Technical Manual

2009

2009

WWW.TECH-MAVIC.COM

CONTENTS

THIS DOCUMENT ONLY COVERS NEW PRODUCTS FOR 2009.

THIS DOCUMENT UPDATES YOUR TECHNICAL INFORMATION AND SHOULD THEREFORE BE KEPT CAREFULLY, WITH NO TIME LIMITATION, WITH THE MANUALS FROM PREVIOUS YEARS.

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.

www.tech-mavic.com

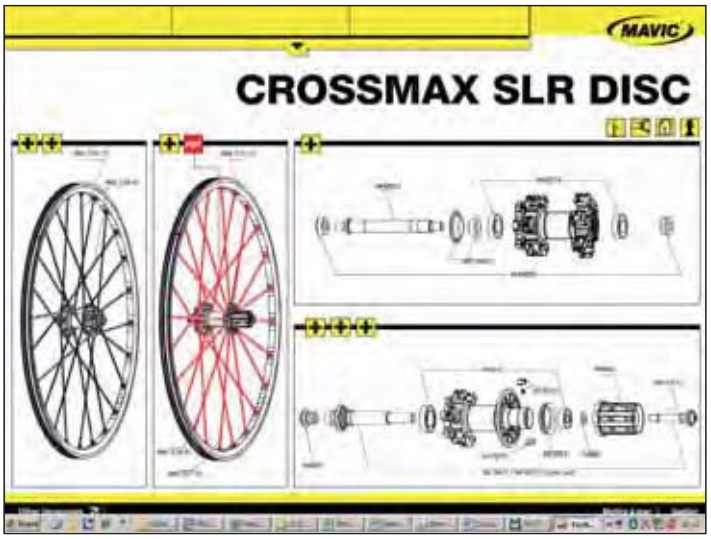
This website (in French, English, German, Spanish, Italian and Japanese) is at your complete disposal. All information about Mavic products released since 1997 is available in PDF format and downloadable from this site that is both easy to access and simple to use.

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:

French	**User name:**	**mavic-fr**
	Password:	**detaillant**
Spanish	**User name:**	**mavic-es**
	Password:	**detallista**
English	**User name:**	**mavic-com**
	Password:	**dealer**
Italian	**User name:**	**mavic-it**
	Password:	**dettaglianti**
German	**User name:**	**mavic-de**
	Password:	**haendler**
Japanese	**User name:**	**mavic-jp**
	Password:	**dealer**

Among other things on the website, you will find:

- Full technical details on all the Mavic products marketed since 1997 - wheels, rims, components - set out 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 and 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.

COSMIC CARBONE SL 09

USE: use only on a road bike. 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 his equipment: 100 kg.

WHEEL WEIGHTS WITHOUT QUICK-RELEASE SKEWER

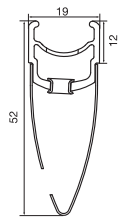
Front:	780 g
Rear M10:	975 g
Rear ED10:	960 g

WHEEL REFERENCES

Front:	995 530 10
Rear M10:	996 531 11
Rear ED10:	995 532 12
Pair M10:	995 533 14
Pair ED10:	995 534 14

RIMS

REFERENCES: Front: 996 840 10
Rear: 996 840 13



Ø VALVE HOLE

Ø: 6.5 mm
Length.: ≥ 55 mm

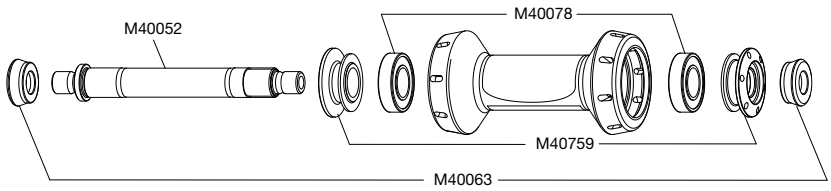
RECOMMENDED TIRE WIDTH

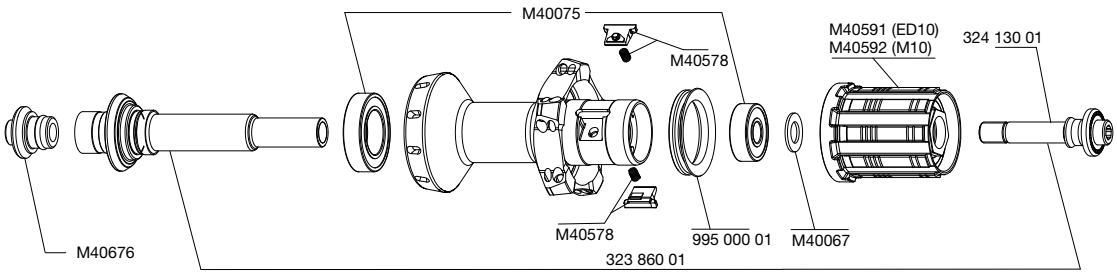
Dimensions: ETRTO 622 x 13C
Recommended tire width: 19 to 28 mm

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 driving spoke and should be inserted in the drive side of the hub

HUBS

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





WHEEL BUILDING

REFERENCES AND LENGTHS:

Front:	996 841 01, length 289 mm (per 8, with nipples)
Rear drive side:	996 842 01, length 306 mm (per 10, with nipples)
Rear non-drive side:	996 843 01, length 288 mm (per 10, with nipples)

FEATURES:
Black steel straight pull spokes with ABS spoke nipples

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

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

ACCESSORIES

WHEELS SUPPLIED WITH:

- BR 301 front quick-release skewer 996 939 01
- BR 301 rear quick-release skewer 996 940 01
- ED10 12D locking ring M40640 (with rear wheel ED10)
- Free play adjustment wrench M40123 (with rear wheel)
- Spoke wrench M40001 (with rear wheel)
- Aerodynamic spoke wrench M40567 (with rear wheel)
- Valve extender M40013
- Rim tape
- User guide

MAINTENANCE

To consult this information quickly in a practical manner, refer to **www.tech-mavic.com**

COSMIC CARBONE SLR

USE: use only on a road bike. 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 his equipment: 100 kg.

WHEEL WEIGHTS WITHOUT QUICK-RELEASE SKEWER

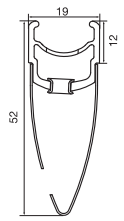
Front:	725 g
Rear M10:	885 g
Rear ED10:	870 g

WHEEL REFERENCES

Front:	995 540 10
Rear M10:	996 541 11
Rear ED10:	995 542 12
Pair M10:	995 543 14
Pair ED10:	995 544 14

RIMS

REFERENCES: Front: 996 834 10
Rear: 996 834 13



Ø VALVE HOLE

Ø: 6.5 mm
Length.: ≥ 55 mm

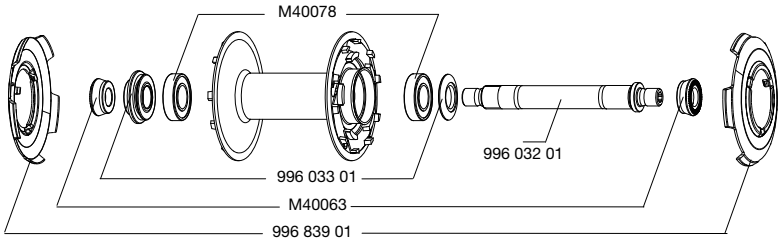
RECOMMENDED TIRE WIDTH

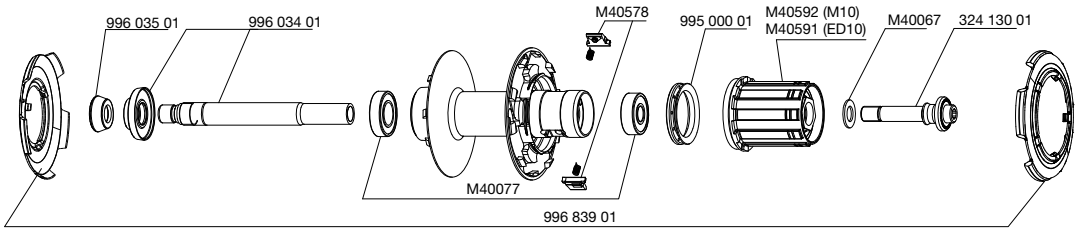
Dimensions: ETRTO 622 x 13C
Recommended tire width: 19 to 28 mm

When replacing the rear rim:
The side of the rim where the spoke holes are the nearest to the leaking edge is the drive side.

HUBS

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





WHEEL BUILDING

REFERENCES AND LENGTHS:

Front and rear non-drive side:	996 835 01, R2R spokes, (per 5, with ABS nipples)
Drive side:	996 836 01, R2R spokes, (per 5, with ABS nipples)

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

LACING PATTERN:
Front and rear: crossed 2 on both sides

TENSION:
Front: 80 to 100 kg
Rear drive side: 90 to 110 kg

ACCESSORIES

WHEELS SUPPLIED WITH:

- BR 601 front quick-release M40149
- BR 601 rear quick-release M40150
- Computer magnet 996 245 01 (with front wheel)
- Free play adjustment wrench M40123 (with rear wheel)
- Aerodynamic spoke wrench M40567 (with rear wheel)
- Spoke wrench M40001 (with rear wheel)
- Valve extender M40013
- Rim tape
- ED10 12D locking ring M40640 (with rear wheel ED10)
- User guide and warranty card

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
Replacing a spoke	See page 32
Replacing the front rim	See page 33
Replacing the rear rim	See pages 34/35

To consult this information quickly in a practical manner, refer to **www.tech-mavic.com**

COMETE ROAD 09

USE: use only on a road bike. 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 his equipment: 100 kg.

WHEEL WEIGHTS WITHOUT QUICK-RELEASE SKEWER

M10:	1165 g
ED10:	1150 g

WHEEL REFERENCES

M10:	996 216 11
ED10:	996 217 12

RIMS

Ø VALVE HOLE

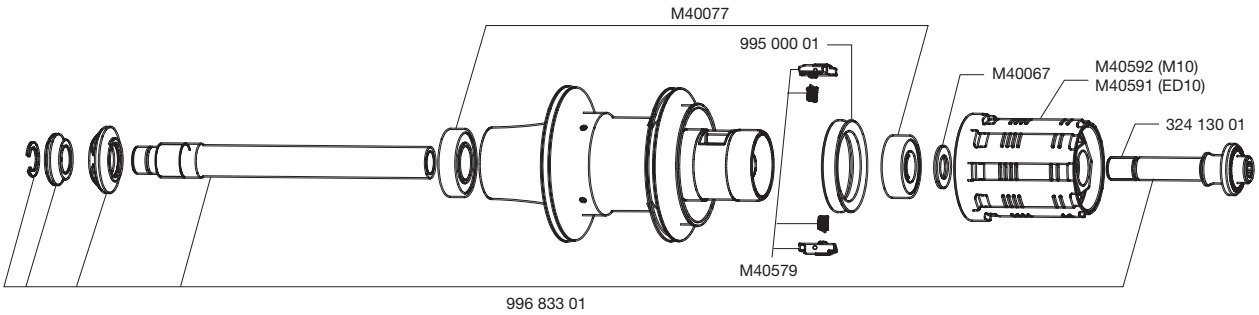
Ø: 6.5 mm
Length.: ≥ 32 mm

RECOMMENDED TIRE WIDTH

Dimensions: ETRTO 622 x 13C
Recommended tire width: 19 to 28 mm

HUBS

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



ACCESSORIES

WHEEL SUPPLIED WITH:

- BR 601 rear quick-release M40150
- ED10 12D locking ring M40640 (with rear wheel ED10)
- Rim tape
- Valve extender 323 634 01
- User guide

MAINTENANCE

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

To consult this information quickly in a practical manner, refer to **www.tech-mavic.com**

KSYRIUM ELITE 09

USE: use only on a road bike. 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 his equipment: 100 kg.

WHEEL WEIGHTS Ø 700 WITHOUT QUICK-RELEASE SKEWER

Front:	675 g
Rear M10:	890 g
Rear ED10:	875 g

WHEEL WEIGHTS Ø 650 WITHOUT QUICK-RELEASE SKEWER

Front:	640 g
Rear M10:	805 g
Rear ED10:	790 g

BLACK WHEEL REFERENCES:

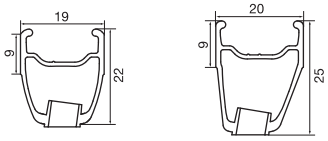
	Ø 700	Ø 650
Front:	996 155 10	996 165 10
Rear M10:	996 156 11	996 166 11
Rear ED10:	996 157 12	996 167 12
Pair M10:	996 158 14	996 168 14
Pair ED10:	996 159 14	996 169 14

SILVER WHEEL REFERENCES:

Front:	996 160 10
Rear M10:	996 161 11
Rear ED10:	996 162 12
Pair M10:	996 163 14
Pair ED10:	996 164 14

RIMS

REFERENCES: **Black:** Front: 996 855 10, Rear: 996 855 13 — **Silver:** Front: 996 863 10, Rear: 996 863 13 — **Ø 650 (Black):** Front: 996 869 10, Rear: 996 869 13



Ø VALVE HOLE

Ø: 6.5 mm
Length.: ≥ 32 mm

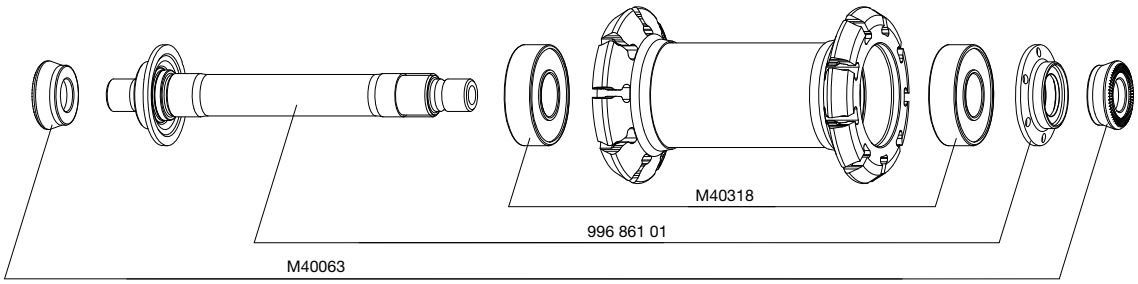
RECOMMENDED TIRE WIDTH

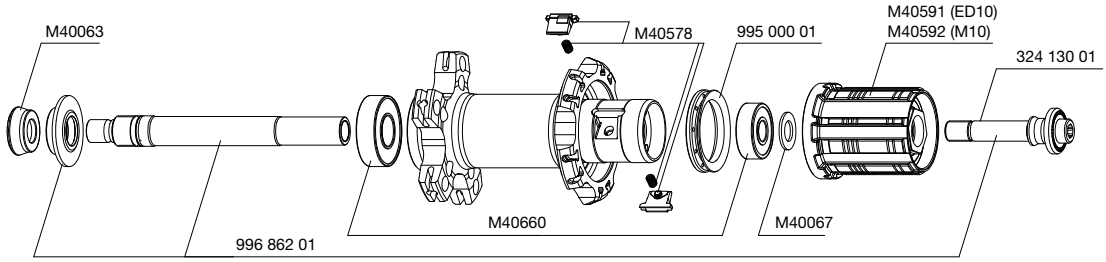
Dimensions: Ø 700: ETRTO 622 x 15C
Ø 650: ETRTO 571 x 15C
Recommended tire width: 19 to 32 mm

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 driving spoke and should be inserted in the non-drive side of the hub

HUBS

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





As the front hub is made up of three parts, maintenance operations (replacing the axle or bearings) must always be carried out on the assembled wheel (hub, rim and spokes assembled).

WHEEL BUILDING

REFERENCES AND LENGTHS:

Black	Front	996 856 01, length 284 mm, (per 9, integrated nipples)
	Rear drive side	996 857 01, length 276 mm, (per 10, integrated nipples)
	Rear non-drive side	996 858 01, length 301 mm, (per 10, integrated nipples)
Silver	Front	996 864 01, length 284 mm, (per 9, integrated nipples)
	Rear drive side	996 865 01, length 276 mm, (per 10, integrated nipples)
	Rear non-drive side	996 866 01, length 301 mm, (per 10, integrated nipples)
Ø 650 Black	Front	996 870 01, length 259 mm, (per 9, integrated nipples)
	Rear drive side	996 871 01, length 251 mm, (per 10, integrated nipples)
	Rear non-drive side	996 872 01, length 280 mm, (per 10, integrated nipples)

FEATURES:
Black or silver stainless steel straight pull spokes with integrated, self-locking M7 screws.

LACING PATTERN:
Front: radial
Rear: Isopulse

TENSION:
Front: 110 to 130 kg
Rear drive side: 125 to 145 kg

ACCESSORIES

WHEELS SUPPLIED WITH:

- BR 301 front quick-release skewer 996 939 01
- BR 301 rear quick-release skewer 996 940 01
- ED10 12D locking ring M40640 (with rear wheel ED10)
- Free play adjustment wrench M40123 (with rear wheel)
- Spoke wrench M40494 (with rear wheel)
- User guide

MAINTENANCE

To consult this information quickly in a practical manner, refer to **www.tech-mavic.com**

R-SYS PREMIUM

USE: use only on a road bike. 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 his equipment: 100 kg.

WHEEL WEIGHTS WITHOUT QUICK-RELEASE SKEWER

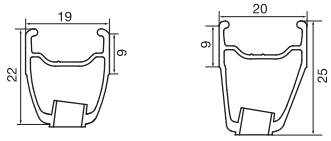
Front:	575 g
Rear M10:	800 g
Rear ED10:	785 g

WHEEL REFERENCES

Front:	996 248 10
Rear M10:	996 249 11
Rear ED10:	996 250 12
Pair M10:	996 378 14
Pair ED10:	996 401 14

RIMS

REFERENCES:
Clincher : Front: 996 848 10
Rear: 996 848 13



Ø VALVE HOLE

Ø: 6.5 mm
Length.: ≥ 32 mm

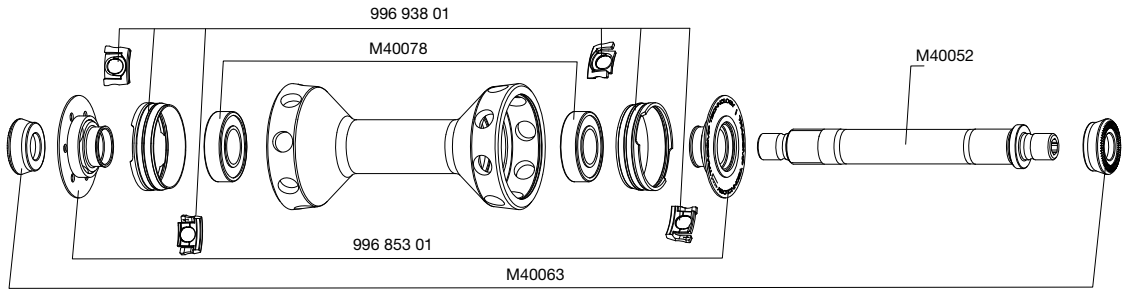
RECOMMENDED TIRE WIDTH

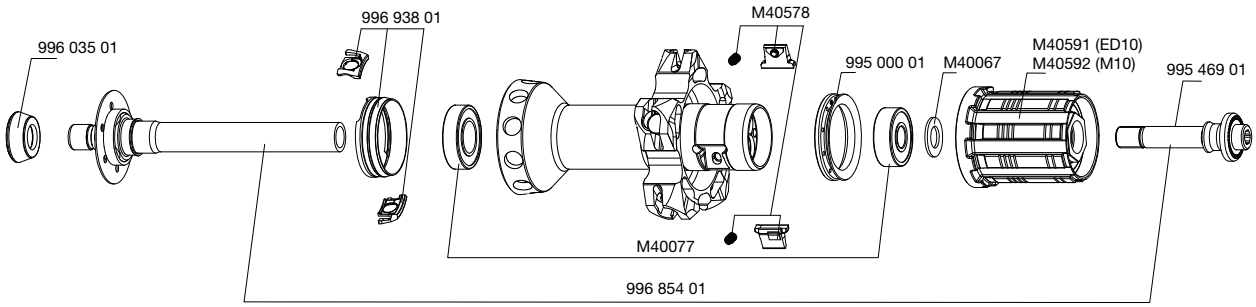
Dimensions: ETRTO 622 x 15C
Recommended tire width: 19 to 32 mm

When replacing the rear rim:
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-driving spoke and should be inserted in the drive side of the hub

HUBS

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





WHEEL BUILDING

REFERENCES AND LENGTHS:

Front:	107 958 01, length 285 mm, (per 9, integrated nipples)
Drive side:	996 073 01, length 294.5 mm, (per 10, integrated nipples)
Non-drive side:	107 959 01, length 284 mm, (per 10, integrated nipples)

FEATURES:
Front and rear non-drive side: carbon tubular spokes (TraComp)
Rear drive side: black Zicral straight pull spokes with integrated, self-locking nipples

LACING PATTERN:
Front: radial, TraComp system
Rear: crossed 2 drive side, radial non-drive side, TraComp system

TENSION:
Front: 70 to 100 kg
Rear drive side: 90 to 110 kg

ACCESSORIES

WHEELS SUPPLIED WITH:

- BR 601 Titanium front quick-release skewer 323 485 01
- BR 601 Titanium rear quick-release skewer 323 486 01
- Computer magnet built in the spoke (front wheel)
- 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
- ED10 12D locking ring M40640 (with rear wheel ED10)
- Wheel bags M40135
- 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
Identifying a damaged TraComp carbon spoke	See 2008 TM, page 28
Removing/Refitting the TraComp ring	See page 36
Truing and replacing a TraComp spoke	See 2008 TM, page 30
Replacing the front rim	See 2008 TM, page 30
Replacing the rear rim	See 2008 TM, page 31

To consult this information quickly in a practical manner, refer to **www.tech-mavic.com**

Never turn a TraComp spoke nipple with having first removed the TraComp rings from the hub, otherwise the spoke may be irreversible damaged.
Never fit a computer magnet other than the one integrated.
Only transport the wheels in the wheel bags supplied. Avoid side shocks to the TraComp spokes.

CROSSMAX SLR DISC 09

STANDARD INTERNATIONAL

USE: use only on a Cross Country 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 his equipment: 85 kg.

WHEEL WEIGHTS WITHOUT QUICK-RELEASE SKEWER

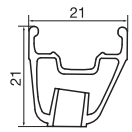
Front:	690 g
Rear:	830 g

WHEEL REFERENCES

Front:	996 412 10
Rear:	996 413 13
Pair:	996 414 14

RIMS

REFERENCES: **Front:** 996 873 10
Rear: 996 873 13



Ø VALVE HOLE

Ø: 6.5 mm
Length.: ≥ 32 mm

RECOMMENDED TIRE WIDTH

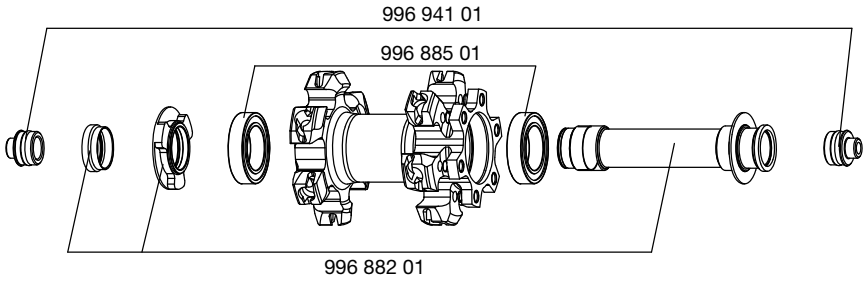
Dimensions: Ø 26”
ETRTO 559 x 17C compatible and Tubeless UST.
Recommended tire width: 1.0” to 2.1”

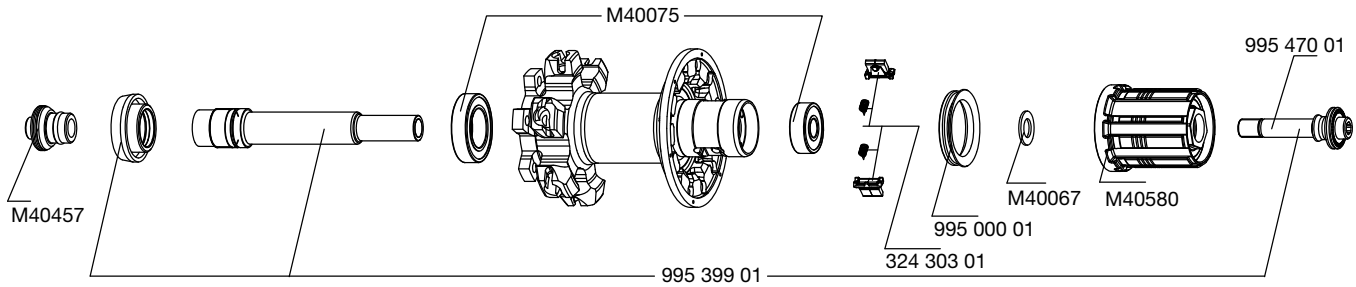
When replacing the front rim:
1. With the valve hole near you, the raised indicator bump must be to the **right** of the valve hole
2. The spoke in the first hole to the right of the valve hole is a non-braking spoke and should be inserted in the disc side

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 should be inserted on the drive side in a marked hole on the hub

HUBS

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





WHEEL BUILDING

REFERENCES AND LENGTHS:

Front:	995 376 01, length 261 mm, (per 12 + 3 red, integrated nipples)
Rear drive side:	995 377 01, length 248 mm, (per 12 + 1 red, integrated nipples)
Rear non-drive side:	996 874 01, length 263 mm, (per 12 + 2 red, integrated nipples)

FEATURES:
Black Zicral double butted straight pull spokes (including two decorated per wheel) with integrated, self-locking M7 aluminum spoke nipples.

LACING PATTERN:
Front: crossed 2 on both sides
Rear: Isopulse

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

ACCESSORIES

WHEELS SUPPLIED WITH:

- BX 601 Titanium front quick-release skewer 995 388 01
- BX 601 Titanium rear quick-release skewer 995 389 01
- Computer magnet M40540 (with front wheel)
- Spoke wrench M40494 (with rear wheel)
- Axle reducers 15=>9 mm 996 941 01 (with front wheel)
- UST valves 995 282 01
- Free play bearing adjustment wrench M40123 (with rear wheel)
- User guide

MAINTENANCE

To consult this information quickly in a practical manner, refer to **www.tech-mavic.com**

CROSSMAX SLR DISC 09 Center-Lock

CENTER LOCK

USE: use only on a Cross Country 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 his equipment: 85 kg.

WHEEL WEIGHTS WITHOUT QUICK-RELEASE SKEWER

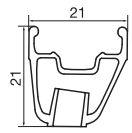
Front:	690 g
Rear:	820 g

WHEEL REFERENCES

Front:	996 499 10
Rear:	996 500 13
Pair:	996 501 14

RIMS

REFERENCES: **Front:** 996 873 10
Rear: 996 873 13



Ø VALVE HOLE

Ø: 6.5 mm
Length.: ≥ 32 mm

RECOMMENDED TIRE WIDTH

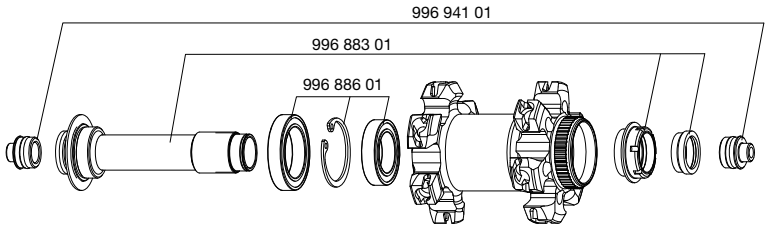
Dimensions: Ø 26”
ETRTO 559 x 17C compatible and Tubeless UST.
Recommended tire width: 1.0” to 2.1”

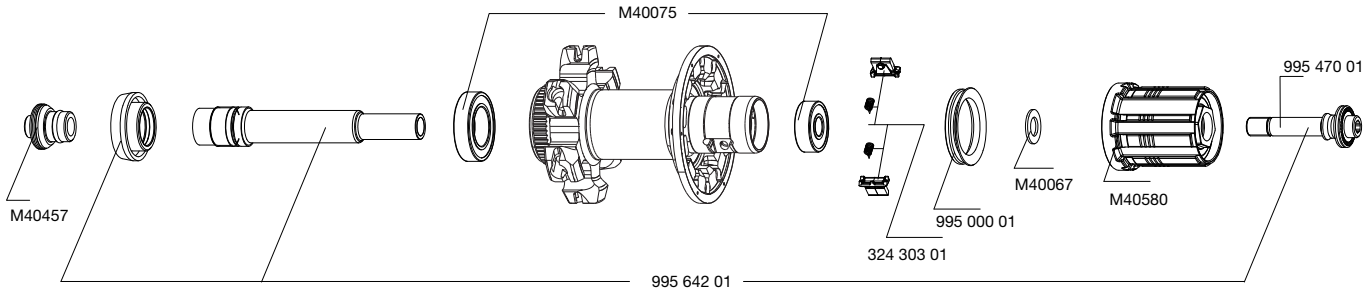
When replacing the front rim:
1. With the valve hole near you, the raised indicator bump must be to the **right** of the valve hole
2. The spoke in the first hole to the right of the valve hole is a non-braking spoke and should be inserted in the disc side.

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 should be inserted on the drive side in a marked hole on the hub

HUBS

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





WHEEL BUILDING

REFERENCES AND LENGTHS:

Front:	995 376 01, length 261 mm, (per 12 + 3 red, integrated nipples)
Rear drive side:	995 377 01, length 248 mm, (per 12 + 1 red, integrated nipples)
Rear non-drive side:	996 874 01, length 263 mm, (per 12 + 2 red, integrated nipples)

FEATURES:
Black Zicral double butted straight pull spokes (including two decorated per wheel) with integrated, self-locking M7 aluminum spoke nipples.

LACING PATTERN:
Front: crossed 2 on both sides
Rear: Isopulse

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

ACCESSORIES

WHEELS SUPPLIED WITH:

- BX 601 Titanium front quick-release skewer 995 388 01
- BX 601 Titanium rear quick-release skewer 995 389 01
- Computer magnet M40540 (with front wheel)
- Spoke wrench M40494 (with rear wheel)
- Axle reducers 15=>9 mm 996 941 01 (with front wheel)
- UST valves 995 282 01
- Free play bearing adjustment wrench M40123 (with rear wheel)
- User guide

MAINTENANCE

To consult this information quickly in a practical manner, refer to **www.tech-mavic.com**

CROSSMAX SLR DISC 09 20 MM

STANDARD INTERNATIONAL

USE: use only on a Cross Country 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 his equipment: 85 kg.

WHEEL WEIGHTS WITHOUT QUICK-RELEASE SKEWER

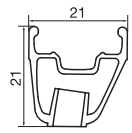
Front:	695 g
Rear:	830 g

WHEEL REFERENCES

Front:	996 520 10
Rear:	996 413 13
Pair:	996 521 14

RIMS

REFERENCES: Front: 996 873 10
Rear: 996 873 13



Ø VALVE HOLE

Ø: 6.5 mm
Length.: ≥ 32 mm

RECOMMENDED TIRE WIDTH

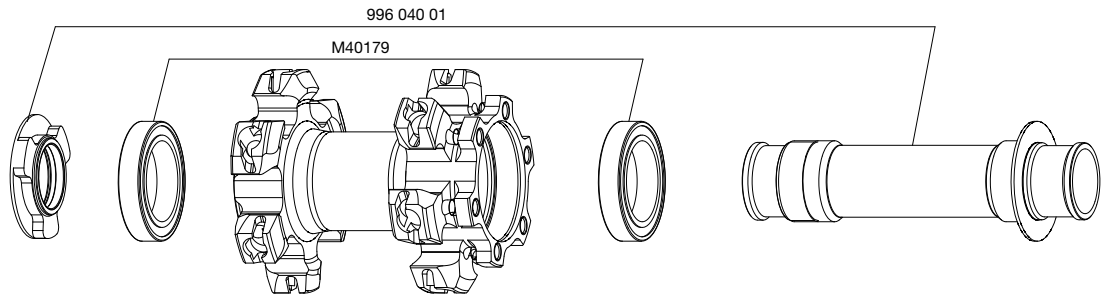
Dimensions: Ø 26"
ETRTO 559 x 17C compatible and Tubeless UST.
Recommended tire width: 1.0" to 2.1"

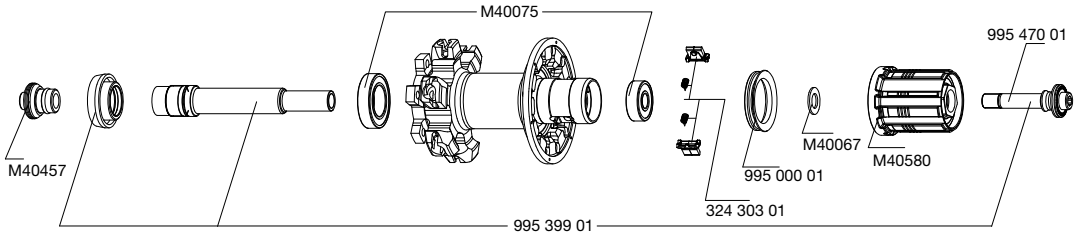
When replacing the front rim:
1. With the valve hole near you, the raised indicator bump must be to the **right** of the valve hole
2. The spoke in the first hole to the right of the valve hole is a non-braking spoke and should be inserted in the disc side.

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 should be inserted on the drive side in a marked hole on the hub

HUBS

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





WHEEL BUILDING

REFERENCES AND LENGTHS:

Front:	995 376 01, length 261 mm, (per 12 + 3 red, integrated nipples)
Rear drive side:	995 377 01, length 248 mm, (per 12 + 1 red, integrated nipples)
Rear non-drive side:	996 874 01, length 263 mm, (per 12 + 2 red, integrated nipples)

FEATURES:
Black Zicral double butted straight pull spokes (front and rear non-drive side) (including two decorated per wheel) with integrated, self-locking M7 aluminum spoke nipples.

LACING PATTERN:
Front: crossed 2 on both sides
Rear: Isopulse

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

ACCESSORIES

WHEELS SUPPLIED WITH:

- BX 601 Titanium rear quick-release skewer 995 389 01
- Computer magnet M40540
- Spoke wrench M40494 (with rear wheel)
- UST valves 995 282 01
- Free play bearing adjustment wrench M40123 (with rear wheel)
- User guide

MAINTENANCE

Replacing the front axle and bearings	See 2008 TM, page 24
Replacing the rear axle	See 2007 TM, page 20
Maintaining and replacing the free wheel mechanism	See 2007 TM, page 21
Replacing the rear bearings	See 2003 TM, page 22
Replacing a spoke	See 2003 TM, page 24
Replacing the front rim	See page 37
Replacing the rear rim	See 2006 TM, page 17

To consult this information quickly in a practical manner, refer to **www.tech-mavic.com**

CROSSMAX SLR DISC 09 LEFTY

STANDARD INTERNATIONAL

USE: use only on a Cross Country 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 his equipment: 85 kg.

WHEEL WEIGHTS WITHOUT QUICK-RELEASE SKEWER

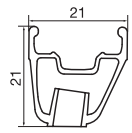
Front:	695 g
Rear:	830 g

WHEEL REFERENCES

Front:	996 522 10
Rear:	996 413 13
Pair:	996 523 14

RIMS

REFERENCES: Front: 996 873 10
Rear: 996 873 13



Ø VALVE HOLE

Ø: 6.5 mm
Length.: ≥ 32 mm

RECOMMENDED TIRE WIDTH

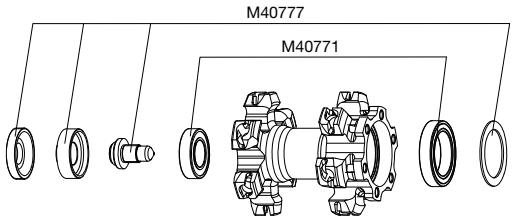
Dimensions: Ø 26"
ETRTO 559 x 17C compatible and Tubeless UST.
Recommended tire width: 1.0" to 2.1"

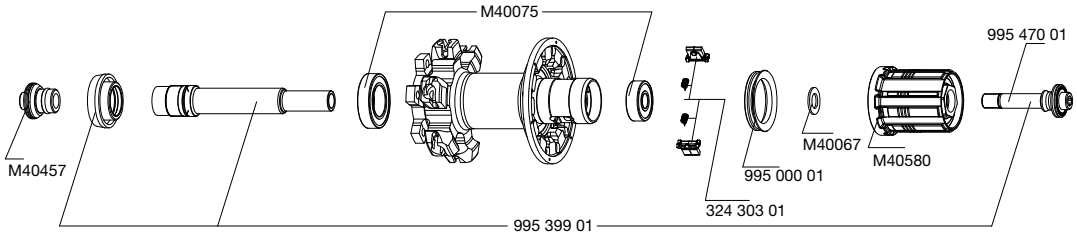
When replacing the front rim:
1. With the valve hole near you, the raised indicator bump must be to the **right** of the valve hole
2. The spoke in the first hole to the right of the valve hole is a non-braking spoke and should be inserted in the disc side.

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 should be inserted on the drive side in a marked hole on the hub

HUBS

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





WHEEL BUILDING

REFERENCES AND LENGTHS:

Front:	995 376 01, length 261 mm, (per 12 + 3 red, integrated nipples)
Rear drive side:	995 377 01, length 248 mm, (per 12 + 1 red, integrated nipples)
Rear non-drive side:	996 874 01, length 263 mm, (per 12 + 2 red, integrated nipples)

FEATURES:
Black Zicral double butted straight pull spokes (including two decorated per wheel) with integrated, self-locking M7 aluminum spoke nipples.

LACING PATTERN:
Front: crossed 2 on both sides
Rear: Isopulse

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

ACCESSORIES

WHEELS SUPPLIED WITH:

- BX 601 Titanium rear quick-release skewer 995 389 01
- Lefty assembly accessories M40777 (with front wheel)
- Computer magnet M40540
- Spoke wrench M40494 (with rear wheel)
- UST valves 995 282 01
- Free play bearing adjustment wrench M40123 (with rear wheel)
- User guide

MAINTENANCE

Fitting and removing the front wheel on the fork	See 2004 TM, page 18
Replacing the front axle and bearings	See page 26
Replacing the rear axle	See 2007 TM, page 20
Maintaining and replacing the free wheel mechanism	See 2007 TM, page 21
Replacing the rear bearings	See 2003 TM, page 22
Replacing a spoke	See 2003 TM, page 24
Replacing the front rim	See page 37
Replacing the rear rim	See 2006 TM, page 17

To consult this information quickly in a practical manner, refer to **www.tech-mavic.com**

CROSSRIDE UB/DISC 09

STANDARD INTERNATIONAL

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 his equipment: 100 kg.

WHEEL WEIGHTS WITHOUT QUICK-RELEASE SKEWER

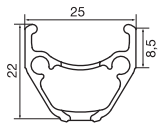
Front:	900 g
Rear M10:	1040 g

WHEEL REFERENCES STANDARD INTERNATIONAL

Front:	996 403 10
Rear:	996 404 13
Pair:	996 405 14

RIMS

REFERENCES: **Front and rear:** 996 891 15



Ø VALVE HOLE

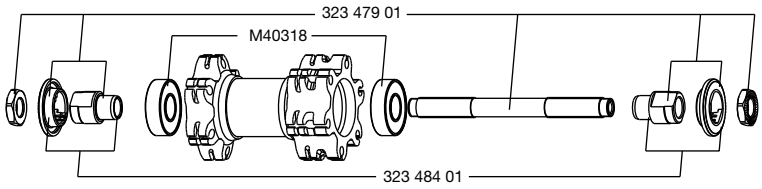
Ø: 8.5 mm with valve adaptor 6.5 mm
Length.: ≥ 32 mm

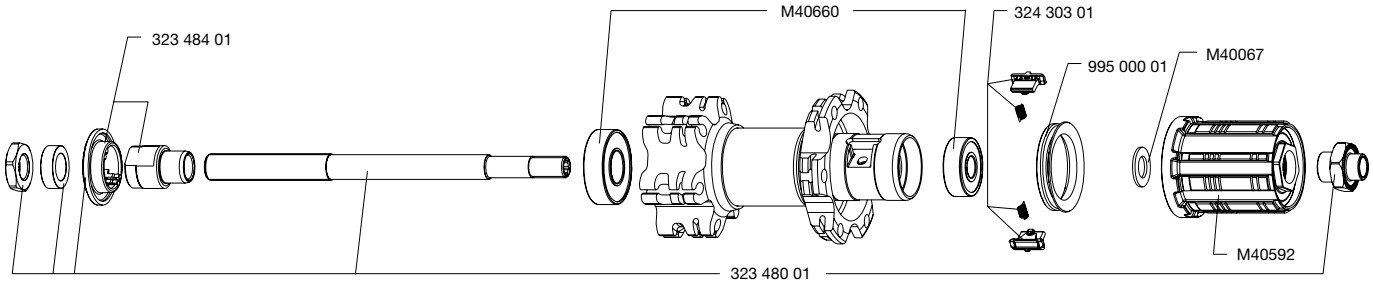
RECOMMENDED TIRE WIDTH

Dimensions: Ø 26"
ETRTO 559 x 19C
Recommended tire width: 1.1" to 2.3"

HUBS

MAINTENANCE: Clean with a dry cloth or soap and 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: crossed 2 on both sides

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

ACCESSORIES

WHEELS SUPPLIED WITH:

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

MAINTENANCE

To consult this information quickly in a practical manner, refer to **www.tech-mavic.com**

CROSSRIDE DISC

STANDARD INTERNATIONAL

CENTER LOCK

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 his equipment: 100 kg.

WHEEL WEIGHTS WITHOUT QUICK-RELEASE SKEWER

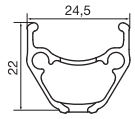
	INT	CL
Front:	885 g	880 g
Rear:	1020 g	1015 g

WHEEL REFERENCES

	INT	CL
Front:	996 176 10	996 179 10
Rear:	996 177 13	996 180 13
Pair:	996 178 14	996 181 14

RIMS

REFERENCES: **Front and rear:** 996 890 15



Ø VALVE HOLE

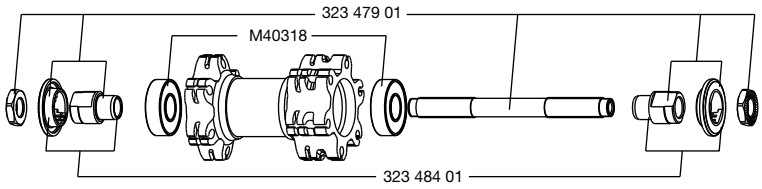
Ø: 8.5 mm with valve adaptor 6.5 mm
Length.: ≥ 32 mm

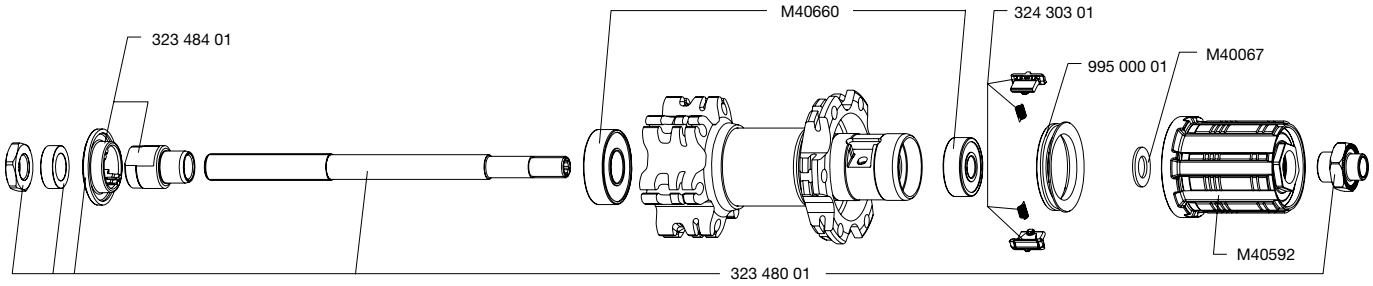
RECOMMENDED TIRE WIDTH

Dimensions: Ø 26”
ETRTO 559 x 19C
Recommended tire width: 1.1” to 2.3”

HUBS

MAINTENANCE: Clean with a dry cloth or soap and 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: crossed 2 on both sides

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

ACCESSORIES

WHEELS SUPPLIED WITH:

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

MAINTENANCE

To consult this information quickly in a practical manner, refer to **www.tech-mavic.com**

CROSSMAX ST DISC 09

STANDARD INTERNATIONAL

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 his equipment: 100 kg.

WHEEL WEIGHTS WITHOUT QUICK-RELEASE SKEWER

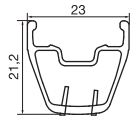
Front:	745 g
Rear:	895 g

WHEEL REFERENCES

Front:	996 799 10
Rear:	995 119 13
Pair:	996 801 14

RIMS

REFERENCES: Front: 995 400 10
Rear: 995 400 13



Ø VALVE HOLE

Ø: 6.5 mm
Length.: ≥ 32 mm

RECOMMENDED TIRE WIDTH

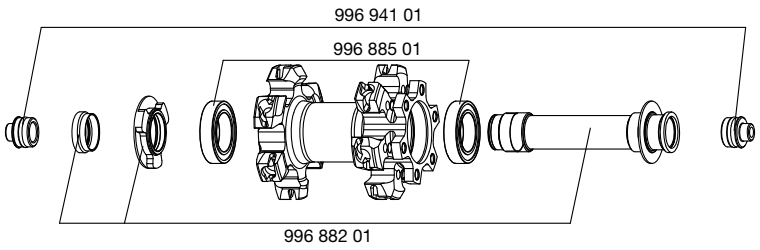
Dimensions: Ø 26"
ETRTO 559 x 19C compatible and Tubeless UST.
Recommended tire width: 1.1" to 2.3"

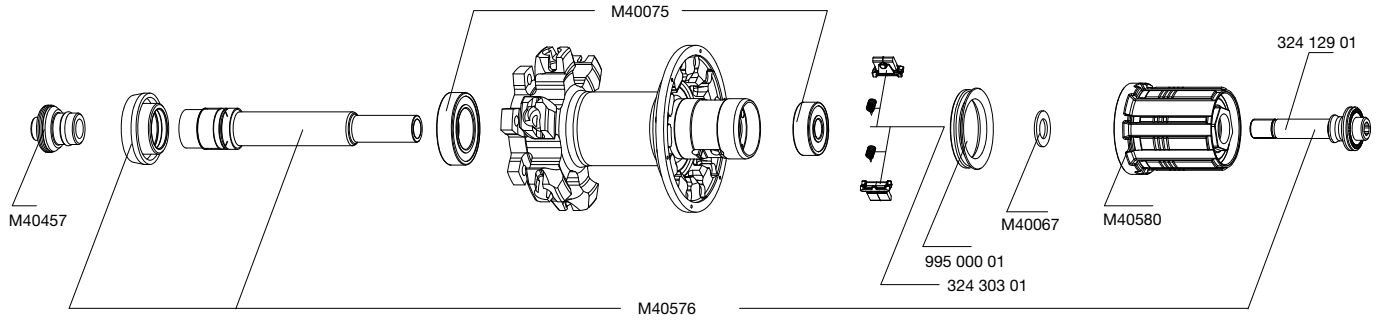
When replacing the front rim:
1. With the valve hole near you, the raised indicator bump must be to the left of the valve hole
2. The spoke in the first hole to the right of the valve hole is a non-braking spoke and should be inserted in the disc side of the hub

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 should be inserted on the drive side in a marked hole on the hub

HUBS

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





WHEEL BUILDING

REFERENCES AND LENGTHS:

Front:	995 401 01, length 261 mm, (per 12 + 1 decorated, integrated nipples)
Rear drive side:	995 402 01, length 248 mm, (per 12, integrated nipples)
Rear non-drive side:	995 403 01, length 263 mm, (per 12 + 1 decorated, integrated nipples)

FEATURES:
Black Zicral round straight pull spokes (with one decorated per wheel) with integrated, self-locking M7 aluminum spoke nipples.

LACING PATTERN:
Front: crossed 2 on both sides
Rear: Isopulse

TENSION:
Front disc side: 110 to 130 kg
Rear drive side: 110 to 130 kg

ACCESSORIES

WHEELS SUPPLIED WITH:

- BX 601 front quick-release M40140
- BX 601 rear quick-release M40141
- UST valves 995 282 01
- Computer magnet M40540 (with front wheel)
- Axle reducers 15 => 9 mm 996 941 01 (with front wheel)
- M7 spoke wrench M40494 (with rear wheel)
- Anti-ejection plugs 996 065 01 (with rear wheel)
- Free play bearing adjustment wrench M40123 (with rear wheel)
- User guide

MAINTENANCE

To consult this information quickly in a practical manner, refer to **www.tech-mavic.com**

CROSSMAX ST DISC 09 Center-Lock

CENTER LOCK

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 his equipment: 100 kg.

WHEEL WEIGHTS WITHOUT QUICK-RELEASE SKEWER

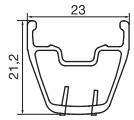
Front:	745 g
Rear:	890 g

WHEEL REFERENCES

Front:	996 800 10
Rear:	995 145 13
Pair:	996 802 14

RIMS

REFERENCES: Front: 995 400 10
Rear: 995 400 13



Ø VALVE HOLE

Ø: 6.5 mm
Length.: ≥ 32 mm

RECOMMENDED TIRE WIDTH

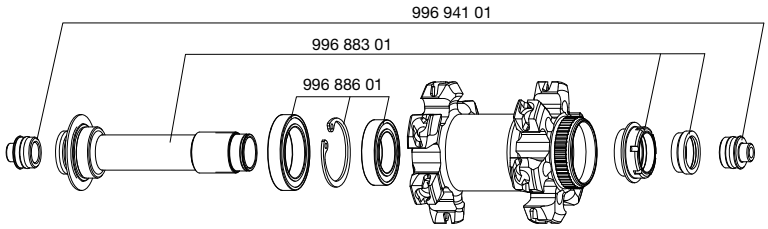
Dimensions: Ø 26"
ETRTO 559 x 19C compatible and Tubeless UST.
Recommended tire width: 1.1" to 2.3"

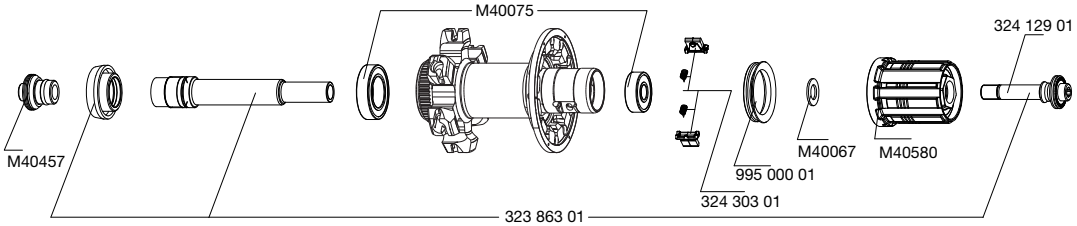
When replacing the front rim:
1. With the valve hole near you, the raised indicator bump must be to the left of the valve hole
2. The spoke in the first hole to the right of the valve hole is a non-braking spoke and should be inserted in the disc side of the hub

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 should be inserted on the drive side in a marked hole on the hub

HUBS

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





WHEEL BUILDING

REFERENCES AND LENGTHS:

Front:	995 401 01, length 261 mm, (per 12 + 1 decorated, integrated nipples)
Rear drive side:	995 402 01, length 248 mm, (per 12, integrated nipples)
Rear non-drive side:	995 403 01, length 263 mm, (per 12 + 1 decorated, integrated nipples)

FEATURES:
Black Zicral round straight pull spokes (with one decorated per wheel) with integrated, self-locking M7 aluminum spoke nipples.

LACING PATTERN:
Front: crossed 2 on both sides
Rear: Isopulse

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

ACCESSORIES

WHEELS SUPPLIED WITH:

- BX 601 front quick-release M40140
- BX 601 rear quick-release M40141
- UST valves 995 282 01
- Computer magnet M40540 (with front wheel)
- Axle reducers 15 => 9 mm 996 941 01 (with front wheel)
- M7 spoke wrench M40494 (with rear wheel)
- Anti-ejection plugs 996 065 01 (with rear wheel)
- Free play bearing adjustment wrench M40123 (with rear wheel)
- User guide

MAINTENANCE

To consult this information quickly in a practical manner, refer to **www.tech-mavic.com**

CROSSLINE

STANDARD
INTERNATIONAL

USE: use only on a Enduro-Freeride MTB fitted with disc brakes. Any other use (such as on a tandem, road bike, cyclo-cross bike, downhill bike…) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty.

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

WHEEL WEIGHTS WITHOUT QUICK-RELEASE SKEWER

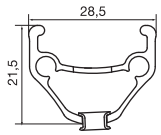
Front: 970 g
Rear: 1085 g

WHEEL REFERENCES

Front: 995 566 10
Rear: 995 567 13
Pair: 995 568 14

RIMS

REFERENCES: **Front and rear:** 996 902 15



Ø VALVE HOLE

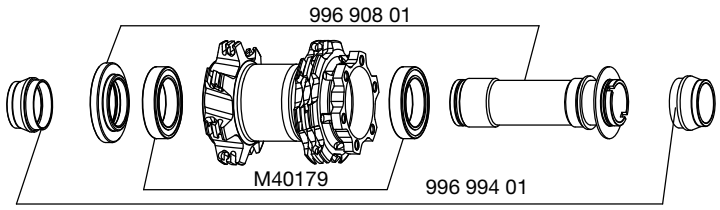
Ø: 8.5 mm
Length.: ≥ 32 mm

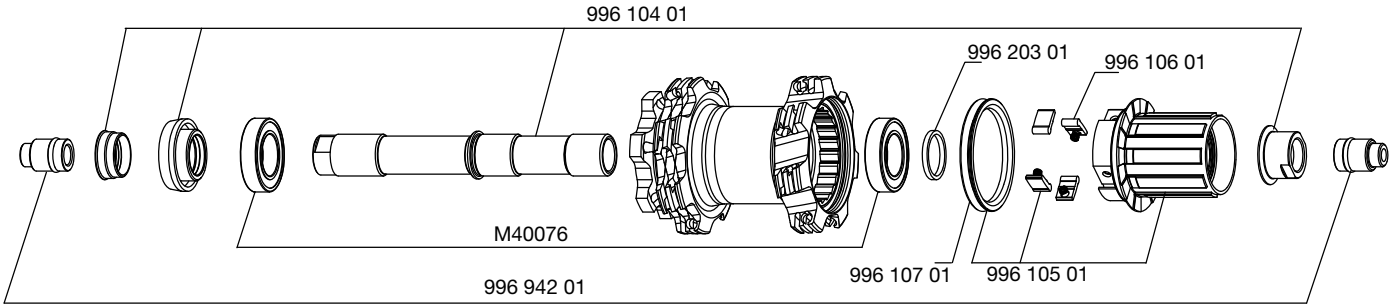
RECOMMENDED TIRE WIDTH

Dimensions: Ø 26”
ETRTO 559 x 21C compatible
Recommended tire width: 2.1” to 2.5”

HUBS

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





WHEEL BUILDING

REFERENCES AND LENGTHS: Front and rear: 996 903 01, length 273 mm, (per 14, with nipples)

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

LACING PATTERN:
Front and rear: crossed 2 on both sides

TENSION:
Front disc side: 110 to 130 kg
Rear drive side: 110 to 130 kg

ACCESSORIES

WHEELS SUPPLIED WITH:

- BX 101 rear quick-release M40351
- Fork support kit 20 mm 996 994 01
- Axle reducers 12=>9 mm 996 942 01
- Rim tape
- Free play bearing adjustment wrench M40123 (with rear wheel)
- User guide

MAINTENANCE

Replacing the front axle and bearings in the INT model	See 2003 TM, page 18
Rear wheel assembly diameter conversion	See page 30
Maintaining and replacing the free wheel mechanism	See page 29
Replacing the rear axle and bearings	See page 30
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

To consult this information quickly in a practical manner, refer to **www.tech-mavic.com**

CROSSLINE Center-Lock

CENTER LOCK

USE: use only on a Enduro-Freeride MTB fitted with disc brakes. Any other use (such as on a tandem, road bike, cyclo-cross bike, downhill bike…) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty.

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

WHEEL WEIGHTS WITHOUT QUICK-RELEASE SKEWER

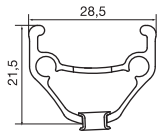
Front: 965 g
Rear: 1080 g

WHEEL REFERENCES

Front: 996 230 10
Rear: 996 231 13
Pair: 996 232 14

RIMS

REFERENCES: **Front:** 996 902 15



Ø VALVE HOLE

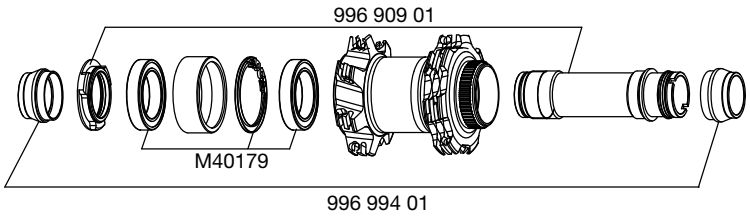
Ø: 8.5 mm
Length.: ≥ 32 mm

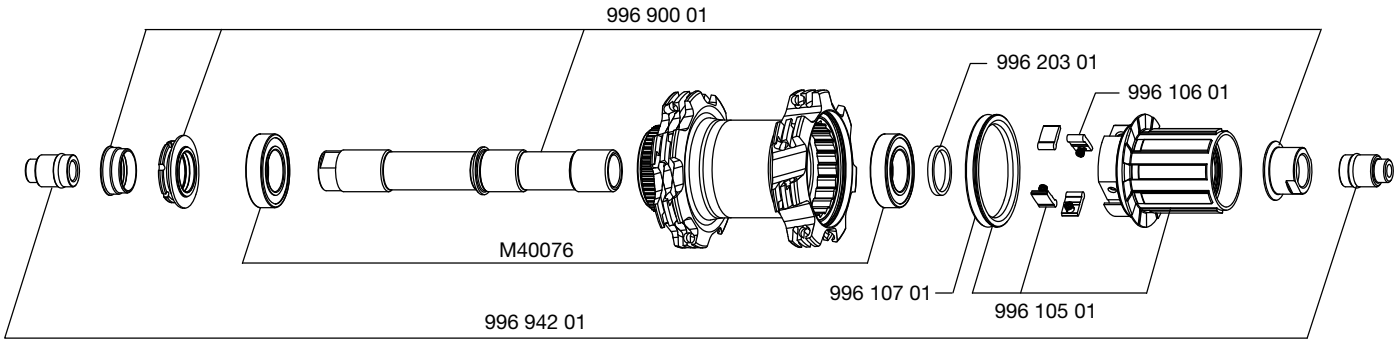
RECOMMENDED TIRE WIDTH

Dimensions: Ø 26”
ETRTO 559 x 21C compatible
Recommended tire width: 2.1” to 2.5”

HUBS

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





WHEEL BUILDING

REFERENCES AND LENGTHS: Front and rear: 996 903 01, length 273 mm, (per 14, with nipples)

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

LACING PATTERN:
Front and rear: crossed 2 on both sides

TENSION:
Front disc side: 110 to 130 kg
Rear drive side: 110 to 130 kg

ACCESSORIES

WHEELS SUPPLIED WITH:

- BX 101 rear quick-release M40351
- Fork support kit 20 mm 996 994 01
- Axle reducers 12=>9 mm 996 942 01
- Rim tape
- Free play bearing adjustment wrench M40123 (with rear wheel)
- User guide

MAINTENANCE

Replacing the front axle and bearings in the CL model	See page 28
Rear wheel assembly diameter conversion	See page 25
Maintaining and replacing the free wheel mechanism	See page 29
Replacing the rear axle and bearings	See page 30
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

To consult this information quickly in a practical manner, refer to **www.tech-mavic.com**

CROSSMAX SX 09

STANDARD INTERNATIONAL

USE: use only on a Enduro-Freeride MTB fitted with disc brakes. Any other use (such as on a tandem, road bike, cyclo-cross bike, downhill bike…) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty.

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

WHEEL WEIGHTS WITHOUT QUICK-RELEASE SKEWER

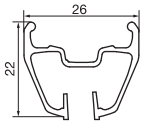
Front:	825 g
Rear:	930 g

WHEEL REFERENCES

Front:	996 223 10
Rear:	996 224 13
Pair:	996 225 14

RIMS

REFERENCES: Front: 996 893 10
Rear: 996 893 13



Ø VALVE HOLE

Ø: 6.5 mm
Length.: ≥ 32 mm

RECOMMENDED TIRE WIDTH

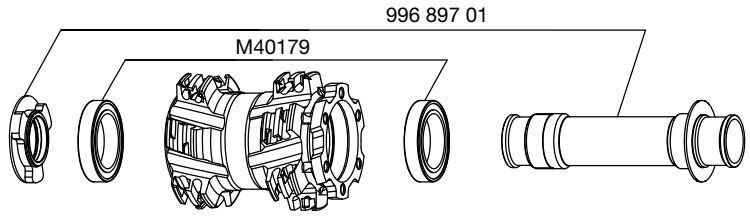
Dimensions: Ø 26"
ETRTO 559 x 21C compatible and Tubeless UST
Recommended tire width: 2.1" to 2.5"

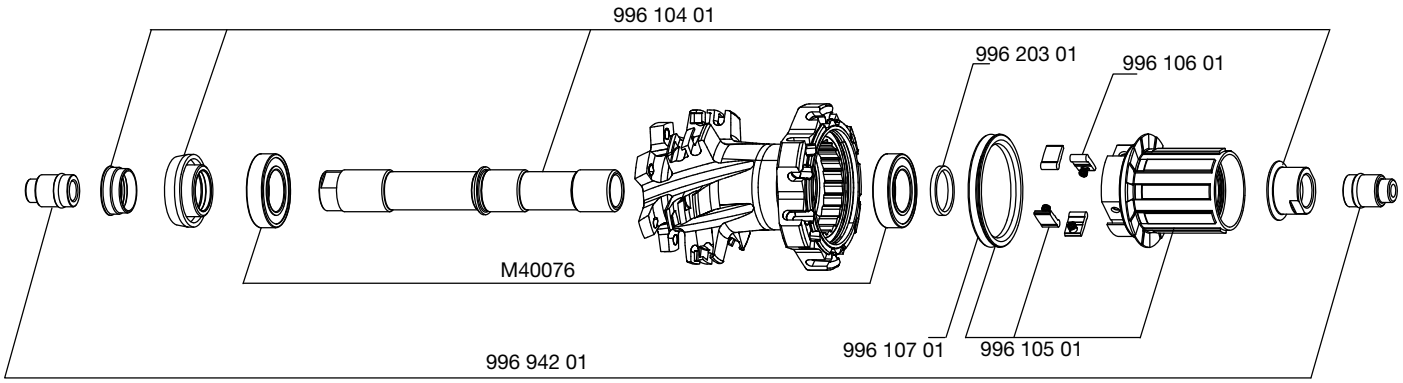
When replacing the front rim:
1. With the valve hole near you, the raised indicator bump must be to the left of the valve hole
2. The spoke in the first hole to the right of the valve hole is a non-braking spoke and should be inserted in the disc side of the hub

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-driving spoke and should be inserted in the drive side of the hub

HUBS

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





WHEEL BUILDING

REFERENCES AND LENGTHS:
Front and rear non-drive side: 995 437 01, length 255 mm, (per 12 + 2 pad-printed, integrated nipples)
Rear drive side: 995 438 01, length 247 mm, (per 12, integrated nipples)

FEATURES:
Gray Zicral round straight pull spokes with integrated, self-locking M7 aluminum spoke nipples.

LACING PATTERN:
Front and rear: crossed 2 on both sides

TENSION:
Front disc side: 110 to 130 kg
Rear drive side: 110 to 130 kg

ACCESSORIES

WHEELS SUPPLIED WITH:

- BX 601 rear quick-release M40141
- Axle reducers 12=>9 mm 996 942 01
- UST valves 995 282 01
- Computer magnet M40540 (with front wheel)
- M7 spoke wrench M40494 (with rear wheel)
- Free play bearing adjustment wrench M40123 (with rear wheel)
- User guide

MAINTENANCE

Replacing the front axle and bearings in the INT model	See 2008 TM, page 24
Rear wheel assembly diameter conversion	See page 25
Maintaining and replacing the free wheel mechanism	See page 29
Replacing the rear axle and bearings	See page 30
Replacing a spoke	See 2003 TM, page 24
Replacing the front rim	See 2003 TM, page 29
Replacing the rear rim	See 2003 TM, page 30

To consult this information quickly in a practical manner, refer to **www.tech-mavic.com**

CROSSMAX SX 09 Center-Lock

CENTER LOCK

USE: use only on a Enduro-Freeride MTB fitted with disc brakes. Any other use (such as on a tandem, road bike, cyclo-cross bike, downhill bike…) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty.

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

WHEEL WEIGHTS WITHOUT QUICK-RELEASE SKEWER

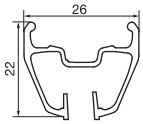
Front:	825 g
Rear:	920 g

WHEEL REFERENCES

Front:	996 507 10
Rear:	996 508 13
Pair:	996 509 14

RIMS

REFERENCES: Front: 996 893 10
Rear: 996 893 13



Ø VALVE HOLE

Ø: 6.5 mm
Length.: ≥ 32 mm

RECOMMENDED TIRE WIDTH

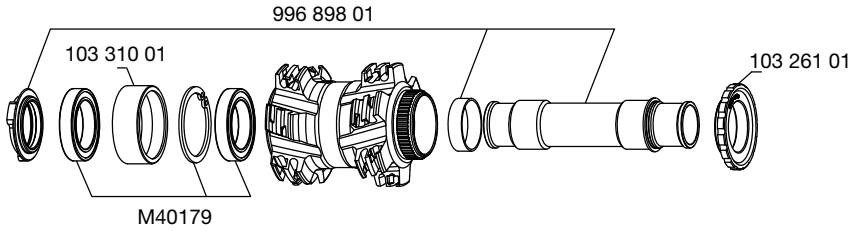
Dimensions: Ø 26”
ETRTO 559 x 21C compatible and Tubeless UST
Recommended tire width: 2.1” to 2.5”

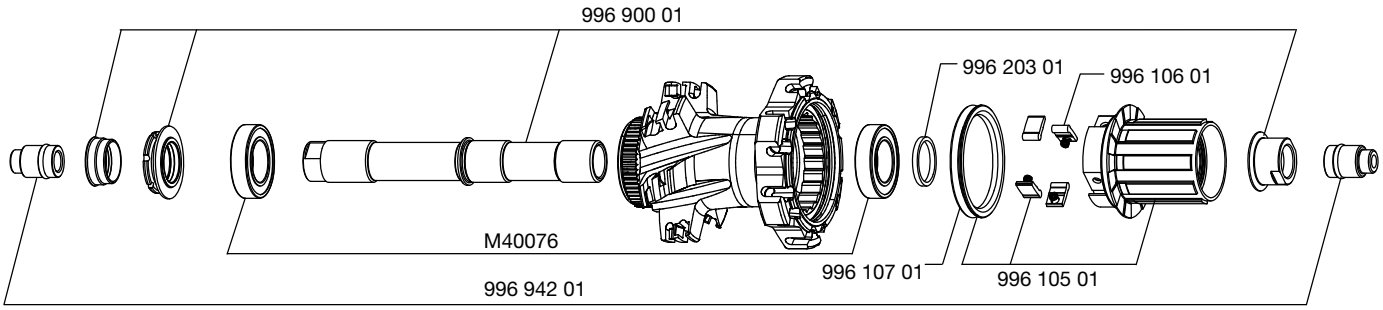
When replacing the front rim:
1. With the valve hole near you, the raised indicator bump must be to the left of the valve hole
2. The spoke in the first hole to the right of the valve hole is a non-braking spoke and should be inserted in the disc side of the hub

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-driving spoke and should be inserted in the drive side of the hub

HUBS

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





WHEEL BUILDING

REFERENCES AND LENGTHS:
Front and rear non-drive side: 995 437 01, length 255 mm, (per 12 + 2 pad-printed, integrated nipples)
Rear drive side: 995 438 01, length 247 mm, (per 12, integrated nipples)

FEATURES:
Gray Zicral round straight pull spokes with integrated, self-locking M7 aluminum spoke nipples.

LACING PATTERN:
Front and rear: crossed 2 on both sides

TENSION:
Front disc side: 110 to 130 kg
Rear drive side: 110 to 130 kg

ACCESSORIES

WHEELS SUPPLIED WITH:

- BX 601 rear quick-release M40141
- Axle reducers 12=>9 mm 996 942 01
- UST valves 995 282 01
- Computer magnet M40540 (with front wheel)
- M7 spoke wrench M40494 (with rear wheel)
- Free play bearing adjustment wrench M40123 (with rear wheel)
- User guide

MAINTENANCE

Replacing the front axle and bearings in the CL model	See page 28
Rear wheel assembly diameter conversion	See page 25
Maintaining and replacing the free wheel mechanism	See page 29
Replacing the rear axle and bearings	See page 30
Replacing a spoke	See 2003 TM, page 24
Replacing the front rim	See 2003 TM, page 29
Replacing the rear rim	See 2003 TM, page 30

To consult this information quickly in a practical manner, refer to **www.tech-mavic.com**

DEETRAKS 09 and DEETRAKS 09 12x150

STANDARD INTERNATIONAL

USE: use only on a Cross Country or Cross Mountain MTB fitted with disc or rim brakes. Any other use (such as on a tandem, road bike, cyclo-cross bike, ...) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty.

Recommended maximum weight of the cyclist and his equipment: 115 kg.

WHEEL WEIGHTS WITHOUT QUICK-RELEASE SKEWER

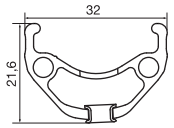
	9.5x135	12x150
Front:	1085 g	1085 g
Rear:	1170 g	1175 g

WHEEL REFERENCES

	9.5x135	12x150
Front:	996 197 10	996 197 10
Rear:	996 198 13	996 221 13
Pair:	996 199 14	996 222 14

RIMS

REFERENCES: Front and rear: 996 925 15



Ø VALVE HOLE

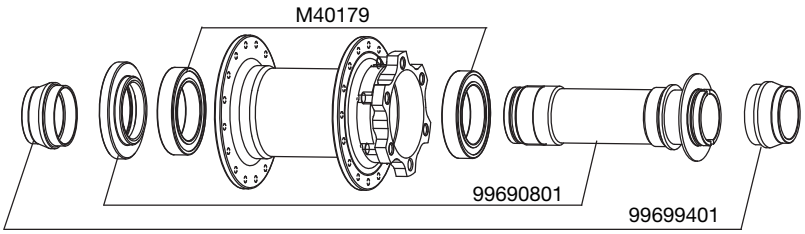
Ø: 8.5 mm
Length.: ≥ 32 mm

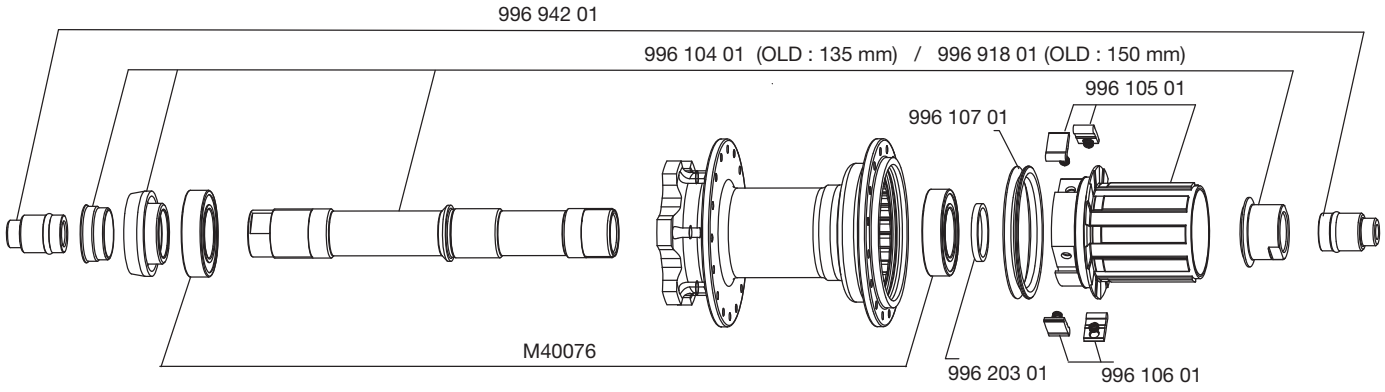
RECOMMENDED TIRE WIDTH

Dimensions: Ø 26"
ETRTO 559 x 25C compatible
Recommended tire width: 2.3" to 3.0"

HUBS

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





WHEEL BUILDING

REFERENCES AND LENGTHS:
Front non-disc side and rear non-drive side: 996 926 01, length 263 mm (per 16, with nipples)
Front disc side and rear drive side: 996 927 01, length 261 mm (per 16, with nipples)

FEATURES:
Black steel round J-bent spokes with Self Lock system and conventional spoke nipples.

LACING PATTERN:
Front and rear: crossed 3 on 2 sides, hot lacing.

TENSION:
Front disc side: 110 to 130 kg
Rear drive side: 120 to 140 kg

ACCESSORIES

WHEELS SUPPLIED WITH:

- BR 101 rear quick-release skewer M40351 (with 135 mm rear wheel only)
- Fork support kit 20 mm 996 994 01
- Axle reducers =>9 mm 996 942 01 (with 135 mm rear wheel only)
- Rim tape
- Free play bearing adjustment wrench M40123 (with rear wheel)
- User guide

MAINTENANCE

Replacing the front axle and bearings — See 2008 TM, page 24
Rear wheel assembly diameter conversion — See page 25
Maintaining and replacing the free wheel mechanism — See page 29
Replacing the rear axle and bearings — See page 30
Replacing one spoke, front or rear rim — See page 40

To consult this information quickly in a practical manner, refer to **www.tech-mavic.com**

DEEMAX 09 and DEEMAX 09 12x150

STANDARD INTERNATIONAL

USE: use only on a Cross Country or Cross Mountain MTB fitted with disc or rim brakes. Any other use (such as on a tandem, road bike, cyclo-cross bike, ...) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty.

Recommended maximum weight of the cyclist and his equipment: 115 kg.

WHEEL WEIGHTS WITHOUT QUICK-RELEASE SKEWER

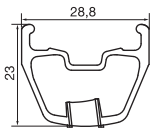
	9.5x135	12x150
Front:	1010 g	1010 g
Rear:	1150 g	1160 g

WHEEL REFERENCES

	9.5x135	12x150
Front:	996 192 10	996 192 10
Rear:	996 193 13	996 195 13
Pair:	996 194 14	996 196 14

RIMS

REFERENCES: Front: 996 910 10
Rear: 996 910 13



Ø VALVE HOLE

Ø: 6.5 mm
Length.: ≥ 32 mm

RECOMMENDED TIRE WIDTH

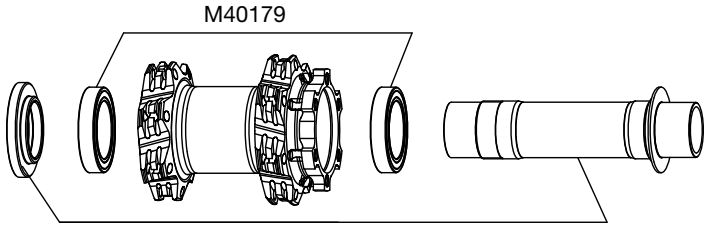
Dimensions: Ø 26"
ETRTO 559 x 23C compatible and Tubeless UST.
Recommended tire width: 2.3" to 3.0"

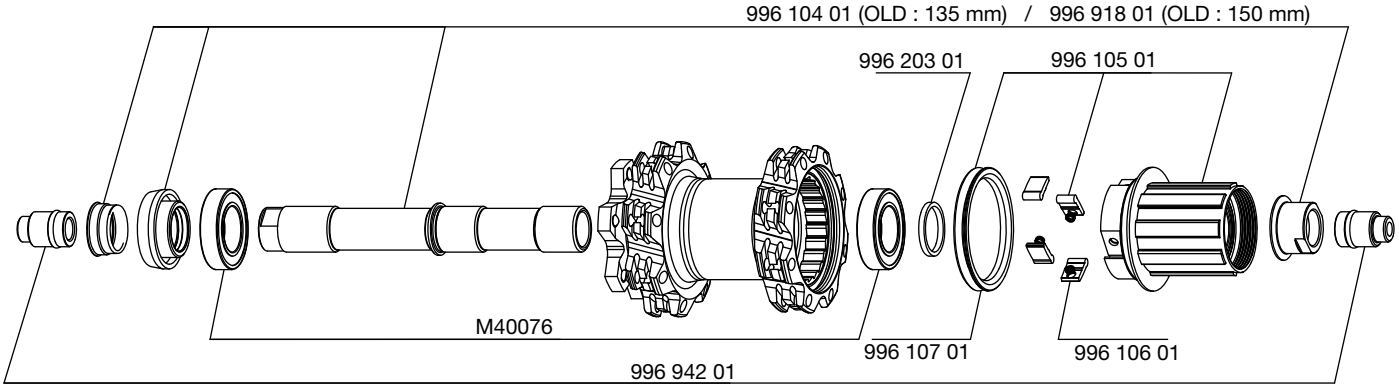
When replacing the front rim:
1. With the valve hole near you, the raised indicator bump must be to the left of the valve hole
2. The spoke in the first hole to the right of the valve hole is a non-braking spoke and should be inserted in the disc side of the hub

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-driving spoke and should be inserted in the drive side of the hub

HUBS

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





WHEEL BUILDING

REFERENCES AND LENGTHS:

Front:	996 911 01, length 270 mm (per 14, integrated nipples)
Rear drive side:	996 912 01, length 264.5 mm (per 16, integrated nipples)
Rear non-drive side:	996 913 01, length 267.5 mm (per 16 integrated nipples)

FEATURES:
Black stainless steel round straight pull spokes with integrated, self-locking M7 aluminum spoke nipples.

LACING PATTERN:
Front and rear: crossed 3 on both sides

TENSION:
Front disc side: 100 to 120 kg
Rear drive side: 110 to 130 kg

ACCESSORIES

WHEELS SUPPLIED WITH:

- BX 601 rear quick-release M40141 (with 135 mm rear wheel only)
- Axle reducers 12=>9 mm 996 942 01 (with 135 mm rear wheel only)
- UST valves 995 282 01
- M7 spoke wrench M40494 (with rear wheel)
- Free play bearing adjustment wrench M40123 (with rear wheel)
- User guide

MAINTENANCE

To consult this information quickly in a practical manner, refer to **www.tech-mavic.com**

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 buyer.

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 lose 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 in the 2009 range and are laid out as follows:

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 23 of this manual) for further details.

All these procedures can all be found at 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)

HUBS

WHEEL ASSEMBLY DIAMETER CONVERSION, FRONT 15 MM AND REAR 12 MM

Tools needed

• None

The front 9 mm and rear 9.5 mm fork supports are clipped to the 15 mm and 12 mm axles respectively.

To unclip them, push them in turn via the inside of the hub using a quick-release rod.

Put a drop of oil on their O-ring before clipping them back on to make them easier to remove.

REPLACING BEARINGS ON THE CROSSMAX SLR DISC 09 LEFTY WHEEL

Tools needed

• 1 clamp hub wrench
• 1 bearing press kit 323 945 01 for the non-disc side bearing
• 1 bearing press kit M40218 for the disc side bearing

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 press kit to remove the bearings.

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 at the flat-bottomed side (see photo)

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

REPLACING THE FRONT AXLE AND BEARINGS ON THE CROSSMAX SLR DISC 09 AND CROSSMAX ST DISC 09 STANDARD INTERNATIONAL MODEL WHEELS

Tools needed

- 1 hub wrench M40123
- Bearing press kit 996 887 01

The operations below can be carried out whether or not the 9 mm axle reducers are fitted.

Unclip the non-disc side fork support.

Hold wrench M40123 in place and loosen the axle with your fingers via the disc side.

Remove the axle.

Use a bearing press kit to remove the bearings.

Fit the new bearings with press kit 996 887 01.

Refit the axle by inserting it in the hub via the disc side and retighten the adjustment nut with the hub wrench with your fingers.

Reclip the non-disc side fork support.

Fit the wheel in the fork and adjust the bearing play.

REPLACING THE FRONT AXLE AND BEARINGS ON THE CENTER LOCK MODELS OF THE CROSSMAX SLR DISC 09 AND CROSSMAX ST DISC 09 WHEELS

Tools needed

- 1 hub wrench M40123
- Bearing press kit 996 887 01 for the disc side bearing
- Bearing press kit M40218 for the non-disc side bearing
- Straight internal circlip clamp

The operations below can be carried out whether or not the 9 mm axle reducers are fitted.
The disc side and non-disc side bearings are not the same size. The disc side bearing is smaller in diameter than the non-disc side.

Unclip the disc side fork support.

Hold the adjustment nut in place with wrench M40123 and loosen the axle with your fingers via the non-disc side. Remove the axle.

Remove the non-disc side bearing, then the circlip via the non-disc side using the circlip clamp.

33333333333333333333 from outside the hub with a press kit to extract the bearing from the other side.

Insert the new disc side bearing (the smaller of the two) via the non-disc side and push it home with press kit 996 887 01.

Refit the circlip via the non-disc side with the circlip clamp.

Fit the new non-disc side bearing with press kit M40218.

Refit the axle to the hub via the non-disc side, retighten the adjustment nut with the hub wrench until contact is made with the bearing and loosen it again by a quarter turn.

Reclip the non-disc side fork support.

Fit the wheel in the fork and adjust the bearing play.

REPLACING THE FRONT AXLE AND BEARINGS ON THE CROSSMAX SX 09 AND CROSSLINE CENTER LOCK MODEL WHEELS

Tools needed

- 1 hub wrench M40123
- Bearing press kit M40218
- Straight internal circlip clamp

The operations detailed below must be carried out on the Crossline wheel without the 9 mm axle reducerss or the 20 mm adaptors.

Insert the end lugs of hub wrench M40123 in two offset holes in the adjustment nut on the non-disc side.

Hold wrench M40123 in place and loosen the axle via the disc side with your fingers (Crossmax SX) or the handle of a second wrench M40123 inserted in the axle slits (Crossline).

Remove the axle. Take care on the Crossmax SX not to mislay the bearing shim washer slid onto the axle.

Remove the non-disc side bearing. As the bearing is fitted in a spacer, this could be removed with the bearing. You must therefore separate the spacer from the bearing.

Remove the circlip via the non-disc side with the circlip clamp.

Remove the disc side bearing by pushing it from outside the hub with a press kit to extract the bearing from the other side.

Insert the new disc side bearing via the non-disc side and push it home with press kit M40218 and an additional tube.

Refit the circlip via the non-disc side with the circlip clamp.

If the non-disc side spacer has come out of the hub during removal, start by fitting the new bearing to the spacer with press kit M40218.

Refit the bearings-spacer assembly in the non-disc side hub, pushing it home with press kit M40218.

Insert the axle in the hub via the disc side. For the Crossmax SX 09, make sure that the shim washer is fitted.

Retighten the adjustment nut with the hub wrench, holding the axle by hand (Crossmax SX) or with the handle of a second wrench M40123 inserted in the axle slits (Crossline) until contact is made with the bearing and loosen it again by a quarter turn.

Fit the wheel in the fork and adjust the bearing play.

MAINTAINING AND REPLACING THE ITS4 FREE WHEEL MECHANISM

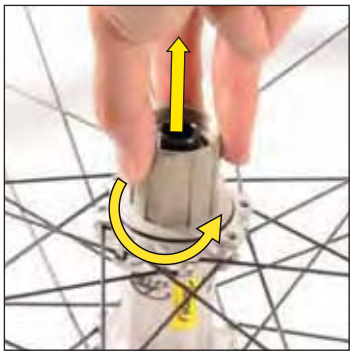
Tools needed

- 14 mm open-end wrench
- 17 mm open-end wrench
- Hub wrench M40123

There is no need to remove the axle from the hub for this operation. Do not remove the 9 mm reducing gears if they are already in place.
Start by loosening the bearing adjustment nut by two turns with hub wrench M40123; this will avoid damaging the bearings during refitting.

Unclip the non-drive side frame support.

Holding the axle with the 14 mm open-end wrench via the non-drive side, loosen the drive side lock nut with the 17 mm open end wrench.



Pull the free wheel body by rotating it counter-clockwise and remove it.

Slide the pawls in their groove to separate them from the free wheel body. Take care not to lose or damage the springs.

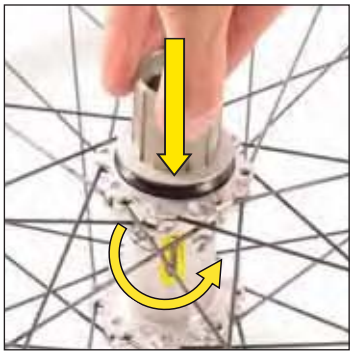
Remove the lip seal to clean or replace it, then refit it. Its lip must not come in contact with the free wheel body. Check that the base of the seal is flat against the entire free wheel body circumference.

Grip the pawl-spring assembly between your thumb and left forefinger and slide it in the throat of the free wheel body. Check that the spring is housed correctly.

Clean the hub body and fill three ratchet teeth with oil M40122.

Check that the ITS4 spacer is in place before refitting the free wheel body.

Center the internal spacer of the free wheel body, then slide the assembly onto the hub axle.



Push the free wheel body gently, rotating it counter-clockwise.

Holding the axle with the 14 mm open-end wrench via the non-drive side, tighten the drive side lock nut with the 17 mm open end wrench. (torque: 15 Nm maximum).

Reclip the non-drive side frame support;
Fix the wheel in its frame and check the bearing play;
If there is any play, gently tighten the adjustment nut with hub wrench M40123 to make the play disappear.

REPLACING THE REAR AXLE AND BEARINGS ON THE HUB BODY OF WHEELS OF THE ITS4 FREE WHEEL SYSTEM

Tools needed

- 14 mm open-end wrench
- 17 mm open-end wrench
- 1 mallet
- 1 press kit 996 901 01
- 1 press kit M40119
- Hub wrench M40123

Do not remove the 9 mm reducing gears if they are already in place for this operation.

Remove the free wheel body-pawl assembly following the appropriate procedure (refer to **www.tech-mavic.com** or the technical manuals from previous years);

Loosen the adjustment nut fully with hub wrench M40123, holding the axle with your hand.

Tap the non-drive side of the axle with the mallet to extract the drive side bearing and the axle.

Remove the non-drive side bearing.

Fit the new non-drive side bearing with press kit M40119.

Fit the new axle to the hub via the drive side, first inserting the side with the two spring pads.

Place the hub in a vice on the non-drive side so that the end of the axle slides freely in the hub.

Refit the non-drive side bearing with press kit 996 901 01.

Retighten the adjustment nut with wrench M40123, holding the axle with your fingers.

Refit the free wheel body, axle and non-drive side frame support following the appropriate procedure (refer to **www.tech-mavic.com** or the technical manuals from previous years);

Fix the wheel in its frame and check the bearing play;

If there is any play, gently tighten the adjustment nut with hub wrench M40123 to make the play disappear.

WHEEL BUILDING

REPLACING THE REAR RIM ON THE KSYRIUM ELITE 09 WHEEL

Tools needed

- Spoke wrench
- Aerodynamic spoke wrench M40567
- Mavic tensiometer 995 643 01 + tension-reading conversion chart supplied

The spoke reference and length to be used are indicated on pages 4 to 23.

These wheels must be fitted as follows:

- **The spokes are fitted radially on the drive side and crossed 2 on the non-drive side.**
- **On the non-drive side, the spokes are hot laced and crossed (going from the hub to the rim, the driving spokes pass above then below the non-driving spokes).**

Start with the non-drive side (longest spokes);

Start by placing a drop of Mavic thread lock M40315 in each threaded hole on the rim.

Turn the rim so that the two raised indicator bumps are to the left of the valve hole when this is near you.

Screw a spoke in the third hole to the right of the valve hole until the nipple locks. Repeat this step for all the spokes, one hole in four on the rim.

Insert the heads of these spokes in the slots on the non-drive side hub. These spokes are non-driving spokes.

Offer up the head of a driving spoke passing underneath the rim, underneath the first non-driving spoke then over the second non-driving spoke. Insert the head of this spoke in the notch in the corresponding slot.

Tighten the nipple on this spoke in the corresponding hole on the rim, then do the same for all the non-drive side driving spokes.

Turn the wheel over, screw a (short) spoke in all the remaining holes in the rim then push their heads in the slots on the drive side hub.

Tension the wheel gradually: only one turn at a time on each nipple until the recommended tension is achieved.

REPLACING A SPOKE ON THE COSMIC CARBONE SLR WHEEL

Tools needed

- Spoke wrench M40001
- R2R 101 295 01 spoke head wrench
- Mavic tensiometer 995 643 01 + tension-reading conversion chart supplied

CAUTION: tightening a spoke nipple affects the two half-spokes. When tensioning, one turn of the spoke nipple to tension the spoke is the equivalent of two turns on a normal wheel.

Mark the spoke pair you wish to replace and loosen both ends of the spoke pair which passes over the spoke pair to be replaced in the hub flange perimeter.

Remove the old spoke pair and fit the new one in place in the hub, respecting the original lacing.

Retension the two spoke pairs involved, holding the spoke heads with the thumb across the carbon rim flange.

Adjust the wheel definitively by holding the spoke heads inside the carbon rim flange with holding tool 101 295 01. **This tool should be offered up via the side with the most space and must enter without forcing.**

No thread lock is necessary as the spoke nipples are ABS.

REPLACING THE FRONT RIM ON THE COSMIC CARBONE SLR WHEEL

Tools needed

- Spoke wrench M40001
- R2R 101 295 01 spoke head wrench
- Mavic tensiometer 995 643 01 + tension-reading conversion chart supplied

Colored dots are stuck to the metal plates in the center of the spokes. These dots must always be visible when the spokes are assembled.

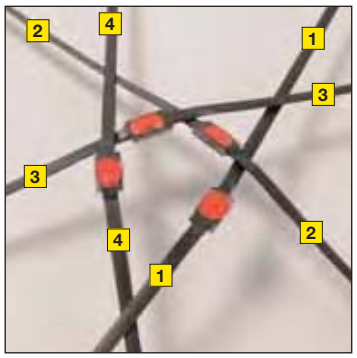
- The red dots mark the front spokes.

CAUTION: tightening a spoke nipple affects the two half-spokes. When tensioning, one turn of the spoke nipple to tension the spoke is the equivalent of two turns on a normal wheel.

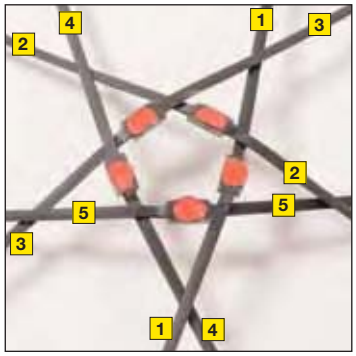
With the valve hole near you, screw a spoke in the first hole to the right of the valve hole and its other end in the eleventh hole when counting clockwise.

Fit the second spoke in the fifth hole to the right of the valve hole, counting counter-clockwise. The other end of this spoke is inserted in the fifteenth hole.

Fit the third spoke in the ninth hole to the right of the valve hole, counting counter-clockwise. The other end of this spoke is inserted in the nineteenth hole.



The fourth spoke is inserted in the thirteenth hole and must pass above the second and third spokes then underneath the first. Its other end is inserted in the third hole.



The fifth spoke is inserted in the seventeenth hole and must pass above the third and fourth spokes then underneath the first and second. Its other end is inserted in the seventh hole.

Turn the wheel over and repeat the steps above. Tighten all nipples until the threaded rods are just brushing the nipples.

Offer up the hub in the middle of the spokes and position the two hub flanges between the two layers of spokes.

Position the plates in the housing on one side of the hub then the other.

Adjust the wheel definitively by holding the spoke heads inside the carbon rim flange with holding tool 101 295 01. **This tool should be offered up via the side with the most space and must enter without forcing.**

Check that that the plates are flat against the hub body. If not, tap them lightly with a mallet to push them home.

Clip the hub caps by bending their internal diameter downwards to position the fixing tabs one by one. Check that the hub cap returns are positioned correctly above each plate.

Adjust the spoke flat alignment by turning the nipples gently with the spoke wrench without holding the spoke head and so that the nipple is not loosened.

REPLACING THE REAR RIM ON THE COSMIC CARBONE SLR WHEEL

Tools needed

- Spoke wrench M40001
- R2R 101 295 01 spoke head wrench
- Mavic tensiometer 995 643 01 + tension-reading conversion chart supplied

Colored dots are stuck to the metal plates in the center of the spokes. These dots must always be visible when the spokes are assembled.

- The green dots mark the drive-side spokes.
- The red dots mark the front and non-drive side spokes.

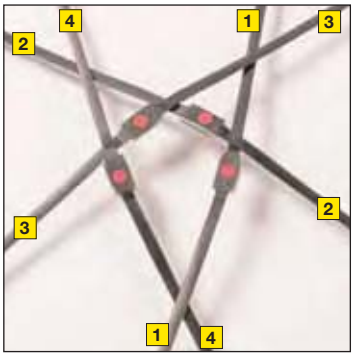
CAUTION: tightening a spoke nipple affects the two half-spokes. When tensioning, one turn of the spoke nipple to tension the spoke is the equivalent of two turns on a normal wheel.

Mark the rim fitting direction: the side of the rim where the spoke holes are the nearest to the leaking edge is the drive side.

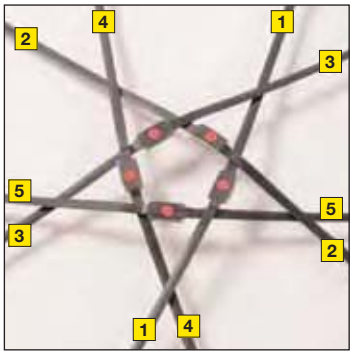
Start with the **non-drive side**. With the valve hole near you, screw a spoke into the **first hole to the right of the valve hole** and its other end into the eleventh hole when counting counter-clockwise.

Fit the second spoke in the **fifth hole to the right of the valve hole**, counting counter-clockwise. The other end of this spoke is inserted in the fifteenth hole, **to the right of the valve hole.**

Fit the third spoke in the **ninth hole to the right of the valve hole**, counting counter-clockwise. The other end of this spoke is inserted in the nineteenth hole, **to the right of the valve hole.**



The fourth spoke is inserted in the thirteenth hole to **the right of the valve hole** and must pass over the second and third spokes then underneath the first. Its other end is inserted in the third hole **to the right of the valve hole.**

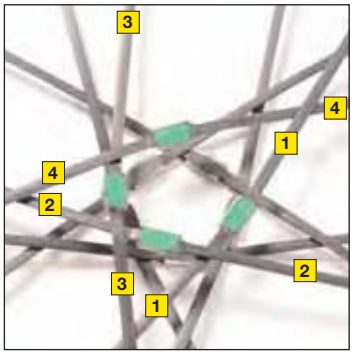


The fifth spoke is inserted in the seventeenth hole to the **right of the valve hole** and must pass over the third and fourth spokes then underneath the first and second. Its other end is inserted in the seventh hole **to the right of the valve hole.**

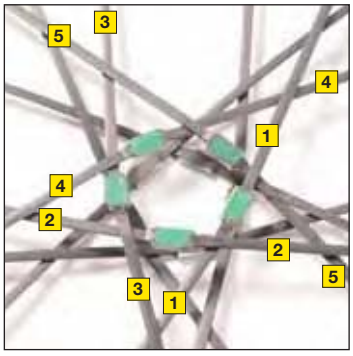
Turn the wheel over. Insert a spoke in the **first hole to the right of the valve hole**. The other end of this spoke is inserted in the eleventh hole, counting **counter-clockwise.**

Fit the second spoke in the **fourth hole to the left of the valve hole**, counting clockwise. The other end of this spoke is inserted in the fourteenth hole, **to the left of the valve hole.**

Fit the third spoke in the **eighth hole to the left of the valve hole**, counting clockwise. The other end of this spoke is inserted in the eighteenth hole, **to the left of the valve hole.**



The fourth spoke is inserted in the twelfth hole to the **left of the valve hole** and must pass underneath the first spoke then over the third and second spokes. Its other end is inserted in the second hole **to the left of the valve hole.**



The fifth spoke is inserted in the sixteenth hole to the **left of the valve hole** and must pass underneath the second and first spokes, then over the fourth and third. Its other end is inserted in the sixth hole **to the left of the valve hole.**

Tighten all nipples until the threaded rods are just brushing the nipples.

Offer up the hub in the middle of the spokes and position the two hub flanges between the two layers of spokes.

Position the plates in the housing on one side of the hub then the other.

Adjust the wheel definitively by holding the spoke heads inside the carbon rim flange with holding tool 101 295 01.

This tool should be offered up via the side with the most space and must enter without forcing.

Check that that the plates are flat against the hub body. If not, tap them lightly with a mallet to push them home.

Clip the hub caps by bending their internal diameter downwards to position the fixing tabs one by one. Check that the hub cap returns are positioned correctly above each plate.

Tension the wheel and center it definitively respecting the spoke tension indicated on page 5.

No thread lock is necessary as the spoke nipples are ABS.

FITTING/REMOVING THE TRACOMP RING AND ITS CLIPS

Tools needed

- TraComp ring tool 996 080 01
- 4 to 5 mm flat screwdriver
- Mallet

To remove the TraComp ring:

Remove the axle following the procedures specific to each hub (refer to **www.tech-mavic.com** or the technical manuals from previous years);

Place the TraComp ring tool 996 080 01 in the hub so that the illustrated screwdriver on the tool is visible.

Thread the screwdriver head through the TraComp ring tool hole.

Insert the screwdriver head through the slit in the TraComp ring tool in the TraComp ring groove, exactly between two clips.

Push the screwdriver handle downwards to lever out the TraComp ring.

The spokes can now turn freely and be extracted.

A new ring and clips must be used when refitting:

Position the two clips on two opposite spoke heads with the split part upwards.

Offer the TraComp ring up to the spoke heads with the conical side facing downwards and the inside groove facing upwards, taking care to slide two clips between each one

Place the TraComp ring tool 996 080 01 against the ring so that the illustrated mallet on the tool is visible.

Forcefully fit the TraComp ring into the hub with the mallet. The entire bottom surface of the TraComp ring must be in contact with the hub body.

Refit the axle following the procedures specific to each hub (refer to **www.tech-mavic.com** or the technical manuals from previous years).

REPLACING THE FRONT RIM ON THE CROSSMAX SLR DISC 09 WHEELS (MODELS: STANDARD INTERNATIONAL AND CENTER LOCK®, CROSSMAX SLR DISC 09 20MM AND CROSSMAX SLR DISC 09 LEFTY)

Tools needed

- Spoke wrench M40652
- Aerodynamic spoke wrench M40567 (for Crossmax SLR Disc and Crossmax SL Disc 07 wheels)
- Mavic tensiometer 995 643 01 + tension-reading conversion chart supplied

These wheels must be fitted as follows:

- The spokes are crossed 2 on both sides.
- The braking spokes are inserted in the notches of the slots farthest away from the hub, on both sides.
- The braking spokes pass over the non-braking spokes, along their full length and without touching.

Start with the disc side;

With the valve hole near you, position the rim so that the raised indicator bump is to the right of the valve hole.

Screw a spoke two turns into the first hole to the right of the valve hole. Repeat this step for the six spokes, one hole in four on the rim.

Insert the head of these spokes in the hub notches nearest the inside: these spokes are non-braking spokes.

Screw a spoke two turns into the third hole to the right of the valve hole. Repeat this step for the six spokes, one hole in four on the rim.

Insert the head of these spokes in the hub notches nearest the outside: these spokes are braking spokes.

Turn the wheel over and screw a spoke into the third hole to the right of the valve hole. Repeat this step for the six spokes, one hole in four on the rim.

Insert the head of these spokes in the hub notches nearest the inside: these spokes are non-braking spokes.

Screw a spoke two turns into the first hole to the right of the valve hole. Repeat this step for the six spokes, one hole in four on the rim.

Insert the head of these spokes in the hub notches nearest the outside: these spokes are braking spokes.

Tighten each nipple equally to tension the wheel.

Tension the wheel and center it definitively (refer to the product pages for the appropriate tension for each wheel).

REPLACING THE FRONT RIM ON THE CROSSRIDE DISC 09 AND CROSSRIDE UB/DISC 09 WHEELS

Tools needed

• Conventional spoke wrench

Basic wheel building principle for Crossride Disc 09 and Crossride UB/Disc 09 **front wheels**: the **non-braking spokes are positioned underneath the braking spokes**, disc side and non-disc side.

Start with the disc side;

Insert the head of a spoke in a slot on the hub so that the spoke is a non-braking spoke.

With the valve hole near you, insert this spoke in the first hole to the right of the valve hole and tighten its nipple two turns. Repeat these steps for the six non-braking spokes, disc side.

Insert the head of a spoke in a slot on the hub so that the spoke is a braking spoke.

With the valve hole near you, insert this spoke in the third hole to the right of the valve hole and tighten its nipple two turns. Repeat these steps for the six braking spokes, disc side.

Turn the wheel over. Insert the head of a spoke in a slot on the hub so that the spoke is a non-braking spoke.

With the valve hole near you, insert this spoke in the third hole to the right of the valve hole and tighten its nipple two turns. Repeat these steps for the six non-braking spokes, non-disc side.

Insert the head of a spoke in a slot on the hub so that the spoke is a braking spoke.

With the valve hole near you, insert this spoke in the first hole to the right of the valve hole and tighten its nipple two turns. Repeat these steps for the six braking spokes, non-disc side.

Tighten each nipple equally to tension the wheel.

Tension the wheel and center it definitively (refer to the product pages for the appropriate tension for each wheel).

REPLACING THE REAR RIM ON THE CROSSRIDE UB/DISC 09 AND CROSSRIDE DISC 09 WHEELS

Tools needed

• Conventional spoke wrench

Basic wheel building principles for Crossride Disc 09 and Crossride UB/Disc 09 **rear wheels**:

- Drive side: the **non-driving spokes are positioned underneath the driving spokes.**
- Non-drive side: the **driving spokes are positioned underneath the non-driving spokes.**

Start with the drive side;

Insert the head of a spoke in a slot on the hub so that the spoke is a non-driving spoke.

With the valve hole near you, insert this spoke in the first hole to the right of the valve hole and tighten its nipple two turns. Repeat these steps for the six non-driving spokes, drive side.

Insert the head of a spoke in a slot on the hub so that the spoke is a driving spoke.

With the valve hole near you, insert this spoke in the third hole to the right of the valve hole and tighten its nipple two turns. Repeat these steps for the six driving spokes, drive side.

Turn the wheel over. Insert the head of a spoke in a slot on the hub so that the spoke is a driving spoke.

With the valve hole near you, insert this spoke in the first hole to the right of the valve hole and tighten its nipple two turns. Repeat these steps for the six driving spokes, non-drive side.

Insert the head of a spoke in a slot on the hub so that the spoke is a non-driving spoke.

With the valve hole near you, insert this spoke in the third hole to the right of the valve hole and tighten its nipple two turns. Repeat these steps for the six non-driving spokes, non-drive side.

Tighten each nipple equally to tension the wheel.

Tension the wheel and center it definitively (refer to the product pages for the appropriate tension for each wheel).

REPLACING A SPOKE, FRONT AND REAR RIM ON THE DEETRAKS 09 AND DEETRAKS 09 12X150 WHEELS

Tools needed

- Spoke wrench
- Mavic tensiometer 995 643 01 + tension-reading conversion chart supplied

The Deetraks 09 wheels were primarily designed to make it easy for dealers to repair them, with standard parts and procedures.

Thus:

- The flanged hubs house dogleg J-bent spokes with a constant 2 mm section.
- Wheel building follows the conventional method: hot lacing of spokes in 3s.

However, to keep the dynamic qualities of these wheels intact, we recommend:

- Using the spokes specified by Mavic under part numbers 996 926 01 (front non-disc side and rear non-drive side) and 996 927 01 (front disc side and rear drive side).
- Complying with the appropriate spoke tensions: 110 to 130 kg for the disc side of the front wheel and 120 to 140 kg for the drive side of the rear wheel, using the Mavic tensiometer 995 643 01.
- Respecting the spoke fitting direction as follows:

The doglegs on the braking spokes on both sides of the front wheel must be facing towards the outside of the hub flanges.

The doglegs on the driving spokes on the drive side of the rear wheel must be facing towards the outside of the hub flange.

The doglegs on the driving spokes on the non-drive side of the rear wheel must be facing towards the inside of the hub flange.

REPLACING A SPOKE ON THE DEEMAX 09, DEEMAX 09 12X150 AND DEEMAX 09 SSC WHEELS.

Tools needed

- Spoke wrench M40494
- Mavic tensiometer 995 643 01 + tension-reading conversion chart supplied

The Deemax 09 and Deemax 09 SSC hubs incorporate the SRS (Spoke Retention System) design which prevents the spokes from being ejected when subject to major shocks.

Consequently, the spokes must be assembled on the hub using a special method. When you have to replace a spoke, therefore, it may prove necessary to remove or release others.

Proceed as follows to assemble the head of a spoke in its slot:

For a spoke located in an inside slot, offer its head up to the slot, keeping it parallel to the hub axle, via the outside of the wheel.

For a spoke located in an outside slot, offer its head up to the slot, keeping it parallel to the hub axle, via the inside of the wheel.

Raise the spoke towards the rim.

The spoke head is now locked inside the slot as long as you do not direct the spoke towards the outside of the wheel.

Then put the spoke back in place while making sure that the lacing is correct:

- on the front and rear non-drive side, the non-braking spokes are inserted in the inside hub slots and pass underneath the braking spokes for their entire length.
- on the rear drive side, the non-driving spokes are inserted in the inside hub slots and pass underneath the driving spokes for their entire length;

Tighten each nipple equally to tension the wheel.

Tension the wheel and center it definitively (refer to the product pages for the appropriate tension for each wheel).

REPLACING THE FRONT RIM ON THE DEEMAX 09 AND DEEMAX 09 SSC WHEELS

Tools needed

• TraComp spoke wrench M40494

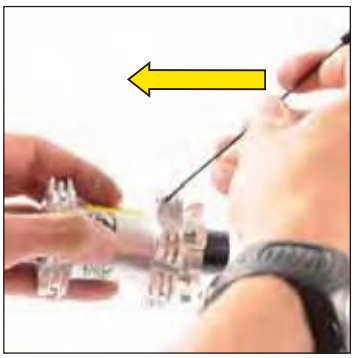
• Mavic tensiometer 995 643 01 + tension-reading conversion chart supplied

These wheels must be fitted as follows:

- The **braking** spokes are fitted to the **inside section of the hub slots** on both sides
- The **non-braking** spokes are fitted to the **outside section of the hub slots** on both sides
- The **non-braking spokes pass underneath the braking spokes**, over their entire length and without touching, on both sides

Start with the disc side.

Offer up the head of a spoke to a slot, keeping it parallel to the hub axle, via the outside of the wheel.



Raise the spoke towards the rim.

Slide this spoke in the outside section of the slot and lower it tangentially to the hub.

Repeat the operation with a new spoke in the same slot, but this time for the inside section of the slot.

Fit all the disc side spokes in this way. Turning them all in the same direction will make it easier to fit the remaining spokes.

With the valve hole near you, turn the rim so that the **raised indicator bump is to the left** of the valve hole.

Tighten the nipple on a **non-braking** spoke (**inside** section of a slot to the right of the hub axle) until it locks in the **first** hole to the right of the valve hole.

Repeat these steps for all the **non-braking** spokes inserted in the **inside** sections of slots, one hole in four in the rim.

Tighten the nipple on a **braking** spoke (**outside** section of a slot to the left of the hub axle) until it locks in the **third** hole to the right of the valve hole. Repeat these steps for all the **braking** spokes inserted in the **outside** sections of slots, one hole in four in the rim.

Turn the wheel over and insert all the non-disc side spokes using the procedures detailed in the first four steps above.

Tighten the nipple on a **non-braking** spoke (**inside** section of a slot to the left of the hub axle) until it locks in the **third** hole to the right of the valve hole.

Repeat these steps for all the **non-braking** spokes inserted in the **inside** sections of slots, one hole in four in the rim.

Tighten the nipple on a **braking** spoke (**outside** section of a slot to the right of the hub axle) until it locks in the **first** hole to the right of the valve hole.

Repeat these steps for all the **braking** spokes inserted in the **outside** sections of slots, one hole in four in the rim.

Tighten each nipple equally to tension the wheel.

Tension the wheel and center it definitively (refer to the product pages for the appropriate tension for each wheel).

REPLACING THE REAR RIM ON THE DEEMAX 09 AND DEEMAX 09 SSC WHEELS

Tools needed

- TraComp spoke wrench M40494
- Mavic tensiometer 995 643 01 + tension-reading conversion chart supplied

These wheels must be fitted as follows:

- Drive side, the **driving spokes** are fitted to the **outside section of the hub slots** and the **non-driving spokes** to the inside section of the hub slots. The non-traction spokes pass underneath the **driving spokes**, over their entire length and without touching.
- Non-drive side, the **driving spokes** are fitted to the inside section of the hub slots and the **non-driving spokes** to the outside section of the hub slots. The driving spokes pass underneath the **non-driving spokes**, over their entire length and without touching.

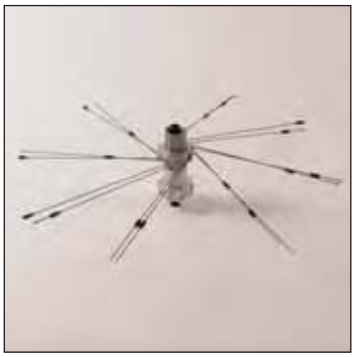
Start with the drive side.

Offer up the head of a spoke to a slot, keeping it parallel to the hub axle, via the outside of the wheel.

Raise the spoke towards the rim.

Slide this spoke in the outside section of the slot and lower it tangentially to the hub.

Repeat the operation with a new spoke in the same slot, but this time for the **inside** section of the slot.



Fit all the drive side spokes in this way. Turning them all in the same direction will make it easier to fit the remaining spokes.

With the valve hole near you, turn the rim so that the r**aised indicator bumps are to the right** of the valve hole.

Tighten the nipple on a **non-driving** spoke (**inside** section of a slot to the right of the hub axle) until it locks in the **first** hole to the right of the valve hole.

Repeat these steps for all the **non-driving** spokes inserted in the **inside** sections of slots, one hole in four in the rim.

Tighten the nipple on a **driving** spoke (**outside** section of a slot to the left of the hub axle) until it locks in the **third** hole to the right of the valve hole.

Repeat these steps for all the **driving** spokes inserted in the **outside** sections of slots, one hole in four in the rim.

Turn the wheel over and insert all the non-drive side spokes using the procedures detailed in the first four steps above.

Tighten the nipple on a **driving** spoke (inside section of a slot to the right of the hub axle) until it locks in the **first** hole to the right of the valve hole.

Repeat these steps for all the **driving** spokes inserted in the **inside** sections of slots, one hole in four in the rim.

Tighten the nipple on a **non-driving** spoke (outside section of a slot to the left of the hub axle) until it locks in the third hole to the right of the valve hole.

Repeat these steps for all the **non-driving** spokes inserted in the **outside** sections of slots, one hole in four in the rim.

Tighten each nipple equally to tension the wheel.

Tension the wheel and center it definitively (refer to the product pages for the appropriate tension for each wheel).

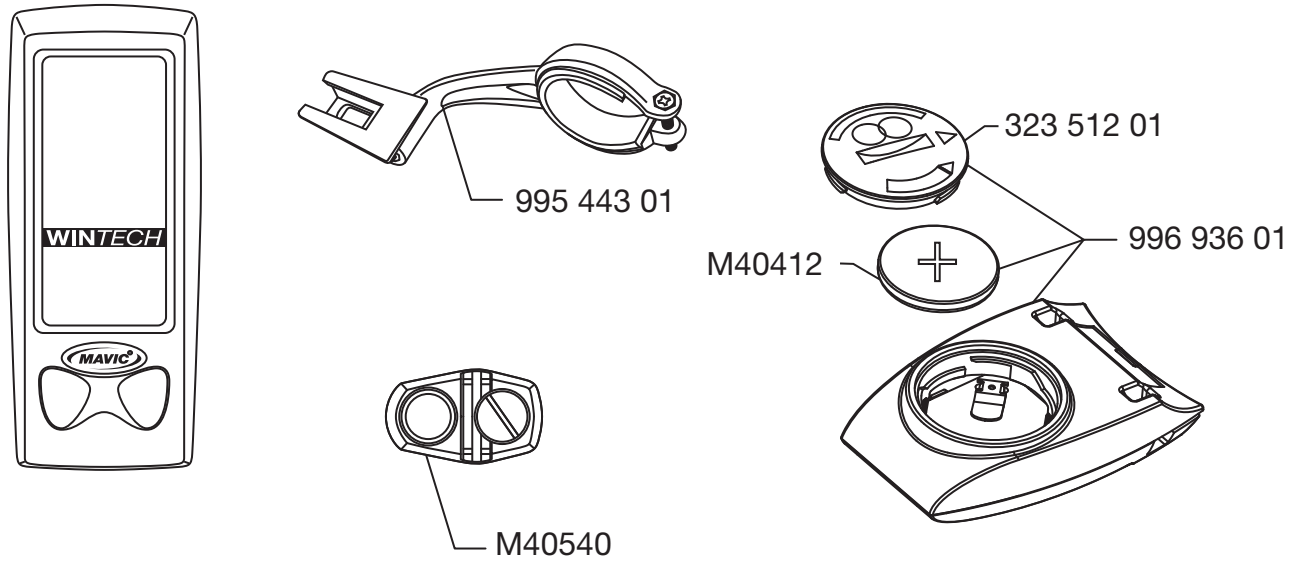
WINTECH FS 09

USE: use only on a road bike, tandem, all road bike or a cross-country or Cross Mountain MTB. Any other use (such as on an Extrême MTB, cyclo-cross bike, ...) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty.

WEIGHT:
Computer: 32 g
Computer bracket: 13 g
Fork-sensor: 18 g

REFERENCES:
Wintech FS 09: 996 812 01
Wintech FS 09 + Cadence: 996 813 01

SPARE PARTS



MAINTENANCE: Clean with a dry cloth, or soap and water if necessary.
Do not use a high-pressure washer.
Avoid extended storage behind a window exposed to direct sunlight.

ACCESSORY PART NUMBERS

Computer and sensor battery cover kit	995 441 01
10-battery kit CR2032:	M40412
Adjustment magnets kit	996 102 01

OPERATING SCOPE

Power supply:	Computer and sensor: battery CR2032
Circumference:	Minimum: 1500 mm, Maximum: 2500 mm
Unit:	Kilometers or miles
Time format:	24 hours only
Water resistance:	Resistant to rainwater. Do not submerge electronic components totally and do not use use a high-pressure washer.
Operating temperature range	0 to 50°C/25 to 122°F
Maximum transmission distances:	Speed: 2 meters Rate: 2 meters
Cumulative odometer:	Up to 99,999 km or miles
Trip distance:	Up to 999.99 km or miles
Stopwatch:	Up to 09:59:59
Speed:	Up to 99 km/h or mph
Rate (optional):	Up to 180 rpm

After fitting the computer, it MUST be synchronized digitally before using it for the first time, as described in the instructions supplied with the computer. Failure to do this will result in no communication between the computer and the various sensors and your system will not function.

WINTECH ULTIMATE

USE: use only on a road bike, tandem, all road bike or a cross-country or Cross Mountain MTB. Any other use (such as on an Extrême MTB, cyclo-cross bike, ...) is highly inadvisable, is the sole responsibility of the user and voids the Mavic warranty.

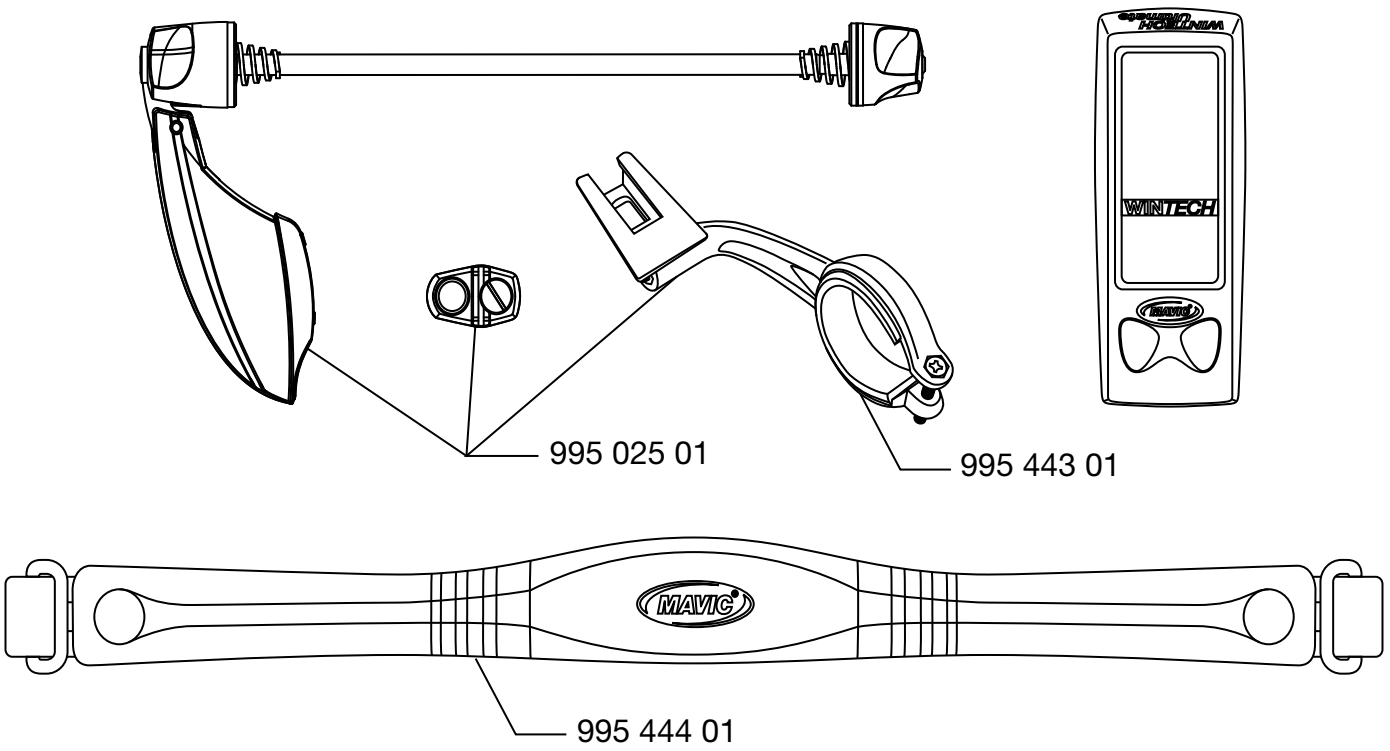
WEIGHT:

Computer: 35 g
Computer bracket: 16 g
Sensor-nut: 28 g
Heart belt: 54 g

REFERENCES:

Wintech Ultimate: 996 646 01
Wintech Ultimate + Cadence: 996 647 01

SPARE PARTS



MAINTENANCE: Clean with a dry cloth, or soap and water if necessary.
Do not use a high-pressure washer.
Avoid extended storage behind a window exposed to direct sunlight.

ACCESSORY PART NUMBERS

Alti computer battery cover kit	996 100 01	**One battery kit CR2430 (Alti computer)**	996 099 01
Heart belt battery cover kit	995 442 01	**10-battery kit CR2032:**	M40412
Sensor battery cover kit:	995 441 01	**Adjustment magnets kit**	996 102 01

OPERATING SCOPE

Power supply:	Computer: battery CR2430 Sensor: battery CR2032	**Maximum transmission distances:**	Speed: 2 meters Rate: 2 meters
Circumference:	Minimum: 1500 mm, Maximum: 2500 mm	**Cumulative odometer:**	Up to to 99,999 km or miles
Unit:	Kilometers or miles	**Trip distance:**	Up to 999.99 km or miles
Time format:	24 hours only	**Stopwatch:**	Up to 09:59:59
Water resistance:	Resistant to rainwater.	**Speed:**	Up to 99 km/h or mph
	Do not submerge the electronic components totally and do not use a high-pressure washer.	**Rate (optional):**	Up to 180 rpm
		Altitude unit:	Meters or feet
		Altitude:	Up to 9,999 m or ft
Operating temperature range	0 to 50°C/25 to 122°F	**Heart rate:**	Up to 240 beats/minute

After fitting the computer, it MUST be synchronized digitally before using it for the first time, as described in the instructions supplied with the computer. Failure to do this will result in no communication between the computer and the various sensors and your system will not function.

RESET

The computer can be reset on the Wintech ES 07, FS 09, HR, Alti and Ultimate.

This can solve certain computer operating difficulties, such as:

- Inconsistent display of distance, speed, altitude, heart values, etc.
- Display locked on a screen (buttons not working)

This means that all recorded information is lost once and for all. Remember to make a note of it in advance and to synchronize digitally once the operation is ended.

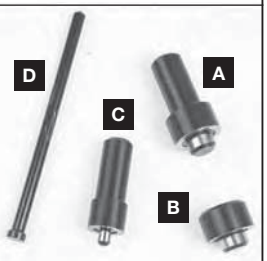
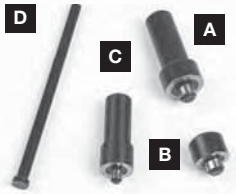
Open the battery cover and remove the battery.

Press the contact switch set back from the base of the battery with a metal tip.

Refit the battery with the + side visible and close the battery cover.

Digitally synchronize all the sensors you use and set the time and the wheel circumference of the bikes you use following the procedures detailed in the product guide or at **www.tech-mavic.com**

TOOLS

REFERENCE	DESCRIPTION	PRODUCT
323 477 01	Multifunction tool: Removing the UST Tubeless rim tape (A) Fitting the UST rim tape (C) Adjusting the front axles on the Cosmos, Ksyrium Équipe, Crossland, Crossmax Enduro Crossmax Enduro Disc, Cosmic Élite 05 and Speedcity 05, Aksium, Crossride 06 wheels Crossride Disc, Crosstrail, Crosstrail Disc, Aksium 08, Ksyrium Equipe 08, Crossride UB/Disc 08, Crossride UB (B)	
M40119	Bearing press kits for bearings: M40075 M40076	
M40120	Bearing press kits for bearings: M40077 M40078	
M40631	Bearing press kits for bearings: M40632	
M40373	Guide ring and bearing press kit for bearings: M40318 M40660	
M40218	Bearing press kit for bearings: M40179	
323 945 01	Bearing press kit for bearings: M40771	
324 300 01	Bearing press kit for bearings: 324 170 01	
996 887 01	Bearing press kit for hub bearings 9/15: 996 885 01 and 996 886 01.	
996 901 01	Bearing press kit for bearings M40076 used in ITS4 free wheel system hubs.	

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 hex key required to remove the free wheel from Crossroc UST, Crossroc UST Disc, Crossride, Crossride Céramic, Cosmos and Cosmic Élite wheels.

REFERENCE	DESCRIPTION	PRODUCT
996 080 01	TraComp ring tool	
995 643 01	Mavic tensiometer for all Mavic wheels	
M40001	Spoke adjustment wrench for Cosmic Carbone, Cosmic Carbone SSC and Cosmic Carbone SL wheels	
101 295 01	R2R spoke head tool	
323 908 01	Cosmic Carbone Pro spoke wrench + spoke wrench for aerodynamic spokes	
M40567	Aerodynamic spoke wrench kit.	
996 079 01	TraComp spoke wrench kit	
M40652	Zamak spoke tightening wrench for Fore M7 pierced wheels (except R-Sys)	
M40630	Screw-in eye tightening wrench kit for Fore M9 pierced wheels and rims.	
996 220 01	Cosmic Carbone Ultimate spoke wrench kit	

REFERENCE	DESCRIPTION	PRODUCT
M40123	Hub wrench for adjusting the play on Mavic QRM+ hubs.	
99613601	Mavic mineral oil for lubricating FTS, FTS-L, FTS-X and ITS4 free wheel bodies. Contents 60 ml. Use this oil only for lubricating FTS, FTS-L, FTS-X and ITS4 free wheel bodies.	
99620401	Mavic thread lock Contents 5 ml.	
M40410	Mavic abrasive soft stone for cleaning the braking surface of the rim, Céramic or UB Control.	

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