BLACKSPIRE DESIGNS LIMITED

PEDALS

MAINTENANCE

(SUB3 / SUB 4 / BIG SLIM MKII / EL GORDO)

CREATED BY: KELVIN WONG

REVISION	DATE	APPROVED BY:
IR	2/14/13	KW
A	2/15/15	KW

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REVISION	CHANGES
IR	-INITIAL PRELIMINARY RELEASE.
A	-RELEASED FOR ONLINE PUBLICATION.

TOOLS REQUIRED FOR PEDAL MAINTENANCE PROCESS

- 6 mm Hex Key Wrench
- 1/4" Drive Torque Wrench
- 6 mm Hex Bit 1/4" Drive Socket
- 1/4" Drive Ratcheting Socket Wrench
- 9 mm 6-Point 1/4" Drive Socket
- 6 mm or 8 mm Tool Punch
- Slickoleum Light Grease
- Rag
- Heavy Duty Grease of Your Choice

MATERIALS REQUIRED FOR PEDAL MAINTENANCE

- 2 x 686Z Bearing (Optional)

1. Loosen and remove the endcap from the pedal body using the 6 mm hex key wrench.

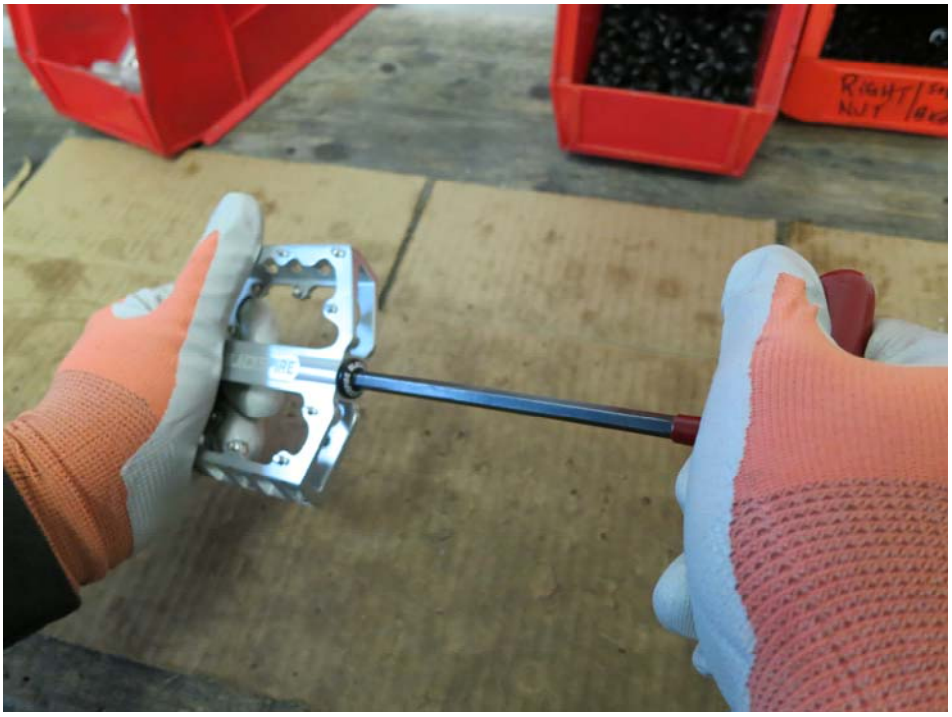

Figure 1: Holding the pedal body with a hand and removing the endcap with the 6 mm hex key wrench.

2. Remove the pedal axle nut by holding the pedal axle stationary with the 6 mm hex key wrench on the larger threaded end of the pedal axle and using the 9 mm 6-point socket on the ratcheting socket wrench.

Figure 2: Holding the pedal axle stationary with the 6 mm hex key wrench and loosening the pedal axle nut with the 9 mm 6-point socket.

3. Remove the pedal axle from the pedal body and wipe away the old grease with a rag.

Figure 3: Cleaned pedal axle with the seal removed.

4. Gently punch the 686 bearing out from the pedal body using a 6 mm or 8 mm tool punch Ensure smooth rotation of the 686 bearing and replace it with a new bearing if the rotation is not effortless.

Figure 4: Insert the 6 mm or 8 mm tool punch through the bushing side and gently tap it to push out the 686 bearing.

5. Insert the original or new 686 bearing into the threaded end of the pedal body by using the pedal axle as a guide.

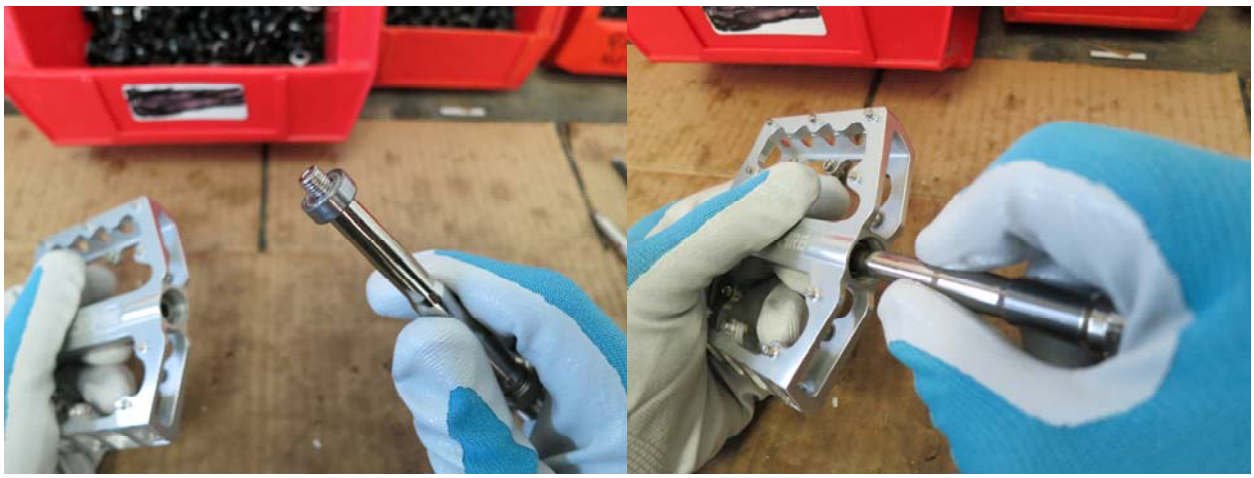

Figure 5: The 686 bearing is placed onto the pedal axle (left) and inserted into the pedal body (right).

6. Apply an even coat of heavy duty grease of your choice onto the largest diameter step of the pedal axle, extending down to the middle step of the pedal axle.

Figure 6: Applying grease onto the split DU bushing seat on the pedal axle. Notice the final location of the rubber seal.

7. Insert the re-greased pedal axle back into the pedal body and spin the pedal axle to displace the grease evenly throughout the bushing, inside the pedal body. If there is excessive lateral movement between the pedal body and pedal axle, the DU bushing may be worn down and would require replacement; referring to the DU Bushing Replacement manual.

Figure 7: Inserting the greased pedal axle into the pedal body.

8. Insert the pedal axle nut onto the smaller threaded end of the pedal axle. Hold down the pedal axle nut against the smaller threaded end of the pedal axle with a finger and spin the pedal axle to allow the threads to engage and hand tighten.

Figure 8: Applying (left) and tightening (right) the pedal axle nut by turning the pedal axle until it is hand tight.

9. Place the larger threaded end of the pedal axle onto the 6 mm hex bit of the torque wrench. Hold the torque wrench stationary and tighten the left pedal axle nut onto the pedal axle using the 9 mm 6-point socket on the ratcheting socket wrench. Tighten the pedal axle nut to the torque specification of 4 Nm.

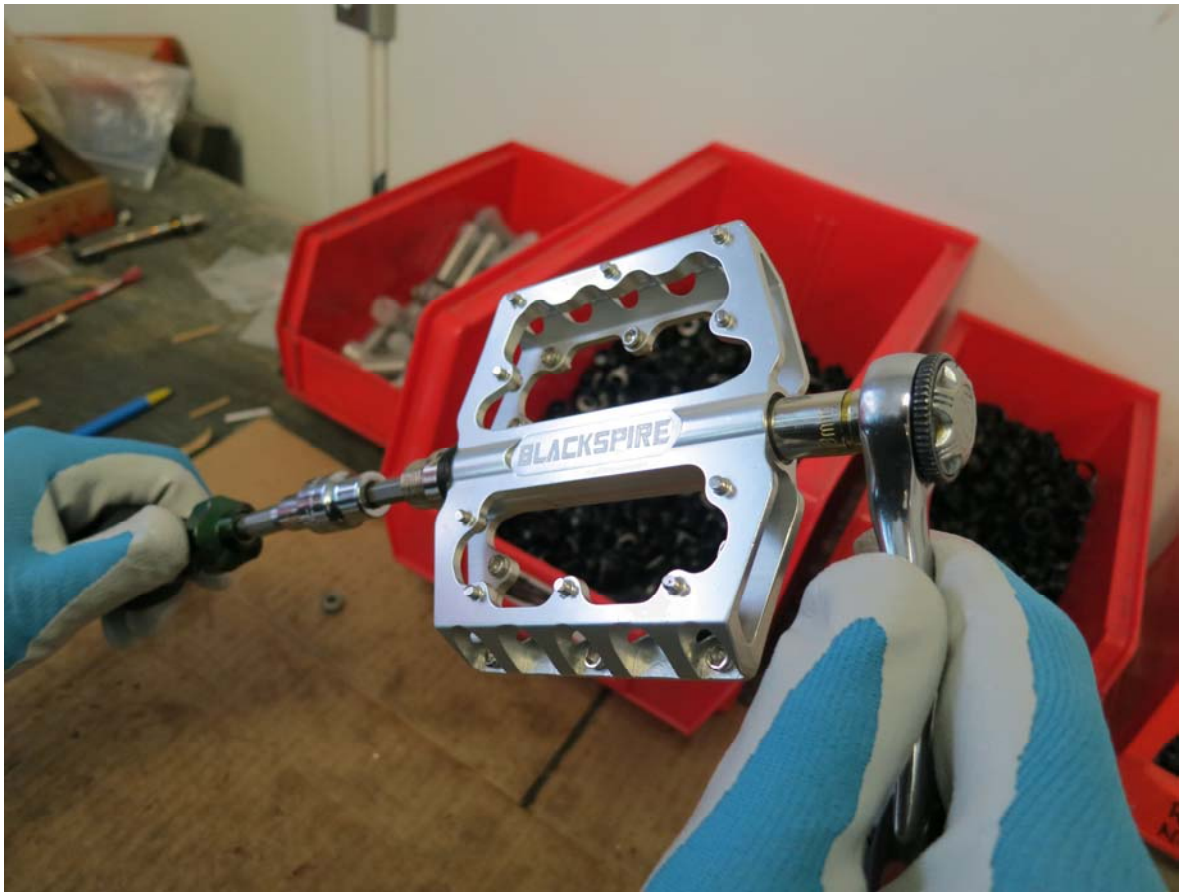

Figure 9: Tightening the pedal axle nut onto the pedal axle to the torque specification of 4 Nm.

10. Insert an end cap into the threaded end of the pedal body. Tighten the end cap to the torque specification of 4 Nm.

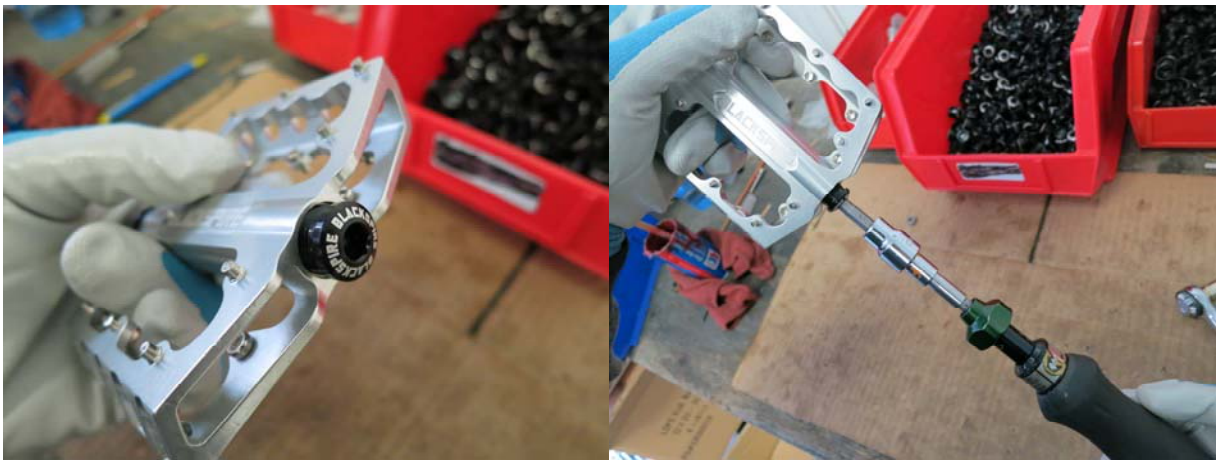

Figure 10: Tightening the end cap onto the pedal body to the torque specification of 4 Nm.

11. Repeat Steps 1 - 10 with the other pedal to finish the maintenance procedures for both pedals.