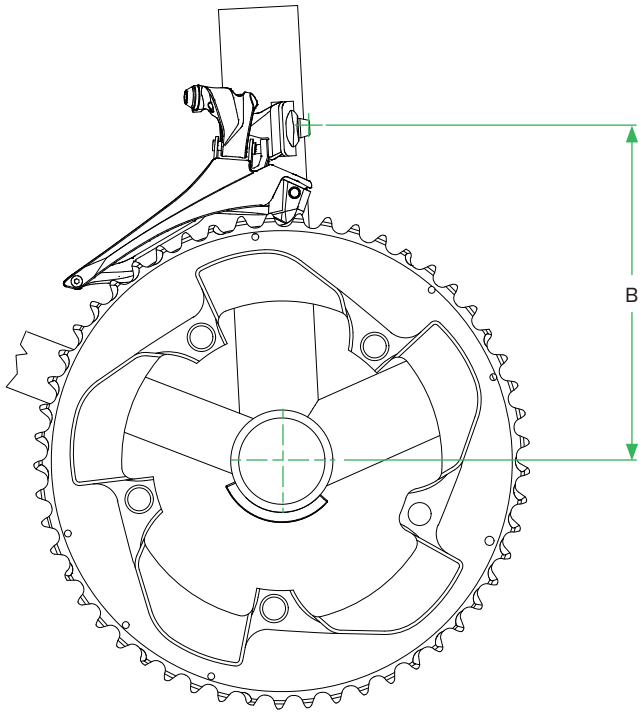
Nominal FD position provided, design should allow for adequate adjustment range in the FD hanger slot to account for tolerances.



Braze-on Hanger Dimensions

SRAM 10 and 11 Speed

	Chainring	Fixation Bolt Position
		B (mm)
2x11	55/42	151
	53/39	147
	52/36	145
	50/34	141
	46/36	133
2x10	55/42	154 (lower hole)
	54/42	152 (lower hole)
	53/39	150 (lower hole)
	52/36	148 (lower hole)
	52/38	148 (lower hole)
	50/34	152 (upper hole)
	46/36	144 (upper hole)

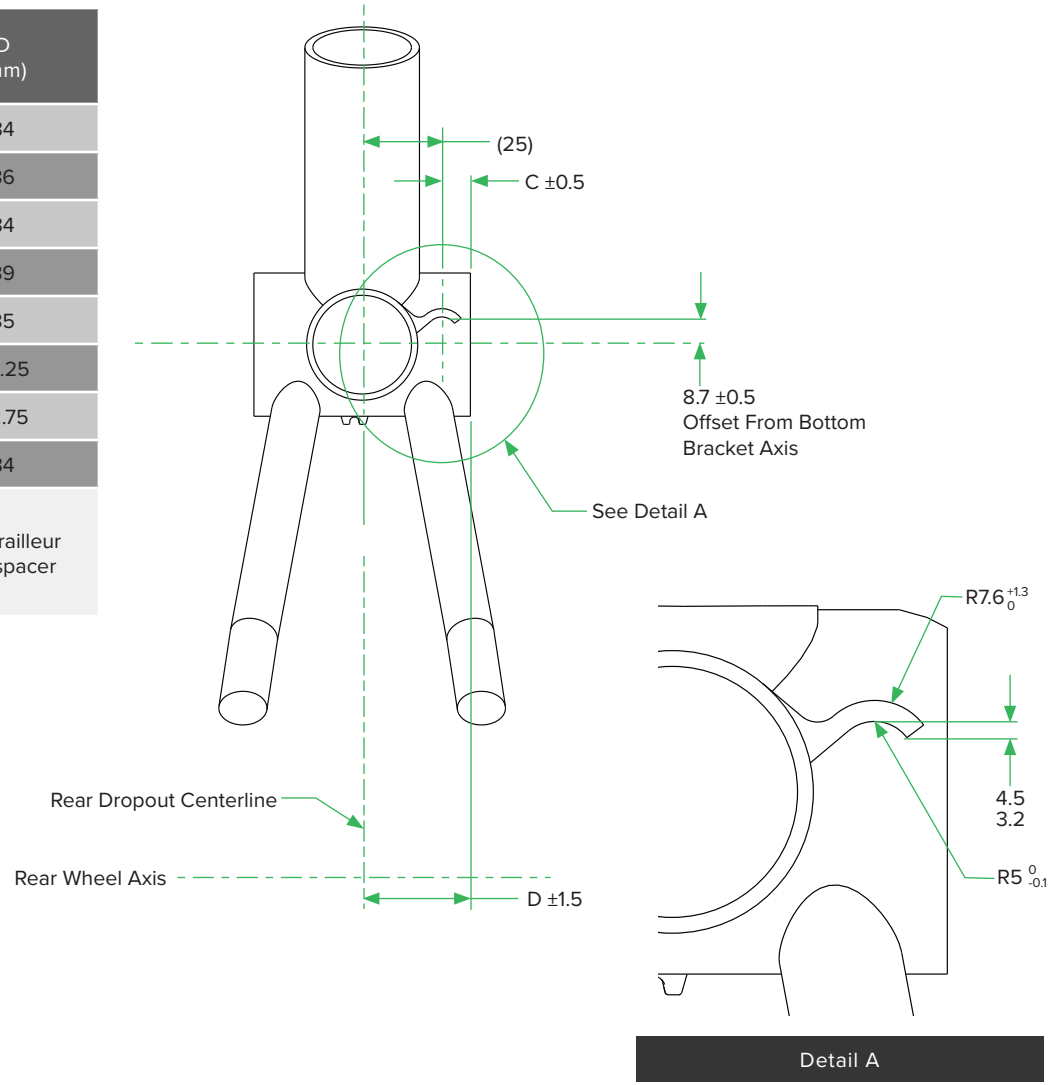


Braze-on Hanger Dimensions

Front Derailleur Interface

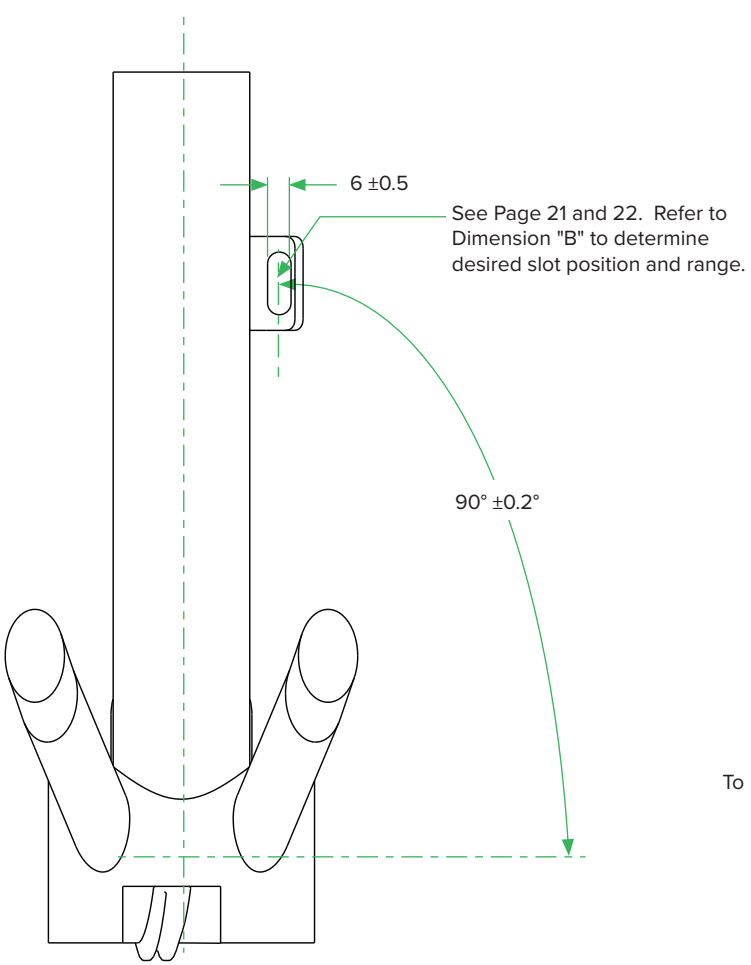
BB Shell Type	BB Shell Width* (mm)	C (mm)	D (mm)
BSA / PressFit30 / BB30	68	9	34
BSA / PF30 / BB30**	73	11.5	36
BB30-73A / PF30-73A	73	9	34
BB30-83A / PF30-83A	83	8	39
Italian	70	10	35
PressFit 86.5, BB386	86.5	18.25	43.25
T47 85.5	85.5	17.25	42.75
PF79-A	79	9	34

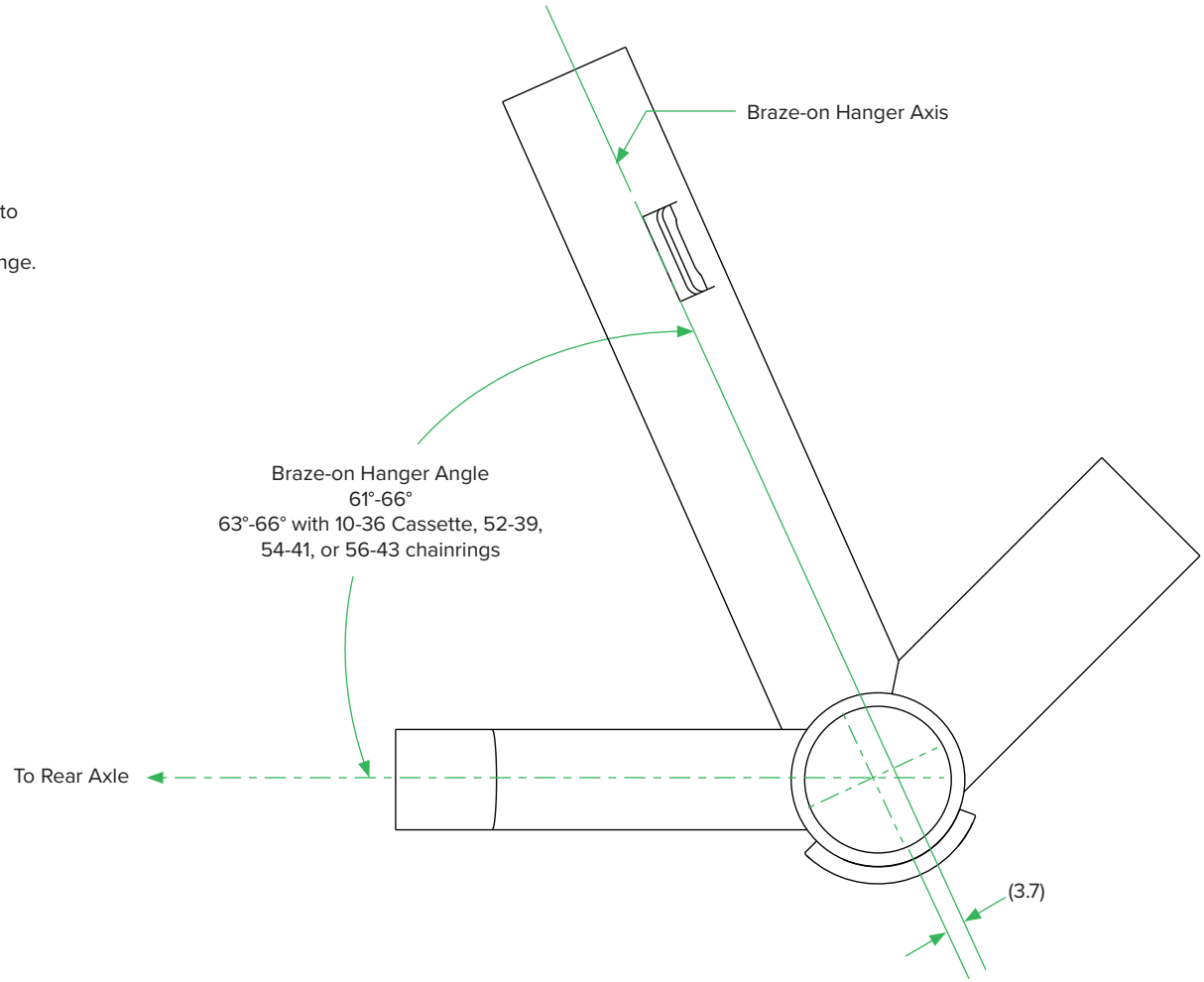
* Dimensions provided for reference, see BB Shell Specifications.
**BSA / PF30 / BB30 73 mm supported by wide chainline front crank and front derailleur only, see the DUB Road and MTB Crankset and Bottom Bracket User Manual for spacer configuration.



Braze-on Hanger Dimensions

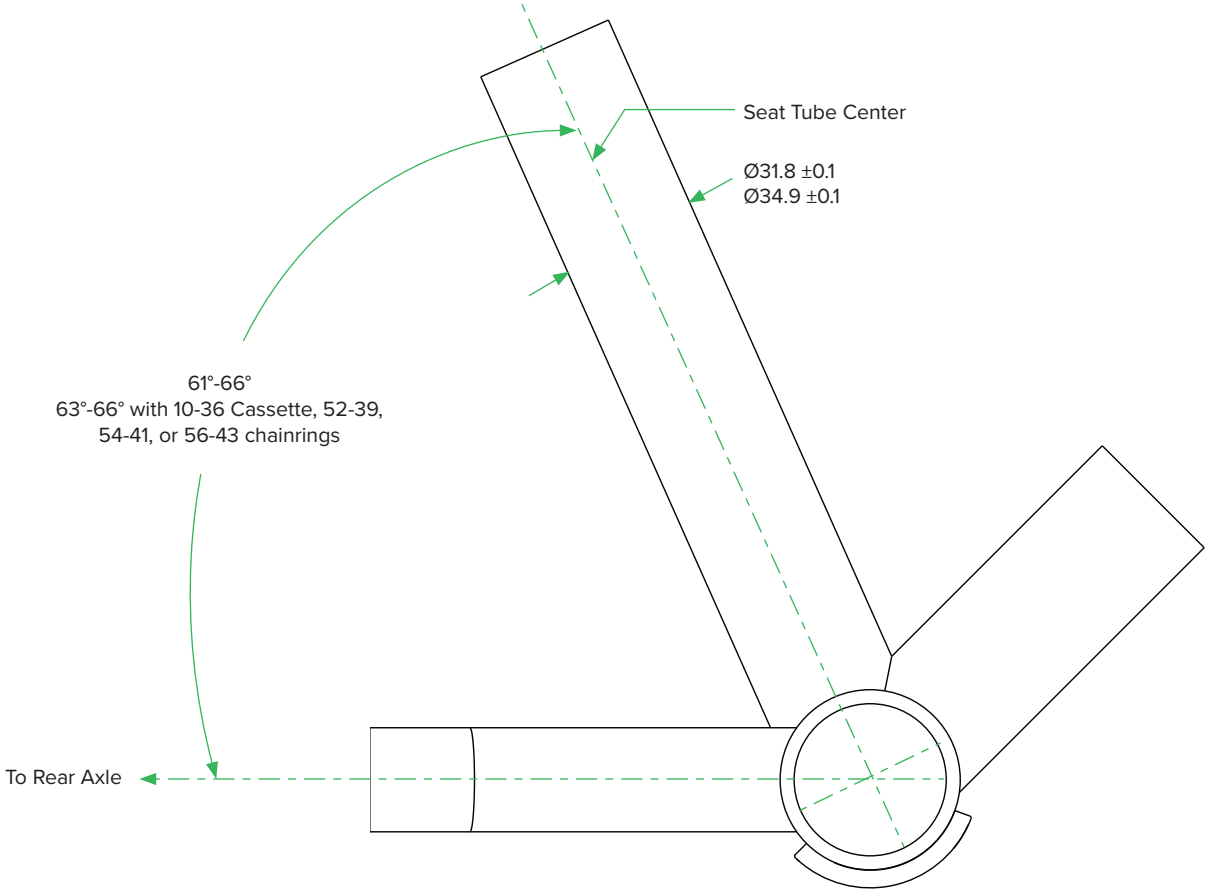
Front Derailleur Interface





Clamp-on Front Derailleur Mount Dimensions

Front Derailleur Interface

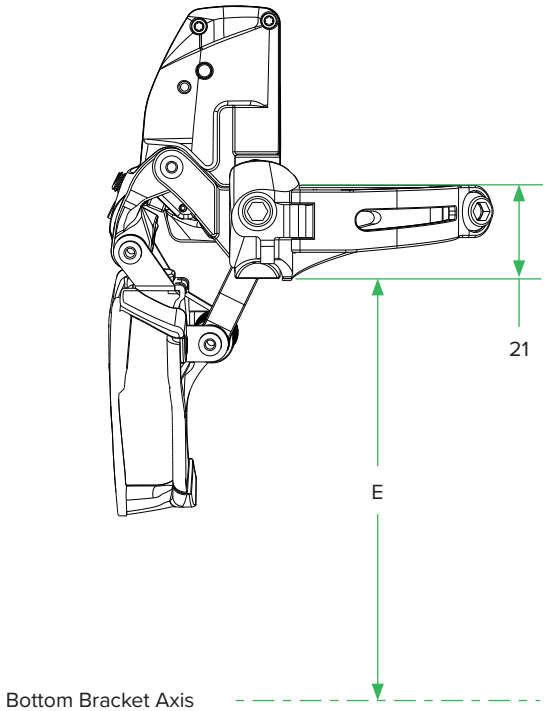


Front Derailleur Position with Clamp Adapter

SRAM 12 Speed

	Chainring Size	Clamp Height E (mm)
2x	50-37	135.5
	48-35	131.5
	46-33	127.5
	43-30	121.5

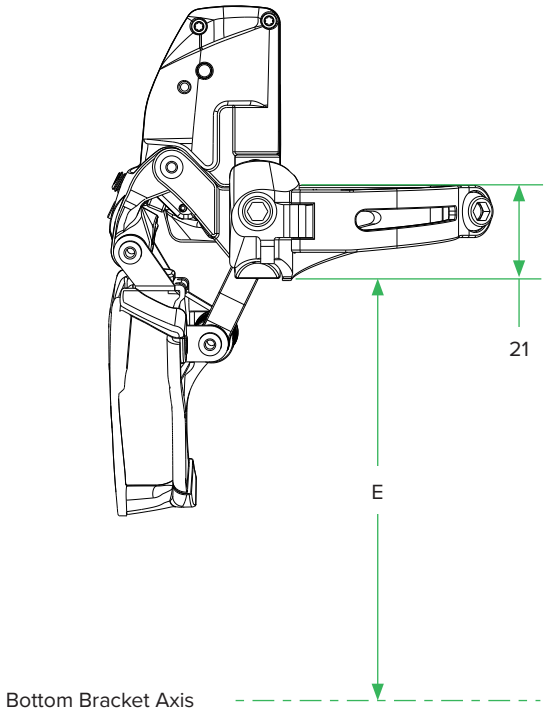
Nominal FD position provided, design should allow for adequate adjustment range of the clamp along the seat tube to account for tolerances.



Front Derailleur Position with Clamp Adapter

SRAM 10 and 11 Speed

	Chainring	Lower Clamp Position
		E (mm)
2x11	55-42	136
	53-39	132
	52-36	130
	50-34	126
	46-36	118
2x10	55-42	149
	54-42	147
	53-39	145
	52-36	143
	52-38	143
	50-34	139
	46-36	131

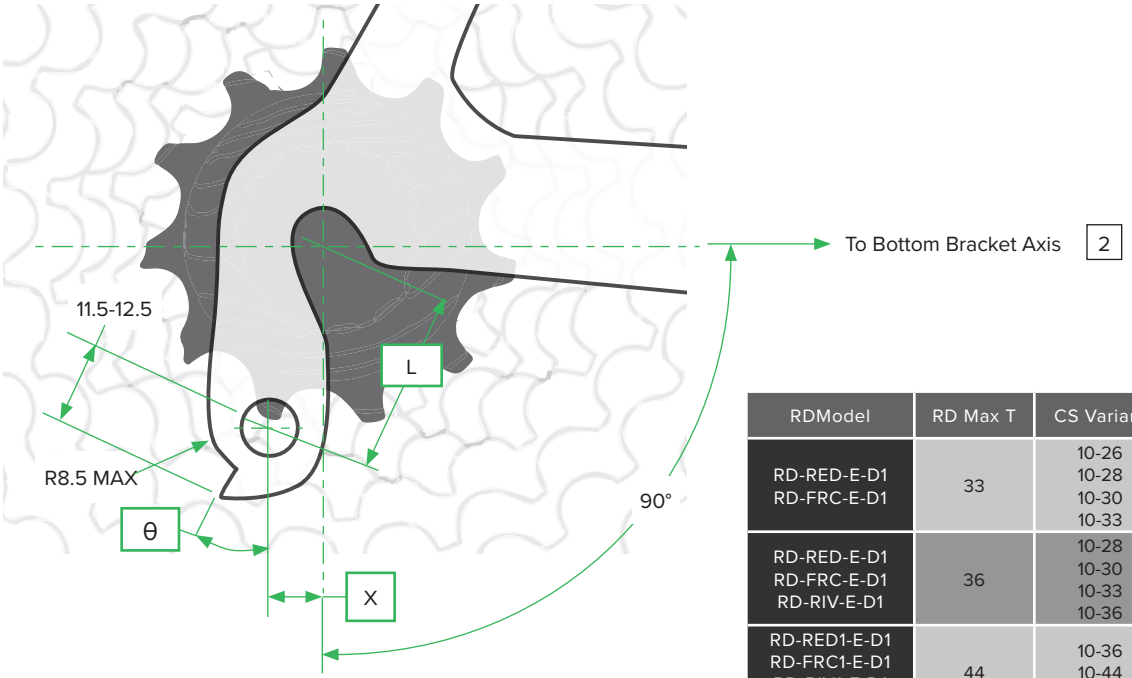


Rear Derailleurs

Hanger and Chainstay Specifications

SRAM Road Rear Derailleurs*

Rear Derailleur Hanger and Chainstay



1 Chainstay should be designed for sufficient clearance to the chain when on the smallest cog to avoid contact between chain and chainstay when riding over a rough surface.

2 Refer to the Frame Chainstay Information page for 1x and 2x chainstay length.

3 Full Mount Rear Derailleur is only compatible with the UDH Frame interface. For more information visit www.universalderailleurhanger.com.

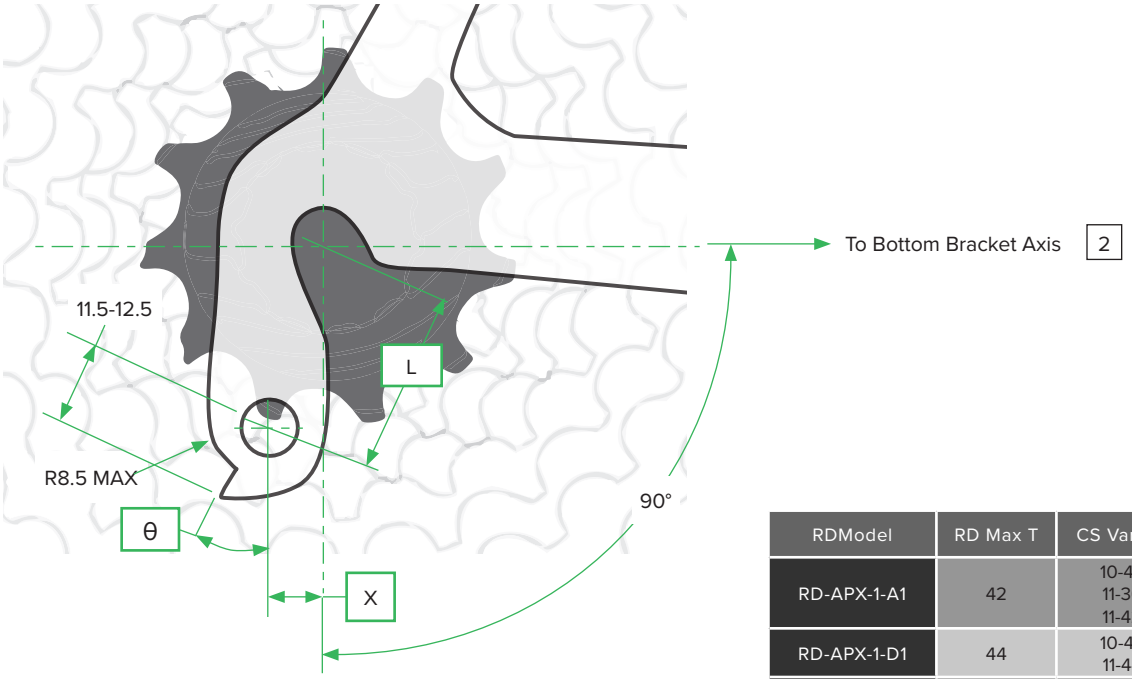
RDModel	RD Max T	CS Variant	Hanger Style	L (mm)	X (mm)	T QR (mm)	T Thru Axle (mm)	θ (°)
RD-RED-E-D1 RD-FRC-E-D1	33	10-26 10-28 10-30 10-33	Road	24-28	7-10	7-9	3.5-5.5	30-35
RD-RED-E-D1 RD-FRC-E-D1 RD-RIV-E-D1	36	10-28 10-30 10-33 10-36						
RD-RED1-E-D1 RD-FRC1-E-D1 RD-RIV1-E-D1 RD-APX-1E-D1	44	10-36 10-44 11-44						
RD-RED-E-D1 RD-FRC-E-D1	33	10-28 10-30 10-33	UDH	30 +/- 0.2	8 +/-0.2	8.5 +/-0.25	5 +/-0.25	25-30
RD-RED-E-D1 RD-FRC-E-D1 RD-RIV-E-D1	36	10-28* 10-30 10-33 10-36						
RD-RED1-E-D1 RD-FRC1-E-D1 RD-RIV1-E-D1	44	10-36* 10-44						
RD-RED-E-E1	36	10-28* 10-30 10-33 10-36	Road L - 26 mm min	26-28	7-10	7-9	3.5-5.5	30-35
			UDH	30 +/- 0.2	8 +/-0.2	8.5 +/-0.25	5 +/-0.25	25-30
RD-RED-1E-E1	46	10-46	3					

* Make sure that frame chainstay remains clear of Road Rear Derailleur Frame Clearance specification zone when configured with this cassette size. The rear derailleur may interfere with the chainstay if it is designed to the limits of UDH Hangerless Interface Clearance Model when used with this cassette. Refer to SRAM Road Drivetrain Frame Fit Specifications and UDH & Full Mount Rear Derailleur Frame Specifications.

Hanger and Chainstay Specifications

SRAM Derailleurs*

Rear Derailleur Hanger and Chainstay



1 Chainstay should be designed for sufficient clearance to the chain when on the smallest cog to avoid contact between chain and chainstay when riding over a rough surface.

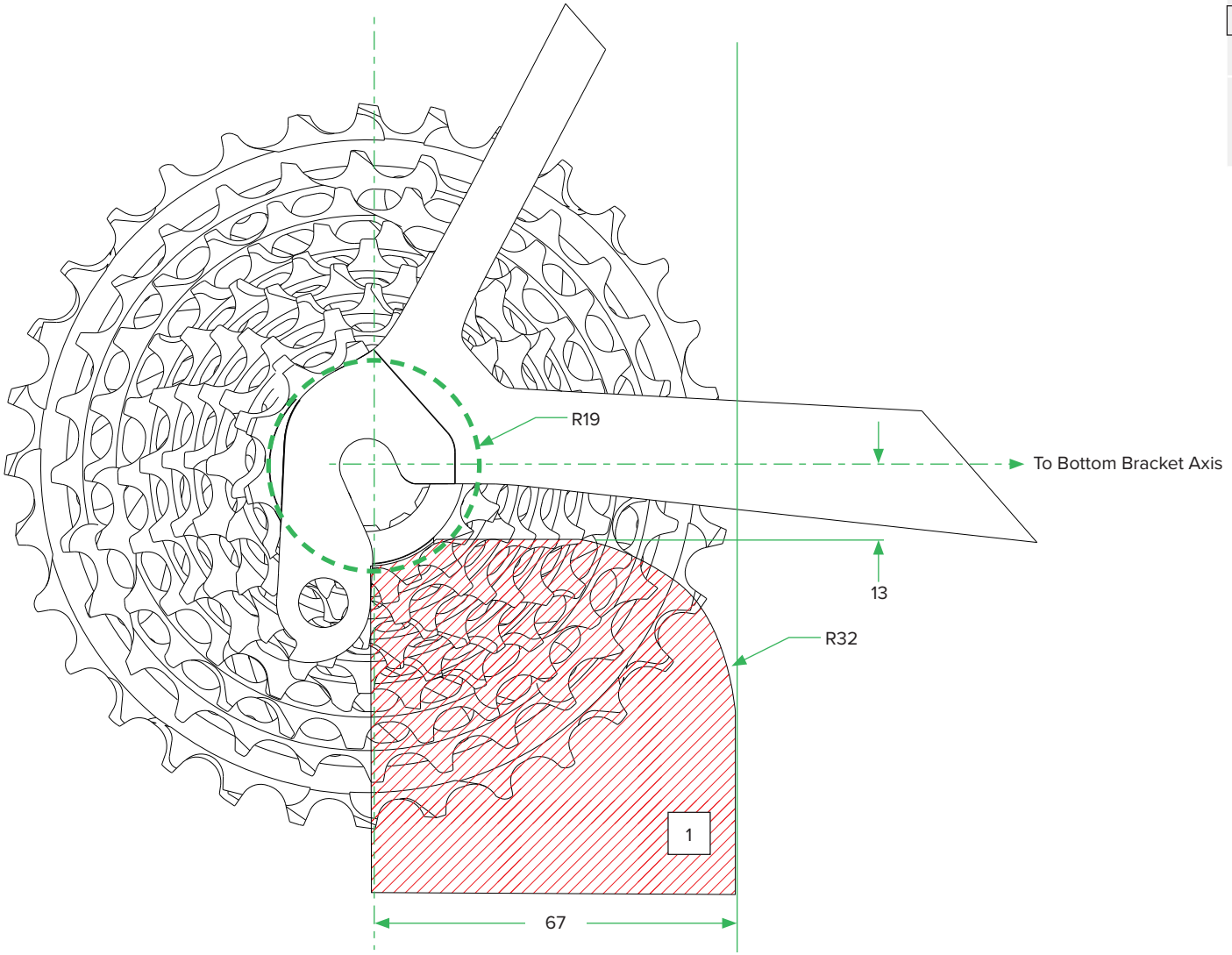
2 Refer to the Frame Chainstay Information page for 1x and 2x chainstay length.

RDModel	RD Max T	CS Variant	Hanger Style	L (mm)	X (mm)	T QR (mm)	T Thru Axle (mm)	θ (°)
RD-APX-1-A1	42	10-42 11-36 11-42	Road	24-28	7-10	7-9	3.5-5.5	30-35
RD-APX-1-D1	44	10-44 11-44	Road L -- 26 mm min	26-30	7-10	7-9	3.5-5.5	30-35
RD-APX-152-D1	52	10-50 10-52 11-50	Road L -- 26 mm min	26-30	7-10	7-9	3.5-5.5	30-35

* Make sure that frame chainstay remains clear of Road Rear Derailleur Frame Clearance specification zone when configured with this cassette size. The rear derailleur may interfere with the chainstay if it is designed to the limits of UDH Hangerless Interface Clearance Model when used with this cassette. Refer to SRAM Road Drivetrain Frame Fit Specifications and UDH & Full Mount Rear Derailleur Frame Specifications.

Rear Derailleur Frame Clearance

SRAM Road Rear Derailleurs*



1	Keep this area clear for rear derailleur clearance.
2	Refer to UDH Frame Specification for Frame Clearance on Full Mount Rear Derailleur.

* Excludes Full Mount RD

Universal Derailleur Hanger Specifications

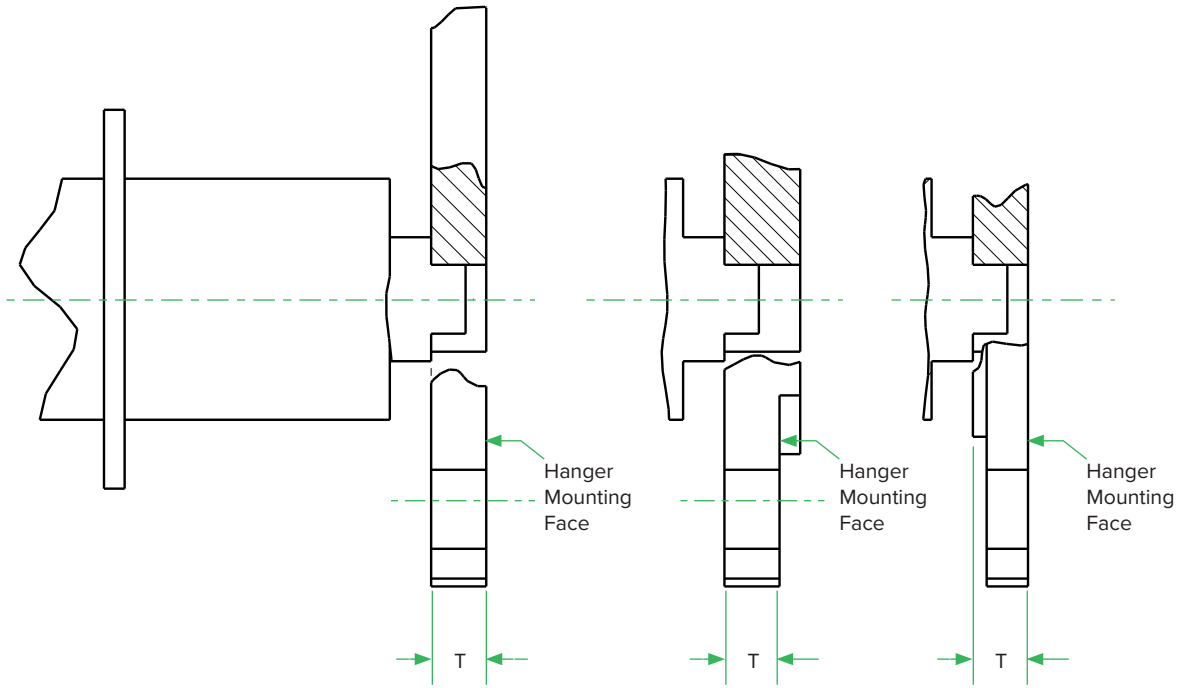
Please visit www.UniversalDerailleurHanger.com for complete specifications.

Hanger Specifications

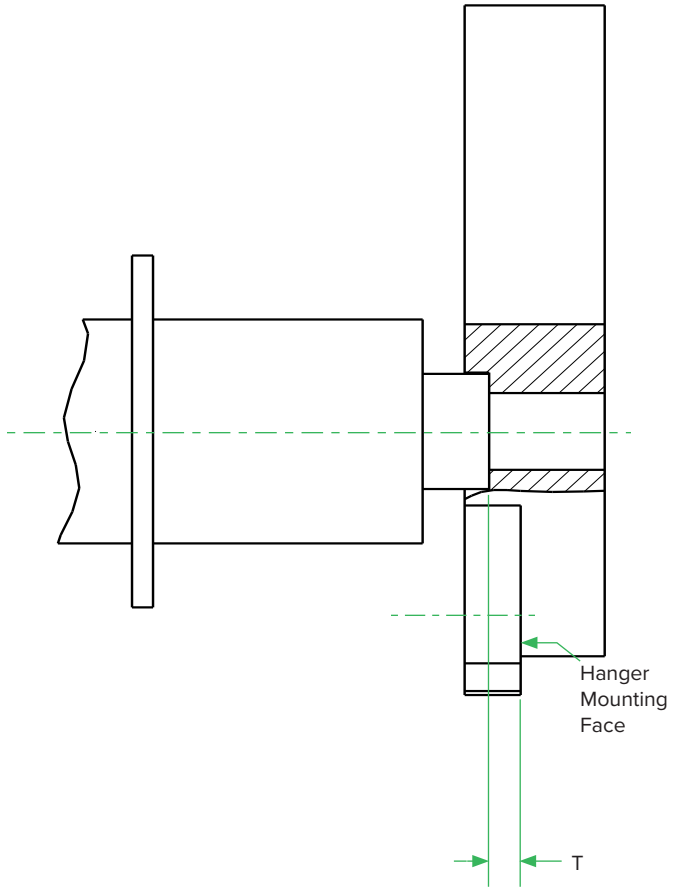
SRAM Road Rear Derailleurs

	T (mm)
Quick Release	7-9
Thru Axle	3.5-5.5

Quick Release



Thru Axle

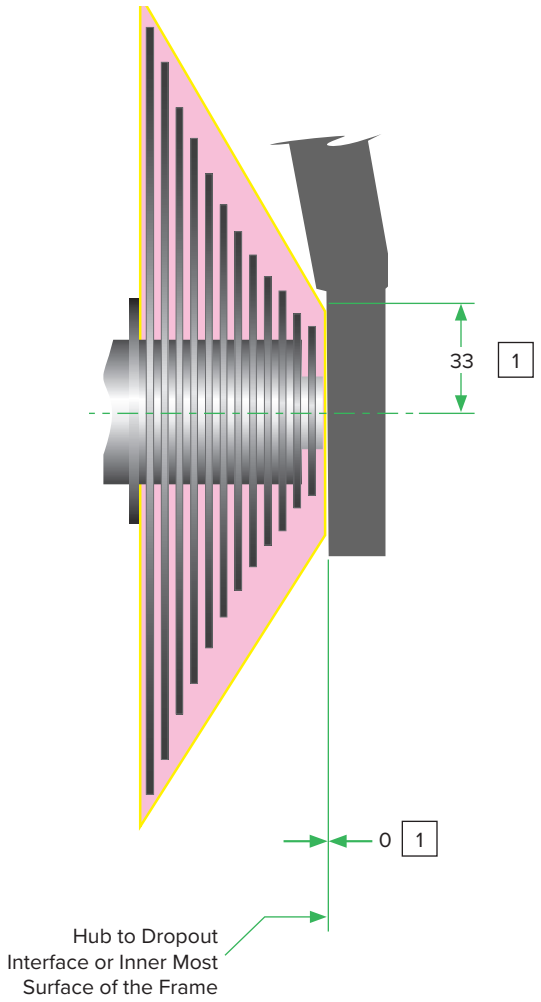


1. Shown hanger specifications not applicable for UDH interface.

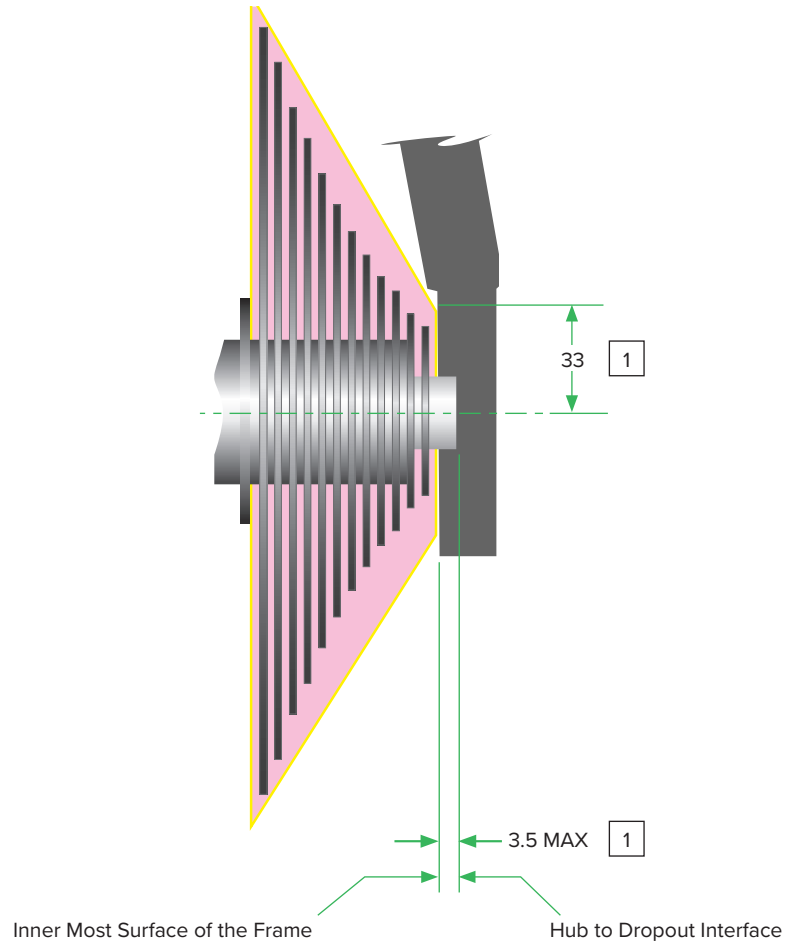
Frame Rear Dropout Clearance

12 Speed Road Chain and Cassette

130 and 135 mm



142 mm



1	An XDR driver body compliant hub is required. Refer to http://xddriverbody.com/ for freehub driver body specifications.
2	Refer to UDH Frame Specification for Chain and Cassette Clearance used on 13 Speed Full Mount Rear Derailleurs.

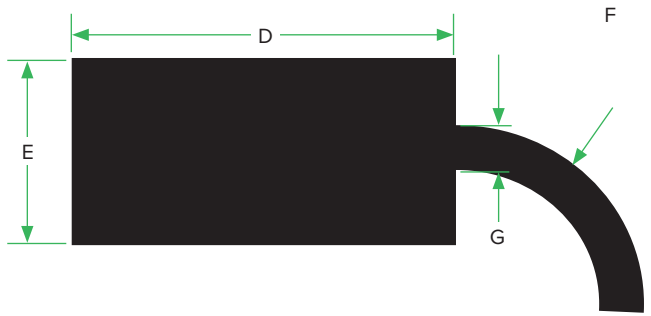
Cable Routing

Cable Housing Stop and AXS Extension Cord Dimensions

Use dedicated derailleur cables and housings with compressionless housing, low friction liner, aluminum ferrules without sealing, and 1.1 mm polished cable.
Ferrule diameter 5.7+0.1 mm. Continuous housing only.
Maximum total bend angle of 500 °. Minimum bend radius of 50 mm.
Avoid : S-bends with small radii and pinch spots (high housing clamping force).
Exit at the rear end best at seat stay or on top of the chain stay.
Minimize cable bending due to suspension and handlebar motion

AXS Extension Cord			
MAX Length Connector D	MAX Diameter Connector E	MIN Bending Radius F	MAX Cable Diameter G
19	Ø 5.8	8.4	Ø 4

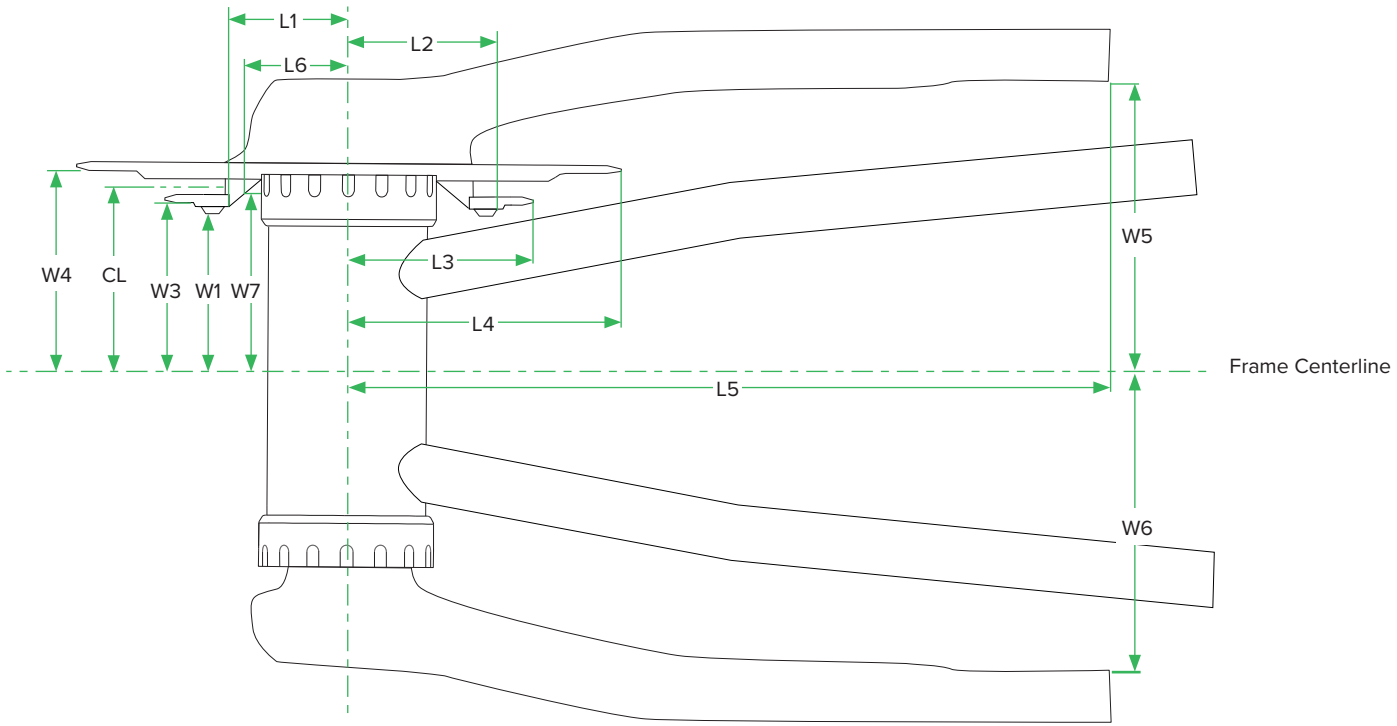
For compatibility with the AXS Extension Cord, a cyclinder diameter (diameter E and length D), must pass through the designated internal cable routing path of the frame.



Road Cranksets

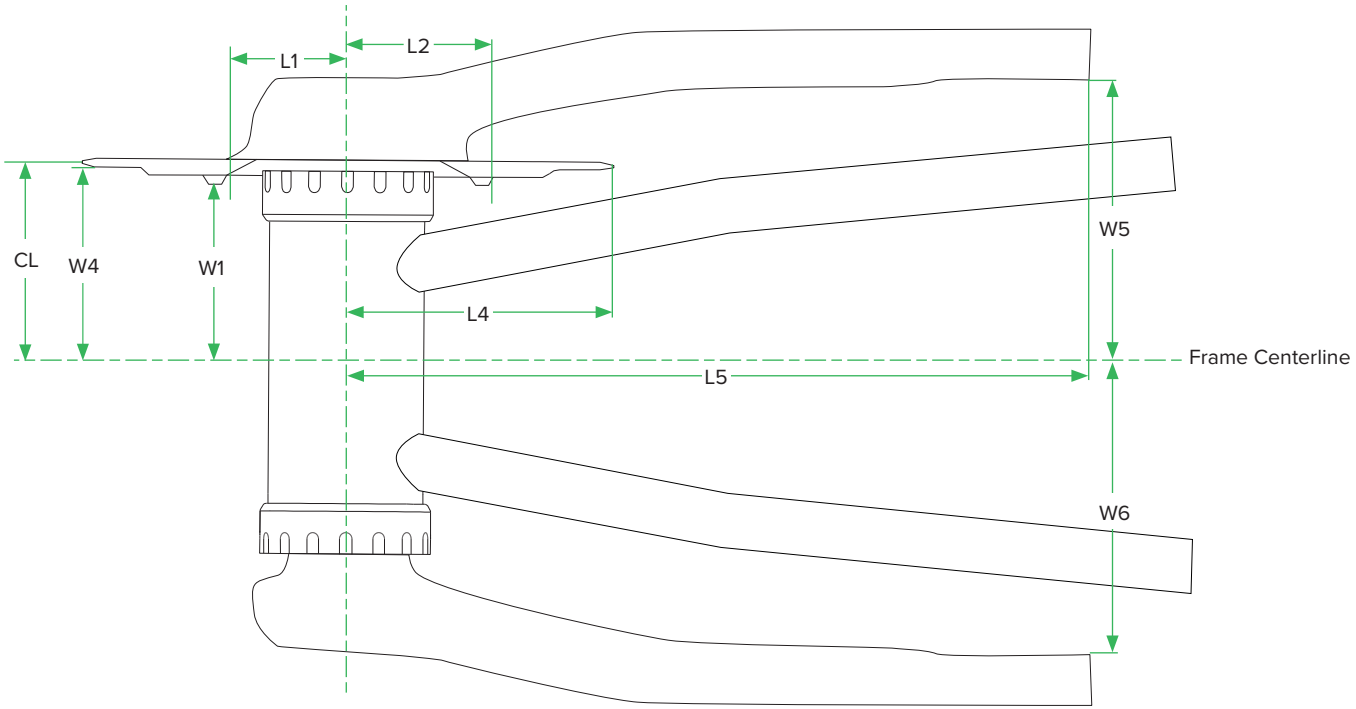
Crankset Diagram

12 Speed 2X



Crankset Diagram

12 Speed 1X



Crankarm and Chainring Frame Clearance

12 Speed

Chainring Configuration	L1 (mm)	L2 (mm)	L3 (mm)	L4 (mm)	L5 (mm)	L6 (mm)	W1 (mm)	W3 (mm)	W4 (mm)	W5 (mm)	W6 (mm)	W7 (mm)	CL (mm)	Q-Factor
(Standard) SRAM RED/ SRAM Force/ SRAM Rival														
56-43	47.0	60.0	89.3	114.6	190.0	35.0	37.3	39.9	47.7	60	60	42.8	45	145
54-41			85.5	110.6										
52-39			81.5	106.4										
50-37			77.4	102.4										
48-35			73.4	98.3										
46-33			69.4	94.3										
(Wide) SRAM Force Wide/ SRAM Rival Wide														
43-30 Wide	40.5	54.9	63.3	88.2	190	31.5	39.8	42.4	50.2	62.5	62.5	45.7	47.5	150

SRAM 12 Speed cranksets must also meet Spider Frame Clearance requirements for Quarq AXS Power Meters.

Crankarm and Chainring Frame Clearance

12 Speed

	Chainring Size	L1 (mm)	L2 (mm)	L4 (mm)	L5 (mm)	W1 (mm)	W4 (mm)	W5 (mm)	W6 (mm)	CL (mm)	Q-Factor
	(Standard) SRAM RED 1x AXS/ SRAM Force 1x AXS										
Direct Mount	68	38.5	46	141.0	190	43.9	44.8	60	60	46.5	145
Direct Mount	66			136.9							
Direct Mount	64			132.9							
Direct Mount	62			128.9							
Direct Mount	60			124.8		41.5	43.4			45*	
Direct Mount	58			120.8							
Direct Mount	56			116.7							
Direct Mount	54			112.7							
Direct Mount	52			108.7							
Direct Mount	50			104.6							
Direct Mount	48			100.6							
107 BCD	46			96.6							
107 BCD	44			92.5							
107 BCD	42			88.5							
107 BCD	40			84.4							
107 BCD	38			80.4							
107 BCD	36			76.4							

	Chainring Size	L1 (mm)	L2 (mm)	L4 (mm)	L5 (mm)	W1 (mm)	W4 (mm)	W5 (mm)	W6 (mm)	CL (mm)	Q-Factor
	(Wide) SRAM RED 1x AXS Wide/ SRAM Force 1x AXS Wide/ SRAM Rival 1x AXS Wide										
Direct Mount	46	N/A	N/A	96.6	190	N/A	45.7	62.5	62.5	47.5	150
Direct Mount	44			92.5							
Direct Mount	42			88.5							
Direct Mount	40			84.4							
Direct Mount	38			80.4							

Spider Frame Clearance

Quarq AXS Platform Power Meters

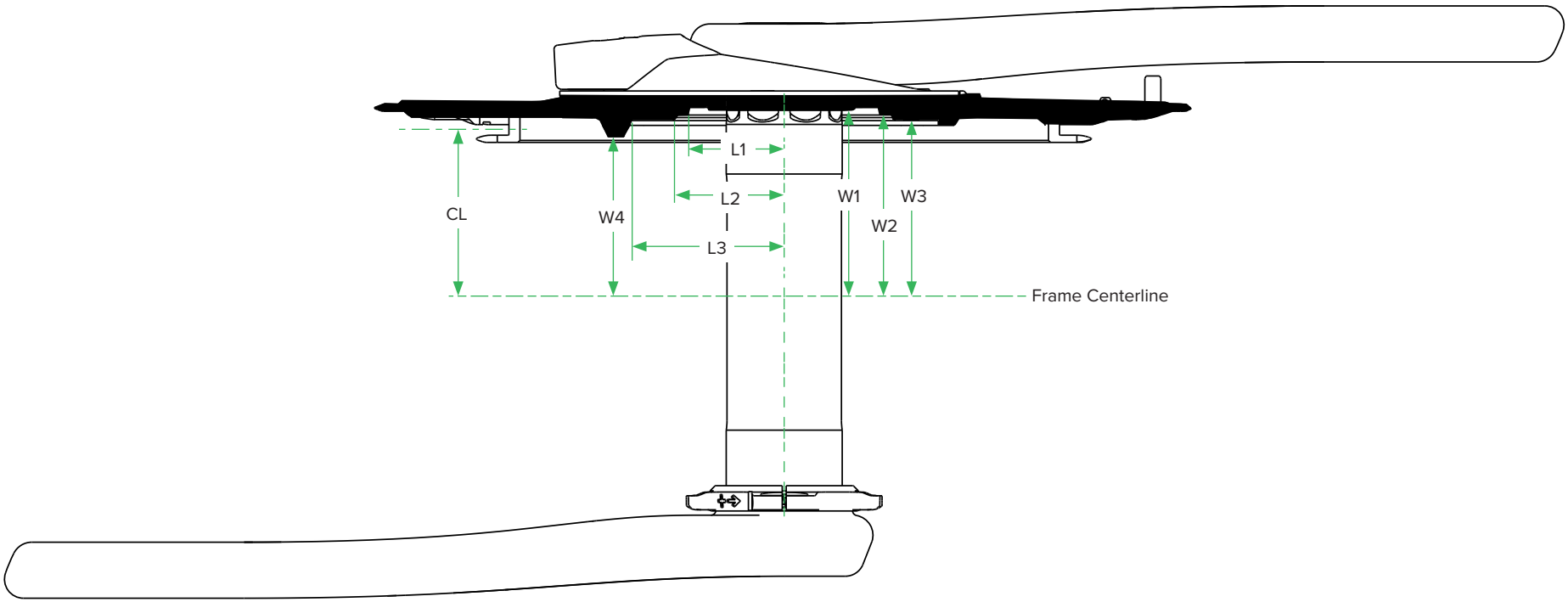
L1 (mm)	L2 (mm)	L3 (mm)	W1 (mm)	W2 (mm)	W3 (mm)	W4 (mm)	CL (mm)
24.0	27.0	37.2	Standard: 48 Wide: 50.5	Standard: 46.7 Wide: 49.2	Standard: 44.3 Wide: 46.8	40.7	Standard: 45 Wide: 47.5

Refer to Chainring Crankarm Clearance 1x, 2x for chainring and crankarm to frame clearance.

Consider clearance in this area if using a wide format BB shell such as BB386 or PressFit 86.5

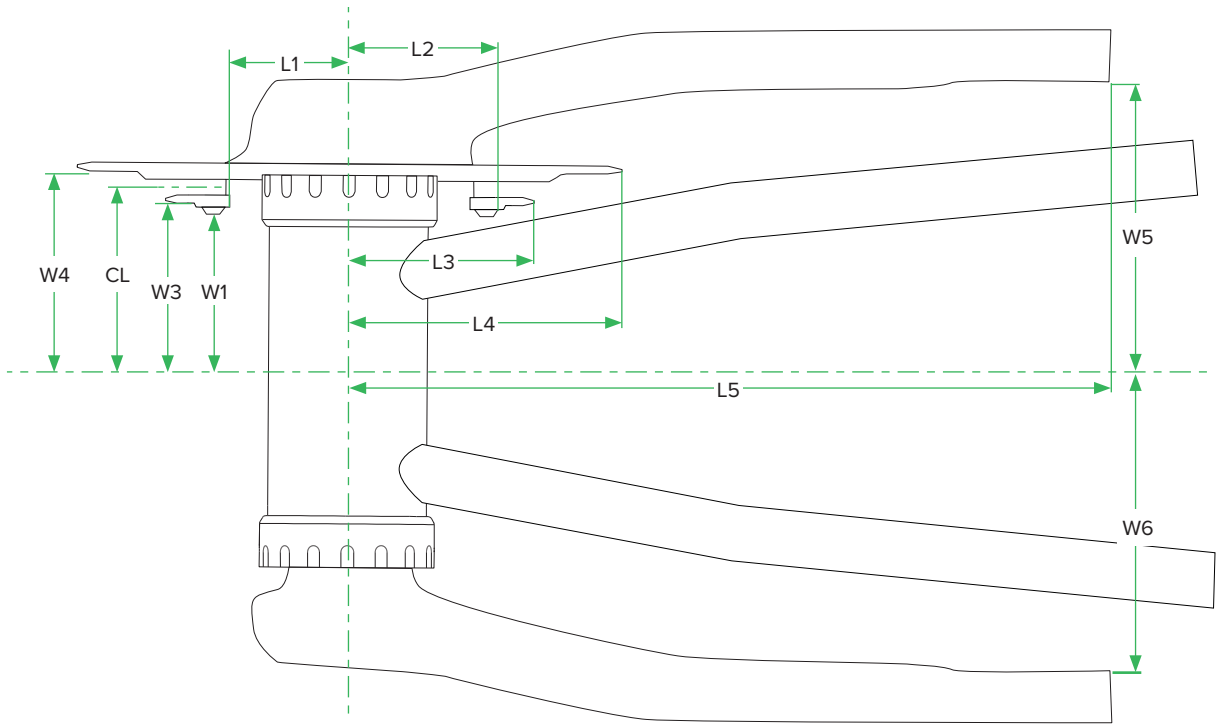
The image depicts a 2X SRAM RED integrated chainring power meter, but dimensions apply to all AXS spider-based power meters.

Dimensions are to the component and do **not** include clearance for debris. Consider additional frame clearance to compensate for mud/grit/debris picked up during normal riding conditions.



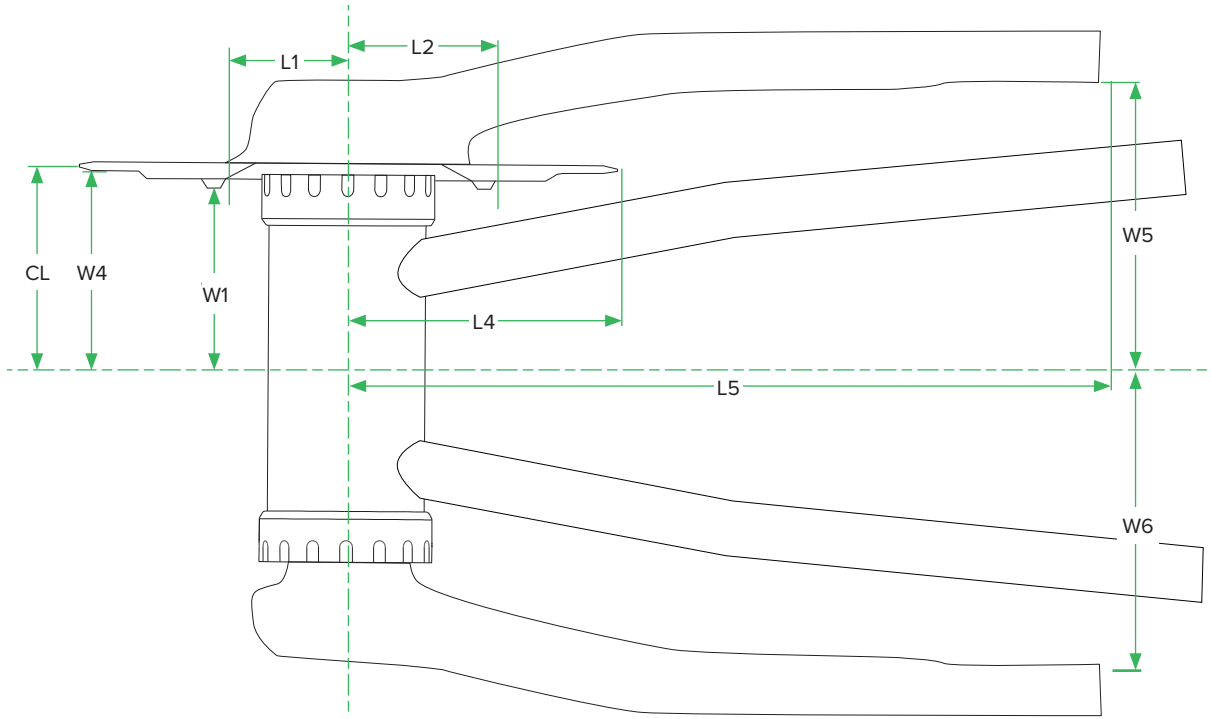
Crankset Diagram

11 Speed



Crankset Diagram

11 Speed and Singlespeed



Crankset Frame Clearance

11 Speed

Chainring	L1 (mm)	L2 (mm)	L3 (mm)	L4 (mm)	L5 (mm)	W1 (mm)	W3 (mm)	W4 (mm)	W5 (mm)	W6 (mm)	CL (mm)	Q-Factor	BB Type
(Standard) SRAM RED*/ SRAM Force/ SRAM RED Quarq Power Meters/ Quarq Prime Carbon Power Ready/S902/S952													
55-42	57.0	71.0	88.0	113.1	197.0	38.0	40.0	47.5	60.0 MIN	60.0 MIN	45	145	GXP BB30 PF30 PFGXP
53-39			81.8	109.2		37.7							
52-36	47.0	61.0	75.0	107.0		38.0		48.0					
50-34			71.0	103.2									
46-36			75.0	95.1									
* Cranksets can be configured to fit BB386, BB30a, and BBright.													
(Wide) SRAM Rival Wide/ S-552													
52-36	47.0	61.0	75.0	106.8	192.1	41.0	42.9	50.6	63.8 GXP/ PFGXP 62.8 BB30	63.8 62.8 BB30	47.5	154.6 GXP/ PFGXP 152.4 BB30/ PF30	GXP BB30 PF30 PFGXP
50-34			71.0	103.1									
(Standard) SRAM Rival 1x/ Quarq Prime Aluminum Power Ready													
52-36	47.0	61.0	75.0	106.8	192.1	38.5	40.4	48.1	61.3 GXP/ PFGXP 60.3 BB30/ PF30	61.3 GXP/ PFGXP 60.3 BB30/ PF30	45	149.6 GXP/ PFGXP 147.4 BB30/ PF30	GXP BB30 PF30 PFGXP
50-34			71.0	103.1									
46-36			75.0	95.1									
(Standard) SRAM S-390													
50-34	57.3	61	71	103.1	191.5	40.4	42.4	50.1	62	62	45	149	GXP BB30 PF30 PFGXP
46-34				95.1									

Crankset Frame Clearance

11 Speed

Chainring	L1 (mm)	L2 (mm)	L4 (mm)	L5 (mm)	W1 (mm)	W4 (mm)	W5 (mm)	W6 (mm)	CL (mm)	Q-Factor	BB Type	Chainstay Length (mm)
(Standard) SRAM Force 1												
54	57.0	72.0	112.2	197.0	38.0	43.7	60.0	60.0	45	145	GXP BB30 PF30 PFGXP	≥ 395
52			108.2									
50	47.0	62.0	104.1									
48			100.1									
46			96.1									
44			92.0									
42			88.0									
40			84.0									
38			79.9									
(Standard) SRAM Rival 1												
50	47.0	62.7	104.1	192.1	38.0	43.7	61.3 GXP/ PFGXP 60.3 BB30/ PF30	61.3 GXP/ PFGXP 60.3 BB30/ PF30	45	149.6 GXP/ PFGXP 147.4 BB30/ PF30	GXP BB30 PF30 PFGXP	≥ 395
48			100.1									
46			96.1									
44			92.0									
42			88.0									
40			84.0									
38			79.9									
(Standard) SRAM Apex 1												
44	49.0	61.0	92.0	191.7	41.3	43.7	62.0	62.1	45	149	GXP BB30 PF30 PFGXP	≥ 395
42			88.0									
40			83.9									

Crankset Frame Clearance

11 Speed and Singlespeed

Chainring	L1 (mm)	L2 (mm)	L4 (mm)	L5 (mm)	W1 (mm)	W4 (mm)	W5 (mm)	W6 (mm)	CL (mm)	Q-Factor	BB Type	Chainstay Length (mm)
(Standard) SRAM S350-1												
44	47.0	62.7	92.0	196.7	38.0	43.7	60.0	60.0	45	145	GXP BB30 PF30 PFGXP	≥ 395
42			88.0									
40			84.0									
(Standard) Omnium												
48	64.5	78.0	99.1	195.4	35.5	42.5	55.0	54.7	45	145	GXP	≥ 395

Crankset Frame Clearance

8/9/10 Speed

Chainring	L1 (mm)	L2 (mm)	L3 (mm)	L4 (mm)	L5 (mm)	W1 (mm)	W3 (mm)	W4 (mm)	W5 (mm)	W6 (mm)	CL (mm)	Q-Factor	BB Type
(Standard) SRAM Apex													
53-39	57.0	71.0	81.0	109.2	196.7	38.0	40.0	47.3	60.0	60.0	45	145	GXP BB30 PF30 PFGXP
50-34	47.0	61.0	71.0	103.2									
48-34				99.0									
46-36			75.0	95.1									
(Standard) Touro													
53-39-30	29.0	41.0	63.0	109.2	190.5	38.5	40.5	48.0	61.0	59.0	45	145	Power Spline
48	47.0	71.0	NA	99.0				NA					
G52	57.0		107.2	112.5				46.0					
G53													Square

SRAM Road Drivetrain with E-Bike Fitment

E-Bike Configurations

Road systems are compatible with road or gravel E-Bike use except for **CN-RIV-D1** and **CN-APX-D1** chains.

Hub drive type:

- All configurations OK; follow all frame fit dimensional specifications.

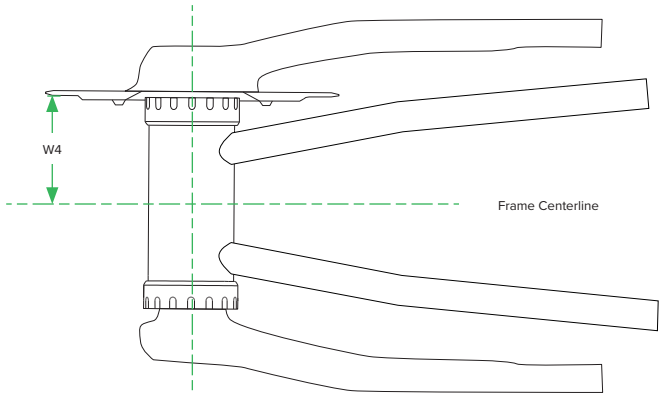
Mid drive type:

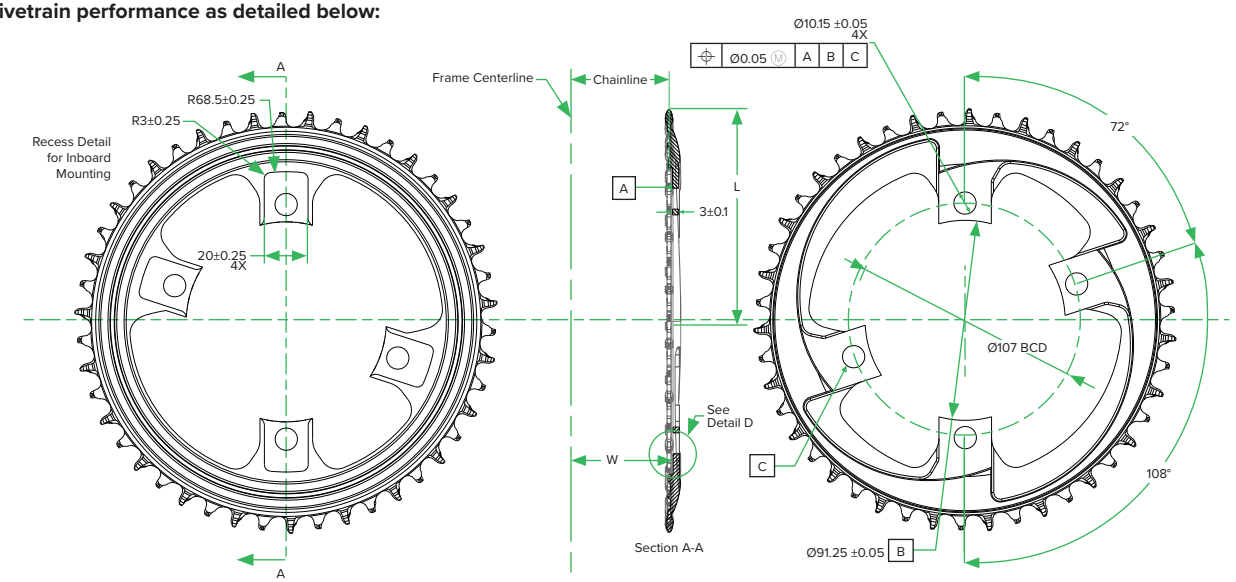
- Only 1x configurations are approved.
- Follow front chainline and interface requirements on the next page.

SRAM Road Drivetrain with E-Bike Fitment

E-Bike Configurations

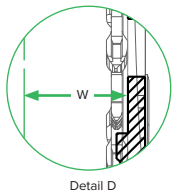
- **SRAM Road Drivetrain 1x Chainring Fit Specification for E-bikes**
- **Customer may configure their own spider to assemble a SRAM X-Sync chainring to their mid-drive E-powertrain in order to achieve the best performance with a SRAM Road Drivetrain. Chainring must be positioned at the recommended chainline to ensure drivetrain performance as detailed below:**





Chainring	L (mm)
42	88.5
44	92.5
46	96.6

W4 (mm)	Chainline (mm)	Rear Over Locknut Dimension (OLD) (mm)	W (mm)
45.8-48.3	47.5-50	142	49.2-51.7
48.8-51.3	50.5-53	148	52.2-54.7

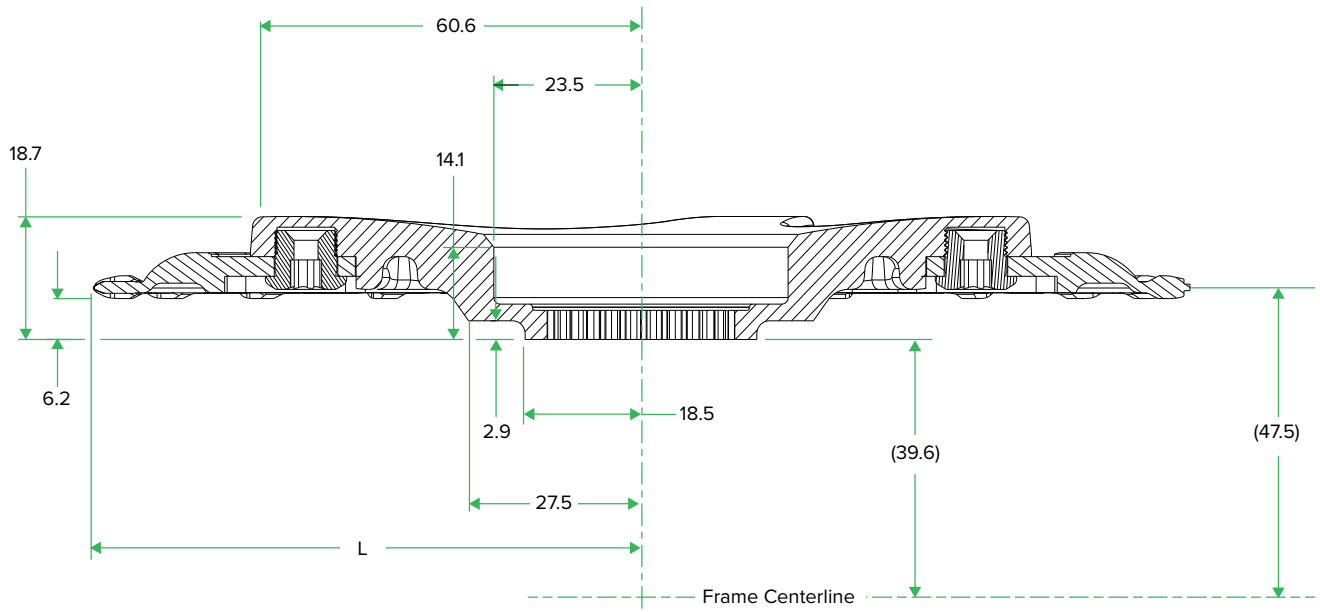


- **Assure the chainring size desired will provide adequate clearance for the frame design by referencing dimensions L and W4, then select a front chainline that meets your frame clearance design requirements.**
- **Depending on the front chainline needed, select the appropriate rear over locknut dimension (i.e. rear wheel axle width) . OLD should depend on the front chainline that is needed for frame clearance. This assures the drivetrain will perform as intended.**
- **Chainring must be positioned relative to frame centerline with a spider mounting interface that is offset from the frame centerline according to dimension W, the dimension to the chainring inboard mounting interface. Chainring may alternatively be mounted by the outboard mounting interface if desired, if so, account for chainring tab thickness.**
- **Customer is responsible for verifying crankarm and spider clearances for non-SRAM spider and/or crankarms.**

E-Road Spider Frame Clearance

Bosch Gen 4

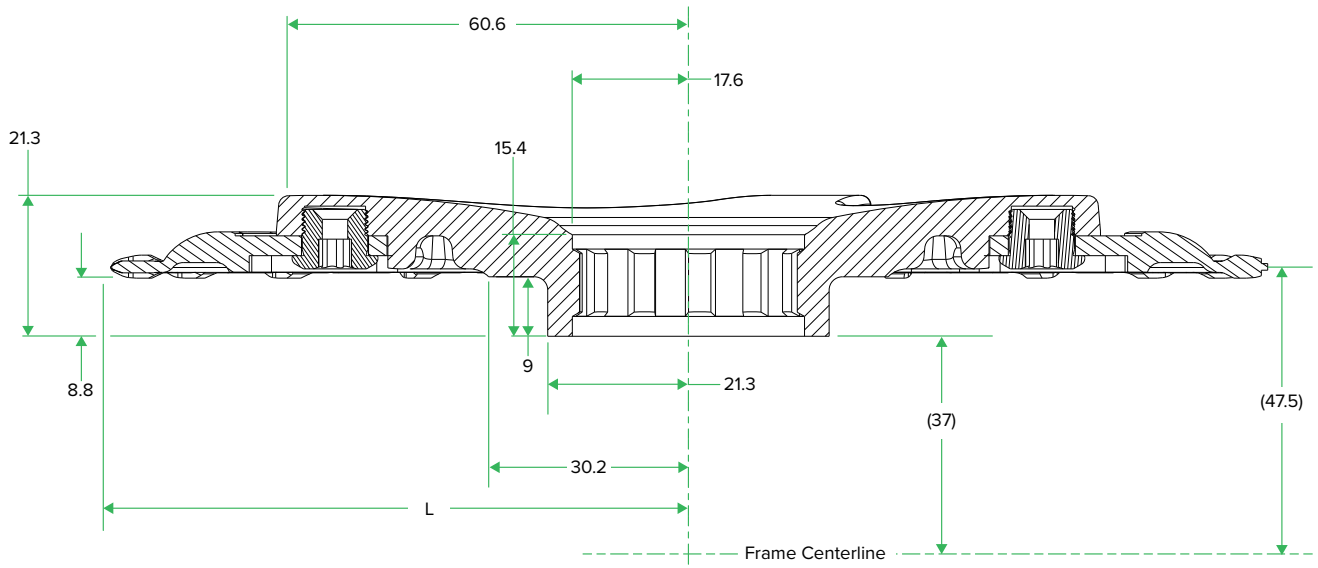
Chainring	L (mm)
42	88.5
44	92.5
46	96.6



E-Road Spider Frame Clearance

Fazua

Chainring	L (mm)
42	88.5
44	92.5
46	96.6



Spider Frame Clearance

Quarq DZero Platform Power Meters

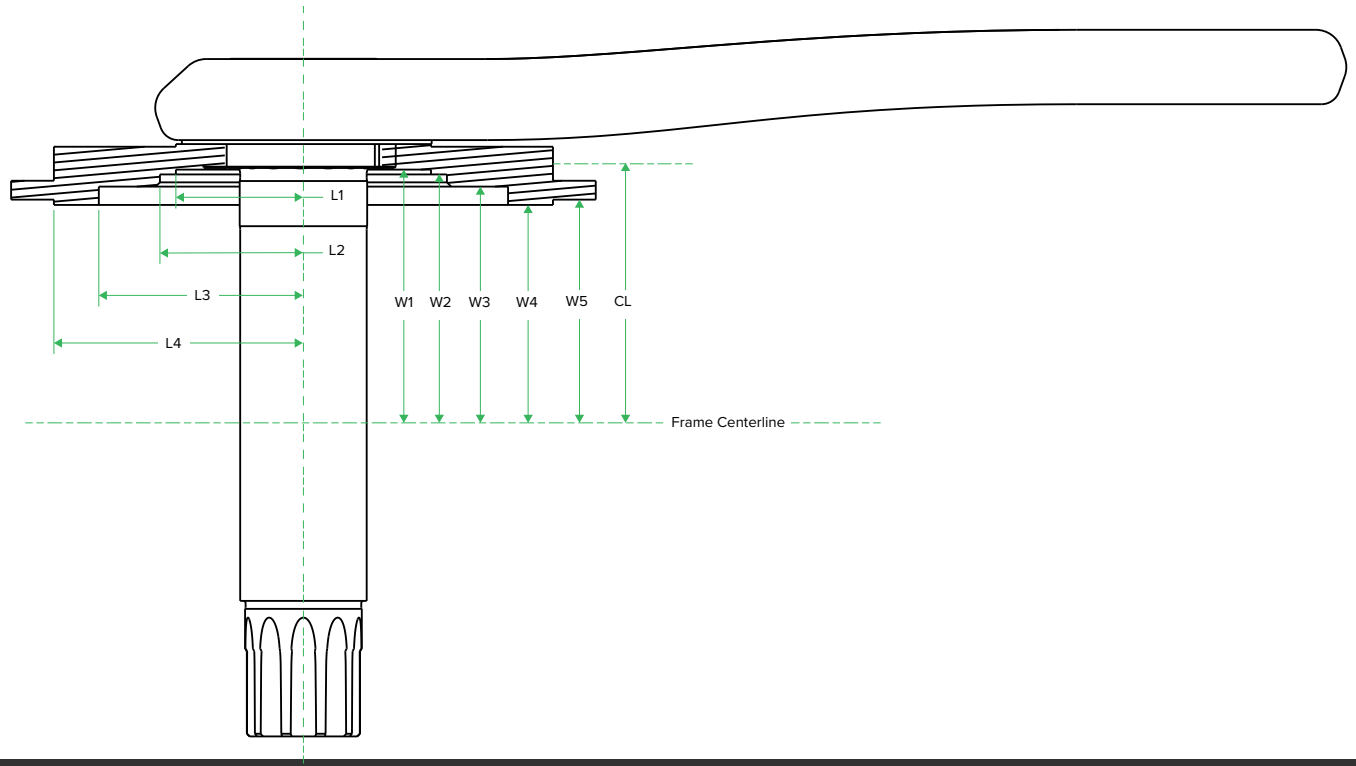
Model	L1 (mm)	L2 (mm)	L3 (mm)	L4 (mm)	W1 (mm)	W2 (mm)	W3 (mm)	W4 (mm)	W5 (mm)	CL (mm)
DZero 110	24.0	27.0	38.5	46.95	47.6	46.7	44.4	41.0	42.0	45
DZero 130			39.0	56.95						
DFOUR			38.5	46.95					41.9	

Cranksets can be configured to fit BB386, BB30a, and BBright.

DZero Carbon, DFour, and RED DZero crankset frame clearance is the same as SRAM Force. See 2x11 Crankset Frame Clearance page.

DZero Aluminum crankset frame clearance is the same as SRAM Rival. See 2x11 Crankset Frame Clearance page.

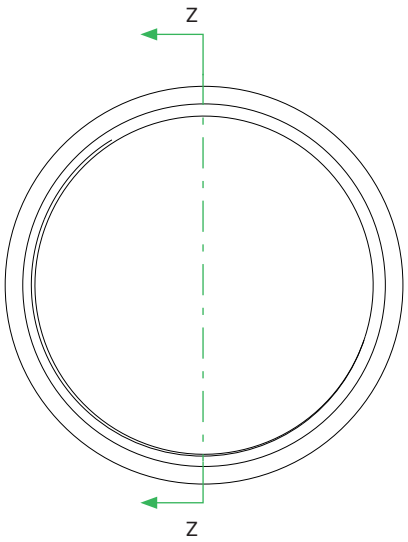
Dimensions are to the component and do **not** include clearance for debris. Consider additional frame clearance to compensate for mud/grit/debris picked up during normal riding conditions.

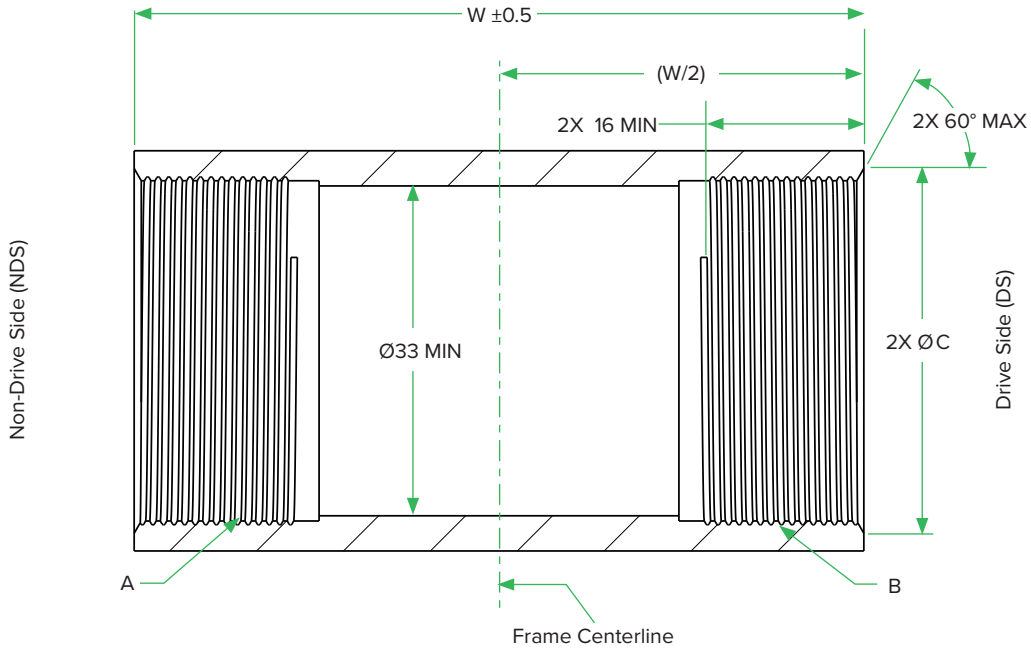


Bottom Bracket Shell Specifications

BSA and Italian Bottom Bracket

Road Bottom Bracket Frame Shell Specification





Section Z-Z

	W	A	B	C
BSA 68	68 ±0.5	BC 1.37" x 24 TPI R.H.*	BC 1.37" x 24 TPI L.H.*	Ø 36 37
BSA 73**	73 ±0.5			
DUB Italian	70 ±0.5	36 mm x 24 TPI - 6G - R.H.***		Ø 37 38
GXP Italian	70 ±0.5	36 mm x 24 TPI R.H.		

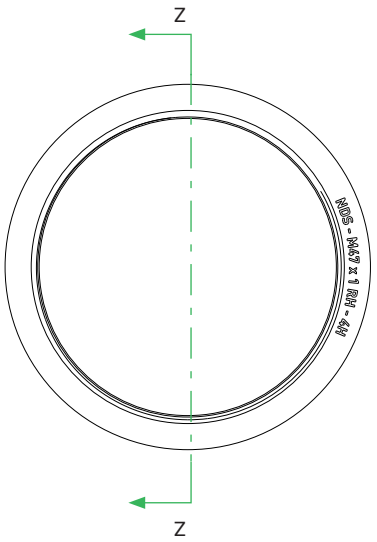
*Reference JIS B 0225

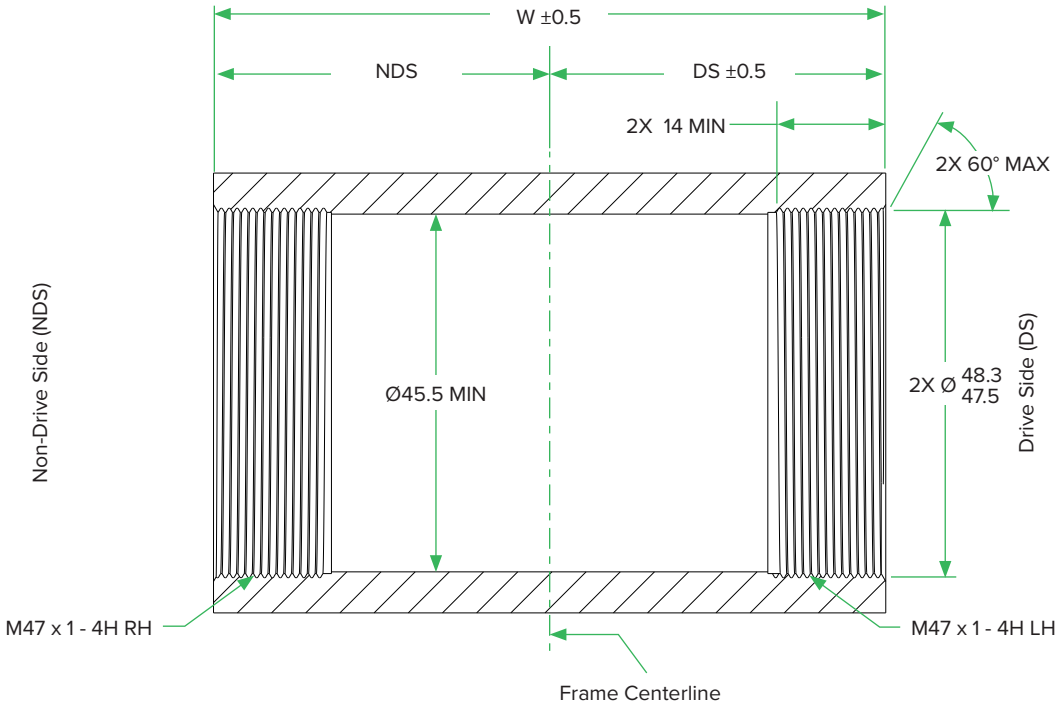
** BSA 73 is only supported by a wide chainline front crank and front derailleur.

***Reference ASME B1.13M-2005

T47

Road Bottom Bracket Frame Shell Specification





Section Z-Z

	W	DS	NDS
T47 68	68	34	34
T47 77 - A	76.75	34	(42.75)
T47 85.5	85.5	42.75	(42.75)

PressFit 30

Road Bottom Bracket Frame Shell Specification

SRAM PressFit 30 (PF30) bottom brackets have been designed and tested to work within the bounds of the dimensions and tolerances in the shell specifications. Materials, manufacturing methods, and frame shell designs can potentially influence the performance of the bottom bracket, even when the shell is manufactured to these specifications. In these instances, it is recommended that bicycle manufacturers confirm the bottom bracket system performance when implemented in their design.

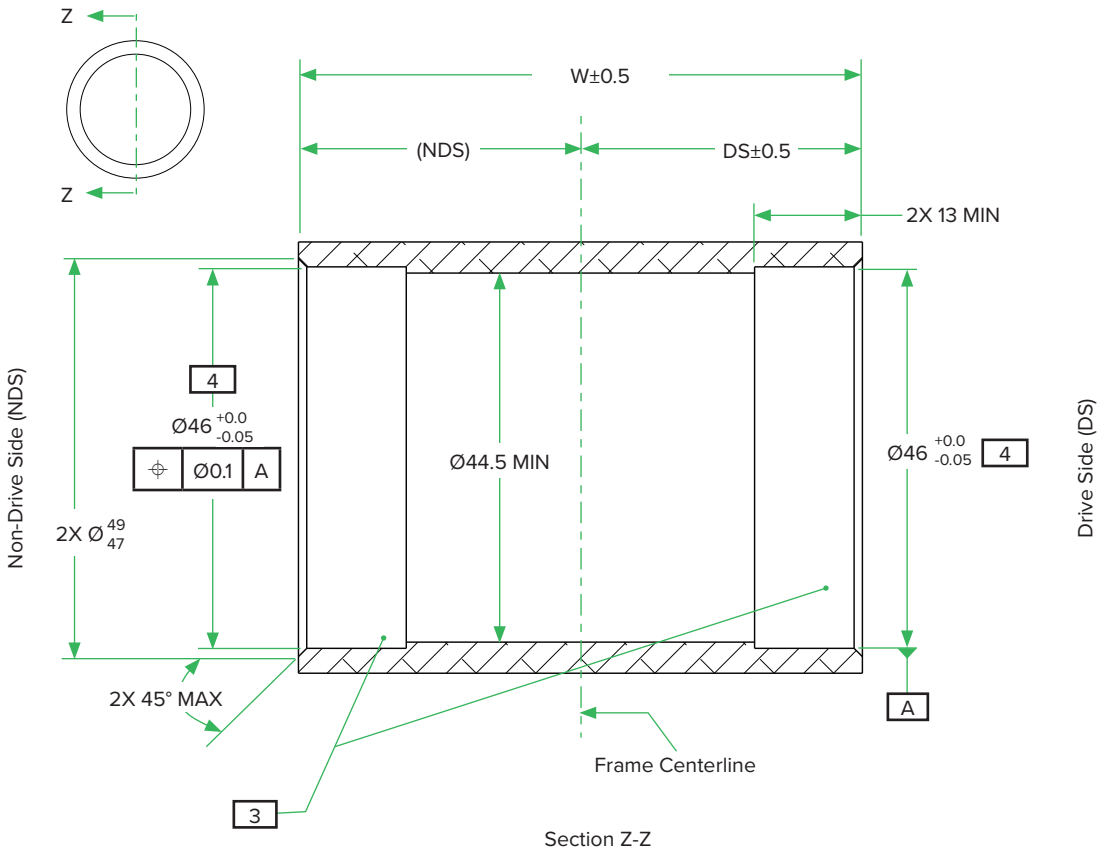
Things that should be considered when evaluating the frame and bottom bracket interaction include, but are not limited to:

- Loosening of the adapter cups from the bottom bracket shell (frame material choice can greatly affect friction coefficient).
- Binding of bearings within the bottom bracket.

For more information regarding PF30 bottom bracket technical information, contact your SRAM representative.

	Dim W	Dim DS	Dim NDS
PF30 68	68	34	
PF30 73*	73	36.5	
PF30 73-A	73	34	39
PF30 79-A [4]	79	34	45
PF30 83-A	83	39	44

*PF30 73 is only supported by a wide chainline front crank and front derailleur.

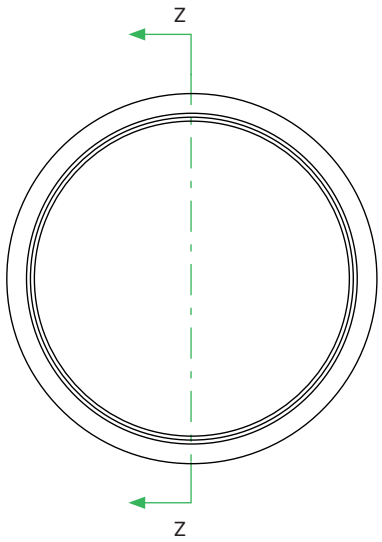


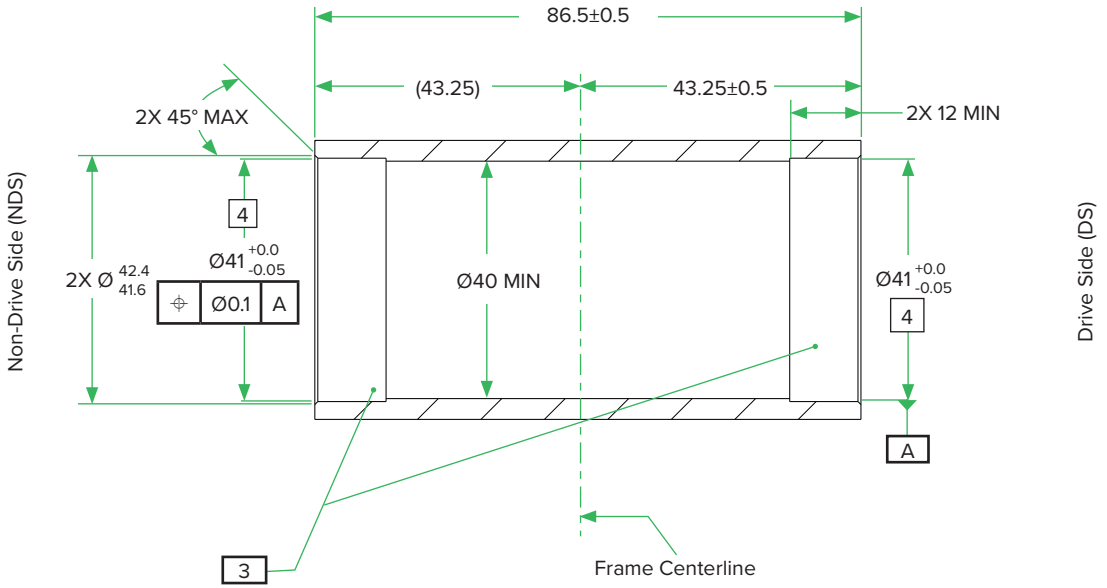
Section Z-Z

1	Dimensions apply after finishing.
2	Only dimensions essential to bottom bracket PressFit and function are shown. All other details are left to the discretion of the frame or component designer. Dimensions shown do not take the place of proper frame, bottom bracket shell, or crankset design.
[3]	PressFit surfaces should be unpainted.
[4]	PF30 79-A Only: Ø45.88-45.96

PressFit Road 86.5

Road Symmetric Frame Shell Specification





Section Z-Z

1	Dimensions apply after finishing.
2	Only dimensions essential to bottom bracket PressFit and function are shown. All other details are left to the discretion of the frame or component designer. Dimensions shown do not take the place of proper frame, bottom bracket shell, or crankset design.
3	PressFit surfaces should be unpainted.
4	Tolerance applies to depth of 12 mm inboard from the outer face of each side.

BB30

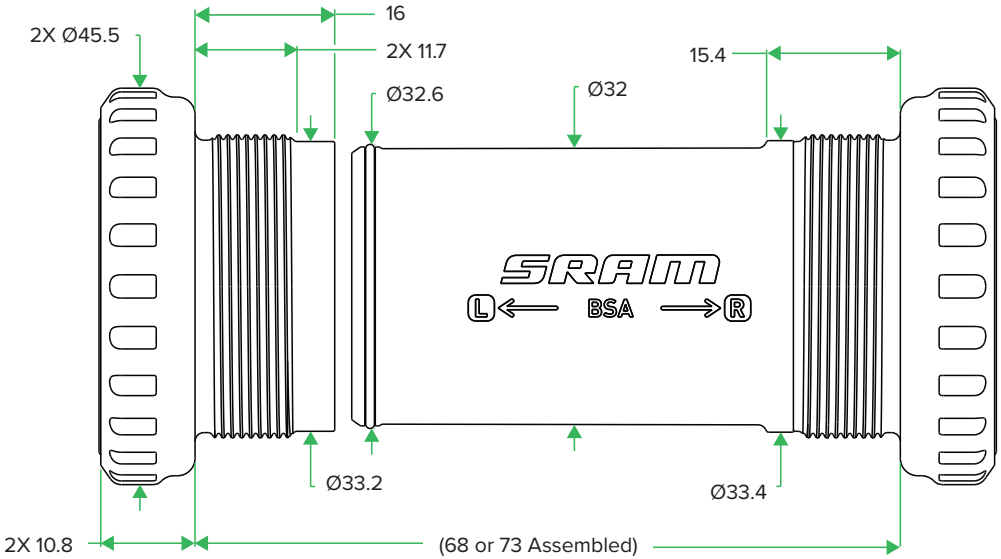
Information

Information for the BB30 drawing and legal agreement can be found on www.BB30standard.com. Use of the information contained in the drawing is forbidden witthout reviewing and agreeing to the legal terms and conditions found on www.BB30standard.com. By using the information contained in the drawing you are certifying that you have agreed to the terms and conditions found within that legal agreement.

DUB Bottom Brackets

DUB BSA 68/73

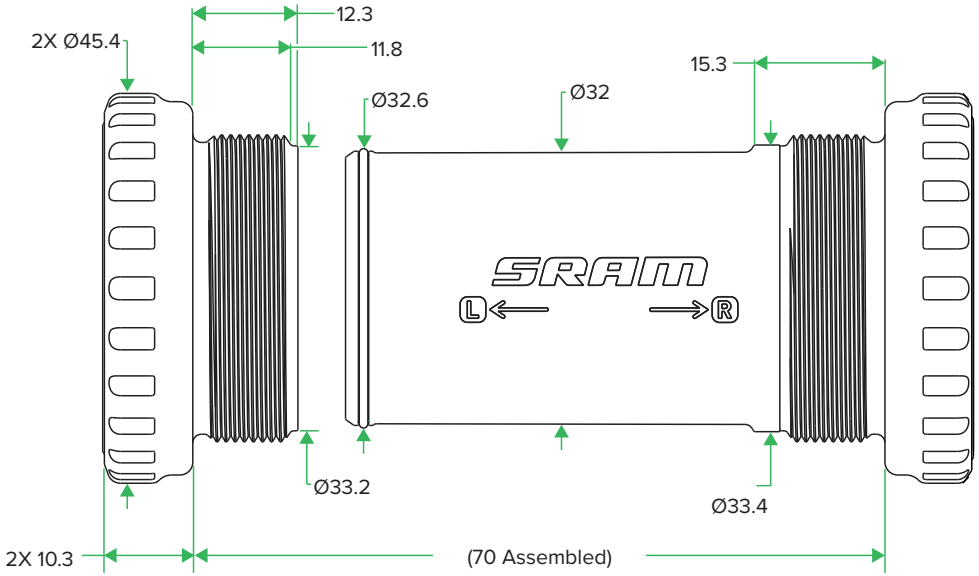
Bottom Bracket Specification



1 BSA 73 is only supported by a wide chainline front crank and front derailleur.

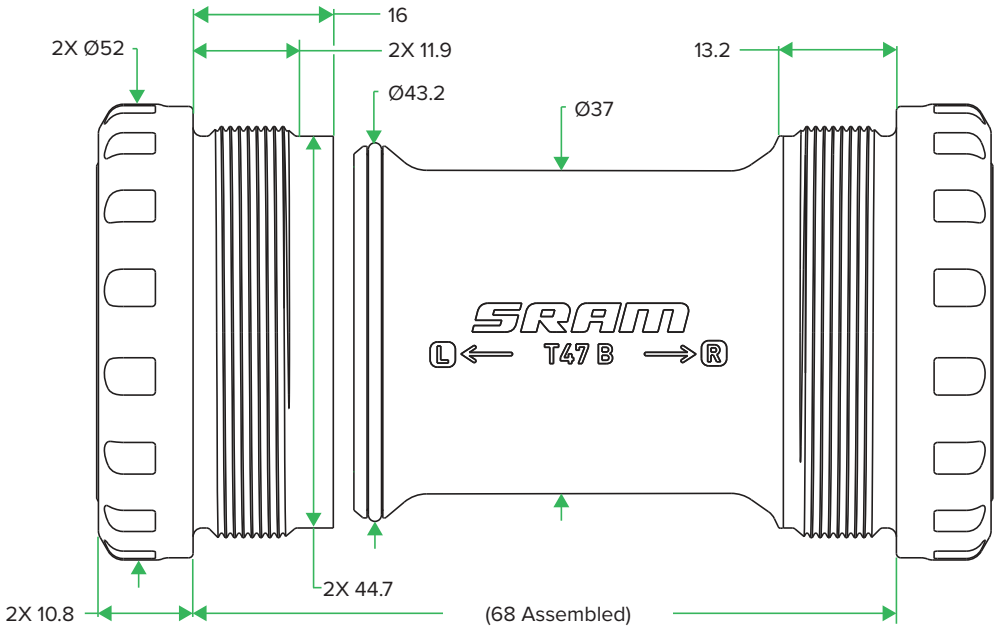
DUB Italian 70

Bottom Bracket Specification



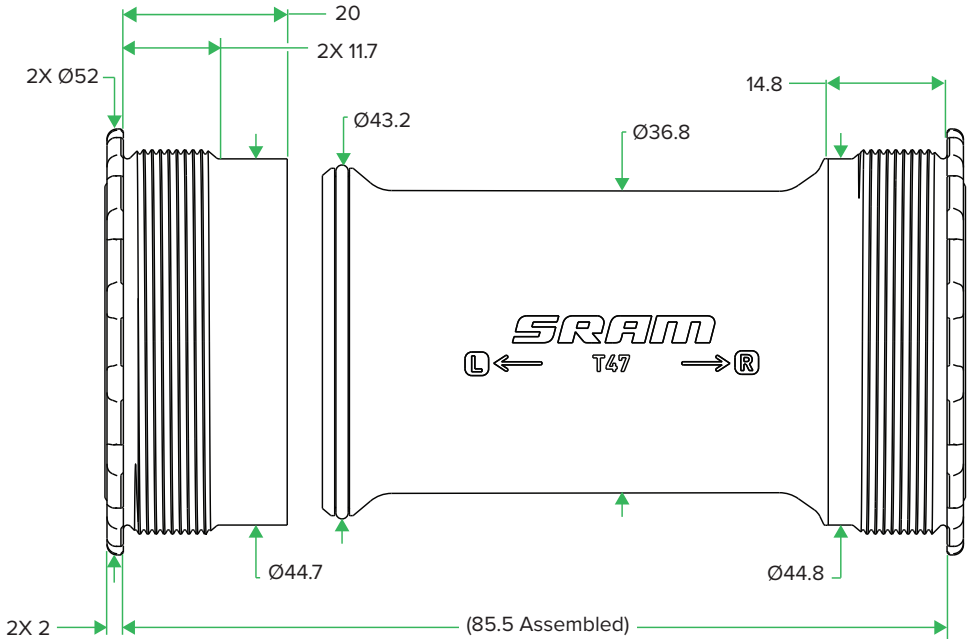
DUB T47 68

Bottom Bracket Specification



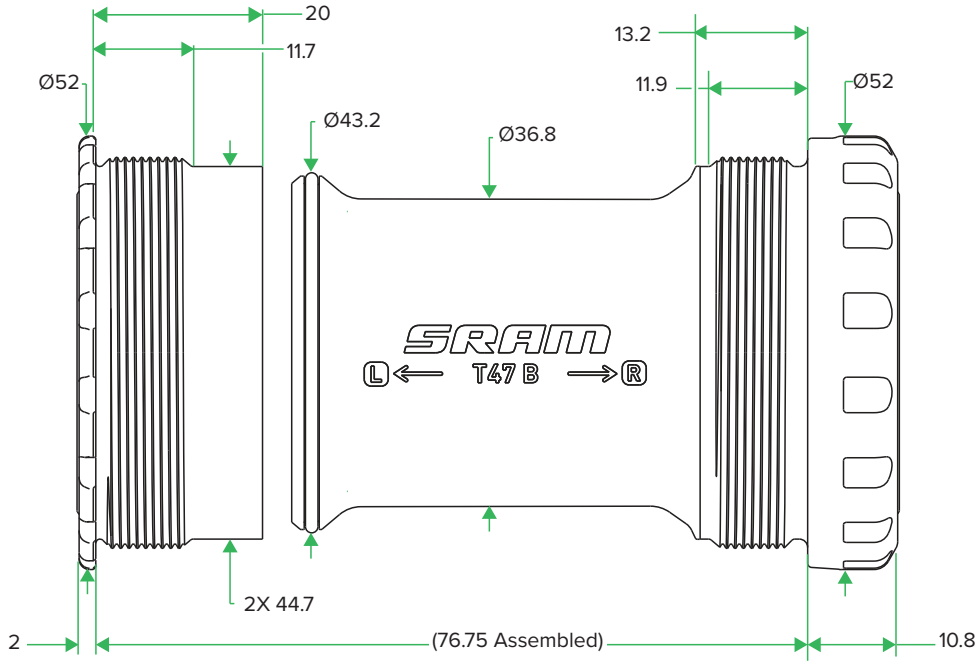
DUB T47 85.5

Bottom Bracket Specification



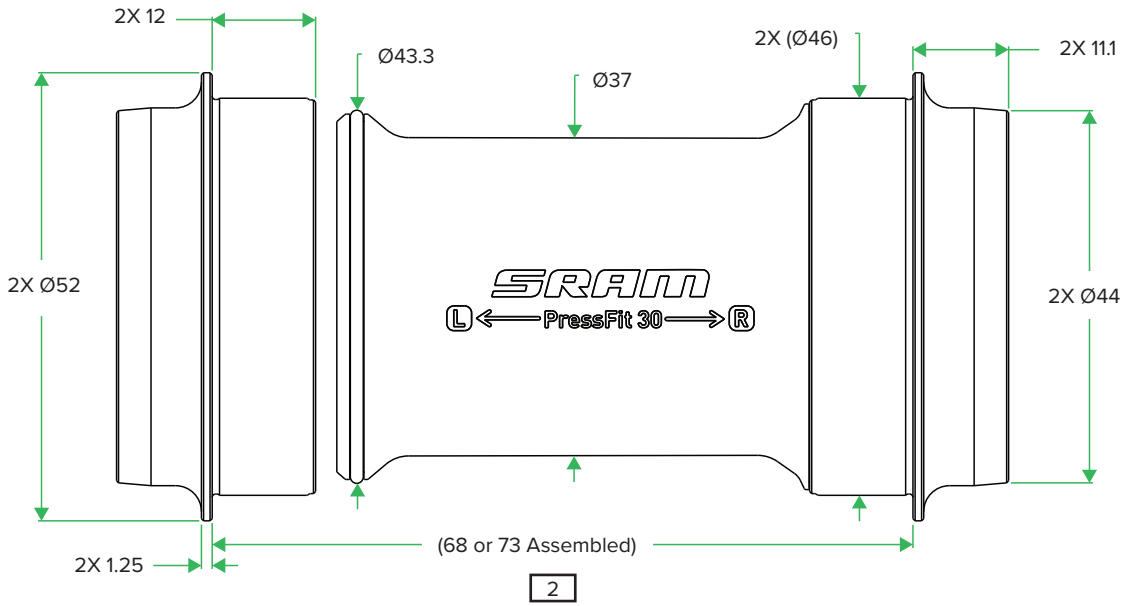
DUB T47 77-A

Bottom Bracket Specification



DUB PressFit 30 68/73

Bottom Bracket Specification

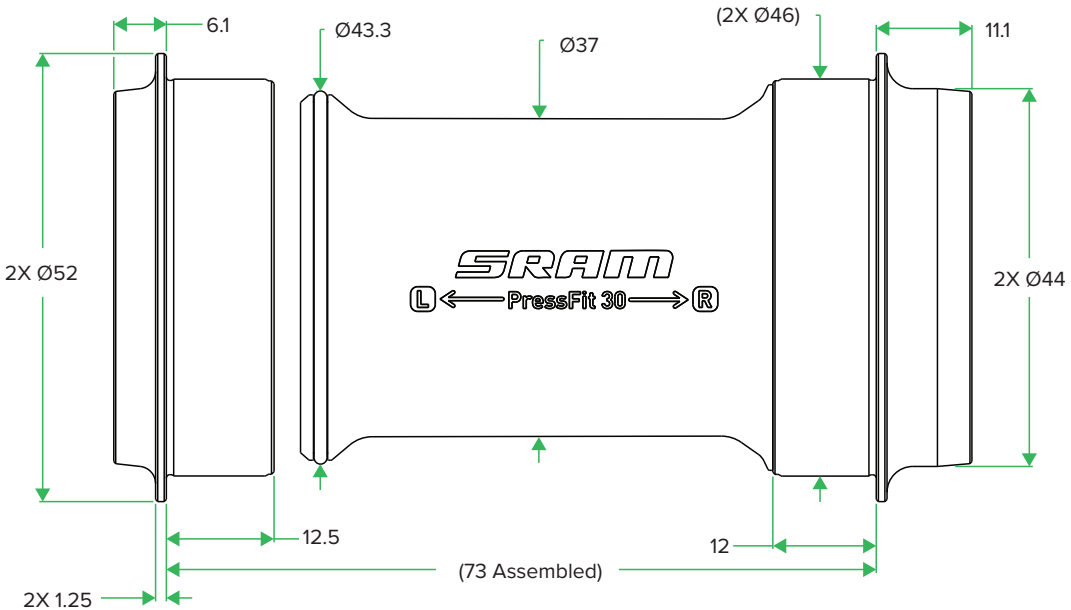


1 Cables and hoses must not contact the crankset spindle during operation; consider cable and hose clearances through the bottom bracket area of the frame.

2 PressFit 30 73 is only supported by a wide chainline front crank and front derailleur.

DUB PressFit 30 73-A

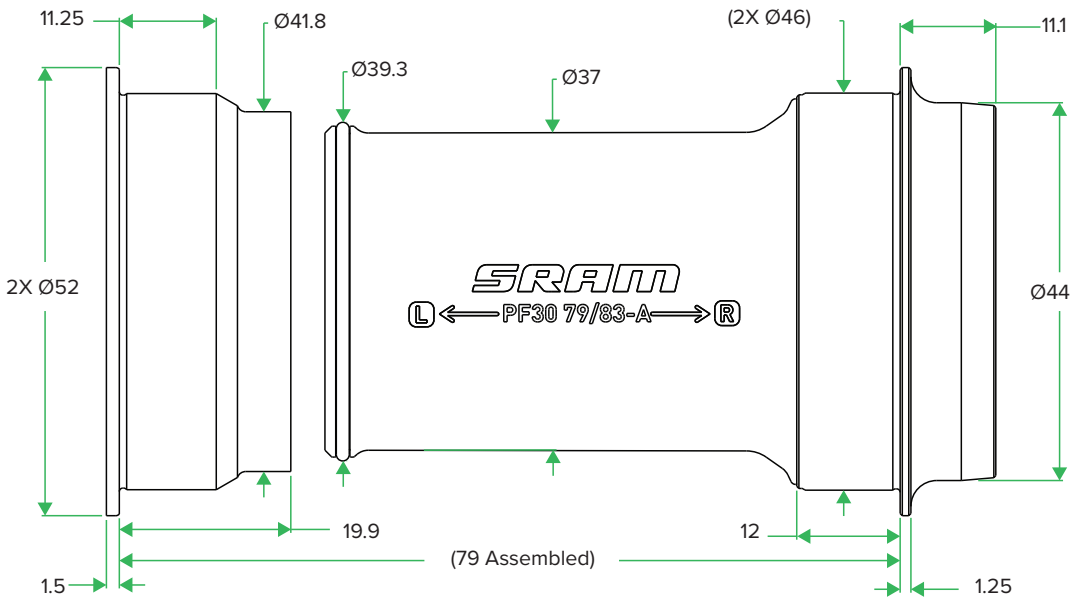
Bottom Bracket Specification



1 Cables and hoses must not contact the crankset spindle during operation; consider cable and hose clearances through the bottom bracket area of the frame.

DUB PressFit 30 79-A

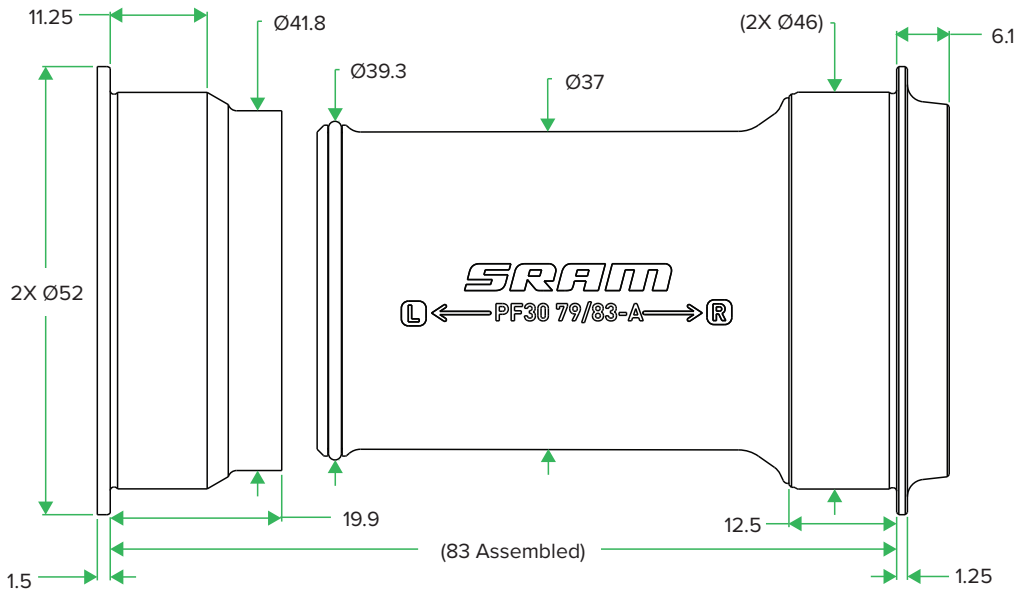
Bottom Bracket Specification



1 Cables and hoses must not contact the crankset spindle during operation; consider cable and hose clearances through the bottom bracket area of the frame.

DUB PressFit 30 83-A

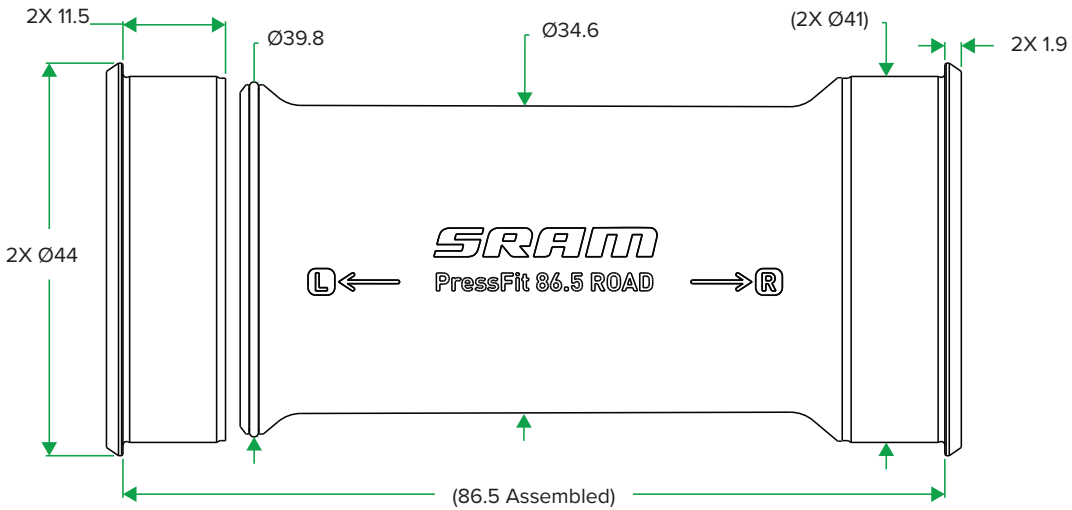
Bottom Bracket Specification



1 Cables and hoses must not contact the crankset spindle during operation; consider cable and hose clearances through the bottom bracket area of the frame.

DUB PressFit 86.5

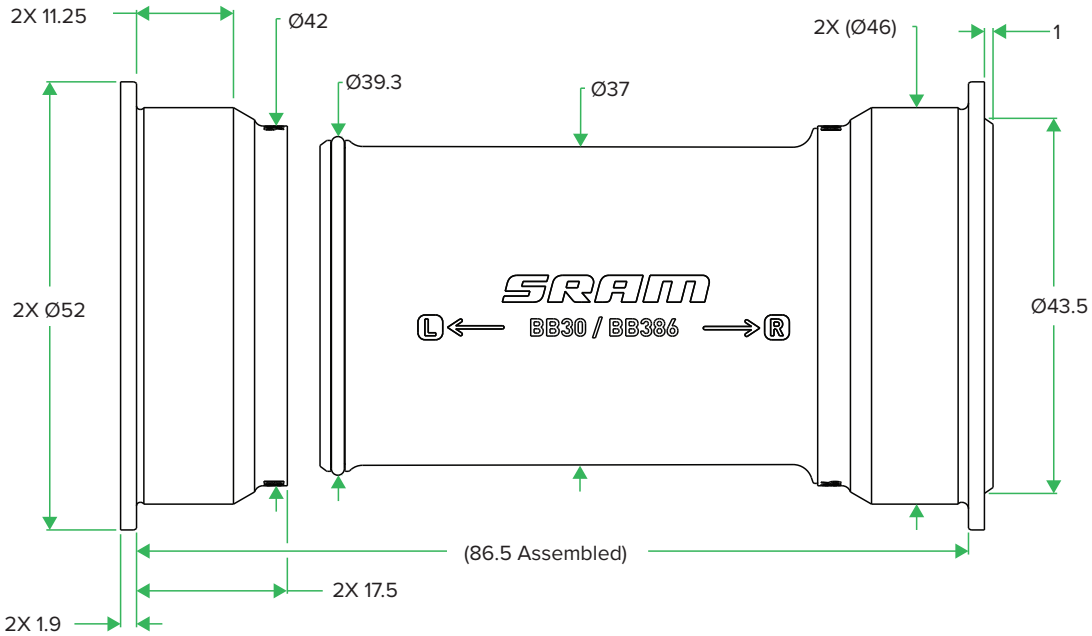
Bottom Bracket Specification



1 Cables and hoses must not contact the crankset spindle during operation; consider cable and hose clearances through the bottom bracket area of the frame.

DUB BB386

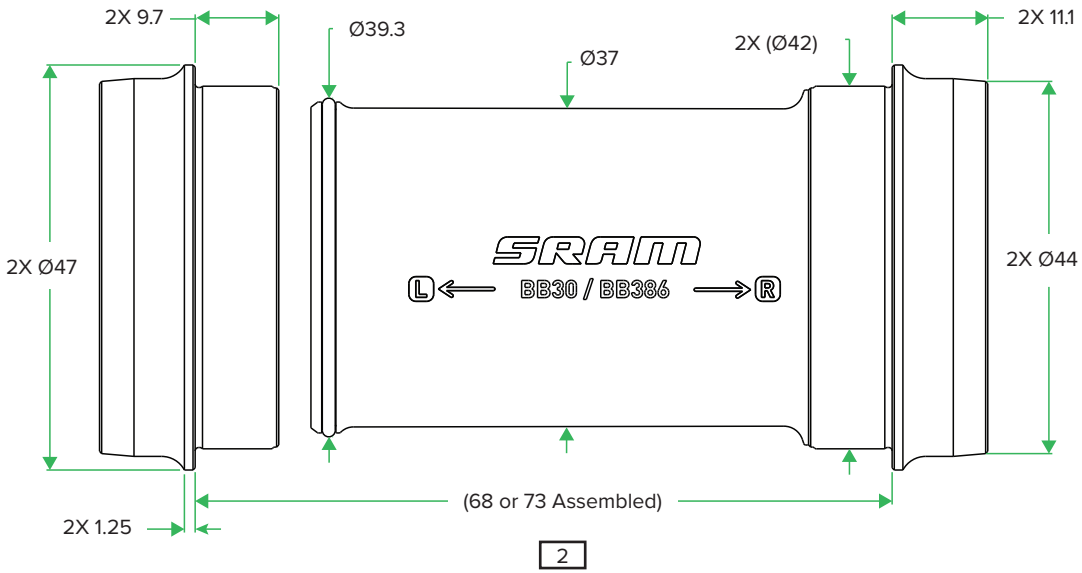
Bottom Bracket Specification



1 Cables and hoses must not contact the crankset spindle during operation; consider cable and hose clearances through the bottom bracket area of the frame.

DUB BB30 68/73

Bottom Bracket Specification

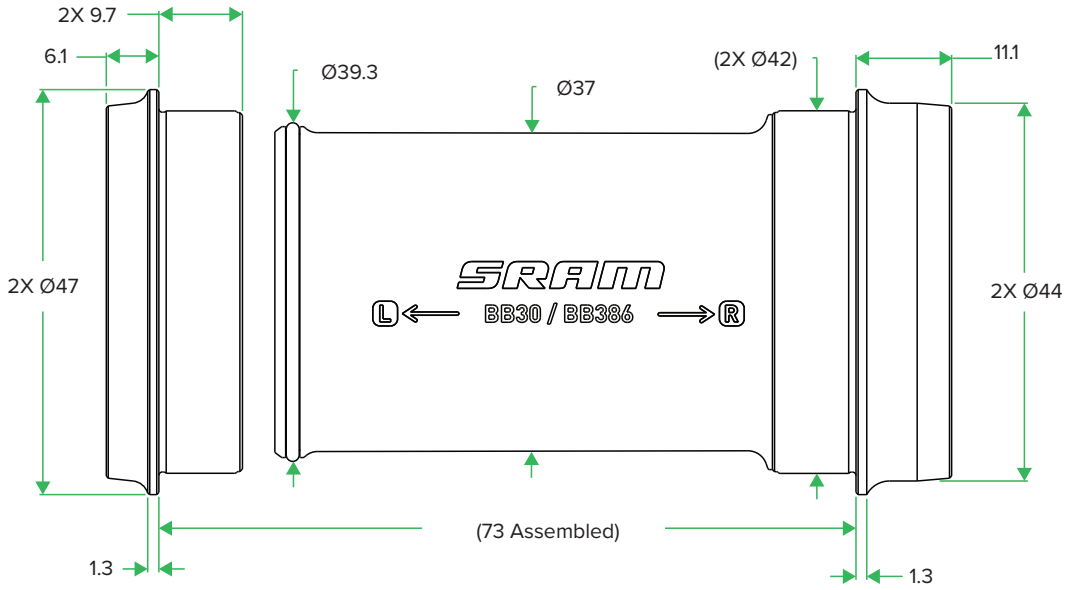


1 Cables and hoses must not contact the crankset spindle during operation; consider cable and hose clearances through the bottom bracket area of the frame.

2 BB30 73 is only supported by a wide chainline front crank and front derailleur.

DUB BB30 73-A

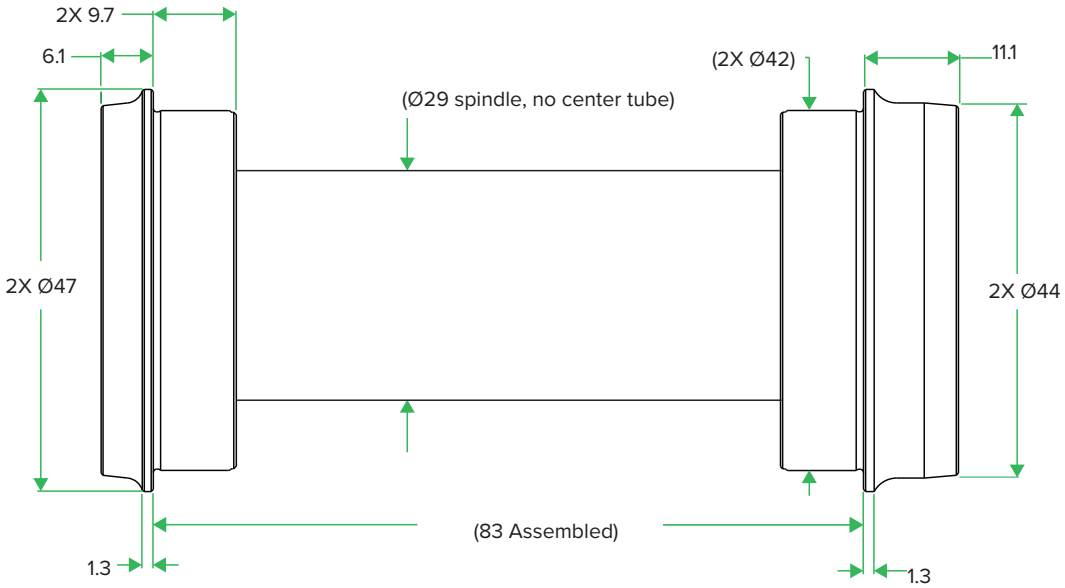
Bottom Bracket Specification



1 Cables and hoses must not contact the crankset spindle during operation; consider cable and hose clearances through the bottom bracket area of the frame.

DUB BB30 83-A

Bottom Bracket Specification



1 Cables and hoses must not contact the crankset spindle during operation; consider cable and hose clearances through the bottom bracket area of the frame.

Brakes

Rotor Size Recommendation Chart

System Weight (Rider + Bike)	Recommended Rotor Size (Rear/Front) (mm) [1]				
	Road, Gravel, Cyclocross [2]	Cargo/E-Cargo, E-Commuter [3]	Cross-country [3]	Trail [3]	Downhill [3]
< 140 lbs (63 kg)	140	160	160	160	180
140-170 lbs (63-77 kg)	140/160	160/180	160/180	160/180	
170-200 lbs (77-91 kg)				180/200	180/200
200-230 lbs (91-104 kg)	160	180	180		
230-260 lbs (104-118 kg)					200
260-290 lbs (118-132 kg)	160/180			200	
290-320 lbs (132-145 kg)		200	200		
> 320 lbs (145 kg)	180			220	220

[1] If riding styles conflict, it is up to the user to size up or size down based on necessary braking power.

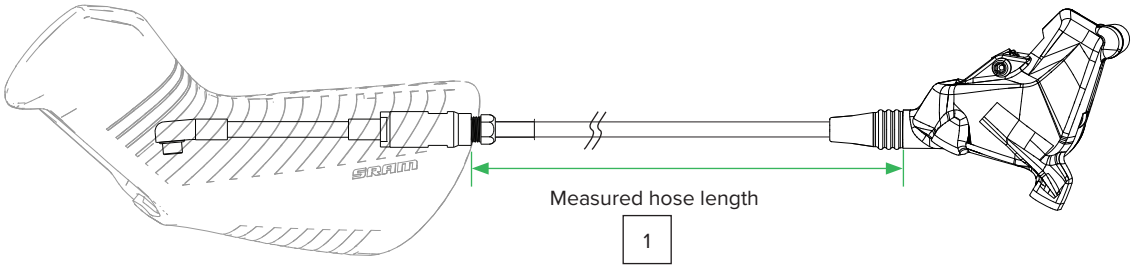
[2] Road, Gravel, Cyclocross -- Consult the fork or frame manufacturer's specifications before installing a 140 mm or 180 mm rotor. These rotor sizes have compatibility limitations on many forks and frames.

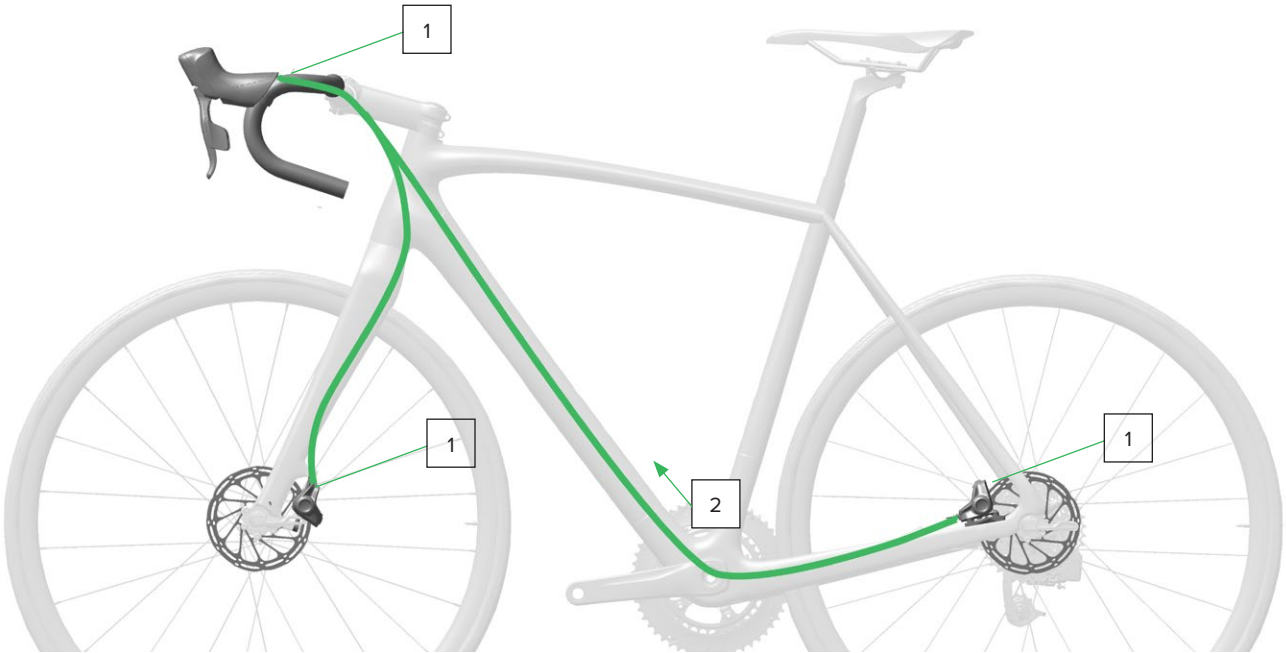
[3] E-bikes -- Consult the appropriate riding style column and select rotor size based on system weight.

SRAM RED eTap AXS/ SRAM Force eTap AXS/ SRAM Rival eTap AXS

Disc Brake Hose Length Specification

SJ (Stealth-a-majig)



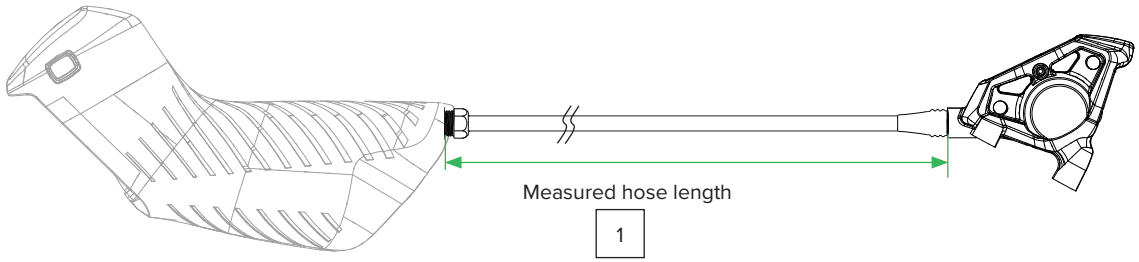


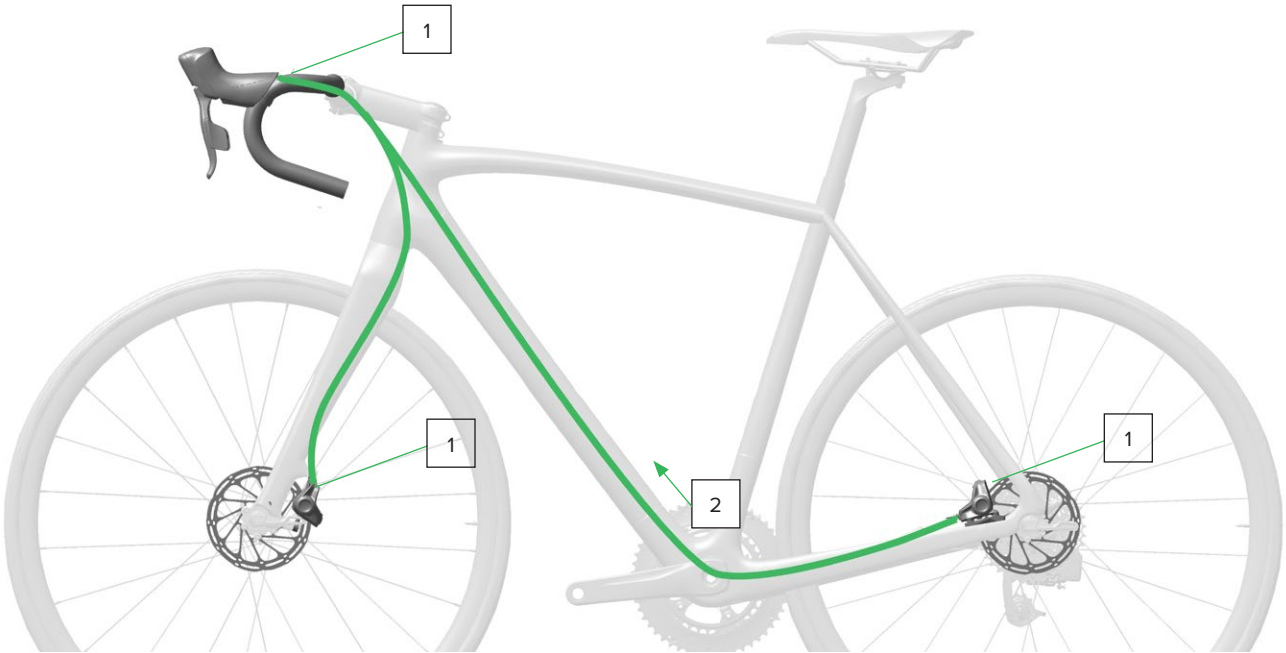
1	FG hose length is measured from the caliper to the back of hood/bar interface. This is the same as caliper to disconnected SJ hose end.
2	The SJ hose routing is from back to front of bike.
3	For internal routing, the SJ connection requires a hole in the frame or fork that is at least Ø5.1 mm.
4	Hose bend radius at 20° C = 30 mm minimum.
5	All surfaces that come in contact with brake hose to be free of burrs and sharp edges.
6	Stealth-a-majig for initial assembly only. A bleed is required if the system is disconnected and reconnected.
7	SRAM Brake systems are not compatible with mineral based fluids such as damping fluid, mineral oil, fork fluid, or RockShox Reverb fluid. **Use only DOT 4 and DOT 5.1 brake fluids with SRAM Hydraulic brakes.**
8	Model codes: EB-RED-D1, ED-RED-D1, ED-RIV-D1, ED-RED-D1, EB-FRC-D1

SRAM RED AXS

Disc Brake Hose Length Specification

SJ (Stealth-a-majig)



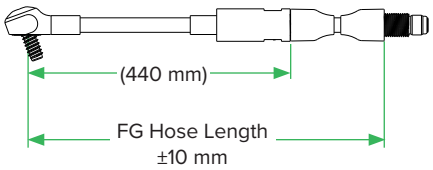


1	FG hose length is measured from the caliper to the back of hood/bar interface. This is the same as caliper to disconnected SJ hose end.
2	The SJ hose routing is from back to front of bike.
3	For internal routing, the SJ connection requires a hole in the frame or fork that is at least Ø5.1 mm.
4	Hose bend radius at 20° C = 30 mm minimum.
5	All surfaces that come in contact with brake hose to be free of burrs and sharp edges.
6	Stealth-a-majig for initial assembly only. A bleed is required if the system is disconnected and reconnected.
7	SRAM Brake systems are not compatible with mineral based fluids such as damping fluid, mineral oil, fork fluid, or RockShox Reverb fluid. **Use only DOT 4 and DOT 5.1 brake fluids with SRAM Hydraulic brakes.**
8	Model code: ED-RED-E1

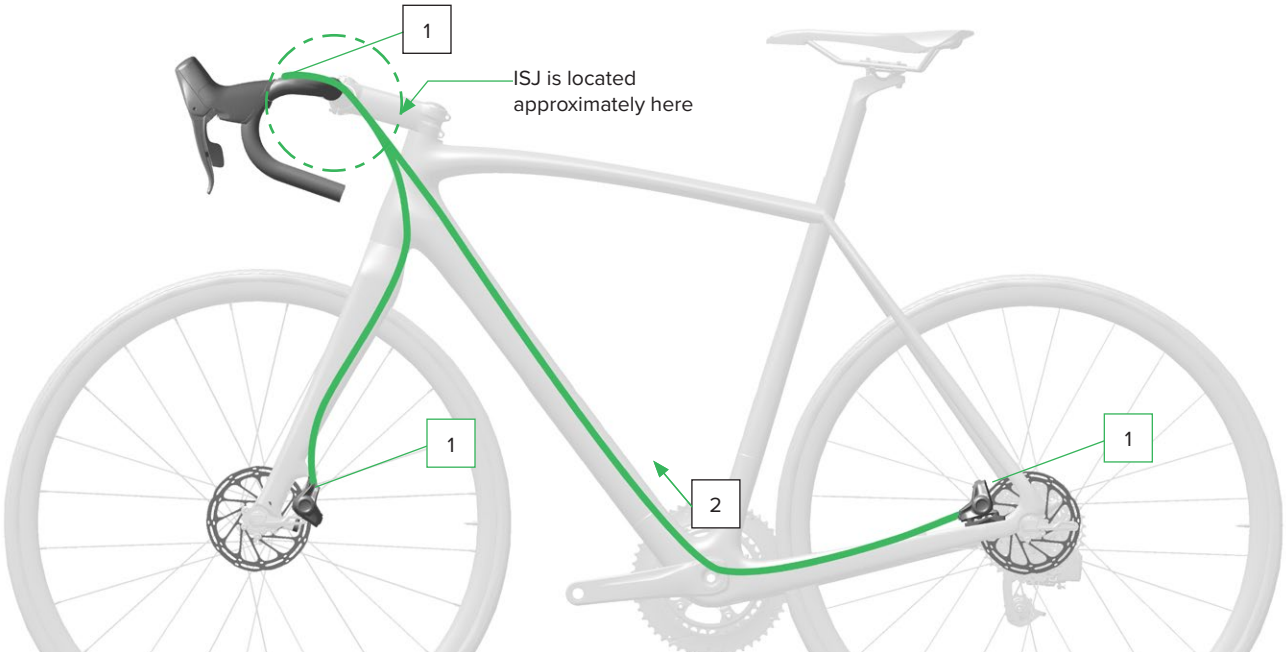
SRAM RED HRD/ SRAM Force HRD/ SRAM Rival HRD/ SRAM Apex HRD/ S-700 HRD

Disc Brake Hose Length Specification

ISJ (Inline Stealth-a-majig)



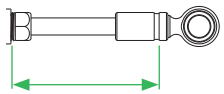
Connected Hose



1	FG (Finished Good) hose equals the measured hose length from the hood/handlebar interface to the caliper plus 80 mm.
2	The ISJ hose routing is from back to front of bike.
3	For internal routing, the ISJ connection requires a hole in the frame or fork that is at least Ø5.1 mm.
4	Hose bend radius at 20° C = 30 mm minimum.
5	All surfaces that come in contact with brake hose to be free of burrs and sharp edges.
6	Stealth-a-majig for initial assembly only. A bleed is required if the system is disconnected and reconnected.
7	SRAM Brake systems are not compatible with mineral based fluids such as damping fluid, mineral oil, fork fluid, or RockShox® Reverb™ fluid. **Use only DOT 4 or DOT 5.1 brake fluids with SRAM® Hydraulic brakes.**
8	Model codes: SB-RED-HRD-B2, ED-FRC-D2, ED-RIV-D1, SB-APX-HRD-A1, SB-700-HRD-B1

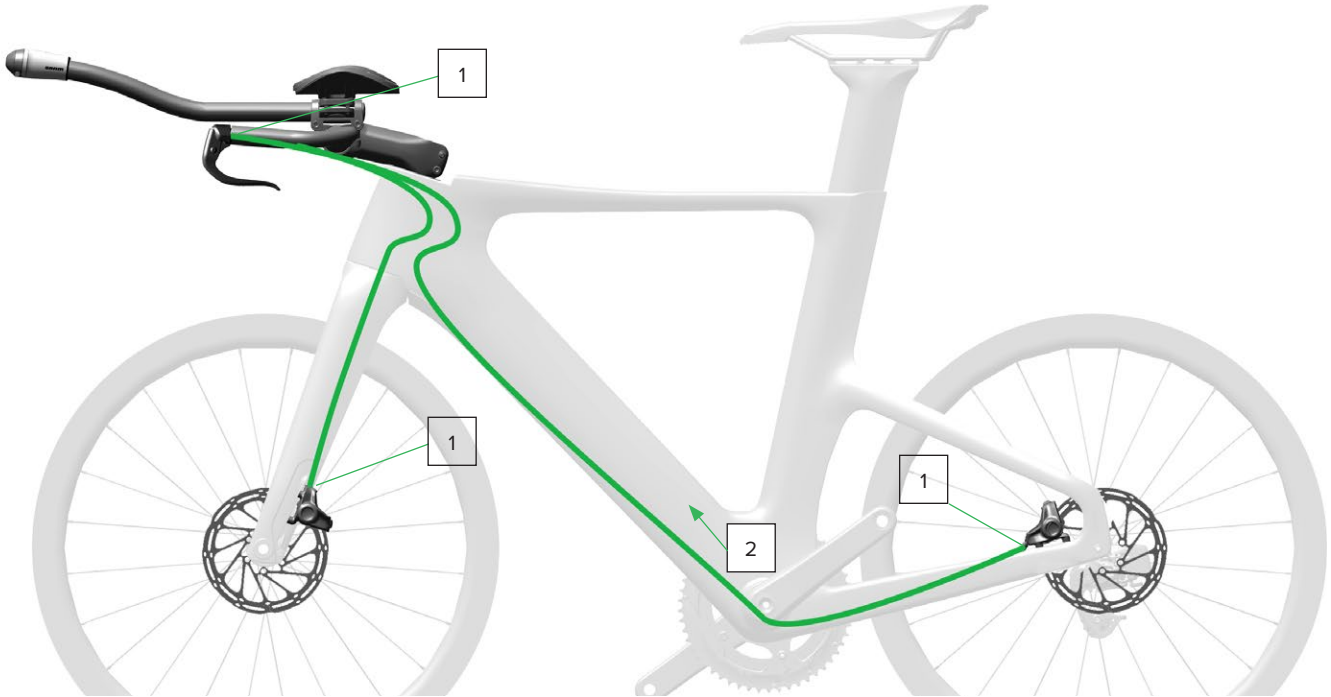
S-900 Aero HRD

Disc Brake Hose Routing Specification



Measured hose length

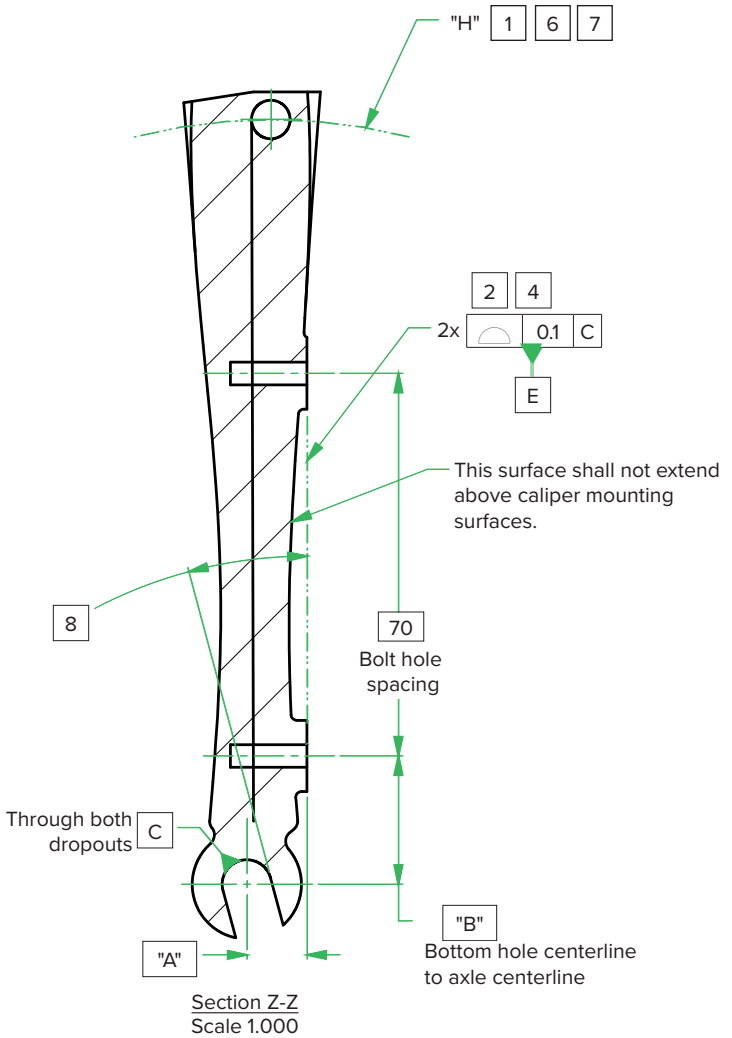
1

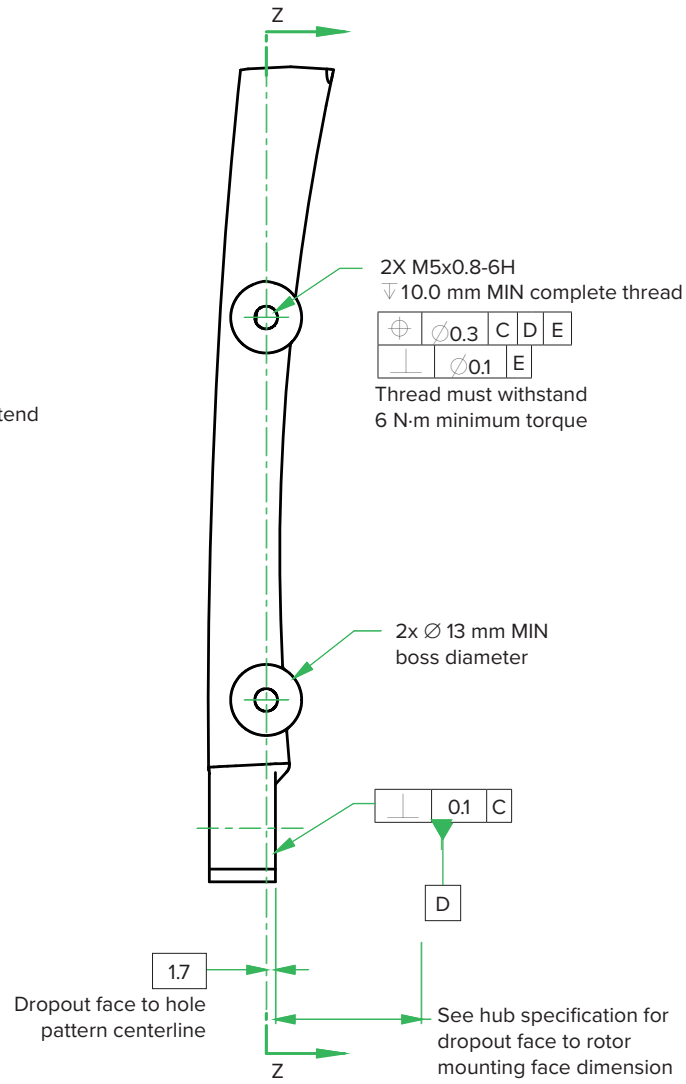


1	FG (Finished Good) hose equals the hose length from the endo of the handlebar to the caliper.
2	The SJ hose routing is from back to front of bike.
3	For internal routing, the SJ connection requires a hole in the frame or fork that is at least Ø5.1 mm.
4	Hose bend radius at 20° C = 30 mm minimum.
5	All surfaces that come in contact with brake hose to be free of burrs and sharp edges.
6	Stealth-a-majig for initial assembly only. A bleed is required if the system is disconnected and reconnected.
7	SRAM Brake systems are not compatible with mineral based fluids such as damping fluid, mineral oil, fork fluid, or RockShox Reverb fluid. **Use only DOT 4 and DOT 5.1 brake fluids with SRAM Hydraulic brakes.**
8	Model code: DB-S-900-A1

Flat Mount Fork with Front Bracket Specification

SRAM Flat Mount Calipers and 140/160, 160/180, 180/200, 200/220 Rotor



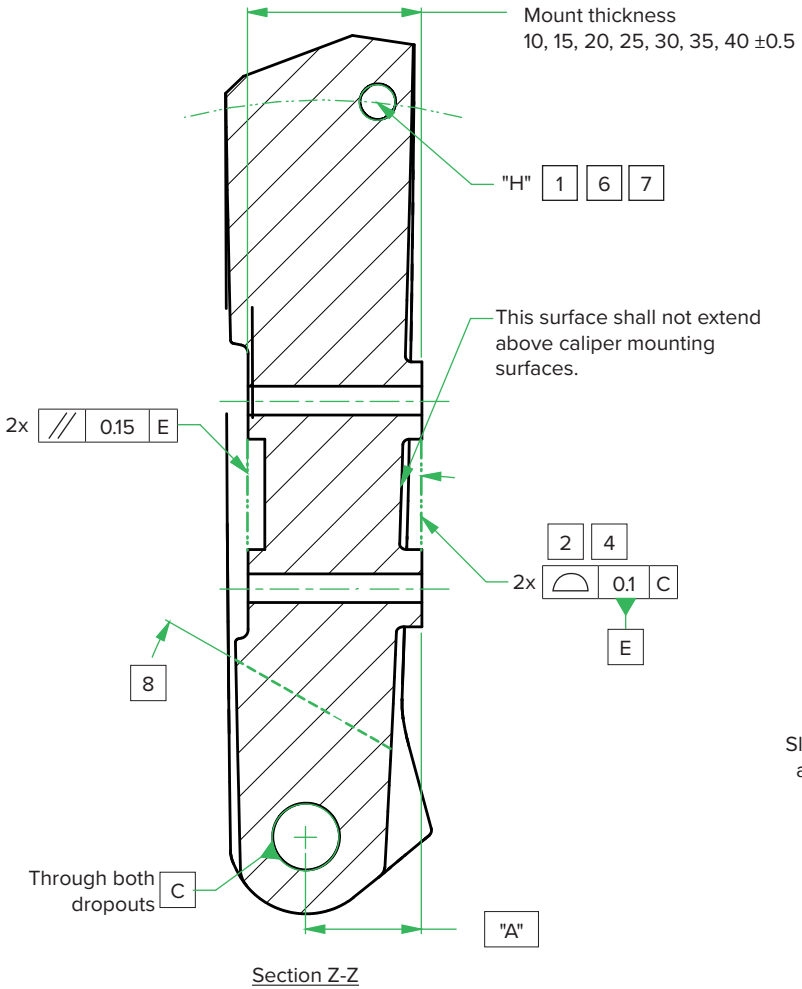


Rotor Ø (mm)	A	B	H (Radius)
140/160	11	23.5	140
160/180	16.7	32	150
180/200	22.4	40.5	160
200/220	28.1	49	170

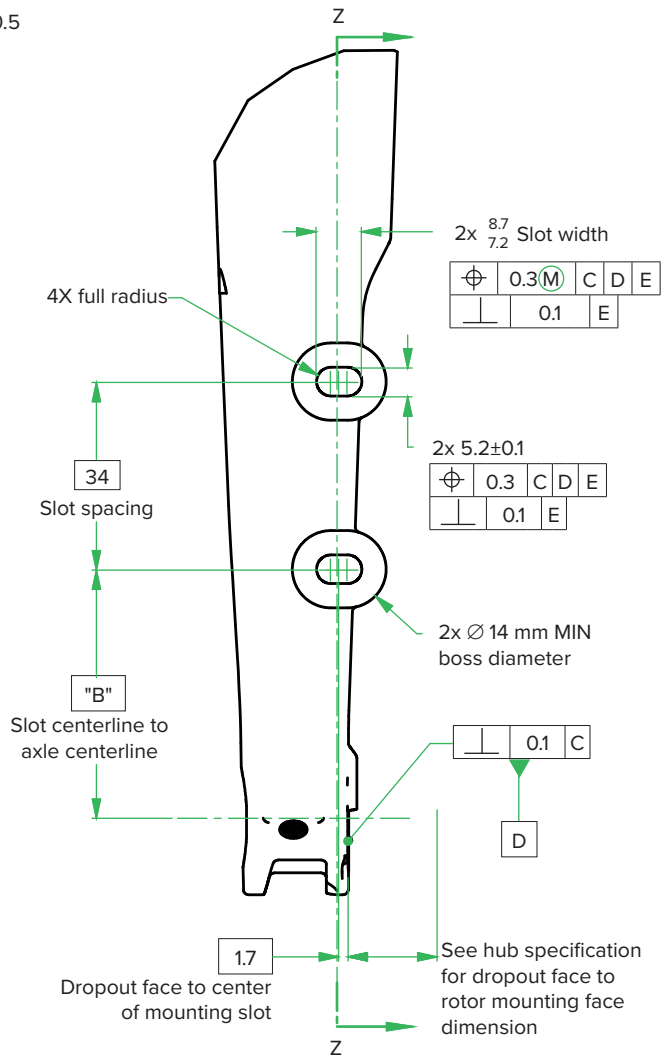
1. Minimum internal routing hole position does not apply to Connect-a-majig.
2. There is potential for the fork and caliper interface to be exposed to high temperatures. This should be evaluated on all designs.
3. All dimensions and tolerances apply in free state and as assembled.
4. Surfaces must be free from paint.
5. All dimensions applied after paint unless otherwise specified.
6. All surfaces that come in contact with brake hose should be free of burrs and sharp edges.
7. Internal hose routing hole position radius "H" mm MIN from dropout ℄
8. Wheel installation may be impeded by rotor-to-caliper interference when wheel installation path approaches or is less than 69°.

Flat Mount Thru Bolt Fork Specification

SRAM Flat Mount Calipers and 140/160/180/200/220 Rotor



Section Z-Z

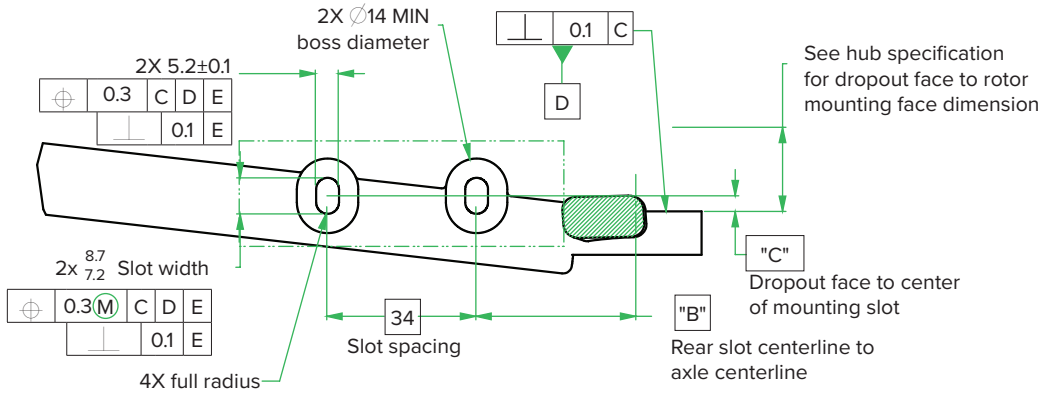


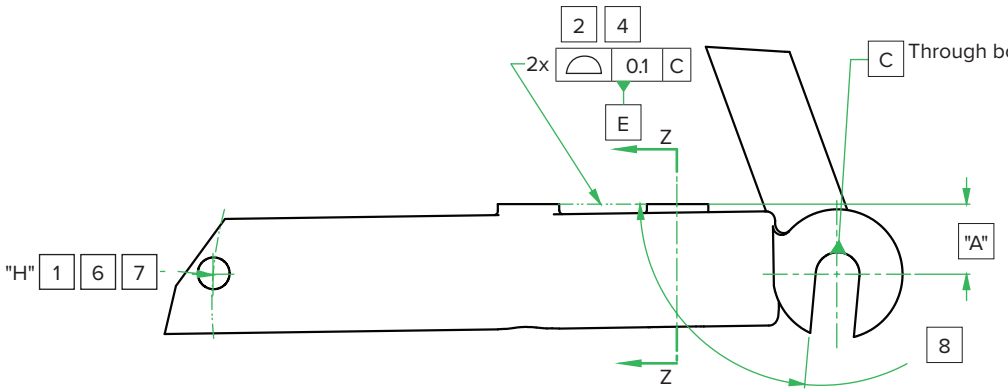
Rotor Ø (mm)	A	B	H (Radius)
140	16.0	36.5	140
160	21.0	45.0	150
180	26.0	53.5	160
200	31.0	62.0	170
220	36.0	70.5	180

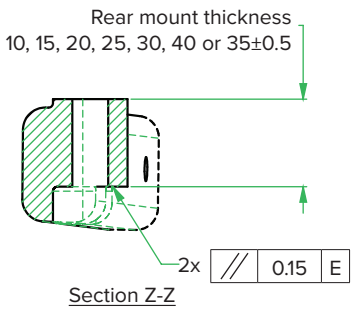
1. Minimum internal routing hole position does not apply to Connect-a-majig.
2. There is potential for the fork and caliper interface to be exposed to high temperatures. This should be evaluated on all designs.
3. All dimensions and tolerances apply in free state and as assembled.
4. Surfaces must be free from paint.
5. All dimensions applied after paint unless otherwise specified.
6. All surfaces that come in contact with brake hose should be free of burrs and sharp edges.
7. Internal hose routing hole position radius "H" mm MIN from dropout ℄
8. Wheel installation may be impeded by rotor-to-caliper interference when wheel installation path approaches or is less than 69°.

Flat Mount Thru Bolt Frame Specification

SRAM Flat Mount Calipers and 140/160/180/200/220 Rotor







Section Z-Z

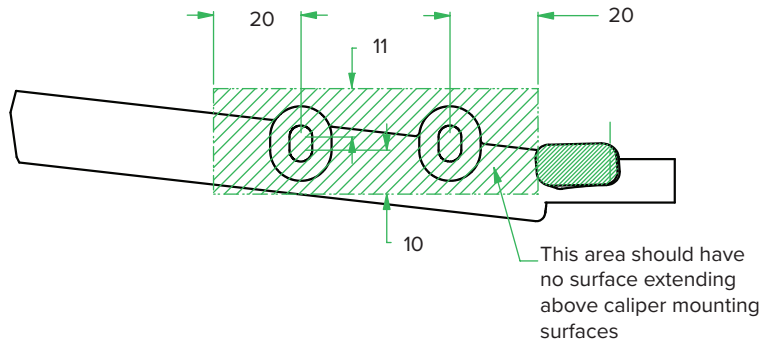
Rotor Ø (mm)	A	B	H (Radius)
140	16.0	36.5	140
160	21.0	45.0	150
180	26.0	53.5	160
200	31.0	62.0	170
220	36.0	70.5	180

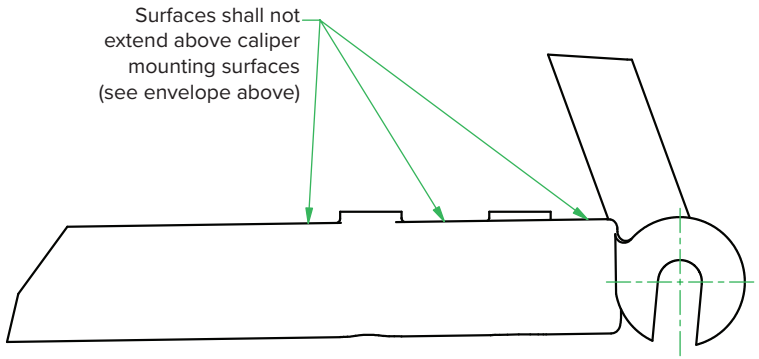
Hub Spacing	C
135	3.55
142	7.05
148	
157	

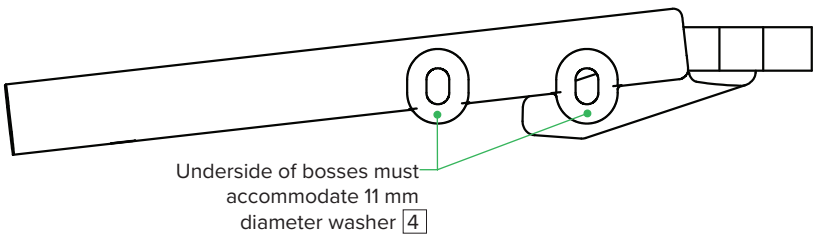
1. Minimum internal routing hole position does not apply to Connect-a-majig.
2. There is potential for the fork and caliper interface to be exposed to high temperatures. This should be evaluated on all designs.
3. All dimensions and tolerances apply in free state and as assembled.
4. Surfaces must be free from paint.
5. All dimensions applied after paint unless otherwise specified.
6. All surfaces that come in contact with brake hose should be free of burrs and sharp edges.
7. Internal hose routing hole position radius "H" mm MIN from dropout ℄
8. Wheel installation may be impeded by rotor-to-caliper interference when wheel installation path approaches or is less than 69°.

Flat Mount Thru Bolt Frame Specification

SRAM Flat Mount Calipers and 140/160/180/200/220 Rotor







Rotor Ø (mm)	A	B	H (Radius)
140	16.0	36.5	140
160	21.0	45.0	150
180	26.0	53.5	160
200	31.0	62.0	170
220	36.0	70.5	180

Hub Spacing	C
135	3.55
142	7.05
148	
157	

1 Minimum internal routing hole position does not apply to Connect-a-majig.

2 There is potential for the fork and caliper interface to be exposed to high temperatures. This should be evaluated on all designs.

3 All dimensions and tolerances apply in free state and as assembled.

4 Surfaces must be free from paint.

5 All dimensions applied after paint unless otherwise specified.

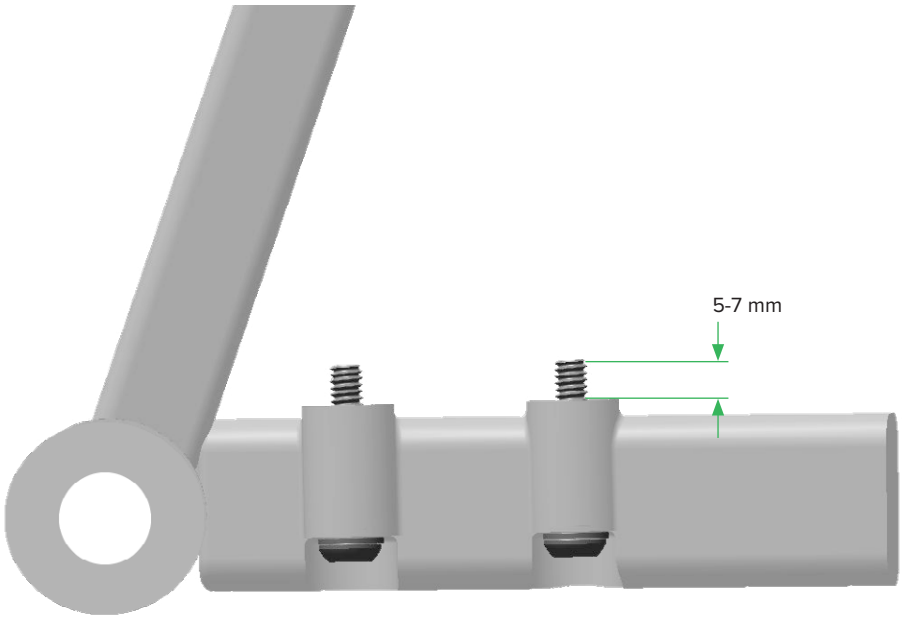
6 All surfaces that come in contact with brake hose should be free of burrs and sharp edges.

7 Internal hose routing hole position radius "H" mm MIN from dropout ℄

8 Wheel installation may be impeded by rotor-to-caliper interference when wheel installation path approaches or is less than 69°.

Flat Mount Frame Specification

All SRAM Flat Mount Calipers



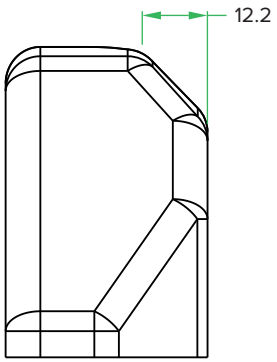
⚠WARNING - CRASH HAZARD

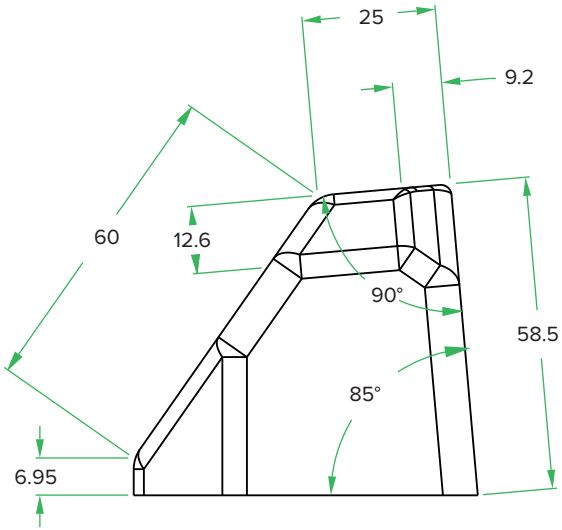
There must be 5-7 mm of mounting bolt thread engagement when mounting brake calipers to forks and frames with flat mount hardward and brackets. Riding a bike with improper bolt engagement can allow the brakes to disengage from the bicycle, which can lead to a crash and serious injury or death to the rider.

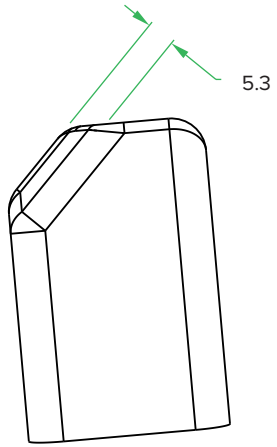
1 Available in rear bolt lengths: 17, 22, 27, 32, 37, and 42 mm.

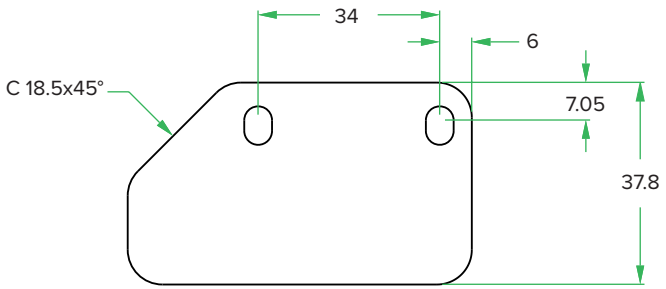
Flat Mount Frame Specification

Flat Mount Caliper Envelope







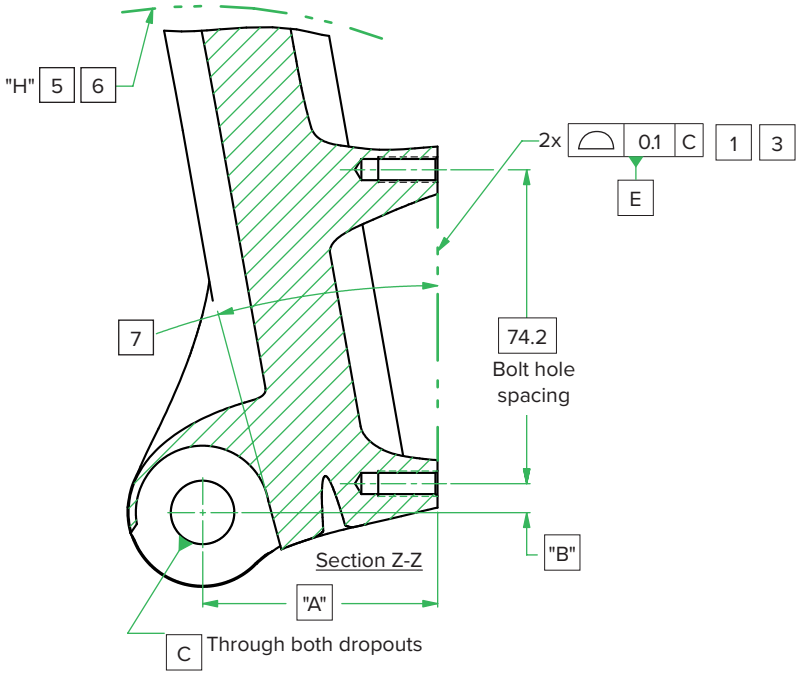


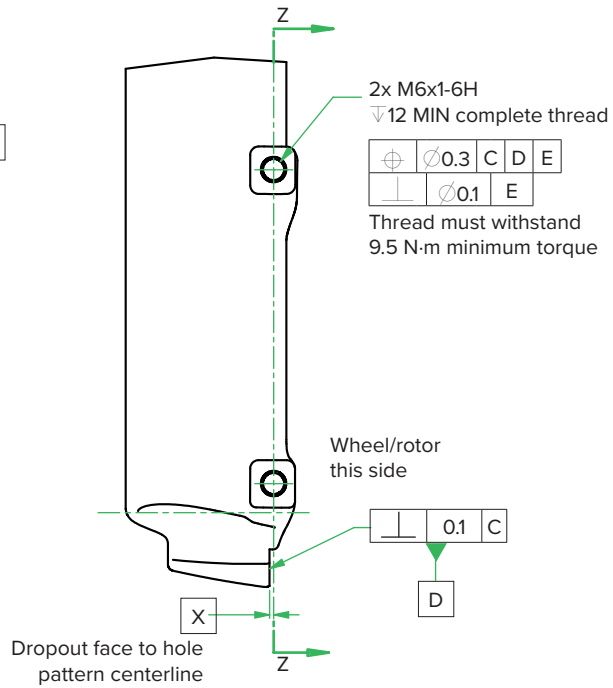
1 Refer to SRAM Connect for 3D envelope file.

2 This envelope represents the keepout zone for all SRAM calipers with an additional 1mm of clearance to account for manufacturing tolerances, finish, paint, etc. Any additional clearance needed is responsibility of the frame design to be accounted for.

Post Mount Fork Specification

All SRAM Post Mount Calipers





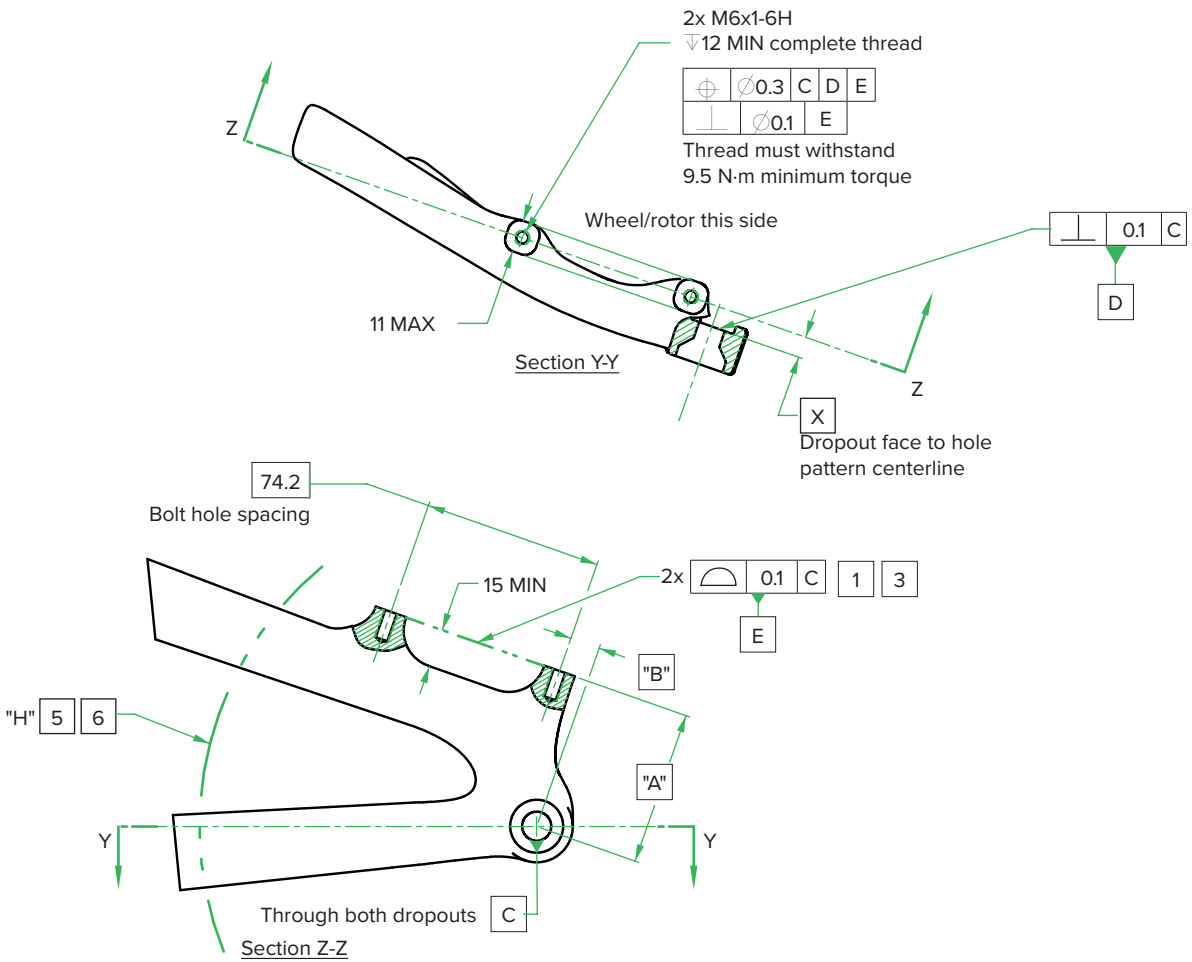
Rotor Ø (mm)	A	B	H (Radius)
140	47.24	1.8	140
160	55.9	6.8	150
180	64.56	11.8	160
200	73.22	16.8	170
203	73.9	18.8	172
220	81.88	21.8	180

Hub Standard	X
9x100 (QR)	0.94
15x100	
15x110 Boost	
20x110 Boost	
Legacy 20x110	5.94

1. There is potential for the fork and caliper interface to be exposed to high temperatures. This should be evaluated on all designs.
2. All dimensions and tolerances apply in free state and as assembled.
3. Surfaces must be free from paint.
4. All dimensions applied after paint unless otherwise specified.
5. All surfaces that come in contact with brake hose should be free of burrs and sharp edges.
6. Internal hose routing hole position radius "H" mm MIN from dropout ℄.
7. Wheel installation may be impeded by rotor-to-caliper interference when wheel installation path approaches or is less than 20°.

Post Mount Frame Specification

All SRAM Post Mount Calipers



Rotor Ø (mm)	A	B	H (Radius)
140	47.24	1.8	140
160	55.9	6.8	150
180	64.56	11.8	160
200	73.22	16.8	170
203	73.9	18.8	172
220	81.88	21.8	180

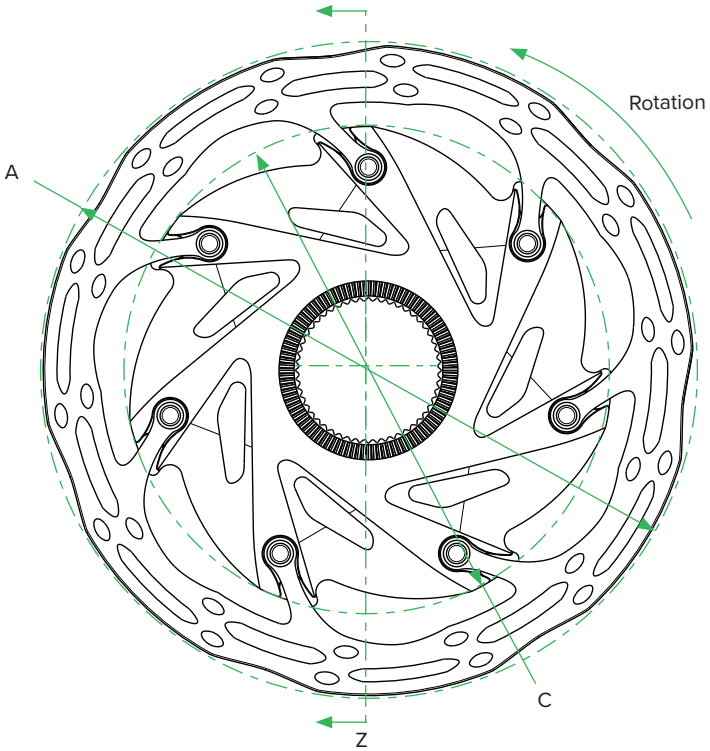
Hub Standard	X
10x135 (QR)	5.7
12x142	9.2
12x148 Boost	
12x157 Super Boost	

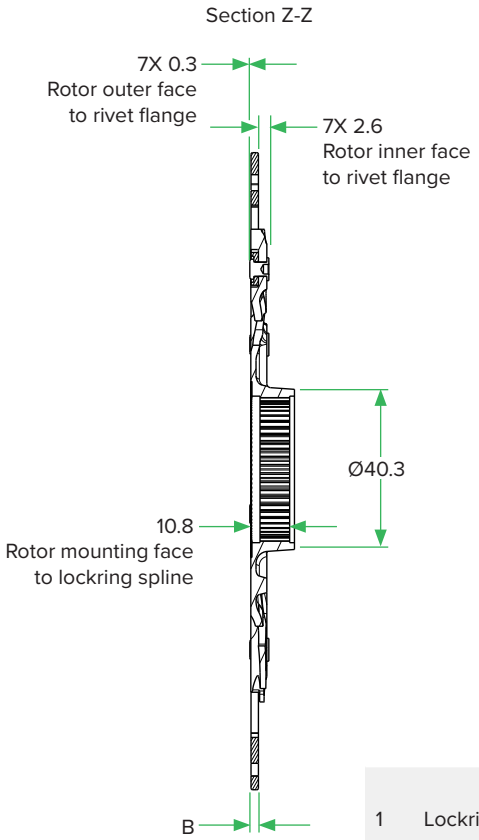
1	There is potential for the fork and caliper interface to be exposed to high temperatures. This should be evaluated on all designs.
2	All dimensions and tolerances apply in free state and as assembled.
3	Surfaces must be free from paint.
4	All dimensions applied after paint unless otherwise specified.
5	All surfaces that come in contact with brake hose should be free of burrs and sharp edges.
6	Internal hose routing hole position radius "H" mm MIN from dropout ℄.

SRAM CenterLine XR

Two-piece Center Locking Rotor Dimensions

Rotor	Rotor Size	Radiused Outer Diameter	Rotor Thickness	Carrier Diameter
		A (mm)	B (mm)	C (mm)
CLX- R	140	140	1.90	100
	160	160	1.85	120



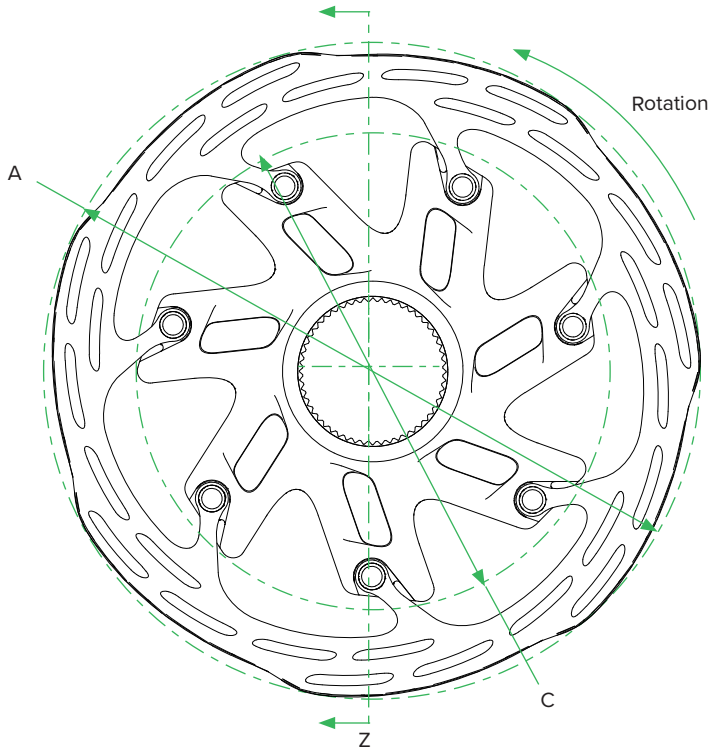


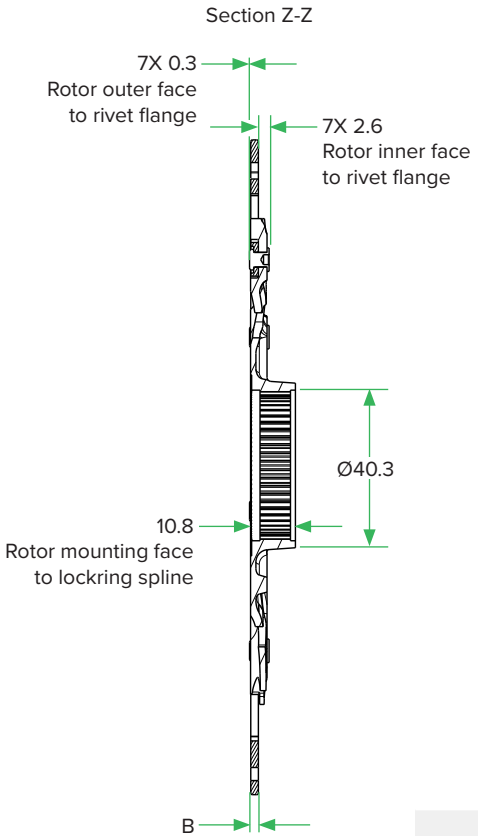
1 Lockring torque to 40 N·m (354 in-lb).

SRAM Paceline X

Two-piece Center Locking Rotor Dimensions

Rotor	Rotor Size	Radiused Outer Diameter	Rotor Thickness	Carrier Diameter
		A (mm)	B (mm)	C (mm)
Paceline X	140	140	1.85	92.5
	160	160	1.85	115



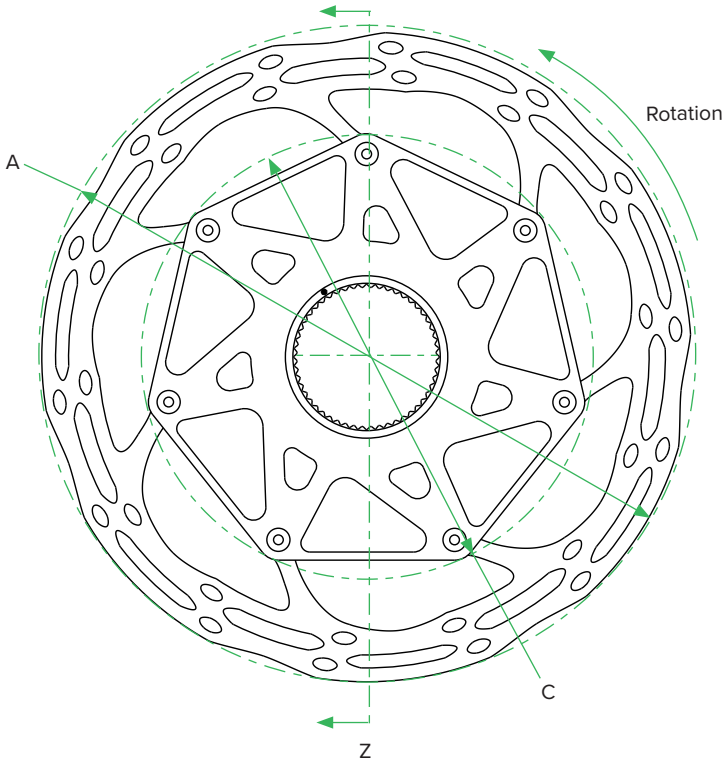


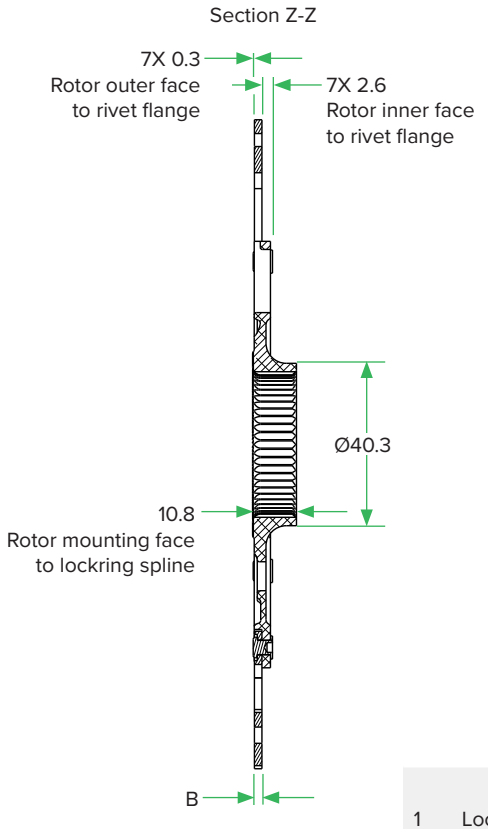
1 Lockring torque to 40 N·m (354 in-lb).

SRAM CenterLine X

Two-piece Center Locking Rotor Dimensions

Rotor	Rotor Size	Radiused Outer Diameter	Rotor Thickness	Carrier Diameter
		A (mm)	B (mm)	C (mm)
CLX	140	140	1.90	90.1
	160	160	1.85	110.1
	180	180	1.85	130.1





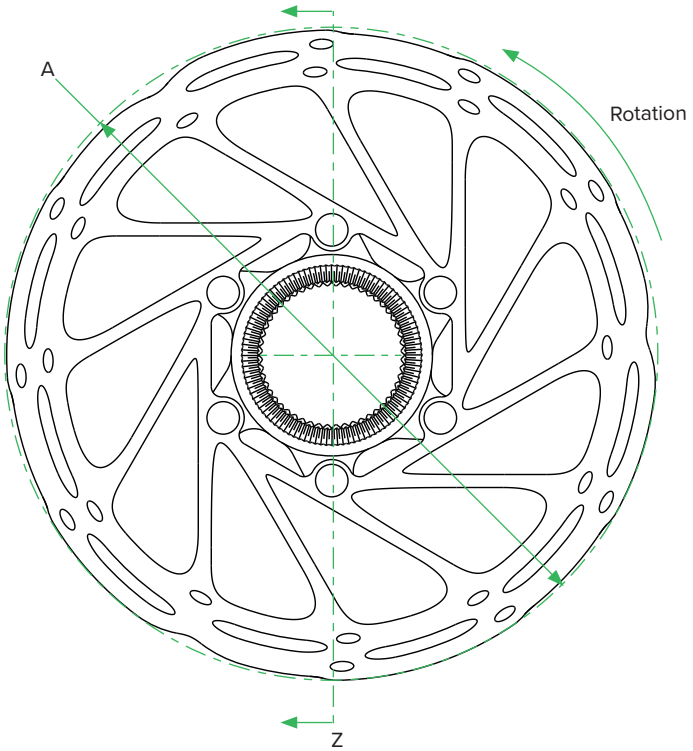
1 Lockring torque to 40 N·m (354 in-lb).

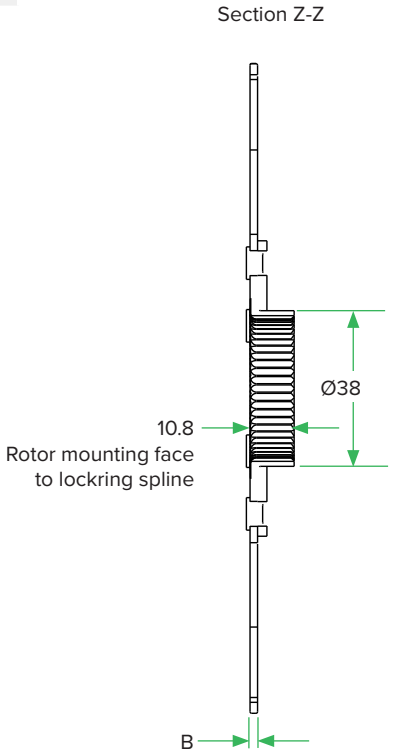
SRAM CenterLine/ SRAM Paceline

One-Piece Center Locking Rotor Dimensions

Rotor size	Radiused Outer Diameter	Rotor Thickness
	A (mm)	B (mm)
140 mm	140	1.85
160 mm	160	
180 mm*	180	

* CenterLine only. Paceline does not come in a 180 mm rotor.



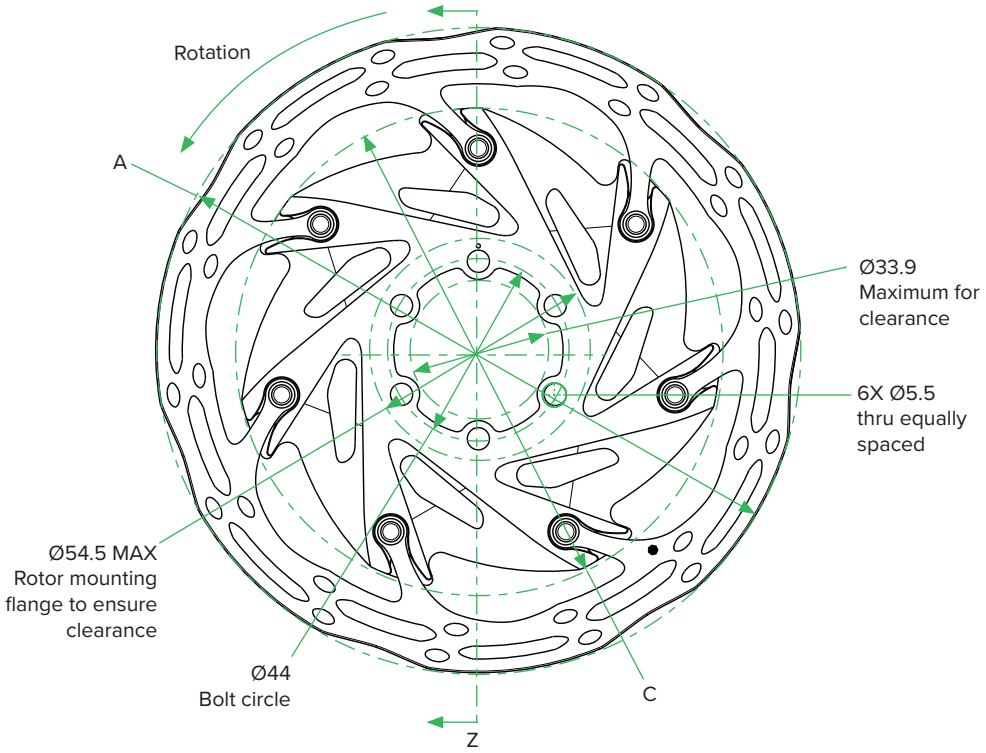


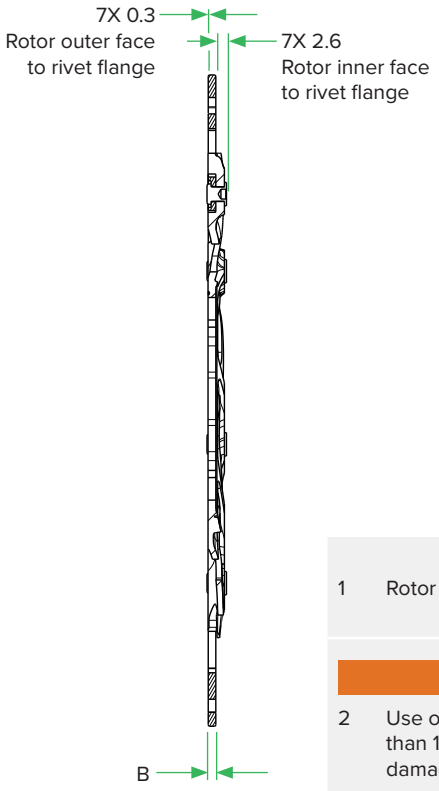
1 Lockring torque to 40 N·m (354 in-lb).

SRAM CenterLine XR

Two-piece 6-Bolt Rotor Dimensions

Rotor	Rotor Size	Radiused Outer Diameter	Rotor Thickness	Carrier Diameter
		A (mm)	B (mm)	C (mm)
CLX- R	140	140	1.90	100
	160	160	1.85	120





1 Rotor mounting bolt torque value is 6.2 N·m (55 in-lb).

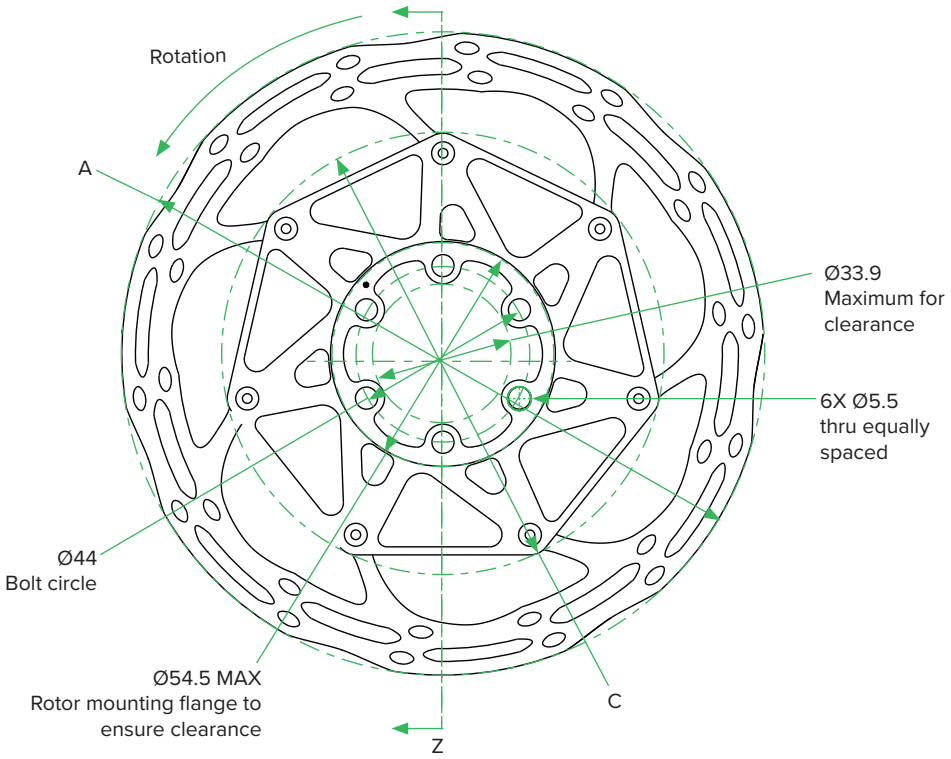
⚠WARNING

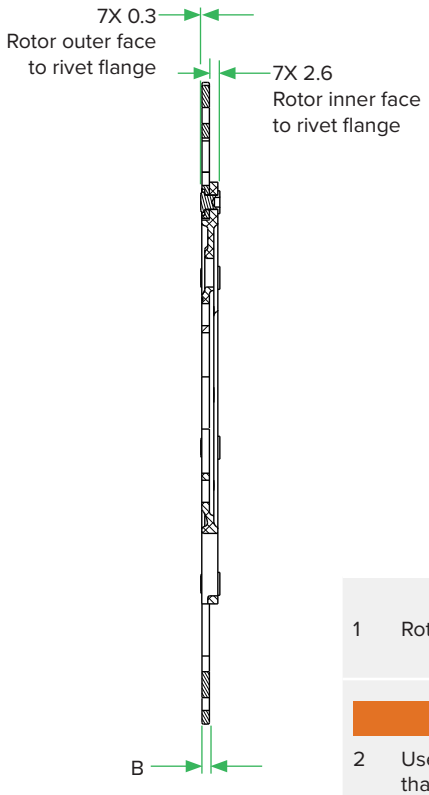
2 Use only 10 mm length rotor bolts. Rotor bolts longer than 10 mm will not properly secure rotor and could damage the hub.

SRAM CenterLine X

Two-piece 6-Bolt Rotor Dimensions

Rotor	Rotor Size	Radiused Outer Diameter	Rotor Thickness	Carrier Diameter
		A (mm)	B (mm)	C (mm)
CLX	140	140	1.90	90.1
	160	160	1.85	110.1
	180	180	1.85	130.1





1 Rotor mounting bolt torque value is 6.2 N·m (55 in-lb).

⚠WARNING

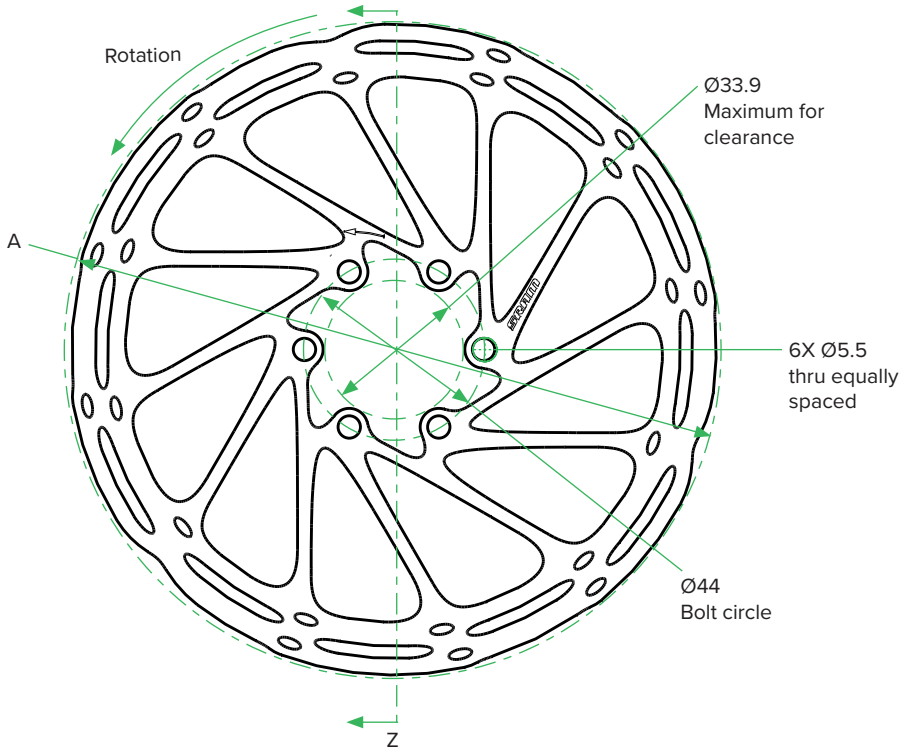
2 Use only 10 mm length rotor bolts. Rotor bolts longer than 10 mm will not properly secure rotor and could damage the hub.

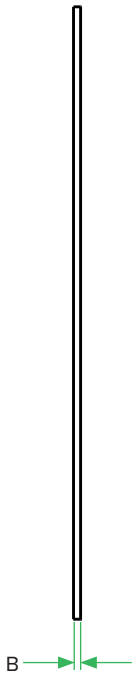
SRAM CenterLine/ SRAM Paceline

One-piece 6-Bolt Rotor Dimensions

Rotor size	Radiused Outer Diameter	Rotor Thickness
	A (mm)	B (mm)
140 mm	140	1.85
160 mm	160	
180 mm*	180	

* CenterLine only. Paceline does not come in a 180 mm rotor.





1 Rotor mounting bolt torque value is 6.2 N·m (55 in-lb).

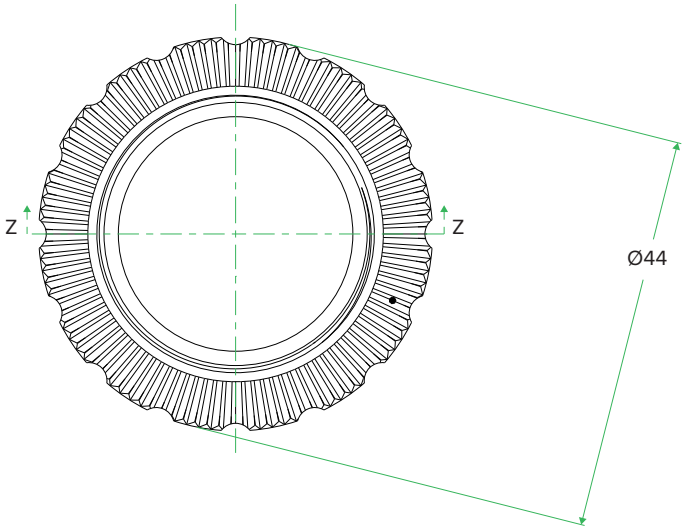
⚠WARNING

2 Use only 10 mm length rotor bolts. Rotor bolts longer than 10 mm will not properly secure rotor and could damage the hub.

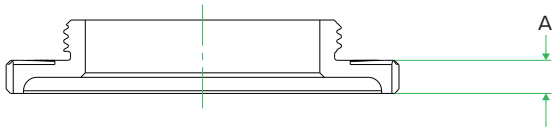
Lockring for Center Locking Rotor

Specifications

Part Number	Lockring Type Thickness	A (mm)
11.2018.063.011 - ZIPP 11.2018.063.004 - SRAM	Regular	3.7
11.2018.063.002 - ZIPP	Thin	2.1



Section Z:Z

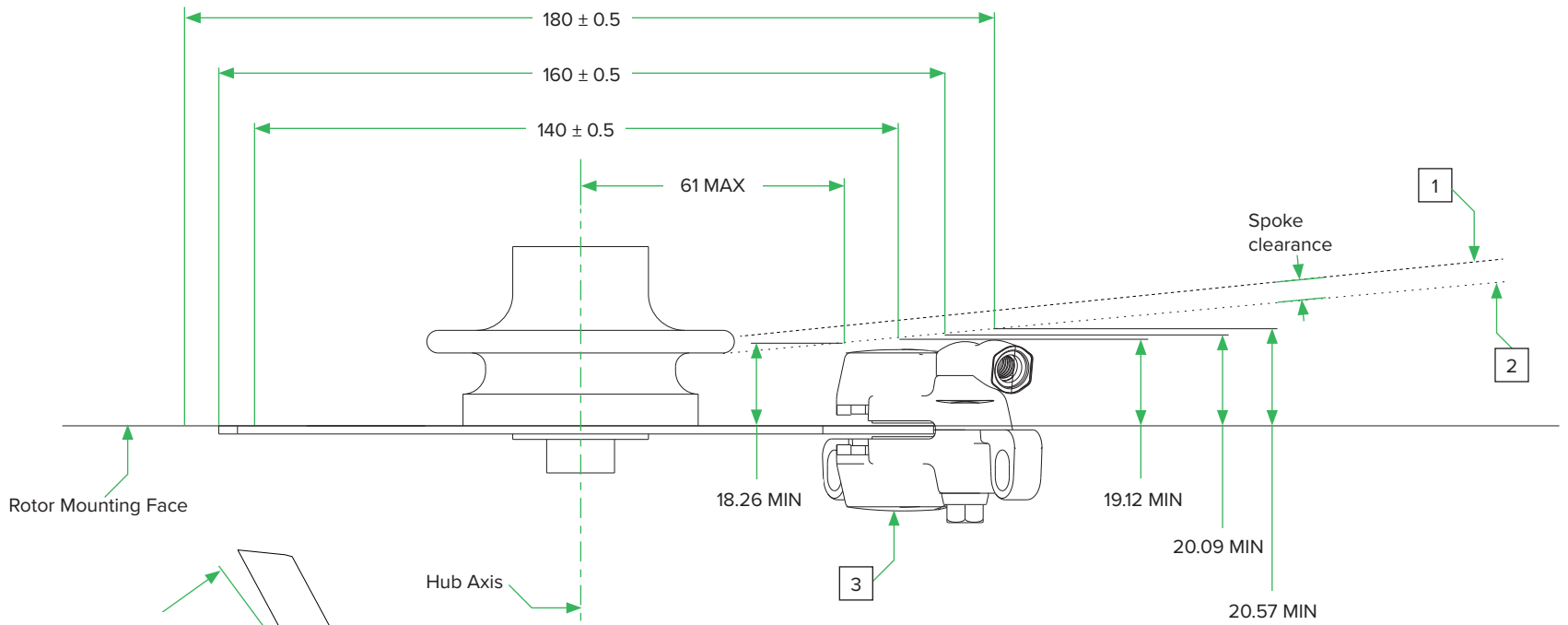


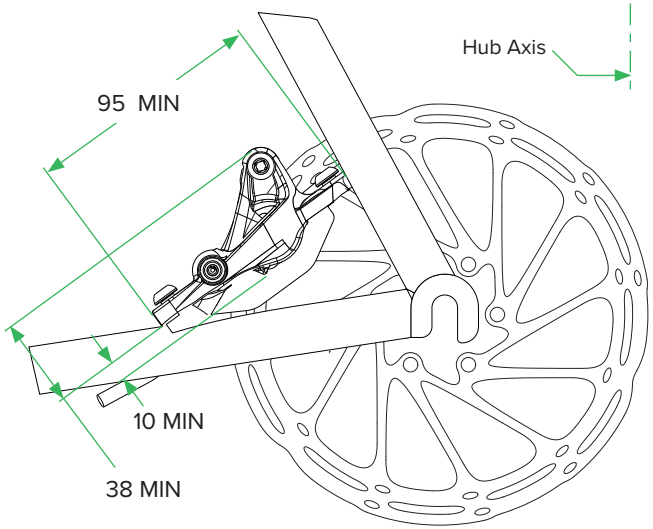
Note

1. SRAM/Zipp lockring torque is 40 N· m (354 in-lb).
2. The Zipp lockring (thin) must be used with a 140 mm or 160 mm rotor.

Spoke Clearance

Road Disc Brakes

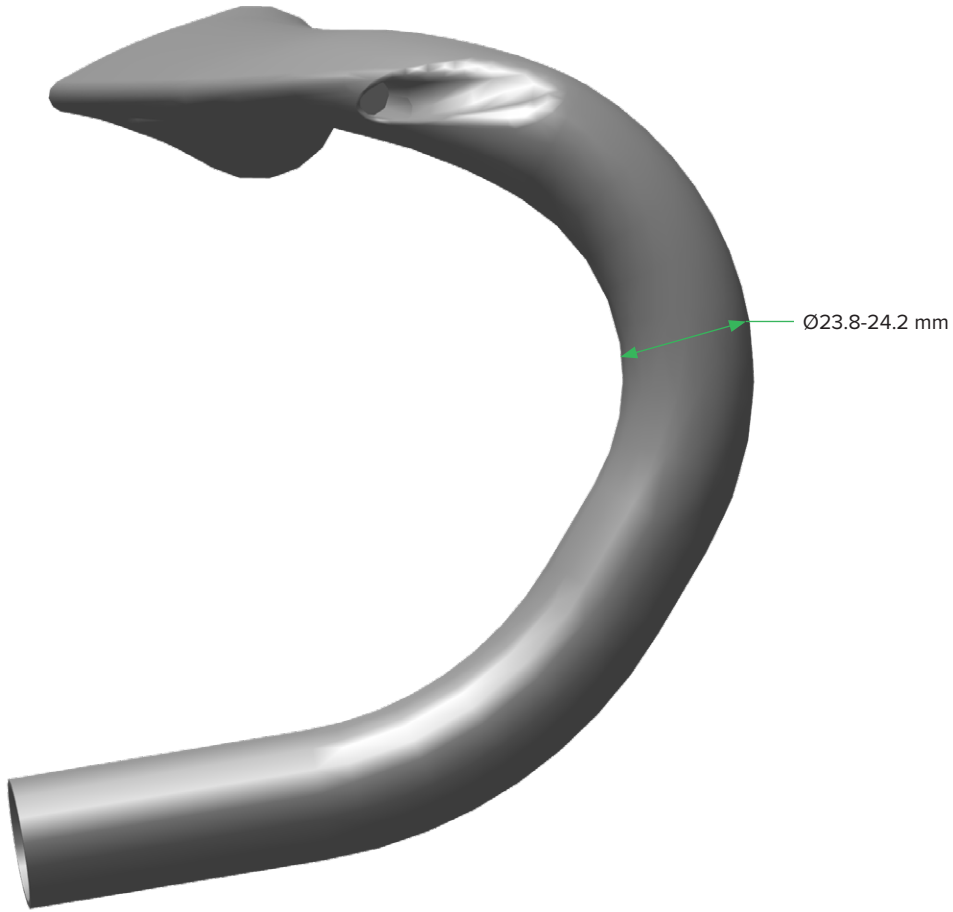




1	Wheel designer to determine the safe clearance distance from the caliper to account for wheel flex and tolerance stack.
2	Caliper body will not extend beyond this datum. Datum accounts for caliper manufacturing tolerances and variation in pad advancement.
3	Caliper position shown for 160 mm rotor.

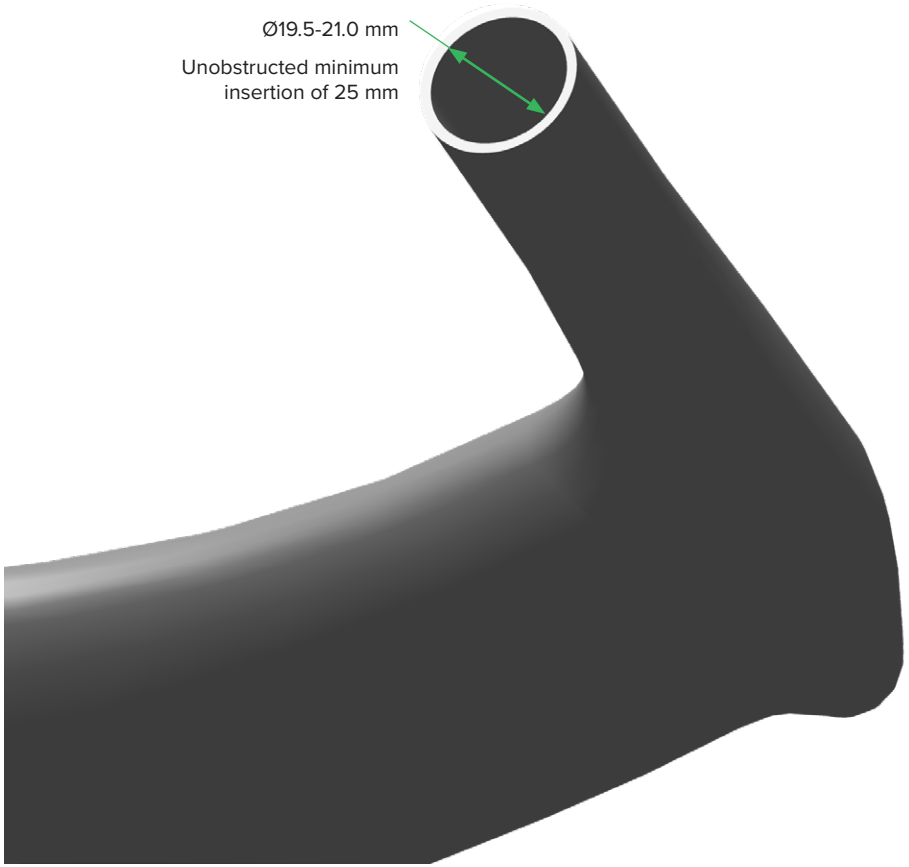
Dropbar Guidelines

All Road Shift-Brakes and Brake Levers



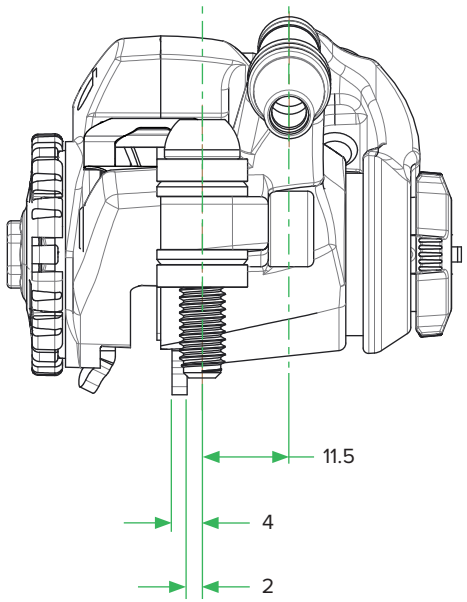
S-900 Aero HRD

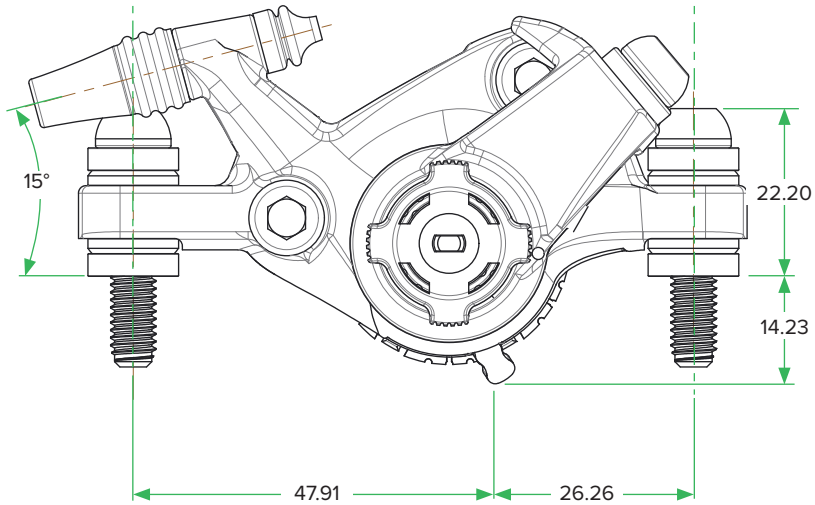
Hydraulic Aero Brake Lever Bar Guidelines



BB7/ BB5 Road

Mechanical Disc Brake Clearance





Front Rim Brake Caliper

Direct Mount and Single Pivot Design Dimensions

Brake Caliper Pivot Location

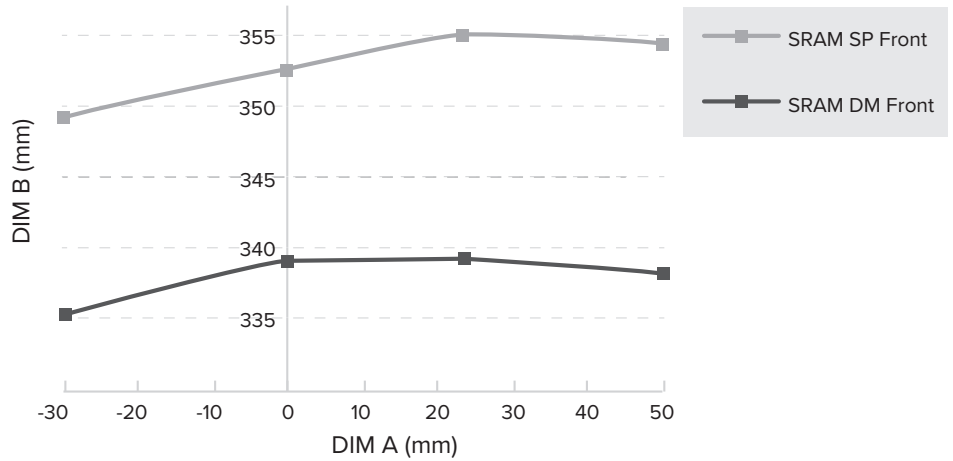
700 C	A		-30	0	25	50
	B ±2	SRAM DM Front	335.9	339	339.5	338
		SRAM SP Front	349	353.5	355	354.5

1 For increased tire clearance, make mounting features to the + side of the "B" dimension tolerance limit.

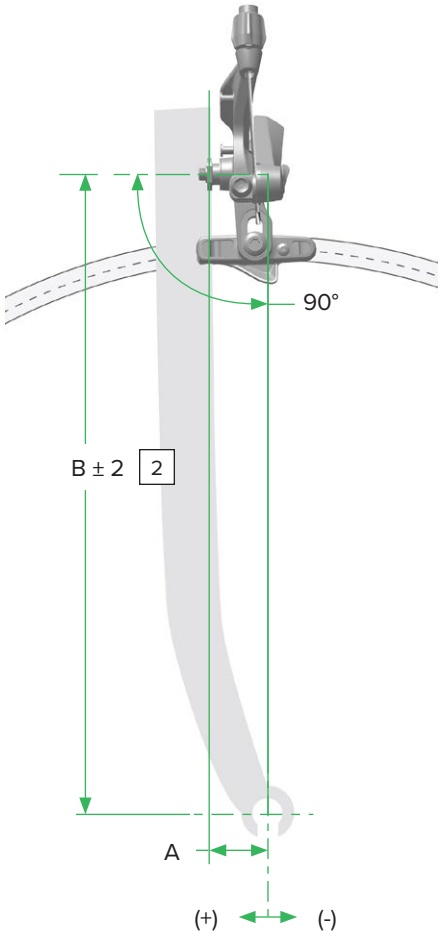
2 For 650c wheels, subtract 26 mm from the 700c "B" dimensions.

3 Mount only to the front side of the fork.

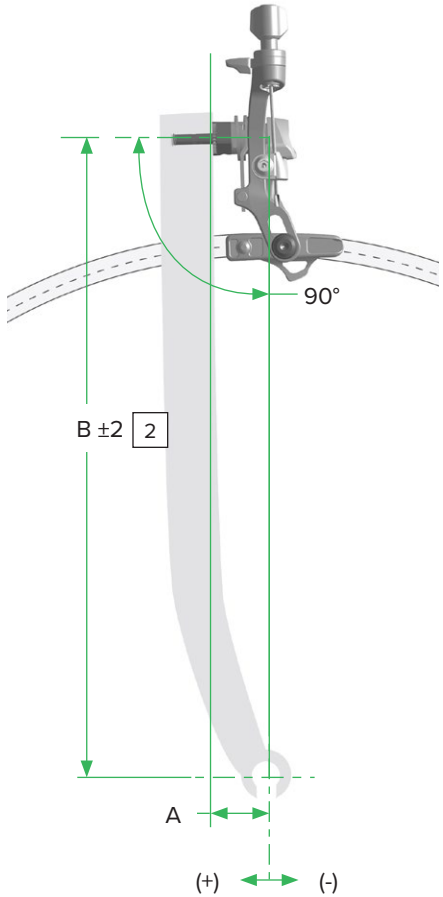
700 C Front



Direct Mount Front Rim Brake Caliper



Single Pivot Front Rim Brake Caliper



Rear Rim Brake Caliper

Direct Mount and Single Pivot Design Dimensions

Brake Caliper Pivot Location

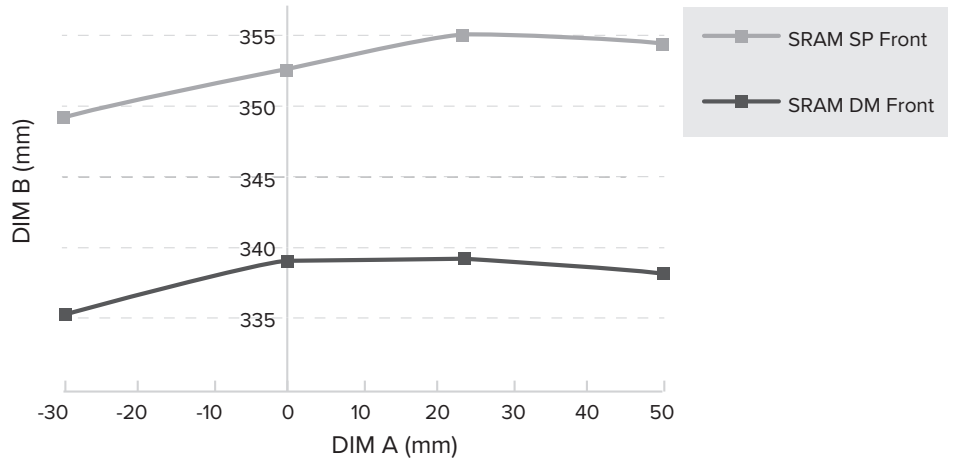
700 C	A		-30	0	25	50
	B ±2	SRAM DM Front	335.9	339	339.5	338
		SRAM SP Front	349	353.5	355	354.5

1 For increased tire clearance, make mounting features to the + side of the "B" dimension tolerance limit.

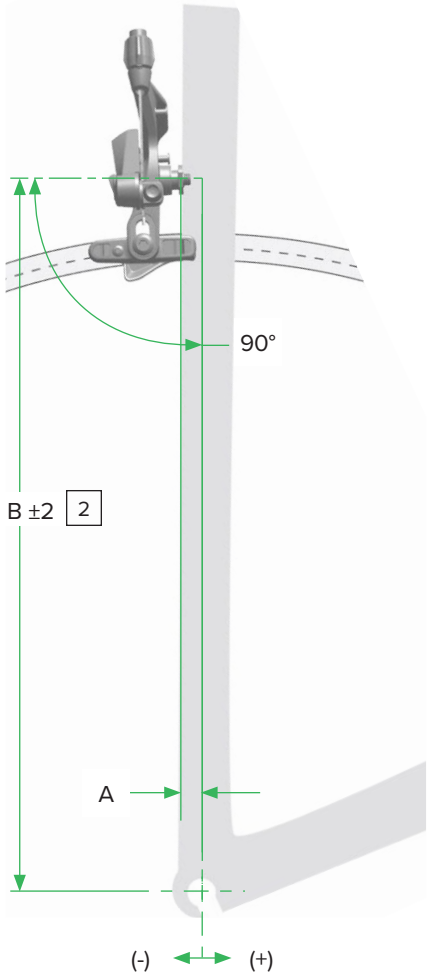
2 For 650c wheels, subtract 26 mm from the 700c "B" dimensions.

3 Mount only to the back side of the seatstay. Do not mount under bottom bracket or on the front side of the seatstay.

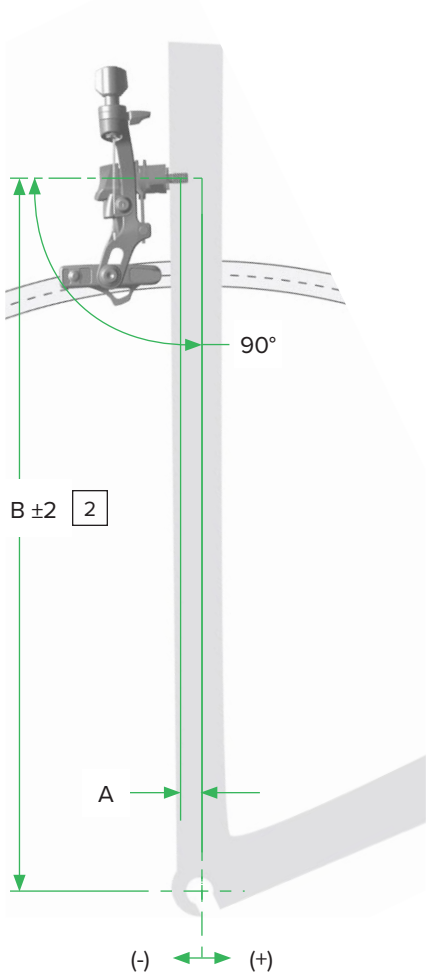
700 C Rear



Direct Mount Rear Rim Brake Caliper



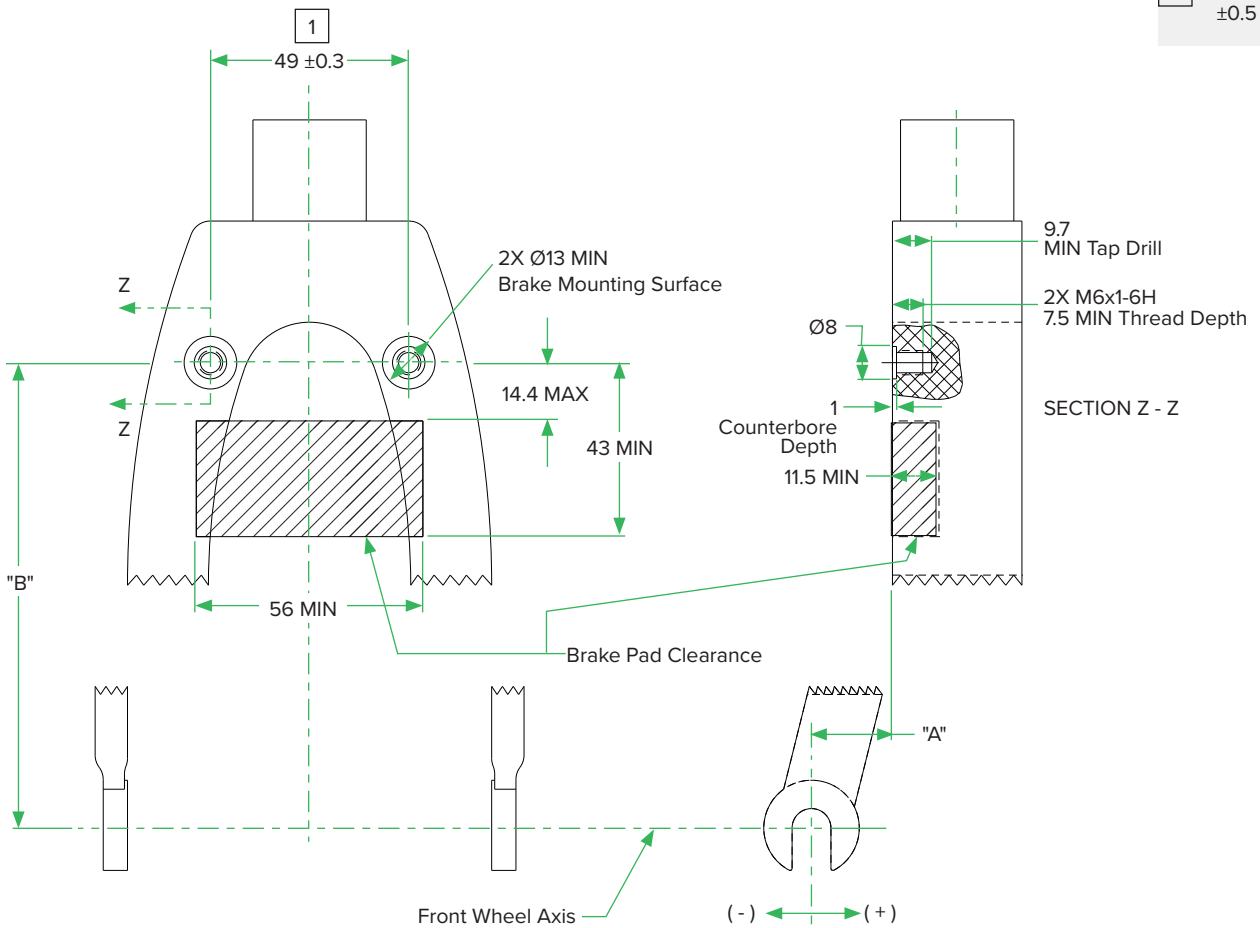
Single Pivot Rear Rim Brake Caliper



Front Direct Mount

Mounting Dimensions

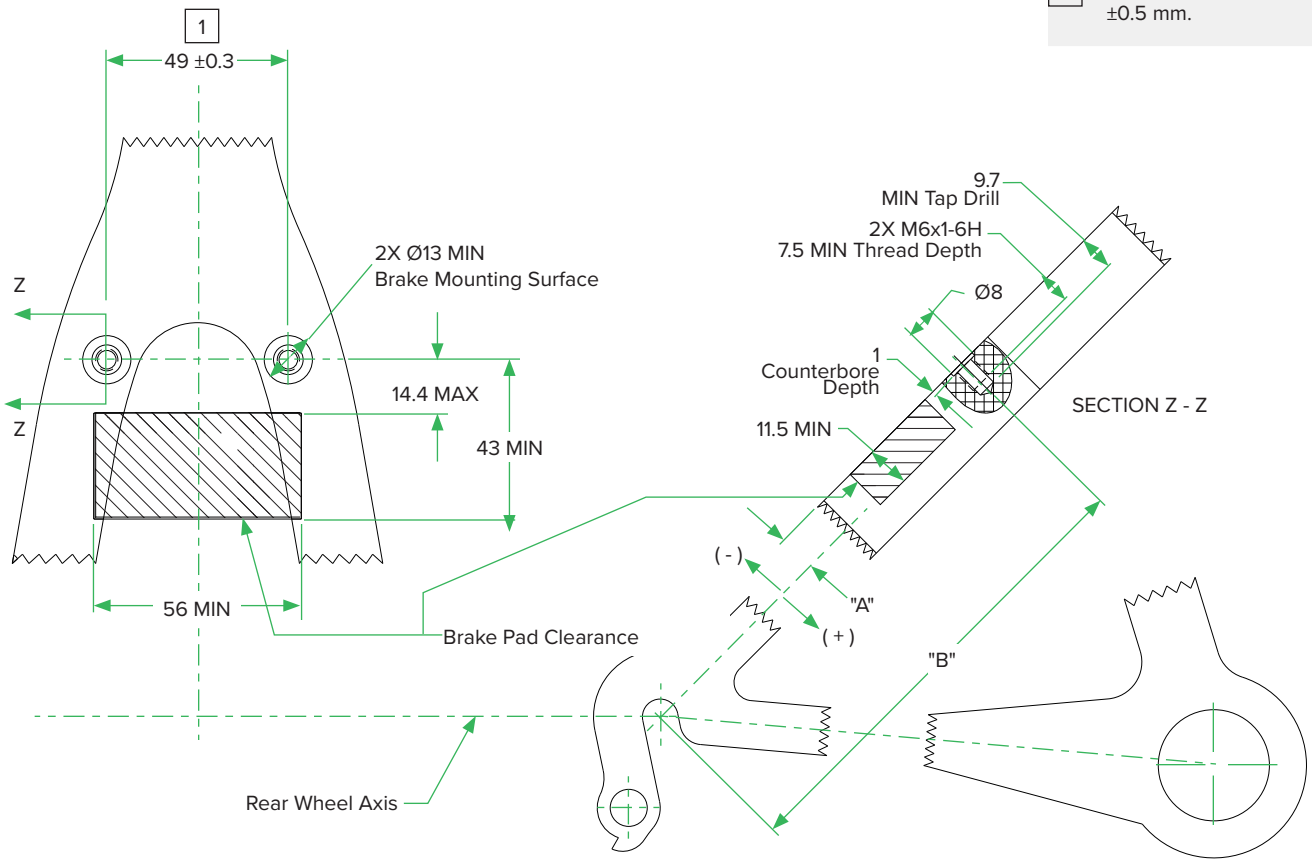
1 Center the posts between the dropouts within ±0.5 mm.



Rear Direct Mount

Mounting Dimensions

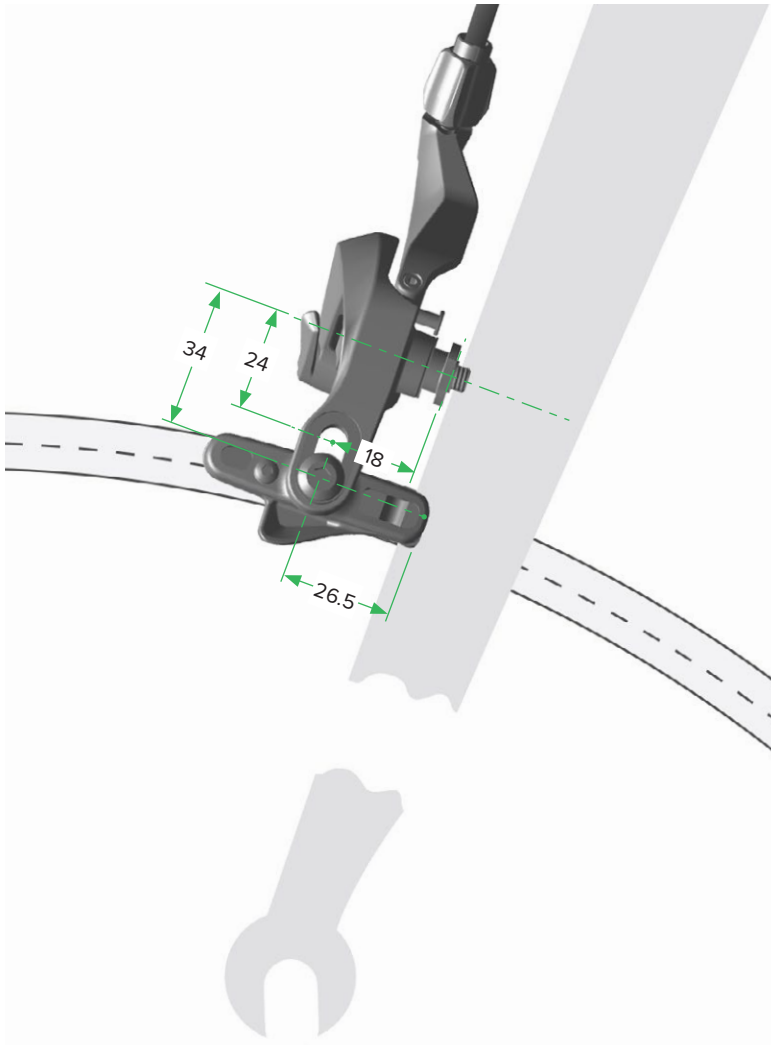
1 Center the posts between the dropouts within ±0.5 mm.



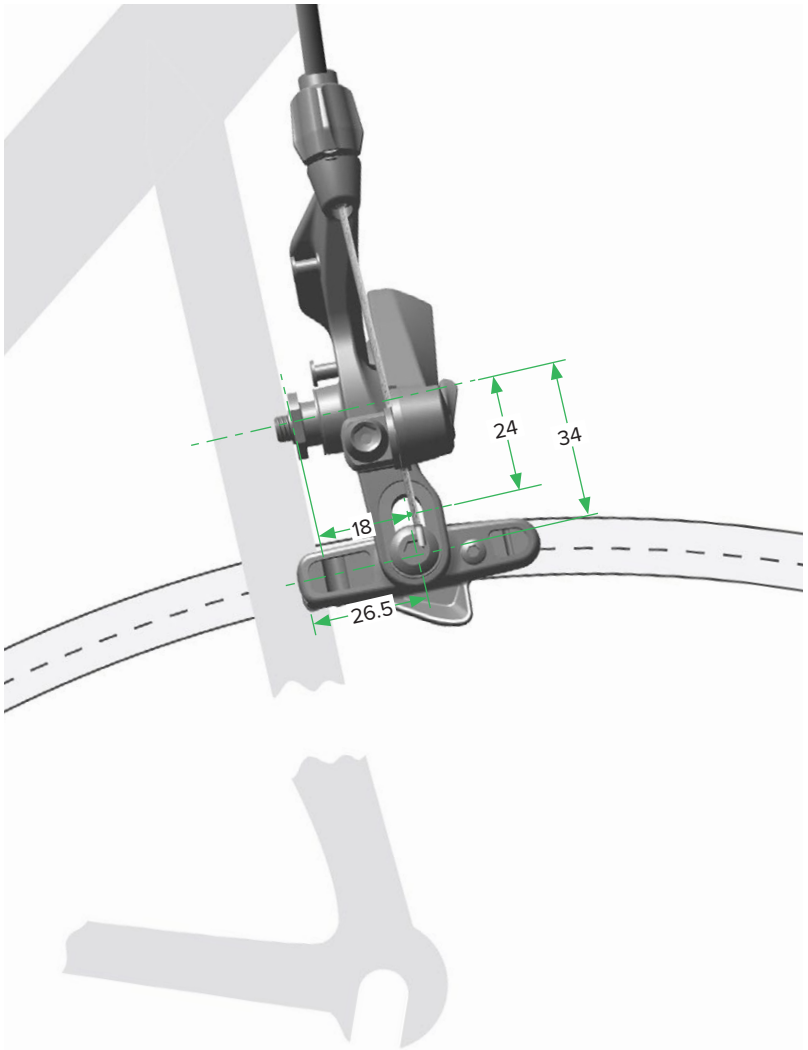
Direct Mount

Rim Brake Caliper Design Dimensions

Front Rim Brake Caliper



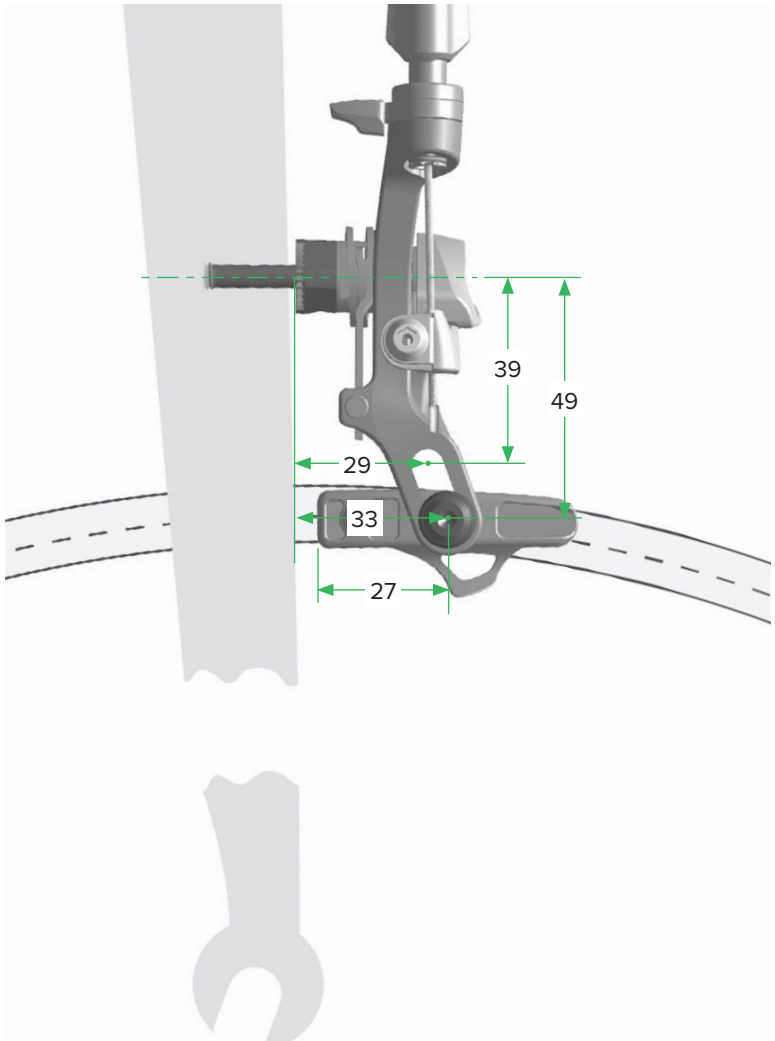
Rear Rim Brake Caliper



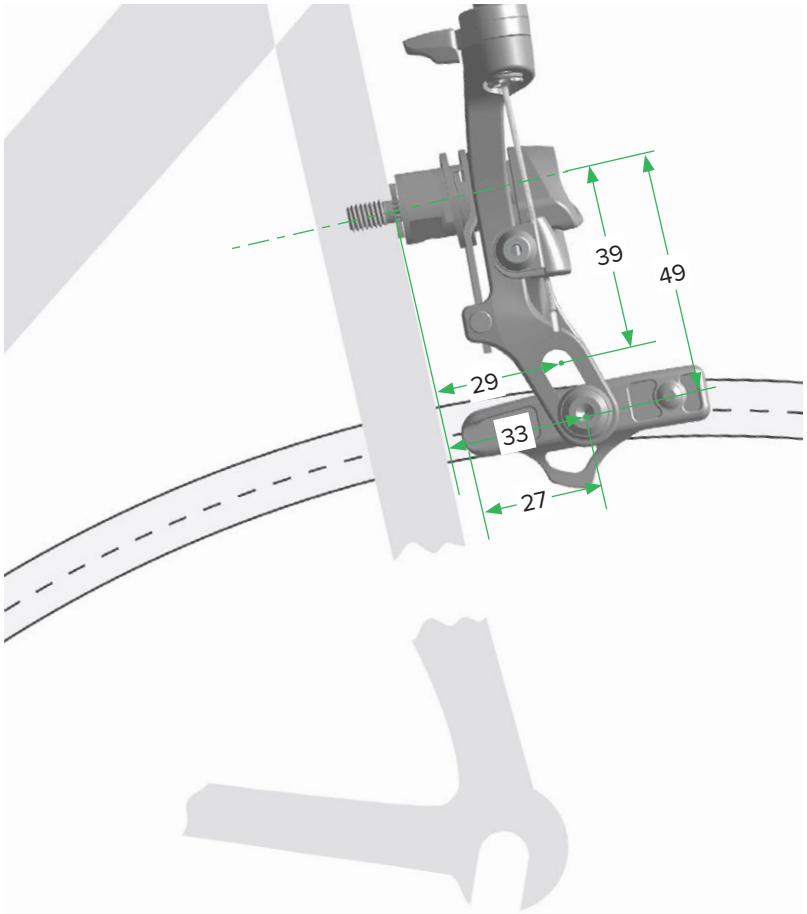
Single-Post Mount

Rim Brake Caliper Design Dimensions

Front Rim Brake Caliper

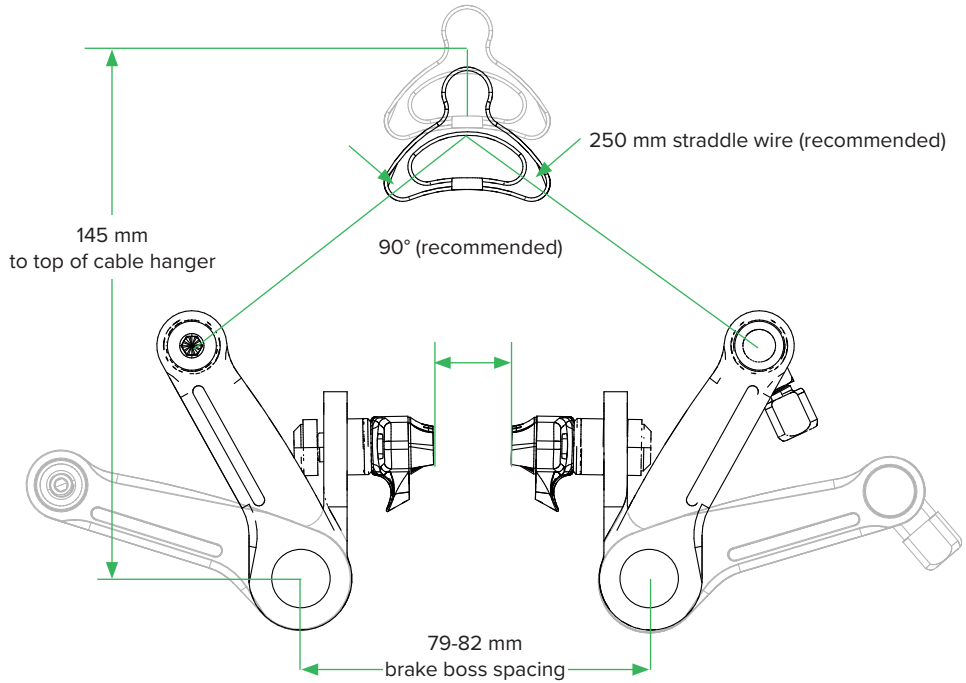


Rear Rim Brake Caliper



Shorty Ultimate

Dual Mounted Brake Caliper

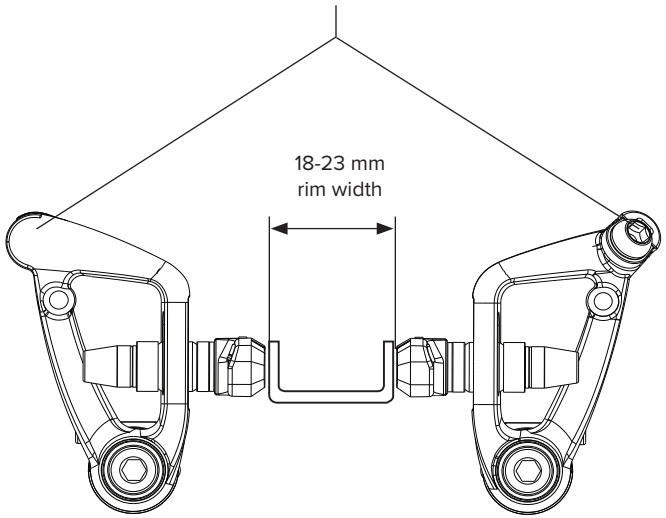


1 For wheel rims wider than 23 mm, consult the spare parts catalog on www.sram.com/service for part numbers.

Shorty 6/ Shorty 4

Cable Carrier and Straddle Cable Length

	Length of straddle cable	Opening angle of straddle cable	Designed width of Shorty	Total height	Designed height	Total width	Pivot width	Opening
	A (mm)	C	D (mm)	H (mm)	h (mm)	W (mm)		
CCC Type S	63	100°	31.78	92.94	56.80	51.61	63.21	39.65
CCC Type A	73	95°		106.12		53.82	67.64	44.08
CCC Type B	82	87°		116.28		56.45	72.89	49.33
CCC Type C	106	80°		138.00		68.14	96.27	72.71
CCC Type D	93	90		122.56		65.76	91.52	67.96



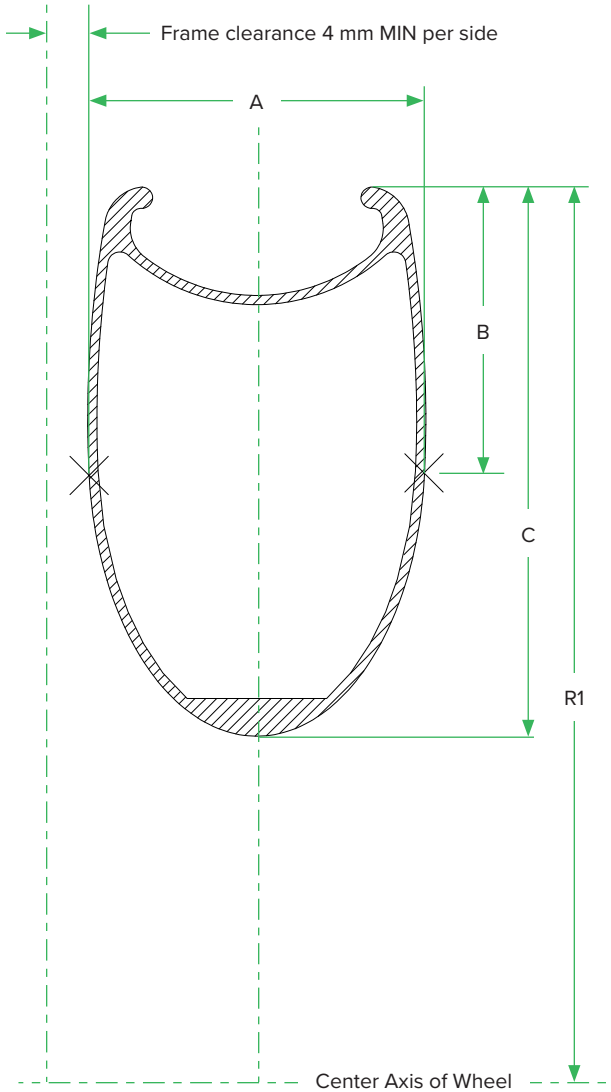
Wheels and Hubs

Zipp Wheels

Rim/Disc Design Parameters

	MAX Width	Internal Width (mm)	Depth at MAX Width	MAX Depth	Radius to Center Axis
	A (mm)		B (mm)	C (mm)	R1 (mm)
30 Course Clincher Tubeless Disc-brake	25	21	5.45	26	316.6
30 Course Clincher Tubeless Rim-brake		21	10		
202 Firecrest Carbon Tubeless Disc-brake	28.7	21	6.9	32	316.67
202 NSW Carbon Tubeless Disc-brake		21			
303 S Carbon Tubeless Disc-brake	27.32	23	3.52	45.15	317.165
303 Firecrest 650b Carbon Tubeless Disc-brake	29.88	21	21.19	45.5	297.95
303 Firecrest Carbon Tubeless Disc-brake	27.5	25	0	30	316.85
303 Firecrest Carbon Tubeless Rim-brake	26.58	21	13.05	45.41	317.13
303 NSW Carbon Tubeless Rim-brake		21			
303 Firecrest Carbon Tubular Disc-brake	28.05	n/a	19.31	45.6	316.86
303 Firecrest Carbon Tubular Rim-brake		n/a			
353 NSW Carbon Tubeless Disc-brake	30	25	1.20 - 5.50**	45.2	317.1
404 Firecrest Carbon Tubeless Disc-brake	27.68	23	0	58	316.975
404 Firecrest Carbon Tubeless Rim-brake	27.74	19	22.05	58.71	316.4
404 NSW Carbon Tubeless Disc-brake		19	22.05	58.71	316.4
404 NSW Carbon Tubeless Rim-brake		19	22.05	58.71	316.4
454 NSW Carbon Tubeless Disc-brake TSS	27.5	23	1.20 - 14.50**	58	316.85

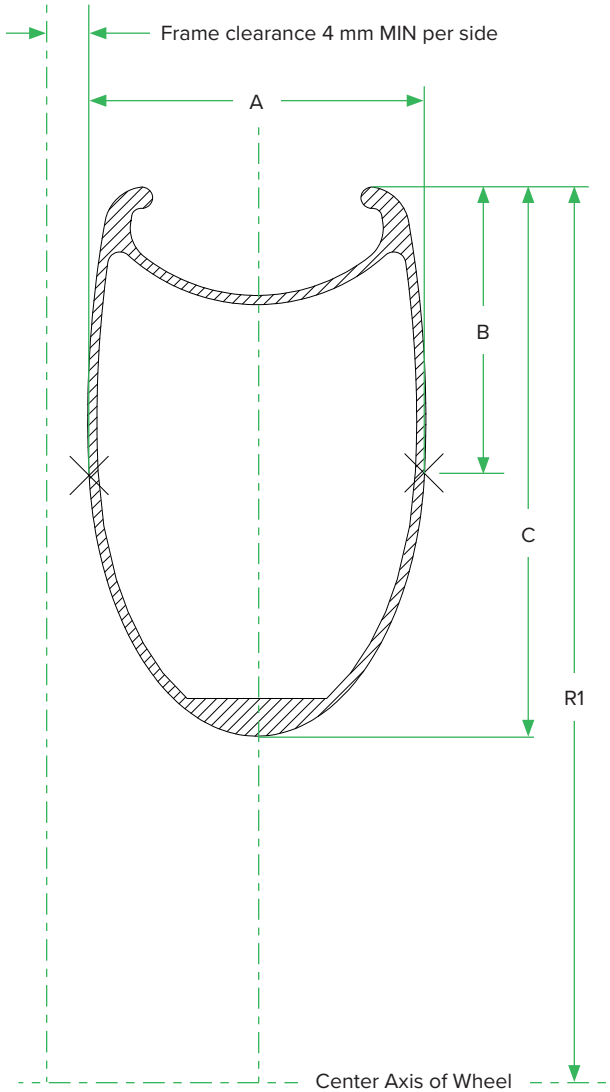
** Endpoints points of vertical line at max width.



Zipp Wheels

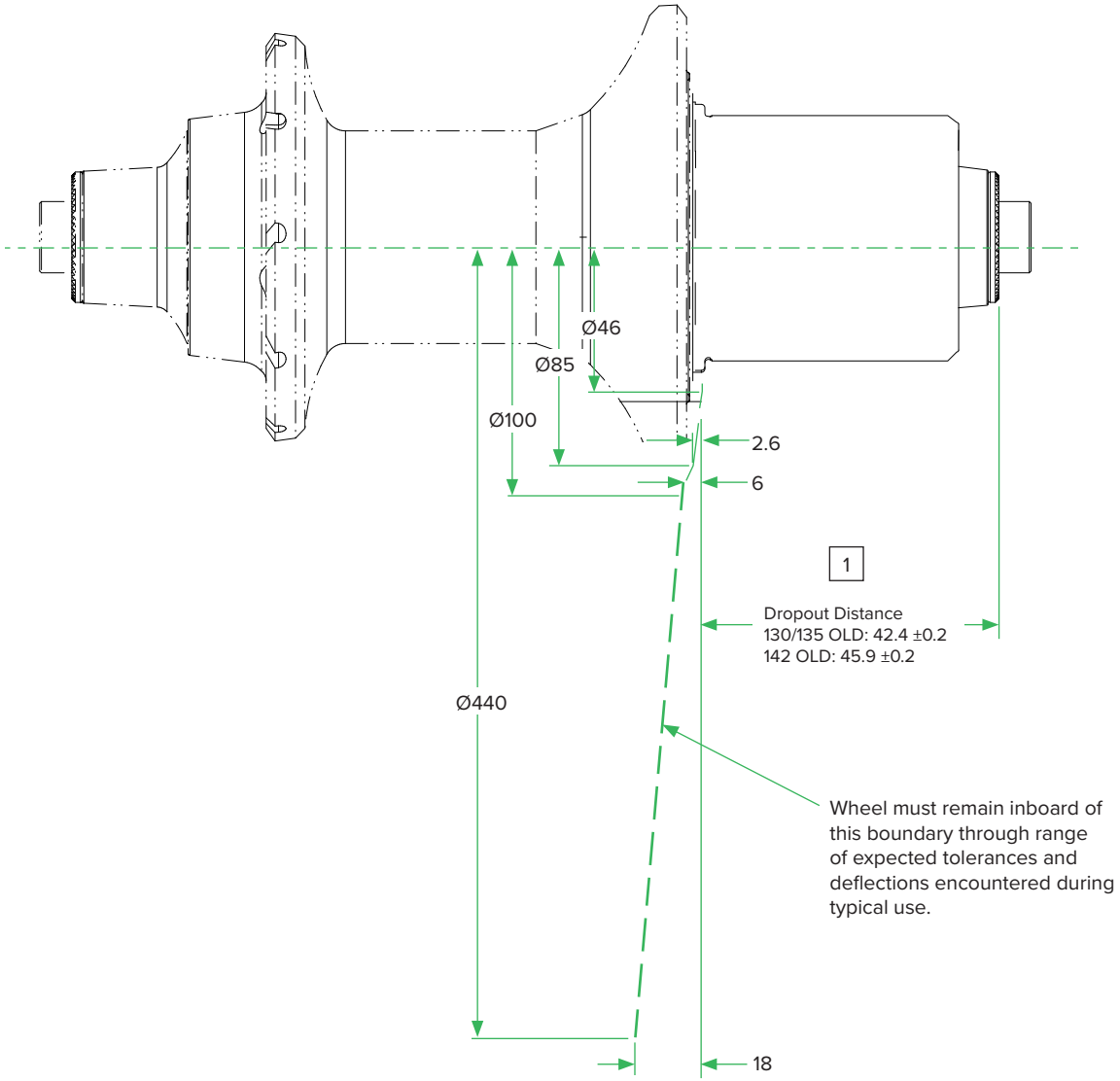
Rim/Disc Design Parameters Continued

	MAX Width	Internal Width (mm)	Depth at MAX Width	MAX Depth	Radius to Center Axis
	A (mm)		B (mm)	C (mm)	R1 (mm)
454 NSW Carbon Tubeless Disc-brake	26.51	19	22.17	58.23	316.145
454 NSW Carbon Tubeless Rim-brake		19			
454 NSW Carbon Tubular Disc-brake	26.52	n/a	22.25	57.92	316.23
454 NSW Carbon Tubular Rim-brake		n/a			
808 Firecrest Carbon Tubeless Disc-brake	28.024	19	35.54	82.5	316.6
808 Firecrest Carbon Tubeless Rim-brake		19			
808 NSW Carbon Tubeless Disc-brake		19			
808 NSW Carbon Tubeless Rim-brake		19			
858 NSW Carbon Tubeless Disc-brake	23.66	18	7.3	83.66	316.19
858 NSW Carbon Tubeless Rim-brake		18			
101 EXPLR Tubeless DB 650	34.3	27	2.65	16.47	298.15
101 EXPLR Tubeless DB 700		27			317.08
Super-9 Carbon Tubular Disc-brake	27.5	n/a	2.46	N/A	317.36
Super-9 Carbon Tubular Rim-brake		n/a			
Super-9 Tubular Track		n/a			
Super-9 Carbon Tubeless Rim-brake	27.48	18	7.3		316.23
Super-9 Carbon Tubeless Disc-brake		18			
Super-9 Carbon Clincher Track		16			



Rear Derailleur Wheel Spoke Clearance

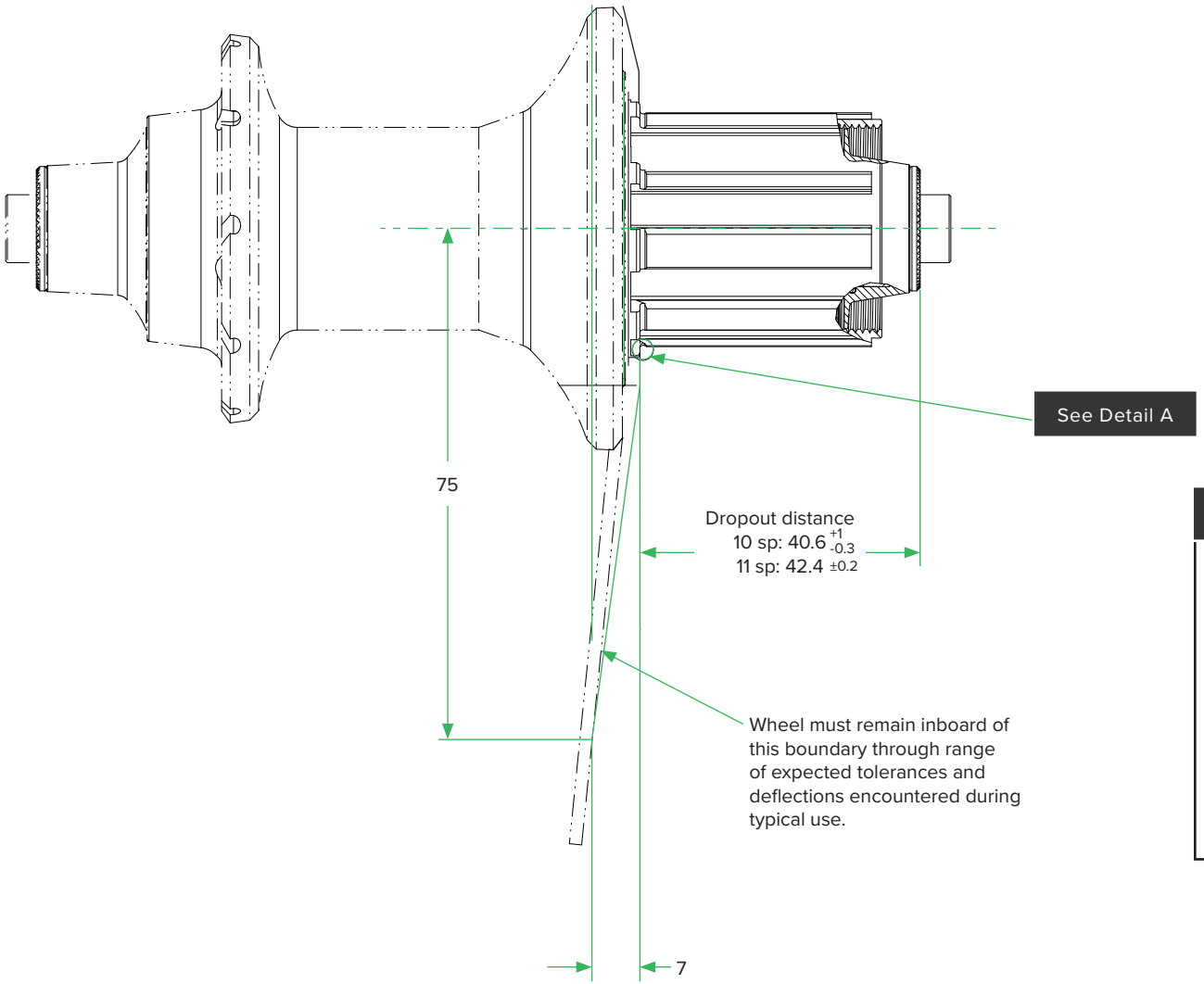
XDR



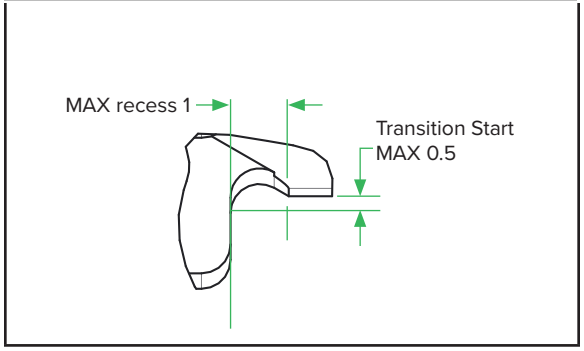
1 Refer to http://xddriverbody.com/ for freehub driver body specifications.

Driver and Wheel Standard

10 and 11 speed

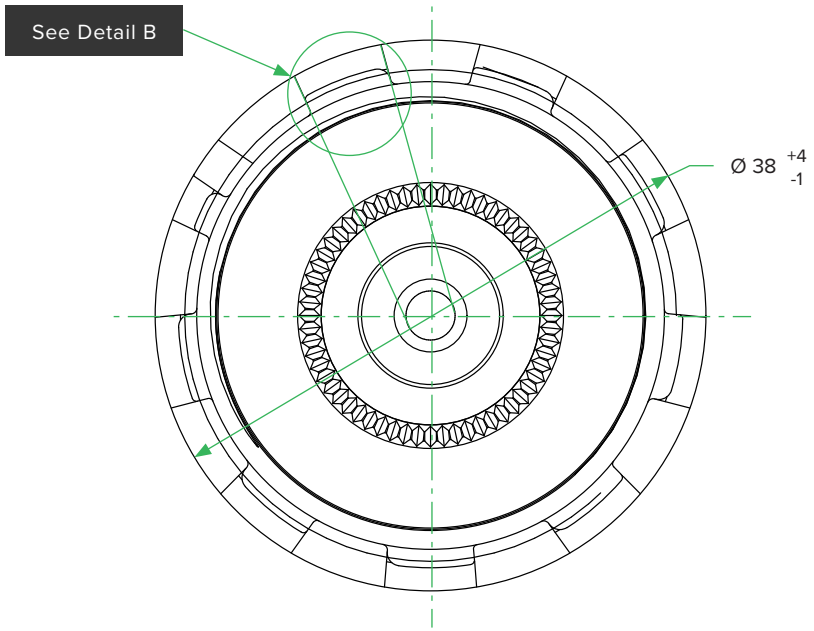


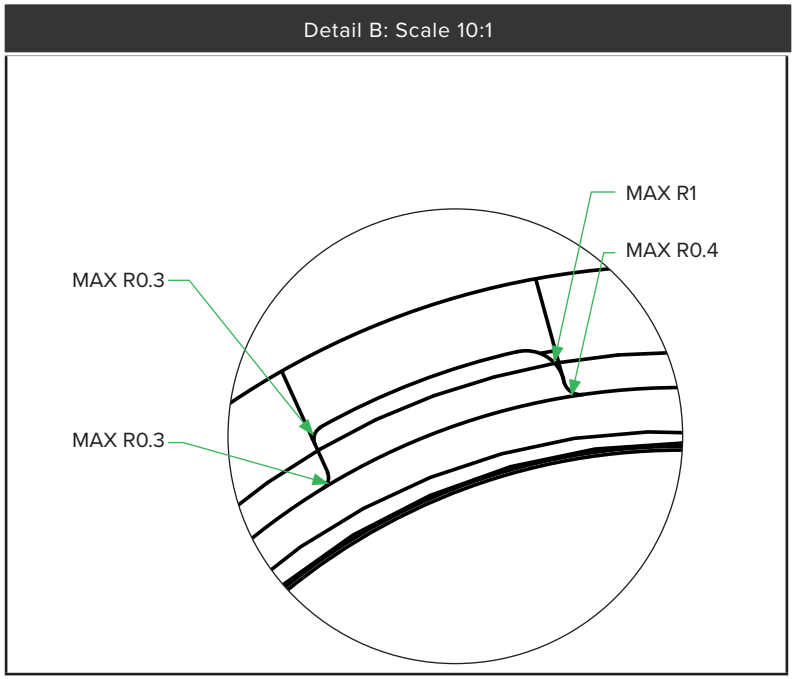
Detail A: Scale 5:1



Driver and Wheel Standard

10 and 11 speed Continued



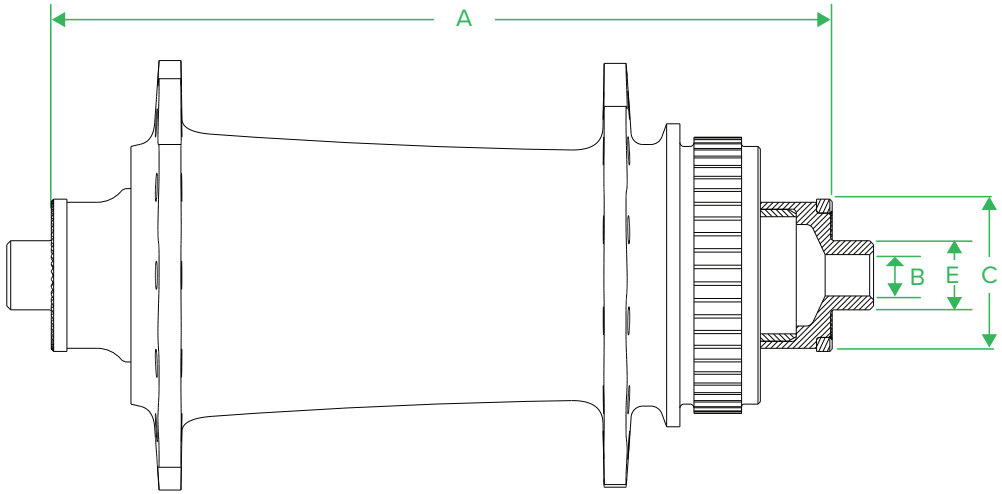


Zipp Hubs with Center Locking Disc Brake Mount

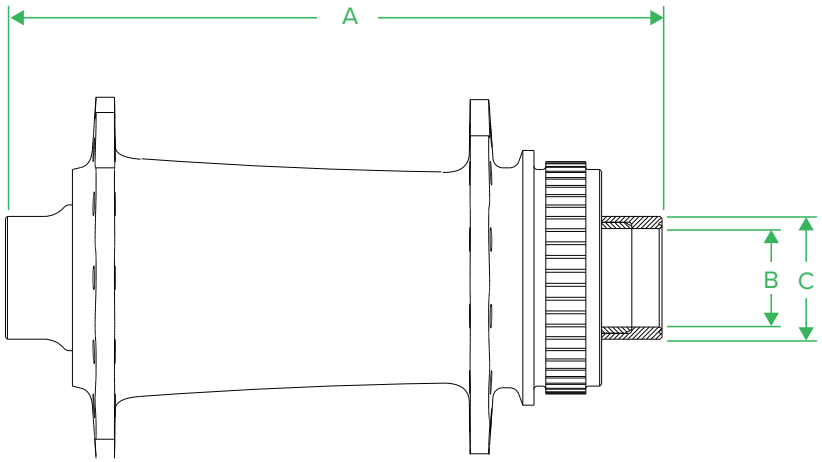
Front Hub Specifications

	A (mm)	B (mm)	C (mm)	E (mm)
9x10 Quick Release Hub	100.0 ± 0.5	Ø 5.3 ± 0.1	Ø 19.5 ± 0.1	Ø 8.85 ± 0.05
12x100 Thru Axle Hub		Ø 12.0 + 0.1	Ø 18.7 ± 0.1	N/A
15x100 Thru Axle Hub		Ø 15.0 + 0.1		

Quick Release Hub



Thru Axle Hub

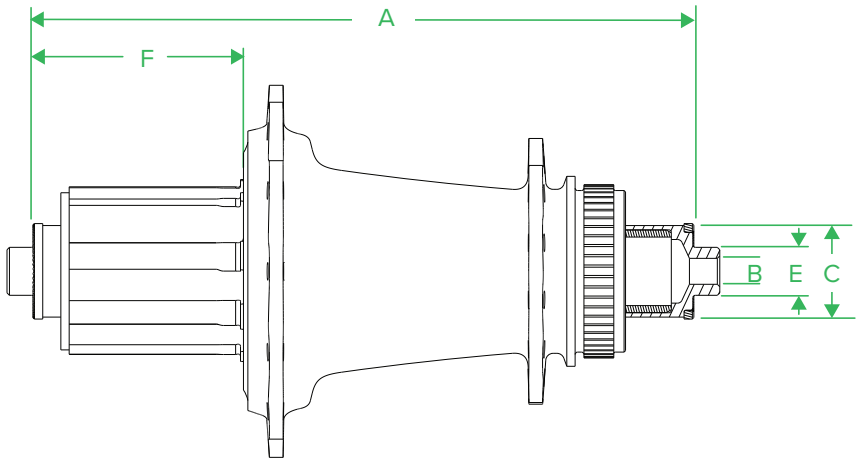


Zipp Hubs with Center Locking Disc Brake Mount

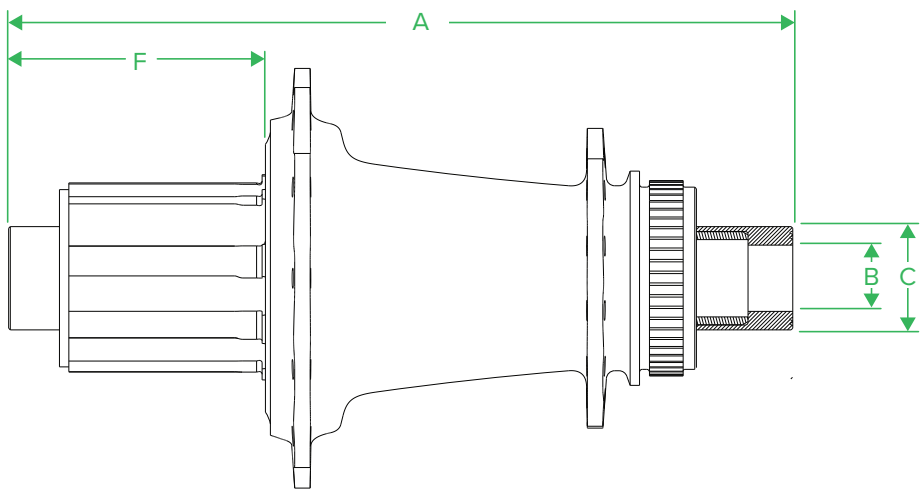
Rear Hub Specifications

	A (mm)	B (mm)	C (mm)	E (mm)	F (mm)
10x135 Quick Release Hub	135.0 ± 0.5	Ø 5.3 ± 0.1	Ø 19.5 ± 0.1	Ø 9.8 ± 0.1	42.4 ± 0.2
12x135 Thru Axle Hub		Ø 12.0 + 0.1	Ø 18.7 ± 0.1	N/A	
12x142 Thru Axle Hub	142.0 ± 0.5				45.9 ± 0.2

Quick Release Hub



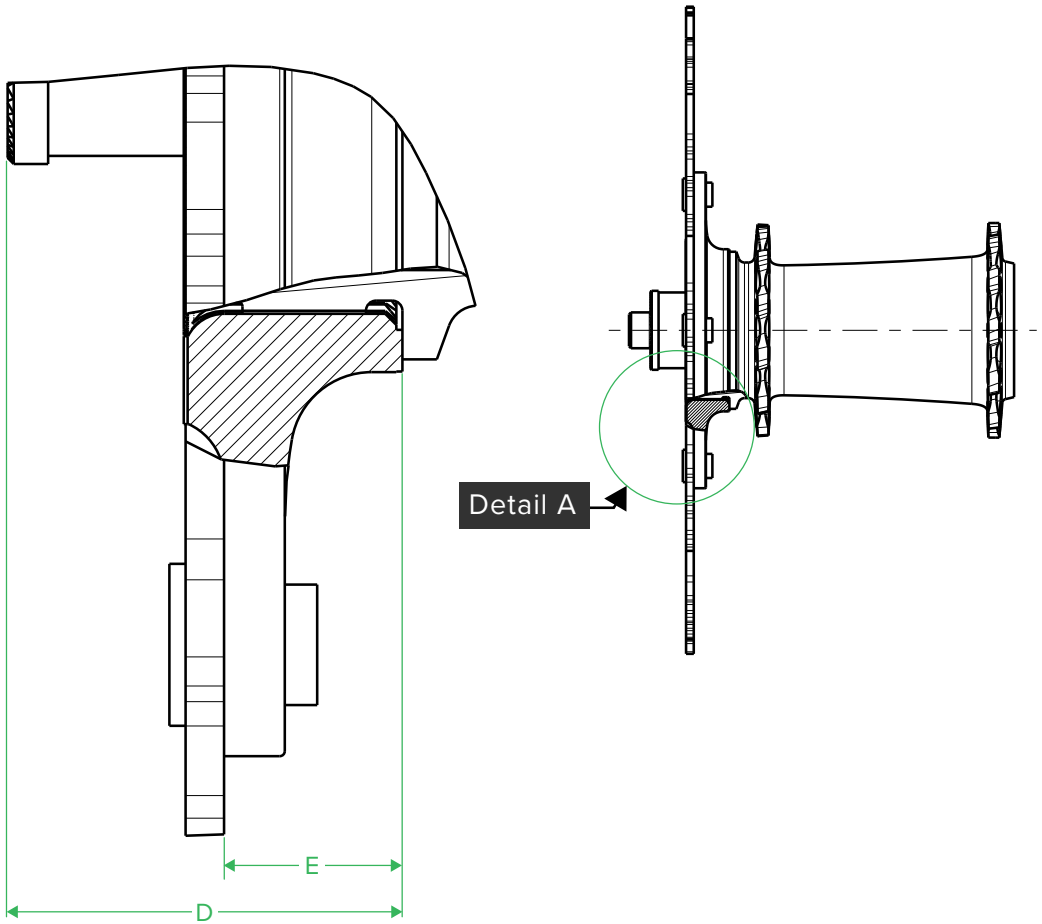
Thru Axle Hub



Zipp Hubs with Center Locking Disc Brake Mount

Front and Rear Hub Distance to Rotor

	D (mm)		E (mm)	
	CLX	CLX-R	CLX	CLX-R
9x10 Quick Release Hub	19.5		8.5	9.0
12x100 Thru Axle Hub				
15x100 Thru Axle Hub				
10x135 Quick Release Hub	24.25			
12x135 Thru Axle Hub				
12x142 Thru Axle Hub	27.25			

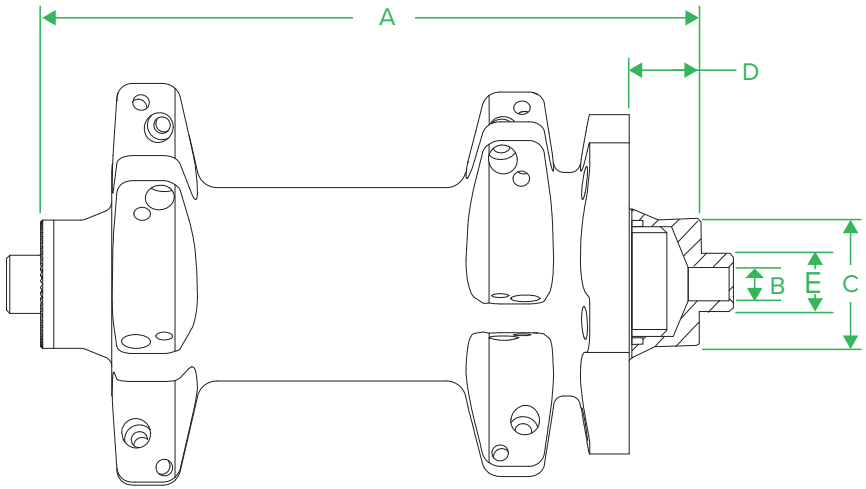


Zipp Hubs with ISO 6 Bolt Disc Brake Mount

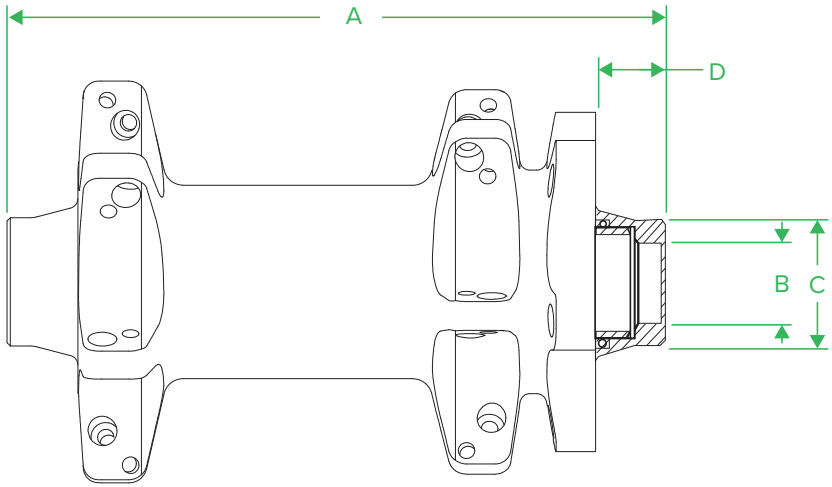
Front Hub Specifications

	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
9x100 Quick Release Hub	100.0 ± 0.5	Ø 5.3 ± 0.1	Ø 19.5 ± 0.1	10.5 ± 0.3	Ø 8.85 ± 0.05
12x100 Thru Axle Hub		Ø 12.0 + 0.1	Ø 19.0 ± 0.1		N/A
15x100 Thru Axle Hub		Ø 15.0 + 0.1	Ø 19.5 ± 0.1		
9x100 Thru-bolt Hub		Ø 9.0 + 0.1			

Quick Release Hub



Thru Axle and Thru-bolt Hub

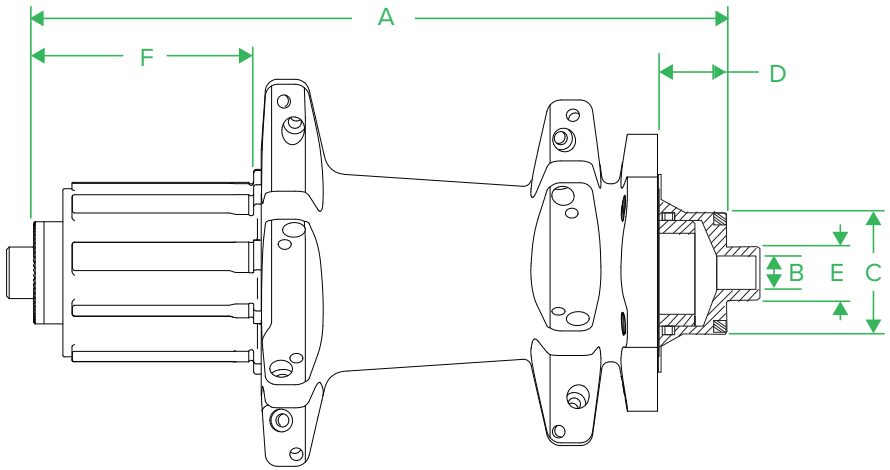


Zipp Hubs with ISO 6 Bolt Disc Brake Mount

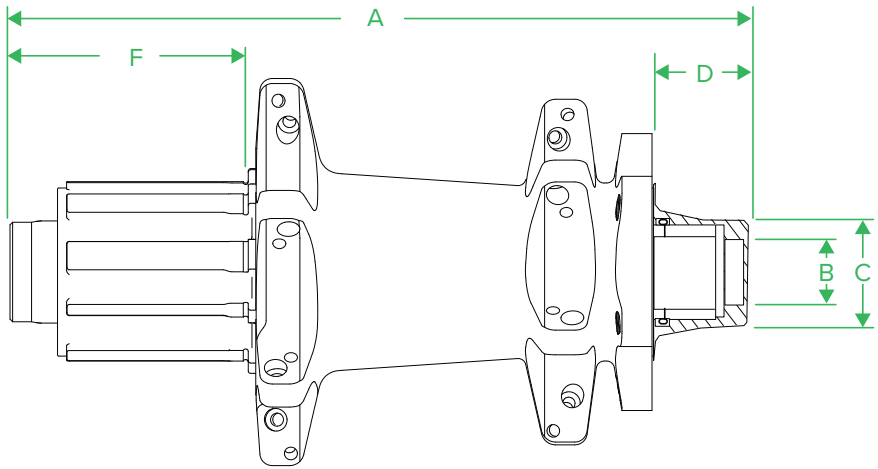
Rear Hub Specifications

	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)
10x135 Quick Release Hub	135.7 +0.3/-1.0	Ø 5.3 ± 0.1	Ø 19.5 ± 0.1	15.5 ± 0.2	Ø 9.85 ± 0.05	42.4 ± 0.2
12x135 Thru Axle Hub		Ø 12.0 + 0.1	Ø 19.0 ± 0.1		N/A	
12x142 Thru Axle Hub	142.7 +0.3/-1.0			19.0 ± 0.2		45.9 ± 0.2
10x135 Thru-bolt Hub	135.7 +0.3/-1.0	Ø 10.0 + 0.1	Ø 19.5 ± 0.1	15.5 ± 0.2		42.4 ± 0.2

Quick Release Hub



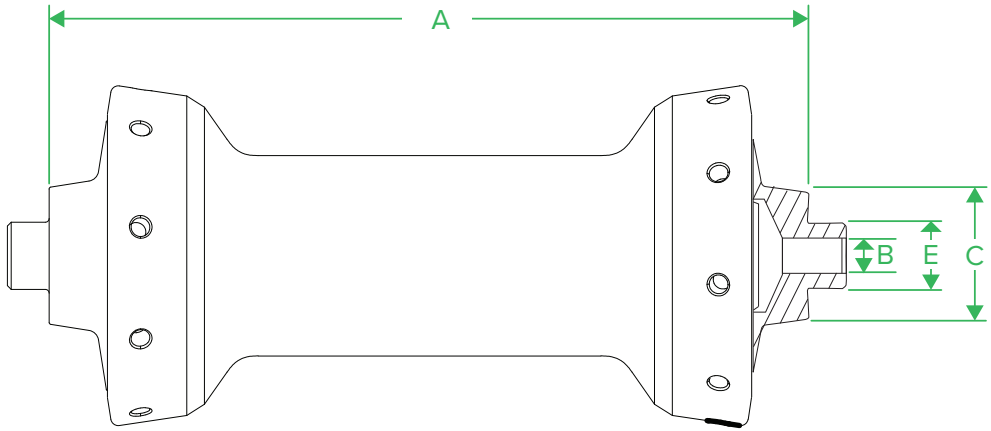
Thru Axle and Thru-bolt Hub



Zipp Rim Brake Hubs

Front Hub Specifications

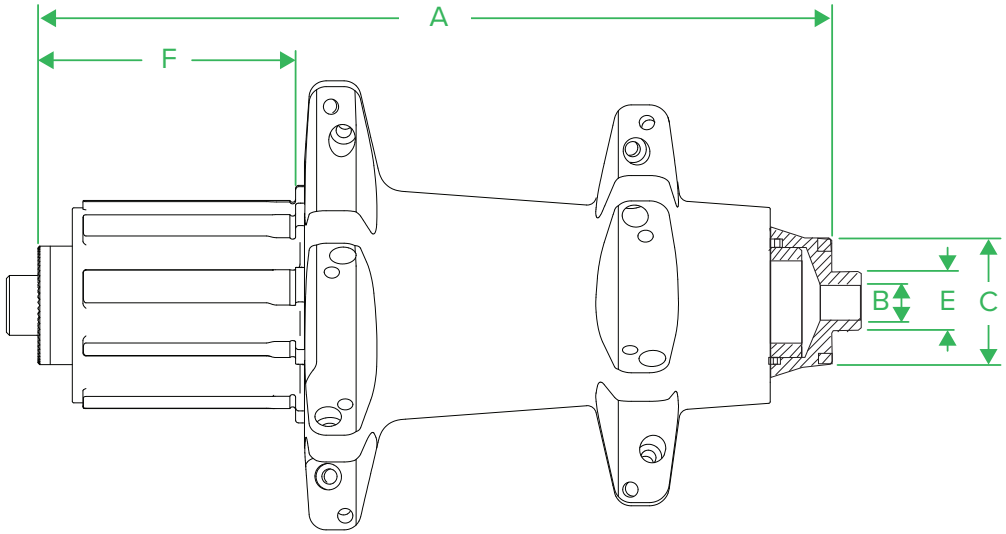
9x100 Quick Release Hub	A (mm)	B (mm)	C (mm)	E (mm)
	100 ± 0.5	Ø 5.3 ± 0.1	Ø 18.3 MAX	Ø 8.85 ± 0.05



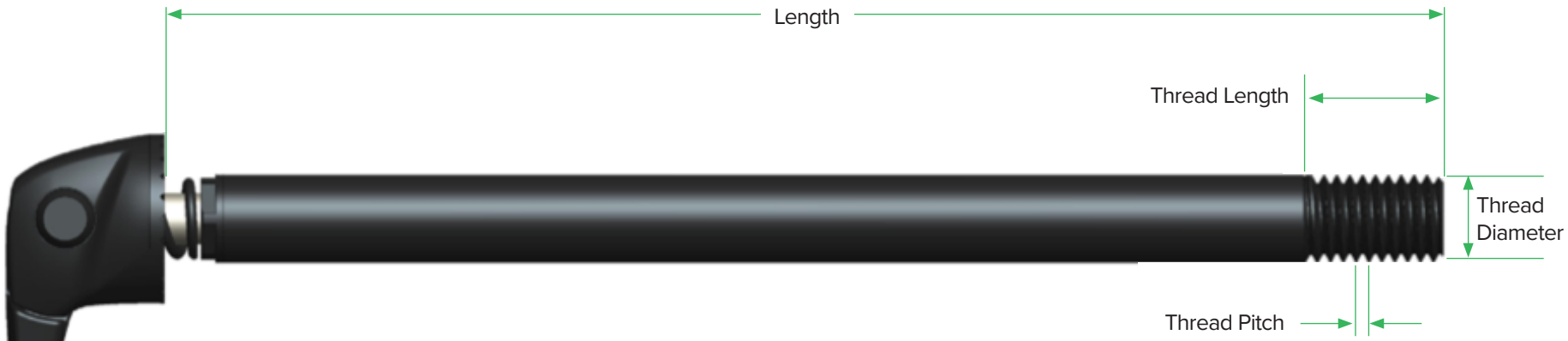
Zipp Rim Brake Hubs

Rear Hub Specifications

	A (mm)	B (mm)	C (mm)	E (mm)	F (mm)
10x130 Quick Release Hub	130.0 ± 0.5	Ø 5.3 ± 0.1	Ø 19.5 ± 0.1	Ø 9.8 ± 0.1	42.4 ± 0.2



Maxle Description Decoder

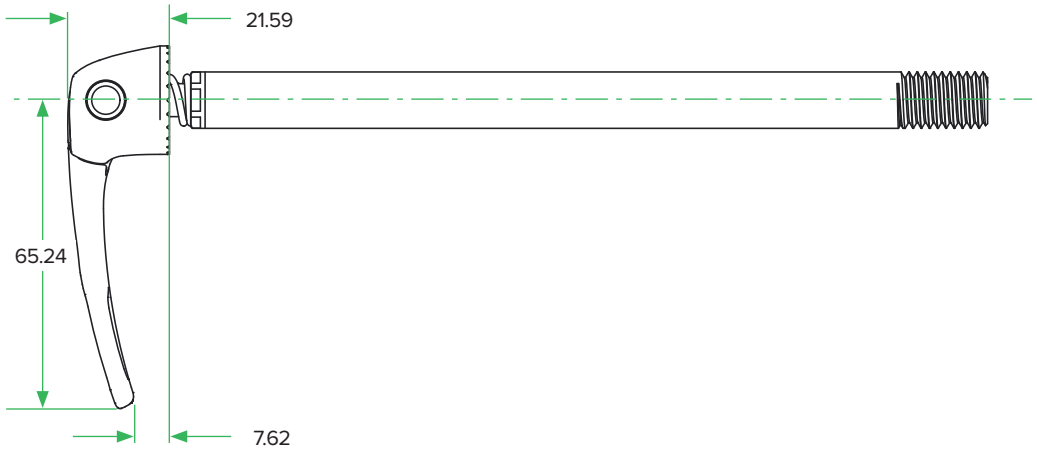


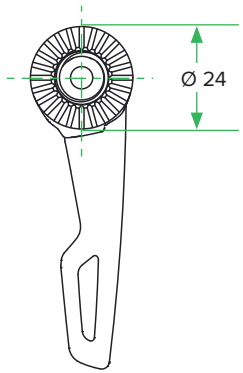
AX	MAXLE ULT	FRONT	L148	TL9	M15 X 1.5	
Platform: Axle	Model: Maxle Ultimate	Orientation: Front	Length: 148 mm	Thread Length: 9 mm	Thread Diameter: 15 mm	Thread Pitch: 1.5 mm

Maxle Ultimate

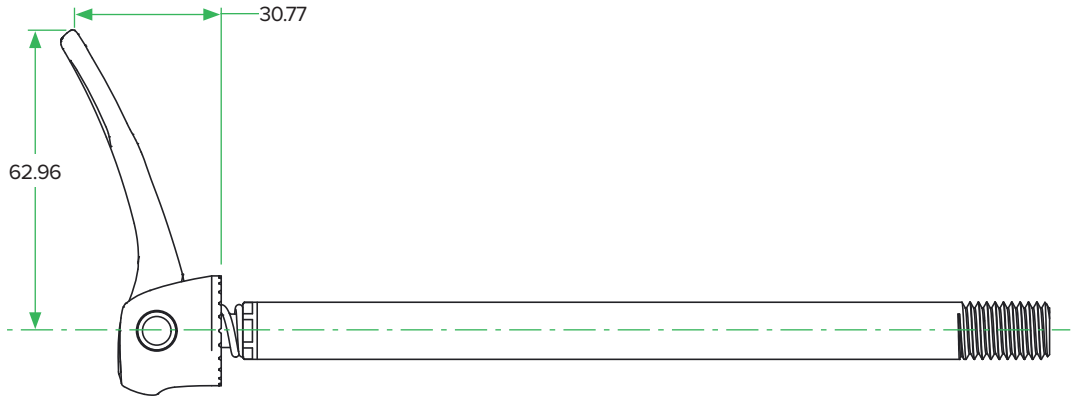
Frame / Fork Clearance

Lever in Closed Position



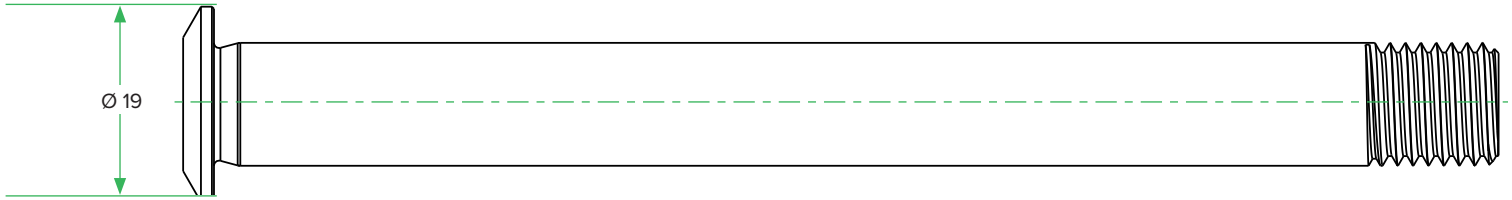


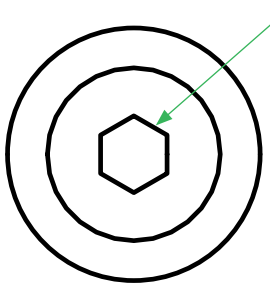
Lever in Open Position



1	Drawing is not to scale.
2	Customer is responsible for ensuring hub, frame, and axle compatibility.
3	The frame manufacturer is responsible for ensuring the frame and/or fork assemblies using Maxles are compliant with existing safety standards.
4	Head translates along the Maxle axis approximately 1.46 mm when lever is moved from open to closed.

Maxle Stealth





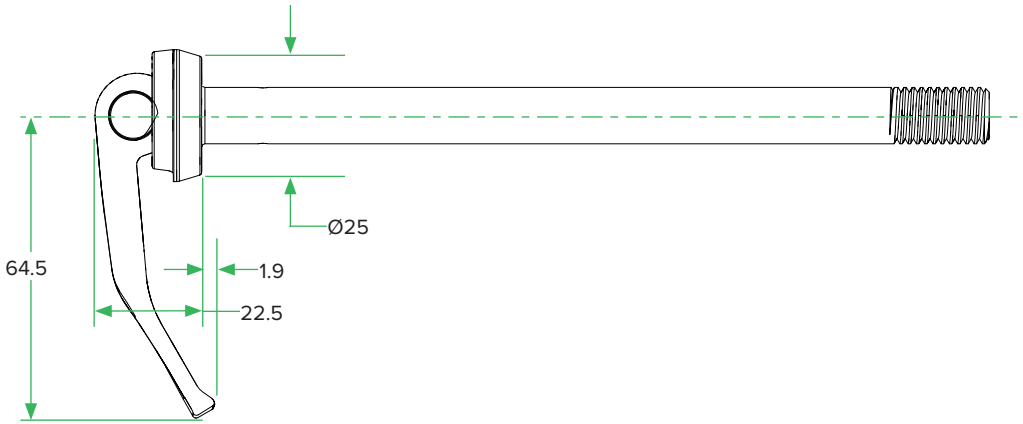
Description	Hex Size	Torque Value
Maxle 12	5	9-13.5 N•m
Maxle 15	6	9-13.5 N•m

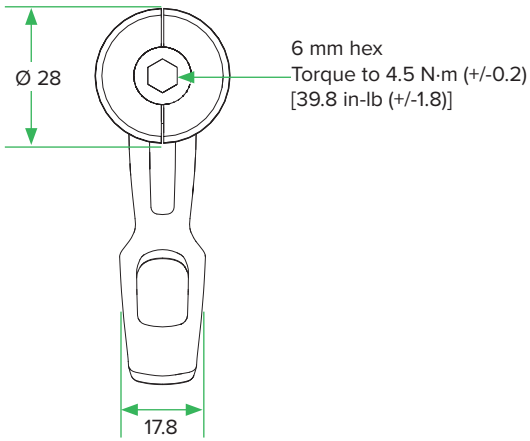
1	Drawing is not to scale.
2	Customer is responsible for ensuring hub, frame, and axle compatibility.
3	The frame manufacturer is responsible for ensuring the frame and/or fork assemblies using Maxles are compliant with existing safety standards.

Maxle Lite & Maxle

Frame / Fork Clearance

Lever in Closed Position





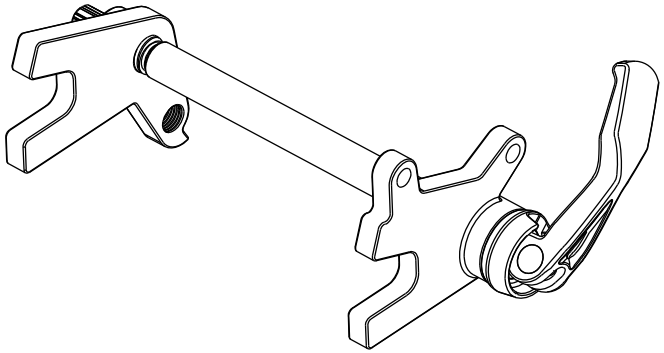
Lever in Open Position

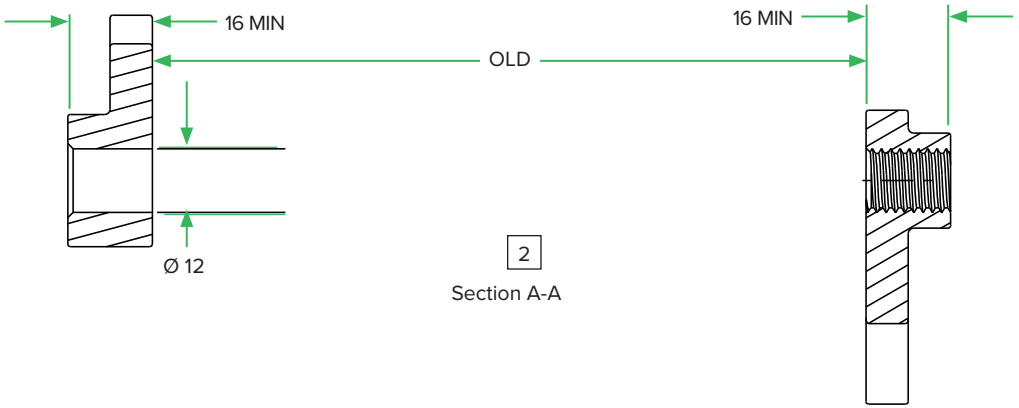
1	Drawing is not to scale.
2	Customer is responsible for ensuring hub, frame, and axle compatibility.
3	The frame manufacturer is responsible for ensuring the frame and/or fork assemblies using Maxles are compliant with existing safety standards.

Maxle, Maxle Lite, Maxle Ultimate, Maxle Stealth

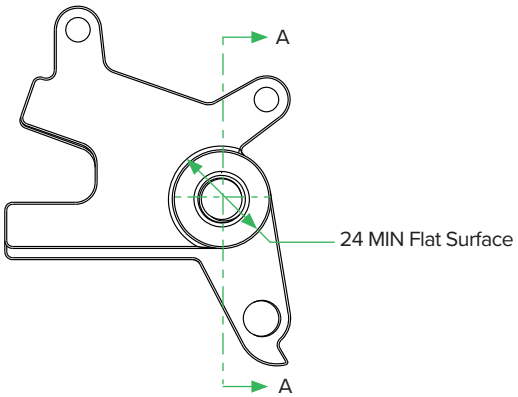
Rear Frame Specification

Frame Dropouts with Maxle Installed





2
Section A-A



Part Number	Description
00.4318.009.001	AX MAXLE ULT REAR L174 TL20 M12X1.75
00.4318.009.013	AX MAXLE ULT REAR L180 TL20 M12X1.75
00.4318.017.004	AX MAXLE STLTH REAR L174 TL20 M12X1.75
00.4318.017.005	AX MAXLE STLTH REAR L180 TL20 M12X1.75

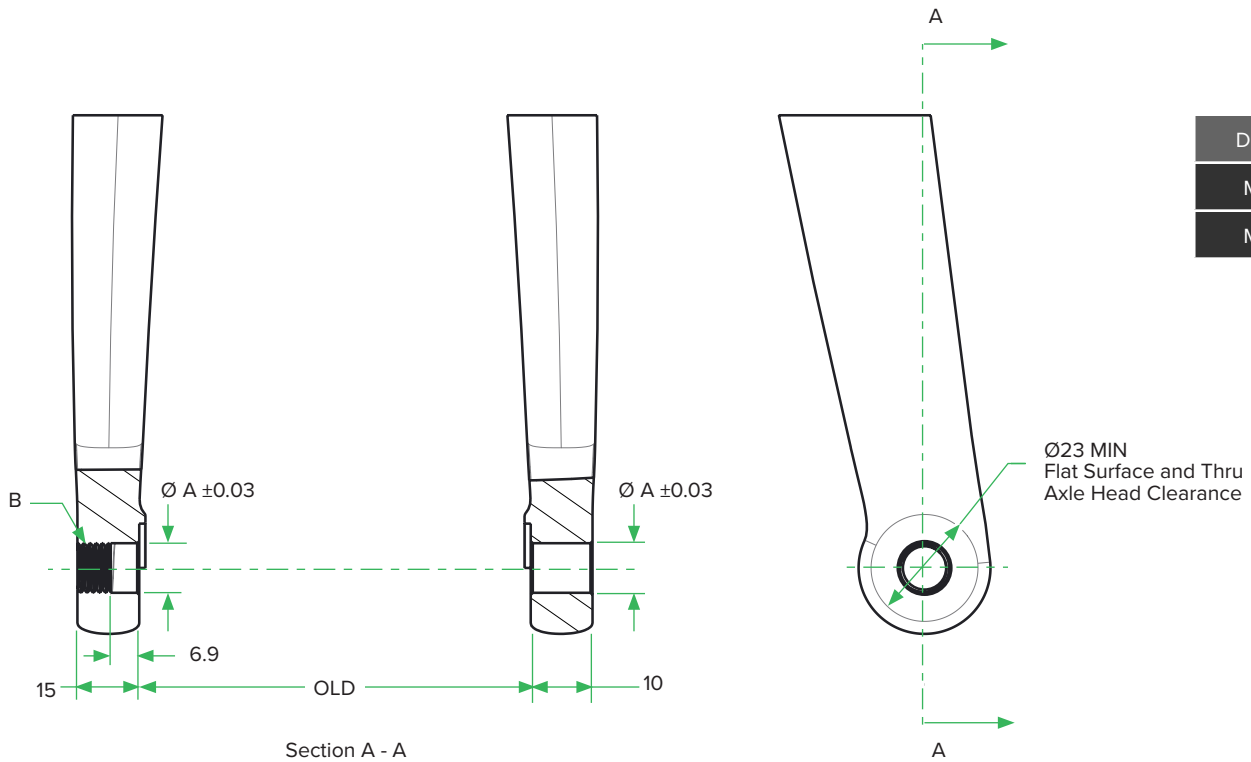
1 Drawing is not to scale.

2 Dimensions apply to the standard Maxle sizes in the table.

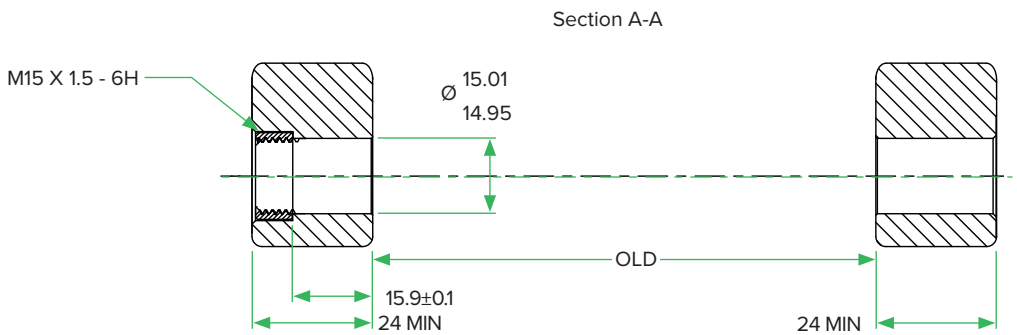
3 Frame designers may request a custom Maxle for their specific frame dropouts. However, frame designers are responsible for ensuring compatibility between their frame and custom Maxle.

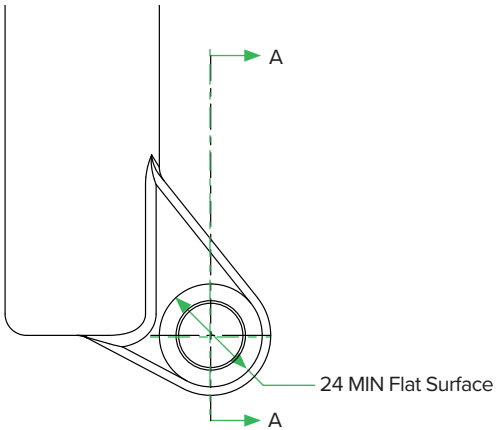
Maxle, Maxle Lite, Maxle Ultimate, Maxle Stealth

Fork Specification



Description	A	B
MAXLE 15	14.98	M15 X 1.5 - 6H
MAXLE 12	12.03	M12 X 1.5 - 6H


Section A-A
M15 X 1.5 - 6H
Ø 15.01
14.95
OLD
15.9±0.1
24 MIN
24 MIN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24 MIN Flat Surface
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Warranty and Trademark

Read the full warranty policy for your components at www.sram.com/warranty.

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