WWW.SPINERGY.COM

SERVICE INSTRUCTIONS



Tilium
Tilium SS
Xaero Carbon SS

WARNING!

These service instructions are intended for bicycle mechanics with prior wheel servicing experience. These instructions are not intended to be a tutorial on general wheel truing or hub service. If you do not have the tools listed below or are not comfortable with these instructions, leave it to a pro!

Always inspect the carbon fiber and other components of the wheel for scratches, gouges, dents, cracking or bends before every ride. Discontinue use of the wheelset and consult a professional bicycle mechanic if any of these conditions appear.

** Always wear eye protection when servicing wheels. **

TRUING & TENSIONING

Tools required, Tilium:

Spinergy small spline tool (FIG 1)
¼" nut driver (FIG 2)
Park TM -1 Tension Meter (Fig 3)

Tools required, Tilium SS:

Spinergy 4mm square nipple tool (FIG 4)
"Fourth hand" cable holder (FIG 5)
Park TM - 1 Tension Meter (Fig 3)

Tools required Xaero carbon SS:

5mm hex nut driver (FIG 2)
"Fourth hand" cable holder (FIG 5)
Park TM-1 Tension Meter (Fig 3)

> Spinergy wheels are hand tensioned and stress relieved before shipping
> Over tensioning will void the warranty.

Due to the flexibility of PBO spokes, they may feel under tensioned when compared to a rigid steel spoke. If you tension PBO spokes to the point where they feel like steeel spokes, you wil have over-tightened the spoke and risk damaging the rim. Increasing spoke tension beyond factory values will not improve performance or durability of the wheel.

TENSION VALUES	DRIVE SIDE	NON DRIVE	FRONT
TILIUM PBO	21-23	10-12	18-20
TILIUM SS, XAERO CARBON SS	20-22	13-15	18-20

TILIUM PBO

Use 1/4" nut driver to turn nipple, which is only accessed under rim tape after removing tire. Use Spinergy small spline tool to hold spoke stationary. Do not allow spoke to rotate while tensioning nipple.

TILIUM SS

Use Spinergy 4mm square nipple driver to turn nipple, which is only accessed under rim tape after removing tire. Use "Fourth hand" brake tool or bladed spoke holder to keep spoke from rotate while tensioning nipple.

XAERO CARBON SS

Use 5mm hex nut driver to turn nipple, which is accessed under rim tape after removing tire. Use "Fourth hand" cable tool or bladed spoke holder to keep spoke from turning while tensioning nipple.

"Which wheel do I have?"

The Tilium uses PBO spokes identified by the exposed nipple heads at the rim and large (2.8mm) direct pull spokes (FIG 6)

The Tilium SS uses standard "J" bend stainless steel spokes in a 2.0/1.8mm-14 gauge.

The Xaero carbon SS uses standard "J" bend stainless steel *bladed* in a 1.8mm-15 gauge

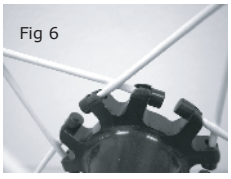

Fig 1


Fig 2


Fig 3


Fig 4


Fig 5


Fig 6

SERVICE INSTRUCTIONS

** Always wear eye protection when servicing wheels. **

HUB SERVICE

DISASSEMBLY

Front

1. Remove either axle cap using a cone wrench on each side (fig1).

2. Remove remaining axle cap by inserting hex key into axle to hold while turning axle cap with cone wrench. (fig 2).

4. Remove bearing by tapping out axle with plastic tipped hammer and punch (fig 3).

Use punch with sufficient diameter not to get stuck in hex key slot in axle.

5. Remove other side hub bearing with punch.

INSPECTION

1. Inspect bearings for excessive play, roughness or drag. Replace if needed.

2. Inspect hubshell and all components for cracks, deformation, wear, breakage. Replace as needed.

TROUBLESHOOTING

Main axle dragging

Hub bearings worn, center hubshell bearing spacer worn or missing, axle bent, bearings not fully seated in hubshell.

Freehub body dragging

Axle worn, freehub body bearings worn, hubshell seal dry, missing or worn #511199 spacer. Of these causes , a worn axle or spacer is the most common. Depending on hub version, the freehub body will use either a step in the axle or a spacer sleeve to space the back of the freehub body away from the hubshell. When assembled, this step or spacer sleeve should protrude out of the back of the freehub body at least 1mm/.040" or about a credit card thickness (fig 4,5).

Freehub body not engaging or disengaging

Dirt contamination in pawl seat, pawl broken, pawl spring broken, ratchet ring broken or stripped, seized bearings in freehub body.

Creaking or clicking

End caps loose, bearings loose fit in hubshell, axle worn / undersized, spokes dirty (PBO) or worn (steel) where they intersect and contact each other, loose quick release.

fig 1



fig 2

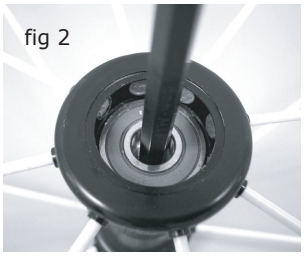


fig3

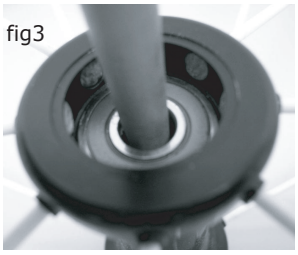


fig 4

fig 5

SPINERGY
WWW.SPINERGY.COM

SERVICE INSTRUCTIONS

** Always wear eye protection when servicing wheels. **

HUB SERVICE

REASSEMBLY

Replacing bearings

Press bearings into hubshell using fitted bearing press or 1/2" drive deep socket that only contacts *outer* race of bearings.

fig 12

Front

1. With axle in between bearings, press bearings into hub (fig). Center axle between bearings (fig).
2. Install end caps. Torque to 100 in-lbs. / 11.3nm

Rear V1

1. Press drive side bearing into hubshell.
3. Slide long end of axle into drive side hubshell bearing from non-drive side. Longer end of axle should protrude from drive side of hubshell.
4. Slide non-drive side hubshell bearing over axle and press in.

Rear V2

1. With axle spacer between bearings, press bearings into hubshell being careful to keep center spacer aligned with hubshell bearings.
2. Insert large diameter end of axle into hub from drive side.
3. Torque non-drive side end cap to 100 in-lbs / 11.3 nm.

Installing freehub body (FHB)

1. Slide #511199 spacer sleeve over drive side of axle axle (V1).
2. Slide FHB over axle. Pawls may catch on ratchet ring. If so, use small tool to push pawls under ratchet ring while lightly pushing in FHB (fig).
3. Torque drive side end cap to 100 in-lbs / 11.3 nm.