

**SRAM**

# 2024 Road Components

**SRAM**  
**RED** 

**SRAM**  
**RED** 

**SRAM**  
**RED**

**SRAM**  
**FORCE** 

**SRAM**  
**FORCE**

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**FORCE1**

**SRAM**  
**RIVAL** 

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**RIVAL**

**SRAM**  
**RIVAL1**

**SRAM**  
**APEX**

**SRAM**  
**APEX1**

**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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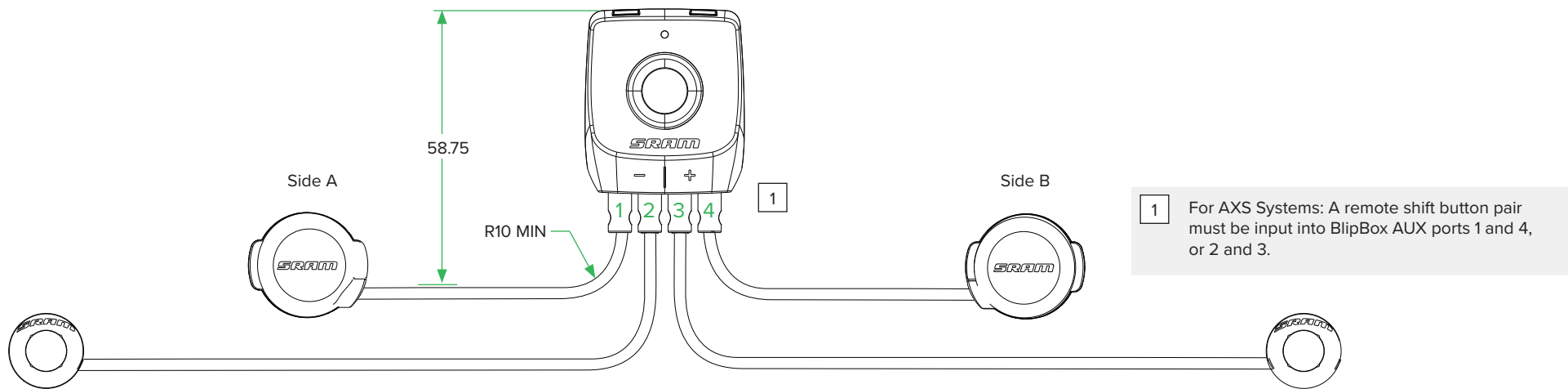
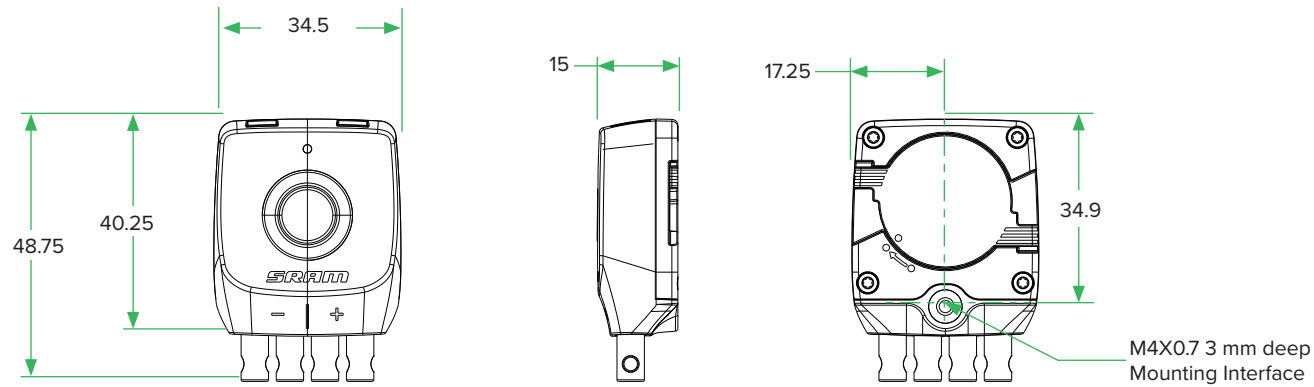
## **Warranty and Trademark**

# Electronic Shifters

# BlipBox

## Dimensions without Elastic Band

Custom Mounting without the Elastic Band Mounting Adapter

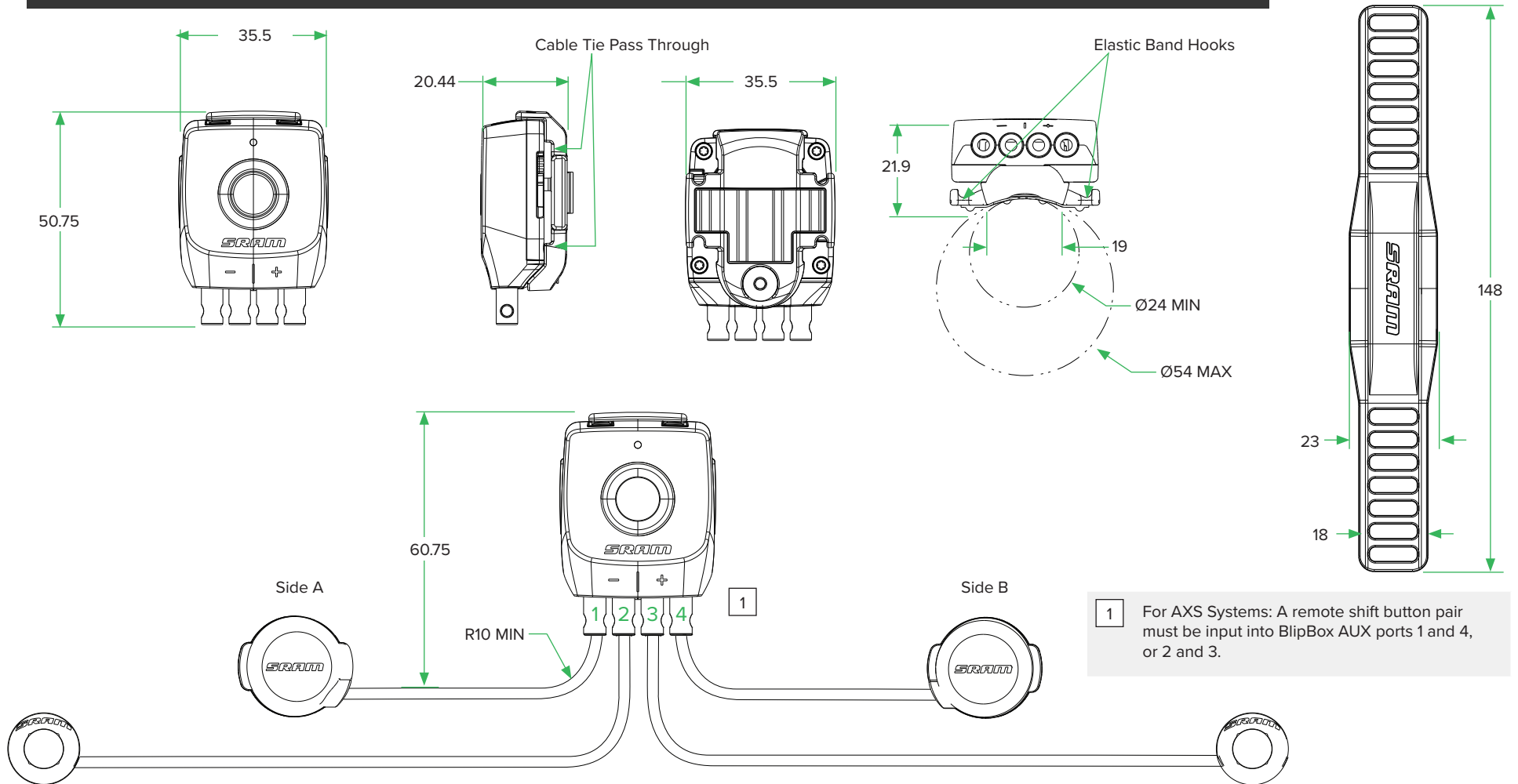




# BlipBox

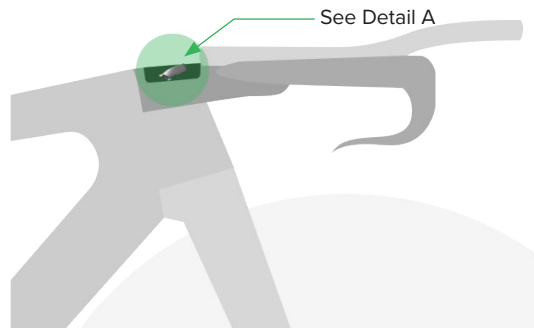
## Dimensions with Elastic Band

Elastic Band Mounting Adapter for Mounting to Cylindrical or Flat Surfaces



# BlipBox

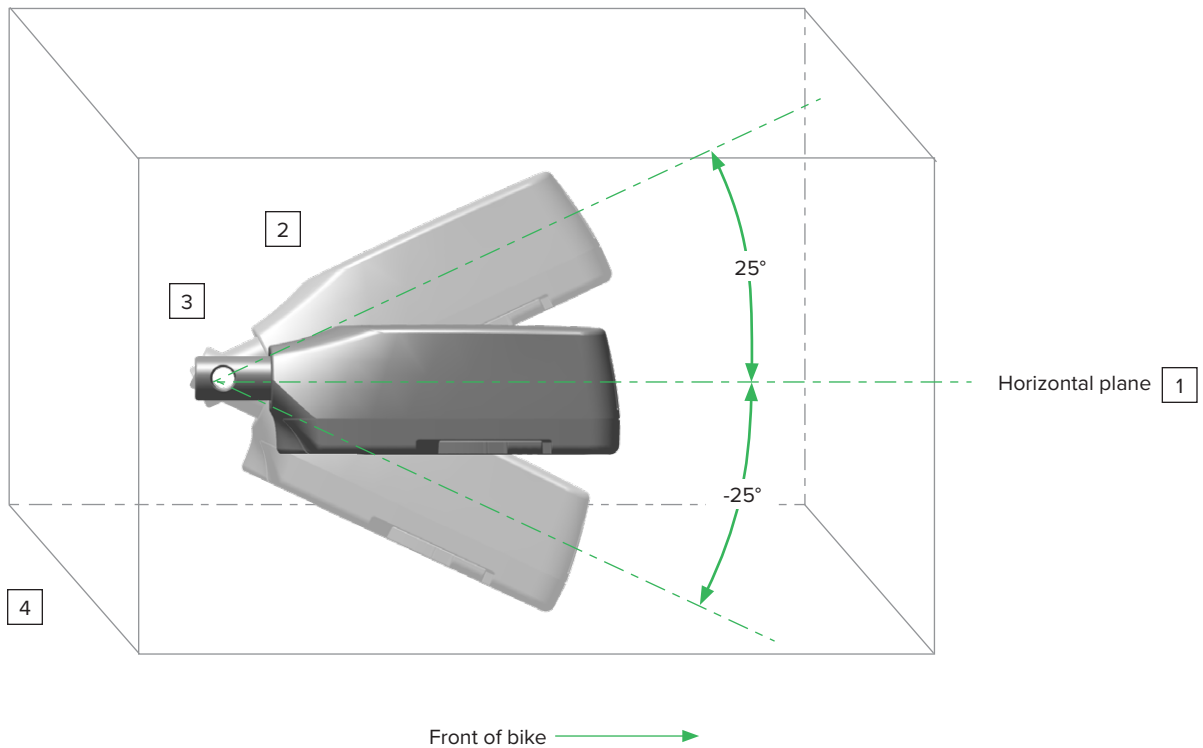
## Enclosure Guidelines



BlipBox orientation for optimal performance in internal enclosure space:

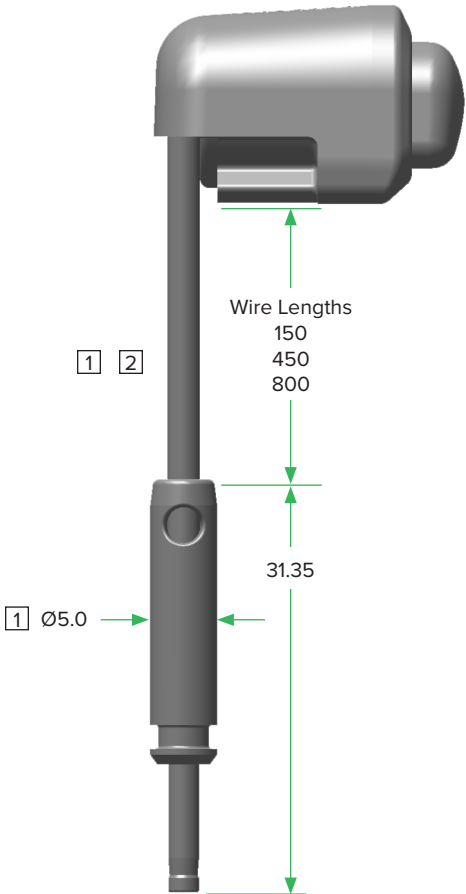
- 1 Must be mounted within  $\pm 25^\circ$  from the horizontal plane.
- 2 The button can face upward or downward.
- 3 The wire input ports can face forward or backward.
- 4 The enclosure should not be 3 or more sides of the following materials: carbon, carbon plastic, metal, or water-filled reservoir.

Detail A: Enclosure Guidelines and Mounting Angle

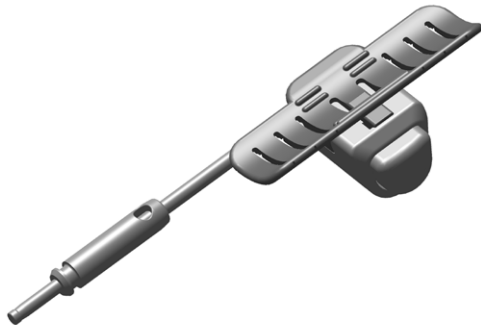


# MultiClics

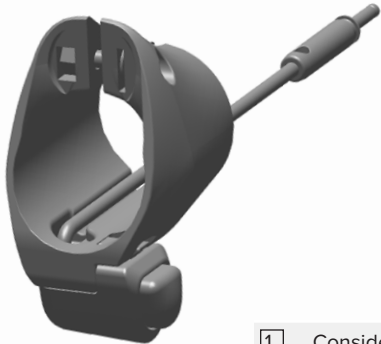
## Remote Shift Buttons



MultiClics with Wing **3**



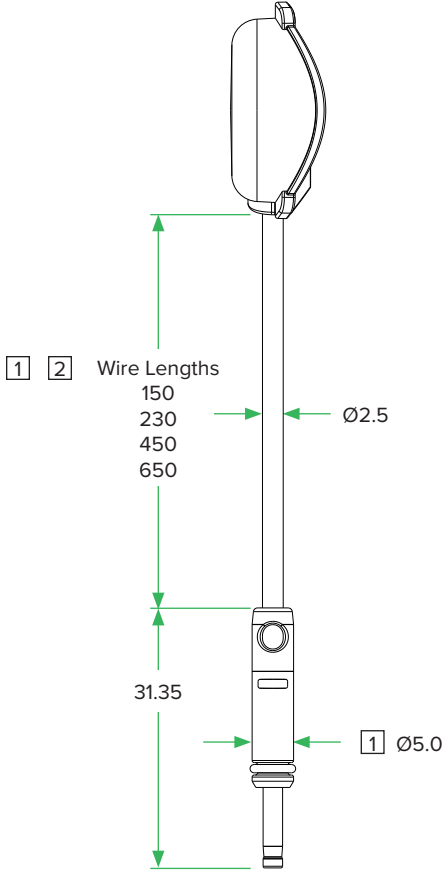
MultiClics with ClampClic for 24 mm Basebar **4**



- 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

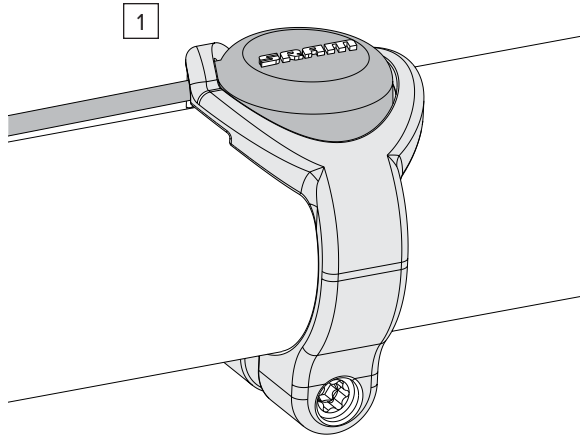


- 1 Consider the connector diameter and wire length when routing wires internally.
- 2 Choose the wire lengths based on application and desired location of the Blips.

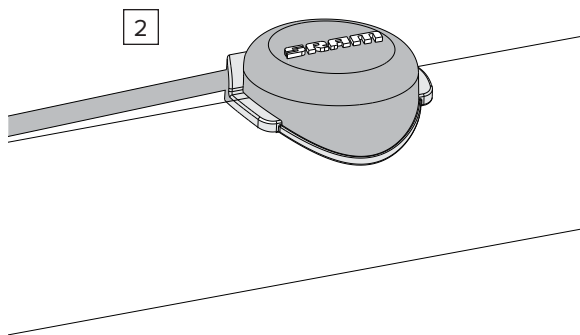
# BlipClamp and BlipGrip

## Remote Shifter Mounting

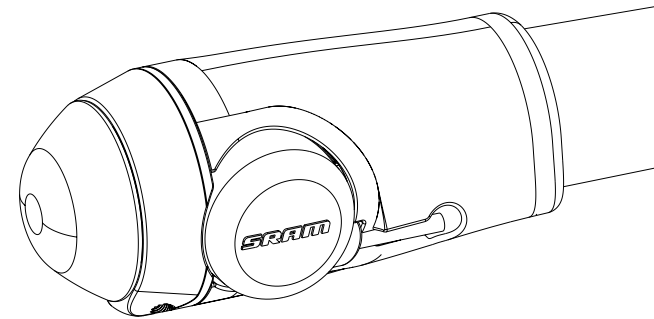
31.8 mm Bar



22.2-35 mm Bar



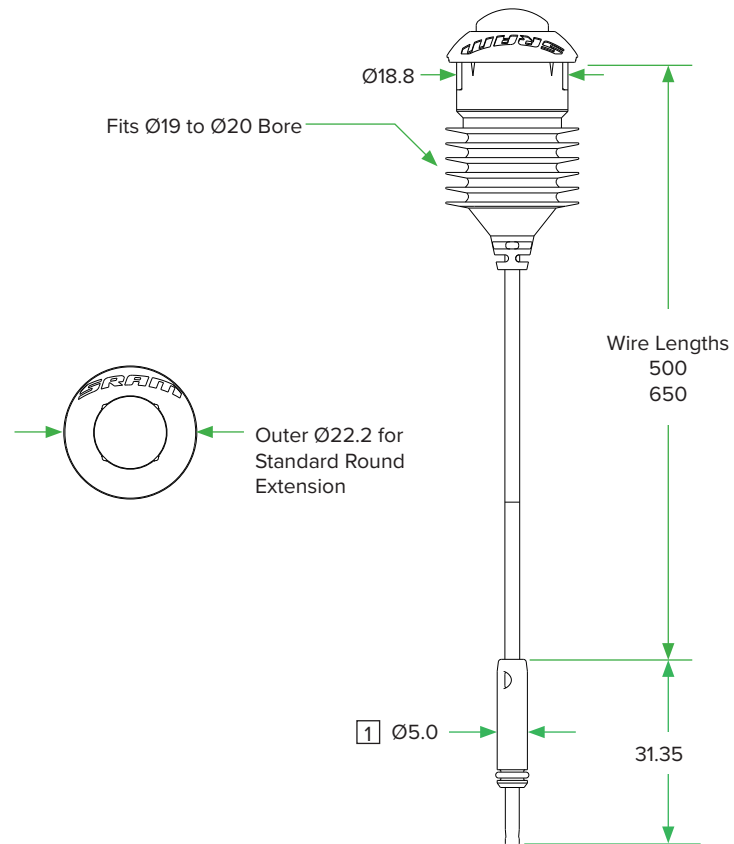
22.2mm TT Extensions



- 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

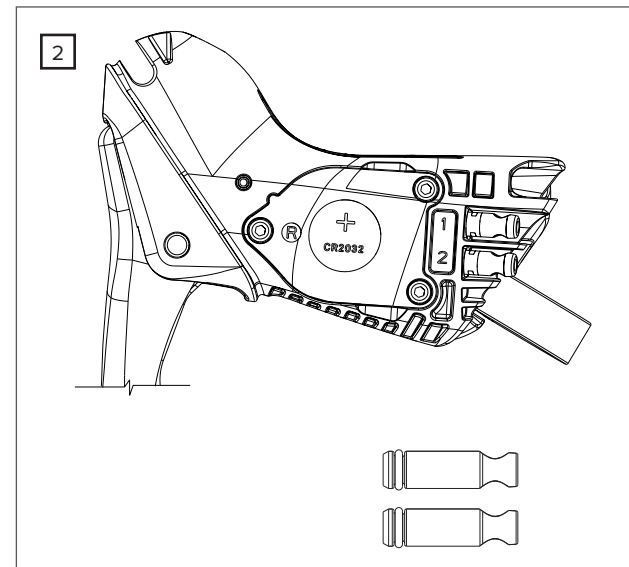
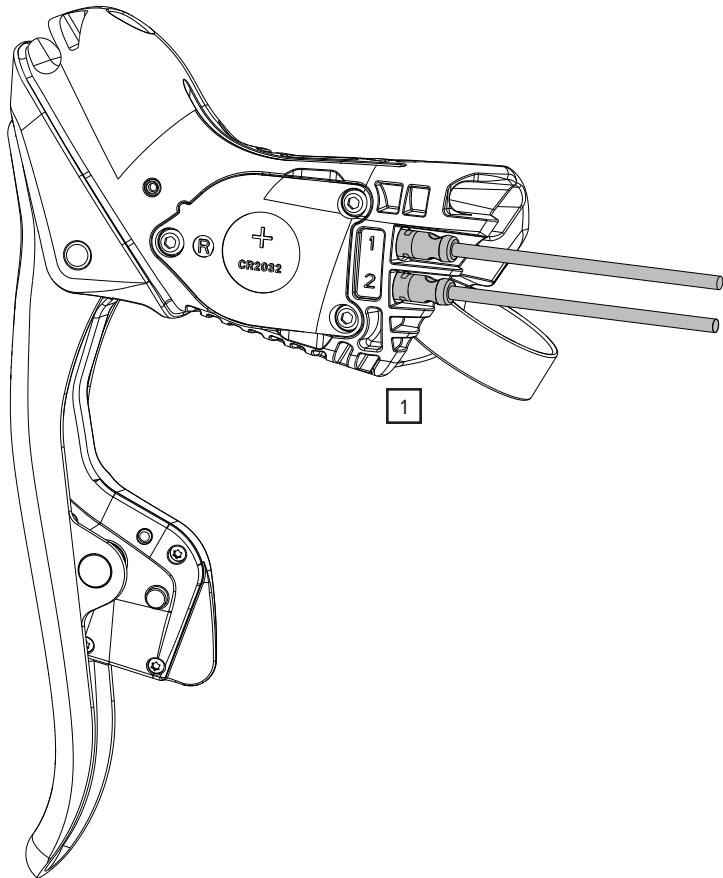
## Extension Shift Buttons



- 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



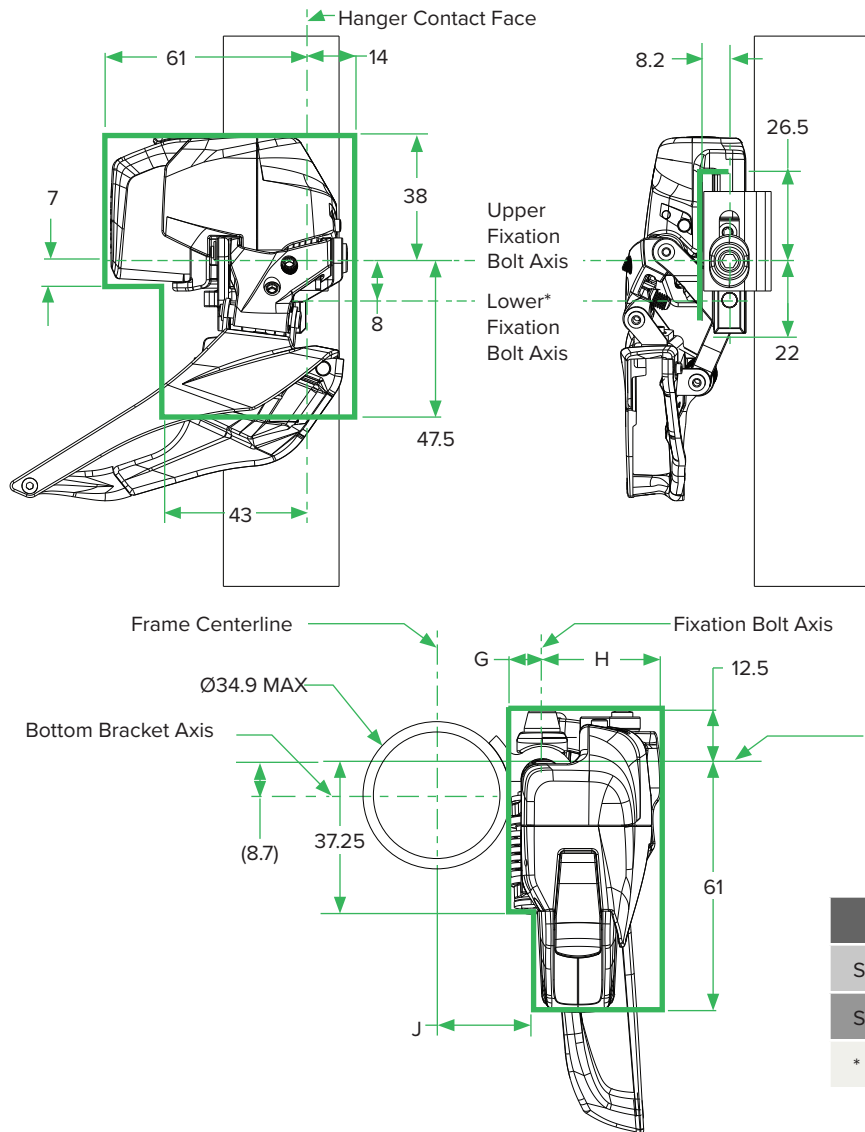
- 1 The left and right shifter brake each provide additional ports for auxiliary remote shifter buttons. SRAM Red eTap AXS has two ports, SRAM Force eTap AXS has one port, and SRAM Rival eTap AXS has no ports.
- 2 Use plugs when remote shifters are not in use.
- 3 Provide a small amount of slack in the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

# Front Derailleurs



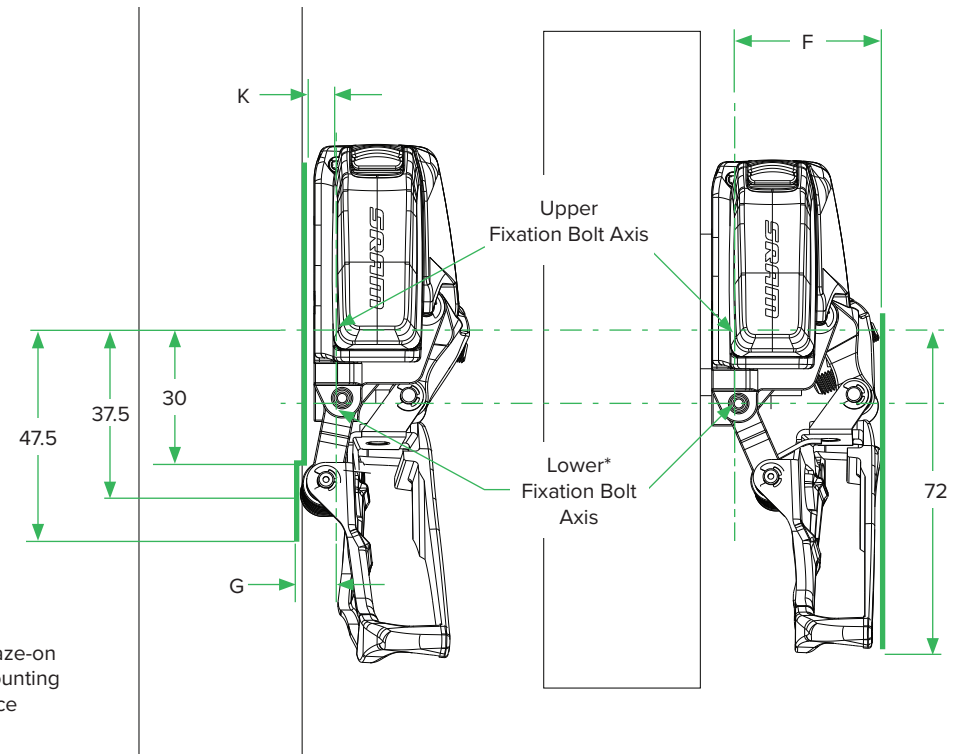
# Front Derailleur Clearance

SRAM 12 Speed



Front Derailleur in Low Gear

Front Derailleur in High Gear

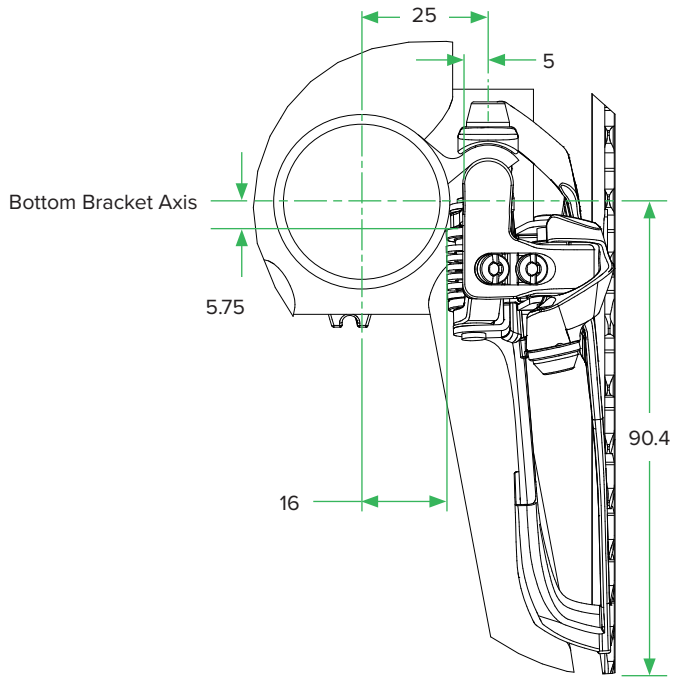


| FD Type                                     | F    | G   | H    | J    | K   |
|---|------|-----|------|------|-----|
| SRAM RED AXS/SRAM Force AXS/ SRAM Rival AXS | 33   | 9.1 | 29   | 23.5 | 5.5 |
| SRAM Force AXS Wide/ SRAM Rival AXS Wide    | 35.5 | 6.6 | 31.5 | 26   | 5   |

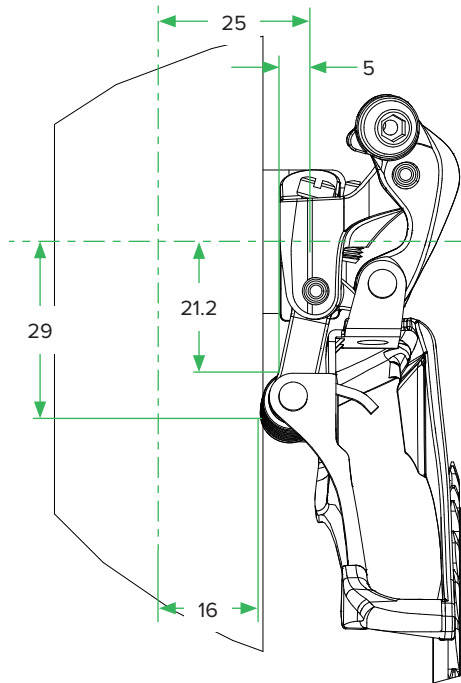
\* Lower fixation bolt hole is only provided on the 2-hole front derailleur variant of FD-RED-E-D1 and FD-RED-E-E1.

# Front Derailleur Clearance

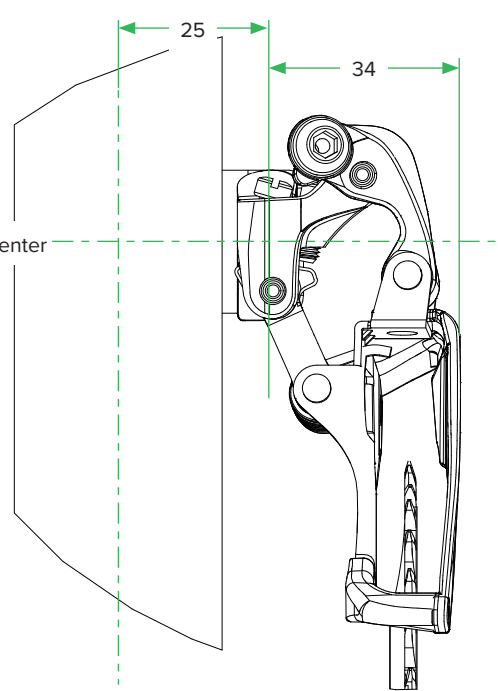
SRAM 11 Speed



Front Derailleur in Low Gear

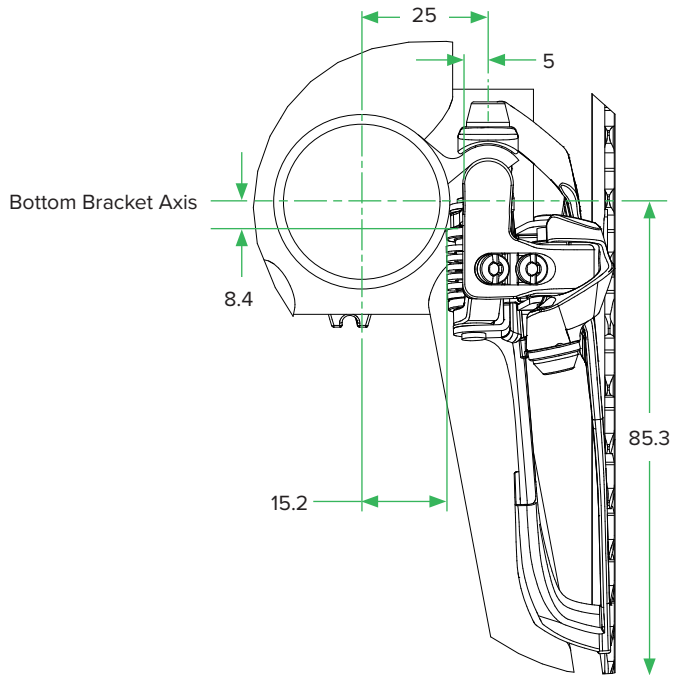


Front Derailleur in High Gear

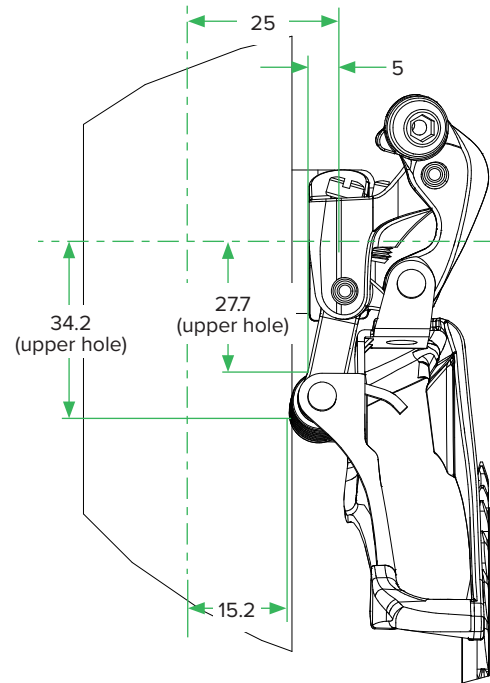


# Front Derailleur Clearance

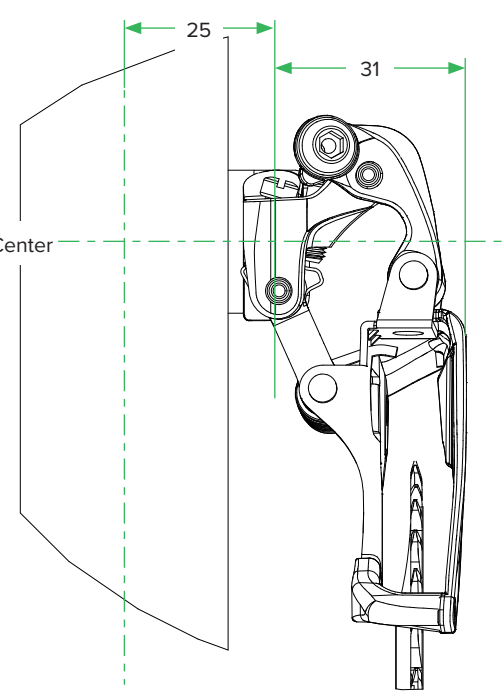
SRAM 10 Speed



Front Derailleur in Low Gear



Front Derailleur in High Gear



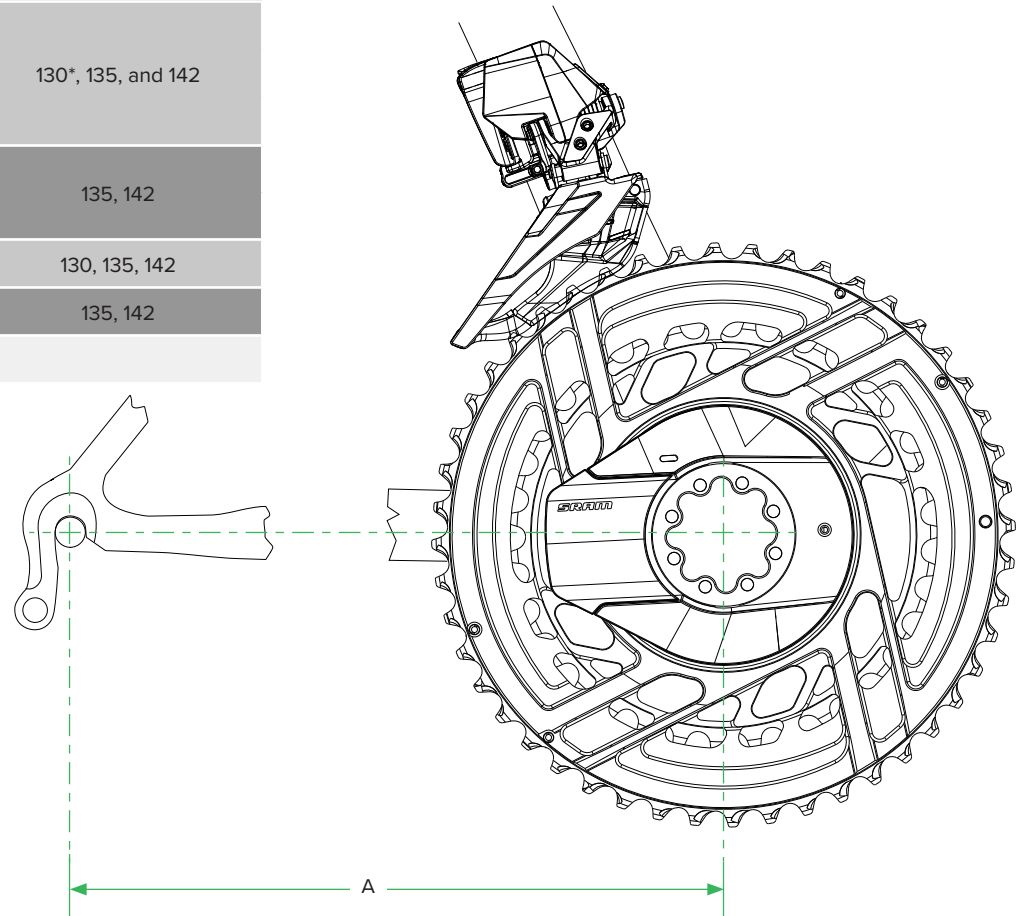
# Frame Chainstay Information

## SRAM 12 Speed

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

\* Compatible with Red-D1 and Force-D1 Only

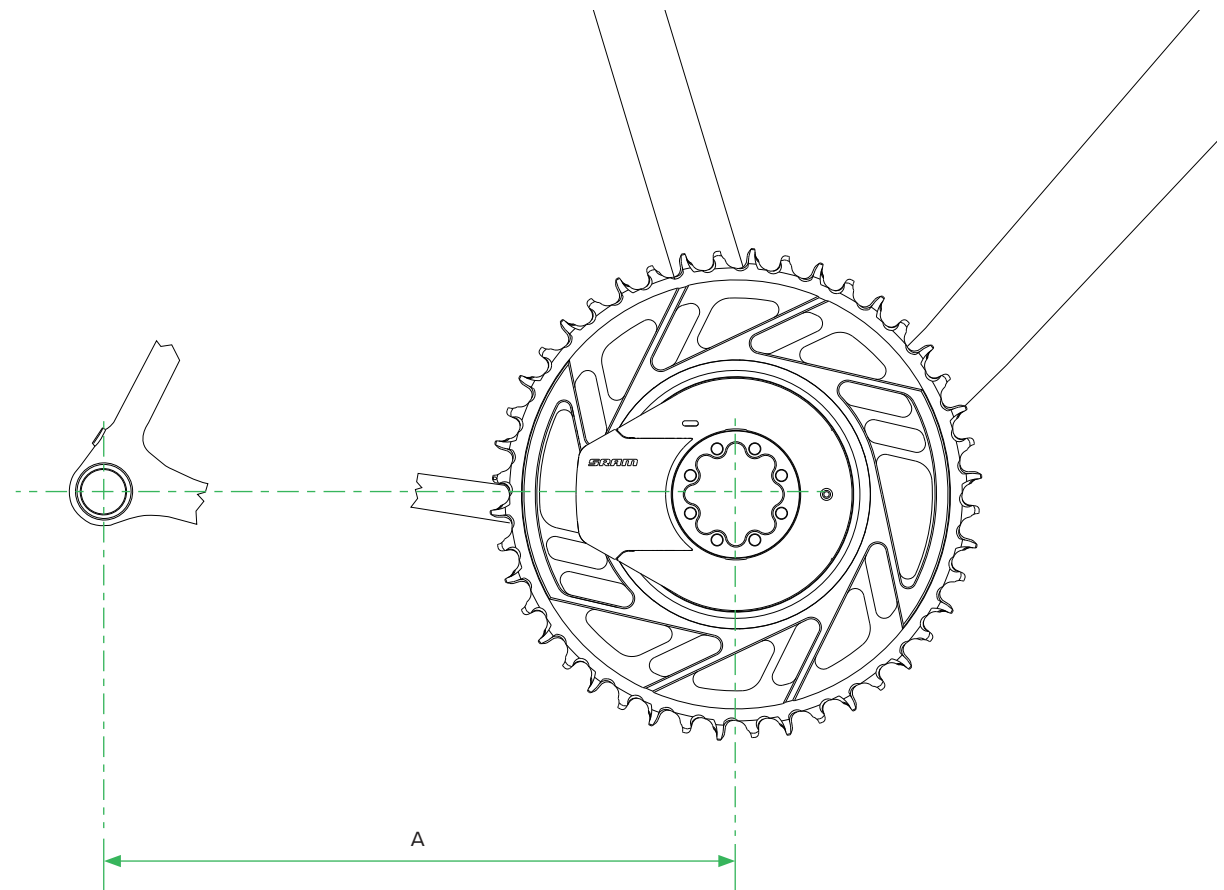
|             |         |
|-------------|---------|
| CL Standard | 45 mm   |
| CL Wide     | 47.5 mm |



# Frame Chainstay Information

## SRAM 13 Speed

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

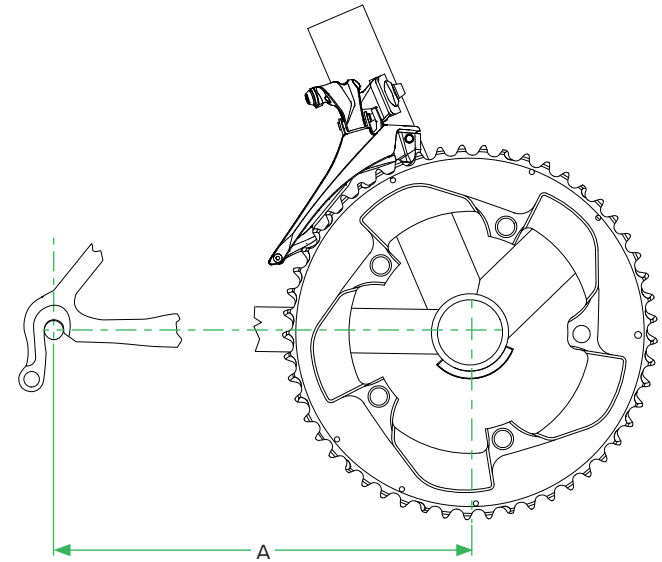


# Frame Chainstay Information

## SRAM 10 and 11 Speed

|      | Chainring | Minimum Chainstay Length A (mm)                       |                |
|------|-----------|---|----------------|
|      |           | 130 OLD* frames<br>135 OLD frames w/ Wide Axle Cranks | 135 OLD frames |
| 2x11 | 55/42     | 405   | 430            |
|      | 53/39     |   |                |
|      | 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



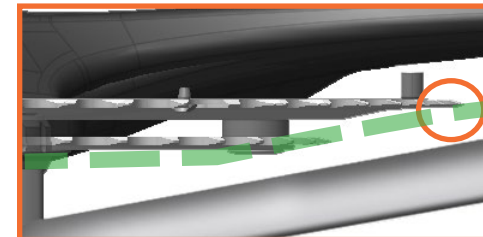
### Potential problems with not following the minimum chainstay length

#### **⚠ 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.

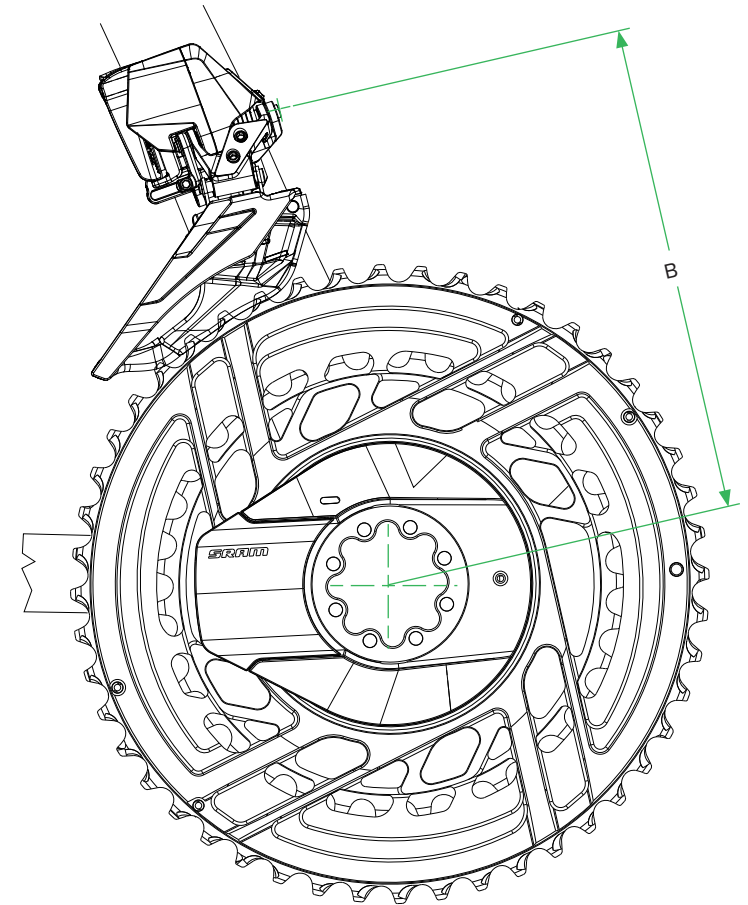


# Braze-on Hanger Dimensions

## 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                                |

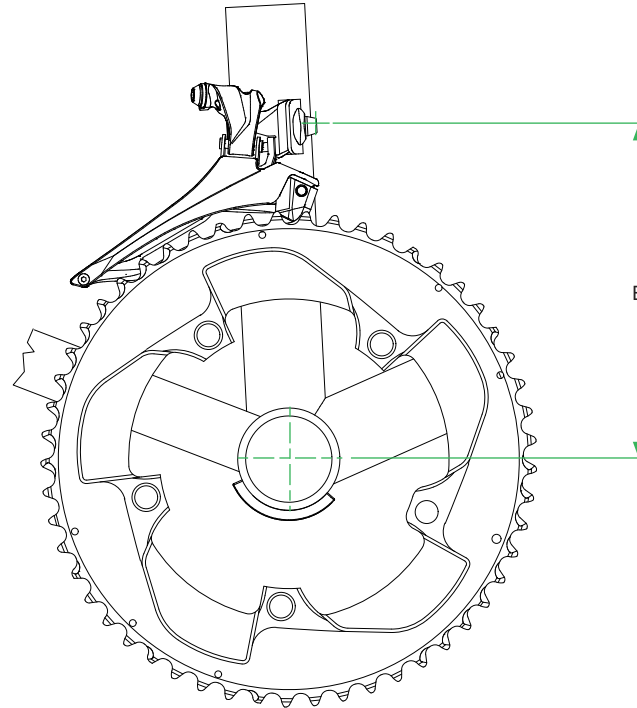
Nominal FD position provided, design should allow for adequate adjustment range in the FD hanger slot to account for tolerances.



# 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)       |





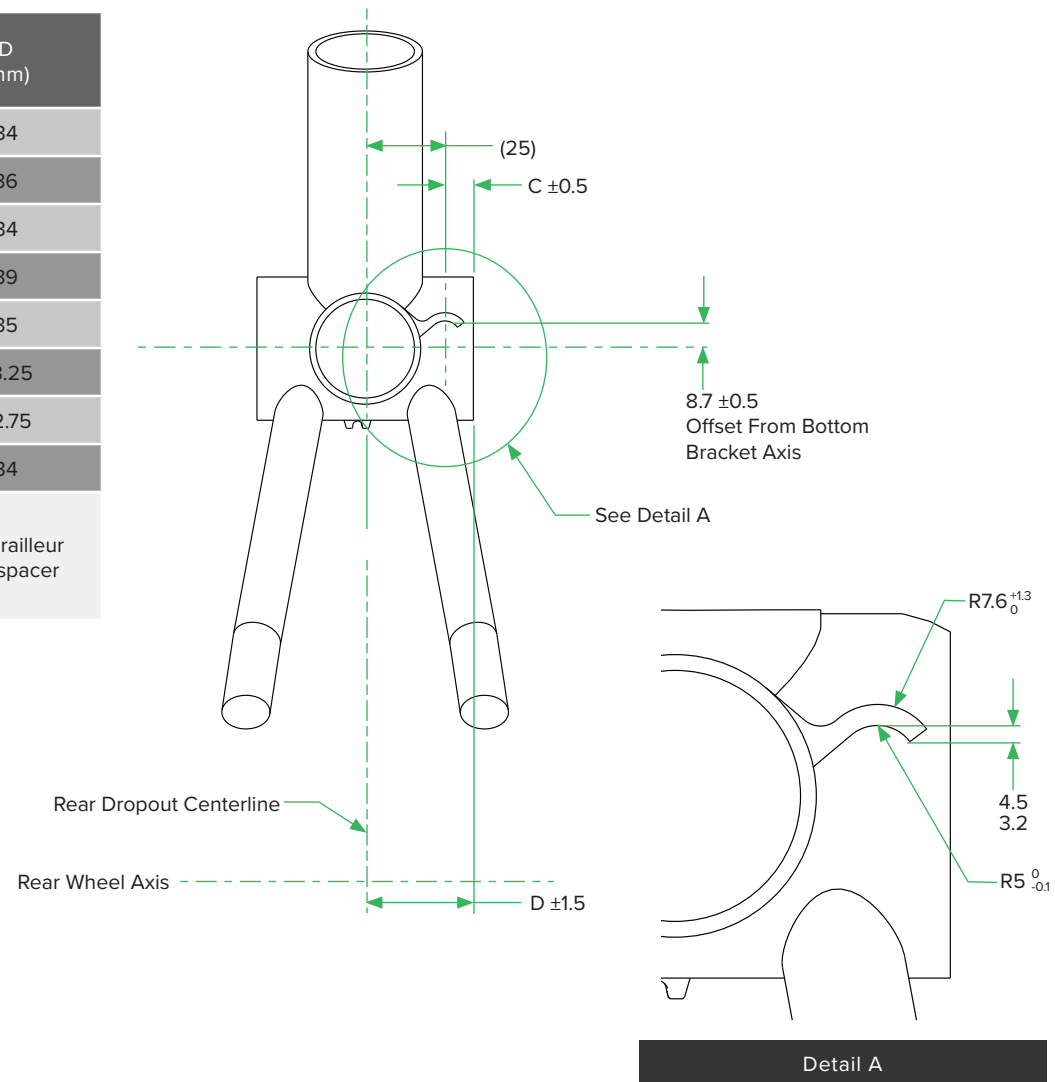
# Braze-on Hanger Dimensions

## 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     |

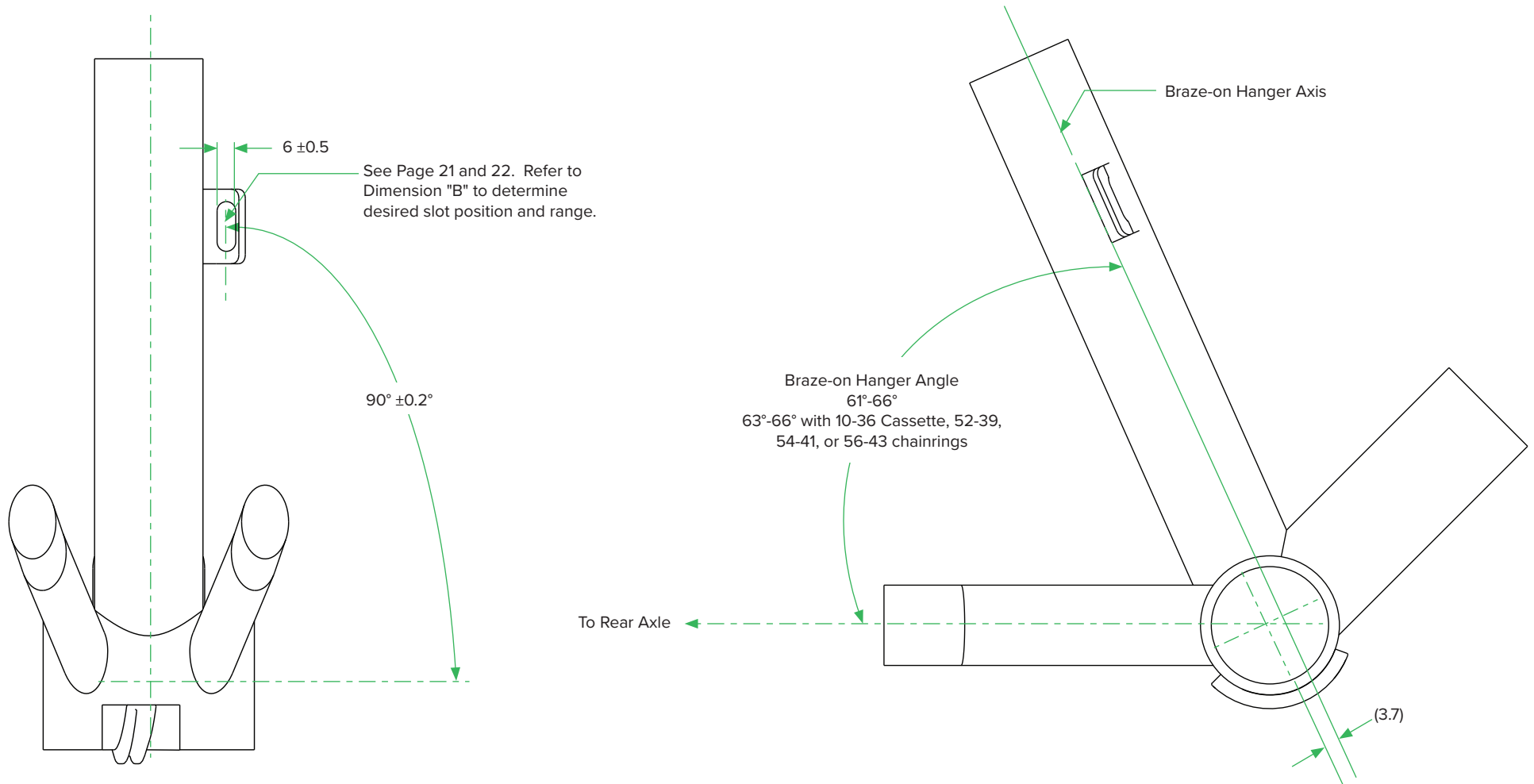
\* Dimensions provided for reference, see BB Shell Specifications.

\*\*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.



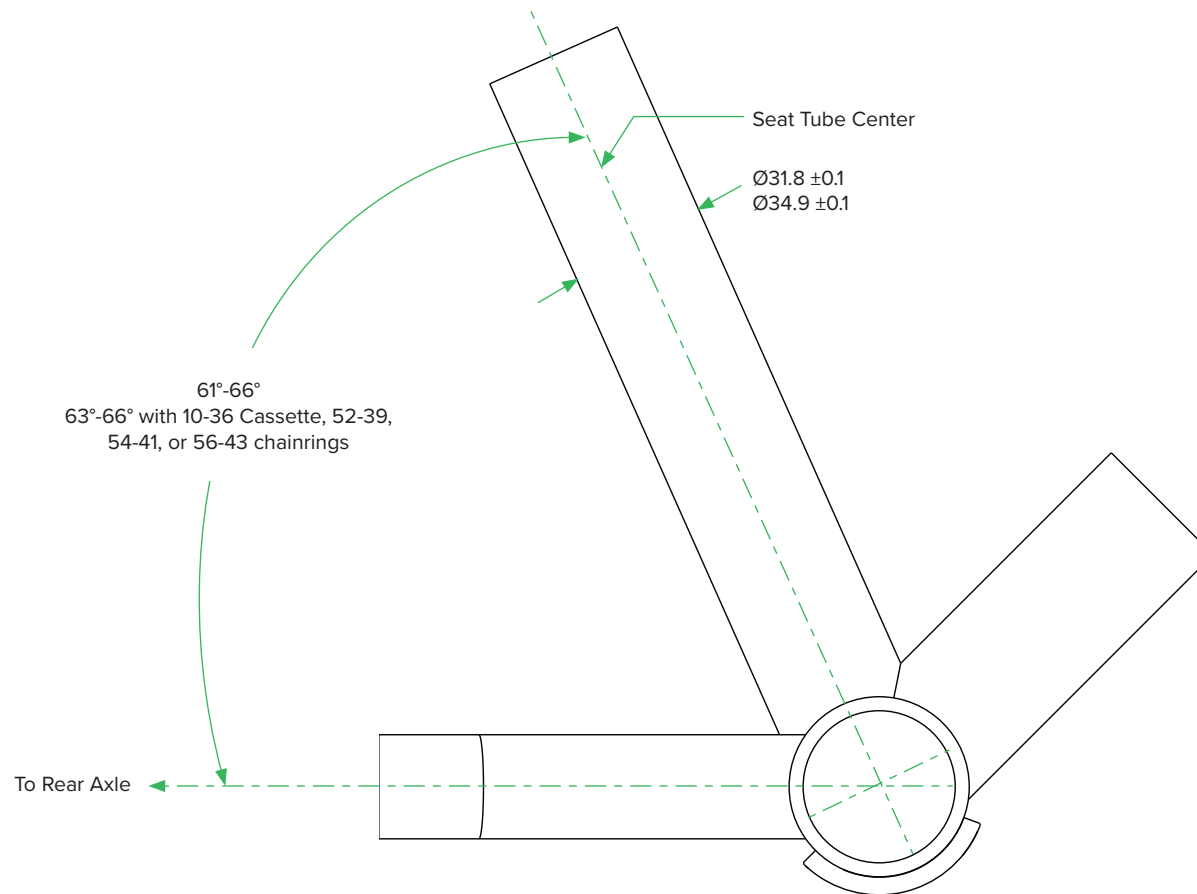
# Braze-on Hanger Dimensions

## Front Derailleur Interface



# Clamp-on Front Derailleur Mount Dimensions

## Front Derailleur Interface

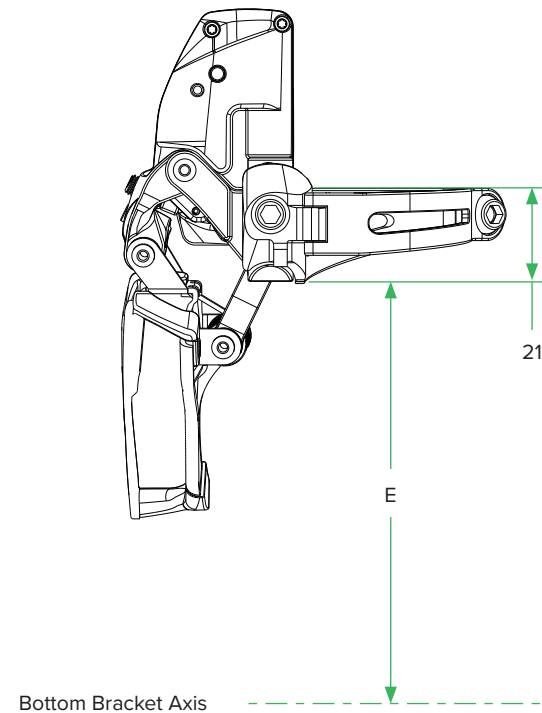


# Front Derailleur Position with Clamp Adapter

## 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               |

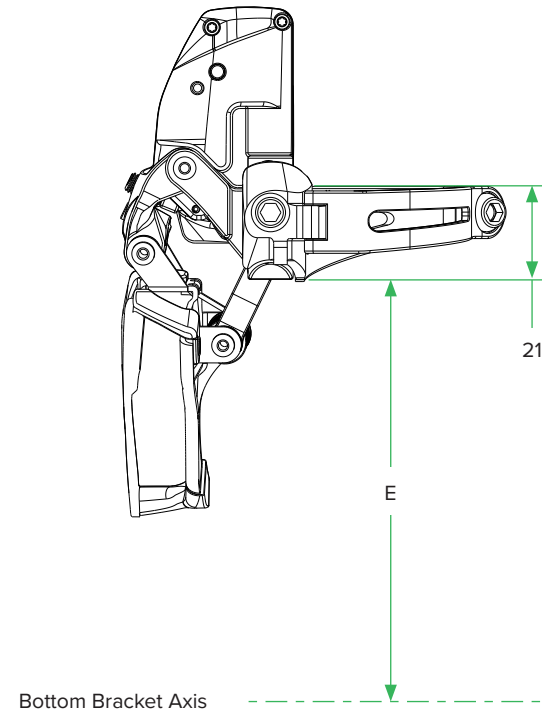
Nominal FD position provided, design should allow for adequate adjustment range of the clamp along the seat tube to account for tolerances.



# 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                  |

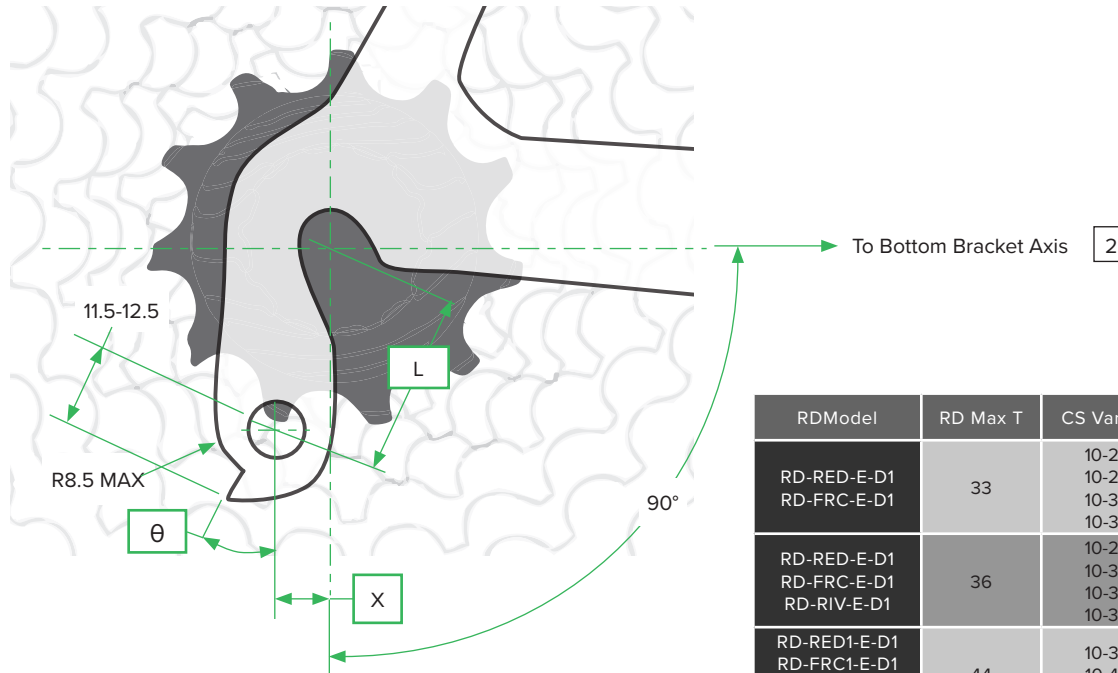


# Rear Derailleurs

# 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](http://www.universalderailleurhanger.com).

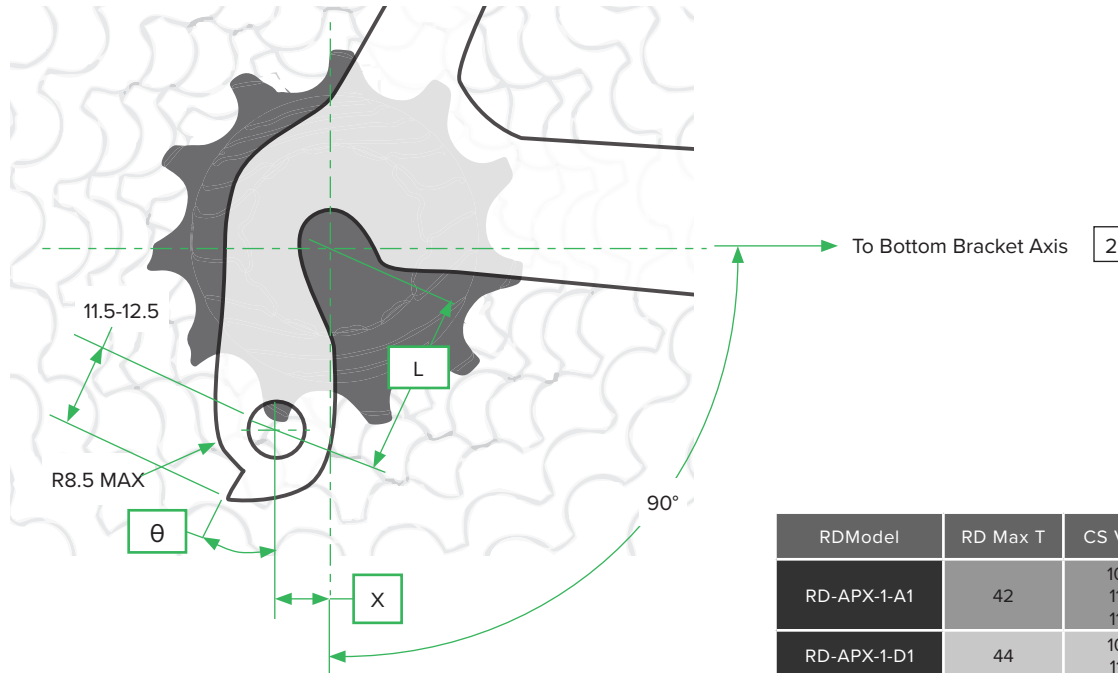
\* Make sure that frame chainstay remains clear of Road Rear Derailleur Frame Clearance specification zone when configured with this cassette size. The rear derailleur may interfere with the chainstay if it is designed to the limits of UDH Hangerless Interface Clearance Model when used with this cassette.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

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

# 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<br>11-36<br>11-42 | Road                   | 24-28  | 7-10   | 7-9       | 3.5-5.5          | 30-35 |
| RD-APX-1-D1   | 44       | 10-44<br>11-44          | Road L --<br>26 mm min | 26-30  | 7-10   | 7-9       | 3.5-5.5          | 30-35 |
| RD-APX-152-D1 | 52       | 10-50<br>10-52<br>11-50 | Road L --<br>26 mm min | 26-30  | 7-10   | 7-9       | 3.5-5.5          | 30-35 |

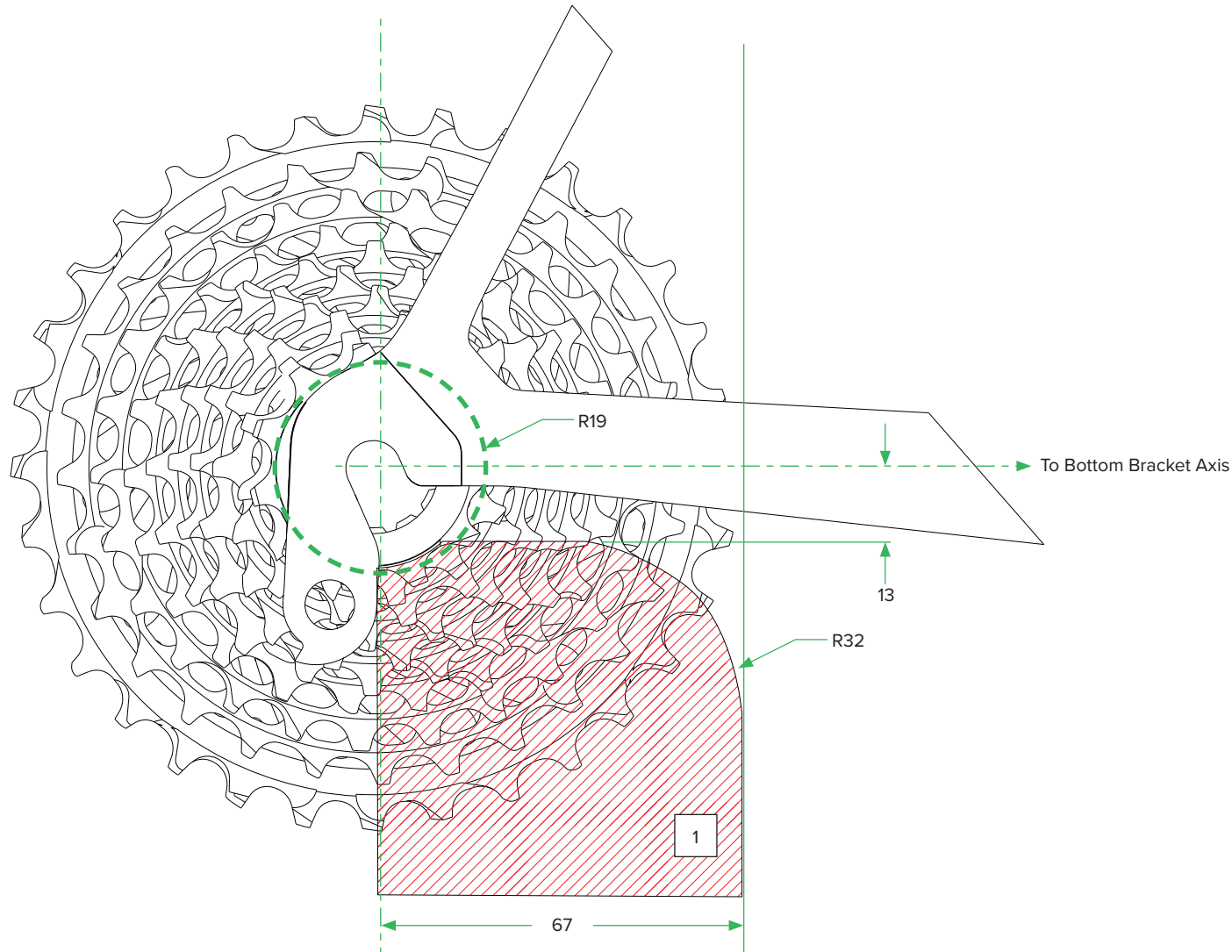
\* Make sure that frame chainstay remains clear of Road Rear Derailleur Frame Clearance specification zone when configured with this cassette size. The rear derailleur may interfere with the chainstay if it is designed to the limits of UDH Hangerless Interface Clearance Model when used with this cassette.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

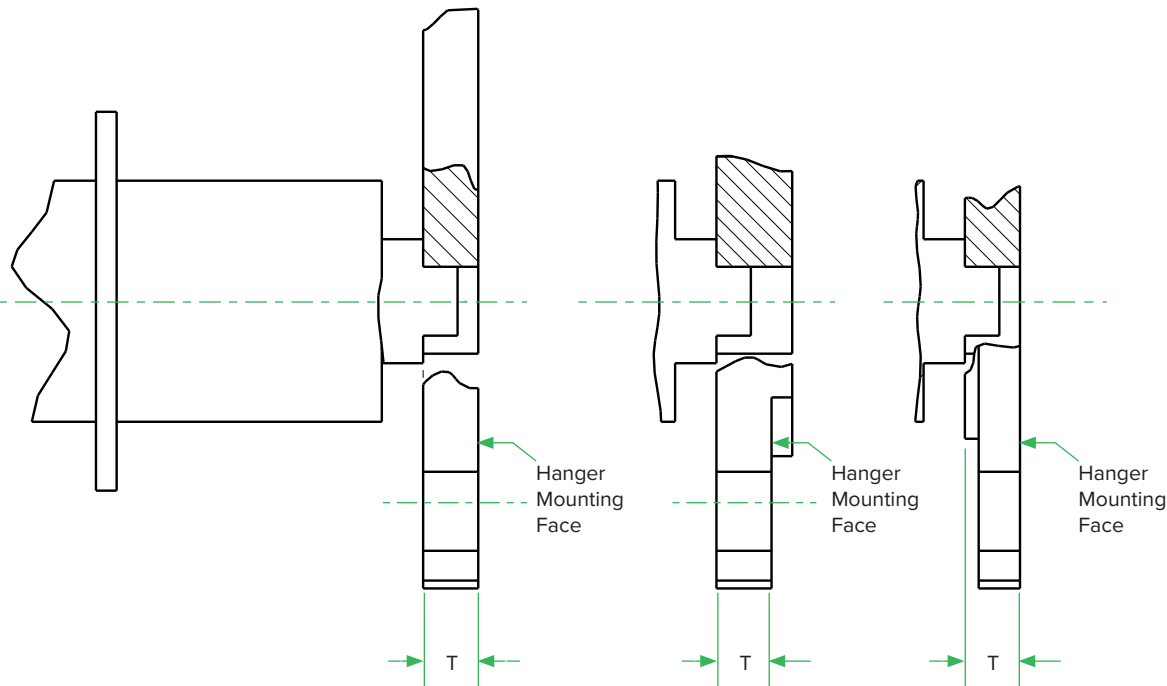
Please visit [www.UniversalDerailleurHanger.com](http://www.UniversalDerailleurHanger.com) for complete specifications.

# Hanger Specifications

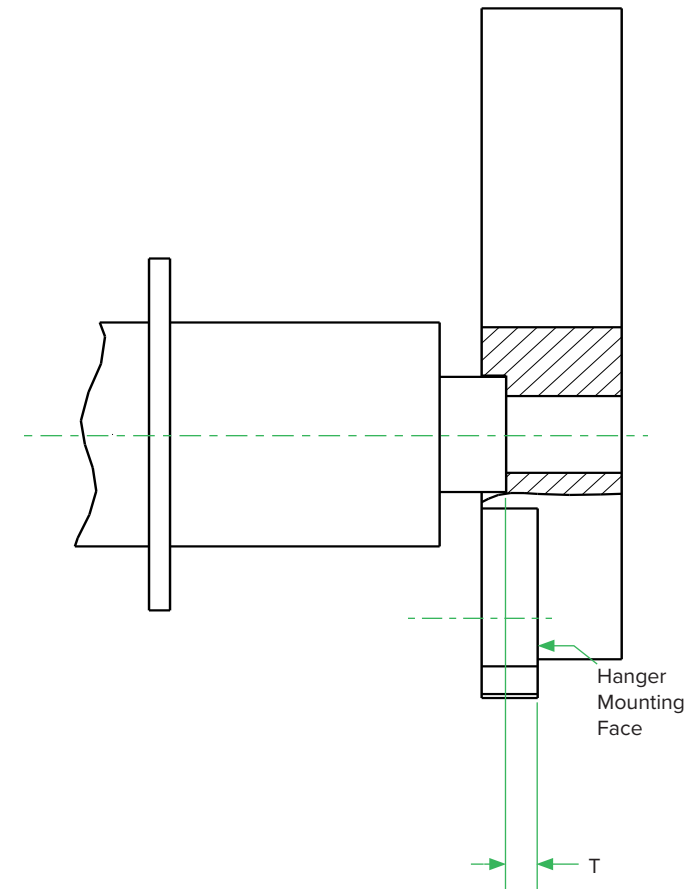
## SRAM Road Rear Derailleurs

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

### Quick Release



### Thru Axle

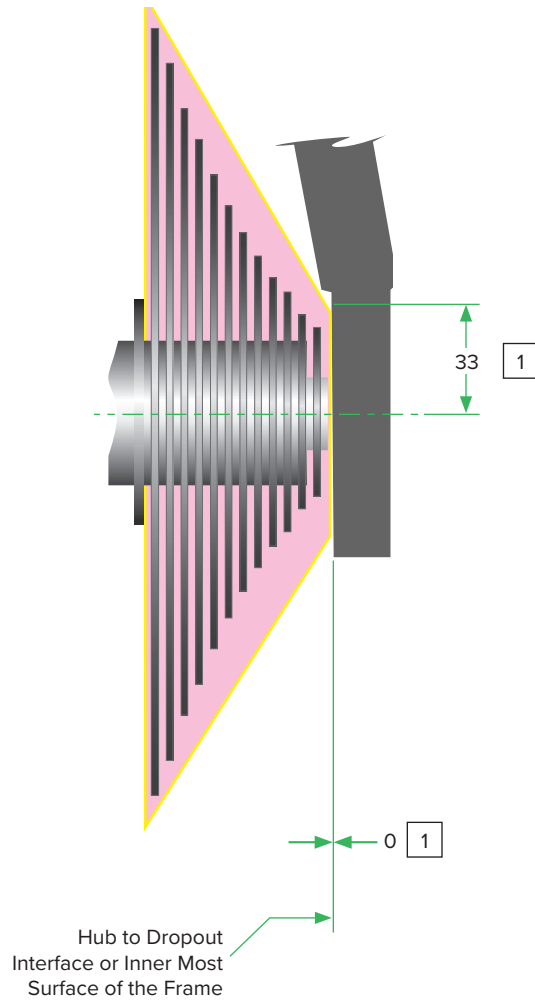


1. Shown hanger specifications not applicable for UDH interface.

# 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.

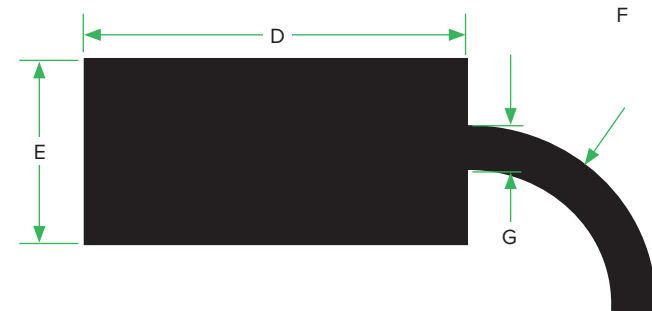
Avoid : S-bends with small radii and pinch spots (high housing clamping force).

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<br>D | MAX Diameter Connector<br>E | MIN Bending Radius<br>F | MAX Cable Diameter<br>G |
| 19                        | Ø 5.8                       | 8.4                     | Ø 4                     |

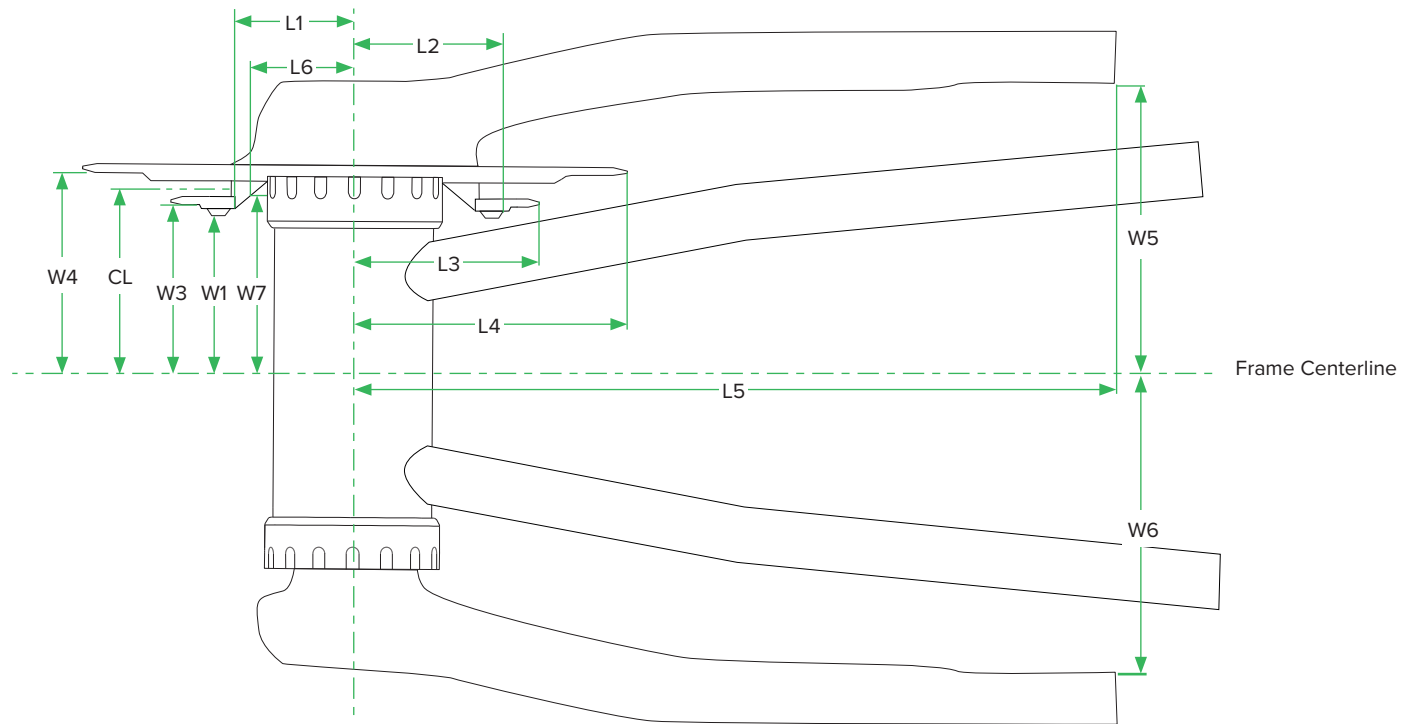
For compatibility with the AXS Extension Cord, a cyclinder diameter (diameter E and length D), must pass through the designated internal cable routing path of the frame.



# Road Cranksets

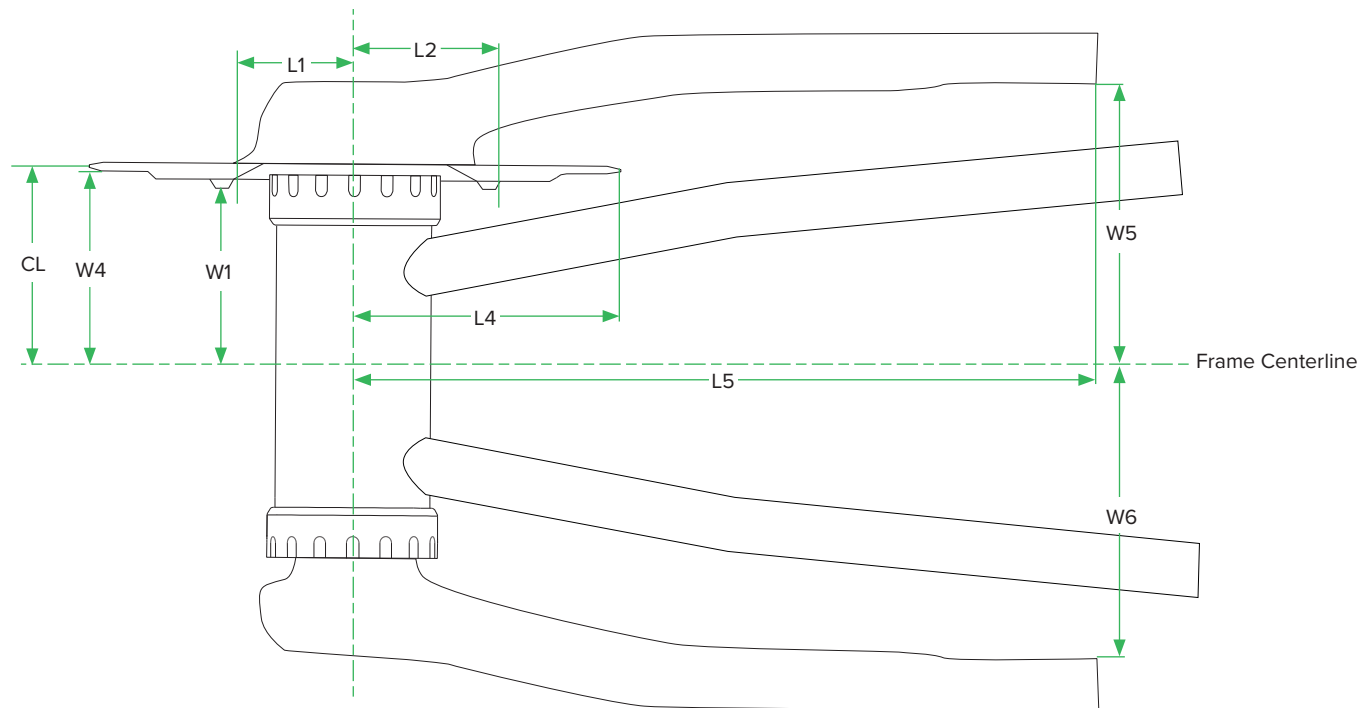
# Crankset Diagram

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 |
|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|
| <b>(Standard) SRAM RED/ SRAM Force/ SRAM Rival</b> |         |         |         |         |         |         |         |         |         |         |         |         |         |          |
| 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    |         |         |         |         |         |         |         |         |         |          |

|  |      |      |      |      |     |      |      |      |      |      |      |      |      |     |
|--|------|------|------|------|-----|------|------|------|------|------|------|------|------|-----|
| <b>(Wide) SRAM Force Wide/ SRAM Rival Wide</b> |      |      |      |      |     |      |      |      |      |      |      |      |      |     |
| 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 |
|--|----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|
| <b>(Standard) SRAM RED 1x AXS/ SRAM Force 1x AXS</b>                               |                |         |         |         |         |         |         |         |         |         |          |
| Direct Mount   | 68             | 38.5    | 46      | 141.0   | 190     | 43.9    | 44.8    | 60      | 60      | 46.5    | 145      |
|  | 66             |         |         | 136.9   |         |         |         |         |         |         |          |
|  | 64             |         |         | 132.9   |         |         |         |         |         |         |          |
|  | 62             |         |         | 128.9   |         |         |         |         |         |         |          |
|  | 60             |         |         | 124.8   |         |         |         |         |         |         |          |
|  | 58             |         |         | 120.8   |         | 41.5    | 43.4    |         |         | 45*     |          |
|  | 56             |         |         | 116.7   |         |         |         |         |         |         |          |
|  | 54             |         |         | 112.7   |         |         |         |         |         |         |          |
|  | 52             |         |         | 108.7   |         |         |         |         |         |         |          |
|  | 50             |         |         | 104.6   |         |         |         |         |         |         |          |
| 107 BCD  | 46             |         |         | 96.6    |         |         |         |         |         |         |          |
|  | 44             |         |         | 92.5    |         |         |         |         |         |         |          |
|  | 42             |         |         | 88.5    |         |         |         |         |         |         |          |
|  | 40             |         |         | 84.4    |         |         |         |         |         |         |          |
|  | 38             |         |         | 80.4    |         |         |         |         |         |         |          |
|  | 36             |         |         | 76.4    |         |         |         |         |         |         |          |
| <b>(Wide) SRAM RED 1x AXS Wide/ SRAM Force 1x AXS Wide/ SRAM Rival 1x AXS Wide</b> |                |         |         |         |         |         |         |         |         |         |          |
| Direct Mount   | 46             | N/A     | N/A     | 96.6    | 190     | N/A     | 45.7    | 62.5    | 62.5    | 47.5    | 150      |
|  | 44             |         |         | 92.5    |         |         |         |         |         |         |          |
|  | 42             |         |         | 88.5    |         |         |         |         |         |         |          |
|  | 40             |         |         | 84.4    |         |         |         |         |         |         |          |
|  | 38             |         |         | 80.4    |         |         |         |         |         |         |          |

# Spider Frame Clearance

## Quarq AXS Platform Power Meters

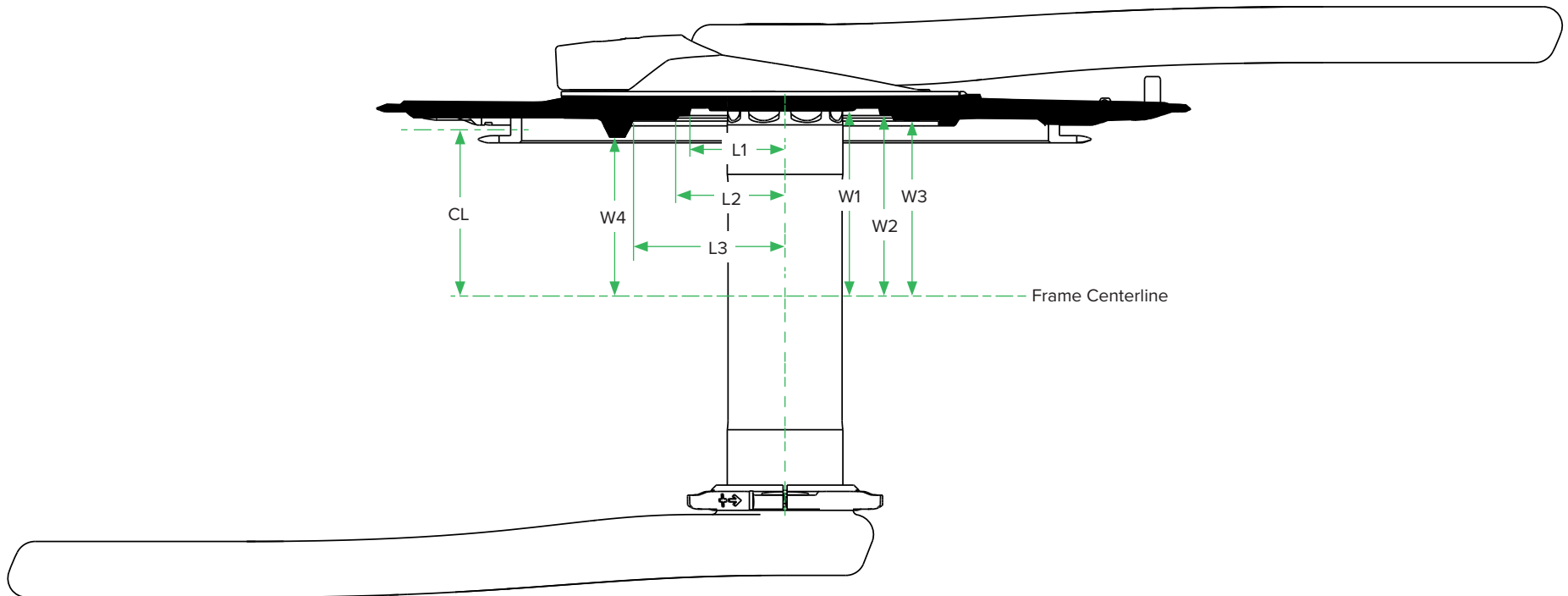
| L1 (mm) | L2 (mm) | L3 (mm) | W1 (mm)                    | W2 (mm)                      | W3 (mm)                      | W4 (mm) | CL (mm)                    |
|---------|---------|---------|----------------------------|------------------------------|------------------------------|---------|----------------------------|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

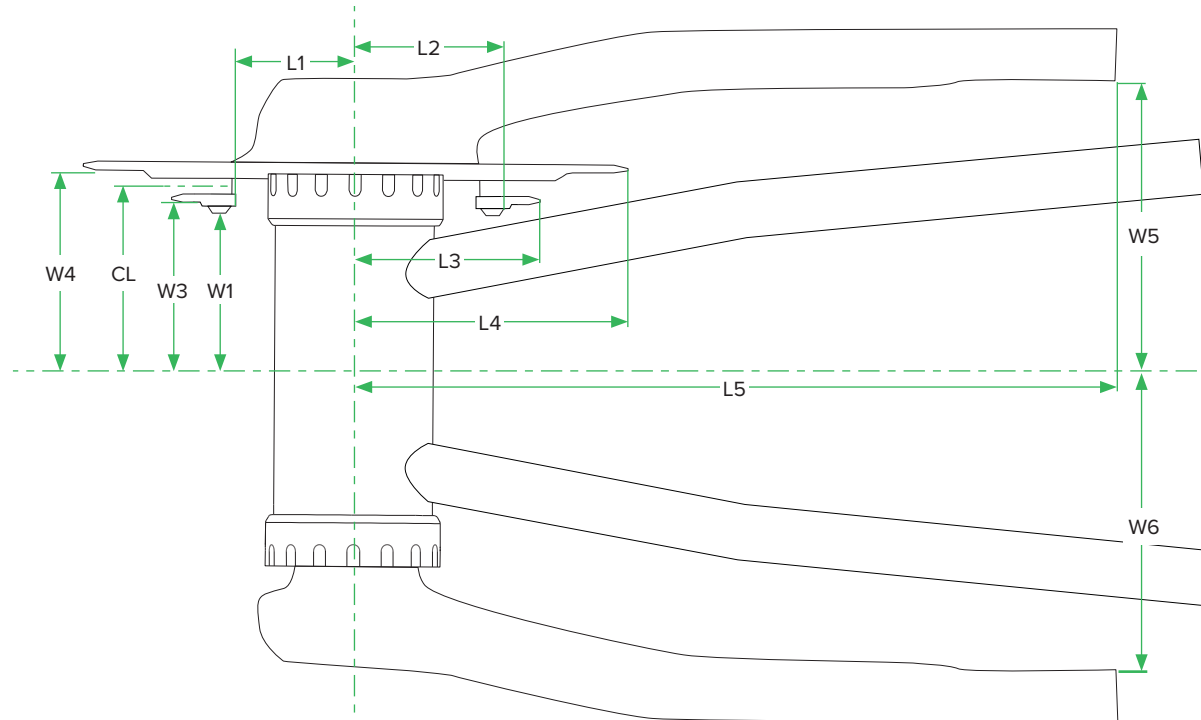
The image depicts a 2X SRAM RED integrated chainring power meter, but dimensions apply to all AXS spider-based power meters.

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.



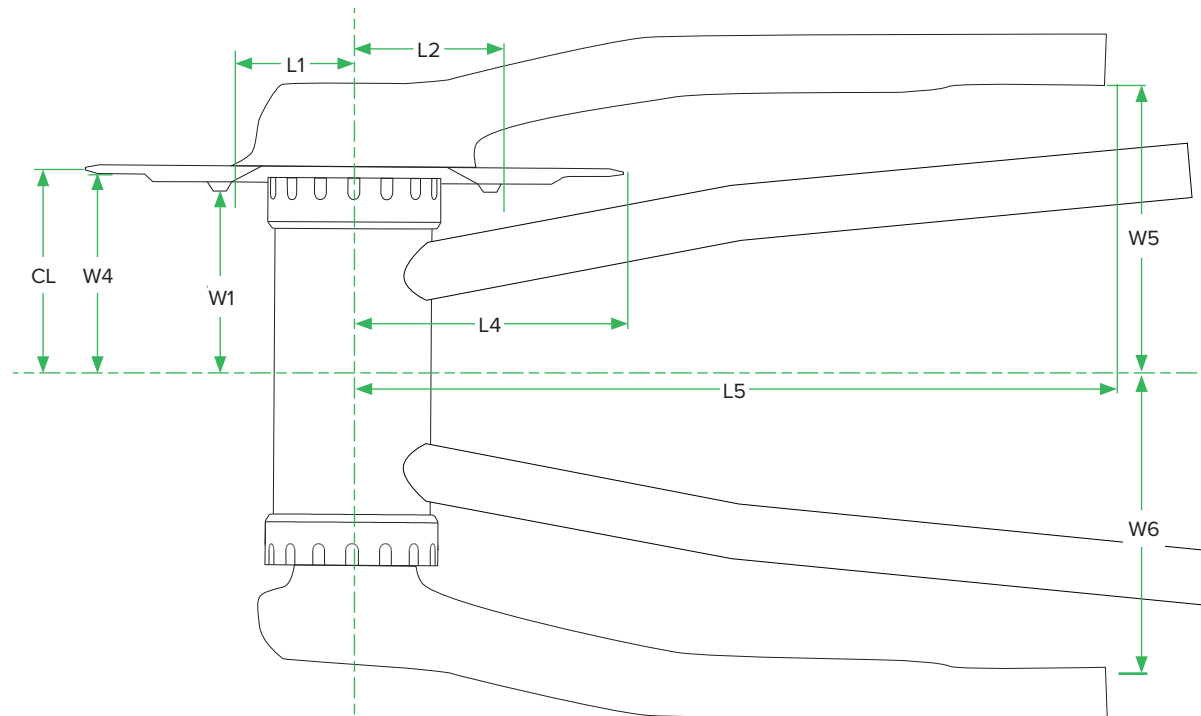
# Crankset Diagram

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                      |
|--|---------|---------|---------|---------|---------|---------|---------|---------|----------|----------|---------|----------|------------------------------|
| <b>(Standard) SRAM RED*/ SRAM Force/ SRAM RED Quarq Power Meters/ Quarq Prime Carbon Power Ready/S902/S952</b> |         |         |         |         |         |         |         |         |          |          |         |          |                              |
| 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<br>BB30<br>PF30<br>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.

|                                      |      |      |      |       |       |      |      |      |                                 |              |      |  |                              |
|--------------------------------------|------|------|------|-------|-------|------|------|------|---------------------------------|--------------|------|--|------------------------------|
| <b>(Wide) SRAM Rival Wide/ S-552</b> |      |      |      |       |       |      |      |      |                                 |              |      |  |                              |
| 52-36                                | 47.0 | 61.0 | 75.0 | 106.8 | 192.1 | 41.0 | 42.9 | 50.6 | 63.8<br>GXP/ PFGXP<br>62.8 BB30 | 63.8<br>BB30 | 47.5 | 154.6<br>GXP/ PFGXP<br>152.4<br>BB30/ PF30 | GXP<br>BB30<br>PF30<br>PFGXP |
| 50-34                                |      |      | 71.0 | 103.1 |       |      |      |      |                                 |              |      |  |                              |

|   |      |      |      |       |       |      |      |      |  |  |    |  |                              |
|---|------|------|------|-------|-------|------|------|------|--|--|----|--|------------------------------|
| <b>(Standard) SRAM Rival 1x/ Quarq Prime Aluminum Power Ready</b> |      |      |      |       |       |      |      |      |  |  |    |  |                              |
| 52-36   | 47.0 | 61.0 | 75.0 | 106.8 | 192.1 | 38.5 | 40.4 | 48.1 | 61.3<br>GXP/ PFGXP<br>60.3<br>BB30/ PF30 | 61.3<br>GXP/ PFGXP<br>60.3<br>BB30/ PF30 | 45 | 149.6<br>GXP/ PFGXP<br>147.4<br>BB30/ PF30 | GXP<br>BB30<br>PF30<br>PFGXP |
| 50-34   |      |      | 71.0 | 103.1 |       |      |      |      |  |  |    |  |                              |
| 46-36   |      |      | 75.0 | 95.1  |       |      |      |      |  |  |    |  |                              |

|                              |      |    |    |       |       |      |      |      |    |    |    |     |                              |
|------------------------------|------|----|----|-------|-------|------|------|------|----|----|----|-----|------------------------------|
| <b>(Standard) SRAM S-390</b> |      |    |    |       |       |      |      |      |    |    |    |     |                              |
| 50-34                        | 57.3 | 61 | 71 | 103.1 | 191.5 | 40.4 | 42.4 | 50.1 | 62 | 62 | 45 | 149 | GXP<br>BB30<br>PF30<br>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) |
|--------------------------------|---------|---------|---------|---------|---------|---------|--|--|---------|--|------------------------------|-----------------------|
| <b>(Standard) SRAM Force 1</b> |         |         |         |         |         |         |  |  |         |  |                              |                       |
| 54                             | 57.0    | 72.0    | 112.2   | 197.0   | 38.0    | 43.7    | 60.0                                     | 60.0                                     | 45      | 145  | GXP<br>BB30<br>PF30<br>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    |         |         |         |         |         |  |  |         |  |                              |                       |
| <b>(Standard) SRAM Rival 1</b> |         |         |         |         |         |         |  |  |         |  |                              |                       |
| 50                             | 47.0    | 62.7    | 104.1   | 192.1   | 38.0    | 43.7    | 61.3<br>GXP/ PFGXP<br>60.3<br>BB30/ PF30 | 61.3<br>GXP/ PFGXP<br>60.3<br>BB30/ PF30 | 45      | 149.6<br>GXP/ PFGXP<br>147.4<br>BB30/ PF30 | GXP<br>BB30<br>PF30<br>PFGXP | ≥ 395                 |
| 48                             |         |         | 100.1   |         |         |         |  |  |         |  |                              |                       |
| 46                             |         |         | 96.1    |         |         |         |  |  |         |  |                              |                       |
| 44                             |         |         | 92.0    |         |         |         |  |  |         |  |                              |                       |
| 42                             |         |         | 88.0    |         |         |         |  |  |         |  |                              |                       |
| 40                             |         |         | 84.0    |         |         |         |  |  |         |  |                              |                       |
| 38                             |         |         | 79.9    |         |         |         |  |  |         |  |                              |                       |
| <b>(Standard) SRAM Apex 1</b>  |         |         |         |         |         |         |  |  |         |  |                              |                       |
| 44                             | 49.0    | 61.0    | 92.0    | 191.7   | 41.3    | 43.7    | 62.0                                     | 62.1                                     | 45      | 149  | GXP<br>BB30<br>PF30<br>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) |
|-------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|------------------------------|-----------------------|
| <b>(Standard) SRAM S350-1</b> |         |         |         |         |         |         |         |         |         |          |                              |                       |
| 44                            | 47.0    | 62.7    | 92.0    | 196.7   | 38.0    | 43.7    | 60.0    | 60.0    | 45      | 145      | GXP<br>BB30<br>PF30<br>PFGXP | ≥ 395                 |
| 42                            |         |         | 88.0    |         |         |         |         |         |         |          |                              |                       |
| 40                            |         |         | 84.0    |         |         |         |         |         |         |          |                              |                       |
| <b>(Standard) Omnium</b>      |         |         |         |         |         |         |         |         |         |          |                              |                       |
| 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                      |
|-----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|------------------------------|
| <b>(Standard) SRAM Apex</b> |         |         |         |         |         |         |         |         |         |         |         |          |                              |
| 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<br>BB30<br>PF30<br>PFGXP |
| 50-34                       | 47.0    | 61.0    | 71.0    | 103.2   |         |         |         |         |         |         |         |          |                              |
| 48-34                       |         |         |         | 99.0    |         |         |         |         |         |         |         |          |                              |
| 46-36                       |         |         | 75.0    | 95.1    |         |         |         |         |         |         |         |          |                              |
| <b>(Standard) Touro</b>     |         |         |         |         |         |         |         |         |         |         |         |          |                              |
| 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<br>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

### **Hub drive type:**

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

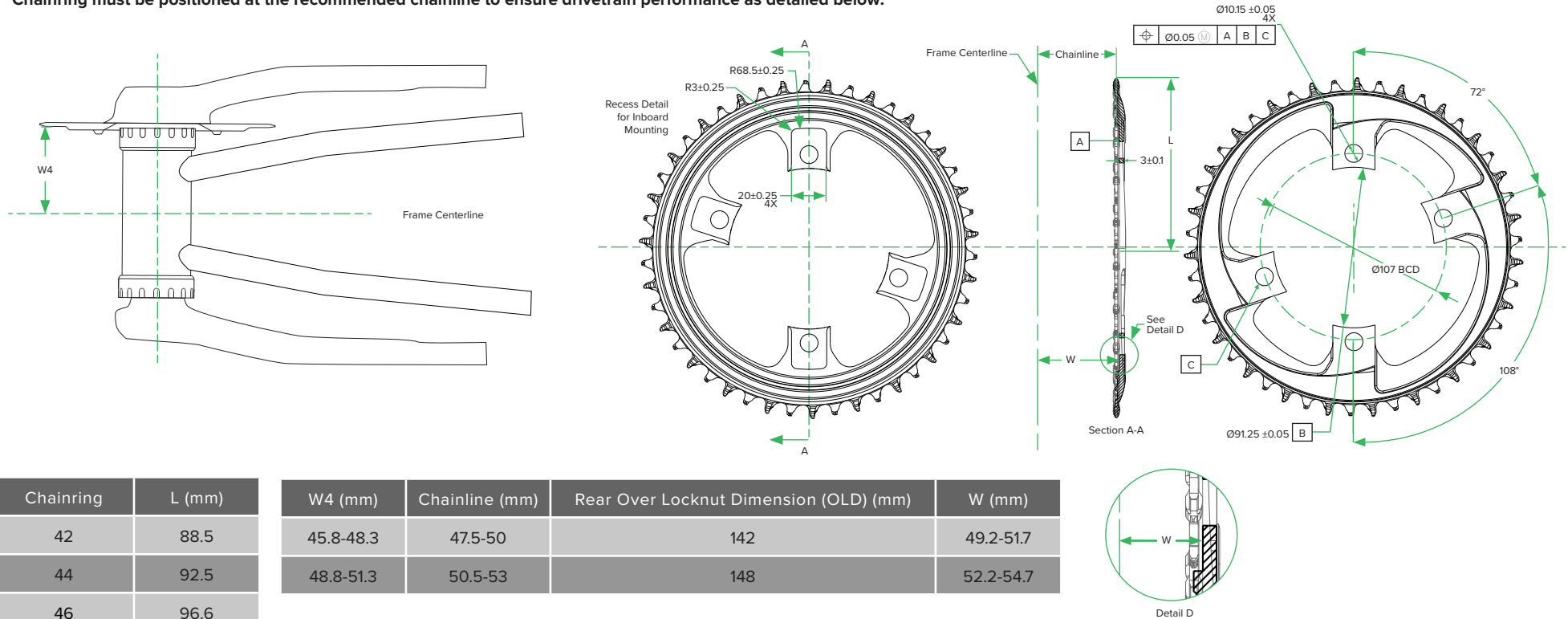
### **Mid drive type:**

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

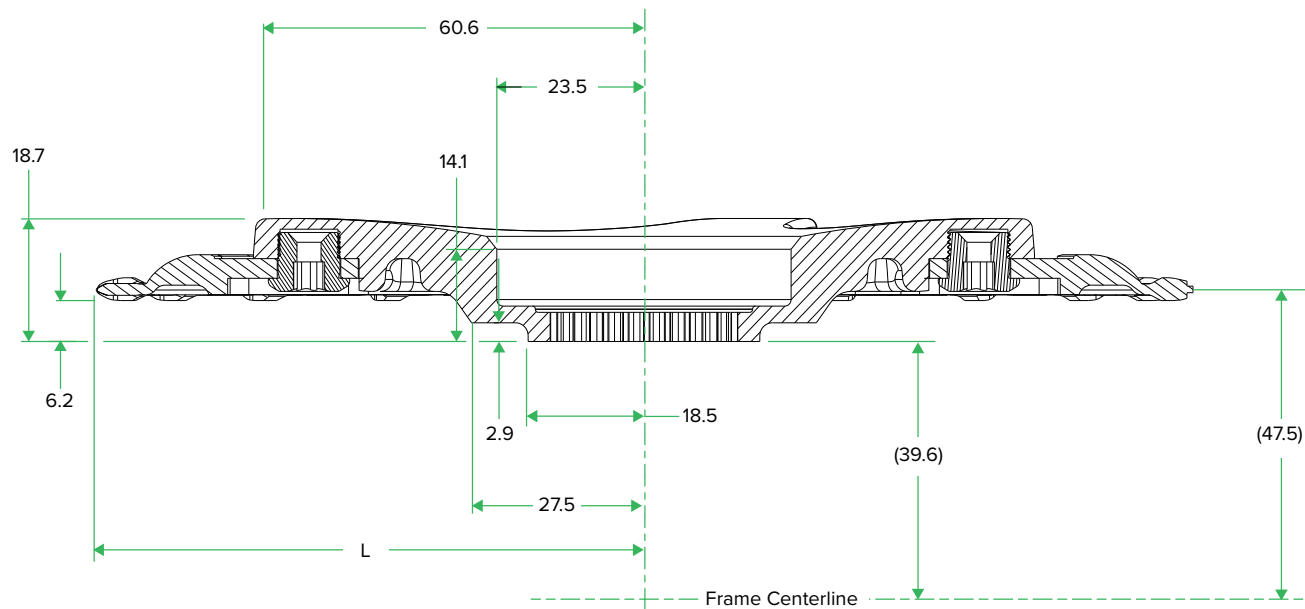


- **Assure the chaining size desired will provide adequate clearance for the frame design by referencing dimensions L and W4, then select a front chainline that meets your frame clearance design requirements.**
- **Depending on the front chainline needed, select the appropriate rear over locknut dimension (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.**
- **Chaining 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 chaining inboard mounting interface. Chaining may alternatively be mounted by the outboard mounting interface if desired, if so, account for chaining 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

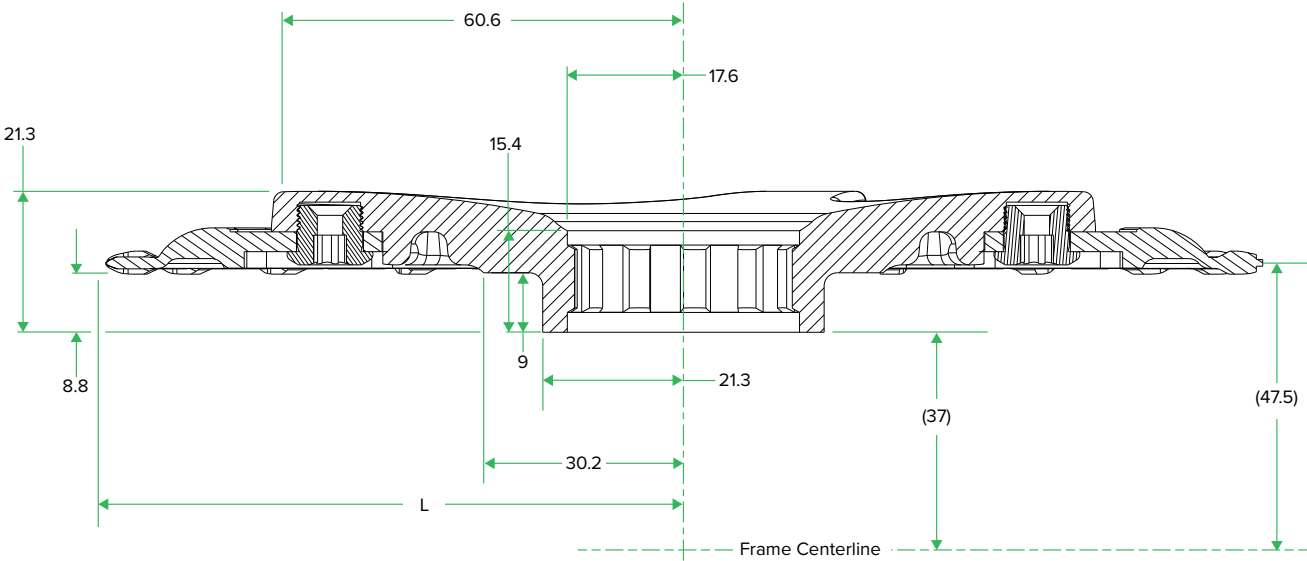
| Chainring | L (mm) |
|-----------|--------|
| 42        | 88.5   |
| 44        | 92.5   |
| 46        | 96.6   |



# 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

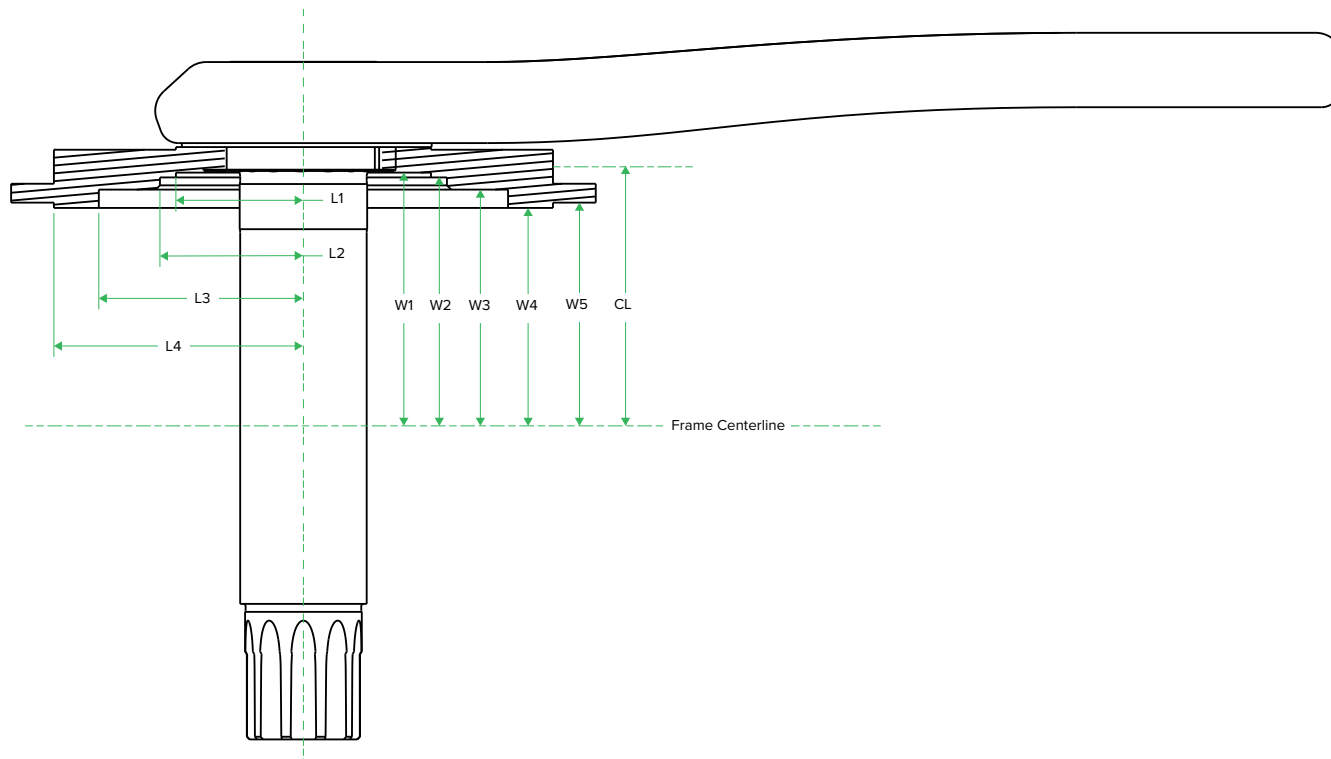
| Model     | L1 (mm) | L2 (mm) | L3 (mm) | L4 (mm) | W1 (mm) | W2 (mm) | W3 (mm) | W4 (mm) | W5 (mm) | CL (mm) |
|-----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| DZero 110 | 24.0    | 27.0    | 38.5    | 46.95   | 47.6    | 46.7    |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

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.

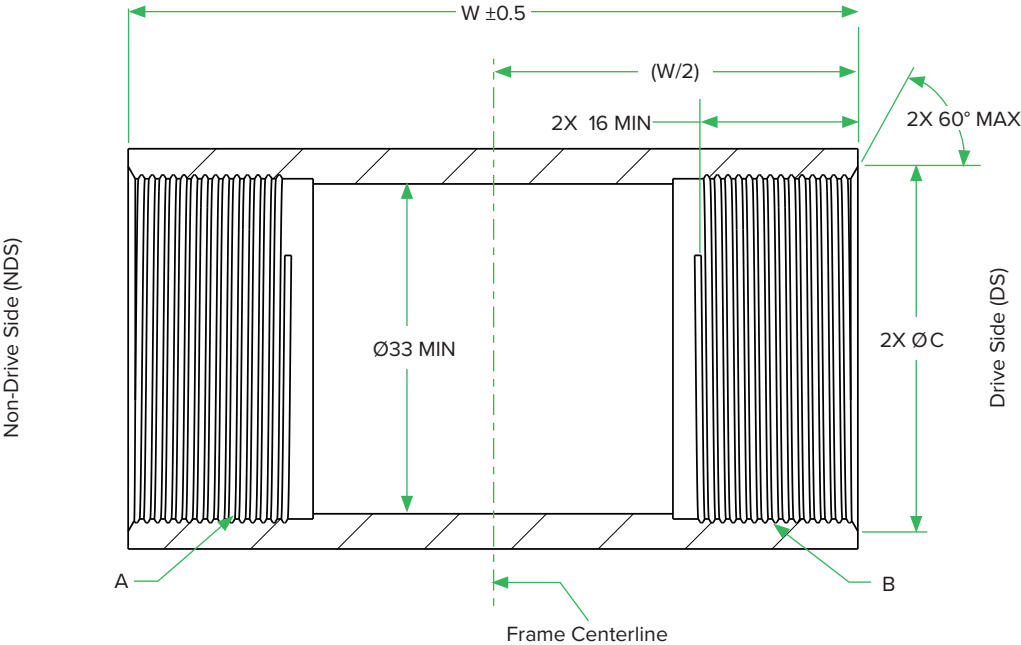
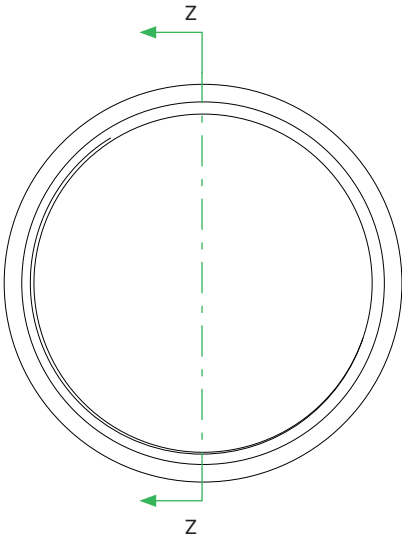
Dimensions are to the component and do **not** include clearance for debris. Consider additional frame clearance to compensate for mud/grit/debris picked up during normal riding conditions.



# 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         |
| BSA 73**    | 73 ±0.5 |                               |                         | Ø 37         |
| DUB Italian | 70 ±0.5 | 36 mm x 24 TPI - 6G - R.H.*** |                         | Ø 37<br>Ø 38 |
| GXP Italian | 70 ±0.5 | 36 mm x 24 TPI R.H.           |                         |              |

\*Reference JIS B 0225

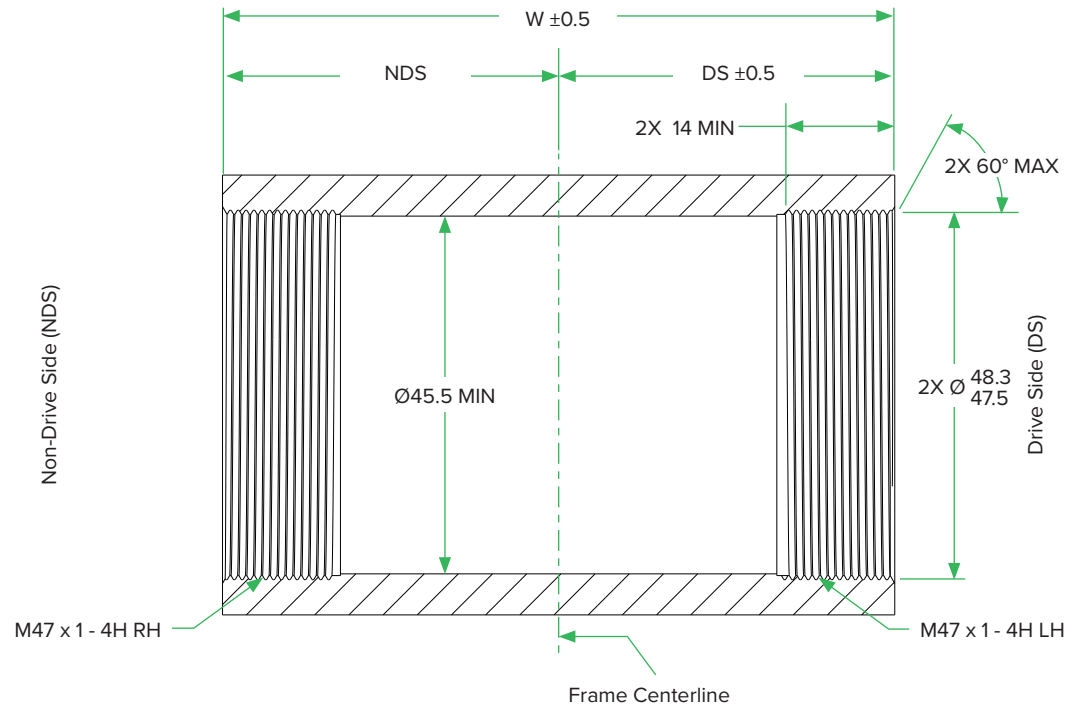
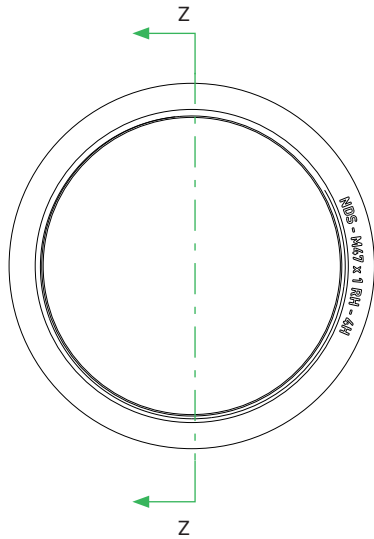
\*\* BSA 73 is only supported by a wide chainline front crank and front derailleur.

\*\*\*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.

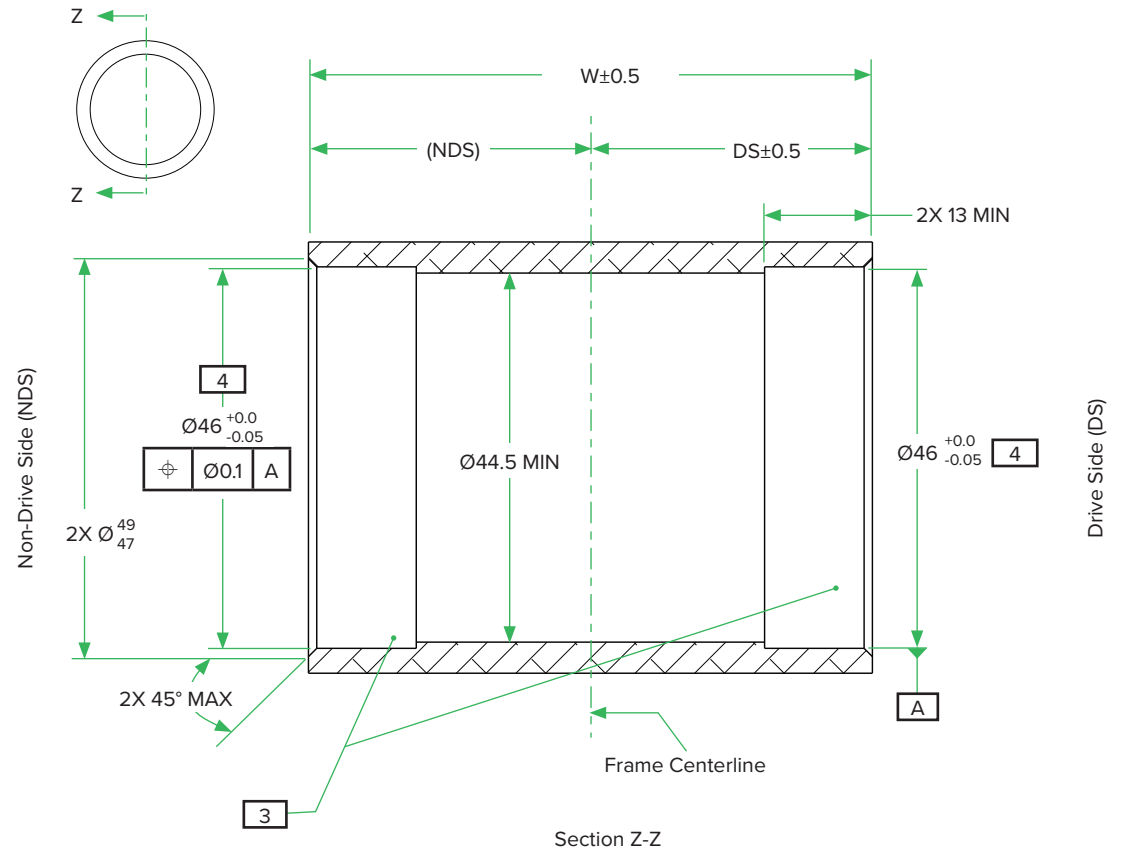
Things that should be considered when evaluating the frame and bottom bracket interaction include, but are not limited to:

- 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 <span style="border: 1px solid black; padding: 0 2px;">4</span> | 79    | 34     | 45      |
| PF30 83-A   | 83    | 39     | 44      |

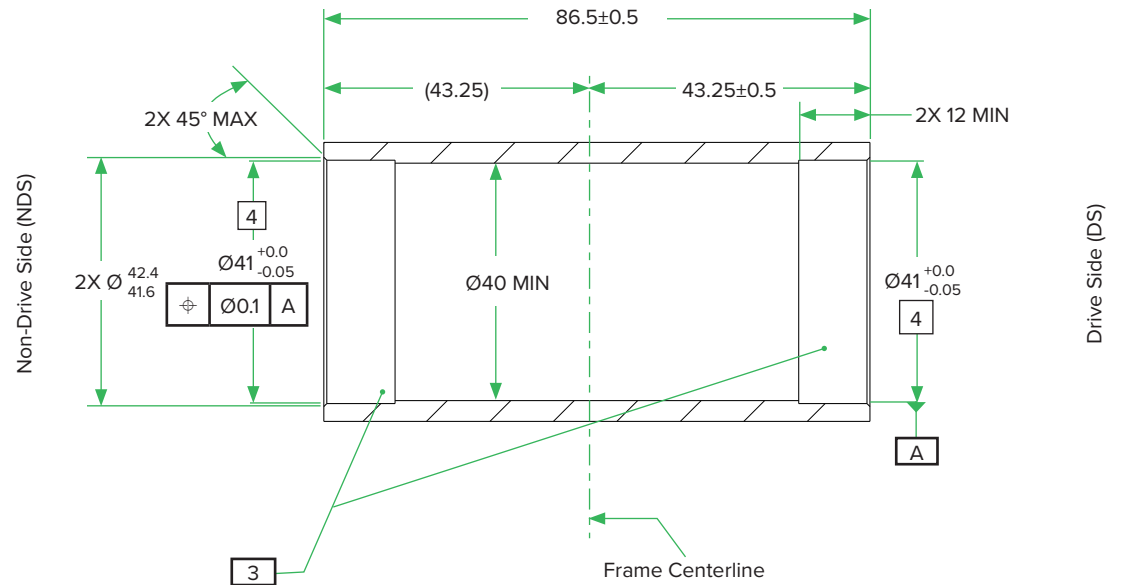
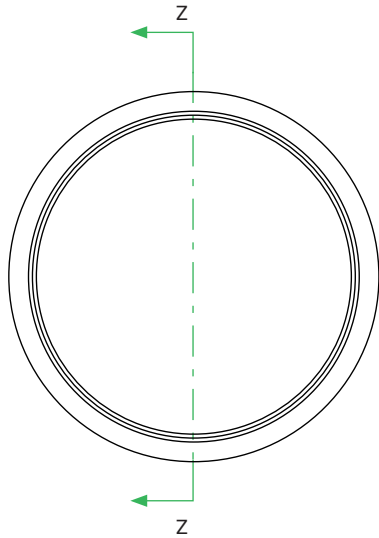
\*PF30 73 is only supported by a wide chainline front crank and front derailleur.



- 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

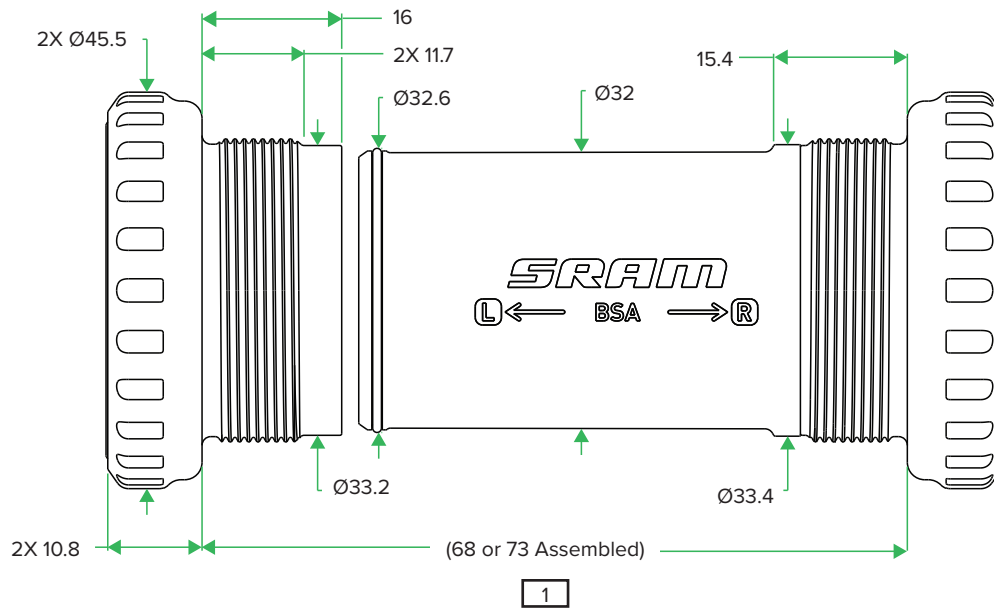
## Information

Information for the BB30 drawing and legal agreement can be found on [www.BB30standard.com](http://www.BB30standard.com). Use of the information contained in the drawing is forbidden without reviewing and agreeing to the legal terms and conditions found on [www.BB30standard.com](http://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

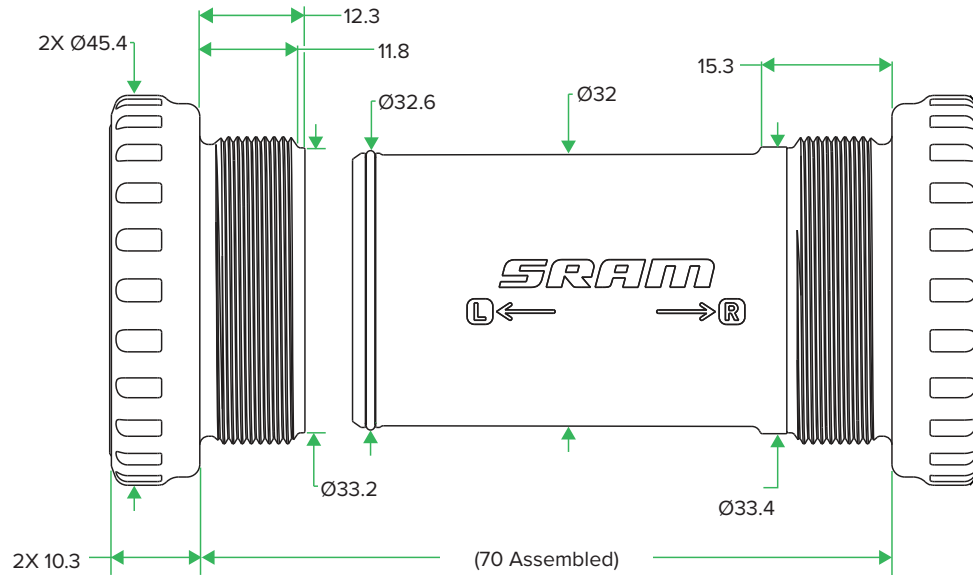
## Bottom Bracket Specification



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

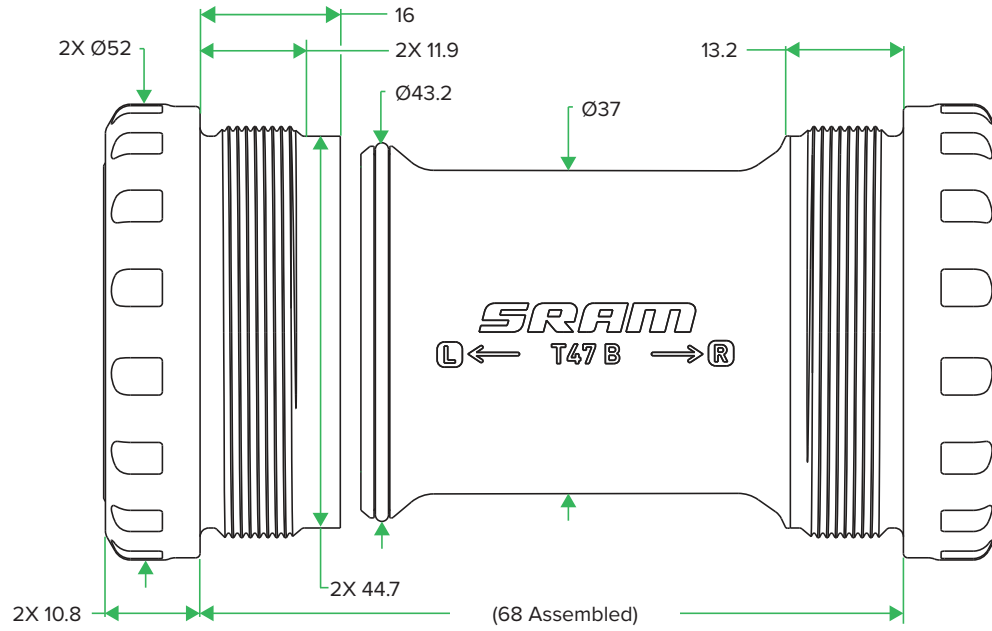
# DUB Italian 70

## Bottom Bracket Specification



# DUB T47 68

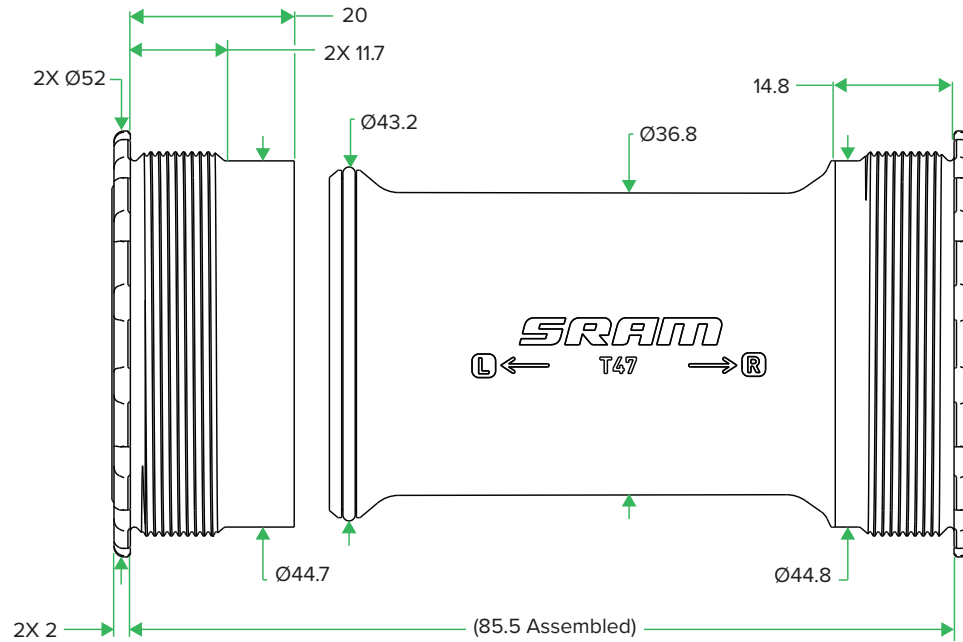
## Bottom Bracket Specification





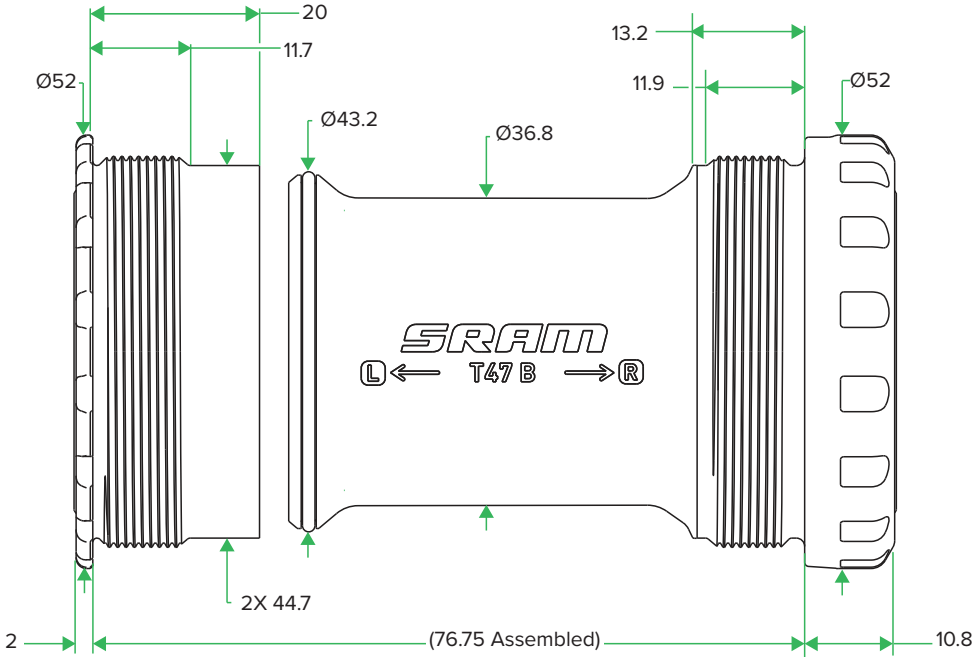
# DUB T47 85.5

## Bottom Bracket Specification



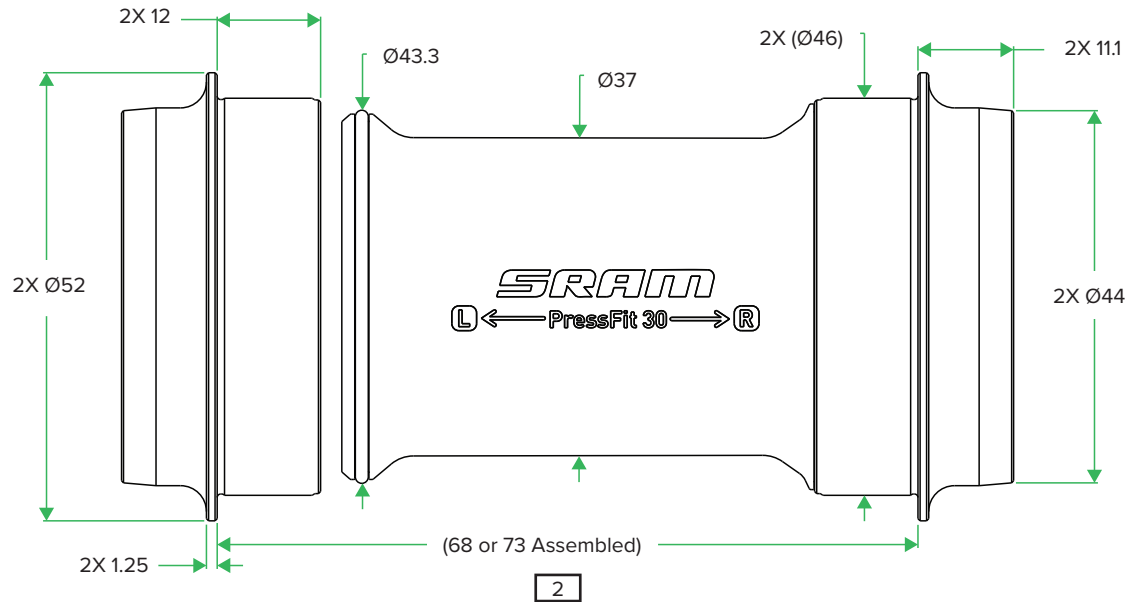
# DUB T47 77-A

## Bottom Bracket Specification



# DUB PressFit 30 68/73

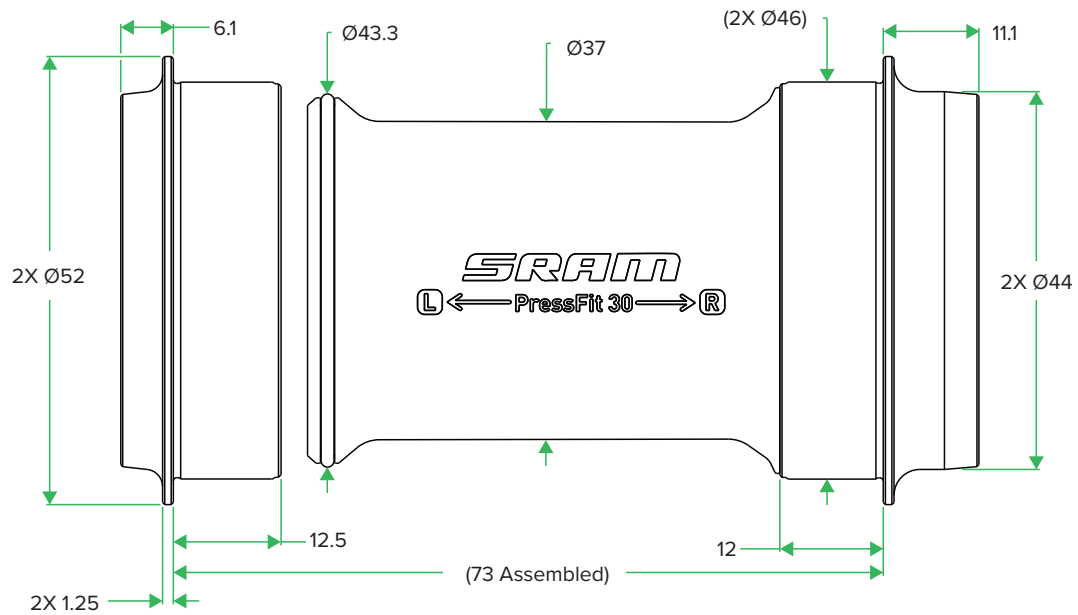
## Bottom Bracket Specification



- 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

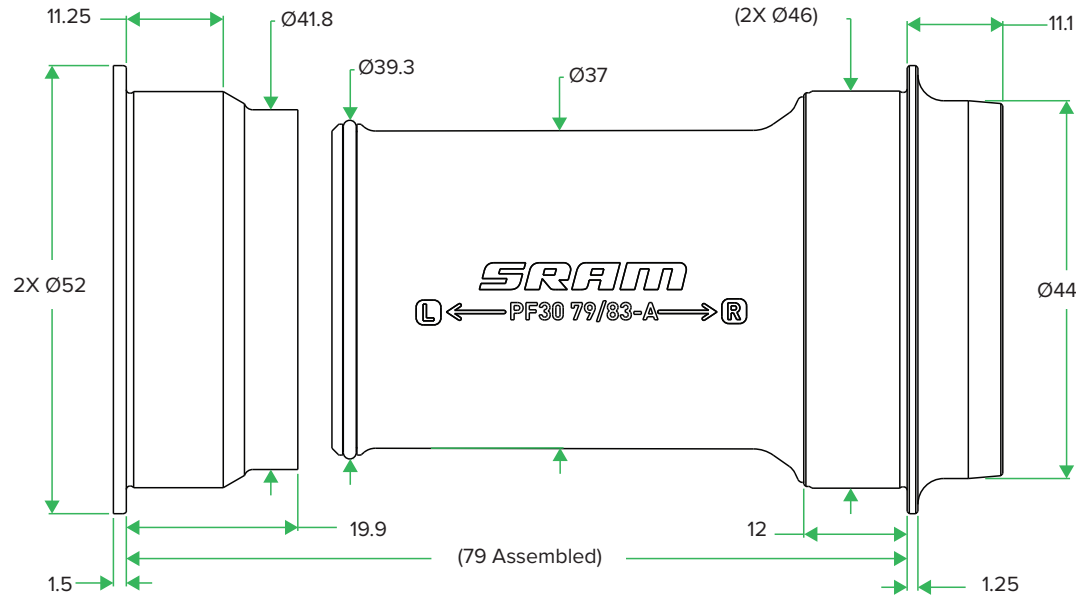
## Bottom Bracket Specification



- 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

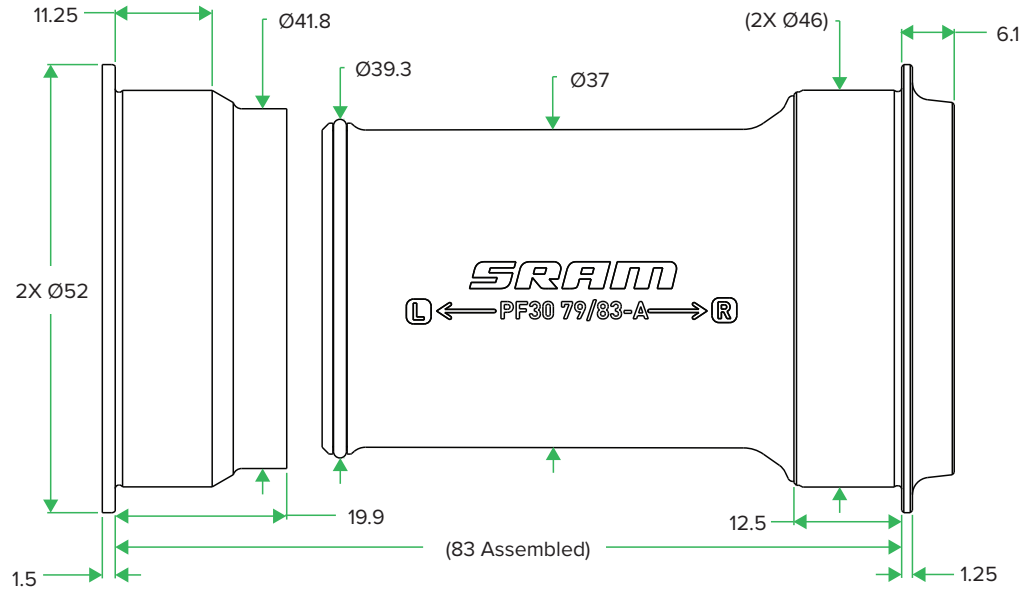
## Bottom Bracket Specification



- 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

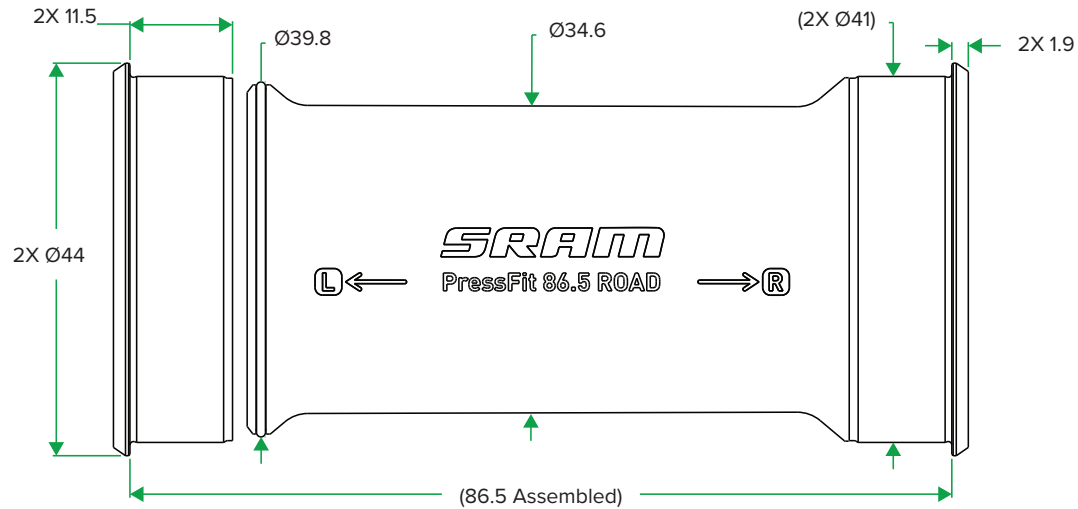
## Bottom Bracket Specification



- 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

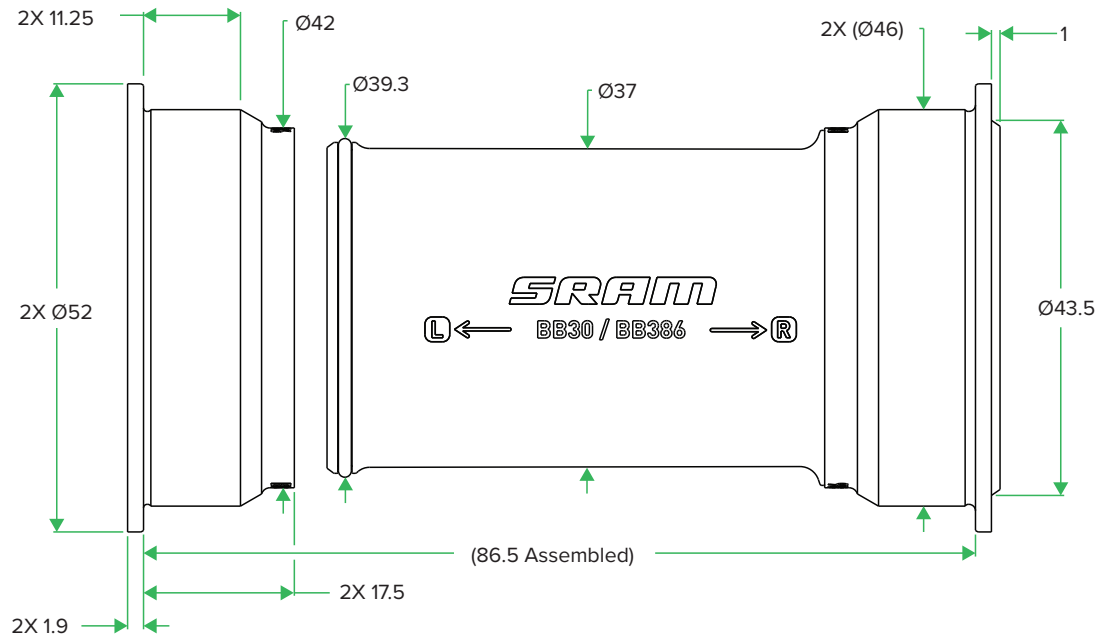
## Bottom Bracket Specification



- 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

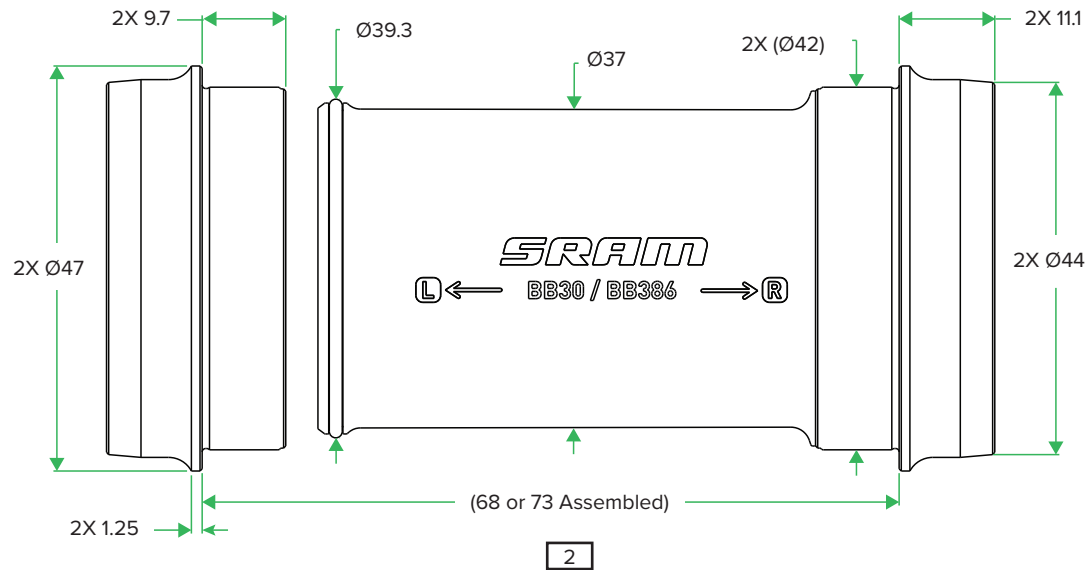


1 Cables and hoses must not contact the crankset spindle during operation; consider cable and hose clearances through the bottom bracket area of the frame.



# DUB BB30 68/73

## Bottom Bracket Specification

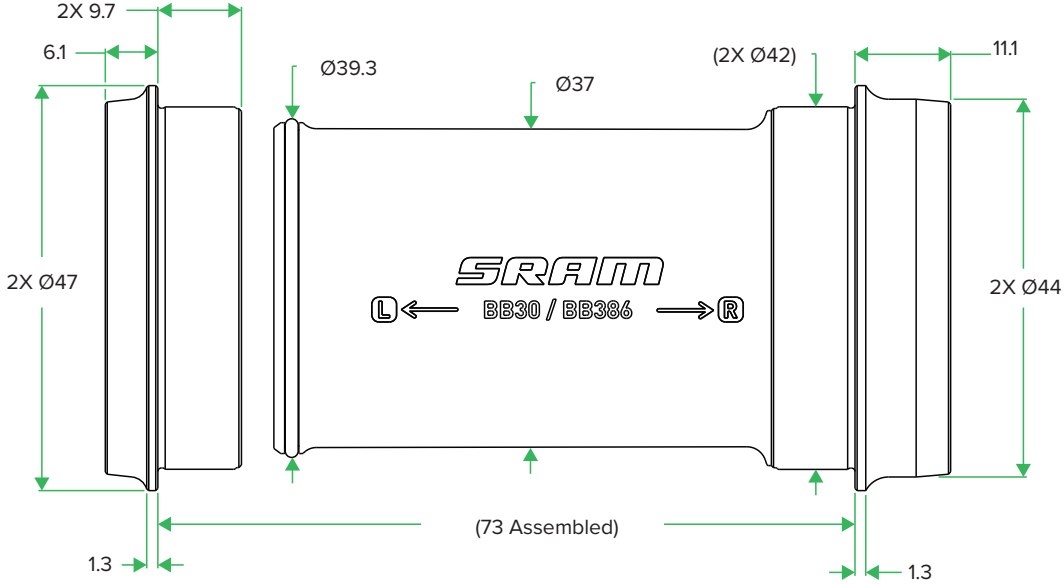


1 Cables and hoses must not contact the crankset spindle during operation; consider cable and hose clearances through the bottom bracket area of the frame.

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

# DUB BB30 73-A

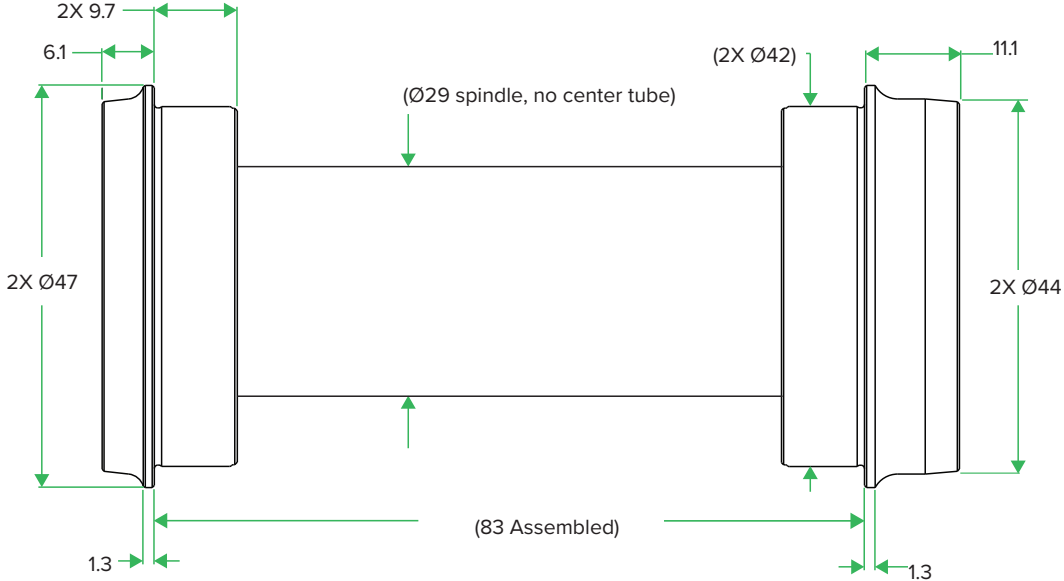
## Bottom Bracket Specification



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

# Recommended Rotor Size and Brake Pad Material

## All SRAM Road Hydraulic Disc Brakes

|                            |                             | Riding Style                   |                                |                                |
|----------------------------|-----------------------------|--------------------------------|--------------------------------|--------------------------------|
|                            |                             | Cyclocross / Time Trial        | Road / Gravel- General         | Road / Gravel- Alpine          |
|                            |                             | Organic or Sintered            | Organic                        | Organic                        |
| System Weight <sup>1</sup> | < 140 lbs (63 kg)           | ø140 mm <sup>3</sup>           | ø140 mm <sup>3</sup>           | ø140 mm <sup>3</sup>           |
|                            | 140 - 160 lbs (63 - 73 kg)  |                                |                                | ø140 mm / ø160 mm <sup>2</sup> |
|                            | 160 - 180 lbs (73 - 82 kg)  |                                | ø140 mm / ø160 mm <sup>2</sup> | ø160 mm                        |
|                            | 180 - 200 lbs (82 - 91 kg)  | ø140 mm / ø160 mm <sup>2</sup> | ø160 mm                        |                                |
|                            | 200 - 240 lbs (91 - 109 kg) | ø160 mm                        |                                |                                |
|                            | 240-260 lbs (109-118 kg)    | ø160 mm / ø180 mm <sup>2</sup> | ø160 mm / ø180 mm <sup>2</sup> | ø180 mm <sup>3</sup>           |
|                            | 260-280 lbs (118-127 kg)    | ø180 mm <sup>3</sup>           | ø180 mm <sup>3</sup>           |                                |

<sup>1</sup> System weight includes the total weight of the bicycle, rider, and all the additional attached items.

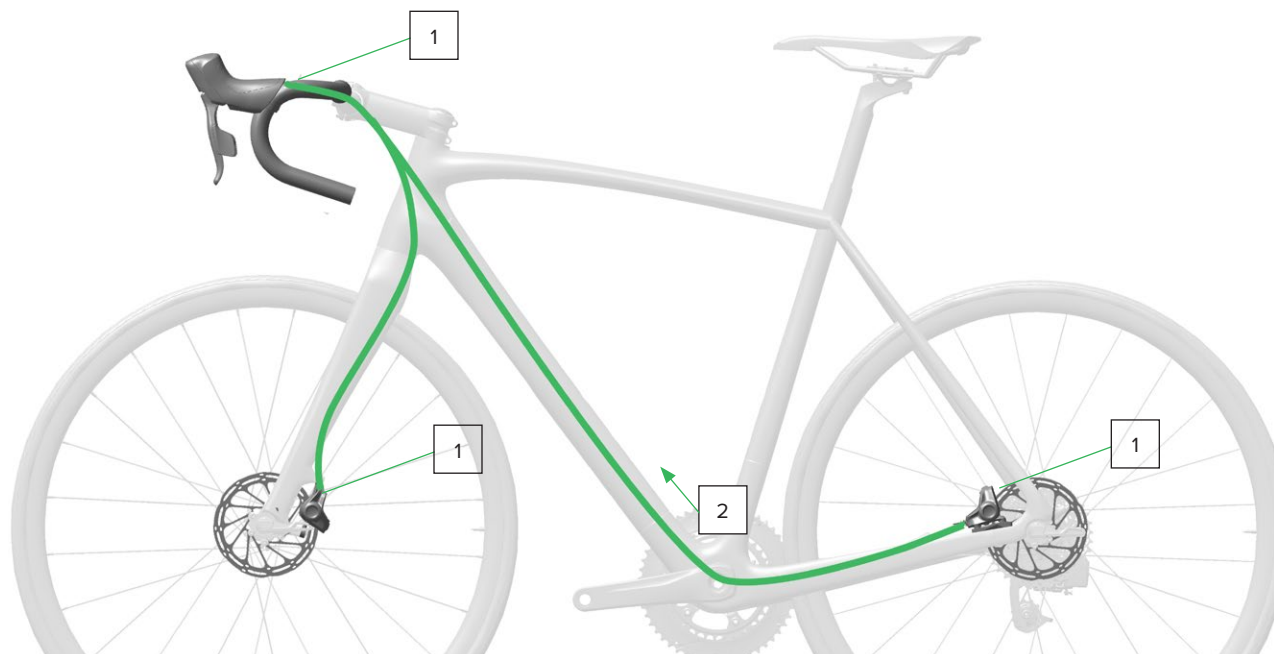
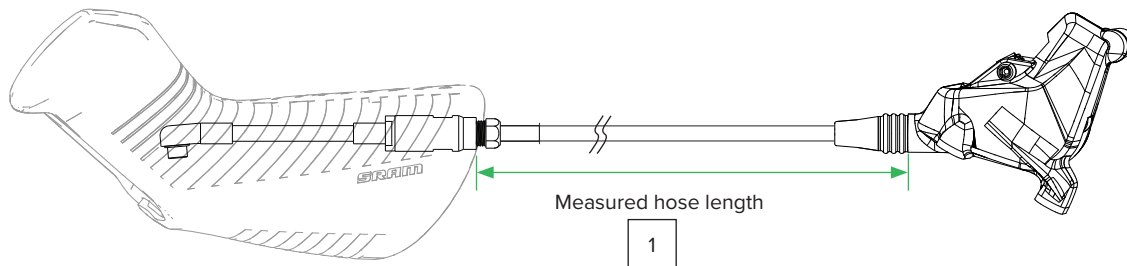
<sup>2</sup> øX / øY show the recommended rotor size for rear and front use.

<sup>3</sup> Consult the fork or frame manufacturer's specification before using a ø140 or a ø180 mm rotor. These rotor sizes have compatibility limitations on many frames and forks.

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

## Disc Brake Hose Length Specification

SJ (Stealth-a-majig)

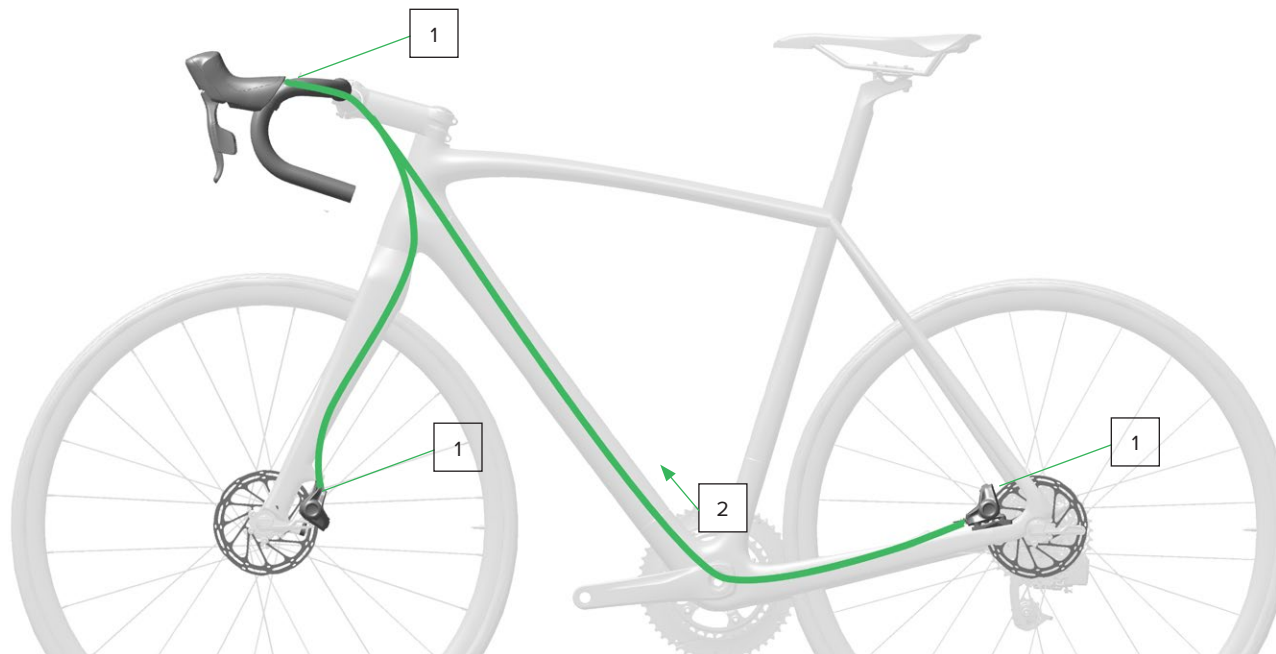
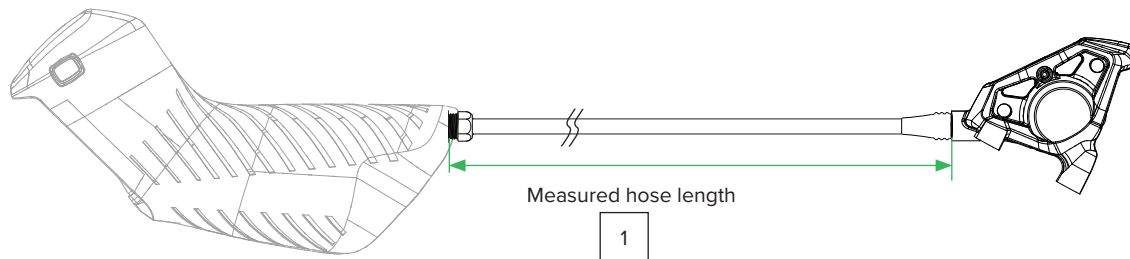


- 1 FG hose length is measured from the caliper to the back of hood/bar interface. This is the same as caliper to disconnected SJ hose end.
- 2 The SJ hose routing is from back to front of bike.
- 3 For internal routing, the SJ connection requires a hole in the frame or fork that is at least  $\text{\O}5.1$  mm.
- 4 Hose bend radius at  $20^{\circ}\text{C}$  = 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)

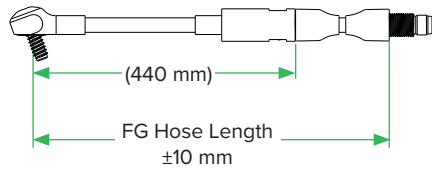


- 1 FG hose length is measured from the caliper to the back of hood/bar interface. This is the same as caliper to disconnected SJ hose end.
- 2 The SJ hose routing is from back to front of bike.
- 3 For internal routing, the SJ connection requires a hole in the frame or fork that is at least  $\text{Ø}5.1$  mm.
- 4 Hose bend radius at  $20^\circ\text{C}$  = 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

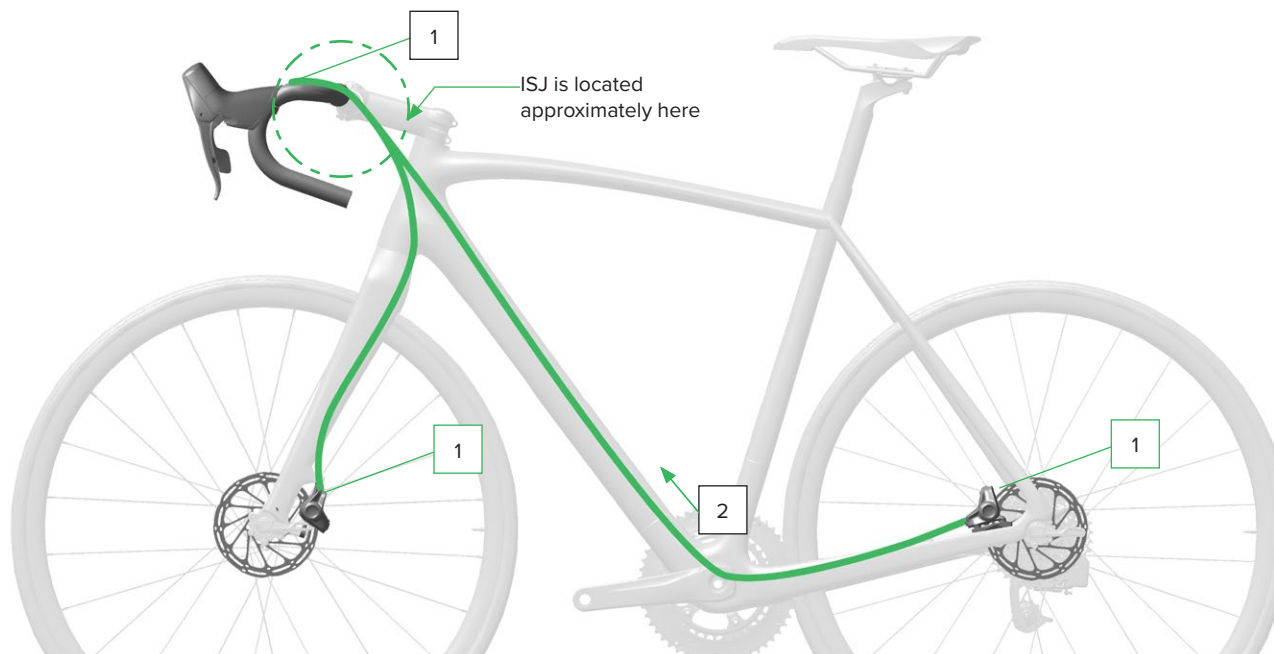
# SRAM RED HRD/ SRAM Force HRD/ SRAM Rival HRD/ SRAM Apex HRD/ S-700 HRD

## Disc Brake Hose Length Specification

ISJ (Inline Stealth-a-majig)



Connected Hose



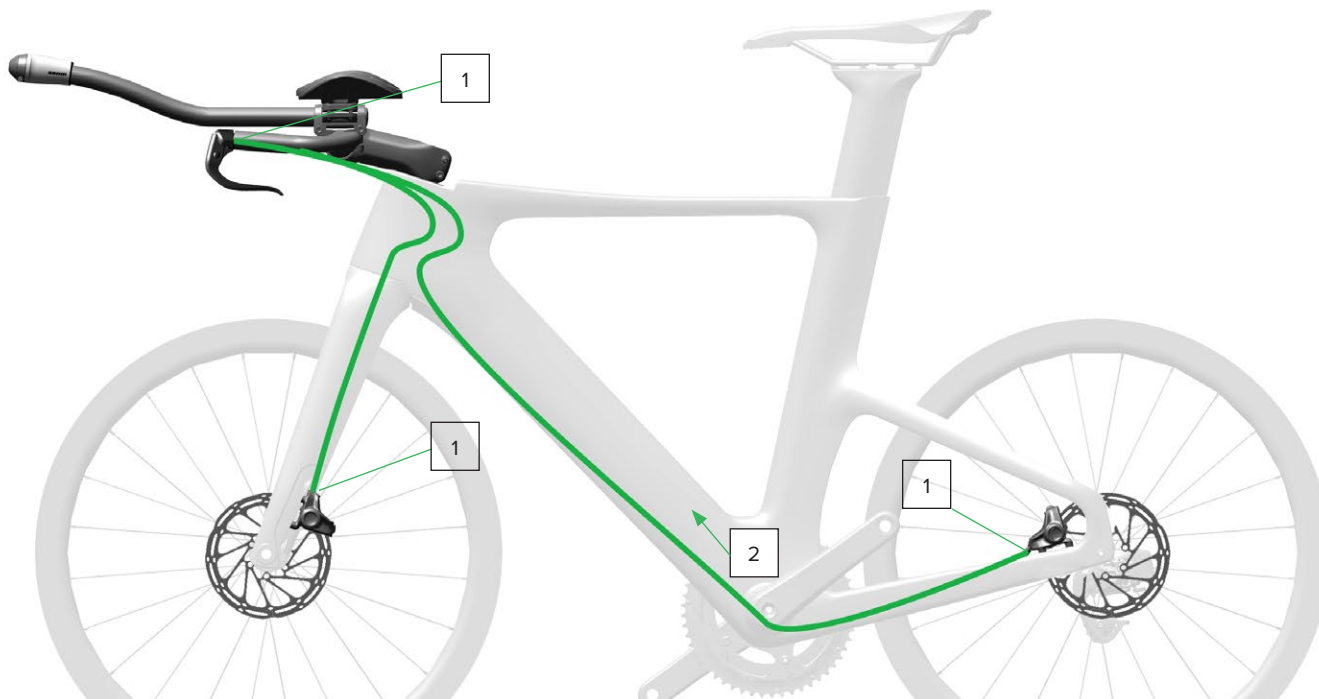
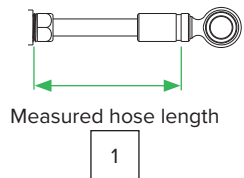
ISJ is located approximately here

- 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  $\text{Ø}5.1$  mm.
- 4 Hose bend radius at  $20^{\circ}\text{C}$  = 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

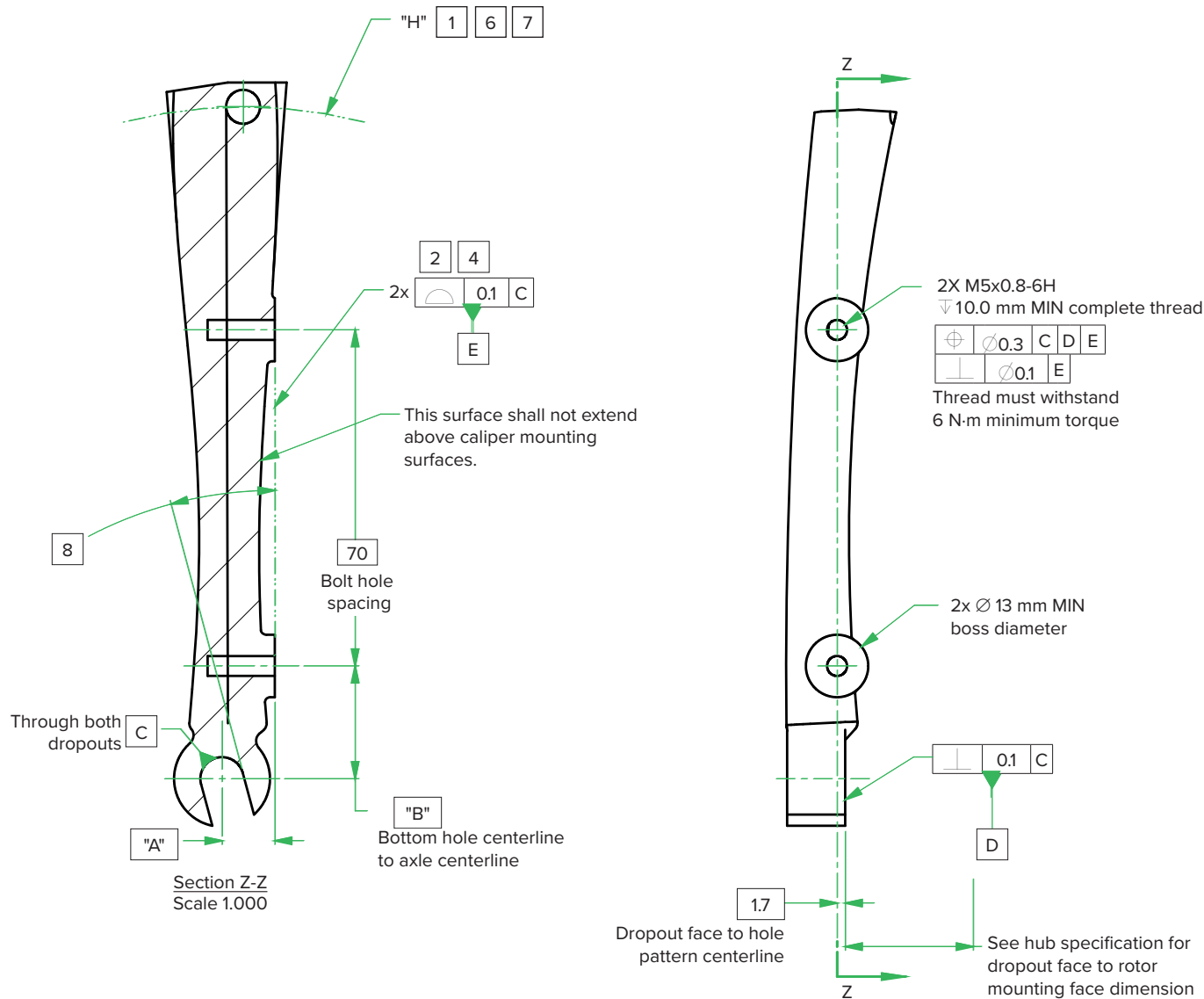
## Disc Brake Hose Routing Specification



- 1 FG (Finished Good) hose equals the hose length from the end 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  $\text{Ø}5.1$  mm.
- 4 Hose bend radius at  $20^\circ\text{C}$  = 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

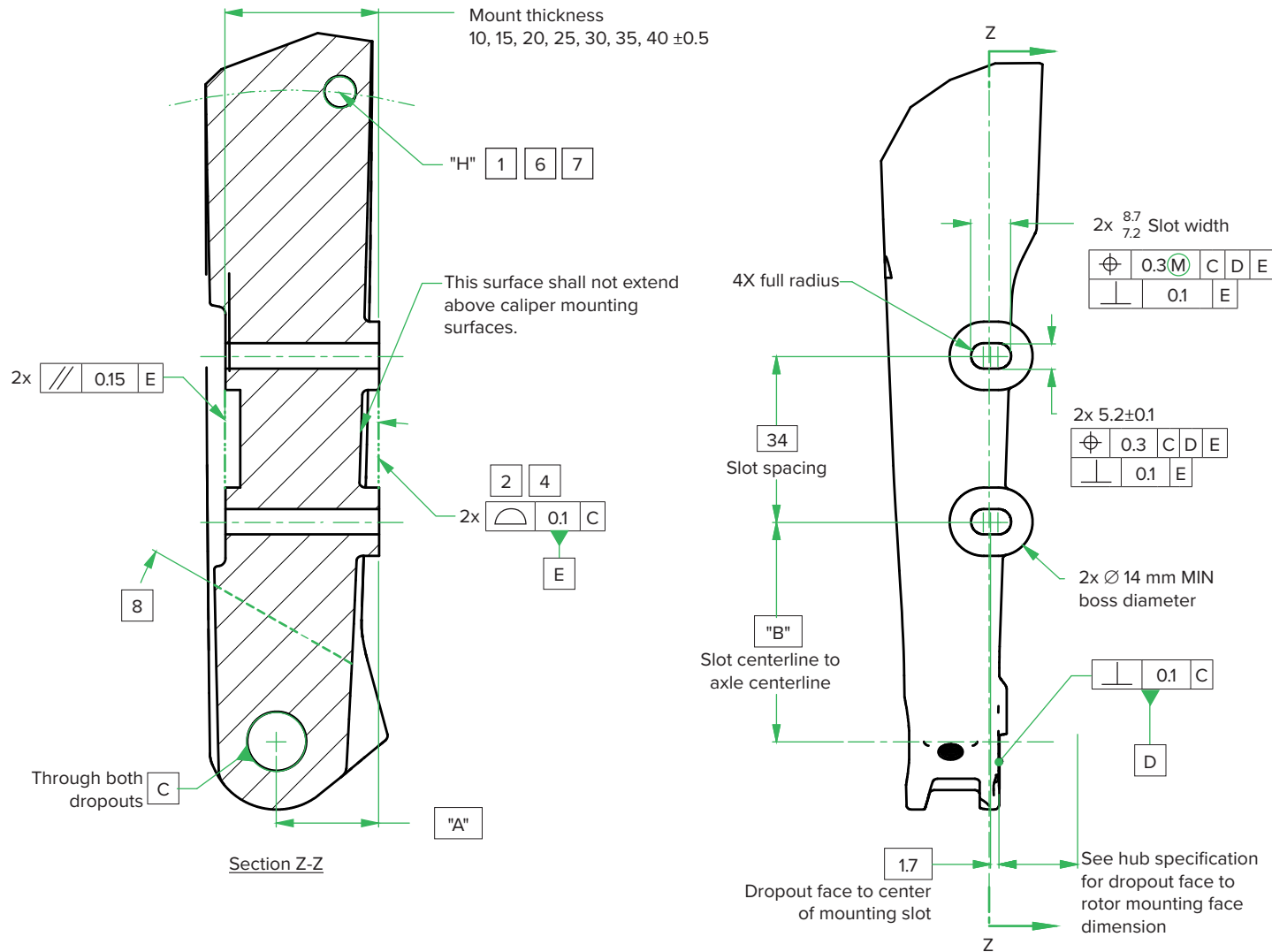


| Rotor ∅ (mm) | A    | B    | H (Radius) |
|--------------|------|------|------------|
| 140/160      | 11   | 23.5 | 140        |
| 160/180      | 16.7 | 32   | 150        |
| 180/200      | 22.4 | 40.5 | 160        |
| 200/220      | 28.1 | 49   | 170        |

- Minimum internal routing hole position does not apply to Connect-a-majig.
- There is potential for the fork and caliper interface to be exposed to high temperatures. This should be evaluated on all designs.
- All dimensions and tolerances apply in free state and as assembled.
- Surfaces must be free from paint.
- All dimensions applied after paint unless otherwise specified.
- All surfaces that come in contact with brake hose should be free of burrs and sharp edges.
- Internal hose routing hole position radius "H" mm MIN from dropout.
- 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

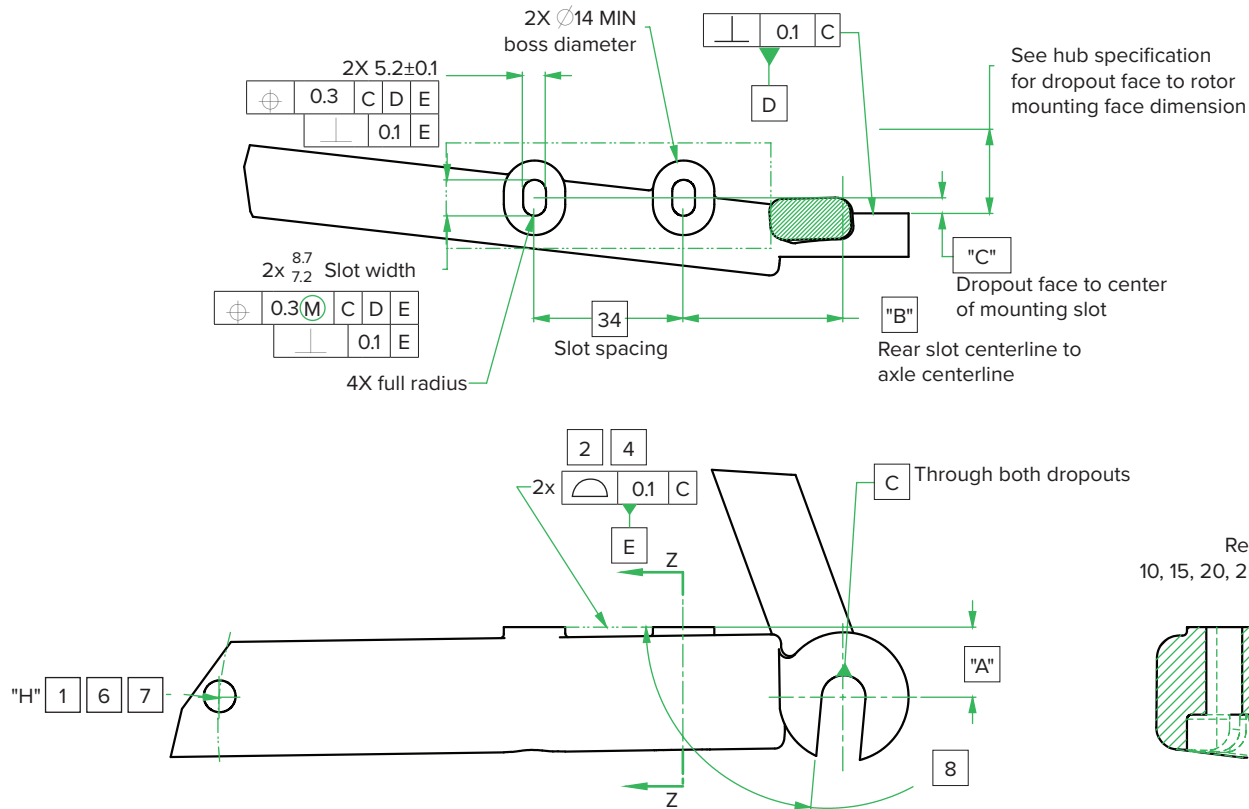


| Rotor Ø (mm) | A    | B    | H (Radius) |
|--------------|------|------|------------|
| 140          | 16.0 | 36.5 | 140        |
| 160          | 21.0 | 45.0 | 150        |
| 180          | 26.0 | 53.5 | 160        |
| 200          | 31.0 | 62.0 | 170        |
| 220          | 36.0 | 70.5 | 180  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

- 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

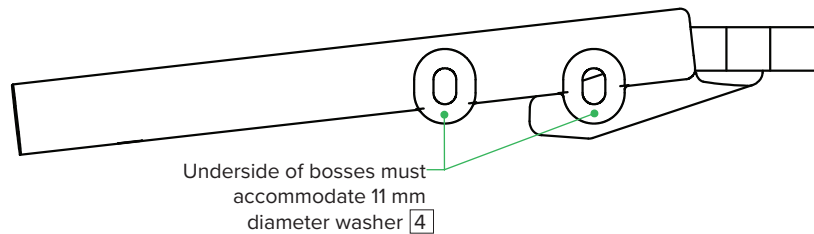
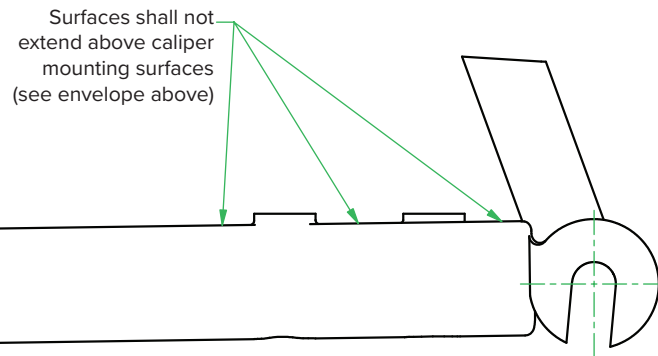
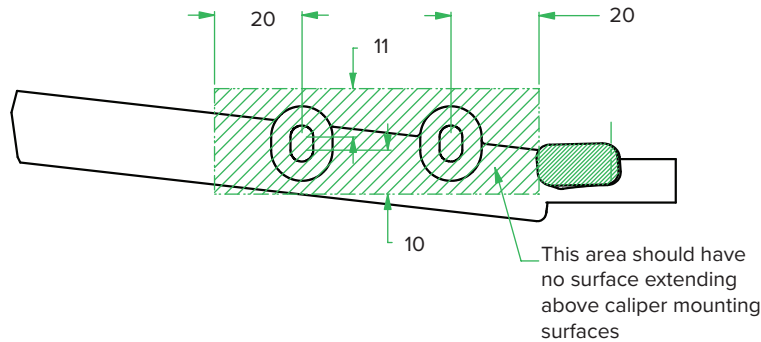


| Rotor $\varnothing$ (mm) | A    | B    | H (Radius) |
|--------------------------|------|------|------------|
| 140                      | 16.0 | 36.5 | 140        |
| 160                      | 21.0 | 45.0 | 150        |
| 180                      | 26.0 | 53.5 | 160        |
| 200                      | 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  $\perp$
- 8 Wheel installation may be impeded by rotor-to-caliper interference when wheel installation path approaches or is less than  $69^\circ$ .

# Flat Mount Thru Bolt Frame Specification

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

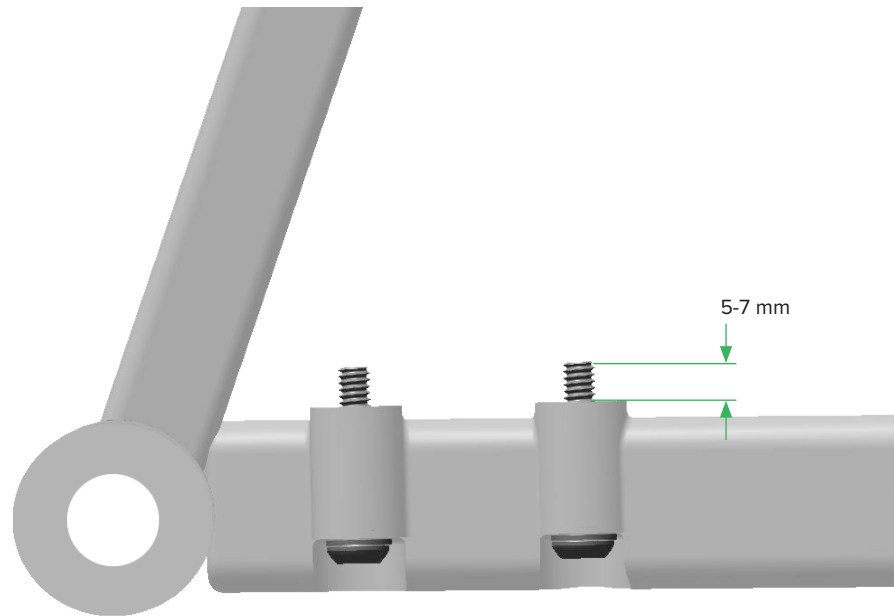


| Rotor $\varnothing$ (mm) | A    | B    | H (Radius) |
|--------------------------|------|------|------------|
| 140                      | 16.0 | 36.5 | 140        |
| 160                      | 21.0 | 45.0 | 150        |
| 180                      | 26.0 | 53.5 | 160        |
| 200                      | 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  $\perp$
- 8 Wheel installation may be impeded by rotor-to-caliper interference when wheel installation path approaches or is less than  $69^\circ$ .

# Flat Mount Frame Specification

All SRAM Flat Mount Calipers



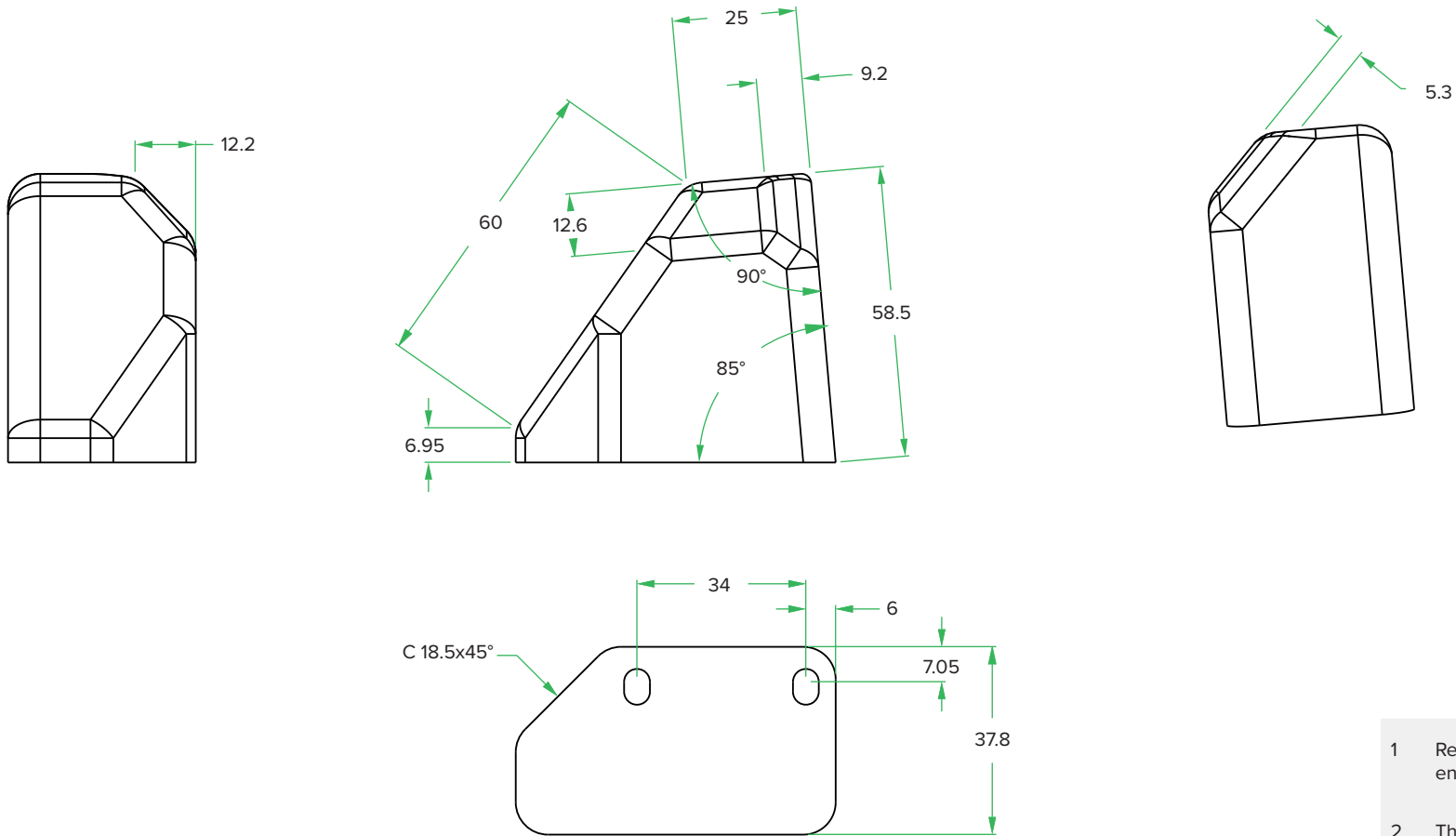
## **⚠WARNING - CRASH HAZARD**

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

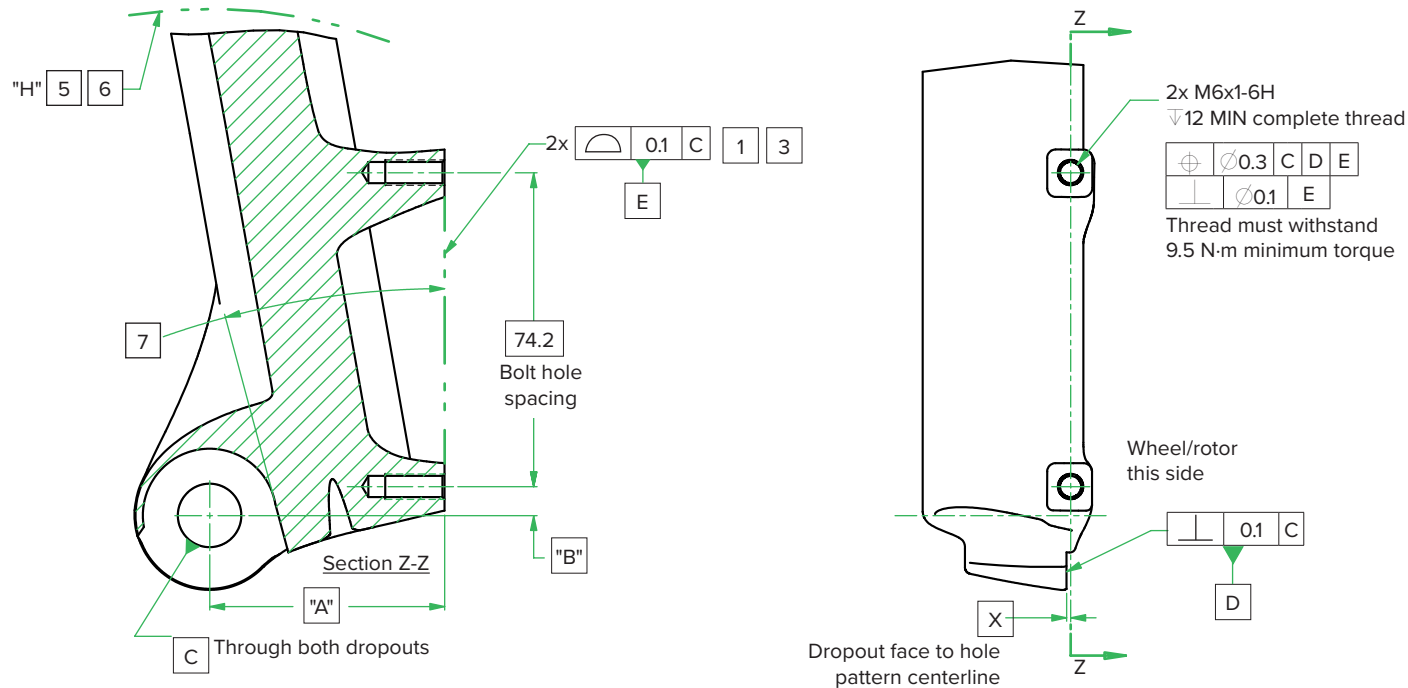
## Flat Mount Caliper Envelope



- 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        |

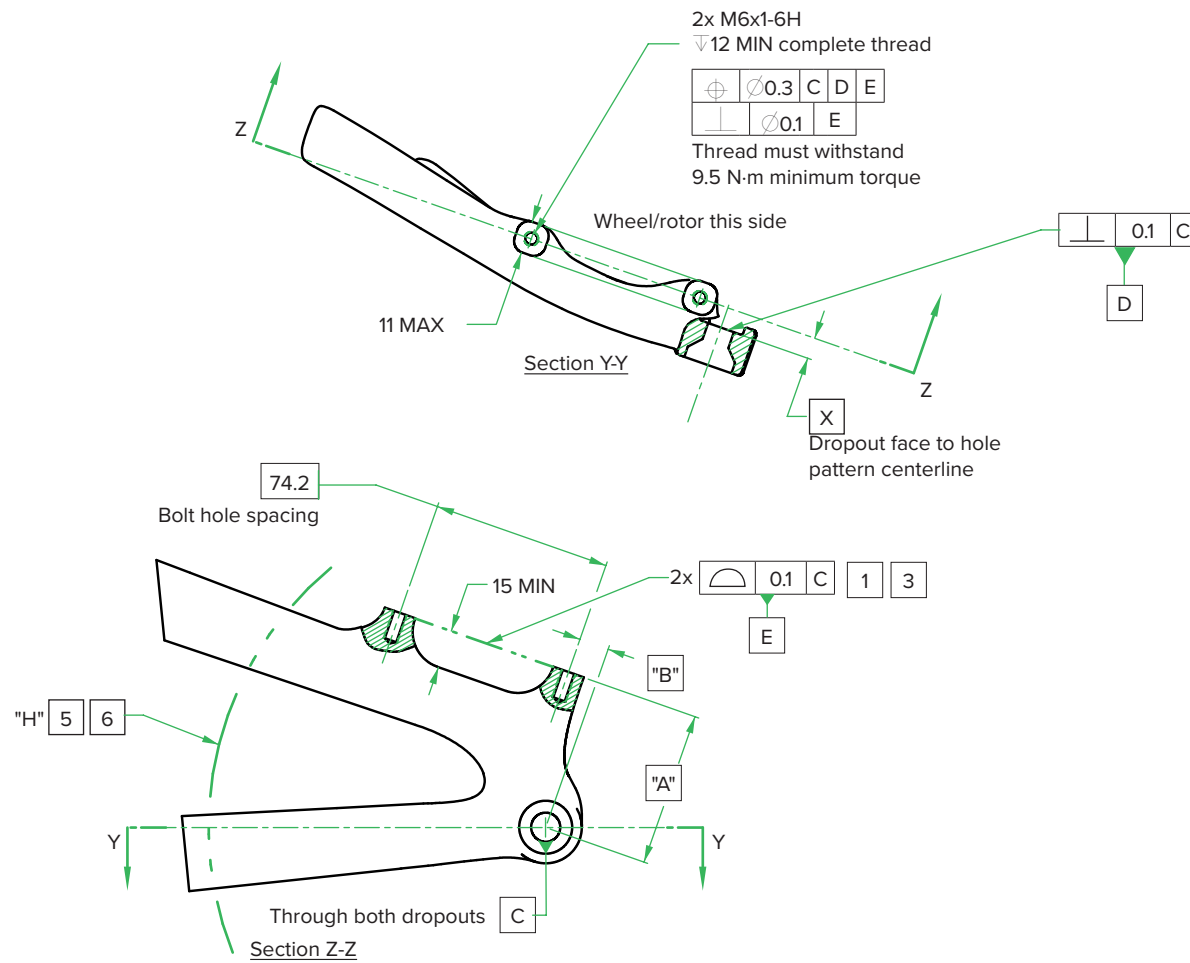
| Hub Standard  | X    |
|---------------|------|
| 9x100 (QR)    | 0.94 |
| 15x100        |      |
| 15x110 Boost  |      |
| 20x110 Boost  | 5.94 |
| Legacy 20x110 |      |

- 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  $\phi$ .
- 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 $\varnothing$ (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        |

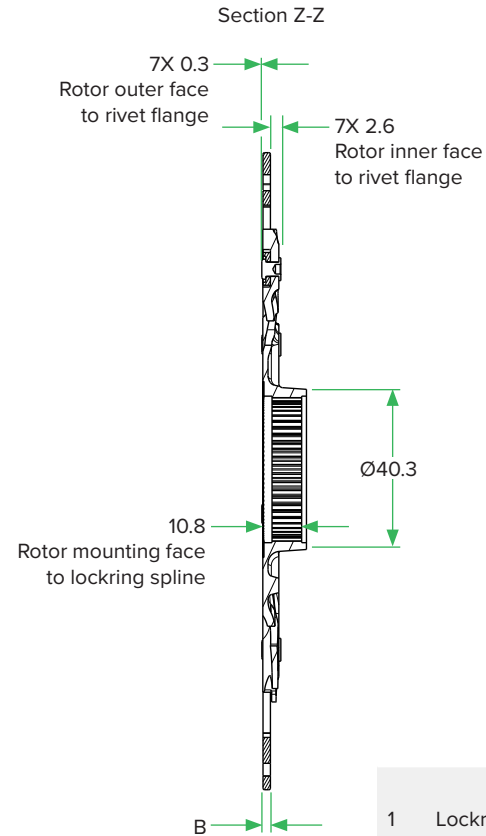
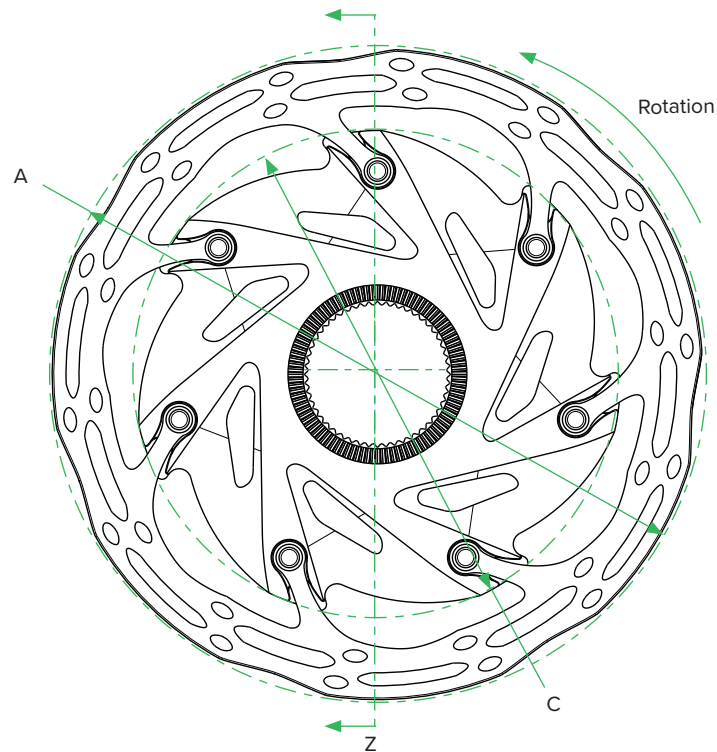
| Hub Standard       | X   |
|--------------------|-----|
| 10x135 (QR)        | 5.7 |
| 12x142             |     |
| 12x148 Boost       | 9.2 |
| 12x157 Super Boost |     |

- 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  $\varnothing$ .

# 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             |                  |

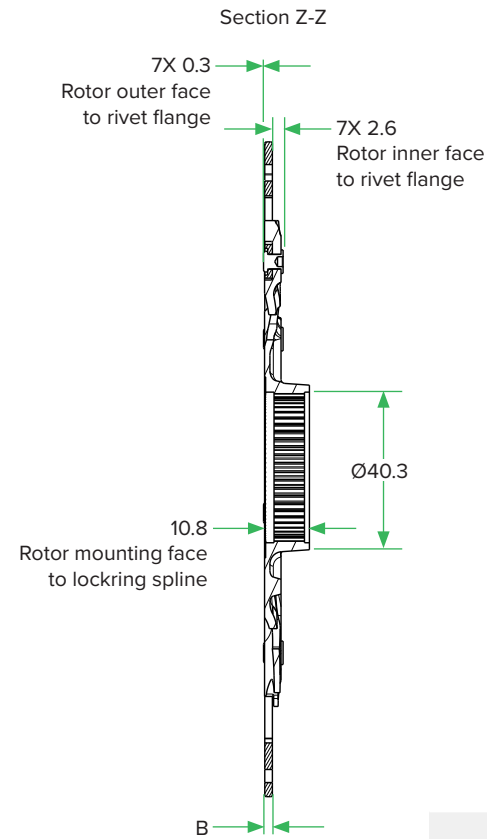
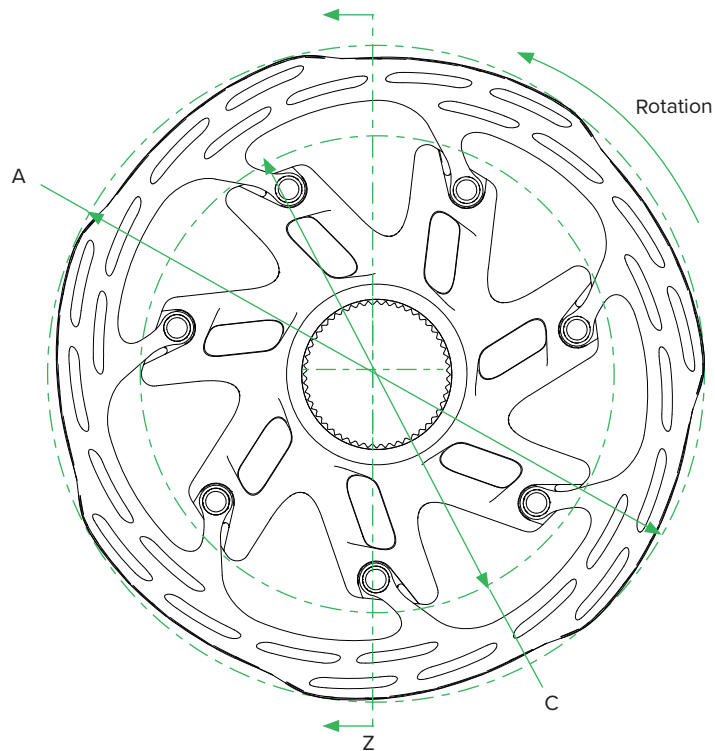


1 Locking torque to 40 N-m (354 in-lb).

# SRAM Paceline X

## Two-piece Center Locking Rotor Dimensions

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

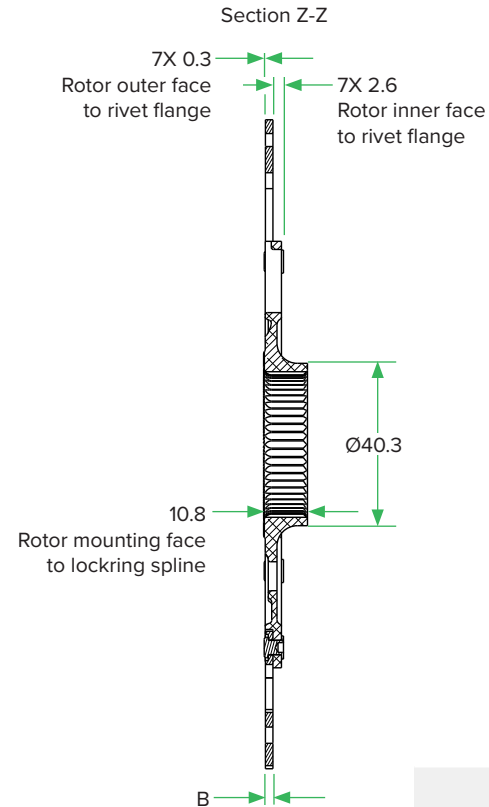
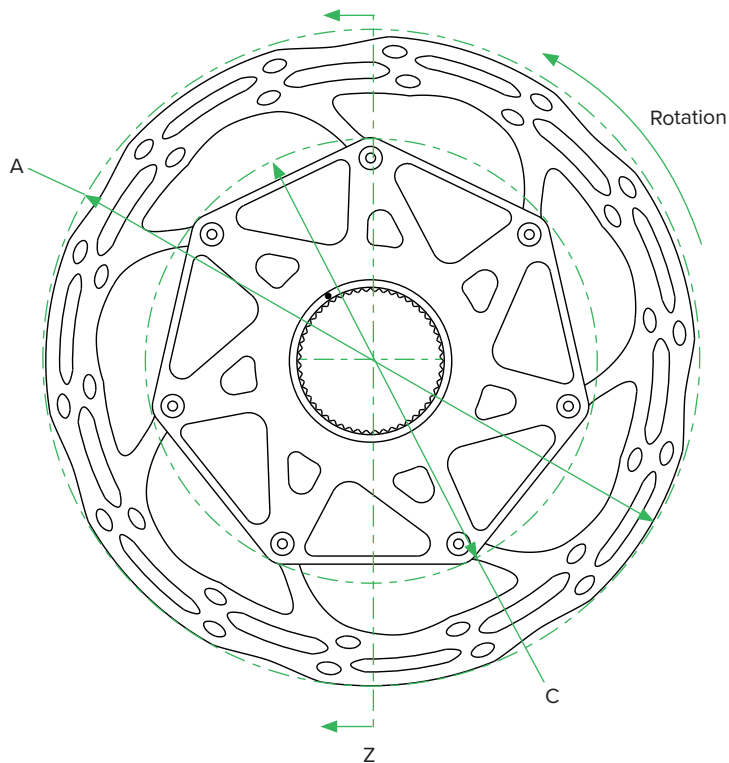


1 Locking torque to 40 N-m (354 in-lb).

# 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            |



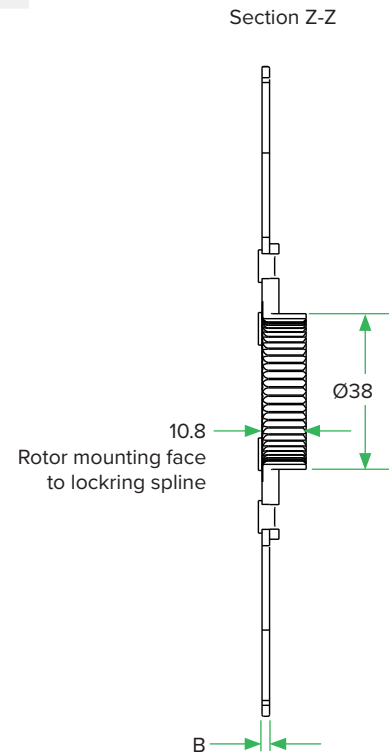
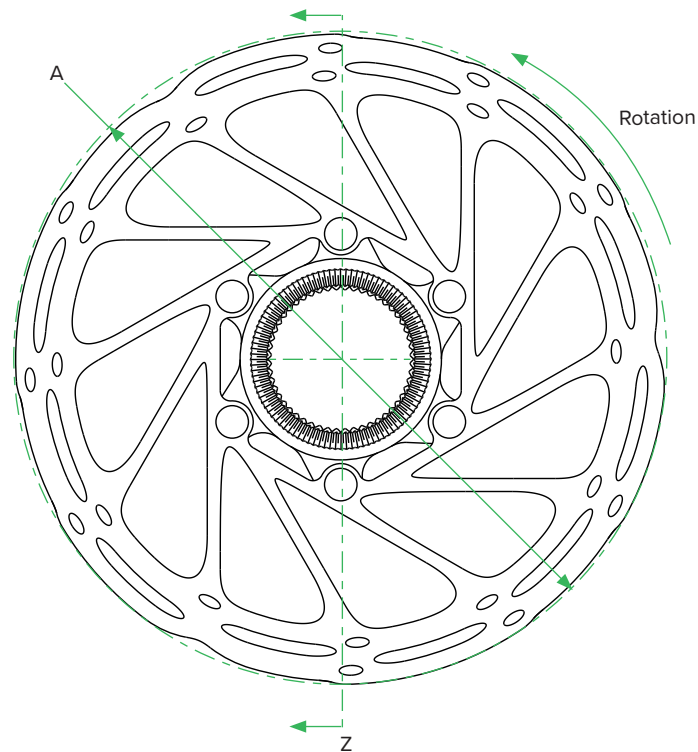
1 Lockring torque to 40 N-m (354 in-lb).

# SRAM CenterLine/ SRAM Paceline

## One-Piece Center Locking Rotor Dimensions

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

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

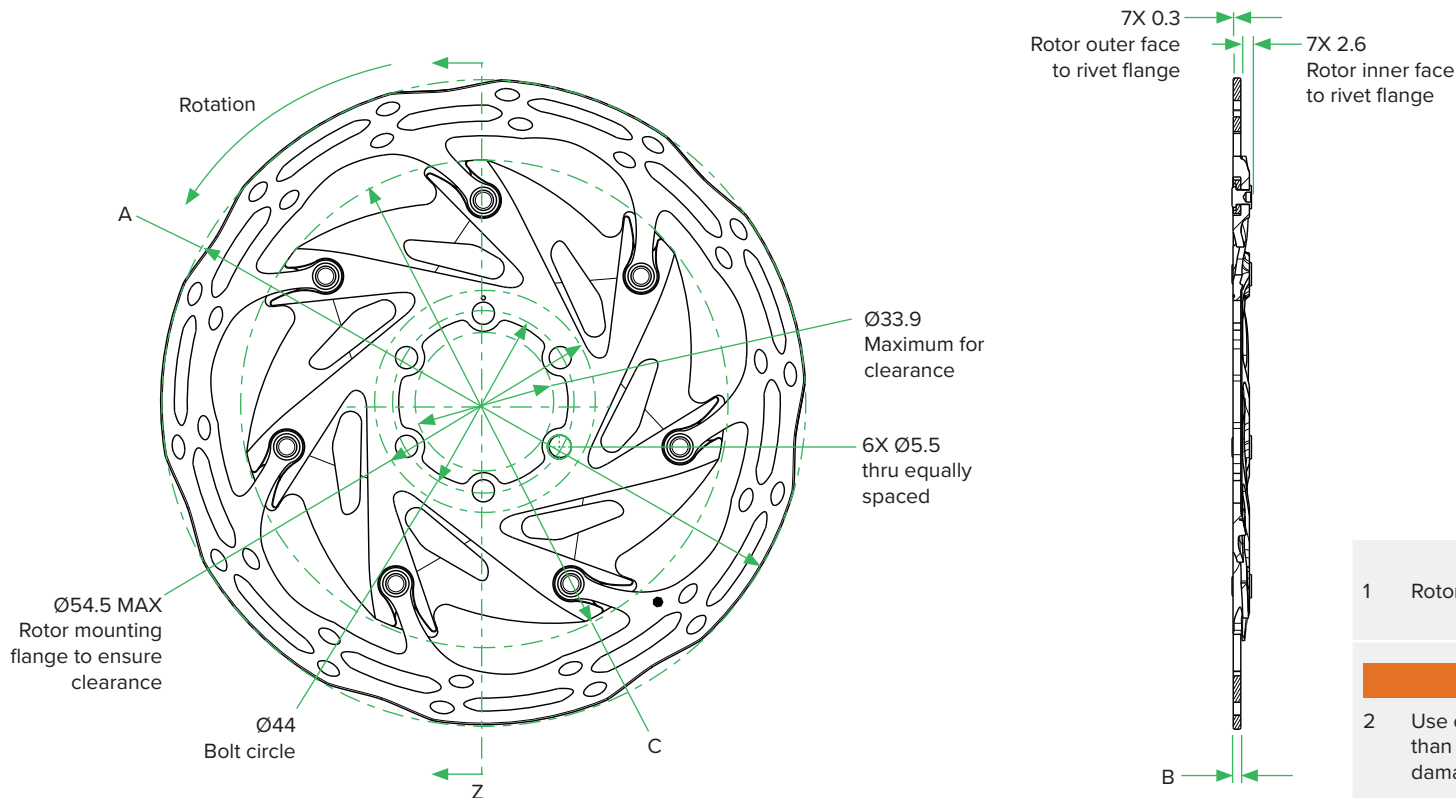


1 Locking torque to 40 N-m (354 in-lb).

# 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).

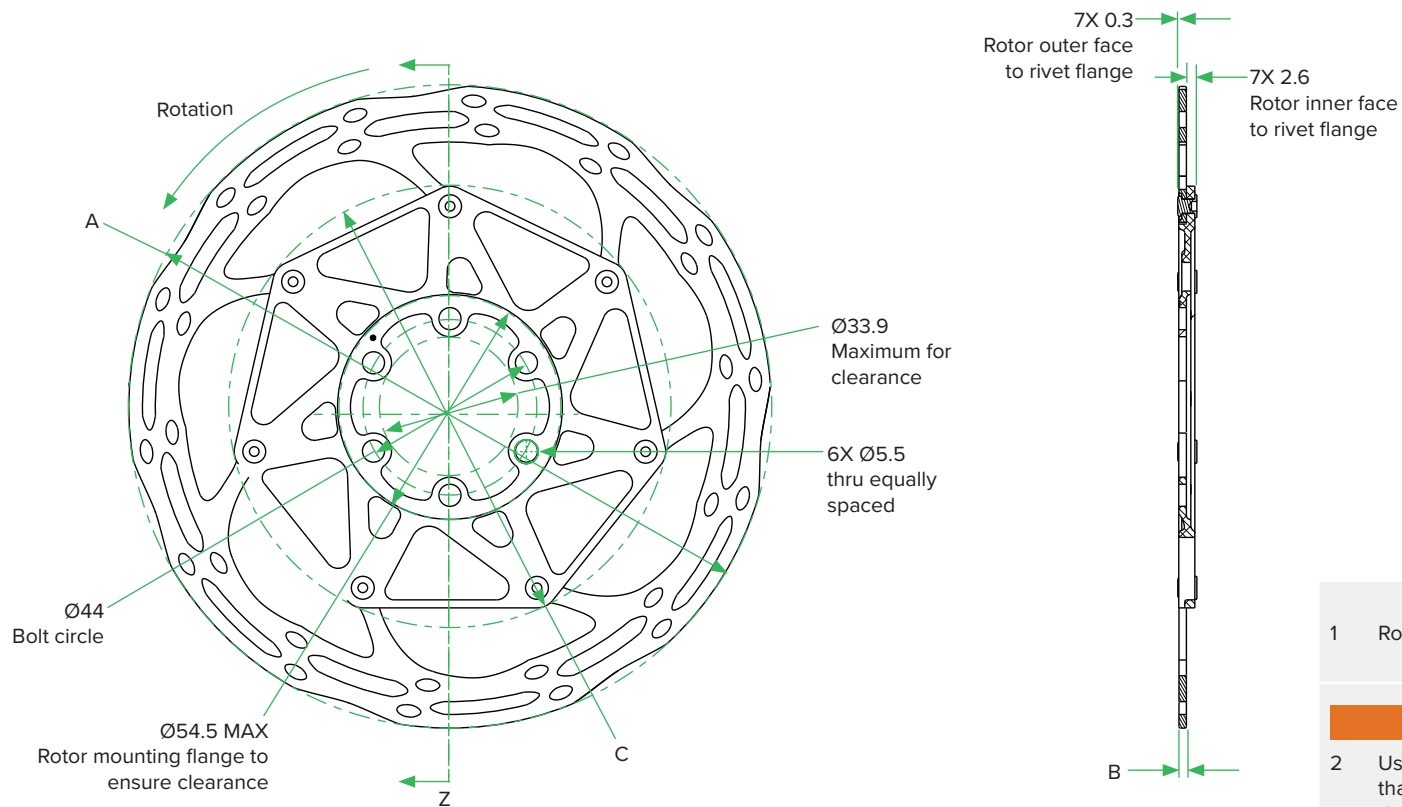
### **⚠WARNING**

- 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**

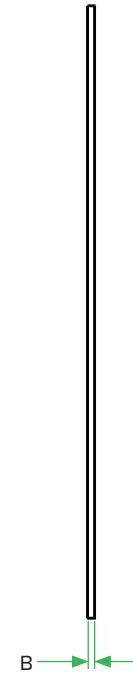
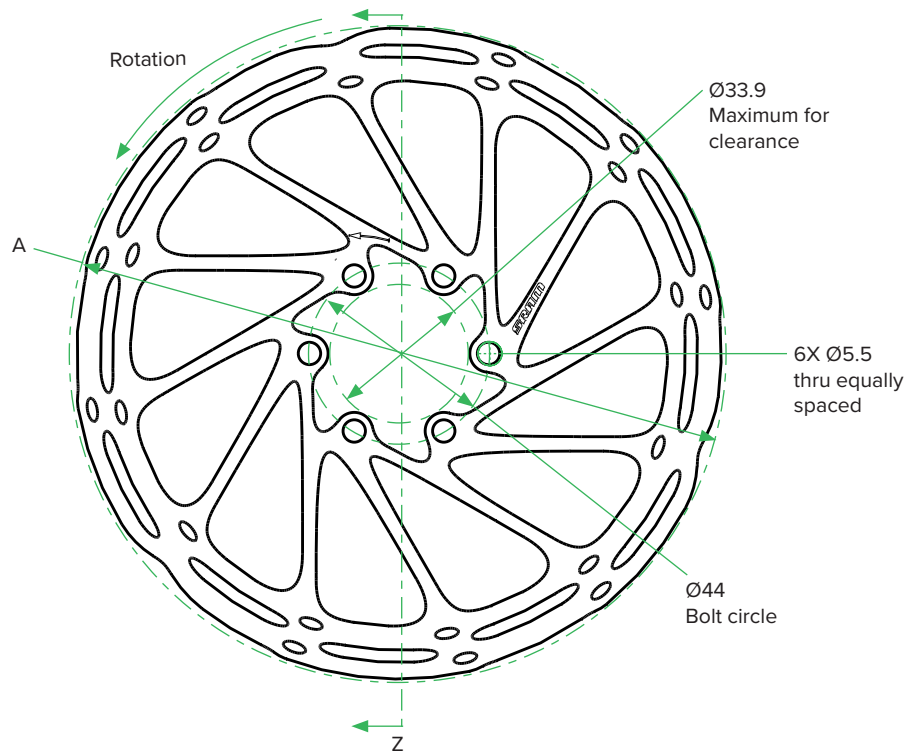
- 2 Use only 10 mm length rotor bolts. Rotor bolts longer than 10 mm will not properly secure rotor and could damage the hub.

# SRAM CenterLine/ SRAM Paceline

## One-piece 6-Bolt Rotor Dimensions

| Rotor size | Rotor Thickness                   |        |
|------------|-----------------------------------|--------|
|            | Radiused Outer Diameter<br>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).

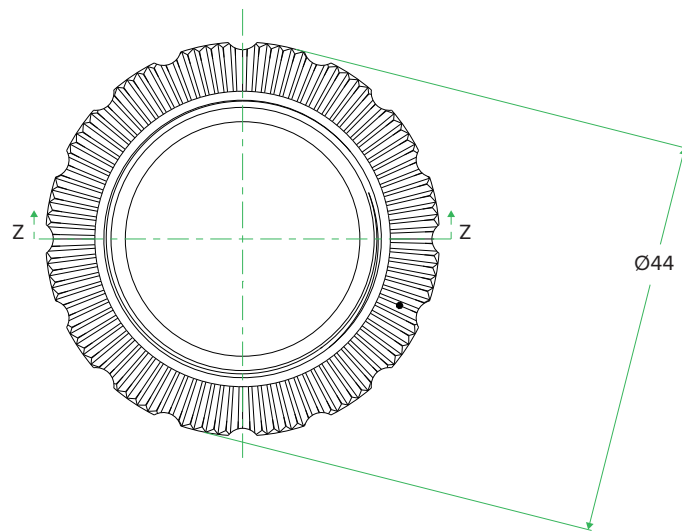
### **⚠ WARNING**

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

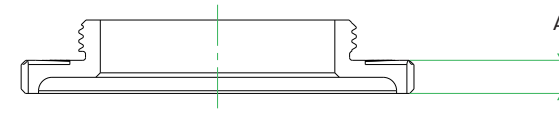


# Lockring for Center Locking Rotor Specifications

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



Section Z:Z

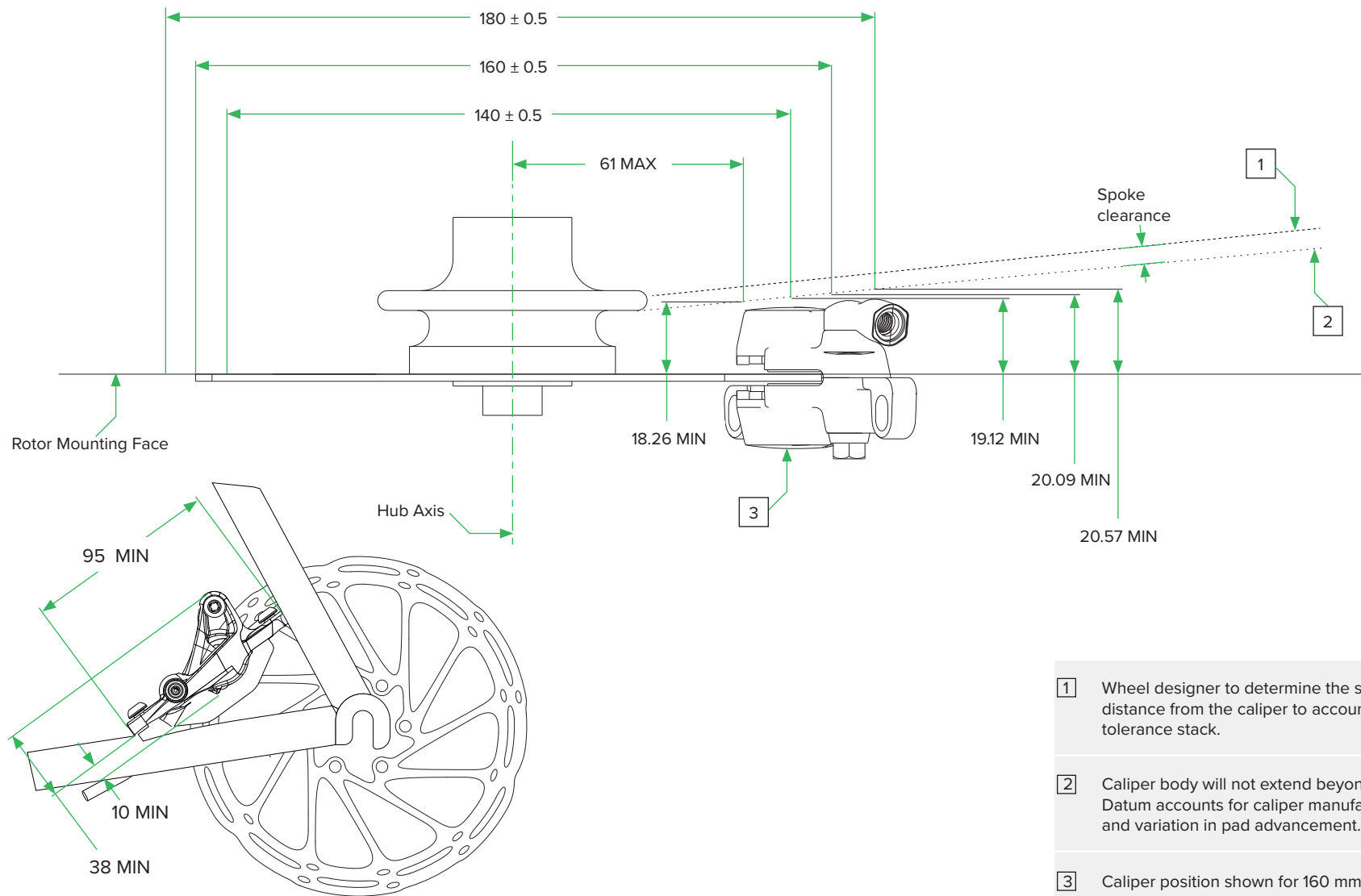


## Note

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

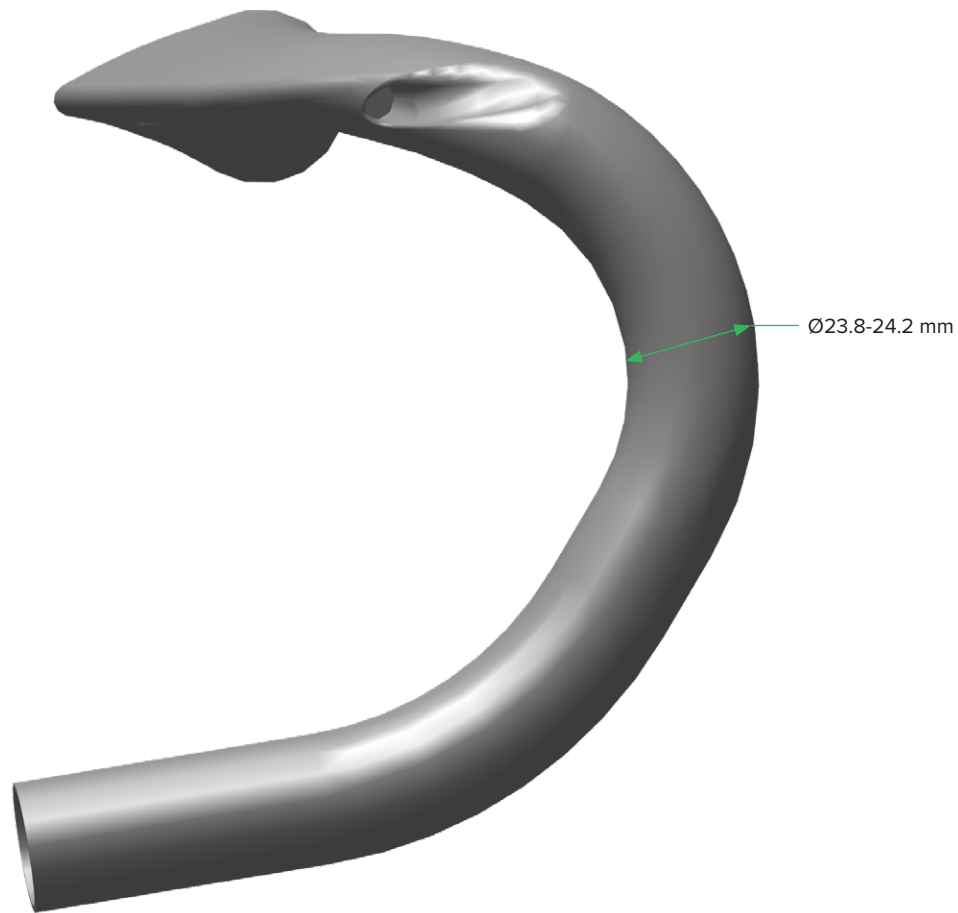
## Road Disc Brakes



- 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.

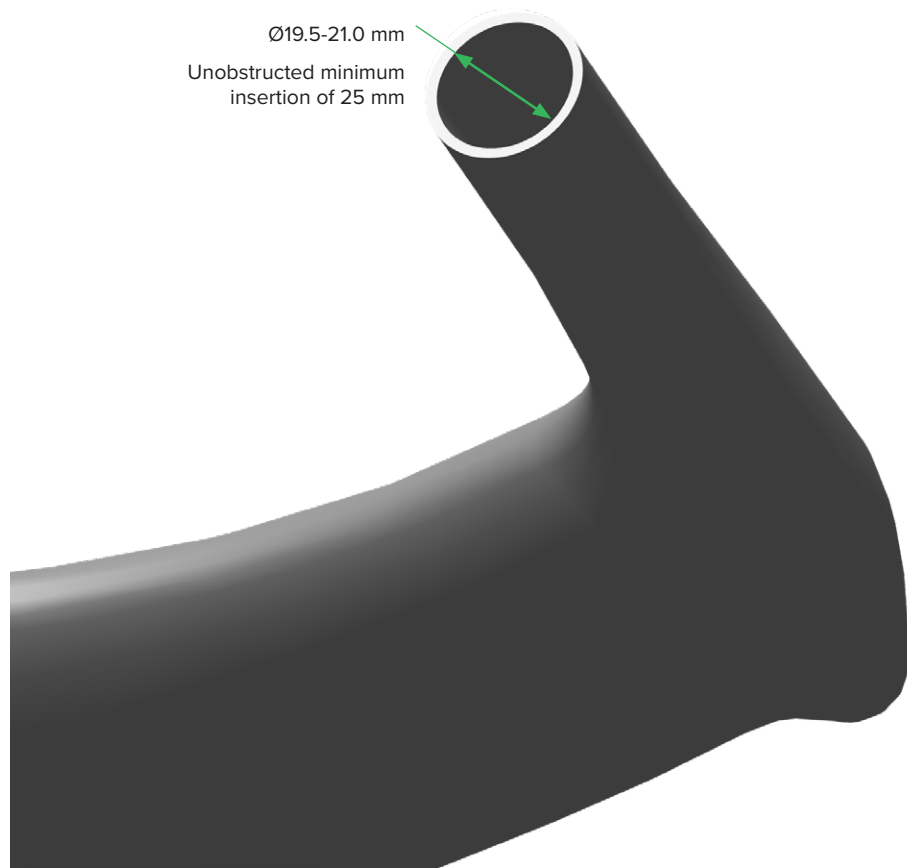
# Dropbar Guidelines

All Road Shift-Brakes and Brake Levers



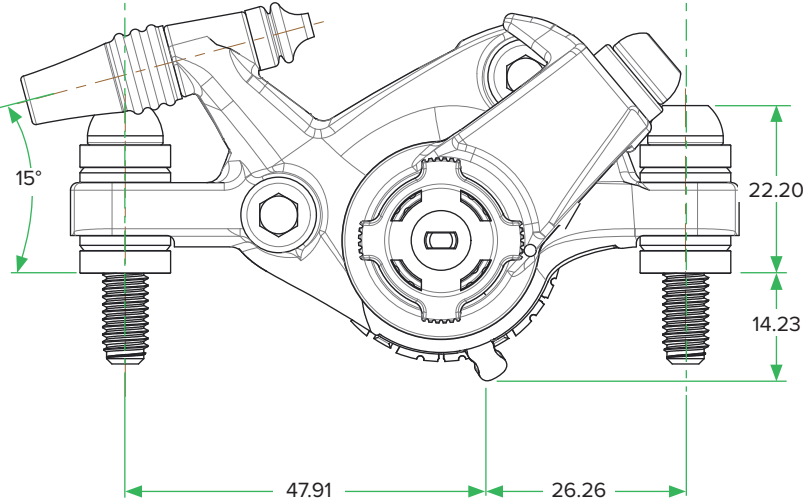
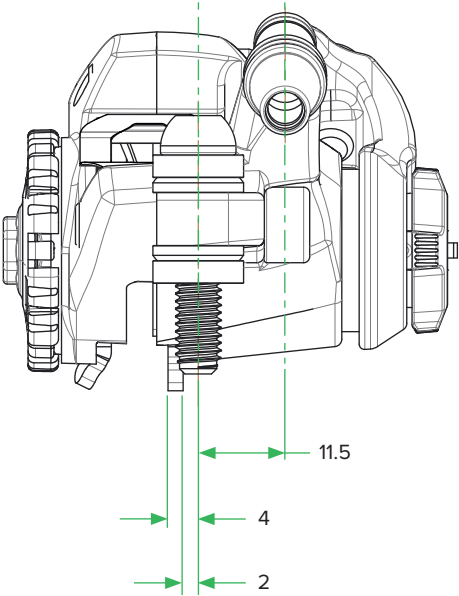
# S-900 Aero HRD

## Hydraulic Aero Brake Lever Bar Guidelines



# BB7/ BB5 Road

## Mechanical Disc Brake Clearance



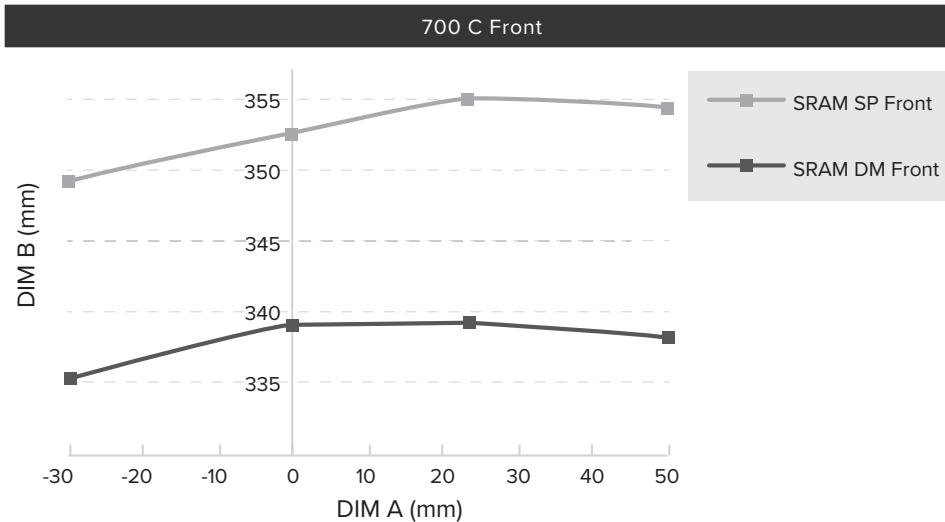
# Front Rim Brake Caliper

## Direct Mount and Single Pivot Design Dimensions

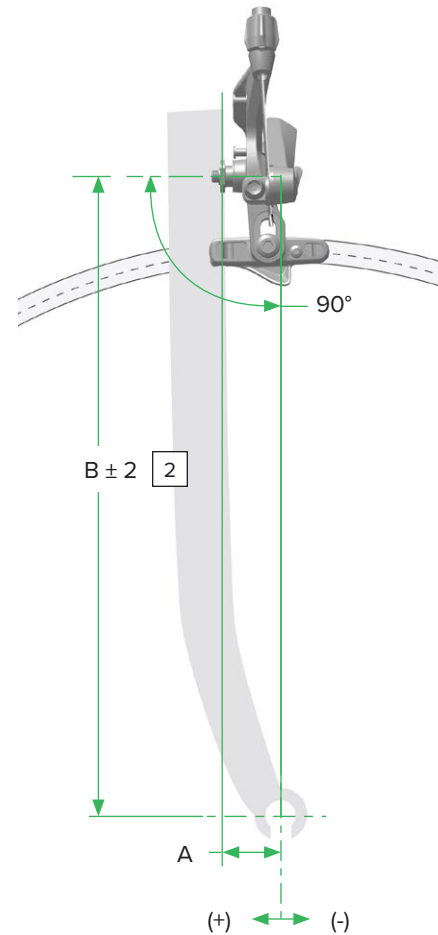
Brake Caliper Pivot Location

| 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 |     |

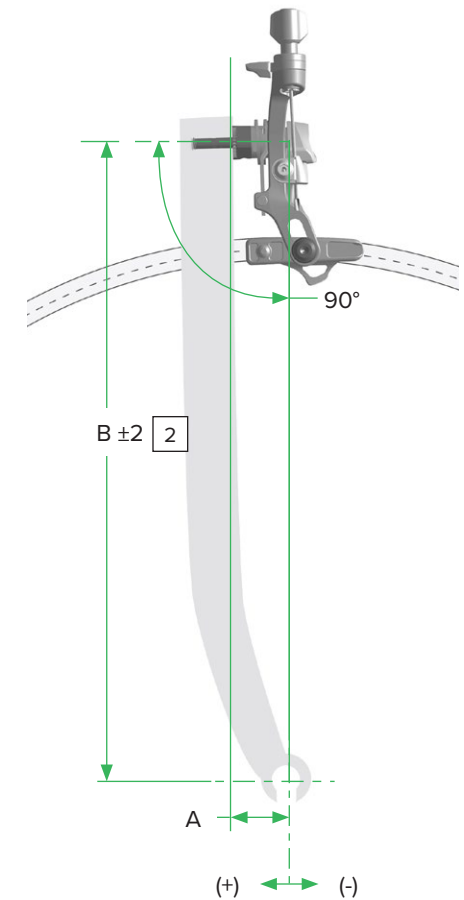
- 1 For increased tire clearance, make mounting features to the + side of the "B" dimension tolerance limit.
- 2 For 650c wheels, subtract 26 mm from the 700c "B" dimensions.
- 3 Mount only to the front side of the fork.



Direct Mount Front Rim Brake Caliper



Single Pivot Front Rim Brake Caliper



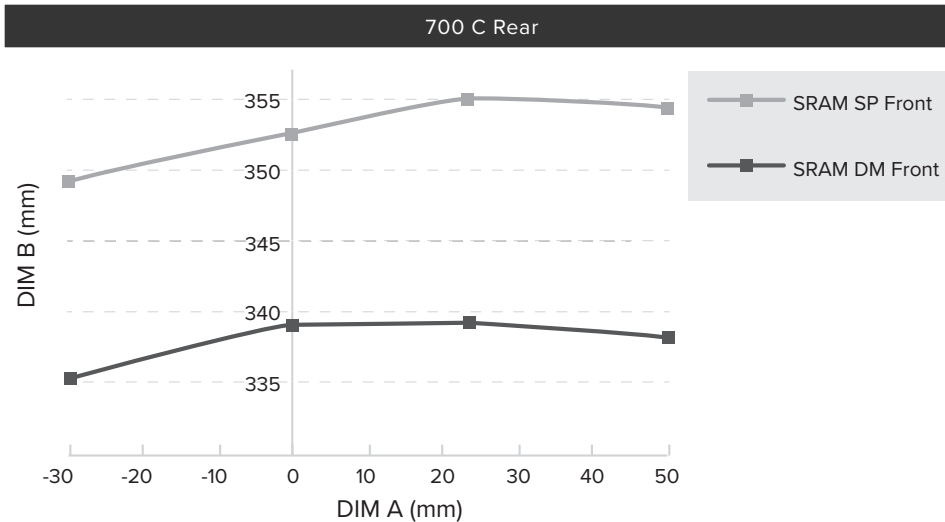
# Rear Rim Brake Caliper

## Direct Mount and Single Pivot Design Dimensions

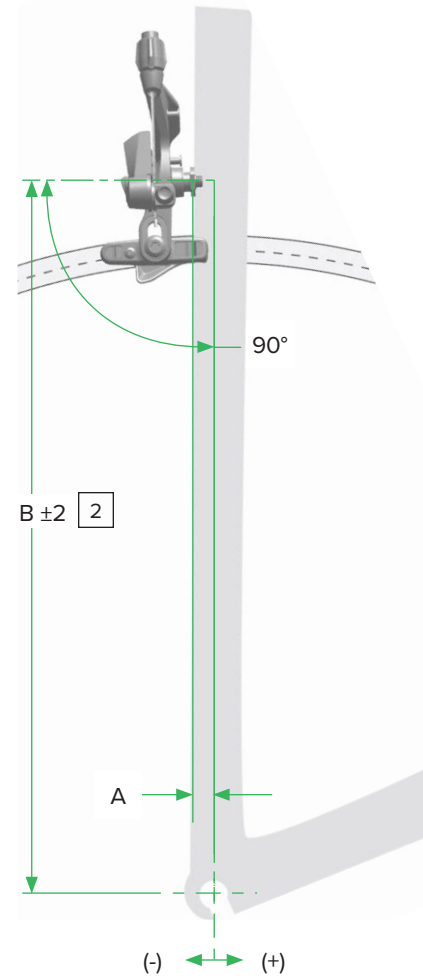
Brake Caliper Pivot Location

| 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 |     |

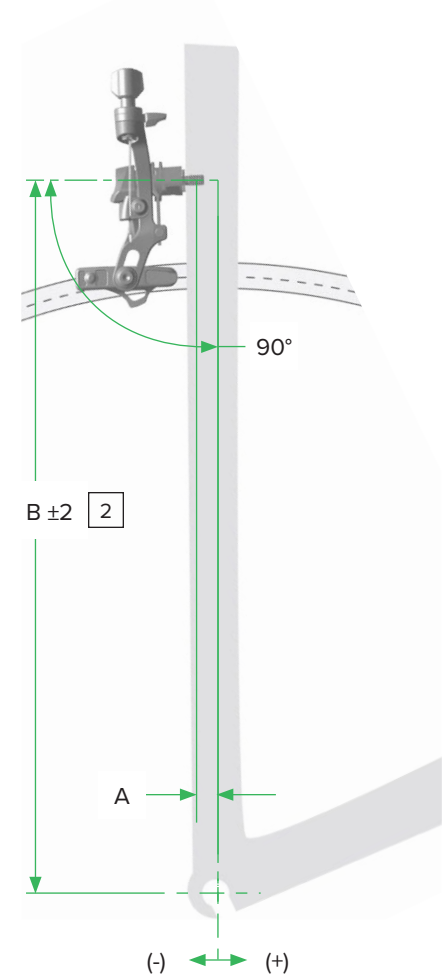
- 1 For increased tire clearance, make mounting features to the + side of the "B" dimension tolerance limit.
- 2 For 650c wheels, subtract 26 mm from the 700c "B" dimensions.
- 3 Mount only to the back side of the seatstay. Do not mount under bottom bracket or on the front side of the seatstay.



Direct Mount Rear Rim Brake Caliper

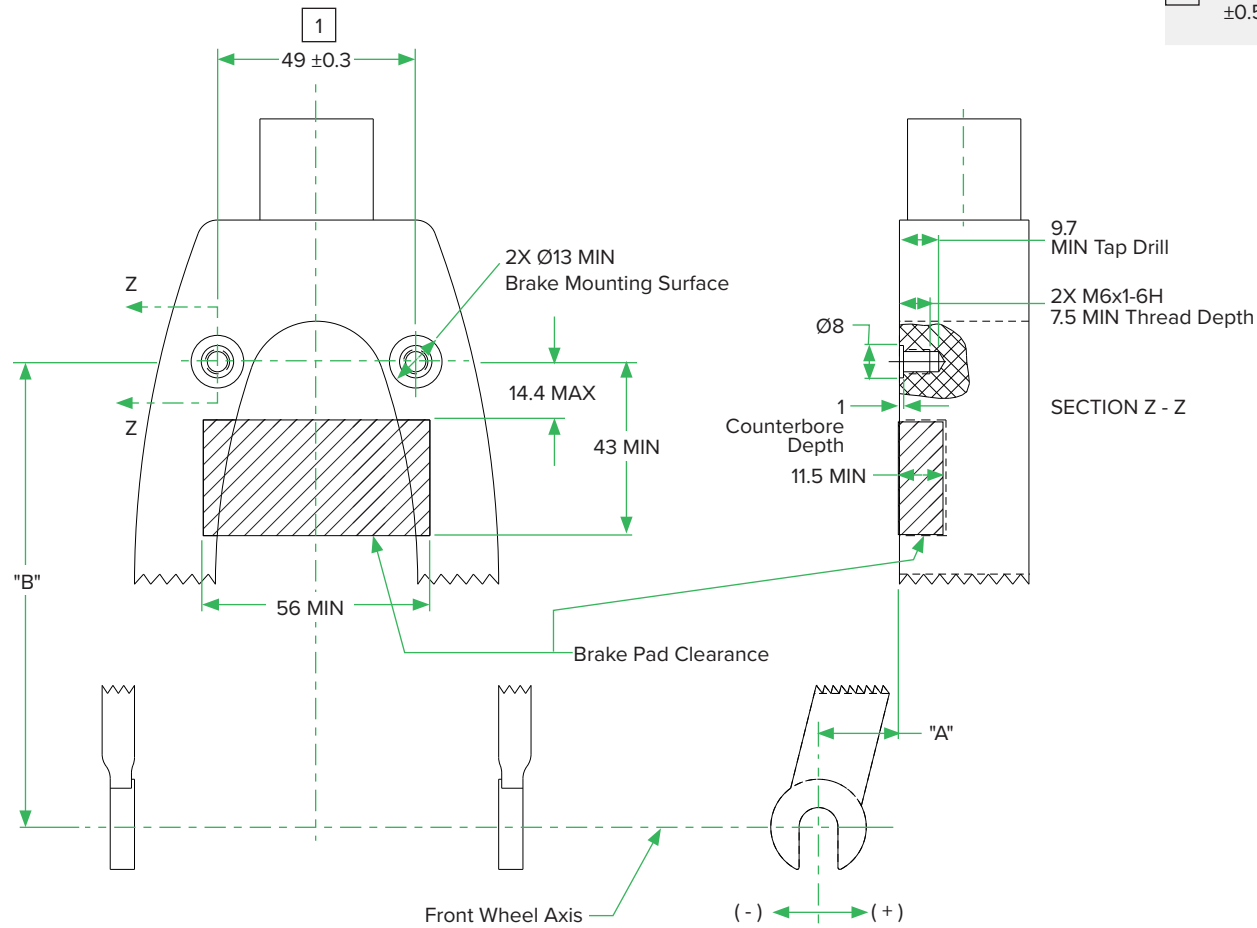


Single Pivot Rear Rim Brake Caliper



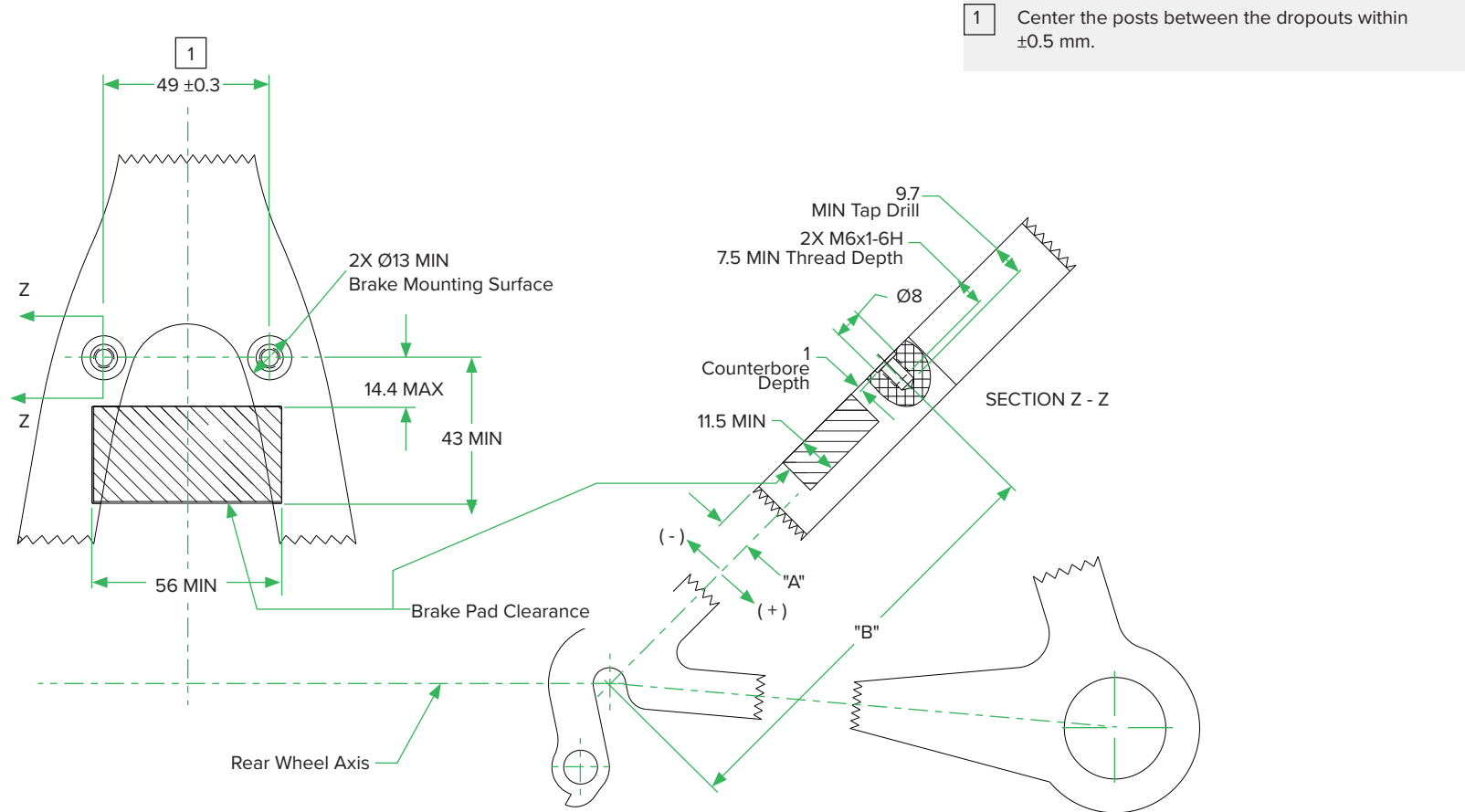
# Front Direct Mount

## Mounting Dimensions





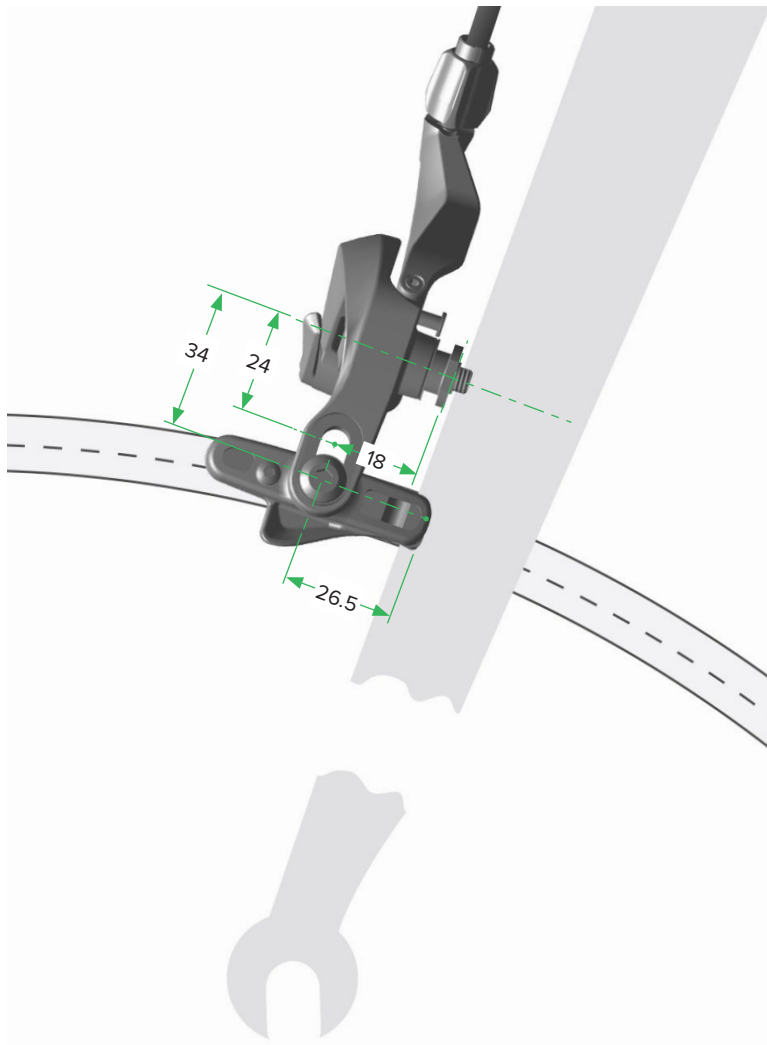
# Rear Direct Mount Mounting Dimensions



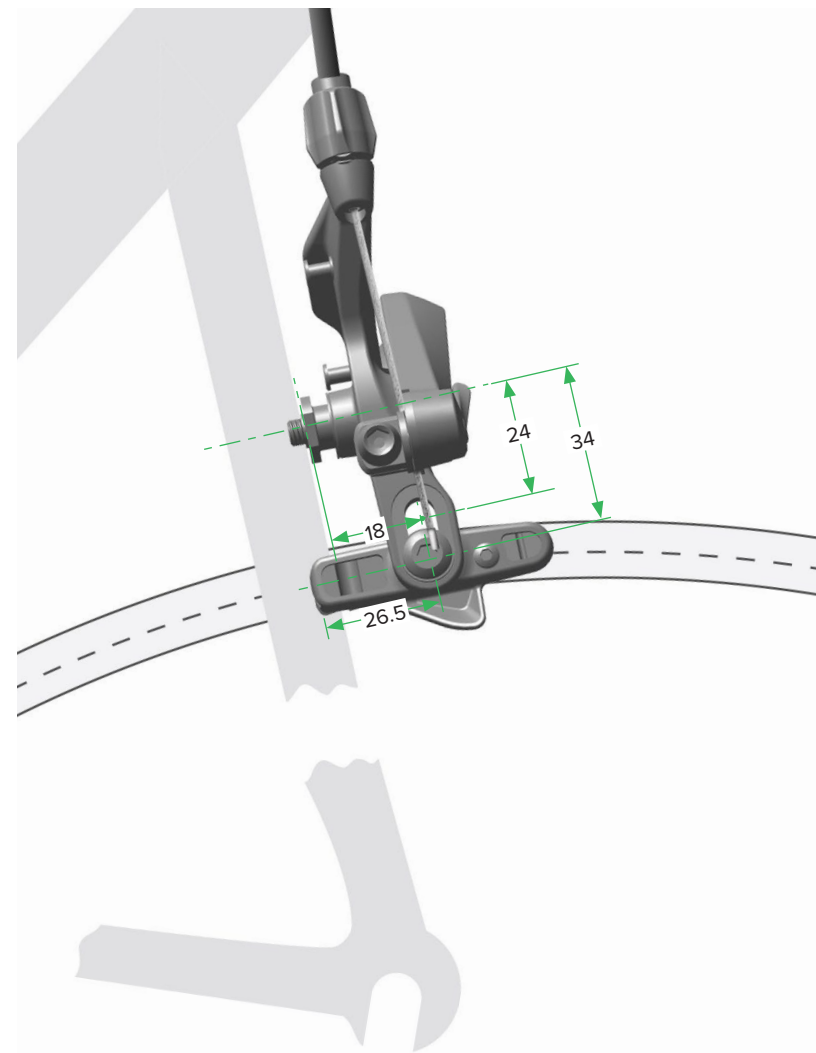
# Direct Mount

## Rim Brake Caliper Design Dimensions

Front Rim Brake Caliper



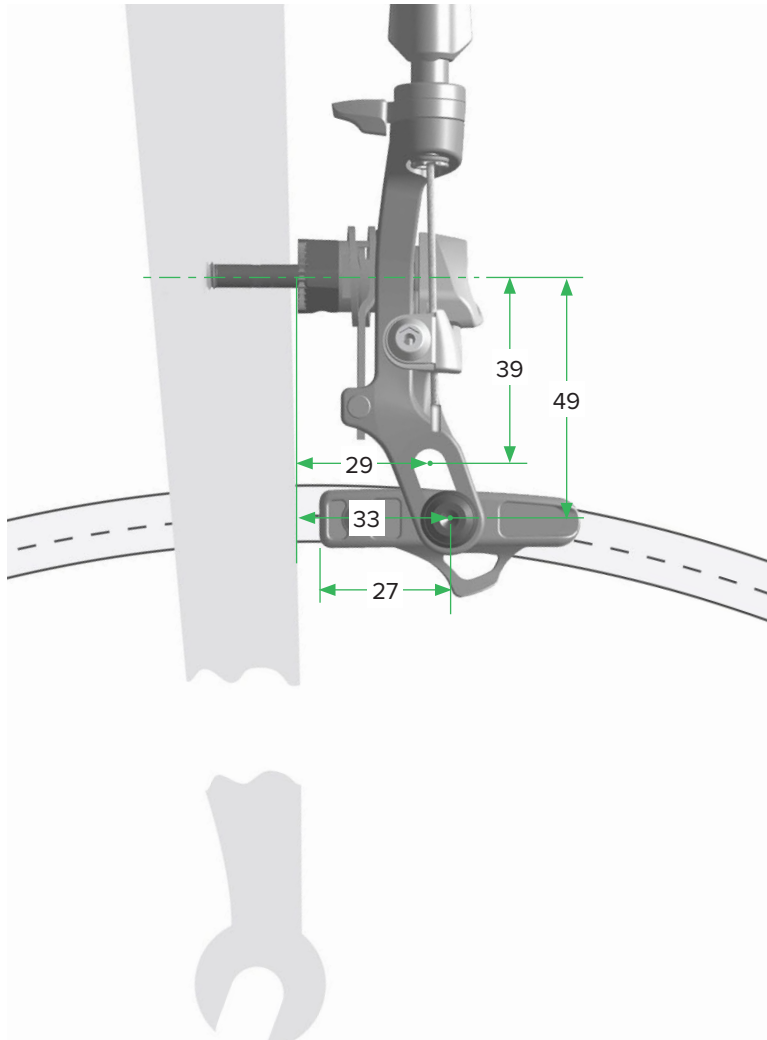
Rear Rim Brake Caliper



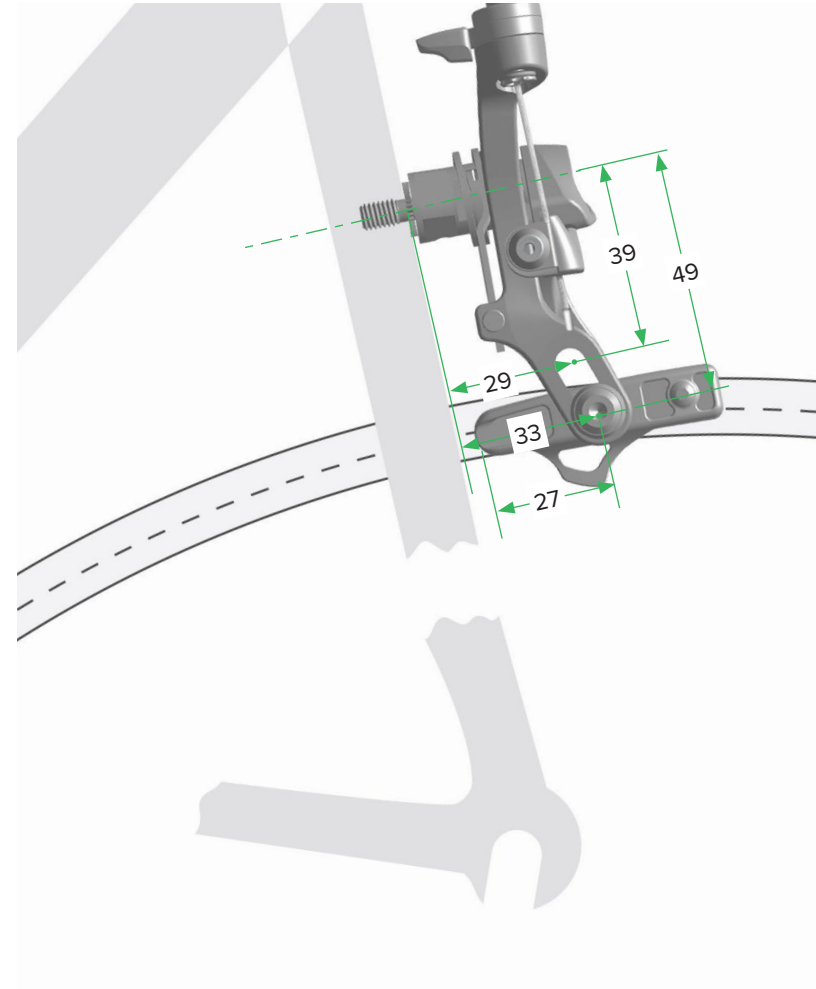
# Single-Post Mount

## Rim Brake Caliper Design Dimensions

Front Rim Brake Caliper

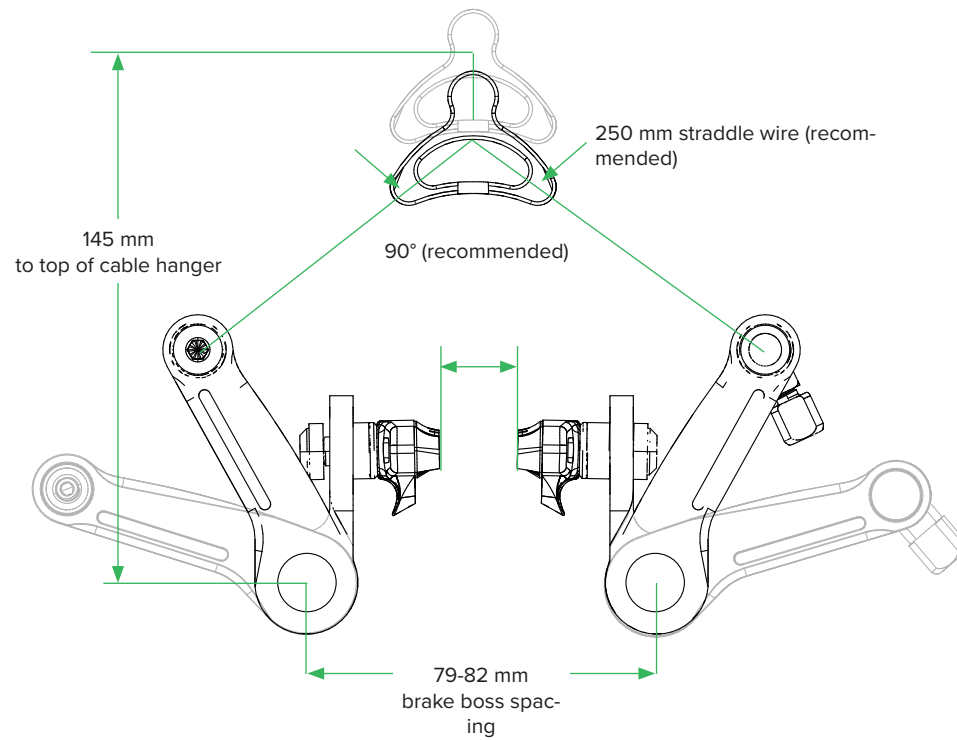


Rear Rim Brake Caliper



# Shorty Ultimate

## Dual Mounted Brake Caliper

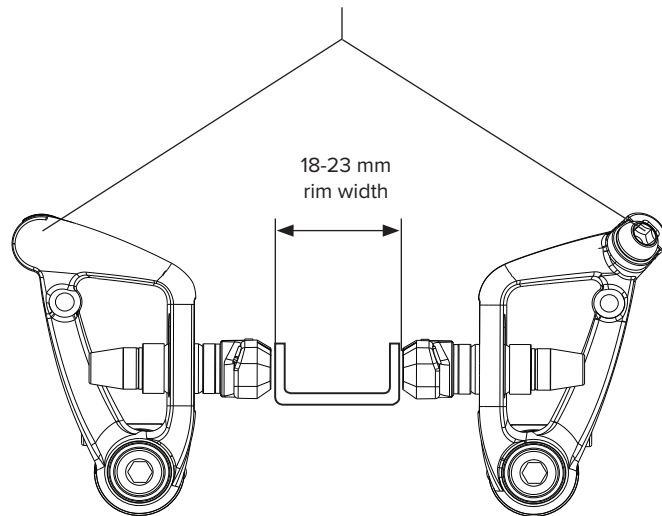


1 For wheel rims wider than 23 mm, consult the spare parts catalog on [www.sram.com/service](http://www.sram.com/service) for part numbers.

# 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   |



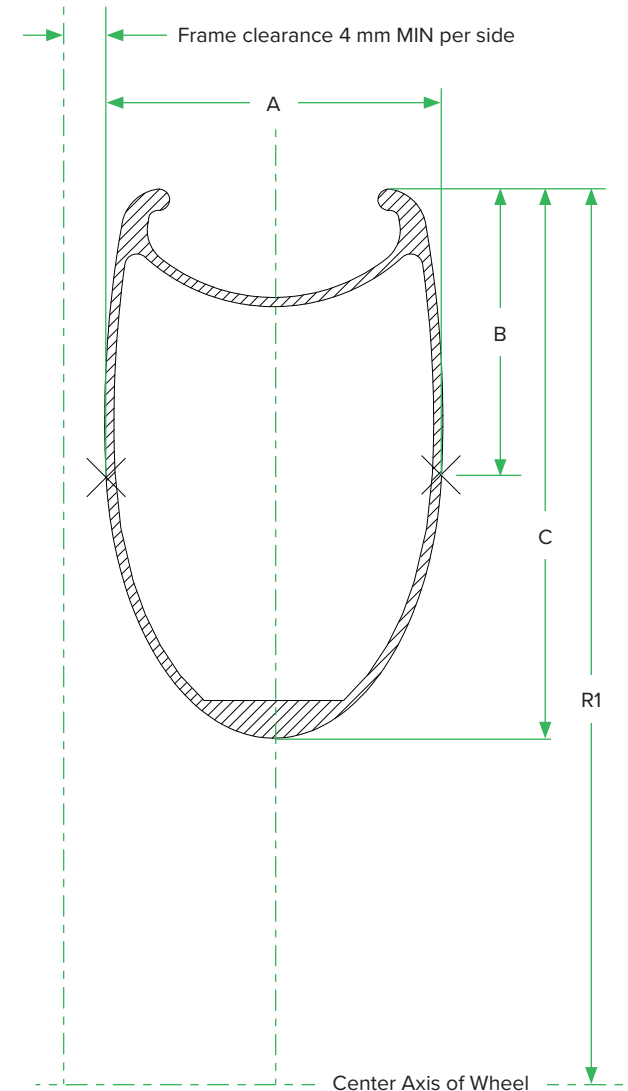
# Wheels and Hubs

# 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                |

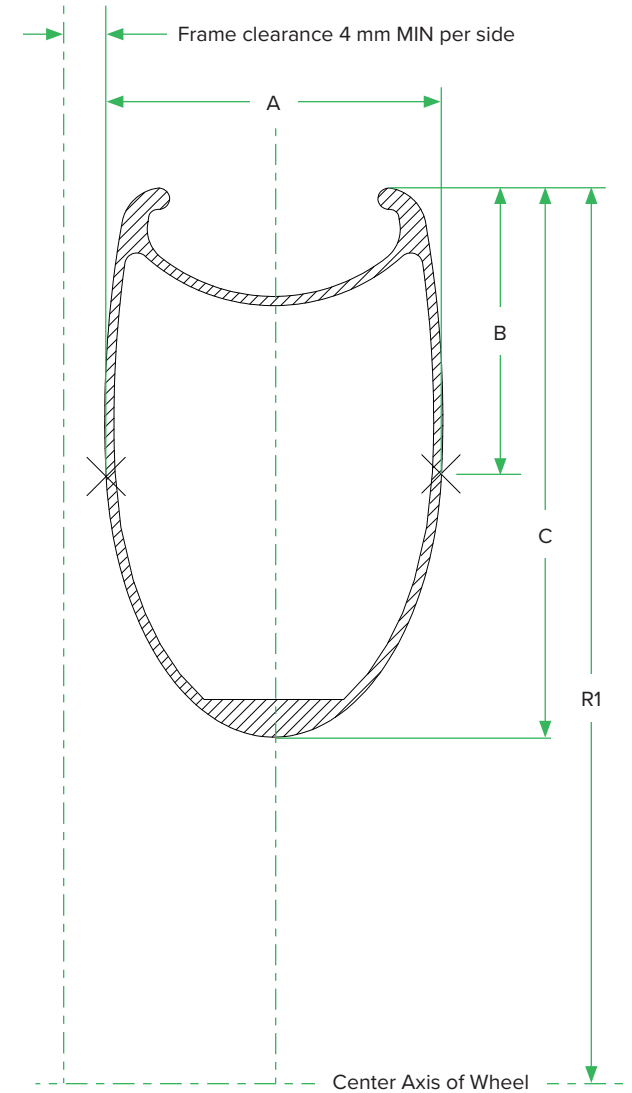
\*\* Endpoints points of vertical line at max width.



# Zipp Wheels

## Rim/Disc Design Parameters Continued

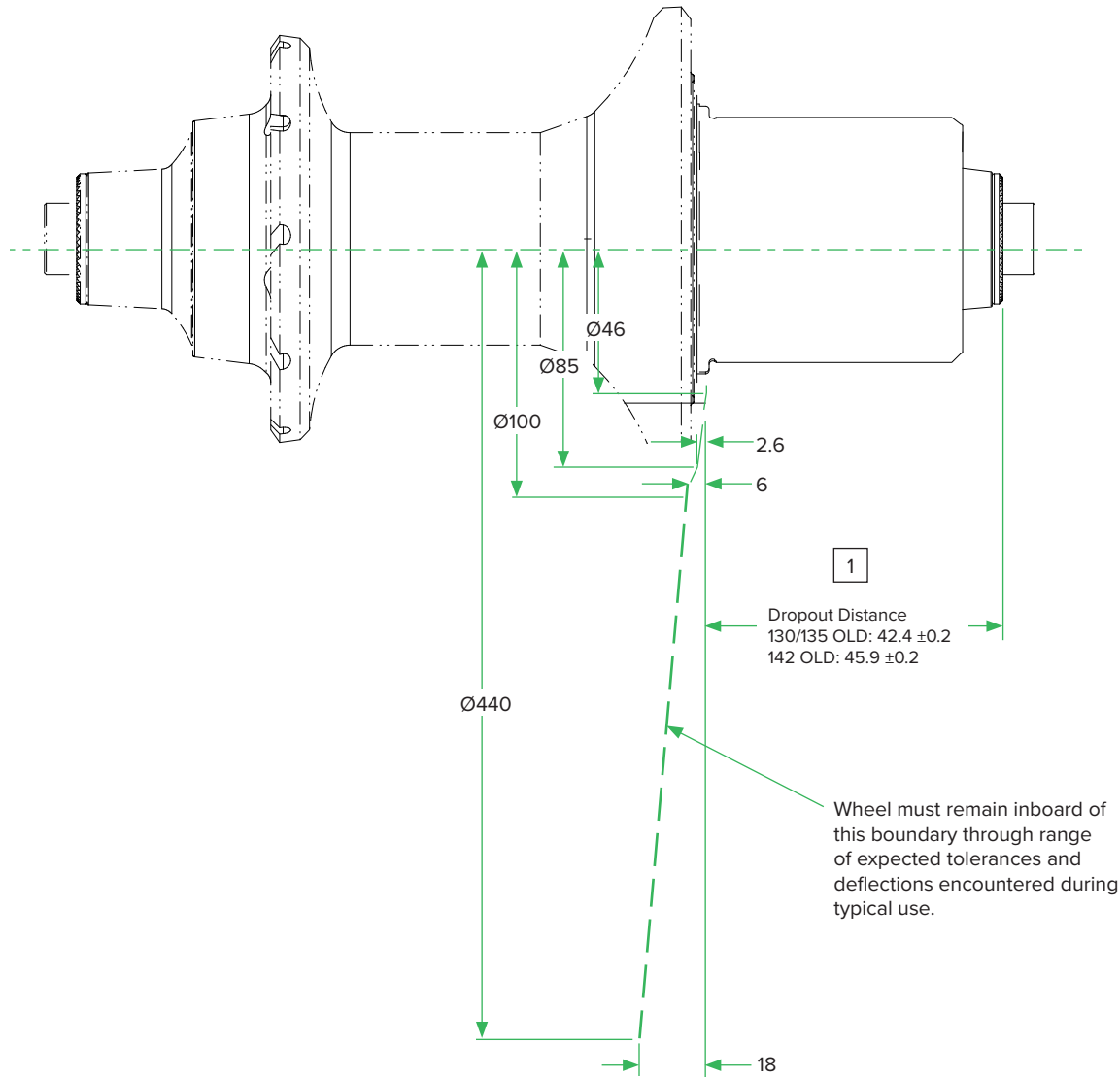
|  | MAX Width | Internal Width (mm) | Depth at MAX Width | MAX Depth | Radius to Center Axis |
|--|-----------|---------------------|--------------------|-----------|-----------------------|
|  | A (mm)    |                     | B (mm)             | C (mm)    | R1 (mm)               |
| 454 NSW Carbon 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                | N/A       | 316.23                |
| Super-9 Carbon Tubeless Disc-brake       |           | 18                  |                    |           |                       |
| Super-9 Carbon Clincher Track            |           | 16                  |                    |           |                       |





# Rear Derailleur Wheel Spoke Clearance

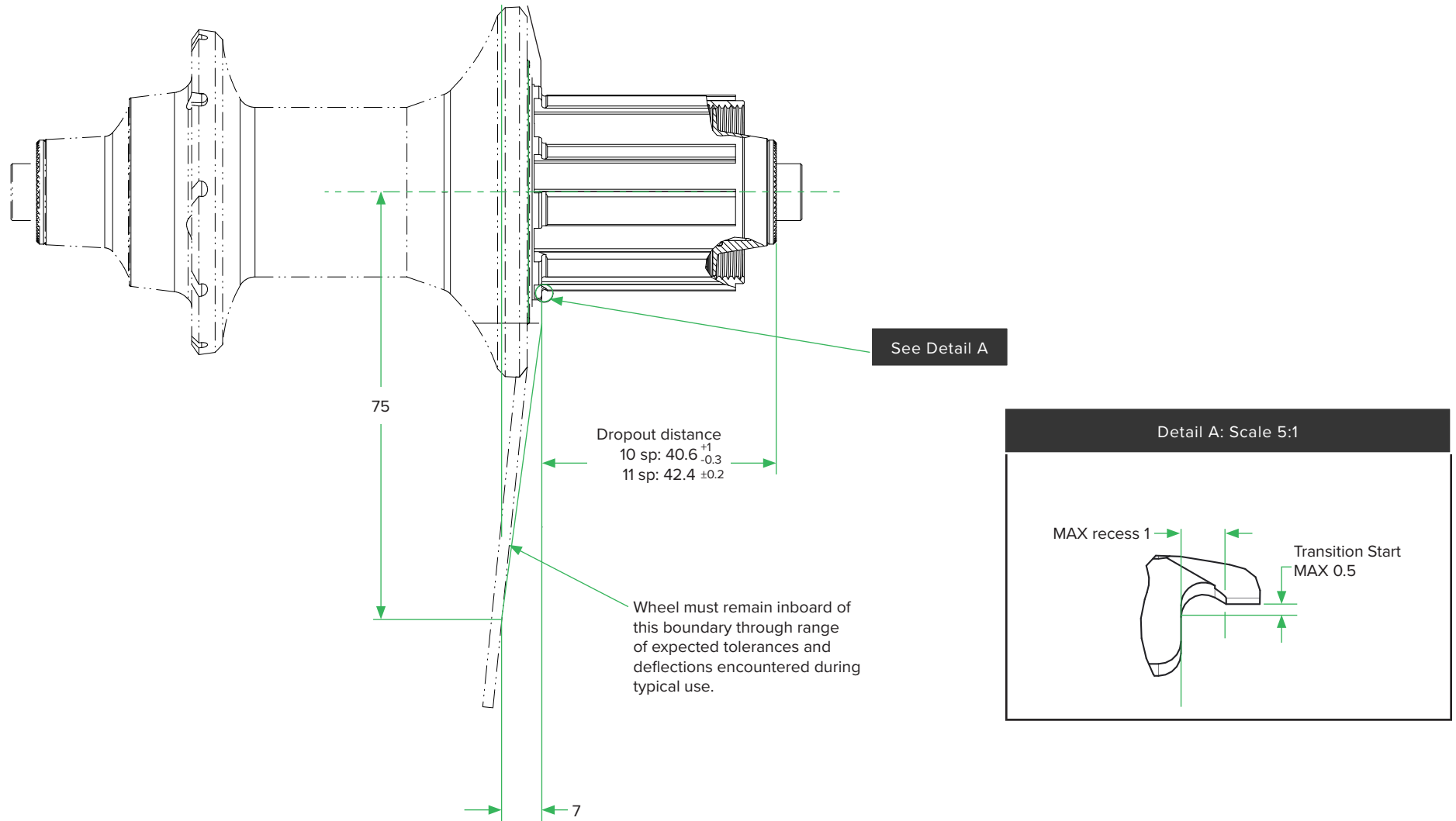
XDR



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

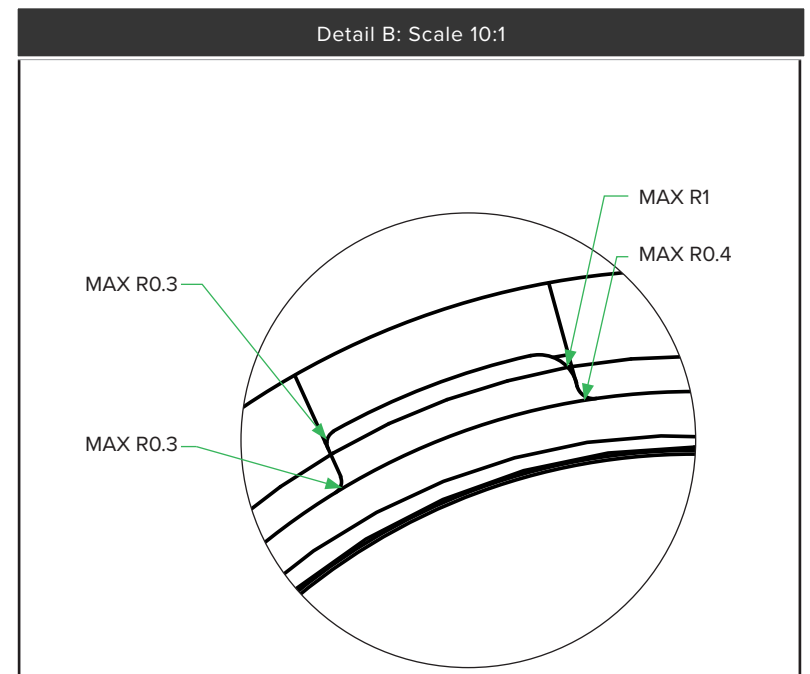
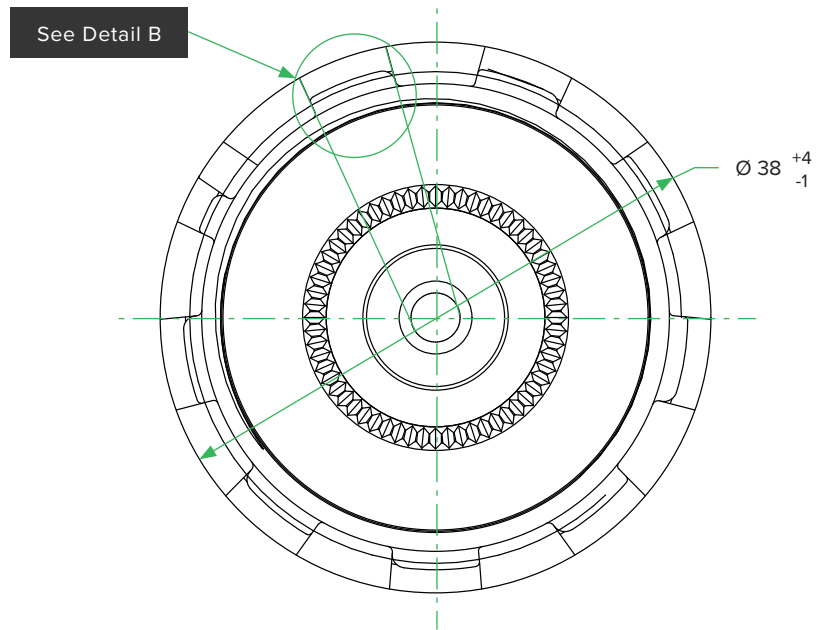
# Driver and Wheel Standard

10 and 11 speed



# Driver and Wheel Standard

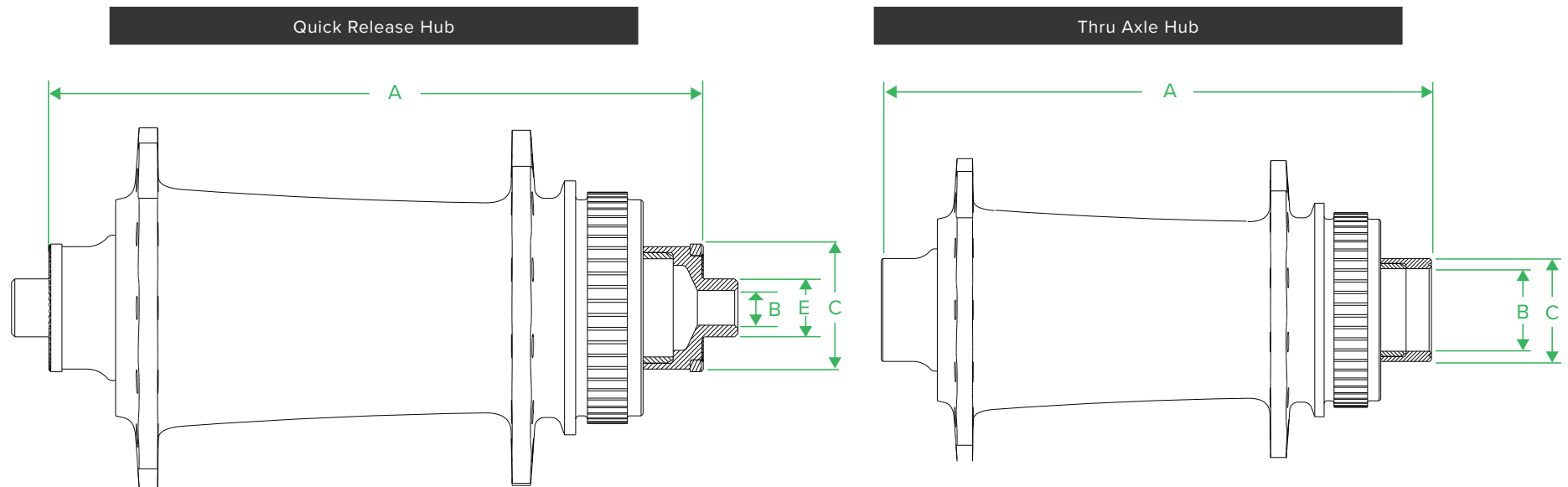
10 and 11 speed



# Zipp Hubs with Center Locking Disc Brake Mount

## Front Hub Specifications

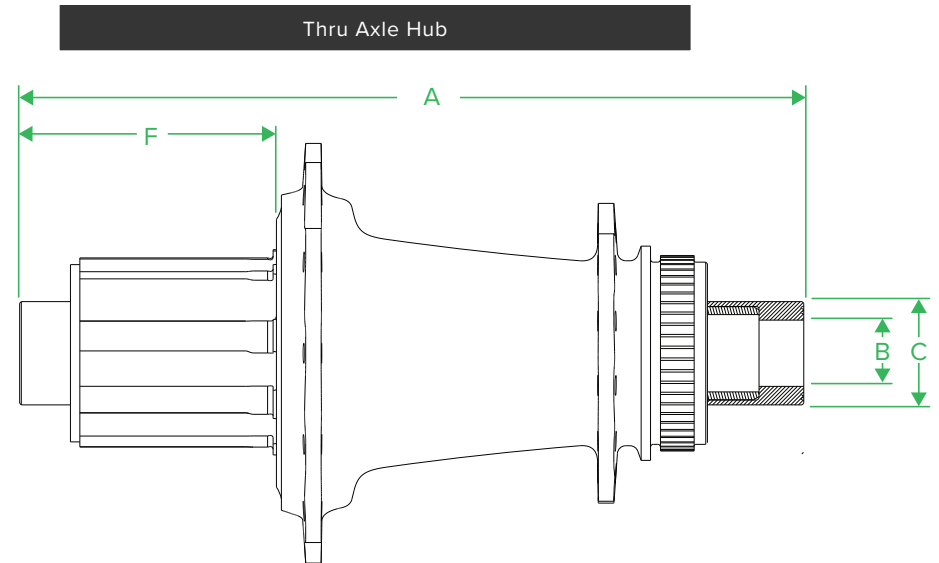
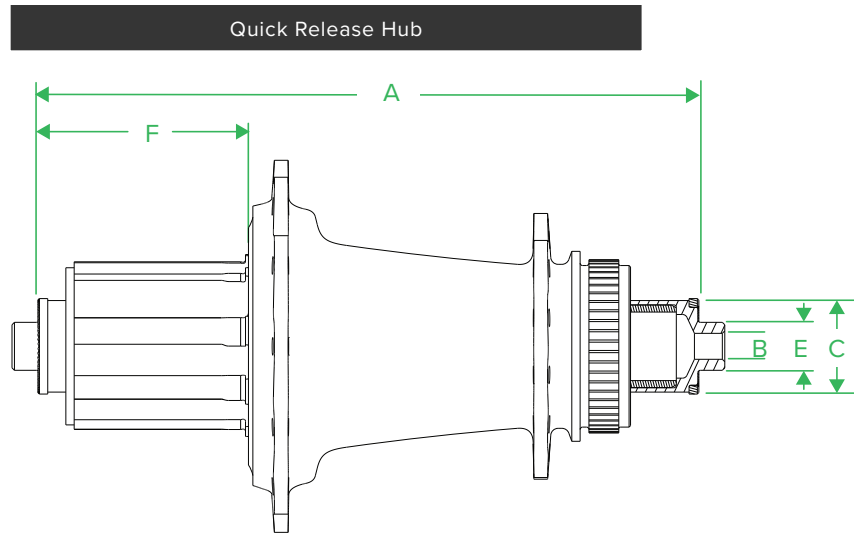
|                        | A (mm)      | B (mm)       | C (mm)       | E (mm)        |
|------------------------|-------------|--------------|--------------|---------------|
| 9x10 Quick Release Hub | 100.0 ± 0.5 | Ø 5.3 ± 0.1  | Ø 19.5 ± 0.1 | Ø 8.85 ± 0.05 |
| 12x100 Thru Axle Hub   |             |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



# Zipp Hubs with Center Locking Disc Brake Mount

## Rear Hub Specifications

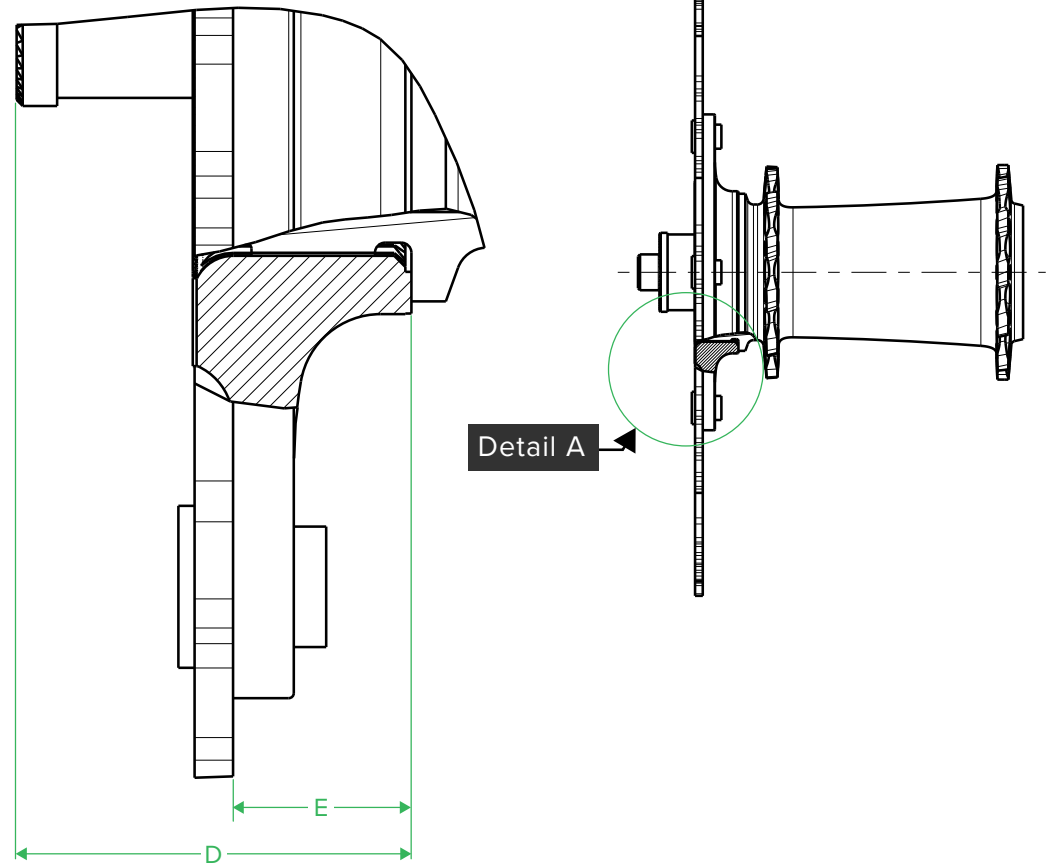
|                          | A (mm)      | B (mm)       | C (mm)       | E (mm)      | F (mm)     |
|--------------------------|-------------|--------------|--------------|-------------|------------|
| 10x135 Quick Release Hub | 135.0 ± 0.5 | Ø 5.3 ± 0.1  | Ø 19.5 ± 0.1 | Ø 9.8 ± 0.1 | 42.4 ± 0.2 |
| 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 |



# 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     | 27.25  |       |        |       |
| 12x142 Thru Axle Hub     |        |       |        |       |

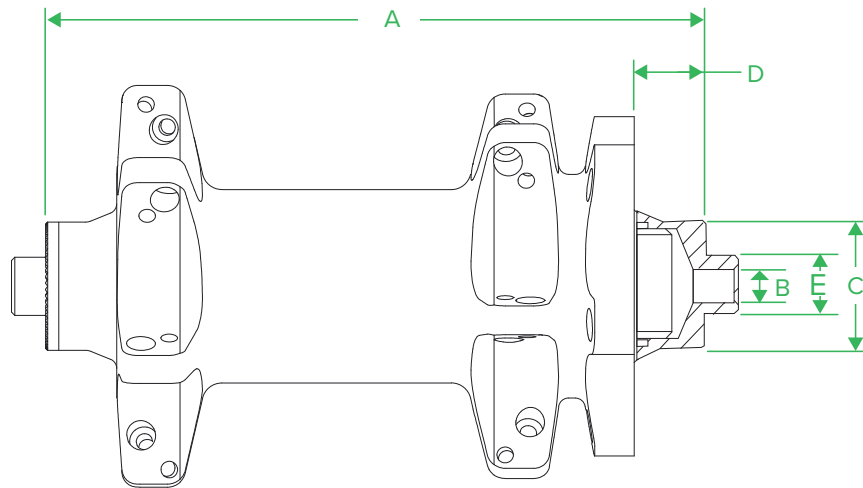


# Zipp Hubs with ISO 6 Bolt Disc Brake Mount

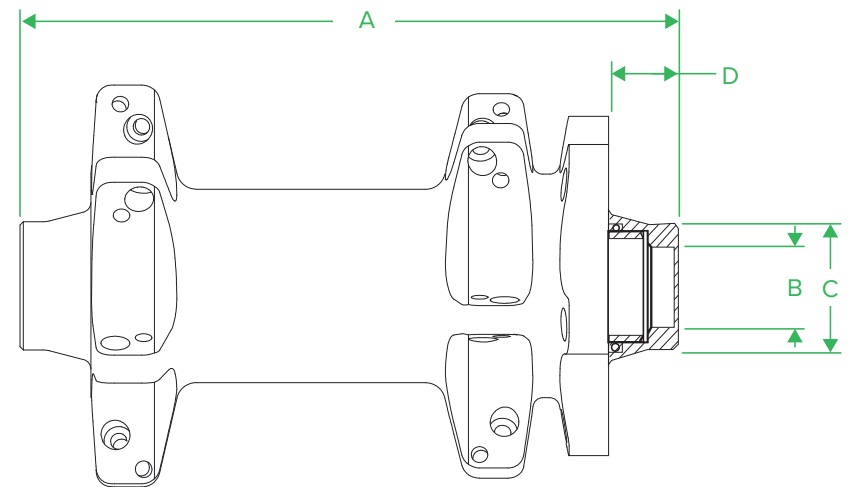
## Front Hub Specifications

|                         | 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



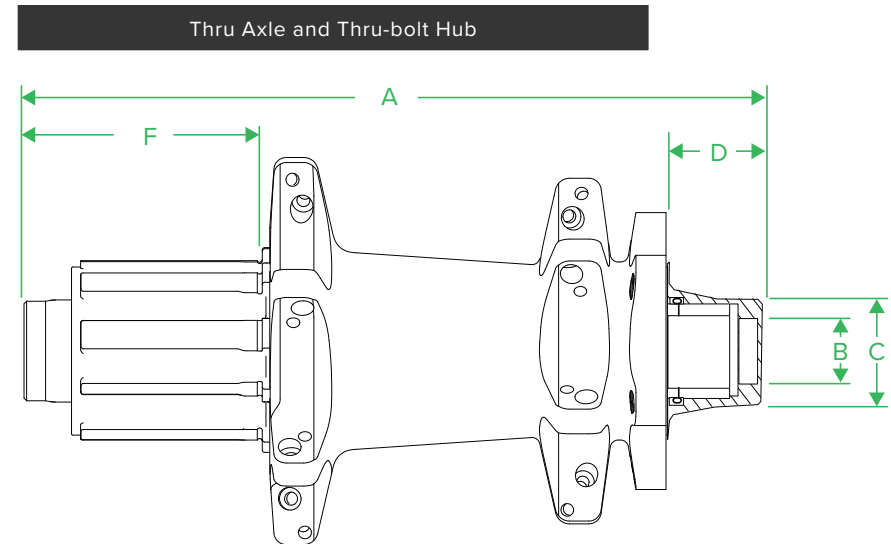
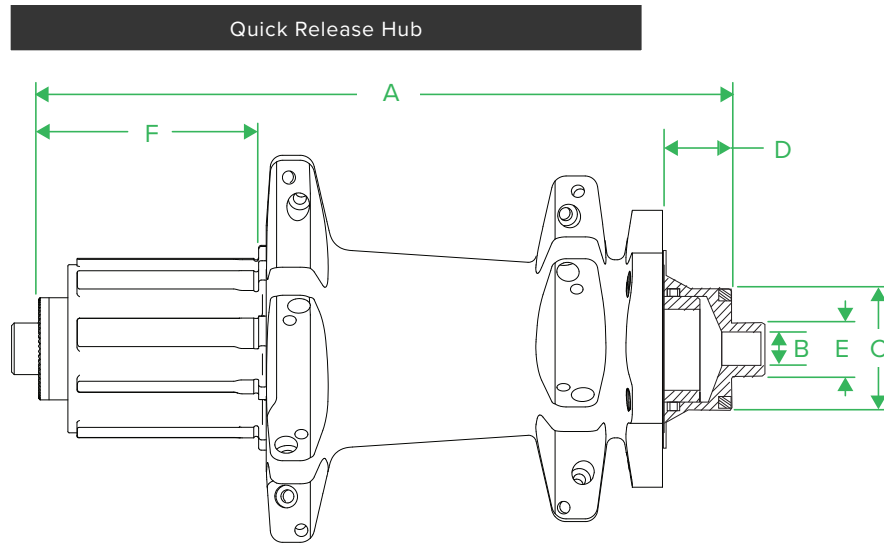
Thru Axle and Thru-bolt Hub



# 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 | $\text{Ø } 5.3 \pm 0.1$  | $\text{Ø } 19.5 \pm 0.1$ | 15.5 $\pm$ 0.2 | $\text{Ø } 9.85 \pm 0.05$ | 42.4 $\pm$ 0.2 |
| 12x135 Thru Axle Hub     |                 | $\text{Ø } 12.0 \pm 0.1$ | $\text{Ø } 19.0 \pm 0.1$ |                |                           |                |
| 12x142 Thru Axle Hub     | 142.7 +0.3/-1.0 | $\text{Ø } 10.0 \pm 0.1$ | $\text{Ø } 19.5 \pm 0.1$ | 19.0 $\pm$ 0.2 | N/A                       | 45.9 $\pm$ 0.2 |
| 10x135 Thru-bolt Hub     | 135.7 +0.3/-1.0 |                          |                          | 15.5 $\pm$ 0.2 |                           | 42.4 $\pm$ 0.2 |

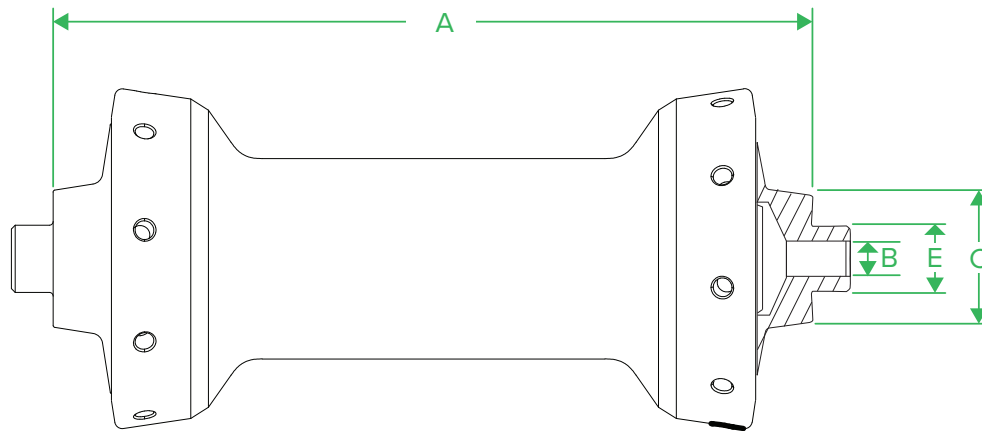




# Zipp Rim Brake Hubs

## Front Hub Specifications

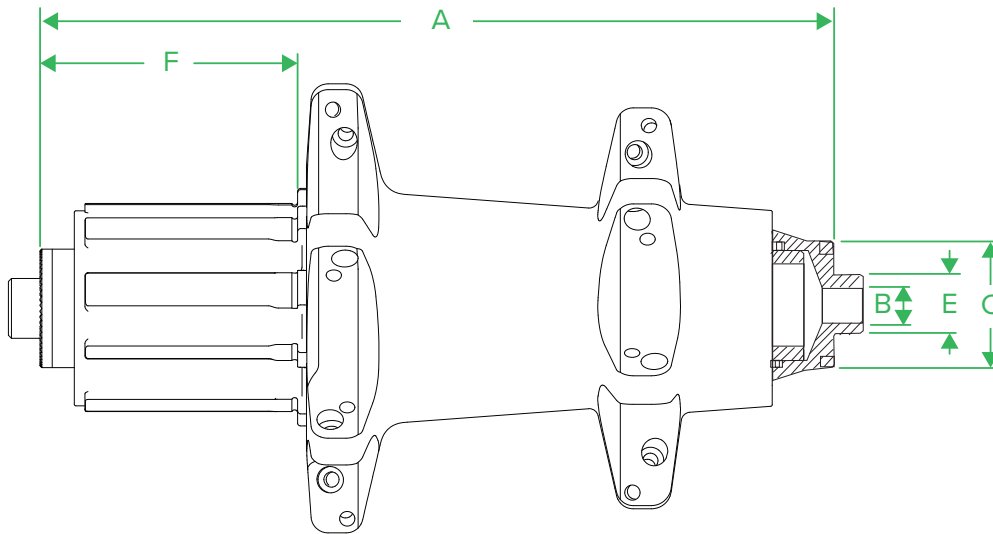
|                         | A (mm)        | B (mm)                  | C (mm)                       | E (mm)                    |
|-------------------------|---------------|-------------------------|------------------------------|---------------------------|
| 9x100 Quick Release Hub | $100 \pm 0.5$ | $\text{Ø } 5.3 \pm 0.1$ | $\text{Ø } 18.3 \text{ MAX}$ | $\text{Ø } 8.85 \pm 0.05$ |



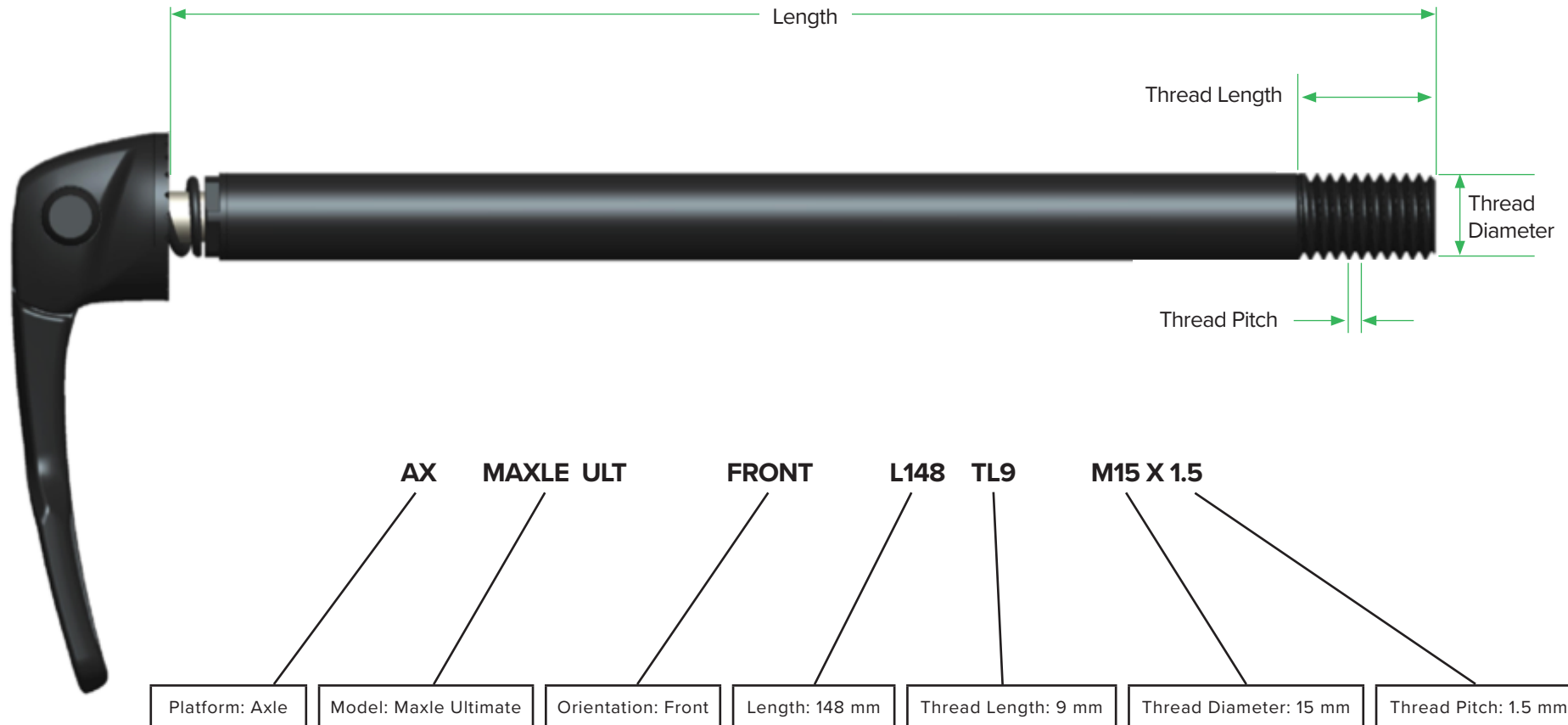
# Zipp Rim Brake Hubs

## Rear Hub Specifications

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



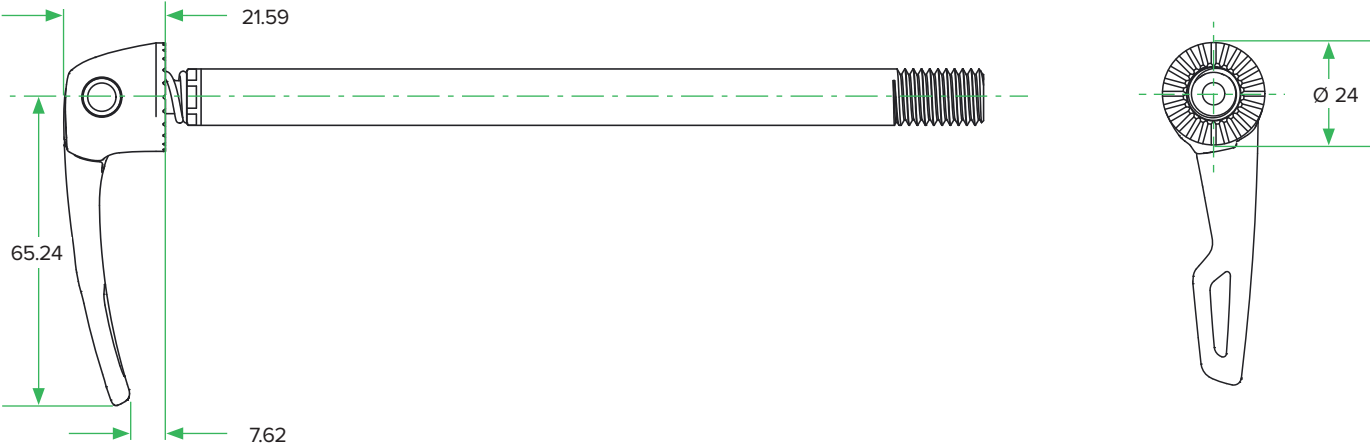
# Maxle Description Decoder



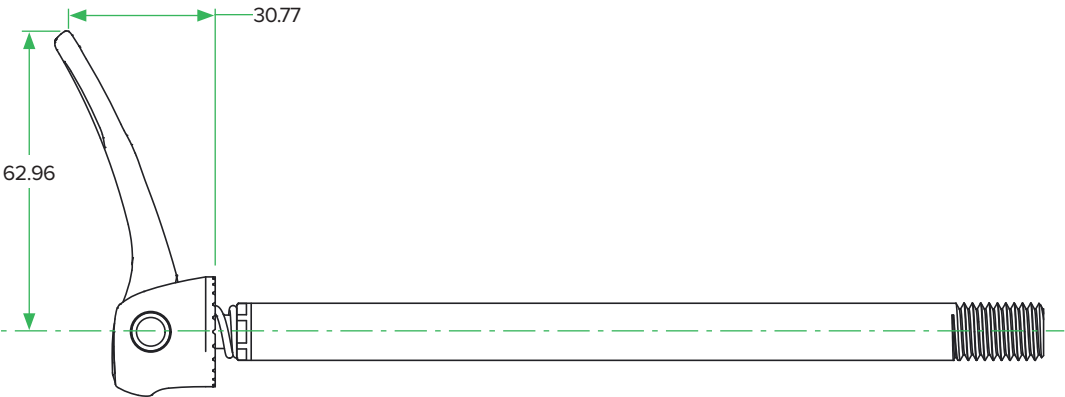
# Maxle Ultimate

## Frame / Fork Clearance

Lever in Closed Position

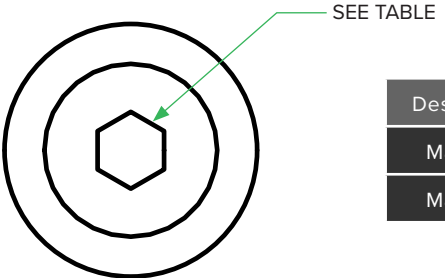
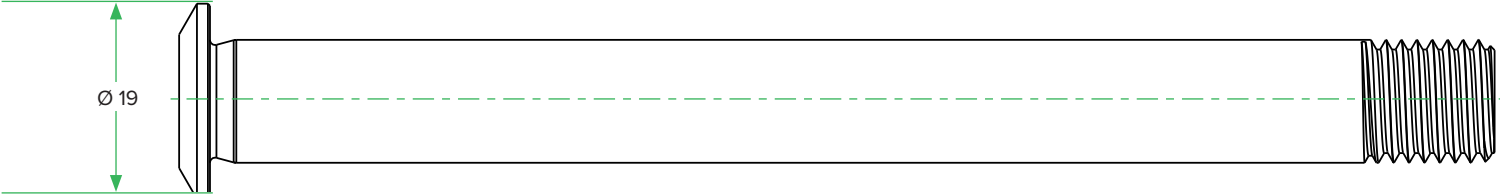


Lever in Open Position



- 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



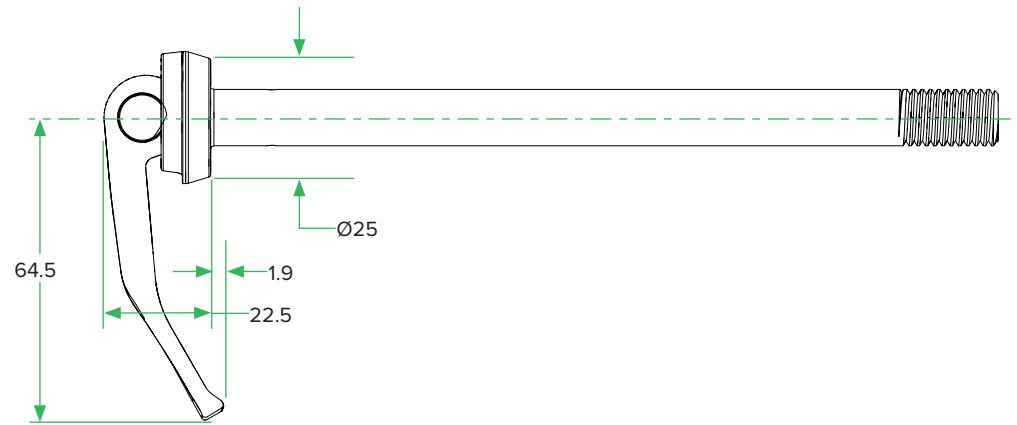
| Description | Hex Size | Torque Value |
|-------------|----------|--------------|
| Maxle 12    | 5        | 9-13.5 N·m   |
| Maxle 15    | 6        | 9-13.5 N·m   |

- 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.

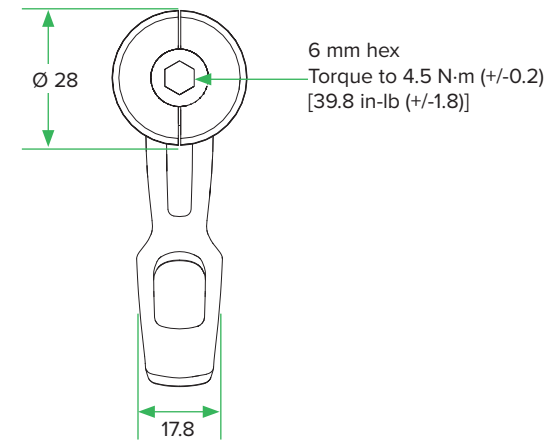
# Maxle Lite & Maxle

## Frame / Fork Clearance

Lever in Closed Position



Lever in Open Position

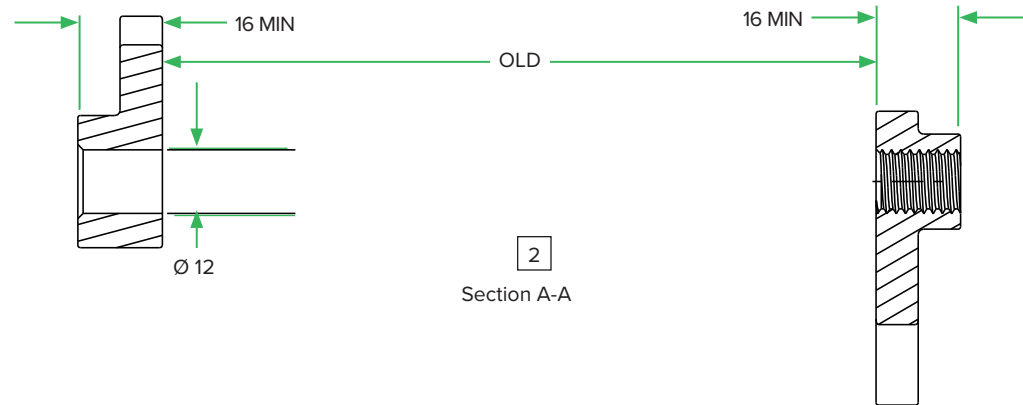
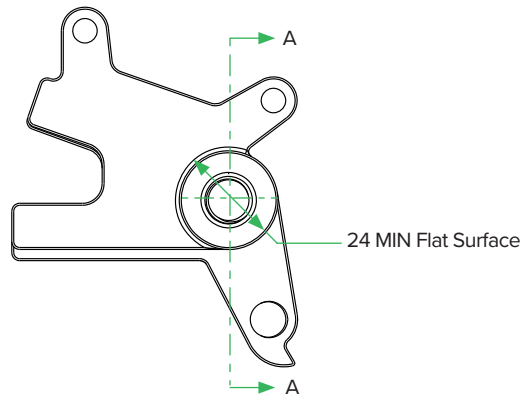
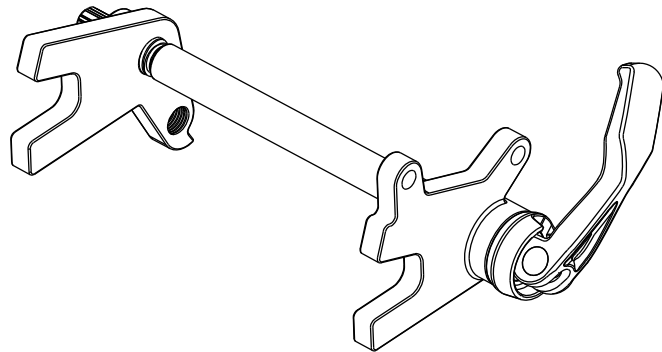


- 1 Drawing is not to scale.
- 2 Customer is responsible for ensuring hub, frame, and axle compatibility.
- 3 The frame manufacturer is responsible for ensuring the frame and/or fork assemblies using Maxles are compliant with existing safety standards.

# Maxle, Maxle Lite, Maxle Ultimate, Maxle Stealth

## Rear Frame Specification

Frame Dropouts with Maxle Installed



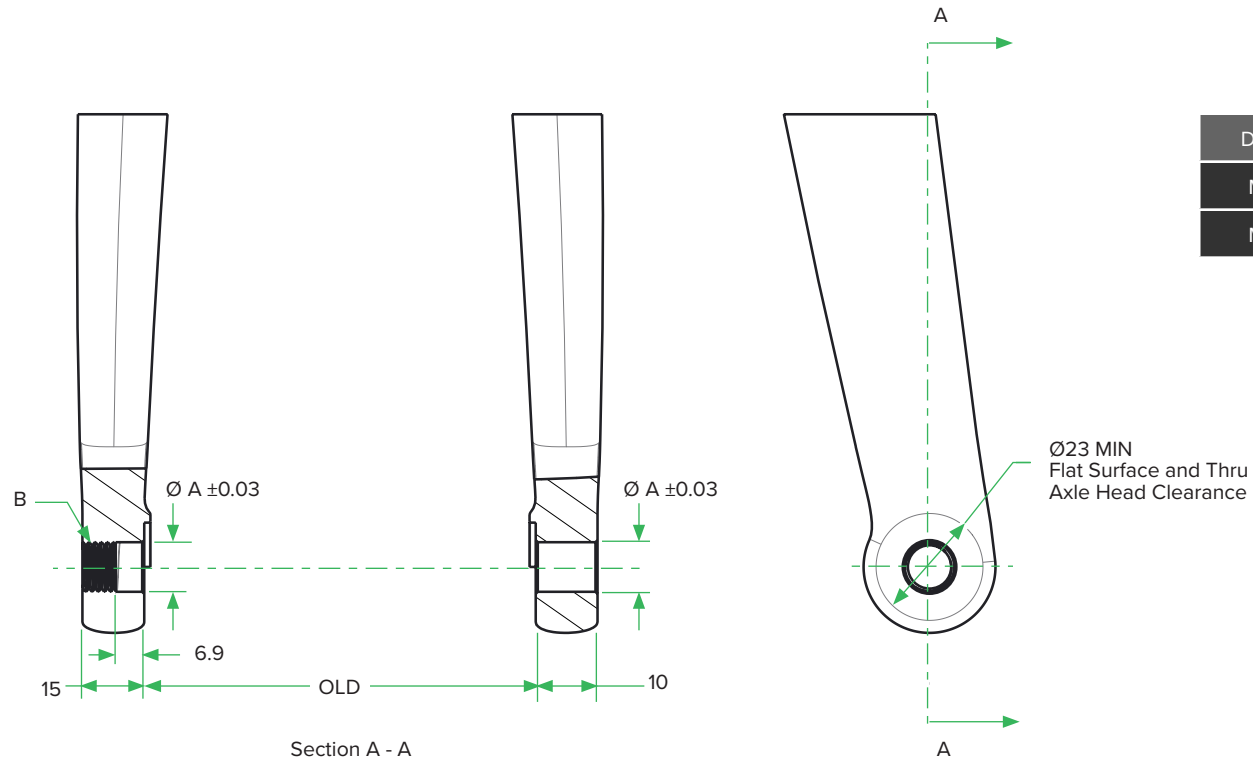
2  
Section A-A

| 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

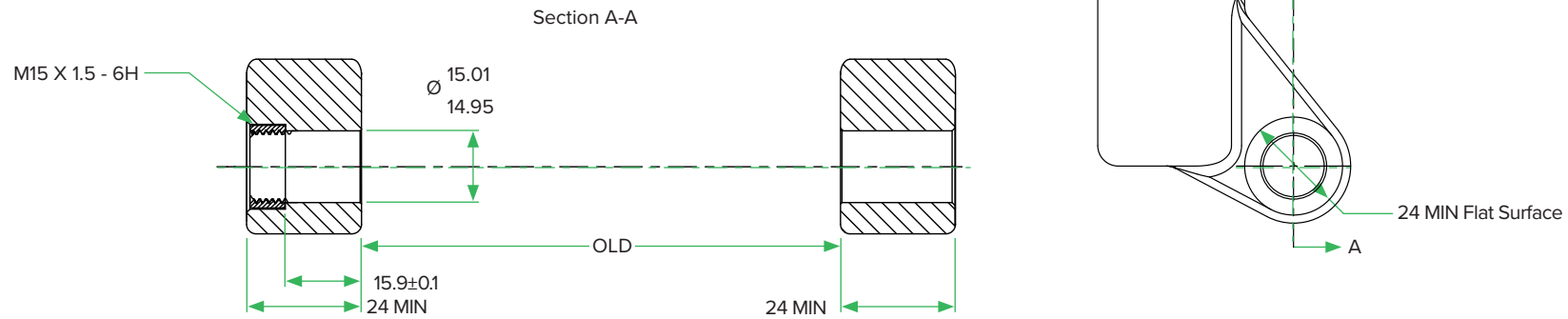


| Description | A     | B              |
|-------------|-------|----------------|
| MAXLE 15    | 14.98 | M15 X 1.5 - 6H |
| MAXLE 12    | 12.03 | M12 X 1.5 - 6H |



# Maxle, Maxle Lite, Maxle Ultimate, Maxle Stealth

## Fork Specification



# Warranty and Trademark

Read the full warranty policy for your components at [www.sram.com/warranty](http://www.sram.com/warranty).

For information about trademarks used in this manual, visit [www.sram.com/website-terms-of-use](http://www.sram.com/website-terms-of-use).



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ASIAN HEADQUARTERS

SRAM Taiwan  
No. 1598-8 Chung Shan Road  
Shen Kang Hsiang, Taichung City  
Taiwan

WORLD HEADQUARTERS

SRAM, LLC  
1000 W. Fulton Market, 4th Floor  
Chicago, Illinois 60607  
U.S.A.

EUROPEAN HEADQUARTERS

SRAM Europe  
Paasbosweg 14-16  
3862ZS Nijkerk  
The Netherlands