

Phil Pearson's Suzuki-based clutch conversion improves the rideability of BSA's Gold Star and many other British classics/**Martyn Williams**

BSA'S CLUBMANS Gold Star is a fine machine for high speed action, but its close ratio gearbox and tall first gear makes it a pig to ride in traffic. It is very stressful for the clutch which can drag or refuse to allow neutral to be selected.

Phil Pearson has owned three Goldies and has never been happy with their clutches. He wondered why they couldn't be as good as those on some Japanese bikes he'd ridden. Then the Great Yarmouth-based engineer had the idea of adapting a Japanese clutch to the sporting single — and other BSAs of the era. He chose one from a Suzuki GS550 as the most suitable.

Pearson's prototype clutch used a two-piece assembly. The original chain wheel was bolted to

a machined centre. Production versions have a lighter, stronger one-piece assembly cut from solid Dural. This rides on a caged ball race that replaces the original roller system.

Pearson uses a machined mainshaft nut and a reduced diameter pushrod to operate on the Suzuki's needle roller thrust bearing. A ball bearing goes between the two pushrods. The longer section of rod comes slightly over length, allowing for individual adjustment.

The first all alloy version has now done over 5,000 miles with no significant wear on the chainwheel or the plates. Pearson clutches are fitted to Goldies in various forms of competition. Gold Star club magazine editor Bill Price has used one in his racer throughout the 1993 season and reports no problems.

Besides the Gold Star, the Pearson clutch also suits B31s with a swinging arm frame plus BSA A7 and A10 twins.

It also fits pre-unit Triumphs after removing a small amount of material from inside the chaincase. In fact Pearson reckons he can convert most British machines although the cost will be higher than for off-the-shelf versions.

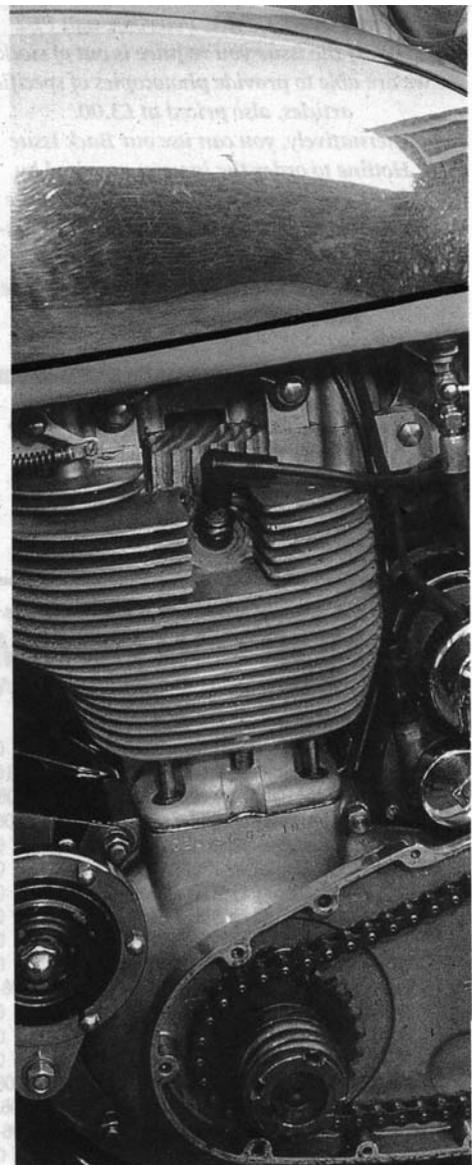
Easy fit

Swapping the clutch can be done in less than an hour. The only special tools you'll need are a clutch hub puller and a flatblade screwdriver with the centre ground away to unscrew the clutch spring cup screws.

To get at the clutch, drain the primary drive (lowest screw in the casing) and remove the chaincase, brake pedal and nearside footrest. The brake pedal can be refitted while the clutch hub is being held in gear to release the main nut.

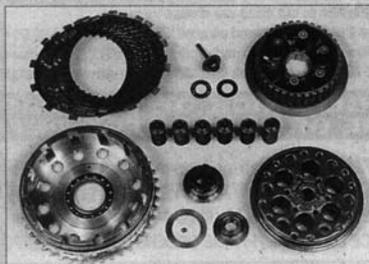
Oil seal conversion

While the clutch is off you could replace the original gearbox felt seal with a new rubber seal and holder (available from Pearson for £48).



Key components

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Clutch assembly is virtually maintenance free even when out of the chaincase. Inclusive price is £275 with Suzuki parts or £300 with new ones



The primary casing becomes oil tight with the oil seal conversion fitted, shown left. It comes with a large cut off splined adapter and costs £48

Whether you use the seal holder or the original plate, make sure the forked end faces away from the engine to accommodate gearbox movement. The 'box pivots on its lower mounting bolt and is moved using the upper adjustment bolt. The chain should have about half an inch of slack in the centre of its run.

Phil Pearson emphasises that the clutch can quickly be returned to original condition if required. For more information about clutch conversions Phil can be contacted on 0493 780055 

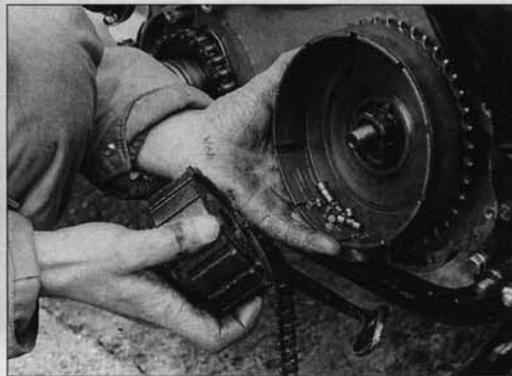
Phil Pearson with his Suzuki-based clutch for Gold Stars. Most Japanese components are retained apart from the basket, which is machined from sold dural



1 Drain the chaincase, remove its cover, the brake pedal and footrest, split the primary chain and you're ready to tackle the clutch



2 Lock shaft for nut removal by engaging gear and holding down foot brake. Then use a puller (pictured) to withdraw clutch



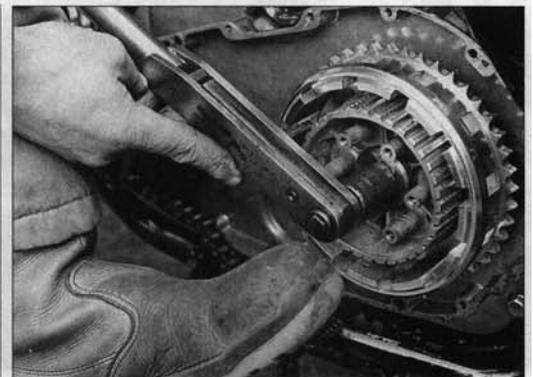
3 Triumph-type clutch as used on most Goldies has good bearing. But rollers fall out when hub is removed from the spline



4 Original seal relies on a scroll to keep oil in the casing. Phil uses a seal holder with sprung lip seal on mainshaft (foreground)



5 Either seal can be used with Suzuki item which is supplied with an adaptor spigot with or without an oil return scroll



6 Check sprockets for alignment with a straight edge and shim engine sprocket if necessary. Torque centre nut to 70lb/ft



7 Suzuki top hat and roller thrust race is used with a ball bearing and pushrod. Machined ring on the basket is cosmetic



8 No adjustment of the socket-head set screws is needed on Suzuki clutch. Don't overtighten them into aluminium bosses

TOOLS REQUIRED

- ◆ Flat blade screwdriver
- ◆ Modified screwdriver
centre cut out on blade end
- ◆ Torque wrench 70+ lb/ft
- ◆ Clutch hub puller
- ◆ Whitworth spanners
range from 3/8 Whit upwards
- ◆ 5 mm hex key
- ◆ 15/16 AF spanner