



## QUICKSTART REAR DERAILLEUR 2004 - X.0, X.9, X.7, 5.0, 4.0, 3.0

SRAM rear derailleur's (RD's) offer very precise shifting performance, easy adjustability, and easy maintenance. This Quickstart is designed to give the rider the maximum performance and longevity of his or her SRAM ESP drivetrain system, plus valuable custom tuning information. SRAM, of course, includes a detailed operating instruction manual with all of its products, in a wide variety of languages. This is a good place to begin when installing a SRAM derailleur. If you do not have this guide please contact your dealer or request the guide from SRAM direct via [www.sram.com](http://www.sram.com) (Operating instruction reference # 4005).

### GENERAL INFORMATION

Before installing any drivetrain components, the rider needs to realize that all of the drivetrain components work together in concert. This means that it is best to inspect/replace all of the drive components; the chain (is it worn, or bent or rusted?), the cog set (are the teeth worn, are the cogs tight on the free-hub body?), the crank set (are the spindle bolts and chain-ring bolts tight? Are the chain-rings straight, or are the teeth worn or smashed from rocks?), the bottom bracket (does it spin smooth, is there any free-play) and, very important, the rear derailleur hanger.

### INSTALLATION

#### RD HANGER TIPS:

Many modern mountain bikes have replaceable rear derailleur hangers which can be replaced if the hanger becomes damaged. What's important is that the hanger is tight (meaning check the tiny bolts or chain-ring bolt that holds them on) and that the hanger is straight. If you have suffered a broken RD, there is a good chance that the hanger is bent one way or another. Make sure that the rear wheel is firmly clamped in the bike when checking the hanger alignment, as most replaceable hangers rely on the quick release to hold them firmly in place. The best way to check hanger alignment is with a hanger alignment tool which any cool bike shop will have. If you do not have access to the tool, carefully install the new RD and swing the cage downward while looking directly toward the front middle chain-ring (you need to get your face right behind the RD). The cage should be projecting straight down, parallel with the rear cogs. The cage should also not be twisted inboard or outboard. Also, please be careful, if for some reason the threads on the hanger are loose or damaged. Replace the hanger if there is any question about the threads, and savvy riders will buy an extra hanger and stuff it in their seat bag or hydration pack for emergencies. The number one cause of poor shifting is damaged hangers. Keep that hanger dialed.

#### SEAT THE HOUSING

When installing new cable and housing or other shifting components, it is important to make sure that the cable housing, ferrules, and cable stops are firmly seated in place. While carefully holding the RD parallelogram from pushing towards the larger cog, forcefully push or twist the shifter to compress the housing into place. You can also pull on an exposed piece of cable with the drive train in the Big -Big to seat the housing. Housing is the artierie that makes the shifting system live, so inspect the housing and replace or re-trim the ends when you service your bike.

#### B-ADJUST SETTING

Once the RD is mounted the next critical step is to roughly set the B-adjust screw to determine the distance between the upper pulley wheel and the cog-set on your bike (chain gap). Before installing the chain or final piece of housing that leads to the RD, push the RD parallelogram until the pulley wheel is centered under the largest cog (usually you'll have to turn out the "low" screw until the wheel is directly centered under the largest cog) Next adjust the screw by the mounting bolt (B-adjust) until there is about a .25 inch or 6mm "chain gap" (about the thickness of a pencil) between the edge of the cog tooth and the edge of the pulley wheel.



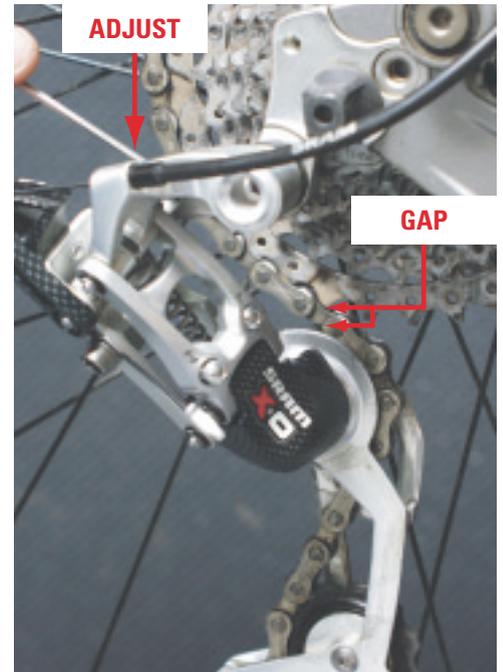
HANGER ALIGNMENT TOOL IN ACTION

**PROPER HOUSING LENGTH**

When the B-adjust is set make sure that the final piece of housing is the proper length. It should fit so that there is slight bend in the housing (a little bit long). This is so the B-adjust can be fine tuned a bit in both directions, without having the housing come out of the derailleur or housing stop. Always check the other portions of housing for proper length, especially on a full suspension bikes. Push the suspension through the travel and make sure there is no binding, pulling or excessive rubbing of the housing.

**PROPER CHAIN LENGTH**

Proper chain length is very important for good shifting performance. A general rule to follow when installing a new chain: Wrap the new chain around the large chain ring and the largest cog in the back, without going through the rear derailleur, then add two segments (three chain pins) in chain length. SRAM chains with Powerlink make it very easy to remove the chain and shorten it, so when installing a new chain always start with a little extra length. It is critical that you check your full suspension bike for "chain-stay growth" meaning that when the suspension is compressed the distance from the bottom bracket center to the rear axle gets longer. If when pushing with your body weight on the rear suspension the cage (lower pulley wheel) is moving towards the bottom bracket, you should run an extra link of chain length. It is best to check this chain-stay growth with the chain in the Big -Big (large chain ring and cog). Riding with a chain that is too short is hard on the RD and can lead to RD failure, especially if you ride with the chain "crossed" in the big-big, and land off a jump or compress the suspension fully.

**PROPER B-ADJUST****DOUBLE-CHECK THE HIGH AND LOW SCREWS**

After installing the RD and adjusting the high and low screw settings, double-check them after a few rides. The low screw is very important to control the inboard movement of the RD. If the screw is a little off, the RD can over shift the big cog and enter the spokes doing damage to the spokes and possibly the RD. If your bike over shifts... something is wrong....so find out why immediately. Sometimes the hanger can get bent on a rock, or in transport.

**SERVICE YOUR RD**

Just because your sweet SRAM RD is working good does not mean that it does not need love. After washing your bike make sure to lube the parallelogram pivots with some light lube, the wipe off the excess. It is also good to remove the inner cage and clean and lube the pulley wheels. X.0 and X.9 have sealed cartridge pulleys that should be re-greased after hard use, especially if you get in a mud fest and power-wash situation. Simply take something with a sharp edge (a sharp pick or knife) and carefully pry off the seal on both sides, clean with degreaser and blow dry, then pack medium weight grease in the bearings. Re-install the seals, and your pulleys are good as new. Other models can often times get away with simple external lubing, but removing the bushings and completely cleaning the running surfaces is best. It is not necessary to lube the cable "fin" on the rear of the RD, because the cable does not actually slide on the fin. Just keep it clean.

**KEEP THE RD INDEXING ADJUSTED**

SRAM's ESP 1 to 1 actuation ratio keeps the indexing performing twice as consistent as other systems. The range of rideable adjustment is also much greater. Another great feature is not having a vulnerable barrel adjuster hanging off the back of the RD to get damaged buy the outside world (your buddies). However, if it seems like your system is not indexing properly....adjust it!! An improper index adjustment means chain skipping and much more work for the RD. The best way to adjust indexing is to stop and shift the RD to the smallest cog. Then push or twist the shifter one click, and make sure the chain shifts to the next cog. If not, turn the barrel adjuster out (counter clockwise) and center the upper pulley wheel exactly over the second cog. Again, a good eyeball here is better than trying to fiddle with it by feel on the trail.

Modern day drivetrain systems perform amazingly, pamper your components like you do yourself. Roost on..HB



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2004 - QUICK TIPS X.0, X.9, X.7, 5.0, 4.0, 3.0

### DOWNHILL/DIRTJUMP/MTNCROSS/FREERIDE TIP

Many hardcore DH, DJ and MC riders like to use a road type cassette that has a narrow range of gears and usually a smallish large cog. When adjusting the mountain bike RD B adjust setting (chain gap) it is not possible to get this 6mm distance. What is important to remember is to loosen the screw as much as possible, but making sure that there is at least 4mm of screw sticking out between the pivot stop and hanger (5.0, 4.0, 3.0) or pivot plate (X.0, X.9, X.7). Do not turn the screw out too far! Also make sure that the screw is touching the pivot plate or hanger in an even fashion (not touching just part of it). Even though the chain gap is large, because of the increase in chain "wrap" the RD will still shift excellent. Don't forget to check the position of this screw after races or thrash sessions when you are fixing the rest of your bike.

**DH/DJ/MC/FR TIP-** The RD does not pivot on the mounting screw, so zip-tie any protruding housing to the swing arm or seat stay, but make sure the length is still correct. This will keep any sticks, pantlegs and shoestrings getting snagged on the housing when pulling sick tricks or fat drops.

### PROPER CHAIN LENGTH

**DH/DJ/MC/FR TIP-** When using a single chain-ring the RD has to take up less chain, it is not necessary to make the chain real short. Also long travel DH bikes usually have a lot of chain stay growth, which is hard to mimic in the parking lot. ...compared to race conditions. The best way to achieve minimum chain length is to remove the rear shock spring and completely compress the suspension to see exactly what happens at full bottom out. Play it safe on chain length so if you do that big launch while in the large cog...your RD will not end up in pieces. Also try to get the single ring as close to the normal middle chain-ring position for perfect chain line and shifting. Always check chain guide hardware as these parts seem to litter most downhill courses. Always double check chain guide alignment after each practice or thrash session, as these parts are easily damaged without the rider knowing.



**CHAIN LENGTH- RD PICTURE WITH BIG BIG SETTING**