2004 TECHNICAL INFORMATION

KONA BICYCLE COMPANY

Kona is based in Ferndale, Washington and Vancouver, BC. During the last few years, many riders and publications have discovered our local North Shore and Galbraith Mountain trails. While everybody thinks that they ride extreme trails, many would gape in disbelief down some of the near vertical ramps, ladders and root entangled mud slides that we ride on every day. This may not be the best riding, but it is very brutal on equipment and riders. It is in these conditions that we evaluate frame design and components. The feeling is, if it works here, it should work anywhere.

The Kona name comes from our fascination with volcanic things. We're located on the Northern edge of the volcanic Cascade Mountain Range, which runs down the Pacific Coast from Canada to Southern California. The Hawaiian Islands are a volcanic chain, so the Kona name connection came along naturally.

Kona was founded in 1988 by long-time riders and racers who had previously worked for other pioneering West Coast mountain bike companies. The original Kona bicycles were custom machines based on our own preference in high-performance off-road bikes. This tradition of making thoughtful, reliable, well-balanced bicycles is still the cornerstone of the Kona way.

FRAME DESIGN

Kona is constantly evaluating and adjusting our frame designs as rider demands and technology change. Rather than re-inventing the mountain bike every season based on the latest trend, we choose to fine-tune our proven designs. While the sloping top tube design that we pioneered over 14 years ago has been largely imitated, we have continued to improve function with significant and subtle refinements. Rather than rush into dual suspension by buying someone else's design, we took nearly two years to design, develop and test prototype after prototype until we settled on the Kona 4-bar walking beam system. Kona is an independent and rider oriented company that believes in doing things our own way.

KONA DUAL SUSPENSION DESIGN FEATURES

Kona Walking Beam 4-Bar Linkage

All Kona dual suspension bikes use a multi-pivot 4-bar walking beam suspension. This allows us more options to individually tune the suspension geometry for Cross-Country, Back-Country, Out of Bounds or Downhill -

**** Compact rear triangle for quick acceleration***
**** Pivot locations cancel pedaling input on suspension***
**** Cartridge bearing pivots for ultra plush ride***
**** High torsional rigidity for ride performance & longer bearing life***
**** Cold-forged swingarms, dropouts, yokes, headtubes & B/B'S for high strength & durability***
**** Custom-tuned rear shocks by Fox Racing Shox***

CROSS-COUNTRY DUAL SUSPENSION – Kikapu, Kikapu Deluxe, King Kikapu, King, A

Kona Cross-Country dual suspension bikes are suited for lightweight, cross-country trail performance. Frame without shock weighs less than 4.5 pounds. Lightweight components are used throughout. The latest in Fox suspension shocks, FLOAT, with Air Negative function is featured for high efficiency. Not recommended for downhill racing, dual slalom, tricks or stunts. ***Not designed for double clamp suspension forks - warranty is voided.***

* 3.4" of rear wheel travel
* Asymmetric chain stays w/cold forged dropouts, replaceable derailleur hangers & I.S. disc mounts
* Lightweight seat stays connect to cold forged swing arms
* Cartridge bearing pivots on seat tube/rocker pivot and bottom bracket yoke reduces stiction
* Rear triangle is standard for all sizes
* Spring Rates: 14"–450 lbs, 16"–500 lbs, 18"–550 lbs, 19"–600 lbs, 20"–650 lbs, 21"–700 lbs, 23" – 700lbs (Kikapu)

BACK COUNTRY DUAL SUSPENSION – Dawg Matic, Dawg, Dawg Dee-Lux, Dawg Primo

Kona Back Country dual suspension bikes are suited for long, demanding endurance style riding. Frame is designed for high performance and durability, using Kona Clump Light 7005 Aluminum tubing. ***Not designed for double clamp suspension forks - warranty is voided.***

* 4" of rear wheel travel
* Chain stays with cold forged dropouts connect to asymmetric chain stay yolks
* Replaceable derailleur hangers and I.S. disc mounts
* Rectangular seat stays connect to a cold-forged yolk and cold forged swing arms
* Custom drawn Kona Clump Light tubing is rectangular at head tube, adds strength & torsional rigidity
* Cartridge bearing pivots on seat tube/swing arm pivot, seat stay yoke and bottom bracket yoke

Out Of Bounds Dual Suspension – Coiler, Coiler Dee-Lux, Stinky, Stinky Dee-Lux, Stinky Primo, Stinky JR

Kona Out of Bounds dual suspension bikes are suited for extreme riding where steep sections predominate. Frame is designed for high strength and durability, using heavy-duty Kona Clump 7005 Aluminum tubing. Heavy-duty components and shocks are featured for maximum strength. Stinky series is double clamp compatible up to 170mm. Coiler series is double-clamp compatible up to 130mm.

* 4" of travel (Stinky JR)
* 5" of rear wheel travel (Coiler, Coiler Dee-Lux)
* 6" of rear wheel travel (Stinky)
* 7" of rear wheel travel (Stinky Dee-Lux, Stinky Primo)
* Main chain stay pivot is above horizontal hub axle plane close to B/B, minimizing pogo effects caused by changes in effective chain stay length. This eliminates pedaling forces from activating suspension
* Chain stays & cold forged dropouts connect to asymmetric chain stay yokes
* Replaceable derailleur hangers and I.S. disc mounts
* Rectangular seat stays connect to a cold-forged yoke and cold forged swing arms
* Custom drawn Kona Clump Light tubing is rectangular at head tube, adds strength & torsional rigidity
* Cartridge bearing pivots on seat tube/swing arm pivot, seat stay yoke and bottom bracket yoke
* Spring Rates: 13" (Stinky JR) – 300 lbs, 15"–450 lbs, 17"–500 lbs, 18"–550 lbs, 19"–600 lbs, 20"–650 lbs (Coiler, Coiler Dee-Lux, Stinky, Stinky Dee-Lux, Stinky Primo)

DOWNHILL BIKES - Stab, Stab Primo

Frames are designed for high strength and durability, using heavy-duty Kona Clump 7005 Aluminum tubing. Heavy-duty components and shocks are featured for maximum strength. Stab and Stab Primo are double-clamp compatible up to 170mm.

* 7" of rear wheel travel (Stab)
* 8 - 9" of rear wheel travel (Stab Primo)
* Adjustable 12mm rear axle allows 1" of wheelbase adjustment (Stab Primo)
* Swing arms, yokes, head tubes and bottom brackets are cold forged for rigidity and durability
* Kona custom butted 7005 aluminum tubing is DH specific
* Cartridge bearing pivots on seat tube/swing arm pivot, seat stay yoke and bottom bracket yoke
* Stab rear triangle is standard for all sizes
* Stab Primo rear triangle is standard for all sizes
* Spring rates are: 15" - 450 lbs., 17" - 550 lbs., 18" – 650 lbs (Stab)
* Spring rates are: Small - 500 lbs., Medium - 600 lbs., Long – 700 lbs (Stab Primo)

SERVICE NOTES FOR DUAL SUSPENSION

* While the 4-Bar linkage system is very torsionally rigid and requires less maintenance than a **single pivot** design bearings and bushings will wear out. Bushing kits and replacement rear stays are available from Kona Mountain Bikes for all suspension frames.

* Cartridge bearings give the suspension a smoother ride. These bearings also require more attention than do bushings. Contaminated bearings can rust & seize, and cause frame damage. Regularly inspect the bearings and make sure that they allow the linkage to move freely.

* Front suspension should be checked and serviced as per manufacturers Owners Manual.

SET-UP NOTES FOR SUSPENSION

FRONT SUSPENSION

For 2004 Kona models use a variety of suspension forks. Travel ranges from 2" to 8" depending on the model. For any suspension fork you have to adjust **sag** in order to get the best performance. Fork makers suggest that the sag measures 25% of the total travel. Sag for all suspension forks can be measured the following way:

1. Make sure that the stanchion protectors (dirt boots) won't interfere with your set-up. They can be removed or one can be zip strapped to the top of the stanchion tube right under the fork crown.

2. Install a zip strap around the stanchion and slide it down until it makes contact with the dust seal located at the top of the fork leg.

3. Sit on the bike with your feet on the pedals. Prop yourself against a wall. Do not bounce on the pedals or the saddle.

4. Carefully get off of the bike without bouncing or compressing the suspension.

5. Measure the distance between zip strap and the black seal to get the **sag**. Decrease sag by increasing the forks pre-load (turn knobs clockwise) or increasing the forks air pressure, increase sag by decreasing pre-load (turn knobs counter clockwise) or decreasing the forks pressure. Refer to chart below for recommended sag

REAR SUSPENSION

For 2004, Kona uses 8 different models of shocks on their rear suspension models. These are all made by FOX USA and include Vanilla, Vanilla R, Vanilla RC, Vanilla DH, FLOAT, FLOAT R, FLOAT RL and Float RL AVA. FLOAT shocks are air sprung and have negative air that creates a more active initial stroke. Vanilla shocks are coil-over style shocks. If the shock model ends with R, it signifies that the shock has external rebound adjustment. If the shock model ends with RC, it signifies that the shock has external rebound and compression adjustment. If the shock model ends with an RL it signifies that the shock has external rebound and lockout. For any rear suspension bike it is necessary to adjust **sag** in order to get the best performance. Set-up is done best when you have someone that can help you.

1. Refer to Suspension Set-Up chart to determine the eye to eye w/o rider measurement. This is the linear distance between the upper and lower bolts that attach the shock to the frame. Check to make sure that the bike has the correct length of shock.

2. Sit on the bike with your weight in a neutral position (centered). Have an assistant measure the distance between the upper and lower shock mounting bolts (eye to eye w/ rider sag). For a good starting point, you want to match the measurement listed in the eye to eye w/ rider sag column.

3. To increase the eye to eye measurement, add air pressure on Float shocks or tighten the pre-load spring on Vanilla shocks. To decrease the eye to eye measurement release air pressure (Float) or loosening the pre-load spring (Vanilla).

4. Repeat steps 2 - 3 until proper sag is achieved.

Rebound Adjustment (R)

Rebound is adjusted using the red clicker knob on the shock. The rebound adjuster controls the speed at which the shock returns after compression. The shock has 12 clicks offering a wide range of adjustment. Rebound should be set so that the shock will return as fast as possible without pushing the rider off of the saddle. During your first few rides experiment with the adjusters noting the setting and the ride. The proper setting is a personal preference and varies depending on rider weight, riding conditions and riding style.

Compression Adjustment (RC)

Compression is adjusted using the blue clicker knob on the shock. The compression adjuster controls the speed at which the shock compresses through the stroke of the shock. The shock offers a wide range of adjustment. Rebound should be set so that the shock will return as fast as possible without pushing the rider off of the saddle. During your first few rides experiment with the adjusters noting the setting and the ride.

Compression Adjustment (RL)

Rebound is adjusted using the red clicker knob on the shock. Compression is locked out using the blue lever on the shock.

FOX SHOCK TERMINOLOGY

TRAVEL: The total amount the shock compresses
SHOCK SAG: The amount the shock compresses with rider sitting on bike in normal riding position. This is usually 15% to 25% of total shock travel. Suggested rates are 15-25% (XC) and 25% for DH
COMPRESSION DAMPENING: This controls the rate at which the shock compresses
REBOUND DAMPENING: Rebound dampening controls the rate at which the shock will extend
PRELOAD: The initial force placed on a spring
SPRING RATE: The amount of force required to compress a spring one inch
FLOAT: Fox air spring technology
VANILLA: Fox coil spring technology

FOX PUMP INSTRUCTION

Thread pump onto air valve (approximately 4 turns). When pump is properly installed PSI will register on pump gauge. Stroke the pump a few cycles. The pressure should increase slowly. If pressure increases rapidly check to make sure that pump is properly fitted and tightened onto the Schraeder valve. If shock has no air pressure, the gauge will not register. Pump to desired PSI setting. When unthreading pump from air valve fitting, the sound of air loss is from the pump hose, NOT the shock itself.

NOTE: If you re-attach the pump, the hose will re-fill with air. This will result in a lower PSI registering of approximately 15 to 20 PSI on the gauge. Average setting is 100-300 PSI. DO NOT EXCEED 300 PSI. Replace shock valve cap before riding.

KONA CROSS-COUNTRY HARDTAIL DESIGN FEATURES

1) SLOPING TOP TUBE:

* Long top tube provides more room for correct positioning and free body movement
* Allows for more stand-over clearance, critical on dual suspension due to higher bottom bracket
* Vertically more compliant main frame absorbs more shock than frames with horizontal top tubes
* Puts rider in secure position for downhill sections

2) COMPACT REAR TRIANGLE:

* 16.75" chain stays provide perfect balance of stability and power transfer when out of the saddle
* Shorter seat stays have less deflection during braking and accelerate quicker than longer stays
* Kona custom butted stays make a rear triangle for the most efficient rear power transfer feasible

3) EXTENDED SEAT TUBE:

* Lower attachment of top tube has more stand-over, more compliant frame and compact rear triangle. Custom external butting provides additional material to strengthen extended portion.
* Kona uses seat clamps that provide worry free locking power. Clamps are easy to replace if ever damaged, and eliminate the welded seat clamps, which can distort the seat tube during fabrication

4) LONG HEADTUBE:

* Provides stronger support at top tube and down tube intersection for suspension forks
* Distributes shock better and prolongs headset bearing life
* Stronger steering position improves balance and gives more control in rough terrain

FRAME SPECIFICATIONS - CROSS-COUNTRY HARDTAILS

CROSS COUNTRY – Makena, Hula, Lana'i, Fire Mountain, Blast, Cinder Cone, Caldera, Kula, Kula Deluxe, Kula Primo, Explosif, Unit

All Kona hardtails share the same race proven geometry. Regardless of the price, ride quality is not compromised. Short chainstays offer excellent power transfer to the rear wheel. Sloping top tube and generous top tube lengths offer a perfect fit for both men and women.

* Makena (20" wheels) & Hula (24" wheels) offer lightweight and good performance for juvenile riders
* Lana'i and Fire Mountain are designed for 80mm travel forks and have intermediate geometry
* Blast / Cinder Cone / Caldera / Kula / Kula Deluxe & Kula Primo are designed for 100mm travel forks
* Explosif / Unit are designed for 80mm forks and have racing geometry
* Blast / Cinder Cone / Caldera / Kula / Kula Deluxe / Kula Primo / Explosif & Unit are disc compatible

CLYDESDALE – Hoss, Hoss Dee-Lux

Kona Clydesdale bike are designed for riders whose stature demands more from their bike. Built tough like an OB hardtail with cross country geometry.

* Forged bottom brackets
* Forged and machined head tubes
* Forged disc compatible dropouts with replaceable derailleur hangers

DIRT JUMP – Stuff JR, Shred, Scrap, Stuff, Roast, Cowan

Kona OB hardtails are designed for dirt jumping, technical single track, dual slalom or trials riding. Heavier construction allows the use of 4" and 5" double clamp forks. 2003 geometry offers even more stand-over clearance.

* Forged bottom brackets
* Forged and machined head tubes
* Forged disc compatible dropouts with replaceable derailleur hangers
* Forged chain stay yolks (Roast / John Cowan Jump)

Asphalt – Smoke, Dew, Dew Deluxe, Dr. Dew, Jake, Jake the Snake, Major Jake, Kona, Kona Deluxe, Konakona, BikeHotRod

A full range of bikes for road racing, transportation and cyclo-cross

* Smoke is a 26" commuter with slick tires, fenders and rack mounts
* BikeHotRod is Kona's chopper cruiser bike with 24" wheels and an internal 3 speed hub
* Dew's are 700C commuters
* Jakes are Kona's race proven cyclo cross bikes
* Kona, Kona Deluxe and Konakona (frame only) are road racing bikes
* Forged light-weight bottom brackets, head tubes and dropouts with replaceable derailleur hangers

FRAME WARRANTY

Kona frame warranty is outlined in detail in the Kona Owner's Manual. It does not cover failure due to accidents, stunt riding, racing, use of double clamp forks (except for DH & OB models), or commercial use. It covers the original owner's use for 4 years from the date of purchase (1 year for DH & OB models). Ownership must be registered with Kona to validate the warranty. Sympathy pricing in the USA & Canada in case of accidents and other failures is available to the original owner.

KONA COMPONENTS

Cromoly Bulge ISIS Crank
* 38.mm OD D-shaped B/B section for incredible strength
* 22mm OD O-shaped pedal section to resist twisting
* Thickwall 2.2mm cromoly tubing for awesome strength
* Kona Ring of Fire rockguard with 32/22T chainrings
* ISIS bottom bracket ready

Cromoly Bulge DH Crank
* 38.mm OD D-shaped B/B section for incredible strength
* 22mm OD O-shaped pedal section to resist twisting
* Thickwall 2.2mm cromoly tubing for awesome strength
* 5mm adaptor for 5-bolt, 110mm single chainring
* 4 Cartridge bottom bracket with fully adjustable chainline

JackShit Pedal
* Extra large 14mm cromoly axle for strength & durability
* Double concave shape to promote cupped feel
* Replaceable stainless steel screw-in pins
* Fully serviceable & replaceable cartridge bearings & bushings
* Extra large aluminum body with wide outside section

Ring of Fire Rockguard
* 5mm cold-forged Aluminum chainring guard
* Black anodized & CNC finish
* Fits up to 34T 4-bolt, 110mm chainrings
* 135 grams

DH Primo Handlebar
* 2014 PG Aluminum
* 680mm width, 38mm rise, 31.8mm clamp area
* 9 degree bend, 5 degree upsweep
* At 330 grams, our strongest handlebar

DH Handlebar
* T6-6061 Double-Butted Aluminum
* 660mm width, 38mm rise, 25.4mm clamp area
* 9 degree bend, 5 degree upsweep
* Proven & solid 365 grams

Control Stem
* 175 grams
* Cold-forged Aluminum for Kona Cross-Country
* 8 or 17 degree rise
* Lengths from 75 - 120mm

JackShit Grip
* Durable Kraton rubber
* 125 grams/pair
* KUS rated BH-32

Mooseknuckle Grip
* Durable Kraton rubber
* 90 grams/pair
* KUS rated BH-34

John Cowan Grip
* Durable Kraton rubber
* 92 grams/pair
* KUS rated BH-1

Cross-Country Saddle
* SDG Satellite design
* 277 grams with cromoly rails
* 270mm x 135mm
* Nailhead skid patches

Out of Bounds Saddle
* SDG Gordo design
* 465 grams with 8mm steel rails
* 290mm x 150mm
* Nailhead skid patches

Project Two Fork
*Triple-butted 1 1/8 inch cromoly blades & steer column
* 795 grams
* Investment cast dropouts

Jump Fork
* Straight gauge cromoly blades & steer column
* 5mm thick leading-edge dropouts
* Solid 1.3 kgs

For service, safety & maintenance information, please refer to the Kona Owner's Manual, which is provided with each bicycle. If you have further technical questions, contact us by e-mail at: **tech@konaworld.com**. For general & sales questions, contact: **joe@konaworld.com**. The Kona web site is located at: **http://www.konaworld.com.**