

## Titanium Bottom Bracket Axle Essential Fitting Instructions

Royce components are manufactured to exacting tolerances. As such, careless installation can cause significant damage to components. Use only Royce fitting tools on cups and lockrings. The condition of used cranks should be inspected carefully before fitting. The use of worn, damaged or incorrectly fitting cranks can result in creaking noises and the gradual loosening of the crank arm on the axle taper.

For technical support telephone 01425 620062



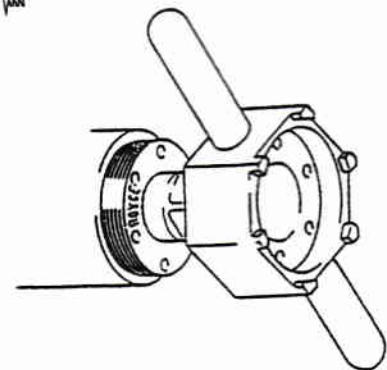
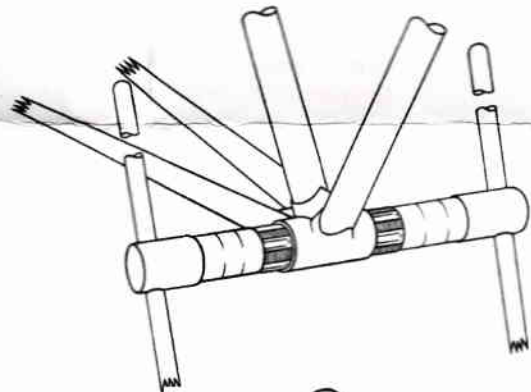
**Disregard of these step by step instructions will result in eternal trouble with creaking cranks!**

1. Ensure that bottom bracket threads in your frame are in good condition. **Threads should be cleaned out with sharp IN-LINE taps.**

2. The drive side cup has been factory fitted. For English threads, the drive side cup is left hand threaded, while the non-drive side cup is right hand threaded. For all other axle threads, both cups are right hand threaded.

- 3a. **NON-LOCKRING MODELS:** Apply a small amount of Royce Anti-Shake to the threads in the bottom bracket shell, insert drive side cup and axle half way into bottom bracket shell, insert non-drive side cup the same amount. Tighten both cups with Royce fitting tool RT0006\* (keep the tool pressed against the cup by using the spacers provided and holding in place with an end bolt) so that each cup protrudes from the bottom bracket shell by an equal amount. Tighten one cup to **30lbfft (40 Nm) torque** using the fitting tool and torque wrench.

- 3b. **LOCKRING MODELS:** Remove both locking rings and assemble as non-lockring model, but use Royce fitting tool RT0001\*. After assembly, grease threads in locking rings and add to assembly, tighten both locking rings using Royce fitting tool RT0001\*

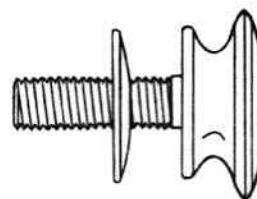


3c. **FIXED CUP MODELS:** Apply a small amount of Royce Anti-Shake to the cup threads. Screw in both cups half way. Tighten **FIXED CUP** to **30lbfft (40 Nm) torque** using Royce fitting tool RT0002\*. Then tighten non-drive side cup to 30lbfft torque using Royce fitting tool RT0001\*.

4. Thoroughly clean the crank arm taper and axle tapers using an air drying cleaning fluid (such as Methylated Spirits) **When clean DO NOT apply oil or grease to the axle taper or crank arm taper.**

5. When fitted by hand, both crank arms should sit between two-thirds and three-quarters of the way up the axle taper.

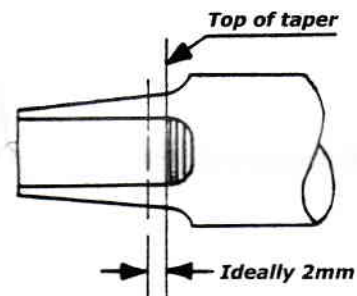
6a. **STAINLESS STEEL END BOLTS:** Each Royce end bolt, complete with spring washer (Bellville) should be fitted as shown in the illustration and the threads greased with assembly grease. Tighten each crank arm onto axle taper to **20lbfft (27 Nm) torque.**



6b. **TITANIUM END BOLTS:** Each Royce end bolt, complete with spring washer (Bellville) should be fitted as shown in the illustration. **Apply an anti-seize compound to the end bolt threads,** then tighten each crank arm onto axle taper to **20lbfft (27 Nm) torque.**

6c. **ALUMINIUM END BOLTS:** **Aluminium end bolts should be used only to retain fully tightened and bedded in crank arms.** Only after step 7 has been completed using stainless steel or titanium end bolts, can aluminium end bolts be used. Tighten each aluminium bolt to **14lbfft (19 Nm) torque.**

7. Crank end bolts should be re-tightened to **20lbfft (27 Nm) torque** after each of a series of short (100 metres) rides that increase in intensity. This process should continue until the end bolts stop rotating and the cranks have fully bedded-in. **When fully bedded in, the inside edge of the crank arm should not reach the start of the radius at the top of the axle taper.**



\*Royce fitting tools RT0001, RT0002 and RT0006 are available through Royce or your local specialist. Precision made, full six pin engagement for standard cups, fixed cups and locking rings complete with special adapter to maintain location on the cup.

### GUARANTEE

We are proud of the quality and durability of our products, which are covered by a no-quibble guarantee. You are entitled to the repair or replacement at our discretion of components subject to faulty materials or manufacture for a period of 12 months from purchase. This guarantee does not limit your legal rights.

Royce UK LTD  
Unit 13F, Queensway, Stem Lane,  
New Milton, Hants, BH25 5NN  
Tel: 01425 620062