



adaptrac.com

MEDIA KIT

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BENEFITS OF ADAPTRAC™

Allows the rider to:

- Deflate tire pressure for maximum traction on descents
- Inflate tire pressure to reduce rolling resistance while climbing
- Tune tire pressure to existing trail conditions (rocky vs. smooth)
- Deflate rear tire only for steep climbing in loose conditions
- Street ride to and from the trailhead at maximum pressure
- Rapid inflation of repaired tire after a puncture (no pumping)

WHY ADAPTRAC?

As mountain bike technology evolves the industry's focus remains on incremental improvements in frame design, suspension and shock technology. Most would agree however, that the most important variable in mountain bike performance is **tire pressure**. This is your only contact with the trail and thus determines the quality and flow of the ride. Until now riders have had to find a compromise, averaging the best overall tire pressure for the terrain. Unfortunately, one tire pressure for all conditions diminishes the benefits of other technological improvements. ADAPTRAC changes everything! Now riders are able to control this variable and adapt tire pressure to ever-changing traction requirements.

WHAT IS ADAPTRAC?

ADAPTRAC is a multi-component system composed of wheels with special patent pending hubs, a dual control valve and a CO2 power pack/regulator. Tire pressure can be raised or lowered while riding with a quick press of the finger on the handlebar control toggles. Actual tire pressure is displayed on analog gauges mounted on the handlebars. The system accepts 12x142mm rear and 15mm front axle standards, and wheels can be removed as you would normally. ADAPTRAC uses readily available, rechargeable CO2 tanks ranging from 4 to 20 ounces so you can carry only what you need. You can now tune your tire pressure to the trail – in seconds!

WILL ADAPTRAC WORK ON MY BIKE?

The ADAPTRAC system is compatible with bike frames using the newer 12x142mm axle (rear wheel) and 15mm axle (front wheel). Included in the system are replacement axles specific to your bike brand and model. All components can be installed by anyone reasonably handy with simple tools in less than half an hour. Alternatively, any bike shop can easily handle the install.

WE REQUEST YOUR FEEDBACK!

Please note that this product is still in the late developmental stage with improvements still to be made on several technical aspects. Your input is greatly appreciated and will assist us to this end. Please read the overview and in particular the Cautions to learn how the system operates and the cautions you must take in its use.

ADAPTRAC OVERVIEW

The **Adaptrac** system consists of three groups of components:

Front and rear hubs: The heart of the Adaptrac system. These special hubs contain two types of seals; static o-rings which seal around the 15mm and 12mm axles themselves and the dynamic seals that rotate around an inner mandrel with an extremely low coefficient of friction. These inner seals allow the transfer of CO2 to and from the rotating tire. Installation and removal of the wheel is accomplished as you would normally. Simply close the valve stem valve before removing the wheel and tire pressure is maintained.

Handlebar control: This is the integrated dual-toggle control valve that controls the inflation and deflation of the front and rear tires independently. The fill/purge valve directs compressed CO2 into and out of the tires and also allows the rider to monitor in real time, the inflation pressure via the stem mounted gauges.

Powerpack: This consists of the paintball style CO2 tank itself (2.5,3,4,5,7,9,12,&20oz capacities), a pressure regulator that regulates the inner tank pressure of approximately 900psi down to a manageable 150psi (approx), and a frame mounted bracket that mounts the power pack to the bicycle frame using the existing water bottle mounts and a stretch Velcro strap.

Performance: One should expect 10 complete cycles from 20 to 50psi with both tires (26" x 2.35"w) from one 12oz tank.

A simple projection: expect one complete cycle (20-50psi) with both tires per ounce of CO2. Only carry what you expect to use.

Inflation time: (20-50) psi approx 7 seconds.

Deflation time: (50-20) psi approx 20 seconds.

System weight: Adds about 690g (1.5lbs) to your bike weight, with an empty 9oz CO2 tank. One can adjust the tire pressure desired in increments as little as 1 psi - up or down. This is a more realistic scenario, as conditions change on the trail.

CAUTIONS

- 1) Shut off the CO2 valve attached to the regulator when not in use.
- 2) Do not allow the temperature of the CO2 tank to exceed **130 degrees F. Do not store in a hot car.** These are the same tanks used in paintball gaming and although they have proven to be safe in extreme environments, there are cautions that must be observed -especially by those not accustomed to their use. Most paintball gamers use small drink coolers to store their CO2 tanks in hot conditions. Light colored thermal jackets around the tank are also used to mitigate temperature issues.
- 3) **Do not deflate your tires below a safe pressure.** Damage to the rim, tire or both may occur. **Do not exceed the tire manufacturer's maximum inflation pressure** as well.
- 4) If you intend to store your bike for more than a few days, evacuate your tires of CO2 and inflate them with air as you would normally. CO2 has a unique habit of escaping through the tire walls in a couple of days.
- 5) As a result of CO2 reactions with sealants, the system is not yet tubeless ready, but chemists are working on this and a solution is within reach.

INVENTOR'S BACKGROUND

Brandt Weibezahn has always had great interest in all things mechanical, but especially in cycling mechanics and technology. Growing up in California in the 70's, he spent after-school time building bikes, go-karts and later, complete cars. During his college years, Brandt worked in industrial pneumatic assembly and sales. This early exposure to gas control systems may have been what sparked the idea of actively adjusting tire pressure while riding. After graduating from college Brandt had the opportunity to transition from sales to his true passion - designing and machining mechanical components. During the past three decades Brandt has co-founded three successful start-up companies, patented numerous consumer devices and sold the start-ups to larger mid-cap companies. During this time Brandt was involved in all phases of design, manufacturing, marketing and sales, thus honing his tool-making and business skills. While these companies provided commercial success, the products themselves were never ones that fulfilled any personal interests. Now, with more freedom to pursue projects of personal interest, Brandt has applied his considerable experience in product development to devise ways of enhancing cycling technology. His experience in the 80's in pneumatic control technology has proven useful in the development of the ADAPTRAC system today.

DEVELOPMENT HISTORY

Historically there has not been a way to create an air passage from the static bike frame to the center of the rotating wheel. The 9mm solid skewer shaft prevented this. The advent of the

hollow thru axle technology for mountain bikes changed this. There was now a ready-made path and thus the ADAPTRAC idea was born. Execution involved the application of a rotary joint, much like a hose reel uses, to convey air from the reel base to the rotating hose. However, when translating this concept to a rotating bicycle wheel one has also to consider the element of friction as a negative consequence. If any perceptible friction is present the product won't sell. Two years of R and D was spent on the development of an ultra low friction seal with a very low leakage rate, typically less than 1 psi per hour. The control valve is an ADAPTRAC creation as well. The independent action of this unique, lightweight fill/purge valve gives the rider tire pressure control.

All ADAPTRAC components were modeled in 3D Solidworks software, eliminating many iterations of development. This was also of benefit in the patent application process as concepts were easily and effectively conveyed to the patent council.

All ADAPTRAC components are CNC machined, anodized and laser etched in the USA. The product has undergone extensive testing both in the lab and on the trail.

ADAPTRAC Inc.

DATA SHEETS

[Control Valve](#)

[15mm Axle Front Hub](#)

[12 x 142mm Axle Rear Hub](#)

PRODUCT FEATURES

[CO2 Regulator](#)

[Control Valve and Gauges](#)

[Rear Hub](#)

[Front Hub](#)

HI-RES IMAGES

ADAPTRAC^(TM) is a trade mark of Adaptrac Inc.

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