

MEILENSTEIN	TUBULAR DISC
MEILENSTEIN EVO	CLINCHER DISC
OBERMAYER EVO	CLINCHER DISC
PFADFINDER EVO	CLINCHER DISC
FERNWEG EVO	CLINCHER DISC



Owner's manual



Chipnummer · Chip number · Numéro de puce ·
Numero d'identificazione · Número individual del chip



Händler · Dealer · Concessionnaire ·
Commerciante · Comerciante

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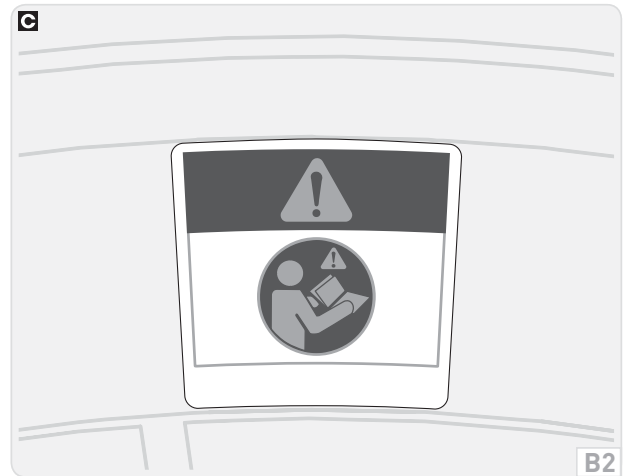
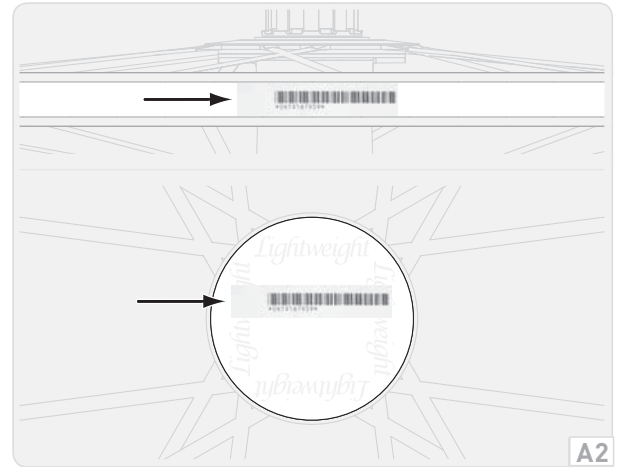
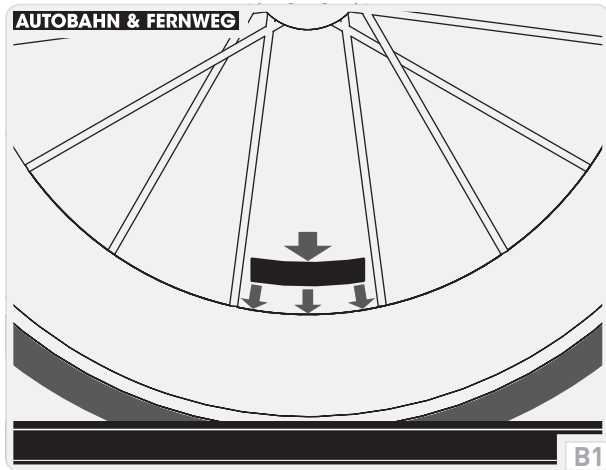
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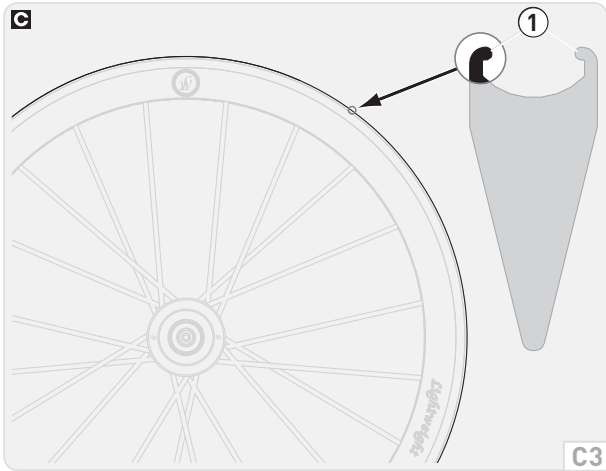
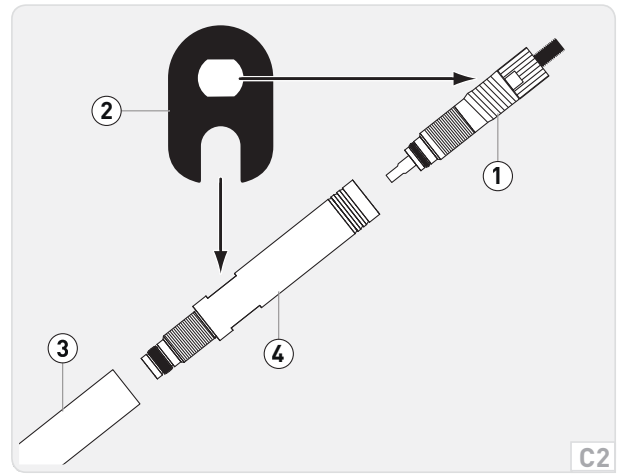
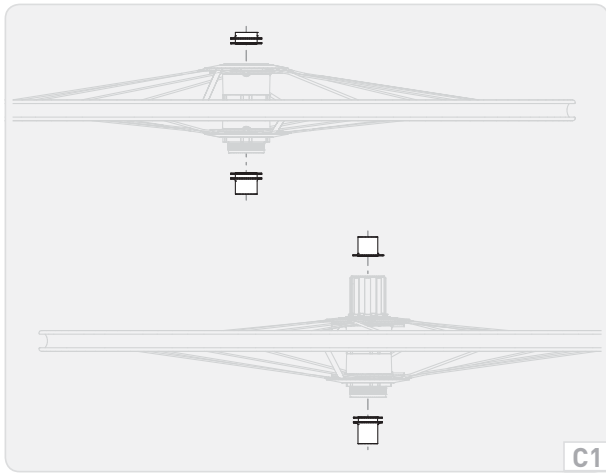
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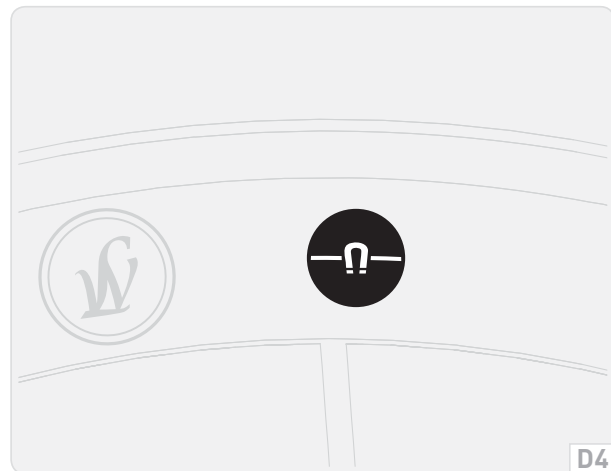
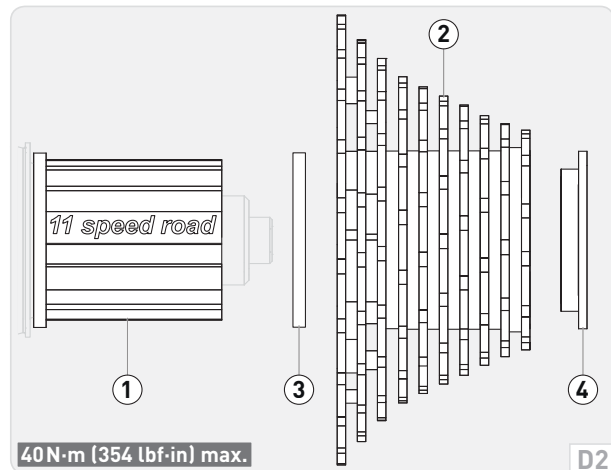
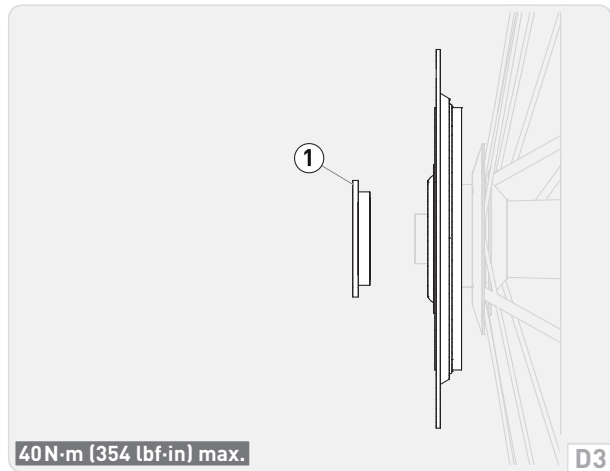
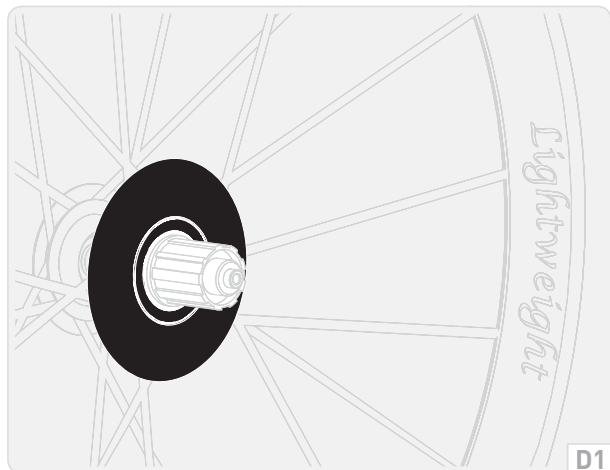
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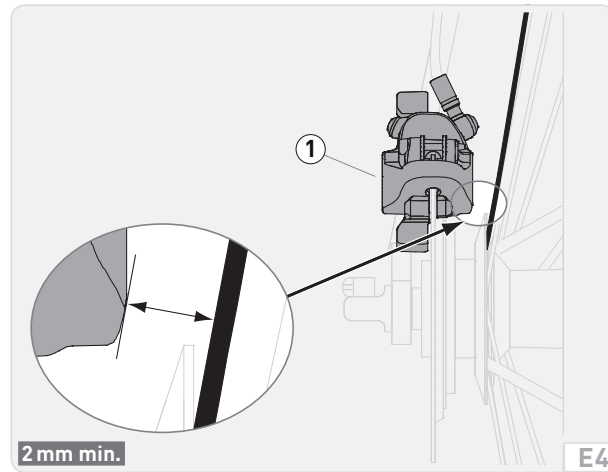
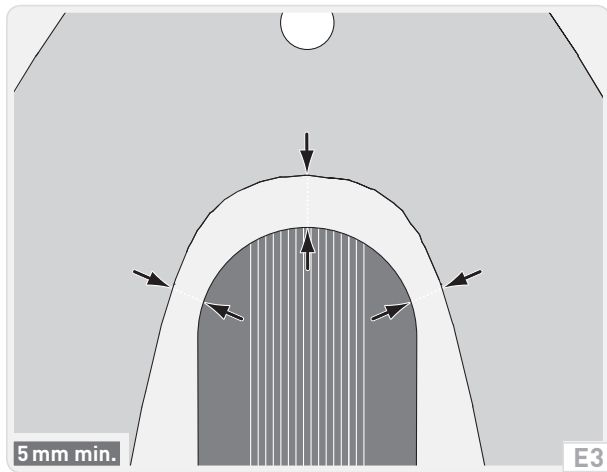
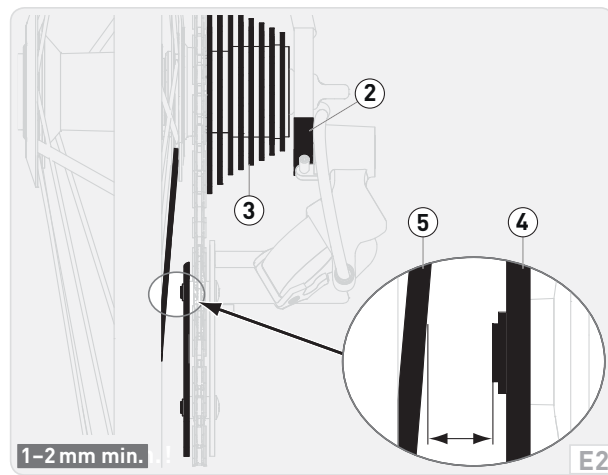
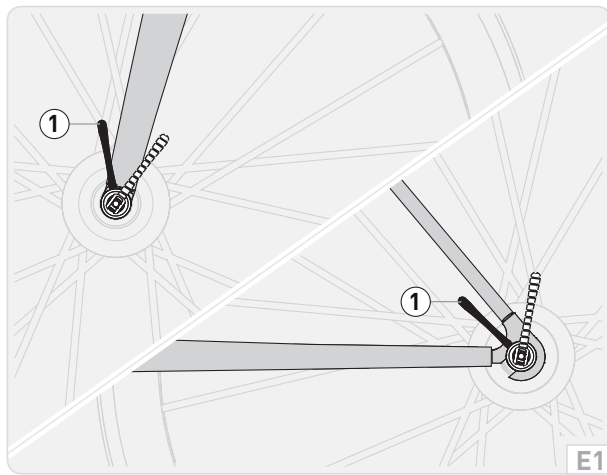
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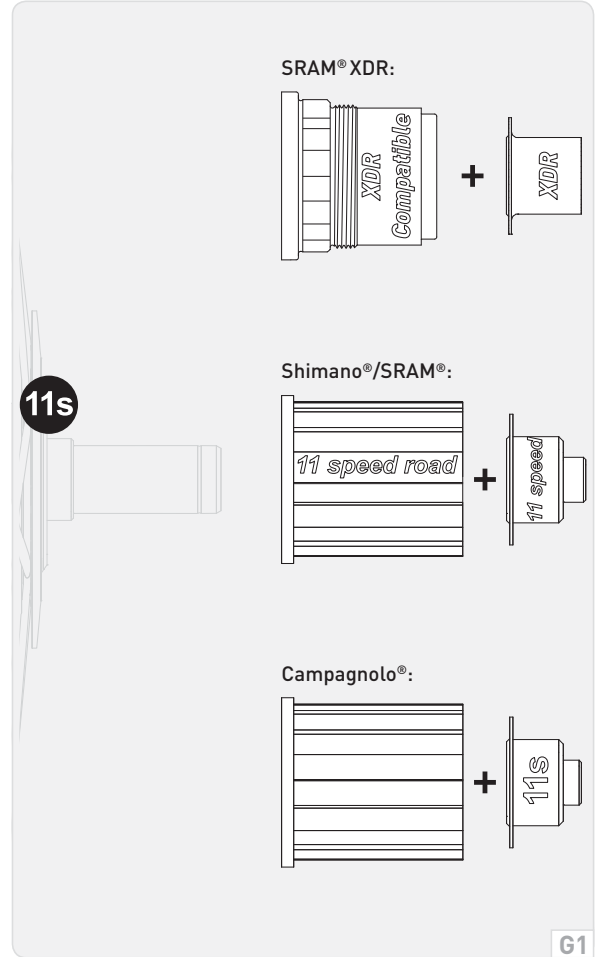
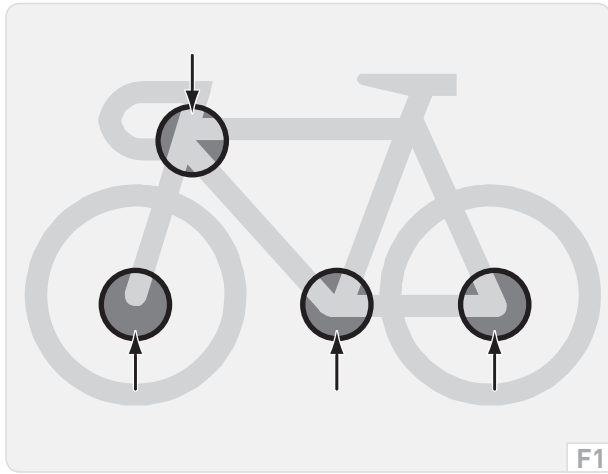
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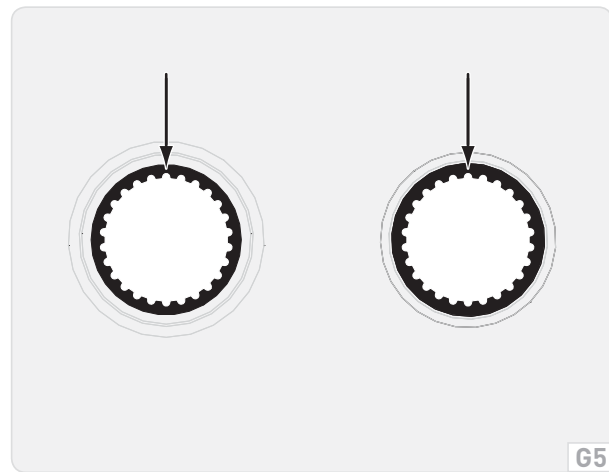
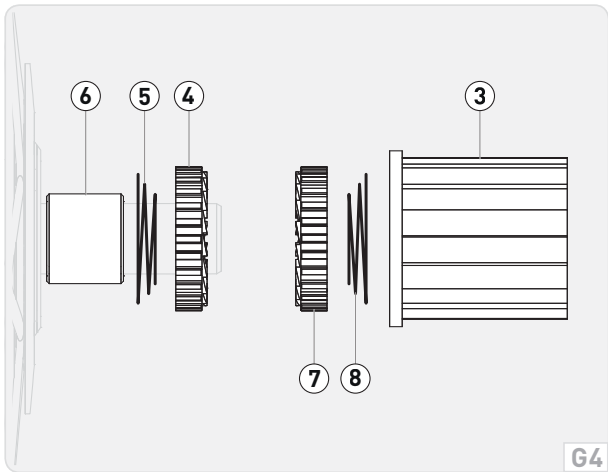
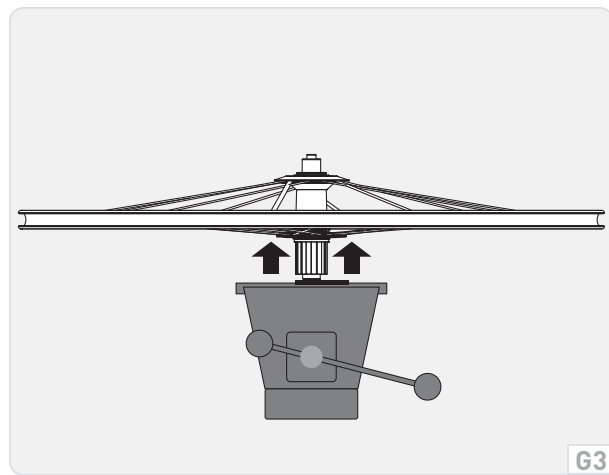
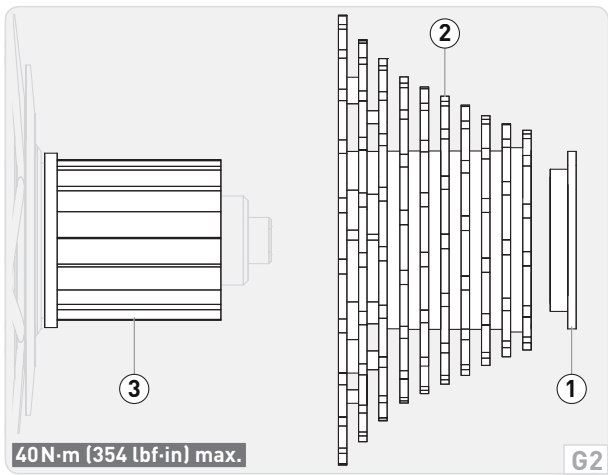


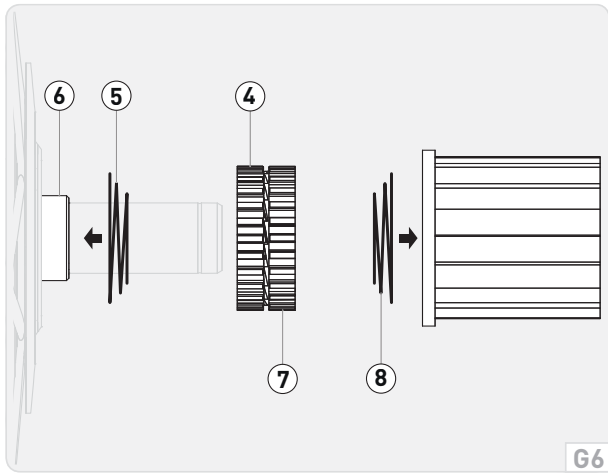




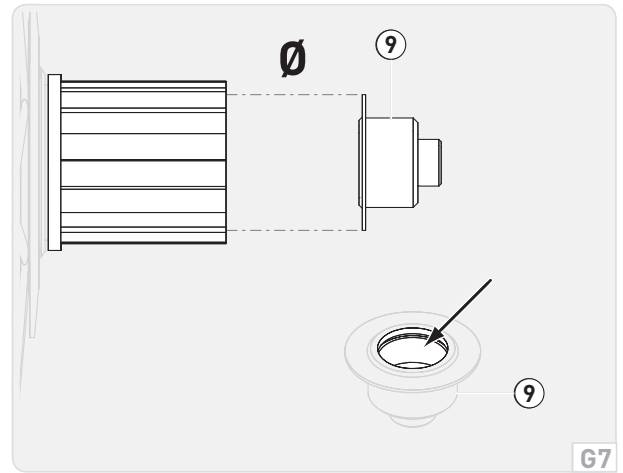




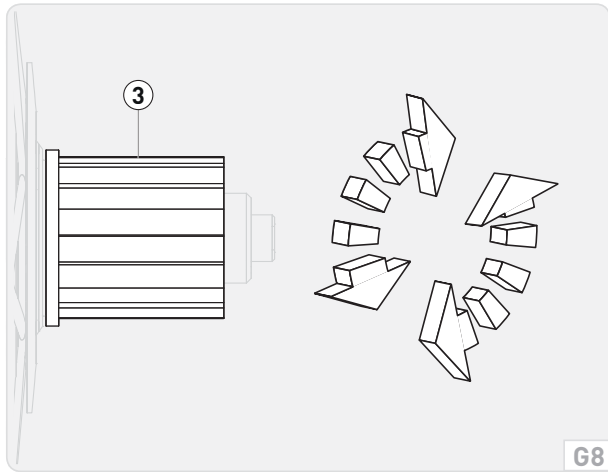




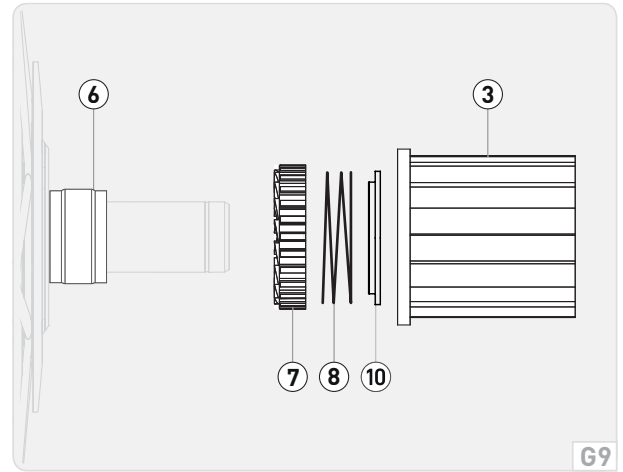
G6



G7



G8



G9

Preface

Congratulations and thank you – you have selected the best wheels in the world.

Handmade – made in Germany.

This manual is an integral component of your Lightweight product and it provides you with important information regarding the safe operation of your Lightweight wheels.

You can find the illustrations referred to in this manual in the graphics section in the fold-out.

The safety of our customers is very important to us. Please read this manual carefully before installing your wheels or riding on them for the first time.

⚠ WARNING Non-observance of the information contained in this manual could result in a fatal or serious accident.

Our information is there for a reason – our interest in your personal safety!

Read and observe all assembly, maintenance and usage instructions and please remember that even the best product can fail if it is improperly treated.

This applies for components from other manufacturers whose products are used on your bicycle (tyres, quick release skewers, brakes etc.).

Read and observe all user instructions.

Keep this manual for other users of your wheels. Make sure that all users read, understand and observe this manual.

If you ever sell or give away your wheels, this manual should be transferred to the new owner.

We hope you get a lot of enjoyment from your Lightweight wheels.

Your Lightweight Team

Explanation of symbols

You will encounter the following symbols and references in this manual:

☞ The index finger instructs you to perform a particular action.

→ The arrow indicates the consequences of your action or important prerequisites.

① This shows additional information or tips.

[3] ... refers to an item number in an illustration.

[A2] ... refers to an illustration in the graphics section.

C This content refers only to Lightweight clincher wheels (Clincher).

T This content refers only to Lightweight tubular tyre wheels (Tubular).

OBERMAYER This content refers only to the corresponding series or its derivatives.

⚠ WARNING The **WARNING** message indicates a hazardous situation which, if not avoided, could result in a fatal or serious injury.

⚠ CAUTION The **CAUTION** message indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE The **NOTICE** message warns of a risk of material damage.

- The dot indicates how to avoid a hazardous situation or a risk of material damage.

Lightweight online

Visit www.lightweight.info for information that you will find interesting.

Accessories, spare parts and clothing in the **SHOP**, frequently asked questions in the **FAQs**, interesting facts in **NEWS & PRESS** and much more.

We look forward to meeting you there!

Your wheel

The illustrations in this manual may be different from your Lightweight wheel, but the required steps are the same for all wheel types, unless otherwise specified.

① The model name of your wheel is on the hub cover. **[A1]**

Registration

Every Lightweight wheel is provided with an integrated chip with a 10-digit code – the chip number. This allows every single wheel to be individually registered.

① Only Lightweight products registered by the original owner or reregistered by subsequent owners enjoy our service provisions!

① To register your Lightweight wheels or change the registration, you can find the required chip numbers either on the external packaging, in the rim well or on the sticker fixed to one of the protective covers of the wheel; alternatively, your specialist shop may have already attached it to the appropriate place on the first page of this manual. **[A2]**

☞ Register or transfer the registration of your Lightweight wheels at www.lightweight.info >>> **SERVICE**.

➔ Our service provisions are available to you.

You will also find information on our extended service offers here.

TECHNICAL DATA

Wheels		Spokes	Approved use	Approved disc brake rotor Ø (mm/inch)	Approved total weight max. (kg/lb)**	Approved tyres
SERIES			*			
MEILENSTEIN	FW	20	Allround	160/6"	120/265	Tubular tyres (Tubular)
	RW	20		160/6" · 140/5.5"		
MEILENSTEIN EVO	FW	20	Allround E-Road***	160/6"	120/265	Clincher tyres, Tubeless (Clincher)
	RW	20		160/6" · 140/5.5"		
OBERMAYER EVO	FW	20	Street	160/6"	100/220	
	RW	20		160/6" · 140/5.5"		
PFADFINDER EVO	FW	20	Allround E-Road***	160/6"	120/265	
	RW	20		160/6" · 140/5.5"		
FERNWEG EVO	FW	20	Street	160/6"		
	RW	20		160/6" · 140/5.5"		

* Street = paved or asphalted surface · Allround = street and gravel

** Approved total weight = rider + bicycle + luggage

*** Approved using the rotor e-kit for SRAM XD and Shimano 11-speed

Hubs		Dimension* (mm)	Rotor	Brake disc holder	Fixing* wheel ∅ (mm)
DT SWISS® 240s	FW	100	-	Shimano® Centerlock® M31×1	9 (Thru Bolt)
					12 (Thru Axle)
					15 (Thru Axle)
	RW	135	Shimano® 11s or SRAM® XDR 12s or Campagnolo® C9/C10/C11/C12	Shimano® Centerlock® M31×1	10 (Thru Bolt)
142				12 (Thru Axle)	
DT SWISS® 180 EXP**	FW	100	-	Shimano® Centerlock® M31×1	12 (Thru Axle)
	RW	142	Shimano® 11s EXP or SRAM® XDR 12s EXP or Campagnolo® C9/C10/C11/C12 EXP	Shimano® Centerlock® M31×1	12 (Thru Axle)

* The size of the supplied right rear wheel adapters is selected by you, your retailer or the manufacturer of your bicycle.

If you wish to install your wheel in dropouts with different dimensions, you will need right rear wheel adapters with correspondingly different dimensions; these are available from your retailer or directly from Carbovation.

** This is an adapted Lightweight-specific version.

⚠ WARNING Contact your dealer for maintenance and spare parts.

① All Lightweight products are the result of manual labour. Deviations in colour and surface finish are characteristic features resulting from this high quality manufacturing procedure.

For more details and information on the manufacture of your Lightweight wheels please consult www.lightweight.info

Intended use

⚠ WARNING Any use other than that intended can lead to accidents resulting in fatal or serious injury.

Your Lightweight clincher wheels for disc brakes (T/C DISC) are designed solely:

- for installation on standard race and time trial bikes which are designed to have disc brakes fitted.
- for use with disc brakes.
- for use with Thru Bolt or Thru Axle.
- for the installation of disc brake rotors that comply with the Shimano® Centerlock® standard.
- **T** for installation (adhesion) of tubular tyres.
- **C** for the installation of clincher or foldable clincher tyres or tubeless tyre systems that comply with the ETRTO* standards. (* European Tyre and Rim Technical Organisation)
- in accordance with the applicable approvals – see **Technical data**, page 14.

In your own interest

Always remember that riding a bicycle involves potential danger for both yourself and other road users, as well as for your bicycle and its components.

Even if protective equipment and safety devices are used, accidents resulting in death or serious injury can still occur. Furthermore, improperly performed assembly and maintenance work could also result in a loss of your rights with regard to product liability and service!

Always ensure your bicycle is maintained in a flawless condition. Care and maintenance will prolong the service life of your bicycle and its components and improve your personal safety!

You should also rely on your common sense and avoid any unreasonable behaviour!

Fundamental safety precautions

Assembly & maintenance

- ⚠ WARNING** Risk of accident due to damage wheels resulting from unprofessionally performed assembly and maintenance work.
 - Do not overestimate your technical ability. All assembly and maintenance work should be performed by a specialist workshop for bicycles. This is the only way to ensure that work is conducted in a professional manner.
 - Always maintain all specified min./max. values – see **Technical data**, page 14.
 - When conducting assembly steps that require a specific tightening torque, always use an appropriate torque wrench that is designed for the tightening torque specified.
 - **C** Use tubeless tyre systems exclusively with wheels of the EVO series.
- ⚠ WARNING T** Risk of accident due to tyre failure.
 - Only ever use high quality and undamaged tubular tyres and suitable adhesive.
 - Your tubular tyres should only be installed (adhesion) by an expert bicycle mechanic.
 - Observe the min./max. inflation pressure values specified by the manufacturer.
- ⚠ WARNING C** Risk of accident due to a bursting tyre.
 - Never use latex inner tubes.
 - Never exceed the tyre inflation pressure approved by us, because the tyre inflation pressure will increase considerably as a result of the temperature created by rolling resistance and possibly high ambient temperature – see **C Installing clincher / tubeless tyres**, page 21.

NOTICE **C** Greatly increased tyre wear.

- Do not combine a tubeless tyre system with an inner tube other than in case of breakdown and then only for a short distance.

NOTICE Corrosion and material damage due to penetration of water.

- Never use a pressure washer or steam cleaner to clean your bicycle, as the seals of your bicycle components are unable to withstand the pressure.
- Even if you use a hose, be careful – never aim the hose directly at the bearing components. **[F1]**

NOTICE Corrosion on surface of your Lightweight components due to incorrect cleaning.

- Never use aggressive solvents (e.g. paint thinner, nitro etc.).
 - It is best to use water and standard paintwork cleaning products.
 - Isopropanol, spirits or petrol may be used carefully; however, avoid excessive wiping and long exposure times and also any contact with the rim decor.
- ① We recommend our specially developed Lightweight **CLEANER FOR BRAKE TRACK AREAS** for cleaning, available from your specialist shop or directly from Carbovation – but avoid all contact with the rim decor!

On the road

▲ WARNING Risk of accident through damaged wheels.

- Never exceed the maximum approved total weight – see **Technical data**, page 14.
- Avoid riding through potholes or over edges and steps.
- Always check your wheels before every ride, after a violent shock and after a blow-out (dents, scratches, cracks, large areas of abrasion etc.). Send us your wheels for inspection before using them again if there is visible damage or if you have any doubts about their condition.

C In particular, always check the sensitive rim flange **[1]** for damage before every ride, after every hard impact and after every blow-out (dents, cracks etc.). **[C3]**

- Never ride with your wheels in combination with a rim brake.
 - Never ride with damaged wheels.
 - Never continue using your bicycle after a serious crash.
- If such a case occurs, send your wheels to us for inspection even if no external damage is visible.

In your own interest you should deal in the same way with all components on your bicycle that are produced by other manufacturers.


- Do not use your wheels below -10 °C (14 °F) or above 45 °C (113 °F) ambient temperature.

▲ WARNING Risk of accident caused by erratic riding or improper equipment.

- Pay particular attention when riding in high winds. Front wheels are more sensitive to side winds from a rim height of 30 mm – the higher the rim the greater the sensitivity. Unwanted steering movements may result.
- Always observe the traffic regulations of the country where you are riding your bicycle.
- When riding your bicycle always wear a high quality cycling helmet (e.g. ANSI certified), that is in excellent condition and close-fitting but not restrictive clothing.
- Only ride your bicycle if you are in good physical condition and your bicycle and all its components are working perfectly.

Transport & storage

⚠ WARNING Risk of accident through damaged wheels.

- Protect your wheels from lateral pressure. This applies particularly during transport and particularly to disc wheels (**RUNDKURS DISC, AUTOBAHN**) and also for the **FERNWEG** series.
- Do not store your wheels below -15 °C (5 °F) or above 55 °C (131 °F) ambient temperature.
-  Do not expose the wheels or the rim surface to extreme heat or direct sunlight over 55° degrees Celsius (131 °F), such as in the boot or on the back shelf of a car. Extreme heat can cause irreparable damage to the wheel, which may fail. If you use a bicycle carrier on a car, the wheels must be at least half a metre away from the hot exhaust pipe.

NOTICE **AUTOBAHN & FERNWEG** The covers of the Lightweight Aero wheels consist of 1 layer of carbon with reduced wall thickness and they can be easily damaged.

- Do not hang your bicycle on a hook by the Aero front or rear wheel.
- When transporting your bicycle on a car rack, make sure that the straps, hooks etc. cannot damage the covers – use suitable padding where necessary to ensure that any pressure is evenly distributed over a wide area. **[B1]**

Safety label

📄 A safety label is placed on both sides of the rim on every Lightweight clincher wheel. **[B2]**

Replace the safety labels if they become illegible or damaged.



Remove the stickers without using heat or chemicals.

Send us a postage-paid return envelope with your address. You will then receive the desired safety labels at no extra charge.

Disposal

If defective or no longer in use, you can dispose of your wheels with your non-recyclable waste or domestic refuse or ask a local waste disposal company for other ways of disposal (e.g. recycling).

You can also send your wheels to us. They will then be disposed of in a way that is harmless to the environment – see **Crashreplacement**, page 31.

Before every ride

- ⚠ **WARNING** Risk of accident through damaged wheels.
- Read and observe all assembly and maintenance instructions, including those specified in the user instructions provided by other manufacturers whose products are used on your bicycle (tyres, Thru Bolt or Thru Axle, cassettes, brakes etc.).
- Do not overestimate your technical ability – all assembly and maintenance work should be performed by a specialist workshop for bicycles. This is the only way to ensure that work is conducted in a professional manner.
- Check the rims and spokes of your wheels for damage (dents, scratches, abrasion extending over a large area etc.).
- Never ride with damaged wheels.

Installing wheel adapters

- ☞ Make sure that the supplied wheel adapters correspond to the dimensions of your Thru Bolt/Thru Axles as well as the dropouts of your bicycle – see **Technical data**, page 14.
- ☞ Allocate the supplied wheel adapters – front wheel, right/left; rear wheel, right/left. [C1]

- ⚠ **WARNING** Risk of accident due to rotor failure.
- Only use original DT Swiss special freewheel grease to lubricate the components. It is available from your specialist shop or directly from Carbovation.

- ☞ Lightly lubricate the wheel adapter – particularly inside. [G7]

NOTICE Loss of function – rotor jams.

- Do not replace the different wheel adapters of the Campagnolo®, SRAM® XDR and Shimano® rotors.
- Make sure that the outer diameter (Ø) of the wheel adapter accurately matches the inner diameter of the rotor used. [G7]
- ☞ Put the adapters onto the axle and press on by hand until they noticeably lock in place.

Installing the cassette

- ⚠ **WARNING** Campagnolo 12-speed cassettes whose largest sprocket has 29 teeth or less cannot be used with the rear wheel of the Obermayer EVO. This sprocket/wheel combination can cause the sprocket and wheel to collide. Campagnolo cassettes whose biggest sprocket has more than 29 teeth (e.g. 11/32 or larger) are not affected by this restriction.

- ① The rotor of the Lightweight rear wheels can be replaced in the event of a system change (Campagnolo® <-> SRAM® XDR <-> Shimano®) – see **Rotor replacement**, page 28.
- ① If necessary, you can get a suitable spoke protector from your specialist dealer. [D1]
- ☞ Ensure that your cassette complies with the rotor type of your rear wheel.
- ① A Shimano® 11-speed road rotor (1) can have a Shimano®/SRAM® 10s cassette (2) installed.
In this case use a spacer (3) (t=1.9 mm). [D2]
- ① A Campagnolo® C9, C10, C11 or C12 cassette can be installed on the Campagnolo® rotor without a spacer.
- ① A SRAM® 12s XDR cassette can be installed on the SRAM® XDR rotor without a spacer.
- ☞ Follow the instructions of the manufacturer when installing your cassette.
- ☞ Tighten the lock ring (4) with tightening torque specified by the manufacturer – **max. 40 N·m (354 lbf·in)**. [D2]

Installing disc brake rotor

- ⚠ **WARNING** Risk of accident due to component failure.
- Exclusively use disc brake rotors with an approved diameter – see **Technical data**, page 14.
- Exclusively use suitable lock rings for securing your disc brake rotors – see **Technical data**, page 14.

PREPARATORY WORK & ASSEMBLY

- ☞ Follow the instructions of the manufacturer when installing your disc brake rotors.
- ☞ Tighten the lock ring (1) with tightening torque specified by the manufacturer – max. 40 N·m (354 lbf·in). [D3]

Fitting the valve extension

- ☞ Screw the valve insert (1) using the supplied tool (2) out of the valve shaft, which may be too short (3). [C2]
- ☞ Screw the Lightweight valve extension (4) into the valve shaft (3).
- ☞ Screw the valve insert (1) into the valve extension (4).

T Adhesion of tubular tyres

Rim width, outer (mm)	Approved tyre sizes min.–max.
24.0	24 – 34
Rim height (mm)	Required valve length (mm)
–48	60

⚠ WARNING Risk of accident due to tyre failure.

- Only ever use high quality and undamaged tubular tyres, such as the Lightweight tubular tyres from Continental®, and suitable adhesives.
 - Use puncture protection sealant. We recommend the product from "ZERO FLATS".
 - Your tubular tyres should only be installed (adhesion) by an expert bicycle mechanic.
 - Follow all the processing instructions provided by the adhesive and tubular tyre manufacturer.
 - Observe the min./max. inflation pressure values specified by the manufacturer.
- ① The lower the inflation pressure or tyre width the higher the risk of a pinch flat.

⚠ CAUTION Risk of damage to health caused by improper handling of solvents and adhesives.

- Follow all the manufacturer's safety instructions.

NOTICE Only use suitable plastic tyre levers when removing your tyres – do not use metal tyre levers under any circumstances. Avoid excessive levering.

- ☞ **Before** adhering your tubular tyre, install the valve extension if required, because this will not be possible later – see **Fitting the valve extension**, page 20.
- ☞ **Prior** to adhesive bonding, fill your tubular tyre with puncture protection sealant.
- ☞ Use suitable adhesive. We recommend the tubular tyre cement produced by Continental® (orange for aluminium rims).
- ☞ Only roughen the rim well of brand new wheels carefully by using fine sandpaper (240 grit or finer).
- ☞ Clean the rim well thoroughly.
- ☞ Adhere the tubular tyre in accordance with the instructions provided by the adhesive and tubular tyre manufacturer.

C Installing clincher / tubeless tyres

Rim width, outer (mm)	Approved tyre sizes min.-max.	Approved tyre inflation pressure max. (bar/psi)
24.0	25-622	8/116
	26-622 – 28-622	7/102
	29-622 – 32-622	6/87
	33-622 – 40-622*	5/72
Rim height (mm)	Required valve length (mm)	
-48	60	
-63	80	
-85	100	

* Only approved for PFADFINDER EVO wheels

⚠ WARNING Risk of accident through damaged wheels.

- Use tubeless tyres exclusively with wheels of the EVO series.

⚠ WARNING Risk of accident through a bursting tyre.

- Never exceed the tyre inflation pressure approved by us, because the tyre inflation pressure will increase considerably as a result of the temperature created by rolling resistance and possibly high ambient temperature - see table.

NOTICE Greatly increased tyre wear.

- Do not combine a tubeless tyre system with an inner tube other than in case of breakdown and then only for a short distance.

NOTICE Always fit your tyres to the wheel without the use of tools – use tyre fluid or washing-up liquid for ease of fitting. Never use tools to get the tyre onto the rim. We recommend using talcum powder to ease the installation procedure.

Only use suitable plastic tyre levers when removing your tyres – do not use metal tyre levers under any circumstances.

Cut a worn or defective tyre with a wire cutter to remove it.

☞ Only use high-quality and undamaged clincher tyres and suitable inner tubes – rim tape is not needed and should not be used – or use a high-quality and undamaged tubeless tyre system.

☞ Observe the min./max. inflation pressure values specified by the manufacturer.

① The lower the inflation pressure or tyre width the higher the risk of pinch flat. In most cases it will be the rim flange (1) to suffer from damage. [C3]

⚠ WARNING

Always use the sealing ring supplied and place it between the rim and the nut when using tubeless valves.

①

TUBELESS TYRES - INSTALLATION

Requirements

- Make sure that the rim you are using carries the „tubeless-ready“ label (EVO series)

Materials

- Original Lightweight tyre lever (supplied)
- Tubeless valves (supplied)
- Tyre sealant
- Tubeless-Ready tyres

NOTICE Please note the following!

- No rim tape is needed and should not be used with EVO series Lightweight wheels.

Preparation for clincher tyres/Installation of tubeless tyres with Lightweight clincher wheels/EVO wheels

1. Position the wheel so that the valve insert is at the bottom (6 o'clock position) and the wheel and tyre are pointing in the right direction of travel (if possible).



2. Starting at the top of the wheel, slowly press the beading of the tyre over the flange into the tyre well (the lowest point in the centre of the rim drop centre).

Then gradually work your way around the entire rim towards the valve as this gives you the most space in the tyre well. At the end, you may need to use a Lightweight tyre lever to carefully lever the tyre beading into the tyre well – note the warning in point 3c.



(With a tool)

3. **WARNING** WARNING! Please note the following:
 - a. First, try to fit the tyre by hand. Use tyre fluid or washing-up liquid if you need to



- b. **If you are unable to fit the tyre by hand, please use our Lightweight tyre lever (the high point load of other tyre levers could damage the flange).**
- c. **Position the tyre lever correctly on the flange without touching the outside of the rim (hatched area). Failure to do so can damage the edge of the rim.**



- 4. Repeat steps 1 – 3 for the second wheel, again making sure that the wheel is correctly positioned in the direction of travel and that you fit the tyre beading last close to the valve.
- 5. Pump the tyres up to the recommended air pressure. Pay attention to the maximum permitted air pressure of our tyres (see User Manual page 33) and check whether the valve insert is inside the tyre beading.
- 6. Pumping up the tyres using a pump or compressor can often make the tyre beading jump or sit with a loud “pop”, which is why you should never exceed the maximum permitted tyre air pressure (see User Manual page 33). It is not unusual for the tyre beading to jump or sit behind the flange after a minute or so despite the maximum tyre air pressure. Should this not be the case, reduce the air pressure and re-inflate the tyre. The

tyre is properly fitted when the tyre beading is positioned evenly behind the flange around the entire wheel and the tyre is running concentrically.

- 7. Now start to fill the sealant with Sclaverand valves / French valves. From this stage onwards, refer to the sealant manufacturer’s instructions for the required filling volume and correct use of their filling system.

Installing the wheels

⚠ WARNING Risk of accident through malfunction of the Thru Bolt/Thru Axles caused by improper assembly.

- Observe all the instructions and information provided in the user instructions from the manufacturer of your Thru Bolt/Thru Axles.
- 🔧 Make sure that your Thru Bolt/Thru Axles comply with the installation dimensions specified – see **Technical data**, page 14.
- 🔧 Follow the instructions of the manufacturer when installing your Thru Bolt/Thru Axles.
- 🔧 Mount your wheels in your race bike's dropouts.
- 🔧 Make sure that, after closing, the levers (1) are in a position that prevents accidental opening while riding – e.g. due to trapping. [E1]

⚠ CAUTION Risk of accident by blockage of the rear wheel caused by incorrectly positioned rear derailleur. [E2]

- Make sure that the derailleur hanger (2) of your bike frame is exactly parallel to the sprocket set (3).
- Make sure that the chain cannot move beyond the large sprocket and that there is a minimum clearance of 1–2 mm between the pulley cage (4) and the rear wheel spokes (5).
- 🔧 Shift the chain to the small chain ring.
- 🔧 Carefully shift the chain to the large sprocket.
- 🔧 Re-adjust the inner limit stop of your rear derailleur if the pulley cage (4) is closer than 1–2 mm to the rear wheel spokes (5). [E2]

⚠ WARNING Risk of accident due to wheels locking as a result of insufficient clearance.

- Make sure that the clearance between tyres and rear stays/seat tube and/or fork blades/fork head is **at least 5 mm**. [E3]
Use narrower tyres if necessary.

⚠ WARNING Danger of falling due to the wheel locking as a result of incorrect positioning or unsuitable dimensions of the brake calliper of the disc brake.

- Make sure that the brake calliper (1) is exactly parallel to the centerline of your bicycle.
- Make sure that the brake calliper (1) has a **min. 2 mm** clearance from the spokes of your wheel. [E4]

Computer magnet

- ① All Lightweight front **and** rear wheels have an integrated computer magnet. The magnet symbol identifies the location of the incorporated magnet. [D4]
- 🔧 Fit the wheel to the front fork or the rear triangle of your race bike.
- 🔧 Install the sensor of your computer.
- 🔧 Align the computer sensor with the magnet symbol.
- ① If correct alignment of the front wheel sensor and Lightweight magnet is impossible due to the fork design, ask your specialist shop for an appropriate spoke magnet!

⚠ WARNING Risk of accident due to spoke breakage.

- Never use spoke magnets fitted by adjusting screws – the adjusting screw will cause severe damage to the fibres of the carbon spokes.

Before every ride

- ⚠ **WARNING** Risk of accident caused by material damage or improper assembly.
 - Never use damaged wheels or defective tyres.
 - Check your Thru Bolt/Thru Axles and wheels for tight and correct seat.
 - Never exceed the max. approved total weight – see **Technical data**, page 14.
 - Observe the min./max. inflation pressure values specified by the manufacturer.
- ⚠ **WARNING** 🚫 Risk of accident due to a bursting tyre.
 - Never exceed the tyre inflation pressure approved by us, because the tyre inflation pressure will increase considerably as a result of the temperature created by rolling resistance and possibly high ambient temperature – see 📖 **Installing clincher / tubeless tyres**, page 21.
- ① The lower the inflation pressure or tyre width the higher the risk of pinch flat. In most cases it will be the rim flange (1) to suffer from damage. [C3]
- ⚠ **WARNING** Risk of accident due to wheels locking as a result of insufficient clearance.
 - Make sure that the clearance between the tyres and rear stays/ seat tube and/or fork blades/fork head is **at least 5 mm**. [E3] Use narrower tyres if necessary.
- ⚠ **WARNING** Risk of accident caused by an insufficient braking effect or erratic braking as a result of dirty disc brake rotors.
 - Make sure that the disc brake rotors and pads are free from lubricants (grease, oil, silicone, Teflon, wax or other such substances).

- 🔧 Check the rims and spokes of your wheels for damage (dents, scratches, abrasion extending over a large area etc.).
- 🔧 📖 In particular, always check the sensitive rim flange (1) for damage before every ride, after every hard impact and after every blow-out (dents, cracks etc.).

[C3]

- 🔧 Check tyres for damaged areas (cracks, abrasion dents etc.).
 - 🔧 Check tyres for correct air pressure.
- 🔧 Check your disc brake is correctly adjusted – in particular, pay attention to having enough space between the brake calliper and spokes.
- ① Please note that if your bicycle falls it can easily cause the brake calliper of your disc brake to be bent inwards or to lose its adjustment. In this case, the brake calliper can come into contact with the spokes of the wheel when you next apply the brakes!
- ⚠ **WARNING** Danger of falling due to the wheel locking as a result of incorrect positioning or unsuitable dimensions of the brake calliper of the disc brake.
 - Make sure that the brake calliper (1) is exactly parallel to the centerline of your bicycle.
 - Make sure that the brake calliper (1) has a **min. 2 mm** clearance from the spokes of your wheel. [E4]
- 🔧 Check the gear mechanism for correct adjustment – pay particular attention to the limit stops – see **Installing the wheels**, page 24.
- ① Please note that if your bicycle falls it can easily cause the derailleur hanger of the frame to be bent inwards. In this case the chain is liable to move beyond the large sprocket and into the area of the rear wheel spokes!

⚠ CAUTION Risk of accident by blockage of the rear wheel caused by incorrectly positioned rear derailleur. [E2]

- Make sure that the derailleur hanger (2) of your bike frame is exactly parallel to the sprocket set (3).
- Make sure that the chain cannot move beyond the large sprocket and that there is a minimum clearance of 1–2mm between the pulley cage (4) and the rear wheel spokes (5).
- ☞ Make sure that your repair kit (at least 1 tubular tyre or 1 spare tube (clincher), tyre levers, pump) is suitable, complete and intact.

On the road

⚠ WARNING Risk of accident through damaged rims.

- Stop as quickly as possible when a blow-out occurs. Never continue riding with a flat tyre.
- Always check your wheels for damage after a violent shock and after a blow-out.
- **C** In particular, always check the sensitive rim flange (1) for damage before every ride, after every hard impact and after every blow-out (dents, cracks etc.). [C3]
- Never ride with damaged wheels.
- Send us your wheels for inspection before use if damage is visible or if you are worried about your wheels not being in perfect condition.

⚠ WARNING Risk of accident through hidden damage caused by a serious crash.

- Never continue using your bicycle after a serious crash. If such a case occurs, send your wheels to us for inspection even if no external damage is visible. In your own interest you should deal in the same way with all components on your bicycle that are produced by other manufacturers.

NOTICE **C** Risk of damage to the sensitive rim flange.

- Stop as quickly as possible when a blow-out occurs. Never continue riding with a flat tyre.

NOTICE **C** Greatly increased tyre wear.

- Do not combine a tubeless tyre system with an inner tube other than in case of breakdown and then only for a short distance.

Regular maintenance

Frequency of maintenance work on your bicycle depends on how often and in which weather conditions you are using it. The following maintenance measures should be conducted more frequently if the bicycle is used in extreme conditions (rain, dirt, long distances etc.).

Regular care and maintenance ensures that your bicycle is always clean and well protected by lubricants and preservatives. Ask your specialist shop about appropriate lubricants and preservatives as well as information relating to their correct application.

Cleaning

NOTICE Corrosion and material damage due to penetration of water.

- Never use a pressure washer or steam cleaner to clean your bicycle, as the seals of your bicycle components are unable to withstand the pressure.
Even if you use a hose, be careful – never aim the hose directly at the bearing components. [F1]
- ☞ Clean your wheels at regular intervals with water and a non-aggressive, environmentally-friendly cleansing agent.
- ☞ During cleaning, always check the rims and spokes of your wheels for damage (dents, scratches, abrasion extending over a large area, wear, etc.).
- ☞ Check tyres for damaged areas (cracks, abrasion dents etc.).
- ☞ Periodically preserve the surface of your wheels using a high quality protecting wax or similar.
Never apply wax to the disc brake rotors!
- ☞ Periodically clean all drive elements (sprockets, chain rings, chain, rear derailleur, front derailleur) of your bicycle.
- ☞ Lightly lubricate the chain on your bicycle at regular intervals.
- ☞ Periodically check derailleur and brake cables for smoothness of

operation.

- ☞ Periodically check all bolts to ensure that they are firmly seated; when doing so observe the respective tightening torques.

Hubs

All hubs in our range of Lightweight wheels are fitted with high quality bearings that require no maintenance. However, their smooth-running attributes can be reduced over time due to wear or they can exhibit increased bearing play.

In this case, please return the affected wheel to us.

- ① Work on the Lightweight front and rear wheel hubs is only allowed to be conducted by a DT Swiss Service Centre or a specialist workshop for bicycles.
- ☞ Always keep the hubs on your Lightweight wheels clean.
- ☞ Periodically preserve the surface of the wheel hubs using a high quality protecting wax or similar. .

▲ WARNING If not correctly performed, assembly and maintenance work can cause accidents resulting in serious or fatal injury.

- Do not overestimate your technical ability – assembly and maintenance of Lightweight front and rear wheel hubs should be conducted by a DT Swiss Service Centre or a specialist workshop for bicycles. This is the only way to ensure that work is conducted in a professional manner.

Furthermore, improperly performed assembly and maintenance work could also result in the loss of your rights with regard to product liability and warranty!

For more information please visit www.dtswiss.com

Rotor replacement

⚠ WARNING Risk of accident due to rotor failure.

- Never use a rotor that exhibits cracks or other evidence of serious damage (dents and burs caused by the cassette have no influence on the function of the rotor and can be ignored).
- Only replace damaged components with original DT Swiss parts.
- Only use original DT Swiss special freewheel grease to lubricate the components. It is available from your specialist shop or directly from Carbovation.

NOTICE Changing the dimension and non-centring of the rear wheel.

- Shimano®/SRAM®: only use the labelled "Shimano® – 11 speed road" rotor and the correspondingly labelled wheel adapter for a 11s rear wheel.

SRAM® XDR: only use the labelled SRAM® XDR type rotor and the correspondingly labelled wheel adapter for an 11s rear wheel.

Campagnolo®: only use the "Campagnolo®" rotor and the correspondingly labelled rear wheel adapter for a 11s rear wheel. [G1]

- ☞ Release the lock ring (1) of the cassette (2) using an appropriate tool. [G2]
- ☞ Remove the cassette from the rotor (3).
- ① Carefully loosen the cassette counterclockwise with a plastic hammer if it is difficult to remove from the rotor.

- ☞ Clean the rotor.
- ☞ Check the rotor for cracks.
- ☞ Inspect the rotor grooves for notches and burs and, if necessary, eliminate them using a suitable smooth file.

- ☞ Clamp the rear wheel adapter of the rotor side in a vice using an appropriate axle retainer. [G3]

NOTICE Risk of material damage.

- Do not hold the rear wheel by the rim when removing it.
- When removing the wheel grasp it from below with both hands to the left and right-hand side of the rotor.
- Apply an equal pressure to the top at either side.
- Have the rotor removed by a specialist workshop for bicycles if it is not possible to remove the hub with moderate force.
- ☞ Remove the hub from the rear wheel adapter. [G3]

Removing the DT SWISS® 240s:

- ☞ Remove the rotor (3), toothed lock washer (4), spring (5) and spacer (6) from the axle. [G4]
- ☞ Remove the toothed lock washer (7) and spring (8) from the rotor.

Removing the DT SWISS® 180 EXP:

- ☞ Pull the rotor (3) and spacer (6) from the axle. [G9]
- ☞ Remove the toothed washer (7), spring (8) and washer (8) from the rotor.
- ☞ Use a dry cloth or brush to thoroughly clean all components of old grease (including the inside toothed portions of the rotor and hub).
- ☞ Check all components for damage.
- ☞ Apply a light coat of grease to the inner teeth of the hub and rotor. [G5]

Assembling the DT SWISS® 240s:

- ☞ Push the spacer (6) and spring (5) up to the mechanical stop on the axle bearings. [G6]
- ➔ The spring side with the larger diameter must lie flush against the bearing!
- ☞ Check the bearings of the rotor for smooth and free operation. Have any defective bearings replaced by a specialist workshop.
- ☞ Insert the spring (8) into the rotor. [G6]
- ➔ The spring side with the larger diameter must lie against the shim of the rotor!
- ☞ Lightly lubricate the toothed lock washers (4) (7). [G6]
- ☞ Place the toothed lock washers – with the toothed portions against each other – onto the axle.
- ☞ Slide the rotor over the axle.
Be careful when installing the rotor. Avoid tilting the components!

Assembling the DT SWISS® 180 EXP:

- ☞ Push the spacer (6) as far as it will go on the axle bearing. (G9)
- ☞ Check the bearings of the rotor (3) or smooth and free operation – have any defective bearings replaced by a specialist bike workshop.
- ☞ Insert the washer (10), the spring (8), and then the toothed washer (7) into the rotor (3). [G9]
- ☞ Lightly lubricate the toothed washer (7) and the teeth in the hub. [G9]
- ☞ Attach the rotor (3) to the axle.
- ☞ Attach the rotor (3) with care – avoiding bending the components!

- ☞ Lightly lubricate the wheel adapter (9) – particularly inside. [G7]

NOTICE Loss of function – rotor jams.

- Do not replace the different wheel adapters of the Campagnolo®, SRAM® XDR and Shimano® rotors.
- Make sure that the outer diameter (Ø) of the wheel adapter accurately matches the inner diameter of the rotor used. [G7]
- ☞ Insert the rear wheel adapter onto the axle and press it by hand until it noticeably locks in place.
➔ This completes installation of the rotor.
- ⓐ Check the function of the freewheel mechanism by turning the rotor (3) jerkily and alternately in both directions. [G8]
If the toothed lock washers fail to engage properly, it means that either an excessive amount/unsuitable type of grease has been applied or the freewheel is not correctly installed.
In this case dismantle the rotor and proceed as described above.
- ⓐ Assemble your cassette – see **Installing the cassette**, page 19.

- ① Please contact our repair department before returning a defective Lightweight product to us!
If products are returned without our previous agreement, the shipping costs incurred will be charged to your account!
- ① When returning a defective Lightweight product please prepay the cost of postage. Any shipment that is not prepaid will be rejected and returned to the sender!
Please send us the defective wheel without any accessories (such as tyres, cassettes, quick release skewers, wheel bags etc.), as we will not assume any liability for possible damage and loss of the aforementioned parts.
We expressly reserve the right to return wheels in an unrepaired state if this requirement is not complied with.
- ① Before returning parts from countries outside Germany, please contact the importer. The importer will handle communications with our repair department on your behalf.
To locate your importer, please go to:
www.lightweight.info >>> DEALER >>> IMPORTERS

Liability for material defects/Warranty

We grant the legal liability for material defects [warranty] on material and manufacturing of all Lightweight products. Within this period we will replace defective products without any costs for the customer.

The liability period begins with the first purchase of the corresponding Lightweight product and is not transferable.

Our liability does not extend to damages resulting from normal wear and tear, accidents, improper modifications, negligence or improper handling and use.

Our liability is also not applicable if Lightweight products have been repaired or otherwise modified by persons not authorized by us.

Furthermore, we are not liable for indirect or consequential damages resulting from the above paragraphs.

In addition to the statutory warranty, we grant a free extension of the warranty on material and manufacturing in the form of a manufacturer's warranty for a total of five years on all disc-brake wheels purchased after July 1, 2020.

The manufacturer's warranty begins on the day after the legal warranty expires and ends five years after the date of purchase of the Lightweight product. The manufacturer's warranty is limited to the initial purchase and is not transferable.

Our manufacturer's warranty does not cover damage resulting from normal wear and tear, accidents, improper modifications, negligence or improper handling and use, nor does it cover wearing parts such as the bearings.

Our warranty is also void if repairs or other modifications to Lightweight products have been carried out by persons not authorized by us.

Furthermore, we are not liable for indirect or consequential damages resulting from the above paragraphs.

- ① Only Lightweight products registered by the original owner or reregistered by subsequent owners enjoy our service provisions!
– see **Registration**, page 13!

Service

Crashreplacement

In the event of irreparable damage (e.g. caused by an accident) we offer a discount off the German list price if you purchase a new Lightweight product as a replacement.

You can find information about this at:

www.lightweight.info >>> SERVICE

Fair deal promise

Minor damage to your Lightweight products will be repaired by our workshop free of charge even after expiration of the statutory warranty period, provided that the work required does not exceed 0.5 hrs.

The decision whether or not a repair is to be carried out free of charge rest solely with us – **if you caused the damage yourself, you are not entitled to free repair work!**

If you caused the damage yourself, please send us the product concerned for inspection.

We will then assess the level of work and either perform the repair free of charge or send you a quotation. It is then up to you to decide whether or not to go ahead with the repair work.

Carbovation GmbH has a policy to improve products as technical developments continue. We therefore reserve the right to make design alterations in relation to the illustrations and descriptions contained in this owner's manual, without incurring obligation to alter products previously delivered.

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Lightweight

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