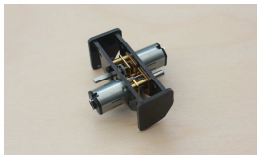
Fitting Instructions

1 Prepare your D90 first by carefully removing the body shell and putting all of the screws away in a safe place. You will also need to remove the four tiny screws holding the stock gearbox in place from each end on the chassis side rails and remove the whole unit. You now need to remove the short drive shaft ends from the stock gearbox. Roll back the rubber retaining rings and carefully push out the two tiny shaft locking pins. You will need the pins, rings and drive shafts for the new gearbox so place away safely.

2 Remove the two motors from the new upgrade bracket and put the tiny M1.6mm screws somewhere safe as they are easy to lose.



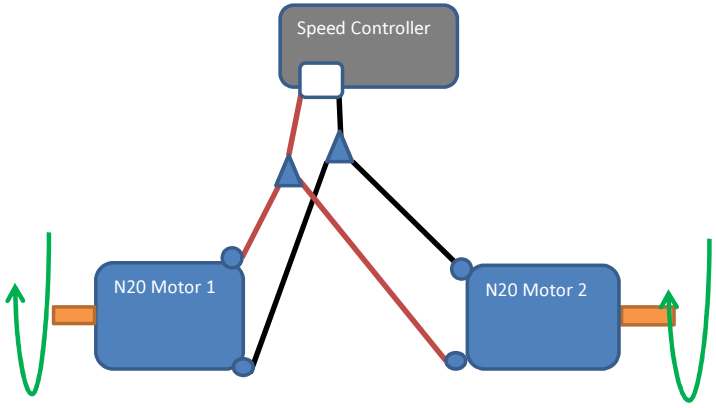
3 Mark the position of the drive shaft locking pins onto the flats of the output shafts from the motor. Useful to use a small centre punch to ensure the holes are truly central. The centre of the pin hole from the end of the output shaft should be approximately 4mm (But 3 to 4mm max from end of output shaft will suffice as there is some play on the drive shafts).

4 Carefully grasp the shafts into a small vice and drill through the shafts at the correct location and using a suitable metal drill bit the same diameter as the drive shaft pins.

5 Check that the drive shafts fit and the locking pin passes through the drive shaft and fully through the motor output shaft. At this point you can fit the cars existing short drive shaft joints onto the output shafts of each new N20 geared motor and pull the securing rubber ring back over the pin positions to hold in place. You should now have two new N20 motors with the drive shaft short ends and locking pins in place and secure.

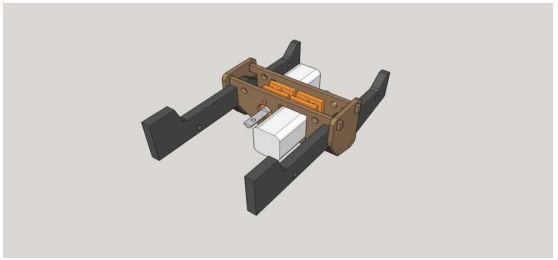
6 Next you will need to get some thin gauge wire to for the motor tabs. A black wire (-) and a red wire (+). It does not matter which tab has (-) or (+) in fact one motor needs to be the opposite to the other as they rotate in opposite directions when in the bracket. Strip the ends of the wires and solder lightly onto the motor tabs. Good idea to check using a battery that each motor is rotating in opposite directions before fitting to the gearbox otherwise your front and rear wheels will try to rotate in opposite directions. If worst comes to worst and you get this step wrong you will need to unsolder and re-solder one of the motors to correct this. Once this is correct the other ends of the common wires from the motors can be connected together i.e. Red to Red and Black to Black.

7 You will now need to disconnect the existing stock wire from the tabs of the stock motor. The ends of these wires can then be soldered to the ends of the common wires that you have soldered on in previous step. See diagram below.



8 Once the wiring is done you can re-install the two motors back into the new black securing bracket, reaffixing the motors with the two M1.6mm bolts previously taken out. Be careful not to overtighten these tiny bolts just a gentle force is required.

9 It is now time to install the unit into the car. Firstly remove the centre four suspension arm bolts, nuts and silver spacers. You will need the spacers and nuts for re-use but the kit contains four new slightly longer bolts for re-fitting once the new bracket is in place. Once these are removed place the new gearbox upgrade unit over the two chassis side rails from above and place the four new M2 longer bolts through the bracket side plates, then fit the silver spacers and one by one the ends of the suspension arm links. As you refit the link ends make sure you re-engage the longer ends of your drive shafts to the ends connected to the new motors. Secure all four with the existing nuts previously put aside. At this stage the new gearbox will be in place and secure and the drive shafts connected.



10 Re-connect the motor drive wire to your speed controller. Power your car up and with the wheels off the ground check that the front and rear wheels are all moving in the same direction. If not you may have the wires on one of the motors the wrong way around, if so you will need to go back to the motor wiring step and re-solder one of the motors.

11 If all of the wheels are travelling in the correct direction it is time to get out and test your new rig. I use either a 2S 7.4V lipo or a 3S 11.1v Lipo for even more speed and power.

12 Good luck and happy crawling.