



**MARCHISIO**  
*engineering*





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The Marchisio range of sprockets differs as follows:

### **1<sup>ST</sup> POSITION LINE:**

1<sup>st</sup> position sprockets for the AVIOTEK and JUNIOR lines

### **AVIOTEK LINE:**

compatible with derailleurs: **Shimano 9s, Campagnolo 9s and Campagnolo 10s.**

### **JUNIOR LINE:**

compatible with derailleurs: **Shimano 8s, Shimano 9s, Campagnolo 9s and Campagnolo 10s.**

### **AVIOTEK AND JUNIOR SH10 LINE:**

compatible with derailleur: **Shimano 10s.**

The following pages describe the various items and their use.

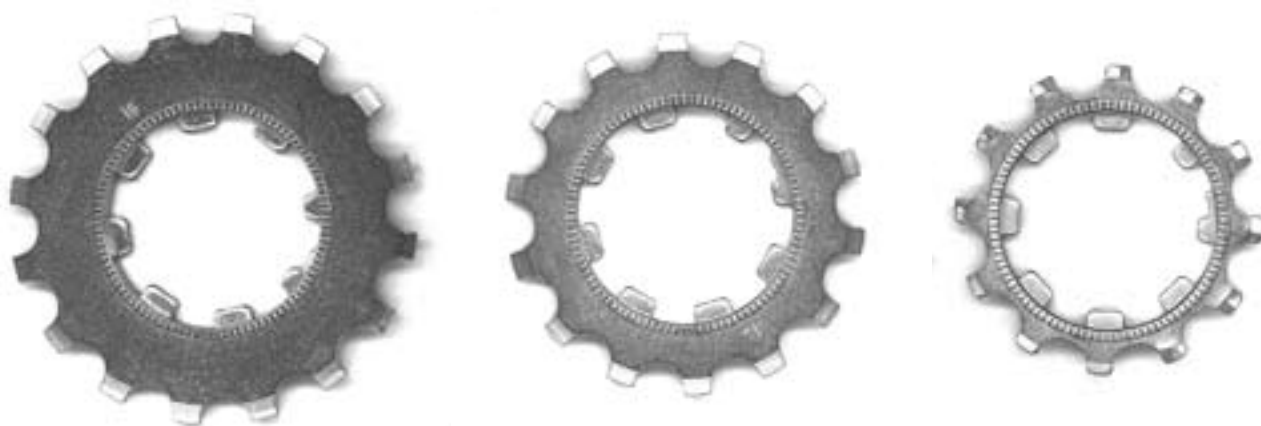
Also illustrated are the assembly drawings of the most popular sprocket cassettes, tested by our Testing Department.

**ATTENTION: All cases not considered in the drawings have not been tested.**

## 1<sup>ST</sup> Position Sprockets for the Aviotek and JUNIOR Lines

The 1st position sprockets come in two models, one compatible with the spline pattern of the Campagnolo hub and one compatible with that of the Shimano hub. The two models each have a different inner spline pattern and are available with 11 to 18 teeth, (17 excluded).

### 1<sup>st</sup> position sprockets for CAMPAGNOLO 9 and 10 speed code PS1xxC [xx: number of teeth]



### 1<sup>st</sup> position sprockets for SHIMANO 8 and 9 speed code PS1xxS [xx: number of teeth]



**N.B.: When using an 11 teeth start sprocket it is compulsory to use a 12 teeth sprocket in 2nd position.**

## Aviotek Line Intermediate position sprockets

### DESCRIPTION:

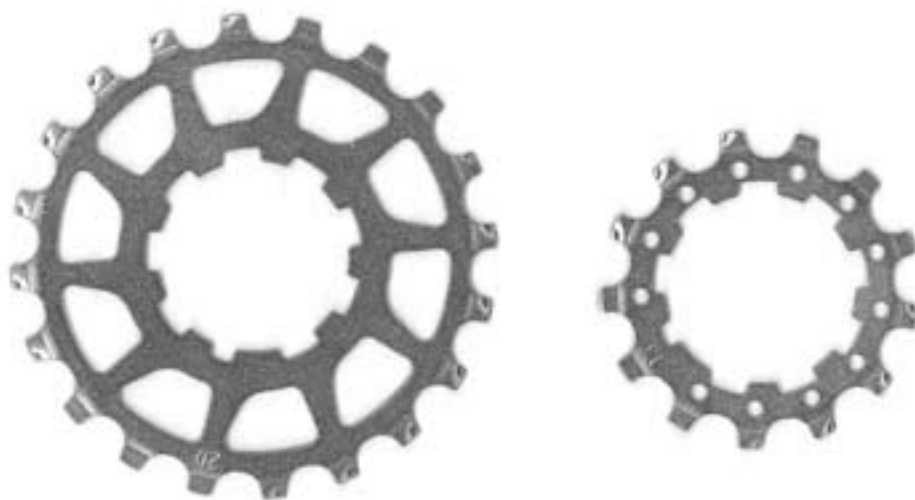
These steel sprockets have an exceptionally high breaking load (1600 N/mm<sup>2</sup>). As a result, they have a high resistance and are very lightweight, for complete reliability in terms of safety and sprocket life.

Available with 13 to 30 teeth (29 excluded).

They come in two types:

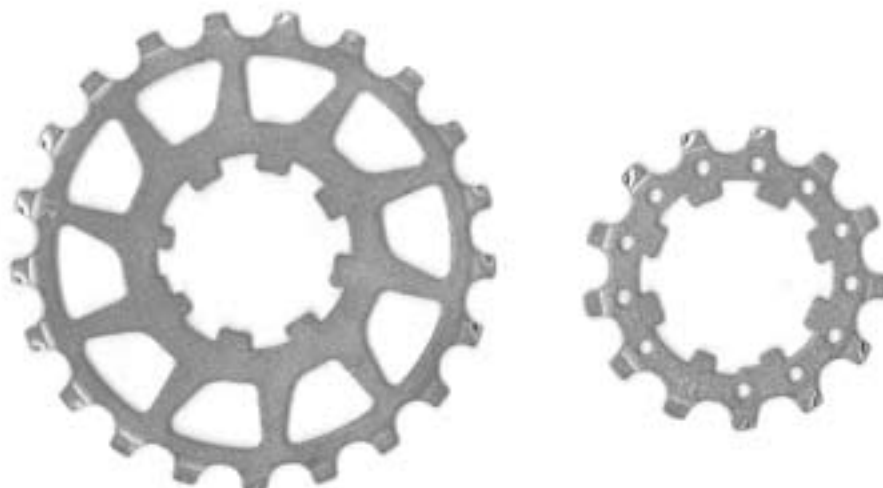
1) compatible with the SHIMANO 9S and 10S hub

**code PSLxxS10** [xx: number of teeth]



2) compatible with the CAMPAGNOLO 9S and 10S hub

**code PSLxxC** [xx: number of teeth]



## Last position sprockets for Campagnolo 10s

**Code: PSL10Cxx** [xx: number of teeth]

When assembling an Aviatek Campagnolo 10s cassette, for reasons of space, use a modified Aviatek sprocket (the biggest) in last position.

Available with **21** to **30** teeth (29 excluded).

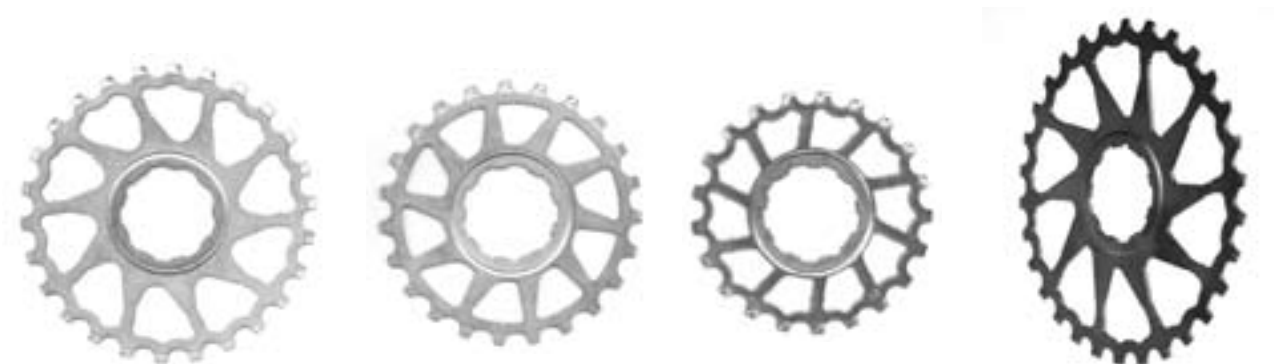


## Last position sprockets for Shimano 8/9S with Shimano 10S derailleur

**Code: PSL10Mxx** [xx: number of teeth]

When assembling an Aviatek Shimano 10s cassette on a Shimano 8/9s hub, for reasons of space, use a modified Aviatek sprocket (the biggest) in last position.

Available with **21** to **30** teeth (29 excluded).



## Junior Line intermediate position sprockets

### DESCRIPTION:

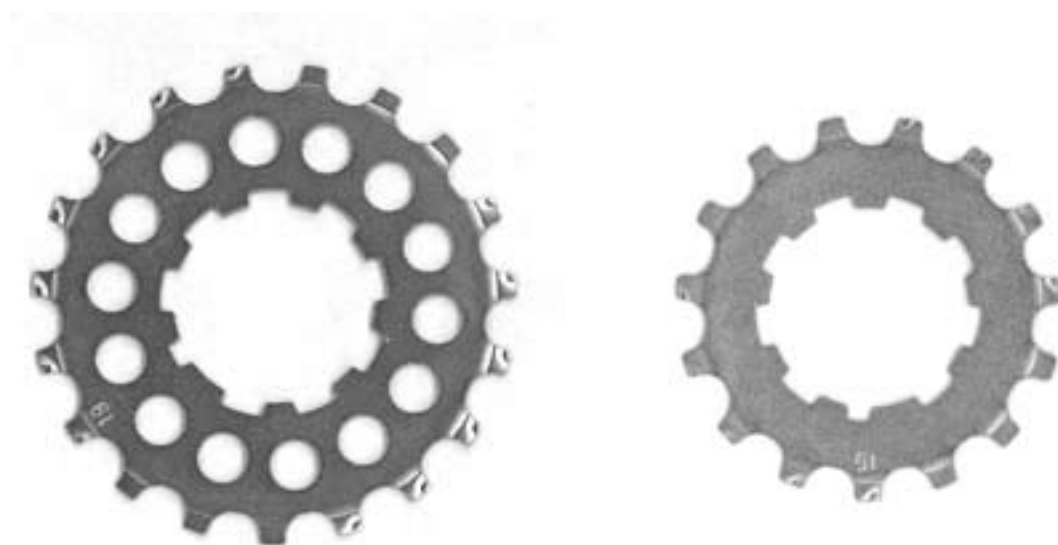
Special steel sprockets with the same characteristics as the Aviotek but much lighter.

Available with 13 to 30 teeth (29 excluded).

They come in two types:

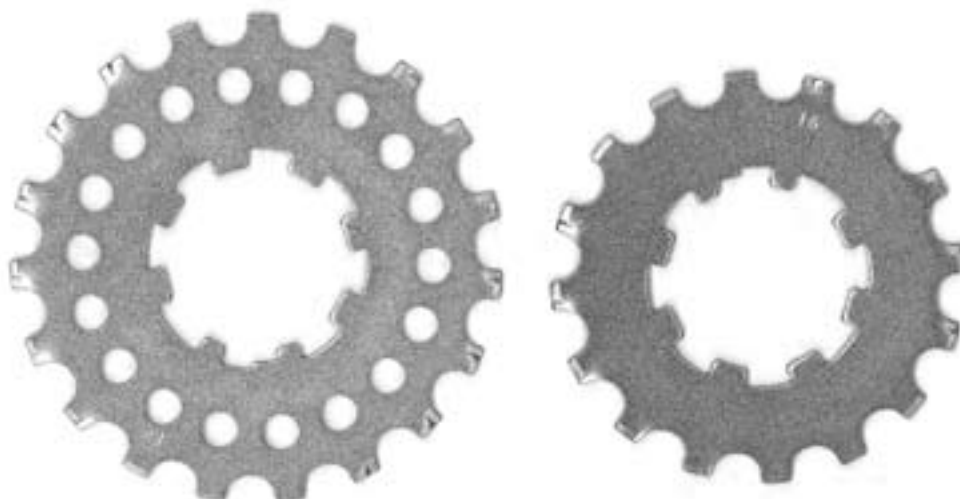
1) compatible with the SHIMANO 8S, 9S and 10S hub

**code JSxx** [xx: number of teeth]



2) compatible with the CAMPAGNOLO 9S and 10S hub

**code JCxx** [xx: number of teeth]



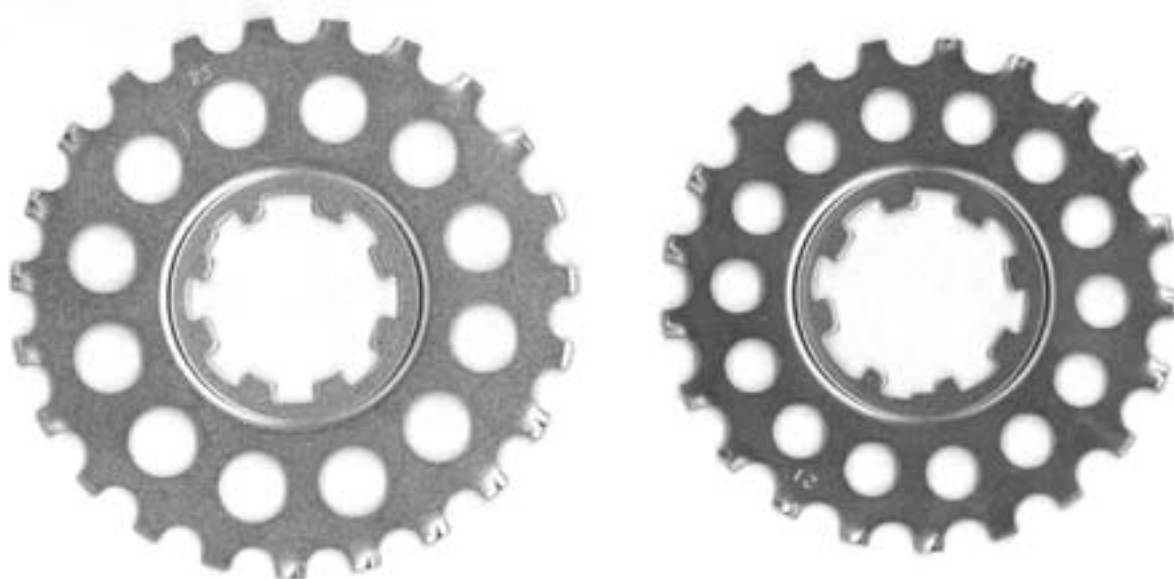


## Last position sprockets for Campagnolo 10s

**Code J10Cxx** [xx: number of teeth]

When assembling a Junior Campagnolo 10s cassette, for reasons of space, use a modified Junior sprocket (the biggest) in last position.

Available with **21** to **30** teeth, (29 excluded).



## Last position sprockets for Shimano 10s

**Code J10Sxx** [xx: number of teeth]

When assembling a Junior Shimano 10s cassette, for reasons of space, use a modified Junior sprocket (the biggest) in last position.

Available with **21** to **30** teeth, (29 excluded)

**N.B.: The sprockets should be mounted with the engraved number facing towards the wheel spokes.**

## Line of sprockets compatible with Shimano 10S

### DESCRIPTION:

Aviotek line sprockets, specially modified for use with the Shimano 10 speed derailleurs.

They are divided into 4 categories:

### 1<sup>st</sup> Position sprockets

**Code P1xxS10** [xx: number of teeth].

They can be used either for the Aviotek line as well as for the Junior line.

Always mount together with the 2nd position sprockets.

Available with 11 to 16 (15 excluded).

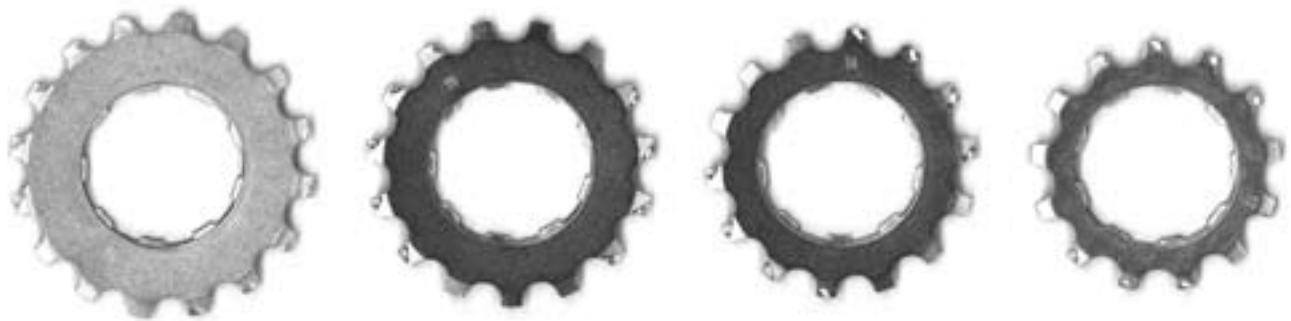


### 2<sup>nd</sup> Position sprockets

**Code P2xxS10** [xx: number of teeth].

They can be used either for the Aviotek line as well as for the Junior line.

Available with **12** to **17**.



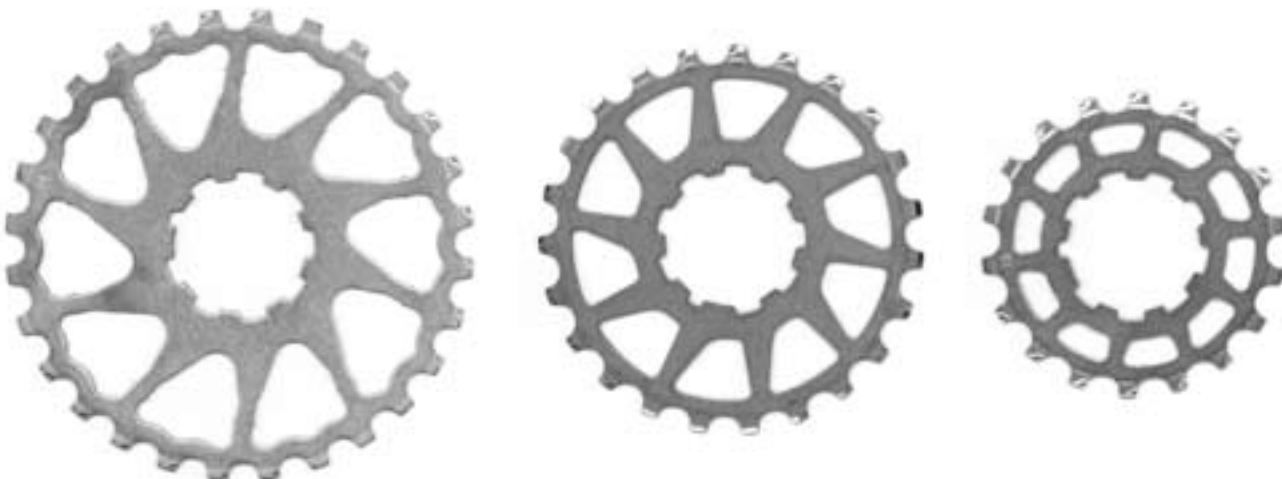
**N.B.: Do not confuse the 2nd position sprockets with the 1st position sprockets for Aviotek and Junior.**

## Intermediate position sprockets for Shimano 10S

**code PSLxxS10** [xx: number of teeth]

For the Aviotek line use the modified Shimano Aviotek sprockets.

Available with **13** to **28** (29 excluded).



**code JSxx** [xx: number of teeth]

For the Junior line use the Junior sprockets with Shimano spline.

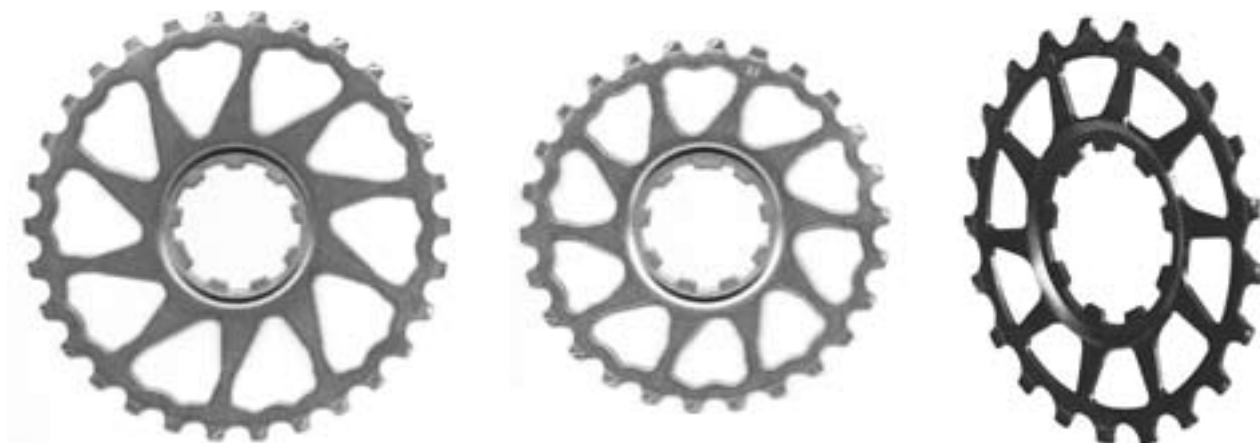
Available with **13** to **28** (see page 6)

## Last position sprockets for Shimano 10S

**code PSLxxS10U** [xx: number of teeth]

When assembling an Aviotek Shimano 10s cassette, for reasons of space, use a modified Aviotek sprocket (the biggest) in last position with an inner pattern compatible with the Shimano 10s hub.

Available with **21** to **30** (20 excluded).



**code J10Sxx** [xx: number of teeth]

For the Junior line use the Junior sprockets with (see pag 7).

Available with **21** to **30** (29 excluded)

## Spacers

The task of the spacers is to allow the assembly and functioning of the sprockets with different spacing according to the type of derailleur.

### SPACERS FOR INTERMEDIATE POSITIONS:



**BLACK**  
**DS3**  
**CAMP. 9s**



**GREY**  
**DS2,9**  
**SHIM. 9s**



**RED**  
**DS3,3**  
**SHIM. 8s**



**YELLOW**  
**DS2,7**  
**CAMP. 10s**



**BLUE**  
**DS2,45**  
**SHIM. 10s**

### SPECIAL SPACERS:

To be fitted in special positions.

#### DS1.9 for Campagnolo 10S

Made of plastic, to be mounted in last position after having inserted the biggest sprocket.



#### DS1 for Shimano 10S

Made of plastic, to be mounted in last position after having inserted the biggest sprocket.



#### DSPS1 for Shimano 10S

Aluminium spacer to be inserted between the 1<sup>st</sup> and 2<sup>nd</sup> position sprockets, before the 1<sup>st</sup> position sprocket.

#### LMO.5 SHEET SHIM

Sheet shim utilised exclusively for the 8 speed (2 pieces) and 9 speed (1 piece). To be mounted before inserting any other item. (10 speed excluded).



#### LMO.7 SHEET SHIM

Sheet shim utilised exclusively for the Aviotek 10s sprocket cassette mounted on an original Shimano 8-9 speed hub.

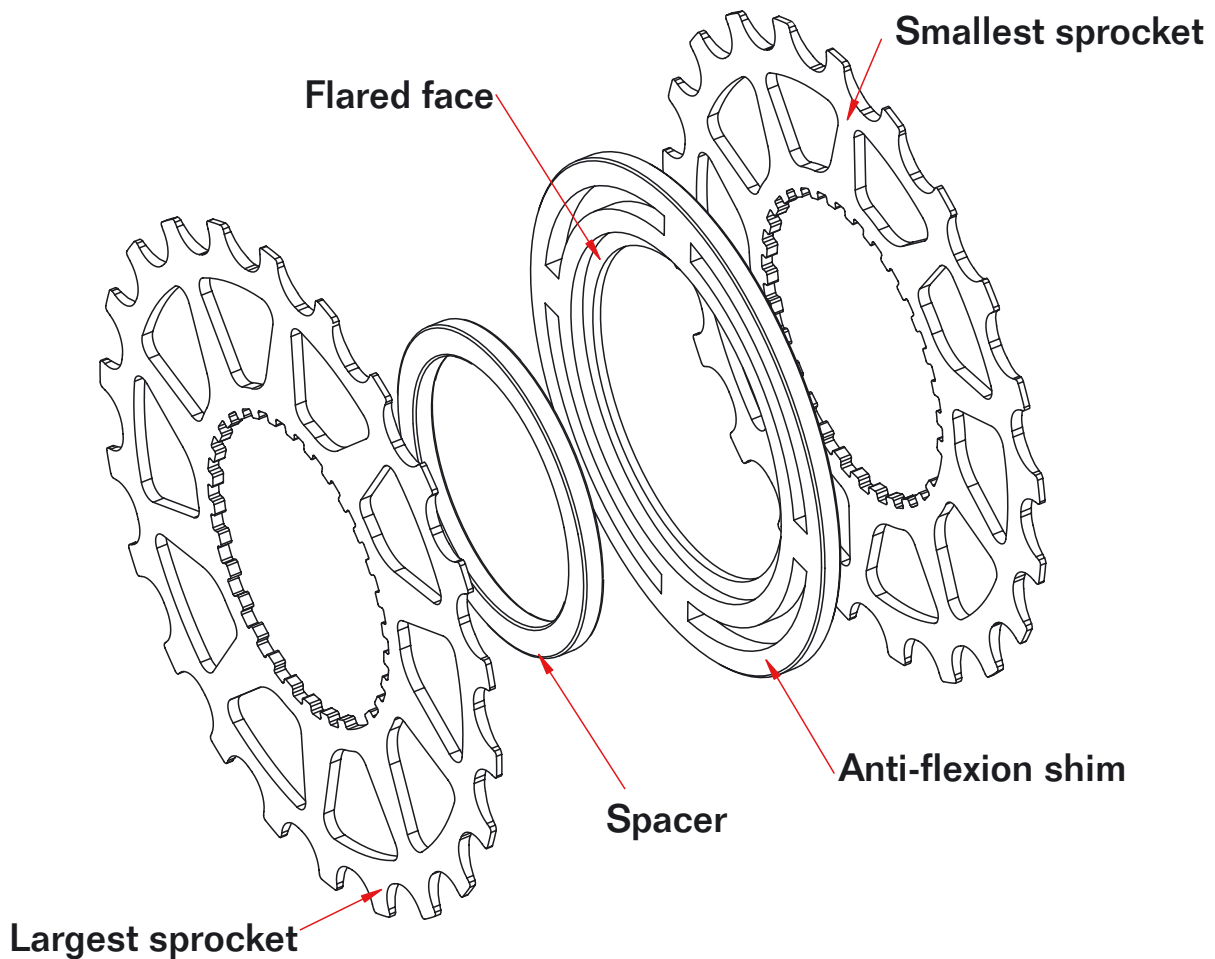


**Warning: do not wash spacers with petrol or solvents.**

## Anti-flexion shims

These come in two types according to the sprockets to be mounted and should always be paired with the respective spacers (the quantity depends on the composition of the cassette).

**The anti-flexion shims should be used exclusively for the Aviotek line.**



### 1<sup>st</sup> TYPE

Uses the anti-flexion shim with 67mm outer dia.

Before inserting sprockets: 21, 22, 23, 24.

CODE: **FL9Z21-24 / FL10C21-24 / FL10S21-24**

### 2<sup>nd</sup> TYPE

Uses the anti-flexion shim with 79mm outer dia.

Before inserting sprockets: 25, 26, 27, 28, 30.

CODE: **FL9Z25-30 / FL10C25-30 / FL10S25-30.**

**Code: FL9Z21-24 COLOUR: GREY**

For Campagnolo 9 speed and Shimano 9 speed to be inserted before sprockets: 21 – 22 – 23 – 24.



**Code: FL9Z25-30 COLOUR: GREY**

For Campagnolo 9 speed and Shimano 9 speed to be inserted before sprockets: 25 – 26 – 27 – 28 – 30.



**Code: FL10S21-24 COLOUR: BLUE**

For Shimano 10 speed to be inserted before sprockets: 21 – 22 – 23 – 24.



**Code: FL10S25-30 COLOUR: BLUE**

For Shimano 10 speed to be inserted before sprockets: 25 – 26 – 27 – 28 – 30.



**Code: FL10C21-24 COLOUR: YELLOW**

For Campagnolo 10 speed to be inserted before sprockets: 21 – 22 – 23 – 24.

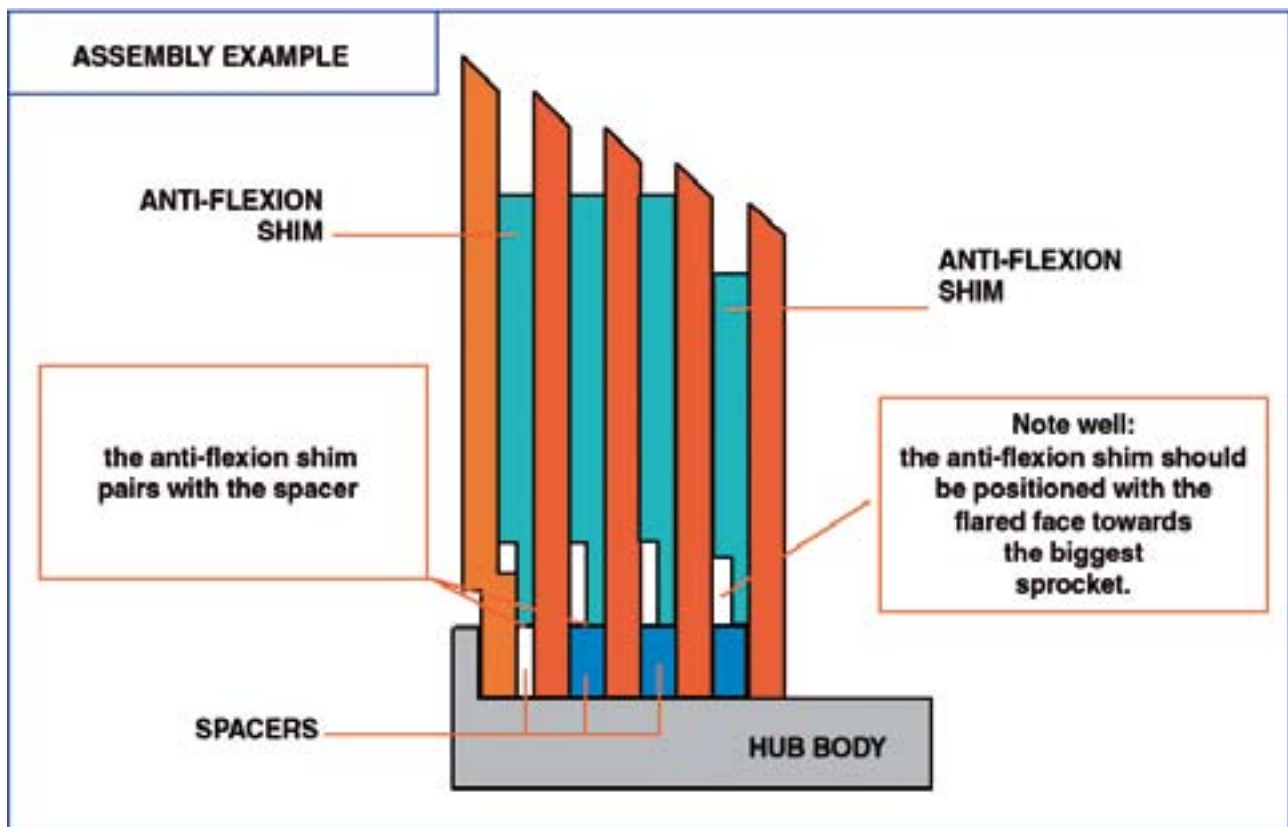


**Code: FL10C25-30 COLOUR: YELLOW**

For Campagnolo 10 speed to be inserted before sprockets: 25 – 26 – 27 – 28 – 30.



## Assembly drawing for anti-flexion shims





## Lock Rings

The lock rings clamp the sprockets on the splined bodies of the hubs.  
Made of steel and light alloy.

### LOCK RINGS for Shimano hubs



- GMRS:** for Shimano 8, 9, 10 speed, steel.
- GMS11:** for Shimano 8, 9 and 10 speed with 11 teeth start sprocket, light alloy.
- GMRS1:** for Shimano 8, 9 and 10 speed with start sprocket from 12 to 18 teeth, light alloy.

### LOCK RINGS for Campagnolo hubs



- GMRCJ:** for Campagnolo 8s and 10s hubs, steel.
- GMC11:** for Campagnolo 9s hubs built before 1999 with 11 teeth start sprocket, light alloy. (Thread M26x1).
- GMC1199:** for Campagnolo 9s and 10s hubs, models from 1999 onwards with 11 teeth start sprocket, light alloy (Thread M27x1).
- GMRCL:** for Campagnolo 9s hubs built before 1999 with start sprocket with 12 to 18 teeth, light alloy. (Thread M26x1).
- GMRCL99:** for Campagnolo 9s and 10s hubs, models from 1999 onwards with start sprocket with 12 to 18 teeth, light alloy. (Thread M27x1).

**N.B. Marchisio sprockets must only be used with Marchisio lock rings.  
[not the original Campagnolo and Shimano ones]. Clamp with a 40 Nm torque.  
Always use LOCTITE® 243 oil resistant medium strength threadlocker on the lock ring thread.**



## Assembly drawings for CASSETTES [kits]

### Drawings for 8 speed cassettes:

drawings for Shimano 8s Junior line ..... **page 16**

### Drawings for 9 speed cassettes:

drawings for Shimano 9s ..... **page 18**

drawings for Campagnolo 9s ..... **page 22**

### Drawings for 10 speed cassettes:

drawings for Shimano 10s Aviotek  
and "SPECIAL CASES" ..... **page 26**

drawings for Shimano 10s Junior  
and "SPECIAL CASES" ..... **page 32**

drawings for Campagnolo 10s ..... **page 38**

General instructions ..... **page 42**

**ATTENZIONE: tutti i casi non contemplati negli schemi non sono collaudati.**

## JUNIOR LINE

with start sprocket (the smallest): **11 TEETH**

mounted on hub: original **SHIMANO 8S/9S** and **MAVIC 9S**

with derailleur: original **SHIMANO 8S**.

### ITEMS

Nr. 1 GMS11 lock ring

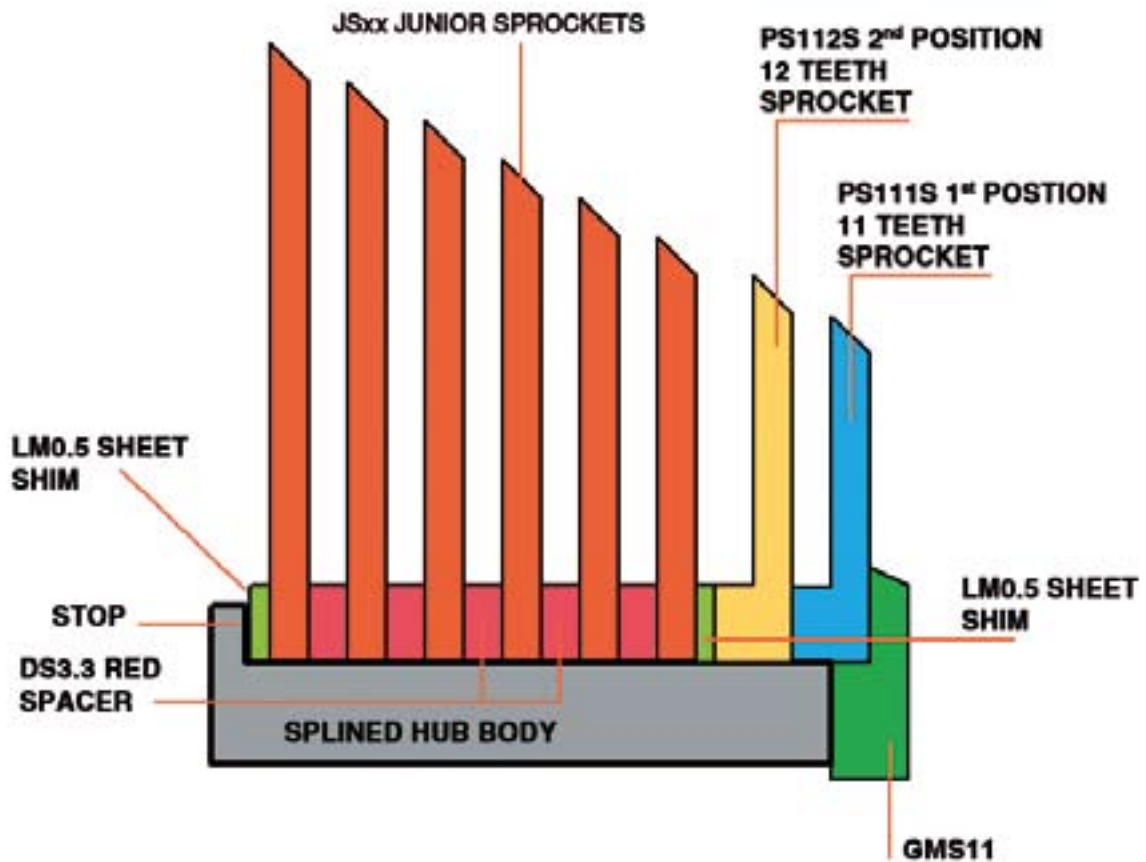
Nr. 1 PS111S

Nr. 1 PS112S

Nr. 6 JSxx

Nr. 5 DS3.3 spacers

Nr. 2 LM0.5 sheet shims



### ASSEMBLY

- 0) To easily assemble the sprockets on the wheel hub, we recommend positioning the wheel on a flat surface.
- 1) Insert the LM0.5 sheet shim in the splined hub body until it rests against the stop.
- 2) Insert the JSxx sprocket with its identification number facing the spokes.
- 3) Insert a DS3.3 spacer in the body resting it against the sprocket.
- 4) Repeat the insertion sequence "sprocket-spacer" 4 times (points 2, 3).
- 5) Insert the last JSxx sprocket with its identification number facing the spokes.
- 6) Insert the LM0.5 sheet shim.
- 7) Insert sprocket PS112S.
- 8) Insert sprocket PS111S pairing it with sprocket PS112S.
- 9) Pour several drops of "LOCTITE® 243 oil resistant medium strength threadlocker" evenly over on the thread of the lock ring.
- 10) Screw down the lock ring on the splined hub body until it stops against sprocket PS111S and clamp using a 40 Nm torque.

**CAUTION:** When using a Mavic hub bear in mind that the 1.8mm spacer ring supplied should be used as a stop and must be inserted before all the Marchisio items.

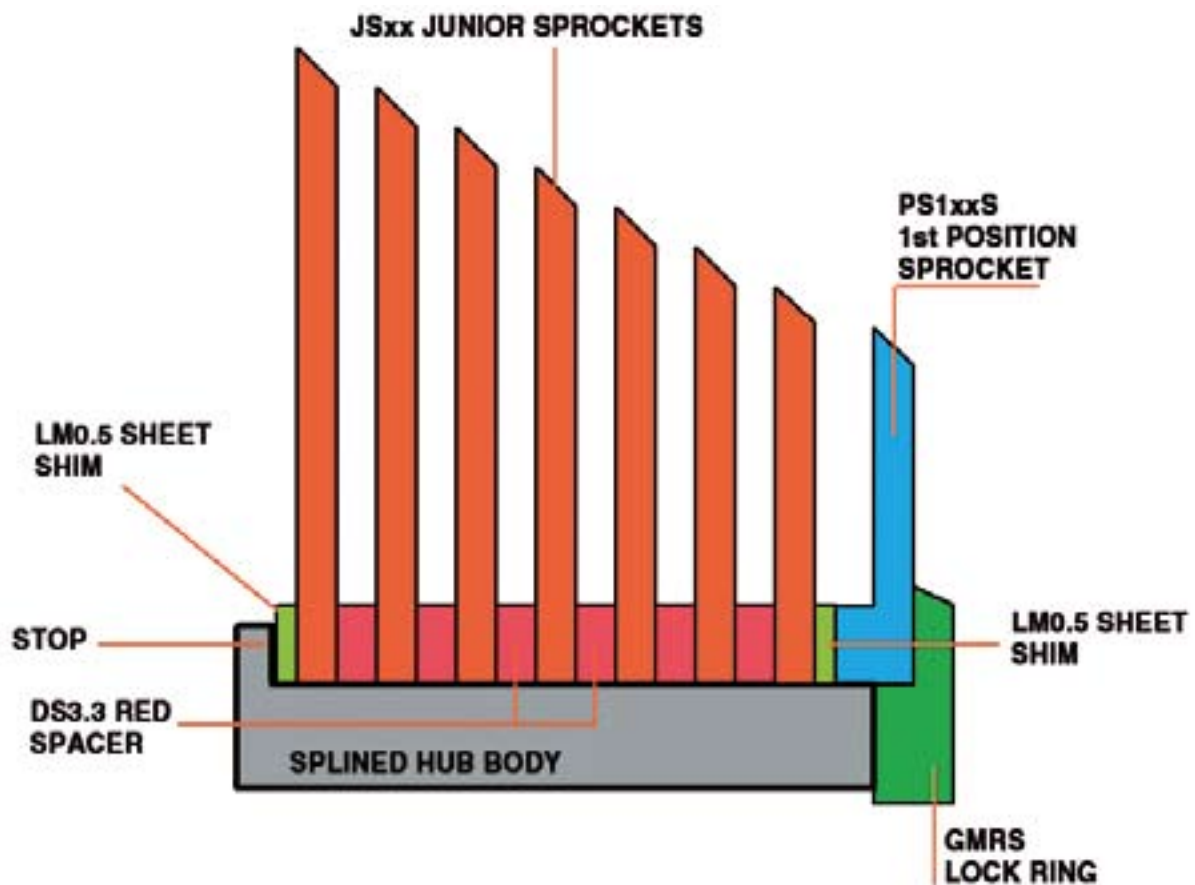
(xx: number of teeth).

## JUNIOR LINE

with start sprocket (the smallest): from **12 to 18 TEETH**  
 mounted on hub: original **SHIMANO 8S/9S** and **MAVIC 9S**  
 with derailleur: original **SHIMANO 8S**.

### ITEMS

- Nr. 1 GMRS lock ring
- Nr. 1 PS1xxS
- Nr. 7 JSxx
- Nr. 6 DS3.3 spacers
- Nr. 2 LM0.5 sheet shims



### ASSEMBLY

- 1) To easily assemble the sprockets on the wheel hub, we recommend positioning the wheel on a flat surface.
  - 2) Insert the LM0.5 sheet shim in the splined hub body until it rests against the stop.
  - 3) Insert sprocket JSxx with its identification number facing the spokes, pushing it fully down.
  - 4) Insert a DS3.3 spacer in the body resting it against the sprocket.
  - 5) Repeat the insertion sequence "sprocket-spacer" 5 times (points 3, 4).
  - 6) Insert the last JSxx sprocket with its identification number facing the spokes.
  - 7) Insert the other LM0.5 sheet shim.
  - 8) Insert sprocket PS1xxS.
  - 9) Pour several drops of "LOCTITE® 243 oil resistant medium strength threadlocker" evenly over on the thread of the lock ring.
  - 10) Screw down the lock ring on the splined hub body until it stops against sprocket PS1xxS and clamp using a 40 Nm torque.
- (xx: number of teeth).

## AVIOTEK LINE

with start sprocket (the smallest): **11 TEETH**

mounted on hub: original **SHIMANO 8S/9S** and **MAVIC 9S**

with derailleur: original **SHIMANO 8S**.

### ITEMS

Nr. 1 GMS11 lock ring

Nr. 1 PS111S

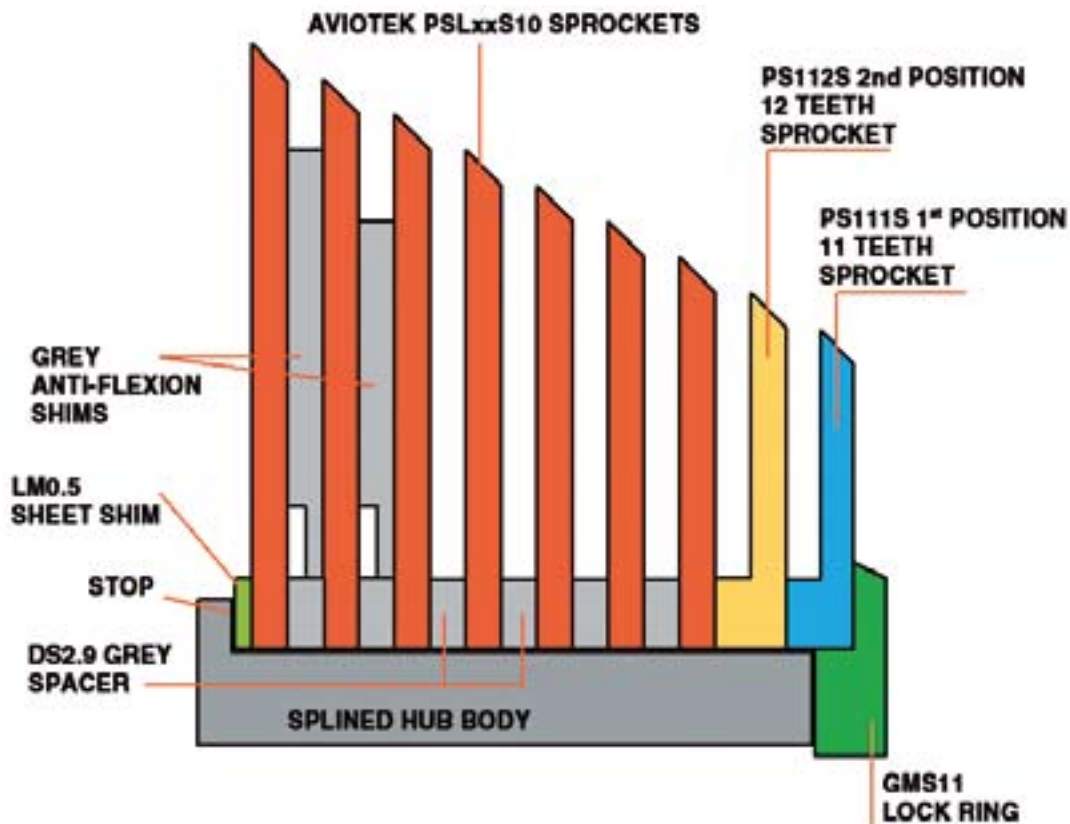
Nr. 1 PS112S

Nr. 7 PSLxxS10

Nr. 6 DS2.9 spacers

Nr. 1 LM0.5 sheet shim

Nr.... Anti-flexion FL9Z21-24, FL9Z25-30



### ASSEMBLY

- 0) To easily assemble the sprockets on the wheel hub, we recommend positioning the wheel on a flat surface.
- 1) Insert the LM0.5 sheet shim in the splined hub body until it rests against the stop.
- 2) Insert sprocket PSLxxS10 with its identification number facing the spokes.
- 3) Insert a DS2.9 spacer in the body resting it against the sprocket.
- 4) Insert the ANTI-FLEXION shim (FL9Z21-24 before sprockets 21, 22, 23, 24; FL9Z25-30 before sprockets 25, 26, 27, 28, 30; assembly specification page 13).
- 5) Repeat the insertion sequence "sprocket-spacer-anti flexion shim" 5 times (points 2, 3 ,4).
- 6) Insert the last sprocket PSLxx with its identification number facing the spokes
- 7) Insert sprocket PS112S.
- 8) Insert sprocket PS111S pairing it with sprocket PS112S.
- 9) Pour several drops of "LOCTITE® 243 oil resistant medium strength threadlocker" evenly over on the thread of the lock ring.
- 10) Screw down the lock ring on the splined hub body until it stops against sprocket PS111S.

**CAUTION:** When using a Mavic hub bear in mind that the 1.8mm spacer ring supplied should be used as a stop and must be inserted before all the Marchisio items.

(xx: number of teeth).

## JUNIOR LINE

with start sprocket (the smallest): **11 TEETH**

mounted on hub: original **SHIMANO 8S/9S** and **MAVIC 9S**

with derailleur: original **SHIMANO 9S**.

### ITEMS

Nr. 1 GMS11 lock ring

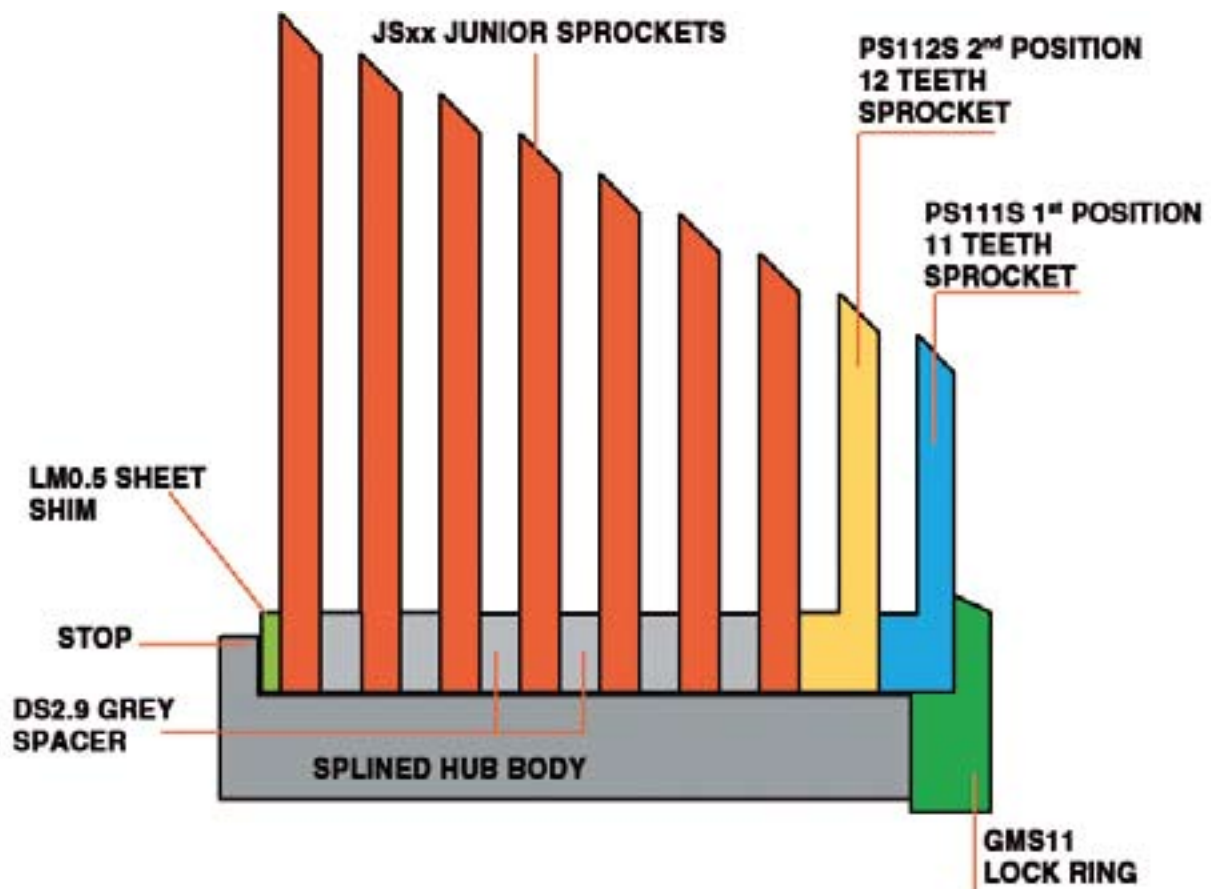
Nr. 1 PS111S

Nr. 1 PS112S

Nr. 7 JSxx

Nr. 6 DS2.9 spacers

Nr. 1 LM0.5 sheet shim



### ASSEMBLY

- 0) To easily assemble the sprockets on the wheel hub, we recommend positioning the wheel on a flat surface.
- 1) Insert the LM0.5 sheet shim in the splined hub body until it rests against the stop.
- 2) Insert sprocket JSxx with its identification number facing the spokes.
- 3) Insert a DS2.9 spacer in the body resting it against the sprocket.
- 4) Repeat the insertion sequence "sprocket-spacer" 5 times (points 2, 3).
- 5) Insert the last sprocket JSxx with its identification number facing the spokes
- 6) Insert sprocket PS112S.
- 7) Insert sprocket PS111S pairing it with sprocket PS112S.
- 8) Pour several drops of "LOCTITE® 243 oil resistant medium strength threadlocker" evenly over on the thread of the lock ring.
- 9) Screw down the lock ring on the splined hub body until it stops against sprocket PS111S and clamp using a 40Nm torque.

**CAUTION:** When using a Mavic hub bear in mind that the 1.8mm spacer ring supplied should be used as a stop and must be inserted before all the Marchisio items.

(xx: number of teeth).

## AVIOTEK LINE

with start sprocket (the smallest): **12 to 18 TEETH**

mounted on hub: original **SHIMANO 8S/9S** and **MAVIC 9S**

with derailleur: original **SHIMANO 9S**.

### ITEMS

Nr. 1 GMRSL lock ring

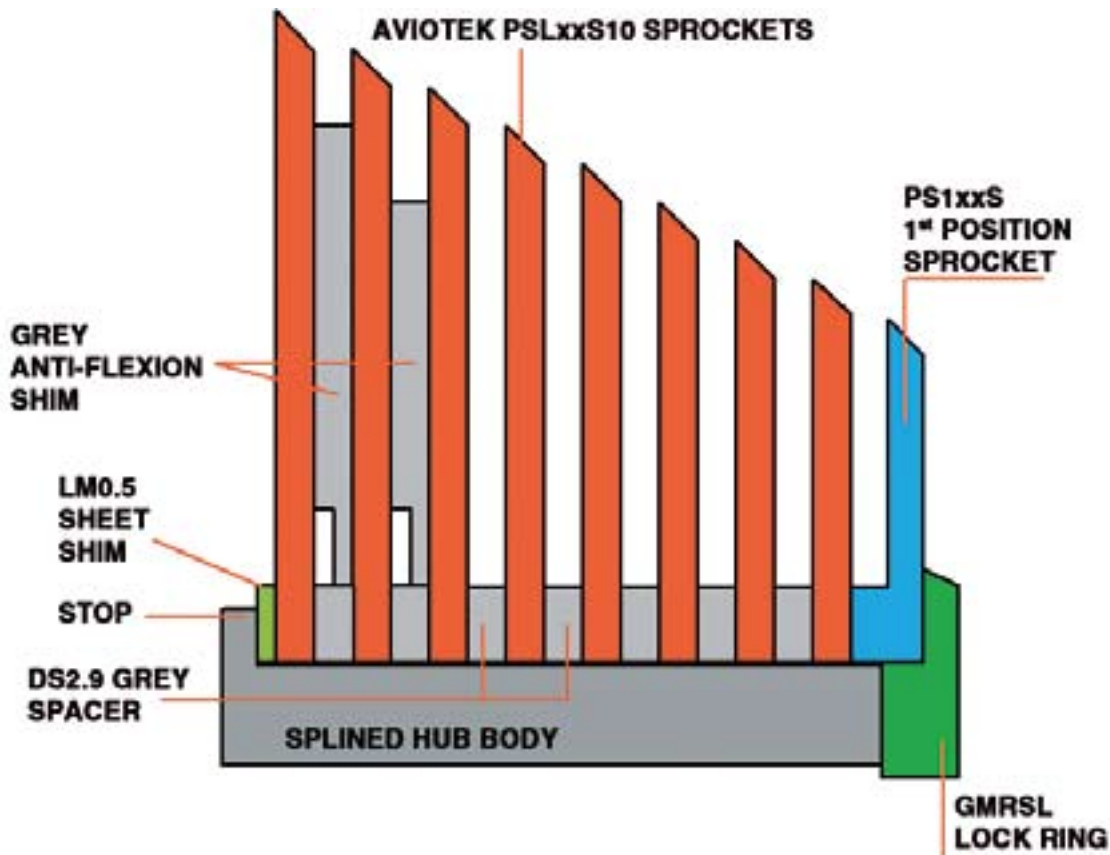
Nr. 1 PS1xxS

Nr. 8 PSLxxS10

Nr. 7 DS2.9 spacers

Nr. 1 LM0.5 sheet shim

Nr. ... Anti-flexion shims FL9Z21-24, FL9Z25-30



### ASSEMBLY

- 0) To easily assemble the sprockets on the wheel hub, we recommend positioning the actual wheel on a flat surface.
- 1) Insert the LM0.5 sheet shim in the splined hub body until it rests against the stop.
- 2) Insert sprocket PSLxxS10 with its identification number facing towards the spokes.
- 3) Insert a DS2.9 spacer in the body resting it against the sprocket.
- 4) Insert the ANTI-FLEXION shim (FL9Z21-24 before sprockets 21, 22, 23, 24; FL9Z25-30 before sprockets 25, 26, 27, 28, 30; assembly specification page 13).
- 5) Repeat the insertion sequence "sprocket-spacer-anti flexion shim" 6 times (points 2, 3, 4).
- 6) Insert the last PSLxxS10 sprocket with its identification number facing towards the spokes.
- 7) Insert sprocket PS1xxS.
- 8) Pour several drops of "LOCTITE® 243 oil resistant medium strength threadlocker" evenly over on the thread of the lock ring.
- 9) Screw down the ring on the splined hub body so that it stops against sprocket PS1xxS and clamp with a 40 Nm torque.

**CAUTION:** When using a Mavic hub bear in mind that the 1.8mm spacer ring supplied should be used as a stop and must be inserted before all the Marchisio items.

(xx: number of teeth).

## JUNIOR LINE

with start sprocket (the smallest): **12 to 18 TEETH**

mounted on hub: original **SHIMANO 8S/9S** and **MAVIC 9S**

with derailleur: original **SHIMANO 9S**.

### ITEMS

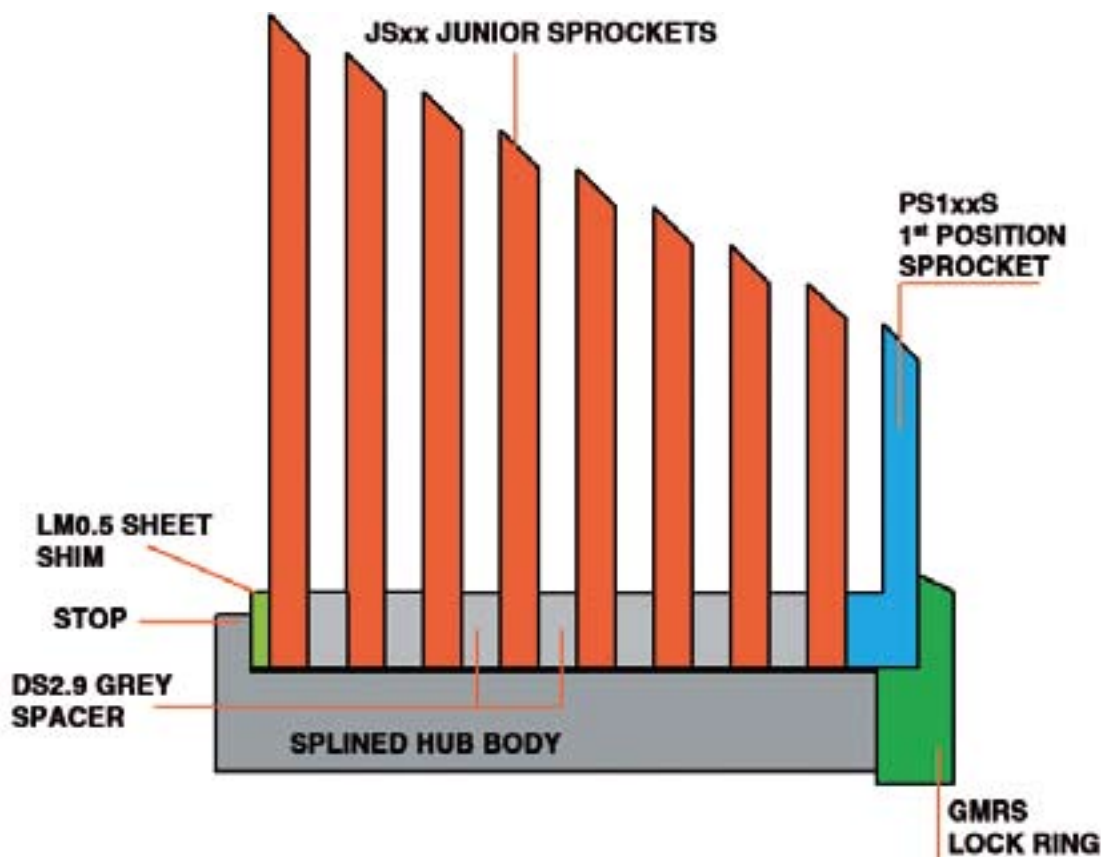
Nr. 1 GMRS lock ring

Nr. 1 PS1xxS

Nr. 8 JSxx

Nr. 7 DS2.9 spacers

Nr. 1 LM0.5 sheet shim



### ASSEMBLY

- 0) To easily assemble the sprockets on the wheel hub, we recommend positioning the actual wheel on a flat surface.
  - 1) Insert the LM0.5 sheet shim in the splined hub body until it rests against the stop.
  - 2) Insert sprocket JSxx with its identification number facing towards the spokes.
  - 3) Insert a DS2.9 spacer in the body resting it against the sprocket.
  - 4) Repeat the insertion sequence "sprocket-spacer" 6 times (points 2, 3).
  - 5) Insert the last JSxx sprocket with its identification number facing towards the spokes.
  - 6) Insert sprocket PS1xxS.
  - 7) Pour several drops of "LOCTITE® 243 oil resistant medium strength threadlocker" evenly over on the thread of the lock ring.
  - 8) Screw down the ring on the splined hub body so that it stops against sprocket PS1xxS and clamp with a 40 Nm torque.
- CAUTION:** When using a Mavic hub bear in mind that the 1.8mm spacer ring supplied should be used as a stop and must be inserted before all the Marchisio items.  
(xx: number of teeth).



## AVIOTEK LINE

with start sprocket (the smallest): **11 TEETH**

mounted on hub: original **CAMPAGNOLO 9S**

with derailleur: original **CAMPAGNOLO 9S**.

### ITEMS

Nr. 1 GMC1199 lock ring

Nr. 1 PS111C

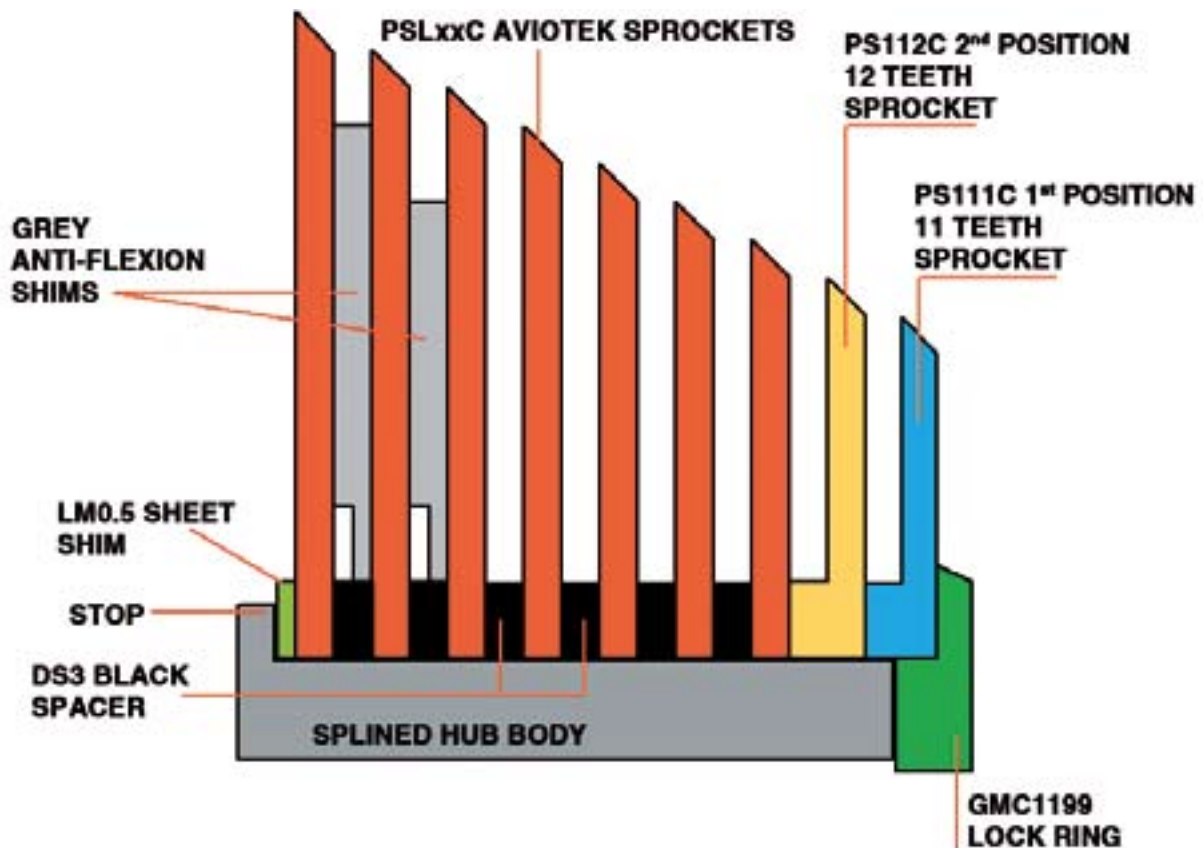
Nr. 1 PS112C

Nr. 7 PSLxxC

Nr. 6 DS3 spacers

Nr. 1 LM0.5 sheet shim

Nr.... Anti-flexion shims FL9Z21-24, FL9Z25-30



### ASSEMBLY

- 0) To easily assemble the sprockets on the wheel hub, we recommend positioning the actual wheel on a flat surface.
  - 1) Insert the LM0.5 sheet shim in the splined hub body until it rests against the stop.
  - 2) Insert sprocket PSLxxC with its identification number facing towards the spokes.
  - 3) Insert a DS3 spacer in the body resting it against the sprocket.
  - 4) Insert the ANTI-FLEXION shim (FL9Z21-24 before sprockets 21, 22, 23, 24; FL9Z25-30 before sprockets 25, 26, 27, 28, 30; assembly specification page 13).
  - 5) Repeat the insertion sequence "sprocket-spacer-anti flexion shim" 5 times (points 2, 3, 4)
  - 6) Insert the last PSLxxC sprocket with its identification number facing towards the spokes.
  - 7) Insert sprocket PS112C.
  - 8) Insert sprocket PS111C pairing it with sprocket PS112C.
  - 9) Pour several drops of "LOCTITE® 243 oil resistant medium strength threadlocker" evenly over on the thread of the lock ring.
  - 10) Screw down the ring on the splined hub body so that it stops against sprocket PS111C and clamp with a 40 Nm torque.
- (xx: number of teeth).



## JUNIOR LINE

with start sprocket (the smallest): **11 TEETH**

mounted on hub: original **CAMPAGNOLO 9S**

with derailleur: original **CAMPAGNOLO 9S**.

### ITEMS

Nr. 1 GMC1199 lock ring

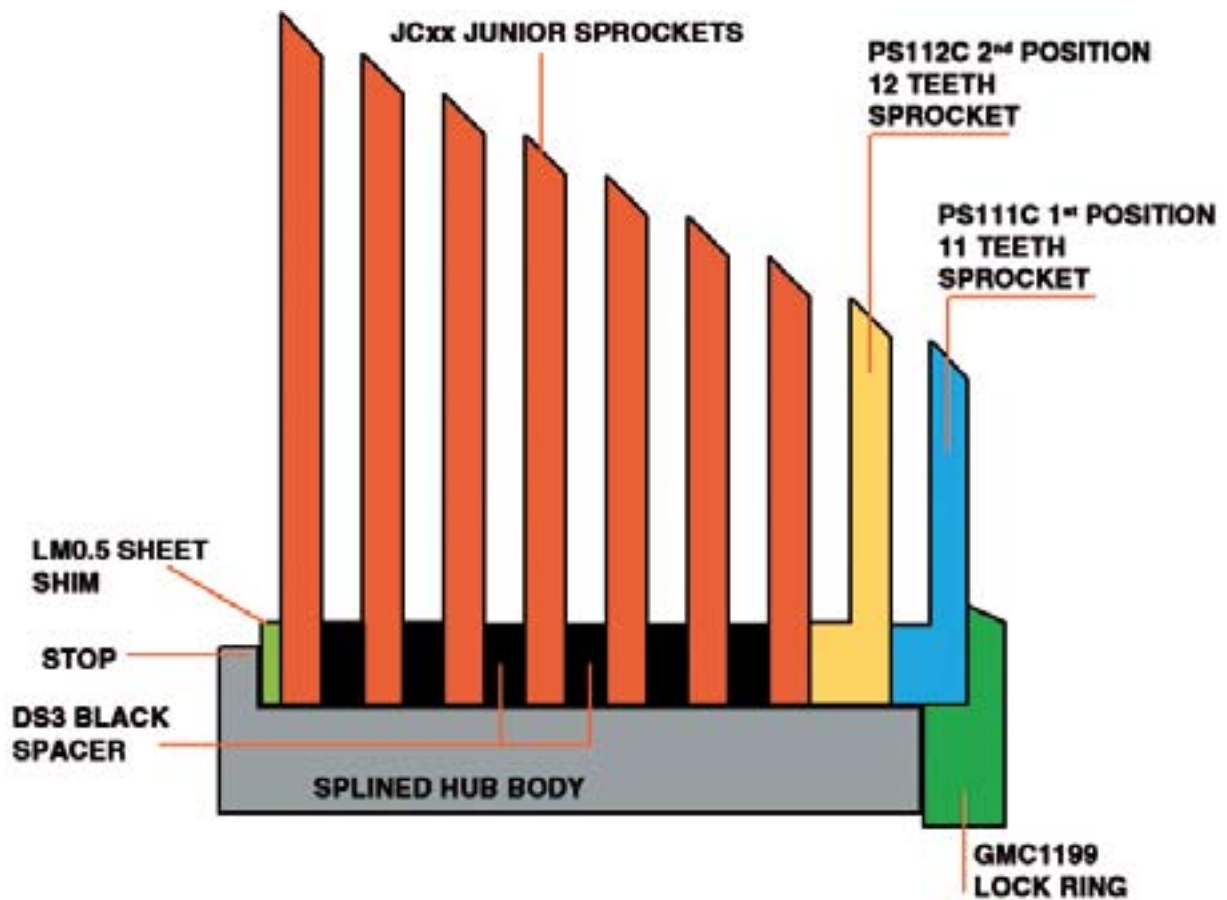
Nr. 1 PS111C

Nr. 1 PS112C

Nr. 7 JCxx

Nr. 6 DS3 spacers

Nr. 1 LM0.5 sheet shim



### ASSEMBLY

- 0) To easily assemble the sprockets on the wheel hub, we recommend positioning the actual wheel on a flat surface.
  - 1) Insert the LM0.5 sheet shim in the splined hub body until it rests against the stop.
  - 2) Insert sprocket JCxx with its identification number facing towards the spokes.
  - 3) Insert a DS3 spacer in the body resting it against the sprocket.
  - 4) Repeat the insertion sequence "sprocket-spacer" 5 times (points 2, 3).
  - 5) Insert the last JCxx sprocket with its identification number facing towards the spokes.
  - 6) Insert sprocket PS112C.
  - 7) Insert sprocket PS111C pairing it with sprocket PS112C.
  - 8) Pour several drops of "LOCTITE® 243 oil resistant medium strength threadlocker" evenly over on the thread of the lock ring.
  - 9) Screw down the ring on the splined hub body so that it stops against sprocket PS111C and clamp with a 40 Nm torque.
- (xx: number of teeth).

## AVIOTEK LINE

with start sprocket (the smallest): **12 to 18 TEETH**

mounted on hub: original **CAMPAGNOLO 9S**

with derailleur: original **CAMPAGNOLO 9S**.

### ITEMS

Nr. 1 GMRCL99 lock ring

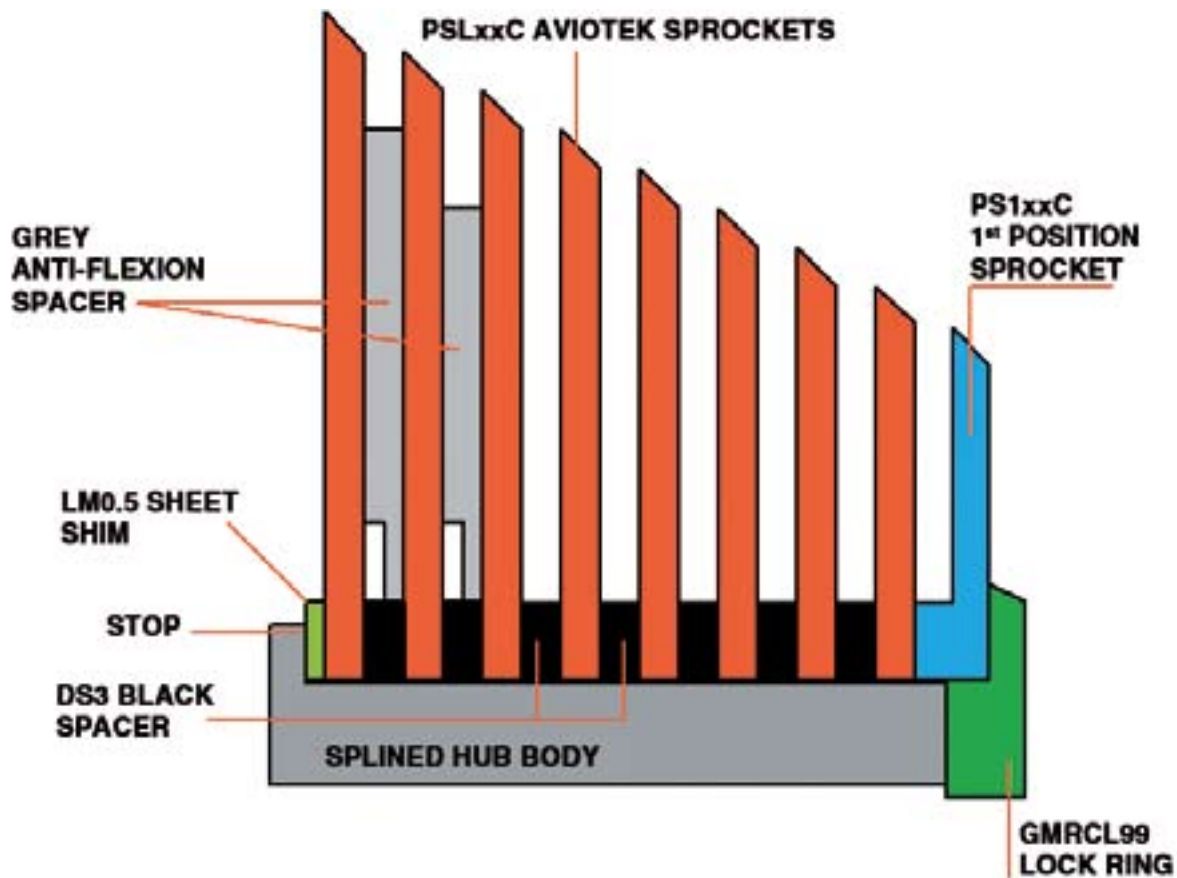
Nr. 1 PS1xxC

Nr. 8 PSLxxC

Nr. 7 DS3 spacers

Nr. 1 LMO.5 sheet shim

Nr. ... Anti-flexion shims FL9Z21-24, FL9Z25-30



### ASSEMBLY

- 0) To easily assemble the sprockets on the wheel hub, we recommend positioning the actual wheel on a flat surface.
  - 1) Insert the LMO.5 sheet shim in the splined hub body until it rests against the stop.
  - 2) Insert sprocket PSLxxC with its identification number facing towards the spokes.
  - 3) Insert the DS3 spacer in the body resting it against the sprocket.
  - 4) Insert the ANTI-FLEXION shim (FL9Z21-24 before sprockets 21, 22, 23, 24; FL9Z25-30 before sprockets 25, 26, 27, 28, 30; assembly specification page 13).
  - 5) Repeat the insertion sequence "sprocket-spacer-anti flexion shim" 6 times (points 2, 3, 4)
  - 6) Insert the last PSLxxC sprocket with its identification number facing towards the spokes.
  - 7) Insert sprocket PS1xxC.
  - 8) Pour several drops of "LOCTITE® 243 oil resistant medium strength threadlocker" evenly over on the thread of the lock ring.
  - 9) Screw down the ring on the splined hub body so that it stops against sprocket PS1xxC and clamp with a 40 Nm torque.
- (xx: number of teeth).

## JUNIOR LINE

with start sprocket (the smallest): **12 to 18 TEETH**

mounted on hub: original **CAMPAGNOLO 9S**

with derailleur: original **CAMPAGNOLO 9S**.

### ITEMS

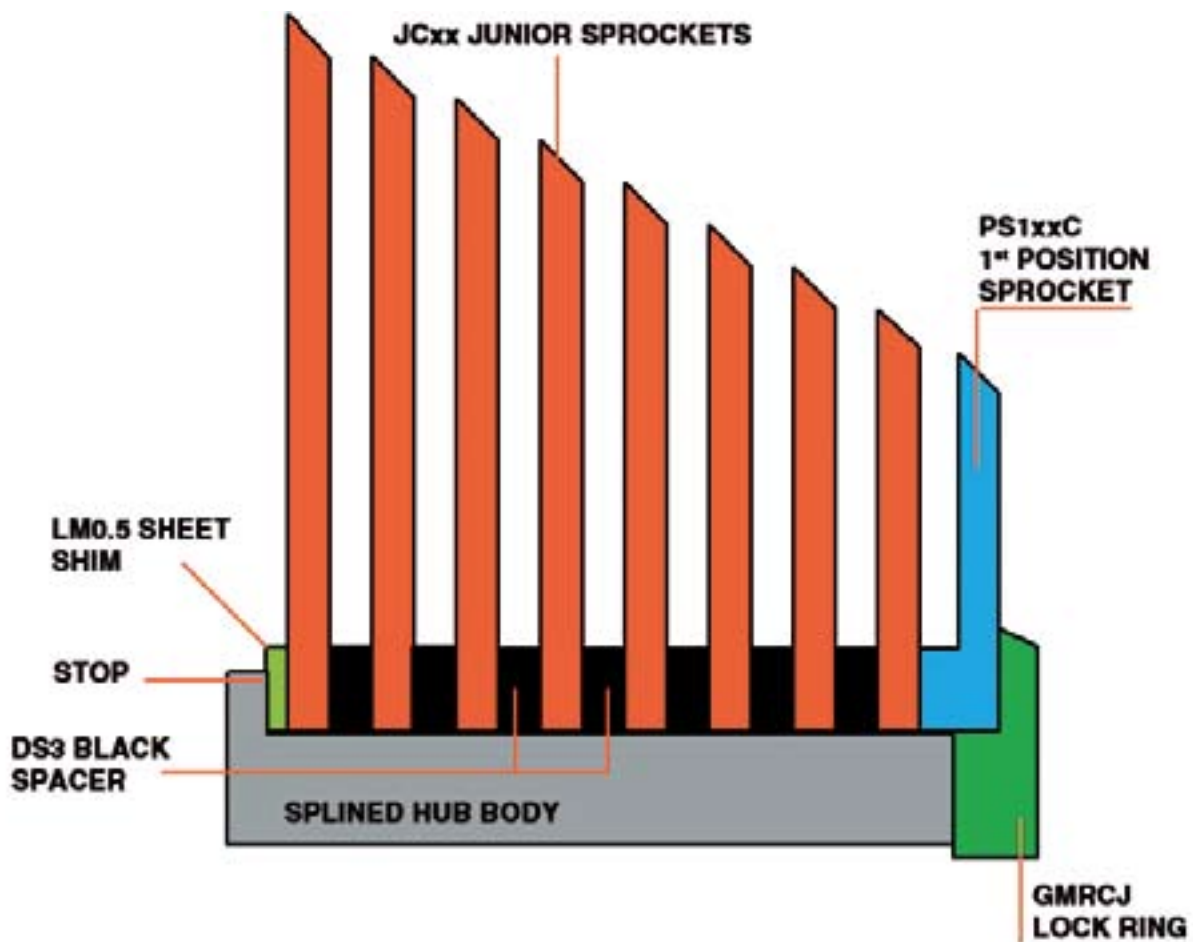
Nr. 1 GMRCJ lock ring

Nr. 1 PS1xxC

Nr. 8 JCxx

Nr. 7 DS3 spacers

Nr. 1 LMO.5 sheet shim



### ASSEMBLY

- 0) To easily assemble the sprockets on the wheel hub, we recommend positioning the actual wheel on a flat surface.
- 1) Insert the LMO.5 sheet shim in the splined hub body until it rests against the stop.
- 2) Insert sprocket JCxx with its identification number facing towards the spokes.
- 3) Insert a DS3 spacer in the body resting it against the sprocket.
- 4) Repeat the insertion sequence "sprocket-spacer" 6 times (points 2, 3).
- 5) Insert the last JCxx sprocket with its identification number facing towards the spokes.
- 6) Insert sprocket PS1xxC.
- 7) Pour several drops of "LOCTITE® 243 oil resistant medium strength threadlocker" evenly over on the thread of the lock ring.
- 8) Screw down the ring on the splined hub body so that it stops against sprocket PS1xxC and clamp with a 40 Nm torque.  
(xx: number of teeth).

## AVIOTEK LINE

with start sprocket (the smallest): **11 TEETH**

mounted on hub: original **SHIMANO 10S**

with derailleur: original **SHIMANO 10S**.

### ITEMS

Nr. 1 GMS11 lock ring

Nr. 1 P111S10

Nr. 1 P212S10

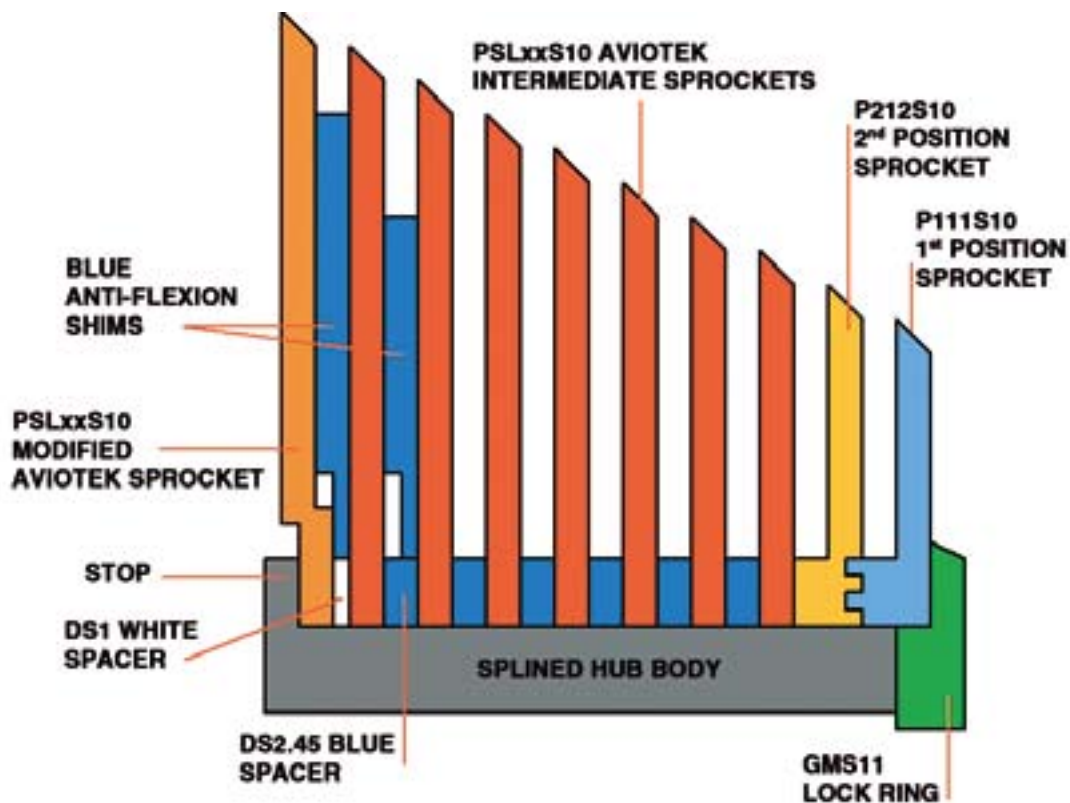
Nr. 7 PSLxxS10

Nr. 6 DS2.45 spacers

Nr. 1 DS1 spacer

Nr. 1 PSLxxS10U

Nr. ... Anti-flexion shims FL10S21-24, FL10S25-30



### ASSEMBLY

- 0) To easily assemble the sprockets on the wheel hub, we recommend positioning the actual wheel on a flat surface.
  - 1) Insert the PSLxxS10U modified Aviatek sprocket in the splined hub body until it rests against the stop.
  - 2) Insert the DS1 spacer resting it against the sprocket.
  - 3) Insert the ANTI-FLEXION shim (FL10S21-24 before sprockets 21, 22, 23, 24; FL10S25-30 before sprockets 25, 26, 27, 28, 30; assembly specification page 13).
  - 4) Insert the biggest PSLxxS10 sprocket.
  - 5) Insert a DS2.45 spacer in the body resting it against the sprocket.
  - 6) Insert the ANTI-FLEXION shim if necessary (See point 3).
  - 7) Repeat the insertion sequence "sprocket-spacer-anti flexion shim" 5 times (points 4, 5, 6)
  - 8) Insert the last PSLxxS10 sprocket.
  - 9) Insert sprocket P212S10 in 2nd position
  - 10) Insert sprocket P111S10 in 1st position pairing it with P212S10.
  - 11) Pour several drops of "LOCTITE® 243 oil resistant medium strength threadlocker" evenly over on the thread of the lock ring.
  - 12) Screw down the ring on the splined hub body so that it stops against sprocket P111S10 and clamp with a 40 Nm torque.
- (xx: number of teeth).

## AVIOTEK LINE

with start sprocket (the smallest): **12 to 16 TEETH**

mounted on hub: original **SHIMANO 10S**

with derailleur: original **SHIMANO 10S**.

### ITEMS

Nr. 1 GMRSL lock ring

Nr. 1 P1xxS10

Nr. 1 P2xxS10

Nr. 1 DSPS1 spacer

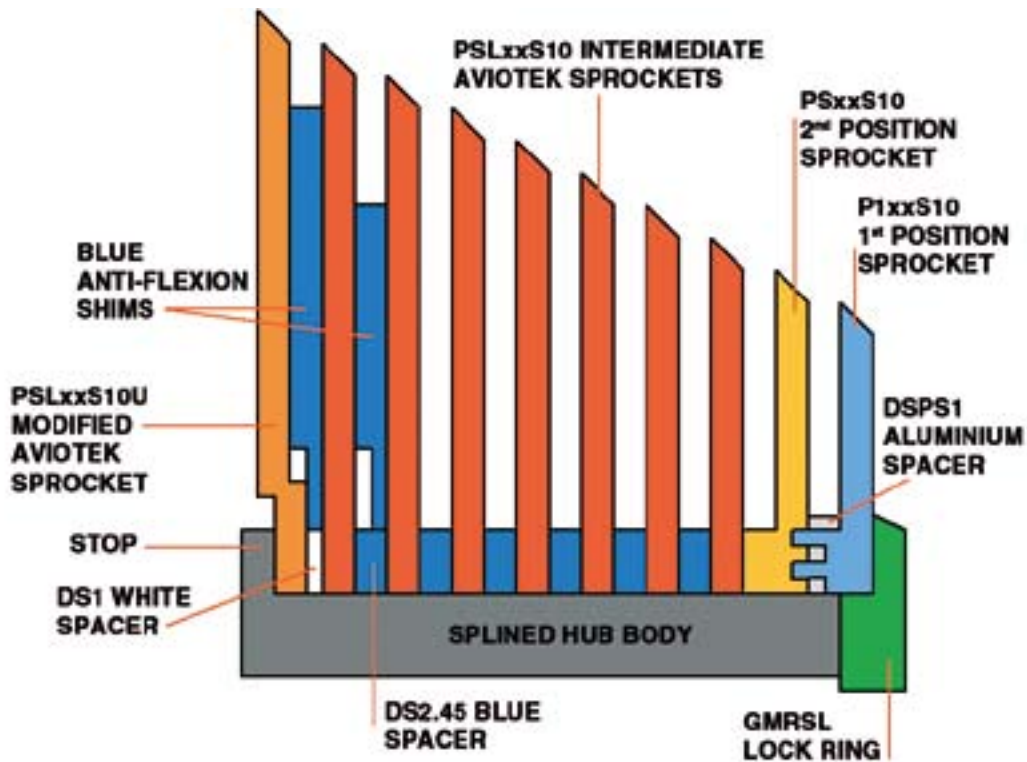
Nr. 7 PSLxxS10

Nr. 6 DS2.45 spacers

Nr. 1 DS1 spacer

Nr. 1 PSLxxS10U

Nr. ... Anti-flexion shims FL10S21-24, FL10S25-30



### ASSEMBLY

- 0) To easily assemble the sprockets on the wheel hub, we recommend positioning the actual wheel on a flat surface.
  - 1) Insert the PSLxxS10U modified Aviatek sprocket in the splined hub body until it rests against the stop.
  - 2) Insert the DS1 spacer resting it against the sprocket.
  - 3) Insert the ANTI-FLEXION shim (FL10S21-24 before sprockets 21, 22, 23, 24; FL10S25-30 before sprockets 25, 26, 27, 28, 30; assembly specification page 13).
  - 4) Insert sprocket PSLxxS10.
  - 5) Insert a DS2.45 spacer in the body resting it against the sprocket.
  - 6) Insert the ANTI-FLEXION shim if necessary (See point 3).
  - 7) Repeat the insertion sequence "sprocket-spacer-anti flexion shim" 5 times (points 4, 5, 6).
  - 8) Insert the last PSLxxS10 sprocket.
  - 9) Insert sprocket P2xxS10 in 2nd position
  - 10) Insert the DSPS1 aluminium spacer.
  - 11) Insert sprocket P1xxS10 pairing it with P2xxS10 and with the DSPS1 spacer.
  - 12) Pour several drops of "LOCTITE® 243 oil resistant medium strength threadlocker" evenly over on the thread of the lock ring.
  - 13) Screw down the ring on the splined hub body so that it stops against sprocket P1xxS10 and clamp with a 40 Nm torque.
- (xx: number of teeth).

## AVIOTEK LINE

SPECIAL CASE

with start sprocket (the smallest): **11 TEETH**

mounted on hub: original **MAVIC 9S**

with derailleur: original **SHIMANO 10S**.

### ITEMS

Nr. 1 GMS11 lock ring

Nr. 1 P111S10

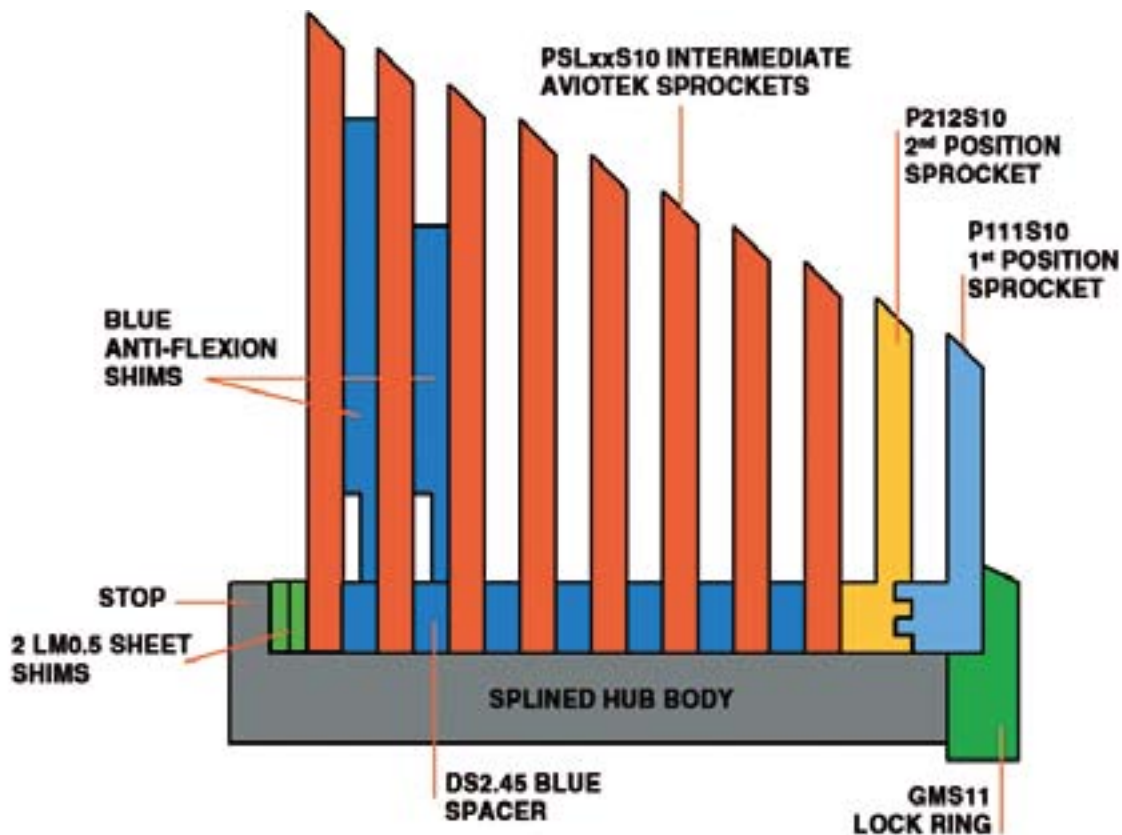
Nr. 1 P212S10

Nr. 8 PSLxxS10

Nr. 7 DS2.45 spacers

Nr. 2 LMO.5 sheet shim

Nr. ... Anti-flexion shims FL10S21-24, FL10S25-30



### ASSEMBLY

- 0) To easily assemble the sprockets on the wheel hub, we recommend positioning the actual wheel on a flat surface.
- 1) Insert the 2 LMO.5 sheet shims in the splined hub body until it rests against the stop.
- 2) Insert the biggest PSLxxS10 sprocket.
- 3) Insert a DS2.45 spacer in the body resting it against the sprocket.
- 4) Insert the ANTI-FLEXION shim (FL10S21-24 before sprockets 21, 22, 23, 24; FL10S25-30 before sprockets 25, 26, 27, 28, 30; assembly specification page 13).
- 5) Repeat the insertion sequence "sprocket-spacer-anti flexion shim" 6 times (points 2, 3, 4).
- 6) Insert the last PSLxxS10 sprocket.
- 7) Insert sprocket P212S10 in 2nd position
- 8) Insert sprocket P111S10 pairing it with P212S10.
- 9) Pour several drops of "LOCTITE® 243 oil resistant medium strength threadlocker" evenly over on the thread of the lock ring.
- 10) Screw down the ring on the splined hub body so that it stops against sprocket P111S10 and clamp with a 40 Nm torque.

**CAUTION:** Never use the 1.8mm spacer ring supplied with the Mavic original hub body.  
(xx: number of teeth).



## AVIOTEK LINE

SPECIAL CASE

with start sprocket (the smallest): **12 to 16 TEETH**

mounted on hub: original **MAVIC 9S**

with derailleur: original **SHIMANO 10S**.

### ITEMS

Nr. 1 GMRSL lock ring

Nr. 1 P1xxS10

Nr. 1 DSPS1 spacer

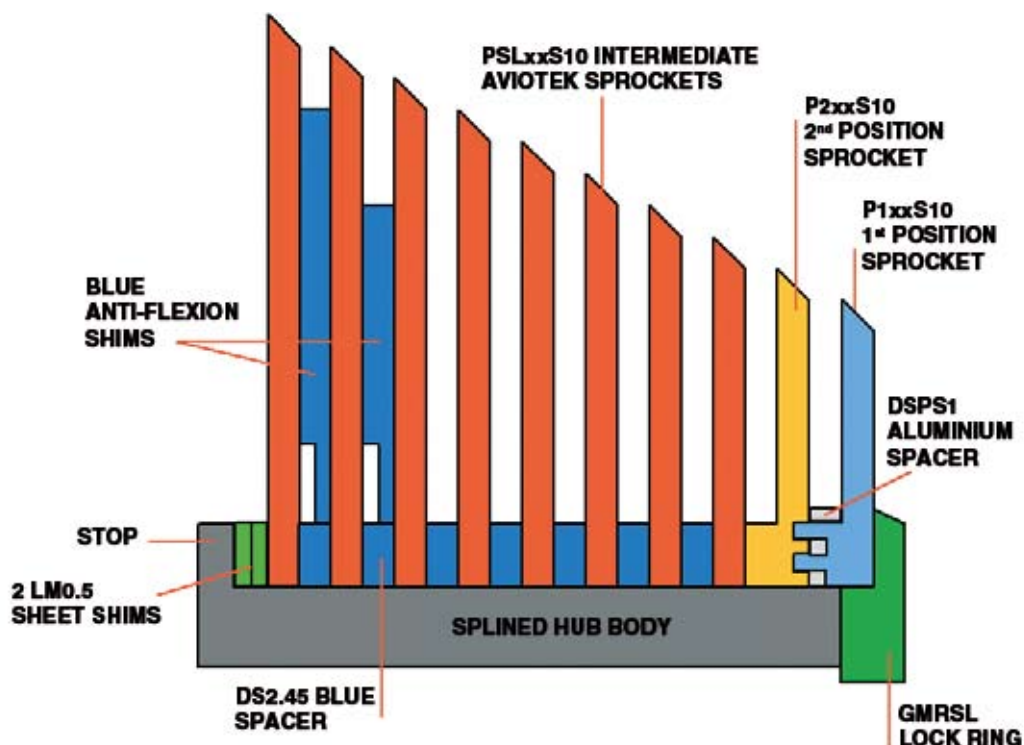
Nr. 1 P2xxS10

Nr. 8 PSLxxS10

Nr. 7 DS2.45 spacers

Nr. 2 LMO.5 sheet shims

Nr. ... Anti-flexion shims FL10S21-24, FL10S25-30



### ASSEMBLY

- 0) To easily assemble the sprockets on the wheel hub, we recommend positioning the actual wheel on a flat surface.
- 1) Insert the 2 LMO.5 sheet shims in the splined hub body until it rests against the stop.
- 2) Insert the biggest PSLxxS10 sprocket.
- 3) Insert a DS2.45 spacer in the body resting it against the sprocket.
- 4) Insert the ANTI-FLEXION shim (FL10S21-24 before sprockets 21, 22, 23, 24; FL10S25-30 before sprockets 25, 26, 27, 28, 30; assembly specification page 13).
- 5) Repeat the insertion sequence "sprocket-spacer-anti flexion shim" 6 times (points 2, 3, 4).
- 6) Insert the last PSLxxS10 sprocket.
- 7) Insert sprocket P2xxS10 in 2nd position.
- 8) Insert the DSPS1 aluminium spacer.
- 9) Insert sprocket P1xxS10 pairing it with P2xxS10 and with the DSPS1 spacer.
- 10) Pour several drops of "LOCTITE® 243 oil resistant medium strength threadlocker" evenly over on the thread of the lock ring.
- 11) Screw down the ring on the splined hub body so that it stops against sprocket P1xxS10 and clamp with a 40 Nm torque.

**CAUTION:** Never use the 1.8mm spacer ring supplied with the Mavic original hub body.  
(xx: number of teeth).

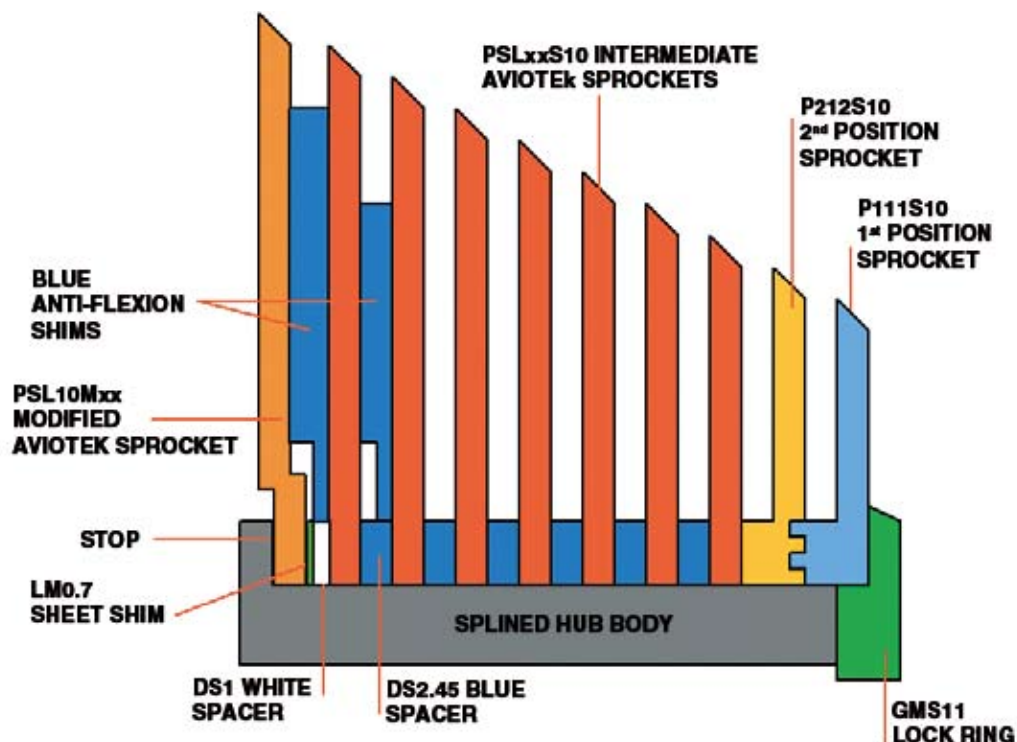
## AVIOTEK LINE

SPECIAL CASE

with start sprocket (the smallest): **11 TEETH**  
 mounted on hub: original **SHIMANO 8S/9S**  
 with derailleur: original **SHIMANO 10S**.

### ITEMS

- Nr. 1 GMS11 lock ring
- Nr. 1 P111S10
- Nr. 1 P212S10
- Nr. 7 PSLxxS10
- Nr. 6 DS2.45 spacers
- Nr. 1 LMO.7 sheet shim
- Nr. 1 DS1 spacer
- Nr. 1 PSL10Mxx
- Nr. ... Anti-flexion shims FL10S21-24, FL10S25-30



### ASSEMBLY

- 0) To easily assemble the sprockets on the wheel hub, we recommend positioning the actual wheel on a flat surface.
  - 1) Insert the PSL10Mxx modified sprocket.
  - 2) Insert the LM0.7 sheet shim in the splined hub body.
  - 3) Insert the DS1 spacer in the body resting it against the sheet shim.
  - 4) Insert the ANTI-FLEXION shim (FL10S21-24 before sprockets 21, 22, 23, 24; FL10S25-30 before sprockets 25, 26, 27, 28, 30; assembly specification page 13).
  - 5) Insert the biggest PSLxxS10 sprocket.
  - 6) Insert a DS2.45 spacer in the body resting it against the sprocket.
  - 7) Insert the ANTI FLEXION shim if necessary. (See point 4).
  - 8) Repeat the insertion sequence "sprocket-spacer-anti flexion shim" 5 times (points 5, 6, 7).
  - 9) Insert the last PSLxxS10 sprocket.
  - 10) Insert sprocket P212S10 in 2nd position.
  - 11) Insert sprocket P111S10 pairing it with P212S10.
  - 12) Pour several drops of "LOCTITE® 243 oil resistant medium strength threadlocker" evenly over on the thread of the lock ring.
  - 13) Screw down the ring on the splined hub body so that it stops against sprocket P111S10 and clamp with a 40 Nm torque.
- (xx: number of teeth).



## AVIOTEK LINE

SPECIAL CASE

with start sprocket (the smallest): 12 to 16 TEETH

mounted on hub: original **SHIMANO 8S/9S**

with derailleur: original **SHIMANO 10S**.

### ITEMS

Nr. 1 GMRSL lock ring

Nr. 1 P1xxS10

Nr. 1 DSPS1 spacer

Nr. 1 P2xxS10

Nr. 7 PSLxxS10

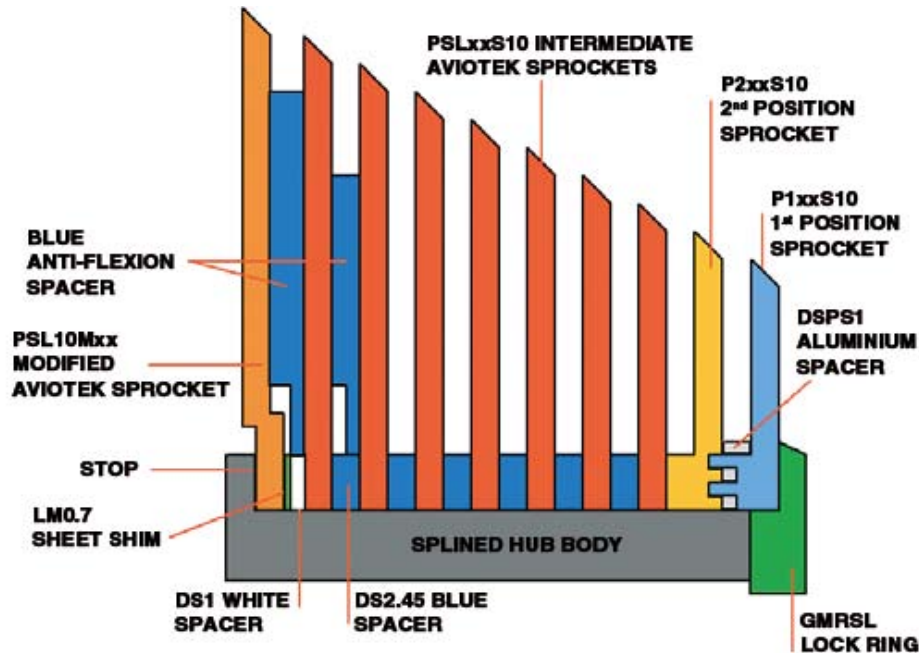
Nr. 6 DS2.45 spacers

Nr. 1 lamierino LMO.7

Nr. 1 LMO.7 sheet shim

Nr. 1 PSL10Mxx

Nr. ... Anti-flexion shims FL10S21-24, FL10S25-30



### ASSEMBLY

- 0) To easily assemble the sprockets on the wheel hub, we recommend positioning the actual wheel on a flat surface.
  - 1) Insert the PSL10Mxx modified sprocket.
  - 2) Insert the LMO.7 sheet shim in the splined hub body.
  - 3) Insert the DS1 spacer in the body resting it against the sheet shim.
  - 4) Insert the ANTI-FLEXION shim (FL10S21-24 before sprockets 21, 22, 23, 24; FL10S25-30 before sprockets 25, 26, 27, 28, 30; assembly specification page 13).
  - 5) Insert the biggest PSLxxS10 sprocket.
  - 6) Insert a DS2.45 spacer in the body resting it against the sprocket.
  - 7) Insert the ANTI FLEXION shim if necessary. (See point 4).
  - 8) Repeat the insertion sequence "sprocket-spacer-anti flexion shim" 5 times (points 5, 6, 7).
  - 9) Insert the last PSLxxS10 sprocket.
  - 10) Insert sprocket P2xxS10 in 2nd position.
  - 11) Insert the DSPS1 aluminium spacer.
  - 12) Insert sprocket P1xxS10 pairing it with P2xxS10 and with the DSPS1 spacer.
  - 13) Pour several drops of "LOCTITE® 243 oil resistant medium strength threadlocker" evenly over on the thread of the lock ring.
  - 14) Screw down the ring on the splined hub body so that it stops against sprocket P1xxS10 and clamp with a 40 Nm torque.
- (xx: number of teeth).

## JUNIOR LINE

with start sprocket (the smallest): **11 TEETH**

mounted on hub: original **SHIMANO 10S**

with derailleur: original **SHIMANO 10S**.

### ITEMS

Nr. 1 GMS11 lock ring

Nr. 1 P111S10

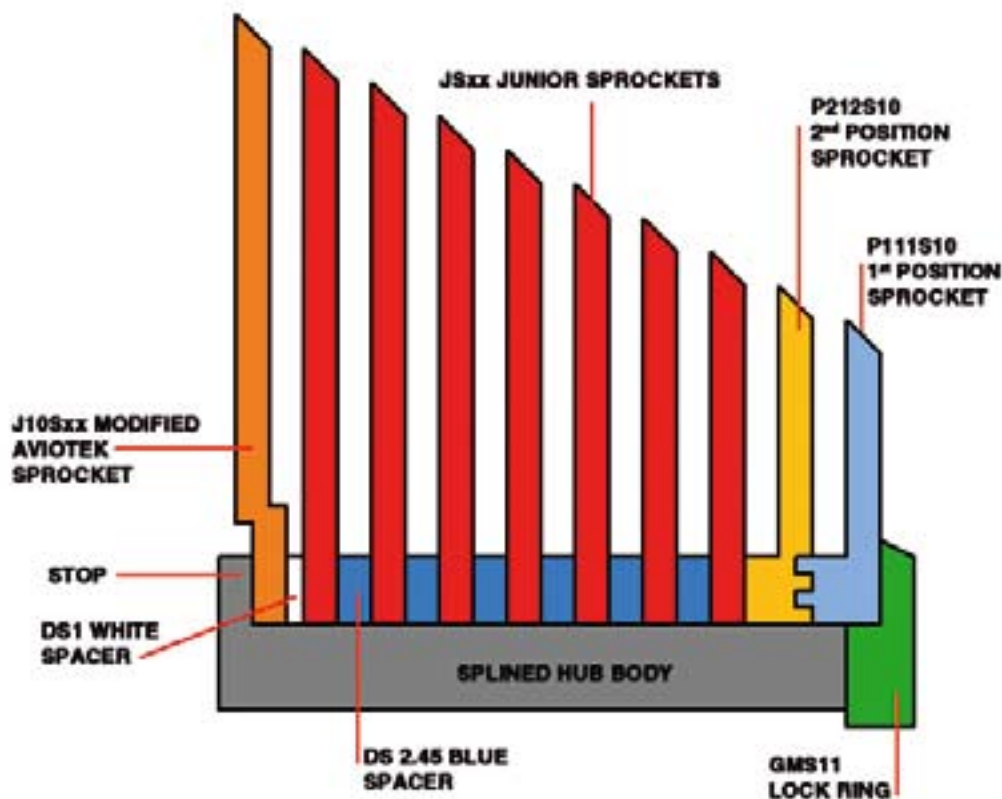
Nr. 1 P212S10

Nr. 7 JSxx

Nr. 6 DS2.45 spacers

Nr. 1 DS1 spacer

Nr. 1 J10Sxx



### ASSEMBLY

- 0) To easily assemble the sprockets on the wheel hub, we recommend positioning the actual wheel on a flat surface.
  - 1) Insert the J10Sxx modified Junior sprocket in the splined hub body until it rests against the stop.
  - 2) Insert the DS1 spacer resting it against the sprocket.
  - 3) Insert the biggest JSxx sprocket.
  - 4) Insert a DS2.45 spacer in the body resting it against the sprocket.
  - 5) Repeat the insertion sequence "sprocket-spacer" 5 times (points 4,5)
  - 6) Insert the last JSxx sprocket.
  - 7) Insert sprocket P212S10 in 2nd position
  - 8) Insert sprocket P111S10 in 1st position pairing it with P212S10.
  - 9) Pour several drops of "LOCTITE® 243 oil resistant medium strength threadlocker" evenly over on the thread of the lock ring.
  - 10) Screw down the ring on the splined hub body so that it stops against sprocket P111S10 and clamp with a 40 Nm torque.
- (xx: number of teeth).

## JUNIOR LINE

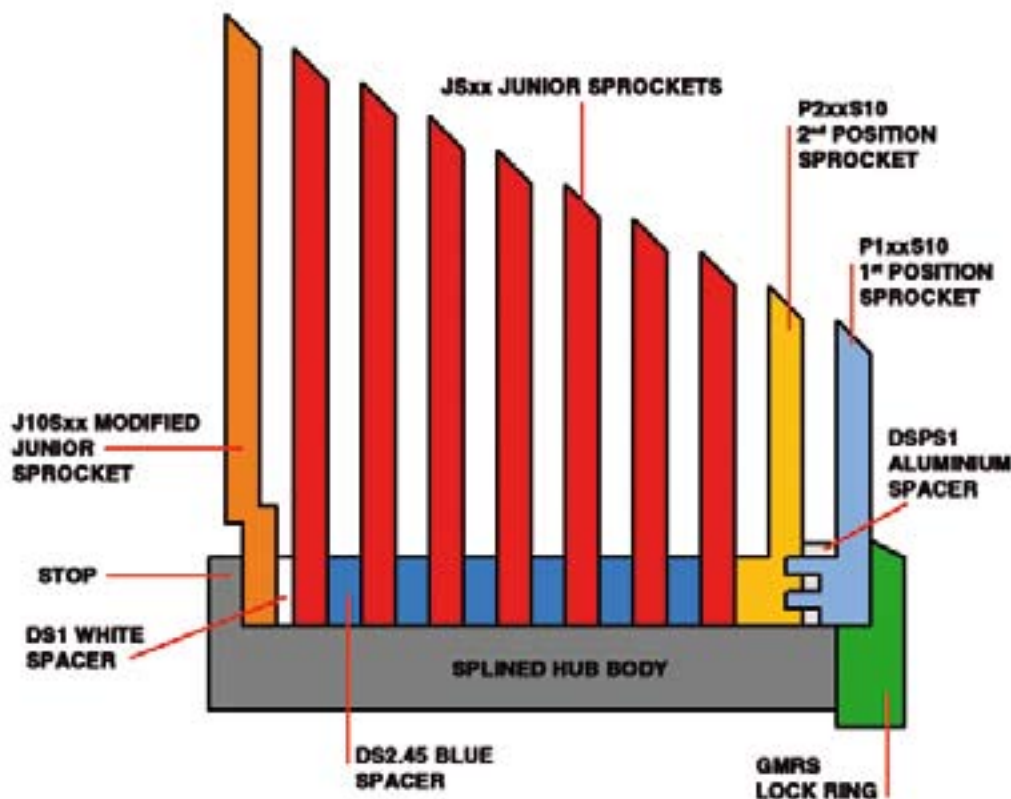
with start sprocket (the smallest): **12 to 16 TEETH**

mounted on hub: original **SHIMANO 10S**

with derailleur: original **SHIMANO 10S**.

### ITEMS

- Nr. 1 GMRS lock ring
- Nr. 1 P1xxS10
- Nr. 1 P2xxS10
- Nr. 1 DSPS1 spacer
- Nr. 7 JSxx
- Nr. 6 DS2.45 spacers
- Nr. 1 DS1 spacer
- Nr. 1 J10Sxx



### ASSEMBLY

- 0) To easily assemble the sprockets on the wheel hub, we recommend positioning the actual wheel on a flat surface.
  - 1) Insert the J10Sxx modified Junior sprocket in the splined hub body until it rests against the stop.
  - 2) Insert the DS1 spacer resting it against the sprocket.
  - 3) Insert sprocket JSxx.
  - 4) Insert a DS2.45 spacer in the body resting it against the sprocket.
  - 5) Repeat the insertion sequence "sprocket-spacer" 5 times (points 4,5).
  - 6) Insert the last JSxx sprocket.
  - 7) Insert sprocket P2xxS10 in 2nd position
  - 8) Insert the DSPS1 aluminium spacer.
  - 9) Insert sprocket P1xxS10 pairing it with P2xxS10 and with the DSPS1 spacer.
  - 10) Pour several drops of "LOCTITE® 243 oil resistant medium strength threadlocker" evenly over on the thread of the lock ring.
  - 11) Screw down the ring on the splined hub body so that it stops against sprocket P1xxS10 and clamp with a 40 Nm torque.
- (xx: number of teeth).

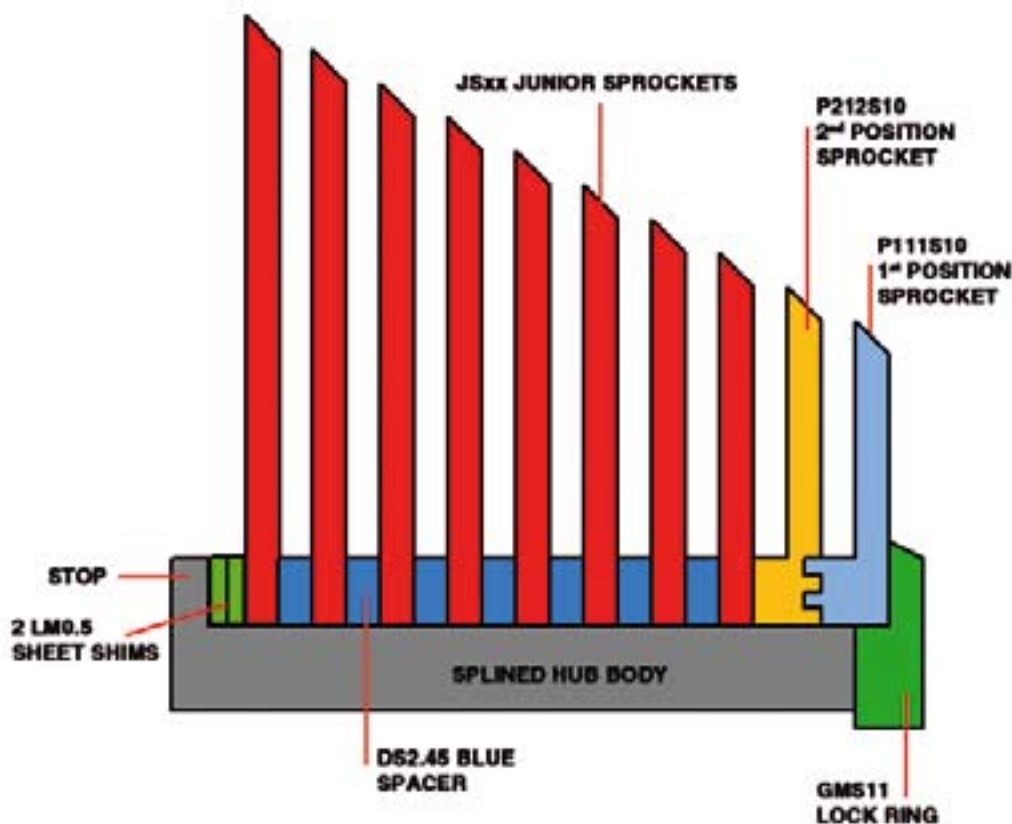
## JUNIOR LINE

SPECIAL CASE

with start sprocket (the smallest): **11 TEETH**  
 mounted on hub: original **MAVIC 9S**  
 with derailleur: original **SHIMANO 10S**.

### ITEMS

- Nr. 1 GMS11 lock ring
- Nr. 1 P111S10
- Nr. 1 P212S10
- Nr. 8 JSxx
- Nr. 7 DS2.45 spacers
- Nr. 2 LM0.5 sheet shim



### ASSEMBLY

- 0) To easily assemble the sprockets on the wheel hub, we recommend positioning the actual wheel on a flat surface.
- 1) Insert the 2 LM0.5 sheet shims in the splined hub body until it rests against the stop.
- 2) Insert the biggest JSxx sprocket.
- 3) Insert a DS2.45 spacer in the body resting it against the sprocket.
- 4) Repeat the insertion sequence "sprocket-spacer" 6 times (points 2,3).
- 5) Insert the last JSxx sprocket.
- 6) Insert sprocket P212S10 in 2nd position
- 7) Insert sprocket P111S10 pairing it with P212S10.
- 8) Pour several drops of "LOCTITE® 243 oil resistant medium strength threadlocker" evenly over on the thread of the lock ring.
- 9) Screw down the ring on the splined hub body so that it stops against sprocket P111S10 and clamp with a 40 Nm torque.

**CAUTION:** Never use the 1.8mm spacer ring supplied with the Mavic original hub body.  
 (xx: number of teeth).

## JUNIOR LINE

SPECIAL CASE

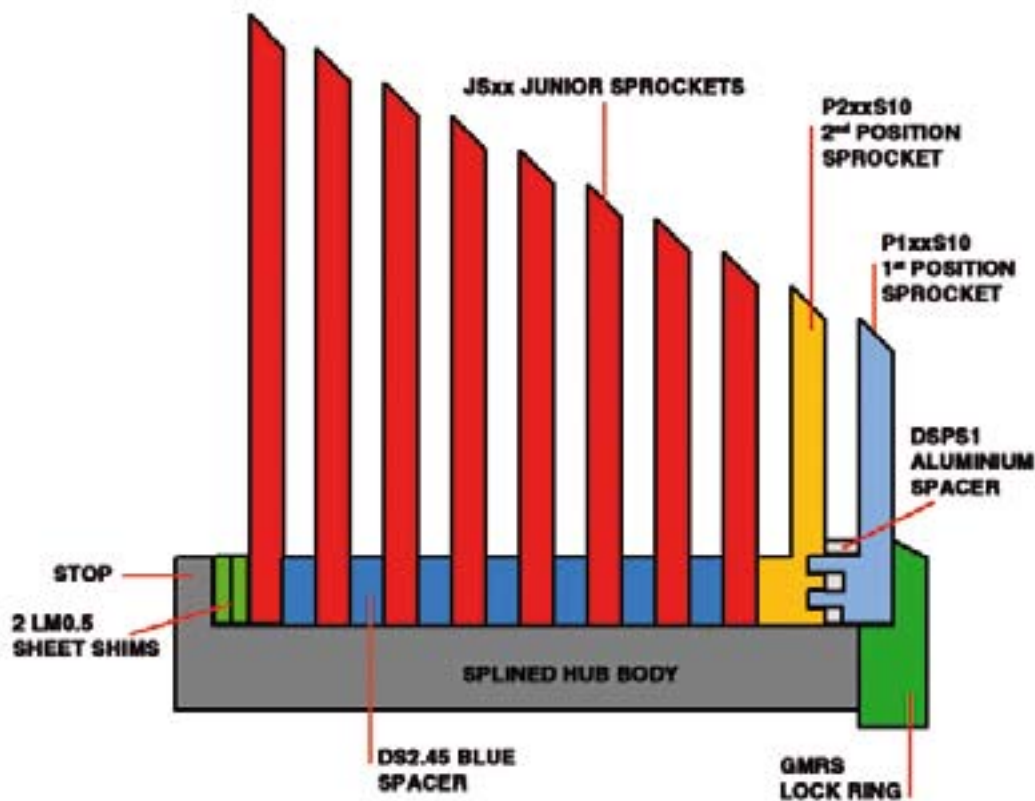
with start sprocket (the smallest): **12 to 16 TEETH**

mounted on hub: original **MAVIC 9S**

with derailleur: original **SHIMANO 10S**.

### ITEMS

- Nr. 1 GMRS lock ring
- Nr. 1 P1xxS10
- Nr. 1 DSPS1 spacer
- Nr. 1 P2xxS10
- Nr. 8 JSxx
- Nr. 7 DS2.45 spacers
- Nr. 2 LM0.5 sheet shims



### ASSEMBLY

- 0) To easily assemble the sprockets on the wheel hub, we recommend positioning the actual wheel on a flat surface.
- 1) Insert the 2 LM0.5 sheet shims in the splined hub body until it rests against the stop.
- 2) Insert the biggest JSxx sprocket.
- 3) Insert a DS2.45 spacer in the body resting it against the sprocket.
- 4) Repeat the insertion sequence "sprocket-spacer" 6 times (points 2,3).
- 5) Insert the last JSxx sprocket.
- 6) Insert sprocket P2xxS10 in 2nd position.
- 7) Insert the DSPS1 aluminium spacer.
- 8) Insert sprocket P1xxS10 pairing it with P2xxS10 and with the DSPS1 spacer.
- 9) Pour several drops of "LOCTITE® 243 oil resistant medium strength threadlocker" evenly over on the thread of the lock ring.
- 10) Screw down the ring on the splined hub body so that it stops against sprocket P1xxS10 and clamp with a 40 Nm torque.

**CAUTION:** Never use the 1.8mm spacer ring supplied with the Mavic original hub body.  
(xx: number of teeth).

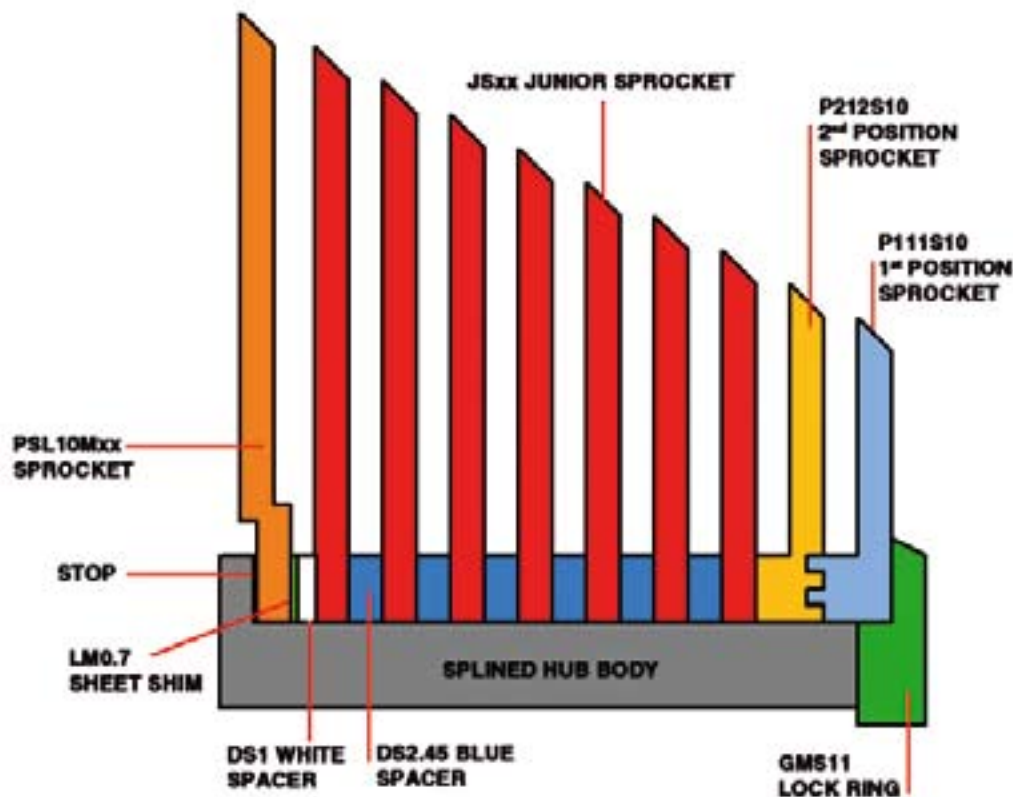
## JUNIOR LINE

## SPECIAL CASE

with start sprocket (the smallest): **11 TEETH**  
 mounted on hub: original **SHIMANO 8S/9S**  
 with derailleur: original **SHIMANO 10S**.

### ITEMS

- Nr. 1 GMS11 lock ring
- Nr. 1 P111S10
- Nr. 1 P212S10
- Nr. 7 JSxx
- Nr. 6 DS2.45 spacers
- Nr. 1 LM0.7 sheet shim
- Nr. 1 DS1 spacer
- Nr. 1 PSL10Mxx



### ASSEMBLY

- 0) To easily assemble the sprockets on the wheel hub, we recommend positioning the actual wheel on a flat surface.
  - 1) Insert the PSL10Mxx modified sprocket.
  - 2) Insert the LM0.7 sheet shim in the splined hub body.
  - 3) Insert the DS1 spacer in the body resting it against the sheet shim.
  - 4) Insert the biggest JSxx sprocket.
  - 5) Insert a DS2.45 spacer in the body resting it against the sprocket.
  - 6) Repeat the insertion sequence "sprocket-spacer" 5 times (points 4,5).
  - 7) Insert the last JSxx sprocket.
  - 8) Insert sprocket P212S10 in 2nd position.
  - 9) Insert sprocket P111S10 pairing it with P212S10.
  - 10) Pour several drops of "LOCTITE® 243 oil resistant medium strength threadlocker" evenly over on the thread of the lock ring.
  - 11) Screw down the ring on the splined hub body so that it stops against sprocket P111S10 and clamp with a 40 Nm torque.
- (xx: number of teeth).

## JUNIOR LINE

SPECIAL CASE

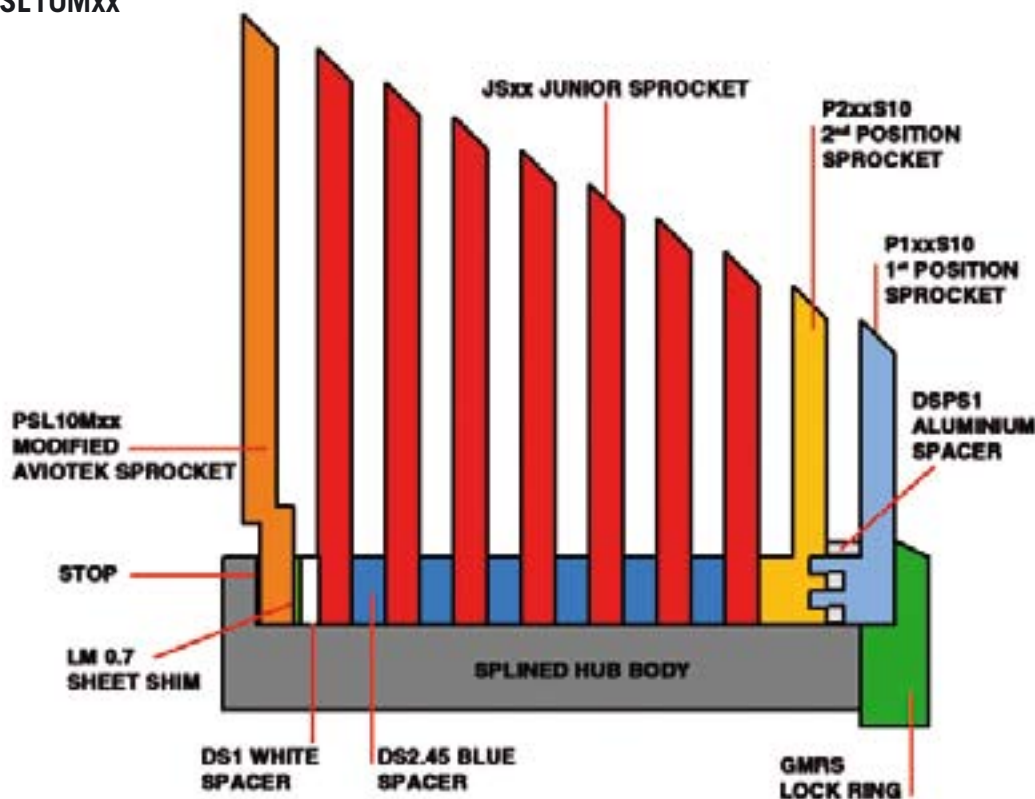
with start sprocket (the smallest): **12 to 16 TEETH**

mounted on hub: original **SHIMANO 8S/9S**

with derailleur: original **SHIMANO 10S**.

### ITEMS

- Nr. 1 GMRS lock ring
- Nr. 1 P1xxS10
- Nr. 1 DSPS1 spacer
- Nr. 1 P2xxS10
- Nr. 7 JSxx
- Nr. 6 DS2.45 spacers
- Nr. 1 LM0.7 sheet shim
- Nr. 1 DS1 spacer
- Nr. 1 PSL10Mxx



### ASSEMBLY

- 0) To easily assemble the sprockets on the wheel hub, we recommend positioning the actual wheel on a flat surface.
  - 1) Insert the PSL10Mxx modified sprocket.
  - 2) Insert the LM0.7 sheet shim in the splined hub body.
  - 3) Insert the DS1 spacer in the body resting it against the sheet shim.
  - 4) Insert the biggest JSxx sprocket.
  - 5) Insert a DS2.45 spacer in the body resting it against the sprocket.
  - 6) Repeat the insertion sequence "sprocket-spacer" 5 times (points 4,5).
  - 7) Insert the last JSxx sprocket.
  - 8) Insert sprocket P2xxS10 in 2nd position.
  - 9) Insert the DSPS1 aluminium spacer.
  - 10) Insert sprocket P1xxS10 pairing it with P2xxS10 and with the DSPS1 spacer.
  - 11) Pour several drops of "LOCTITE® 243 oil resistant medium strength threadlocker" evenly over on the thread of the lock ring.
  - 12) Screw down the ring on the splined hub body so that it stops against sprocket P1xxS10 and clamp with a 40 Nm torque.
- (xx: number of teeth).



## AVIOTEK LINE

with start sprocket (the smallest): **11 TEETH**

mounted on hub: original **CAMPAGNOLO 9S** and **10S**

and **MAVIC** hub for Campagnolo 10s

with derailleur: original **CAMPAGNOLO 10S**.

### ITEMS

Nr. 1 GMC1199 lock ring

Nr. 1 PS111C

Nr. 1 PS112C

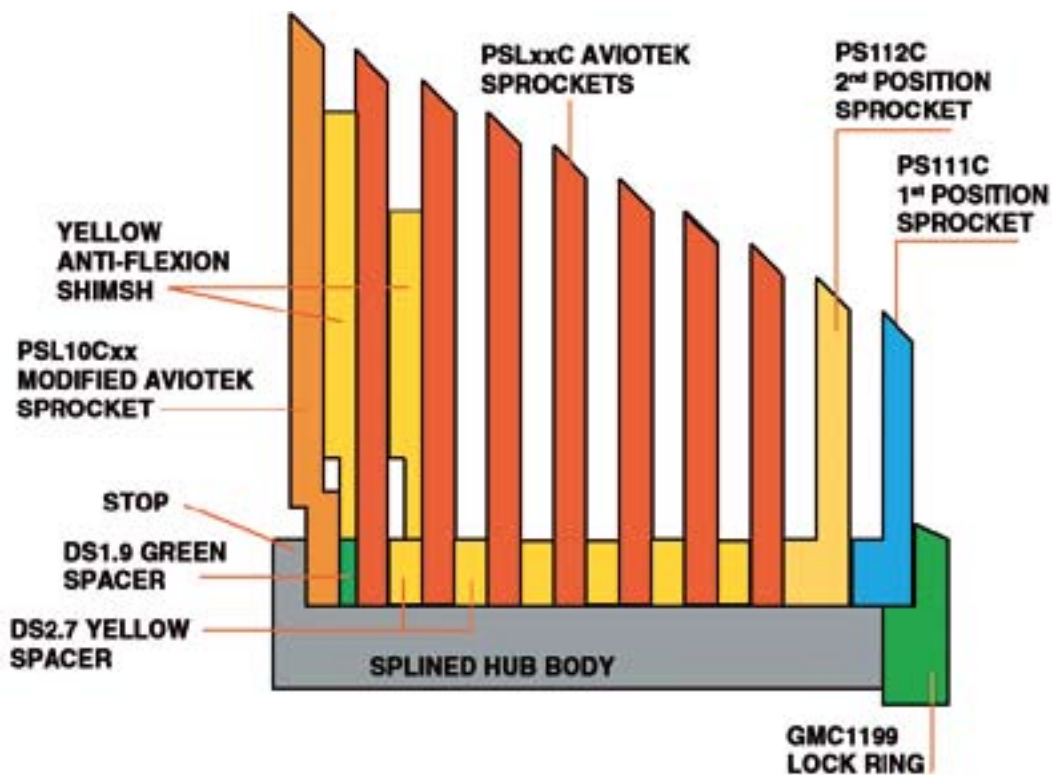
Nr. 7 PSLxx

Nr. 6 DS2.7 spacers

Nr. 1 DS1.9 spacer

Nr. 1 PSL10Cxx

Nr. ... Anti-flexion shims FL10C21-24, FL10C25-30



### ASSEMBLY

- 0) To easily assemble the sprockets on the wheel hub, we recommend positioning the actual wheel on a flat surface.
  - 1) Insert the PSL10Cxx Aviatek modified sprocket in the splined body until it rests against the stop.
  - 2) Insert the DS1.9 spacer resting it against the sprocket.
  - 3) Insert the ANTI-FLEXION shim (FL10C21-24 before sprockets 21, 22, 23, 24; FL10C25-30 before sprockets 25, 26, 27, 28, 30; assembly specification page 13).
  - 4) Insert the sprocket PSLxxC with its identification number facing towards the spokes..
  - 5) Insert a DS2.7 spacer in the body resting it against the sprocket.
  - 6) Insert the ANTI FLEXION shim if necessary. (See point 3).
  - 7) Repeat the insertion sequence "adapter-sprocket-spacer-anti flexion shim" 5 times (points 4, 5, 6).
  - 8) Insert the last PSLxxC sprocket with its identification number facing towards the spokes.
  - 9) Insert sprocket PS112C.
  - 10) Insert sprocket PS111C.
  - 11) Pour several drops of "LOCTITE® 243 oil resistant medium strength threadlocker" evenly over on the thread of the lock ring.
  - 12) Screw down the ring on the splined hub body so that it stops against sprocket PS111C and clamp with a 40 Nm torque.
- (xx: number of teeth).



## JUNIOR LINE

with start sprocket (the smallest): **11 TEETH**

mounted on hub: original **CAMPAGNOLO 9S** and **10S**

and **MAVIC** hub for Campagnolo 10s

with derailleur: original **CAMPAGNOLO 10S**.

### ITEMS

Nr. 1 GMC1199 lock ring

Nr. 1 PS111C

Nr. 1 PS112C

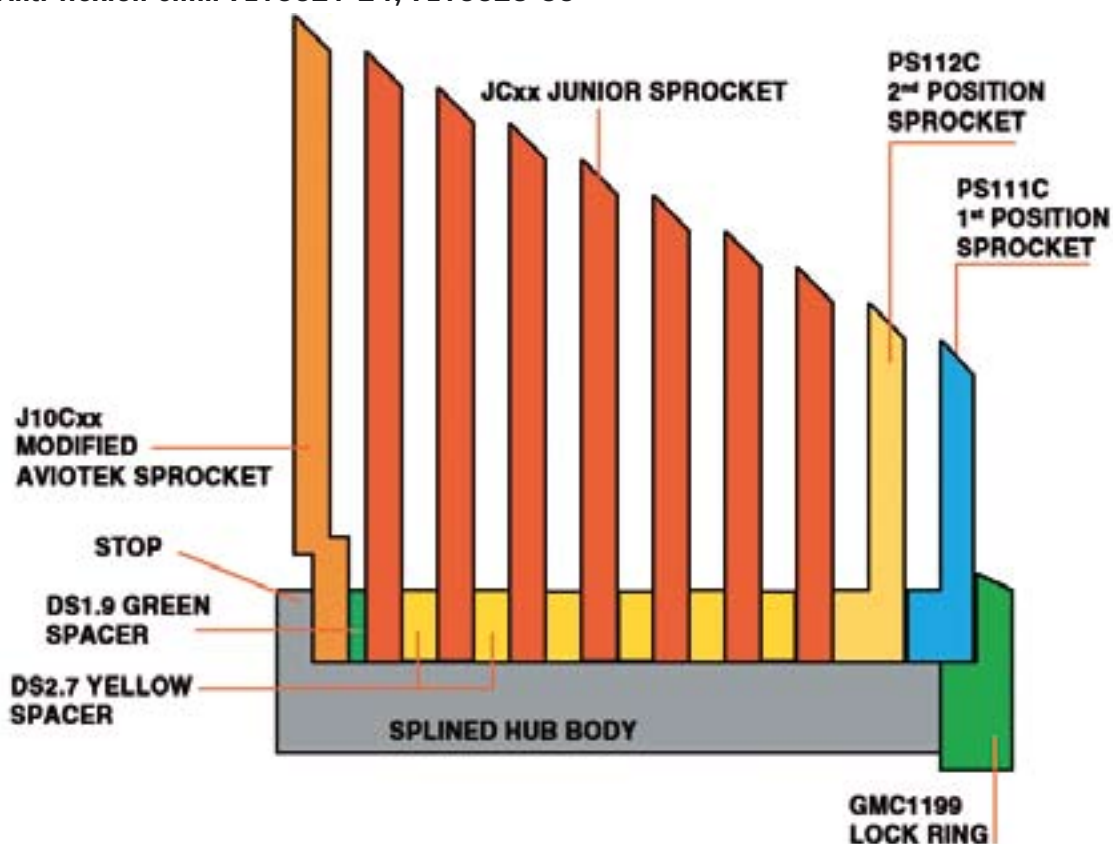
Nr. 7 JCxx

Nr. 6 DS2.7 spacers

Nr. 1 DS1.9 spacer

Nr. 1 J10Cxx

Nr. 1 Anti-flexion shim FL10C21-24, FL10C25-30



### ASSEMBLY

- 0) To easily assemble the sprockets on the wheel hub, we recommend positioning the actual wheel on a flat surface.
  - 1) Insert the modified J10Cxx Aviotek sprocket in the splined body until it rests against the stop.
  - 2) Insert the DS1.9 spacer resting it against the sprocket.
  - 3) Insert the JCxx sprocket with its identification number facing the spokes.
  - 4) Insert a DS2.7 spacer in the body resting it against the sprocket.
  - 5) Repeat the insertion sequence "sprocket-spacer" 5 times (points 3, 4).
  - 6) Insert the last JCxx sprocket with its identification number facing towards the spokes.
  - 7) Insert sprocket PS112C.
  - 8) Insert sprocket PS111C.
  - 9) Pour several drops of "LOCTITE® 243 oil resistant medium strength threadlocker" evenly over on the thread of the lock ring.
  - 10) Screw down the ring on the splined hub body so that it stops against sprocket PS111C and clamp with a 40 Nm torque.
- (xx: number of teeth).

## AVIOTEK LINE

with start sprocket (the smallest): **12 to 18 TEETH**

mounted on hub: original **CAMPAGNOLO 9S** and **10S**

and **MAVIC** hub for Campagnolo 10s

with derailleur: original **CAMPAGNOLO 10S**.

### ITEMS

Nr. 1 GMRCL99 lock ring

Nr. 1 PS1xxC

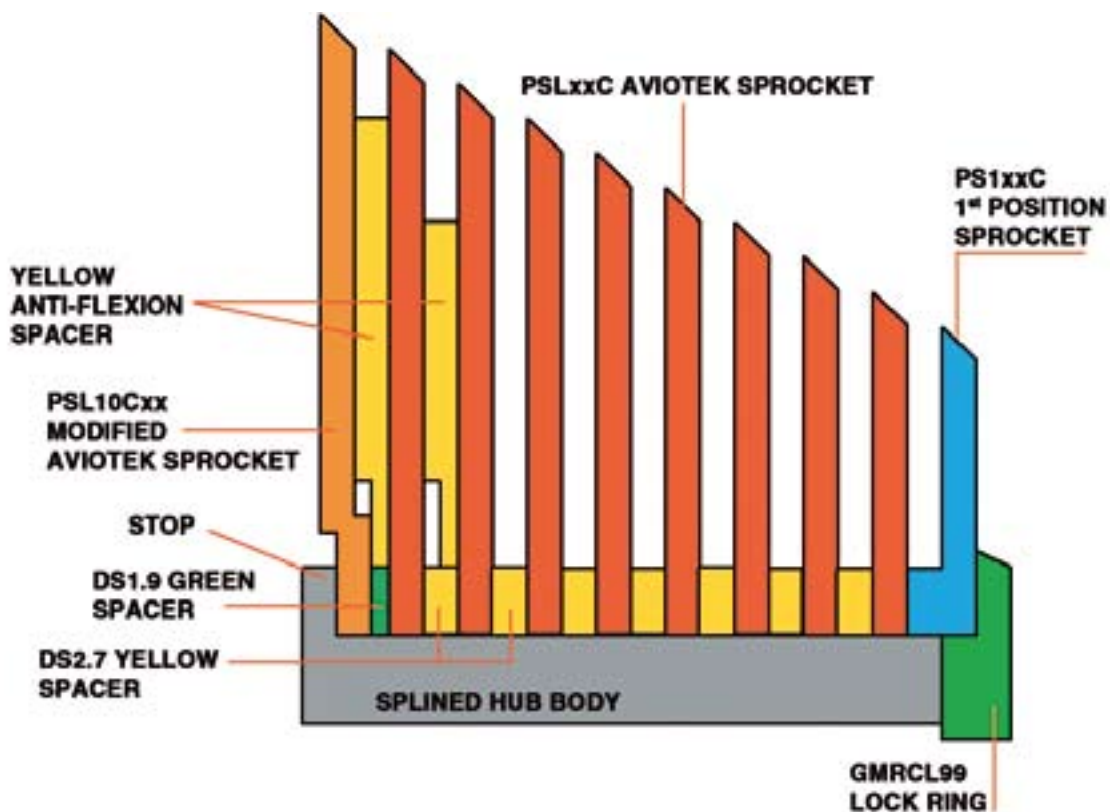
Nr. 8 PSLxxC

Nr. 7 DS2.7 spacers

Nr. 1 DS1.9 spacer

Nr. 1 PSL10Cxx

Nr. ... Anti-flexion shim FL10C21-24, FL10C25-30



### ASSEMBLY

- 0) To easily assemble the sprockets on the wheel hub, we recommend positioning the actual wheel on a flat surface.
  - 1) Insert the modified PSL10Cxx Aviatek sprocket in the splined body until it rests against the stop.
  - 2) Insert the DS1.9 spacer resting it against the sprocket.
  - 3) Insert the ANTI FLEXION shim (FL10C21-24 before sprockets 21, 22, 23, 24; FL10C25-30 before sprockets 25, 26, 27, 28, 30; assembly drawing page 13).
  - 4) Insert sprocket PSLxxC with its identification number facing towards the spokes.
  - 5) Insert a DS2.7 spacer resting it against the sprocket.
  - 6) Insert the ANTI FLEXION shim if necessary (See point 3).
  - 7) Repeat the insertion sequence "sprocket-spacer-anti flexion shim" 6 times (points 4, 5, 6).
  - 8) Insert the last PSLxx sprocket with its identification number facing towards the spokes.
  - 9) Insert sprocket PS1xxC.
  - 10) Pour several drops of "LOCTITE® 243 oil resistant medium strength threadlocker" evenly over on the thread of the lock ring.
  - 11) Screw down the ring on the splined hub body so that it stops against sprocket PS1xxC and clamp with a 40 Nm torque.
- (xx: number of teeth).

## JUNIOR LINE

with start sprocket (the smallest): **12 to 18 TEETH**

mounted on hub: original **CAMPAGNOLO 9S** and **10S**

and **MAVIC** hub for Campagnolo 10s

with derailleur: original **CAMPAGNOLO 10S**.

### ITEMS

Nr. 1 GMRCJ lock ring

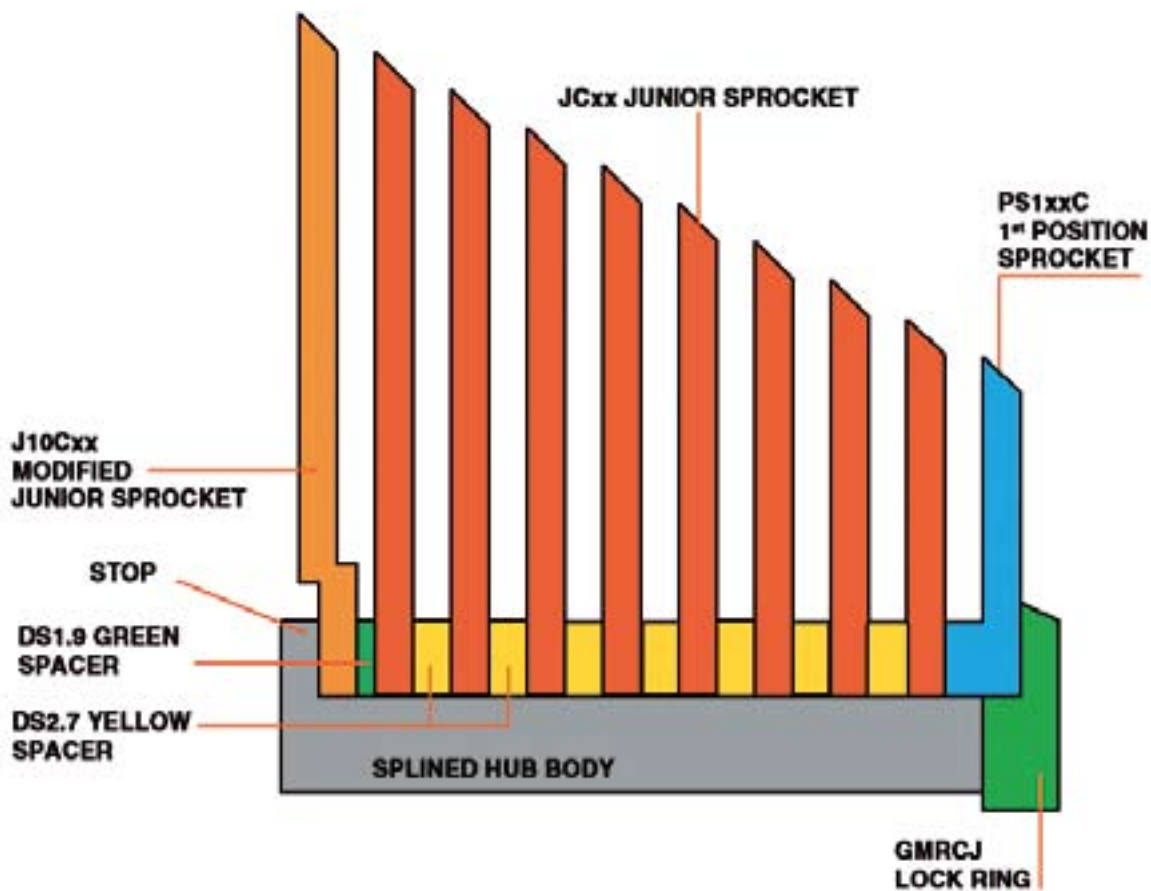
Nr. 1 PS1xxC

Nr. 8 JCxx

Nr. 7 DS2.7 spacers

Nr. 1 DS1.9 spacer

Nr. 1 J10Cxx



### ASSEMBLY

- 0) To easily assemble the sprockets on the wheel hub, we recommend positioning the actual wheel on a flat surface.
  - 1) Insert the modified J10Cxx sprocket in the splined body until it rests against the stop.
  - 2) Insert the DS1.9 spacer resting it against the sprocket.
  - 3) Insert sprocket JCxx with its identification number facing towards the spokes.
  - 4) Insert a DS2.7 spacer resting it against the sprocket.
  - 5) Repeat the insertion sequence "sprocket-spacer" 6 times (points 4, 5, 6).
  - 6) Insert the last JCxx sprocket with its identification number facing towards the spokes.
  - 7) Insert sprocket PS1xxC.
  - 8) Pour several drops of "LOCTITE® 243 oil resistant medium strength threadlocker" evenly over on the thread of the lock ring.
  - 9) Screw down the ring on the splined hub body so that it stops against sprocket PS1xxC and clamp with a 40 Nm torque.
- (xx: number of teeth).

## GENERAL WARNINGS

This paragraph lists all the general warnings that we consider “IMPORTANT” for a safe use of our products.

### **FAILURE TO OBSERVE THESE SPECIFICATIONS CAN SERIOUSLY COMPROMISE THE USER'S SAFETY AND CAUSE SERIOUS DAMAGES TO THE RIDER AND THE BIKE.**

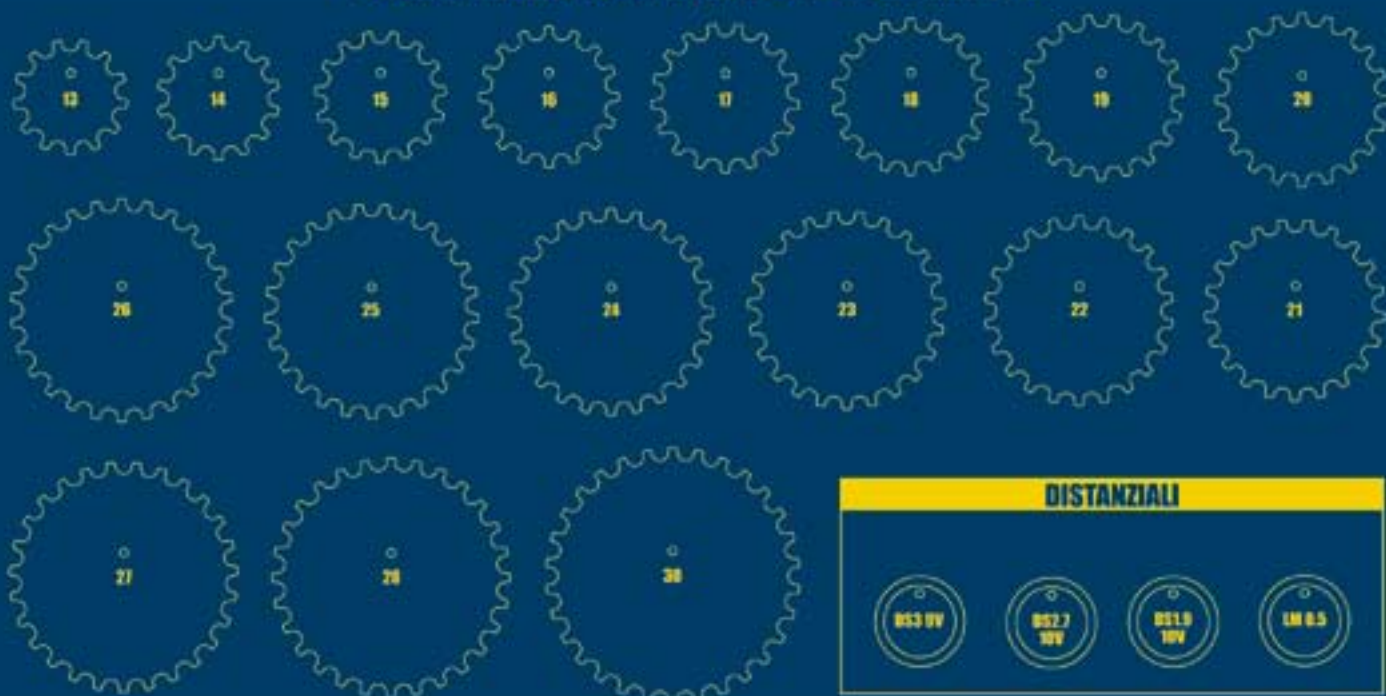
- 1) Carefully read through the cases shown on the previous pages. Check that what you require correspond to one of the cases mentioned. Failing which, do not carry out compositions or modifications not included in this manual.
- 2) Always use “LOCTITE® 243 oil resistant medium strength threadlocker” on the thread of the lock ring. Although these lock rings have an anti-unscrewing knurled surface, over the course of time and with the flexion that occurs during use, the lock ring may loosen. When “LOCTITE® 243 oil resistant medium strength threadlocker” is used this does not occur.
- 3) Check at least once a week that the lock ring is tightly clamped using a torque wrench, make sure to clamp using a 40 Nm torque.
- 4) The passing of the chain from one sprocket to another is called “shifting”. The accuracy of this operation depends on several factors such as the wear of the mechanisms, adjustment of the derailleur and not least the sensitivity of the user when operating the derailleur using the special command.  
Even only one of these factors can negatively influence the shifting phase. If the rider “shifts” using maximum force or even worse when he is not sat firmly on the bicycle (that is with the rider's weight supported only by the pedals), it's possible the chain will break, or slide over the sprockets with devastating effects in the case of a fall.  
We therefore highly recommend that the rider only “shifts” using minimum force and above all when sitting firmly on the saddle. The rider should only stand up on the pedals after making sure that the chain has shifted from one sprocket to another.
- 5) We would like to remind you that Mechanics should read this information manual and make it available to the final user.

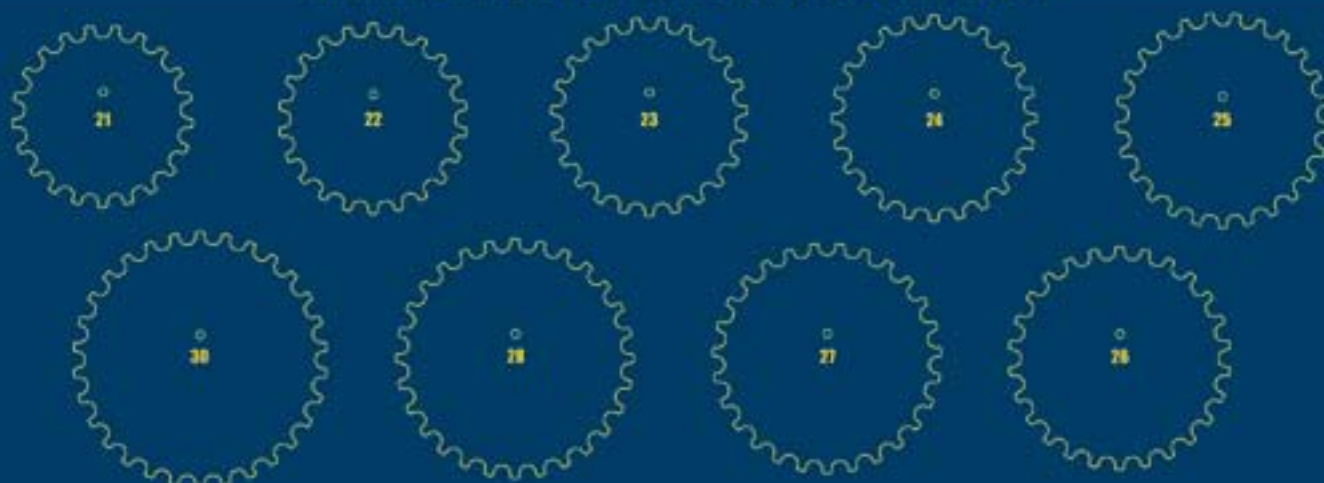


**PRIME POSIZIONI 9-10V AVIOTEK e JUNIOR (PS1C)**

**GHIERE**

**SPESSORI ANTIFLESSIONE**

**PIGNONI SEMPLICI 9-10V AVIOTEK (PSLC) 9-10V JUNIOR (JC)**

**DISTANZIALI**

**PIGNONI IN ULTIMA POSIZIONE 10V AVIOTEK (PSL10C) JUNIOR (J10C)**




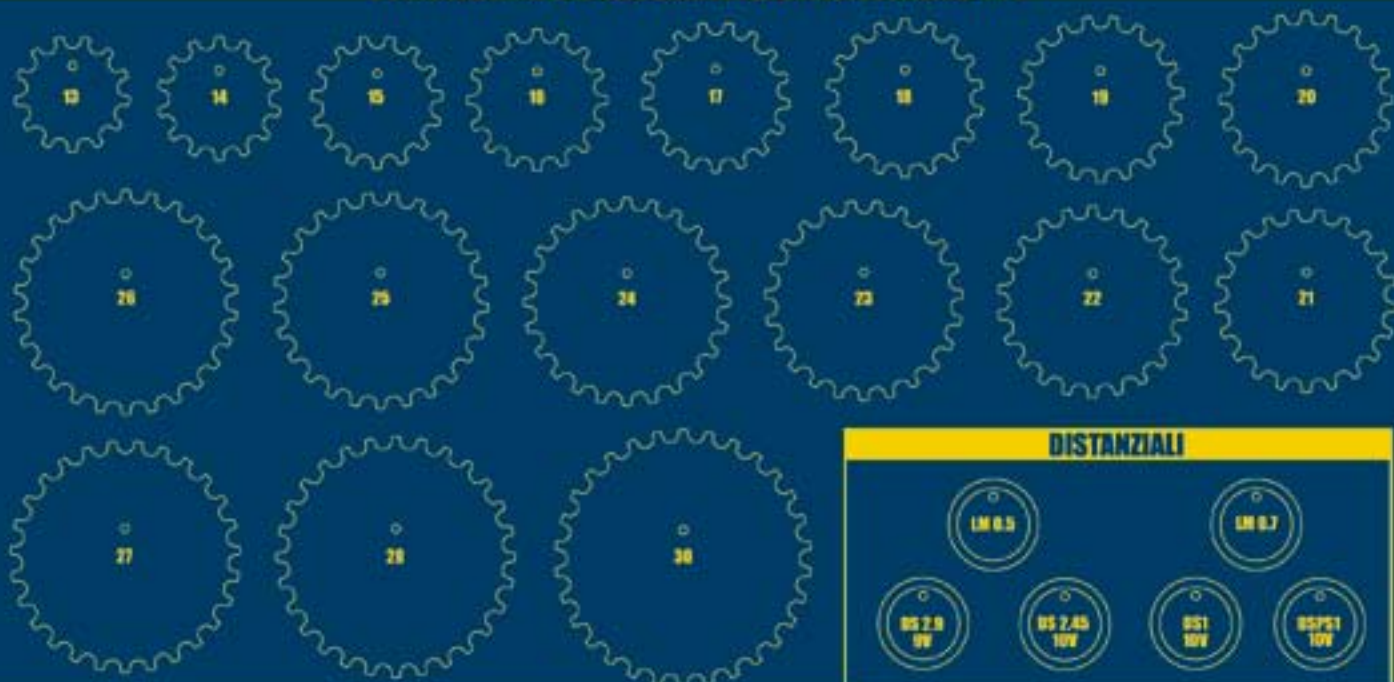
**PRIME POSIZIONI 9V AVIOTEK e JUNIOR (P1S1S)**

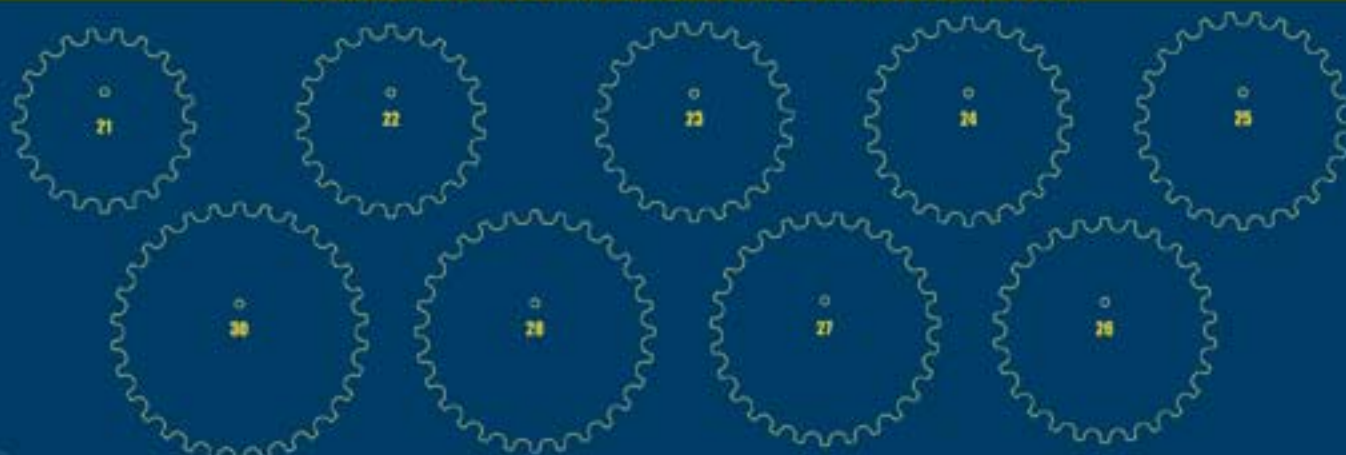
**GHIERE**

**PRIME POSIZIONI 10V AVIOTEK E JUNIOR (P1S10)**

**SPessori ANTIFLESSIONE**

**SECONDE POSIZIONI 10V AVIOTEK E JUNIOR (P2S10)**

**PIGIONI SEMPLICI 9-10V AVIOTEK (PSLS10) - JUNIOR (JS)**

**DISTANZIALI**

**PIGIONI IN ULTIMA POSIZIONE 10V AVIOTEK (PSLS10U) E JUNIOR (J10S)**


**ASTI  
OVEST**



**LOC.RILATE/VALBELLA**

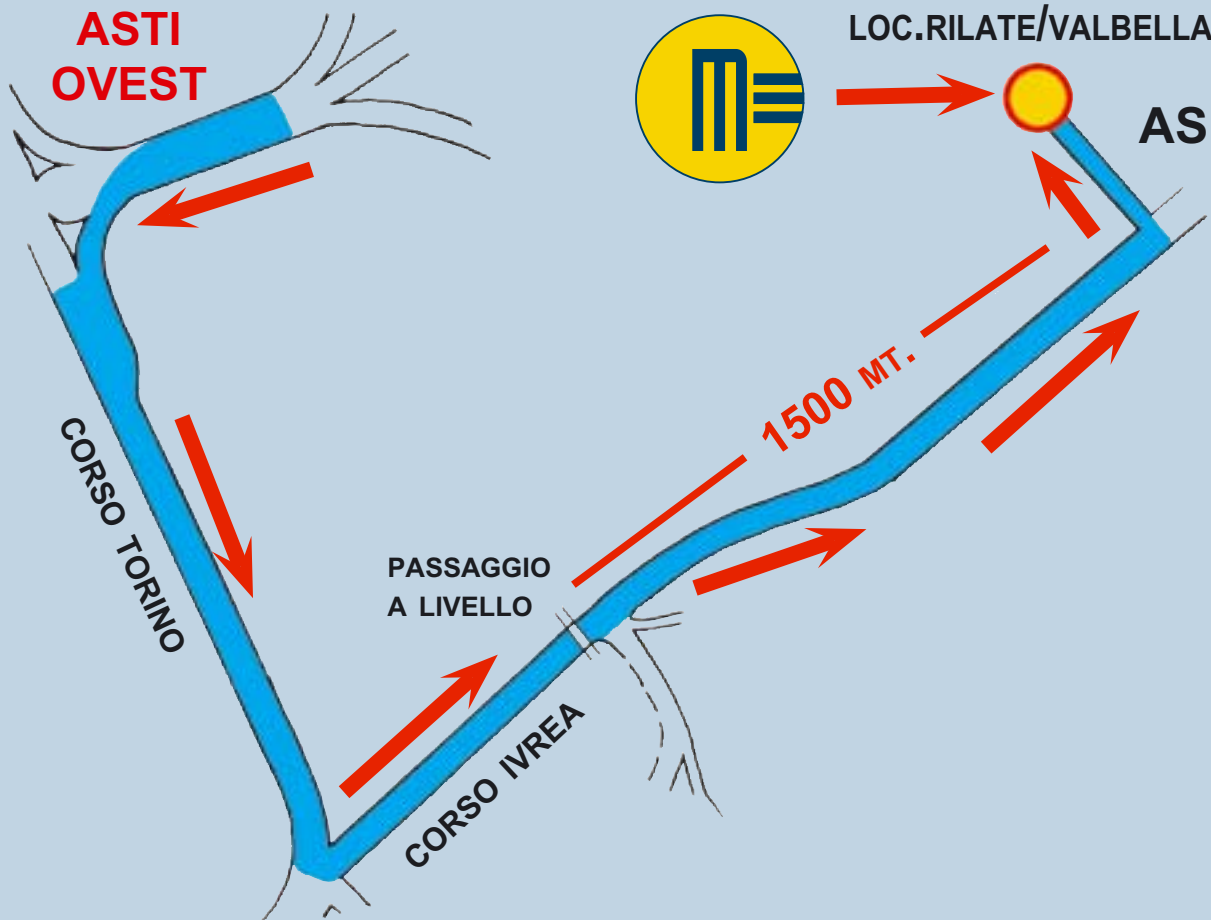
**ASP**

**CORSO TORINO**

**PASSAGGIO  
A LIVELLO**

**CORSO IVREA**

**1500 MT.**







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