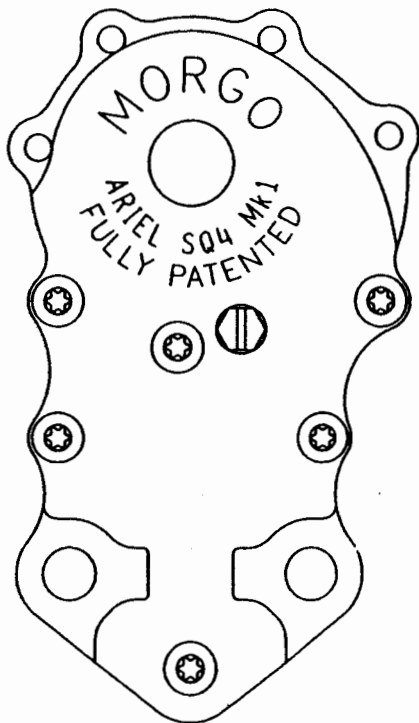


# MORGO®

ARIEL SQ4 MK1  
ROTARY OIL PUMP



## FITTING INSTRUCTIONS

## PLEASE READ THESE INSTRUCTIONS CAREFULLY

With respect to the more enlightened, some aspects of these instructions may appear elementary, but it must be pointed out that some of our customers have never seen the inside of a motorcycle engine.

### Removing The Old Oil Pump

1. Drain all oil from the oil tank and engine. Remove the timing cover.
2. The old oil pump is held in place by two nuts. Remove the nuts and washers. Slide pump and gasket off the studs. Screw the two nuts onto one stud and lock them together. i.e. turn inside nut anticlockwise and outside nut clockwise. With spanner on inside, nut turn anticlockwise: stud will now unscrew. Repeat for second stud.
3. Remove pump drive nut from the cam shaft.

### Fitting New Morgo Super Pump

1. Fit slotted drive nut onto cam shaft and tighten up. Fit pump with gasket but without drive insert to the engine, place a feeler gauge down the access slot to determine the clearance between the drive nut and the pump shaft, .005" to .015" is recommended. 4 Drive nut shim washers are supplied with the pump kit .005" .010" .015" .020" the computation of same placed between the drive nut and the chain wheel should give the correct clearance.
2. Holding the pump horizontal with the feed holes uppermost pump clean engine oil into the 5 transfer holes with a pump type oil can or similar fitted with a outlet nozzle that is a good fit in the pump body holes. This pressure injection of oil is very important to make sure the pump is fully wetted. It is also good practice to pump oil into the crankcase, you cannot over fill with oil. The scavenge side of the pump will remove any excess oil you pump into the engine.
3. Finally turn the pump, stopping so that when shaft insert is fitted it will match the position of the drive nut. Put a small dab of grease in the drive slot in the pump shaft to hold the floating insert in place, offer the pump without gasket and bolts into the drive nut slot, moving the pump in a rotary backward and forward movement. When the floating insert engages in the drive slot look

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down the screw holes and line up with the holes in engine casing. This will make the fixing screws easier to locate on assembly.

4. Put the two bolts complete with the lock tabs into the holes in pump body and put gasket over bolt threads, making sure the holes in gasket line up with holes in pump.
5. Place the pump in position, screw in the two bolts each one a small amount at a time, until both bolts centralise the pump, then nip up tightly.
6. Now fill the oil tank with oil, remove centre bleed screw, this has a hexagon head and screwdriver slot. Allow air and oil to escape until all air bubbles stop and only oil escapes, ( it may take a few seconds for the oil to drain down from the oil tank ) after a generous amount of oil has escaped replace the bleed screw, lock the screw up tight. The pump is now fully primed. After the first start up of the engine the pump will stay primed unless the oil feed pipes are removed for any reason, in which case the pump will have to be re-primed.

### Important

The priming screw on this pump MUST be fitted with a Dowty sealing washer, as supplied when new.

7. Refit the timing cover using the gasket provided, it will be noted that the gasket is slightly larger than the profile of the timing cover, this is deliberate to accommodate the huge variation in the shape of the cover and engine case. The gasket can be trimmed to match after fitting.

Do not be fooled into thinking you have oil pressure just because oil is returning from the scavenge outlet tube this oil could be the residue from previous running with the old pump or the 1/3 of a pint you have put in the crankcase and not new oil being delivered from the new rotary pump.

Whilst we are not suggesting for one minute that oil filter units should not be fitted in the scavenge return, it must be pointed out they do offer a partial restriction particularly when the oil is cold and more so when due for changing. Therefore it is recommended units with a by-pass safety relief valve facility should be fitted.

## OIL CHANGING

When engines are totally drained of oil i.e. oil tank and crankcase etc. It is advisable to pour approximately 1/3 pint of oil into the crankcase. This makes oil immediately available for the scavenge return to feed the rockers.

It must be remembered the Ariel SQ4 Mk1's have not had the benefit of such a generous oil supply, so some owners in the past have restricted the oil return outlet in the oil tank to gain more oil to the rockers, you will find the oil return with the super pump is more effective and needs no restriction.

The golden rule with the MORGO SUPER PUMP is, if the oil is there and the pump is primed the pump will pump it.

Remember advice is always at the end of the Phone or Fax.

## IMPORTANT

### CLEARANCE BETWEEN NUT AND DRIVE SHAFT

.005" to .015" or .13mm to .38mm

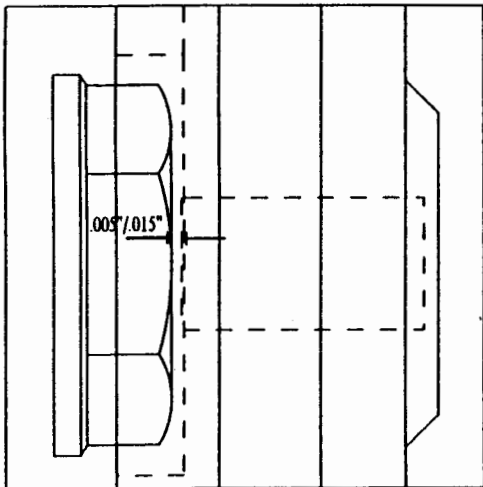


FIG. 1

