

t u r n e r b i k e s

TURNER BIKES
HANDMADE
SINCE 1994
TURNERBIKES.COM



Geometry, p.18

Bike Setup, pp.15-17

Index, pp.13-14

Flux, pp.11-12

Sultan, pp.09-10

5.Spot, pp.07-08

DHR, pp.05-06

Tech Info, pp.03-04

Intro, pp.01-02

TURNER BICYCLES

2011 Product Catalog

Turner Suspension Bicycles, inc
41615 Date St. #105, Murrieta, CA 92562
ph: 951.677-1711 • fx: 951.677-1373
http://www.turnerbikes.com

t u r n e r b i k e s

TURNER BIKES: WE LIVE, WE RIDE AND WE BUILD BIKES.

Building American made suspension mountain bikes since 1994, Turner Bikes has been at the forefront of suspension mountain bike technologies for one very important reason... because we ride what we build. Perhaps it is not an altruistic endeavor, but we are also not going to feed you with a loaded mission statement about how we are planning on saving the world one bike at a time.

We simply design and build suspension mountain bikes that are meant to be ridden hard, purely because we prefer riding our bikes over fixing them. The way we see it - a suspension mountain bike should be able to ride through the mud without destroying the pivot bearings, it should be able to effortlessly ride on the side of a rut and then not chatter over a series of roots down the trail, it should inspire confidence with speed and encourage you to pedal up that next climb without a second thought, and it should have a company behind it that is willing to back up every single claim with excellent customer service when you need it most. Performing and Enduring is what every Turner suspension mountain bike was born to do.

From day one, when David Turner found the ride quality of the suspension mountain bikes this industry had to offer lacking. It became his mission to push the abilities of the bike while other companies were choosing to streamline production in order to make suspension mountain bikes available to more consumers. David's dream had always been in creating the perfect ride without any compromise. Something he could be happy with every day of the year, rain or shine, Moab Utah or Wales UK, on a rut ridden descent or up a rocky climb. A balance of everything that is a suspension mountain bike that can only be proven by the ride. This is the dream and this is the bike.

Steve Gordenker, San Diego, California



Nick Tizer, Cockermouth, United Kingdom



Jake Weber, Eagle Mountain, Utah



Michael Brabander, Den Haag, Nederland



Joseph Pauly, Morzine, France



Stuart Wright, Richmond, United Kingdom



Steve Gordenker, San Diego, California



Brad Tymchuk, Edmonton, Canada

t u r n e r b i k e s

DW-LINK: A REAL WORLD DESIGN FOR REAL WORLD RIDERS

The dw-link suspension design is pushing the boundaries of how we look at suspension. It is the solution to an obvious but ignored problem; the rider.

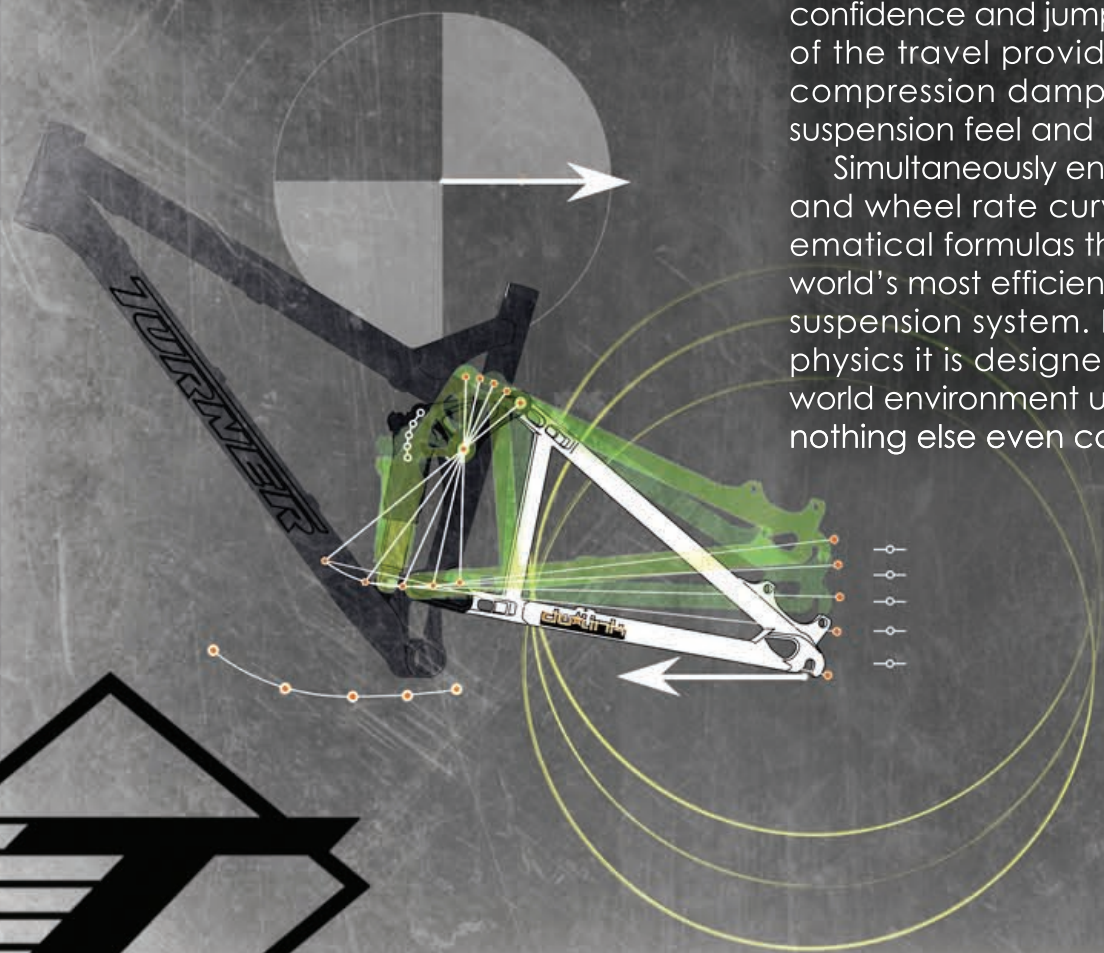
No matter how well a suspension design is mechanically devised through modern engineering and progressive materials, it can not make up for the sloppy and inconsistent nature of a human body mashing on the pedals. The forces the rider inflicts on the bike is enough to debunk any perfectly honed suspension design to the extent that a bandage is considered standard hardware, such as pedaling platform type dampers.

Newton's third law states that every action has an equal and opposite reaction. When a vehicle accelerates, the reaction is that its mass is transferred

rearward. The dw-link's patented position sensitive anti-squat perfectly balances this rearward mass transfer. Once the greatest force of impact, the rider, is removed from the system, the unrestricted suspension can now be developed to work with flawless results including increasing efficiency, traction, and bump sensitivity, while still eliminating pedal feedback.

Now as the dw-link suspension reacts to obstacles, its position sensitive axle path intelligently changes to meet the demands of the trail. In the beginning of the travel, its rearward profile gives incredible small bump absorption and traction on the climbs. In the middle of the travel, the dw-link axle path works with the front suspension to provide a balanced feel for amazing cornering confidence and jumping ability. The end of the travel provides an increase in compression damping for bottomless suspension feel and big hit absorption.

Simultaneously engineered anti-squat and wheel rate curves are the mathematical formulas that make dw-link the world's most efficient and traction-aiding suspension system. By using the laws of physics it is designed to work in a real world environment under a real life body, nothing else even compares.



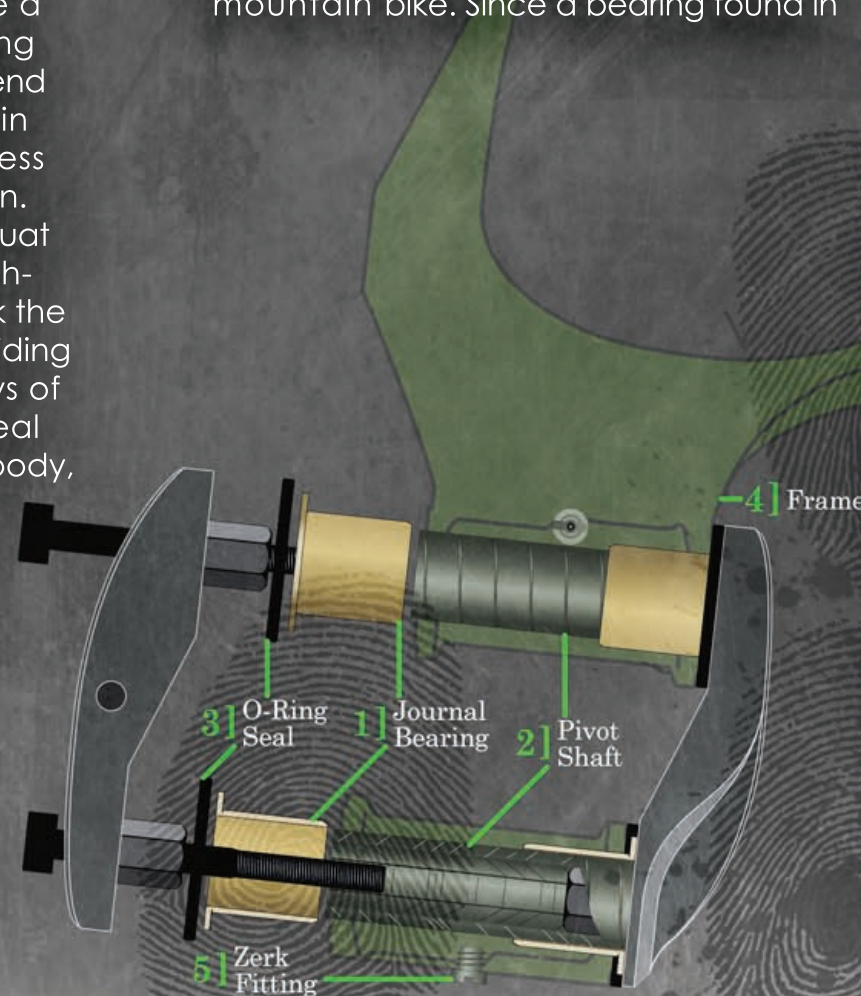
WHY USE JOURNAL BEARINGS? UNCOMPROMISED TRAIL PERFORMANCE:

The journal bearing design offers incredible strength and long life with very little maintenance. Standard bearings are designed with high-speed rotation in mind (skateboard wheels, drill motors etc.) The journal bearing we use has a purpose of holding a very tight tolerance along with carrying a load much greater than that produced by a bicycle frame. We feel that these two attributes are essential to a great riding xc/trail bike. Making it a dependable system even after countless miles of abuse.

The rear of our frames are often praised for how stiff they are laterally and how well they track through the roots, ruts, and rocks encountered on a xc/trail mountain bike. Since a bearing found in

a bike pivot never makes a full rotation, you rely on two maybe three of the balls in the cartridge to carry the entire load and pressures generated by the rider. Over time this is what creates that "crunchy" feel or "squeaky" sounds.

Standard bearings are also made of steel which will rust over time and is very susceptible to the environment. Our journal bearing system uses kevlar composites and hard anodized aluminum which will never rust and is lighter in weight as well. So long lasting, tight tolerance, less weight and incredible load bearing capabilities are why we have chosen to stick with journal bearings on our Flux, Sultan and 5.Spot xc/trail bikes.



The System Components:

1 The Kevlar Composite Journal Bearings we use can hardly be compared to their brass relatives. More durable, less friction & tighter tolerances make this new material transcend industry standards for bearing proficiency.

2 The Pivot Shaft is spiral grooved to aid in the distribution of lubricating grease throughout the entire bearing system, while the hard anodized alloy surface is extremely durable and will not corrode in even the harshest environments.

3 The Quad-Wall O-Ring Seal is designed with a square contour that in conjunction with the machined frame / bearing interface creates a tight seal to keep the grease in and the dirt & grime out.

4 Every frame is meticulously designed, intricately machined, and fastidiously prepared to interface with the quad-wall o-ring and journal bearings to make a hardwearing and precise device.

5 The threaded Zerk grease lubrication fittings can be found at every pivot location. The Zerk fittings allow for trouble-free maintenance and resolute performance for an unrivaled bearing service life.

t u r n e r b i k e s

Travel: 8.3 in [210mm]
 Headtube: 1.5in
 Seatpost: 30.9mm
 Guide: ISCG 05
 BB Shell: 83mm
 Axle: 12x150 thru axle
 Disc Brake: 160-203mm, post-mount
 Max Rear Tire: 2.5in
 Rec Fork Size: 180-203mm
 Rear Shock: 9.5in x 3 in, fox dhx rc4



In Downhill racing you only have the difference between a few seconds to make your day. This is no place for heavy, sluggish freeride sleds or half baked linkage curves; Only a purpose built downhill bike puts you within reach of the podium. Building upon 10 years of DHR geometry excellence this race bike will have you railing corners and gaining speed when others are feathering their brakes back in your dust.

Using the newest version of the World Championship proven dw-link, this bike will out accelerate every other design on the race course. With the patented anti-squat technology the rear suspension won't lock out under power, allowing the rear tire to hook up while you rip out of

Features //

- dw-link
- 8.3 Inches of Travel [210mm]
- FOX DHX RC4 Shock [9.5x3]
- 150x12 Thru Axle
- ISCG 05 Chain Guide
- Post-mount R. Disc Brake
- 1.5" Head Tube
- Threaded Zerk Lubrication Fittings
- New Compact Dropouts
- Butted & Tapered Stays- Lower swing weight
- Mass Centralized- Lower center of gravity

DHR

Downhill Race

Handmade since 94



t u r n e r b i k e s

Travel: 5.5 in [140mm]
 Headtube: 44mm
 Seatpost: 30.9mm
 Fr. Derailleur: 34.9mm, top pull/bottom swing
 BB Shell: 73mm
 Disc Brake: 160-185mm, post-mount
 Max Rear Tire: 2.35in
 Rec Fork Size: 140-160mm
 Rear Shock: 7.5in x 2in, fox rp23



This 140mm travel trail bike harmonizes the intuitive handling and incredible versatility of the older 5 Spot to a higher level. Turner revolutionized the trail bike class in 2003 and now, eight years later, Turner's updated trail bike continues to be the leader with world class Turner geometry and unparalleled quality.

Now riders can experience the incredible efficiency of dw-link rear suspension combined with Turners superior chassis integrity and award winning handling. Descending with the newest 5 Spot will give you the confidence to conquer almost any terrain with active braking and a perfectly engineered linkage ratio in the 140mm trail bike class.

Features //

- dw-link
- 5.5 Inches of Travel [140mm]
- FOX RP23 Shock [7.5x2]
- Journal Bearing System
- New Burrito Gusset
- Post-mount R. Disc Brake
- 44 Head Tube
- Threaded Zerk Lubrication Fittings
- Updated Trail Geometry

5 SPOT

Enduro Trail

Handmade since 94



t u r n e r b i k e s

Travel: 4.92 in [125mm]
 Headtube: 44mm
 Seatpost: 30.9mm
 Fr. Derailleur: 34.9mm, top pull/bottom swing
 BB Shell: 73mm
 Disc Brake: 160-185mm, post-mount
 Max Rear Tire: 2.35in
 Rec Fork Size: 120-140mm
 Rear Shock: 7.5in x 2in, fox rp23



With 29 inch wheels and 125mm of travel, the updated 29er from Turner is for everyone who loves the 29 inch wheel characteristics and now can utilize those big wheels with a trail bike class leading 125mm of dw-link travel. David Turner and Dave Weagle really did their homework on the Sultan.

Carefully blending the dynamics of rider positioning with the unique anti-squat needs of a 29 inch wheeled bike. Specific attention was paid to the relationship between bottom bracket height, chainstay length and dw-link placement resulting in very efficient power transfer through those big wheels, yet always fully active suspension that devours every obstacle mother earth has to lay down in front of it.

Features //

- dw-link
- 4.92 Inches of Travel [125mm]
- FOX RP23 Shock [7.5x2]
- Journal Bearing System
- New Burrito Gusset
- Post-mount R. Disc Brake
- 44 Head Tube
- Threaded Zerk Lubrication Fittings
- Updated 29er Trail Geometry

SULTAN

29er XC Trail

Handmade since 94



t u r n e r b i k e s

Travel: 4.14 in [105mm]
 Headtube: 1.125in
 Seatpost: 30.9mm
 Fr. Derailleur: 34.9mm, top pull/bottom swing
 BB Shell: 73mm
 Disc Brake: 160mm, post-mount
 Max Rear Tire: 2.2in
 Rec Fork Size: 100-120mm
 Rear Shock: 6.5in x 1.5in, fox rp23



The Flux is a 105mm travel cross country bike carrying the great tradition of Turner handling, uncompromised quality and now dw-link efficiency. For 2011 the bar has been raised again with cross country specific pivot and frame design. All of the dw-link locations have been optimized resulting in snappy acceleration with uninhibited suspension travel. A bike of this caliber has the perfect combination of ergonomic fit and suspension geometry that will inspire you to make this bike fly! The Flux's uncompromised design makes this bike perfect for hammering out epic adventures or breathing your lungs out on the race course.

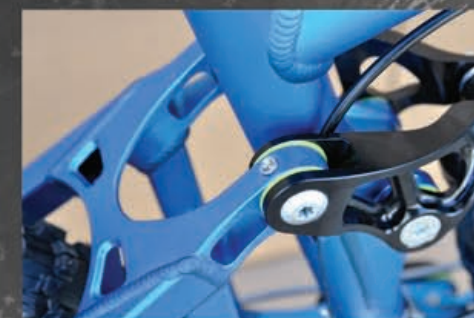
Features //

- dw-link
- 4.14 Inches of Travel [105mm]
- FOX RP23 Shock [6.5x1.5]
- Journal Bearing System
- New Burrito Gusset
- Post-mount R. Disc Brake
- Threaded Zerk Lubrication Fittings

FLUX

Cross Country

Handmade since 94



INDEX: EXTENDED DEFINITIONS AND EXPLANATIONS.

dw-link -

Simultaneously engineered anti-squat and wheel rate curves are the mathematical formulas that make dw-link the world's most efficient and traction-aiding suspension system.

The dw-link is the only design on the market that is able to control unwanted bob and still remain active in more gear combinations than any other design. Dave Weagle has been refining the mathematics of optimum pivot locations of the dw-link on everything from World Cup winning downhill bikes to short travel XC flyers.

Journal Bearings -

The use of journal bearings, or 'bushings' as some in the bike industry call them, is a perfect solution for the high shock load and abusive limited range of motion that bicycle suspensions put on the pivot system.

Our Journal Bearing system utilizes hard anodized aluminum pivot shafts and Kevlar composite bearings. Since it is not made of steel this system is not capable of rusting and has substantial weight savings over its cartridge style counterparts. Then with the zerk lubrication fittings found at every pivot location, our Journal bearing system has an unrivaled service life, even in the harshest of environments.

The design of our Journal Bearing System is built into the frame to work seamlessly with the suspension. By not using an off-the-shelf bearing we are able make use of the entire width of the pivot area.

This eliminates any torsional flex in the back end and is why our bikes have legendary handling & stability.

Burrito vs Taco -

Moving into 2011 we created a custom drawn, differentially dimensioned tube to replace the taco shell style seat tube/ top tube gusset of the past. This design will spread the load across the top tube and seat tube more efficiently with its convex top surface. This is due to the shape and varying wall thickness of the burrito to control how the stress is dispersed through the frame.

44 Headtube -

This head tube is perfectly sized to work with a tapered steerer fork and the new 44XX lower head set bearing from Cane Creek. Stiffness gains of up to 20% can be had with a tapered steerer fork. With the upper bearing bore now at 44mm, the rider has the ability to run a ZeroStack headset on top. This setup will lower the hand position up to 10mm for more control on steep climbs and fast descents, where front end traction is enhanced through transferring the riders weight over the handle bar. Our 'just right' head tube design allows for the biggest bearing size on the bottom for a long head set life.

Improved Cable Routing -

In order to make sure that no one had unwanted contact with the bike we created a special machined part to pass the rear derailleur cable directly through the tube on the right side of the rear end.

Anodized Frame Finish -

Due to the tough nature of anodizing and the permanence of lazer etching it fits well with the extremely long life riders get out of their Turner Bikes.

Threaded Zerk Grease Fittings -

Zerks are stainless steel, ultra compact, custom made proprietary fittings to aide in the lubrication and maintenance of all the pivots on a Turner frame. It only makes sense that a machine that is used in the rough and many times sees wet conditions, that it would have a way to push the grit and water out easily and on regular basis. This is one of the key features that makes the ownership of a Turner cost effective over the long haul.

Post-mount Disc Brakes -

The biggest reason why Turner Bikes chose to pioneer the use of post-mount rear brake mounting was to eliminate the adapter. All disc brake manufacturers and all new fork designs had already gone to the post-mount calipers due to the ease of set up and the increased rigidity provided. With the decision to create the post-mount rear dropout we eliminated the adapter and two bolts that were doing nothing but adding weight and potential flex.

Finite Element Analysis (FEA) -

A mathematical technique for analyzing stress points, which breaks down a physical structure into substructures called 'finite elements'. These finite elements and their interrelationships are then converted into equation form and solved mathematically.

We use an FEA computer program to aide in the design of every Turner frame. This helps us maximize the strength and minimize the weight to insure a perfect balance is achieved as form follows function is the convention we adhere by, been defined.

Mass Centralization -

Our DHR has been designed to carry the majority of its weight as low and close to the bottom bracket as possible. This includes lighter butted & tapered stays, compact dropouts, post-mount brakes, and so on to reduce the weight at the extremities of the frame.

This is done to accomplish two main goals. One is to build a super rigid chassis to provide lightning quick trail response. The other is to keep the bulk of the frame weight centered and as low as possible to improve stability and handling. The result is a down hill frame design that is even faster and more agile than any of its predecessors. Railing corners and floating over rock gardens has never been this effortless.

Butted & Tapered Stays -

The chain and seat stays on the new DHR are Butted and Tapered. This feature reduces the swing weight of the rear end for improved handling and enhanced shock performance.

Enduro Max-type Bearings -

With the tight space constraints to allow the dw-link to behave optimal, remain fully active and have incredible lateral rigidity under load, the DHR uses enduro max-type bearings since they have been proven to work in a smaller compact design. Then with the aide of triple seals and Zerk lubrication fittings, this system raises the bar for world cup dh racing potential. The design of the new DHR has been refined and tuned to deliver the best handling feel and shock performance imaginable.

SERVICE GUIDE: KNOW YOUR TURNER

The Basics -

Check Your Tire Pressure. Tire Pressure plays a very important role in how your bike will ride and perform. Traction is Everything!

Tighten Your Quick Releases. Simple Yes, but with grave consequences if gone unchecked.

Lube Your Chain. Duh Right? Well you would not believe how many squeaky pivots turn out to be dry chains.

Lubing Zerk Fittings -

Your frame has five (5) Zerk fitting locations which should be lubed every 3-6 months in normal-dry conditions and every 10-20 hours in wet conditions.

When Lubing use a bent tip needle grease gun and inject just enough grease to pressurize the system.

Checking Pivot Bolts -

Every 6 months, you can use a Torque Wrench to check each of the pivot bolts. DO NOT Perform this check unless you have and know how to use a Torque Wrench. Continued overtightening of the pivot bolts may result in pivot bolt failure and injury, which will NOT be covered under any warranty.



Proper Shock Setup -

To properly set-up your new Turner's Fox RP23 air shock, first find your 'Ready to ride weight'.

Your 'Ready to ride weight' is how much you weigh with all of your riding gear on, yes that includes your helmet, water and spare tube as well. Just how you normally look while riding. As a starting point, your 5.Spot's rear shock will run about 30lbs of pressure below your 'Ready to ride weight'. So if your riding weight is 180lbs then you want to put 150lbs of pressure in your shock.

Not riding a 5.Spot? Then check the chart to the right for the appropriate PSI Adjustment for your Turner model.

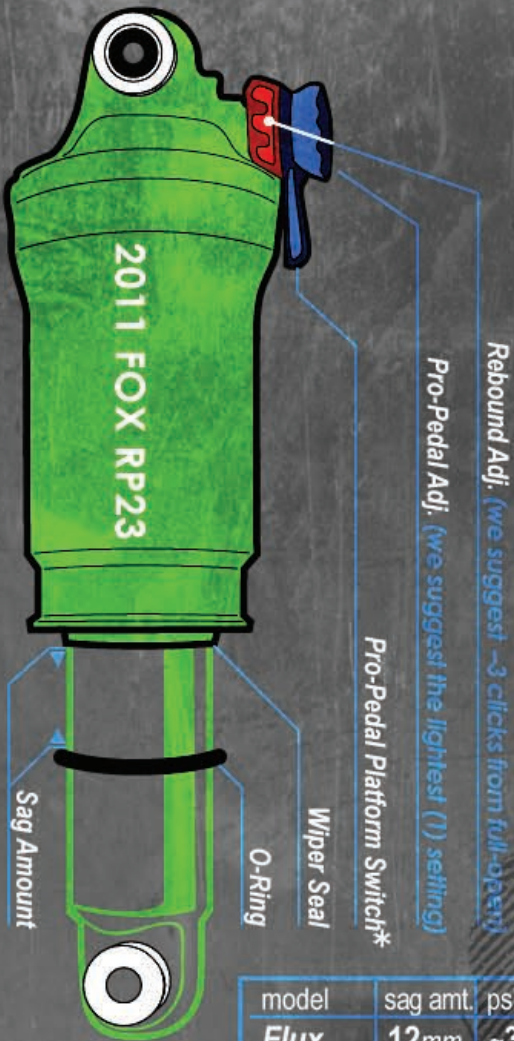
Once the pressure is adjusted, push the shock o-ring against the wiper seal of the shock.

Find a stable wall to lean on, then mount your bike with all of your riding gear on. It may help to lower your seat slightly so you can easily reach the ground while sitting. Then bounce a little, just enough to engage the shocks travel.

Carefully reach down and slide the shocks o-ring back up against the wiper seal and smoothly step off of your bike. Trying Not to engage the shocks travel when dismounting.

Then measure the distance between the shocks o-ring and wiper seal. On your 5.Spot, this should measure 15mm when the proper sag is acheived. Again, check the chart to the right for the appropriate Sag Amount for your Turner model.

Next add or remove 5psi and re-check the measurement of sag using the previous steps until the proper amount of sag is accurately achieved.



model	sag amt.	psi adj.	Eye to Eye and Stroke length
Flux	12mm	~30lbs	6.5inx1.5in / 165mmx38mm
Sultan	15mm	~40lbs	7.5inx2in / 190.5mmx50.8mm
5.Spot	15mm	~30lbs	7.5inx2in / 190.5mmx50.8mm
All use 21.8mm wide reducers with 6mm hardware			

Warranty Information -

Turner Suspension Bicycles will repair or replace, at their sole discretion, the frame, or frame component if found to be defective. This Warranty will apply for a period of Two (2) years after the original date of purchase and is fully transferable to subsequent owners as long as the original purchase receipt is supplied at the time of the warranty claim.

For More Resources -

To register your Turner Bike;
www.turnerbikes.com/011/warranty
 For FAQs on Turner Bikes;
www.turnerbikes.com/011/faqs.html
 For Turner Specific small-parts & softgoods;
www.turnerbikes.com/catalog
 For other Turner Specific questions;
tech@turnerbikes.com
 For Turner Warranty questions;
warranty@turnerbikes.com
 For any shock related information/questions;
www.foxracingshox.com

Handmade since 94

* Our shocks come custom tuned from Fox Shox for our bikes specifically, which has a very low compression and low rebound setting. This is crucial for the dw-link to perform to its fullest. We suggest to not use the Pro-Pedal feature on your shock, or at the minimum only use the lightest (1) setting. With the dw-link, this feature should only be used on very

smooth trails or while commuting on pavement to the trail head.

† The amount of sag effects the BB height & handling with no loss of dw-link performance.

Try +/- 2mm of sag to custom tune your Turner ride. + = stability / - = nimbleness.

SERVICE GUIDE: KNOW YOUR TURNER ...CONTINUED

DHR, 2011 Fox DHX RC4 Setup

These settings can be used as a starting point.

- BV Pressure:** 140psi
- HSC:** -10 clicks out
- LSC:** -12 clicks out

Spring Rates -

~170lb rider: 350 spring •REB: -7 clicks out
~200lb rider: 400 spring •REB: -5 clicks out

As a general rule, you should have 30-33% of your shocks travel devoted to sag. The faster you ride, the more energy you are putting into the bike. Being honest with your assessment of yourself as a rider is the first step to getting your bike set up for you.

Please Note: When adjusting preload, check with your shock manufacturers specifications for max preload since the coil may 'bottom-out' before the stroke of the shock.

To Increase Early Travel Support, decrease spring rate and add preload.

To Increase End Travel Support, you can either add BV pressure or increase spring rate and decrease preload.

BOOST VOLUME (via bottom-out control): I do not recommend changing the boost volume to anything lower than full open, as the dw-link DHR has ramp built into its leverage ratio.

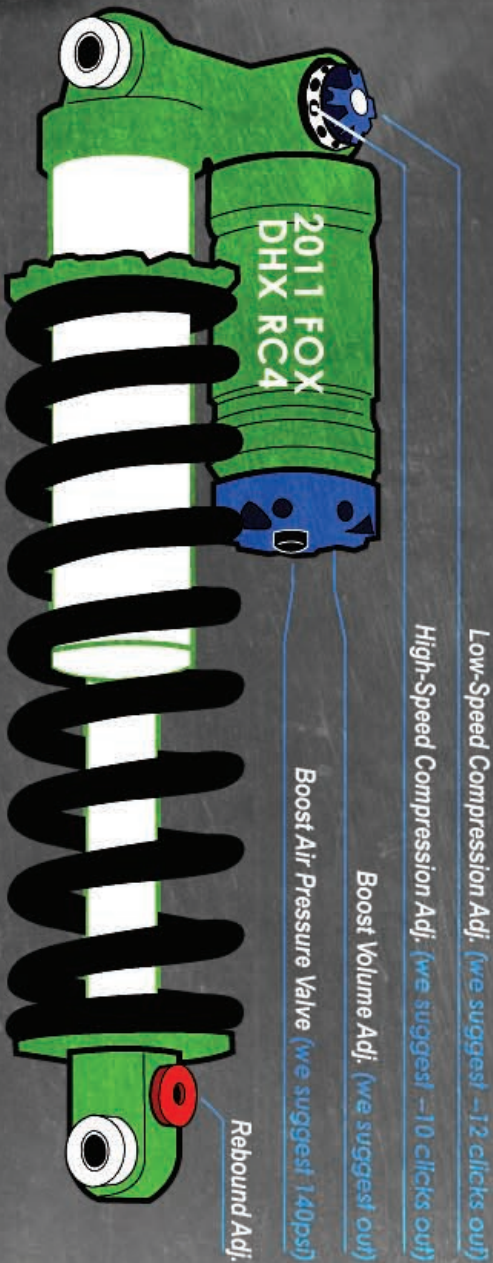
HSC:

These settings were based on a rocky East Coast test track. If you are on a smoother track with bermed corners and less square edges, you can increase HSC. If you are riding at World Cup speeds, you can increase HSC. If you feel the bike slowing

down through rocky sections, you may be running too much HSC. If a 'Plusher' ride is desired, run less HSC.

LSC:

Unless you pedal like a gorilla, really getting your hips into the action, you shouldn't need any additional LSC.

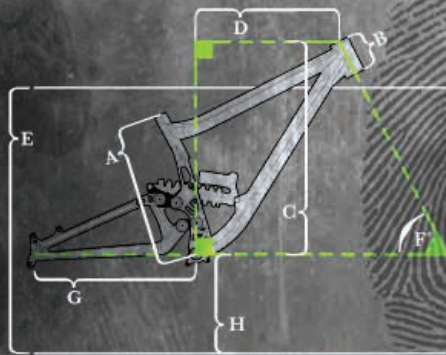


GEOMETRY: GO TO WWW.TURNERBIKES.COM FOR MORE INFO

DHR

{ Based on a 570mm axle to crown fork with a 26"x2.5" tire, acceptable fork travel range: 180-203mm }

	sm	md	lg	xl	all		
a: seat tube	14.5	15.6	16.6	16.6	f: head angle	63°	
b: head tube	3.5	4.0	4.3	4.7	seat angle	N/A	
c: stack	22.6	22.9	23.3	23.6	g: chainstay	17.4	
d: reach	14.4	15.4	16.1	16.7	h: bb height	13.5	
e: standover	28.5	29.9	30.7	30.9	bb shell	83mm	
wheelbase	45.6	46.75	47.25	48.5	seat post	30.9mm	
rec'd rider size	< 5'6	5'6-5'10	5'10-6'1	6'1+	head tube	1.5	



ESPOT

{ Based on a 525mm axle to crown fork with a 26"x2.3" tire, acceptable fork travel range: 140-160mm }

	xs	sm	md	lg	xl	2xl	all	
a: virtual tt	21.5	22.5	23.0	23.6	24.5	25.3	g: head angle	67.7°
b: seat tube	13.0	15.0	17.0	19.0	21.0	23.0	h: seat angle	73.0°
c: head tube	3.7	3.7	4.5	5.3	6.1	6.8	i: chainstay	16.9
d: stack	22.3	22.3	23.1	23.8	24.6	25.7	j: bb height	13.5
e: reach	14.4	15.3	15.6	16.0	16.7	17.3	bb shell	73mm
f: standover	28.4	28.9	30.2	31.0	32.0	33.0	seat post	30.9mm
rec'd rider size	4'11-5'2	5'2-5'6	5'6-5'10	5'10-6'1	6'1-6'4	6'4+	head tube	44mm

SULTAN

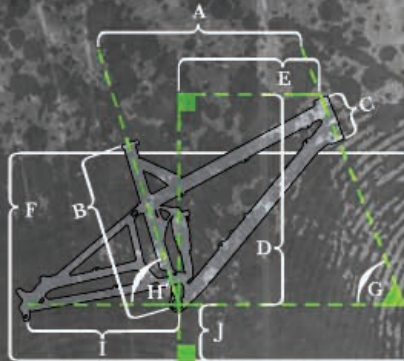
{ Based on a 525mm axle to crown fork with a 29"x2.2" tire, acceptable fork travel range: 120-140mm }

	md	lg	xl	2xl	all	
a: virtual tt	23.0	23.6	24.5	25.3	g: head angle	69.5°
b: seat tube	17.0	19.0	21.0	23.0	h: seat angle	73°
c: head tube	3.7	4.5	5.3	6.1	i: chainstay	18.2
d: stack	24.1	24.7	25.6	26.3	j: bb height	13.4
e: reach	16.1	16.3	17.2	17.6	bb shell	73mm
f: standover	31.0	31.5	33.0	34.0	seat post	30.9mm
rec'd rider size	5'6-5'10	5'10-6'1	6'1-6'4	6'4+	head tube	44mm

FLUX

{ Based on a 490mm axle to crown fork with a 26"x2.1" tire, acceptable fork travel range: 100-120mm }

	xs	sm	md	lg	xl	all	
a: virtual tt	21.7	22.6	23.3	23.9	24.5	g: head angle	70.0°
b: seat tube	13.0	15.0	17.0	19.0	21.0	h: seat angle	73.5°
c: head tube	3.5	4.0	4.3	5.3	6.3	i: chainstay	16.7
d: stack	21.4	21.9	22.2	23.1	24.1	j: bb height	12.9
e: reach	15.2	16.0	16.6	16.9	17.2	bb shell	73mm
f: standover	28.0	29.0	30.0	31.0	32.0	seat post	30.9mm
rec'd rider size	4'11-5'2	5'2-5'6	5'6-5'10	5'10-6'1	6'1-6'4	head tube	1.125



Attention! Actung! Peligro!

No two companies measure and label the sizing of their bikes the same way. Use the recommended rider height on the geometry chart to correctly size your new Turner Bike. Do not assume that any other company's sizing is anywhere close to another, many times when comparing brands you will find a full size differentiation when comparing specifications.