1994 Retail Technical Manual

TREK USA

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Introduction

Why A Trek?

Trek USA has made a concerted effort to let you know more about Trek to help you become part of the Trek team. As you read through the 1994 Trek catalog and watch the Trek video, you will learn a lot of general information about Trek USA. However, as you read this technical manual there is even more information.

There are a lot of pretty paint jobs and flashy parts on many different brands of bikes these days. There are more claims about superior design by rocket scientists or racers. How do you, as a bike shop professional, sort through these claims? And how does the customer, with a limited understanding of bicycles, make an intelligent purchasing decision?

We challenge you to think about what goes into every Trek bike in your store, and what Trek will mean to your customers over the years. Rather than make exaggerated claims about mystical properties of our bikes, we present you with obvious differences.

We were founded on high expectations.

The original premise of Trek was to build a bicycle frame that would rival the performance of those being hand built in Europe, but to do so at an economical price by adding American technology to the manufacturing process. We set a pretty lofty goal, and those first Trek buyers in 1976 expected us to reach that goal with every frame we produced. Word of our success spread, and we produced more models. To better control the quality and value of our bikes, we began to manufacture our own rims. Now those founding expectations are placed on a whole array of cycling gear including tires, clothes, helmets, and System components.

At Trek, we make bikes.

We don't just 'design' bikes, we make bikes, and lots of them. Over 200,000 last year alone. We have our own factory in Wisconsin which lets us choose how we make those bikes. We're not limited by the manufacturing techniques offered by someone else's factory.

We've learned a lot about building bikes.

Yes, we do import some Trek bikes, but we can apply the experience gained by building over a million bikes here in the U.S., which allows us to deliver the best bicycles possible from these other factories.

Its surprising what lessons have come from building all those bikes in Wisconsin.

We continue to test, and to learn. We have one engineer who's sole function is to perform exacting, scientific tests so that we can deliver reliable bikes. And we test more than just our bikes. We test the parts that are spec'd on our bikes, even breaking expensive titanium stems to make sure your customer can ride safely. We test brake cables, and handlebars. We break rims, seatposts, and even test paint durability with our "gravelometer".

Our engineers do more than just design bikes.

We have a large engineering staff, but half of them don't design bikes at all. They design better ways to make bikes. When you buy a Trek, these manufacturing engineers are the reason it will be built more accurately, and last longer. Not only that, our engineers have found ways to do this for a lower cost, so you can sell your customer a better bike for less money.

We're serious about the bike business.

A lot of companies in the bike business today consist basically of a sales office and a warehouse. We run a 130,000 square foot bicycle factory in Waterloo, Wisconsin with 600 employees. We've invested heavily in technology, like the three year development of our OCLV process. Trek research and development has brought a lot of technology to a lower price your customers can afford.

We build every bike like it was our own.

Our love of bikes got us to where we are today. Each model is designed and built as though a friend, or even ourselves, were going to ride it. When a person at Trek buys a bike, its not a special design or a one-of-a-kind. Its the same as the one you may be selling a customer today.

Our lifetime warranty is just that.

We're committed to building bikes that last a lifetime. Even with the lightest production bikes in the world, our testing and research shows that your customer can totally rely on their Trek. We state it in writing. And we support it with the best customer service team in the industry.

Trek Geometry: Bike Design

Head Angle

The angle formed by the intersection of the centerline of the head tube and a horizontal plane. This angle effects steering quickness, and the steeper the head angle, usually the quicker the steering.

Seat Angle

The angle formed by the intersection of the centerline of the seat tube and a horizontal plane. This angle effects the fit of the bike, particularly addressing the length of the femur (upper leg bone) by changing the rider's position over the crankset. Usually, smaller bikes will have steeper seat tubes, while larger bikes will have more relaxed seat angles.

Seat Tube Length

The distance from the center of the bottom bracket to the top of the seat tube, although alternate methods may measure to the center of the top tube or top of the top tube. This relates to overall leg length, but with the advent of super-long seatposts, is less meaningful than it once was. A new term, "effective seat tube length", has no practical value as it is normal to move the seat up or down to accommodate the rider.

Top Tube Length

The distance from the junction of the centerlines of the head tube and top tube to the junction of the centerlines of the seat tube and the top tube. This measurement relates to torso length and positioning on the bike.

Effective Top Tube Length

The length of a horizontal line from the junction of the centerlines of the head tube and top tube to the imaginary centerline of the seat tube. This measurement is important due to the sloping top tube (with extra long seat post extension) currently favored by mountain bikers. A more accurate version of the top tube measurement, this relates to torso length and positioning.

Chainstay Length

The distance from the center of the bottom bracket to the center of the rear axle. This dimension effects weight distribution over the rear wheel.

Bottom Bracket Height

The distance from the center of the bottom bracket to the ground. This measurement effects ground to pedal clearance, as well as stability of the bike by dictating the height of the rider's center of gravity.

Offset (Rake)

The perpendicular distance from the centerline of the head tube to the center of the front hub. Rake combined with the head tube angle yields another steering term, trail.

Wheelbase

The distance from the center of the rear hub to the center of the front hub. This determines handling characteristics like turning radius, tracking stability, and shock absorption.

Trail

The distance between where the head tube centerline intersects the ground and a vertical line dropped from the center of the front hub. This measurement effects the stability of the steering system and the feel of the steering. Longer trail usually means a "heavier" or more stable feel, while less trail usually feels "quicker" or "lighter".

Front Center

The distance from the center of the bottom bracket to the center of the front hub. This distance effects both weight distribution and toe clip / front wheel overlap. Given that most mountain bikes use only a narrow range of steering angles and offsets, front center also refers to the amount of "cockpit room" the rider will have.

Stem

This should be considered part of the bike's geometry because it effects weight distribution and steering feel. Along with handlebar width, it also relates to arm and torso length.

It All Works Together

Every facet of bike design will effect another, so we can only talk in generalities about what any one dimension does to the bike. Its obviously true that each part of the bike is connected to another part of the bike. However, it isn't always apparent how changing one dimension on a bike will effect the others.

An easy example of this is how chainstay length can effect something as far away on the bike as steering. If you shorten the chainstays, you decrease the wheelbase while increasing the weight over the rear wheel. This must in turn decrease the weight over the front wheel, which will effect the steering feel.

Geometry Changes for 1994

The 1994 Trek line features an awesome number of material changes. New Sequential TIG welded steel technology, an OCLV suspension bike main triangle, new tubing diameters for the ABT aluminum and three tube carbon mountain bikes, a stiffer OCLV road fork, different lay-up of the three tube carbon road bikes, and even a revamp of the tubing make-up of the off-road carbon tubes. A less noticeable, but still important area of major change is that of frame design, or geometry.

Mountain Tracks

The new Mountain Tracks (formerly called Antelopes) have gone through a re-sizing. With this change, and those of the rest of the Trek line, a uniform sizing is offered throughout the line. This means that every model is offered in the same size run- 14.5, 16.5, 18, 19.5, 21, 22.5, and 24. Moving from one product family to another, or upgrading, should be much easier now. In addition, the new Mountain Tracks offer a much more contemporary look with sloping top tubes and extended seat tubes. As before, we measure our framesets from the center of the bottom bracket to the top of the seat tube. The extended seat tube means that every frame size now offers more standover height for better top tube clearance.

The 800 and 820 share the same geometry. These bikes are very comfortable and extra stable. This forgiving handling is great for the less experienced rider, making it easier to negotiate rough terrain.

The 830 and 850 models are a little more aggressive in their design, plus they are designed to be suspension ready. They will steer a bit quicker and also be more reactive to the terrain, so they take a bit more skill to ride well. Suspension ready means that when we spec a suspension fork like on the SHX models, the head tube angle and standover height does not change, so no performance is lost.

SingleTracks

The SingleTracks share the looks and sizing of the Mountain Tracks with sloping top tubes and extended seat tubes. They give race-level performance that is precise, lively, and quick responding. They have shorter chainstays than the Mountain Tracks for extra climbing and stopping power in steep terrain.

The entire SingleTrack line is suspension ready, but with a slightly different fork length specification than the 830 and 850. This is because the SingleTracks are designed to accommodate the Mogul series of air/oil forks. An air/oil suspension fork is usually set up without any sag, as compared to an elastomer or steel spring fork which does have sag. With sag, the front axle to fork crown race seat dimension will be slightly shorter. These bikes were designed for use with the longer blades of high performance air/oil type forks.

Aluminum and Three Tube Carbon Mountain Bikes

These bikes get extra big tubes and new lugs. Sizing runs just like the SingleTracks and Mountain Tracks, and the looks are similar as well.

However, the geometry is slightly different than the SingleTracks. The overall geometry is basically the same as our very successful OCLV mountain bikes of 1993.

Suspension Track System- STS

The full suspension bikes get a new swingarm geometry outlined later in this manual. The new 9500 fits differently than the 9200 because it uses an OCLV main triangle with geometry like the 9800 and 9900.

MultiTracks

The 7900 gets a slight change in carbon tubing specs- the liner of 'Spectra used in '93 has been replaced with three more layers of carbon for a total of 9 layers. This will add strength and stiffness, but no additional weight.

The steel MultiTracks (as well as the 750 MetroTrack) get a lower bottom bracket. This makes these bikes a little less off-road in their design. The benefits of this change include easier mounting of the bike and a lower center of gravity for better stability. Both the 750 Multi and MetroTrack get the same steel manufacturing technology as the '94 SingleTracks, making them lighter and stronger than the '93 versions.

520

The 520 is another beneficiary of Trek's new Sequential TIG technology. In addition to this improvement in strength and lower weight is the new frame design. A lower bottom bracket adds stability and ease of getting on the bike (especially important when you've got the rack piled to the sky with touring gear). Longer chainstays mean a smoother ride and more heel clearance with panniers.

Tandems

For 1994, all three models of Trek tandems are available in all sizes. The new 57 x 47 size has a sloping top tube, so the size range of captains which fit this bike is especially broad. With its long seatposts, this bike will fit most captains from 5'9'' to 6'2" and stokers from about 5' to 5'6" which may make this our most versatile size.

Jazz

The Latitude gets the same attention to design and sizing as the Mountain Tracks and SingleTracks, again allowing easier sizing and/or upgrading to a Trek.

The juvenile line features extended seat collars and lower top tubes. This allows more sizes of riders per size of bike because a smaller rider can straddle the bike while the seat height at full extension is unchanged. This is especially important to parents, as it allows a child to ride a bike longer, giving them more reason to buy a quality Jazz bike.

Fitting Trek Bikes

Trek bikes have been designed to fit lots of sizes of riders who ride in lots of different ways. To help you find the best fit for your customers, we have included a few guidelines:

Road Bikes

Have the customer straddle the bike. There should be 1-2" clearance over the top tube. Using this test, most people will find two bike sizes which fit well. Between these sizes, select the best bike size through the customer's preferences for handlebar height and reach.

OCLV Road Bikes

OCLV road bikes are measured to the top of the seat tube. The top tube has been dropped below its normal position to create a smooth transition between top tube and seat tube. For this reason, slightly more standover height may be desirable than on other Trek road bikes.

All Terrain Bicycles

Choose an all-terrain bike with 2-6" top tube clearance. All terrain bicycles have higher bottom brackets than road bikes to provide more pedal clearance over obstacles found off-road. These bikes also are designed with more clearance over the top tube for the more dynamic bike handling required, and to allow safe dismounts in uneven terrain.

Like road bikes, there will usually be a choice of sizes within these recommendations, and handlebar height combined with reach should be the deciding factor.

Trek suspension bikes have a slightly higher bottom bracket which ensures that pedal clearance is not compromised during compression of the system. Good fit will mean less clearance over the top tube than on a "rigid" Trek mountain bike.

MultiTrack

MultiTrack bikes offer some of the benefits of both road and mountain bikes. This is partially achieved by placing the rider in a position similar to that of riding a mountain bike. For this reason, MultiTrack geometry is similar to mountain bike design, and so is the positioning. If you size MultiTracks like road bikes, the reach may be too great and the rider stretched out too far.

Tandems

On a tandem, the captain often holds the bike with the stoker on board, the feet on the pedals. This balancing act requires adequate top tube clearance, so the best tandem sizing allows the captain 2-3" of clearance. Top tube clearance for the stoker is less important because the stoker usually keeps their feet on the pedals at stop signs, etc., and therefore with good tandem technique may be sized without any top tube clearance. For larger stokers, Trek tandems use oversize seatposts so that there will not be any flex in the seatpost, even when extended to its full available length. In this way, a variety of stokers of different sizes can ride Trek tandems.

For more fitting info

To help you more easily find a size of bike which fits better, we have made a listing of the reaches of each size and model. This information is listed with each model's specs, and is also compiled for the full Trek line on page 107 of this manual.

Materials

Properties of Materials

When selecting a material for bicycle frame construction, there are many factors to consider such as ease of manufacturing, cost, and others. For performance, the two most important considerations are Specific Ultimate Strength and Specific Modulus. In layman's terms, Specific Ultimate Strength is the breaking strength of a material divided by its weight. Specific Modulus can be translated to mean the stiffness per weight.

The reasons for the importance of these two factors are simple. A bicycle must be adequately strong to withstand the rigors of cycling, it must be adequately stiff to provide good performance, and it should be as light as possible to avoid wasting the rider's energy.

Another factor in choosing bicycle frame material that may be equally important to the consumer is the cost of the bicycle. When cost versus performance is considered, we refer to this as value.

If a material does not have a blend of stiffness and strength, it will either be heavy or be lacking in strength or performance. Let's look at an example: Cro-Moly steel has a high specific modulus, but a fairly low specific ultimate strength (see chart on page 10). This means that a fairly high amount of material (by weight) will have to be used to make a Cro-Moly bike of good strength. However, Cro-Moly steel is usually relatively inexpensive and so can offer a good value, even if a little heavier than some other materials.

As another example, carbon fiber composite is quite a bit more expensive than Cro-Moly steel. However, because it has very high specific ultimate strength, a very light bike can be built that is very strong. In addition, its high specific modulus means that even a very light carbon bike can also have good stiffness.

Another high tech material for bicycles is titanium. Although different alloys vary somewhat in their characteristics, generally titanium has a lower specific modulus than carbon fiber composite, Cro-Moly steel, and even some aluminum alloys. Titanium has a higher specific ultimate strength than Cro-Moly steel, but is again lower than high tech aluminum and especially carbon composite. This means that a titanium bike of good strength and stiffness will be heavier than a carbon fiber composite bike of like performance, even though considerably more expensive.

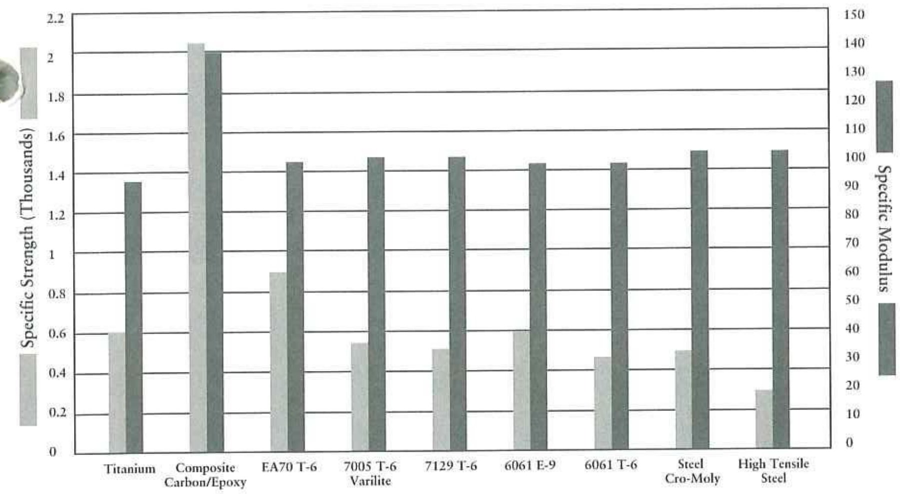
Trek engineers have looked at these and other materials to ensure that Trek bikes offer the best performance per dollar possible. We chose not to use some materials which may make good bicycles, but are too expensive to give good value.

As you look at the chart comparing characteristics of the various materials, remember that many factors will effect the end product. For example, increasing the diameter of a tube will increase its stiffness, but reduce its resistance to denting, even with the same wall thickness. Manufacturing techniques, like designing and building lugs, will effect the price of a completed bicycle. Volume of manufacturing can bring prices down, an important fact that allows Trek to build expensive lugged aluminum and carbon bikes at competitive prices. As we developed new steel technologies, or high tech aluminum and carbon bicycles, we brought down the price while actually increasing the level of performance.

Another important point is that there is more to a bicycle than the tubeset. Tubing which is no longer straight, or bikes that don't track straight due to poor alignment are poor values. Trek bicycles are built with high tech processes to ensure that the properties of the tubing remain after construction. The fittings are top quality as well. Investment casting, forging, and other processes are integrated into Trek lug work. Rather than use a weak and flexible bolt-together derailleur hanger Trek uses forged dropouts. Stiffer forged dropouts not only resist ordinary shifting forces, but will withstand all but the most severe impacts.

A final consideration in bicycle design (and one we hope never becomes necessary) is the ability to repair a frame in the event of a severe accident. We have gone to great lengths to over-design Trek bikes, to make them stronger than necessary. In almost every case we could reduce the weight of our bikes somewhat, but at the expense of reliability. Nevertheless, chances are good that someone out there will find a way to break their Trek bike. With this thought in mind, we've designed our bikes to be repairable. Even our carbon fiber frames can be economically repaired although in an extreme case, it may be less expensive to buy a new frame rather than repair an old frame with extensive damage.

Specific Ultimate Strength & Specific Modulus



Matrix Rims

	Sutherland's Correction Factor	Weight	Eyelet	Spoke Pattern
26 Inch				
Single Track	-29	525 gm	no	28, 32, 36
Single Track Comp	-27	465 gm	single	28, 32, 36
Single Track Pro	-25	425 gm	single	28, 32, 36, 40
Mt. Titan	-25	365 gm	single	28, 32, 36
Mt. Aero	-30	395 gm	no	28, 32, 36
700C				
Journey	-9	500 gm	single	32, 36, 40, 48
Titan Tech	-9	475 gm	single	32, 36
Sonic	-12	465 gm	double	28, 32, 36
Titan Tour	-10	520 gm	single	32, 36, 40, 48
Iso C II	-14	410 gm	no	28, 32, 36
Tubular				
Iso II	-10	375 gm	no	24, 28, 32, 36
Photon	-7	360 gm	double	28, 32, 36

A word about wheels

Wheel durability is effected by three factors: materials, wheel assembly, and use/maintenance. To get the most from a bike, each factor is important.

Materials

The best wheels can be obtained through using the correct components. Correct rim selection for the intended usage is critical. Spoke gauges should match the diameter of the hub drillings. Use a spoke thread preparation to ease assembly and prevent corrosion of the threaded parts. Do not use alloy nipples if the rim's spoke holes are not smooth and lubricated. Carefully consider the strength requirements of rider weight and terrain. For wheels with high strength requirements such as tandems, Trek recommends more spokes and the use of stronger rims. While lighter wheels with fewer spokes may provide better performance, broken spokes or wheels that won't stay true are considered to be the lowest of performance factors.

Matrix rims are constructed of 6061 T6 heat treated aluminum. The rims use a pin-type construction rather than welding so that the added strength of heat treating is not removed during rim fabrication. Another important feature is the use of eyeletting. Eyelets distribute the forces resulting from the attachment of the spokes. With Trek's double eyelet,

these forces are distributed through both the outer and inner walls of the rim structure, making these rims particularly strong.

Design of the rim also effects the strength and application of a rim. Good design distributes forces through the rim, reducing peak loads that can damage the rim. Rim width effects tire fit. Width also effects how your brakes work. In particular, the inverted sidewalls of the Journey and Single Track Pro rims lend themselves to the use of cantilever brakes. The angled sidewall provides a more secure angle for the brake pads, resisting pad "dive" because the rim's sidewall is perpendicular to the arc of the pivoting cantilever brake arm.

Wheel Assembly

Good wheels are the result of careful attention to the building process. After lacing, bringing the wheel to correct round, true, and dish must be a gradual process to avoid placing undue stress on any of the components. Spokes must be "relieved" so that their bend matches that of the hub flange, so they take the most direct line possible to the rim, and so they have not been twisted, or rotated by turning the nipples.

The final part of building a strong wheel is insuring that the spoke tension is correct. There is actually a broad range of acceptable tension for a wheel. Most important is the even tension within the structure. Uneven spoke tension is the most common cause of wheel problems.

Use/Maintenance

Any wheel deserves regular maintenance. In the Trek Owner's Manuals, riders are advised to check their wheels before every ride, and to have any problems serviced by their Trek dealer.

Even the most carefully built wheels can have problems. Some riders take pride in their ability to break equipment, but the best riders know that if you don't make it to the finish line, you can't win the race. Good riding technique goes a long way to avoiding wheel problems.

System Components

Trek System Components, like Trek bicycle frames, are the result of thorough study and development executed by the Trek engineering staff. These products underwent careful study to ensure they matched the performance of Trek bikes, and were specifically designed or selected because they enhanced the fit, look, function, and value of Trek bikes.

That was the easy part. Each design went through a series of tests for accuracy in sizing, strength, durability, and more. Our engineers broke sample pieces from many manufacturers. We found out what worked and what didn't. From these tests, we developed components that were both light and strong. As an example, our System 4 ATB handlebars are stronger than some bars weighing twice as much!

After we were satisfied with the quality of each of these products, orders were placed. As the shipments arrive we continue to randomly sample the pieces to ensure that they match the quality of the test pieces. Its an expensive undertaking, but we feel its important to deliver a product that goes beyond just lightweight.

The result is a common sense approach to upgrading a bike. If you replace a System 1 piece with a System 2, it will be both lighter and stronger. With Trek's R&D behind it, it will also be a great value.

STEMS

Standard ATB - TIG Cro-Moly with 165 mm insertion tube

System 1	354 gm, 5-10° rise, fits $1^{1/8}$" headset, 25.4 mm handlebar
System 2	315 gm, 5-10° rise, fits 1"or$1^{1/8}$" headset, 25.4 mm handlebar

Standard OS ATB - TIG Cro-Moly with 150 mm insertion tube

System 2 OS	340 gm, 32° rise, fits $1^{1/4}$" headset, 25.4 mm handlebar
System 3 90° OS	320 gm, 0° rise, fits $1^{1/4}$" headset, 25.4 mm handlebar

Direct Connect ATB - fits 1 1/8" headset size, 25.4 mm handlebar, 10-12° rise/drop

System 2	184 gm, TIG heat treated Cro-Moly
System 3	183 gm, Forged 6061 T6 aluminum, hidden binder
System 4	170 gm, Forged 6061 T6 aluminum (also to fit 1" headset)

Hybrid - TIG Cro-Moly, standard type with 160 mm insertion tube, fits 1" headset and 25.4 mm handlebar

System 1	286 gm, 15° rise on 135, 25° rise on 90, 105, 120

Road - TIG Cro-Moly, standard type , fits 1" headset

System 1	300 gm, -17° rise, with 150 mm insertion, fits 25.4 mm handlebar
System 2	252 gm, -17° rise, with 130 mm insertion, fits 26.0 mm handlebar
System 1 90°	300 gm, 0° rise, with 150 mm insertion, fits 25.4 mm handlebar

STEMS (cont.)

Direct Connect Road - for AheadSet, fits 1" headset, 26.0 mm handlebar

System 4	155 gm, 0° rise, TIG 6061 T6 aluminum

Tandem Stoker - fits 25.4 mm handlebar

System 2	300 gm, TIG CroMoly, fits 29.8 seat post, 130 mm extension
System 3	260 gm, TIG 6061 T6 aluminum, fits 29.8 mm seatpost, 110-160 mm extension, child model has 190 - 240 mm extension

HANDLEBARS

ATB - 25.4 mm clamp diameter, 5° bend, 560 mm length, bulged and knurled center

System 2	230 gm, 6061 T6 aluminum
System 3	170 gm, 6061 T6 aluminum
System 4	150 gm, 7075 T6 aluminum

Road - Dual Control design

System 1	396 gm, 25.4 mm clamp diameter, 6061 T6 aluminum, sleeved and knurled
System 2	326 gm, 26.0 mm clamp diameter, 6061 T6 aluminum, bulged and knurled, grooved for aero cable routing
System 3	296 gm, 26.0 mm clamp diameter, 2014 T4 aluminum, bulged, grooved for aero cable routing

Bar ends

System Bar End Plugs- internal expander prevents bar collapse with clamp-on bar ends, bumper to prevent top tube damage

System 1	210 gm bonded aluminum, long L-bend
System 2	164 gm TIG 6061 T6 aluminum, long L-bend
System 3	140 gm TIG OS 6061 T6 aluminum, long L-bend
System 4	120 gm TIG OS 6061 T6 aluminum, short ski bend

SEATS

ATB Saddle

System 2 Gel	430 gm, low profile, wide shape, Gel Lite, Astrale cover
System 2	288 gm, low profile, wide shape, synthetic leather cover
System 3	238 gm, low profile, wide shape, Manganese rails, leather cover

Road Saddle

System 2	278 gm, low profile, racing shape, synthetic leather cover
System 3	226 gm, low profile, racing shape, Manganese rails, leather cover
System 4	190 gm, low profile, racing shape, Vanadium rails, leather cover

Women's ATB Saddle

System 2	298 gm, low profile, women's shape, synthetic leather cover
System 3	248 gm, low profile, women's shape, Manganese rails, leather cover

SEATPOSTS

System seat post clip- designed to attach bags to QuickCleat equipped seat posts	
System 1	270 gm bonded, 6061 T6 aluminum with forged head and Quick Cleat system
System 2	268 gm forged 6061 T6 aluminum with QuickCleat system
System 3 Road	256 gm forged 6061 T6 aluminum with QuickCleat system
System 3 ATB	248 gm 6061 T6 aluminum,"I" beam construction, barrel type clamp
System 4 ATB	252 gm TIG 6061 T6 aluminum

PEDALS

ATB

System 1	480 gm, resin body, sealed bearings, Cro-Moly axle, clips & straps
System 2	540 gm, forged aluminum body, sealed bearings, Cro-Moly axle, clips and straps
System 3	450 gm, forged aluminum body, sealed bearings, Cro-Moly axle, clips and straps

Road

System 1	450 gm, resin body, sealed bearings, Cro-Moly axles, toe clips and straps
System 2	480 gm, forged aluminum body, sealed bearings, Cro-Moly axles, toe clips and straps

SEAT POST CLAMPS

Seatpost Quick Release

System 1	46 gm, Cro-Moly skewer, light steel lever
System 2	44 gm, Cro-Moly skewer, aluminum cutaway lever

Seatpost Binder Bolt

System 3	12 gm, machined 6/4 titanium w/rolled threads
	17 gm, Cro-Moly steel

Seatpost Collar
Road

System 2	37 gm, for 520, forged aluminum, tall design for better clamping
System 3	32 gm, for OCLV, forged aluminum w/cutaways, integral bolt

Seatpost Collar
ATB

System 2 ATB	38 gm, (For Steel) forged aluminum, tall design for better clamping
System 2 ATB	36 gm, (For Aluminum and Composite) forged aluminum, tall design for better clamping
System 3 ATB	22 gm, (For OCLV) forged aluminum with cutaways

Tandem

System 3 Tandem	46 gm, double bolt, black anodized aluminum, prevents rotation of captain's seatpost

Cable Hanger

System Hybrid	16 gm, forged aluminum, slotted cable stop, fits 1" headset
System ATB	16 gm, forged aluminum, slotted cable stop, fits 1$^{1/8}$" headset
System Tandem	30 gm, forged aluminum, slotted and adjustable cable stop, fits 1$^{1/4}$" headset
System Ahead	35 gm, forged aluminum, clamps to steerer, fits 1$^{1/8}$" headset

Brake Actuator Unit (BAU)

System ATB	40 gm, fits any ATB, aids power and centering of cantilever brakes
System Women's	35 gm, special design for rear brake on women's frames, fits seatpost clamp bolt

TIG Welded SingleTracks

Since 1976, hundreds of thousands of steel bicycles have been built with lugged construction in Waterloo, Wisconsin. Not only was the volume of Trek's brazed bikes incredible, but so was the quality. Trek was the first large-scale manufacturer to receive Reynold's prestigious certification to build with the ultra-light Reynolds 753 tube sets, a level of brazing skill that many custom builders were not capable of at the time.

Trek's expertise in low temperature brazing set our U.S. manufactured products apart from the flood of TIG welded bikes coming from the Orient. With road bikes since 1976, and later with innovative oversize mountain bikes dubbed "SingleTracks", Trek developed a reputation for building quality bikes with a lightweight, lively ride. The Trek's lightweight ride was the result of using thin-walled, lightweight tubing. This thin-walled tubing was sensitive to overheating, which necessitated low temperature joining techniques- i.e. brazing.

Mass produced welding causes heat stress in the steel which weakens the tubes. The intense, high heat from rapid TIG welding distorts the tubes. To maintain the strength required for a bicycle, thick-walled tubing is used in mass produced TIG bikes. Although in some cases the resulting TIG bikes were lighter overall than Trek's SingleTracks, the tubing used was actually thicker and heavier, and the resultant ride lacked the response of the Treks.

Light, thin walled tubing is critical to the flex and resiliency which create a lively ride. This is why quality bicycles use double-butted tubing. Thinner tubing allows a bike to absorb shock, smoothing out the road or trail. However, the high stresses found at the joints of a bicycle frame require thicker tubing for strength. In the past, the butting process used by tubing manufacturers was limited by both the total difference in wall thickness possible, and also the length of butt required to make that transition. Recently, True Temper has developed new technology which allows them to make faster transitions (shorter butts) with greater differentiation (more change) of wall thickness.

This new technology allows a tube set to be manufactured which has enough thickness at the ends to allow TIG welding. Yet the tubing is thin enough (and the thin portion begins close enough to the end of the tube) to achieve a ride very similar to the performance of bikes built with Trek's brazed construction.

In addition to True Temper's technology breakthrough, Trek has developed manufacturing technology equally impressive. A list of new procedures includes laser mitering, size specific jigs, sequential welding, brazed dropouts, and all the other extra steps that make Trek bikes the best quality.

Trek's design engineers were working side by side with the manufacturing engineers to make sure these bikes have all the features demanding off road cyclists want. Starting with a clean slate, they pooled their ideas and experiences. Here's a list of the ideas our engineering teams put into every SingleTrack:

Suspension ready geometry-

The head angle is correct with a suspension fork on the bike. This means that if a rigid fork is spec'd for these bikes it is a little longer than in '93 (about 30 mm). This gives these bikes quicker, more precise steering, with or without a suspension fork.

Custom True Temper Cro-Moly tube sets-

Trek-designed tube sets maximize weight savings while maintaining strength requirements and performance. The three main tubes are 1 1/4" (31.8 mm). Compared to 1993 SingleTracks, the larger diameter seat tube yields greater bottom bracket stiffness, but the smaller down tube adds comfort through front end resiliency and better vertical compliance. The seat stays, while thin-walled, are thicker at the cantilever boss attachment points. This increases cantilever stiffness for more stopping power. None of the tubes are crimped or indented, so no strength or stiffness is lost.

Internal head tube reinforcements-

With most bikes, the head tube is milled to make a thinner wall where the headset cups are inserted. This requires starting with a thick, heavy head tube. With this construction the highest stress area is actually the weakest area because you have removed some material. SingleTracks have head tube reinforcements welded into a thin head tube. This reduces weight, but adds strength where its needed the most- at the headset cup insert area. The larger diameter head tube adds strength and welding surface, but the inserts also mean that a standard oversize (1 1/8"or 28.6 mm) mountain bike headset is used.

Seat lug reinforcement-

On most bikes, the top of the seat tube (like the headtube) is a high stress area that gets reamed for roundness to allow the seatpost to slide easily. With Trek's new SingleTracks, an internal reinforcement is welded into the top of the seat tube, adding strength at the weld area of the seat cluster, but leaving the seat tube thin and light for a better ride. An added benefit is that even though the seat tube is larger diameter, the SingleTracks still use a standard 27.2 mm seatpost.

Laser mitered tubes-

Punch mitering or machine mitering leaves a tube with a thin, feathered edge. In addition, each time the mitering tool is used the tool gets duller and less accurate in its cutting. During welding, as the weld bead is laid over the tube end, the bead is applied to a thinned portion of tubing. Heat penetration is lessened because the feathered edge covers the weld area completely.

When tubes are mitered with a laser, the tube is cut by a computer-controlled beam of intense light waves. There is no metal to metal contact to wear the cutter and cause inaccuracies.

With laser mitering the tube is cut at a 90° angle to the tubing axis. This means the weld bead will be laid over a beefy piece of steel. The slight notch where the tubes meet allows heat to completely penetrate both tubes, providing a stronger joint for a stronger frame.

Dedicated V-Block Jigs-

With adjustable jigs, one jig can be used to build any geometry of bike. However, correct adjustments are critical to frame accuracy. To avoid even the chance of poor alignment or sizing, we use size and model specific V-block jigs so each size and model gets a dedicated jig that is never changed. Its more expensive, but this way each frame comes out of manufacturing exactly the way the design engineers intended.

Sequential TIG welding-

When extreme heat such as that of welding is applied to a metal, it tends to bow and warp. With sequential welding, a specific pattern of welds is applied to compensate for this warping. Part of each joint, in specific order, is welded and allowed to cool. Each joint is also welded in specific order. When the correct order is followed, applying one weld will pull another weld back into alignment. This process is time consuming, but with the thin wall tubing used in these bikes, we wanted to avoid cold setting the entire frame like other manufacturers do.

TIG stands for Tungsten Inert Gas. In TIG welding, an inert gas (Argon) is flowed over the hot metal to prevent oxygen in the air from reaching the steel. If oxygen reaches the hot steel, the result would be oxygen embrittlement which weakens the steel and thus the frame. When an entire joint is welded all the way around the tube at one time, the Argon gas cannot cover the entire hot portion of the weld. When Trek bikes are welded, only small portions of a weld are applied at one time. In this way, the smaller weld zone which results can be completely shielded with Argon gas until it cools, making our bikes stronger. Sequential welding has been used successfully on Trek tandems for two years.

Brazed-on ACSD mount-

Chain suck is a fact of life on mountain bikes. But Trek's new ACSD (Anti-Chain Suck Device) is the best protection available. It's super strong, easily adjustable, very effective, and part of the frame.

Welding area is maximized-

Look at the way the chainstays meet the bottom bracket shell. The lower chainstay placement lessens chainslap, but even more importantly, the weld surface is larger to add strength and stiffness in this critical area. This is another benefit of the oversize head tube used with our internal reinforcements, as the larger head tube also maximizes the weld area.

Ergonomic sizing-

Almost every mountain bike in the Trek line was redesigned for better fit this year. With the new SingleTracks, the top tubes are shorter on the short bikes, and they're longer on the big bikes. The extended seat tube provides lower straddle heights. The '94 SingleTracks feature a unique look and ride with aggressive, sloping top tubes with lots of cockpit room. And lastly, tube sets have size specific butting to optimize the ride characteristics of each size of bicycle.

Brazed dropouts-

Should a rider damage the Trek-designed dropouts in a crash, they are replaceable, because they're brazed, not welded.

Lighter-

Even with all these extras added to the frame, the new SingleTracks still shed 3/4 pound! Trek's design philosophy has always been to give the consumer the best riding bike possible. In the past, the use of thinner tubing for a resilient, lively ride required that the best frames be built with low temperature brazing and lugged construction.

With Trek's new technology, that same thin tubing and quality ride can be achieved with a different manufacturing process - sequential TIG welding. The level of technology Trek brings to this new manufacturing venture exceeds the quality and features provided by all but a few of the most expensive custom built bikes. Now the strength, alignment, and lively ride of a custom bike are built into every new 1994 SingleTrack, and at a Trek price.

SingleTrack frame weight (18"): 2220gm (4.89 lbs.)

OCLV: Optimum Compaction Low Void

OCLV is the name that Trek has coined to describe our patent pending engineering breakthrough with Carbon Fiber Composites. This leap in technology allows the manufacture of composite lugs and tubes that offer **Optimum Compaction** of the carbon fiber, with **Low Void** content in the laminate.

The Process

Carbon Fiber Composite is composed of two parts: the carbon fibers, and the epoxy resin matrix that holds them together. Composite means that these two substances have been combined to blend the best characteristics from the two parts. The benefits of this composite material varies according to the quality and quantity of the ingredients in the mix, as well as the quality of the lamination, or arrangement of the fibers in the epoxy matrix.

To achieve the benefits of OCLV, Trek uses top quality carbon fibers and epoxy. The fibers are tightly compacted together to maximize the benefits of a top-quality laminate, a condition engineers refer to as Optimum Compaction. Still, the most important part of the OCLV process is that it places the fibers, and therefore the strength, exactly where they are needed. The precise locations are determined by use of FEA, or Finite Element Analysis. FEA is computer modeling which allows the determination of the stresses with a given construction or thickness of material. The model can be changed to eliminate material where its not needed, to provide you with the lightest bike possible.

How good is Trek's OCLV process? For composite parts on airplanes, quality specifications are very strict. Voids, or inconsistencies in the composite material like air bubbles or epoxy pockets, create the possibility of a weakness. For safety's sake, no more than 2% of the laminate used in these flying machines may contain voids. The OCLV process commonly achieves a quality level of less than 1% voids, yielding a super strong, uniform material that optimizes the benefits of carbon fiber composite. Most important, though, is that the OCLV process gives us the control to put th fibers of carbon exactly where they are supposed to be, something that hasn't been achieved with "one-piece" carbon frames.

With a carbon fiber composite that has Optimum Compaction and Low Void, you get the strongest, stiffest, and lightest material used in the bicycle industry today. Trek's technology allows this new breed of bicycles to have the correct stiffness for a unique blend of great efficiency, comfort, and handling. OCLV bikes are the lightest production framesets in the world, and yet these bikes are incredibly durable. They even come with Trek's Lifetime Guarantee!

The Manufacturing

OCLV is definitely a revelation in materials, but the difference doesn't stop there. These framesets are manufactured with a level of precision that is unmatched in the industry. The processes used to assemble these framesets yields an exact image of the engineers' computer drawings for frame layout, and each frameset shows a flawless finish.

The secret to such a high level of frame building precision is to design frame parts that only fit together in one way, so the alignment of every frameset is guaranteed. The lugs and tubes are built individually so that each part's quality can be carefully inspected, ensuring that they are built to very high standards. Building the OCLV lugs as well as fabricating the frame itself allows total control over the entire process- something totally unique in the cycling industry.

After the different pieces of the OCLV frames have been manufactured, they are carefully assembled using proven bonding procedures on special alignment tables to check and recheck the alignment. Bonding is a process which uses aerospace adhesives to glue the lugs and tubes together, but this is no ordinary glue! Similar to the adhesives used to join airplane fuselages or hold helicopter rotor blades together, it would take about 16 tons of force to pull two pieces of an OCLV frame apart. Actually, the material surrounding a bonded joint would give way before the bond could be broken.

Extensive testing was done on completed OCLV frames and the results were compared with information gained from testing bikes built by competitors. In one of the most abusive tests performed, the OCLV bikes came through with flying colors. The Low Cycle Fatigue Tester roughly mimics the forces which a bike goes through while running into a brick wall at 15 miles per hour. A good steel bike will go through about 15,000 cycles before it fails, which is more than required to offer a Lifetime Warranty. The new '94 SingleTracks will go 30,000 cycles. Our bonded aluminum bikes, designed to outlast conventional steel technology, will endure about 40,000 cycles on this beast. At last count, an OCLV frame had gone 160,000 cycles, and we jokingly refer to this as a 10-Lifetime bike.

The Ride

Carbon fiber can be placed exactly where its wanted in the OCLV process, so a bike can be made to ride any way a rider wants. A little stiffer here? No problem. A little softer there? Again, no problem. This has been done for the '94 OCLV off road bikes, as well as the forks of the OCLV road bikes. These changes directly address the feedback we received from our Professional racers. We continue to listen to what riders want, providing you with the best ride possible.

By constructing lugs with long, gradual tapers, the major stresses experienced by a bicycle frame will occur within the lug, and not in the tube or frame joint as in "normal" construction. Tubing can be kept as thin as possible, and the lugs fully address the specific forces which occur at a given point. The bike allows very little lateral frame flex, making it very efficient in hard climbs or sprints, even for big riders. But with carbon fiber, the bike can still eat up shock, and a light rider will find that the terrain will fly by with very little fatigue (which may be helped by the fact that the bike weighs several pounds less than most!). For the racer in all of us, there is an excellent feel for the ground beneath you. You get good feedback from what's under the tires and the bike lets you know what's happening beneath the wheels. Cornering becomes a dream.

Much of this good feel has to do with size specific design and size specific stiffness. Each frame size gets specific angles and tube lengths to 'custom' fit the rider, and carefully place the rider over the wheelbase for optimum weight balance. In addition, both the tubes and the lugs of different sizes of bikes offer different amounts of stiffness so that big frames are stiffer, and small frames are less so. This may seem simple, but with most bikes its exactly the opposite.

With OCLV technology, you're riding a little bit of the future. Its a new and innovative process, one that a rider will appreciate more and more as the miles fly by.

9800 frame weight (18"): 1294gm (2.85 lbs.)

5200 frame weight (56cm): (2.44lbs.)

Big Tubes and ABT

For 1994, Trek has made big changes in the ABT mountain bike line. Although Trek's OCLV mountain bikes are also built with Advanced Bonding Technology, here we are referring specifically to the aluminum and three tube composite mountain bikes.

Geometry changes-

For 1994, all ABT bikes get a fresh visual appearance. Sloped top tubes and redesigned lugs give the bikes a look that says fast, light and cutting edge.

Further investigation will show you that the bikes have been built with suspension ready geometry. The adjusted bottom bracket height, lower standovers, and 71 degree head angles (used on most sizes) will all be maintained if a suspension fork is installed. This works because the rigid forks spec'd by the engineers are designed with an increased distance from the front axle to the fork crown race seat. By designing the bike this way, the quick steering designed into Trek's ABT bikes will be intact with a suspension fork, like the Mogul spec'd on the 7000SHX.

Another change in the '94 ABT geometry is more ergonomic design. Ergonomic means designed to work with your body. By carefully matching top tube lengths to seat tube dimensions, each ABT model will better fit the rider. Better fit will make the '94 bikes more comfortable. Plus they'll perform better through improved weight balance and enhanced cockpit room.

Frame stiffness

Although the new Trek geometries are important factors in their increased performance, an equally important and more visually noticeable change is the larger diameter, thin-walled tubing which is the source of the increased stiffness and lower weight of the '94 models.

When Trek first came out with bonded aluminum bikes in 1986, we chose to build those bikes with a slightly larger (when compared to steel bikes) tubing diameter of $1^{3/8}$ inches (34.9 mm). This dimension was chosen to provide a blend of comfort and stiffness which we felt best matched what riders were looking for. At that time, these bikes were slightly stiffer than steel bikes on the market.

When we refer to frame stiffness, many different measurements and performance characteristics are combined into one overly simple descriptor. Many facets of a bicycles performance are determined by the flex, or lack of flex, of the frame. Here are a few examples:

Bottom bracket stiffness- the resistance to sway of the bottom bracket during hard pedaling. Stiffer bottom brackets increase pedaling efficiency.

Splay- the ability of the wheels to move toward and away from each other. Splay generally comes from the fork, but the frame can also contribute to splay. This stiffness can be particularly important under heavy front brake loads.

Bending stiffness- this is the resistance to flex of the frame along its vertical plane. In other words, if the seat tube were fixed, and pressure was applied to the head tube and rear dropouts at the same time, you would have bending flex. This stiffness is important in resisting side loading from hard steering.

Torsional stiffness- the resistance to twisting forces which would put your wheels in two different planes. This is the stiffness required to prevent steering loading which might allow the front wheel to be out of plane with the rear wheel, which would be bad for handling. Torsional stiffness also relates to bottom bracket stiffness.

Vertical compliance- stiffness in a vertical plane, largely effecting comfort. Also relates to splay.

So what does all this mean? First of all, it is very rare that only one type of stiffness be required of the bike frame. As the bike rolls over rough terrain, it is being twisted and flexed from all directions. Pedaling, pulling on the handlebars, braking, and the ground itself are all constantly working to flex a bike frame. Total rigidity is not good, though, because without some twist and flex the bike would not follow terrain as well, nor would it be as comfortable. The key is to have the correct flex for the desired performance.

Large diameter tubes

There are a great many factors which effect the stiffness of a tube, or a structure. Materials and their modulus (stiffness) are one. That is why Trek makes bikes with three families of materials- carbon fiber composite, aluminum alloys with various strength enhancements, and traditional Cro-Moly steel.

Given a material and its inherent properties, the next consideration would be the diameter of the tube, and also the length of the tube. The longer the span crossed by a tube of a given dimension, the more displacement, or flex, that tube will exhibit. More importantly, the larger the diameter of a tube with a given wall thickness, the stiffer it will be.

Strength requirements

Another benefit of the stiffness of a larger diameter tube is that the stiffness of a tube in a structure can add strength to the structure by resisting bending forces. In this way, tubing wall thickness can be reduced as the tubing diameter increases, allowing some adjustment for the stiffness and strength in a structure, as well as the total material required.

However, the shear strength of a tube is based on its cross-sectional area and the strength properties of the material. A one inch tube with a given cross section of material is as strong as a thin walled, two inch tube with the same cross-sectional area of the same material.

Another important consideration for bicycles is something called hoop strength, or the resistance of a tube to crushing or dents. Hoop strength is determined by the wall thickness of a tube, and also its radius. As an example, it would be relatively easy to dent a 1 mm thick flat sheet of Cro-Moly steel, but a 1 inch Cro-Moly tube with a 1 mm thick wall would be very hard to dent. In bicycle construction, large diameter tubes with thin walls can be a problem, because a tube which has been dented has lost strength.

Making the bike ride better

Trek has applied these principle in several ways. In 1986, we started building aluminum frames with increased tube diameters because aluminum as a material is not as stiff as steel. In addition, the wall thickness of these aluminum tubes was increased. This way, the stiffness of the two bikes was comparable. This also yielded a bike which was about 40% stronger than existing steel bikes, but still a half pound lighter.

Since 1986, mountain biking has changed, and so have the demands of the riders. People are riding harder, and in more technical terrain, than ever before. They want more control, more efficiency. They want more comfort. They want lighter bikes. Yet, they ride them harder in more abusive situations.

Fortunately, aluminum alloys and the technology behind tube manufacturing has increased. Higher strength alloys like 7129 T6 allow tubes which exhibit much higher tensile strengths than ever before. Thinner tube walls are possible due to the dent resistance of these materials, and the higher strength means a lessened requirements of cross-sectional area. However, less material means less rigidity, so tubing diameters have been increased to actually add stiffness in some areas. A further stiffness increase comes from the substitution of three additional layers of carbon fiber to replace the layer of Spectra formerly used in our Composite ATBs. Not only does this add stiffness, but also strength.

On the new Trek ABT bikes, you will notice a wide variety of tubing diameters. Careful selection of tubing results in a bike which is more efficient, has more precise steering in rough conditions, yet is more comfortable. And best of all, Trek engineers managed to leave durability in while they took half a pound out!

800 frame weight (18"): 1807gm (3.98 lbs.)

Accessories and Parts

Tires and Tubes

Trek continues to increase the quality and selection of our rubber program. Attention is given to issues as broad as packaging that's easy for customers and store personnel to work with, to what's the best traction tire for gnarly downhills in loose and wet conditions. Sometimes the details get by without anyone noticing, so we want to point out a few of the fine points:

• Tube sizing that makes sense. We have the least SKUs (Stock Keeping Units) possible to cover the range of your customer's normal needs. In addition, we offer the broadest sizing of a single SKU in your most popular sizes. We don't have any 'dead' sizes that only fit one specific tire size.

• Easy to read, easy to buy packaging. Tube sizes are printed on all surfaces of the box, and an illustration clearly identifies valve type.

• High quality, performance oriented tubes for our regular price. In some cases other companies charge you big bucks for alleged "ultra-light" tubes which are heavier than our standard tubes. Our presta tubes also feature long valve stems so they work well even in deep aero rims.

• Innovative, engineered tread designs that work. Try them yourself. Trek road and off-road tires are designed from an analytical view of tread and casing interaction of steering and drive demands.

Tire design

A great example of Trek's tire design is the new Trek Big Kahuna tire system. Building on the success of the Control Track system (which was a refinement of the Z Axis system), the Big Kahuna has a more open tread pattern, taller tread blocks on the shoulder, low density rubber and offset shoulder blocks on the rear tire.

A more open tread pattern provides better mud evacuation as well as a better bite in soft conditions. The less total surface area there is on the top of the tread blocks (within the tire contact patch) the more pressure each tread block exerts on the ground. This helps penetration of loose soils for a deeper bite. The tread blocks are also taller, especially on the shoulder of the tire. Tread height (or depth) determines how deep a bite the tire will have.

While tread block height is generally good, too much height can make the blocks unstable in hard conditions, allowing a tire to squirm and lose traction. You can beef up the blocks by adding more angle to the sides of the blocks, but this adds weight.

How do you cope with the requirements for traction, yet keep a tire lightweight (we all know the importance of rolling weight, especially at the outside of a big circle)? By carefully analyzing the way the tread interacts with the ground at the point of contact.

Rear tires mostly work in a straight forward and back direction in pedaling or braking. A certain amount of sidehill traction is desired, but in some cases you may want the rear tire to loosen up. The Big Kahuna has offset shoulder tread blocks, which increase sidehill traction. The Control Track rear tire has shoulder blocks which are lined up with the center blocks. This tread pattern enhances straight-line performance such as steep hill climbing and braking.

Front tires do their work in braking and cornering. Because of the angular forces which occur when the handlebars are turned, front tires are exposed to more side loads (angled to the rim). The front tread blocks should face these angular load factors at a perpendicular angle, just like the rear tread blocks do. This is why the Big Kahuna's front tread blocks sit on the tire at an angle, but a portion of the center tread blocks face forward to resist straight line braking. You'll also notice that as a front Big Kahuna is leaned more heavily, and turned more sharply, the tread block orientation of the contact patch actually changes to give better bite with these changing forces.

The low density (rebound) rubber used in the Big Kahuna allows the tread material to grip solid material by molding itself over small imperfections in the ground's surface. This also is responsible for a slightly smoother ride.

A consideration of tire performance that often gets overlooked is the casing, or fabric part of the tire. Trek uses high quality casings, with a 127 TPI nylon casing in the best tires, with the exception of the Iso Tech 6 road tire, which uses a nylon/Kevlar hybrid casing. Due to the way this material is constructed, this casing is only 58 TPI.

TPI stands for Threads Per Inch. The higher the thread count in one inch of material, the smaller the denier (thickness) of threads used. The greater number of small threads increases the casing strength, while decreasing its weight. A more important benefit of high TPI casings is suppleness. The thin casings allow more flex for better comfort, even at higher air pressures. In addition, this same flexibility allows the tread to wrap itself over irregularities in terrain for better traction. This is just as true in a criterium as it is out on the slickrock.

Helmets

Trek is a company that has always believed in promoting safety in cycling. That's why we spend a lot of time, energy and money to do thorough testing on frames and components. We believe that your customer deserves a quality product that they can rely on. We put that same energy into our Trek helmets.

We build our own helmets in a small Wisconsin town about 25 miles from the Trek bike factory. By designing our own facility, our manufacturing engineers were able to find ways to build helmets better. Through better design and manufacturing, we can offer you a high performance product for a better price, just like our bikes.

With our own factory, we are able to closely monitor the quality of Trek helmets. Being so close, our product managers can visit several times a week to keep an eye on the testing and development in the R&D lab.

A brief inspection of the details of a Trek helmet will show you the difference. First, we start with an EPS (expanded poly-styrene) 'biscuit'. This is the primary shock absorbing structure of the helmet. We build ours with good ventilation and maximum protection. Ventilation is not just a matter of how large and how many holes there are in the shell. It depends on adding heat escape ports at critical places. Most of the time, most cyclists do not go fast enough to "blast wind through their helmets", nor do they hold their heads still and at the correct angle for this to happen even in the best of conditions. Test this! See if you can feel more or less air moving through your helmet as you turn your head. True, helmets tend to feel hotter when you're forced to go slow on a climb, but they aren't hot if you pedal at your hillclimbing speed while riding on the flats. Going uphill, you're hot from the extra work you're doing when climbing.

Some manufacturers are so concerned with low weight and trim loo[k] that they give the minimum protection required to pass ANSI and Snell [a] testing. Since the Snell and ANSI tests do not account for all the ways that cyclists find to crash their bikes, we feel that barely passing minimums is not enough. Trek helmets offer full protection. The lower back of the head, as well as the temple areas are covered, plus these areas have an adequate thickness to reduce contact of the facial bones and pavement in a side impact of the head. By using a thin shell cover over the EPS, helmet durability, and therefore safety, is greatly enhanced. Not only that, but the shell is our chance to make a fashion statement. Our helmets look cool, but the difference is that they have tasteful, timeless good looks that will last more than a season. You'll also notice that with the Criterium, the shell

covers the lower portion of the helmet as·well. Trek was the first to offer this extra level of protection.

Trek helmets feature comfortable, well placed straps with buckles that are easy to use. While narrow straps may give you a better tan line, that [sa]me strap may be required to keep your helmet on during a fall. Wide [str]aps distribute pressure over a wider area, and are therefore more com[f]ortable. Our Fastex buckles are strong, reliable, and easy to open and close. There is never a doubt whether the buckle is fastened.

Another safety feature of Trek helmets is reflective material. On some its a patch on the back. But on most, its a full, head encircling band of safety. With some of these, <u>the reflective material is black colored</u>, so its particularly important to tell your customers about it.

The last feature is that of low weight. While other companies have come up with some intriguing names to make their helmets sound like they are light, these same helmets are in some cases heavier than our full protection models, even with our extra safety features.

Now, we want to ask you- Why do you wear a helmet? For safety and protection, of course (and maybe to look cool, too). So get the best, buy a Trek!

SUSPENSION

To understand the way different suspension systems work, it helps to illustrate these systems with some charts. The charts used to discuss basic suspension differences have two components, Force and Travel.

Travel is the distance the wheel moves in an upward direction. Travel is shown at the bottom of the graph in inches, increasing as you move to the right.

Force is the amount of impact felt by the suspension fork. This impact varies according to the size of the rider, the speed of the rider, and the size of the bump encountered. For discussion's sake, it may help to imagine that the rider size and speed are constant, and that the only variable is the size of the bump. This oversimplification can then be shown on the left side (vertical axis) of each graph as the size of the bump in inches.

When looking at these graphs, it may help to think of what you see in this way: "For this size of bump, you get this much travel". In this way you can see how different spring materials, spring preloads, and spring curves will effect your ride.

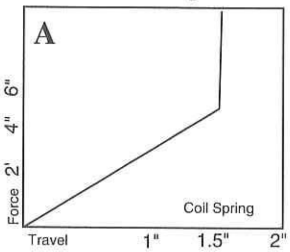
At the lower left corner of the graphs, the size of a bump is zero, and there is no travel. As the size of the bump becomes greater, the fork begins to move (travel). This movement is illustrated by the curves moving out to the right. As the size of the bump gets bigger, the force is greater and the travel increases. When the fork "bottoms out" (becomes fully compressed), there is no further travel, regardless of how much bigger the bump gets. This can be seen on the graphs as a vertical line which means the force is increasing with no further increase in travel (no movement to the right of the graphs).

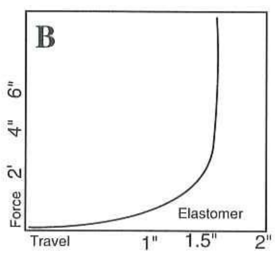
Coil spring

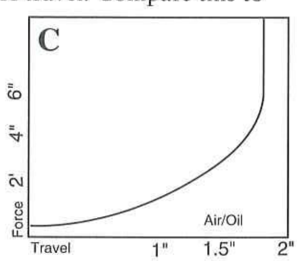
A coil steel spring fork offers good small bump performance. It will respond to a very small bump with a small amount of travel, similar to the response of an elastomer fork. For each increment of bump size, you get a like increment of travel. Because this continues at a steady rate throughout the full compression of the fork, we call this a linear spring rate and it is shown as a straight line on graph A.

Elastomers

With an elastomer fork, the fork moves easily over small bumps. For small bumps, you continue to get lots of travel. However, the ratio of travel to bump size changes. Looking at chart B and comparing two sets of bumps, you'll see that when you compare a 1/2 inch bump to a one inch bump, there is a great deal of difference in the amount of travel. Compare this to







the difference between a 2 inch bump and a 2 1/2 inch bump. There is not much difference in travel at all. When we refer to this difference in the change of travel per bump size, we talk about how *progressive* the fork is.

While steel springs are not progressive, elastomer springs can be too progressive. This means that elastomers may allow too much travel on small bumps, leaving less travel available for larger bumps.

The Rock Shox Quadra is a design that compensates for this shortcoming by using a longer elastomer stack, and more total travel. A longer stack means that for a given size of bump, there is less percentage compression of the elastomers.

Air/Oil

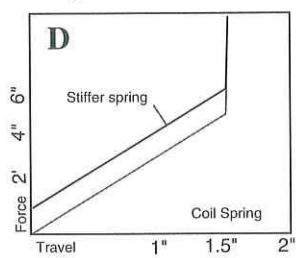
You will notice on the air/oil graph C that the spring curve does not start at the bottom of the graph. With most air/oil forks, tiny bumps do not compress the fork so there is little or no travel. This lack of movement is often mistaken as stiction, but it's source is really the air spring preload. If you decrease the preload (lower the air pressure), the fork will compress with less force. As with other suspension systems, if the spring compresses too easily over small bump forces, it will also respond more easily to forces above the spring. The biggest force above the spring is the rider's pedaling motion.

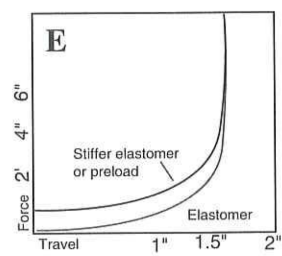
The biggest benefit of an air/oil system is that through careful design the spring curve can be completely controlled. The correct progression of fork stiffness can be achieved and the fork does a better job of addressing all sizes of bumps. In addition, more shock is actually absorbed, but we'll talk about that when we get to the section on Damping.

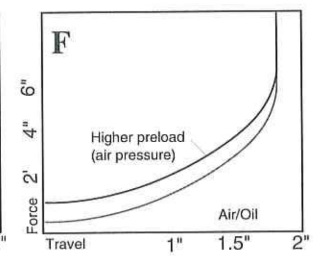
The effects of Preload

With any suspension system, it would be best if the fork never bottomed out. Bottom-out means you have used up all your suspension's travel. When riding, this is felt as a jolt, as if you had no suspension at all! To avoid bottom-out, the spring (regardless of it's curve) must be of sufficient stiffness so that under normal riding you do not reach the end of the fork's travel.

With any of these systems, preventing bottom-out can be done by increasing the stiffness of the spring. Some systems are adjustable, such as the Mogul or Quadra. With the steel coil in an SR DuoTrack, a stiffer spring can be installed. In each case, this moves the curve up in our graph (D, E, and F). The new curve is exactly parallel to the old one and progressiveness does not change. However, it now takes a bigger bump to get the fork to start compressing. In addition, for any bump that is encountered, the fork will compress less, so there is less travel.

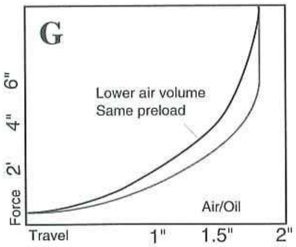


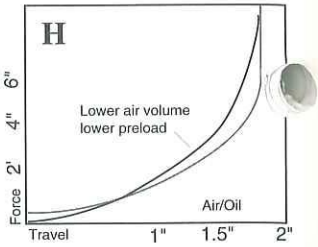




Adjusting air volume

The Trek Mogul Extreme allows you to change the spring curve of your fork. This is different than adjusting the preload, because you are adjusting how fast the rate of change of the spring stiffness occurs.





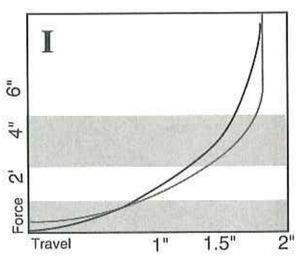
Changing the size of the air chamber in your fork is essentially the same as the custom tuning done in the shop when you change the oil depth in a fork, a service that requires special tools and partial disassembly of the fork. With the Trek Mogul Extreme, you can change the air volume of your fork on the trail with just a twist of the collars.

As you hit a bump with an air/oil suspension fork, the air chamber is compressed and the air pressure increases. By changing the size of the initial air chamber, you change how fast the air pressure rises. This means you have changed the spring rate and how progressive the fork is. To help you understand what this means, here are two theoretical examples:

- If a 4 inch air chamber is compressed 1 inch, the air pressure will go up 25%.
- If a 2 inch air chamber is compressed 1 inch, the air pressure will go up 100%.

The smaller the air chamber with the same initial preload, the faster the fork will get stiffer. If it gets stiffer faster, it will move (travel) less with a given impact, but rebound quicker (Graph G). With a larger air volume, the fork will have more travel with the same impact, but rebound slower. However, with the Extreme's adjustable damping, you can modify these curves.

This means that you can more accurately adjust your fork so that it works for your style of riding. With the Mogul Extreme, you can adjust the spring curve so that you get the most travel over the size of bumps you are most frequently riding over. If you are only riding over small bumps, you would want the black spring curve shown in the lower shaded band of Graph I because you would have more travel over bumps of this size. If you are more concerned with big bumps as shown by the upper shaded band, you would want the grey spring curve for more travel.



Remember that when we use the size of a bump here, this is an oversimplification of impact energy. Impact energy also is created by rider size and speed. Only the Mogul Extreme allows you to custom tune the spring curve of your forks for your riding style.

Damping

A spring is an energy storage system. A steel spring will store energy during impact and return virtually all of it to the suspension system. This is what allows a pogo stick to bounce you back into the air after you have compressed it. With elastomers, hysteresis provides a small amount of damping. Damping slows down the spring by allowing some of the impact energy to be changed to friction (heat). This way, some of the impact energy does not return to the suspension system.

Oil damping works by forcing oil through small holes or channels called valves. The movement of the oil creates friction which becomes heat energy and this friction is energy which is not returned to the suspension system. In other words, oil damping allows impact energy to be effectively absorbed.

The key to this shock absorption is travel. Oil only flows through the valves when the fork moves (compression or rebound) so travel is essential to the level of shock absorption. This is an important part of tuning your fork. Adjusting the preload of a Mogul will allow you to get the most travel possible with its preset spring curve, while avoiding the possibility of bottoming out. With the Extreme, you can adjust the preload and change the spring curve to allow the most travel for your riding style.

The difference between suspension and shock absorption

Light damping, like that of an elastomer or steel spring fork, is best for comfort and elimination of vibration. With small bumps, a lot of shock absorption is not really necessary because these small impacts do not generate enough force to cause any problems for the rider.

Heavy damping is best for hard impacts and keeping your wheels on the ground for better control. For really hard hits, true shock absorption can save the rider by decreasing the actual amount of force they have to deal with.

You can adjust either the compression or rebound damping valves on both the Black Diamond and the Extreme. This allows both a better "feel" and also allows a rider to adjust the amount of shock absorption for their needs and the terrain they ride on. With most forks, this damping adjustment requires disassembly and possibly machining of the parts. With Trek forks, you can make these same adjustments on the trail.

The definition of the best suspension

Many riders today judge their suspension system by how much they can feel it move. The more movement, the better. Contrast this with car suspension. If your car moves up and down a lot over a bump, you probably need new shocks. Performance suspension holds the car firmly and lets the wheels move over the bump. In such a vehicle, you hardly feel the car move at all.

The ideal bicycle suspension should be unnoticeable except that when you ride a bumpy section of trail, you feel less. Different riders may need different spring curves or damping rates to achieve these goals. With Trek's Mogul series forks, pick from the simplicity of the Mogul or "design your own" with the Black Diamond or Extreme.

'94 Suspension Fork Feature/Benefits

Mogul

The Trek Mogul is a top quality suspension fork which offers great performance which requires only a simple air pressure adjustment by the rider. The Mogul offers a full 1.8 inches of travel with distinct benefits when compared to other suspension forks. The stanchions are very durable because they are nickel plated and hard chromed. This treatment also gives the Mogul's stanchions a super smooth surface for greatly increased seal life. Damping rates on the Mogul are designed by Trek engineers and preset at the factory for all-round performance over any terrain.

Virtually everything on the Mogul has changed for 1994. Longer sliders have been turned down to a smaller diameter at the bottom. With longer sliders, the Cro-Moly stanchions can be made shorter. Both reduce weight.

While redesigning the sliders, the bushings were separated further, and bushing tolerance was decreased (made tighter), both adding lateral rigidity. With longer sliders, the new brake arch has been made shorter, as well as being a new design of forged aluminum for much greater stiffness. The new crown has less offset and narrower stanchions, adding even more stiffness and again reducing weight.

Inside, there is a new topout bumper and lighter, synthetic fork oil. Synthetic oil is longer lasting and has less viscosity change with extreme temperatures.

Damping rates for rebound and compression have been modified. One side of the new Mogul uses the same valves as the DS2, and one side uses the valves from the '93 Mogul. This means that the Mogul's damping is about halfway between the two.

Maintenance of the Mogul will be very similar to the '93 version. The Trek tool kit from '93 has all the required tools, and most of the rebuild parts will remain the same.

Mogul Black Diamond

The '94 Black Diamond gets all the weight reduction and stiffness enhancement benefits of the Mogul , but with a lighter and stiffer 100% carbon fiber brake arch. A stiffer arch and tighter bushings mean that there is less flex between the handlebars and the front wheel. This dramatically increases steering control and stopping power.

The triple adjustment offered on the '94 Black Diamond lets a rider custom tune the shock absorbing capabilities of their fork. Preload, compression damping, and rebound damping can all be tuned right on the trail. Also improved for '94, the new damping dials are moulded so they are more comfortable to turn, rotate easier, and the indicator numbers are moulded in.

The ability to adjust both compression and rebound damping is accomplished by adapting the damping control mechanism found in the '93 Black Diamond. Like the '93 model, both fork legs have separate valves for rebound and compression. The difference is that with the '94 model, only

the left leg has the compression damping adjustment found in both legs of the '93 version. The '94 model offers adjustable rebound damping in the right leg. An oversimplified explanation of this would be to say that we just turned the adjusting mechanism upside down in the right leg.

Mogul Extreme

The new quadruple-adjust Extreme offers the most tunable suspension fork on the market. Now you can set your forks to your riding style in four ways.

1. Adjust the preload to adress your body weight and pedaling style.
2. Adjust the compression damping to absorb some of the force which would otherwise end up at the handlebars.
3. Adjust the rebound damping to control the speed of the sliders after impact. Remember that higher air pressures in the fork will create higher rebound speeds. These higher air pressures are the result of a higher preload or from fully compressing the fork, especially if you start with a small air volume.
4. Change the air volume to change the spring curve of your forks.

With correct adjustment, your forks get the most travel possible for the type of riding you do.

STS Suspension Track System

Full suspension bikes offer a rider all the benefits of front suspension, plus the same benefits for the rear of the bike. Comfort, efficiency, and control are all enhanced. However, like front suspension in its infancy, there can be a lot of resistance to such a bike. Common complaints mostly center around the extra weight, extra complexity and lower rigidity. These are the same complaints that early proponents of front suspension encountered. In fact, these are the same complaints which were voiced when the derailleur was introduced!

However, given time, we all learned to tolerate the inconvenience of having derailleurs stuck all over our bicycles. Like derailleurs, with some use you learn how to use the confounded contraptions, and pretty soon you wouldn't know how to ride without them.

Also like derailleurs, full suspension bikes continue to go through a series of refinements. STS has the following benefits:

- •Approximately 3.5 inches of rear wheel travel
- •Lower weight
- •Less maintenance
- •More damping
- •More easily adjustable for rider preference
- •Greater torsional and lateral rigidity
- •Better component interface
- •Can be retrofitted to T3C or T4C suspension bikes.

These benefits have been achieved primarily by the new STS design itself. With STS, the portion of the swingarm in front of the pivot has been extended which changes the leverage ratio of the swingarm. With a longer lever in front of the pivot, it takes less force to control the motion of the swingarm at the rear wheel. Less spring force is needed to control the up and down motion of the swingarm. The damping exerts a greater force on the rear wheel. This increased leverage even adds torsional rigidity to the swingarm.

The Risse shock which we spec'd offers a variety of great features. With the addition of this rear air/oil shock, you have both compression damping and rebound damping. The Risse shock has more travel than the AB Zorb II rear shock, so when combined with the new swingarm's lengthened front lever arm, the rear wheel travel remains about the same (it actually increased by a few millimeters). The Risse's air spring has a less progressive spring curve than the elastomer of the AB Zorb, so more travel can be utilized with most bumps (see spring curve information for forks). However, the extra damping means that you won't feel the travel as much, providing less noticeable, but more effective shock absorption. With a better spring curve and more damping, STS becomes much less sensitive to adjustments. Test rides will be easier to set up because the system doesn't have to be "just so" for good performance, a real plus when its time to sell a suspension bike.

The OCLV swingarm provides greater strength, lateral stiffness, and torsional stiffness. It is also 3/4 of a pound lighter than its aluminum cousin. STS uses a new aluminum pivot axle, which further reduces weight. This aluminum axle is Electroless Nickel plated and Teflon impregnated making

it lighter yet more durable then the stainless steel axle of '93. It also has SpiraLock threads, which are like having tiny teeth in the threads to prevent pivot axle retention bolts from loosening.

A further '94 feature is the deletion of the seat tube "window" cable routing. With the development of new off-center cantilever brakes, the brake cable no longer requires a center routing. This allows a stronger pivot lug with lower weight.

Risse rear shock

The Risse rear shock is an air/oil shock which provides both compression and rebound damping. The air preload is adjusted via a Schraeder valve using a Risse pump and the special adapter. This adapter does not open the pump's Schraeder valve until the pump is almost fully attached. With this adapter's mechanism, when you remove the pump after inflation, the shock remains at the last pressure reading you saw on the gauge.

Oil compression and rebound damping in the Risse is provided by a series of reed valves stacked on either side of a thin piston. One side of the piston is for rebound, and one for compression, so each function may be separately tuned by installing different diameters or thicknesses of reed valves on either side of the piston. Because of the relatively large damping valves in the shock, it is not effected very much by oil viscosity. This means that in extremely cold temperatures, it is not necessary to change the oil for correct performance.

At full extension of the shock, the piston fits tightly inside a port inside the shock. During the last 3 millimeters of travel the piston begins to enter the port and the the shock's oil remaining inside the port is forced to exit through a tiny bleeder valve. This added damping greatly increases the resistance to the piston's movement, providing a top-out mechanism. At full extension, all the oil is pushed out of the port.

When the shock undergoes compression from this fully extended position, the first 3 millimeters of travel create a vacuum as the piston is drawn from the port. The piston's position in the port must be replaced by oil and the port can only be refilled through the bleeder valve. This resistance to the first 3 millimeters of shock travel equals about 8 mm of travel at the rear wheel. This extra damping gives a lockout effect to the STS in its fully extended position. This lockout allows you to ride the STS bikes at a slightly reduced preload and still get great performance.

The service recommended for a Risse rear shock is much like that of a Trek air/oil fork. Under normal usage, it should only need servicing every two years. However, the conditions and regular maintenance (such as cleaning) of the shock will greatly effect this. Caked mud or ice crystals can be jammed into the seals and increase wear. Always keep the shock and its working parts as clean as possible.

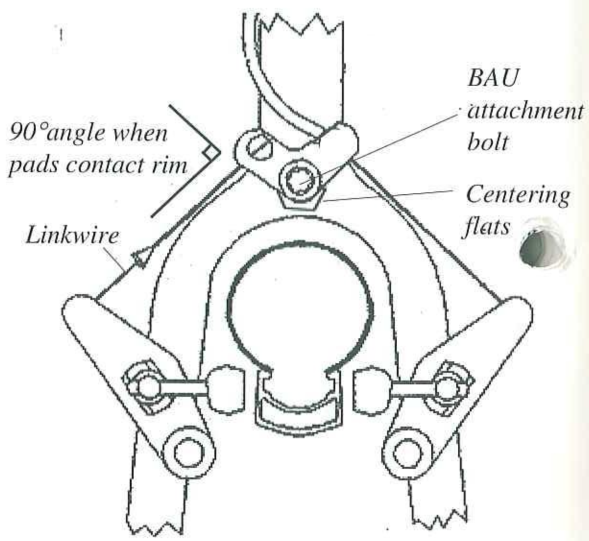
Rebuilding a Risse shock for maintenance or tuning is fairly simple. A single parts kit provides all the seals and O-rings necessary, as well as a selection of reed valves for custom tuning. Only one special tool is needed to disassemble a Risse shock. This tool holds the shock's main shaft while the shock's body is unthreaded. Rebuild instructions will be included in the '94 Trek Suspension Service update.

Info for the mechanic

BAU- Brake Actuator Unit

All Trek SingleTrack, ABT, and OCLV mountain bikes come with a BAU. This nifty device is also available aftermarket for other models or brands of bikes. It is listed as a System component in the Trek catalogue. The purpose of the BAU is to allow a smooth cable routing to the rear brake without involving the seat post clamp bolt or quick release. It has the further benefits of providing a nicely progressive braking feel, and it also allows easier centering of cantilever brakes. To correctly adjust the BAU, refer to the illustration below and follow these simple instructions:

1. Connect the correct linkwire to the BAU and the left cantilever (as you face the brakes).
2. Adjust the left brake pad so that it is aligned with the rim, centered on the rim, and has correct toe-in, but do not tighten the pad adjusting bolt.
3. The correct length of the brake pad post is determined by the angle of the linkwire. As the pad contacts the rim, the linkwire should form a 90-100° angle with the lower, straight edge of the BAU where the linkwire enters the BAU.
4. When the correct brake pad post length has been set, tighten the brake pad adjusting bolt.
5. Adjust the right brake pad (as you face the brakes) to match the brake pad post length of the left brake arm. As before, center, align, and toe the pad as normal.
6. Back the centering screw most of the way out of the brake (but not all the way).
7. Insert the housing, with ferrule, into the housing stop of the BAU.
8. Attach the brake cable to the right brake arm.
9. Center the brake pads over the rim. This is done by placing a 16 mm wrench on the centering flats on the back of the BAU. Loosen the BAU attachment bolt with a 5mm hex wrench. Rotate the wrench until the brakepads are centered, and tighten the attachment bolt. Although centering the pads does not always mean the pads will hit the rim at the same time, this small difference will not effect braking performance.
10. As usual, follow all safety precautions to ensure that the brakes are correctly adjusted.

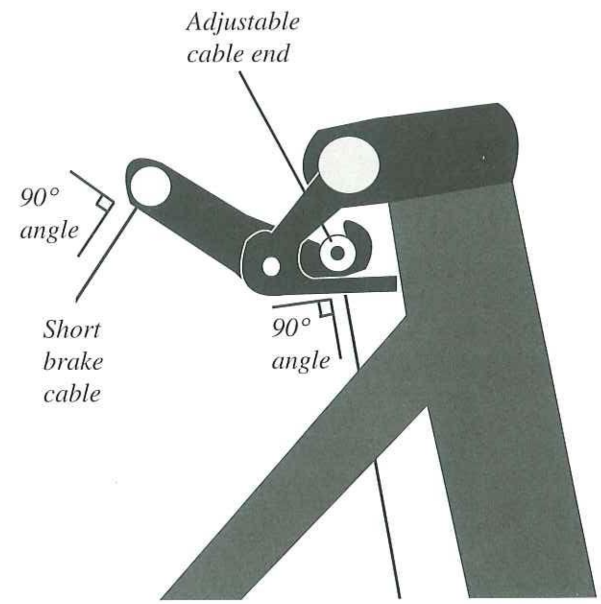


BAU- Women's frame model

There is also a BAU for Trek women's frames. This device avoids unwanted friction which can come from using a roller or excessive housing to route the cable around the dropped top tube, up the seat tube, and back down to the brakes.

To adjust a BAU on a women's model, refer to the illustration below and follow these instructions:

1. Install the rear brake cable in the lever and follow the normal cable routing to the BAU.
2. Loosen the set screw in the adjustable cable-end and thread the cable through the small hole.
3. Place the adjustable cable end in the hook of the BAU. Position the BAU so that a line intersecting the center of the cable end and the BAU pivot is perpendicular (90°) to the brake cable.
4. Tighten the set screw to clamp the cable.
5. Attach the barrel end of the short brake cable (standard ATB style) to the end of the BAU with the enclosed "eye".
6. Attach the brake straddlewire carrier to the short brake cable, attach the straddlewire, and adjust as usual.
7. The short brake cable should also form a 90° angle with the BAU.



Side-actuated brake adjustment

The 1994 Trek STS full suspension bikes have received many upgrades in frame design and components. With the rear brakes, new cantilever designs allow top tube cable routing and removal of the seat tube "window". This reduces the stress on this part of the frame, so we were able to use less material to reduce weight, yet provide a stronger frame.

These new brakes work like cantilevers, but the actuating force is from the side rather than the center. These brakes work best with high quality, flexible brake cables such as Shimano's SLR brake cables.

Interloc Racing Design Widget

To adjust the IRD Widget, follow these instructions:

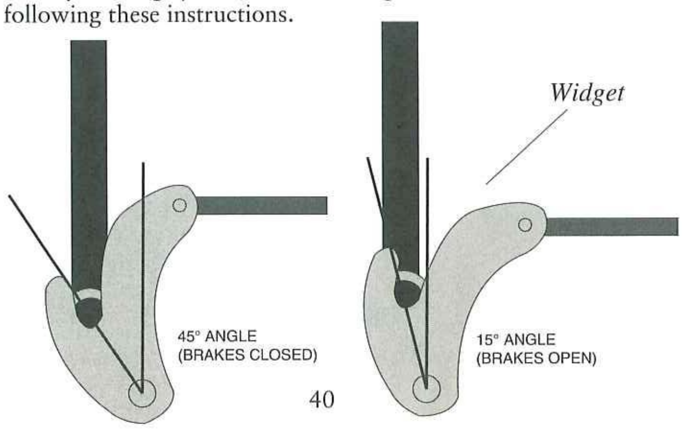
1. Mount the brakes on the cantilever posts without the springs.
2. Install the fixing bolts (without the springs) and tighten. Check that the brake arms move freely.
3. Remove fixing bolts and brake arms. Re-install the springs, brake arms, and fixing bolts on the frame. There are Left and Right springs. Springs should wind tighter as the brakes are applied.
4. Screw the connector rod into the tube about 0.5in (12mm).

Caution! A minimum insertion of at least 1/4" is required for safety.

5. Install the cable, but do not tighten the cable clamp bolt.
6. Connect the connector rod.
7. Adjust the cable and connecting rod so that the widget is rotated about 15° when the brake is open. Kink the cable where it enters the brake arm so that it follows the contour of the arm, then tighten the cable clamp bolt.
8. Set pad contact and toe-in. It is not important that the hardware stack holding the brake post stud is aligned, just that pad position is correct.
9. Center the brakes by rotating the 11/16" centering nut while holding the brake fixing bolt with an allen wrench. (Note: Centering nut may be rotated without loosening the fixing bolt).

The ideal pad clearance should allow 2 mm between each brake pad and the rim. Optimum braking power is applied when the widget is at a 45° angle to the centerline of the cantilever. The three things effecting this adjustment are cable tension, connecting rod length, and brake pad post extension.

As with any braking system, as the brake pads wear these brakes should be readjusted following these instructions.



Paul Component Engineering Cross-Tops

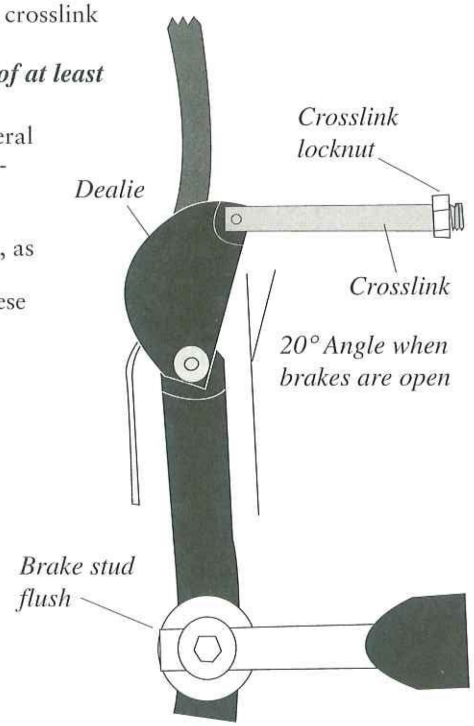
To adjust Crosstops, follow these instructions:

1. Adjust the pads. The end of the brake pad stud should not extend beyond the pad washer, as shown. Pad adjustment should be normal with the pads aligned and centered on the rim with about 0.5-1.0 mm toe-in. Make sure the pads do not contact the tire at any point in the wheel's rotation, and that the pads cannot "dive" off the rim. Fine-tuning may be necessary after the first ride.
2. Insert the cable and housing into the Dealie. Thread the cable through the cable clamp.
3. Pull the cable until the flat side of the Dealie is at about a 20° angle to the cantilever arm.
4. Tighten the cable clamp.
5. Loosen the cantilever mounting bolt on the left cantilever, rotate the square centering block with a 16mm wrench until a little spring tension holds the pad away from the rim. Retighten the cantilever mounting bolt.
6. Repeat the tensioning process in #5 for the right side.
7. Screw the crosslink into the tube until there is about 2 mm clearance between the pads and the rim on both sides of the wheel. Tighten the crosslink locknut snugly.

Caution! A minimum insertion of at least 1/4" is required for safety.

5. Apply the brakes firmly several times, and recheck your adjustments.

As with any braking system, as the brake pads wear these brakes should be readjusted following these instructions.



Dry firing

One of the first things that people love to do with the new shifting systems is "dry-fire" the shifters. Dry-firing is shifting the shifters on a derailleur equipped bike without moving the chain. While this may seem innocent enough, it can seriously damage the works of virtually every shifter on the market.

The problem is this: If the shifter is shifted so that cable tension is removed, the cable end may become disengaged from the shifter. As the shifter is then shifted again, the loose cable end can get jammed, and the cable end can damage other shifter parts. In particular, the gear indicators on the new Shimano shifters can be damaged, and these are time consuming to repair.

Note: This is not a warranty situation.

Over the years Shimano has introduced an amazing array of new products to enhance the performance of mountain bikes. SIS shifting, RapidFire Plus, HyperGlide, SPD, and more. For 1994, Shimano is introducing reduced size mountain bike drivetrains called Compact groups. These groups use smaller chainrings and smaller cassettes. This reduces weight while increasing shifting accuracy.

Chainring bolt hole circles

In order to accommodate these new, smaller pieces, the bolt hole circles on Shimano cranks have changed. For your use and reference, these crank arms use the following bolt hole circles:

'93 XTR, XT, DX, LX, Altus	74 mm/ 110 mm
400CX, 700CX	58 mm/ 110 mm
'94 XTR	74 mm/ 110 mm
'94 XT-C, LX-C	58 mm/ 94 mm
'94 STX, Alivio	58 mm/ 95 mm

Note: The STX inner ring is not interchangeable with XT, LX, 400CX, or 700CX due to ring shape.

Cassette interchangeability

Although larger in size (number of teeth), '93 cassettes will fit on '94 freewheel bodies. However, the reverse is not true. '94 Compact cassettes will not fit on '93 freewheel bodies.

Complete wheels are interchangeable, because the cog spacing remains the same within the 8 speed and 7 speed families.

There are several advantages to the AheadSet system: Lighter weight, better control, and easier service.

The adjusting mechanism on an AheadSet is very simple, yet works better than a standard headset. There are several pieces that are different, because there are no threads on the steerer. All the headset parts that normally thread onto the top of the fork are now smooth, so they slide down the steerer. The stem slides over the steerer, along with two 5 mm stem height adjusters. These height adjusters can be placed above or below the stem to change the handlebar height. A plastic top cap sits above these. A long adjusting bolt goes through the top cap, and engages the threads of the star-fangled nut, a star washer that is pressed into the inside of the steerer. Tightening the adjusting bolt pulls the stem down the steerer, pressing downwards on the stem and the height adjusters, and thus onto the headset, tightening the bearings. Once the correct adjustment of the headset is determined, tighten the stem clamp bolt(s). This firmly attaches the stem to the steerer, and prevents the headset bearings from loosening, effectively locking in the adjustment.

Normally, it doesn't take a lot of tightening force to achieve the correct headset adjustment. We offer a torque spec of about 22 lb•in, which is enough to move the stem, against some friction, and still get the right adjustment. 22 lb•in of torque is roughly equivalent to 5 pounds of force at the end of a 4 inch allen key.

If you find that the adjusting bolt requires too much torque to get good headset adjustment, you should check several things:

-Make sure the stem clamp bolts are loose enough.

-Some stems fit rather tightly onto the steerer (especially with an aluminum steerer like on some Trek suspension forks), which would require more force to move the stem down to tighten the bearings. In these cases, it is advisable to spread the stem slightly so it will slide more easily on the steerer.

-Make sure that the steerer is not too long. Correct stem/steerer fit should leave the top of the steerer 1 to 3 mm lower than the top of the stem. If you have removed any of the headset parts (such as reflector brackets) you may need to add a spacer under the stem to achieve this clearance. In no case should the stem be more than 3 mm above the top of the steerer. This would be dangerous.

-Make sure that both the steerer and the adjusting bolt have been lightly greased.

-Make sure there are no projections from either the top cap or the inside of the steerer which would prevent the top cap from easily sliding down the steerer.

-Make sure the top cap is not contacting the star fangled nut (the star shaped piece inside the steerer that the adjusting bolt threads into).

Remember that by design the top cap is not very strong. If the top cap was very strong and the adjusting bolt was over-tightened, the headset could be damaged. Even so, the top cap will withstand about 60 lb•in, or three times more force than should be required for correct headset adjustment.

For mechanics- KSS & Campagnolo

KSS/Sachs bottom bracket-

This is a high precision, tightly sealed cartridge type bottom bracket. It is held in place by two plastic bottom bracket cups. These cups use a slight resistance fit to prevent them from loosening. This resistance means that you do not use the proper tool, or if you overtighten them, you will dama the cups. Park makes a tool specifically for these cups (TCG P/N 53037). Also please note that the torque specs for these cups is 160-175 lb•in (184-204 kgf•cm). This is considerably lower than the torque spec for most other bottom brackets.

Campagnolo

A welcome addition to the Trek line for 1994 is the revered Italian components manufacturer, Campagnolo. Campy is known for their high quality, durable designs and we feel they will nicely compliment the quality of our Trek frames.

The majority of the Campy parts will need little or no explanation. However, there are a few unique things to be aware of.

• Chorus shift lever centering screw-

The shift lever of a Chorus Ergopower shift lever can be centered behind the main (brake lever). This is accomplished by rotating a small 1.5 mm allen screw located at the top of the shift lever.

• Campagnolo cassette alignment-

When the cogs are correctly aligned, Campy shifting is as good as it gets. Its quick, its solid, and the smoothness of Campagnolo drivetrains is unrivaled.

To remove Campy cogs from the freewheel body, use a Shimano or Park cassette lockring tool and Park chainwhip (TCG P/N 52017) following the same method as when removing a Shimano cassette lockring.

To get the best shifting, the cassette cogs must be correctly aligned. While Shimano uses a positive locator on each cog to keep cogs aligned for HyperGlide, Campy has designed a system that allows more cog inter-changeability for rider customization of their gearing. To install Campy cogs, read the chart on the next page as you follow the instructions:
NOTE: Always place each cog on the body with the stamped letter facing o

Campy cog installation instructions:

1. Install the first cog in any orientation, stamped letter out. This is your first Installed Cog.
2. Place a spacer over the cog.
3. Select your next cog.
4. Find it's listing on the side of the chart marked Next Cog to be Installed.
5. Find the listing for the Installed Cog at the bottom of the chart, and note the letter indicated where the two listed cog numbers meet.

6. Find the listed letter on the Cog to be Installed. Place that letter in alignment with the 'A' on the last Installed Cog on the freewheel body.
7. Repeat for all 8 cogs. The last cog does not require special alignment.
8. Tighten the cassette lockring to 35-40 lb•in (40-46 kgf•cm).

NEXT COG TO BE INSTALLED \ INSTALLED COG	14	15	16	17	18	19	20	21	22	23	24	26	28	30	32	34
32																E
30															H	B
28														E	F	A
26													G	A	C	
24												A	H			
23												G				
22											C	H				
21									G	G	E					
20								G	A	E	C					
19							A	A	B							
18						B	H	G								
17					G	B	C									
16				A	A											
15			B	D												
14		B	F													
13	A	D														

INSTALLED COG

Gore RideOn Derailleur Cables

The Gore RideOn cable system is a unique feature which employs several thin layers of PTFE (also known as Teflon) to greatly reduce cable friction. The reduction of friction is a big benefit in modern indexed shifting systems. With RideOn cables, every shifting system will work its best. When included with 1994 Trek models 5500, 9500, and 9900, the parts of the system are:

- Innerwire, like a coated cable (2)
- Liner - small diameter tube about the same length as the innerwire (2)
- Guide armor - larger diameter tube about 2.5 inches long (2)
- Umbrella tube - 8 inch larger diameter tube (1)
- RideOn housing cut to length
- Housing ferrules with oversize openings for the cable liner (already installed on housing)
- Cable ends (2)
- Instructions for removal of existing cables and installation of RideOn cables.

Notes before starting installation:

- Only use the RideOn housing, coated innerwire, liner, and special ferrules. Using standard cables with RideOn housing may allow contamination of the cables resulting in poor performance.
- Do not use grease or any other lubricant on RideOn innerwire, liner, or housing.
- Pay special attention to the housing ends. Make sure they are equipped with RideOn ferrules, and that they are open and free from burrs.
- Be especially careful not to scratch or tear the coating on the innerwire. Pulling the innerwire across any sharp edge (such as a shifter or the edge of a ferrule) can pull the coating off and ruin the cable.
- When referring to the routing of the innerwire and housing, first or front indicates the part closest to the shifter, while last or back refer to the part closest to the derailleur.

For rear derailleur (5500, 9500, 9900)-

1. ***Thread the innerwire***
   Remove the coated innerwire from the liner. Thread the innerwire through the shifter.
2. ***Install the liner***
   Slide the liner over the innerwire. For model 9900 with GripShift, cut 9in. (23cm) off the liner before installation.
3. ***Install the housing***
   Install the liner, with the innerwire inside, through the first housing. Pushing them through together with a slight twisting motion will make it easier to insert the liner into the housing. If the liner does not easily pass through the housing, do not force it. Recheck the housing and ensure that there are no snags or burrs.

4. ***Align the liner***
   Line up the liner with the front end of the housing. Make sure the liner does not extend past the front end of the housing, as this could jam the shifter. Position the housing in its shifter and housing stop.
5. ***Install the guide armor*** *(for 9500 with top tube routing, skip this and go to Step 6).*
   Slide a guide armor into the bottom bracket cable guide. Align the front of the armor with the front of the cable guide.
6. ***Continue routing the innerwire***
   Continue routing the liner and innerwire through the housings and guides, but do not thread them through the derailleur yet. At this point, the innerwire and liner should extend out of the last piece of housing.
7. ***Take out the slack***
   Make sure the liner is correctly aligned with the front housing (see Step 4). With the front housing back in its stops, make sure each piece of housing is firmly in its housing stops by pulling on the end of the innerwire, but not the liner.
8. ***Cut the liner to length.***
   With a sharp blade, cut the liner off at the back end of the last housing.
9. ***Trim the innerwire***
   With the housings and liner in place, pull the coated innerwire tight. Use a sharp blade to score the Gore-Tex cover of the innerwire at the back end of the last housing. Avoid nicking the cable. Slide or peel the coating off the end of the innerwire, leaving a bare wire.
10. ***Attach the innerwire and adjust the derailleur***
    Attach the bare innerwire to the derailleur as normal. Follow normal procedures to adjust the derailleur and adjust cable tension. Install a cable end to prevent fraying.

For front derailleur (5500, 9500, 9900)-

1. ***Thread the innerwire***
   Remove the coated innerwire from the liner. Thread the innerwire through the shifter.
2. ***Install the liner***
   Slide the liner over the innerwire. For model 9900 with GripShift, cut 9in. (23cm) off the liner before installation.
3. ***Install the housing***
   Install the liner, with the innerwire inside, through the first housing. Pushing them through together with a slight twisting motion will make it easier to insert the liner into the housing. If the liner does not easily pass through the housing, do not force it. Recheck the housing and ensure that there are no snags or burrs.

4. Align the liner
Line up the liner with the front end of the housing. Make sure the liner does not extend past the front end of the housing, as this could jam the shifter. Position the housing in its shifter and housing stop.

5. Install the guide armor
Slide a guide armor into the bottom bracket cable guide. Align the front of the armor with the front of the cable guide, and thread the liner and innerwire through the guide armor. For the 9500, which uses a plastic bottom bracket cable guide, make sure the guide armor is completely seated in the grooves of the cable guide.

6. Mark the liner
Pull only the innerwire enough to pull the slack out of the system. Determine the point where the front derailleur will clamp the innerwire and mark the liner with a felt pen at the clamp point.

7. Cut the liner to length
Carefully pull the front housing (with the liner) out of the shifter about 6 inches. With a sharp blade, cut the liner at a point two inches in front of (below) the mark you made showing the cable clamp point.

8. Remove the slack again
Slide the housing back into the shifter. Make sure the liner is correctly aligned in the housing (see Step 4). Pull the back end of the innerwire to remove the slack.

9. Install the umbrella tubing
Slide the umbrella tubing over the innerwire and liner. Position the umbrella tubing so that it will overlap the liner by about 2 inches.

10. Clamp the innerwire
Pull the innerwire only, and clamp the innerwire and umbrella tubing in the front derailleur cable clamp bolt in its normal routing. Tighten the cable clamp. Be sure the liner is not caught in the cable clamp. The installed innerwire must be free to move inside the liner, and the umbrella tube will move outside the liner.

11. Adjust the derailleur and cut the innerwire.
Adjust the derailleur. Cut the innerwire and umbrella tubing about 1 past the derailleur cable clamp and install a cable end cap over both the umbrella tube and innerwire.

Trek has spec'd the world's leading pedal system for many years with great success. 1994 improvements to the Look pedal line include:

- Left and right threading to pedal bearing assemblies to prevent accidental disassembly
- New, more stylized looks
- Dynamic positioner for cleat installation
- 'Free-Arc' variable rotation adjustment on model PP-286

Note: Do not adjust the Free Arc rotational adjustment with the cleat engaged in the pedal.

Dynamic Positioner

To install Look cleats with the Dynamic Positioner:

1. Set the pedals at their lowest release setting.
2. Screw the cleats onto the shoes without tightening all the way.
3. With the Dynamic Positioner in the Open position (parallel the sole), slide it into the slot between the cleat and sole. The cleat must be able to move at this time. Adjust the cleat attachment screws at this time as necessary.
4. Turn the Dynamic Positioner to Lock (pointing up) and put on the shoes.
5. Step into the pedal. If used with PP-286, turn the Free-Arc adjustment to 0° rotation before entering the pedals.
6. Unlock the Dynamic Positioner and pedal. Move the foot around until the right position is found, and then Lock the Positioner.
7. Step out of the pedal.
8. While holding the cleat securely, Unlock the Positioner and tighten the cleat attachment screws.

ACSD AntiChain Suck Device

All 1994 Trek mountain bikes built in the U.S. have an adjustable Anti Chain Suck Device (ACSD) Unfortunately, the ugliness of chainsuck is an off-road fact of life. Even with the best equipment in great shape, a little mud can stick a chain to a chainring in nothing flat. The Trek ACSD is the best protection there is for protecting those tender chainstays.

If the chainrings are bent or misaligned, it is critical that they be straightened before performing this adjustment. To adjust the Trek ACSD, loosen the two mounting bolts which attach the ACSD plate to the chainstay. Position the ACSD plate so that there is between 1 and 2 mm of clearance between the ACSD and any part of the chainrings. Tighten the ACSD adjusting bolts.

It is advisable to test ride the bike after adjusting the ACSD because some chainrings may deflect under pedaling loads, causing the ACSD to rub. While this may not hurt the bike, it will be very annoying to the rider.

In some cases when riding, accumulated mud and goo may cause rubbing even with a correctly adjusted ACSD. These same gooey conditions are the times when ACSD adjustment is most critical. Avoid leaving extra room for goo to pass the ACSD, as this may also allow the chain through the larger gap if the chainrings flex further under pedal pressure.

ACSD fender mounting bracket

To prevent excess mud buildup in the bottom bracket/ACSD/front derailleur area, most Trek mountain bikes do not have chainstay bridges. Through careful design, they are not required for strength or stiffness. This reduces weight and helps these areas stay clean.

However, if a rider wants to install fenders on a mountain bike, most full coverage fenders require a bottom bracket mounting location.

We have thoughtfully provided a fender mount which may be installed as an accessory to the Trek ACSD. To install the fender mount, simply remove the ACSD attachment bolts, install the fender mounting bracket between the ACSD and the chainstays, and readjust the ACSD as normal.

ACSD generator mount

The '94 Trek 750 MetroTrack uses the ACSD mount for still another purpose. The generator mount of the 750 Metro is attached to the ACSD. When using the mounts for this extra purpose, it is recommended that you adjust the ACSD first, as outlined above, and then position the generator mount.

Other details

ABT Road bike top tube cable sleeve

Trek ABT (Advance Bonding Technology) road bikes route the rear brake cable through the top tube (with the exception of the OCLV models). This cable routing is clean and visually eye appealing. However, on large bumps, the brake cable housing can bounce inside the top tube, making an annoying sound.

To prevent this form happening, we have included a foam sleeve with each of these bikes. The foam looks like a very small diameter piece of pipe insulation.

To install this device, please follow these instructions:

1. Thread the rear brake housing into the top tube through the front entry hole.

2. Push the housing through the top tube and guide it out through the seat lug and seat tube.

3. Slide the foam sleeve over the housing, ease the foam through the seat lug hole, and continue to slide the foam into the top tube. It may be necessary to compress the foam or wiggle it a bit to slide it through the seat lug.

4. Slide the foam as far forward as possible in the top tube.

5. Pull the rear end of the cable housing back into seat tube a bit, and reroute the housing through the rear housing exit hole of the seat lug/top tube.

Note: When installing a new cable housing at some time in the future, it is not necessary to route the new housing through the foam sleeve. The sleeve will usually do its job even if its just loose in the top tube.

Another tip: On small sizes, sometimes the cable housing will cause the rear brake to become un-centered. If this occurs, try attaching the smallest size of wire tie to the housing where it exits either end of the top tube. This will prevent the housing from sliding through the top tube.

OCLV seatlugs

Do not grease the seatpost on bikes with OCLV construction.

The seat lug on Trek OCLV road and montain bikes are built with a single piece construction. After the lug is built, a carbon fiber tube is laminated to the lug. The interior of this tube is lined with a thin layer of fiberglass.

This fiberglass layer prevents galvanic corrosion between the aluminum seatpost and the carbon fiber by keeping them separated. If you apply grease to the seatpost, the grease will permeate the fiberglass, and you will not be able to adequately clamp the setpost.

If the seatpost has been inadvertantly greased, remove the grease with solvent (but don't get any solvent in the bottom bracket).

Item	Torque Specifications LB•IN	KGF•CM
Handlebar clamp bolt, forged stem	150-180	170-200
Handlebar clamp bolt, welded stem	100-120	115-140
Stem wedge bolt	175-260	200-300
Direct connect steerer clamp bolt	100-120	115-140
Bar end attaching bolts	130-150	150-170
Seat attaching bolt	175-350	200-400
Seat post binder bolt	150-180	170-200
Water bottle attaching bolt	20-25	23-29
Crank arm bolt	300-390	350-450
Chainring bolt	50-70	60-80
Pedal attachment	350-380	400-440
KSS cartridge bottom bracket	160-175	184-204
Shimano cartridge fixed cup	403-600	463-690
Wheel axle nuts	130-210	150-250
Campagnolo cassette lockring	35-40	40-46
Shimano cassette lockring	347	400
Front derailleur clamp bolt	40-60	50-70
Rear derailleur attaching bolt	70-85	80-100
Front and rear derailleur cable clamp bolt	35-52	40-60
Shifter clamp bolt, top mount style	40-60	50-70
Brake lever attaching bolt	40-60	50-70
Brake caliper attaching bolt	70-85	80-100
Cantilever brake attaching bolt	40-60	50-70
Caliper brake pad attaching bolt	40-60	50-70
Cantilever brake pad attaching nut	70-80	80-90
Brake cable clamping bolt	50-70	60-80
Cantilever cable carrier fixing bolt	35-45	40-50
Anti-Chain Suck Device	30-40	35-45

Item	Torque Specifications LB•IN	KGF•CM
AB Zorb II		
upper shock mounting bolt	220-230	254-265
lower shock mounting bolt	150-160	172-185
T4C pivot bolts	100-110	115-127
Mogul/ Mogul Black Diamond		
Brake arch-slider	90-110	104-127
Brake boss-slider	90-100	104-115
Brake cable housing stop-brake arch	55-70	63-81
Fork crown pinch bolts	78-96	90-110
DS2/ DDS3		
Fork crown pinch bolts	336-384	386-441
ShockWave		
Brake arch-slider	105-110	121-127
Slider retaining screws	60-70	69-81
Brake cable housing stop-brake arch	26	30
Rock Shox Quadra		
Brake arch attachment bolts	60-70	68-80
MetroTrack		
Fender adjusting nuts	30-40	35-46
Kickstand attachment bolts	30-40	35-46
Jazz Bicycles		
Handlebar clamp bolts (4 bolt stem)	80-100	92-115
Seat clamp (nutted type)	180-220	207-253

How to Use This Section

This section is designed to help the mechanic in the shop as well as the sales person on the floor. Explanations are given of materials, as well as definitions of technical and trademarked terms found in the 1994 Trek Catalog. Of special benefit is the information listed to help you upgrade your customer to the next model, or fit a customer on a Trek bike.

Spec Information- To help you use the model specifications listed in this section, the following definitions of terminology are given:

1. **Stand over height**- the distance from the ground to the top of the top tube, measured in the middle of the top tube.

2. **Top tube**- the length of the top tube measured from the centerline junction of the seat and top tubes to the centerline junction of the head and top tubes.

3. **Effective top tube**- the horizontal distance from the intersection of the head tube/top tube centerlines to the seat tube centerline. The more accurate way to talk about bike fit. Sloping top tube bikes have a longer effective top tube than actual top tube, because the top tube "takes a shortcut" to the seat tube.

4. **Stem extension**- the length of the stem measured from the center of the handelbars to the centerline of the steerer and stem, along the centerline of the stem. Because some stems are horizontal and some stems angled, there are two other stem dimensions to be aware of: reach (the horizontal component of the stem) and rise (the vertical component of the stem). Example: A 100 mm stem with a 25° rise in a bike with a 71° headtube will have a 44° rise when measured from the ground. In the bike this 100 mm stem has a reach of 71 mm and a rise of 71 mm. Also listed is the steerer clamp height of Direct Connect stems, because this effects steerer length.

5. **Reach**- the horizontal distance from the handlebars to an imaginary vertical line extending above the junction of the centerlines of the seat and top tubes. For the stoker position on a tandem, the reach will be shorter than the top tube. This information is also listed in compiled form so that if needed you can more quickly find a bike to fit a customer.

6. **Handlebar width**- the end to end dimension on mountain style handlebars, or the center to center dimension of the end of the drops on road handlebars. Al listed is the stem clamp diameter and amount of bend on mountain style bars.

7. **Crank arm length**- length of cranks measured center of bottom bracket axle to center of pedal axle.

8. **Head tube length**- original length of headtube. A more accurate way of determining steerer length is to combine stack height, headtube length, and stem requirements (different direct connect stems require different steerer lengths).

9. **Seatpost length**- includes diameter of post. In some cases such as suspension bikes, longer posts will not allow the seatpost to slide entirely down into the frame. If substituting seatposts, please ensure that the new seatpost is measured accurately for diameter.

Gearing- a listing of the number of teeth on the chainrings and freewheel cogs. A gear chart is found on pages 100 and 101.

General Information

Hubset type: describes the hub configuration for freewheels or drum brakes, and the number of spokes required.

Spokes: describes the length and guage (thickness) of the spokes. D/ND refers to the Drive/NonDrive spokes of the rear wheel, with the freewheel side being the drive side.

Tire size: indicates the original Trek tire size. On many models other sizes will fit.

Front derailleur: indicates the seat tube diameter, or "braze-on type" if the derailleur doesn't use a band or clamp attachment.

Bottom bracket: indicates model, shell width, and axle length.

Rear dropout width: indicates the distance between the inside dropout faces. With modern designs, this does not necessarily indicate the rear hub's outer locknut dimension.

Headset size: indicates the stem outer diameter/inner headtube diameter/fork crown race seat diameter in millimeters.

Stack height: the height of a headset when installed in the frame. This dimension is added to head tube length (also steerer clamp height and spacers for Direct Connect or AheadSet systems) to calculate steerer length.

Weight: actual weight of a complete bike, usually an 18" mountain bike, a 20" hybrid, a 56 cm road bike, or a 58x53 tandem.

Upgrades: this is a feature designed to help you upgrade your customer to a ...er model by listing several key features of a bike that are not found on the model before it. Example: the customer is test riding a 1400, and you want to sell the customer a 2200. The upgrades found on the 2200 are listed for your quick reference. If you need further information about a bike, such as frame angles or parts not listed in Upgrades, refer to your Trek catalog for a complete breakdown of specs and geometry for each bike.

Road Steel

Model 370

Sizes	19	21	23	25
1. Stand-over height				
Inches	29.4	31.3	33.2	35.2
Centimeters	74.7	79.5	84.4	89.3
2. Top tube				
Inches	20.9	21.6	22.4	23.2
Centimeters	53.0	55.0	57.0	59.0
3. Effective top tube				
Inches	20.9	21.6	22.4	23.2
Centimeters	53.0	55.0	57.0	59.0
4. Stem (extension / -17 degrees rise)				
Millimeters	80	80	100	120
5. Reach (effective top tube + stem reach)				
Inches	24.8	25.6	26.4	27.2
Centimeters	63.0	65.0	67.0	69.0
6. Handlebar width (25.4 mm diameter)				
Millimeters	390	410	410	430
7. Crank arm length				
Millimeters	170	170	170	170
8. Head tube length				
Inches	3.3	4.1	6.1	8.1
Millimeters	85	105	155	205
9. Seatpost length (26.6 mm diameter)				
Millimeters	220	220	220	220
10. Gearing	40/52		12-14-16-18-21-24-28	

General Specifications

Hubset, type	HyperGlide
Spoke number	36
Spokes, front	304 14ga.
Rear (D/ND)	302/304 14ga.
Tire size	700 x 25
Front derailleur	28.6 mm / 1 1/8"
Bottom bracket	BB-CS11
Shell width	68
Axle length	115
R. Dropout width	130 mm
Headset size	22.2/30.0/27.0
Stack height	35.5 mm
Weight	25.3 lb/ 11.46 kg

Features

- *Great value in all round road bike*
- *Double butted Cro-Moly main triangle*
- *Cro-Moly fork*
- *Shimano SIS 14 speed w/ 400LX rear derailleur*
- *Trek Gel saddle*
- *Micro adjust alloy seatpost*
- *IsoTech 2 tires, alloy rims*

Model 520

Sizes	17	19	21	23	25
1. Stand-over height					
Inches	27.0	28.0	28.8	29.8	31.3
Centimeters	68.7	71.1	73.1	75.8	79.5
2. Top tube					
Inches	20.3	20.8	21.4	22.0	22.4
Centimeters	51.6	52.9	54.4	55.8	56.8
3. Effective top tube					
Inches	21.3	21.7	22.0	22.4	22.8
Centimeters	54.0	55.0	56.0	57.0	58.0
4. Stem (extension / 0 degrees rise)					
Millimeters	65	80	100	100	120
5. Reach (effective top tube + stem reach)					
Inches	23.7	24.6	25.8	26.2	26.6
Centimeters	60.1	62.6	65.5	66.5	67.5
6. Handlebar width (25.4 mm diameter)					
Millimeters	400	400	420	420	440
7. Crank arm length					
Millimeters	170	175	175	175	175
8. Head tube length					
Inches	3.3	3.3	3.3	4.1	5.7
Millimeters	85.0	85.0	85.0	105.0	145.0
9. Seatpost length (27.2 mm diameter)					
Millimeters	250	250	250	250	250
10. Gearing	26/36/46			11-13-15-18-21-24-28	

General Specifications

Hubset, type	HyperGlide
Spoke number	36
Spokes, front	297 14ga.
Rear (D/ND)	295/296 14 ga.
Tire size	700 x 28
Front derailleur	31.8 mm / 1 1/4"
Bottom bracket	BB-UN51
Shell width	68
Axle length	118
R. Dropout width	130 mm
Headset size	22.2/30.2/26.4
Stack height	31.8 mm
Weight	24.5 lb./ 11.12 kg.

Features

- *True long distance touring bike*
- *True Temper custom butted Cro-Moly*
- *Deore LX 21 speed with bar end shifters*
- *System 2 Gel saddle and 90° stem for comfort*
- *36° Titan Tour wheels, Kevlar belted tires*
- *Full braze-on package with low rider mounts*

Road Aluminum

Model 1200

Sizes	47	50	52	54	56	58	60	62
1. Stand-over height								
Inches	28.5	29.6	30.4	31.2	31.9	32.6	33.4	33.8
Centimeters	72.4	75.3	77.1	79.2	81.1	82.9	84.8	85.8
2. Top tube								
Inches	20.1	20.9	20.9	21.7	21.7	22.4	22.4	23.0
Centimeters	51.0	53.0	53.0	55.0	55.0	57.0	57.0	58.5
3. Effective top tube								
Inches	20.4	20.9	20.9	21.7	21.7	22.4	22.4	23.0
Centimeters	51.8	53.0	53.0	55.0	55.0	57.0	57.0	58.5
4. Stem (extension / -17 degrees rise)								
Millimeters	65	80	80	100	100	120	120	120
5. Reach (effective top tube + stem reach)								
Inches	23.0	24.0	24.0	25.6	25.6	27.2	27.2	27.8
Centimeters	58.3	61.0	61.0	65.0	65.0	69.0	69.0	70.5
6. Handlebar width (25.4 mm diameter)								
Millimeters	380	400	400	420	420	420	440	440
7. Crank arm length								
Millimeters	165	170	170	170	170	175	175	175
8. Head tube length								
Inches	3.4	3.4	4.1	4.9	5.7	6.5	7.2	7.6
Millimeters	86	86	104	124	145	165	183	193
9. Seatpost length (27.2 mm diameter)								
Millimeters	250	250	250	250	250	250	250	250
10. Gearing	42/53		13-15-17-19-21-23-26					

General Specifications

Hubset, type	HyperGlide
Spoke number	32
Spokes, front	299 14 ga.
Rear (D/ND)	296/298 14ga.
Tire size	700 x 25
Front derailleur	34.9 mm / 1 3/8"
Bottom bracket	BB-CS21
Shell width	68
Axle length	115
R. Dropout width	128 mm
Headset size	22.2/30.2/26.4
Stack height	35.75
Weight	22.5 lb./10.21 kg.

Features

- *Light weight racing bike*
- *Bonded construction*
- *Heat treated and butted Al tubing*
- *Aero Cro-Moly unicrown fork*
- *RX 100 14 speed drivetrain*
- *32 spoke Titan Tech heat treated and hard anodized rims*
- *System 2 racing saddle*

Model 1220

Sizes	47	50	52	54	56	58	60	62
1. Stand-over height								
Inches	28.5	29.6	30.4	31.2	31.9	32.6	33.4	33.8
Centimeters	72.4	75.3	77.1	79.2	81.1	82.9	84.8	85.8
2. Top tube								
Inches	20.1	20.9	20.9	21.7	21.7	22.4	22.4	23.0
Centimeters	51.0	53.0	53.0	55.0	55.0	57.0	57.0	58.5
3. Effective top tube								
Inches	20.4	20.9	20.9	21.7	21.7	22.4	22.4	23.0
Centimeters	51.8	53.0	53.0	55.0	55.0	57.0	57.0	58.5
4. Stem (extension / 0 degrees rise)								
Millimeters	65	80	80	100	100	120	120	120
5. Reach (effective top tube + stem reach)								
Inches	22.8	23.9	23.9	25.4	25.4	27.0	27.0	27.6
Centimeters	58.0	60.7	60.7	64.6	64.6	68.5	68.5	70.0
6. Handlebar width (25.4 mm diameter)								
Millimeters	380	400	400	420	420	420	440	440
7. Crank arm length								
Millimeters	170	170	170	170	170	175	175	175
8. Head tube length								
Inches	3.4	3.4	4.1	4.9	5.7	6.5	7.2	7.6
Millimeters	86	86	104	124	145	165	183	193
9. Seatpost length (27.2 mm diameter)								
Millimeters	250	250	250	250	250	250	250	250
10. Gearing	30/42/52			12-14-16-18-21-24-28				

General Specifications

Hubset, type	HyperGlide
Spoke number	32
Spokes, front	299 14 ga.
Rear (D/ND)	296/298 14ga.
Tire size	700 x 25
Front derailleur	34.9 mm / 1 3/8"
Bottom bracket	BB-CS21
Shell width	68
Axle length	127.5
R. Dropout width	128 mm
Headset size	22.2/30.2/26.4
Stack height	35.75
Weight	22.7 lb./10.29 kg.

Upgrades from 1200

- *Touring version of 1200*
- *RX-100T 30 x 42 x 52 triple crank*
- *12-28 7 speed freewheel*
- *System 2 Gel saddle for more padding*
- *90° stem for higher bar position*
- *Wide range derailleurs (RX 100T and GS)*

Road Aluminum

Model 1400

Sizes	47	50	52	54	56	58	60	62
1. Stand-over height								
Inches	28.5	29.6	30.4	31.2	31.9	32.6	33.4	33.8
Centimeters	72.4	75.3	77.1	79.2	81.1	82.9	84.8	85.8
2. Top tube								
Inches	20.1	20.9	20.9	21.7	21.7	22.4	22.4	23.0
Centimeters	51.0	53.0	53.0	55.0	55.0	57.0	57.0	58.5
3. Effective top tube								
Inches	20.4	20.9	20.9	21.7	21.7	22.4	22.4	23.0
Centimeters	51.8	53.0	53.0	55.0	55.0	57.0	57.0	58.5
4. Stem (extension / -17 degrees rise)								
Millimeters	65	80	80	100	100	120	120	120
5. Reach (effective top tube + stem reach)								
Inches	23.0	24.0	24.0	25.6	25.6	27.2	27.2	27.8
Centimeters	58.3	61.0	61.0	65.0	65.0	69.0	69.0	70.5
6. Handlebar width (25.4 mm diameter)								
Millimeters	380	400	400	420	420	420	440	440
7. Crank arm length								
Millimeters	165	165	170	170	170	175	175	175
8. Head tube length								
Inches	3.4	3.4	4.1	4.9	5.7	6.5	7.2	7.6
Millimeters	86	86	104	124	145	165	183	193
9. Seatpost length (27.2 mm diameter)								
Millimeters	250	250	250	250	250	250	250	250
10. Gearing	39/53		13-14-15-17-19-21-23-26					

General Specifications

Hubset, type	HyperGlide
Spoke number	32
Spokes, front	296 14/15ga.
Rear (D/ND)	294/295 14/15ga.
Tire size	700 x 25
Front derailleur	34.9 mm / $1^{3/8}$"
Bottom bracket	BB-UN51
Shell width	68
Axle length	115
R. Dropout width	128 mm
Headset size	22.2/30.2/26.4
Stack height	31.8 mm
Weight	22.4 lb./10.16 kg.

Upgrades from 1200

- *STI Dual control shifters*
- *Epoxy bonded aluminum fork*
- *Dual pivot brakes*
- *8 speed cassette*
- *System 2 handlebars for dual control*
- *Matrix Sonic rims*

Road Composite

Model 2120

Sizes	47	50	52	54	56	58	60	62
1. Stand-over height								
Inches	28.5	29.6	30.4	31.2	31.9	32.6	33.4	33.8
Centimeters	72.4	75.3	77.1	79.2	81.1	82.9	84.8	85.8
2. Top tube								
Inches	20.1	20.9	20.9	21.7	21.7	22.4	22.4	23.0
Centimeters	51.0	53.0	53.0	55.0	55.0	57.0	57.0	58.5
3. Effective top tube								
Inches	20.4	20.9	20.9	21.7	21.7	22.4	22.4	23.0
Centimeters	51.8	53.0	53.0	55.0	55.0	57.0	57.0	58.5
4. Stem (extension / 0 degrees rise)								
Millimeters	65	80	80	100	100	120	120	120
5. Reach (effective top tube + stem reach)								
Inches	22.8	23.9	23.9	25.4	25.4	27.0	27.0	27.6
Centimeters	58.0	60.7	60.7	64.6	64.6	68.5	68.5	70.0
6. Handlebar width (25.4 mm diameter)								
Millimeters	380	400	400	420	420	420	440	440
7. Crank arm length								
Millimeters	170	170	170	170	170	175	175	175
8. Head tube length								
Inches	3.4	3.4	4.1	4.9	5.7	6.5	7.2	7.6
Millimeters	86	86	104	124	145	165	183	193
9. Seatpost length (27.2 mm diameter)								
Millimeters	250	250	250	250	250	250	250	250
10. Gearing	30/42/52			12-14-16-18-21-24-28				

General Specifications

Hubset, type	HyperGlide
Spoke number	32
Spokes, front	299 14ga.
Rear (D/ND)	296/298 14ga.
Tire size	700 x 25
Front derailleur	34.9 mm / $1^{3/8}$"
Bottom bracket	BB-UN51
Shell width	68
Axle length	127.5
R. Dropout width	128 mm
Headset size	22.2/30.2/26.4
Stack height	31.8 mm
Weight	22.2 lb./10.06 kg.

Upgrades from 1220

- *Carbon fiber composite main triangle*
- *21 speed LX derailleurs, bar end shifters*
- *SPD pedals*
- *System 2 wide racing saddle*
- *90° stem for more handlebar height*
- *Iso Tech 3K tires with Kevlar belts*

Road Composite

Model 2200

Sizes	47	50	52	54	56	58	60	62
1. Stand-over height								
Inches	28.5	29.6	30.4	31.2	31.9	32.6	33.4	33.8
Centimeters	72.4	75.3	77.1	79.2	81.1	82.9	84.8	85.8
2. Top tube								
Inches	20.1	20.9	20.9	21.7	21.7	22.4	22.4	23.0
Centimeters	51.0	53.0	53.0	55.0	55.0	57.0	57.0	58.5
3. Effective top tube								
Inches	20.4	20.9	20.9	21.7	21.7	22.4	22.4	23.0
Centimeters	51.8	53.0	53.0	55.0	55.0	57.0	57.0	58.5
4. Stem (extension / -17 degrees rise)								
Millimeters	65	80	100	100	120	120	130	130
5. Reach (effective top tube + stem reach)								
Inches	23.0	24.0	24.8	25.6	26.4	27.2	27.6	28.1
Centimeters	58.3	61.0	63.0	65.0	67.0	69.0	70.0	71.5
6. Handlebar width (26.0 mm diameter)								
Millimeters	380	400	400	420	420	420	440	440
7. Crank arm length								
Millimeters	170	170	170	172.5	172.5	172.5	172.5	172.5
8. Head tube length								
Inches	3.4	3.4	4.1	4.9	5.7	6.5	7.2	7.6
Millimeters	86	86	104	124	145	165	183	193
9. Seatpost length (27.2 mm diameter)								
Millimeters	250	250	250	250	250	250	250	250
10. Gearing	39/53		12-13-14-15-17-19-21-23					

General Specifications

Hubset, type	HyperGlide
Spoke number	32
Spokes, front	296 14/15 ga.
Rear (D/ND)	293/295 14/15ga.
Tire size	700 x 25
Front derailleur	34.9 mm / 1 3/8"
Bottom bracket	KSS TLS
Shell width	68
Axle length	115.5
R. Dropout width	128 mm
Headset size	22.2/30.2/26.4
Stack height	31.8 mm
Weight	21.2 lb./9.62 kg.

Upgrades from 1400

- *Carbon fiber composite main triangle*
- *Campagnolo Veloce Ergopower group*
- *Look ARC pedals*
- *System 2 handlebars for dual control*
- *Iso Tech 5 folding tires*
- *System 3 saddle and post*

Model 2300

Sizes	47	50	52	54	56	58	60	62
1. Stand-over height								
Inches	28.5	29.6	30.4	31.2	31.9	32.6	33.4	33.8
Centimeters	72.4	75.3	77.1	79.2	81.1	82.9	84.8	85.8
2. Top tube								
Inches	20.1	20.9	20.9	21.7	21.7	22.4	22.4	23.0
Centimeters	51.0	53.0	53.0	55.0	55.0	57.0	57.0	58.5
3. Effective top tube								
Inches	20.4	20.9	20.9	21.7	21.7	22.4	22.4	23.0
Centimeters	51.8	53.0	53.0	55.0	55.0	57.0	57.0	58.5
4. Stem (extension / -17 degrees rise)								
Millimeters	65	80	100	100	120	120	130	130
5. Reach (effective top tube + stem reach)								
Inches	23.0	24.0	24.8	25.6	26.4	27.2	27.6	28.1
Centimeters	58.3	61.0	63.0	65.0	67.0	69.0	70.0	71.5
6. Handlebar width (26.0 mm diameter)								
Millimeters	380	400	400	420	420	420	440	440
7. Crank arm length								
Millimeters	167.5	170	170	170	172.5	172.5	175	175
8. Head tube length								
Inches	3.4	3.4	4.1	4.9	5.7	6.5	7.2	7.6
Millimeters	86	86	104	124	145	165	183	193
9. Seatpost length (27.2 mm diameter)								
Millimeters	250	250	250	250	250	250	250	250
10. Gearing	39/53		12-13-14-15-17-19-21-23					

General Specifications

Hubset, type	HyperGlide
Spoke number	32
Spokes, front	296 14/15ga.
Rear (D/ND)	294/295 14/15ga.
Tire size	700 x 25
Front derailleur	34.9 mm / 1 3/8"
Bottom bracket	BB-UN71
Shell width	68
Axle length	115
R. Dropout width	128 mm
Headset size	22.2/30.2/26.4
Stack height	33.2 mm
Weight	21.0 lb/ 9.54 kg

Upgrades from 2200

- *Shimano Ultegra STI group, complete with chain*
- *Look PP-266 aero pedals with release and angular adjustment*
- *Tange Seiki Levin headset*

Road OCLV

Model 5200

Sizes	50	52	54	56	58	60	62	
1. Stand-over height								
Inches	29.5	29.9	30.4	31.2	31.9	32.7	33.4	
Centimeters	74.9	75.9	77.3	79.3	81.1	83.0	84.8	
2. Top tube								
Inches	20.4	20.8	21.5	22.0	22.4	22.8	23.2	
Centimeters	51.8	52.8	54.5	56.0	57.0	58.0	59.0	
3. Effective top tube								
Inches	20.9	20.8	21.5	22.0	22.4	22.8	23.2	
Centimeters	53.1	52.8	54.5	56.0	57.0	58.0	59.0	
4. Stem (extension / -17 degrees rise)								
Millimeters	80	100	110	110	120	120	130	
5. Reach (effective top tube + stem reach)								
Inches	24.1	24.7	25.8	26.4	27.2	27.6	28.3	
Centimeters	61.1	62.8	65.5	67.0	69.0	70.0	72.0	
6. Handlebar width (26.0 mm diameter)								
Millimeters	400	400	420	420	420	440	440	
7. Crank arm length								
Millimeters	170	170	170	172.5	172.5	175	175	
8. Head tube length								
Inches	3.8	3.8	4.1	4.8	5.5	6.2	7.0	
Millimeters	97	97	104	121	140	158	177	
9. Seatpost length (27.2 mm diameter)								
Millimeters	250	250	250	250	250	250	250	250
10. Gearing	39/53		12-13-14-15-17-19-21-23					

General Specifications

Hubset, type	HyperGlide
Spoke number	32
Spokes, front	296 14/15ga.
Rear (D/ND)	294/295 14/15ga.
Tire size	700 x 25
Front derailleur	braze-on type
Bottom bracket	BB-UN71
Shell width	68
Axle length	115
R. Dropout width	128 mm
Headset size	22.2/30.2/26.4
Stack height	33.2 mm
Weight	19.9 lb./9.03 kg.

Upgrades from 2300

- *OCLV frame- lightest production frameset in the world*
- *OCLV fork- stronger and lighter, yet more shock absorbing*

Model 5500

Sizes	50	52	54	56	58	60	62	
1. Stand-over height								
Inches	29.5	29.9	30.4	31.2	31.9	32.7	33.4	
Centimeters	74.9	75.9	77.3	79.3	81.1	83.0	84.8	
2. Top tube								
Inches	20.4	20.8	21.5	22.0	22.4	22.8	23.2	
Centimeters	51.8	52.8	54.5	56.0	57.0	58.0	59.0	
3. Effective top tube								
Inches	20.9	20.8	21.5	22.0	22.4	22.8	23.2	
Centimeters	53.1	52.8	54.5	56.0	57.0	58.0	59.0	
4. Stem extension / 5 degrees rise (Direct Connect w/ 41 mm steerer clamp height)								
Millimeters	80	100	110	110	120	120	130	
5. Reach (effective top tube + stem reach)								
Inches	23.9	24.4	25.5	26.1	26.8	27.2	28.0	
Centimeters	60.6	62.1	64.7	66.2	68.1	69.1	71.1	
6. Handlebar width (26.0 mm diameter)								
Millimeters	400	400	420	420	420	440	440	
7. Crank arm length								
Millimeters	172.5	172.5	172.5	172.5	172.5	172.5	172.5	
8. Head tube length								
Inches	3.8	3.8	4.1	4.8	5.5	6.2	7.0	
Millimeters	97	97	104	121	140	158	177	
9. Seatpost length (27.2 mm diameter)								
Millimeters	250	250	250	250	250	250	250	250
10. Gearing	39/53		12-13-14-15-17-19-21-23					

General Specifications

Hubset, type	HyperGlide
Spoke number	32
Spokes, front	296 14/15ga.
Rear (D/ND)	293/295 14/15ga.
Tire size	700 x 25
Front derailleur	braze-on type
Bottom bracket	KSS TLS
Shell width	68
Axle length	111
R. Dropout width	128 mm
Headset size	22.2/30.2/26.4
Stack height	29.3 mm
Weight	19.8 lb/ 8.98 kg

Upgrades from 5200

- *Campagnolo Chorus Ergopower group*
- *DiaCompe Kontak precision headset*
- *Look PP-286 FreeArc pedals*
- *Iso Tech 6 tires with*
- *System 4 saddle and Direct Connect stem*
- *System 3 road handlebars*
- *Gore Ride-On cable system*

MultiTrack

Model 700

Sizes	15	17	19	21	23	17W	20W
1. Stand-over height							
Inches	27.6	28.6	29.5	30.8	32.5		
Centimeters	70.2	72.7	75.0	78.1	82.6		
2. Top tube							
Inches	20.7	20.8	21.3	22.0	22.5		
Centimeters	52.5	52.9	54.2	55.8	57.0		
3. Effective top tube							
Inches	21.5	21.7	22.0	22.4	22.8	21.7	22.0
Centimeters	54.5	55.0	56.0	57.0	58.0	55.0	55.9
4. Stem (extension / 45 degrees rise)							
Millimeters	100	100	100	100	100	100	100
5. Reach (effective top tube + stem reach)							
Inches	23.2	23.4	23.8	24.2	24.6	23.4	23.7
Centimeters	58.9	59.4	60.4	61.4	62.4	59.4	60.3
6. Handlebar width (25.4 mm diameter) (60 mm rise)							
Millimeters	580	580	580	610	610	580	610
7. Crank arm length							
Millimeters	170	170	170	170	170	170	170
8. Head tube length							
Inches	3.3	3.3	3.3	3.9	5.5	4.9	6.1
Millimeters	85	85	85	100	140	125	155
9. Seatpost length (26.6 mm diameter)							
Millimeters	300	300	300	300	300	250	300
10. Gearing	28/38/48			14-16-18-21-24-28			

General Specifications

Hubset, type	Threaded
Spoke number	36
Spokes, front	304 14ga.
Rear (D/ND)	303/304 14ga.
Tire size	700 x 35
Front derailleur	28.6 mm/ 1 1/8"
Bottom bracket	YST-612NW
Shell width	68
Axle length	
R. Dropout width	130 mm
Headset size	22.2/30.0/27.0
Stack height	35.5 mm
Weight	27.9 lb/ 12.64 kg

Features

- *MultiTrack design for recreational bicycling*
- *Light, fast 700c whee[illegible]*
- *Shimano TY30 Optige[illegible] Thumbshifter*
- *Comfortable, upright riding position*
- *Araya PX-35 alloy rims*
- *Wide ratio18 speed SIS shifting*
- *High rise stem with riser bars for upright comfort*

Model 720

Sizes	15	17	19	21	23	17W	20W
1. Stand-over height							
Inches	27.6	28.6	29.5	30.8	32.5		
Centimeters	70.2	72.7	75.0	78.1	82.6		
2. Top tube							
Inches	20.7	20.8	21.3	22.0	22.5		
Centimeters	52.5	52.9	54.2	55.8	57.0		
3. Effective top tube							
Inches	21.5	21.7	22.0	22.4	22.8	21.7	22.0
Centimeters	54.5	55.0	56.0	57.0	58.0	55.0	55.9
4. Stem (extension / 45 degrees rise)							
Millimeters	100	100	100	100	100	100	100
5. Reach (effective top tube + stem reach)							
Inches	23.2	23.4	23.8	24.2	24.6	23.4	23.7
Centimeters	58.9	59.4	60.4	61.4	62.4	59.4	60.3
6. Handlebar width (25.4 mm diameter) (60 mm rise)							
Millimeters	580	580	580	610	610	580	610
7. Crank arm length							
Millimeters	170	170	170	170	170	170	170
8. Head tube length							
Inches	3.3	3.3	3.3	3.9	5.5	4.9	6.1
Millimeters	85	85	85	100	140	125	155
9. Seatpost length (26.6 mm diameter)							
Millimeters	300	300	300	300	300	250	300
10. Gearing	28/38/48			11-13-15--18-21-24-28			

General Specifications

Hubset, type	Threaded
Spoke number	36
Spokes, front	304 14ga.
Rear (D/ND)	302/304 14ga.
Tire size	700 x 35
Front derailleur	28.6 mm/ 1 1/8"
Bottom bracket	BB-CS11
Shell width	68
Axle length	122.5
R. Dropout width	135 mm
Headset size	22.2/30.0/27.0
Stack height	35.5 mm
Weight	27.7 lb./12.58 kg.

Upgrades from 700

- *Cro-Moly main triangle*
- *GripShift SRT-300i 21 speed shifters*
- *Alivio rear derailleur*
- *Quick release on rear wheel*
- *Alloy micro-adjust seat post*
- *CT50 crankset*
- *Araya PX-45 alloy rims*

MultiTrack

Model 730

Sizes	15	17	19	21	23	17W	20W
1. Stand-over height							
Inches	27.6	28.6	29.5	30.8	32.5		
Centimeters	70.2	72.7	75.0	78.1	82.6		
2. Top tube							
Inches	20.7	20.8	21.3	22.0	22.5		
Centimeters	52.5	52.9	54.2	55.8	57.0		
3. Effective top tube							
Inches	21.5	21.7	22.0	22.4	22.8	21.7	22.0
Centimeters	54.5	55.0	56.0	57.0	58.0	55.0	55.9
4. Stem (extension / 45 degrees rise)							
Millimeters	100	100	100	100	100	100	100
5. Reach (effective top tube + stem reach)							
Inches	23.2	23.4	23.8	24.2	24.6	23.4	23.7
Centimeters	58.9	59.4	60.4	61.4	62.4	59.4	60.3
6. Handlebar width (25.4 mm diameter) (60 mm rise)							
Millimeters	580	580	580	610	610	580	610
7. Crank arm length							
Millimeters	170	170	170	170	170	170	170
8. Head tube length							
Inches	3.3	3.3	3.3	3.9	5.5	4.9	6.1
Millimeters	85	85	85	100	140	125	155
9. Seatpost length (26.6 mm diameter)							
Millimeters	300	300	300	300	300	250	300
10. Gearing	24/34/42			11-13-15-18-21-24-28			

General Specifications

Hubset, type	HyperGlide
Spoke number	36
Spokes, front	304 14ga.
Rear (D/ND)	302/304 14ga.
Tire size	700 x 35
Front derailleur	28.6 mm/ 1 1/8"
Bottom bracket	BB-LP20
Shell width	68
Axle length	110
R. Dropout width	135 mm
Headset size	22.2/30.0/27.0
Stack height	35.5
Weight	27.2 lb/ 12.33 kg

Upgrades from 720

- *Full Cro-Moly frame and fork*
- *GripShift SRT-300i shifters*
- *21 speed Compact drive*
- *Alivio crankset and rear derailleur*
- *Cassette-type rear hub*
- *Stainless steel spokes*
- *System 1 Gel saddle*

Model 750

Sizes	15	17	19	21	23	17W	20W
1. Stand-over height							
Inches	27.6	28.6	29.6	30.7	32.5		
Centimeters	70.2	72.7	75.0	78.1	82.6		
2. Top tube							
Inches	20.7	20.8	21.3	22.0	22.4		
Centimeters	52.5	52.9	54.1	55.8	57.0		
3. Effective top tube							
Inches	21.5	21.7	22.0	22.4	22.8	21.6	21.9
Centimeters	54.5	55.0	56.0	57.0	58.0	54.8	55.6
4. Stem (extension / degrees rise)							
Millimeters	90/25	105/25	120/25	120/25	135/15	90/25	105/25
5. Reach (effective top tube + stem reach)							
Inches	24.0	24.6	25.4	25.8	27.2	24.1	24.9
Centimeters	61.0	62.6	64.6	65.6	69.2	61.3	63.2
6. Handlebar width (25.4 mm diameter, 5° bend)							
Millimeters	560	560	560	560	560	560	560
7. Crank arm length							
Millimeters	170	170	175	175	175	170	170
8. Head tube length							
Inches	3.5	3.5	3.5	3.9	5.5	4.7	6.5
Millimeters	90	90	90	100	140	120	165
9. Seatpost length (27.2 mm diameter)							
Millimeters	300	300	300	300	300	300	300
10. Gearing	24/34/42			11-13-15-18-21-24-28			

General Specifications

Hubset, type	HyperGlide
Spoke number	32
Spokes, front	299 14ga.
Rear (D/ND)	297/298 14ga.
Tire size	700 x 38
Front derailleur	31.8 mm/ 1 1/4"
Bottom bracket	BB-LP30
Shell width	68
Axle length	113
R. Dropout width	135 mm
Headset size	22.2/30.2/26.4
Stack height	31.8 mm
Weight	25.7 lb./11.67 kg.

Upgrades from 730

- *U.S. True Temper custom butted Cro-Moly frame*
- *GripShift SRT-300i shifters*
- *Shimano STX Compact drive 21 speed, Multi-Condition brakes*
- *Titan Tour heat treated and hard anodized rims*
- *System 1 pedals with toe clips and straps*
- *Invert II 700x38 tires*

MultiTrack

Model 7600

Sizes	16.5	18	20	22
1. Stand-over height				
Inches	29.2	30.1	31.3	32.9
Centimeters	74.3	76.4	79.4	83.6
2. Top tube				
Inches	21.7	21.9	22.6	23.0
Centimeters	55.0	56.6	57.4	58.5
3. Effective top tube				
Inches	22.2	22.6	22.6	23.0
Centimeters	56.4	57.4	57.4	58.5
4. Stem (OS) extension / degrees rise				
Millimeters	90/-5	105/-5	120/-10	135/-10
5. Reach (effective top tube + stem reach)				
Inches	25.6	26.6	27.3	28.3
Centimeters	65.1	67.6	69.3	71.8
6. Handlebar width (25.4 mm diameter, 5° bend)				
Millimeters	560	560	560	560
7. Crank arm length				
Millimeters	175	175	175	175
8. Head tube length				
Inches	3.7	3.7	4.6	6.6
Millimeters	93	93	116	167
9. Seatpost length (27.2 mm diameter)				
Millimeters	300	300	300	300
10. Gearing	20/32/42			11-12-13-14-15-17-19

General Specifications

Hubset, type	HyperGlide
Spoke number	32
Spokes, front	300 14 ga.
Rear (D/ND)	298/299 14ga.
Tire size	700 x 38
Front derailleur	34.9 mm/ 1 3/8"
Bottom bracket	BB-UN51
Shell width	68
Axle length	118
R. Dropout width	135 mm
Headset size	25.4/34.0/30.0
Stack height	30.25 mm
Weight	24.3 lb./11.02 kg.

Upgrades from 750

- *Easton 7129 E9 Pro gram bonded frame*
- *Tange OverSize Cro-Moly fork*
- *400CX group*
- *GripShift 500 shifters*
- *System 3 handlebars*
- *System 2 pedals with toe clips and straps*

Model 7900

Sizes	16.5	18	20	22
1. Stand-over height				
Inches	29.2	30.1	31.3	32.9
Centimeters	74.3	76.4	79.4	83.6
2. Top tube				
Inches	21.7	21.9	22.6	23.0
Centimeters	55.0	56.6	57.4	58.5
3. Effective top tube				
Inches	22.2	22.6	22.6	23.0
Centimeters	56.4	57.4	57.4	58.5
4. Stem (OS) extension / degrees rise				
Millimeters	90/-5	105/-5	120/-10	135/-10
5. Reach (effective top tube + stem reach)				
Inches	25.6	26.6	27.3	28.3
Centimeters	65.1	67.6	69.3	71.8
6. Handlebar width (25.4 mm diameter, 5° bend)				
Millimeters	560	560	560	560
7. Crank arm length				
Millimeters	175	175	175	175
8. Head tube length				
Inches	3.7	3.7	4.6	6.6
Millimeters	93	93	116	167
9. Seatpost length (27.2 mm diameter)				
Millimeters	300	300	300	300
10. Gearing	20/32/42			11-12-13-14-15-17-19

General Specifications

Hubset, type	HyperGlide
Spoke number	32
Spokes, front	300 14/15ga.
Rear (D/ND)	298/299 14/15ga.
Tire size	700 x 40
Front derailleur	34.9 mm/ 1 3/8"
Bottom bracket	BB-UN51
Shell width	68
Axle length	118
R. Dropout width	135 mm
Headset size	25.4/34.0/30.0
Stack height	30.25 mm
Weight	24.3 lb./11.02 kg.

Upgrades from 7600

- *Carbon fiber composite main triangle*
- *700CX group with RapidFire Plus shifters*
- *Matrix Journey rims*
- *CrewCut 700x40 knobby tires*
- *System 2 bar ends*
- *System 2 wide racing saddle*

MetroTrack

Model 750M

Sizes	15	17	19	21	23	17W	20W
1. Stand-over height							
Inches	27.6	28.6	29.6	30.7	32.5		
Centimeters	70.2	72.7	75.0	78.1	82.6		
2. Top tube							
Inches	20.7	20.8	21.3	22.0	22.4		
Centimeters	52.5	52.9	54.1	55.8	57.0		
3. Effective top tube							
Inches	21.5	21.7	22.0	22.4	22.8	21.6	21.9
Centimeters	54.5	55.0	56.0	57.0	58.0	54.8	55.6
4. Stem (extension / degrees rise)							
Millimeters	90/25	105/25	120/25	120/25	135/15	90/25	105/25
5. Reach (effective top tube + stem reach)							
Inches	24.0	24.6	25.4	25.8	27.2	24.1	24.9
Centimeters	61.0	62.6	64.6	65.6	69.2	61.3	63.2
6. Handlebar width (25.4 mm diameter, 5° bend)							
Millimeters	560	560	560	560	560	560	560
7. Crank arm length							
Millimeters	170	170	175	175	175	170	170
8. Head tube length							
Inches	3.5	3.5	3.5	3.9	5.5	4.7	6.5
Millimeters	90	90	90	100	140	120	165
9. Seatpost length (27.2 mm diameter)							
Millimeters	300	300	300	300	300	300	300
10. Gearing	24/34/42			11-13-15-18-21-24-28			

General Specifications

Hubset, type	Threaded
Spoke number	32
Spokes, front	299 14ga.
Rear (D/ND)	297/298 14ga.
Tire size	700 x 35
Front derailleur	31.8 mm/ 1 1/4"
Bottom bracket	BB-LP30
Shell width	68
Axle length	113
R. Dropout width	135 mm
Headset size	22.2/30.2/26.4
Stack height	31.8
Weight	29.7 lb./13.46 kg.

Upgrades from 750

- *Fenders*
- *Generator lightset with handlebar mounted engagement lever*
- *Trek Back Rack*
- *Trek Chime*

Mountain Track KDZ

Model 800 KDZ

Sizes	12" x 20"	14" x 24"
1. Stand-over height		
Inches	22.8 (21.5 girls)	25.8 (24.0 girls)
Centimeters	57.9 (54.5 girls)	65.6 (61.1 girls)
2. Top tube		
Inches	16.3	19.7
Centimeters	41.3	50.1
3. Effective top tube		
Inches	17.1	20.8
Centimeters	43.5	52.8
4. Stem extension / degrees rise		
Millimeters	80/25 (45 girls)	100/45
5. Reach (effective top tube + stem reach)		
Inches	19.4 (18.5 girl's)	22.5
Centimeters	49.3 (47.0 girl's)	57.2
6. Handlebar width (25.4 mm diameter)		
Millimeters	540	540
7. Crank arm length		
Millimeters	150	160
8. Head tube length		
Inches	3.7 (4.5 girls)	4.1
Millimeters	9.5 (11.5 girls)	10.5
9. Seatpost length (26.6 mm diameter)		
Millimeters	300 (200 girls)	300 (200 girls)
10. Gearing 28/38	12-14-16-18-21-24	24/34/42 12-14-16-18-21-24

General Specifications

Hubset, type	HyperGlide	HyperGlide
Spoke number	36	36
Spokes, front	189 14ga.	240 14ga.
Rear (D/ND)	186/187 14ga.	236/238 14ga.
Tire size	20 x 1.95	24 x 1.95
Front derailleur	28.6 mm / $1^{1/8}$"	28.6 mm / $1^{1/8}$"
Bottom bracket	BB-LP20	BB-LP20
Shell width	68	68
Axle length	110	110
R. Dropout width	126 mm	126 mm
Headset size	22.2/27.0/30.0	22.2/27.0/30.0
Stack height	35.5mm	35.5 mm
Weight	25.5 lb./11.57 kg.	26.2 lb./11.90 kg.

Model 800 and 820 14" x 24"

	800 14" x 24"	820 14" x 24"
1. Stand-over height		
Inches	25.8 (24.0 girls)	25.8 (24.0 girls)
Centimeters	65.6 (61.1 girls)	65.6 (61.1 girls)
2. Top tube		
Inches	19.7	19.7
Centimeters	50.1	50.1
3. Effective top tube		
Inches	20.8	20.8
Centimeters	52.8	52.8
4. Stem extension / degrees rise		
Millimeters	100/35	100/25 (45- girls)
5. Reach (effective top tube + stem reach)		
Inches	23.1	23.6 (22.5 girl's)
Centimeters	58.7	60.0 (57.2 girl's)
6. Handlebar width (25.4 mm diameter)		
Millimeters	540 (580 girls)	540 (580 girls)
7. Crank arm length		
Millimeters	165	165
8. Head tube length		
Inches	4.1	4.1
Millimeters	10.5	10.5
9. Seatpost length (26.6 mm diameter)		
Millimeters	300 (200 girls)	300 (200 girls)
10. Gearing	28/38/48 14-16-18-21-24-28	28/38/48 11-13-15-18-21-24-28)

General Specifications

Hubset, type	Threaded	Cassette
Spoke number	36	36
Spokes, front	240 14ga.	240 14ga.
Rear (D/ND)	237/238 14ga.	237/238 14ga.
Tire size	24 x 1.95	24 x 1.95
Front derailleur	28.6 mm / $1^{1/8}$"	28.6 mm / $1^{1/8}$"
Bottom bracket	BB-CS11	BB-LP20
Shell width	68	68
Axle length	122.5	118
R. Dropout width	130 mm	135 mm
Headset size	22.2/27.0/30.0	22.2/27.0/30.0
Stack height	30.0	35.5

Mountain Track

Model 800

Sizes	14.5	16.5	18	19.5	21	22.5	17W	20W
1. Stand-over height								
Inches	27.0	28.0	28.8	29.8	31.3	32.8		
Centimeters	68.6	71.1	73.1	75.8	79.4	83.2	- -	- -
2. Top tube								
Inches	20.3	20.8	21.4	22.0	22.4	22.7		
Centimeters	51.6	52.9	54.4	55.8	56.8	57.7	- -	- -
3. Effective top tube								
Inches	21.3	21.7	22.0	22.4	22.8	23.2	21.4	21.9
Centimeters	54.0	55.0	56.0	57.0	58.0	59.0	54.4	55.6
4. Stem extension / 45 degrees rise)								
Millimeters	100	100	100	100	100	100	100	100
5. Reach (effective top tube + stem reach)								
Inches	23.0	23.4	23.8	24.2	24.9	25.3	23.1	23.6
Centimeters	58.4	59.4	60.4	61.4	63.3	64.3	58.8	60.0
6. Handlebar width (25.4 mm diameter, 6° bend) (women's - 60 mm rise)								
Millimeters	560	580	580	580	580	580	580	610
7. Crank arm length								
Millimeters	170	170	170	170	170	170	170	170
8. Head tube length								
Inches	3.3	3.3	3.3	4.1	5.7	7.3	4.9	6.1
Millimeters	85	85	85	105	145	185	125	155
9. Seatpost length (26.6 mm diameter)								
Millimeters	300	300	300	300	300	300	300	300
10. Gearing	28/38/48			14-16-18-21-24-28				

General Specifications

Hubset, type	Threaded, nutted rear
Spoke number	36
Spokes, front	264 14ga.
Rear (D/ND)	261/263 14ga.
Tire size	26 x 1.95
Front derailleur	28.6mm/1 1/8"
Bottom bracket	BB-CS11
Shell width	68
Axle length	122.5
R. Dropout width	130 mm
Headset size	22.2/30.0/27.0
Stack height	30.0 mm
Weight	29.8 lb./13.53 kg.

Features

- *Great recreational mountain bike*
- *Shimano SIS shifting*
- *Thumb shifters with Optigear*
- *Connection tires with all-purpose tread*
- *Weinmann 4019 alloy rims*
- *Comfy Trek foam saddle*

Model 820

Sizes	14.5	16.5	18	19.5	21	22.5	24	17W	20W
1. Stand-over height									
Inches	27.0	28.0	28.8	29.8	31.3	32.8	34.2		
Centimeters	68.6	71.1	73.1	75.8	79.4	83.2	86.9	- -	- -
2. Top tube									
Inches	20.3	20.8	21.4	22.0	22.4	22.7	23.1		
Centimeters	51.6	52.9	54.4	55.8	56.8	57.7	58.7	- -	- -
3. Effective top tube									
Inches	21.3	21.7	22.0	22.4	22.8	23.2	23.6	21.4	21.9
Centimeters	54.0	55.0	56.0	57.0	58.0	59.0	60.0	54.4	55.6
4. Stem extension / 45 degrees rise)									
Millimeters	100	100	100	100	120	120	120	100	100
5. Reach (effective top tube + stem reach)									
Inches	23.0	23.4	23.8	24.2	24.9	25.3	25.7	23.1	23.6
Centimeters	58.4	59.4	60.4	61.4	63.3	64.3	65.3	58.8	60.0
6. Handlebar width (25.4 mm diameter, 6° bend) (women's- 60 mm rise)									
Millimeters	560	580	580	580	580	580	580	580	610
7. Crank arm length									
Millimeters	170	170	170	170	170	170	170	170	170
8. Head tube length									
Inches	3.3	3.3	3.3	4.1	5.7	7.3	8.9	4.9	6.1
Millimeters	85	85	85	105	145	185	225	125	155
9. Seatpost length (26.6 mm diameter)									
Millimeters	300	300	300	300	300	300	300	250	300
10. Gearing	28/38/48			11-13-15-18-21-24-28					

General Specifications

Hubset, type	Threaded
Spoke number	36
Spokes, front	266 14ga.
Rear (D/ND)	263/264 14ga.
Tire size	26 x 1.95
Front derailleur	28.6mm / 1 1/8"
Bottom bracket	BB-CS11
Shell width	68
Axle length	122.5
R. Dropout width	135 mm
Headset size	22.2/30.0/27.0
Stack height	35.5 mm
Weight	28.1 lb./12.75 kg

Upgrades from 800

- *Cro-Moly main triangle w/outer butted seat tube*
- *Cro-Moly fork*
- *Alivio rear, C50 front derailleurs*
- *GripShift SRT-300i 21 speed shifters*
- *Quick release rear wheel*
- *Alloy micro-adjust seat post*
- *Shaimano cartridge bottom bracket*

Mountain Track

Model 830

Sizes	14.5	16.5	18	19.5	21	22.5	17W	20W
1. Stand-over height								
Inches	27.3	28.3	29.1	30.2	31.7	33.1		
Centimeters	69.4	71.9	73.8	76.7	80.4	84.1	- -	- -
2. Top tube								
Inches	20.3	21.0	21.7	22.3	22.6	23.0		
Centimeters	51.6	53.3	55.2	56.6	57.5	58.4	- -	- -
3. Effective top tube								
Inches	21.3	21.9	22.4	22.8	23.2	23.6	21.4	21.9
Centimeters	54.0	55.5	57.0	58.0	59.0	60.0	54.4	55.6
4. Stem extension / 45 degrees rise)								
Millimeters	100	100	100	100	120	120	100	100
5. Reach (effective top tube + stem reach)								
Inches	23.0	23.6	24.2	24.6	25.3	25.7	23.1	23.6
Centimeters	58.4	59.9	61.4	62.4	64.3	65.3	58.8	60.0
6. Handlebar width (25.4 mm diameter, 6° bend) (Women's - 60 mm rise)								
Millimeters	560	580	580	580	580	580	580	610
7. Crank arm length								
Millimeters	170	170	175	175	175	175	170	170
8. Head tube length								
Inches	3.3	3.3	3.3	4.1	5.7	7.3	4.9	6.1
Millimeters	85	85	85	105	145	185	125	155
9. Seatpost length (26.6 mm diameter)								
Millimeters	300	300	300	300	300	300	250	300
10. Gearing	24/34/42			11-13-15-18-21-24-28				

General Specifications

Hubset, type	Cassette
Spoke number	36
Spokes, front	266 14ga.
Rear (D/ND)	263/264 14ga.
Tire size	26 x 1.95
Front derailleur	28.6mm / 1 1/8"
Bottom bracket	BB-LP20
Shell width	68
Axle length	110
R. Dropout width	135 mm
Headset size	22.2/27.0/30.0
Stack height	35.5mm
Weight	28.2 lb./12.78 kg.

Upgrades from 820

- *Full Cro-Moly frame*
- *Cro-Moly fork*
- *Suspension ready design with head angle, standover, and bottom bracket height corrected for longer fork blades*
- *Alivio 21 speed Com pact drivetrain*
- *Trek Gel saddle*
- *Stainless steel spokes*

Model 830SHX

Sizes	14.5	16.5	18	19.5	21	22.5
1. Stand-over height						
Inches	27.3	28.3	29.1	30.2	31.7	33.1
Centimeters	69.4	71.9	73.8	76.7	80.4	84.1
2. Top tube						
Inches	20.3	21.0	21.7	22.3	22.6	23.0
Centimeters	51.6	53.3	55.2	56.6	57.5	58.4
3. Effective top tube						
Inches	21.3	21.9	22.4	22.8	23.2	23.6
Centimeters	54.0	55.5	57.0	58.0	59.0	60.0
4. Stem extension / 15 degrees rise)						
Millimeters	90	105	120	120	135	135
5. Reach (effective top tube + stem reach)						
Inches	24.2	25.3	26.3	26.7	27.6	28.0
Centimeters	61.5	64.2	66.9	67.9	70.2	71.2
6. Handlebar width (25.4 mm diameter, 6° bend)						
Millimeters	560	580	580	580	580	580
7. Crank arm length						
Millimeters	170	170	175	175	175	175
8. Head tube length						
Inches	3.34	3.34	3.34	4.13	5.70	7.28
Millimeters	85	85	85	105	145	185
9. Seatpost length (26.6 mm diameter)						
Millimeters	300	300	300	300	300	300
10. Gearing	24/34/42			11-13-15-18-21-24-28		

General Specifications

Hubset, type	Cassette
Spoke number	36
Spokes, front	266 14ga.
Rear (D/ND)	263/264 14ga.
Tire size	26 x 2.0
Front derailleur	28.6mm / 1 1/8"
Bottom bracket	BB-LP20
Shell width	68
Axle length	110
R. Dropout width	135 mm
Headset size	22.2/27.0/30.0
Stack height	35.5 mm
Weight	29.7 lb./13.47 kg.

Upgrades from 830

- *SR DuoTrack 7001 suspension fork*
- *Lower angle stem for more aggressive riding*
- *CliffHanger/CliffClimber tire system*

Mountain Track

Model 850

Sizes	14.5	16.5	18	19.5	21	22.5
1. Stand-over height						
Inches	27.3	28.3	29.1	30.2	31.7	33.1
Centimeters	69.4	71.9	73.8	76.7	80.4	84.1
2. Top tube						
Inches	20.3	21.0	21.7	22.3	22.6	23.0
Centimeters	51.6	53.3	55.2	56.6	57.5	58.4
3. Effective top tube						
Inches	21.3	21.9	22.4	22.8	23.2	23.6
Centimeters	54.0	55.5	57.0	58.0	59.0	60.0
4. Stem (OS) extension / degrees rise						
Millimeters	90/15	105/25	120/25	135/25	135/25	135/25
5. Reach (effective top tube + stem reach)						
Inches	24.2	24.8	25.8	26.7	23.9	27.4
Centimeters	61.4	63.1	65.6	67.7	68.7	69.7
6. Handlebar width (25.4 mm diameter, 6° bend)						
Millimeters	560	560	560	560	560	560
7. Crank arm length						
Millimeters	170	170	175	175	175	175
8. Head tube length						
Inches	3.34	3.34	3.34	4.13	5.70	7.28
Millimeters	85	85	85	105	145	185
9. Seatpost length (26.6 mm diameter)						
Millimeters	300	300	300	300	300	300
10. Gearing	24/34/42			11-13-15-18-21-24-28		

General Specifications

Hubset, type	HyperGlide
Spoke number	36
Spokes, front	265 14ga.
Rear (D/ND)	262/263 14ga.
Tire size	26 x 2.0
Front derailleur	28.6mm / 1 1/8"
Bottom bracket	BB-LP20
Shell width	68
Axle length	110
R. Dropout width	135 mm
Headset size	25.4/34.0/30.0
Stack height	35.5mm
Weight	28.3 lb./12.83 kg.

Upgrades from 830

- *OverSize Cro-Moly frame*
- *STX rear derailleur*
- *Alivio RapidFire Plus shifters with Optical Display*
- *Araya GP-710 alloy rims*
- *Trek CliffHanger/CliffClimber tire system*
- *Shimano Alivio M-System brakes*

Model 850SHX

Sizes	14.5	16.5	18	19.5	21	22.5
1. Stand-over height						
Inches	27.3	28.3	29.1	30.2	31.7	33.1
Centimeters	69.4	71.9	73.8	76.7	80.4	84.1
2. Top tube						
Inches	20.3	21.0	21.7	22.3	22.6	23.0
Centimeters	51.6	53.3	55.2	56.6	57.5	58.4
3. Effective top tube						
Inches	21.3	21.9	22.4	22.8	23.2	23.6
Centimeters	54.0	55.5	57.0	58.0	59.0	60.0
4. Stem (OS) extension / 15 degrees rise						
Millimeters	90	105	120	135	135	135
5. Reach (effective top tube + stem reach)						
Inches	24.2	25.3	26.3	27.2	27.6	28.0
Centimeters	61.4	64.2	66.9	69.2	70.2	71.2
6. Handlebar width (25.4 mm diameter, 6° bend)						
Millimeters	580	580	580	580	580	580
7. Crank arm length						
Millimeters	170	170	175	175	175	175
8. Head tube length						
Inches	3.34	3.34	3.34	4.13	5.70	7.28
Millimeters	85	85	85	105	145	185
9. Seatpost length (26.6 mm diameter)						
Millimeters	300	300	300	300	300	300
10. Gearing	24/34/42			11-13-15-18-21-24-28		

General Specifications

Hubset, type	HyperGlide
Spoke number	36
Spokes, front	265 14ga.
Rear (D/ND)	262/263 14ga.
Tire size	26 x 2.0
Front derailleur	28.6mm / 1 1/8"
Bottom bracket	BB-LP20
Shell width	68
Axle length	110.5
R. Dropout width	135 mm
Headset size	25.4/34.0/30.0
Stack height	35.5 mm
Weight	29.6 lb./13.43 kg.

Upgrades from 850

- *SR DuoTrack SPK-200 spring/elastomer suspension fork*

  (full elastomer kit is available as an aftermarket upgrade)
- *Lower stem angle for more aggressive ride*

SingleTrack

Model 920

Sizes	14.5	16.5	18	19.5	21
1. Stand-over height					
Inches	27.7	28.7	29.5	30.5	31.9
Centimeters	70.3	72.8	74.9	77.4	81.1
2. Top tube					
Inches	20.4	21.2	22.1	22.6	23.0
Centimeters	51.9	53.8	56.1	57.5	58.4
3. Effective top tube					
Inches	21.7	22.4	22.8	23.2	23.6
Centimeters	55.0	56.0	58.0	59.0	60.0
4. Stem (OS) extension / degrees rise					
Millimeters	90/-5	105/-5	120/-10	135/-10	135/-10
5. Reach (effective top tube + stem reach)					
Inches	25.1	26.1	27.5	28.5	28.9
Centimeters	63.7	66.2	69.9	72.3	73.3
6. Handlebar width (25.4 mm diameter, 5° bend)					
Millimeters	560	560	560	560	560
7. Crank arm length					
Millimeters	170	175	175	175	175
8. Head tube length					
Inches	3.5	3.5	3.5	4.1	5.7
Millimeters	90	90	90	105	145
9. Seatpost length (27.2 mm diameter)					
Millimeters	300	300	300	300	300
10. Gearing	24/34/42			11-13-15-18-21-24-28	

General Specifications

Hubset, type	HyperGlide
Spoke number	32
Spokes, front	268 14ga.
Rear (D/ND)	266/267 14ga.
Tire size	26 x 2.1
Front derailleur	31.8mm / 1 1/4"
Bottom bracket	BB-LP30
Shell width	73
Axle length	113
R. Dropout width	135 mm
Headset size	25.4/34.0/30.0
Stack height	30.25 mm
Weight	27.7 lb./12.57 kg.

Upgrades from 850

- *U.S. True Temper custom butted Cro-Moly frame*
- *STX Compact group*
- *Matrix Single Track Comp heat treated rims*
- *26x2.1 Control Track tires*
- *System 2 handlebars and Gel Lite seat*
- *System 1 Cro-Moly stem, pedals with toe clips and straps*

SingleTrack

Model 930

Sizes	14.5	16.5	18	19.5	21
1. Stand-over height					
Inches	27.7	28.7	29.5	30.5	31.9
Centimeters	70.3	72.8	74.9	77.4	81.1
2. Top tube					
Inches	20.4	21.2	22.1	22.6	23.0
Centimeters	51.9	53.8	56.1	57.5	58.4
3. Effective top tube					
Inches	21.7	22.4	22.8	23.2	23.6
Centimeters	55.0	56.0	58.0	59.0	60.0
4. Stem (OS) extension / degrees rise					
Millimeters	90/-5	105/-5	120/-10	135/-10	135/-10
5. Reach (effective top tube + stem reach)					
Inches	25.1	26.1	27.5	28.5	28.9
Centimeters	63.7	66.2	69.9	72.3	73.3
6. Handlebar width (25.4 mm diameter, 5° bend)					
Millimeters	560	560	560	560	560
7. Crank arm length					
Millimeters	170	175	175	175	175
8. Head tube length					
Inches	3.5	3.5	3.5	4.1	5.7
Millimeters	90	90	90	105	145
9. Seatpost length (27.2 mm diameter)					
Millimeters	300	300	300	300	300
10. Gearing	24/34/42			11-13-15-18-21-24-28	

General Specifications

Hubset, type	HyperGlide
Spoke number	32
Spokes, front	268 14ga.
Rear (D/ND)	266/267 14ga.
Tire size	26 x 2.1
Front derailleur	31.8mm / 1 1/4"
Bottom bracket	BB-LP30
Shell width	73
Axle length	113
R. Dropout width	135 mm
Headset size	25.4/34.0/30.0
Stack height	30.25mm
Weight	27.7 lb./12.57 kg.

Upgrades from 850

- *U.S. True Temper custom butted Cro-Moly frame*
- *STX Compact group*
- *Matrix Single Track Comp heat treated rims*
- *26x2.1 Control Track tires*
- *System 2 handlebars and Gel Lite seat*
- *System 1 Cro-Moly stem, pedals with toe clips and straps*

Model 930SHX

Sizes	14.5	16.5	18	19.5	21
1. Stand-over height					
Inches	27.7	28.7	29.5	30.5	31.9
Centimeters	70.3	72.8	74.9	77.4	81.1
2. Top tube					
Inches	20.4	21.2	22.1	22.6	23.0
Centimeters	51.9	53.8	56.1	57.5	58.4
3. Effective top tube					
Inches	21.7	22.4	22.8	23.2	23.6
Centimeters	55.0	56.0	58.0	59.0	60.0
4. Stem (OS) extension/degrees rise (Direct Connect w/41 mm steerer clamp height)					
Millimeters	90/10	105/10	120/10	135/10	135/10
5. Reach (effective top tube + stem reach)					
Inches	24.8	25.7	27.0	27.9	28.3
Centimeters	62.9	65.2	68.5	70.8	71.8
6. Handlebar width (25.4 mm diameter, 5° bend)					
Millimeters	560	560	560	560	560
7. Crank arm length					
Millimeters	170	175	175	175	175
8. Head tube length					
Inches	3.5	3.5	3.5	4.1	5.7
Millimeters	90	90	90	105	145
9. Seatpost length (27.2 mm diameter)					
Millimeters	300	300	300	300	300
10. Gearing	24/34/42			11-13-15-18-21-24-28	

General Specifications

Hubset, type	HyperGlide
Spoke number	32
Spokes, front	268 14ga.
Rear (D/ND)	266/267 14ga.
Tire size	26 x 2.1
Front derailleur	31.8mm / 1 1/4"
Bottom bracket	BB-LP30
Shell width	73
Axle length	113
R. Dropout width	135 mm
Headset size	25.4/34.0/30.0
Stack height	25.5 mm
Weight	28.8 lb./13.08 kg.

Upgrades from 930

- *Rock Shox Quadra 10 adjustable elastomer suspension fork*
- *AheadSet*
- *System 2 Cro-Moly Direct Connect stem*
- *System 1 bar ends- 210 gm bonded aluminum*

SingleTrack

Model 950

Sizes	14.5	16.5	18	19.5	21
1. Stand-over height					
Inches	27.7	28.7	29.5	30.5	31.9
Centimeters	70.3	72.8	74.9	77.4	81.1
2. Top tube					
Inches	20.4	21.2	22.1	22.6	23.0
Centimeters	51.9	53.8	56.1	57.5	58.4
3. Effective top tube					
Inches	21.7	22.4	22.8	23.2	23.6
Centimeters	55.0	56.0	58.0	59.0	60.0
4. Stem (OS) extension / degrees rise					
Millimeters	90/-5	105/-5	120/-10	135/-10	135/-10
5. Reach (effective top tube + stem reach)					
Inches	25.1	26.1	27.5	28.5	28.9
Centimeters	63.7	66.2	69.9	72.3	73.3
6. Handlebar width (25.4 mm diameter, 5° bend)					
Millimeters	560	560	560	560	560
7. Crank arm length					
Millimeters	170	175	175	175	175
8. Head tube length					
Inches	3.5	3.5	3.5	4.1	5.7
Millimeters	90	90	90	105	145
9. Seatpost length (27.2 mm diameter)					
Millimeters	300	300	300	300	300
10. Gearing	22/32/42			11-13-15-18-21-24-28	

General Specifications

Hubset, type	HyperGlide
Spoke number	32
Spokes, front	268 14ga.
Rear (D/ND)	266/267 14ga.
Tire size	26 x 2.1
Front derailleur	31.8mm / 1 1/4"
Bottom bracket	BB-UN51
Shell width	73
Axle length	113
R. Dropout width	135 mm
Headset size	25.4/34.0/30.0
Stack height	30.25 mm
Weight	26.1 lb./11.83 kg.

Upgrades from 930

- *System 2 butted Cro-Moly fork*
- *LX Compact group with XT rear derailleur*
- *22 x 32 x 42 chainrings*
- *Big Kahuna 26x2.1 tire system*
- *System 2 Cro-Moly stem*

Model 970

Sizes	14.5	16.5	18	19.5	21
1. Stand-over height					
Inches	27.7	28.7	29.5	30.5	31.9
Centimeters	70.3	72.8	74.9	77.4	81.1
2. Top tube					
Inches	20.4	21.2	22.1	22.6	23.0
Centimeters	51.9	53.8	56.1	57.5	58.4
3. Effective top tube					
Inches	21.7	22.4	22.8	23.2	23.6
Centimeters	55.0	56.0	58.0	59.0	60.0
4. Stem (OS) extension/degrees rise (Direct Connect w/41 mm steerer clamp height)					
Millimeters	90/10	105/10	120/10	135/10	135/10
5. Reach (effective top tube + stem reach)					
Inches	24.8	25.7	27.0	27.9	28.3
Centimeters	62.9	65.2	68.5	70.8	71.8
6. Handlebar width (25.4 mm diameter, 5° bend)					
Millimeters	560	560	560	560	560
7. Crank arm length					
Millimeters	170	175	175	175	175
8. Head tube length					
Inches	3.5	3.5	3.5	4.1	5.7
Millimeters	90	90	90	105	145
9. Seatpost length (27.2 mm diameter)					
Millimeters	300	300	350	350	350
10. Gearing	22/32/42			11-12-14-16-18-21-24-28	

General Specifications

Hubset, type	HyperGlide
Spoke number	32
Spokes, front	268 14/15ga.
Rear (D/ND)	266/267 14/15ga.
Tire size	26 x 2.1
Front derailleur	31.8mm / 1 1/4"
Bottom bracket	BB-UN51
Shell width	73
Axle length	113
R. Dropout width	135 mm
Headset size	25.4/34.0/30.0
Stack height	27.6 mm
Weight	25.4 lb./11.53 kg

Upgrades from 950

- *LX/XT mixed group with 8 speed freewheel*
- *AheadSet with System 2 Direct Connect stem*
- *Single Track Pro rims and 14/15 ga. spokes*
- *System 2 pedals with toe clips and straps*
- *System 3 handlebars with System 2 bar ends*
- *System 3 saddle with Manganese rails, leather*

Aluminum

Model 7000

Sizes	14.5	16.5	18	19.5	21
1. Stand-over height					
Inches	28.3	29.3	30.0	30.9	32.3
Centimeters	71.9	74.4	76.2	78.5	82.0
2. Top tube					
Inches	20.4	21.9	22.5	22.8	23.0
Centimeters	51.8	55.6	57.2	57.9	58.4
3. Effective top tube					
Inches	21.2	22.9	23.3	23.4	23.6
Centimeters	53.8	58.2	59.2	59.4	59.9
4. Stem (OS) extension / degrees rise					
Millimeters	90/-5	105/-5	120/-10	135/-10	135/-10
5. Reach (effective top tube + stem reach)					
Inches	24.6	26.9	28.0	28.6	28.8
Centimeters	62.5	68.4	71.1	72.7	73.2
6. Handlebar width (25.4 mm diameter, 5° bend)					
Millimeters	560	560	560	560	560
7. Crank arm length					
Millimeters	170	175	175	175	175
8. Head tube length					
Inches	4.1	4.1	4.1	4.9	6.3
Millimeters	105	105	105	124	159
9. Seatpost length (27.2 mm diameter)					
Millimeters	300	300	350	350	350
10. Gearing	24/34/42			11-13-15-18-21-24-28	

General Specifications

Hubset, type	HyperGlide
Spoke number	32
Spokes, front	268 14/15ga.
Rear (D/ND)	266/267 14/15ga.
Tire size	26 x 2.1
Front derailleur	34.9mm / 1 3/8"
Bottom bracket	KSS TLS
Shell width	73
Axle length	118 AS
R. Dropout width	135 mm
Headset size	25.4/34.0/30.0
Stack height	30.25 mm
Weight	25.3 lb./11.46 kg.

Upgrades from 950

- *Easton 7129 E9 ProGram aluminum bonded frame*
- *Suspension ready geometry*
- *SingleTrack Pro rims with14/15 butted spokes*
- *System 2 wide racing saddle with synthetic leather cover*
- *System 3 handlebars (170 gm)*

Model 7000SHX

Sizes	14.5	16.5	18	19.5	21
1. Stand-over height					
Inches	28.3	29.3	30.0	30.9	32.3
Centimeters	71.9	74.4	76.2	78.5	82.0
2. Top tube					
Inches	20.4	21.9	22.5	22.8	23.0
Centimeters	51.8	55.6	57.2	57.9	58.4
3.Effective top tube					
Inches	21.2	22.9	23.3	23.4	23.6
Centimeters	53.8	58.2	59.2	59.4	59.9
4. Stem (OS) extension/degrees rise (Direct Connect w/41 mm steerer clamp height)					
Millimeters	90/10	105/10	120/10	135/10	135/10
5. Reach (effective top tube + stem reach)					
Inches	24.3	26.5	27.4	28.0	28.2
Centimeters	61.7	67.4	69.7	71.2	71.7
6. Handlebar width (25.4 mm diameter, 5° bend)					
Millimeters	560	560	560	560	560
7. Crank arm length					
Millimeters	170	175	175	175	175
8. Head tube length					
Inches	4.1	4.1	4.1	4.9	6.3
Millimeters	105	105	105	124	159
9. Seatpost length (27.2 mm diameter)					
Millimeters	300	300	350	350	350
10. Gearing	24/34/42			11-13-15-18-21-24-28	

General Specifications

Hubset, type	HyperGlide
Spoke number	32
Spokes, front	268 14/15ga.
Rear (D/ND)	266/267 14/15ga.
Tire size	26 x 2.1
Front derailleur	34.9mm / 1 3/8"
Bottom bracket	KSS TLS
Shell width	73
Axle length	118 AS
R. Dropout width	135 mm
Headset size	25.4/34.0/30.0
Stack height	25.5 mm
Weight	26.8 lb./12.18 kg

Upgrades from 7000

- *Trek Mogul air/oil suspension fork*
- *AheadSet*
- *Suspension specific hubset*
- *System 2 Cro-Moly Direct Connect stem*
- *System 2 bar ends*

Aluminum

Model 8000

Sizes	14.5	16.5	18	19.5	21
1. Stand-over height					
Inches	28.3	29.3	30.0	30.9	32.3
Centimeters	71.9	74.4	76.2	78.5	82.0
2. Top tube					
Inches	20.4	21.9	22.5	22.8	23.0
Centimeters	51.8	55.6	57.2	57.9	58.4
3. Effective top tube					
Inches	21.2	22.9	23.3	23.4	23.6
Centimeters	53.8	58.2	59.2	59.4	59.9
4. Stem (OS) extension/ 10° rise (Direct Connect w/41 mm steerer clamp height)					
Millimeters	90	105	120	135	135
5. Reach (effective top tube + stem reach)					
Inches	24.3	26.5	27.4	28.0	28.2
Centimeters	61.7	67.4	69.7	71.2	71.7
6. Handlebar width (25.4 mm diameter, 5° bend)					
Millimeters	560	560	560	560	560
7. Crank arm length					
Millimeters	170	175	175	175	175
8. Head tube length					
Inches	4.1	4.1	4.1	4.9	6.3
Millimeters	105	105	105	124	159
9. Seatpost length (27.2 mm diameter)					
Millimeters	300	300	350	350	350
10. Gearing	22/32/42			11-13-15-18-21-24-28	

General Specifications

Hubset, type	HyperGlide
Spoke number	32
Spokes, front	268 14/15ga.
Rear (D/ND)	266/267 14/15ga.
Tire size	26 x 2.1
Front derailleur	34.9mm / $1^{3/8}$"
Bottom bracket	KSS TLS
Shell width	73
Axle length	118 AS
R. Dropout width	135 mm
Headset size	25.4/34.0/30.0
Stack height	25.5 mm
Weight	24.5 lb./11.11 kg

Upgrades from 7000

- *AheadSet*
- *LX Compact group with XT rear derailleur*
- *System 2 Cro-Moly Direct Connect stem*
- *System 2 pedals with toe clips and straps*

Composite

Model 8700

Sizes	14.5	16.5	18	19.5	21
1. Stand-over height					
Inches	28.3	29.3	30.0	30.9	32.3
Centimeters	71.9	74.4	76.2	78.5	82.0
2. Top tube					
Inches	20.4	21.9	22.5	22.8	23.0
Centimeters	51.8	55.6	57.2	57.9	58.4
3. Effective top tube					
Inches	21.2	22.9	23.3	23.4	23.6
Centimeters	53.8	58.2	59.2	59.4	59.9
4. Stem (OS) extension/ 10° rise (Direct Connect w/41 mm steerer clamp height)					
Millimeters	90	105	120	135	135
5. Reach (effective top tube + stem reach)					
Inches	24.3	26.5	27.4	28.0	28.2
Centimeters	61.7	67.4	69.7	71.2	71.7
6. Handlebar width (25.4 mm diameter, 5° bend)					
Millimeters	560	560	560	560	560
7. Crank arm length					
Millimeters	170	175	175	175	175
8. Head tube length					
Inches	4.1	4.1	4.1	4.9	6.3
Millimeters	105	105	105	124	159
9. Seatpost length (27.2 mm diameter)					
Millimeters	300	300	350	350	350
10. Gearing	22/32/42			11-13-15-18-21-24-28	

General Specifications

Hubset, type	HyperGlide
Spoke number	32
Spokes, front	268 14/15ga.
Rear (D/ND)	266/267 14/15ga.
Tire size	26 x 2.0
Front derailleur	34.9mm / $1^{3/8}$"
Bottom bracket	KSS TLS
Shell width	73
Axle length	118 AS
R. Dropout width	135 mm
Headset size	25.4/34.0/30.0
Stack height	27.6 mm
Weight	24.0 lb./10.89 kg.

Upgrades from 8000

- *Carbon fiber composite main triangle*
- *PiranhaPro-K 26x2.0 tires*
- *System 3 wide racing saddle with Manganese rails and leather cover*
- *System 4 handlebars*
- *System 3 pedals*
- *System 2 bar ends*

Suspension Track

Model 9200

Sizes	16.5	18	20	22
1. Stand-over height				
Inches	29.5	30.4	31.5	33.2
Centimeters	74.9	77.2	80.0	84.3
2. Top tube				
Inches	21.3	21.8	22.1	22.7
Centimeters	54.1	55.4	56.1	57.6
3. Effective top tube				
Inches	22.2	22.5	22.5	23.0
Centimeters	56.4	57.2	57.2	58.4
4. Stem (OS) extension/10° rise (Direct Connect w/40 mm steerer clamp height)				
Millimeters	120	135	150	150
5. Reach (effective top tube + stem reach)				
Inches	26.3	27.2	27.7	28.1
Centimeters	66.9	69.0	70.3	71.5
6. Handlebar width (25.4 mm diameter, 5° bend)				
Millimeters	560	560	560	560
7. Crank arm length				
Millimeters	175	175	175	175
8. Head tube length				
Inches	4.3	4.3	4.8	6.3
Millimeters	109	109	122	160
9. Seatpost length (27.2 mm diameter)				
Millimeters	250	300	350	350
10. Gearing	22/32/42			11-13-15-18-21-24-28

General Specifications

Hubset, type	HyperGlide
Spoke number	32
Spokes, front	268 14/15ga.
Rear (D/ND)	266/267 14/15ga.
Tire size	26 x 2.0
Front derailleur	34.9mm / 1 3/8"
Bottom bracket	BB-UN51
Shell width	73
Axle length	113
R. Dropout width	135 mm
Headset size	25.4/34.0/30.0
Stack height	27.6 mm
Weight	27.9 lb./12.68 kg

Upgrades from 8700

- *STS- Suspension Track System*
- *Trek Mogul air/oil suspension fork*
- *Gore Ride-On cable system*
- *System 3 alloy Direct Connect stem*
- *System 3 seatpost*

Model 9500

Sizes	16.5	18	19.5	21
1. Stand-over height				
Inches	28.5	29.2	30.1	31.5
Centimeters	72.3	74.1	76.4	79.9
2. Top tube				
Inches	21.9	22.4	22.7	22.9
Centimeters	55.7	57.0	57.7	58.2
3. Effective top tube				
Inches	21.9	22.4	22.7	22.9
Centimeters	55.7	57.0	57.7	58.2
4. Stem (OS) extension/ 10° rise (Direct Connect w/40 mm steerer clamp height)				
Millimeters	120	120	135	150
5. Reach (effective top tube + stem reach)				
Inches	26.0	26.6	27.4	28.1
Centimeters	66.2	67.5	69.5	71.3
6. Handlebar width (25.4 mm diameter, 5° bend)				
Millimeters	560	560	560	560
7. Crank arm length				
Millimeters	175	175	175	175
8. Head tube length				
Inches	4.3	4.3	4.8	6.3
Millimeters	110	110	123	159
9. Seatpost length (27.2 mm diameter)				
Millimeters	300	350	350	350
10. Gearing	22/32/42			11-12-14-16-18-21-24-28

General Specifications

Hubset, type	HyperGlide
Spoke number	32
Spokes, front	268 14/15ga.
Rear (D/ND)	266/267 14/15ga.
Tire size	26 x 2.0
Front derailleur	34.9mm / 1 3/8"
Bottom bracket	BB-UN71
Shell width	73
Axle length	113
R. Dropout width	135 mm
Headset size	25.4/34.0/30.0
Stack height	27.6 mm
Weight	25.7 lb./11.68 kg

Upgrades from 9200

- *OCLV main triangle*
- *Trek Mogul Extreme air/oil suspension fork*
- *8 speed XT Compact group w/GripShift SRT 500*
- *System 4 alloy Direct Connect stem*
- *XT SPD pedals*
- *System 3 bar ends*
- *System 4 saddle with Vanadium rails*

OCLV Mountain

Model 9800

Sizes	16.5	18	19.5	21
1. Stand-over height				
Inches	28.5	29.2	30.1	31.5
Centimeters	72.3	74.1	76.4	79.9
2. Top tube				
Inches	21.9	22.4	22.7	22.9
Centimeters	55.7	57.0	57.7	58.2
3. Effective top tube				
Inches	22.9	23.3	23.4	23.6
Centimeters	58.1	59.1	59.4	59.9
4. Stem (OS) extension/ 10° rise (Direct Connect w/40 mm steerer clamp height)				
Millimeters	105	120	135	150
5. Reach (effective top tube + stem reach)				
Inches	26.5	27.4	28.0	28.7
Centimeters	67.3	69.6	71.2	73.0
6. Handlebar width (25.4 mm diameter, 5° bend)				
Millimeters	560	560	560	560
7. Crank arm length				
Millimeters	175	175	175	175
8. Head tube length				
Inches	4.3	4.3	4.8	6.3
Millimeters	110	110	123	159
9. Seatpost length (27.2 mm diameter)				
Millimeters	300	350	350	350
10. Gearing	22/32/42			11-12-14-16-18-21-24-28

General Specifications

Hubset, type	HyperGlide
Spoke number	32
Spokes, front	268 14/15ga.
Rear (D/ND)	266/267 14/15ga.
Tire size	26 x 2.0
Front derailleur	34.9mm / 1 3/8"
Bottom bracket	BB-UN51
Shell width	73
Axle length	113
R. Dropout width	135 mm
Headset size	25.4/34.0/30.0
Stack height	27.6 mm
Weight	22.1 lb./10.06 kg.

Upgrades from 8700

- *OCLV frame*
- *System 3 ultralight Cro-Moly fork*
- *LX/XT Compact mixed group with 8 speed w/ GripShift SRT 500*
- *System 3 alloy Direct Connect stem*
- *System 3 pedals*
- *System 3 bar ends*
- *System 3 seatpost*

Model 9900

Sizes	16.5	18	19.5	21
1. Stand-over height				
Inches	28.5	29.2	30.1	31.5
Centimeters	72.3	74.1	76.4	79.9
2. Top tube				
Inches	21.9	22.4	22.7	22.9
Centimeters	55.7	57.0	57.7	58.2
3. Effective top tube				
Inches	22.9	23.3	23.4	23.6
Centimeters	58.1	59.1	59.4	59.9
4. Stem (OS) extension/ 10° rise (Direct Connect w/40 mm steerer clamp height)				
Millimeters	105	120	135	150
5. Reach (effective top tube + stem reach)				
Inches	26.5	27.4	28.0	28.7
Centimeters	67.3	69.6	71.2	73.0
6. Handlebar width (25.4 mm diameter, 5° bend)				
Millimeters	560	560	560	560
7. Crank arm length				
Millimeters	175	175	175	175
8. Head tube length				
Inches	4.3	4.3	4.8	6.3
Millimeters	110	110	123	159
9. Seatpost length (27.2 mm diameter)				
Millimeters	300	350	350	350
10. Gearing	22/32/42			11-12-14-16-18-21-24-28

General Specifications

Hubset, type	HyperGlide
Spoke number	32
Spokes, front	268 14/15ga.
Rear (D/ND)	266/267 14/15ga.
Tire size	26 x 2.0
Front derailleur	34.9mm / 1 3/8"
Bottom bracket	BB-UN71
Shell width	73
Axle length	113
R. Dropout width	135 mm
Headset size	25.4/34.0/30.0
Stack height	27.6 mm
Weight	23.5 lb./10.68 kg.

Upgrades from 9800

- *Trek Mogul Black Diamond suspension fork*
- *XT Compact group with GripShift SRT 500*
- *HG90 chain*
- *XT SPD pedals*
- *System 4 alloy Direct Connect stem*
- *System 4 saddle with Vanadium rails*

Tandems

Model T50

Sizes	50x46	54x50	57x47	58x53	62x56
1. Stand-over height					
Inches	30.0/27.6	30.9/29.7	31.8/29.1	32.4/31.2	34.1/32.5
Centimeters	76.3/70.0	78.5/75.5	80.9/74.0	82.4/79.2	86.6/82.6
2. Top tube					
Inches	21.3/26.0	21.5/27.2	21.9/25.9	22.2/28.0	23.0/28.7
Centimeters	54.0/66.0	54.5/69.0	55.7/65.9	56.5/71.0	58.5/73.0
3.Stem (1 1/4") Captain's extension/ 32° rise, Stoker - 130 mm					
Millimeters	120	120	135	135	135
4. Reach (effective top tube + stem reach)					
Inches	24.4/20.9	24.6/22.0	25.4/20.8	25.7/22.8	26.5/23.6
Centimeters	61.9/53.0	62.4/56.0	64.6/52.9	65.4/58.0	67.4/60.0
5. Handlebar width (25.4 mm diameter, 5° bend)					
Millimeters	560/560	560/560	560/560	560/560	560/560
6. Crank arm length					
Millimeters	170/170	175/175	175/175	175/175	175/175
7. Head tube length					
Inches	4.0	4.0	5.4	5.4	7.3
Millimeters	102	102	137	137	185
8. Seatpost length (29.8 mm diameter)					
Millimeters	350/300	350/300	350/300	350/350	350/350
9. Gearing	28/38/48		12-14-16-19-22-26-30		

General Specifications

Hubset, type	PowerFlo, threaded for drum brake
Spoke number	40R/36F
Spokes, front	301 13/14 ga.
Rear (D/ND)	296/296 13/14 ga.
Tire size	700 x 38
Front derailleur	31.8mm / 1 1/4"
Bottom bracket	3RRB
Shell width	68
Axle length	42/52/42
R. Dropout width	140 mm
Headset size	28.6/37.0/33.0
Stack height	41.0 mm
Weight	42.1 lb/19.1 kg.

Features

- *Light weight, perfor mance tandem with excellent fit*
- *U.S. made True Temper custom butted Cro-Moly frame*
- *Tange special Tandem fork with 1 1/4" headset*
- *Tandem wheelset w/40° R/ 36°F with cassette, drum brake threading*
- *Upright, hybrid styling for comfort, easy riding*

Model T100

Sizes	50x46	54x50	57x47	58x53	62x56
1. Stand-over height					
Inches	30.0/27.6	30.9/29.7	31.8/29.1	32.4/31.2	34.1/32.5
Centimeters	76.3/70.0	78.5/75.5	80.9/74.0	82.4/79.2	86.6/82.6
2. Top tube					
Inches	21.3/26.0	21.5/27.2	21.9/25.9	22.2/28.0	23.0/28.7
Centimeters	54.0/66.0	54.5/69.0	55.7/65.9	56.5/71.0	58.5/73.0
3.Stem (1 1/4") Captain's extension/ 32° rise, Stoker - 130 mm					
Millimeters	120	120	135	135	135
4. Reach (effective top tube + stem reach)					
Inches	24.4/20.9	24.6/22.0	25.4/20.8	25.7/22.8	26.5/23.6
Centimeters	61.9/53.0	62.4/56.0	64.6/52.9	65.4/58.0	67.4/60.0
5. Handlebar width (25.4 mm diameter, 5° bend)					
Millimeters	560/560	560/560	560/560	560/560	560/560
6. Crank arm length					
Millimeters	175/175	175/175	175/175	175/175	175/175
7. Head tube length					
Inches	4.0	4.0	5.4	5.4	7.3
Millimeters	102	102	137	137	185
8. Seatpost length (29.8 mm diameter)					
Millimeters	350/300	350/300	350/300	350/350	350/350
9. Gearing	28/38/48		12-14-16-19-21-24-28		

General Specifications

Hubset, type	HyperGlide
Spoke number	40R/36F
Spokes, front	296 13/14 ga.
Rear (D/ND)	298/299 13/14 ga.
Tire size	700 x 35
Front derailleur	31.8mm / 1 1/4"
Bottom bracket	BB-UN51
Shell width	68
Axle length	127.5
R. Dropout width	140 mm
Headset size	28.6/37.0/33.0
Stack height	41.0 mm
Weight	42.1 lb/19.1 kg.

Upgrades from T50

- *Deore DX derailleurs with HyperGlide*
- *Custom Deore XT tandem hubset w/40°R/ 36°F, 140 mm spacing*
- *Invert 700x35 tires*
- *Deore DX M-System brakes*
- *System 2 ATB handlebars*
- *Deore DX RapidFire Plus shifters*

Tandems

Model T200

Sizes	50x46	54x50	57x47	58x53	62x56
1. Stand-over height					
Inches	30.0/27.6	30.9/29.7	31.8/29.1	32.4/31.2	34.1/32.5
Centimeters	76.3/70.0	78.5/75.5	80.9/74.0	82.4/79.2	86.6/82.6
2. Top tube					
Inches	21.3/26.0	21.5/27.2	21.9/25.9	22.2/28.0	23.0/28.7
Centimeters	54.0/66.0	54.5/69.0	55.7/65.9	56.5/71.0	58.5/73.0
3.Stem (1 1/4") Captain's extension/0 degrees rise, Stoker - adjustable 110-160 mm					
Millimeters	100	100	120	120	120
4. Reach (effective top tube + stem reach)					
Inches (Cap't)	25.2	25.2	26.5	26.8	27.6
Stoker	21.6-19.7	22.8-20.9	21.6-19.7	23.6-21.6	24.4-22.4
Centimeters	63.9/55-50	64.1/58-53	67.2/55-50	68.0/60-55	70.0/62-57
5. Handlebar width (25.4 mm diameter)					
Millimeters	420/460	420/460	440/460	440/460	440/460
6. Crank arm length					
Millimeters	170/170	170/170	175/170	175/170	175/175
7. Head tube length					
Inches	4.0	4.0	5.4	5.4	7.3
Millimeters	102	102	137	137	185
8. Seatpost length (29.8 mm diameter)					
Millimeters	350/300	350/300		350/350	350/350
9. Gearing	32/44/54		12-13-14-16-18-21-24-28		

General Specifications

Hubset, type	HyperGlide, threaded for drum brake
Spoke number	40R/36F
Spokes, front	297 13/14 ga.
Rear (D/ND)	297/298 13/14 ga.
Tire size	700 x 28
Front derailleur	31.8mm / 1 1/4"
Bottom bracket	BB-UN71
Shell width	68
Axle length	127.5
R. Dropout width	140 mm
Headset size	28.6/37.0/33.0
Stack height	41.0 mm
Weight	42.1 lb/19.1 kg.

Upgrades from T100

- *XTR derailleurs with 8 speed bar end shifters*
- *Hugi tandem hubset w/ XTR cassette, threaded for drum brake*
- *XT cranks w/ 32x44x54*
- *Iso Tech 3K 700x28 tires with Kevlar belts*
- *XTR brakes with Dia-Compe aero hybrid levers*
- *Modolo road handlebars*
- *XT SPD pedals*

Jazz

Latitude

Sizes	14.5	16.5	18	19.5	21	22.5	17W	20W
1. Stand-over height								
Inches	27.0	28.0	28.8	29.8	31.3	32.8		
Centimeters	68.6	71.1	73.1	75.8	79.4	83.2	- -	- -
2. Top tube								
Inches	20.3	20.8	21.4	22.0	22.4	22.7		
Centimeters	51.6	52.9	54.4	55.8	56.8	57.7	- -	- -
3. Stem extension (45° rise)								
Millimeters	100	100	100	100	100	100	100	
4. Handlebar width (25.4 mm diameter) (Women's- 60 mm rise)								
Centimeters	580	580	580	580	580	600	600	
5. Crank Arm length								
Inches	170	170	170	170	170	170	170	
6. Head tube length								
Inches	3.3	3.3	3.3	4.5	6.5	4.9	6.1	
Millimeters	85	85	85	115	165	125	155	
7. Seatpost length (26.6 diameter)								
Millimeters	300	300	300	300	300	300	300	
8. Gearing	28/38/48			14-17-20-24-28				

General Specifications

Hubset, type	Threaded, nutted axle
Spoke number	36
Spokes, front	261 14 ga.
Rear (D/ND)	259/261 14 ga.
Tire size	26 x 2.1
Front derailleur	28.6mm / 11/8"
Bottom bracket	YST BB-612
	68
R. Dropout width	130 mm
Headset size	22.2/30.0/27.0
Stack height	30.0 mm

Features

- *Mountain style bike with performance enough to develop a rider into an enthusiast*
- *15 speed SIS thumb shifters*
- *26x2.0 knobbies*
- *DiaCompe cantilever brakes with adjustable reach*
- *Quick release front wheel*
- *SR cotterless crank*

Street Life

Sizes	17	19	21	23	17W	20W	
1. Stand-over height							
Inches	27.6	29.5	31.4	33.3			
Centimeters	70.2	75.0	79.8	84.6			
2. Top tube							
Inches	21.3	21.9	22.2	22.6			
Centimeters	54.0	55.5	56.5	57.5			
3. Stem extension (45° rise)							
Millimeters	100	100	100	100	100	100	100
4. Handlebar width (25.4 mm diameter) (60 mm rise)							
Centimeters	600	600	600	600	600	600	600
5. Crank Arm length							
Inches	170	170	170	170	170	170	170
6. Head tube length							
Inches	3.3	3.3	3.3	4.5	6.5	4.9	6.1
Millimeters	85	85	85	115	165	125	155
7. Seatpost length (26.6 diameter)							
Millimeters	300	300	300	300	300	300	300
8. Gearing		48	14-16-18-21-24-28				

General Specifications

Hubset, type	Threaded, nutted rear axle
Spoke number	36
Spokes, front	261 14 ga.
Rear (D/ND)	259/261 14 ga.
Tire size	700 x 41
Front derailleur	28.6mm / 11/8"
Bottom bracket	YST BB-612 68
R. Dropout width	130 mm
Headset size	22.2/30.0/27.0
Stack height	30.0 mm

Features

- *Hybrid styling for casual city riding*
- *6 speed with GripShift simplicity*
- *700x35 tires for a durable, stable ride*
- *DiaCompe cantilever brakes with adjustable reach*
- *Quick release front wheel*
- *Shimano derailleur*

Jazz

	Cruiser Classic	*Calypso*
Sizes	19" men's and women's	19" men's and women's
1. Stand over height		
	30.7"/78.1 cm	30.7"/78.1 cm
2. Stem		
	4 bolt BMX type	4 bolt BMX type
3. Handlebar width (25.4 mm diameter) (132 mm rise)		
Millimeters	700	700
4. Crank arm length		
Inches	6.5	6.5
5. Head tube length		
Inches	4.1	4.1
Millimeters	105	105
6. Seatpost length (25.6 mm diameter)		
Millimeters	300	300
10. Gearing	40 x 18	40 x 14-16-18-21-24-28

General Specifications

Hubset, type	Coaster brake, nutted F&R	Threaded, nutted F&R
Spoke number	36	36
Spokes, front	263 14ga.	263 14ga.
Rear (D/ND)	263 14ga.	263 14ga.
Tire size	26 x 2.125	26 x 2.125
Bottom bracket	One piece type 28 TPI	One piece type 28TPI
R. Dropout width	126 mm	126 mm
Headset size	22.2/27.0/30.0	22.2/27.0/30.0
Stack height	32.5 mm	32.5 mm

Features

- *Cruiser styling with Coaster brake*
- *Cool look and comfy ride*
- *Whitewall 26x2.125 street tires*
- *Foam padded, swept back handlebars*
- *Alloy rims and stainless steel spokes*
- *One piece crank*

Upgrades from Cruiser Classic

- *6 speed GripShift*
- *Gumwall tires*
- *Shimano derailleur*
- *Alloy sidepull brakes*

	Rocket	Inferno
	14" x 24"	14" x 24"
1. Stand over height	26.4"/ 67.1 cm	26.4"/ 67.1 cm
2. Stem extension / 25° rise		
Millimeters	60	60
3. Handlebar width (25.4 mm diameter)		
Millimeters	530/ 540W	530/ 540W
4. Crank arm length		
Inches	5.5	5.5
5. Head tube length		
Inches	4.1	4.1
Millimeters	105	105
6. Seatpost length (26.6 mm diameter)		
Millimeters	300	300
7. Gearing	26/36/46 14-17-20-24-28	26/36/46 14-17-20-24-28

General Specifications

	Rocket	Inferno
Hubset, type	Threaded, nutted F&R	Threaded, nutted F&R
Spoke number	36	36
Spokes, front	237 14ga.	240 14ga.
Rear (D/ND)	234/236 14ga.	2237/239 14ga.
Tire size	24 x 1.95	24 x 1.95
Bottom bracket	One piece type 28 TPI	One piece type 28 TPI
R. Dropout width	130 mm	130 mm
Front derailleur	28.6 mm/ 1 1/8"	28.6 mm/ 1 1/8"
Headset size	22.2/27.0/30.0	22.2/27.0/30.0
Stack height	30.0	30.0

Features (Rocket)

- *Proportionate mountain bike performance*
- *Cro-Moly and Tensile steel frame*
- *15 spd SIS thumbshifters*
- *DiaCompe cantilever brakes*
- *Brake levers with adjustable reach*
- *Alloy rims*

Features (Inferno)

- *SR 7001 DuoTrack suspension fork*
- *Bar end equipped, just like the off road race bikes*

Jazz

	Bold Moves	Clash
Sizes	12" x 20"	12" x 20"
1. Stand over height	22.4"/ 56.9 cm	
2. Stem	60 mm/ 25° rise	4 bolt BMX type
3. Handlebar width (25.4 mm diameter)		
Millimeters	530 (540 girls)	550
4. Crank arm length		
Inches	5.5	6.5
5. Head tube length		
Inches	4.1	4.1
Millimeters	105	105
6. Seatpost length (26.6 mm diameter)		
Millimeters	300	300
7. Gearing	44 x 14-17-20-24-28	44 x 18

General Specifications

	Bold Moves	Clash
Hubset, type	Threaded, nutted F&R	Coaster brake, nutted F&R
Spoke number	36	36
Spokes, front	190 14ga.	185 14ga.
Rear (D/ND)	186/188 14ga.	186/188 14ga.
Tire size	20 x 1.95	20 x 2.125
Bottom bracket	One piece type 28 TPI	One piece type 28TPI
R. Dropout width	126 mm	126
Headset size	22.2/27.0/30.0	22.2/27.0/30.0
Stack height	30.0 mm	32.5 mm

Features (Bold Moves)

- *20" wheeled mountain bike*
- *Looks likes the big bikes*
- *Knobby 20 x 1.95" tires*
- *Bolt on wheels for safety*
- *5 speed SIS shifting*
- *Shimano derailleur with guard*

Features (Clash)

- *Radical styling with retro-arc frameset*
- *Graphics for kids*
- *Coaster brake for safety, hand brake for the look kids want*
- *Elevated chainstays for clearance*

	Zig Zag	Wizard
Sizes	12" x 20"	8" x 16"
1. Stand over height		
	21.4"/ 54.4 cm	18.9"/ 47.9 cm
2. Stem		
	4 bolt BMX type	4 bolt BMX type
3. Handlebar width (25.4 mm diameter)		
Millimeters	170	130
4. Crank arm length		
Inches	4.5	4.5
5. Head tube length		
Inches	3.5	4.0
Millimeters	90	102
6. Seatpost length (22.2 mm diameter)		
Millimeters	250	220
7. Gearing	36 x 18	32 x 18

General Specifications

Hubset, type	Coaster brake, nutted F&R	Coaster brake, nutted F&R
Spoke number	36	28
Spokes, front	185 14ga.	137 14 ga.
Rear (D/ND)	186/188 14ga.	132 14 ga.
Tire size	20 x 2.125	16 x 1.75
Bottom bracket	One piece type 28 TPI	One piece type 28TPI
R. Dropout width	112 mm	112
Headset size	21.2/32.5/27.0	21.2/32.5/27.0
Stack height	32.5 mm	30.0 mm

Features

- *20" wheels*
- *Coaster brakes*
- *Knobby 20 x 1.95" tires*
- *Bolt on wheels for safety*
- *Hot colors*
- *Chainguard and pads forsafety*

Features

- *Great bike for learning*
- *Heavy-duty, adjustable training wheels*
- *Coaster brake for safety*
- *Extra low stand over height*
- *Pads*

Reaches

Road Reaches

	47	50	52	54	56	58	60	62
1220, 2120	58.0	60.7	60.7	64.6	64.6	68.5	68.5	70.0
1200, 1400	58.3	61.0	61.0	65.0	65.0	69.0	69.0	70.5
2200, 2300	58.3	61.0	63.0	65.0	67.0	69.0	70.0	71.5
[illegible]200	-	61.1	62.8	65.5	67.0	69.0	70.0	72.0
5500	-	60.6	62.1	64.7	66.2	68.1	69.1	71.1
		19		21		23		25
370		63.0		65.0		67.0		69.0
		17		19	21		23	25
520		60.1		62.6	65.5		66.5	67.5

MultiTrack/MetroTrack Reaches

	15	17	19	21	23	17W	20W
700, 720, 730	58.9	59.4	60.4	61.4	62.4	59.4	60.3
750, 750M	61.0	62.6	64.6	65.6	69.2	61.3	63.2
		16.5	18	20	22		
7600, 7900		65.1	67.6	69.3	71.8		

Mountain Bike Reaches

	14.5	16.5	18	19.5	21	22.5	24	17W	20W
800, 820	58.4	59.4	60.4	61.4	63.3	64.3	65.3	58.8	60.0
830	58.4	59.9	61.4	62.4	64.3	65.3	---	58.8	60.0
830SHX	61.5	64.2	66.9	67.9	70.2	71.2			
850	61.4	63.1	65.6	67.7	68.7	69.7			
850SHX	61.4	64.2	66.9	69.2	70.2	71.2			

	14.5	16.5	18	19.5	21
920, 930, 950	63.7	66.2	69.9	72.3	73.3
930SHX, 970	62.9	65.2	68.5	70.8	71.8
7000 8000, 8700	62.5	68.4	71.1	72.7	73.2
7000SHX	61.7	67.4	69.7	71.2	71.7
9500	-	66.2	67.5	69.5	71.3
9800, 9900	-	67.3	69.6	71.2	73.0
		16.5	18	20	22
9200		66.9	69.0	70.3	71.5

Tandem Reaches

	50/46	54/50	57/47	58/53	62/56
T50, T100	61.9/53.0	62.4/56.0	64.6/52.9	65.4/58.0	67.4/60.0
T200	63.9/55-50	64.1/58-53	67.2/55-50	68.0/60-55	70.0/62-57

Models 1220, 2120

	30	42	52
12	--	95	117
14	58	81	100
16	51	71	88
18	45	63	78
21	39	54	67
24	34	47	58
28	29	41	--

Models 1200, 1400

	42	53
13	--	110
15	76	95
17	67	84
19	60	75
21	54	68
23	49	62
26	44	--

Models 2200, 2300, 5200, 5500

	39	53
12	--	119
13	81	110
14	75	102
15	70	95
17	62	84
19	55	75
21	50	68
23	46	--

Model 370

	40	52
12	--	117
14	77	100
16	68	88
18	60	78
21	51	67
24	45	58
28	39	--

Model 520

	26	36	46
11	--	88	113
13	54	75	96
15	47	65	83
18	39	54	69
21	33	46	59
24	29	41	52
28	25	35	--

Models 7600M, 7900

	20	32	42
11	--	79	103
12	45	72	95
13	42	66	87
14	39	62	81
15	36	58	76
17	32	51	67
19	28	45	--

Model T50

	28	38	48
12	--	85	108
14	54	73	93
16	47	64	81
19	40	54	68
22	34	47	59
26	29	39	50
30	25	34	--

Model T100

	28	38	48
11	--	93	118
13	58	79	100
15	50	68	86
18	42	57	72
21	36	49	62
24	31	43	54
28	27	37	--

Model T200

	32	44	54
12	--	99	[illegible]
13	66	91	[illegible]
14	62	85	104
16	54	74	91
18	48	66	81
21	41	57	69
24	36	49	61
28	31	42	--

Models 700, 800,

	28	38	48
14	--	73	93
16	47	64	81
18	42	57	72
21	36	49	62
24	31	43	54
28	27	37	--

Models 720, 820

	28	38	48
11	--	93	118
13	58	79	100
15	50	68	86
18	42	57	72
21	36	49	62
24	31	43	54
28	27	37	--

Models 730, 750, 750M, 830, 830SHX, 850, 850SHX, 920, 930, 930SHX, 7000, 7000SHX

	24	34	42
11	--	83	103
13	59	71	87
15	43	61	76
18	36	51	63
21	31	44	54
24	27	38	58
28	23	33	--

Models 970, 9500, 9800, 9900

	22	32	42
11	--	79	103
12	49	72	95
14	42	62	81
16	37	54	71
18	33	48	63
21	28	41	54
24	25	36	47
28	21	31	--

Models 950, 8000, 8700, 9200

	22	32	42
11	--	79	103
13	46	75	96
15	40	65	83
18	33	48	63
21	28	41	54
24	25	36	47
28	21	31	--

Model KDZ (12x20)

	28	38
12	--	63
14	40	54
16	35	48
18	31	42
21	27	36
24	23	--

Models 800, KDZ (14x24)

	24	34	42
12	--	68	84
14	41	58	72
16	36	51	63
18	32	45	56
21	27	39	48
24	24	34	--

These gear charts are for comparison only. Actual roll-out, or distance travelled in one rotation of the crankset, will vary according to wheel and tire size. For this reason, except for 20" and 24" wheels, all calculations are for a 27 inch wheel.