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Mini to Honda b16a2 kit installation guidelines and disclaimer.

This manual is only intended as a guide.
Please study and familiarise yourself with the project before attempting installation.
A comprehensive tool kit will be required as well as a good knowledge and skill in automobile mechanical and electrical engineering.
It is strongly advised that at interim periods and on completion that the conversion is inspected by a qualified engineer.
Allspeed Engineering Ltd accept no responsibility or liability for the incorrect fitting and or misuse of the conversion or its products.
This conversion is only intended for use with the Honda b16a2 engine and gearbox assembly.

Basic mini preperation guidelines.

Mini preperation can take many forms dependant on the type of mini front used ie. Fixed, flip, standard round nose, extended round nose, clubman front, fibre glass or steel.

Flip front will require removal of the existing front and the necessary mount making.

Example clubman fixed front inner wing mods shown below. These are shown for guidance and would recommend a trial fit to self assess the amount of material to remove.

Bulkhead mods will be dependant on the type of injection system used, an aftermarket throttle body injection system could be used with no bulkhead mods, if using the standard injection and ecu, bulkhead mods will be required. Any protusions under the inlet manifold not used can be removed to improve clearance and again would recommend a trial fit to assess the amount of modification required.
Below is a guidance example of the bulkhead mods required using the standard injection system.

The engine position in the frame is adjustable front to back to optimise engine bay space when the mini is LHD, hence a LHD engine position being further back will mean increased bulkhead mods when using the standard injection/ecu.

The steering rack should have a vertical grind on RHD minis as shown below to assist with diff housing to rack clearance.

Subframe preperation.

The subframe towers can be built up as per a standard mini subframe using the rubber donut and top arm, hi-lo units are essential to achieve the desired ride height and for the purposes of corner weighting on completion of the conversion.
It is recommended to use a thick thrust washer at both ends of the top arm pivot shaft as shown below.

If using allspeed bottom arm and tie bar set, these need to be adjusted for camber and castor on final assembly, the allspeed tie bar is cranked to inprove brake caliper clearance on full steering lock.

Basic subframe installation.

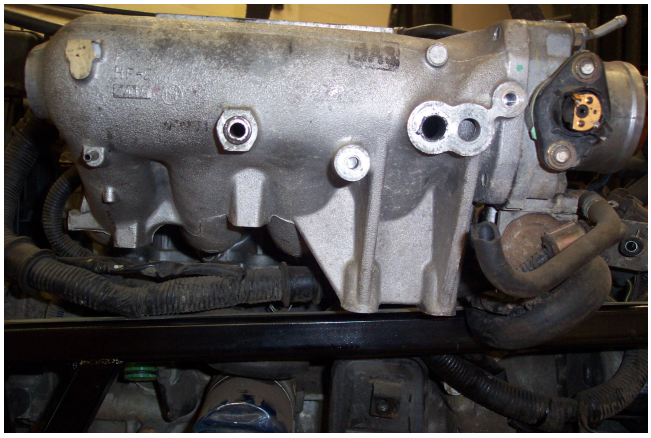
For a large tower bolt mini shell the subframe can be loosly positioned using the large washers supplied with the tower bolts.

Next the floor mount bolts can be located, if the mini is to be used for fast road or competition the floor mounts on the inside of the mini should be double plated, the 2mm plate being fully welded.
All the bolts can now be tightened ensuring the frame is correctly located. If a fixed front is being used the front subframe mounting holes will require a new hole drilling through the mini front panel, this can then be bolted up solid.

Basic engine preperation.

If using the standard cast exhaust manifold, grind the front face as shown to improve frame clearance.

Protusions that can be removed from under the standard inlet manifold to improve bulkhead clearance.

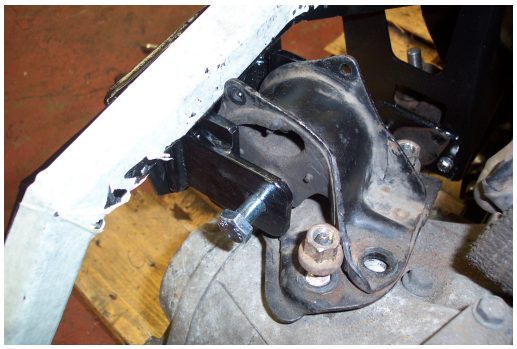


The oil filter is best removed for engine installation.

Thought should be given to heater water hose routing prior to installation as the Honda connections are difficult to access when the engine is in position.

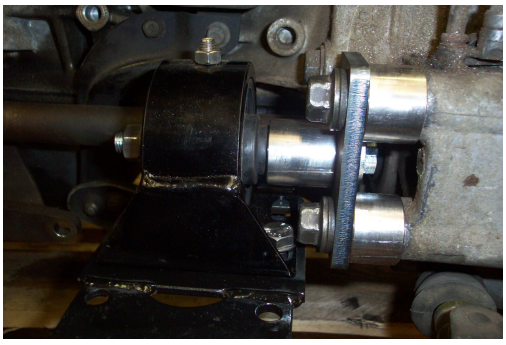
Basic engine installation.

The subframe uses the standard crx top mounts and a special rear mount included in the kit.
The engine can be lowered into the frame locating the gearbox mount first.



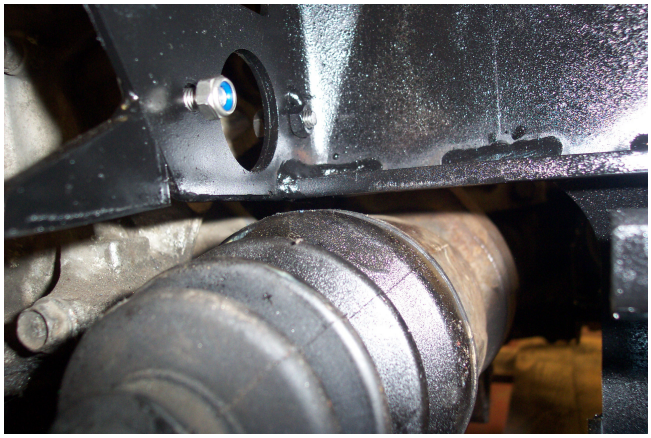
The timing belt end mount can now be located. Shim under mount Bracket if required.

And finally the rear mount.



The engine and gearbox assembly now needs leveling and the appropriate clearances setting.

The desired parameters for engine position is level left to right, with a gap of 3 to 5mm between the diff housing and steering rack for RHD minis and a 3 to 5mm gap between the inner cv joints and the underneith of the subframe towers. The gearbox mount is slotted to achieve position and the timing belt mount can be shimmed vertically if required (shims provided in kit)

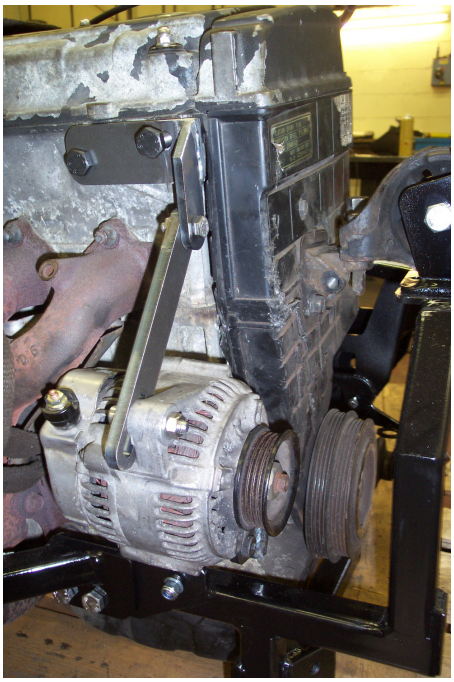


All the mounts have adjustment to move the engine back for LHD minis.
When satisfactory position has been achieved all bolts should be tightened.

Subframe to standard exhaust manifold clearance.

Clubman/extended round nose altenator bkt.

The bracket is intended for the standard Honda/Denso 4m22 altenator. A poly 'V' belt of around 750mm long should suffice.



If the altenator is close to the exhaust manifold a heat wrap can be used to protect the altenator.

Typical engine in position RHD.