



**VOLVO** 

**RUOTE PER BICICLETTE**

**WHEELS FOR BIKES**

**ROUES BICYCLETES**

**RÄDER FÜR FAHRRÄDER**

**RUEDAS PARA BICICLETAS**

**MANUALE ISTRUZIONI  
OPERATING MANUAL  
MANUEL D'INSTRUCTIONS  
BETRIEBSANLEITUNG  
MANUAL DE INSTRUCCIONES**

**2011**

Manuale di istruzioni originali

 **FORMULA**  
Power, Technology, Design.

**WARNING! BEFORE INSTALLING AND USING THIS NEW FORMULA SRL PRODUCT IT IS CRITICAL TO YOUR SAFETY THAT YOU READ AND STRICTLY ADHERE TO THE INSTRUCTIONS IN THIS MANUAL. FAILURE TO DO SO COULD CAUSE SERIOUS INJURY AND/OR AFFECT YOUR LEGAL RIGHTS.**

**KEEP THIS MANUAL IN A SAFE PLACE FOR FUTURE REFERENCE AS IT CONTAINS INFORMATION CRITICAL TO YOUR SAFETY.**

**WARNING! DO NOT INSTALL OR DISASSEMBLE THIS FORMULA SRL PRODUCT ON YOUR OWN!**

**Always seek the help of a professional mechanic. If you decide to ignore this important safety warning, keep in mind that you are doing so EXCLUSIVELY at your own risk and strictly follow all Formula installation and disassembly instructions.**

**Note: AS WITH ANY MANUAL, THIS MAY BE PERIODICALLY UPDATED. CONTACT YOUR FORMULA SRL DEALER, OR CHECK OUR WEB SITE, ([www.formula-brake.com](http://www.formula-brake.com)) TO RECEIVE ALL SUCH UPDATES.**

This manual contains information for the safe use, proper mounting and maintenance of VOLO wheel sets. Following the rules contained in this manual will ensure the safest use, best performance and longest life of your VOLO wheels and will avoid the most common product use/maintenance inconveniences and problems.

**Carefully follow the SAFETY GUIDELINES to assure appropriate use and service of VOLO wheel sets.**

**In this handbook you will find the following safety symbols:**



**CAUTION:** Directs your attention toward unsafe practices which could result in damage to the bicycle, equipment and/or minor injury.



**WARNING:** Directs your attention toward unsafe practices a foreseeable consequence of which would be damage to the bicycle, equipment and/or serious injury or death.

It is impossible to anticipate every situation that may occur while riding a bicycle. This manual makes no representation about the safe use of the bicycle under all conditions. There are risks associated with the use of any bicycle which cannot be predicted or avoided. By choosing to ride a bicycle, you assume the responsibility for that risk. Read and understand your bicycle owner's manual before using your bicycle.

## **GENERAL SAFETY GUIDELINES**

- Never put your hands near or inside rotating parts. Protective five-finger gloves that do not reduce sensitivity or your ability to grip should be used during repair.
- Check you adopt the correct measures to handle all components and equipment that could cause damage to persons or property.
- Before starting any product installation/mounting operations, carefully check for potentially dangerous conditions at the work site. If dark, ensure sufficient light is available.

- All maintenance operations must be carried out solely by personnel authorized by FORMULA SRL.
- Ensure that the quick release is tightened correctly. Bounce the bike on the ground from a height of about 10cm/4" to ensure that there are no loose parts. Riding with an improperly adjusted wheel quick release can allow the wheel to wobble or fall off the bicycle causing injury or death.
- Ensure that the tires are in good condition and check the inflation pressure before each ride.
- Wet weather impairs tire grip, traction and braking, making it much more difficult to control the bike. More attention must be paid while riding in wet conditions in order to avoid accidents. Bear in mind that braking power/tire grip can change suddenly as the road surface gradually dries.
- Always wear a properly fitted and fastened helmet while riding. Make sure the helmet is approved in the country of use.
- Learn and comply with the local rules of the road and cycling regulations. Always ride carefully and responsibly.
- Wear close-fitting clothes that make you easy to see (fluorescent or bright colors).
- If you ride at night, use adequate lights and reflectors that are clean and fitted securely. Be constantly alert that in darkness, you may not be visible to other road users and alert to possible obstacles in the road.

## **VOLO WHEELSET SAFETY GUIDELINES**

- VOLO wheel sets produced by FORMULA SRL are designed exclusively for use on two wheel bicycles. Volo wheels should not be used for electric bicycles or tandem (multi-person) bicycles. Any other use is to be considered hazardous. FORMULA SRL shall not be held liable for any consequences from improper usage.
- The lifespan of VOLO wheel sets depends on many factors, such as rider size and weight, tires used and normal wear and tear on the bicycle and/or wheels.
- The rim wears with use and is subject to metal fatigue. Check the condition of the rim regularly and replace the rim when necessary. A worn rim or one showing signs of fatigue may break suddenly.
- Impact, falls, excessive, improper or harsh use of the bicycle may compromise the structural integrity of the wheels, significantly reducing their lifespan. Short life-wheel components need to be replaced more often.
- Have the wheels 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 inspection reveals any deformation, cracks, signs of impact or stress, no matter how slight, immediately replace (not repair) the component. Excessively worn components also require immediate replacement.
- The frequency at which inspection is required depends on many factors. Ask a FORMULA srl dealer to recommend an inspection and service schedule that is right for you.
- Use of the product by individuals who weigh more than 82kg/180lbs is not recommended. If you weigh more than 82kg/180lbs be especially careful and have the bike inspected more frequently.
- Parts which have been bent or damaged in an accident or as the result of impact, must be immediately replaced with genuine FORMULA srl replacement parts.
- Rim/tire compatibility; VOLO wheel sets are precisely sized. If fitting the tire onto a VOLO rim is too easy, the tire may be too big. Use only high-quality tires which are the correct size and

require reasonable force in order to be put on. A tire that is too big may suddenly deflate causing serious accidents, personal injury or death.

- Check with a qualified mechanic to ensure that the selected VOLO wheel is suitable for the required type of use and to establish an inspection and service schedule that is right for you.
- Tools supplied by other manufacturers for wheels similar to VOLO wheels may not be compatible with VOLO wheels. Likewise, tools provided by FORMULA srl may not be compatible with components/wheels supplied by other manufacturers. Check with a qualified mechanic or tool manufacturer to ensure compatibility before using tools supplied by one manufacturer on components/wheels supplied by another manufacturer.
- Failure to verify compatibility of the tools may cause the component to work incorrectly or break, resulting in an accident, personal injury or death.
- The user of VOLO wheels expressly recognizes that there are risks inherent in bicycle riding, including but not limited to failure of a bike component, resulting in an accident, personal injury or death.
- By purchasing and using these VOLO wheels, the user expressly, voluntarily and knowingly accepts and/or assumes these risks, including but not limited to the risk of passive negligence on the part of FORMULA srl, i.e. for hidden, latent or obvious defects and exempts FORMULA srl from liability to the fullest extent permitted by law against any resulting damage.
- Ensure there are no damaged or loose spokes.
- Always make sure that the front and rear wheels are marked "VOLO".
- Make sure the wheels are true before use. Spin the wheel to ensure that it does not wobble up and down or from side to side. Never use wheels that are not true or that have broken or damaged spokes.
- Carefully read the FORMULA VOLO wheel instructions before use.
- Carefully follow the scheduled maintenance program as indicated in the relative paragraph.
- Always use genuine FORMULA srl replacement parts.
- Always use a spoke protection disc on the rear wheel. Check that it is in the correct position on a regular basis.



## **ENVIRONMENTAL NOTES**

In order to protect the environment, please follow these simple instructions to correctly dispose of Formula srl products:

- 1) The packaging does not require special disposal because it is not dangerous in any way; we suggest recycling paper and plastic.
- 2) It is also recommended to recycle the metal parts after use.

For both points mentioned above, it is recommended to dispose of the waste following national regulations through the appropriate specialized waste disposal companies.

## 1 TECHNICAL SPECIFICATIONS

Rim size	26" (in)	29" (in)
Axle dimensions	FRONT 100 mm – REAR 135 mm	FRONT 100 mm – REAR 135 mm
Spoke length	FRONT DX=266 – SX=266 (disc side) REAR DX=266 – SX=268 (disc side)	FRONT DX=296 – SX=296 (disc side) REAR DX=296 – SX=298 (disc side)
Inflation pressure	See operating pressure in table 1	See operating pressure in table 1

Table 1 Tire Operating Pressure

Size (in)	Max. pressure (bar)	Max. pressure (psi)	Size (in)	Max. pressure (bar)	Max. pressure (psi)
1,95	4,0	59	2,45	3,3	48
2,00	3,9	58	2,5	3,2	46
2,10	3,8	55	2,55	3,1	45
2,13	3,8	55	2,6	3,1	45
2,20	3,6	52	2,65	3,0	43
2,25	3,6	52	2,7	3,0	43
2,30	3,5	51	2,75	2,9	42
2,35	3,4	49	2,8	2,9	42
2,40	3,3	48			

**NOTE:** The wheel you have purchased has been designed for use with STANDARD or TUBELESS tires.



### WARNING:

**If TUBELESS tires are used, verify they are genuine by making sure that are marked with the TUBELESS logo and from a reputable seller.**

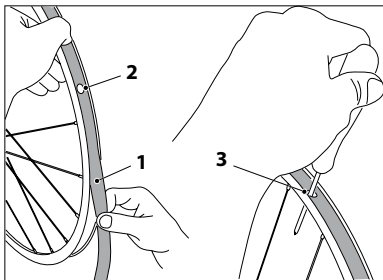
## 2 TIRES

In order to safely use FORMULA VOLO wheels, the tire must be tight on the rim.

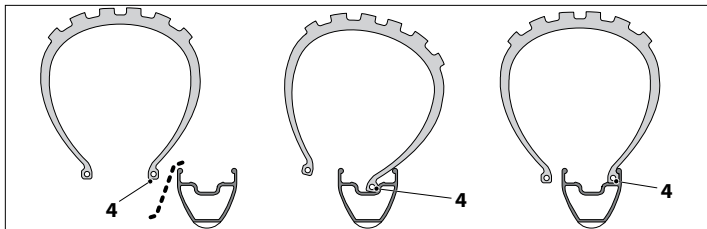
FORMULA srl has tested the rims with STANDARD and TUBELESS tires. In any case, FORMULA srl does not design or produce tires and therefore shall not be held responsible for performance, quality or malfunctions of the tire.

### 2.1 Mounting STANDARD tires

- Mount the protective tape (1) on the rim, placing it with the hole (2) matching the valve hole in the rim.
- Insert a stop (3) in the valve hole and finish placing the protective tape (1) on the rim ensuring the hole in the tape is aligned with the valve hole in the rim.

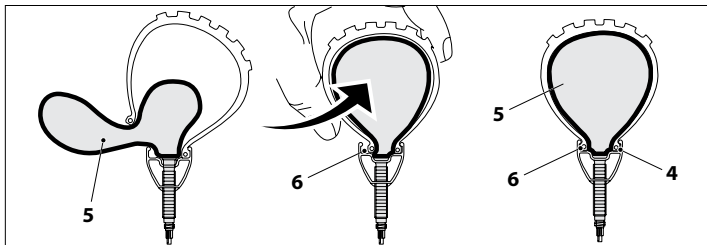


- Get the STANDARD tire that is suitable for your needs.
  - Insert the first tire bead (4) in the rim groove.
- NOTE:** The inner tube should be fitted with a Presta valve (ø 6.5 mm).



**⚠ WARNING: Never drill the rim for a larger valve hole or try to redrill the rim. The rim will be irreparably damaged and may even collapse as a result.**

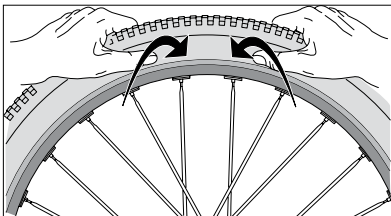
- Place the partially inflated inner tube (5) completely inside the tire. The Presta valve should be inserted in the hole in the rim. Place the tube in the center of the tire casing.



- Insert the other tire bead (6), forcing it in the rim groove. Start from the point opposite the valve and continue along the entire circumference of the rim. Use tire levers if necessary. Be careful not to pinch the inner tube (5).

**⚠ WARNING: Do not use screw drivers or other sharp tools that may scratch or damage the edge of the rim or puncture the inner tube.**

- Inflate the inner tube (5) until the two tire beads (4-6) are secured in the correct position.



**⚠ WARNING: Even when using an inner tube, it is EXTREMELY important to seat the two tire beads to prevent the tire from coming off the rim.**

## 2.2 Mounting TUBELESS tires

-Install the wheel, preferably on a frame or truing stand to center the wheels. Clean the inside of the rim with a cloth dampened with alcohol in order to degrease the channel inside the rim.

**CAUTION:** Use only alcohol to clean the rim, other products may damage the rim.

-Start installing the tape (1) for the TUBELESS kit, starting the tape halfway between 2 nipple holes (2).

-Keeping the tape tight (1) turn the wheel while installing the tape. (3) Make sure the tape stays in the middle of the rim channel. The tape should make two complete rotations around the rim so that each part of the rim is covered by two layers of tape. Check the tape to make sure it is fastened to the rim at all points.

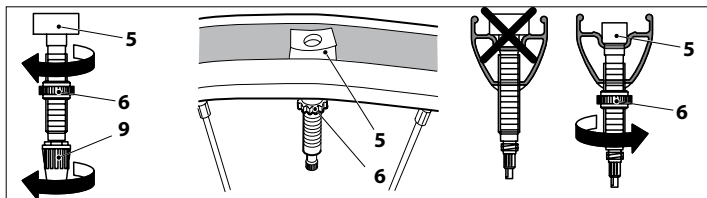
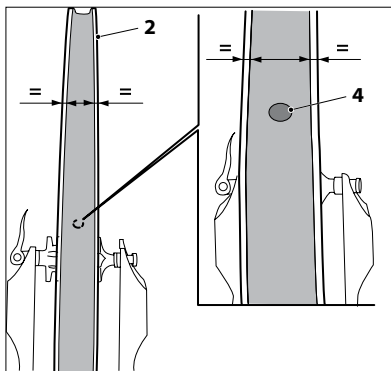
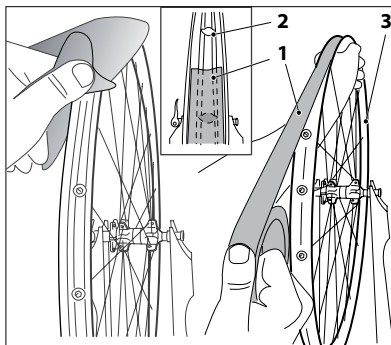
-Cut the tape (1).

-Make sure the tape is in the middle of the rim channel and not protruding (2).

-Use a sharp punch slightly smaller in diameter than the valve to make a hole (4) in the tape where the valve hole is found in the rim.

-Remove the valve cap (9) and valve nut (6).

-Insert the valve (5) bringing it against the rim channel. Tighten the valve nut (6) from the opposite side as shown in the figure. The valve nut should only be tightened by hand.

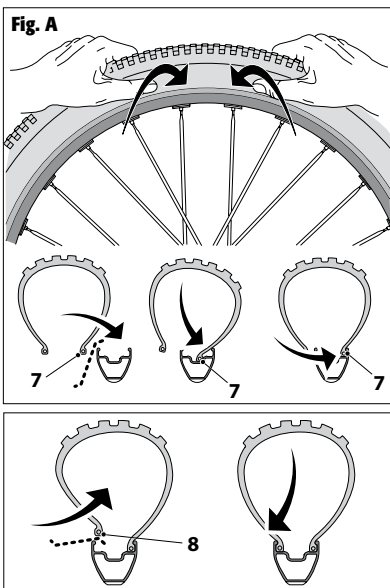




**WARNING:** Whenever possible, install or remove the tires only by hand. If this is not possible, use only tire levers specifically designed for bicycle wheels. Any other lever may damage the tire or rim, resulting in sudden or future loss of pressure in the tire which may result in the loss of control of the bicycle and injury or death.

- Fit the first of the two beads (7) of the tire into the rim groove starting from the point opposite the valve (Fig. A).
- Pour the recommended amount of TUBELESS tire sealant into the tire. Refer to the instructions provided by the tire sealant manufacturer or consult your mechanic for the proper amount of your fluid of choice.
- Fit the second bead (8) of the tire into the rim groove starting from the point opposite the valve and continue around the whole circumference of the rim.

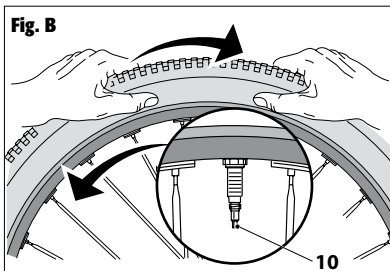
Fig. A



**CAUTION:** To prevent damaging the tire, it is necessary to complete the bead installation near the valve.

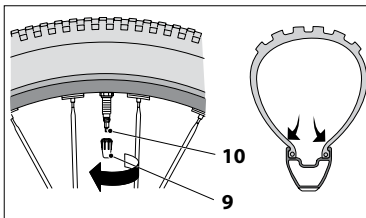
- Check that the tire is correctly positioned on both sides of the valve (Fig. B).
- Make sure the tire is correctly positioned by gently moving it back and forth on the rim.
- Open the valve (10).
- Inflate the tire until the two beads go into the correct position. While this is being done, it may be possible to hear a popping noise as the tire settles.
- Make sure the tire is centered and the bead is settled around the entire circumference of the wheel.
- Completely deflate and verify that the tire beads stay in place and do not drop towards the rim groove.

Fig. B



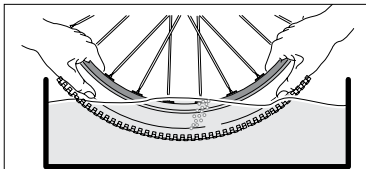


- Inflate until the desired pressure is reached.
- Never exceed the maximum pressure recommended by the tire manufacturer and the maximum pressure for the rim indicated in the table in this manual.
- Tighten the valve (10) back on and put the valve cap (9) back into place.



## 2.2.1 Checking tightness of TUBELESS tires

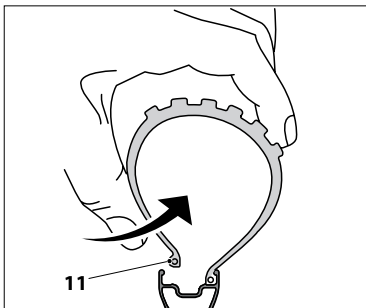
- Verify the tire and rim are in good condition.
- Inflate the tire to a pressure of 3 bar. Place the wheel and tire in a bucket of water, as shown in the figure.
- Replace the tire, if it is leaking and will not seal.
- If the leak is found in the valve zone, remove the valve, apply grease on the rubber part of the valve in contact with the rim and put back in place.
- If the leak continues, replace the valve.

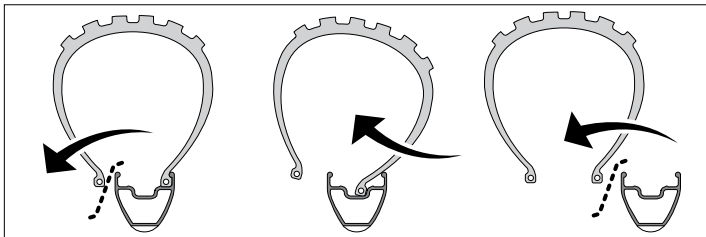


**NOTE:** If, after all the checks mentioned above have been completed and the TUBELESS system is still not satisfactory, contact your nearest FORMULA srl dealer.

## 2.3 Removing the tires

- Remove the valve cap (9), unscrew the valve (10) and deflate the tire.
- Starting from the side opposite the valve, press one side of the tire with your hands until the bead (11) is released from its seat. Let it drop into the rim groove and continue around the entire wheel circumference.





-Starting from the valve, pull the tire until it comes off the rim and continue around the entire wheel circumference removing the tire.

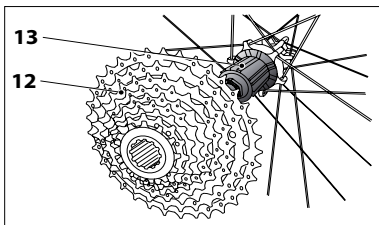
**⚠ CAUTION: Completely remove one side of the tire before going on to the other side.**

- Carry out the same operation on the other side of the tire.
- Remove the tire.

### 3 MOUNTING AND REMOVING THE CASSETTE

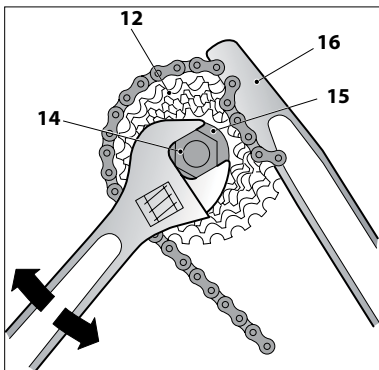
#### 3.1 Mounting HG 9/10S SHIMANO INC. – PG 9/10 SRAM CORP

- Fit the cassette (12) onto the freehub body (13) following the cassette manufacturer's instructions for proper alignment.
- Use tool (14) (TL – LR15 from Shimano Inc. or FR5 from Park Tool Co.) to tighten the lock ring (15) supplied with the cassette on the freehub body to the correct torque specified by the cassette manufacturer.



#### 3.2 Removing HG9/10S SHIMANO INC. – PG 9/10S SRAM CORP

- Remove lock ring (15) using tool (14) (TL-LR15 from Shimano Inc. or FR-5 from Park Tool Co.) and a chain whip (16).
- Remove the cassette from the freehub body.



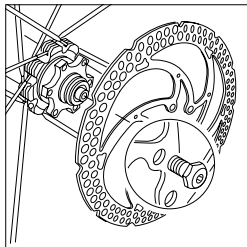
## 4 BRAKES

FORMULA VOLO wheels are available in the following versions:

-for disc brakes with ISO 6-bolt system.



**WARNING: Do not use rim brakes on a wheel designed for disc brakes and vice versa: failure to heed this warning may cause accidents, serious personal injury or death.**



-For brake operating instructions: consult the manual provided by your brake manufacturer.

## 5 MAINTENANCE

### 5.1 Periodic wheel maintenance



**CAUTION: It is strongly recommended that you contact a qualified mechanic for all your service needs including mounting, removal and replacement of the hubs, rims and spokes. Ask the mechanic to recommend an inspection and service schedule that is right for you based on the riding style, mileage and environment (example: rain, salted roads, muddy roads, bike rider's weight, etc...).**



**WARNING: Spoke nipples should only be adjusted with a special nipple wrench. Using other tools may damage the nipples and/or cause them to break resulting in accidents, serious personal injury or death.**



**WARNING: For qualified mechanics, contact your local FORMULA srl dealer or FORMULA srl service center for instructions regarding mounting, servicing and replacing the hubs, rims and spokes.**

### 5.2 Cleaning the wheels

Use only water and neutral soap or products specifically formulated to clean bicycles. If you are not sure if a cleaning product is suitable, contact the FORMULA srl service center.

Dry with a soft cloth.



**WARNING: Do not use rough sponges or metal pads.**



**CAUTION: Salt, mud and sand may seriously damage the bicycle and its components. Thoroughly rinse, clean and dry your bicycle after using it in these conditions. If a high-pressure washer is used to wash the bike, NEVER aim the water jet directly at the hubs. Pressurized water, even water sprayed from a garden hose, may penetrate the seals and get inside the hubs, irreparably damaging the bearings.**

## 5.3 Routine maintenance

### If punctured:

When a tire is punctured, air leakage may be slow and not immediate allowing you, in some cases, to keep on riding back home.

### With standard tire with inner tube:


Replace it with a new one following the directions given in paragraph 2.1.


### With TUBELESS tire:

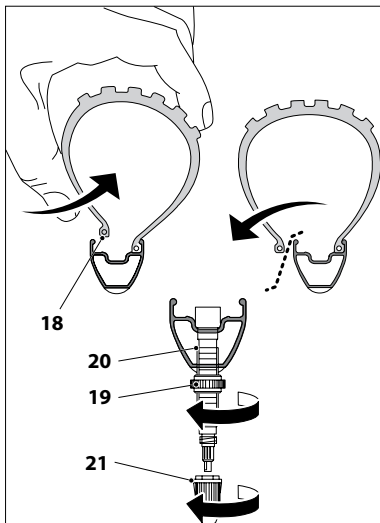
Remember that a TUBELESS tire can be repaired by putting on a patch, anti-puncture spray or a new inner tube.

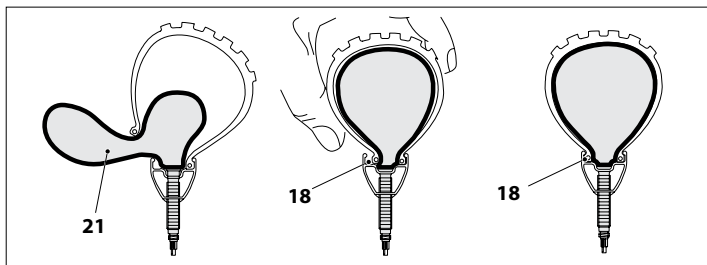
#### 5.3.1 Putting in an inner tube

- Completely deflate the tire.
- Starting from the side opposite the valve, press one side of the tire with your hands until the bead (18) is released from its seat. Let it drop into the rim groove.
- Continue around the entire wheel circumference.
- Starting from the valve, pull the tire until it comes off the rim. Use tire levers if needed.
- Continue around the entire wheel circumference.
- Remove the valve cap (21).
- Unscrew the valve nut (19) of the TUBELESS valve (20) and remove.

 **CAUTION: The inner tube must be fitted with a Presta valve (6.5 mm)**

 **WARNING: Never drill the rim for a larger valve hole or drill other holes in the rim. The rim will be irreparably damaged and may even collapse as a result.**

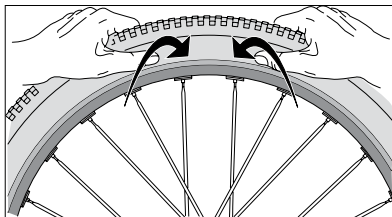




-Put the partly inflated Presta valve tube (**21**) in the tire.

-Insert the bead (**18**) of the tire into the rim groove starting from the point opposite the valve. Continue around the entire rim circumference being careful not to pinch the inner tube.

-Inflate the inner tube until the two tire beads go into the correct position.



**⚠ WARNING:** Even when using an inner tube, it is **EXTREMELY** important for safety purposes to seat the two tire beads to prevent the tire from coming off the rim.

## 5.4 Transport and storage

When the wheel is transported separately from the bike or when it is not used for an extended period, put it in a wheel bag to protect it from impact, dust and dirt.

## **READ CAREFULLY!**

FORMULA SRL provides the original purchaser of its wheels with a limited warranty that the wheels are free of defects in material and/or workmanship for a period of two years from date of purchase.

## **WHAT PROTECTION DO I RECEIVE FROM THE WARRANTY?**

FORMULA SRL will, at its discretion, repair or replace the defective product under warranty.

## **WARRANTY CONDITIONS AND LIMITATIONS**

1. Formula Srl guarantees its new products to be free from defects in materials or workmanship for 24 months from the date of purchase. You must establish proof of purchase with an original sales document (sales receipt or invoice) showing the date and place of retail purchase of the product in order to obtain warranty service. Formula Srl gives no guarantee of whatever nature for non-new products.
2. The validity of this warranty is subject to the following:
  - (a)- The claim must be notified within eight (8) days of discovery of the potential defect;
  - (b)- Every claim must be submitted to the FORMULA SRL Dealer from which the product was purchased, with the understanding, however, that the discretion as to the acceptability of the claim is exclusively FORMULA's; Warranty claims for products purchased directly from Formula shall be processed by Formula Srl.
  - (c)- Only a FORMULA SRL Dealer can ship the allegedly defective product to the manufacturer, with the accompanying documentation.

**Failure to comply with these procedures will invalidate the claim; in which case the product will be made available to the owner for thirty (30) days and then destroyed.**

3. This warranty does not cover damages resulting from:
  - a. **Incorrect transport and installation. Incorrect installation refers to failure to follow the safety guidelines and instructions outlined in this instructions manual and or on the web-site [www.formula-brake.com](http://www.formula-brake.com).**
  - b. **Unintended ad inappropriate use of the product. Unintended ad inappropriate use refers to use of the product for purposes differ-ent from those for which it was specifically designed and manufac-tured having regard to reasonably foreseeable use. Unintended purposes include, but are not limited to, cross country UCI sanc-tioned downhill races.**
  - c. **Use of materials or spare parts that do not carry the Formula trademark for VOLO wheels. Formula Srl shall not guarantee conformity, safety, service life and performance of Formula VOLO wheels if materials and spare parts that do not carry the Formula trademark and/or are non-compatible and/or are not suitable and/or are not expressly authorized are used.**
  - d. **Lack of appropriate or reasonable maintenance or storage, washing with**

**harsh materials, use of corrosive agents, prolonged exposure to solvents.**

- e. Products on which the serial number and/or production code have been altered, damaged and/or removed.**
- f. Modifications made by persons not duly authorized by Formula without being approved by Formula.**
- g. Normal wear and tear or deterioration due to the use of the product.**

- 4. Retailers, wholesalers, importers or anyone else apart from FORMULA SRL may not modify this warranty in any way.
- 5. This warranty does not affect the statutory rights of the consumer or any rights the purchaser may have against the dealer pursuant to the sales contract.
- 6. The laws of Italy govern all matters arising out of or relating to this warranty. Any disputes or legal actions by purchaser arising out of or relating to this warranty shall be brought exclusively before the court of Prato, Italy.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.





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