ZERO STACK (ZS) HEADSET INSTALLATION INSTRUCTIONS

WARNING: Cane Creek threadless headsets are designed for use with unthreaded, full-thickness bicycle fork steerer tubes. Use of this headset with a threaded steerer tube or a steerer tube with a reduced wall thickness can result in cracking or breaking of the steerer tube, causing damage to the bicycle and possible injury or death to the rider.

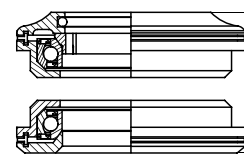
A. HEADSET & FRAME COMPATIBILITY

Cane Creek's ZS Headsets can be used only in bicycle frames specifically designed for their use and are incompatible with most frames designed for traditional headsets. Head tubes must be made with a specific and unique bore diameter.

B. PREPARING FRAME AND FORK FOR HEADSET INSTALLATION:

1. Use a head tube reaming and facing tool to prepare the top and bottom of the frame's head tube. (Be sure to use the correct reamer diameter corresponding to the headset being installed.)
2. Use a crown race cutting tool to turn and face the crown race seat of the fork. (Be sure to use the correct cutter diameter corresponding to the headset being installed.)

Note: It is imperative to complete these steps to ensure a smooth operating headset. If these steps are not completed or done improperly, the headset may be more rough in turning or may tend to "stick" to one side or the other. This applies to ALL frames and forks, new or used, painted or unpainted.



Headset Stack Height = A + B

C. DETERMINING REQUIRED FORK STEERER TUBE LENGTH:

There are 2 possible methods for determining the required fork steerer tube length. Each is explained below:

i) Calculation Method:

1. Determine the headset stack height by adding the following measurements (see illustration above):
   A) Bottom of the large diameter portion of the upper cup to the top of the upper bearing cover.
   B) Crown race bottom to the top of the large diameter portion of the lower cup.
2. Measure the head tube length.
3. Measure the total height of any stem spacers used.
4. Measure the height of the clamp portion of the handlebar stem.
5. Add the above dimensions and subtract 3 mm for adjustment clearance

Required fork steerer tube length = headset stack height + head tube length + total height of spacers + stem clamp height – 3 mm

ii) Assembly Method (preferred):

1. Install the bearing cups as instructed in E below.
2. Install the crown race as instructed in F below.
3. Assemble the headset as instructed in H below.
4. Tighten 1 stem clamp bolt enough to hold the assembly in place.
5. Mark the steerer tube at the top of the stem.
6. Disassemble the stem, spacers, upper bearing cover and bearings.
7. The required fork steerer tube length will be 3 mm below the marking from step 5.

D. CUTTING FORK STEERER TUBE:

1. Carefully cut the fork steerer tube in the correct location, as determined from step B, using a tubing cutter, hacksaw or other appropriate cutting tool.
2. Use a file to remove any burrs from the area of the cut to prevent damage to the upper bearing cover o-ring.

E. INSTALLING UPPER AND LOWER BEARING CUPS:

Press the upper and lower bearing cups into the head tube using a good quality headset press. It is important to press on the outer flange only, to prevent damage to the bearing cups.

F. INSTALLING CROWN RACE:

Press the fork crown race onto the fork with an appropriate crown race installation tool until the flat back face is flush against the fork crown. *Note: The crown race should fit with a press fit.*

G. INSTALLING STAR NUT INTO FORK STEERER TUBE:

1. Position the star nut with the concave end facing upward over the top of the steerer tube.
2. Press the star nut into the steerer tube to a point 15 mm below the top. This should preferably be done using a star nut installation tool. If this tool is unavailable, thread the compression bolt into the star nut and lightly tap the assembly into position with a dead-weight mallet or similar tool. Ensure that the threads of the star nut are aligned with the steerer tube.

Note: When replacing a fork, it is necessary to use a new star nut.

H. ASSEMBLING HEADSET:

1. Place the lower seal over the steerer tube and onto the crown race, ensuring that it is seated properly in the groove.
2. Slide one bearing cartridge over the fork steerer tube while ensuring the angled surface at the inside diameter of the cartridge is downward and mates with the crown race angle.
3. Insert the fork steerer tube into the head tube, holding it while completing the steps below.
4. Ensure that the lower seal is correctly seated in the groove of the lower cup and is still seated correctly in the crown race.
5. Install the upper bearing cartridge over the steerer tube while ensuring the angled surface at the outside of the bearing cartridge is downward and mates with the angle at the inside of the upper bearing cup.
6. Slide the compression ring over the steerer tube with the angled surface downward.
7. Install the upper seal into the groove of the upper bearing cup.
8. Install the upper bearing cover (It may be necessary to apply a small amount of grease to the o-ring to allow easy installation), ensuring that it seats correctly with the upper seal in the groove.
9. Install stem height adjustment spacers (if used) and then the stem onto the steerer tube.
10. Seat the steerer tube firmly upward in the head tube and the stem firmly downward against the spacer (or upper bearing cover), leaving the clamp bolts loose.

CAUTION: The top of the steerer tube must be 3 mm below the top of the stem before the compression bolt is tightened. If the steerer tube is too long, sufficient compression may not be possible and the headset will remain loose, risking rapid headset wear and possible damage to the frame. If the steerer tube is too short, the stem may not have sufficient clamping surface against the steerer tube to be used safely.

I. TIGHTENING/PRELOADING HEADSET ASSEMBLY:

1. Lubricate the compression bolt.
2. Insert the compression bolt through the recess in the top cap and begin threading the bolt into the star nut, while seating the top cap into the top of the stem.
3. Tighten the compression bolt with a 5 mm hex wrench to preload the bearings. Apply only enough torque to remove all play from the headset while ensuring it still rotates freely. **CAUTION**: Insufficient preload will result in a loose headset. Excessive preload will result in the headset binding. Either condition will cause rapid headset wear and could adversely affect the steering characteristics of the bicycle.
4. With the stem aligned with the fork, secure the stem to the steerer tube and lock in the bearing pre-load by tightening the stem clamp bolt/s. These should be tightened to the torque recommended by the stem manufacturer. **WARNING**: Make sure the stem clamp bolts are sufficiently tight to prevent the stem and handlebars from turning relative to the steerer tube. A loose stem can result in damage to the bike, loss of control, and severe injury or death to the rider.
5. If the headset needs re-adjusting after the initial break-in period: Loosen the stem clamp bolt/s, re-set the pre-load with the compression bolt (step 3) and re-tighten the stem clamp bolts (step 4).

Note: It is essential that the stem is securely tightened to the steerer tube.

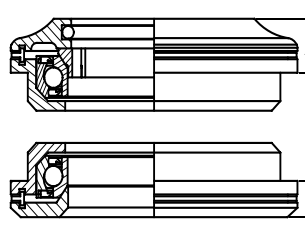
WARRANTY:

Cane Creek threadless headsets are warranted for two years from date of purchase against defects in materials and workmanship. Cane Creek Cycling Components will repair or replace, at our option, the defective part at no charge. This warranty does not cover damage occurring during shipment, storage, failure to follow instructions, misuse, accidents or crashes, neglect or poor maintenance, improper assembly, installation or assembly with incompatible products, normal wear, or modification. Warranty claims should be made through the original dealer, when possible. A dated proof of purchase is required.

US Patent #s 5095770 and 6126323 apply

CANE CREEK

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Headset Stack Height = A + B

Parts List:

1 Compression Bolt
2 Top Cap
3 Star Nut
4 Upper Bearing Cover
5 Compression Ring
6 Upper Seal
7 Upper Bearing
8 Upper Bearing Cup
9 Lower Bearing Cup (same as Upper)
10 Lower Bearing (same as Upper)
11 Lower Seal (same as Upper)
12 Crown Race

Liste der Einzelteile:

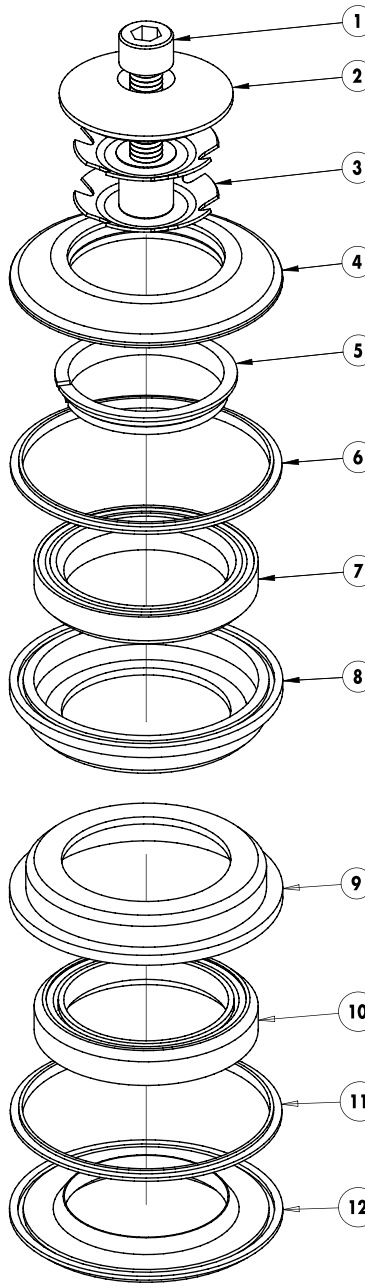
1 Kompressionsschraube
2 Abdeckkappe
3 Gezahnte Mutter/Stahlkralle
4 Obere Lagerabdeckung
5 Kompressionsring
6 Obere Dichtung
7 Oberes Lager
8 Obere Lagerschale
9 Untere Lagerschale (baugleich wie obere L.)
10 Unteres Lager (baugleich wie oberes L.)
11 Untere Dichtung (baugleich wie obere D.)
12 Gabelkonus

Elenco dei componenti:

1 Vite di compressione
2 Tappo superiore
3 Ancorina (dado a stella)
4 Coperchio cuscinetto superiore
5 Anello di compressione
6 Guarnizione superiore
7 Cuscinetto superiore
8 Calotta cuscinetto superiore
9 Calotta cuscinetto inferiore (come quella superiore)
10 Cuscinetto inferiore (come quello superiore)
11 Guarnizione inferiore (come quella superiore)
12 Cono inferiore della serie sterzo

Lijst onderdelen:

1 Klembout
2 Afsluiting bovenkant
3 Zeskantige moer
4 Omhulsel bovenlager
5 Borgring
6 Bovenste afsluitring
7 Bovenlager
8 Cup bovenlager
9 Cup onderlager (zelfde als bovenlager)
10 Onderlager (zelfde als bovenlager)
11 Onderste afsluitring (zelfde als bovenste afsluitring)
12 Loopring kroon



Lista de las piezas:

1 Perno de compresión
2 Tapa superior
3 Tuerca de estrella
4 Cubierta del rodamiento superior
5 Anillo de compresión
6 Cierre superior
7 Rodamiento superior
8 Casquillo del rodamiento superior
9 Casquillo de rodamiento inferior (igual que el superior)
10 Rodamiento inferior (igual que el superior)
11 Cierre inferior (igual que el superior)
12 Anillo de rodadura de la corona

Liste des pièces :

1 Boulon de compression
2 Capuchon supérieur
3 Écrou en étoile
4 Couvercle du roulement supérieur
5 Bague de compression
6 Joint supérieur
7 Roulement supérieur
8 Cuvette du roulement supérieur
9 Cuvette du roulement inférieur (identique à la cuvette du roulement supérieur)
10 Roulement inférieur (identique au roulement supérieur)
11 Joint inférieur (identique au joint supérieur)
12 Bague de couronne

Lista de peças:

1 Parafuso de compressão
2 Protecção superior
3 Porca em estrela
4 Tampa superior de rolamentos
5 Anilha de compressão
6 Anilha superior
7 Rolamentos superiores
8 Copo de rolamentos superiores
9 Copo de rolamentos inferiores (iguais aos superiores)
10 Rolamentos inferiores (iguais aos superiores)
11 Anilha inferior (igual à superior)
12 Tampa inferior

パーツリスト :

1 コンプレッション・ボルト
2 トップ・キャップ
3 スター・ナット
4 アッパー・ベアリング・カバー
5 コンプレッション・リング
6 アッパー・シール
7 アッパー・ベアリング
8 アッパー・ベアリング・カップ
9 ローアー・ベアリング・カップ（アッパーと同じ）
10 ローアー・ベアリング （アッパーと同じ）