

**DUKE HUBS
USER
MANUAL**

DUKE

RACING WHEELS

MAIN FEATURES

Materials

Hub body, axle, endcaps and freewheel body:
Aircraft grade aluminium (7075;6061) CNC machined
Driving system: steel CNC machined

Bearings

Front hub:
2x 6803 2RS Stainless steel sealed bearings (17mm internal axle diameter)
Rear hub:
4x 17287 2RS Stainless steel sealed bearings (17mm internal axle diameter)

Draving system

The transmission of the torque is realized using two ratchet rings.
One is fixed, the other one is movable pushed by springs.
Both are in steel to increase durability.
It is possible to choose the number of engagement teeth :
25 teeth (quieter), 50 teeth, 75 teeth (faster)

Sealing

Double walled endcaps
Freewheel lip seal
2RS Bearings

Weight limit : no

Cleaning

Never use a high pressure washer
Never apply detergent to the hubs
Use a soft-bristled brush with soapy water

Service

The hubs has to be serviced once a year minimum.
In case of extrem rain or mud, the hub has to be serviced more frequently.
DUKE provides this service on request.
The user can himself carry out the maintenance. See below the maintenance procedure. However, wrong manipulations can damage the hub or degrade its performance.
Damages can not be covered by warranty.

BUILDING

Lacing

Classic hubs (J-bend spokes):
Max tension : 1200N
Recommended tension : 1100N
Crossing : 2x or 3x; radial lacing is forbidden and will not be covered by warranty.

Straight-pull hubs:

Max tension : 1300N
Recommended tension : 1100N
Canam SP (road) front hub : radial lacing
Canam SP (road) and Mad Max SP (MTB) : 2 cross in 24 holes; 3 cross in 28 holes

Cassette: tightening torque of 40Nm (lower torque may allow the cassette sprockets to mark the freewheel body.)
Disc: tightening torque of 6 Nm

Hubs weight

Front MadMax 105g – Rear MadMax 220g
Front Canam SP 65g – Rear Canam SP 191g
Front MadMax SP : 88g – Rear MadMax SP : 210g
The weight of the hubs may vary slightly depending on the kind of axle and freewheel body.

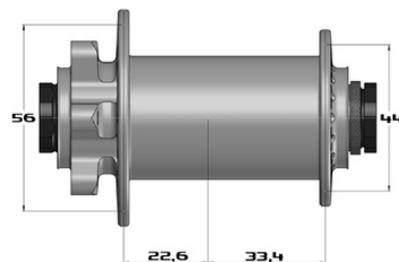
Géométries

These are optimized to the maximum in order to guarantee the best stability of wheel.

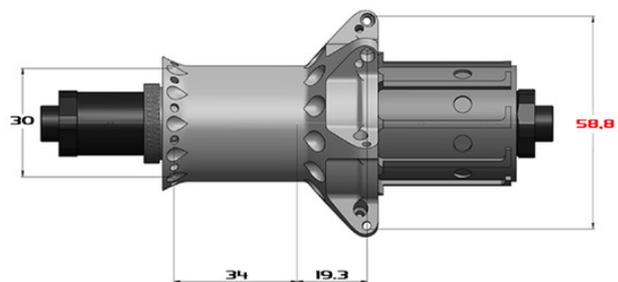
Canam SP 20 et 24 trous



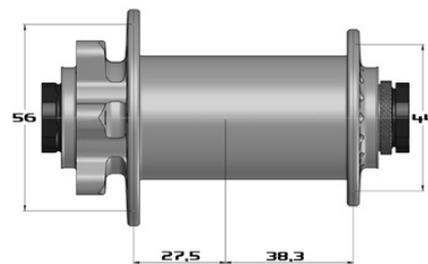
Mad Max 100x15



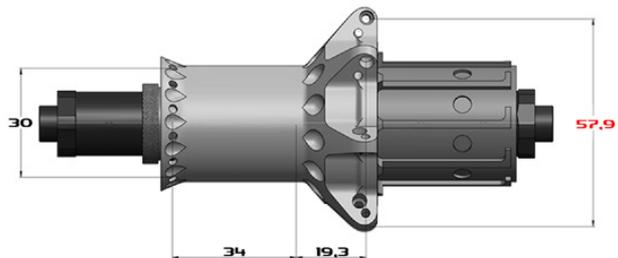
Canam SP 24 trous



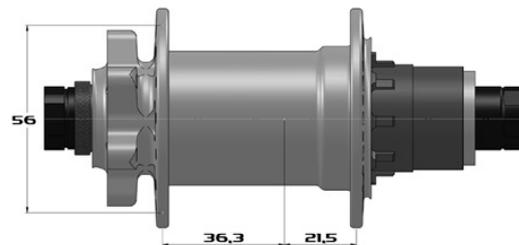
Mad Max 110x15 boost



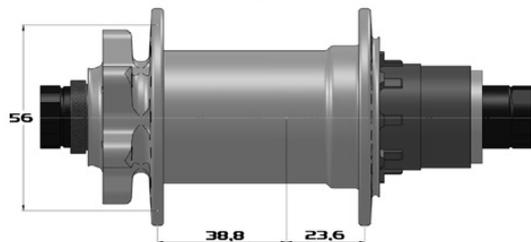
Canam SP 28 trous



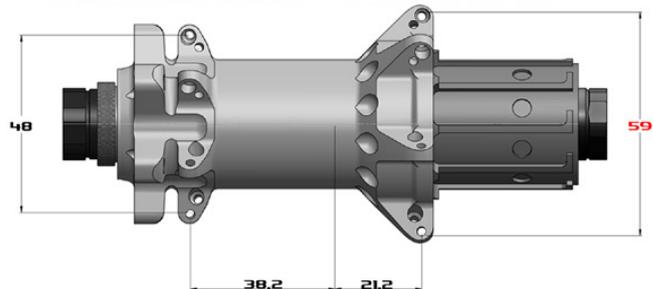
Mad Max 142x12



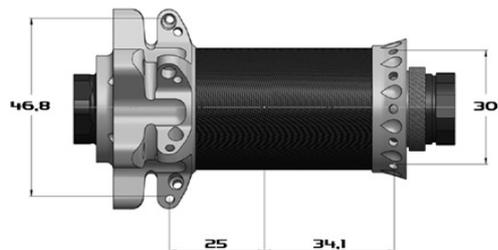
Mad Max 148x12 boost



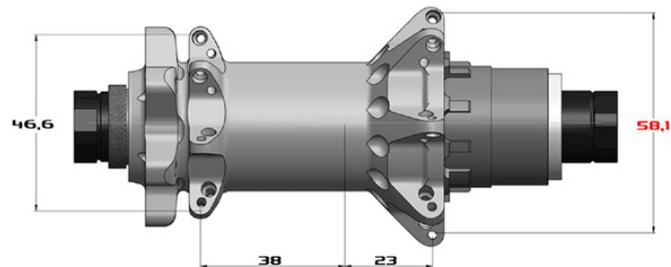
Mad Max SP 142x12 - 24 trous 11v route



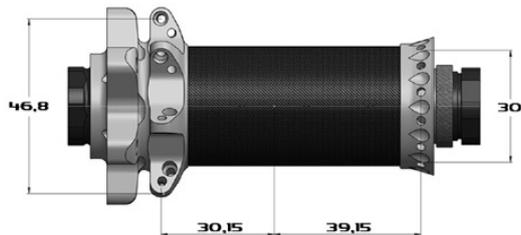
Mad Max SP 100x15 24/28 trous



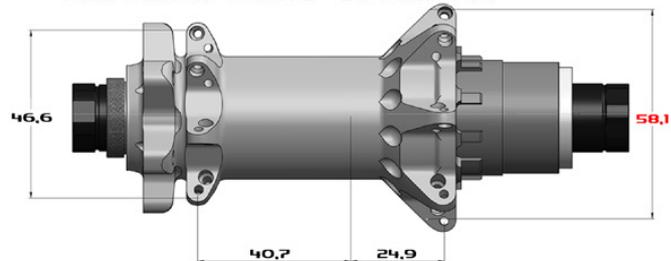
Mad Max SP 142x12 - 28 trous VTT



Mad Max SP 110x15 28 trous



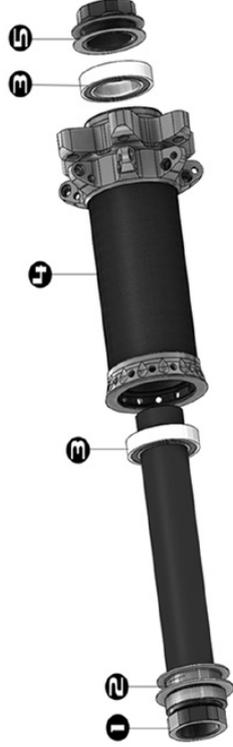
Mad Max SP 148x12 - 28 trous VTT



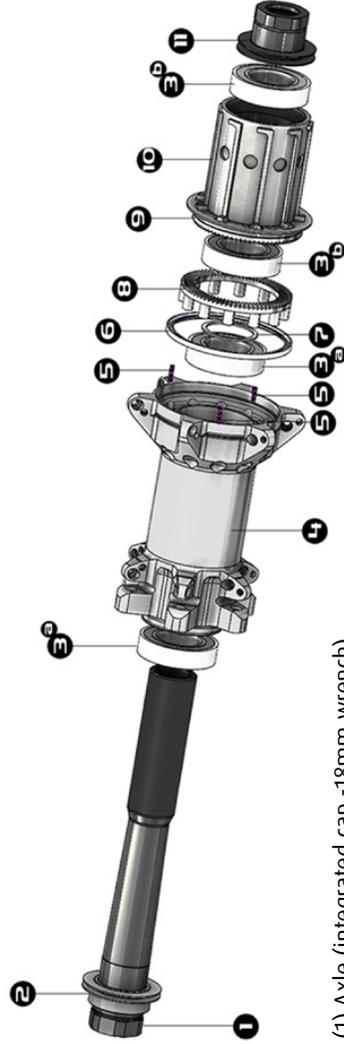
FREEWHEEL SERVICE

Be sure to install you on a clean and light workbench . Small pieces like springs will be to handle. Dirt mixed with oil can prevent the freewheel from working properly.

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



- (1) Axle (integrated cap -19 mm en QR15 - 18 mm en QR12)
- (2) Adjusting nut
- (3) Bearing 6803
- (4) Hub body
- (5) Disc side endcap (19 mm en QR15 - 18 mm en QR12)



- (1) Axle (integrated cap -18mm wrench)
- (2) Preload nut
- (3a) Hub body bearings 17287
- (3b) Freewheel body bearings 17287
- (4) Hub body
- (5) Springs
- (6) Lip seal
- (7) Washers / Spacer
- (8) Mobile ratchet
- (9) Fixed ratchet (fixed to the freewheel body)
- (10) Freewheel body
- (11) Drive side endcap (18mm wrench)

FREEWHEEL SERVICE

Be sure to install you on a clean and light workbench . Small pieces like springs will be to handle. Dirt mixed with oil can prevent the freewheel from working properly. Hubs should be serviced at least once a year. When used in extreme rain and mud conditions, the hub must be serviced more frequently.

Disassembly

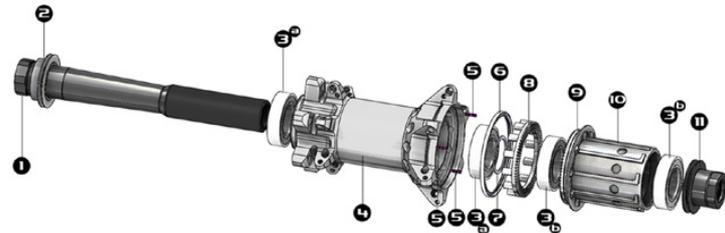
- 1-Unscrew the preload nut (2)
 - 2-Hold the opposite free wheel axle using an 18mm wrench tool (1) or using a vise and unscrew the freewheel end cap using a 18mm wrench tool (11)
 - 3-Pull the freewheel body (10) (be careful to the washers / spacer (7) located between the hub bearing and the freewheel bearing).
 - 4-Lift and remove the lip seal (6) using a flat screwdriver.
 - 5-Remove the mobile ratchet (8) taking care not to lose the springs (5) below.
 - 6-Remove the springs (5) using a very fine screwdriver.
 - 7-Push the axle (1).
 - 8-Clean all parts with a spray degreaser. Insist on the back of the mobile ratchet, pins, springs and their housing. There should be no dirt or grease.
- On bearings: do not spray degreaser, use a dry cloth to remove dirt.
Check teeth ratchet wear.

- (1) Axle (integrated cap -18mm wrench)
- (2) Preload nut
- (3a) Hub body bearings 17287
- (3b) Freewheel body bearings 17287
- (4) Hub body
- (5) Springs
- (6) Lip seal
- (7) Washers / Spacer
- (8) Mobile ratchet
- (9) Fixed ratchet (fixed to the freewheel body)
- (10) Freewheel body
- (11) Drive side endcap (18mm wrench)

Reassembly and greasing the freewheel

After making sure the hub is perfectly clean:

- 9-Put a thin layer of grease on the surface of each bearing (3a, 3b)
 - 10-Insert the axle (1), then the washers / spacer (7).
 - 11-Replace the 3 springs (5) at 120 ° (leave 3 empty spaces between each spring).
 - 12-Oil the pins of the mobile ratchet (8) with a lubricant type WD40, a very fluid oil is enough because the pins slide in self-lubricated bushings.
- Be careful, do not use any grease on the pins, this could prevent the smooth movement of the mobile ratchet.
- 13-Replace the mobile ratchet (8)
 - 14-Replace the lip seal (6) in its location by pressing on the outer edge with a small flat screwdriver. Be careful not to damage the lip. The flat part of the seal must be against the hub body (4), the lip must be turned outside (10)
 - 15-Apply on the teeth of the ratchet the supplied DUKE oil, and also on the seal. A 15W40 oil could also be used.
 - 16-Apply blue Loctite N°243 on the threads of the preload nut. Screw it on the axis up to the endstop (2).
 - 17- Replace the hub axle.
 - 18-Insert the freewheel body (10).
 - 19-Screw the endcap (11), with blue Loctite type N° 243. The tightening torque is 20Nm.
 - 20-Adjust the play using the preload nut (2). Once the nut is in contact with the bearing, move back slightly: the axle (and the freewheel body) must be able to turn freely. The axle must not have any play.
- If the preload nut is too tight, it could damage bearings and reduce performance.

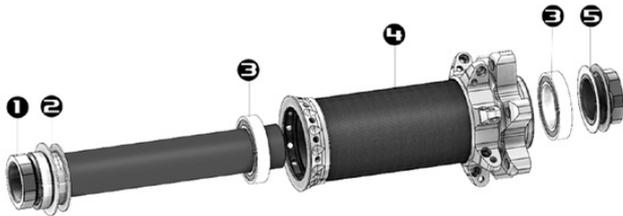


FRONT HUB SERVICE

- 1- Unscrew the play preload nut (2).
- 2- Hold the axle on non disc side with an 18 mm wrench tool (1) or with a vise and unscrew the disc side endcap with a 18mm wrench tool (5).
- 3- Push the axle (1).
- 4- Clean all the parts. Do not spray degreaser on bearings, use a dry cloth to remove any dirt.

After making sure the hub is perfectly clean:

- 5- Put a thin layer of grease on the outer face of the bearings (3).
- 6- Inserted the axle (1)
- 7- Screw the cap (11), with blue Loctite type N° 243. The tightening torque is 20 Nm.
- 8- Adjust the play using the preload nut (2). Once the nut is in contact with the bearing, move back slightly: the axle (and the freewheel body) must be able to turn freely. The axle must not have any play.
If the preload nut is too tight, it could damage bearings and reduce performance.



- (1) Axle (integrated cap -19mm wrench)
- (2) Preload nut
- (3) Bearings 6803
- (4) Hub body
- (5) Disc side endcap

WARRANTY

Duke hubs are warrantied for two years from the date of purchase against any hidden defects.
Bearings are wearing parts and are not guaranteed.
The warranty does not apply in case of improperly use, accident, absence or non-compliance of service, modification or improper mounting of the hub.

DUKE

RACING WHEELS

**3 RUE MADAME DE LA BORDE
85 500 CHAMBRETAUD
FRANCE**

**duke-racingwheels.com
+33 (0)2 51 67 79 60**