

B.S.A. CYCLES Ltd.

(Proprietors: The Birmingham Small Arms Co. Ltd.)

SERVICE SHEET No. 15.

"SERVICE."

September, 1930.

The fitting of Flywheel Assemblies to Crankcase.

Hold the flywheel assembly by means of the driving-side engine shaft in a vice fitted with lead clams.

Fit the timing side half crankcase complete with bearing—that is, that half of the crankcase containing the crankcase studs.

If a glut peg is fitted to the flywheel engine shaft boss, make sure that this peg matches up with the slot in the engine shaft ball race.

Glut pegs are not fitted to the flywheels of 1930 models, and these pegs can be removed from the flywheels of earlier machines and dispensed with if desired.

The glut peg is located correctly if the joint face of the crankcase coincides approximately with the centre line of the connecting rod, as shown in the diagram.

If the two do not coincide the crankcase half must be removed from the engine shaft and another attempt made to locate the glut peg in the slot of the ballrace.

On no account must pressure be brought to bear upon the crankcase in an endeavour to force the glut peg home, since this will result in the peg being burred over.

If necessary, however, a slight lead can be filed on the glut peg to facilitate assembly.

With the part assembly as above raised off the bench on two blocks of sufficient height to allow the engine shaft to clear the bench fit the driving-side crankcase half, making sure that the recess in the ballrace matches up with the glut peg (if fitted) when the driving side crankcase half is pressed home firmly by hand. This can only be done by sighting the position of the slot in the ballrace with the glut peg in the engine shaft boss.

Here again excessive pressure must not be used to force the glut peg home.

Tighten up three or four of the crankcase bolts and test the engine shaft for end float.

No play whatever should be in evidence, but the flywheel assembly should be perfectly free when revolved by means of the connecting rod.

If end play is in evidence the driving-side crankcase half must be removed and suitable packing washers inserted between the ballrace and the flywheel engine shaft boss.

These washers, which are .005in. thick, can be obtained from "Spares," Small Heath, and are listed under the following component numbers at a home retail price of 2d. per dozen.

27-271	...	Internal diameter	$\frac{1}{2}$ in.
EA130	...	"	$\frac{1}{2}$ in.
M519A	...	"	$\frac{63}{64}$ in.
15-177	...	"	$\frac{1}{2}$ in. Not drilled for glut peg.
24-38	...	"	$\frac{63}{64}$ in. Not drilled for glut peg.

Great care should be taken to guard against excessive end thrust on the ballraces, since such end thrust will cause the ballraces to fail prematurely.

As a matter of fact the overall dimension between the faces of the ballraces when the crankcase is bolted up tightly should be approximately .002in. less than the overall dimension between the faces of the flywheel engine shaft bosses when the flywheels are tightened up tightly. This initial tightness of .002in. is just sufficient to allow the flywheel assembly to be a good working fit between the ballraces when the engine has warmed up.

If there be no evidence of either end play or end thrust on the bearings the three or four crankcase bolts should be removed, the driving-side half crankcase lifted off, and both jointing faces painted liberally with gold size, shellac, or any other good jointing compound and the whole bolted up solidly together.

Allow the joint to set thoroughly before oil is circulated.

When fitting old flywheels into a new crankcase, or new flywheels into an old crankcase on the 1927, 1928, and 1929 inclined engine models, note the important details quoted on Service Sheet No. 16.

When a light-weight crankcase has been split it will be necessary to lap the joint faces of both halves before re-assembling.

This can be carried out by smearing the joint faces with smooth emery powder and oil mixed to a paste, and matching up the two halves, rotating through a small arc one on the other.

