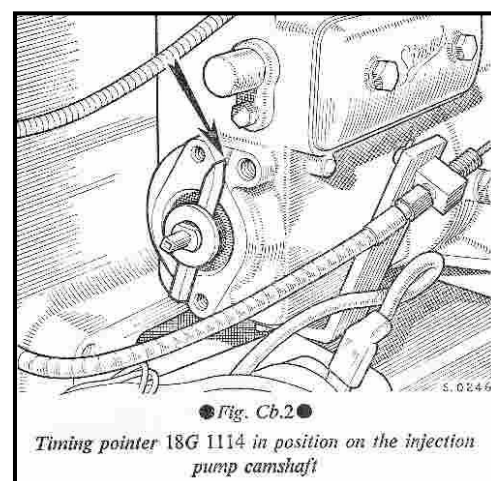
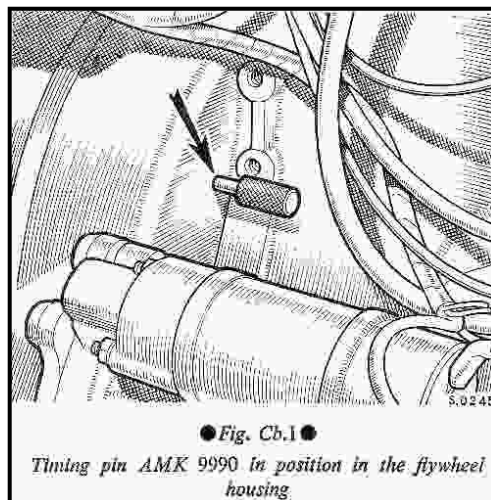


Simms Minimec Injection Pump Timing - 34TD, 38TD, 4/98NT & 4/98TT Engines

This procedure requires the use of a few special tools, but can be carried out without them. Also it assumes that the original flywheel is still fitted. Different models of engine have different injection timing degrees.

1. Insert timing pin AMK 9990 through the flywheel housing hole above the starter motor (A ¼ inch (6 mm) twist drill will suffice in the absence of the correct tool) and engage the pin with the hole in the flywheel when number one piston is on its compression stroke. (Remove the rocker cover to verify that both valves on number one cylinder are closed)
2. Remove the pump drive inspection cover from the timing case cover. Slacken the three Allen screws in the gear hub half a turn. Note; these three screws are 'captive' and can't be removed without removing the complete hub.
3. Remove the tractometer drive housing from the pump.
4. Fit timing pointer 18G 1114 to the pump camshaft and rotate the camshaft to align the pointer with the timing mark on the pump body. (In the absence of the special tool one can be made from a suitable washer and a ¼ inch (6 mm) Allen key, cut, shaped and welded to the washer - see diagram)
5. Tighten the drive gear Allen screws and refit the inspection cover.
6. Refit the tractometer drive housing and cable.
7. Thoroughly bleed the fuel system and, if necessary, reset both maximum running speed and engine idling speed.

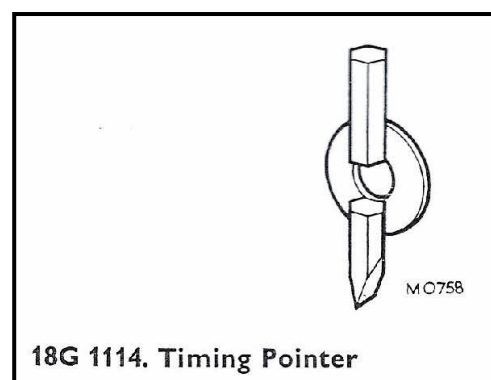


REMEMBER TO REMOVE THE TIMING PIN FROM THE FLYWHEEL HOUSING BEFORE STARTING THE ENGINE

Data;

Injection Timing;

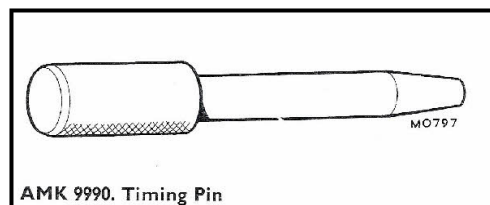
10/42 and 10/60	=	25° BTDC
3/45 and 4/65	=	20° BTDC
344	=	22° BTDC
384	=	20° BTDC
4/98NT & TT	=	16° BTDC



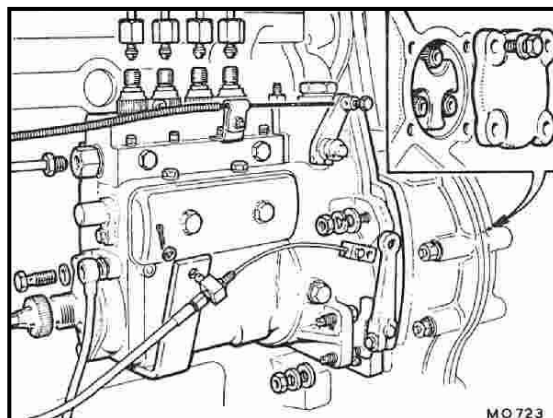
Alternative 'Spill' timing method.

For this procedure you will require an old fuel injector pipe shaped as in the diagram.

1. Insert timing pin AMK 9990 through the flywheel housing hole above the starter motor (A ¼ inch (6 mm) twist drill will suffice in the absence of the correct tool) and engage the pin with the hole in the flywheel when number one piston is on its compression stroke. (Remove the rocker cover to verify that both valves on number one cylinder are closed)



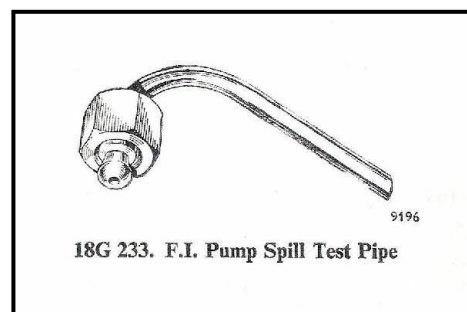
2. Remove the pump drive inspection cover from the timing case cover. Slacken the three Allen screws in the gear hub half a turn. Note; these three screws are 'captive' and can't be removed without removing the complete hub. Turn the pump as far as possible against normal rotation (Anti-clockwise).



3. Remove number one fuel injection pipe then remove the clamp and unscrew the delivery valve holder from number one element, remove the delivery valve, valve spring and volume reducer and refit the delivery valve holder. Connect the test pipe to the delivery valve holder.

4. Set the stop control lever in the 'Run' position and the throttle lever in the maximum position.
5. Operate the fuel lift pump to prime the fuel system, fuel should now flow from the test pipe.

6. Turn the injection pump slowly in the direction of normal rotation (Clock-wise). As the element inlet port is progressively closed by the rising plunger, the fuel issuing from the test pipe will gradually diminish, the instant of inlet port closure will be observed when there is no drip of fuel from the test pipe for a period of 15 sec's. (The term 'inlet port closure' refers to the instant when the flow of fuel through the barrel inlet port from the fuel gallery is cut off by the pumping plunger on its upward stroke, and corresponds to the theoretical commencement of injection)



7. Tighten the drive gear Allen screws and refit the inspection cover.
8. Remove the test pipe and delivery valve holder. Refit the delivery valve, valve spring and volume reducer and refit the delivery valve holder. Refit number one injection pipe.
9. Thoroughly bleed the fuel system and, if necessary, reset both maximum running speed and engine idling speed.

REMEMBER TO REMOVE THE TIMING PIN FROM THE FLYWHEEL HOUSING BEFORE STARTING THE ENGINE

This 'Spill' procedure can be used on Minimec pumps with the three part drive coupling. The engine timing mark is on the flywheel and lines up with a mark behind the square inspection cover on the clutch cover. The timing pointer is on the front of the pump with a scribe line on the coupling.