

# **Conventional Quickshifters vs. Strain Gauge Quickshifters**

## **CONVENTIONAL QUICKSHIFTERS**

By 'conventional quickshifters' we mean all quickshifters that do not use a strain gauge. This includes 'pressure sensors', 'transducers' etc.

All conventional quickshifters use some sort of switch, which is a mechanical device. This makes conventional quickshifters very susceptible to vibration and shock and as such they will fail after a time.

Practical testing has shown that the best conventional quickshifters expect a maximum of a season's race usage. However they often fail a lot earlier as any team mechanic will tell you.

They are also completely unsuitable for road use, as the high vibration and shock experienced on public roads destroys a conventional quickshifter quickly.

As a switch needs mechanical movement to be activated, the operation is distance based. i.e. The gear lever needs to move a certain distance for a quickshift to be initiated.

A conventional quickshifter relies on a spring or other pre-tension mechanism to hold the switch open. The strength of this spring determines the amount of force required to initiate a quickshift.

This is not adjustable - which is a problem as different riders, gear linkages and gearboxes require different amounts of force to shift.

## **STRAIN GAUGE QUICKSHIFTERS**

As an alternative, strain gauge or load cell quickshifters completely eliminate all of the problems associated with conventional quickshifters. This is because there are no moving parts at all. The quickshifter works by measuring the molecular change in the shift rod when a force is applied to it. This makes them very precise devices and. This is why high budget race teams use strain gauge quickshifters - they are far superior in every way.

Another major advantage is that as the strain gauge measures force applied to the lever, it is not distance based, but load based. So a quickshift will occur at precisely the right point every time without the need for any setup. i.e. With a strain gauge quickshifter, the selector drum is always loaded when a quickshift is initiated ensuring a perfect and smooth shift every time. This is also very gentle on the gearbox.

In addition, unlike all other quickshifters, strain gauge quickshifters are adjustable. This ensures that the correct amount of force is required at the lever to have a perfect shift, regardless of rider preference, linkage setup or gearbox.

The major down side of strain gauge quickshifters is cost and complexity.

**COST:** Strain Gauge systems can cost thousands.

**COMPLEXITY:** The actual strain gauge is useless without an external amplifier and complex electronics to interface to the bike.

HM are unique in bringing all of the advantages of a strain gauge quickshifter into one complete and compact package. This package includes everything required and simply plugs into any existing bike loom - all at a price that is competitive with conventional quickshifters!

(please see our document "Strain gauges vs. Load cells" for more technical info)

and finally.....ask any rider that has experienced using a strain gauge quickshifter and he will tell you that there is no comparison. Reliable smooth and slick shifts every time! virtually indestructible