⚠ WARNING!

Carefully read, follow and understand the instructions given in this manual. It is an essential part of the product, and you should keep it in a safe place for future reference.

MECHANIC QUALIFICATION - Please be advised that many bicycle service and repair tasks require specialized knowledge, tools and experience. General mechanical aptitude may not be sufficient to properly service or repair your bicycle. If you have any doubt whatsoever regarding your service/repair ability, please take your bicycle to a qualified repair shop.

INTENDED USE - This Campagnolo® product is designed and manufactured for use only on road racing style bicycles that are ridden **only** on smooth road or track surfaces. Any other use of this product, such as off-road or on trails **is forbidden**.

LIFESPAN - WEAR - INSPECTION REQUIREMENT - The lifespan of Campagnolo® components depends on many factors, such as rider size and riding conditions. Impacts, falls, improper use or harsh use in general may compromise the structural integrity of the components and significantly reduce their lifespan. Some components are also subject to wear over time. Please have your bicycle regularly inspected by a qualified mechanic for any cracks, deformation, signs of fatigue or wear (use of penetrating fluid or other visual enhancers to locate cracks on parts is recommended). If the inspection reveals any deformation, cracks, impact marks or stress marks, no matter how slight, **immediately** replace the component; components that have experienced excessive wear also need **immediate** replacement. The frequency of inspection depends on many factors; check with your authorized representative of Campagnolo S.r.l. to select a schedule that is best for you. Parts which have been bent or otherwise damaged in an accident or as a result of any other impact must not be re-straightened. They must be replaced immadiately with original Campagnolo® parts. If you weigh 82 kg/180 lbs or more, you must be especially vigilant and have your bicycle inspected more frequently (than someone weighing less than 82 kg/180 lbs) for any evidence of cracks, deformation, or other signs of fatigue or stress. Check with your mechanic to discuss whether the components you selected are suitable for your use, and to determine the frequency of inspections.

Important PERFORMANCE, SAFETY and WARRANTY Notice - The parts and components of Campagnolo® 9s and 10s drivetrains, braking systems, rims, pedals and all other Campagnolo® products, are designed as a single integrated system. To avoid compromises in terms of SAFETY, PERFORMANCE, DURABILITY, FUNCTION, and to prevent voiding the WARRANTY, use only the parts and components supplied or specified by Campagnolo S.r.l., without interfacing them with or substituting them with products, parts or components manufactured by other companies.

Note: Tools supplied by other manufacturers for components similar to Campagnolo® components may not be compatible with Campagnolo® components. Likewise, tools supplied by Campagnolo S.r.l. may not be compatible with components supplied by other manufacturers. Always check with your mechanic or the tool manufacturer to insure compatibility before using tools supplied by one manufacturer on components supplied by another.

The user of this Campagnolo® product expressly recognizes that there are risks inherent in bicycle riding, including but not limited to the risk that a component of the bicycle can fail, resulting in an accident, personal injury or death. By his purchase and use of this Campagnolo® product, the user expressly, voluntarily and knowingly accepts and/or assumes these risks and agrees to hold Campagnolo S.r.l. harmless against any resulting damages.

If you ever have any questions, please contact your mechanic or your nearest Campagnolo® dealer for additional information.

Never make any modifications whatsoever to any Campagnolo® components.

⚠ WARNING!

FAILURE TO FOLLOW ANY OF THE INSTRUCTIONS IN THIS MANUAL COULD RESULT IN FAILURE OF THE PRODUCT, AN ACCIDENT, PERSONAL INJURY OR DEATH.

1. SAFETY RECOMMENDATIONS

A - BEFORE EVERY RIDE

- Check to be sure that all quick release fasteners, nuts and bolts are properly adjusted (see the "Quick Release" instruction sheet). Bounce the bicycle on the ground and listen and look for anything which may be loose.
- Be sure that your tires are inflated to the correct pressure and that there is no damage whatsoever in the tread or sidewall.
- Be sure that none of the spokes are damaged or loose.
- Be sure that your wheels are perfectly centered. Spin the wheels to be sure that they do not wobble up and down or from side to side, and that they do not make contact with the brake pads while rotating.
- Check your brake pads and cables to be sure they are in good condition.
- Test your brakes in the beginning of your ride to make sure that they are operating properly.
- Check all reflectors to make sure that they are clean, straight, and securely mounted.
- Learn and follow the local bicycle laws and regulations, and obey all traffic signals, signs and laws while you ride.

DO NOT RIDE YOUR BICYCLE IF IT DOES NOT PASS THIS PRE-RIDE TEST. CORRECT ANY CONDITION BEFORE YOU RIDE!

B - GENERAL SAFETY RECOMMENDATIONS

- Be sure that the periodic maintenance schedule is strictly followed (see Section 12).
- Always use original Campagnolo® spare parts.
- Wear clothes which are snug-fitting and which make you visible to traffic, such as neon, fluorescent, or other bright colors.
- Avoid biking at night, because it is more difficult for you to be seen by traffic, and it is more difficult for you to see obstructions on the ground. If you do ride at night, you should equip your bicycle with and use a headlight and a taillight.
- When riding in wet conditions, remember that the stopping power of your brakes is greatly reduced and that the adherence of the tires on the ground is considerably reduced. Also bear in mind that because of the progressive drying of the braking surface during braking itself, braking power may vary sharply. This makes it harder to control and stop your bicycle. Extra care is required when riding your bicycle in wet conditions to avoid an accident.
- Campagnolo S.r.l. reminds you to always wear a properly fitted and fastened bicycle helmet that has been approved by ANSI or SNELL.
- If you ever have any comments, questions, or concerns, please contact your nearest Campagnolo® dealer.

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On our website you will also find information on other Campagnolo® products and Campagnolo®'s spare parts catalogue.

ENGLISH

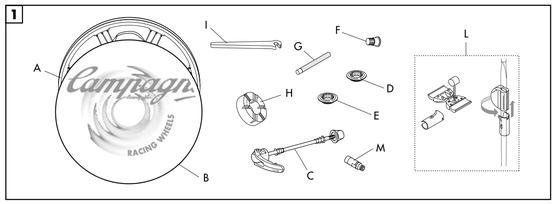
Campagnolo®

EURUS™
for tubulars and clinchers

Owner's Manual

2. THE PACKAGE

1



The package you have purchased contains the following items (Fig. 1):

A - The wheel;
B - The wheel bag (in envisaged);
C - The quick release (instructions included);
D - The lockring for clamping the Campagnolo® sprocket set (rear wheels with Campagnolo® FW body only);

⚠ WARNING!

This lockring is not compatible with Campagnolo® 11T sprockets. Campagnolo® sprocket sets starting from 11 are sold with their special lockring.

E - The lockring for clamping the sprocket set of Shimano Inc. (rear wheels with FW body for sprockets of Shimano Inc. only);

⚠ WARNING!

This lockring is not compatible with Shimano® 11T sprockets that require their special lockring code Campagnolo® CS-801.

F - The magnet-attracting nipple insert (rear wheels only);
G - The nipple guide magnet (rear wheels only);
H - The spoke antirotation ring (rear wheels only);
I - The spoke wrench (rear wheels only);
L - The speed magnet (front wheels only);
M - The valve adapter (rear tubular wheels only).

3. TECHNICAL SPECIFICATIONS

3.1 - EURUS™ tubular wheels

WHEEL TECHNICAL SPECIFICATIONS

• Rim diameter:
- front: 634 mm
- rear: 634 mm
• O.L.D.:
- front: 100 mm
- rear: 130 mm
• Quick release type:
- front: QF6-20
- rear: QR6-20
• Nominal wheel weight:
- front: 635 g
- rear: 875 g
• Inflation pressure: see the inflation pressure recommended by the producer of the tire.
• Use: road racing on smooth road or track surfaces **only**.

SPOKES TECHNICAL SPECIFICATIONS

Front wheel:
• Spokes type: AERO aluminum with variable section
• Spokes number: 16
• Spokes lenght: 277,7 mm
• Recommended tension: 110-130 Kg

Rear wheel - freewheel side:
• Spokes type: AERO aluminum with variable section
• Spokes number: 14
• Spokes lenght: 281,2 mm
• Recommended tension: 100÷120 Kg

Rear wheel - side opposite the freewheel:
• Spokes type: AERO aluminum with variable section
• Spokes number: 7
• Spokes lenght: 275,2 mm
• Recommended tension: 80÷100 Kg

3.2 - EURUS™ clincher wheels

WHEEL TECHNICAL SPECIFICATIONS

• ETRTO rim diameter: 622x15C
• O.L.D.:
- front: 100 mm
- rear: 130 mm
• Quick release type:
- front: QF6-20
- rear: QR6-20
• Nominal wheel weight:
- front: 635 g
- rear: 875 g
• Inflation pressure: see table 1 Operating Pressures
• Use: road racing on smooth road or track surfaces only.

SPOKES TECHNICAL SPECIFICATIONS

Front wheel:
• Spokes type: AERO aluminum with variable section
• Spokes number: 16
• Spokes lenght: 277,7 mm
• Recommended tension: 110-130 Kg

Rear wheel - freewheel side:
• Spokes type: AERO aluminum with variable section
• Spokes number: 14
• Spokes lenght: 281,2 mm
• Recommended tension: 100÷120 Kg

Rear wheel - side opposite the freewheel:
• Spokes type: AERO aluminum with variable section
• Spokes number: 7
• Spokes lenght: 275,2 mm
• Recommended tension: 80÷100 Kg

TABLE 1

OPERATING PRESSURES		
Clincher cross-section (mm)	**Pressure** (bar)	**Pressure** (psi)
23	7,8	113
25	7,2	104

4. TIRES

4.1 - EURUS™ tubular wheels

• The wheel you have purchased is designed to use tubular tires.
• After mounting a suitable tubular tire to the wheel, check to see that the diameter and cross-section are compatible with dimension of the wheel.
• The installation of the tubular tire on the wheel is an operation that requires special attention. Refer to the instructions enclosed with the tubular tire before and during installation. We recommend, in most cases, applying at least three coats of glue to the rim and one coat to the tire and allow the tubular tire to "set" for at least twenty-four hours before using the wheel.

⚠ WARNING!

Failure to properly install the tire can cause sudden and unexpected loss of tire pressure, resulting in an accident, personal injury or death.

• Use acetone to degrease the bonding surface of the rim before applying the glue for tubular tire installation.
• Before fitting the tubular tire, gently rub the bonding surface of the rim with fine emery cloth.

INFLATING AND DEFLATING THE TIRE

• To **inflate** the tire of the **front wheel**: 1) remove the cap, 2) unscrew the valve, 3) inflate the tire using a compressor or pump equipped with a pressure gauge to obtain the required pressure, then 4) tighten the valve and replace the cap.
• To **inflate** the tire of the **rear wheel**: 1) remove the cap, 2) unscrew the valve, 3) tighten the valve adapter, 4) inflate the tire using a compressor or pump equipped with a pressure gauge to obtain the required pressure, 5) unscrew the valve adapter, then 6) tighten the valve and replace the cap.
• To **deflate** the tire: 1) remove the cap, 2) unscrew the valve, 3) press and hold down the valve to obtain the required pressure, then 4) tighten the valve and replace the cap.

⚠ WARNING!

Never exceed the maximum inflation pressure recommended by the tire manufacturer or for the cross section of the tubular tire you are using.
Excessive tire pressure reduces grip on the road and increases the risk that the tire will unexpectedly burst.
Inflation pressure that is too low reduces tire performance and increases the probability of sudden and unexpected loss of tire pressure. In addition, premature wear and damage to the rim may occur.

⚠ WARNING!

Incorrect tire pressure could cause tire failure or loss of control of the bicycle, resulting in an accident, personal injury or death.

4.2 - EURUS™ clincher wheels

⚠ WARNING!

Rim-Tire Compatibility
All Campagnolo® rims are built in strict accordance with ETRTO (European Tire and Rim Technical Organization) specifications, with precise dimensions. If fitting the tyre onto a Campagnolo® rim is too easy, the tyre might be too big. If a tire is too difficult to install, that tire is most likely too small. Use only high-quality tyres whose fitting requires reasonable force. Using a tire that does not fit properly on the rim can cause unexpected tire failure, resulting in an accident, personal injury or death.

• The wheel you have purchased is designed to use clincher tires.
• Before fitting the tires, check that the diameter indicated on the tire is 622mm and that the cross-section is between 23 and 25 mm, to insure that the tire and wheel are compatible in accordance with ETRTO (European Tire and Rim Technical Organization) standards.

⚠ WARNING!

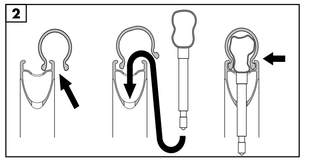
Failure to properly install the tire can cause sudden and unexpected loss of tire pressure, resulting in an accident, personal injury or death.

INSTALLING CLINCHER TIRES

Be sure that you do not damage or otherwise bend any portion of the rim when installing the tire.

• Insert one side of the clincher into the seat provided on the rim (Fig. 2).
• Slightly inflate the inner tube to facilitate assembly.
• Insert the valve through the hole in the rim, and then position the remainder of the inner tube between the rim and the clincher tire.
• Insert the second side of the clincher tire into its seat in the rim.
• In order to properly set the tube and tire on the rim, you should first inflate the tube to between 2 and 3 atmospheres. You should then manually set the tube and tire on the rim, making sure that the tube is positioned correctly within the tire and that the tire is positioned correctly on the rim.You may then fully inflate the tube to the correct working pressure. Please inflate the tube slowly, making sure that you maintain the correct positioning of the tube and tire on the rim.

2



INFLATING AND DEFLATING THE TIRE

• **To inflate the tire:** 1) remove the cap, 2) unscrew the valve, 3) inflate the tire using a compressor or pump equipped with a pressure gauge to obtain the required pressure, then 4) tighten the valve and replace the cap.

• **To deflate the tire:** 1) remove the cap, 2) unscrew the valve, 3) press and hold down the valve to obtain the required pressure, then 4) tighten the valve and replace the cap.

⚠ WARNING!

Never exceed the maximum inflation pressure recommended by the tire manufacturer or for the cross section of the clincher tire you are using. See the "Operating Pressures" table.
Excessive tire pressure reduces grip on the road and increases the risk that the tire will unexpectedly burst.
Inflation pressure that is too low reduces tire performance and increases the probability of sudden and unexpected loss of tire pressure. In addition, premature wear and damage to the rim may occur.

⚠ WARNING!

Incorrect tire pressure could cause tire failure or loss of control of the bicycle, resulting in an accident, personal injury or death.

5. SPROCKET ASSEMBLY AND DISASSEMBLY

Note
Tools supplied by other manufacturers for components similar to Campagnolo® components, including but not limited to Shimano Inc., may not be compatible with Campagnolo® components. Likewise, tools supplied by Campagnolo S.r.l. may not be compatible with components supplied by other manufacturers. Always check with your mechanic or the tool manufacturer to insure compatibility before using tools supplied by one manufacturer on components supplied by another.

⚠ WARNING!

Failure to insure compatibility between tools and components could result in improper operation or failure of the component, an accident, personal injury or death.

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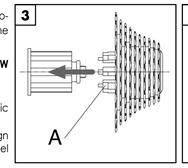

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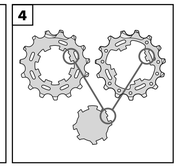
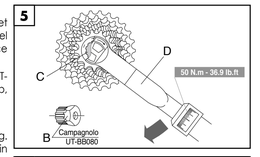


5.1 - CAMPAGNOLO® SPROCKETS (on Campagnolo® type FW body)

5.1.1 - Assembly

• The sprockets are pre-assembled and timed on the plastic support (A - Fig. 3).
• Insert the support on the side of the freewheel body, align the spline patterns, press the sprockets onto the freewheel and extract the support (A) from the hub (Fig. 3).
• If installing the sprockets without the plastic support, install the individual or preassembled sprockets and the spacers on the sprocket body of the hub aligning the spline patterns (Fig. 4). The profile of the freewheel body with two asymmetrical grooves ensures automatic sprocket timing since there is only one assembly option.
• Using a torque wrench (D - Fig. 5) equipped with the Campagnolo® tool UT-BB080 (B - Fig. 5), tighten the lockring (C - Fig. 5), which is provided with the hub, on to the freewheel body to 50 N.m (36.9 lb.ft).

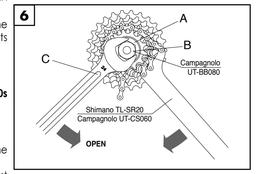
5



5.1.2 - Disassembly

• Remove the lockring (A – Fig. 6) using the Campagnolo® tool UT-BB080 (B - Fig. 6) with a 24 mm hexagonal wrench (C - Fig. 6) and the Campagnolo® chain whip UT-CS060 (Fig. 6).
• Insert the plastic sprocket carrier on the side of the freewheel body, align the spline patterns on the body with those on the carrier and slide the sprockets onto it.
• Slide the sprocket carrier, with the sprockets, off the freewheel body.

6



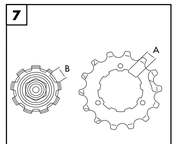
5.2 - 10S SPROCKETS starting from 11 and 12 of Shimano Inc. (on FW body for 10s sprockets starting from 11 and 12 of Shimano Inc.)

5.2.1 - Assembly

• Fit the sprockets on the FW body and check that:
- the surface with the name of the groupset of each sprocket is facing the outside of the FW body.
- the broadest tabs of the sprocket (A - Fig. 7) is aligned with the broadest grooving of the FW body (B - Fig. 7).
• Using a torque wrench (D - Fig. 5) equipped with the Campagnolo® tool UT-BB080 (B - Fig. 5), tighten the lockring (C - Fig. 5), which is provided with the hub, on to the freewheel body to 50 N.m (36,9 lb.ft).

Note
The lockring provided with the hub is not compatible with Shimano® 11T sprockets that require their special lockring Campagnolo® CS-801.

7



5.2.2 - Disassembly

• Remove the lockring (A – Fig. 6) using the Campagnolo® tool (B - Fig. 6 - Campagnolo® code UT-BB080) with a 24 mm hexagonal wrench (C - Fig. 6) and the chain whip TL-SR20 of Shimano Inc. (Fig. 6).
• Take the sprockets off the FW body.

6. DISASSEMBLY, ASSEMBLY AND LUBRICATION OF HUBS

⚠ WARNING!

Always wear protective gloves and glasses while working on the hubs.

6.1 - DISASSEMBLY, ASSEMBLY AND LUBRICATION OF THE FRONT HUB

• Unscrew the screws with a 2,5 mm Allen wrench and remove the side covers (A - Fig. 8). Be sure not to damage the hub or spokes.

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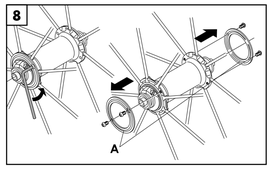
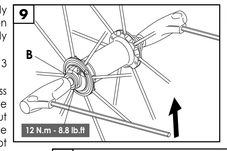


• Unscrew the locking nut (B - Fig. 9) with a fully inserted 5 mm Allen wrench; counter the rotation of the axle with another 5 mm Allen wrench fully inserted on the opposite end of the axle itself.
• Using a 2,5 mm Allen wrench, loosen the screw by 3 turns (**C** - Fig. 10) of the lockring (**D** - Fig. 10).
• Unscrew and remove the lock ring (**D** - Fig. 11), press the axle (**H** - Fig. 11) towards the hub body, remove the ring (**G** - Fig. 11), the cone (**I** - Fig. 11), slide out the axle (**H** - Fig. 11) from the hub, remove the cone (**J** - Fig. 11), the gaskets (**K** - Fig. 11) taking care not to damage them, and the ball bearings (**L** - Fig. 11). Be careful not to damage any component.
• If it is necessary to replace the cups, contact your mechanic or your nearest Campagnolo® Service Center.
• Carefully clean the components, grease the ball bearings and proceed to refit the system performing disassembly operations in reverse order.

Note
When inserting the axle, be careful not to move the ball bearings out of their seats.

9



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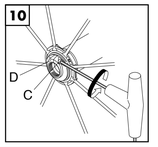

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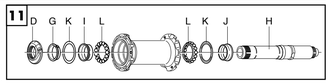


• Tighten the locking nut (**B** - Fig. 9) to a torque setting of 12 N.m (8.8 lb.ft).
• Adjust the hub as illustrated in section 7.

6.2 - DISASSEMBLY, ASSEMBLY AND LUBRICATION OF THE REAR HUB

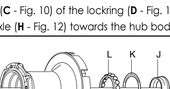
• Remove the sprocket set (see section 5).
• Unscrew the screws with a 2,5 mm Allen wrench and remove the side covers (A - Fig. 8). Be sure not to damage the hub or spokes.
• Unscrew the locking nut (**B** - Fig. 9) with a fully inserted 5 mm Allen wrench; counter the rotation of the axle with another 5 mm Allen wrench fully inserted on the opposite end of the axle itself.
• Using a 2,5 mm Allen wrench, slacken the screw by 3 turns (**C** - Fig. 10) of the locking (**D** - Fig. 10).
• Unscrew and remove the lock ring (**D** - Fig. 12), press the axle (**H** - Fig. 12) towards the hub body, making sure that the freewheel body comes out of its seat; slide out the axle-freewheel body unit, remove the ring (**G** - Fig. 12) the cone (**I** - Fig. 12), and the cone (**J** - Fig. 12), the gaskets (**K** - Fig. 12) taking care not to damage them, and the ball bearings (**L** - Fig. 12). Be careful not to damage any component.

12

• If it is necessary to replace the cups, contact your mechanic or your nearest Campagnolo® Service Center.
• Carefully clean the components, grease the ball bearings and proceed to refit the system performing disassembly operations in reverse order.

Note
When inserting the axle, be careful not to move the ball bearings out of their seats.

13



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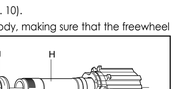
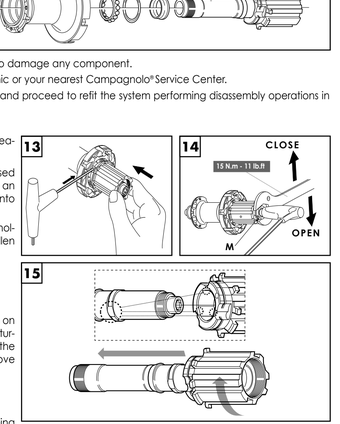


• Position the freewheel close to the hub and hold it pressed against the latter; lower one by one the three pawls with an Allen wrench or a screwdriver and insert the freewheel fully into its seat (Fig. 13).
• Tighten the locking nut (**M** - Fig. 14) with a 17 mm wrench, holding the axle steady from the freewheel side with a 5 mm Allen wrench (approximate torque setting: 15 N.m - 11 lb.ft).
• Adjust the hub as illustrated in section 7.

15



6.3 - REMOVING THE FREEWHEEL BODY

Hold the axle steady by fully inserting a 5 mm Allen wrench on the freewheel side (Fig. 14). Completely unscrew the nut by turning it clockwise with a 17 mm wrench. Turn the FW body until the grooves of the FW body and the axle (Fig. 15) match. Remove the freewheel body from the axle.

6.4 - REMOVING AND REFITTING THE PAWLS

Remove the spring by slightly raising the pawl (**A** - Fig. 16), being careful not to distort it. Pull out the pawls and replace them if necessary. Insert the bent part of the spring into the hole of the pawl carrier. Fit the spring between the openings in each pawl, simultaneously setting the pawls into their final position (Fig. 17**A**). When the operation is complete make sure that all three pawls rotate freely and remain in the open position (Fig. 17**B**).

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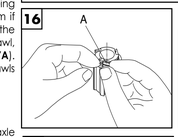

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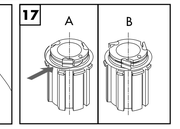

6.5 - FITTING THE FREEWHEEL BODY ON THE HUB

Turn the FW body until the grooves of the FW body and the axle (Fig. 15) match. Fully insert the freewheel body on the axle. Place the freewheel on the hub and hold it in position. Lower the three (3) pawls one by one with an Allen wrench or screwdriver, and fully insert the freewheel in its seat (Fig. 13). Hold the axle steady by fully inserting a 5 mm Allen wrench on the freewheel side. Tighten the locking screw with a 17 mm wrench to a torque of 15 N.m (11 lb.ft).

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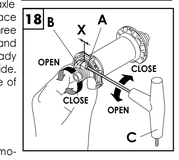

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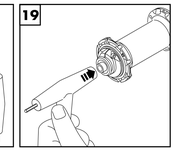

7. HUBS ADJUSTMENT

• Unscrew the screws with a 2,5 mm Allen wrench and remove the side covers (A - Fig. 8). Be sure not to damage the hub or spokes.
• Fully insert the 2,5 mm Allen wrench (**C** - Fig. 18) into the screw (**A** - Fig. 18) of the lockring (**B** - Fig. 18) and tighten by approximately three (3) turns.
• To reduce axle clearance, tighten the lockring (**B** - Fig. 18) by turning it clockwise by hand.
• To increase axle clearance, loosen the lockring (**B** - Fig. 18) by turning it counter-clockwise by hand. Strike the screw (Fig. 19) lightly with the plastic handle of the Allen wrench.
• Tighten the Allen screw (**A** - Fig. 18) with the wrench properly seated on it until the gap (**X** - Fig. 18) on the lockring (**B** - Fig. 18) is completely closed.
• Make sure that the adjustment is correct (the axle slides easily and without play), otherwise repeat the adjustment procedure.
• When the adjustment is correct, replace the side covers by screwing the screws with a 2,5 mm Allen wrench.

8. REPLACING A SPOKE

⚠ WARNING!

Always wear gloves and protective goggles when working with the spokes.

8.1 - FRONT WHEEL AND REAR WHEEL ON THE SIDE OPPOSITE THE FREEWHEEL

• Before replacing a spoke, refer to the technical specifications to find 1) the type and length of the spoke to be replaced, 2) the recommended spoke tension value and the maximum tension value not to exceed.
• Check that there are no residues of sand or of other impurities in the rim; if necessary eliminate them with a jet of compressed air.
• Get an original spare spoke.

Note
Do not scratch the rim with the spokes.

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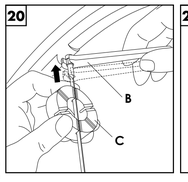

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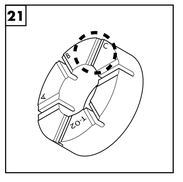

• Unscrew the screws with a 2,5 mm Allen wrench and remove the side covers (A - Fig. 8). Be sure not to damage the hub or spokes.
• Unscrew the nipple corresponding to the spoke to be replaced using the provided spoke wrench (B - Fig. 20).

Note
To prevent the spoke from turning and to avoid any damage, position the provided spoke antirotation ring (C - Fig. 20) as close to the nipple as possible.
The ring is provided with 3 grooves so that it can be used with 3 different types of spoke; the groove to use for spokes for the EURUS™ wheel is the one marked by the letter C (Fig. 21).

• If the nipple is not damaged and can be reused:
- Grip the nipple firmly so as not to allow it to slide into the rim.

- Slide out the spoke to replace (Fig. 22).
- Screw the nipple about two turns onto the new spoke.
- Insert the spoke into the hub (Fig. 23).
- Screw the nipple on to the new spoke using the provided spoke wrench (B - Fig. 24).

Note
To prevent the spoke from turning and to avoid any damage, position the provided spoke antirotation ring (C - Fig. 24) as close to the nipple as possible.

- When it is also necessary to replace the nipple:
- Slide the nipple into the rim as far as the valve hole (Fig. 25).
- Rest the wheel on a surface that will not damage the rim and let it bounce from 2 cm/1 inch max (Fig. 25) until the nipple comes out of the valve hole.
- Slide out the spoke to replace (Fig. 26).
- Screw the magnet-attracting nipple insert firmly onto the new nipple (Fig. 27).
- Insert the nipple into the valve hole and use the magnet contained in the package to guide the nipple as far as the spoke hole (Fig. 28).
- Bring the nipple out of the hole and remove the nipple-magnet coupling pin (Fig. 28).
- Screw the nipple about two turns onto the new spoke.
- Insert the spoke into the hub (Fig. 23).
- Screw the nipple on to the new spoke using the provided spoke wrench (B - Fig. 24).

Note
To prevent the spoke from turning and to avoid any damage, position the provided spoke antirotation ring (C - Fig. 24) as close to the nipple as possible.

- Replace the side covers by screwing the screws with a 2,5 mm Allen wrench.
- Following the operations described in chapter 10:
- Carry out the tensioning and balancing of the spokes;
- Check the centering and dish of the wheel.

Note
Always use the Loctite® 290 in the spoke-nipple interface after replacing the spoke.

- After replacing the spoke and tensioning and centering the wheel, it is necessary to carry out the adjustment of the hub (see chapter 7).

8.2 - REAR WHEEL ON FREEWHEEL SIDE

- Before replacing a spoke, refer to the technical specifications to find 1) the type and length of the spoke to be replaced, 2) the recommended spoke tension value and the maximum tension value not to exceed.
- Check that there are no residues of sand or of other impurities in the rim; if necessary eliminate them with a jet of compressed air.
- Get an original spare spoke.

Note
Do not scratch the rim with the spokes.

- Unscrew the nipple corresponding to the spoke to be replaced using the provided spoke wrench (B - Fig. 24).

Note
To prevent the spoke from turning and to avoid any damage, position the provided spoke antirotation ring (C - Fig. 24) as close to the nipple as possible.
The ring is provided with 3 grooves so that it can be used with 3 different types of spoke; the groove to use for spokes for the EURUS™ wheel is the one marked by the letter C (Fig. 29).

- If the nipple is not damaged and can be reused:
- Grip the nipple firmly so as not to allow it to slide into the rim.
- Slide out the spoke to replace (Fig. 30).

Note
If necessary, first remove the spoke above the one to be replaced and, after fitting the new spoke, reposition it in the same place.

- Screw the nipple about two turns onto the new spoke.
- Insert the spoke into the hub (Fig. 31).
- Screw the nipple on to the new spoke using the provided spoke wrench (B - Fig. 24).

Note
To prevent the spoke from turning and to avoid any damage, position the provided spoke antirotation ring (C - Fig. 24) as close to the nipple as possible.

- When it is also necessary to replace the nipple:
- Slide the nipple into the rim as far as the valve hole (Fig. 28).
- Rest the wheel on a surface that will not damage the rim and let it bounce from 2 cm/1 inch max (Fig. 28) until the nipple comes out of the valve hole.
- Slide out the spoke to replace (Fig. 32).

Note
If necessary, first remove the spoke above the one to be replaced and, after fitting the new spoke, reposition it in the same place.

- Screw the magnet-attracting nipple insert firmly onto the new nipple (Fig. 27).
- Insert the nipple into the valve hole and use the magnet contained in the package to guide the nipple as far as the spoke hole (Fig. 28).
- Bring the nipple out of the hole (Fig. 28) and remove the nipple-magnet coupling pin.
- Screw the nipple about two turns onto the new spoke.
- Insert the spoke into the hub (Fig. 31).
- Screw the nipple fully in using the special spoke wrench (B - Fig. 24).

Note
To prevent the spoke from turning and to avoid any damage, position the provided spoke antirotation ring (C - Fig. 24) as close to the nipple as possible.

- Put back the spoke above if it was necessary to remove it in the first place.
- Following the operations described in chapter 10:
- Carry out the tensioning and balancing of the spokes;
- Check the centering and dish of the wheel.

Note
Always use the Loctite® 290 in the spoke-nipple interface after replacing the spoke.

- After replacing the spoke and tensioning and centering the wheel, the hub must then be adjusted (see chapter 7).

9. CHANGING THE RIM

⚠ WARNING!

Rim wears out with use. Check wear status, especially on the braking track on the side of the rim, regularly and replace when worn. A worn out rim may suddenly and unexpectedly fail resulting in an accident, personal injuries or death.

⚠ WARNING!

<u>For the clincher tire version:</u> change the rim when the distance between the rim shoulders exceeds 15.5 mm (Fig. 33). A deformed rim may cause the clincher to suddenly come out of its seat, resulting in an accident, personal injury or death.

- Before proceeding with the disassembly of the wheel, note the original orientation of the rim and the spoke arrangement on a sheet of paper can assist you in reassembling the wheel correctly.
- Get an original spare rim.

⚠ WARNING!

Always wear gloves and protective goggles when working with the spokes.

Note
Do not scratch the rim with the spokes.

9.1 - FRONT RIM

- Unscrew the screws with a 2,5 mm Allen wrench and remove the side covers (A - Fig. 34). Be sure not to damage the hub or spokes.
- For each spoke:
- Unscrew the nipple on to the new spoke using the provided spoke wrench (B - Fig. 24).

Note
To prevent the spoke from turning and to avoid any damage, position the provided spoke antirotation ring (C - Fig. 24) as close to the nipple as possible.
The ring is provided with 3 grooves so that it can be used with 3 different types of spoke; the groove to use for spokes for the EURUS™ wheel is the one marked by the letter C (Fig. 29).

- Slide the spoke out of the hub (Fig. 22).
- Slide the nipple into the rim as far as the valve hole (Fig. 25).
- Rest the wheel on a surface that will not damage the rim and let it bounce from 2 cm/1 inch max (Fig. 25) until the nipple comes out of the valve hole.

- Carry out the operations indicated in the previous point for all the spokes.
- Get the new rim.
- For each spoke:
- Screw the magnet-attracting nipple insert firmly onto the new nipple (Fig. 27).
- Insert the nipple into the valve hole and use the magnet contained in the package to guide the nipple as far as the spoke hole (Fig. 28).
- Bring the nipple out of the hole and remove the nipple-magnet coupling pin (Fig. 28).
- Screw the nipple about two turns onto the spoke.
- Carry out the operations indicated in the previous point for all the spokes.
- Fit the spokes one by one into the hub (Fig. 23).

Note
The rim has oriented holes (Fig. 36). When inserting the spokes onto the hub, follow the natural inclination of the holes.

- Screw each nipple on to each new spoke using the special spoke wrench (B - Fig. 24). To prevent the spoke from turning and avoid any damage, position the provided spoke antirotation ring (C - Fig. 24) as close to each nipple as possible.
- Replace the side covers by screwing the screws with a 2,5 mm Allen wrench.
- Follow the operations described in chapter 10:
- Carry out the tensioning and balancing of the spokes;
- Check the centering and dish of the wheel.

Note
Always use the Loctite® 290 in the spoke-nipple interface of every spoke after replacing the rim.

9.2 - REAR RIM

⚠ WARNING!

Some factors must be kept in mind when replacing the rear rim:

- The spokes are assembled 3 by 3. The 2 external spokes are always right-hand, the central spoke is always left-hand (Fig. 36).

- To determine the right (FW) side of the rim, keep the rim in your hands as shown in Fig. 37 and verify that the valve hole is on the right of the group of 3 spokes (B - Fig. 36).

- Unscrew the screws with a 2,5 mm Allen wrench (Fig. 34) and remove the left cover. Be sure not to damage the hub or spokes.
- For each spoke:
- Unscrew the nipple using the provided spoke wrench (B - Fig. 24).

Note
To prevent the spoke from turning and to avoid any damage, position the provided spoke antirotation ring (C - Fig. 24) as close to the nipple as possible.
The ring is provided with 3 grooves so that it can be used with 3 different types of spoke; the groove to use for spokes for the EURUS™ wheel is the one marked by the letter C (Fig. 29).

- Slide the spoke out of the hub (Fig. 30).
- Slide the nipple into the rim as far as the valve hole (Fig. 25).
- Rest the wheel on a surface that will not damage the rim and let it bounce from 2 cm/1 inch max (Fig. 25) until the nipple comes out of the valve hole.

- Carry out the operations indicated in the previous point for all the spokes.
- Get the new rim.
- For each spoke:
- Screw the magnet-attracting nipple insert firmly onto the new nipple (Fig. 27).
- Insert the nipple into the valve hole and use the magnet contained in the package to guide the nipple as far as the spoke hole (Fig. 28).
- Bring the nipple out of the hole and remove the nipple-magnet coupling pin.
- Screw the nipple about two turns onto the spoke.

Note
• FW side (right) spokes: L. 281,2.
• Side opposite the FW (left) spokes: L. 275,2.

- Carry out the operations indicated in the previous point for all the spokes.
- Beginning with the freewheel side, insert the spokes into the hub (Fig. 31).

Note
There is a groove with two different depths in the hub on the freewheel side. Insert first the spokes which are housed in the deeper grooves (Fig. 37).

- Then continue with the insertion of the spokes on the side opposite the freewheel.
- Screw each nipple on to each new spoke using the special spoke wrench (B - Fig. 24). To prevent the spoke from turning and to avoid any damage, position the provided spoke antirotation ring (C - Fig. 24) as close to each nipple as possible.

⚠ WARNING!

Check that there are no signs of wear, damage or deformation on the braking track on the side of the rim. A damaged rim may break suddenly resulting in an accident, personal injury or death.

- Carry out the operations indicated in the previous point for all the spokes.
- Replace the left cover by screwing the screws with a 2,5 mm Allen wrench.
- Follow the operations described in chapter 10:
- Carry out the tensioning and balancing of the spokes;
- Check the centering and dish of the wheel.

Note
Always use the Loctite® 290 in the spoke-nipple interface of every spoke after replacing the rim.

10. ADJUSTMENT OF SPOKES TENSION AND WHEEL CENTERING

- Centering the wheel involves checking and correcting axial (centering) and radial (roundness) offsets (Fig. 38).

⚠ WARNING!

This is one of the most important stages in assembling the wheel. Using wheels that have not been centered properly or which have broken or damaged spokes may result in an accident, personal injury or death.

- To center, place the wheel on a rigid wheel-centering support (A - Fig. 39), lock it by means of the quick release skewer and check the axial and radial offsets using a dial gauge (Fig. 39).
- To correct excessive axial deformation to the left part of the wheel, adjust the spoke in the deformed area by either increasing the tension of the right-handed spoke or reducing the tension of the left-handed spoke.
- Carry out this operation over the whole surface of the wheel, bearing in mind that the decision to increase or decrease tension in the spokes also directly influences the wheel dishing.
- To correct excessive outwards radial deformation, adjust the pair of spokes in the area in question by increasing their tension; to correct excessive inwards radial deformation, adjust the pair of spokes in the area in question by reducing their tension.
- Repeat checking the axial and radial trueness until an error of less than 0,4 mm is obtained.
- Balance the wheel as described in para 10.1.
- **Alternate between nipple tensioning and checking for trueness and circularity until the correct spoke tension is obtained, and the deformation error is within the following limits:**
- centering (axial offset): 0,3 mm
- circularity (radial offset): 0,4 mm
- Repeat balancing, making all necessary corrections, until the wheel is properly centered (Fig. 40).

10.1 - BALANCING THE WHEELS

⚠ WARNING!

This is one of the most important stages in assembling the wheel.
Incorrect balancing may damage the wheel or cause the wheel to unexpectedly fail, resulting in an accident, personal injury or death.

- To carry out this operation, the wheel must be fitted on a very rigid wheel centering support (A - Fig. 40).
- **Spoke after spoke,** pull the rim forcefully with both hands from the side opposite the spoke (B - Fig. 42) to balance.
- Repeat the operation from the other side of the wheel (Fig. 41).

10.2 - CHECKING WHEEL DISH

- To check wheel dish, use a template (Campagnolo® code UT-HU010 - A - Fig. 42) and place it on one side of the wheel. Screw or unscrew the measuring screw until it touches the nut or the counter-cup of the hub.
- Place the template on the other side of the wheel and check that the measuring screw (B - Fig. 42) rests on the nut or counter-cup of the hub. If there is any distance between the screw and hub, the wheel dish must be corrected.
- The maximum permitted wheel dish tolerance is 1 mm.
- **Front wheels:** if the rim axis is excessively displaced to one side, slacken all the spoke nipples on the same side by approximately one-quarter turn. Then tighten all the spoke nipples on the opposite side by approximately one-quarter turn. Check the dishing again and repeat the operation as required, taking care not to excessively tighten the spokes.
- **Rear wheels:** if the rim axis is excessively displaced to one side, slacken all the spoke nipples on the same side by approximately one-half turn and simultaneously tighten all the spoke nipples on the opposite side by approximately one-quarter turn. Remember that the different angle of the right and left spokes (shallower and steeper, respectively) significantly affects wheel dishing; therefore, never increase the left spoke nipples by more than approximately one-quarter turn to avoid difficulties in setting the wheel dish. Repeat the operation as required, taking care not to excessively tighten the spokes.

⚠ CAUTION!

The values given above (approximately 1/2 turn and approximately 1/4 turn) are suggestive. However, bear in mind that if the tension of the right-hand spokes is changed in one direction, then the tension of the left-handed spokes must be changed almost twice as much in the opposite direction.

Note
After tensioning and centering the wheel, always use a thread lock in the spoke-nipple interface.

11. BRAKES

11.1 - CAMPAGNOLO® BRAKES

- Before every ride, check your brake pads and cables to be sure they are in good condition. In addition, test your brakes in the beginning of your ride to make sure they are operating properly.
- Make sure that the brake pads are perfectly aligned with the wheel braking surface, adjust the brake pads so that they are centered in height in relation to the braking surface of the rim and parallel to it horizontally and vertically and make sure that they are about 1 mm from the surface of the rim (Fig. 43).
- Check the wear status of the brake pads at regular intervals and replace them when the braking surfaces reach the limit marked by the wording "WEAR LIMIT" or if braking power is in any way insufficient (consult the brake instruction leaflet).
- Check the tension of the brake control cables at regular intervals.
- Keep the braking surface of the rim and the brake pads free from oil and grease.
- Using a file, periodically remove any traces of debris or sand from the brake pads which could lead to deep scoring on the sides of the rims, reduce the braking efficiency and adversely affect the integrity of the rim itself.
- Check the brake cable for any evidence of wear or stretching, and replace the cables if necessary. In addition, check that the screw locking the cable to the brake is correctly tensioned (consult the brake instruction leaflet).
- Check torque setting(s) of the brake, brake pad and cable locking screws at regular intervals.
- When riding in wet conditions, remember that the stopping power of your brakes is greatly reduced and the adherence of the tires to the ground is considerably reduced. Also bear in mind that because of the progressive drying of the braking surface during braking itself, braking power may vary sharply. This makes it harder to control and stop your bicycle. Extra care is required when riding your bicycle in wet conditions to avoid an accident. An accident could result in severe personal injury or death.
- For further information please consult the instruction sheet supplied with the brakes.

11.2 - BRAKES OF OTHER MANUFACTURERS

Please consult the instruction sheet supplied by the manufacturer.

12. PERIODICAL WHEEL MAINTENANCE

- After using the wheel for the first time, check wheel trueness and circularity.

⚠ WARNING!

Using wheels that have not been centred properly or which have broken or damaged spokes may result in accidents, personal injury or death.

- After every ride, check the condition of the tires and inflation pressure.
- Periodically take your bicycle to a qualified mechanic to lubricate the hubs. Check with your mechanic to select a schedule that is best for you (approximately every 2,000/5,000 km - 1,200/3,000 miles).
- Every 10,000/20,000 km (6,000/12,000 miles) please take your bicycle to a qualified mechanic to lubricate, remove, disassemble and check the hubs.
- Have your mechanic periodically check every component that is subject to wear (rims, ball bearings, brake pads). If necessary, have them replaced.
- At least once each month, please take your bicycle to a qualified mechanic to check the tension of the spokes, wheel centering and wheel dish and correct as necessary.
- Periods and riding distances are purely indicative and may be significantly different in relation to conditions of use and the intensity of your activity (for example: racing, rain, salted Winter roads, weight of the rider etc.). Check with your mechanic to select a schedule that is best for you.

12.1 - CLEANING THE WHEELS

When cleaning the wheels, only use non-abrasive, non-corrosive products such as water and neutral soap, or specific products specially designed for cleaning bicycles. Never use abrasive or metal sponges. Dry with a soft cloth.

NOTE
Never spray your bicycle with water under pressure.
Pressurized water, even from the nozzle of a small garden hose, can pass seals and enter into the components of your bicycle, damaging them beyond repair.
Wash your bicycle and Campagnolo® wheels by wiping them down with water and neutral soap.

12.2 - TRANSPORT AND STORAGE

When transporting the wheel separately from the bike or if the wheel will not be used for a long period of time, store it in a wheelbag to protect it against impacts and dirt.

This product is protected by one or more of the following patents:

- **Patent applications:** DE 19828009.2 - JP 10-217047 - AU 79331/01 - CN 011233516 - CZ PV2001-2243 - EP 03009131.8 - IT TO2001A000210 - JP 2001-204664 - CN 200310114898? - EP 02425686.9 - IT 02425686.9 - JP 2003-378755 - TW 92130587 - US 10/704467 - AU 2004202807 - CN 0410062041.X - EP 03425419.3 - JP 2004-189995 - TW 93118094 - US 10/877024 - CN 0510005886.X - EP 04425046.2 - JP 2005-18762 - TW 94101250 - US 11/044234 - CN 0510074749.1 - EP 04425402.7 - JP 2005-155510 - TW 94113301 - US 11/136237 - CN 05/10083577.4 - EP 04425509.9 - JP 2005-200133 - TW 94123272 - US 11/126819 - CN 0510096673.2 - EP 04425653.5 - JP 2005-251583 - TW 94129965 - US 11/216611 - EP 05425235.8
- **Patents:** BE 1201458 - EP 1201458 - FR 1201458 - DE 1201458 - DE 20121866.6 - IT 1320727 - IT 1201458 - NL 1201458 - PT 1201458 - CH 1201458 - TW 240364 - GB 1201458 - US 6491350 - FR 9810117 - IT 1296196 - US 5997104 - MX 230355 - DE 20221235.1
- **Design patent applications:** EM 000047683 - II DM/056139
- **Designs:** CZ 30719 - IT 80805 - JP 1162273 - JP 1162274 - PT 30294 - TW 086727 - TW 086729 - US D458202 S - US D472507S

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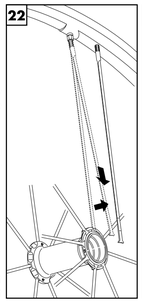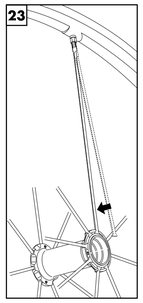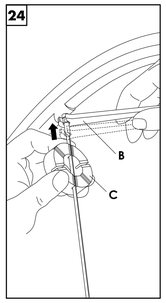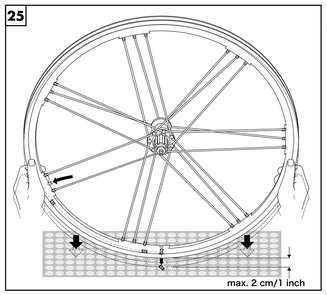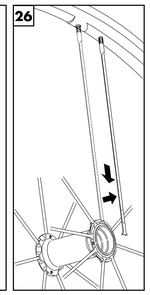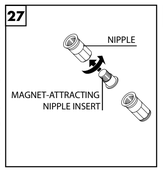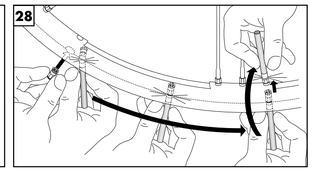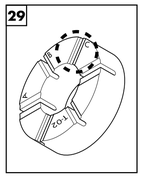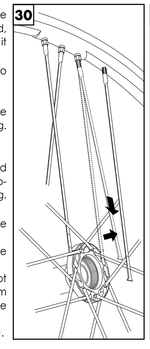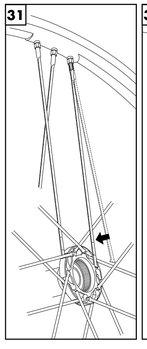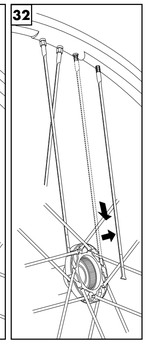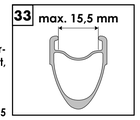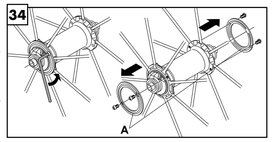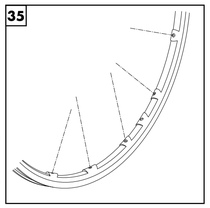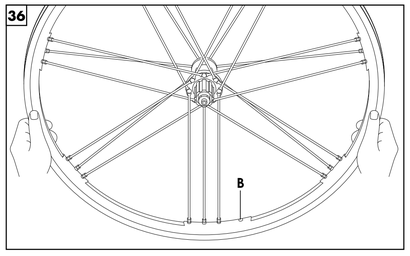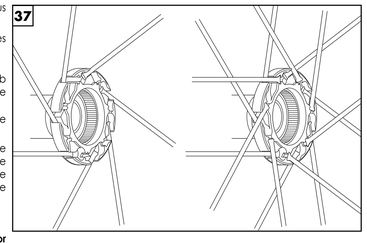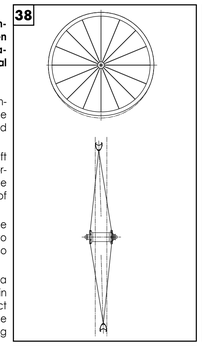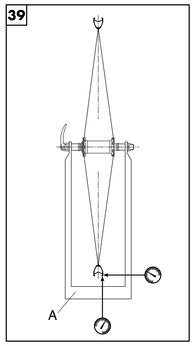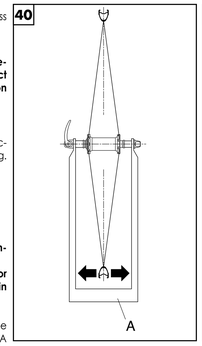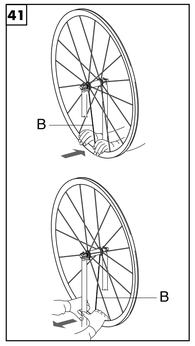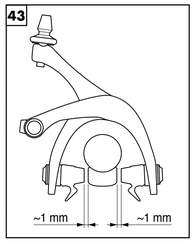
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