Technical Bulletin

SunTour U.S.A., Inc. P.O. Box 1076, Fairfield, N.J. 07006

MICROLITE *Power Thumb Shifter*

"Upright" handlebars are back in style for all kinds of riding; and with their resurgence has come increased demand for SunTour's power ratcheted Mighty Shifter.

But the Mighty Shifter II, while unquestionably the best thumb shifter on the market, has some drawbacks when used on mountain bikes. For one, it's hard to mount it close to motorcycle brake levers and grips, because the lever sits a bit too close to the handlebar. For another, it could use just a tad more leverage when making a fast shift on a super-wide cog spread.

So, after some close consultation with makers of off-road bikes, SunTour has designed an upscale thumb shifter which overcomes these inconveniences and adds a few additional features.

Called the MicroLite Power Thumb Shifter, the new model uses SunTour's Endless Band clamping system; a rugged, longer lever design; and a quick-adjust friction screw similar to that of the SunTour Superbe levers. The unique power ratchet internals, which dramatically reduce shifting effort and improves derailleur positioning, is part of the new lever shape. A right and a left thumb lever are provided, with both working against the derailleur spring when you push with the thumb, and with the spring when you pull with the index finger. Lever shape is designed to keep the thumb from slipping on rough terrain.

Photo 1

Specifications

Model No.	*LD-2800* *(LS-3700: Right Hand Unit)* *(LS-3800: Left Hand Unit)*
Material	*Lever — Light Alloy Clamp Band — Stainless Steel*
Features	*Power Ratchet Mechanism* *Ergonomic Lever Design* *Endless Band Mounting* *Adjustable Mounting Angle* *Right or Left Hand Units Available*
Clamp Diameter	*22.2mm (7/8")*
Mounting Position	*Handlebar*
Weight	*155g. a pair, without cables*

Special Features

Power Ratchet Mechanism: Developed a number of years ago by Maeda Industries, Ltd., makers of SunTour brand products, and protected by world-wide patents, this unique engineering design eliminates the lever resistance found in ordinary shift levers. Levers without this feature require positive friction to stay in the selected gear position, but the Power Shifter has no frictional resistance (***Chart 1***). Instead, a finely calibrated ratchet built into the lever mechanism (***Photo 2***) resists the pull of the derailleur spring and helps to position the lever more precisely on downshifts to a lower gear at the rear (or a larger chainring at the front). On shifts in the opposite direction, the derailleur spring helps to move the lever. The result is perfectly balanced operation on both upshifts and downshifts.

Chart 1

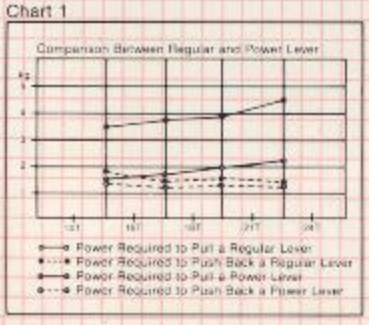


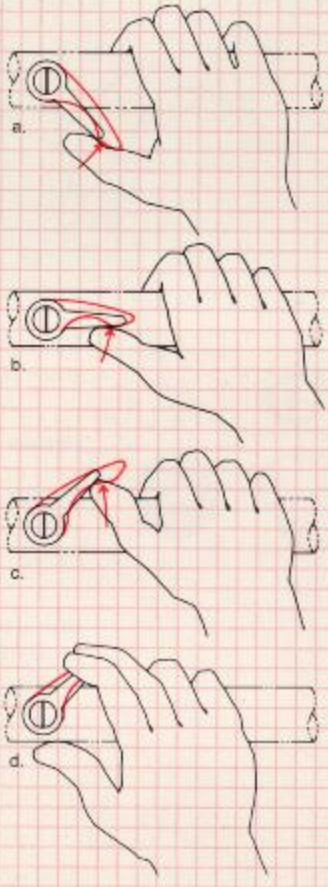
Photo 2

While others have tried to imitate the sound and feel of the Power Shifter, only SunTour's patented design actually eliminates friction. The Power Shifter mechanism is also available on the SunTour PUB-5 and PUB-10 stem shifters; the PSL-M and the PDL-M downtube shifters; the Mighty Shifter II handlebar shifter, and the popular Bar-Con handlebar end shifters.

Ergonomic Lever Design: Ergonomics means Human Engineering applied to objects in a way which improves human efficiency. Applied to the MicroLite Power Thumb Shifter, it works like this:

When you have to shift gears while riding on a rough surface, in heavy traffic or with a heavily loaded bike, it is best to be able to keep both hands on the handlebar. The ergonomic design of the MicroLite Power Shifter permits you to shift through the entire range of the derailleur using only your thumb to push the lever, or your index finger to pull it. In this way, you can maintain a firm grip on the bar with both hands (***Fig. 1***).

Fig. 1.



a. When the lever is on the rider's side of the handlebar, the ridged surface of the lever end provides good grip for the thumb.

b. When the lever is parallel to the handlebar grip, the thumb pressure is applied directly to the ridged end surface in a natural straight movement.

c. When the lever is on the far side of the handlebar grip, concentrated thumb pressure is transmitted, always at the most efficient angle, to the carefully radiused inside curve of the lever, guiding the thumb and keeping it from slipping off the lever.

d. The lever shape and the ridged surface along the outer curve end assure a good grip for the index finger when shifting in the opposite direction.

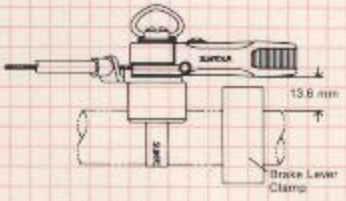
The ergonomic design of the levers results in a shape that not only assures maximum efficiency and compatibility with the human hand, but also permits the rider to shift gears under any conditions, without the slightest loss of control of the handlebar.

Endless Band Clamp: Those who have skinned their knees on a conventional shift lever clamp while hurtling over rough terrain will appreciate this clever adaptation of SunTour's mounting method for Superbe Pro and Cyclone MII MicroLite front derailleurs. Grabbing the handlebar with firm, even pressure around its entire diameter, the Endless Band is stronger, lighter, more compact and more attractive than standard clamping methods; and there are no protrusions to snag clothing or rider.

Adjustable Mounting Angle: The lever body offers great flexibility in how the lever is positioned on the handlebars. This feature, explained in Step 3 of the Installation Instructions, assures correct positioning regardless of handlebar shape or style.

Other Features: 13.6mm of clearance between the lever and the handlebar allows any type of off-road brake lever installation, without risk of operational inconvenience (***Fig. 2***). The ringed tension adjusting bolt allows the rider to balance the lever tension against the derailleur spring even while riding.

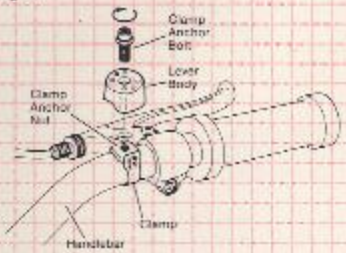
Fig. 2.



Installation Instructions for SunTour MicroLite Power Thumb Shifter

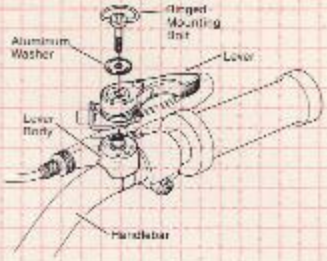
1. (***Fig. 3***) Put the clamp on the handlebar approximately where you want to position the lever, and fit the clamp anchor nut into the clamp slots. Then mount the lever body onto the anchor nut with the 9mm clamp anchor bolt, and tighten in place.

Fig. 3.



2. (***Fig. 4***) Choose a suitable angle for the lever by matching the two pins on the bottom of the lever with a pair of holes in the lever body, and attach the lever to the lever body with the ringed tension adjusting bolt. Tighten sufficiently to give you smooth downshifting. The power ratchet mechanism will hold against the derailleur spring.

Fig. 4.



3. The lever's position on the handlebar can be adjusted to fit the shape of the bar or the position of the grip, by matching the pins on the bottom of the lever to the appropriate pair of holes in the lever body (***Fig. 5***).

(***Fig. 6***): Position a gives a 45 degree angle between lever and bar; Position b gives a 15 degree angle between lever and bar; Position c gives a 75 degree angle between lever and bar.

Fig. 5.

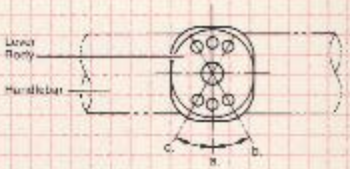


Fig. 6.