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THIS DOCUMENT ONLY COVERS NEW PRODUCTS FOR 2011.
THIS DOCUMENT UPDATES YOUR TECHNICAL INFORMATION AND SHOULD THEREFORE BE KEPT CAREFULLY WITH THE MANUALS FROM PREVIOUS YEARS, WITH NO TIME LIMITATION.
ALL INFORMATION ON PRODUCTS ALREADY INCLUDED IN PREVIOUS RANGES CAN BE FOUND IN THE TECHNICAL MANUALS PUBLISHED SINCE 1997.
PLEASE VISIT THE INTERNET SITE WWW.TECH-MAVIC.COM TO FIND ALL EDITIONS OF THIS MANUAL PUBLISHED SINCE 1997.
This website (in English, French, German, Spanish, Italian and Japanese) is at your complete disposal. All information about Mavic products released since 1997 is available in PDF format and downloadable from this easily accessible and user-friendly site.

Visit: www.tech-mavic.com where you will find all this information. To connect to this website you will need a user name and password:

User name: mavic-com
Password: dealer

Among other things on the website, you will find:

- The technical details on all Mavic products marketed since 1997 - wheels, rims, components - arranged by discipline and by product.
- 4 recap charts of spoke lengths and references for all our wheels, which will help you to manage your spoke stock.
- A program for calculating spoke length: starting with a Mavic rim, select the drilling, lacing pattern and the width of your hub, as well as the diameter of the flanges and the distances between the flange and the frame or fork support; the spoke length required to build your wheel will be calculated automatically.

We hope that this tool will meet your needs. Do not hesitate to point out any malfunctions you identify or improvements that you would like to see.
Use: front wheel only, intended exclusively for track bikes. Any other use (such as on a road bike, tandem, cyclo-cross bike, or off-road use...) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty. Recommended maximum weight of the cyclist and equipment: 100 kg.

WHEEL WEIGHT WITHOUT RETAINING SCREWS

|       | Front | 750 g |

WHEEL REFERENCES

|       | Front | 111 554 10 |

HUB

MAINTENANCE: Clean with a dry cloth or soapy water if necessary. Do not use a high-pressure washer.

RECOMMENDED TUBULAR WIDTH

Dimensions: Ø 700
633 mm
Tubular only / Recommended width: 18 to 21 mm

ACCESSORIES MAINTENANCE

WHEELS SUPPLIED WITH:

- Retaining screw M40124
- Wheel bag
- Wheel user guide

MAINTENANCE

Bearing adjustment

See 2011 TM, page 31
Use: rear wheel only, intended exclusively for track bikes. Any other use (such as on a road bike, tandem, cyclo-cross bike, or off-road use...) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty.

Recommended maximum weight of the cyclist and equipment: 100 kg.

WHEEL WEIGHT WITHOUT FIXING NUT

|        | Rear | 980 g |

WHEEL REFERENCES

|        | Rear | 111 549 13 |

Ø VALVE HOLE

Ø: 6.5 mm
Length: ≥ 32 mm

RECOMMENDED TUBULAR WIDTH

Dimensions: Ø 700
633 mm
Tubular only / Recommended width: 18 to 21 mm

HUB

MAINTENANCE: Clean with a dry cloth or soapy water if necessary. Solvent products are not to be used in any case. Do not use a high-pressure washer.

---

REPLACING THE FRONT AXLE AND BEARINGS

1. Using two 15 mm open-end wrenches, unscrew the axle end screws. Only one of the 2 needs to be unscrewed from the axle in order for it to be extracted from the hub;

2. To remove the 2nd axle end screw, insert a 5 mm Allen wrench inside the axle on the side opposite the remaining axle end screw, hold the axle end screw with a 15 mm open end wrench and unscrew the assembly;

3. Remove the bearings, then install the new ones;

4. Repeat procedure 1 above in reverse order.

---

ACCESSORIES WHEELS SUPPLIED WITH:

• Fixing nuts M40772
• Wheel bag
• Wheel user guide

MAINTENANCE
**ELLIPSE 11**

**Use:** For track bike use only. Any other use (such as on a road bike, tandem, cyclo-cross bike, or off-road use...) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty. Recommended maximum weight of the cyclist and equipment: 100 kg.

**WHEEL WEIGHT WITHOUT FIXING NUTS**
- Front: 905 g
- Rear: 990 g

**WHEEL REFERENCES**
- Front: 112 014 10
- Rear: 112 015 13
- Pair: 112 018 14

**SALES REFERENCES:**
- Front and Rear: 120 334 15

**RIMS**

<table>
<thead>
<tr>
<th>Ø VALVE HOLE</th>
<th>RECOMMENDED TIRE WIDTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø: 6.5 mm</td>
<td>Dimensions: ETRTO 622 x 15C</td>
</tr>
<tr>
<td>Valve extender: 118 952 01</td>
<td>Recommended tire width: 19 to 23 mm</td>
</tr>
<tr>
<td>Length: ≥ 55 mm</td>
<td></td>
</tr>
</tbody>
</table>

**HUBS**

**MAINTENANCE:**
- Clean with a dry cloth or soapy water if necessary.
- Do not use a high-pressure washer.

**WHEEL BUILDING**

<table>
<thead>
<tr>
<th>REFERENCES AND LENGTHS:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front: 120 337 01, length 279 mm (per 10, integrated nipples)</td>
</tr>
<tr>
<td>Rear: 120 338 01, length 296 mm (per 10, integrated nipples)</td>
</tr>
</tbody>
</table>

**FEATURES:**
- Black ultra-bladed straight pull spokes with ABS nipples (self-locking)

**LACING PATTERN:**
- Front: radial
- Rear: 2-cross lacing on both sides

**TENSION:**
- Front: 90 to 110 kg
- Rear drive side: 90 to 110 kg

**ACCESSORIES MAINTENANCE**

<table>
<thead>
<tr>
<th>WHEELS SUPPLIED WITH:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixing nuts 323 886 01</td>
</tr>
<tr>
<td>Rim tape</td>
</tr>
<tr>
<td>Aluminum valve extender, 60 mm, 118 952 01</td>
</tr>
<tr>
<td>Free play bearing adjustment wrench M40123</td>
</tr>
<tr>
<td>Aerodynamic spoke wrench M40567 (with rear wheel)</td>
</tr>
<tr>
<td>Wheel user guide</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MAINTENANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replacing the front and rear axle and bearings</td>
</tr>
<tr>
<td>Replacing a spoke</td>
</tr>
<tr>
<td>Replacing the front rim</td>
</tr>
<tr>
<td>Replacing the rear rim</td>
</tr>
</tbody>
</table>
**COMÈTE ROAD 11**

**Use:** for road bike use only. Any other use (such as on a tandem, cyclo-cross bike, or off-road use...) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty. Recommended maximum weight of the cyclist and equipment: 100 kg.

<table>
<thead>
<tr>
<th>WHEEL WEIGHT WITHOUT SKEWER AND WITHOUT TUBULAR</th>
<th>WHEEL REFERENCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>M10 1165 g</td>
<td>Rear M10 111 543 11</td>
</tr>
<tr>
<td>ED11 1159 g</td>
<td>Rear ED11 111 544 12</td>
</tr>
</tbody>
</table>

**WHEEL REFERENCES**

**ACCESSORIES**

- BR 501 rear quick-release skewer M40150
- ED11 120 locking ring (with rear wheel ED11) 108 317 01
- Rim tape
- Aluminum valve extender, 60 mm, 118 952 01
- Yksion PowerLink rear tubular 23c 118 491 01
- 1 pair of Mavic Exalith brake pads for Exalith brake track: HG/Sram/Mavic 120 164 01 or ED 120 165 01
- Wheel user guide
- Tubular user guide

**MAINTENANCE**

- Replacing the rear axle
- Maintaining and replacing the free wheel mechanism
- Replacing the rear bearings
- Important notes about Exalith rims
- Bonding a tubular

**Refer to the website for quick and convenient access to information:** [www.tech-mavic.com](http://www.tech-mavic.com)

**WHEEL REFERENCES**

- Rear M10 111 543 11
- Rear ED11 111 544 12

**HUBS**

**MAINTENANCE:** Clean with a dry cloth or soapy water if necessary. Do not use a high-pressure washer.

**EXALITH:** for efficient and long-lasting braking performance, use only the special Mavic® Exalith® brake pads supplied with your wheels.

- The use of other brake pads may be dangerous for the user and may void the warranty.
- Please carefully read the «Exalith Warning» provided with your wheels.
- The brake pads can be ordered separately using the following references 120 164 01 (HG, Sram, Mavic) and 120 165 01 (ED).
- Clean with a dry cloth or soapy water if necessary.

**RECOMMENDED TIRE WIDTH**

- **Dimensions:** Ø 700: 633 mm
- Tubular only / Recommended width: 18 to 23 mm

**RECOMMENDED VALVE HOLE**

- Ø 6.5 mm
- Length: ≥ 32 mm

**MAINTENANCE:** Clean with a dry cloth or soapy water if necessary.

**WHEEL WEIGHT WITHOUT SKEWER AND WITHOUT TUBULAR**

- M40077 1165 g (M10)
- M40579 1159 g (ED11)
**COSMIC CARBONE ULTIMATE 11**

**Use:** For road bike use only. Any other use (such as on a tandem, cyclo-cross bike, or off-road use...) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty.

Recommended maximum weight of the cyclist and equipment: 100 kg.

**WHEEL WEIGHT WITHOUT QUICK-RELEASE SKEWER AND WITHOUT TUBULAR**

<table>
<thead>
<tr>
<th></th>
<th>Front</th>
<th>Rear M10</th>
<th>Rear ED11</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>520 g</td>
<td>680 g</td>
<td>665 g</td>
</tr>
</tbody>
</table>

**WHEEL REFERENCES**

<table>
<thead>
<tr>
<th></th>
<th>Front</th>
<th>Rear M10</th>
<th>Rear ED11</th>
<th>Pair M10</th>
<th>Pair ED11</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>11807610</td>
<td>11841011</td>
<td>11807812</td>
<td>11807914</td>
<td>11841114</td>
</tr>
</tbody>
</table>

**RIMS**

**Ø VALVE HOLE**

Ø: 6.5 mm  
Length: ≥ 55 mm

**RECOMMENDED TIRE WIDTH**

Dimensions: Ø 700  
633 tubular only  
Recommended tubular width: 19 to 23 mm

Use only the Mavic carbon rim brake pads supplied with the wheels. The brake pads can be ordered separately using references 120 131 01 (HG, Sram, Mavic) and 120 132 01 (ED).

**HUBS**

**MAINTENANCE:** Clean with a dry cloth or soapy water if necessary. Do not use a high-pressure washer. Do not pull or press on the spokes when handling the quick-release skewer. Avoid transport using a bike carrier.

Only transport the wheels in the wheel bags supplied. Avoid side shocks to the spokes.

**WHEEL BUILDING**

**FEATURES:**

Unidirectional carbon spokes molded into the rim, conventional nipples on rear non-drive side only

**LACING PATTERN:**

Front and rear non-drive side: «diameter» spokes from rim to rim, 2-cross pattern  
Rear non-drive side: radial

**ACCESSORIES**

- BR 681 Titanium front quick-release skewer 323 485 01  
- BR 681 Titanium rear quick-release skewer 323 486 01  
- ED11 120 locking ring (with rear wheel ED11) 108 317 01  
- Wheel bags M40135  
- 1 pair of Mavic Carbon brake pads for braking on carbon rim with the rear wheel: HG/Sram/Mavic 120 131 01 or ED 120 132 01  
- 2 pairs of Mavic Carbon brake pads for braking on carbon rim with the front wheel: HG/Sram/Mavic 120 131 01 and ED 120 132 01  
- Free play bearing adjustment wrench M40123  
- Yksion GripLink front tubular 23c 119 412 01  
- Yksion PowerLink rear tubular 23c 118 451 01  
- Aluminum valve extender, 60 mm, 118 952 01  
- Wheel user guide  
- Tubular user guide

**WHEELS SUPPLIED WITH:**

- MAINTENANCE
  - Replacing the front axle and bearings  
  - Replacing the rear axle  
  - Maintaining and replacing the free wheel mechanism  
  - Replacing the rear bearings  
  - Replacing a nipple  
  - Bonding a tubular

Refer to the website for quick and convenient access to information: [www.tech-mavic.com](http://www.tech-mavic.com)

See 2005 TM, page 20  
See 2008 TM, page 23  
See 2003 TM, page 21  
See 2008 TM, page 24  
See 2008 TM, page 32  
See Mavic tubular user guide
**COSMIC CARBONE 80**

**Use:** For road bike use only. Any other use (such as on a tandem, cyclo-cross bike, or off-road use...) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty.

Recommended maximum weight of the cyclist and equipment: 100 kg.

---

### Wheel Weight Without Quick-Release Skewer and Without Tubular

<table>
<thead>
<tr>
<th></th>
<th>Front</th>
<th>Rear M10</th>
<th>Rear ED11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>800 g</td>
<td>965 g</td>
<td>950 g</td>
</tr>
</tbody>
</table>

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### Wheel References

<table>
<thead>
<tr>
<th></th>
<th>Front</th>
<th>Rear M10</th>
<th>Rear ED11</th>
<th>Pair M10</th>
<th>Pair ED11</th>
</tr>
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<tbody>
<tr>
<td>Reference</td>
<td>11150410</td>
<td>11150511</td>
<td>11150612</td>
<td>11150714</td>
<td>11150814</td>
</tr>
</tbody>
</table>

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### Rims

**Sales References:**

- Front: 120 109 10
- Rear: 120 109 13

**Ø Valve Hole**

- Ø: 6.5 mm
- Length: > 80 mm

**Recommended Tire Width**

- Dimensions: Ø 700
- 633 tubular only
- Recommended tubular width: 19 to 23 mm

Use only the Mavic carbon rim brake pads supplied with the wheels. The brake pads can be ordered separately using references 120 131 01 (HG, Sram, Mavic) and 120 132 01 (ED).

When replacing the rear rim:

1. With the valve hole near you, turn the rim so that the «infobloc» label can be seen.
2. The first spoke to the right of the valve hole is a non-traction spoke and should be inserted in the drive side hub.

---

### Hubs

**Maintenance:**

- Clean with a dry cloth or soapy water if necessary.
- Do not use a high-pressure washer.

---

### Wheel Building

**References and Lengths:**

- Front: 120 113 01, length 233 mm (per 8, integrated nipples)
- Drive side: 120 114 01, length 249 mm (per 10, integrated nipples)
- Non-drive side: 120 115 01, length 231 mm (per 10, integrated nipples)

**Lacing Pattern:**

- Front: radial
- Rear: 2-crossed drive side, radial non-drive side

**Tension:**

- Front: 120 to 140 kg
- Rear drive side: 140 to 160 kg

---

### Accessories

- M40552, 24.8
- M40052
- M40759
- M40063
- M40576

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### Maintenance

- Replacing the front axle
- Replacing the front bearings
- Replacing the rear axle
- Replacing the free wheel mechanism
- Replacing the rear bearings
- Replacing a spoke
- Replacing the front rim
- Replacing the rear rim
- Bonding a tubular

Refer to the website for quick and convenient access to information: [www.tech-mavic.com](http://www.tech-mavic.com)
Use: for road bike use only. Any other use (such as on a tandem, cyclo-cross bike, or off-road use...) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty. Recommended maximum weight of the cyclist and equipment: 100 kg.

WHEEL WEIGHT WITHOUT QUICK-RELEASE SKEWER AND WITHOUT TIRE

<table>
<thead>
<tr>
<th></th>
<th>Front</th>
<th>Rear M10</th>
<th>Rear ED11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front</td>
<td>725 g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rear M10</td>
<td></td>
<td>885 g</td>
<td></td>
</tr>
<tr>
<td>Rear ED11</td>
<td></td>
<td>870 g</td>
<td></td>
</tr>
</tbody>
</table>

WHEEL REFERENCES

<table>
<thead>
<tr>
<th></th>
<th>Front</th>
<th>Rear M10</th>
<th>Rear ED11</th>
<th>Pair M10</th>
<th>Pair ED11</th>
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<tbody>
<tr>
<td>Front</td>
<td>111 672 10</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Rear M10</td>
<td>111 673 11</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rear ED11</td>
<td>111 674 12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair M10</td>
<td>111 675 14</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair ED11</td>
<td>111 676 14</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

RIMS

SALES REFERENCES:

Front: 120 169 10
Rear: 129 169 13

REFERENCE AND LENGTHS:

Front: 120 169 10
Rear: 129 169 13

Available in a pair with the following references:

Pair M10: 111 672 10
Pair ED11: 111 676 14

EXALITH: for efficient and long-lasting braking performance, use only the special Mavic® Exalith® brake pads supplied with your wheels. The use of other brake pads may be dangerous for the user and may void the warranty. Please carefully read the «Exalith Warning » provided with your wheels. Clean with a dry cloth or soapy water if necessary. The brake pads can be ordered separately using the following references 120 164 01 (HG, Sram, Mavic) and 120 165 01 (ED).

MAINTENANCE: Clean with a dry cloth or soapy water if necessary. Do not use a high-pressure washer.

HUBS

MAINTENANCE: Clean with a dry cloth or soapy water if necessary. Do not use a high-pressure washer.

FEATURES:

Unidirectional R2R carbon spokes (rim to rim), ABS nipples

LACING PATTERN:

Front and Rear: 2-cross lacing on both sides

TENSION:

Front: 80 to 100 kg
Rear drive side: 130 to 150 kg

REFERENCES AND LENGTHS:

WHEEL BUILDING

Accessories

• BR 601 front quick-release skewer M40149
• BR 601 rear quick-release skewer M40150
• Removable computer magnet (front wheel) 996 245 01
• Free play adjustment wrench M40123 (with rear wheel)
• Aerodynamic spoke wrench 101 295 01 (with rear wheel)
• Spoke wrench M40001 (with rear wheel)
• Rim tape
• ED11 12D locking ring (with rear wheel ED11) 108 317 01
• 1 pair of Mavic Exalith brake pads for Exalith brake track with the rear wheel: HG/Sram/Mavic 120 164 01 or ED 120 165 01
• 2 pairs of Mavic Exalith brake pads for Exalith brake track with the front wheel: HG/Sram/Mavic 120 164 01 and ED 120 165 01
• 2 Mavic butyl inner tubes 111 040 01
• Wheel user guide
• Tire user guide

WHEELS SUPPLIED WITH:

• Yksion GripLink front clincher 23c 118 498 01
• Yksion PowerLink rear clincher 23c 118 502 01

ACCESSORIES

Replacing the front axe and bearings
Replacing the rear axe
Maintaining and replacing the free wheel mechanism
Replacing the rear bearings
Replacing a spoke
Replacing the front rim
New hub cap
Replacing the rear rim

Important notes about Exalith rims
Tire replacement

Refer to the website for quick and convenient access to information: www.tech-mavic.com

WHEEL WEIGHT WITHOUT QUICK-RELEASE SKEWER AND WITHOUT TIRE

<table>
<thead>
<tr>
<th></th>
<th>Front</th>
<th>Rear M10</th>
<th>Rear ED11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front</td>
<td>725 g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rear M10</td>
<td></td>
<td>885 g</td>
<td></td>
</tr>
<tr>
<td>Rear ED11</td>
<td></td>
<td>870 g</td>
<td></td>
</tr>
</tbody>
</table>

WHEEL REFERENCES

<table>
<thead>
<tr>
<th></th>
<th>Front</th>
<th>Rear M10</th>
<th>Rear ED11</th>
<th>Pair M10</th>
<th>Pair ED11</th>
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</thead>
<tbody>
<tr>
<td>Front</td>
<td>111 672 10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rear M10</td>
<td>111 673 11</td>
<td></td>
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</tr>
<tr>
<td>Rear ED11</td>
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<tr>
<td>Pair M10</td>
<td>111 675 14</td>
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<td></td>
</tr>
<tr>
<td>Pair ED11</td>
<td>111 676 14</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
**COSMIC CARBONE SR**

*Use: for road bike use only.* Any other use (such as on a tandem, cyclo-cross bike, or off-road use...) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty. Recommended maximum weight of the cyclist and equipment: 100 kg.

### Wheel Building

**Features:** Unidirectional R2R carbon spokes (rim to rim), ABS nipples

**Lacing Pattern:** Front and Rear: 2-cross lacing on both sides

**Tension:** Front: 80 to 100 kg
Rear drive side: 130 to 150 kg

### Accessories

- BR 601 front quick-release skewer M40149
- BR 601 rear quick-release skewer M40150
- Removable computer magnet (front wheel) 996 245 01
- Free play adjustment wrench M40123 (with rear wheel)
- Aerodynamic spoke wrench 101 295 01 (with rear wheel)
- Spoke wrench M40001 (with rear wheel)
- Aluminum valve extender, 60 mm, 118 952 01
- Rim tape
- ED11 12D locking ring (with rear wheel ED11) 108 317 01
- Wheel user guide

### References and Lengths

<table>
<thead>
<tr>
<th>Feature</th>
<th>Front and Rear Non-Drive Side: 119 901 01, R2R spokes (per 5, with ABS nipples) and 2 hub caps 996 836 01, R2R spokes (per 7, with ABS nipples)</th>
</tr>
</thead>
</table>

### MAINTENANCE

- Replacing the front axle and bearings
  - See 2005 TM, page 20
- Replacing the rear axle
  - See 2008 TM, page 23
- Maintaining and replacing the free wheel mechanism
  - See 2003 TM, page 21
- Replacing the rear bearings
  - See 2008 TM, page 24
- See 2009 TM, page 32
- Replacing a spoke
  - See 2009 TM, page 33
- Replacing the front rim
  - See 2011 TM, page 33
- New hub cap
  - See 2009 TM, page 34/35

Refer to the website for quick and convenient access to information: [www.tech-mavic.com](http://www.tech-mavic.com)
**Use:** for road bike use only. Any other use (such as on a tandem, cyclo-cross bike, or off-road use...) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty.

Recommended maximum weight of the cyclist and equipment: 100 kg.

<table>
<thead>
<tr>
<th>Wheel Weight Without Quick-Release Skewer</th>
<th>Wheel References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front: 780 g</td>
<td>Front: 118 093 10</td>
</tr>
<tr>
<td>Rear M10: 975 g</td>
<td>Rear M10: 118 094 11</td>
</tr>
<tr>
<td>Rear ED11: 960 g</td>
<td>Rear ED11: 118 095 12</td>
</tr>
<tr>
<td>Rear ED11: 960 g</td>
<td>Rear ED11: 118 097 14</td>
</tr>
</tbody>
</table>

**Wheels Building**

<table>
<thead>
<tr>
<th>Features</th>
<th>Lacing Pattern</th>
<th>Tension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black steel straight pull spokes with ABS spoke nipples</td>
<td>Front: radial, drive side, radial non-drive side</td>
<td>Free play adjustment wrench to 100 kg</td>
</tr>
<tr>
<td>Rear: 2-crossed drive side, radial non-drive side</td>
<td>Rear drive side: 150 to 170 kg</td>
<td></td>
</tr>
</tbody>
</table>

**Accessories Supplied With:**

- BR 301 front quick release 996 939 01
- BR 301 rear quick release 996 940 01
- Locking ring ED11 120 (with rear wheel ED11) 108 317 01 free play adjustment wrench M40123 (with the rear wheel)
- Spoke wrench M40001 (with rear wheel)
- Aerodynamic spoke wrench M40567 (with rear wheel)
- Alu. valve extender 80 mm, 118 952 01
- Rim tape
- Wheel user guide

**Hubs**

**Maintenance:** Clean with a dry cloth or soapy water if necessary. Do not use a high-pressure washer.

**Rims**

**Sales References:**
- Front: 120 171 10
- Rear: 120 171 13

**Recommended Tire Width**

Dimensions: ETRTO 622 x 13C

Recommended tire width: 19 to 28 mm

When replacing the rear rim:
1. With the valve hole near you, turn the rim so that the «infobloc» label can be seen.
2. The first spoke to the right of the valve hole is a non-traction spoke and should be inserted in the drive side hub.

**Wheel Weight Without Quick-Release Skewer**

<table>
<thead>
<tr>
<th>Wheel Weight Without Quick-Release Skewer</th>
<th>Wheel References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front: 780 g</td>
<td>Front: 118 093 10</td>
</tr>
<tr>
<td>Rear M10: 975 g</td>
<td>Rear M10: 118 094 11</td>
</tr>
<tr>
<td>Rear ED11: 960 g</td>
<td>Rear ED11: 118 095 12</td>
</tr>
<tr>
<td>Rear ED11: 960 g</td>
<td>Rear ED11: 118 097 14</td>
</tr>
</tbody>
</table>

**Wheel References**

<table>
<thead>
<tr>
<th>Wheel References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front: 118 093 10</td>
</tr>
<tr>
<td>Rear M10: 118 094 11</td>
</tr>
<tr>
<td>Rear ED11: 118 095 12</td>
</tr>
<tr>
<td>Rear ED11: 118 097 14</td>
</tr>
</tbody>
</table>

**Wheel Supplied With:**

- Replacing the front axle
- Replacing the front轴承
- Replacing the rear axle
- Replacing the free wheel mechanism
- Replacing the rear bearings
- Replacing the spoke
- Replacing the front rim
- Replacing the rear rim

Refer to the website for quick and convenient access to information: [www.tech-mavic.com](http://www.tech-mavic.com)
**COSMIC ELITE 11**

**Use:** for road bike use only. Any other use (such as on a tandem, cyclo-cross bike, or off-road use...) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty. Recommended maximum weight of the cyclist and equipment: 100 kg.

**WHEEL WEIGHT WITHOUT QUICK-RELEASE SKEWER**

<table>
<thead>
<tr>
<th></th>
<th>Front</th>
<th>Rear M10</th>
<th>Rear ED11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>815 g</td>
<td>955 g</td>
<td>970 g</td>
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**WHEEL REFERENCES**

<table>
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<tr>
<th></th>
<th>Front</th>
<th>Rear M10</th>
<th>Rear ED11</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>112 108 10</td>
<td>112 109 11</td>
<td>112 110 12</td>
</tr>
<tr>
<td></td>
<td>112 111 14</td>
<td>112 112 14</td>
<td></td>
</tr>
</tbody>
</table>

**RIMS**

**SALES REFERENCES:** Front and Rear: 120 173 15

**Ø VALVE HOLE**

- Ø: 6.5 mm
- Length: ≥ 55 mm

**RECOMMENDED TIRE WIDTH**

- Dimensions: ETRTO 622 x 15C
- Recommended tire width: 19 to 32 mm

**HUBS**

**MAINTENANCE:** Clean with a dry cloth or soapy water if necessary. Do not use a high-pressure washer.

**WHEEL BUILDING**

**REFERENCES AND LENGTHS:**

- Front: 120 289 01, length 276 mm (per 10 with nipples and 1 retaining ring)
- Drive side: 120 291 01, length 292 mm (per 10, with nipples)
- Non-drive side: 120 290 01, length 276 mm (per 10 with nipples and 1 retaining ring)

**FEATURES:**

- Rear Wheel: black steel bladed, straight pull spokes with ABS spoke nipples
- Front Wheel: Self-Lock type black steel bladed, straight pull spokes with standard nipples

**LACING PATTERN:**

- Front: radial
- Rear: 2-crossed drive side, radial non-drive side

**TENSION:**

- Front: 70 to 90 kg
- Rear drive side: 145 to 165 kg

**REFERENCES AND LENGTHS:**

- 120 289 01, length 276 mm (per 10 with nipples and 1 retaining ring)
- 120 291 01, length 292 mm (per 10, with nipples)
- 120 290 01, length 276 mm (per 10 with nipples and 1 retaining ring)

**ACCESSORIES WHEELS SUPPLIED WITH:**

- Conventional alu quick-release skewer on front M40350
- Conventional alu quick-release skewer on rear M40351
- Rim tape
- Aerodynamic spoke wrench M40567 (with rear wheel)
- Aluminum valve extender, 60 mm, 118 952 01
- ED11 120 D 129 01 lockring (with rear wheel ED11) 108 317 01
- Wheel user guide

**MAINTENANCE**

- Replacing the front axle and bearings: See 2004 TM, page 19
- Replacing the rear axle: See 2004 TM, page 20
- Maintaining and replacing the free wheel mechanism: See 2004 TM, page 21
- Replacing the rear bearings: See 2002 TM, page 22
- Replacing a spoke: See 2008 TM, page 25
- Replacing the front rim: See 2008 TM, page 25
- Replacing the rear rim: See 2010 TM, page 22

Refer to the website for quick and convenient access to information: www.tech-mavic.com
R-SYS SLR 11 (tubular version)

**Use:** for road bike use only. Any other use (such as on a tandem, cyclo-cross bike, or off-road use...) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty.

Recommended maximum weight of the cyclist and equipment: 100 kg.

### Wheel Building

**References and lengths:**
- **Front:** 120 297 01, length 285 mm (per 9, integrated nipples)
- **Drive side:** 120 292 01, length 297.5 mm (per 10, integrated nipples)
- **Non-drive side:** 120 293 01, length 286.7 mm (per 11, integrated nipples)

**Tension:** Front: 75 to 95 kg
Rear drive side: 90 to 110 kg

**Lacing pattern:**
- Front: radial, Tracomp system
- Rear: 2-cross lacing drive side, radial non-drive side, Tracomp system

**Features:**
- Front and rear non-drive side: carbon tubular spokes (Tracomp) - new generation
- Rear drive side: black swaged, bladed, straight pull Zicral spokes with integrated, self-locking M7 nipples

**Accessories:**
- BR 601 front quick-release skewer M40149
- BR 601 rear quick-release skewer M40150
- Removable built-in computer magnet (front) 105 416 01
- Free play adjustment wrench M40123 (with rear wheel)
- Spoke wrench 996 079 01 (with rear wheel)
- Zicral spoke wrench M40567 (with rear wheel)
- Tracomp ring tool 996 080 01
- ED11 123 locking ring (with rear wheel ED11) 108 317 01
- Wheel bags M40135
- 1 pair of Mavic Exalith brake pads for Exalith brake track with the rear wheel: HG/Sram/Mavic 120 164 01 or ED 120 165 01
- 2 pairs of Mavic Exalith brake pads for Exalith brake track with the front wheel: HG/Sram/Mavic 120 164 01 and ED 120 165 01
- Xksion GripLink front tubular 23c 119 412 01
- Xksion PowerLink rear tubular 23c 118 491 01
- Wheel user guide
- Tubular user guide

**Wheel supplied with:**
- Maintenance
- R-SYS SLR 11 (tubular version)

**Accessories:**
- Replacement of the front and bearings
- Replacing the rear axle
- Maintaining and replacing the free wheel mechanism
- Replacing the rear bearings
- Important note for fitting Tracomp spokes
- Identifying a damaged Tracomp spoke
- Removing/Refitting the Tracomp ring
- Truing and replacing a Tracomp spoke
- Replacing the front rim
- Replacing the rear rim
- Important notes about Exalith rims
- Bonding a tubular

**Wheels supplied with:**
- See Mavic tubular user guide

**Refer to the website for quick and convenient access to information:**

www.tech-mavic.com

Never turn a Tracomp spoke nipple without having first removed the Tracomp rings from the hub, otherwise the spoke may be irreversibly damaged.

Never fit a computer magnet other than the one supplied with the wheel.

Only transport the wheels in the wheel bags supplied. Avoid side shocks to the Tracomp spokes.

---

**Wheels without quick-release skewer and without tubular:**

<table>
<thead>
<tr>
<th></th>
<th>Front</th>
<th>Rear M10</th>
<th>Rear ED11</th>
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</thead>
<tbody>
<tr>
<td>Weight</td>
<td>675 g</td>
<td>775 g</td>
<td>760 g</td>
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</tbody>
</table>

**Wheel References:**

<table>
<thead>
<tr>
<th></th>
<th>Front</th>
<th>Rear M10</th>
<th>Rear ED11</th>
<th>Pair M10</th>
<th>Pair ED11</th>
</tr>
</thead>
<tbody>
<tr>
<td>References</td>
<td>120 058 10</td>
<td>111 996 11</td>
<td>111 997 12</td>
<td>120 061 14</td>
<td>120 062 14</td>
</tr>
</tbody>
</table>

---

**Parts and accessories:**

<table>
<thead>
<tr>
<th></th>
<th>Front:</th>
<th>Rear M10:</th>
<th>Rear ED11:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø valve hole</td>
<td>Ø 6.5 mm</td>
<td>Length: ≥ 32 mm</td>
<td></td>
</tr>
</tbody>
</table>

**Recommended tire width:**

- Dimensions: Ø 700
- Tubular only
- Recommended tubular width: 19 to 23 mm

**When replacing the rear rim:**

1. With the valve hole near you, the two raised indicator bumps must be to the right of the valve hole.
2. The spoke in the first hole to the right of the valve hole is a non-traction spoke and should be introduced in the drive side.

**Exalith:** for efficient and long-lasting braking performance, use only the special Mavic® Exalith® brake pads supplied with your wheels. The use of other brake pads may be dangerous for the user and may void the warranty. Please carefully read the «Exalith Warning» provided with your wheels. Clean with a dry cloth or soapy water if necessary.

The brake pads can be ordered separately using the following references 120 164 01 (HG, Sram, Mavic) and 120 165 01 (ED).

**Operations:**
- Replacing the front axle and bearings
- Replacing the rear axle
- Maintaining and replacing the free wheel mechanism
- Replacing the rear bearings
- Identifying a damaged Tracomp spoke
- Removing/Refitting the Tracomp ring
- Truing and replacing a Tracomp spoke
- Replacing the front rim
- Replacing the rear rim
- Important notes about Exalith rims
- Bonding a tubular

**Accessories:**

- Xksion GripLink front tubular 23c 119 412 01
- Xksion PowerLink rear tubular 23c 118 491 01
- Wheel user guide
- Tubular user guide

**Maintenance:**

**Tracomp:**

- Always remove a Tracomp ring before taking the wheel apart.
- Never remove a Tracomp ring with a tool other than the correct one.
- Never replace a damaged Tracomp spoke.
- Never replace a Tracomp spoke on which a Tracomp ring is still fitted.

**Exalith brake pads:**

- HG/Sram/Mavic 120 164 01 or ED 120 165 01
- Mavic tubular user guide
Use: for road bike use only. Any other use (such as on a tandem, cyclo-cross bike, or off-road use...) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty.
Recommended maximum weight of the cyclist and equipment: 100 kg.

**R-SYS SLR (clincher version)**

**WHEEL WEIGHT WITHOUT QUICK-RELEASE SKEWER AND WITHOUT TIRE**

<table>
<thead>
<tr>
<th></th>
<th>Front</th>
<th>Rear M10</th>
<th>Rear ED11</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>605 g</td>
<td>780 g</td>
<td>765 g</td>
</tr>
</tbody>
</table>

**WHEEL REFERENCES**

<table>
<thead>
<tr>
<th></th>
<th>Front</th>
<th>Rear M10</th>
<th>Rear ED11</th>
<th>Pair M10</th>
<th>Pair ED11</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>120 057 10</td>
<td>111 993 11</td>
<td>111 991 12</td>
<td>120 059 14</td>
<td>120 060 14</td>
</tr>
</tbody>
</table>

**RIMS**

**SALES REFERENCES:**

- Clincher:
  - Front: 120 206 10
  - Rear: 120 206 13

**FEATURES:***

- Front and rear non-drive side: carbon tubular spokes (Tracomp) - new generation
- Rear drive side: black round, straight pull Zicral spokes with integrated, self-locking M7 nipples

**LACING PATTERN:**

- Front: radial, Tracomp system
- Rear drive side: 2-cross lacing drive side, radial non-drive side, Tracomp system

**HUBS**

**MAINTENANCE:**

- Clean with a dry cloth or soapy water if necessary.
- Do not use a high-pressure washer.

**EXALITH:**

- For efficient and long-lasting braking performance, use only the special Mavic Exalith brake pads supplied with your wheels.
- The use of other brake pads may be dangerous for the user and may void the warranty. Please carefully read the «Exalith Warning» provided with your wheels.
- The brake pads can be ordered separately using the following references: 120 164 01 (HG, Sram, Mavic) and 120 165 01 (ED).

**WHEEL BUILDING**

**REFERENCES AND LENGTHS:**

- Front: 120 296 01, length 285 mm (per 9, integrated nipples)
- Drive side: 120 294 01, length 294.5 mm (per 10, integrated nipples)
- Non-drive side: 120 295 01, length 283.7 mm (per 10, integrated nipples)

**TENSION:**

- Front: 75 to 95 kg
- Rear drive side: 90 to 110 kg

**ACCESSORIES**

- • BR 601 front quick-release skewer M40149
- • BR 601 rear quick-release skewer M40150
- • Removable computer magnet (front wheel): 105 416 01
- • Spoke wrench 996 079 01 (with rear wheel)
- • Zicral spoke wrench M40567 (with rear wheel)
- • Tracomp ring tool 996 080 01
- • ED11 12D locking ring (with rear wheel ED11): 108 317 01
- • Wheel bags M40135
- • 1 pair of Mavic Exalith brake pads for Exalith brake track with the rear wheel: HG/Sram/Mavic 120 164 01 or ED 120 165 01
- • 2 pairs of Mavic Exalith brake pads for Exalith brake track with the front wheel: HG/Sram/Mavic 120 164 01 and ED 120 165 01
- • Yksion GripLink front clincher 23c 118 498 01
- • Yksion PowerLink rear clincher 23c 118 502 01
- • 2 Mavic butyl inner tubes 111 040 01
- • Wheel user guide
- • Tire user guide

**WHEELS SUPPLIED WITH:**

- • 996 938 01 M40078
- • 996 853 01 M40063
- • 996 035 01 M40052
- • 996 938 01 M40578
- • 996 853 01 M40579
- • 996 853 01 M40597
- • 996 854 01 M40598
- • 996 853 01 M40592 (ED11)

**MAINTENANCE**

- Replacing the front axle and bearings
- Replacing the rear axle
- Maintaining and replacing the free wheel mechanism
- Replacing the rear bearings
- Important note for fitting Tracomp spokes
- Identifying a damaged Tracomp spoke
- Removing/Refitting the Tracomp ring
- Truing and replacing a Tracomp spoke
- Replacing the front rim
- Replacing the rear rim
- Important notes about Exalith rims
- Tire replacement

Refer to the website for quick and convenient access to information: www.tech-mavic.com

Never turn a Tracomp spoke nipple without having first removed the Tracomp rings from the hub; otherwise the spoke may be irreversibly damaged.
Never fit a computer magnet other than the one supplied with the wheel.
Only transport the wheels in the wheel bags supplied. Avoid side shocks to the Tracomp spokes.
**KSYRIUM SLR** Front (tubular version)

**Use:** for road bike use only. Any other use (such as on a tandem, cyclo-cross bike, or off-road use...) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty. Recommended maximum weight of the cyclist and equipment: 100 kg.

<table>
<thead>
<tr>
<th>WHEEL WEIGHT WITHOUT QUICK-RELEASE SKEWER AND WITHOUT TUBULAR</th>
<th>WHEEL REFERENCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front: 620 g</td>
<td>Front: 111 378 10</td>
</tr>
</tbody>
</table>

- **WHEEL BUILDING**
  - **REFERENCES AND LENGTHS:**
    - Front: 120 302 01, length 284.5 mm (per 12, integrated nipples)
  - **FEATURES:**
    - Black bladed, straight pull Zicral spokes with integrated and self-locking M7 nipples
  - **LACING PATTERN:**
    - Front: radial
  - **TENSION:**
    - Front: 110 to 130 kg

- **ACCESSORIES**
  - WHEELS SUPPLIED WITH:
    - BR 601 front quick-release skewer M40149
    - Computer magnet M40540
    - Wheel bag M40135
    - 2 pairs of Mavic Exalith® brake pads supplied with your wheels
    - HG/Sram/Mavic 120 164 01 and ED 120 165 01
    - Yksion GripLink front tubular 23c 119 412 01
    - Wheel user guide
    - Tubular user guide

- **MAINTENANCE**
  - Replacing the front axle and bearings
  - Replacing a spoke
  - Replacing the front rim
  - Important notes about Exalith rims
  - Bonding a tubular

Refer to the website for quick and convenient access to information: [www.tech-mavic.com](http://www.tech-mavic.com)

**RIMS**

- **SALES REFERENCES:**
  - Tubular: Front: 120 295 01
  - Ø VALVE HOLE
    - Ø: 6.5 mm
    - Length: ≥ 32 mm
  - **RECOMMENDED TIRE WIDTH**
    - Dimensions: Ø 700
    - 633 tubular only
    - Recommended tubular width: 19 to 23 mm

**HUBS**

- **MAINTENANCE:**
  - Clean with a dry cloth or soapy water if necessary.
  - Do not use a high-pressure washer.

- **EXALITH:** for efficient and long-lasting braking performance, use only the special Mavic® Exalith® brake pads supplied with your wheels. The use of other brake pads may be dangerous for the user and may void the warranty. Please carefully read the «Exalith Warning» provided with your wheels. Clean with a dry cloth or soapy water if necessary.

- The brake pads can be ordered separately using the following references 120 164 01 (HG, Sram, Mavic) and 120 165 01 (ED).

- **SALES REFERENCES:**
  - Tubular: Front: 120 295 01

- **REFERENCES AND LENGTHS:**
  - 120 302 01, length 284.5 mm (per 12, integrated nipples)

- **WHEEL WEIGHT WITHOUT QUICK-RELEASE SKEWER AND WITHOUT TUBULAR:**
  - Front: 620 g

- **WHEEL REFERENCES:**
  - Front: 111 378 10
**KSYRIUM SLR Front (clincher version)**

**Use:** for road bike use only. Any other use (such as on a tandem, cyclo-cross bike, or off-road use...) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty. Recommended maximum weight of the cyclist and equipment: 100 kg.

**Wheel Building**

**References and Lengths:**
- Front: 120 302 01, length 284.5 mm (per 12, integrated nipples)

**Features:**
- Black bladed, straight pull Zicral spokes with integrated and self-locking M7 nipples

**Lacing Pattern:**
- Front: radial

**Tension:**
- Front: 110 to 130 kg

**Accessories**

- BR 601 front quick-release skewer M40149
- Computer magnet M40540
- Wheel bag M40135
- 2 pairs of Mavic Exalith® brake pads for Exalith® brake track with the front wheel: HG/Sram/Mavic 120 164 01 and ED 120 165 01
- Yksion GripLink front clincher 23c 118 498 01
- 1 Mavic butyl inner tube 111 840 01
- Wheel user guide
- Tire user guide

**Wheels Supplied With:**

- M40078
- M40052
- M40759
- M40063

**Maintenance**

- Replacing the front axle and bearings: See 2005 TM, page 20
- Replacing a spoke: See 2003 TM, page 23
- Replacing the front rim: See 2003 TM, page 27
- Important notes about Exalith rims: See 2011 TM, page 28
- Tire replacement: See Mavic tire user guide

Refer to the website for quick and convenient access to information: [www.tech-mavic.com](http://www.tech-mavic.com)
KSYRIUM SR

Use: for road bike use only. Any other use (such as on a tandem, cyclo-cross, bike, or off-road use...) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty.

Recommended maximum weight of the cyclist and equipment: 100 kg.

WHEEL WEIGHT WITHOUT QUICK-RELEASE SKEWER AND WITHOUT TIRE

<table>
<thead>
<tr>
<th></th>
<th>Front</th>
<th>Rear M10</th>
<th>Rear ED11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>845 g</td>
<td>815 g</td>
<td>800 g</td>
</tr>
</tbody>
</table>

WHEEL REFERENCES

<table>
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<tr>
<th></th>
<th>Front</th>
<th>Rear M10</th>
<th>Rear ED11</th>
<th>Pair M10</th>
<th>Pair ED11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
<td>112 018 10</td>
<td>112 019 11</td>
<td>112 020 12</td>
<td>112 021 14</td>
<td>112 022 14</td>
</tr>
</tbody>
</table>

SALES REFERENCES:

|        | Front: 120 209 10 | Rear: 120 209 13 |

RIMS

0 VALVE HOLE

- Ø: 6.5 mm
- Length: ≥ 32 mm

RECOMMENDED TIRE WIDTH

- Dimensions: ETRTO 622 x 15C
- Recommended tire width: 19 to 32 mm

When replacing the rear rim:

3. With the valve hole near you, the two raised indicator bumps must be to the right of the valve hole.

4. The spoke in the first hole to the right of the valve hole is a non-traction spoke and should be inserted in the drive side.

HUBS

MAINTENANCE:

- Clean with a dry cloth or soapy water if necessary.
- Do not use a high-pressure washer.

WHEEL BUILDING

REFERENCES AND LENGTHS:

<table>
<thead>
<tr>
<th></th>
<th>Front: 120 302 01, length 285 mm (per 12, integrated nipples)</th>
<th>Drive side: 120 301 01, length 294.5 mm (per 10, integrated nipples)</th>
<th>Non-drive side: 120 295 01, length 284 mm (per 10, integrated nipples)</th>
</tr>
</thead>
</table>

LACING PATTERN:

- Front: radial

ACCESSORIES

- BR 601 front quick-release skewer M40149
- BR 601 rear quick-release skewer M40150
- Computer magnet M40540 (with front wheel)
- Free play adjustment wrench M40123 (with rear wheel)
- Spoke wrench 996 079 01 (with rear wheel)
- Zicral spoke wrench M40567
- ED11 12D locking ring (with rear wheel ED11) 108 317 01
- Wheel user guide

WHEELS SUPPLIED WITH:

- BR 601 front quick-release skewer M40149
- BR 601 rear quick-release skewer M40150
- Computer magnet M40540 (with front wheel)
- Free play adjustment wrench M40123 (with rear wheel)
- Spoke wrench 996 079 01 (with rear wheel)
- Zicral spoke wrench M40567
- ED11 12D locking ring (with rear wheel ED11) 108 317 01
- Wheel user guide

MAINTENANCE

- Replacing the front axle and bearings See 2005 TM, page 20
- Replacing the rear axle See 2008 TM, page 24
- Maintaining and replacing the free wheel mechanism See 2003 TM, page 21
- Replacing the rear bearings See 2008 TM, page 24
- Important note for fitting Tracomp spokes See 2008 TM, page 28
- Removing/Refitting the Tracomp ring See 2009 TM, page 36
- Truing and replacing a Tracomp spoke See 2008 TM, page 30
- Replacing a spoke See 2003 TM, page 23
- Replacing the front rim See 2008 TM, page 30
- Replacing the rear rim See 2008 TM, page 31

Refer to the website for quick and convenient access to information: www.tech-mavic.com

Never turn a Tracomp spoke nipple without having first removed the Tracomp rings from the hub, otherwise the spoke may be irreversibly damaged.

Never fit a computer magnet other than the one supplied with the wheel.

Only transport the wheels in the wheel bags supplied. Avoid side shocks to the Tracomp spokes.
### KSYRIUM SL 11

**Use:** For road bike use only. Any other use (such as on a tandem, cyclo-cross bike, or off-road use...) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty. Recommended maximum weight of the cyclist and equipment: 100 kg.

### Wheel Weight Without Quick-Release Skewer

<table>
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<tr>
<th></th>
<th>Front</th>
<th>Rear M10</th>
<th>Rear ED11</th>
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<tbody>
<tr>
<td>Weight</td>
<td>645 g</td>
<td>855 g</td>
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### Wheel References

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<td>Number</td>
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<td>112 162 11</td>
<td>112 163 12</td>
<td>112 164 14</td>
<td>112 165 14</td>
</tr>
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</table>

### Rims

**Sales References:**

- **Black:**
  - Front: 120 210 10
  - Rear: 120 210 13

**Recommended Tire Width**

- **Dimensions:** Ø 700: ETRTO 622 x 15C
- **Recommended tire width:** 19 to 32 mm

**When replacing the rear rim:**
1. With the valve hole rear you, the two raised indicator bumps must be to the right of the valve hole.
2. The spoke in the first hole to the right of the valve hole should be introduced into the drive side in a marked hole on the hub.

### Hubs

**Maintenance:**

- Clean with a dry cloth or soapy water if necessary.
- Do not use a high-pressure washer.

### Wheel Building

**References and Lengths:**

- **Front:** 120 302 01, length 284.5 mm (per 12, integrated nipples)
- **Rear drive side:** 120 303 01, length 275 mm (per 10, integrated nipples)
- **Rear non-drive side:** 120 304 01, length 298.5 mm (per 10, integrated nipples)

**Features:**

- Black bladed, straight pull Zicral spokes with integrated, and self-locking M7 nipples

**Lacing Pattern:**

- Front: radial
- Rear: Isopulse

**Tension:**

- Front: 110 to 130 kg
- Rear drive side: 120 to 140 kg

### Accessories

- BR 601 front quick-release skewer M40149
- BR 601 rear quick-release skewer M40150
- Computer magnet M40540 (with front wheel)
- Free play adjustment wrench M40123 (with rear wheel)
- Zicral spoke wrench M40494 (with rear wheel)
- Spoke wrench 996 079 01 (with rear wheel)
- ED11 12D locking ring (with rear wheel ED11) 108 317 01
- Wheel user guide

### Maintenance

- Replacing the front axle and bearings: See 2005 TM, page 20
- Replacing the rear axle: See 2007 TM, page 20
- Maintaining and replacing the free wheel mechanism: See 2003 TM, page 21
- Replacing the rear bearings: See 2003 TM, page 22
- Replacing a spoke: See 2003 TM, page 23
- Replacing the front rim: See 2003 TM, page 27
- Replacing the rear rim: See 2006 TM, page 17

Refer to the website for quick and convenient access to information: [www.tech-mavic.com](http://www.tech-mavic.com)
Use: for road bike use only. Any other use (such as on a tandem, cyclo-cross bike, or off-road use...) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty.

Recommended maximum weight of the cyclist and equipment: 100 kg.

**WHEEL WEIGHT WITHOUT QUICK-RELEASE SKEWER**

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<tr>
<th></th>
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<th>Black 875 g</th>
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<td>112 219 14</td>
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<td>112 216 11</td>
<td>112 218 12</td>
<td>112 219 14</td>
<td>112 221 14</td>
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**REFERENCES WHEELS**

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<th>Rear: 120 219 13</th>
<th>Silver: Front: 120 220 10</th>
<th>Rear: 120 220 13</th>
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**RIMS**

- Ø VALVE HOLE: Ø 6.5 mm
- Length: ≥ 32 mm

- RECOMMENDED TIRE WIDTH:
  - Dimensions: Ø 700: ETRTO 622 x 15C
  - Recommended tire width: 19 to 32 mm

When replacing the rear rim:
1. With the valve hole near you, the two raised indicator bumps must be to the left of the valve hole
2. The first spoke to the right of the valve hole is a traction spoke and should be inserted in the hub non-drive side

**MAINTENANCE:**

- Black:
  - Silver:
  - Ultra-flat straight pull stainless steel spokes with integrated and self-locking M7 nipples
  - Front: radial
  - Rear: Isopulse
  - Tension: Front: 80 to 90 kg
  - Rear drive side: 140 to 160 kg

**REFERENCES AND LENGTHS:**

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</table>

**ACCESSORIES MAINTENANCE:**

- WHEELS SUPPLIED WITH:
  - BR 301 front quick release 996 939 01
  - BR 301 rear quick release 996 940 01
  - Free play adjustment wrench M40123 (with rear wheel)
  - Spoke wrench M40567 (with rear wheel)
  - Spoke wrench 996 079 01 (with rear wheel)
  - ED11 12D locking ring (with rear wheel 996 317 01
  - Wheel user guide

**MAINTENANCE:**

- Replacing the front axle and bearings See 2005 TM, page 20
- Replacing the rear axe See 2007 TM, page 20
- Maintaining and replacing the free wheel mechanism See 2003 TM, page 21
- Replacing the rear bearings See 2004 TM, page 22
- Replacing a spoke See 2011 TM, page 30
- Replacing the front rim See 2008 TM, page 25
- Replacing the rear rim See 2009 TM, page 31

Refer to the website for quick and convenient access to information: www.tech-mavic.com
Use: for road bike use only. Any other use (such as on a tandem, cyclo-cross bike, or off-road use...) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty. Recommended maximum weight of the cyclist and equipment: 100 kg.

**WHEEL WEIGHT WITHOUT QUICK-RELEASE SKEWER**

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<tr>
<th></th>
<th>Black</th>
<th>White</th>
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</thead>
<tbody>
<tr>
<td>Front</td>
<td>770 g</td>
<td></td>
</tr>
<tr>
<td>Rear M10</td>
<td>920 g</td>
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<tr>
<td>Rear ED11</td>
<td>905 g</td>
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**WHEELS REFERENCES**

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<td>111 584 10</td>
</tr>
<tr>
<td>Rear M10</td>
<td>111 570 11</td>
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</tr>
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<td>Rear ED11</td>
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<td>111 586 12</td>
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<td>Pair M10</td>
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<td>111 587 14</td>
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<td>Pair ED11</td>
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**RIMS**

**SALES REFERENCES:**

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<tr>
<th></th>
<th>Black: 120 212 15</th>
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<tbody>
<tr>
<td>Ø 6.5 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length: ≥ 32 mm</td>
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<td></td>
</tr>
</tbody>
</table>

**RECOMMENDED TIRE WIDTH**

Dimensions: Ø 700: ETRTO 622 x 15C

Recommended tire width: 19 to 32 mm

**HUBS**

**MAINTENANCE:** Clean with a dry cloth or soapy water if necessary.

Do not use a high-pressure washer.

**WHEEL BUILDING**

**FEATURES:**

Black bladed steel spokes and front Self-Lock and rear nipples

**LACING PATTERN:**

Front: radial

Rear: Isopulse

**TENSION:**

Front: 80 to 90 kg

Rear drive side: 130 to 150 kg

**ACCESSORIES**

- Conventional aluminum quick-release skewer on front M40350
- Conventional aluminum quick-release skewer on rear M40351
- ED11 12D locking ring (with rear wheel ED11) 108 317 01
- Wheel user guide

**WHEELS SUPPLIED WITH:**

**MAINTENANCE**

Replacing the front axle and bearings

Replacing the rear axle

Maintaining and replacing the free wheel mechanism

Replacing the rear bearings

Replacing a spoke

Replacing the front rim

Replacing the rear rim

Refer to the website for quick and convenient access to information: www.tech-mavic.com
**CROSSTRAIL DISC**

**Use:** Use only on a Cross-country or Cross-mountain MTB fitted with disc brakes. Any other use (such as on a tandem, road bike, cyclo-cross bike, free-ride or downhill bike...) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty. Recommended maximum weight of the cyclist and equipment: 100 kg.

**WHEEL WEIGHT WITHOUT QUICK-RELEASE SKEWER AND WITHOUT ADAPTER**

- **Front:** 750 g
- **Rear:** 925 g

**WHEEL REFERENCE**

- **Front:** 112 005 10
- **Rear:** 112 006 10
- **Pair:** 112 007 14

---

**RIMS**

**SALES REFERENCES:**

Front and rear: 126 330 15

**Ø VALVE HOLE**

- **Ø:** 6.5 mm
- **Length:** ≥ 32 mm

**RECOMMENDED TIRE WIDTH**

Dimensions:

- Ø 26" only
- ETRTO 559 x 19C compatible and Tubeless UST.
- Recommended tire width: 1.5" to 2.3"

When replacing the rim:

1. With the valve hole near you, the two raised indicator bumps must be to the right of the valve hole.
2. The spoke in the first hole to the right of the valve hole is a non-braking spoke and should be introduced into the disc side.

When replacing the rear rim:

1. With the valve hole near you, the two raised indicator bumps must be to the right of the valve hole.
2. The spoke in the first hole to the right of the valve hole is introduced in the drive side.

---

**HUBS**

**MAINTENANCE:**

Clean with a dry cloth or soapy water if necessary. Do not use a high-pressure washer.

---

**WHEEL BUILDING**

**REFERENCES AND LENGTHS:**

- **Front:** 120 341 01, length 267.5 mm (per 12 with integrated nipples)
- **Rear drive side:** 120 342 01, length 265 mm (per 12 with integrated nipples)
- **Rear non-drive side:** 120 343 01, length 267.5 mm (per 12 with integrated nipples)

**FEATURES:**

- Black steel straight pull spokes with self-locking and integrated M7 spoke nipples

**LACING PATTERN:**

- Front: 2-cross lacing on both sides

**TENSION:**

- **Front disc side:** 90 to 110 kg
- **Rear drive side:** 110 to 130 kg

---

**ACCESSORIES**

- Front quick-release skewer M40350
- Rear quick-release skewer M40352
- Removable UST valve 995 282 01
- Spoke wrench
- 2 disc adapters for conversion from Center Lock to International Standard
- Wheel user guide

---

**WHEELS SUPPLIED WITH:**

Refer to the website for quick and convenient access to information: [www.tech-mavic.com](http://www.tech-mavic.com)
# CROSSRIDE DISC 11 - 15 mm

**Use:** use only on a Cross-country or Cross-mountain MTB fitted with disc brakes. Any other use (such as on a tandem, road bike, cyclo-cross bike, free-ride or downhill bike…) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty. Recommended maximum weight of the cyclist and equipment: 100 kg.

## WHEEL WEIGHT WITHOUT QUICK-RELEASE SKEWER AND WITHOUT ADAPTER

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## WHEEL REFERENCES

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<td></td>
<td>111 850 10</td>
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## RIMS

**SALES REFERENCES:** Front and rear: 120 216 15

### Ø VALVE HOLE

- Ø: 8.5 mm with 6.5 mm valve adapter
- Length: ≥ 32 mm

### RECOMMENDED TIRE WIDTH

- **Dimensions:** Ø 26"
- ETRTO 559 x 19C
- Recommended tire width: 1.5 to 2.3

## HUBS

**MAINTENANCE:** Clean with a dry cloth or soapy water if necessary. Do not use a high-pressure washer.

## WHEEL BUILDING

**REFERENCES AND LENGTHS:**

- Front and rear: 995 435 01, length 271 mm (per 12, with nipples)

### FEATURES:

- Black bladed straight pull steel spokes with brass nipples

### LACING PATTERN:

- Front and rear: 2-cross lacing on both sides

### TENSION:

- Front: 100 to 120 kg
- Rear drive side: 120 to 140 kg

## ACCESSORIES

- Conventional alu quick-release skewer on rear: M40351
- Rim tape 559x20x0.6
- 2 disc adapters for conversion from Center Lock to International Standard
- Wheel user guide

## MAINTENANCE

- Replacing the front axe and bearings
  - See 2010 TM, pages 21 and 22
- Replacing the rear axle
  - See 2004 TM, page 20
- Maintaining and replacing the free wheel mechanism
  - See 2007 TM, page 21
- Replacing the rear bearings
  - See 2004 TM, page 22
- Replacing a spoke
  - See 2004 TM, page 25
- Replacing the front rim
  - See 2004 TM, page 28
- Replacing the rear rim
  - See 2004 TM, page 29

Refer to the website for quick and convenient access to information: [www.tech-mavic.com](http://www.tech-mavic.com)
CROSSRIDE DISC 11 INTL

Use: use only on a Cross-country or Cross-mountain MTB fitted with disc brakes. Any other use (such as on a tandem, road bike, cyclo-cross bike, free-ride or downhill bike…) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty. Recommended maximum weight of the cyclist and equipment: 85 kg.

WHEEL WEIGHT WITHOUT QUICK-RELEASE SKEWER AND WITHOUT ADAPTER
- Front: 880 g
- Rear: 1020 g

WHEEL REFERENCES
- STANDARD INT
  - Front: 127 091 10
  - Rear: 127 092 13
  - Pair: 127 093 14

RIMS
- Ø Valve Hole: Ø 6.5 mm with 6.5 mm valve adapter
- Length: ≥ 32 mm
- RECOMMENDED TIRE WIDTH AND PRESSURE
  - Dimensions: Ø 26"
  - ETRTO 559 x 19C
  - Recommended tire width: 1.5 to 2.3

HUBS
- MAINTENANCE: Clean with a dry cloth or soapy water if necessary. Do not use a high-pressure washer.

WHEEL BUILDING
- Front and rear: 996 875 01, length 261 mm (per 12, with nipples)

FEATURES:
- Black steel straight pull spokes with Self-Lock system and conventional spoke nipples
- LACING PATTERN: Front and rear: 2-cross lacing on both sides
- TENSION: Front: 100 to 120 kg
- Rear drive side: 120 to 140 kg

ACCESSORIES
- BR 101 front quick release: M40350
- BR 101 rear quick release: M40351
- Rim tape 559x20x0.6
- Wheel user guide

WHEEL REFERENCES
- STANDARD INT
  - Front: 127 091 10
  - Rear: 127 092 13
  - Pair: 127 093 14

MAINTENANCE
- Replacing the front axle and bearings: See 2004 TM, page 19
- Replacing the rear axle: See 2004 TM, page 20
- Maintaining and replacing the free wheel mechanism: See 2004 TM, page 21
- Replacing the rear bearings: See 2004 TM, page 22
- Replacing a spoke: See 2004 TM, page 25
- Replacing the front rim: See 2009 TM, page 38
- Replacing the rear rim: See 2009 TM, page 39

Refer to the website for quick and convenient access to information: www.tech-mavic.com
CROSSRIDE DISC 11 CL

Use: use only on a Cross-country or Cross-mountain MTB fitted with disc brakes. Any other use (such as on a tandem, road bike, cyclo-cross bike, free-ride or downhill bike...) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty. Recommended maximum weight of the cyclist and equipment: 85 kg.

WHEEL WEIGHT WITHOUT QUICK-RELEASE SKEWER AND WITHOUT ADAPTER

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RIMS

SALES REFERENCES: Front and rear: 120 216 15

Ø 26" Valve Hole

 Ø 8.5 mm with 6.5 mm valve adapter
Length: ≥ 32 mm

RECOMMENDED TIRE WIDTH AND PRESSURE

Dimensions:
 Ø 26"
ETRTO 559 x 19C
Recommended tire width: 1.5 to 2.3

FEATURES:
Black steel straight pull spokes with Self-Lock system and conventional spoke nipples

LACING PATTERN:
Front and rear: 2-cross lacing on both sides

TENSION:
Front: 100 to 120 kg
Rear drive side: 120 to 140 kg

HUBS

MAINTENANCE: Clean with a dry cloth or soapy water if necessary.
Do not use a high-pressure washer.

WHEEL BUILDING

REFERENCES AND LENGTHS:
Front and rear: 996 875 01, length 261 mm (per 12, with nipples)

FEATURES:
Black steel straight pull spokes with Self-Lock system and conventional spoke nipples

LACING PATTERN:
Front and rear: 2-cross lacing on both sides

TENSION:
Front: 100 to 120 kg
Rear drive side: 120 to 140 kg

ACCESSORIES

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<thead>
<tr>
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<th>WHEELS SUPPLIED WITH:</th>
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<tbody>
<tr>
<td>• BR 101 front quick release: M40350</td>
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<td>• BR 101 rear quick release: M40351</td>
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<tr>
<td>• Rim tape 559x20x0.6</td>
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<td>• Wheel user guide</td>
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MAINTENANCE

Replacing the front axle and bearings
Replacing the rear axle
Maintaining and replacing the free wheel mechanism
Replacing the rear bearings
Replacing a spoke
Replacing the front rim
Replacing the rear rim

Refer to the website for quick and convenient access to information: www.tech-mavic.com
Use: use only on a Cross-country or Cross-mountain MTB fitted with disc brakes. Any other use (such as on a tandem, road bike, cyclo-cross bike, free-ride or downhill bike…) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty. Recommended maximum weight of the cyclist and equipment: 100 kg.

WHEEL WEIGHT WITHOUT QUICK-RELEASE SKEWER

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<tbody>
<tr>
<td></td>
<td>900 g</td>
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WHEEL REFERENCES

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<td>117 787 13</td>
<td>117 788 14</td>
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</table>

RIMS

SALES REFERENCES:
Front and rear: 120 217 15

Ø VALVE HOLE
- Ø: 8.5 mm with 6.5 mm valve adapter
- Length: ≥ 32 mm

RECOMMENDED TIRE WIDTH AND PRESSURE
- Dimensions: Ø 26″
- ETRTO 559 x 19C
- Recommended tire width: 1.5 to 2.3

HUBS

MAINTENANCE: Clean with a dry cloth or soapy water if necessary. Do not use a high-pressure washer.

WHEEL BUILDING

REFERENCES AND LENGTHS:
Front and rear: 996 892 01, length 261 mm (per 12, with nipples)

FEATURES:
- Silver stainless steel straight pull spokes with Self-Lock system and conventional spoke nipples

LACING PATTERN:
- Front and rear: 2-cross lacing on both sides

TENSION:
- Front disc side: 100 to 120 kg
- Rear drive side: 120 to 140 kg

ACCESSORIES

- BR 101 front quick release: M40350
- BR 101 rear quick release: M40351
- Rim tape 559x20x0.6
- Wheel user guide

MAINTENANCE

- Replacing the front axle and bearings: See 2004 TM, page 19
- Replacing the rear axle: See 2004 TM, page 20
- Maintaining and replacing the free wheel mechanism: See 2007 TM, page 21
- Replacing the rear bearings: See 2004 TM, page 22
- Replacing a spoke: See 2004 TM, page 25
- Replacing the front rim: See 2009 TM, page 38
- Replacing the rear rim: See 2009 TM, page 39

Refer to the website for quick and convenient access to information: www.tech-mavic.com
Use: use only on a Cross-country or Cross-mountain MTB fitted with disc brakes. Any other use (such as on a tandem, road bike, cyclo-cross bike, free-ride or downhill bike...) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty. Recommended maximum weight of the cyclist and equipment: 100 kg.

### WHEEL WEIGHT WITHOUT QUICK-RELEASE SKEWER

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<thead>
<tr>
<th></th>
<th>Front</th>
<th>Rear</th>
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<td></td>
<td>780 g</td>
<td>920 g</td>
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### WHEEL REFERENCES

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<th>Front:</th>
<th>Rear:</th>
<th>Pair:</th>
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<td></td>
<td>117 792 10</td>
<td>117 793 13</td>
<td>117 794 14</td>
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</tbody>
</table>

### RIMS

**SALES REFERENCES:** Front and rear: 120 218 15

- Ø VALVE HOLE: Ø 0.5 mm with 6.5 mm valve adapter
- Length: ≥ 32 mm

**RECOMMENDED TIRE WIDTH AND PRESSURE**

- Dimensions: Ø 26"
- ETRTO 559 x 17C
- Recommended tire width: 1.5 to 2.1

### HUBS

**MAINTENANCE:** Clean with a dry cloth or soapy water if necessary. Do not use a high-pressure washer.

### WHEEL BUILDING

**REFERENCES AND LENGTHS:**

- Front and rear non-drive side: 996 069 01, length 253 mm (per 10, with nipples)
- Drive side: 996 070 01, length 276 mm (per 10, with nipples)

**LACING PATTERN:**

- Front: radial
- Rear: 2-crossed drive side and radial non-drive side

**TENSION:**

- Front disc side: 100 to 120 kg
- Rear drive side: 120 to 140 kg

### FEATURES:

Black steel bladed straight pull spokes with Self-Lock system and conventional spoke nipples

### ACCESSORIES MAINTENANCE

- 8 VALVE HOLE: Ø 0.5 mm with 6.5 mm valve adapter
- Length: ≥ 32 mm

**WHEELS SUPPLIED WITH:**

- BR 101 front quick release: M40350
- BR 101 rear quick release: M40351
- Rim tape 559x20x0.6
- Wheel user guide

**WHEELS WITH QUICK-RELEASE SKEWER:**

### MAINTENANCE

- Replacing the front axle and bearings: See 2004 TM, page 19
- Replacing the rear axle: See 2004 TM, page 20
- Maintaining and replacing the free wheel mechanism: See 2004 TM, page 21
- Replacing the rear bearings: See 2004 TM, page 22
- Replacing a spoke: See 2008 TM, page 25
- Replacing the front rim: See 2008 TM, page 25
- Replacing the rear rim: See 2008 TM, page 26

Refer to the website for quick and convenient access to information: [www.tech-mavic.com](http://www.tech-mavic.com)
1) Brake pads:
   For efficient and long-lasting braking performance, use only Mavic® Special Exalith brake pads as supplied with your wheels. The use of other brake pads may be dangerous for the user and may void the warranty.

2) Breaking in the rim's braking surface:
   A break-in period is necessary to ensure brake pad performance (approx. 500 km). To guarantee brake pad performance, the user must be careful not to brake suddenly during this period. There is a risk of premature wear to the brake pads during the rim break-in period. Compared with traditional rim surfaces, more frequent brake shoe adjustments may be necessary. The user must check brake pad wear before every ride.

3) Limitation of warranty:
   A change in the appearance of the rim's brake track may be caused by an accumulation of pollution under the brake pads. This change in appearance does not affect braking performance and is considered normal wear and tear not covered by warranty.

4) Rotation direction:
   Warning. For efficient and durable braking performance, the wheel must be mounted according to the rotation direction indicated on the rim. Disregard of this instruction may be dangerous for the user and could void the warranty.
WHEEL MAINTENANCE

WARRANTY REMINDER

Before any repair of a Mavic wheel (or any other Mavic product), please note that it is guaranteed against manufacturing or material defects for a period of two years from the date of purchase by the original user.

This means that:
• During the warranty period and when it is clearly covered by the warranty (first contact your MSC), you must return the Mavic wheel (or any other Mavic product) directly to your MSC to benefit in full from the Mavic warranty.
However, if you decide to repair the wheel (or any other Mavic product) yourself, your customer will no longer benefit from the Mavic warranty.
• For repairs after the warranty period has expired, we advise you to refer to the following pages before carrying out work on the Mavic wheel. When replacing the rim, please note the new serial number of the rim on the original warranty card and the date of replacement.

Your customer’s new rim will only be covered by the Mavic warranty if this procedure is followed.

REPAIRS

The following pages will help you maintain the wheels of the 2011 range and are laid out as follows:

WHEEL BUILDING
- Replacing a front spoke or the front rim on Ksyrium Elite 11 wheels ................................................................. Page 30
- Replacing a spoke on Crosstrail G11 wheels ................................................................................................................. Page 31

HUBS
- Bearing adjustment on iO Track ................................................................................................................................. Page 31
- Lefty Disc hub clearance adjustment ...................................................................................................................... Page 32
- New hub cap: Cosmic Carbone SLR / SR .................................................................................................................. Page 33

STICKERS
- Replacing stickers on Cosmic Carbon (SL/SR/SLR/80/Ultimate) ........................................................................ Page 34

Any maintenance operation not detailed in the following pages can be found in the technical manuals from previous years.
Refer to the product sheets (pages 4 to 26 of this manual) for further details.
All these procedures can also be found on www.tech-mavic.com

Before any operation, we recommend removing:
• the wheel from the bike by releasing the quick-release skewer
• the skewer, the tire
• the cassette and chain disc (if necessary) for the rear wheel
• the brake disc (if necessary)
WHEEL BUILDING

REPLACING A SPOKE OR THE FRONT RIM ON KSYRIUM ELITE 11 WHEELS

Tools needed:
• Spoke wrench 996 079 01
• Aerodynamic spoke wrench M40567
• Mavic tensiometer 995 643 01 + tension-reading conversion chart supplied
• 1 x 5 mm Allen wrench
• 1 hub wrench M40123

The spoke reference and length to be used are indicated in the product pages.
The hub is in 3 parts (2 flanges + central tube). These 3 parts are not integral with each other.
It is thus possible that, without the spokes in place (bare hub), the 2 flanges pivot in relation to each other. When under the tension of the spokes, they will move into the correct position by themselves.

Adjustment nut side, remove the fork support which is clipped on the end of the axle.

Insert the 5 mm Allen wrench into the end of the axe, side opposite the adjustment nut. Hold the adjustment nut with the hub wrench M40123.

Unscrew the axe by turning the Allen wrench counter-clockwise. Turn it approximately 5 turns to free up enough play.

Manually pre-fit/screw in all the rim spokes until contact with the threadlocker.

Insert each spoke head into the housings of one of the hub flanges, presenting them from the outside owing to the space freed up by the play in the axle. Repeat this operation for the other layer.

Screw each of the nipples uniformly (1 spoke wrench turn for each spoke and per wheel turn) to tension the wheel, while checking the proper position of their heads in the bottom of the hub groove to prevent spoke displacement or hub breakage.

Using the Allen wrench ad the hub wrench M40123, retighten the axle (counter-clockwise) until contact with the bearing is reached and then back off one-half turn.

Tension the wheel and center it definitively respecting the spoke tension indicated on the product pages.
REPLACING A SPOKE ON CROSSTRAIL 2011

Important note: as the head diameter of Mavic M7 spokes has been modified for the 2011 product range, the spoke wrench 996 079 01, formerly reserved for Tracomp spokes, will now be used for the new M7 spokes starting in 2011.

Tools needed:
• 1 spoke wrench 996 079 01
• 1 tensiometer + tension-reading conversion table adapted to the tensiometer used

The spoke reference and length to be used are indicated in the product pages.

If repair operations must be performed on a wheel having at least 3 broken spokes, we recommend that you remove the tension on the wheel by unscrewing each nipple to the limit of the brake ring before replacing the broken spokes.

1. Unscrew the spoke nipple with the spoke wrench to release the tension.
2. Remove the spoke from its notch.
3. Completely unscrew and remove the spoke.
4. Position the new spoke in its notch, making sure that the lacing is correct.
5. Apply a thin drop of threadlocker on the spoke nipple threads.
6. Tighten the spoke to put tension on the spoke (refer to the product pages for the appropriate tension for each wheel)
7. Check wheel roundness and trueness

The spokes are equipped with an anti-rotation system, preventing them from turning at the hub. The spokes will automatically lock into the hub when tensioned.

BEARING ADJUSTMENT ON IO TRACK

Important note: the hub on an IO Track wheel has been pre-adjusted at the factory for optimum use and to prevent premature wear. The free play can be modified. Incorrect free play adjustments can damage the bearings on the IO Track wheel or permanently alter their performance.

Tools needed:
• 15 mm open-end wrench

1) If there is any play:
Use a 15 mm open-end wrench to very lightly tighten the lock nut by monitoring the play at the top of the wheel.

2) In case of tightening
Loosen the lock nut approximately ½ turn, unlock the wheel, remove it from the frame and remove the retaining screws. Give a light mallet tap on the axle lock nut to achieve freer rotation, fit the wheel back on the frame and perform the adjustment again as in the first case.
LEFTY DISC HUB CLEARANCE ADJUSTMENT

Tools needed

- 1 clamp hub wrench
- 1 bearing removal kit
- 1 bearing press kit (M40218) for the disc side bearing
- 1 mallet

Loosen the non-disc side bearing protection cap with the hub wrench.

Remove the spacer and the wheel tightening screw on the fork.

Use the bearing removal kit to remove the bearings.

Add a shim.

Adjust the clearance with one or more spacers provided in the kit (5 elements) 127 590 01.

Refit the bearings using the bearing press kit 323 945 01 (non-disc side) and M40218 (disc side).

Clip the tightening screw to the spacer on the flat-bottomed side (see photo).

Refit the bearing protection cap with the hub wrench (9 Nm torque).

If the clearance requires readjustment, repeat the operation.
**NEW HUB CAP: COSMIC CARBONE SLR / SR**

**Tools needed**
- 1 fine-tip flat screwdriver (5 x 125 mm for example)

**Step 1:**
Remove the old cap.

Unclip and remove the old hub cap by pressing on the inside with your thumbs while lifting the outside with your fingers.

**Step 2:**
Install the new cap.

Position the new cap, making sure that its teeth are not touching the spokes. Place your thumbs on the two opposite edges of the cap and press to clip the cap onto the hub body. Check that the cap is properly positioned. Caution: The cap must not touch the spokes.

**Step 3:**
Remove the new cap.

Insert a flat-tip screwdriver (ideally 5 x 125 mm) fully into an opening at the junction of two spokes. The tip of the screwdriver should be against the hub body. Caution: the screwdriver must be correctly positioned between two spokes and be in contact with the hub body. Incorrect positioning may result in spoke damage. Use the screwdriver to raise and remove the cap.
Remove the original “Cosmic” stickers by pulling them up very gently to prevent leaving adhesive residue on the surface of the rim.

Leave the small sticker with the Mavic logo in place: it will be used as a guide during placement of the new sticker; furthermore, it is not included in your new sticker kit.

Clean the sides of the rim with the cleaning wipe supplied in the sticker kit.

First stick the “Cos” part, placing the right angle of the upper left-hand part of the letter C on the right end of the small sticker featuring the Mavic logo. A constant minimum space of 13 mm must be observed between the top of the sticker and the top of the rim.

Next, place the 2nd “mic” part aligned with the “Cos” part. A constant space of 13 mm must be observed between the top of the sticker and the top of the rim.
### Tools

<table>
<thead>
<tr>
<th>REFERENCE</th>
<th>DESCRIPTION</th>
<th>PRODUCT</th>
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<tbody>
<tr>
<td>323 477 01</td>
<td>Multifunction tool: Removing the UST Tubeless rim tape (A). Fitting the UST rim tape. Adjusting the front axles on the Cosmos, Ksyrium Equipe, Crossland, Crossmax Enduro, Crossmax Enduro Disc, Cosmic Elite 05 and Speedcity 05, Aksium, and Crossride 06 wheels. Crossride Disc, Crosstrail, Crosstrail Disc Aksium 08, Ksyrium Equipe 08, Crossride UB/Disc 08, Crossride UB (B), Aksium 10</td>
<td><img src="image1" alt="Image" />.</td>
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<tr>
<td>M40119</td>
<td>Bearing press kits for bearings: M40075 M40076</td>
<td><img src="image2" alt="Image" />.</td>
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<tr>
<td>M40120</td>
<td>Bearing press kits for bearings: M40077 M40078</td>
<td><img src="image3" alt="Image" />.</td>
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<tr>
<td>323 909 01</td>
<td>Bearing press kit for R-Sys SL bearings</td>
<td><img src="image4" alt="Image" />.</td>
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<td>M40373</td>
<td>Guide ring and bearing press kit for bearings: M40318 M40660</td>
<td><img src="image5" alt="Image" />.</td>
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<tr>
<td>M40218</td>
<td>Bearing press kit for bearings: M40179</td>
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<td>323 945 01</td>
<td>Bearing press kit for bearings: M40771</td>
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<td>324 300 01</td>
<td>Bearing press kit for bearings: 324 170 01</td>
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<td>996 887 01</td>
<td>Bearing press kit for hub bearings 9/15: 996 885 01 and 996 896 01</td>
<td><img src="image9" alt="Image" />.</td>
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<tr>
<td>996 901 01</td>
<td>Bearing press kit for bearings M40076 used in ITS4 free wheel system hubs</td>
<td><img src="image10" alt="Image" />.</td>
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**A+B:** Press kit for the front wheel.  
**A+C:** Press kit for the rear wheel.  
**D:** Press kits for the front and rear wheels.  
**E:** Press kits for the front and rear wheel bearings.  
**F:** Guide ring for the 12 mm Allen wrench required to remove the free wheel from Crossroc UST, Crossroc UST Disc, Crossride, Crossride Ceramic, Cosmos and Cosmic Elite wheels.
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<tr>
<th>REFERENCE</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>996 080 01</td>
<td>Tracomp ring tool</td>
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<tr>
<td>M40001</td>
<td>Spoke adjustment wrench for Cosmic Carbone, Cosmic Carbone SSC, Cosmic Carbone SL and Cosmic Carbone SLR wheels</td>
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<tr>
<td>101 295 01</td>
<td>R2R spoke head tool</td>
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<tr>
<td>323 908 01</td>
<td>Cosmic Carbone Pro spoke wrench kit + aerodynamic spoke wrench</td>
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<tr>
<td>M40567</td>
<td>Aerodynamic spoke wrench kit</td>
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<tr>
<td>996 079 01</td>
<td>Tracomp spoke wrench kit and new M7s (starting in 2011)</td>
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<td>M40652</td>
<td>Zamak spoke tightening wrench kit for Fore M7 pierced wheels before 2011 (except R-Sys)</td>
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<td>M40630</td>
<td>Screw-in eye tightening wrench kit for Fore M9 pierced wheels and rims</td>
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<td>996 220 01</td>
<td>Cosmic Carbone Ultimate spoke wrench kit</td>
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<td>108 850 01</td>
<td>Bearing press kit for the bearings of 10/15 mm Crossride front hubs</td>
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<tr>
<td>M40123</td>
<td>Hub wrench for adjusting the play on Mavic QRM+ hubs</td>
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<tr>
<td>99613601</td>
<td>Mavic mineral oil for lubricating FTS, FTS-L, FTS-X and ITS4 free wheel bodies</td>
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<td>Use this oil only for lubricating FTS, FTS-L, FTS-X and ITS4 free wheel bodies</td>
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<td>99620401</td>
<td>Mavic threadlocker</td>
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<td>Content 5 ml.</td>
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<td>M40410</td>
<td>Mavic abrasive rubber rim stone for cleaning the braking surface of the rim, Ceramic or UB Control</td>
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