**Datsun Engine Conversions**

There are lots of people out there who will tell you that fitting a Datsun “A” series engine into a Morris Minor is a really easy job. They will tell you it bolts straight in, that it can be done in a weekend, etc, etc. These people all have one thing in common, their knowledge is second hand, they all have a “mate at work”, or “a friend of their brother” who did it.

The truth of the matter is a bit different, and I would like to tell you of my experience, and I had an advantage – a Minor with a Datsun engine to refer too. When I did this I was at all times aware that the car would have to be “engineered” and tried to make it look as “standard” as possible. One tip at this stage – anything you cut and weld, paint with paint that matches the original. Anything you fabricate (brackets etc) clean off the rough edges and paint matt black.

The steps -
1/ Remove the bumper, front panel and radiator, also best to take the bonnet off.

2/ Remove the carpet front seats and gearbox cover.

3/ Remove the motor, gearbox and tail-shaft.

4/ Prepare your Datsun engine by removing the oil filter, and the heater outlet from the rear of the head. This hole needs to be plugged and the plug cut off flush with the head. Using a 120Y or Sunny gearbox is preferable, the rear gearbox mount can be adapted to mount the Datsun unit and serves as a good reference point for the rest of the installation. The 120Y or Sunny gearbox has a rib down the top of the bell-housing, this needs to be ground off to clear the steering rack. A Datsun 1200 gearbox (supposedly stronger) has a different shaped bell-housing that will need a fairly large section to be cut away to fit under the steering rack (it isn’t possible to move the rack up high enough to gain clearance), and the gearbox mounts are in different positions so you will have to manufacture a new cross member and mount it to the chassis rails.

5/ Lower your Datsun engine and gearbox into place, mark where the front cross-member needs to be cut away to clear the front pulley. Remember you may need to change the fan belt one day so allow some clearance. Remove engine and gearbox.

6/ Cut the cross-member away and lower the engine and gearbox back in, locate the gearbox mount, and measure up for your front engine mounts, these are available as part of a kit or you can make them yourself. Be aware that there are a number of different engine brackets that change the height and angle that the engine sits at.

7/ Having fitted your engine mounts, and you have the engine sitting in place, mark where the chassis rail needs to be cut away around the oil filter, and to allow some clearance for the starter motor and clutch cable. You will also probably have to modify the firewall slightly to give the breather at the rear of the engine clearance.
8/ Remove the engine and gearbox, cut away the marked pieces of chassis, and re-weld the seams, box and re-weld the front cross-member.

9/ Modify or build a gearbox mount, I have found using the original Morris cross-member best using a fabricated bracket to take the Morris gearbox rubber mounts.

10/ Bolt your engine mounts onto the chassis rails, I find this is preferable to welding – it is also the way Morris did it.

11/ Make up a bracket to secure the clutch cable and modify (and perhaps lengthen) the arm on the clutch pedal to accept the Datsun cable.

12/ Remove the electric fuel pump and relocate the fuel line across the rear of the firewall.

Almost finished, now reinstall the Datsun engine and gearbox.

Now all you need to do is –

1/ Wire up the starter motor for a solenoid, and the change the generator wiring to accept an alternator, and probably the carby solenoid – a short cut here, remove the solenoid and discard the pin inside it and you wont need to wire it up. (You will also need to change the system to negative earth).

2/ Using your Morris rear flange and your Datsun front yoke, shorten your tailshaft to fit, and install it. (Allow 20-30 mm free play in the length.

3/ Move the radiator forward and down as much as possible in the front panel then refit it. Then find radiator hoses to fit, the top one is easy, the bottom one may present a challenge. For a fan I prefer to use the Morris one, opening the holes out to fit the Datsun front pulley, but others cut down the Datsun plastic fan and reverse it.

4/ Get a new exhaust system, it is possible to have a new engine pipe made up to fit up to the existing muffler, but using a standard morrie muffler strangles the Datsun a bit.

5/ Buy and fit a new “Datsun – Morris speedo cable, or modify a Datsun speedo cable to connect up to the Morrie speedo. Note the speedo or odometer will not be accurate now. Approx - speedo reading 1.5 times for MPH, or speedo reading 2.4 times for KPH.

6/ Modify your floor to accept the new gear stick position (minor mods on 1000s, big change on MMs).

7/ Hook up your fuel lines, ignition, throttle, choke, clutch cable, earth straps etc.

8/ Replace the bonnet, seats, carpets, bumper.
Now road test it…

1/ Fix all the things that the road test showed up.

2/ Because of the extra power you will probably feel that your engine is revving to hard through the gears and while cruising, the easy answer to this is to fit a 4.2 diff (approx $350), while you’ve got the axles out check them for twists, and the oil seals for leakage.

3/ You’ve now got more power and potentially more speed – can you pull up?
Three options –
- Power brake booster.
- Major front brakes (bigger drums)
- Disk brakes.

4/ You should probably also consider upgrading you tyres to radials if you haven’t already done so.

The Engineers report.
The Engineer will inspect the workmanship of the conversion, and that the vehicle is structurally capable of the conversion.
Tips –
- Don’t bother starting a conversion if your car has rust or damage to the chassis or subframe.
- Make everything looks as neat, tidy and standard as possible, use lock washers, block any holes in the firewall and floor etc.
- Make sure it’s roadworthy.
The engineer will expect brake upgrades (as above), lap sash seatbelts in the front (and perhaps rear).
If the engine you have fitted is bigger than 1200cc, then he will probably also require 2 speed wipers. If larger than 1400cc then he may start talking about a collapsible steering column, heater demisters and rear lap sash seatbelts. He may also want to observe handling and braking tests at speed.
His report will cost $750+, and he may give you a list of things to do and want to re-inspect it.

Lastly, changing your engine with the RTA.
You will need your Engineer’s report, and a receipt or proof of ownership of the Datsun engine.
You will also need some time and be prepared for some agro.

But, having said all that it’s not the worst conversion imaginable, but if you plan to do it over a weekend make sure it’s a long weekend and you have about four mates who are mechanics to help you. Seriously though, it is a very satisfying conversion, and if you are contemplating it, I would be happy to give you any advice.
PS. My experience in these sorts of things to date –
Holden Red 149 into EJ Holden, replacing grey motor.
Rover 90 six cylinder into series 1 Landrover.
Holden 186 into Series 2 Landrover.
Chev 307 V8 into Nissan G60 Patrol.
Chev 283 V8 and Toyota Landcruiser gearbox and transfer case into CJ5 Jeep.
2 Datsun A series into Morris Minor 1000s.
Datsun A14 and 2T Celica gearbox into Morris 1000.
Currently putting a Datsun A15 and 3T Celica gearbox into a stretched Morrie ute.