



## WTB Tire User's Manual

For all WTB tires



**NOTE TO RETAILERS:** If you are installing this component for your customer, please make sure that this User's Manual is passed along to the customer after you use it.

GI3-0309

Thank you for the confidence you have shown in WTB by selecting one of our products. We appreciate your business, and your satisfaction is important to us. Because we would like to make sure that you get the best performance and longest service life from any WTB product you use, you MUST read these instructions BEFORE you assemble, install or use your new WTB components. YOUR SAFETY DEPENDS ON THIS. And if you have any questions or problems, or feel you do not understand something about the product, its installation or its use, please talk with your WTB dealer or contact WTB.

GI1-0210

**IMPORTANT NOTE:** This WTB user's manual for this specific component on your bicycle is not a substitute for all the safety and use information contained in the owner's manual that was supplied with your bicycle. If you do not have such an owner's manual, contact the bicycle's manufacturer or retailer for a copy. To the extent that your bicycle user's manual and this component part user's manual conflict as to the use of this specific WTB component, this WTB user's manual should be followed. If you are unsure about the resolution of a conflict between this manual and any other manual or set of instructions, please consult your local bicycle retailer.

GI2-0309

**READ BEFORE USE:** This User's Manual refers to ESSENTIAL information for:

- 1(a) Intended Use
- 1(b) WTB Tire Summary Chart for Model Year 2020
- 1(c) Tire Size Designation
- 1(d) Selecting the Correct Rim Strip
- 1(e) Selecting the Correct Inner tube
- 1(f) Rim/Tire Compatibility under ISO and ETRTO
- 1(g) Tire Installation and Removal (TCS and tube-type)
- 1(h) Tire Hotpatches and Tire Markings Explained

*NOTE: For additional technical information on bicycle wheel rims and tires, see the below manual matrix available at [wtb.com/manuals](http://wtb.com/manuals).*

RI4-0210

	<b>WTB Technical Manuals (Detailed information)</b>	<b>WTB User Manuals (Less detailed information)</b>
<b>RIMS</b>	A detailed technical explanation of international bicycle rim standards and fundamentals, as applied to WTB Rims, including previous model year products.	Concise user information on WTB Rims.
<b>TIRES</b>	A detailed technical explanation of international bicycle tire standards and fundamentals, as applied to WTB Tires, including previous model year products.	Concise user information on WTB Tires.

**⚠️ WARNING** BEFORE EACH USE CHECK EACH OF THE FOLLOWING:

- Break wear / operation
- Spoke tension
- Rim wear / damage / trueness
- Tires
- Always check your disc brake rotors or caliper brake pads for excessive wear before you ride as well as the operation of the brake levers and cables.
- Before any ride, always check your spoke tension. See Section 2 *Maintenance and Repair*, below.
- Always check your rims for any wear, dents, gouges and damage and that the wheels are true before you ride. If there is any damage to your rims, replace them BEFORE you ride.
- Always check your tires for tire bead and tire sidewall fraying or damage. If either is damaged, see WARNING at Section 2(a).

## 1. Before you start

**⚠️ WARNING** GENERAL WARNING:

The fact that you selected one or more WTB components for your bike indicates that you are probably a rider of above average experience; but do not allow that to lull you into complacency. **No matter how experienced you are as a cyclist, do not fail to read this WARNING or to carefully follow the instructions below.**

Technological advances have made bicycles and bicycle components more complex, and the pace of innovation is increasing. Many bicycle component installation, service and repair tasks require special knowledge and tools. ***Improper installation, adjustment or service may result in damage to the component or component failure.***

All WTB products should be installed by a qualified bicycle mechanic using appropriate professional tools. ***WTB assumes no liability for products which are improperly installed, assembled or configured.***

When installing WTB components in conjunction with another manufacturer's components, you should always follow that manufacturer's instructions for their components and WTB's for WTB components. If there is a conflict, ask your dealer to help you resolve it. ***WTB assumes no liability for damage caused by installing other manufacturers' products.***

After any installation, adjustment or repair to your bicycle or components, test your work by taking a test ride in a controlled environment, away from cars, other cyclists, obstacles or other hazards.

Failure to follow these instructions can result in component failure. Component failure can cause you to lose control of the bicycle and fall, leading to serious injury or death. WTB cannot warn of all potential hazards resulting from misuse of its products, only those that it can reasonably foresee from anticipated use of the product as learned from years of dealing with product issues and consumer questions.

GW1-0210

**1(a) Intended Use:** This product is not intended for use by children age 12 and under without adult supervision. Check the Intended Use information for this product at [wtb.com/manuals](http://wtb.com/manuals) to make sure this product is compatible with how you intend to use it. Also please check our website to make sure you have the most current version of the instructions for this product. If you have any questions or doubts, check with your WTB dealer or contact WTB.

IU1-0210

**⚠️ WARNING** Understand your bike and its intended use. Choosing the wrong component for your intended purpose can be hazardous. Also read, in its entirety, the first WARNING of the Maintenance and Repair section of these instructions.

IU2-0508

**⚠️ WARNING** Determine the Intended Use of your WTB Tire BEFORE you ride it.

Intended Use as used in this Manual is influenced by several factors:

- Tire Size Designation. See Section 1(c);
- Tire / Rim Compatibility. See Section 1(e);
- ASTM Intended Use Classification. See Section 1(b); and
- Industry Standard for Intended Use. See Section 1(b).

Intended Use is not the same as “Tire Size.” See also Section 1(c), Tire Size Designation for WTB tire sizes.

Information used to determine Intended Use of WTB Tires is contained in the WTB Tire Summary Chart for Model Year 2016 in Section 1(b) below.

### 1(b) WTB Tire Summary Chart for Model Year 2020

The Common Bicycle Type, WTB Tire Name, Industry Standard Category Name for Intended Use, Tube Type or Tubeless, Terrain and Surface Conditions, ASTM Intended Use Classifications, Tire Size Designation as set forth by ISO and ETRTO are integrated below for model year 2016 WTB Tires:

WTB Tire Name	Industry Standard Name for Intended Use	Tube Type or Tubeless	26", 27.5", 29" 650b, 700c	Terrain and Surface Conditions	ISO / ETRTO Tire Size Designation (as marked on tire)	WTB RIM RECOMMENDATIONS
<b>ADVENTURE ROAD</b>						
Exposure 700 x 30 Road TCS tire (tan)	Adventure Road	Road TCS	700c	Pavement	30-622	15C - 19C
Exposure 700 x 30 Road TCS tire	Adventure Road	Road TCS	700c	Pavement	30-622	15C - 19C
Exposure 700 x 36 Road TCS tire	Adventure Road	Road TCS	700c	Pavement	36-622	17C - 23C
Exposure 700 x 36 Road TCS tire (tan)	Adventure Road	Road TCS	700c	Pavement	36-622	17C - 23C
Expanse 700 x 32 Road TCS tire	Adventure Road	Road TCS	700c	Pavement / Hardpack	32-622	15C - 20C
Expanse 700 x 32 Road TCS tire (tan)	Adventure Road	Road TCS	700c	Pavement / Hardpack	32-622	15C - 20C
Byway 700 x 34 Road TCS tire	Adventure Road	Road TCS	700c	Pavement / Hardpack / Dirt	34-622	17C - 22C
Byway 700 x 34 Road TCS tire (tan)	Adventure Road	Road TCS	700c	Pavement / Hardpack / Dirt	34-622	17C - 22C
Horizon 650 x 47 Road TCS tire	Adventure Road	Road TCS	650b	Pavement / Hardpack	47-584	17C - 27C
Horizon 650 x 47 Road TCS tire (tan)	Adventure Road	Road TCS	650b	Pavement / Hardpack	47-584	17C - 27C
Horizon 650 x 47 Road TCS SG2 tire	Adventure Road	Road TCS	650b	Pavement / Hardpack	47-584	17C - 27C
<b>URBAN / HYBRID</b>						

All Terrain 1.95 26" Comp tire	Urban	Comp	26"	Pavement / Hardpack	47-559	17C - 27C
All Terrain 700 x 32 Comp tire	Urban	Comp	700c	Pavement / Hardpack	32-622	15C - 20C
All Terrain 700 x 37 Comp tire	Urban	Comp	700c	Pavement / Hardpack	37-622	17C - 23C
Slick 2.2 29" Comp tire	Urban	Comp	29"	Pavement	54-622	19C - 29C
ThickSlick 1.95 27.5" Comp tire	Urban	Comp	27.5"	Pavement	50-584	17C - 27C
ThickSlick 2.0 26" Comp tire	Urban	Comp	26"	Pavement	50-559	17C - 27C
ThickSlick 2.1 29" Comp tire	Urban	Comp	29"	Pavement	52-622	17C - 29C
ThickSlick 700 x 25 Comp tire	Urban	Comp	700c	Pavement	25-622	13C - 17C
ThickSlick 700 x 25 Comp tire (white)	Urban	Comp	700c	Pavement	25-622	13C - 17C
ThickSlick 700 x 25 Flat Guard tire	Urban	Flat Guard	700c	Pavement	25-622	13C - 17C
ThickSlick 700 x 28 Comp tire	Urban	Comp	700c	Pavement	28-622	15C - 19C
ThickSlick 700 x 28 Flat Guard tire	Urban	Flat Guard	700c	Pavement	28-622	15C - 19C
<b>CX / GRAVEL</b>						
Byway 650 x 47 Road TCS tire	Adventure Road / Gravel / Bikepacking	Road TCS	650b	/Pavement / Hardpack / Dirt / Gravel	47-584	17C - 27C
Byway 650 x 47 Road TCS tire (tan)	Adventure Road / Gravel / Bikepacking	Road TCS	650b	/Pavement / Hardpack / Dirt / Gravel	47-584	17C - 27C
Byway 650 x 47 Road TCS SG2 tire	Adventure Road / Gravel / Bikepacking	Road TCS	650b	/Pavement / Hardpack / Dirt / Gravel	47-584	17C - 27C
Byway 700 x 40 Road TCS tire	Adventure Road / Gravel / Bikepacking	Road TCS	700c	Pavement / Hardpack / Dirt / Gravel	40-622	17C - 23C
Byway 700 x 40 Road TCS tire (tan)	Adventure Road / Gravel / Bikepacking	Road TCS	700c	Pavement / Hardpack / Dirt / Gravel	40-622	17C - 23C
Byway 700 x 40 Road TCS SG2 tire	Adventure Road / Gravel / Bikepacking	Road TCS	700c	Pavement / Hardpack / Dirt / Gravel	40-622	17C - 23C
Byway 700 x 44 Road TCS tire	Adventure Road / Gravel /	Road TCS	700c	Pavement / Hardpack / Dirt /	44-622	17C - 25C

	Bikepacking			Gravel		
Byway 700 x 44 Road TCS tire (tan)	Adventure Road / Gravel / Bikepacking	Road TCS	700c	Pavement / Hardpack / Dirt / Gravel	44-622	17C - 25C
Byway 700 x 44 Road TCS SG2 tire	Adventure Road / Gravel / Bikepacking	Road TCS	700c	Pavement / Hardpack / Dirt / Gravel	44-622	17C - 25C
Cross Boss 700 x 35 TCS Light/Fast Rolling tire	Gravel / Cyclocross	TCS Light FR	700c	Hardpack / Dirt / Gravel	35-622	17C - 22C
Cross Boss 700 x 35 TCS Light/Fast Rolling tire (tan)	Gravel / Cyclocross	TCS Light FR	700c	Hardpack / Dirt / Gravel	35-622	17C - 22C
Crosswolf 700 x 32 TCS Light/Fast Rolling tire	Cyclocross	TCS Light FR	700c	Loose / Wet	32-622	15C - 20C
Nano 700 x 40 Comp tire	Gravel / Cyclocross	Comp	700c	Hardpack / Dirt / Gravel	40-622	17C - 23C
Nano 700 x 40 Race tire	Gravel / Cyclocross	Race	700c	Hardpack / Dirt / Gravel	40-622	17C - 23C
Nano 700 x 40 TCS Light/Fast Rolling tire	Gravel / Cyclocross	TCS Light FR	700c	Hardpack / Dirt / Gravel	40-622	17C - 23C
Nano 700 x 40 TCS Light/Fast Rolling tire (tan)	Gravel / Cyclocross	TCS Light FR	700c	Hardpack / Dirt / Gravel	40-622	17C - 23C
Nano 700 x 40 TCS Light/Fast Rolling SG2 tire	Gravel / Cyclocross	TCS Light FR	700c	Hardpack / Dirt / Gravel	40-622	17C - 23C
Raddler 700 x 40 TCS Light/Fast Rolling tire	Gravel / Cyclocross	TCS Light FR	700c	Dirt / Gravel / Loose / Wet	40-622	17C - 23C
Raddler 700 x 40 TCS Light/Fast Rolling tire (tan)	Gravel / Cyclocross	TCS Light FR	700c	Dirt / Gravel / Loose / Wet	40-622	17C - 23C
Raddler 700 x 40 TCS Light/Fast Rolling SG2 tire	Gravel / Cyclocross	TCS Light FR	700c	Dirt / Gravel / Loose / Wet	40-622	17C - 23C
Raddler 700 x 44 TCS Light/Fast Rolling tire	Gravel / Cyclocross	TCS Light FR	700c	Dirt / Gravel / Loose / Wet	44-622	17C - 25C

Raddler 700 x 44 TCS Light/Fast Rolling tire (tan)	Gravel / Cyclocross	TCS Light FR	700c	Dirt / Gravel / Loose / Wet	44-622	17C - 25C
Raddler 700 x 44 TCS Light/Fast Rolling SG2 tire	Gravel / Cyclocross	TCS Light FR	700c	Dirt / Gravel / Loose / Wet	44-622	17C - 25C
Resolute 650 x 42 TCS Light/Fast Rolling tire (tan)	Gravel / Cyclocross / Bikepacking	TCS Light FR	650b	Hardpack / Dirt / Gravel / Loose / Wet	42-584	17C - 24C
Resolute 650 x 42 TCS Light/Fast Rolling SG2 tire	Gravel / Cyclocross / Bikepacking	TCS Light FR	650b	Hardpack / Dirt / Gravel / Loose / Wet	42-584	17C - 24C
Resolute 700 x 42 TCS Light/Fast Rolling tire (tan)	Gravel / Cyclocross / Bikepacking	TCS Light FR	700c	Hardpack / Dirt / Gravel / Loose / Wet	42-622	17C - 24C
Resolute 700 x 42 TCS Light/Fast Rolling SG2 tire	Gravel / Cyclocross / Bikepacking	TCS Light FR	700c	Hardpack / Dirt / Gravel / Loose / Wet	42-622	17C - 24C
Riddler 700 x 37 TCS Light/Fast Rolling tire	Gravel / Cyclocross	TCS Light FR	700c	Pavement / Hardpack / Dirt / Gravel	37-622	17C - 23C
Riddler 700 x 37 TCS Light/Fast Rolling tire (tan)	Gravel / Cyclocross	TCS Light FR	700c	Pavement / Hardpack / Dirt / Gravel	37-622	17C - 23C
Riddler 700 x 37 TCS Light/Fast Rolling SG2 tire	Gravel / Cyclocross	TCS Light FR	700c	Pavement / Hardpack / Dirt / Gravel	37-622	17C - 23C
Riddler 700 x 45 TCS Light/Fast Rolling tire	Gravel / Cyclocross / Bikepacking	TCS Light FR	700c	Pavement / Hardpack / Dirt / Gravel	44-622	17C - 25C
Riddler 700 x 45 TCS Light/Fast Rolling tire (tan)	Gravel / Cyclocross / Bikepacking	TCS Light FR	700c	Pavement / Hardpack / Dirt / Gravel	44-622	17C - 25C
Riddler 700 x 45 TCS Light/Fast Rolling SG2 tire	Gravel / Cyclocross / Bikepacking	TCS Light FR	700c	Pavement / Hardpack / Dirt / Gravel	44-622	17C - 25C

Sendero 650 x 47 Road TCS tire	Adventure Road / Gravel / Trail / Bikepacking	Road TCS	650b	Hardpack / Dirt / Gravel / Loose / Wet	47-584	17C - 27C
Sendero 650 x 47 Road TCS tire (tan)	Adventure Road / Gravel / Trail / Bikepacking	Road TCS	650b	Hardpack / Dirt / Gravel / Loose / Wet	47-584	17C - 27C
Sendero 650 x 47 Road TCS SG2 tire	Adventure Road / Gravel / Trail / Bikepacking	Road TCS	650b	Hardpack / Dirt / Gravel / Loose / Wet	47-584	17C - 27C
Venture 650 x 47 Road TCS tire	Adventure Road / Gravel / Bikepacking	Road TCS	650b	Pavement / Hardpack / Dirt / Gravel / Loose	44-584	17C - 27C
Venture 650 x 47 Road TCS tire (tan)	Adventure Road / Gravel / Bikepacking	Road TCS	650b	Pavement / Hardpack / Dirt / Gravel / Loose	44-584	17C - 27C
Venture 650 x 47 Road TCS SG2 tire	Adventure Road / Gravel / Bikepacking	Road TCS	650b	Pavement / Hardpack / Dirt / Gravel / Loose	44-584	17C - 27C
Venture 700 x 40 Road TCS tire	Adventure Road / Gravel / Bikepacking	Road TCS	700c	Pavement / Hardpack / Dirt / Gravel / Loose	37-622	17C - 23C
Venture 700 x 40 Road TCS tire (tan)	Adventure Road / Gravel / Bikepacking	Road TCS	700c	Pavement / Hardpack / Dirt / Gravel / Loose	37-622	17C - 23C
Venture 700 x 40 Road TCS SG2 tire	Adventure Road / Gravel / Bikepacking	Road TCS	700c	Pavement / Hardpack / Dirt / Gravel / Loose	37-622	17C - 23C
Venture 700 x 50 Road TCS tire	Adventure Road / Gravel / Bikepacking	Road TCS	700c	Pavement / Hardpack / Dirt / Gravel / Loose	47-622	17C - 27C

Venture 700 x 50 Road TCS tire (tan)	Adventure Road / Gravel / Bikepacking	Road TCS	700c	Pavement / Hardpack / Dirt / Gravel / Loose	47-622	17C - 27C
Venture 700 x 50 Road TCS SG2 tire	Adventure Road / Gravel / Bikepacking	Road TCS	700c	Pavement / Hardpack / Dirt / Gravel / Loose	47-622	17C - 27C
<b>MOUNTAIN</b>						
Convict 2.5 27.5" TCS Tough/High Grip tire		TCS Tough HG	27.5"	Dirt / Loose / Rocky	62-584	19C - 29C
Judge 2.4 27.5" TCS Tough/Fast Rolling tire	Enduro / Gravity	TCS Tough FR	27.5"	Dirt / Loose / Rocky / Wet	55-584	19C - 29C
Judge 2.4 27.5" TCS Tough/High Grip tire	Enduro / Gravity	TCS Tough HG	27.5"	Dirt / Loose / Rocky / Wet	55-584	19C - 29C
Judge 2.4 29" TCS Tough/Fast Rolling tire	Enduro / Gravity	TCS Tough FR	29"	Dirt / Loose / Rocky / Wet	55-622	19C - 29C
Judge 2.4 29" TCS Tough/High Grip tire	Enduro / Gravity	TCS Tough HG	29"	Dirt / Loose / Rocky / Wet	55-622	19C - 29C
Nano 2.1 29" TCS Light/Fast Rolling tire	Cross-Country / Trail	TCS Light FR	29"	Hardpack / Loose over Hard / Dirt	52-622	17C - 29C
Nine Line 2.25 29" TCS Light/Fast Rolling tire	Cross-Country / Trail	TCS Light FR	29"	Hardpack / Loose Over Hard / Dirt	54-622	19C - 29C
Ranger 2.0 27.5" TCS Light/Fast Rolling tire	Cross-Country	TCS Light FR	27.5"	Hardpack / Loose Over Hard / Dirt / Wet	50-584	17C - 27C
Ranger 2.0 29" TCS Light/Fast Rolling tire	Cross-Country	TCS Light FR	29"	Hardpack / Loose Over Hard / Dirt / Wet	52-622	17C - 29C
Ranger 2.25 29" TCS Light/Fast Rolling tire	Cross-Country / Trail	TCS Light FR	29"	Hardpack / Loose Over Hard / Dirt / Wet	55-622	19C - 29C



Ranger 2.25 29" TCS Light/Fast Rolling tire (tan)	Cross-Country / Trail	TCS Light FR	29"	Hardpack / Loose Over Hard / Dirt / Wet	55-622	19C - 29C
Ranger 2.25 29" TCS Light/High Grip tire	Cross-Country / Trail	TCS Light HG	29"	Hardpack / Loose Over Hard / Dirt / Wet	55-622	19C - 29C
Ranger 2.4 29" TCS Light/Fast Rolling tire	Cross-Country / Trail	TCS Light FR	29"	Hardpack / Loose Over Hard / Dirt / Wet	55-622	19C - 29C
Ranger 2.4 29" TCS Light/High Grip tire	Cross-Country / Trail	TCS Light HG	29"	Hardpack / Loose Over Hard / Dirt / Wet	55-622	19C - 29C
Ranger 2.4 29" TCS Tough/Fast Rolling tire	Cross-Country / Trail	TCS Tough FR	29"	Hardpack / Loose Over Hard / Dirt / Wet	55-622	19C - 29C
Ranger 2.4 29" TCS Light/Fast Rolling tire (tan)	Cross-Country / Trail	TCS Light FR	29"	Hardpack / Loose Over Hard / Dirt / Wet	55-622	19C - 29C
Ranger 2.6 29" TCS Light/Fast Rolling TriTec Slash Guard tire	Cross-Country / Trail	TCS Light FR	29"	Hardpack / Loose Over Hard / Dirt / Wet	66-622	23C - 48C
Ranger 2.8 26" TCS Light/Fast Rolling tire	Trail / Bikepacking	TCS Light FR	26"	Hardpack / Loose Over Hard / Dirt / Wet	67-559	25C - 49C
Ranger 2.8 27.5" TCS Light/Fast Rolling tire	Trail / Bikepacking	TCS Light FR	27.5"	Hardpack / Loose Over Hard / Dirt / Wet	67-584	25C - 49C
Ranger 2.8 27.5" TCS Tough/Fast Rolling tire	Trail / Bikepacking	TCS Tough FR	27.5"	Hardpack / Loose Over Hard / Dirt / Wet	67-584	25C - 49C
Ranger 3.0 27.5" TCS Light/Fast Rolling tire	Trail / Bikepacking	TCS Light FR	27.5"	Hardpack / Loose Over Hard / Dirt / Wet	72-584	29C - 51C
Ranger 3.0 29" TCS Light/Fast Rolling tire	Trail / Bikepacking	TCS Light FR	29"	Hardpack / Loose Over Hard / Dirt / Wet	72-622	29C - 51C

Ranger 3.0 29" TCS Tough/Fast Rolling tire	Trail / Bikepacking	TCS Tough FR	29"	Hardpack / Loose Over Hard / Dirt / Wet	72-622	29C - 51C
Riddler 2.25 29" TCS Light/Fast Rolling tire	Cross-Country / Trail	TCS Light FR	29"	Hardpack / Loose Over Hard / Dirt	54-622	19C - 29C
Trail Boss 2.25 26" Comp tire	Cross-Country / Trail / Enduro	Comp	26"	Hardpack / Loose Over Hard / Dirt / Loose / Rocky	54-559	19C - 29C
Trail Boss 2.25 26" TCS Light/Fast Rolling tire	Cross-Country / Trail / Enduro	TCS Light FR	26"	Hardpack / Loose Over Hard / Dirt / Loose / Rocky	54-559	19C - 29C
Trail Boss 2.25 27.5" Comp Tire	Cross-Country / Trail / Enduro	Comp	27.5"	Hardpack / Loose Over Hard / Dirt / Loose / Rocky	54-584	19C - 29C
Trail Boss 2.25 27.5" TCS Tough/Fast Rolling tire	Cross-Country / Trail / Enduro	TCS Tough FR	27.5"	Hardpack / Loose Over Hard / Dirt / Loose / Rocky	54-584	19C - 29C
Trail Boss 2.25 29" Comp Tire	Cross-Country / Trail / Enduro	Comp	29"	Hardpack / Loose Over Hard / Dirt / Loose / Rocky	54-622	19C - 29C
Trail Boss 2.25 29" TCS Light/Fast Rolling tire	Cross-Country / Trail / Enduro	TCS Light FR	29"	Hardpack / Loose Over Hard / Dirt / Loose / Rocky	54-622	19C - 29C
Trail Boss 2.25 29" TCS Tough/Fast Rolling tire	Cross-Country / Trail / Enduro	TCS Tough FR	29"	Hardpack / Loose Over Hard / Dirt / Loose / Rocky	54-622	19C - 29C
Trail Boss 2.4 27.5" TCS Light/Fast Rolling tire (tan)	Trail / Enduro	TCS Light FR	27.5"	Loose Over Hard / Dirt / Loose / Rocky / Wet	55-584	19C - 29C
Trail Boss 2.4 27.5" TCS Light/Fast Rolling TriTec Slash Guard tire	Trail / Enduro	TCS Light FR	27.5"	Loose Over Hard / Dirt / Loose / Rocky / Wet	55-584	19C - 29C

Trail Boss 2.4 27.5" TCS Tough/Fast Rolling TriTec tire	Trail / Enduro	TCS Tough FR	27.5"	Loose Over Hard / Dirt / Loose / Rocky / Wet	55-584	19C - 29C
Trail Boss 2.4 29" TCS Light/Fast Rolling tire (tan)	Trail / Enduro	TCS Light FR	29"	Loose Over Hard / Dirt / Loose / Rocky / Wet	54-622	19C - 29C
Trail Boss 2.4 29" TCS Light/Fast Rolling TriTec Slash Guard tire	Trail / Enduro	TCS Light FR	29"	Loose Over Hard / Dirt / Loose / Rocky / Wet	55-622	19C - 29C
Trail Boss 2.4 29" TCS Tough/Fast Rolling TriTec tire	Trail / Enduro	TCS Tough FR	29"	Loose Over Hard / Dirt / Loose / Rocky / Wet	55-622	19C - 29C
Trail Boss 2.6 27.5" TCS Light/Fast Rolling TriTec Slash Guard tire	Trail / Enduro	TCS Light FR	27.5"	Loose Over Hard / Dirt / Loose / Rocky / Wet	65-584	21C - 48C
Trail Boss 2.6 27.5" TCS Tough/Fast Rolling TriTec tire	Trail / Enduro	TCS Tough FR	27.5"	Loose Over Hard / Dirt / Loose / Rocky / Wet	65-584	21C - 48C
Trail Boss 2.6 29" TCS Light/Fast Rolling TriTec tire	Trail / Enduro	TCS Light FR	29"	Loose Over Hard / Dirt / Loose / Rocky / Wet	65-622	21C - 48C
Trail Boss 2.6 29" TCS Tough/Fast Rolling TriTec tire	Trail / Enduro	TCS Tough FR	29"	Loose Over Hard / Dirt / Loose / Rocky / Wet	65-622	21C - 48C
VelociRaptor 2.1 26" Front Comp Tire	Cross- Country / Trail	Comp	26"	Dirt / Loose / Rocky / Wet / Mud	47-559	17C - 27C
VelociRaptor 2.1 26" Rear Comp Tire	Cross- Country / Trail	Comp	26"	Dirt / Loose / Rocky / Wet / Mud	47-559	17C - 27C
Verdict 2.5 27.5" TCS Tough/High Grip TriTec tire	Enduro / Gravity	TCS Tough HG	27.5"	Dirt / Loose / Rocky / Wet	60-584	19C - 29C

Verdict 2.5 27.5" TCS Light/High Grip TriTec tire	Enduro / Gravity	TCS Light HG	27.5"	Dirt / Loose / Rocky / Wet	60-584	19C - 29C
Verdict 2.5 29" TCS Tough/High Grip TriTec tire	Enduro / Gravity	TCS Tough HG	29"	Dirt / Loose / Rocky / Wet	60-622	19C - 29C
Verdict 2.5 29" TCS Light/High Grip TriTec tire	Enduro / Gravity	TCS Light HG	29"	Dirt / Loose / Rocky / Wet	60-622	19C - 29C
Verdict Wet 2.5 27.5" TCS Tough/High Grip TriTec tire	Enduro / Gravity	TCS Tough HG	27.5"	Loose / Wet / Mud	60-584	19C - 29C
Verdict Wet 2.5 29" TCS Tough/High Grip TriTec tire	Enduro / Gravity	TCS Tough HG	29"	Loose / Wet / Mud	60-622	19C - 29C
Vigilante 2.3 26" Comp tire	Trail / Enduro	Comp	26"	Dirt / Loose / Rocky / Wet	57-559	19C - 29C
Vigilante 2.3 26" TCS Light/Fast Rolling tire	Trail / Enduro	TCS Light FR	26"	Dirt / Loose / Rocky / Wet	57-559	19C - 29C
Vigilante 2.3 27.5" Comp tire	Trail / Enduro	Comp	27.5"	Dirt / Loose / Rocky / Wet	57-584	19C - 29C
Vigilante 2.3 27.5" TCS Light/Fast Rolling tire	Trail / Enduro	TCS Light FR	27.5"	Dirt / Loose / Rocky / Wet	57-584	19C - 29C
Vigilante 2.3 27.5" TCS Light/High Grip tire	Trail / Enduro	TCS Light HG	27.5"	Dirt / Loose / Rocky / Wet	57-584	19C - 29C
Vigilante 2.3 27.5" TCS Tough/Fast Rolling tire	Trail / Enduro	TCS Tough FR	27.5"	Dirt / Loose / Rocky / Wet	57-584	19C - 29C
Vigilante 2.3 27.5" TCS Tough/High Grip tire	Trail / Enduro	TCS Tough HG	27.5"	Dirt / Loose / Rocky / Wet	57-584	19C - 29C
Vigilante 2.3 29" TCS Light/Fast Rolling tire	Trail / Enduro	TCS Light FR	29"	Dirt / Loose / Rocky / Wet	57-622	19C - 29C
Vigilante 2.3 29" TCS Light/High Grip tire	Trail / Enduro	TCS Light	29"	Dirt / Loose /	57-622	19C - 29C

		HG		Rocky / Wet		
Vigilante 2.3 29" TCS Tough/Fast Rolling tire	Trail / Enduro	TCS Tough FR	29"	Dirt / Loose / Rocky / Wet	57-622	19C - 29C
Vigilante 2.3 29" TCS Tough/High Grip tire	Trail / Enduro	TCS Tough HG	29"	Dirt / Loose / Rocky / Wet	57-622	19C - 29C
Vigilante 2.5 27.5" TCS Light/High Grip TriTec Slash Guard tire	Trail / Enduro / Gravity	TCS Light HG	27.5"	Dirt / Loose / Rocky / Wet	60-584	19C - 29C
Vigilante 2.5 27.5" TCS Tough/Fast Rolling TriTec tire	Trail / Enduro / Gravity	TCS Tough FR	27.5"	Dirt / Loose / Rocky / Wet	60-584	19C - 29C
Vigilante 2.5 27.5" TCS Tough/High Grip TriTec tire	Trail / Enduro / Gravity	TCS Tough HG	27.5"	Dirt / Loose / Rocky / Wet	60-584	19C - 29C
Vigilante 2.5 27.5" TCS Light/Fast Rolling tire (tan)	Trail / Enduro / Gravity	TCS Light FR	27.5"	Dirt / Loose / Rocky / Wet	60-584	19C - 29C
Vigilante 2.5 29" TCS Light/High Grip TriTec Slash Guard tire	Trail / Enduro / Gravity	TCS Light HG	29"	Dirt / Loose / Rocky / Wet	60-622	19C - 29C
Vigilante 2.5 29" TCS Tough/Fast Rolling TriTec tire	Trail / Enduro / Gravity	TCS Tough FR	29"	Dirt / Loose / Rocky / Wet	60-622	19C - 29C
Vigilante 2.5 29" TCS Tough/High Grip TriTec tire	Trail / Enduro / Gravity	TCS Tough HG	29"	Dirt / Loose / Rocky / Wet	60-622	19C - 29C
Vigilante 2.6 27.5" TCS Light/High Grip TriTec Slash Guard tire	Trail / Enduro	TCS Light HG	27.5"	Dirt / Loose / Rocky / Wet	65-584	21C - 48C
Vigilante 2.6 27.5" TCS Tough/Fast Rolling TriTec tire	Trail / Enduro	TCS Tough FR	27.5"	Dirt / Loose / Rocky / Wet	65-584	21C - 48C
Vigilante 2.6 27.5" TCS Tough/High Grip TriTec tire	Trail / Enduro	TCS Tough HG	27.5"	Dirt / Loose / Rocky / Wet	65-584	21C - 48C
Vigilante 2.6 29" TCS Light/High Grip TriTec Slash Guard tire	Trail / Enduro	TCS Light HG	29"	Dirt / Loose / Rocky /	65-622	21C - 48C

				Wet		
Vigilante 2.6 29" TCS Tough/Fast Rolling TriTec tire	Trail / Enduro	TCS Tough FR	29"	Dirt / Loose / Rocky / Wet	65-622	21C - 48C
Vigilante 2.6 29" TCS Tough/High Grip TriTec tire	Trail / Enduro	TCS Tough HG	29"	Dirt / Loose / Rocky / Wet	65-622	21C - 48C
Vigilante 2.8 27.5" TCS Light/High Grip TriTec tire	Trail / Enduro / Bikepacking	TCS Light HG	27.5"	Dirt / Loose / Rocky / Wet	67-584	25C - 49C
Vigilante 2.8 27.5" TCS Tough/Fast Rolling TriTec tire	Trail / Enduro / Bikepacking	TCS Tough FR	27.5"	Dirt / Loose / Rocky / Wet	67-584	25C - 49C
Vigilante 2.8 27.5" TCS Tough/High Grip TriTec tire	Trail / Enduro / Bikepacking	TCS Tough HG	27.5"	Dirt / Loose / Rocky / Wet	67-584	25C - 49C
Vigilante 2.8 29" TCS Tough/High Grip TriTec tire	Trail / Enduro / Bikepacking	TCS Tough HG	29"	Dirt / Loose / Rocky / Wet	67-622	25C - 49C
Vigilante 2.8 29" TCS Tough/Fast Rolling TriTec tire	Trail / Enduro / Bikepacking	TCS Tough FR	29"	Dirt / Loose / Rocky / Wet	67-622	25C - 49C
Vigilante 2.8 29" TCS Light/High Grip TriTec Slash Guard tire	Trail / Enduro / Bikepacking	TCS Light HG	29"	Dirt / Loose / Rocky / Wet	67-622	25C - 49C

For previous model year WTB tires see WTB Tire Technical Manual.

Where possible, in addition to industry standard descriptions, this User's Manual references American Society for Testing and Materials ("ASTM") Standard Classifications for Bicycle Usage to describe Intended Use, along with Common Terms. See ASTM Designation F 2043-09 at [www.astm.org](http://www.astm.org)

For clarification, WTB defines the following terms:

- Cross Country. ASTM Condition 3. Cross Country riding is focused as much on climbing as it is descending. This style of riding does not include technical terrain and/or jumps. Cross Country bikes are hard tails or short-travel full suspension and set up as minimal as possible to save weight. Riders do not wear protective gear (only helmets).
- Trail. ASTM Condition 4. Trail (also known as All Mountain) is the most often used term in mountain biking. Trail riding encompasses any and all conditions in mountain biking. Trail bikes are generally full suspension bikes with 4- to 6-inches of travel and they're built to handle Cross Country climbs, technical terrain and jumps.
- Freeride. ASTM Condition 4. Freeride is a style of mountain biking that involves excessive speed, big jumps and technical terrain. Riders in this category are most concerned with performing tricks on

natural and man-made obstacles. Freeride bikes are generally full suspension bikes with 6- to 8-inches of travel.

- Downhill. ASTM Condition 4. Downhill is often associated with racing and involves terrain-specific bikes on bike-specific trails. This category is most commonly found at lift-access bike parks that feature big jumps, excessive speed and technical terrain. Downhill bikes are full suspension bikes with 7- to 10-inches of travel and built for descending without concern for climbing. Riders wear protective gear (full face helmets and pads).
- Pavement. ASTM Condition 1. The pavement category can be called comfort, hybrid, city or trekking. This riding includes smooth or paved surfaces, on city streets as well as designated bike paths. Pavement riding does not include jumps of any kind, technical terrain or excessive speed.
- MTB/ATB. ASTM Condition 2. The MTB/ATB category involves non-technical terrain and moderate speeds on unpaved surfaces and gravel roads. This riding is often performed on entry-level mountain bikes or cyclocross bikes outfitted with offroad-capable tires.

If you would like to read a summary of the ASTM F2043 - 09 Standard Classification for Bicycle Usage please visit this link <http://www.astm.org/Standards/F2043.htm> **You will need to purchase the complete standard from ASTM.**

### 1(c) WTB Tire Size Designation

Tires, like rims, have a convoluted evolution and often tire “sizes” are referred to inaccurately. Tires are often categorized according to rim “sizes,” which also lack accurate pertinent information to determine tire and rim fit or for Tire Size Designation. WTB follows ISO and ETRTO for tire standards, including “Tire Size Designation.”

**Historically mountain bikes used 559mm bead diameter tires, which are often referred to as 26” or a “Mountain Bike” tires. The 26” refers to a traditional measurement based on the outside diameter of a historical tire inflated on an undefined matching rim. DO NOT USE THE 26” REFERENCE TO DESIGNATE THE TIRE SIZE DESIGNATION. ALSO DO NOT USE THE 26” REFERENCE FOR TIRE SIZE DESIGNATION OR RIM /TIRE COMPATABILITY.** The 559mm Rim Diameter and the Inner Rim Width are the two measurements that define Rim Size or Rim Size Designation. Both numbers are necessary to determine correct rim size and correct tire size compatibility.

It is very difficult to accurately measure the ISO/ETRTO diameter of a tire according to ISO/ETRTO. Special tools are required. Measurement methods are outlined in ISO and ETRTO. The information in the Summary Chart in Section 1(b) Intended Use, above can help you determine the Tire Bead Diameter of WTB Tires.

WTB produces tires with three different Tire Bead Diameters:

<u>ISO/ETRTO Tire Bead Diameter</u>	<u>Common Use</u>	<u>Common Reference Term</u>
1. 559 mm	Mountain bike Comfort bike Cruiser Bike	26”
2. 584 m	Mountain bike	650B, 27.5”
3. 622 mm	Includes road, trekking, hybrid and city bikes	700C
	29” Mountain Bike	29”, 29er
	Cyclocross/Gravel	Cyclocross/Gravel

(1) Tire Size Designation. Once you know the ISO/ETRTO Tire Section Width and the Tire Bead Diameter of your WTB Tire you have the key measurements to determine the Tire Size Designation:

- The first number in the ISO/ETRTO form is the Tire Section Width.
- The second number, after “-” is the Tire Bead Diameter.

FOR EXAMPLE: A tire with a Tire Size Designation of 54-559 has a 559 mm Tire Bead Diameter and a Tire Section Width of 54mm.

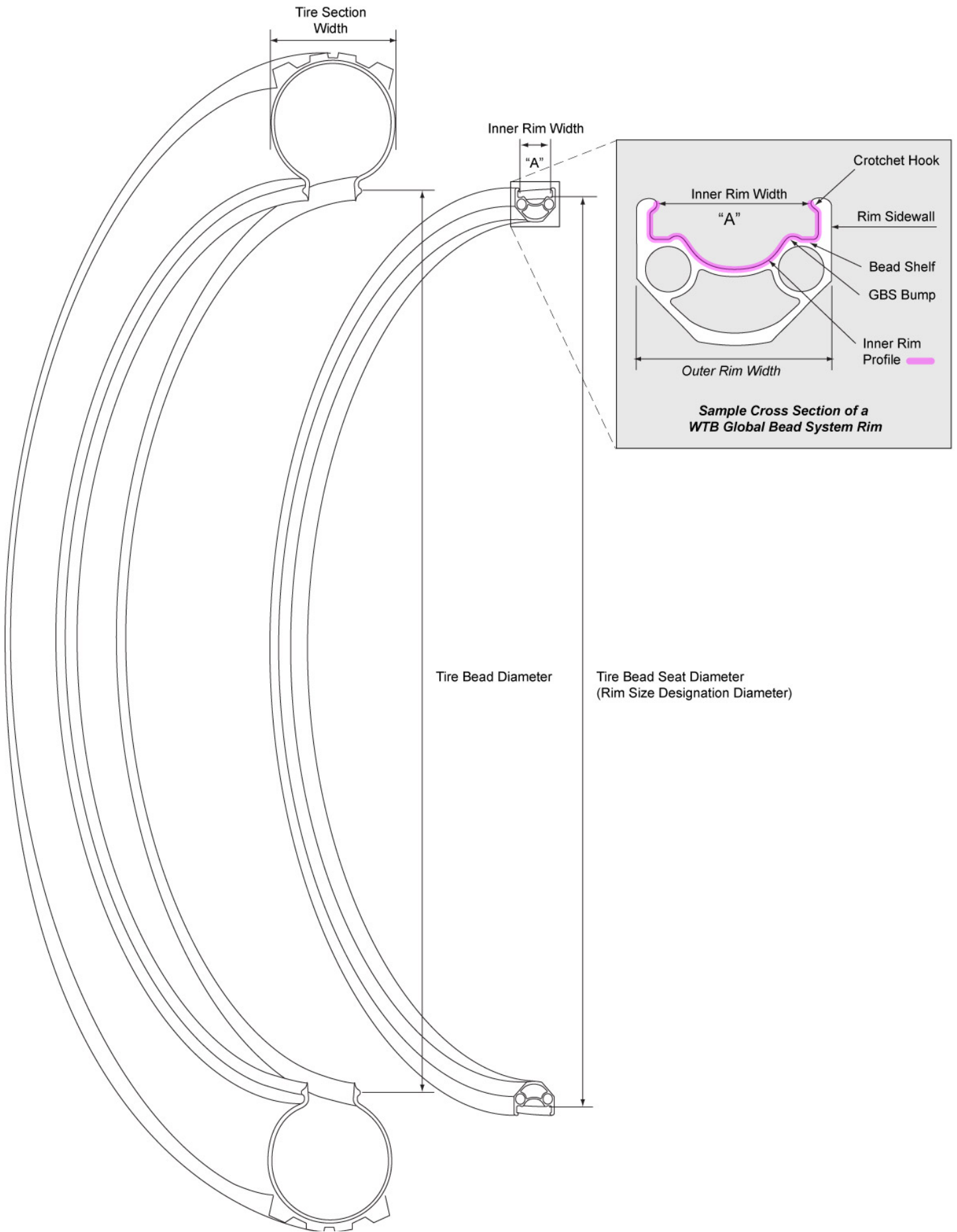
26” vs. 559. Are these the same?.

As mentioned above, 26” measures the outside diameter of a historical tire on an undefined rim. ETRTO and ISO categorize tires and rims by Bead Seat Diameter (for rims) and Bead Diameter (for tires). The two references, 26” or 559mm refer to two different measures. The 26” reference might be considered a market name. If one were to “translate” that the 26” means 559mm Tire Bead Diameter, then 26” and 559mm tires would be equivalent. However, because 26” is not an international standard, WTB does not use this measure to determine Rim Size Designation or Tire Size Designation. If it helps a user or dealer understand what is being referenced, then it might be helpful to equate 26” with a 559mm Bead Seat Diameter rim. However, it would be inaccurate to say, for example, that 26” tires fit on 26” rims. The reference is simply incorrect when determining tire and rim compatibility. It is most helpful for the user and the dealer to refer to rims and tires by their diameter and (for rims) Inner Rim Width and (for tire) Tire Section Width.

To determine WTB Tire Size Designation, you need to identify two specifications / measurements on the WTB Tire:

- (1) Tire Section Width; and
- (2) Tire Bead Diameter





Finding the WTB Tire Size Designation with Tire Sidewall Markings and Hotpatches.

The WTB Tire Size Designation is embossed onto the sidewalls of all WTB Tires. Before 2010 model year, the Tire Size Designation was put in ISO/ETRTO form on the tire sidewall markings of all WTB Tires. Since Model Year 2010, WTB Tire Size Designations have been identified with the writing: "Tire Size Designation," followed by the actual Tire Size Designation of the given WTB Tire. See also Section 1(h) Hotpatches and Tire Markings Explained.

#### **b. Compatibility:**

**(1)** The Tire Size Designation, size, pressure rating, in some cases rotation direction is marked on the sidewall of WTB tires. Starting in model years after 2010, ETRTO Rim Size Designation Compatibility information is marked on the sidewall of WTB tires. (See **2. Tire Markings** below).

**(2)** Check to make sure that your WTB Tire Size Designation is compatible with the Rim Size Designation and your bicycle fork and frame. For Rim / Tire compatibility information please see the WTB Rim / Tire Compatibility Manual and the WTB Rim Technical Manual at [wtb.com/manuals](http://wtb.com/manuals). If you have any questions or doubts, check with your WTB dealer or a qualified bicycle mechanic.

T12-0309

**⚠WARNING** Failure to confirm compatibility, properly install, operate and maintain any component or accessory can result in serious injury or death.

CO1-0508-1

**1(d) Selecting the Correct Rim Strip:** Use only the correct size rim strip or tape width, thickness and material. The rim strip or tape must be chosen to guarantee the complete covering of all spoke holes and spoke heads during use, not slip from side to side in the rim or slip around the rim's diameter, and permit proper mounting, fit and seating of the tire and tube. The thickness of the rim strip or rim tape should not exceed 0.8 mm. Its mechanical strength should be sufficient to withstand the maximum recommended inflation pressure of the tire. Dirt, moisture and tire mounting technique can contribute to the slippage or movement of some types of rim tape.

RS1-0309

**⚠WARNING** Failure to use the correct width rim strip or tape on your wheel, or improper installation of any rim strip or tape can result in improper seating of the tire bead in the rim, which may lead to sudden tire deflation. Failure to make sure that the rim strip or tape covers all spoke holes completely and that it stays in place during use may lead to sudden tire deflation. Sudden tire deflation can cause loss of control, resulting in serious injury or death. If you have any questions about the correct size, material or fitting of the rim strip or rim tape, check with your WTB dealer or a qualified bicycle mechanic.

RS2-0508-1

**1(e) Selecting the Correct Inner Tube:** Use only the correct size inner tube, thickness, valve stem type and material for the tire. The recommended tire size ranges are marked on tube packages. You may use a properly sized inner tube with a TCS/ETRTO tubeless tire if you make sure to remove the tubeless tire valve stem first.

T12-0309

**⚠WARNING** Failure to use the correct size, thickness, valve stem type and material inner tube with your WTB tire, or improper installation of any inner tube can result in improper seating of the tire bead in the rim, which may lead to sudden tire deflation. Sudden tire deflation can cause loss of control, resulting in serious injury or death. If you have any questions about the correct size, thickness, valve stem type, material or fitting of the inner tube, check with your WTB dealer or a qualified bicycle mechanic.

#### **1(f) Rim Tire Compatibility Under ETRTO and ISO.**

Both ISO and ETRTO have recommendations for rim and tire compatibility. ETRTO has "Approved Rim Contours" for compatibility with specific Tire Section Widths. ISO has "Recommended Rims" for specific Tire Section Widths (referred to in ISO as "Nominal Section Width"). Reference Summary Chart on page 3.

Rim / Tire compatibility information can also be found in the WTB Rim / Tire Compatibility Manual and the WTB Rim Technical Manual at [wtb.com/manuals](http://wtb.com/manuals).

**⚠ WARNING** Failure to confirm tire/rim compatibility, properly install, operate and maintain any component or accessory can result in serious injury or death.

CO1-0210

**⚠ WARNING** WTB rims and tires are designed to fit together within the ISO/ETRTO recommendations. If you choose to use non-WTB branded tires on WTB rims or vice versa WTB cannot guarantee that they will fit as optimally as WTB branded tires and rims. In some cases the misfit between a non-WTB and WTB product could result in a sudden loss of air pressure and or a tire coming off a rim during riding resulting in serious injury or death.

CO5-0210

**⚠ WARNING** Tires and Rims *should* be compatible, because they should be made to the same basic international standards; but WTB cannot guarantee that all manufacturers make their products in compliance with international standards. While everyone in the bicycle industry tries to work to industry accepted standards, there is no guarantee of 100% inter-brand compatibility of components. All manufacturers recommend that you do not “mix and match” brands of components, so if you do, you are on your own.

CO6-0210

**⚠ WARNING** If your tire goes on and off your rim with little hand mounting effort do not ride it. That is the sign of a possible mismatch between that particular rim and tire. If you have another brand or model of rim that is compatible with that tire’s size designation, try mounting the tire on that rim to see if it is looser or tighter. If sufficiently tight then use that rim and tire together or contact WTB for assistance. A tire that fits too loose can come off the rim while riding (causing serious injuries or death) especially at air pressure approaching or below the minimum posted on the tire or under hard riding and cornering conditions.

## 1(g) Tire Installation & Removal

- Inflate tire to maximum pressure designated on the tire sidewall (PSI / BAR / kPa ). Do not inflate the tire over maximum pressure designated on the tire sidewall.
  - PSI: (Pounds per Square Inch) Pressure resulting from a one pound force applied to an area of one square inch. The pressure air exerts on the wall of its container.
  - BAR: Metric unit of pressure equal to (14.50) PSI or (100) kPa.
  - kPa (Kilopascal) is a metric unit used to measure pressure. (1) kPa equals approximately (0.1450) PSI
- Confirm molded indicator line is uniformly visible around entire rim circumference.
- Reduce tire to desired pressure. NEVER ride a tire below inflated below the minimum pressure designated on the tire sidewall.
- If you intended to install the tire without the use of an inner tube, it must be designed, intended and indicated as tubeless compatible. Tubeless compatibility is indicated on the sidewall of WTB tubeless tires. Tubeless WTB tires require the use of tubeless tire sealant.

### 1(g)(1) Tires with inner tubes

#### Before you start:

- (i) Ensure that the tire size selected is compatible with the rim to which it is to be fitted. In particular the nominal rim diameter of the tire size and of the rim size as shown in the relevant markings must coincide. Verify that the tire is not damaged or aged.  
Check that the inner tube is of a correct size for the tire size.

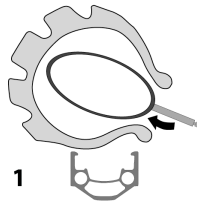
- (ii) Clean the rim to remove any contamination (grease, rust, foreign material, etc.). Inspect carefully, paying particular attention to the spoke ends and valve hole, which should be smooth, free from burrs or sharp edges.  
Check and tighten loose spokes. Damaged or distorted spokes or rims must not be repaired and must be replaced. See WARNINGS under **Maintenance and Repair** below.
- (iii) Check the rim strip or rim tape as recommended in 1(d) above.
- (iv) If desired, lightly lubricate the tire beads using a suitable lubricant (soapy solution or proprietary bead lubricant) so as to avoid damage during fitting. Avoid excessive lubrication, which may lead to rotation of the tire on the rim during operation.

ETRTO2-0309

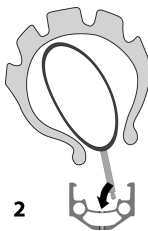
**⚠WARNING Do not use lubricants based on hydrocarbons or hydrocarbon mixtures**

**(v) Mounting a tire with inner tube**

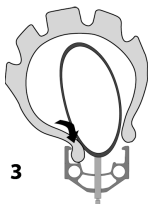
1. Slightly inflate the inner tube and place it inside the tire.



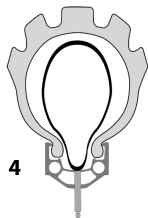
2. Insert the valve stem into the valve stem hole of the rim.



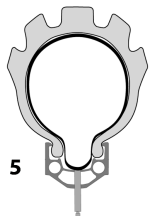
3. Insert one tire bead into the rim.



4. Using hands only, no tools, insert the other tire bead, starting from the side opposite the valve stem and working both sides simultaneously toward the valve stem, until the second bead is seated in the rim. Make sure that the inner tube is not being pinched against the rim by the tire bead.



5. *Slowly* inflate the tire with a bicycle pump or CO<sub>2</sub> cartridge, keeping an eye on both sides of the tire to make sure it is seating evenly all the way around and at the proper depth. This is done by watching to see that the tire's molded rim line evenly follows the rim edge. Inflate to the maximum recommended pressure marked on the side of the tire; then deflate to the



desired riding pressure, making sure the pressure is within the range of recommended pressure marked on the sidewall of the tire. Check pressure with a tire pressure gauge.

**⚠WARNING After full inflation the bead line on the tire should not be more than 2 mm above the rim edge. If it is, the tire and rim are not compatible and must not be ridden.**

6. If the valve has a retaining nut, tighten the nut finger tight against the rim.

7. Install the valve cap.

**(6) Removing a tire with inner tube**

1. Fully deflate the tire.

2. If the tire valve has a retaining nut, remove it.

3. Starting opposite the valve, push the tire above the bead toward the center of the rim with your thumbs. Continue 360 degrees around the outside of the tire on both sides. This will push the bead off the seat area, allowing easier disassembly.

4. Using your hands or a tire lever, lift one bead over the rim lip all the way around the rim.

5. Remove the inner tube.

6. Remove the tire from the rim.

**1(g)(2) WTB TCS/ETRTO Tubeless tires**

The WTB TCS/ETRTO tubeless tire concept is based on the principle that the rim profile has a deep central groove where the tire beads are placed when mounting the tire. When beginning to inflate, the beads are pressed against the groove, creating an initial airtight seal. When the tire continues to be inflated, the beads climb up and along the rim wall and lock into place on the sidewall behind the raised ridges.

**⚠WARNING**

**WTB TCS™/ETRTO tubeless concept requires specific rim profiles and specific tires and tire beads in order to be mounted, retain air sufficiently and to be ridden safely.**

**Before you start:**

- (i) Ensure that the tire size selected is compatible with the rim on which it is to be fitted. See Tire/Rim Compatibility Manual at this site OR page 3 and ISO 5775-1 and ETRTO Section M, Subsection 13. Check the tire for any damage or ageing, particularly around the bead seating area. Tubeless tires must only be fitted on WTB TCS rims, or rims designed to meet ETRTO Tubeless specifications.
- (ii) Check the rim for damage, particularly around the bead seating area, removing any sharp edges, burring, contamination, or foreign bodies. Pay particular attention to the nipple heads, the spoke ends (if protruding inside the rim wall) and the valve hole, which should be smooth, free from burrs or sharp edges. Check and tighten loose spokes. Damaged or distorted spokes or rims shall not be repaired and must be replaced. See WARNINGS under **Maintenance and Repair** below.
- (iii) Check the airtight rim tape (if required on your rim) and replace it if damaged. Position the rim tape (if required) so that the hole for the valve corresponds with the hole in the rim and is laid properly over the well and the bead seat area. Its mechanical strength should be sufficient to withstand the maximum recommended inflation pressure of the tire and maintain air tightness of the tire rim assembly. Check that the valve is tightened correctly to the rim well.
- (iv) Insert valve through valve hole and tighten the valve-nut to ensure an airtight seal between the base of the valve and the inner rim well, with the rim tape in-between the two.
- (v) Lubricate the rim (inside) and the tire around the bead seat area with a recommended bead lubricant or mild soapy water only.

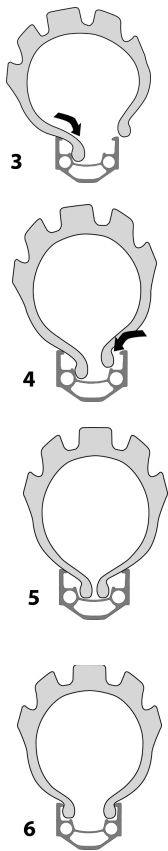
ETRTO3-0309

**⚠WARNING Do not use lubricants that contain hydrocarbons.**

**(5) Mounting a TCS/ETRTO tubeless tire**

- 1. Use only your hands, no tools or tire levers, as they could damage the seal between tire and rim.
- 2. Liberally moisten the rim with specific TCS/ETRTO tire mounting fluid or mild soapy water.
- 3. Insert the first bead into the bottom of the groove in the TCS/ETRTO rim.
- 4. Pour tubeless sealant into the tire. Minimum amounts:
 

Drop Bar 25-40mm	100ml
Drop Bar 41-52mm	125ml
Mountain 2.0-2.5"	150ml
Mountain 2.6-3.0"	175ml
- 5. For the second bead, start on the tire 180° opposite from the valve.
- 6. Insert the second bead in the bottom of the groove, working both sides simultaneously toward the valve stem



and finishing at the valve. The tire must fit snugly in the bottom of the groove before inflating.

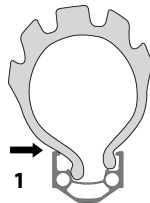
**⚠WARNING** 6. *Slowly* inflate the tire with a bicycle pump or CO<sub>2</sub> cartridge, keeping an eye on both sides of the tire to make sure it is seating evenly all the way around and at the proper depth. This is done by watching to see that the tire’s molded rim line evenly follows the rim edge. You should hear a “dull snapping sound” of the beads locking into place on the rim. Inflate to the maximum recommended pressure marked on the side of the tire; then, to ensure that the beads are seated correctly, completely deflate the tire. The beads should remain seated. Re-inflate to the operating inflation pressure making sure the pressure is within the range of recommended pressure marked on the sidewall of the tire. Check pressure with a tire pressure gauge.

**After full inflation the bead line on the tire should not be more than 2 mm above the rim edge. If it is, the tire and rim are not compatible and must not be ridden.**

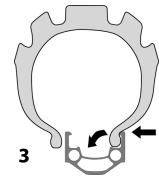


### (8) Removing a TCS/ETRTO tubeless tire

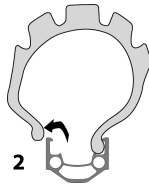
1. Deflate the tire. Then, beginning at the point opposite the valve, unlock one side of the bead by forcing it into the groove of the rim. Continue along the rest of the tire.



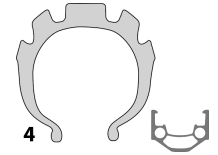
3. Unlock the second bead by pushing it into the rim groove and continue all the way around the rest of the rim circumference.



2. Without using tire levers or other tools, pull only the first bead of the tire over the top of the rim. Continue around the rest of the rim circumference.





4. Remove the tire.



### 1(h) “Hotpatches” and Tire Markings Explained

(1) Tire “Hotpatches” are stickers that are vulcanized (cooked) onto the side on a tire. Hotpatches are usually colorful and visually distinctive. WTB tires are labeled with the model name and, where appropriate, with a decal or “hot patch” providing additional Tire and Rim Compatibility information, such as the examples below.


Hotpatch (colored markings on tire sidewall)	Detail
<p>TRAIL BOSS 2.25 29" </p>	<p>The tire model is Trail Boss 2.25 29" TCS Light Fast Rolling. This is a 29" tubeless tire.</p>
<ul style="list-style-type: none"> <li>• </li> <li>• TCS Light</li> <li>• Fast Rolling</li> </ul>	<p>This is a WTB “Tire Level and Specification” WTB has several levels of tires: TCS Light, TCS Tough, Tube-Type Light and Comp.</p> <p>This Level Hotpatch shows the tire is a “TSC Light” tubeless-specific tire.</p> <p>The Tire Casing is 60 threads per inch, and the tire bead is a Tubeless-Specific Aramid bead.</p> <p>The tread compound is Dual-DNA rubber, two rubber compounds in different regions of the tread, specified for the intended use.</p>

(2) Important information about a WTB tire is molded into the tire casing. Starting in the model year 2010, the Tire Markings outlined in the chart below are molded into all WTB tires. The corresponding details below explain the meaning of each Tire Marking.


#### (1) Model Year 2010 and after Tire Sidewall Markings

	Tire Marking	Detail
1.	<p>TIRE SIZE DESIGNATION:</p> <p>54-622</p>	<p>This is the Tire Size Designation. It is defined by the standards organizations ETRTO and ISO. ETRTO is the “European Tyre and Rim Technical Organisation” and ISO is the “International Organization for Standardization,” which is a network of the national standards institutes of 159 countries and the world’s largest developer and publisher of International Standards.</p> <p>The first number of the “Tire Size Designation” is the Tire Section Width (The outside width of the tire casing). The Tire Section Width in this example is 54 mm.</p>

		<p>The second number is the Tire Bead Diameter. This measures the bead diameter of the tire. The Tire Bead Diameter in this example is 559 mm.</p> <p>Common Tire Bead Diameters are:</p> <ul style="list-style-type: none"> <li>• 559 mm = 26" Mountain bike, Comfort bike, Cruiser bike</li> <li>• 622 mm = 700C or "road tires," Hybrid, trekking, city and 29" mountain bike tires.</li> <li>• 584 mm = 650B Mountain Bike, Road Plus,</li> </ul>
2.	TIRE SECTION WIDTH:  54 MM	<p>This is the Tire Section Width of a tire casing on a Measuring Rim at a specified pressure for a period of time. The Tire Section Width in this example is 54 millimeters.</p> <p>The Tire Section Width is important for determining the ETRTO and ISO rim size recommendations for tire and rim compatibility.</p>
3.	ROTATION →	Mount tire so that it rotates in the direction of the arrow while riding.
4.	35-65 PSI / 2.4-4.5 BAR / 240-450 kPa (MIN-MAX)	<p>Minimum and maximum tire inflation pressure in different but equivalent measurements.</p> <p>Tires should ALWAYS be inflated within the minimum and maximum pressure range.</p> <p>35-65 PSI. This tire should always be inflated between 35 – 65 "pounds per square inch." This means no less than 35 psi and no more than 65 psi.</p> <p>2.5 – 4.5 BAR. This tire should always be inflated between 2.5 – 4.5 BAR *</p> <p>* BAR is a metric unit used to measure pressure. 1 bar = 14.50 pounds per square inch or 1 bar = 100 kPa (kilopascals)</p> <p>240 - 450 kPa. This tire should always be inflated between 240-450 kPa **</p> <p>** kPa (Kilopascal) is a metric unit used to measure pressure. 1 kPa equals approximately 0.1450 psi</p>
5.	WILDERNESS TRAIL BIKES TREAD DESIGN	WTB designed the tire tread.
6.	WTB TRAILBOSS 2.25 (54 / 57) 29"	<p>Product Name and Size of the tire.</p> <ul style="list-style-type: none"> <li>• The Product Name is on the left. The example here is a "WTB Trailboss 2.25" tire. "2.25" is part of the model name of the tire, and may be used as a reference to other tire brands' tire widths. The accurate measure of a tire is given by ISO and ETRTO as the Tire Size Designation (Tire Section Width and Tire Bead Diameter in millimeters) and Tire Section Width.</li> <li>• The first number in parentheses is the Tire Section Width in millimeters. This number is the same as the Tire Section Width measure from Numbers 1 and 2, above. The Tire Section Width in this example is 54 mm.</li> </ul> <p>The Tire Section Width is important for determining the ETRTO and ISO rim size recommendations for tire and rim compatibility.</p> <ul style="list-style-type: none"> <li>• The second number in parentheses is the Overall Tire Width, or tread width, in millimeters. This is the outermost measure of the</li> </ul>

		<p>outside knob. This number determines tire clearance in the frame or fork. The Overall Tire Width in this example is 57 mm.</p> <ul style="list-style-type: none"> <li>The last number is a bicycle type as commonly referred to in the market place. Originally, this number intended to measure the outside diameter of the tire as mounted on a rim.</li> </ul>
7.	 <b>READ USER'S MANUAL AT WTB.COM BEFORE USE</b>	<p>Always read the product's User's Manual or Instruction Manual BEFORE installing and using a product. All WTB User's Manuals are at <a href="http://wtb.com/usersmanuals">wtb.com/usersmanuals</a>.</p>
8.	<p>ETRTO APPROVED: USE 19C-37C INNER RIM WIDTH</p>	<p>The Inner Rim Width that is approved for use with this tire by the European Tyre and Rim Technical Organisation ("ETRTO") is a Crochet Rim with an Inner Rim Width between 19mm – 37mm. See Tire/Rim Compatibility Manual [ADD SECTION REFERENCE], also ISO 5775-1 [page 6] (© 1997) and also ETRTO Section M, Subsection 13. (<a href="http://www.etrto.org">www.etrto.org</a>)</p>

## 2. Maintenance and Repair

 **Many bicycle component installation, service and repair tasks require special knowledge and tools. Do not begin any installation, adjustments or service on your bicycle until you have learned from your dealer how to properly complete it. Improper installation, configuration, adjustment or service may result in damage to the component or component failure. Component failure can cause you to lose control and fall.**

BPSA-OM9-5

Like any mechanical device, a bicycle and its components are subject to wear and stress. Different materials and mechanisms wear or fatigue from stress at different rates and have different life cycles. If a component's life cycle is exceeded, the component can suddenly and catastrophically fail, causing serious injury or death to the rider. Creaks, scratches, cracks, fraying and discoloration are signs of stress-caused fatigue and indicate that a part is at the end of its useful life and needs to be replaced. While the materials and workmanship of your bicycle or of individual components may be covered by a warranty for a specified period of time by the manufacturer, this is no guarantee that the product will last the term of the warranty. Product life is often related to the kind of riding you do and to the treatment to which you submit the bicycle and its components. The warranty is not meant to suggest that the bicycle or a component cannot be broken or will last forever. It only means that the bicycle or component is covered subject to the terms of the warranty.

BPSA-OM9-5A

**The "useful life" of this component (the time during which the component is safe to ride) will be reduced** if (1) you use it more than the average user; (2) you are heavier than the average rider; (3) the terrain/roads you ride on is rougher than average; (4) you tend to be harder on components than the average rider; (5) you fail to follow its installation instructions or maintenance instructions, including lubrication and adjustment; (6) it must endure more adverse environmental conditions than the average component (i.e. sweat, corrosive mud, salty beach air etc.); (7) you damage/weaken it in a crash, jump or through other abuse; (8) you fail to purchase the appropriate model of product for the type of riding it endures; and/or (9) you race with the component or participate in any other type of extreme, aggressive riding such as *Freeride, All Mountain, Downhill, Jumping, , etc.* The more factors you meet and the more often they occur, the more this component's life will be reduced, however it is impossible to say how much.

Racing (road, mountain or triathlons) places extreme stress on bicycles and their components (like it does riders) and significantly shortens their usable or "useful" life (the time during which the component is safe to ride). If you participate in these types of events, the lifetime of the product may be significantly shortened depending upon the level and amount of racing. The "normal wear" of a component may differ greatly between competitive and non-competitive uses, which is why professional level riders often use new bikes and components each season as well as having their bikes serviced by professional mechanics after each ride. Particular care should be placed in the regular examination of your bicycle and it's components to insure your safety.



If you engage in extreme, aggressive stunt or competition riding, *you will get hurt*, and you voluntarily assume a greatly increased risk of injury or death.

Not all bicycles, components or equipment are designed for these types of riding, and those that are may not be suitable for all types of aggressive riding. Check with the bicycle or component manufacturer about suitability before engaging in extreme riding.

When riding fast downhill, you can reach speeds achieved by motorcycles, and therefore face similar hazards and risks. Have your bicycle and equipment carefully inspected by a qualified mechanic and be sure it is in perfect condition. Consult with expert riders, area site personnel and race officials on conditions and equipment advisable at the site where you plan to ride. Wear appropriate safety gear, including an approved full face helmet, full finger gloves, and body armor. Ultimately, it is your responsibility to have proper equipment and to be familiar with course conditions.

Although many catalogs, advertisements and articles about bicycling depict riders engaged in extreme riding, this activity is extremely dangerous, increases your risk of injury or death, and increases the severity of any injury. Remember that the action depicted is being performed by professionals with many years of training and experience. Know your limits and always wear a helmet and other appropriate safety gear. Even with state-of-the-art protective safety gear, you could be seriously injured or killed when jumping, stunt riding, riding downhill at speed or in competition.

BPSA-OM9-2F

## 2(a) Maintenance

Before every ride, check the tires for excess wear, cracking, cuts or bruises. Spin each wheel slowly and look for cuts in the tread and cuts or bulges in the sidewall. Check the wheel rims for any signs of damage: dents, wobbles, bulges, cracks, deformation.

**⚠WARNING** Do not ride a bike with a damaged tire or rim. Riding a damaged tire or rim may lead to sudden tire deflation. Sudden tire deflation can cause loss of control, resulting in serious injury or death. Replace damaged tires and rims before riding the bike.

Before every ride, check the tire pressure of both tires. The tire's pressure rating is marked on the sidewall.

**⚠WARNING** Never inflate a tire beyond the maximum pressure, or ride a tire with less than the minimum pressure marked on the tire's sidewall. Exceeding the recommended maximum or minimum pressure may cause tire failure. Tire deflation can cause loss of control, resulting in serious injury or death.

The best and safest way to inflate a bicycle tire to the correct pressure is with a bicycle pump which has a built-in pressure gauge.



**⚠WARNING** There is a safety risk in using gas station air hoses or other air compressors. They are not made for bicycle tires. They move a large volume of air very rapidly, and will raise the pressure in your tire very rapidly, which could cause the tube to explode or the tire to seat improperly.

Tire pressure is given either as maximum pressure or as a pressure range. How a tire performs under different terrain or weather conditions depends largely on tire pressure. Inflating the tire to near its maximum recommended pressure gives the lowest rolling resistance; but also produces the harshest ride. High pressures work best on smooth, dry pavement.

Very low pressures, at the bottom of the recommended pressure range, give the best performance on smooth, slick terrain such as hard-packed clay, and on deep, loose surfaces such as deep, dry sand.

**⚠WARNING** Tire pressure that is too low for your weight and the riding conditions can cause a puncture of the tube by allowing the tire to deform sufficiently to pinch the inner tube between the rim and the riding surface, causing sudden tire deflation. Sudden tire deflation can cause loss of control,

resulting in serious injury or death. Replace damaged tires and rims before riding the bike.


 **CAUTION:** Pencil type automotive tire gauges can be inaccurate and should not be relied upon for consistent, accurate pressure readings. Instead, use a high quality digital or dial gauge. 

TI3-1108-1

## 2(b) Service and Repair

We strongly urge you to have any servicing or repair of your WTB components done by a qualified bicycle mechanic with the appropriate tools, knowledge and experience. If you believe that you are qualified to service, replace parts or repair a WTB component, please download, read and follow the Service Instructions at [wtb.com/manuals](http://wtb.com/manuals) for the component that you plan to repair. [CHANGED LANGUAGE, CHANGE PP #]

SE1-0608-2

 **WARNING** We highly recommend that you carry a spare inner tube when you ride your bike. Patching a tube or a tubeless tire is an emergency repair. If you do not apply the patch correctly or apply several patches, the patch can fail, resulting in possible tire failure, which could cause you to lose control and fall. Replace a patched tube as soon as possible.

BPSA-OM9-4G

## 2(c) Sealants

**Pre-puncture sealants** are most commonly liquids applied to a tubeless tire through the valve, at the time of fitting. Liquid tubeless tire sealants should only be used in conjunction with compatible TCS and ETRTO tubeless rims and tires, according to the sealant manufacturer's recommendations.

Puncture damage sometimes renders tires unrepairable and only a fully qualified professional specialist should be entrusted to determine if a safe repair is possible.

## 2(d) Maintenance, Storage, and Service Life

### 2(d)(1) Storage of Tires, Tubes and Rim Strips

#### 2(d)(1)(i) Introduction

In view of the harmful influence of temperature, humidity, and light, inside tire storage is essential. Whether fitted on rims or not, tires must be stored in clean conditions free from exposure to sunlight or strong artificial light, heat, ozone, (electrical machines) and hydrocarbons. If possible, mount on wheels and inflate to approximately 100 kilopascal (kPa) (1 Bar or 14.5 psi) Store mounted tire hanging vertically. Cover with opaque wheel bags.

#### 2(d)(1)(ii) Humidity

The store room should be cool, dry and moderately ventilated. Damp or wet conditions should be avoided. Care must be taken to ensure no condensation occurs. If tires are stored outdoors they should be covered. An opaque, waterproof tarpaulin is a good cover. Water or moisture should be kept out of the tire.

#### 2(d)(1)(iii) Light

There should be protection from sunlight and strong artificial light with a high ultra-violet content. Room lighting with ordinary incandescent lamps is preferable to fluorescent tubes.

#### 2(d)(1)(iv) Temperature

The storage temperature should be below 35°C (95°F) and preferably 25°C (77°F) at temperatures exceeding 50°C (122°F), particularly in the absence of proper rotation of stocks, certain forms of deterioration may be accelerated sufficiently to affect the ultimate service life. Direct contact with pipes and radiators must be avoided. The effects of low temperature are not permanently deleterious, but can cause the products to stiffen. Care should be taken therefore to avoid distorting them during handling at that temperature. When they are taken from low temperature storage for immediate use, their temperature should be raised to approximately 20°C throughout before they are put into service.

#### 2(d)(1)(v) Oxygen, Ozone, and Chemical Agents

As ozone is particularly harmful, storage rooms should not contain any equipment generating ozone such as fluorescent lighting, mercury vapor lamps, electrical machines or other equipment which may produce sparks or other electrical discharges. Combustion gases and vapors which may produce ozone via photo-chemical process should also be excluded. Solvents, fuels, lubricants, chemicals, acids, disinfectants and the

like should be kept in the store rooms. Rubber solutions should be stored in a separate room and the administrative regulations on the storage and handling of inflammable liquids must be observed.

#### **2(d)(1)(vi) Deformation**

Products should be stored in a relaxed condition free from tension, compression, or other deformation since these may cause cracking or permanent distortion.

#### **2(d)(1)(vii) Rotation of Stocks**

Storage time is to be minimized. Stocks should be issued from the stores in rotation so that those remaining in storage are of the latest manufacture or delivery.

#### **2(d)(1)(viii) Short-Term Storage**

For short-term storage (up to 4 weeks) tires can be stacked horizontally, one on top of another, on wooden gratings but the height of the stacks should not exceed 1.20m (4 ft) . After 4 weeks the tires should be restacked, reversing the order of the tires. When fitted on rims, tires should be stored inflated in an upright position on in a single layer on shelf racks.

#### **2(d)(1)(ix) Long-Term Storage**

For long term storage tires should be stored upright in a single layer on shelf racks with at least 10cm. clearance above the floor. To avoid deformation it is advisable to rotate them slightly once a month.

#### **2(d)(1)(x) Tubes**

Tire tubes should either be slightly inflated, dusted with talcum and placed in the tires, or stored in a deflated condition in their boxes in small stacks (max height 50 cm./ 19 inches) – on shelves with a smooth level bottom. Slatted palettes are not suitable since they might apply pressure at particular points. They should be stored under the same atmospheric conditions set forth above for tires.

### **2(d)(2) Tire Service Life**

**2(d)(2)(i)** The serviceability of a tire over time is a function of the storage conditions (temperature, humidity, position etc), Rubber compounds (hard or soft etc) and service conditions (load, speed, inflation pressure, terrain, road hazard or mounting damage, mounting issues, rim size, bead issues etc.) to which a tire is subjected throughout its life. Since these conditions vary widely, accurately predicting the serviceable life of a tire in advance is not possible. The older a tire, the greater the chance that it will need to be replaced due to service-related conditions found upon inspection.

**2(d)(2)(ii)** Tires should be removed from service for several different reasons, including tread worn down to minimum depth, signs of damage (cuts, cracks, bulges, etc.) or signs of abuse (under inflation, overloading, etc). That is why it is recommended to have all tires inspected regularly. The tire industry continues to support the consumer's role in the regular care and maintenance of their tires. A maintenance inspection by the consumer for the proper inflation pressure and tread wear should be made **BEFORE EVERY RIDE**. Additionally, the condition of a tire should be assessed regularly to determine if there are any tactile or visual signs that replacement is necessary.

**2(d)(2)(iii)** These recommendations and guidelines cannot ensure that the tires do not exhibit an undetectable internal condition that may render them to be unacceptable for continued service. Consumers are strongly encouraged to be cognizant of their tires' visual condition as well as any change in dynamic performance such as increased noise or vibration, either of which could be an indicator that the tires should be removed from service.

ETRT04-0309

## **3. Replacement Parts**

**⚠WARNING** Use only genuine WTB replacement parts and follow the Service Instructions at [wtb.com](http://wtb.com). Failure to do so could compromise the safety or performance of the component and result in component failure.

G14-0508-1

## **4. Warranty**

WTB products are warranted against defects in materials and workmanship. To read the full current warranty for your WTB product, see the Warranty section of our Web site, [wtb.com/warranty](http://wtb.com/warranty)

G15-0508-1

## **5. Making a warranty claim**

To make a warranty claim, see the Warranty section of our Web site, [wtb.com/warranty](http://wtb.com/warranty)

GI6-0508-1

## **6. Contact Information**

If you have any questions or problems with any WTB product, please contact WTB.

GI7-0508-1

## **7. Disclaimer**

The original English language version/meaning of these instructions supersedes all translations. WTB is not responsible for any errors in translation of these or any product instructions.

GI8-0508-1

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