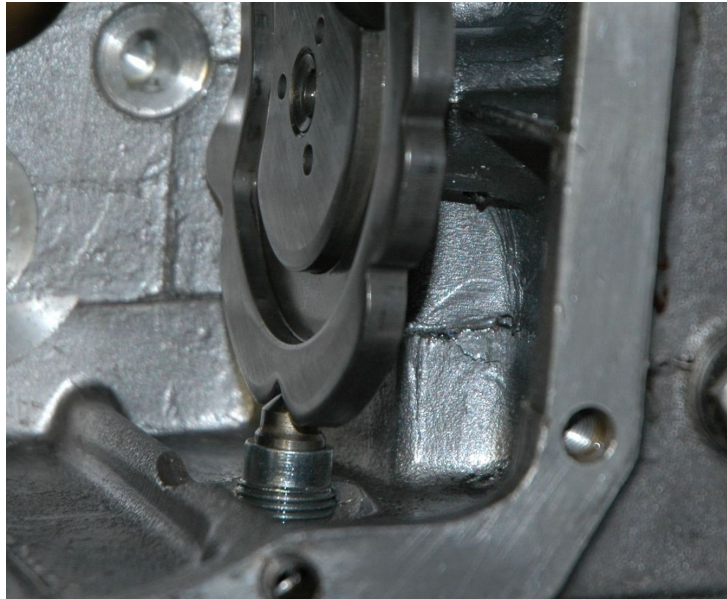


## Triumph Shift Cam Leaf Spring Conversion

During the years 1971 and 1972 Triumph was trying to cut costs everywhere they could. One of the ideas engineers tried on the 650cc models was installing a leaf spring on the gearbox shift cam in place of the tried and true plunger detent. BSA had been using this setup successfully for years and, at least on paper, it seemed like a good idea. However, the Triumph implementation of this left a little to be desired. The result is that the “leaf spring bikes” shift OK, but they just don't have that wonderful, positive feel found on most Triumph gearboxes. Owners regularly complain of “mushy” shifting and missed gears and this issue only gets worse over time.

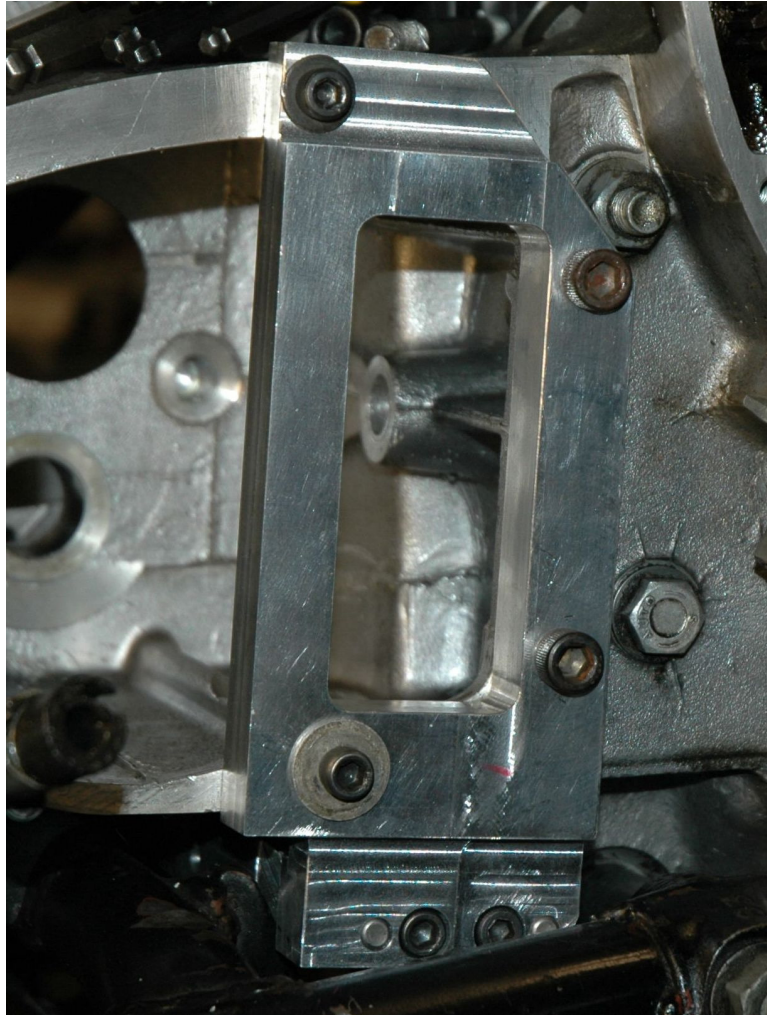


Triumph shifter cam with the classic plunger detent

For years now it's been known that you can convert the “leaf spring gearbox” back to the standard plunger detent by drilling and tapping a hole in the bottom of the engine case. The only problem is that you had to be a fairly competent machinist and you had to have the engine out of the frame to access the bottom of the engine. If the hole was not drilled in the correct position, then the shift cam would be positioned in the wrong place and the quality of the shifting and gear engagement would suffer. Suffice it to say that since the hole gets drilled in your engine cases, you only get one try. And if you mess up, it could be time for new engine cases. With all the risks, few owners bothered... that is until now. Enter Mike Horton.

Mike is a machinist and tool maker from California who owns a well kept 1972 Bonneville. He wanted to make the shift spring conversion on his own bike and of course he wanted it done correctly. So he designed and built a special tool for the conversion purpose. Well, Mike being the precision type guy he is, he found that the tool takes all the worries out of making the conversion. When the tool is fitted to the gearbox case, it guides the drill bit to the exact position every time. Then with the same tool in place, and a quick bushing swap, the tool

guides the tap into the drilled hole to complete the job. And best of all, the tool is so small that it can be used whether the engine is in the frame or not !



Mike's tool in place and ready to drill

[Now here's the very best news of all:](#) Mike is making this tool available in a kit to his fellow Triumph owners for a very reasonable fee and a deposit. Mike's kit includes the tool, the correct drill bit, the correct tap, the guide bushings, installation bolts, and complete operating instructions. All you need to provide is a Triumph and a drill motor. When you finish using the tool, then send the kit back to him and you'll get your deposit back. The entire kit fits easily into a Priority Mail carton you can get free at the Post Office and ship for about \$6.

Preparation for drilling is easy. All you need to do is disassemble the gearbox outer and inner cover. Lift out the layshaft, shift forks, shift cam and old leaf spring. Bolt the drill jig in place using the same tapped holes that the inner gearbox cover uses. When the installation bolts are snug, the bike can be laid over on its left side to gain access to the bottom of the gearbox. When the drill bit is placed in a drill motor the fun can begin. Usually you'll be finished using

the tool in about 1 hour. And the results of your efforts will be a cleanly tapped hole into which the new detent pluger parts are ready to fit.

Having the traditional Triumph detent plunger offers the following advantages:

- Much more positive shifting feel
- Fewer missed gear shifts
- External access to the camplate spring without gearbox dis-assembly
- The ability to increase or decrease your shifter spring force

To make your reservation in the USA, write Mike a letter. Please include your name, address and a money order for \$140. This includes \$40 for using the kit and \$100 for the fully refundable deposit. Mike's address is:

Mike Horton  
PO Box 310  
Diamond Springs, CA 95619

Mike will send you the kit, the instructions and his phone number in case you have questions.

**Added:** The response to this tool has been so overwhelming that a new second tool is now available in the UK and Europe by contacting:

Kelvin Tonkin  
23 Agar Road  
Newquay, Cornwall TR7 2EW  
UK  
User name "kellyt" on BritBike.Com and RAT Forum

Here is a list of all the replacement camplate detent parts you'll need in order to convert your gearbox. Most well equipped Triumph shops will be able to provides these:

57-2172 Housing  
57-4059 Spring  
57-3978 Washer  
57-3660 Plunger

Hope this helps!

RF Whatley  
Rodi British Bikes