

HUB SERVICE MANUAL

DUKE
RACING WHEELS

MAIN CHARACTERISTICS

Materials

Hub shell, axle and caps : Aircraft grade aluminium (7075)
Freewheel body : Grade 5 Titanium (Ti6Al4V)
CNC machining

Bearings

Front hub : 2x 6803 stainless steel sealed bearing (internal axle 17mm diameter)
Rear hub : 4x 6902 stainless steel sealed bearing (internal axle 15mm diameter)

Driving System

The power transmission is made by two toothed wheels.
One is fixed, the other is mobile on a specific spring.

<i>MadMAX :</i> 70 teeth for MTB hubs (5.1°) 40 teeth for ROAD/GRAVEL hubs (9°) compatible with E-Bike	<i>BadBOY :</i> 40 teeth for MTB hubs & ROAD/GRAVEL hubs (9°) compatible with E-Bike
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Sealing

Double wall caps
specific freewheel seal developed in-house by DUKE

Cleaning

Never use a high pressure cleaner
Never apply detergent to the hubs
Use a soft bristle brush with soapy water

Maintenance

The hubs should be checked at least once a year.
If used in extreme rain and mud conditions, the hub should be serviced more frequently.
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DUKE provides this service on request.
The user can also perform the maintenance himself.
The maintenance procedure is described below.
However, improper handling may damage the hub or impair its performance.
Any damage caused will not be covered by the warranty..

ASSEMBLY

Lacing

<i>MadMAX :</i> Straight-pull hubs: Max tension : 1200N Recommended tension : 1100N	<i>BadBOY :</i> J-Bend hubs Max tension : 1200N Recommended tension : 1100N
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Cassette

Tightening torque of 40Nm
(an insufficient torque could may cause the cogs of the cassette to mark the the freewheel body.

Disc

Tightening torque of 6Nm

Hubs weights

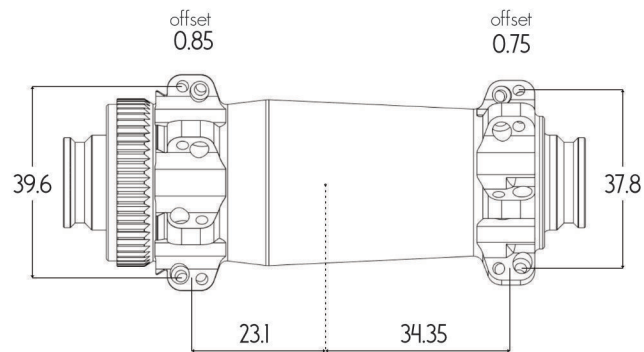
MadMAX CL XDR 24T : front = 92g / rear = 201g
MadMAX CL XD 28T : front = 98g / rear = 202g
MadMAX IS MS 28T : front = 104g / rear = 219g
The weight of the hubs can vary slightly depending on the type of axle and freewheel body chosen.

BadBOY CL XD : front = 108g / rear = 239g
BadBOY IS XD : front = 120g / rear = 257g
The weight of the hubs can vary slightly depending on the type of axle and freewheel body chosen.

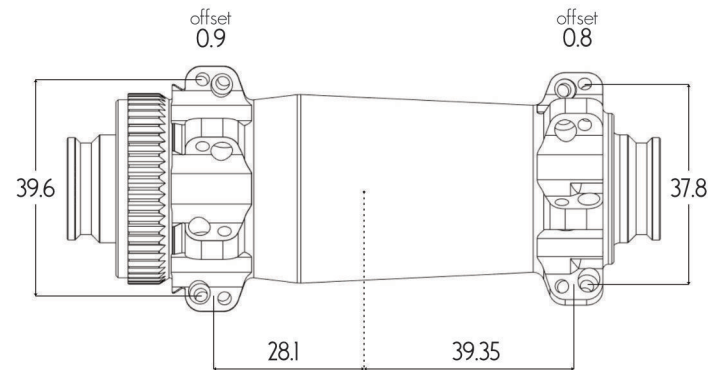
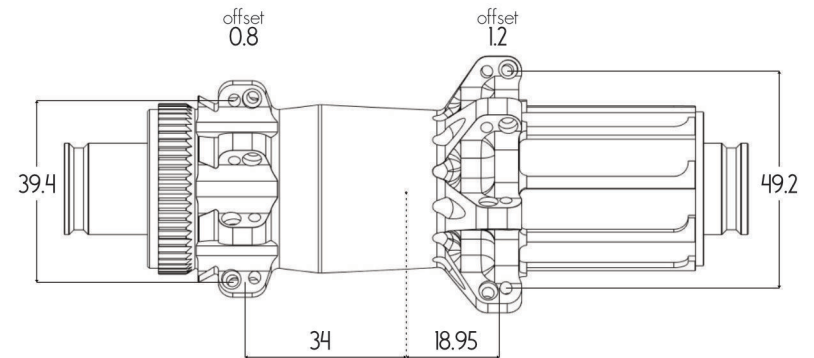
Geometries

These are optimized to the maximum in order to guarantee the best possible stability of the wheel.
We do not know of any better geometry to date.

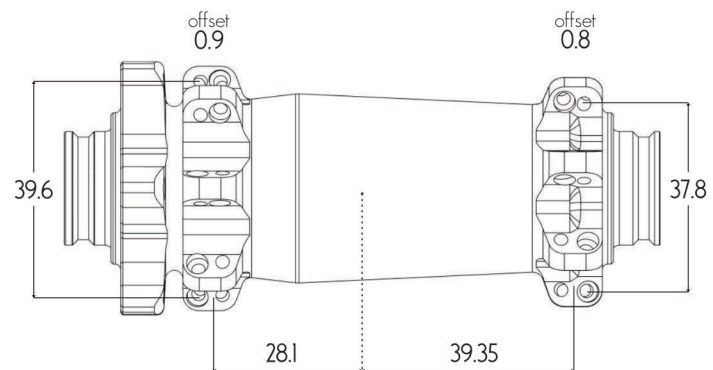
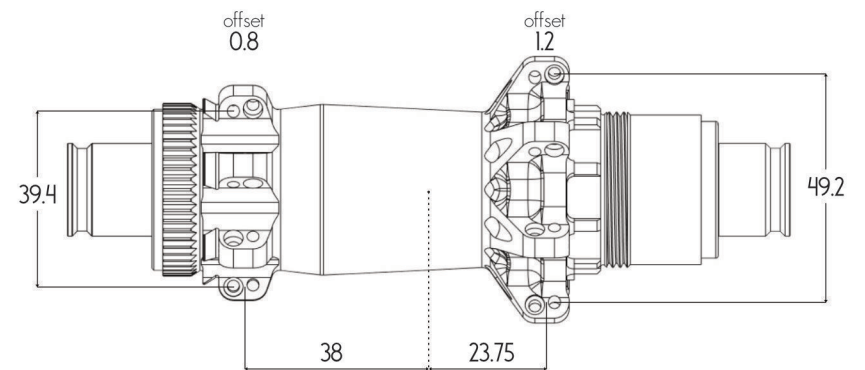
GEOMETRIE



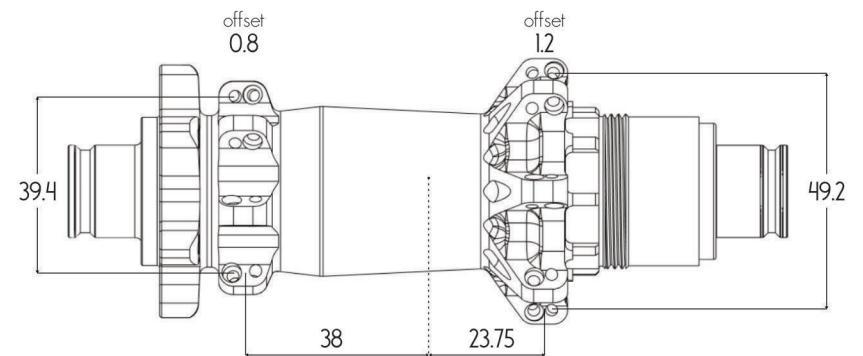
MadMAX CL
(road) 24T



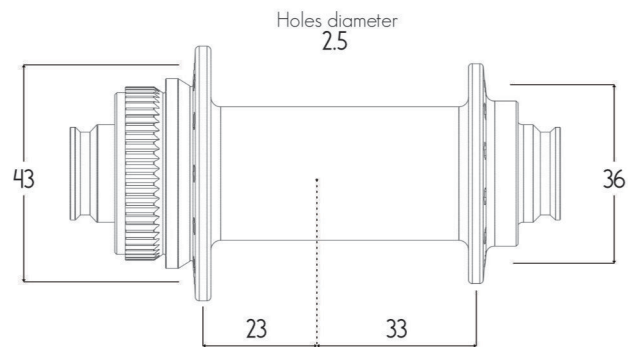
MadMAX CL
(MTB) 24T



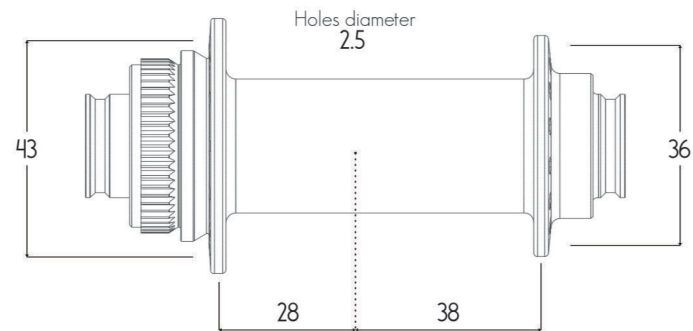
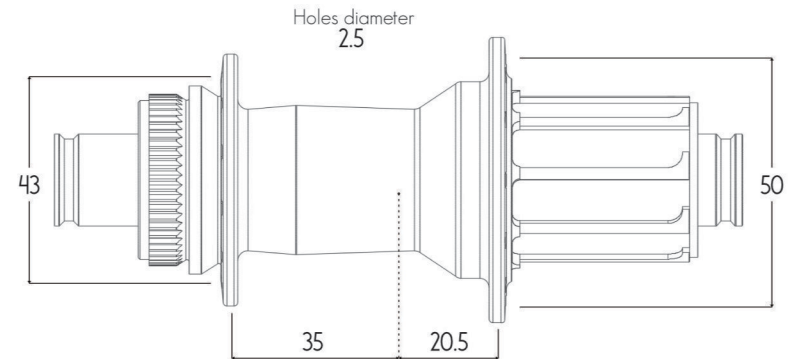
MadMAX IS
(MTB) 28T



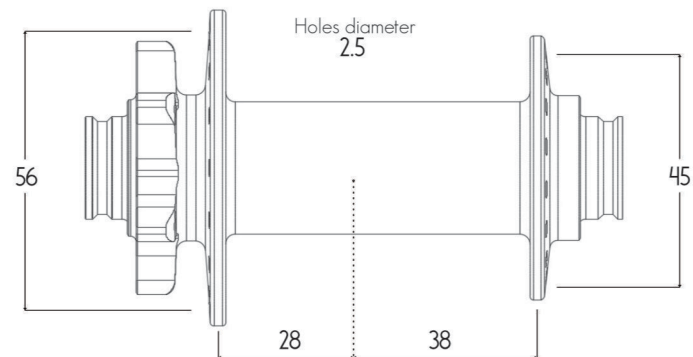
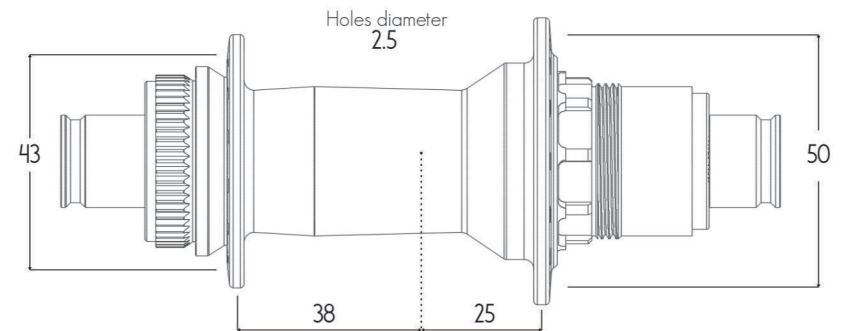
GEOMETRIE



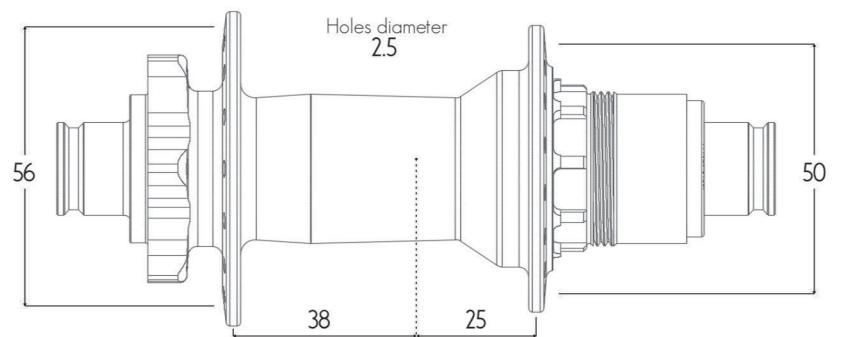
BadBOY CL
(100x12)



BadBoy CL
(Boost)



BadBOY IS
(Boost)

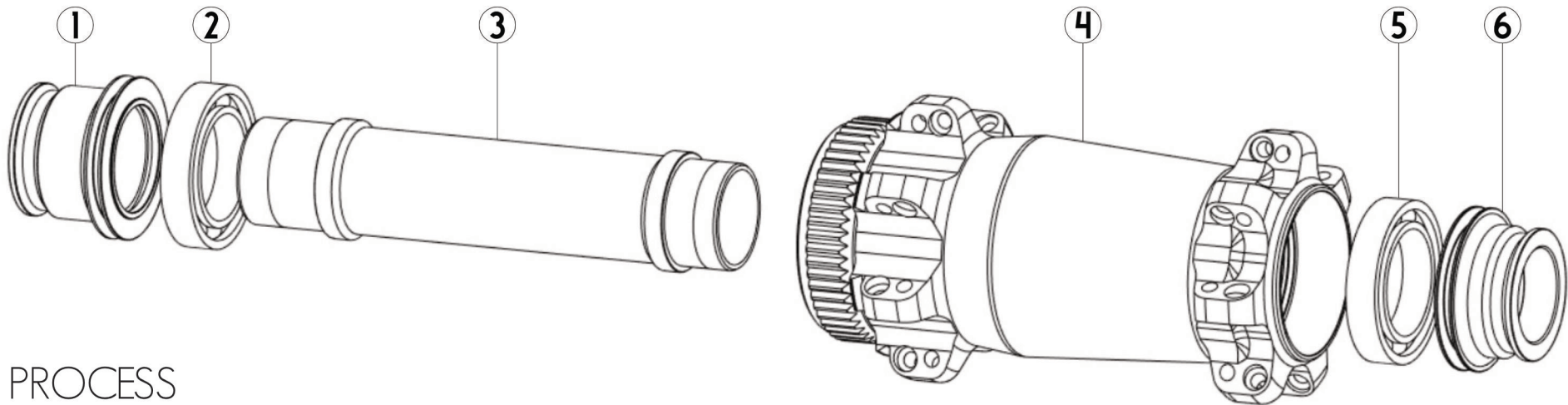


DUKE HUB MAINTENANCE

Make sure your workplace is clean and properly lighted.
Dirt mixed with grease can interfere with the operation of the of the freewheel.

The hubs should be serviced at least once a year.
If used in extreme rain and mud conditions, the hub must be serviced more frequently.

- ① Disc side cap
- ② Bearing 6803 disc side
- ③ Axle
- ④ Hub body
- ⑤ Bearing 6803 opposite disc side
- ⑥ opposite disc side cap



PROCESS

DISASSEMBLY

- 1 / Remove the caps ① & ⑥ by pulling them carefully
- 2 / Push the axle towards the disc side using a suitable tool
- 3 / Remove the bearings from the axle ③
- 4 / Clean all parts, do not spray degreaser on the bearings ② & ⑤ use a dry cloth to remove any dirt.
Use a dry wiper to remove any dirt.

ASSEMBLY

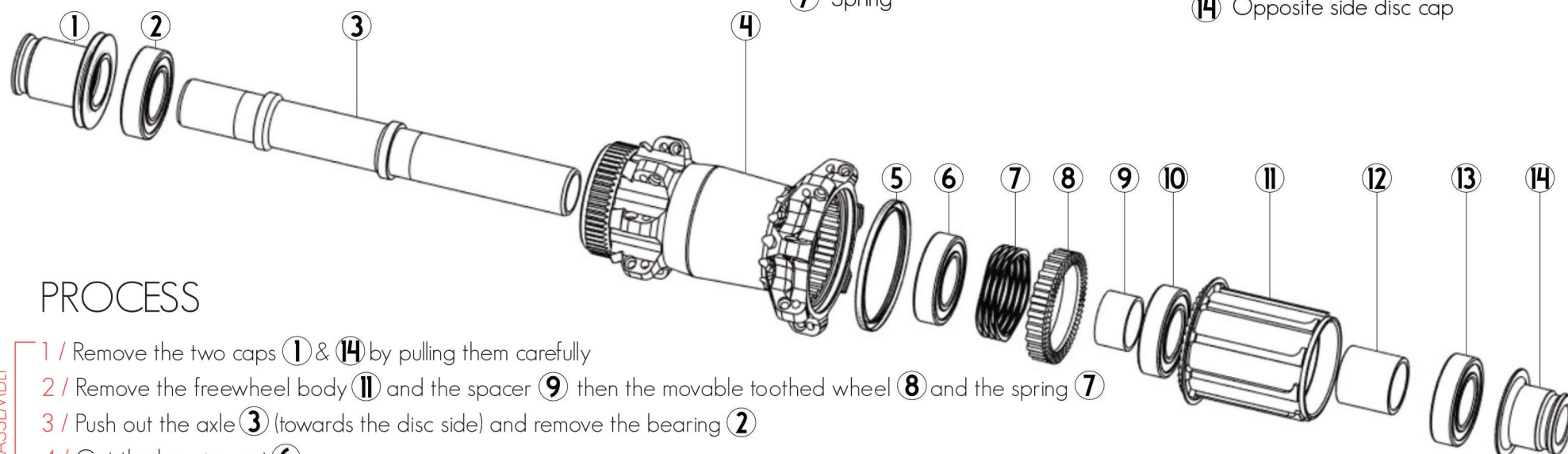
- 5 / Apply a thin layer of DUMOND **TECH D** Pro X MR Grease on the bearing seats of the hub body ④
- 6 / Insert the bearing ② red side out into the hub body
- 7 / Reinsert the axis ③ with the red flange bearing ⑤ towards the outside while maintaining the bearing ② in position (attention to the direction of the axis)
- 8 / Reposition the caps ① & ⑥

Please follow the order in which the bearings are mounted, otherwise they may not function properly.

DUKE FREEWHEEL MAINTENANCE

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- | | |
|-----------------------------------|--|
| ① Disc side cap | ⑧ Mobile toothed wheel |
| ② 6902 Bearing disc side | ⑨ Hub spacer |
| ③ Axle | ⑩ 6902 internal freewheel bearing |
| ④ Hub body | ⑪ Freewheel body |
| ⑤ Sealing ring | ⑫ Freewheel body spacer |
| ⑥ 6902 Bearing side disc opposite | ⑬ 6902 external freewheel bearing (except microspine 6802) |
| ⑦ Spring | ⑭ Opposite side disc cap |



PROCESS

DISASSEMBLY

- 1 / Remove the two caps ① & ⑭ by pulling them carefully
- 2 / Remove the freewheel body ⑪ and the spacer ⑨ then the movable toothed wheel ⑧ and the spring ⑦
- 3 / Push out the axle ③ (towards the disc side) and remove the bearing ②
- 4 / Get the bearing out ⑥
- 5 / For the freewheel body remove the bearing ⑩ then the spacer ⑫ and finally the bearing ⑬

ASSEMBLY

- A / Clean piece by piece with a clean and dry wipe
- B / For the freewheel body, when assembling respect the order ⑩ ⑫ ⑬ (red flange towards the outside)
- C / Apply a thin layer of **DUMONDE TECH D** Pro X MR Grease on the bearing seats of the hub body ④
- D / Mount the bearing ⑥ with the red face out and then ② with the axle (while maintaining the bearing ⑥ in position)
- E / Insert the spacer ⑨
- F / Apply **DUMONDE TECH D** ProX Freehub grease on the teeth of the freewheel body then place the movable toothed wheel and the spring in the hub body
- G / Reposition the caps ① & ⑭

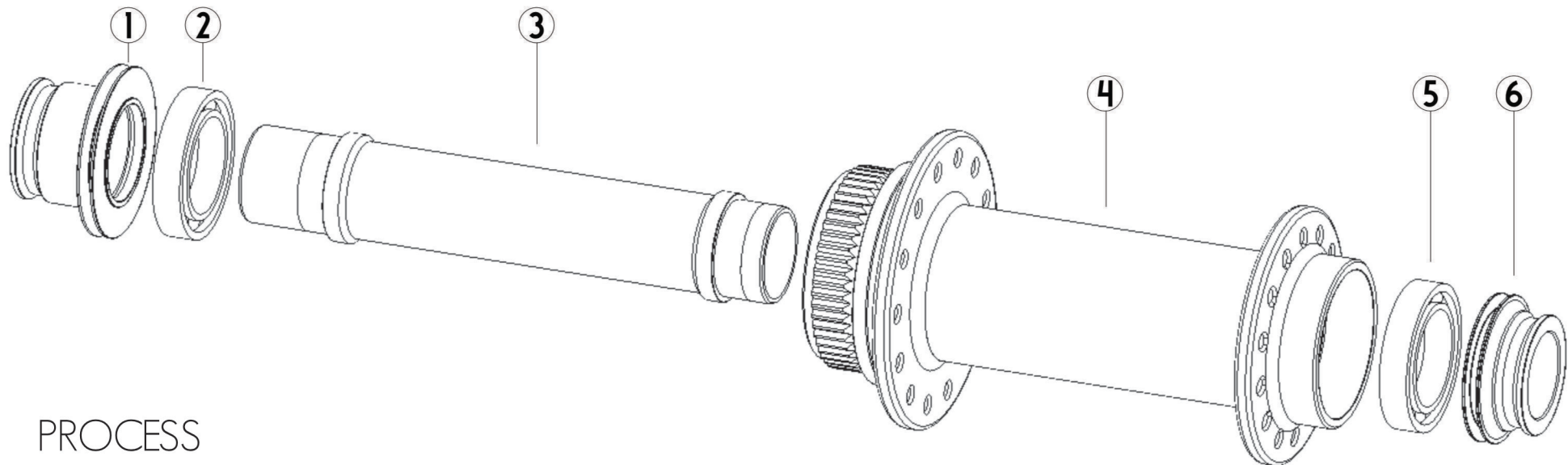
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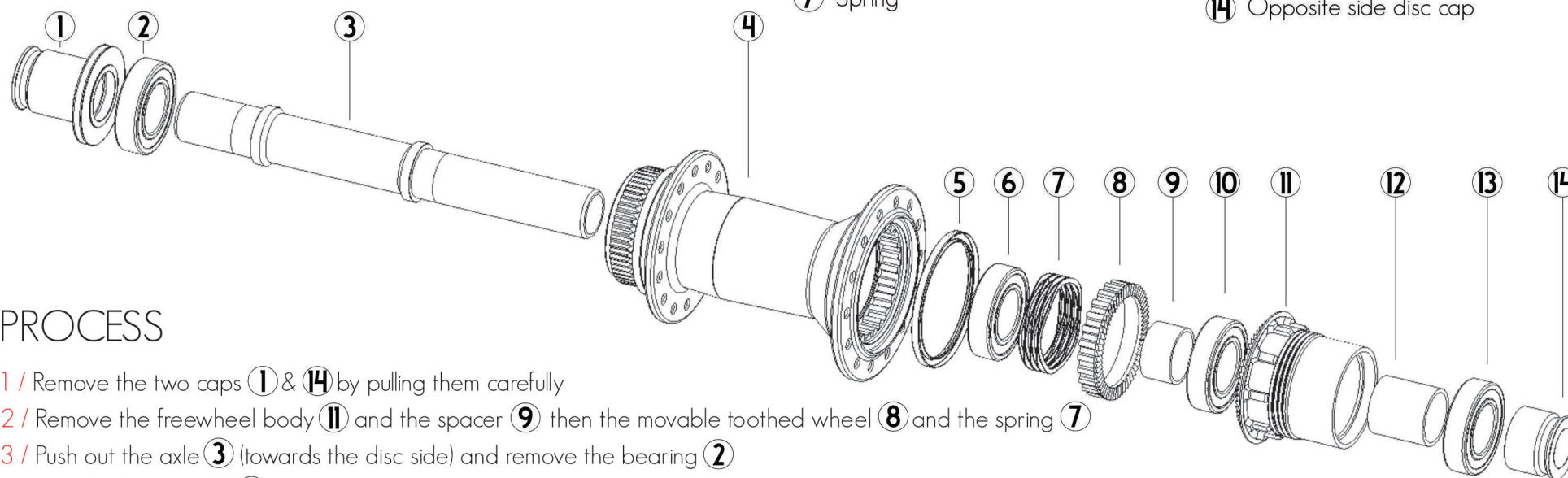
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WARRANTY

DUKE hubs are guaranteed for two years from the date of purchase against any hidden defect. Bearings are wearing parts and are not covered by the warranty. The guarantee does not apply in case of inappropriate use, absence or non-respect of the maintenance advice, modification or incorrect assembly of the hub (spoke profiles, spoke passages, spoke tensions, etc.)

For all additional requests and warranty requests, please contact us by e-mail at the following address :

contact@duke-racingwheels.com



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