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WILDERNESS TRAIL BIKES
SpeedMaster™ Cantilever Brake

The SpeedMaster Cantilever brake is easy to install and adjust. Once properly installed, it responds with amazing stopping power and modulation, providing progressive and precise control of your wheel speed.

The Wilderness Trail Bikes SpeedMaster Cantilever brake was designed to reduce brake boss flex. This is accomplished by the placement of the brake pad post between the tubular brake arm and the frame (or fork). The force is centered at the base of the brake boss, greatly reducing brake boss flex and improving braking control and power. The one screw clamp easily adjusts to fit a wide range of rim widths, brake stud spacings, and brake pad toe-in adjustments, allowing optimal brake pad positioning on any bike.

The SpeedMaster Cantilever brake uses proprietary Linear Return Springs™ that generate a strong pad centering effect, returning the brake arms to an exact position far more consistently than coil springs at a lighter spring rate. Exact rim centering between brake pads is critically important because pedaling motion causes the brake to drag intermittently when serious power is applied to the pedals. (You are serious, aren't you?)

The innovative brake pad placement, easily adjustable brake pad positioning and Linear Return Spring tension allow the Wilderness Trail Bikes SpeedMaster brake to set a new standard for cantilever brake set-up and performance.

You will need the following tools to install, set-up and adjust your SpeedMaster Cantilever brake:

- A 4 mm hex wrench (for the one screw adjustment clamp)
- A 5 mm hex wrench (for the main pivot bolt)
- An adjustable (Crescent®) wrench (for micro positioning of brake pad to rim face)
- A business card or matchbook cover (to insert, folded once or twice, between the tail end of the brake pad and the rim for toe-in)
- An 8 mm box end or open end wrench (to clamp the stirrup wire)
- A 7/16" or 11 mm box end or open end wrench (to accurately position the angle of the stirrup wire to the brake arm)
- A 5/8" or 16 mm cone wrench (or your adjustable wrench to micro tune the brake spring tension evenly - don't forget - light spring pressure is best)
- a little bit of time and a good attitude (a good brake deserves a good set-up)

Brake Arm Assembly

The brake arm bushing should be oiled or greased and the brake boss greased. Slide the brake arm assembly onto the boss. (Note: The main pivot bushings have been sized to fit the largest diameter, shortest brake boss we have found. The arms should pivot freely - if they do not, please call WTB for instructions.) A small bag of brake arm shim washers has been supplied with your brake. These washers are designed to be used only when the brake mounting boss is longer than the pivot bushing of the brake arm resulting in an undesirable amount of "play." Slide the arm forward and back, perpendicular to the seat stay or fork blade. If there is an undesirable amount of play, remove the brake arm and place a shim washer over the stud, bolt down the arm and check again. If there is still too much play, repeat the process. Be sure that the brake arm pivots freely.

Oil the brake boss threads and bolt the brake spring and holder down snug. The brake springs should uncoil around the spring holder away from the tire, cross the brake arm and contact the spring top on the inside. Snug the brake spring down in a position where it won't interfere with your set-up. Brake spring tension is done at the final adjustment.

Brake Pad Positioning

Check to be sure your wheel is properly mounted. The rim should be centered between seat stays or fork blades. Now you are ready to position your brake pads. The adjustment clamps fit snugly on the brake arm so they don't need to be held during clamping. It may be necessary to remove the clamping screw to slide the adjustment clamp up or down. If it is too difficult to slide the clamp, use a 7/16" drill bit shank to release the tension on the clamp. Just push the solid end of the drill bit between the two tails of the ring clamp. The clamp will slide freely on the brake arm. Estimate the proper height for the brake pad position and re-install the screw and brake pad fixing hardware. The final position should have the pad contact the rim close to the tire because as the pad wears, it will move to the inside edge of the rim. Put a little tension on the clamp screw and check pad alignment.

Now we get to deal with brake pad "toe-in." Toe-in is when the front tip of the brake pad contacts the rim first and compensates for brake boss flex. When mounted as recommended, the SpeedMaster Cantilever brake should need very little toe-in. Excessive toe-in causes spongy feeling brakes that don't modulate as well. That is, they are either not stopping adequately or have locked the wheel which doesn't provide the stopping power available when traction is maintained. The back end of the pad, which contacts the rim first during rotation, should be about one millimeter from the rim as the front end of the pad touches. A good way to space the back end of the pad from the rim is with a folded business card. The toe-in position will change slightly as you apply the necessary tension to the clamping screw. The toe-in will increase on the back brake as the screw is tightened. This is good and will probably take less time for adjustment than the front. When tightening the clamp screw on a fork mounted SpeedMaster, the brake pad will be pulled in the opposite direction. You must account for this by starting with the back end of the brake pad much farther from the rim than the front. Try 3 mm or 1/8". Hold the brake pad post from rotating with an adjustable wrench. Check the end result after the clamping screws are adequately tight.

Yoke, Hook and Stirrup Wire Positioning

The yoke is first clamped onto the main brake wire with 3/4" to 1" tire clearance. Make sure that it isn't twisted. That way, the stirrup wire won't be required to straighten it each time the brake is actuated and maximum pad retraction (ah yes, the flex we spoke of earlier) will be maintained.

The link between the stirrup wire end and the brake arm peg must be in place before the stirrup wire is passed through the yoke. Pull the bare end of the stirrup wire through the hole created by the hex clamp and the bolt head. Pull it down tight, that is, no brake lever free play. Align the stirrup wire and tighten the hex head bolt. Lightly pull the brake lever until the desired grip to lever distance is felt (accounting for cable seating if necessary). Because brake wire is woven in a spiral, you may need to loosen and re-tighten the wire clamp. Any twisting load in the wire should be taken out as it creates unwanted flex. After twist has been removed and your brake lever is at the desired distance from the grip, tighten the wire clamping bolt.

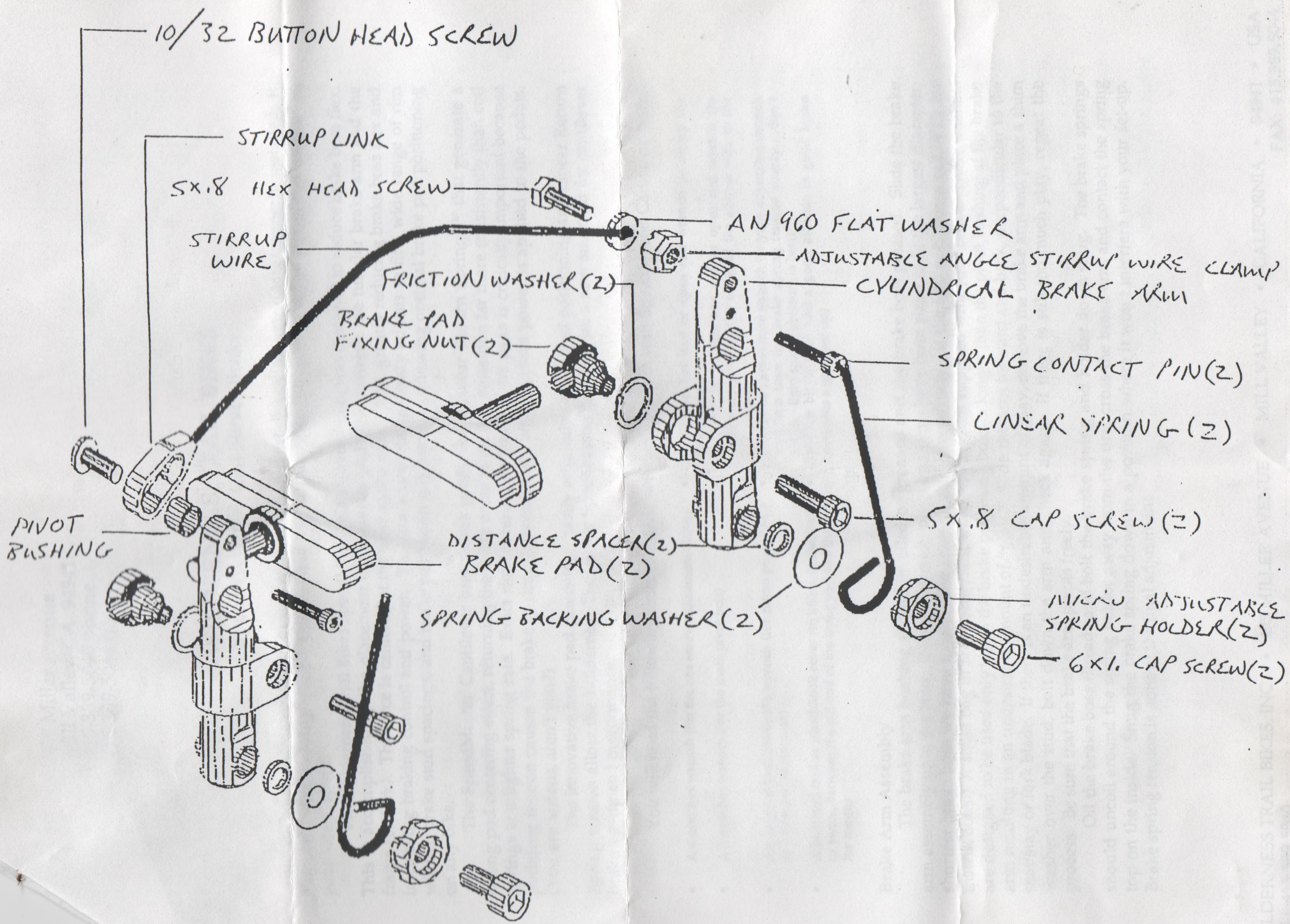
(Note: the angle that the wire is clamped will impact brake performance and retraction. Clamping the wire so there is no bend at maximum actuation will give the best performance. More retraction may be needed to keep the pads from dragging when climbing or sprinting. If so, clamp the stirrup wire with no bend at retraction and put a bend in the stirrup wire at the yoke.)

Brake Spring Tension

The last step is spring tension. Use your 5 mm hex wrench to clamp the main pivot bolt as you are adjusting spring tension with the 5/8" or 16 mm cone wrench (an adjustable wrench also works). Please keep in mind that Linear Return Springs will accurately return the brake arm to the same place even with very light spring pressure. Light spring pressure is preferred to reduce hand fatigue and increase sensitivity. Over-tightening the springs will bend them. Spring tension is held by the main pivot bolt clamping the spring holder against the end of the brake boss. Since the surface area for clamping is small, wiping the grease off of the end of the brake boss and the thin washer may be necessary. Again, use light spring pressure and don't over tighten the bolt.

Satisfaction Guaranteed

If you have questions, comments or complaints about your WTB SpeedMaster Cantilever brake, please call WTB at (415) 924-9632. Your satisfaction is our guarantee of future business.


10/32 BUTTON HEAD SCREW
STIRRUP LINK
5X.8 HEX HEAD SCREW
AN 960 FLAT WASHER
STIRRUP WIRE
ADJUSTABLE ANGLE STIRRUP WIRE CLAMP
FRICTION WASHER(2)
CYLINDRICAL BRAKE ARM
BRAKE PAD FIXING NUT(2)
SPRING CONTACT PIN(2)
LINEAR SPRING(2)
5X.8 CAP SCREW(2)
PIVOT BUSHING
DISTANCE SPACER(2)
BRAKE PAD(2)
SPRING BACKING WASHER(2)
MICRO ADJUSTABLE SPRING HOLDER(2)
6X1. CAP SCREW(2)