Sweet Wings Installation & Care Instructions

BOTTOM BRACKET SHELL SIZE - VERY IMPORTANT:
Two spindle lengths are available for the Sweet Wings; one for 68-70 mm bottom bracket shells and one for a 73 mm bottom bracket shell. Prior to installing the Sweet Wings, please make sure the spindle length matches your bottom bracket shell width.

FRAME PREPARATION - VERY IMPORTANT:
Face and tap the bicycle bottom bracket shell. Make sure the bottom bracket shell is clean and free from burs. **Note: This step is essential to ensure accurate bearing alignment and smooth crankset rotation.**

INSTALLATION TOOLS NEEDED:

- Torque Wrench (3/8" drive or 1/2" drive w/ 3/8" adapter)
- 3/8" drive extension for torque wrench
- 8 mm hex key socket bit for torque wrench
- Park BBT-2 bottom bracket tool

BOTTOM BRACKET CUP/BEARING INSTALLATION:

1. Grease the cup threads.
2. Non-drive cup/bearing - Hand install the non-drive cup/bearing in the non-drive side of the bottom bracket shell. From the drive side, slide the Park BBT-2 tool (with the torque wrench and extension attached) through the bottom bracket shell. Engage the non-drive cup/bearing and tighten to 40 ft-lbs. (See Figure 1).
3. Bottom Bracket Sleeve - Grease both ends of the aluminum sleeve. Slide the sleeve into the bottom bracket shell so that it butts against the non-drive bearing cup.

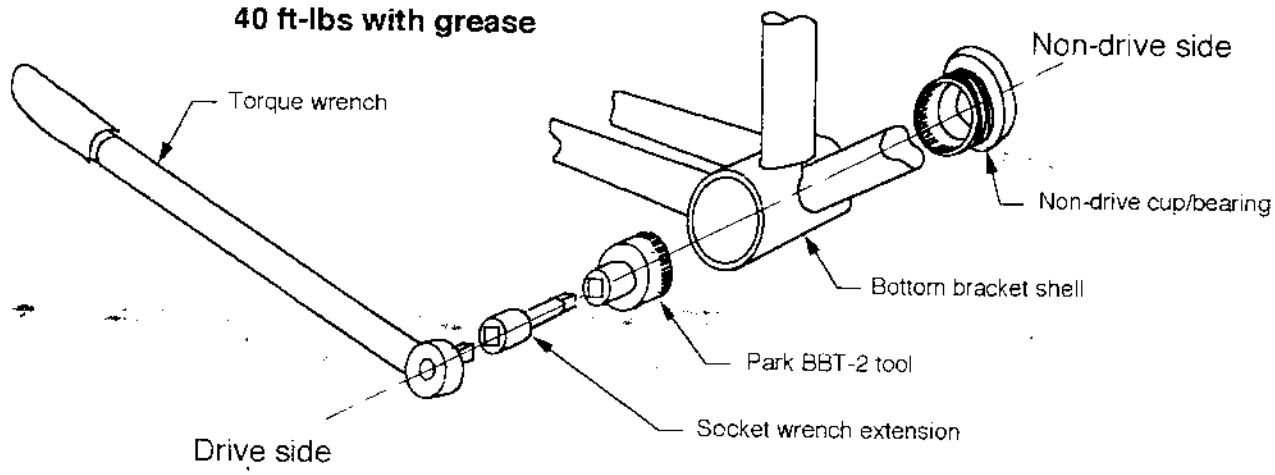


Fig. 1 Installation of Non-drive cup/bearing

4. Drive cup/bearing - Hand install the drive cup/bearing in the drive side of the bottom bracket shell. Guide the sleeve into the drive cup so it seats against the bearing. The aluminum sleeve must seat against the non-drive cup and the drive side bearing. Using the Park BBT-2 tool and torque wrench, engage the drive cup/bearing and tighten to 40 ft-lbs. (See Figure 2). Make sure that the sleeve fits snugly between the non-drive cup and drive side bearing. If the sleeve can be moved with a finger the bottom bracket shell is too wide. Remove the cup/bearing assemblies and sleeve, then face the BB shell to reduce its width. Refer to Steps 1-4 for reinstallation of the bottom bracket cup/bearings and sleeve after facing. **Note: It is normal to have a small gap between the BB shell and the flange of the drive cup.**

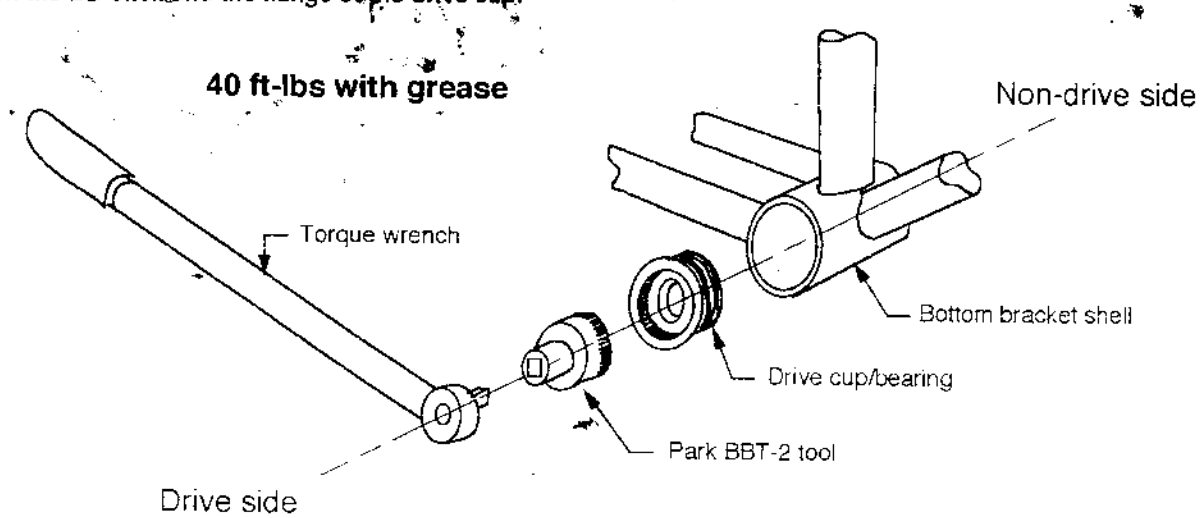


Fig. 2 Installation of Drive cup/bearing

CRANKSET/BOTTOM BRACKET SPINDLE INSTALLATION:

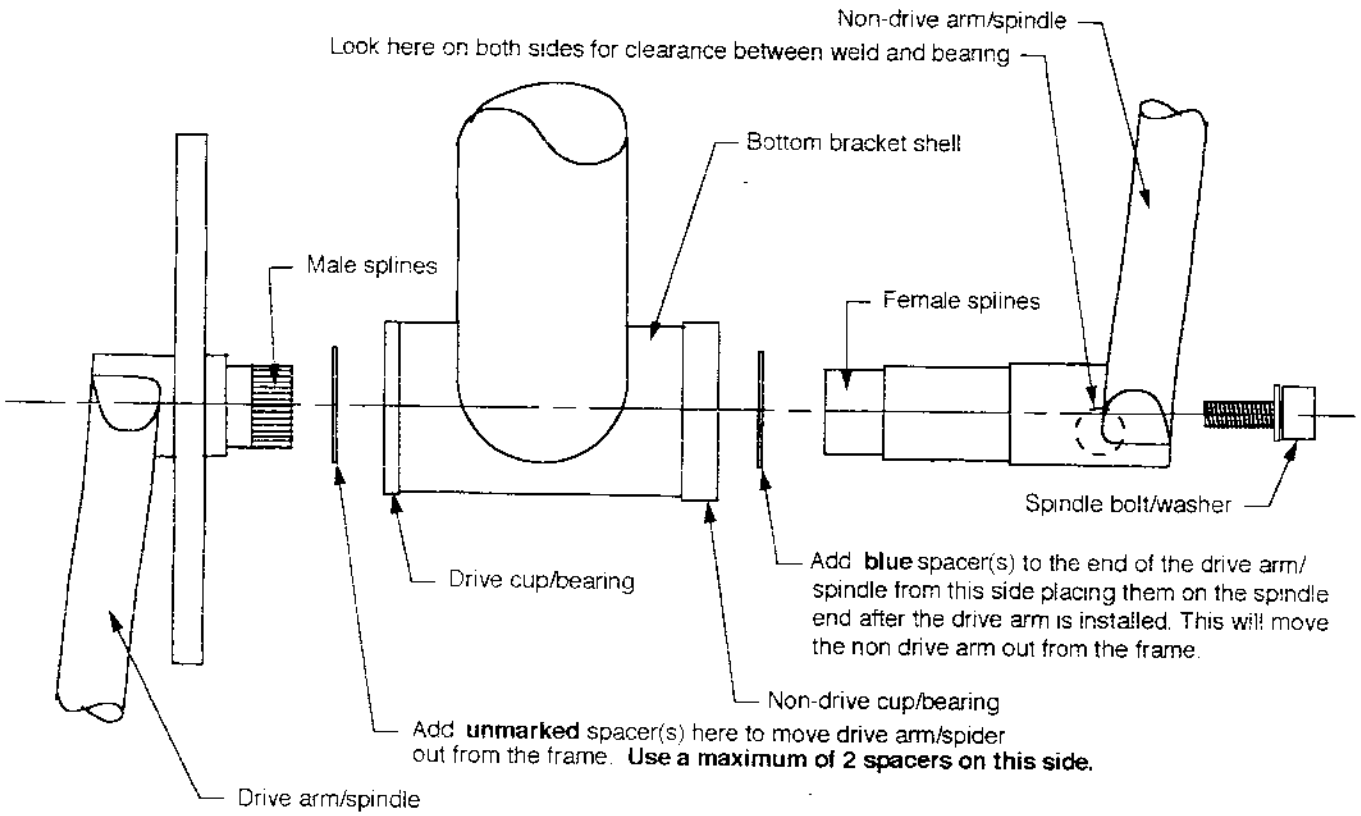
5. Grease the male splines of the drive arm/spindle. For each bearing, grease the inside circumference of the interior bearing race (the bearing surface through which the spindle slides). (See Figure 3).
6. The Sweet Wings uses an oversize spindle which requires almost the full inside diameter of the bottom bracket shell. Some frames use a screw to fasten a derailleur cable guide under the bottom bracket shell. This screw may protrude into the bottom bracket shell and interfere with installation or rotation of the spindle. Remove all interfering portions of the screw and/or protrusions prior to installation of the crankset.
7. Check the non-drive spindle length:

Check the spindle length by sliding the non-drive arm/spindle through the non-drive bearing hole. The non-drive spindle must span across the bottom bracket shell and be against the inside of the drive bearing. Check this by looking through the drive bearing hole. Also, if you rotate the non-drive arm/spindle the drive bearing should rotate. If it is not against the bearing, blue marked spacer(s) must be added to increase the spindle length.

8. Installation of blue marked spacers:

Slide the drive arm/spindle through the drive bearing hole. Then slip the spacer(s) onto the drive spindle splines by accessing the splines from the non-drive side of the bottom bracket shell. Upon completion, slide the non-drive arm/spindle through the non-drive bearing hole. Or, use grease to stick the required number of washers on the end of the non-drive spindle. Slide the drive arm/spindle through the drive bearing hole, and then with the spacers attached, slide the non-drive spindle through the non-drive bearing hole and bottom bracket shell until the spacers are against the inside of the drive bearing. **Note: For 70 mm (Italian) width bottom bracket shells, a minimum of 2 blue marked spacers against the inside of the drive bearing are required. (See Figure 3).**

9. Engage the male-female splines with the arms positioned directly opposite each other. (See Figure 3).



Note: A sum of 4 spacers is the maximum that can be added.

Fig. 3 Crankset/bottom bracket spindle installation and adjustment

CRANKSET/BOTTOM BRACKET SPINDLE INSTALLATION (CONT.):

10. Install the spindle bolt and washer through the hole in non-drive arm/spindle. (See Figure 4). **Note: At this time, do not fully tighten the spindle bolt or apply Loctite to the threads.**

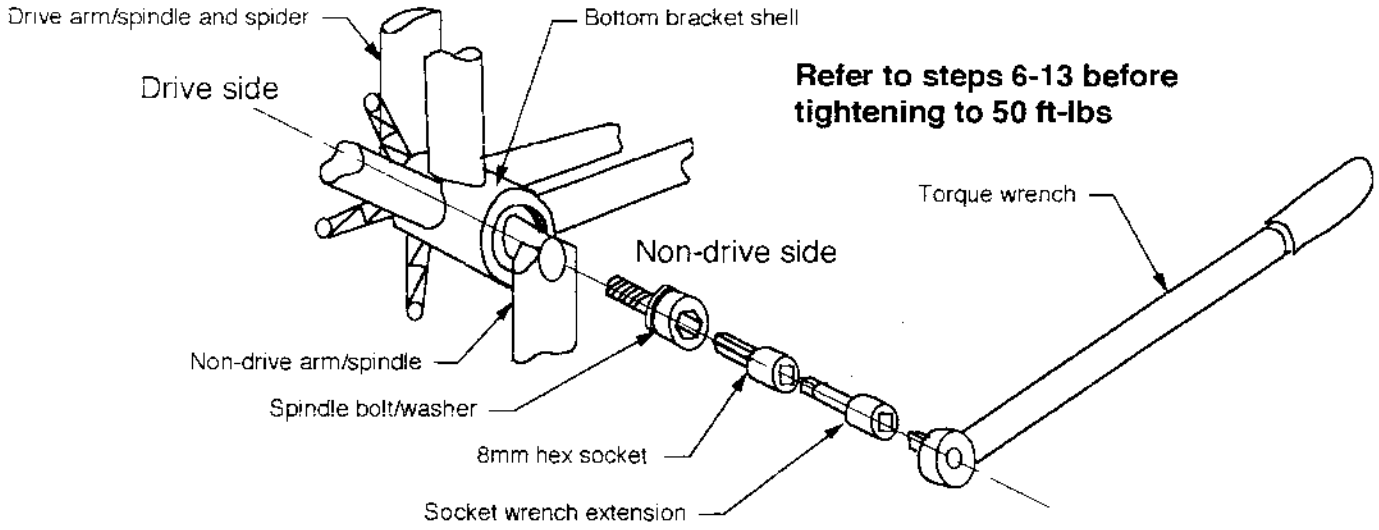


Fig. 4 Installation of spindle bolt

11. Check for the following clearances:
- Clearance between the weld at the non-drive arm/spindle joint and the non-drive bearing race. (See Figure 3) **Note: Inadquate clearance in this location will result in dislodging of the drive bearing from its cup upon tightening of the spindle bolt. If the drive bearing is dislodged from the cup, the cup/bearing assembly must be replaced.**
- Clearance between the chainrings and the chain stays.
- Clearance between the crank arms and the chain stays.

12. *If the chainline and the clearances are okay:* Remove the spindle bolt and washer. Make sure the spindle bolt threads are clean. Lightly grease both sides of the washer. Apply Loctite #242 to the threads of the spindle bolt and the threads of the drive/arm spindle that the bolt engages. Re-install the spindle bolt and washer using the 8mm hex head socket, extension and torque wrench. Tighten the spindle bolt to 50 ft-lbs. **Note: It is normal for the crankarms to have a small amount of sideplay. It will not effect the performance or life of the product.** Continue on to Step No. 15.

13. *If increased clearance(s) are needed:* Remove the spindle bolt and the crank arm/spindles. Add the provided spacer(s) against either the outside or inside of the drive side bearing. To increase clearances on the drive side, add unmarked spacers (2 maximum) against the outside of the drive bearing. To increase clearances on the non-drive side add blue marked spacers (4 maximum) against the inside of the drive side bearing. Refer to Step No. 8 for installation of blue marked spaces. (See Figure 3). **Note: A sum of 4 spacers is the maximum that can be added to the spindle. Spacers must only be used on their designated side; unmarked spacers against the outside of the drive bearing and blue marked spacers against the inside of the drive bearing.**

14. *Once the desired chainline and clearances are achieved:* Lightly grease both sides of the washer. Apply Loctite #242 (or equivalent) to the threads of the spindle bolt and the threads of the drive/arm spindle that the bolt engages. Re-install the spindle bolt and washer using the 8mm hex head socket, extension and torque wrench. Tighten the spindle bolt to 50 ft-lbs.

15. Spin the crankset without the chain to check the cup/bearing alignment. If the crank spins freely, then the crankset/bottom bracket installation is complete. If the crankset spins unevenly or drags, check the following again:
- The crankset spindle length matches the bottom bracket shell width. A 68 mm spindle requires a bottom bracket shell width between 68-71 mm. A 73 mm spindle requires a bottom bracket shell width between 73-76 mm.)
- The bottom bracket facing and tapping were performed correctly. If they were not, the bottom bracket shell must be faced and tapped again.
- Check for clearance between the welds on the non-drive arm and the non-drive bearing. (See Figure 3).

Note: The Loctite (or equivalent) and the washer must be used when installing the spindle bolt, otherwise the bolt may loosen while riding. The threads of the spindle bolt must not be greased. If the threads of the spindle bolt have been greased, use a degreaser on the bolt as well as on the threads inside the drive spindle.

16. Press in place the plastic spindle caps. Continue to "CHAINRING INSTALLATION".

CHAINRING INSTALLATION:

Road:

Typical installation.

Mountain (See Figure 5):

1. Using a set of standard chainrings bolts, bolt the Ring Wranglers to the outside of the spider and the small chainring to the inside of the spider. At this time, do not fully tighten the chainring bolts.
2. Using a second set of standard chainrings bolts, bolt the big and the middle chainrings to their respective sides of the Ring Wranglers.
3. Once all the pieces are in place, progressively tighten all of the chainring bolts.

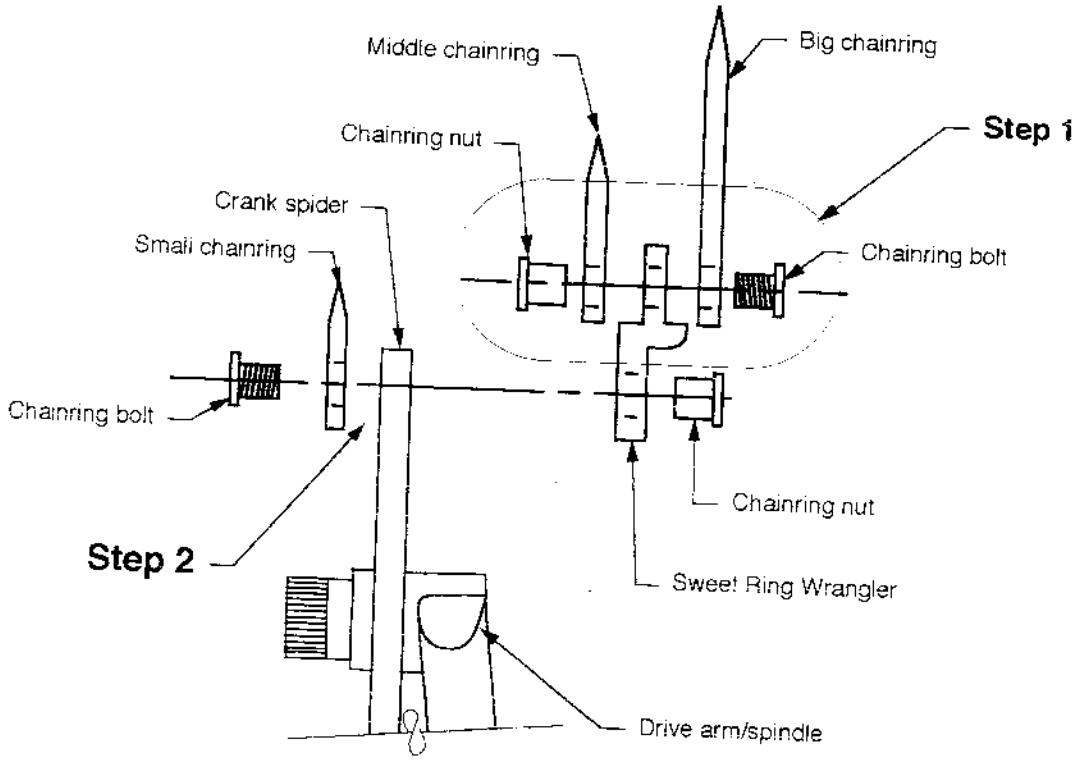


Fig. 5 Chainring installation

CARE/MAINTENANCE:

- Check the spindle bolt for tightness periodically.
- We recommend cleaning with soap and water or any bike cleaner/ degreaser. Do not use abrasive cleaners. Thoroughly dry all surfaces (interior as well as exterior) after cleaning.

WARRANTY:

LIMITED WARRANTY

Sweet Parts guarantees this product, when used under normal, non-abusive conditions, against defects in materials and workmanship for the first year following its retail sale. "Non-abusive conditions" does not include ramp jumping, acrobatics, stunt riding, trials riding or training for such events. This warranty applies only to the original retail purchaser of this product and is subject to the conditions set forth below.

It is the consumer's responsibility to regularly inspect the product to determine the need for maintenance or replacement. This warranty does not cover normal wear to the product or any Sweet Parts products that have been modified, neglected, inadequately maintained, misused, abused or involved in accidents. There are no warranties which extend beyond the face hereof.

This warranty does not cover damage to products resulting from use in competition, improper assembly or repair, or damage resulting from causes other than defects in workmanship and materials, including, but not limited to, lack of technical skill, competence or experience of the user.

The responsibility of Sweet Parts under this warranty is limited to repair or replacement of this product, at the sole discretion of Sweet Parts.

If this product needs to be repaired or replaced because of a defect in workmanship or materials, return the part directly to Sweet Parts or to a Sweet Parts dealer along with your original sales receipt. Before returning the part, telephone Sweet Parts at (818) 403-9530 to receive a return authorization number. The part requiring service or replacement must be returned to Sweet Parts, either by the purchaser or a Sweet Parts dealer. Insurance, handling and transportation charges for service shall be borne by the person desiring service.

LIMITATION OF IMPLIED WARRANTY

In no event shall Sweet Parts be liable for any loss, inconvenience or damage, whether direct, or incidental, consequential or otherwise, resulting from breach of any express or implied warranty or condition, of merchantability, fitness for a particular purpose, or otherwise with respect to this product, except as set forth herein. With the exception of any warranties implied by state law as hereby limited, the foregoing express limited warranty is exclusive and in lieu of all other warranties, guarantees, agreements and other similar obligations of manufacturer or seller. Some states do not allow the exclusions or limitations of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

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