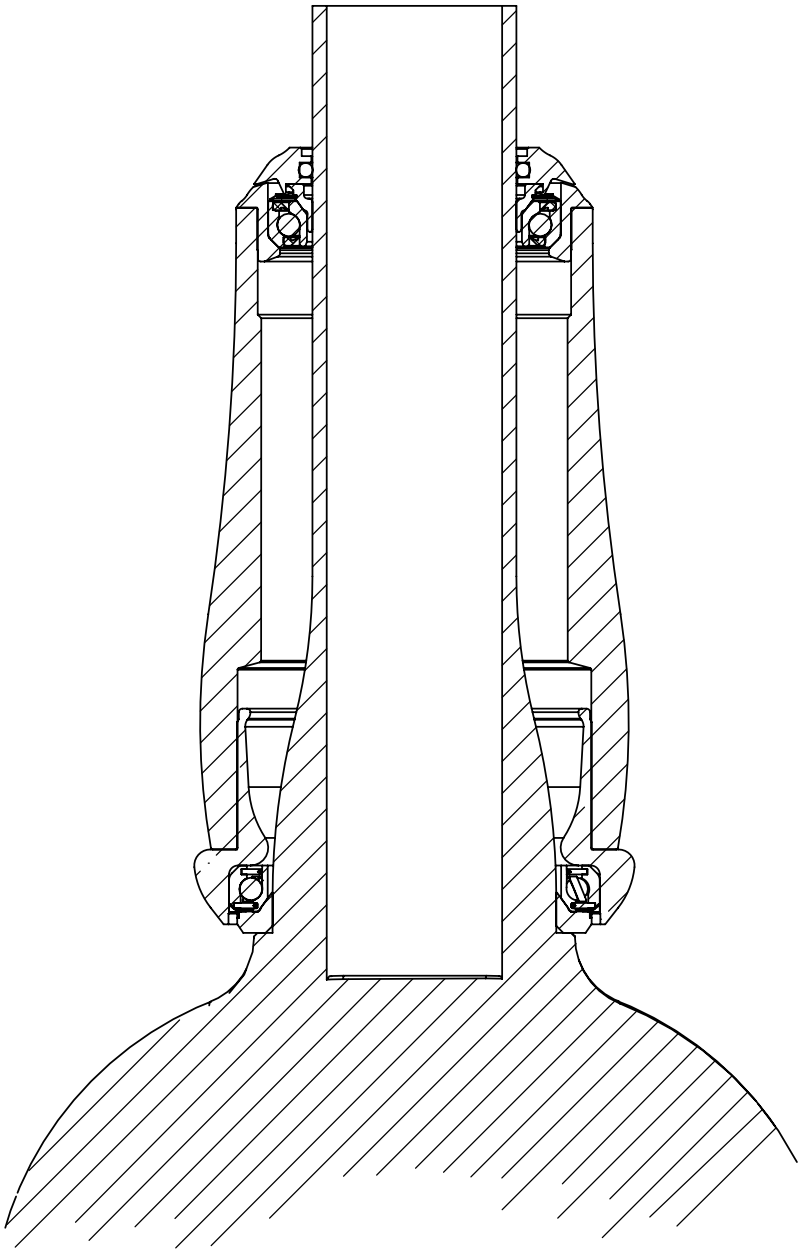
CANE CREEK

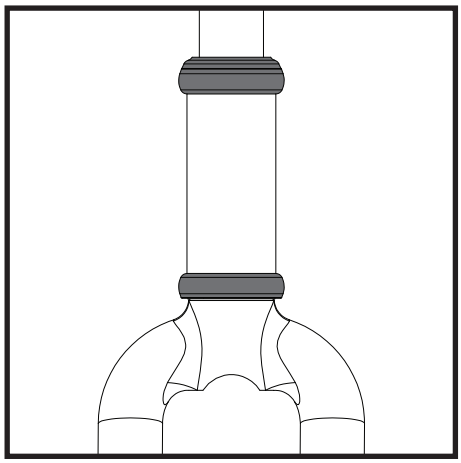
OE Head-Tube Specification Guide



Revision B
11/9/2009

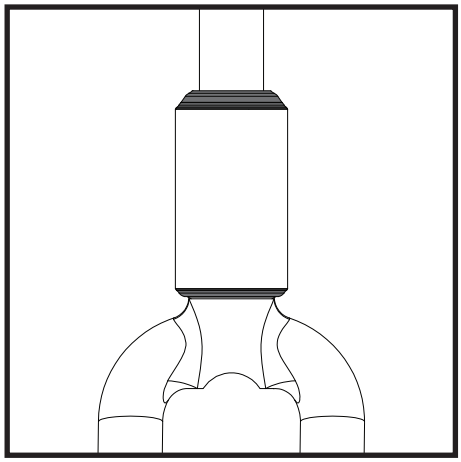
Headset Platforms

Traditional



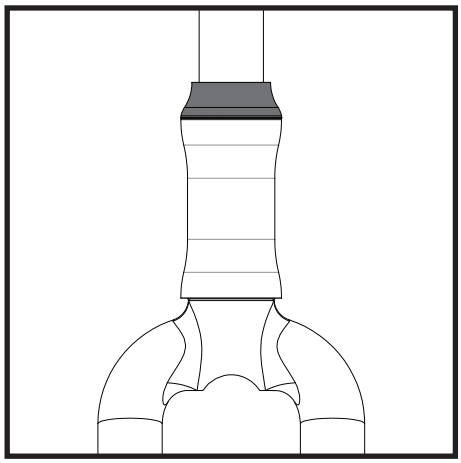
Traditional Headsets
- Bearings sit outside of the head-tube in pressed-in cups
- This style is the most common, especially on older or more traditional bikes

Semi-Integrated



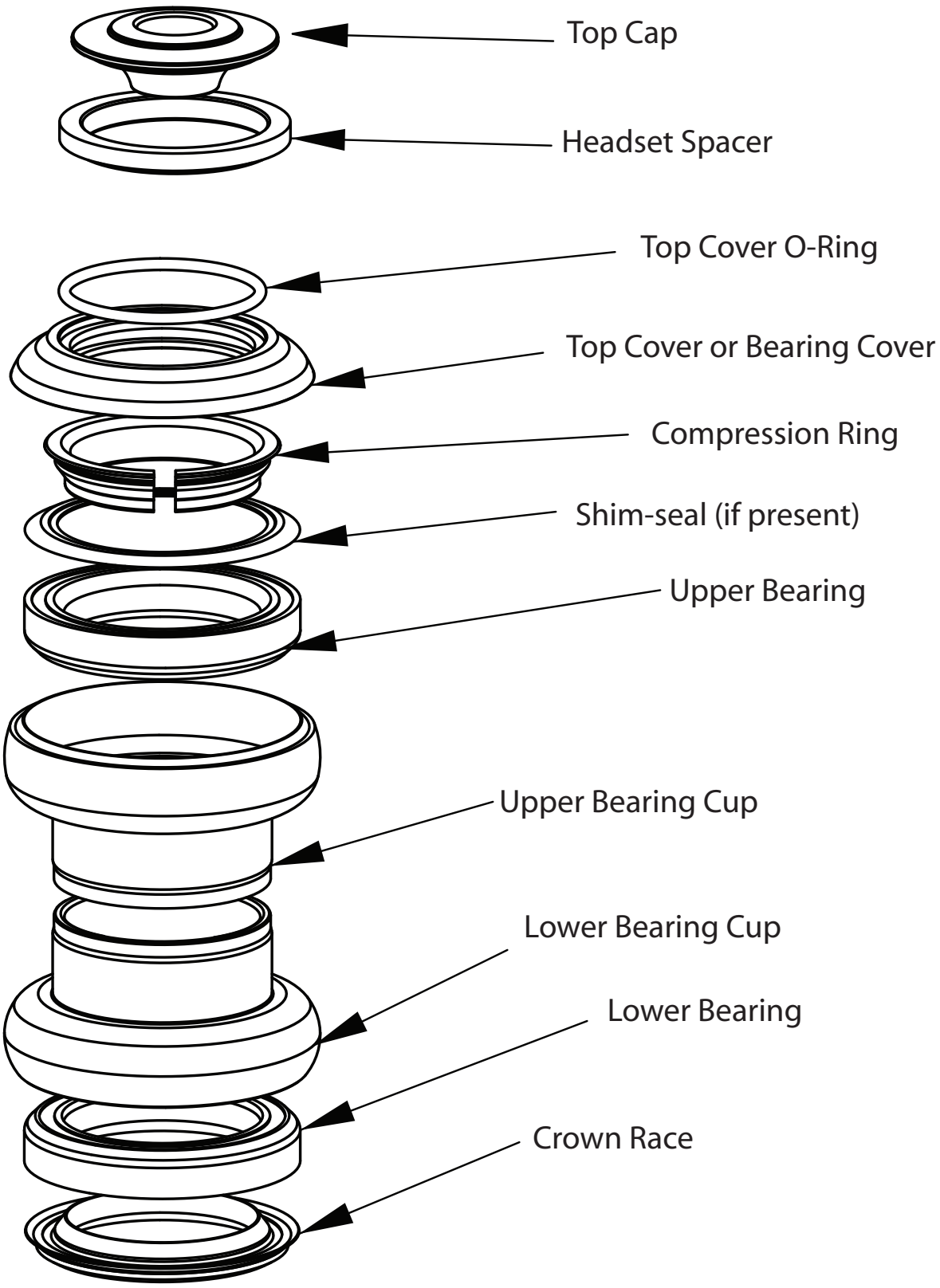
Semi-Integrated Headsets
- Bearings sit inside the head-tube in pressed-in, recessed cups
- Head-tubes have a larger diameter than integrated and traditional platforms
- Also known as ZeroStack

Integrated

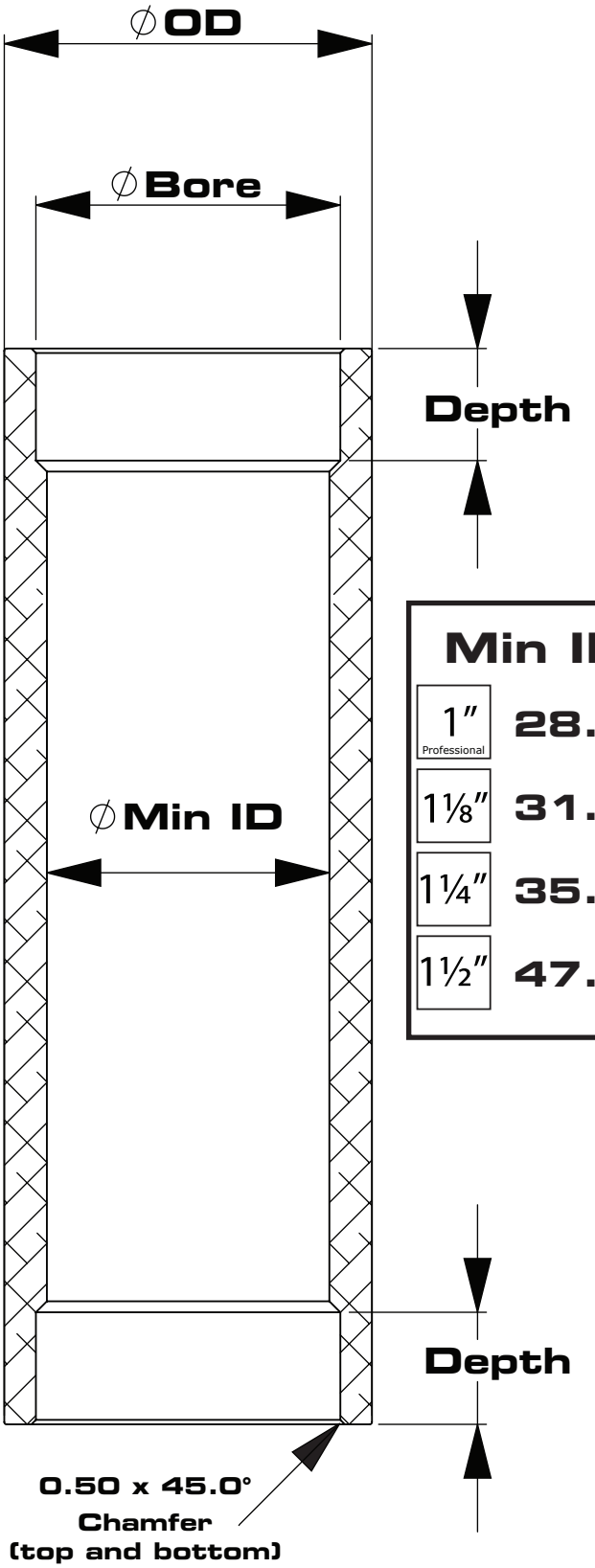


Integrated Headsets
- Bearings sit inside a specially designed head-tube with integral bearings seats
- There are no pressed in cups, however some designs utilize removable bearing seat chamfers that resemble small angled rings
- Carbon fiber and titanium frames often use bonded-in aluminum inserts, this should not be confused with a semi-integrated design

Anatomy of a Threadless Headset



Traditional Head-Tubes



Bore

1″ Professional	30.10 +0/-0.05
1⅛″	33.95 +0/-0.05
1¼″	36.95 +0/-0.05
1½″	49.61 +0/-0.04

Min ID

1″ Professional	28.5
1⅛″	31.5
1¼″	35.0
1½″	47.6

Min Depth

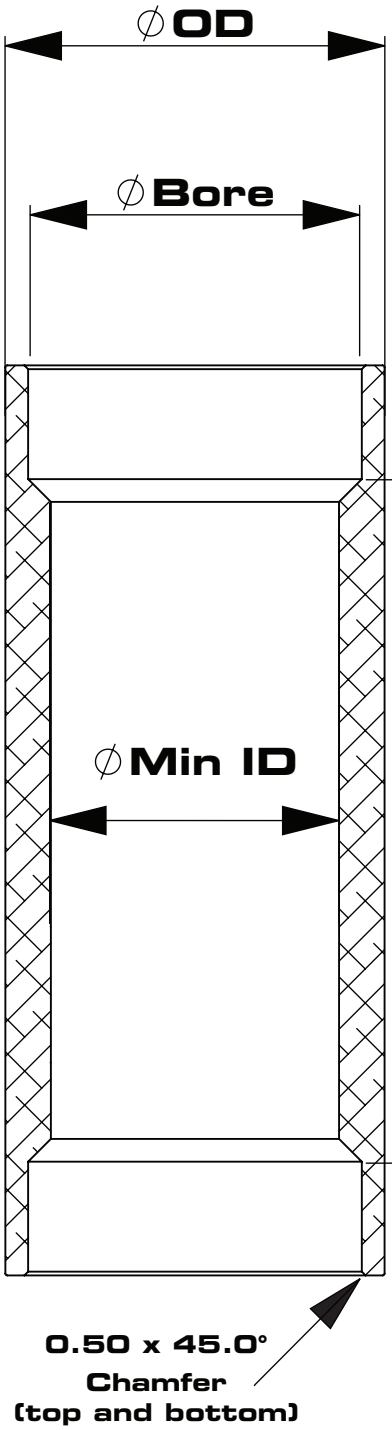
1″ Professional, 1⅛″, 1¼″	12.5
1½″	25.4

OD

(for aesthetic purposes only)

1″ Professional	34.2 +0/-._.__
1⅛″	39.45 +0/-._.__
1¼″	43.00 +0/-._.__
1½″	57.00 +0.1/-0.1

Semi-Integrated / ZeroStack™ Head-Tubes



Bore

1″ Professional	41.40 +0/-0.05
1⅛″	44.00 +0/-0.05
1½″	55.95 +0/-0.05

Min ID

1″ Professional	36.0
1⅛″	38.0
1½″	47.6

Min Depth

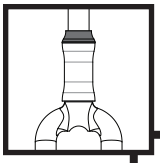
1″ Professional, 1⅛″, 1½″	15.0

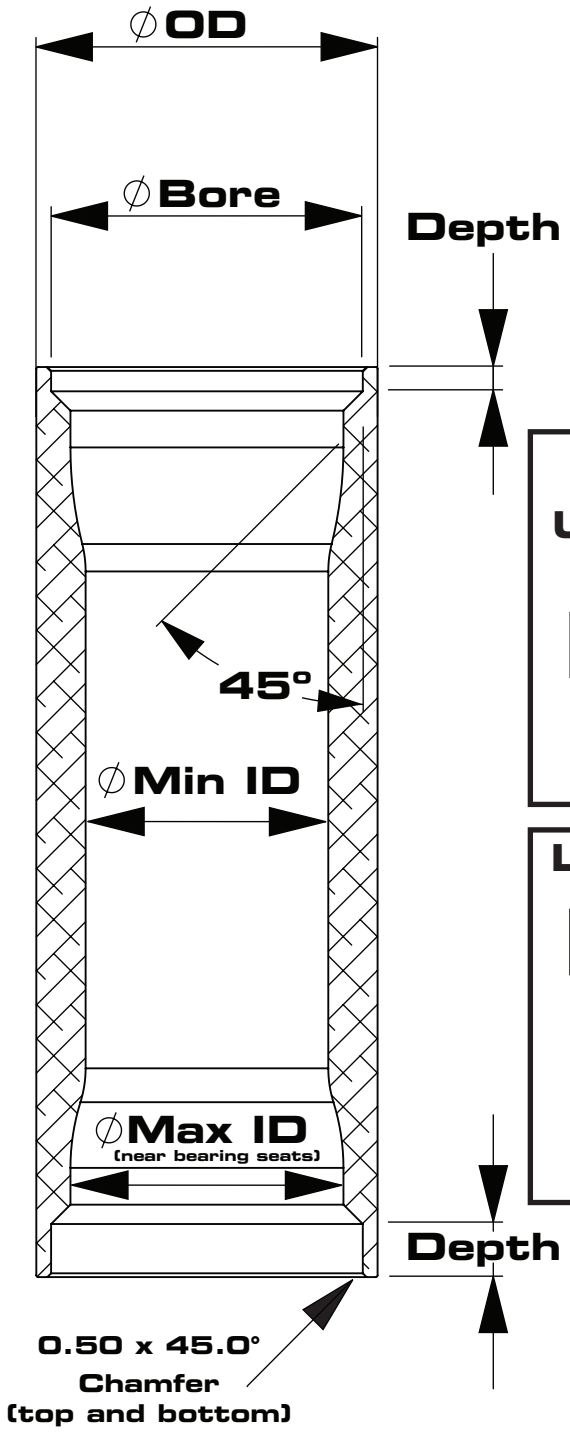
OD

(for aesthetic purposes only)

1″ Professional	47.0 +0.1/-0.1
1⅛″	50.0 +0.1/-0.1
1½″	62.0 +0.1/-0.1

Integrated Head-Tubes





Bore

1″ Professional	38.15 $^{+0.1}/_{-0.0}$
1⅛″	41.10 $^{+0.1}/_{-0.0}$
1¼″	47.00 $^{+0.1}/_{-0.0}$
1⅜″	49.10 $^{+0.1}/_{-0.0}$
1½″	52.10 $^{+0.05}/_{-0.05}$

Upper Depth

CANE CREEK | 1″ Professional | 1⅛″ | 1½″

3.2 $^{+0.0}/_{-0.1}$

Max ID
(near bearing seats)

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= Bore - 4mm

Lower Depth

CANE CREEK | 1″ Professional | 1⅛″ | 1⅜″

7.0 $^{+0.0}/_{-0.1}$

CANE CREEK | 1½″ | 1¼″

7.5 $^{+0.0}/_{-0.2}$

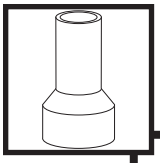
Min ID

1″ Professional	28.0
1⅛″	32.0

OD
(for aesthetic purposes only)

1″ Professional	42.0 $^{+0.1}/_{-0.1}$
1⅛″	45.0 $^{+0.1}/_{-0.1}$
1½″	56.0 $^{+0.1}/_{-0.1}$

***In the case of Tapered configurations, the steerer tube should be at least 1.5mm from any point on the inside of the head-tube.**



Tapered: Overview

In the never-ending quest for lighter, stiffer, and stronger framesets many manufacturers have begun to favor so-called tapered headsets which utilize a large lower bearing assembly for strength and stiffness while maintaining a standard-sized upper assembly for light-weight and component compatibility.

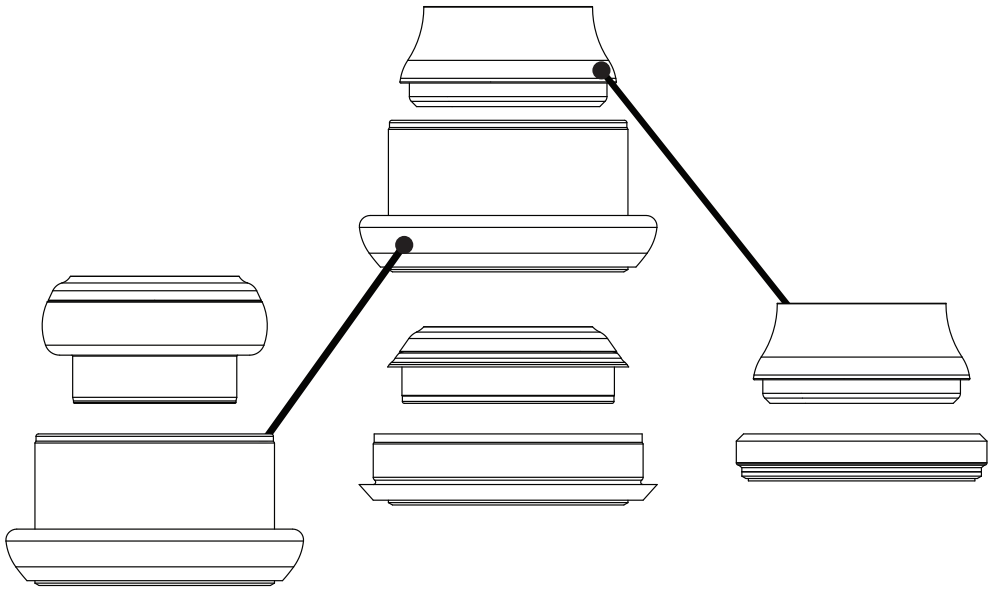
When designing a Tapered head-tube and fork assembly it is necessary to specify four things:

- Upper steerer-tube diameter
- Lower steerer-tube diameter

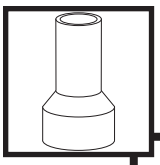
- Upper head-tube platform
- Lower head-tube platform

Upper steerer-tubes should always be 1-1/8” standard and may be mated to the head-tube with any of the three common headset platforms available today: Traditional, Integrated, or ZeroStack.

Lower steerer-tubes can range from 1-1/8” to 1.5” in 1/8” increments for Integrated platforms and can be *either* 1-1/8” or 1.5” for Traditional and ZeroStack platforms.



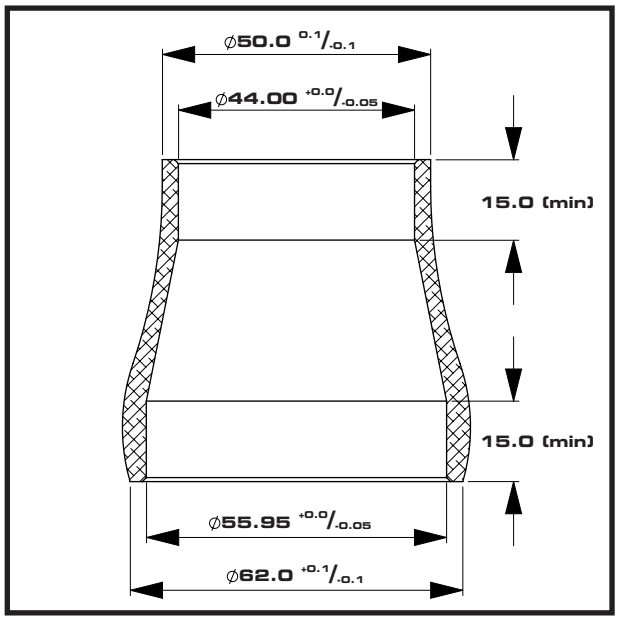
While there are some preferred embodiments as described in the following pages, the upper and lower head-tubes may be considered largely independent; platforms and sizes may be interchanged to best meet your design goals.



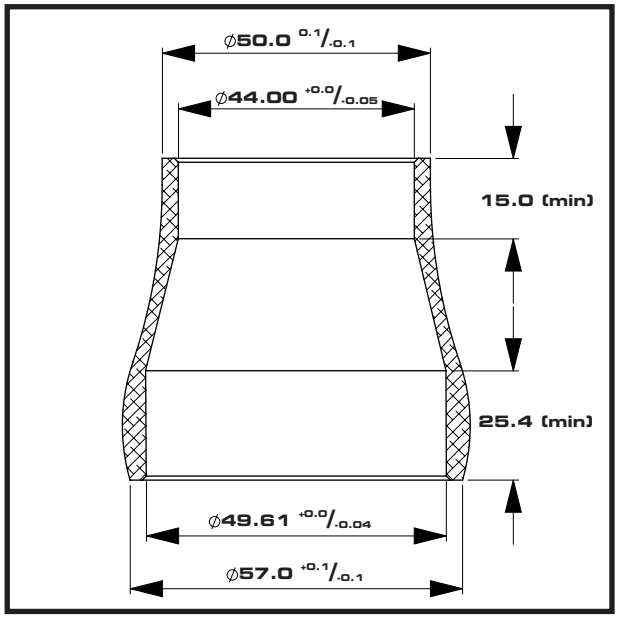
Tapered: Preferred Embodiments

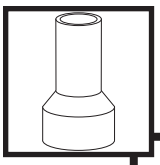
Mountain Bike Applications

ZeroStack - Matching



ZeroStack/Traditional

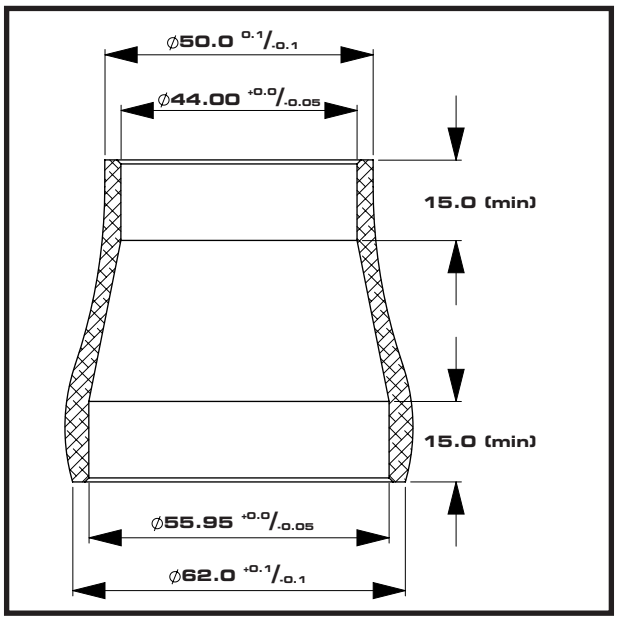




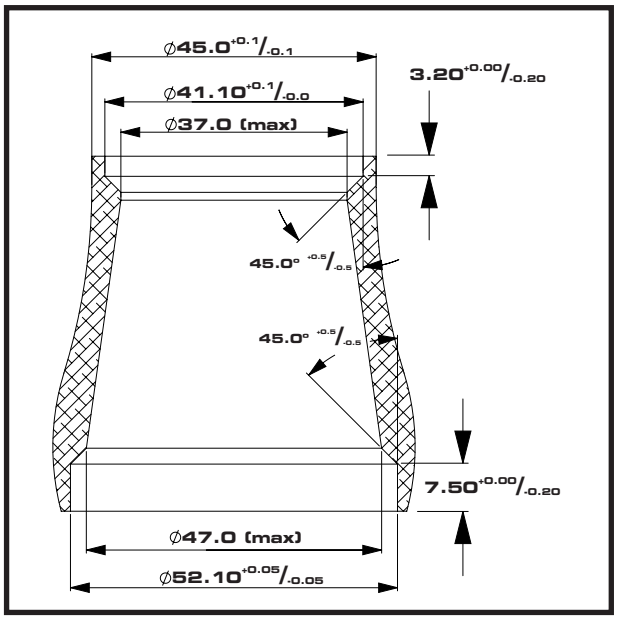
Tapered: Preferred Embodiments

Road Bike Applications

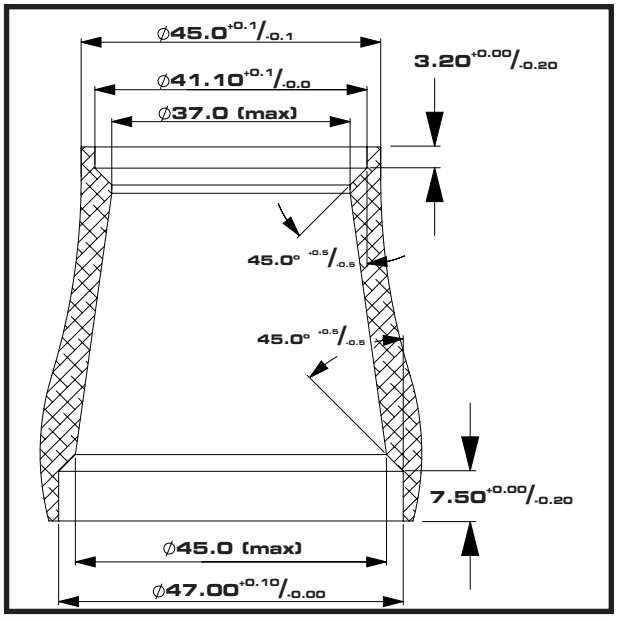
ZeroStack - Matching (1.5” Lower)



Integrated (1.5” Lower)

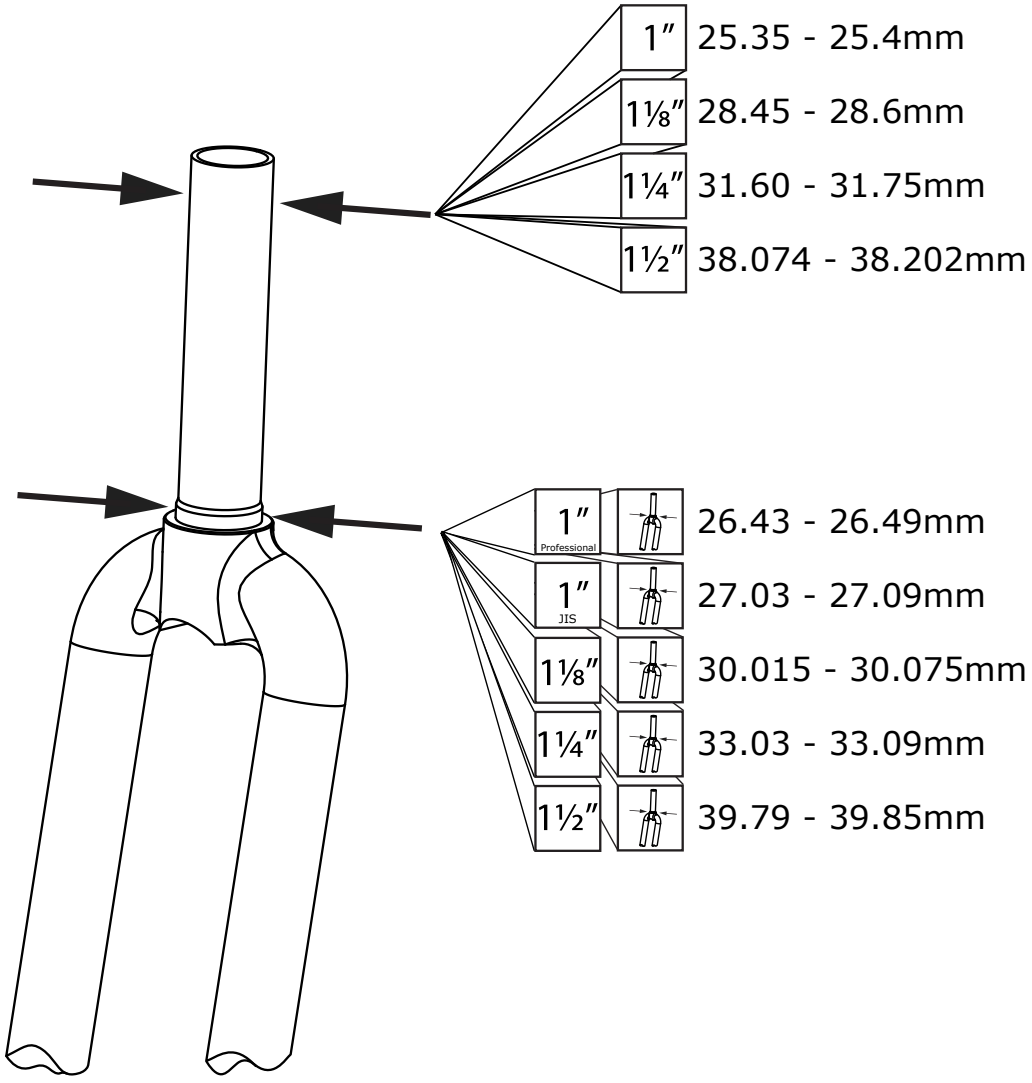


Integrated (1-1/4” Lower)



Fork Interface

Constant-Diameter Steerer Tubes



Fork Interface

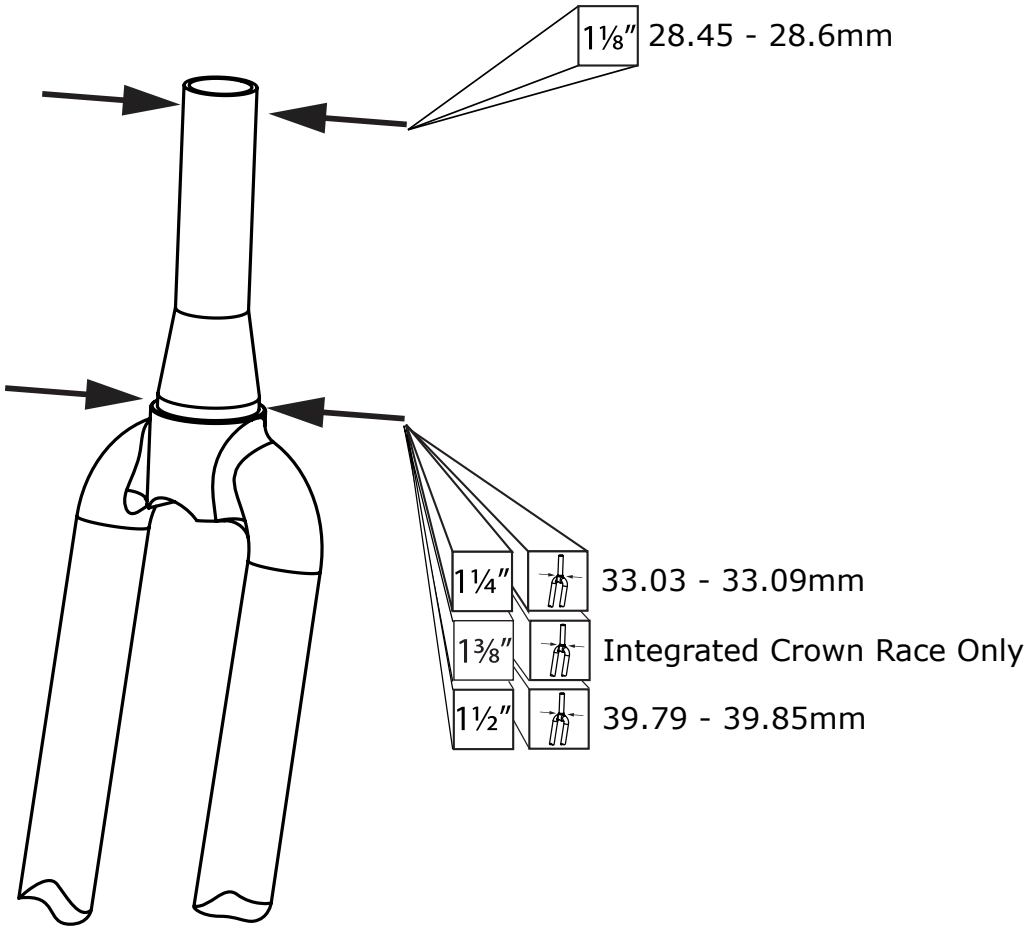
Tapered Steerer Tubes

Tapered steerer-tubes exist in many configurations and geometries but for purposes of headset fit there are only two key dimensions:

- Upper steerer-tube diameter
- Crown-race seat diameter

The upper steerer-tube diameter is critical because this is where the upper headset assembly mates with the steerer-tube. The fork designer must ensure that this area is cylindrical and within the specified diameter tolerance. The fork designer must also work with the frame designer to ensure that the steerer-tube is completely cylindrical at the height of the upper headset bearing bore in order to provide a proper interface for the headset.

The crown-race seat diameter should also be accurately controlled because it must be within the specified tolerances in order to provide a proper interference fit with the crown-race.



Fork Interface

Tapered Steerer Tubes: 1-3/8” Crown Geometry

The 1-3/8” lower bearing provides a nice middle-ground between the 1-1/4” and 1.5” platforms and is already in use on some high-end carbon fiber frames. Implementing this platform is similar to the other oversize lower assemblies however, at this time traditional press-fit crown races are not available in this size. In order to mate the fork-crown to the lower bearing the crown must have a special geometry as detailed below.