

CONGRATULATIONS!

You have just purchased a World Cup bred, state-of-the-art, high performance bicycle frame. No expense has been spared in the design, construction, materials and workmanship of this product.

Please read the warranty form and return it to Ellsworth Handcrafted Bicycles, Inc. within 30 days to register your new frame. We take great pride in the design and execution of our products, and stand behind them with an industry leading, Limited Lifetime Warranty to the original purchaser. As the warranty states it is for design or manufacturing defects. It is crucial to understand the proper set up and maintenance of your new bicycle frame and its equipment. This is the owner's obligation and responsibility in order to insure the performance and durability this bike was designed to provide. Failure to follow proper set up could jeopardize your warranty. Please take the time to read through this manual thoroughly and understand the information within. With proper setup and maintenance, your new Ellsworth frame will bring you a lifetime of riding enjoyment.

WARNING! Bicycling is inherently dangerous. Proper equipment setup is crucial in helping to prevent equipment failure and resulting injury or death. Use of this bicycle *does not* bestow any of the following: superhuman powers, ability to perform insane aerial stunts, anti-gravity qualities, or absolution from a lack of COMMON SENSE! Always wear protective gear, and obey all traffic laws, street and trail signage.

REAR SHOCK SET UP

Rear shock setup on our full suspension models is crucial for maximum riding performance. We manufacture the world's most efficient suspension designs, which may provide you with efficient pedaling regardless of sag or laden settings. However, incorrect setup can result in loss of performance but most importantly could cause damage to the frame. The shock should be set up to bottom less than 10% of the time, and should never bottom very hard. If after following these set-up instructions, you find you are still frequently bottoming your suspension, please call customer service. It is likely that your shock is not functioning properly, or you are too heavy for the spring or suspension medium (air shock) that you are currently using.

Measuring sag

Sag improves the characteristics of the suspension. Ellsworth uses fully-active suspension designs, and as such, they are designed to have some sag in the system. XC riders may want less, and competition DH racers may want more. Big drop freeriders will need to set the bike up to take the hit, rather than ride perfectly up to that hit. In other words, set up is completely dependant on how and what you ride. For all Ellsworth frames, recommended sag is 15 – 40% of the total travel at the shock.

e.g., The Joker has a stroke of 2" at the shock, 25% of 2" is 0.5". Therefore the sag should be 0.5". This is easily measured using a zip-tie around the shock shaft, or a dab of grease on the shock shaft, and carefully mounting the bike, so as not to put excessive motion to the shock with your body weight. With the correct setup, the distance between the shock body and the zip-tie will be 0.5" in this example. You can add preload (reducing the amount of sag) by either adding air to the shock, or tightening the spring collar, and the reverse to increase the amount of sag by decreasing the amount of preload. It is possible to get the correct sag with a spring that is too heavy or too light. After you have the sag correct, carefully monitor your suspension's function to determine its "high velocity" or "dynamic" performance. It should not bottom while riding with any significant frequency. If you're doing big drops or "hucking" the bike to a flat landing, you will need to forget all about the sag or static performance of your shock, and focus entirely on preventing it from bottoming when you're hucking it off your garage roof to the flat concrete driveway. This is an extreme example, but important for the owner to conceptualize so that the suspension setup and its importance in performance and the bike's durability is understood. If you are unsure about this set up, please find a qualified dealer and have them familiarize you with the concepts, so you can give good feedback in tuning the suspension to your riding style.

Setting air pressure

Air pressure will depend on which air shock you have. Start with settings that yield 15-20% static sag, as discussed above. Adjustments should be made from there. Be very cautious if your air settings are less or equal to your body weight. Very few manufacturers have sufficient air volume to allow such low relative pressures, regardless of leverage ratio on the bike. Again, if you are unsure about the set up of an air shock, please seek the assistance and tutelage of a qualified Ellsworth Dealer. You can locate an Ellsworth Dealer on our website, www.ellsworthbikes.com, or by calling customer service at 760-788-7500.

Note for the non-little people: We *HIGHLY* recommend that riders over 180lbs use a coil-over rear shock. An air shock will not adequately support heavier riders, due to the compressibility of the medium of air, accurate velocity damping leverage ratios of our suspension designs, *no matter what the shock manufacturer may state*. Failure to recognize this, it is possible to prematurely fatigue the frame via excessive shock bottoming, thus voiding the warranty.

REAR SHOCK COMPATIBILITY & APPLICATION

Amount of travel	Isis	Truth	Joker	Id	Dare
3" or 7.5-80mm	6.0 x 1.25	6.0 x 1.25	-	-	-
4" or 100mm	6.5 x 1.5	6.5 x 1.5	6.5 x 1.5	-	-
5" or 125mm	-	-	-	7.875 x 2.0	-
6" or 150mm	-	-	7.5 x 2.0	7.875 x 2.25	-
8" or 200mm	-	-	-	-	7.875 x 2.25

ANY other shock, regardless of the manufacturer, that is *not* specified by each model will void the warranty. The shock manufacturer is responsible for the warranty of any shock sold on our frame, or any shock they represent to be applicable on our frame. Your lifetime warranty does not cover frame damage due to shock failure, fit, misuse, or misapplication. Bike shocks provide two functions. First they suspend the rider with the spring, and second they dampen the velocity and energy of an impact to the rear wheel. Serious injury can result if your shock is not functioning correctly or is not set up properly to provide these two functions.

FORK LENGTH & TRAVEL RECOMMENDATIONS

Model	Recommended fork travel	Max fork length (measured axle to crown)
Sub 22	<80mm (less than 3.5")	<445mm (less than 17.5")
Truth	<80-100mm (3 to 4")	<470mm (less than 18.5")
Isis	80-125mm (3 to 5")	<508mm (less than 20")
Joker	100-180mm (3 to 7")	No maximum limitations necessary
Id	125-150mm (4 to 6")	<600mm (less than 23.6")
Dare	>125mm (more than 5")	No maximum limitations necessary
Specialist	<125mm (less than 5")	<600mm (less than 23.6")

OTHER HELPFUL HINTS

Basic Maintenance

All 2002 full suspension frames use the highest quality max pak, full compliment sealed cartridge bearings, which require very little, or no maintenance. It is not recommended that you remove the plastic seal on the bearing. They are removable to clean and lubricate if necessary, this however is unlikely to be necessary with any frequency. Routinely inspect the frame and components for wear.

Torque Specs.

On full suspension models, torque specs for the main pivot bolt(s) (12mm diameter, 8mm hex head) is 20 ft/lbs. Rear pivots on 4-bar linkage frames (8mm bolts) is 15 ft/lbs.

Seat Post Insertion

It is recommended that there be at least 4", or 10cm of seat post insertion into the frame. The use of layback seat posts is *strongly* discouraged. Failure to maintain proper seat post insertion will void your warranty, and the damage it may cause could lead to serious injury.

Disc Brake Mounts

All Ellsworth mountain bike frames are equipped with International Standard disc brake mounts. There are no compatibility issues with brake manufacturers who comply with the International Standard. 74mm mount brakes will require an adapter that may need to be modified. Modification of any kind to the frame will void the warranty. Check with the manufacturer of disk brakes to insure the proper combination of caliper and adapter for your bike.

If you have any further questions about your frame, its setup, maintenance, features or warranty, please feel free to contact our Customer Service Department weekdays, 8:30am to 5:00pm PST.

ENJOY THE RIDE!

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HANDCRAFTED BICYCLES, INC.

2002 OWNER'S MANUAL