This document was created for free use among members of the AJS/Matchless Egroup. Do not resell.

SERVICE BULLETIN AND TECHNICAL DATA

FWN/DD. 59/4.

August, 1959.

250cc. MODEL

As this Model was an innovation for the 1959 Season, service details are provided for information and guidance:

REMOVING THE ENGINE FROM FRAME

The engine, with gear box, can be removed as a unit. We find it preferable to remove the gear box first, as it makes handling easier. Strip down as detailed in Instruction Book for decarbonising, then -

Remove engine plate cover, disconnect alternator and contact breaker.
" cables.
" cover 042053, outer cover 042049.
" alternator rotor, engine sprocket, front chain and clutch complete.
" six countersunk screws, 041097, securing back portion chaincase and remove the case.

REMOVING THE GEAR BOX

Disconnect rear chain, clutch cable (gear box end).

Remove gear box adjuster, gear box top bolt 042394, nuts securing right side engine plate, release gear box clamps.
" engine plate with distance pieces behind it, then pull out the gear box.

Turn to Engine: -

" Five studs passing through the frame and crankcase, raise the rear end of crankcase assembly, pull it backwards and lift out of frame. If difficulty exists, wheel machine off the central stand.

continued ..

Issued by:

ASSOCIATED MOTOR CYCLES LTD · LONDON S.E.18

MANUFACTURERS OF A.J.S. AND MATCHLESS MOTORCYCLES

This document was created for free use among members of the AJS/Matchless Egroup. Do not resell.

Service Bulletin (59/4) continued:

DISMANTLING SEQUENCE FOR THE 250cc. ENGINE

Before dismantling, study the exploded view of the engine and gear box as illustrated in the Spares List.

Special Tools required -

1). Extractor bolt for automatic ignition device, 042247.
2). Small timing pinion extractor, 143332.
3). Clutch withdrawal tool, 040449 -
(Used also on heavyweight gear box).

With engine removed from the frame, take off cylinder and piston.

Remove drain plugs from crankcase also oil reservoir, oil in timing chest with spill into crankcase, and drain by tilting the assembly over on the drive side.
" contact breaker base plate, the A.T.D.
(Use extractor bolt, 042247).
" four bolts for cam housing, gently tap to remove it.
" nine bolts and take off oil reservoir, 042083.
" small timing pinion nut, 000230 (right hand thread).
" small timing pinion (Use extractor tool, 043332).

Strip down timing gear in the following sequence:-

1). Camshaft.
2). Camshaft follower distance piece - wide.
3). Camshaft follower exhaust.
4). Camshaft follower distance piece - narrow.
5). Camshaft follower inlet.

WARNING An attempt to separate the crankcase halves without first removing the oil pump plunger, 042104, will result in serious damage.

Remove oil pump guide pin and sleeve, 010138.
" screwed plug and washer, 042045.
" oil pump plunger, 042104 (use short length of clean $\frac{1}{4}$" dia. rod)
" felt filter cap, 042058, extract filter, spring and plunger.
" six crankcase bolts, 042035, one bolt 042036, also stud 016013.

The timing side crankcase can now be separated from the drive side.
Remove the crankcase breather tube 042221, before proceeding further.

continued ..

This document was created for free use among members of the AJS/Matchless Egroup. Do not resell.

Service Bulletin (59/4) continued:

WARNING - continued

As advised in Service Bulletin 58/3, the drive side crankcase must be uniformly and gently heated to relieve the interference fit of the drive side ball bearings, before separating the crankcase from the flywheels. Possibly the outer ball bearing will remain in the crankcase, the two bearing housings are dimensionally different.

To remove outer ball bearing, re-heat the crankcase, use a double diameter drift to prevent the bearing tilting during removal.
With the flywheels out, take off breather stator 042220 (this may also remain in the crankcase), and watch for key 017602, when rotor is removed. Remove this key before taking off the inner ball bearing.

TO RE-ASSEMBLE

It is only necessary to reverse the dismantling sequence with the following precautions:-

1) Ensure key for breather rotor 042219, does not become dislodged when the rotor is fitted.
2) Ensure breather stator 042219 is correctly located in crankcase to enable the breather tube 042221 to be screwed fully home. Do not use force, re-register stator if difficulty exists.
3) Re-heat the drive side crankcase before fitting it.
4) Carefully and correctly locate the oil pump guide pin in the annular groove in the plunger.
5) Replace oil seal for camshaft, 042183, if it is damaged.

continued ..

This document was created for free use among members of the AJS/Matchless Egroup. Do not resell.

Service Bulletin (59/4) continued:

IMPROVISED WORKSHOP TOOLS

Several useful workshop tools can be fabricated from worn or scrapped parts, for example: a tool to fit on the gear box mainshaft splines (where the clutch is fitted) to prevent the shaft from turning whilst tightening the shaft nut 041265, can be made from an old first gear pinion 041279 (250cc. gear box) with a length of strip steel 12" x 1" x 3/16" welded to the pinion.

Similarly for the A.M.C. heavyweight gear box, an old Burman clutch sleeve for mainshaft G-35-2 with a clutch washer 12-10-4 welded, or something similar, together with a steel strip of above dimensions, can be used for the same purpose.

A tool to turn the engine during overhaul, to set tappets, ignition, etc., is invaluable. A suitable handle for this purpose can be made up from an old shock absorber cam, 000830 for single-cylinder models, and cam 016584 for twin-cylinder models. A short length of steel strip welded to the cam with an old crankcase bolt through the end of the strip, completes the handle. This tool in position and used as a sprag against the bench, will hold the engine from turning whilst tightening or unscrewing the small timing pinion nut, camshaft nuts, etc.,

If a gear box, either the lightweight or heavyweight type, is completely dismantled, or for attention to the main sleeve gear bearing and oil seal, it is not an easy matter to secure the sleeve gear whilst tightening the rear chain sprocket nut. A mainshaft third gear pinion 040012, welded or brazed on to an old mainshaft 040001, is the tool for this job. With the mainshaft held in a vice, invert the gear box shell over it and engage the third gear pinion into the sleeve gear. The chain sprocket nut can then be firmly tightened, without stress on the sleeve gear or the gear box shell. Use pinion 041276, and shaft 041263, for the lightweight gear box.

A bent or damaged single-cylinder push rod with the adjuster removed, can be screwed on to the fork damper rods to "fish up" the rod for attachment to the fork tube bolt.

* * *