

To install the Phil Crankbearing cartridge the following is required: The Crankbearing Cartridge; Mounting Rings with the tube of retaining compound; Mounting Ring Wrench (the use of 2 wrenches will ease the installation)

## **INSTALL THE CRANKBEARING CARTRIDGE USING THE FOLLOWING THREE STEPS:**

### **1. INSTALLATION PREPARATION**

*THIS INSURES THE BOTTOM BRACKET SHELL WILL PROPERLY ACCOMMODATE THE CARTRIDGE.*

- A. Check the interior of bottom bracket for adequate clearance for the crankbearing cartridge. File away protruding objects that could come in contact with the cartridge such as frame tube ends, cable guide screws, etc.
- B. Clean the threads on both sides of bottom bracket thoroughly with a non-oily solvent such as 1-1-1 trichloroethane, energene (dry cleaning fluid) or naphtha; and allow the threads to dry completely.

### **2. SPINDLE ALIGNMENT PROCEDURE**

*THIS IS PERFORMED TO DETERMINE THE PROPER POSITIONING OF THE CARTRIDGE IN THE BOTTOM BRACKET. THIS IS PERFORMED PRIOR TO FIXING ITS POSITION VIA THE RETAINING COMPOUND ON THE MOUNTING RINGS. OUR MOUNTING RINGS ENABLE THE CARTRIDGE TO BE POSITIONED WITHIN A 5 MILLIMETER BAND OF A "NORMAL" CENTERED POSITION. IF IT IS KNOWN THAT THE SPINDLE WILL BE ALIGNED PROPERLY IN ITS CENTERED POSITION, THE ALIGNMENT PROCEDURE MAY NOT BE NECESSARY AND THE STEPS IN THE FRAME INSTALLATION PROCEDURE MAY BE FOLLOWED.*

- A. Place the crankbearing cartridge in the bottom bracket with the "P" of the "Phil" logo towards the chainring side of the frame. Thread the mounting rings into each side of bottom bracket by hand. The counter-bored side must face inward to nest cartridge. On British and Swiss threaded bottom brackets, the chainring side of frame has left-hand threads. The left-hand threaded mounting ring is indicated by a RED surface on its counter-bored side.
- B. With the mounting ring wrench, tighten the rings against the cartridge using approximately 25 ft-lbs. of torque. The rings should feel snug against the cartridge and should protrude about the same amount from each end of the bottom bracket. A properly mounted cartridge will be held securely in the frame and its spindle will turn smoothly.
- C. Clean and lightly oil the ends of the spindle, the square holes in the crankarms, and the crankarm mounting bolts. Install the crankarms securely on the spindle.
- D. Check the chainring-to-frame clearance, the chainline, and both crankarm-to-frame clearances.
- E. If the spindle needs to be shifted to the left or right, remove the crankarms, loosen the mounting ring on the side that must be shifted out, and tighten the ring on the opposing side. Re-install the crankarms and, again, check the clearances and alignment.
- F. Once the proper alignment is determined, measure the amount of threads visible outside of the bottom bracket shell. If more than 5mm of thread is visible, this cartridge may be inappropriate for the frame and crankarm combination. For technical support refer to your local professional bicycle dealer or to our technical support department. Remove the crankarms and mounting rings.

### **3. FRAME INSTALLATION PROCEDURE**

- A. Apply the retaining compound, supplied with the mounting rings, to the threads on each mounting ring. Thread the rings into the bottom bracket and onto the cartridge, placing them in the positions measured during the SPINDLE ALIGNMENT PROCEDURE. With the mounting ring wrench, apply approximately 25 ft-lbs. of torque to secure the rings against the cartridge.
- B. Be careful to wipe off any retaining compound that may touch the frame paint as it may discolor some types of paint.
- C. Install the crank arms and tighten thoroughly.