

Upgrade Series III carb

Changing 2.25 carb for a 1³/₄in unit gives more power and reliability

The two-and-a-quarter petrol engine fitted to thousands of Series Land Rovers is a stalwart. Known for its excellent longevity and willingness to work hard, its main downside is its fuel system.

From the factory, most Series Land Rovers came with either a Zenith or Solex carburettor. As with every component that has moving parts, wear can set in and cause temperamental starting and running, as well as even poorer fuel economy than usual. The bodies of these carburettors are also known to warp, introducing an air leak between the carb and inlet manifold.

A Weber carburettor was a popular upgrade and gave better economy, but at the expense of performance.

The solution lies in the 1³/₄in carbs fitted to Rover V8s. The Zenith Stromberg CD175

and the SU HIF44 or HS6/HD6 are the most common, and are catered for by HNJ Engineering's fitting kit. These larger carbs allow the engine to breathe far better, and they're more reliable and less prone to 'bogging' and inconsistent running than the standard carb.

It's important that whichever unit you choose has the correct throttle and choke linkages, as well as the right fuel jets for the 2.25 – a BDM or BDL needle for the SU, or a 4F needle for the Stromberg CD175. And if you're using a secondhand carb from

a V8, note that it's the right-handed one you're after for this conversion.

Tools and kit used

- Socket and spanner set
- Screwdrivers
- Cloth
- Brake cleaner
- Drill and bits
- Step drill
- Scraper
- Knife
- Marker pen
- Dot punch

Safety advice

- Always disconnect the battery when working on the fuel system.

The Expert Martin Domoney



Martin was responsible for bringing the dilapidated LRO Series III up to roadworthy condition, in partnership with Britpart's Steve Grant. He grabs the keys at every opportunity, and looks forward to wringing a bit more grunt from the petrol engine.

THE LRO SIII

The mag's 109 is mainly used for greenlanning trips, and for ferrying around bits of old Land Rover in its cavernous load bay. A bit more power wouldn't go amiss – and that's what we're hoping to achieve with our new SU carb.



HOW LONG?

Three hours



HOW MUCH?

- 1³/₄in carburettor conversion kit (complete version), £174.95 hnjengineering.co.uk
- Range Rover Classic choke cable (NRC9094), £7.13 Island-4x4.co.uk
- Reconditioned SU HIF44 carburettor, £199.50 ebay.co.uk/str/dgscarburation

HOW HARD?



Who's LRO's star carb-swap man? SU, Martin!



Part-y time

1 Here are all the bits you'll need to convert a standard two-and-a-quarter to a 1¾in carburettor. The HNJ conversion kit is very comprehensive; the only extras you'll need are a Range Rover Classic choke cable and the carburettor itself.



Make it safe

2 Petrol vapour and sparks are best ignited within the cylinders of the engine, and not randomly under the bonnet of your Land Rover. To avoid any unwanted thermal incidents, disconnect the negative battery lead and tuck it safely away.



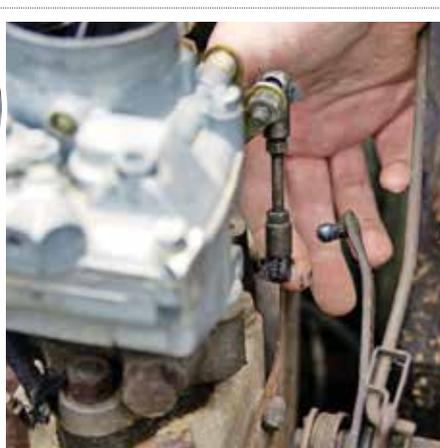
Remove intake pipe

3 Loosen the hose clamps at the oil bath air filter, and the top of the original carburettor. Wiggle the breather pipe off the air intake hose, then lift the whole lot out of the engine bay. The flexible rubber pipe will be re-used later.



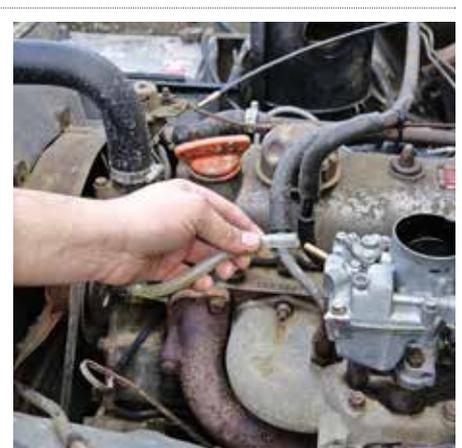
Disconnect choke cable

4 Loosen the clamping screw on the carb linkage, then carefully release the metal clip (or cable ties, in our case...) that holds the choke cable sheath to its bracket. Also disconnect the distributor's vacuum advance pipe from the barbed port.



Release throttle linkage

5 The SU carburettor is controlled by a cable, rather than the original linkage system. Unclip and disconnect the rod from the bulkhead-mounted lever, and keep it with the old carburettor in case you ever need to refit it or want to return to standard.



Petrol pipe off

6 Next, the petrol feed pipe to the carburettor must be removed. Loosen off the hose clamp, then simply wiggle it off the fitting. Depending on how much slack you have in the petrol pipe, you may need to extend it when fitting the new carb.



Remove old carb

7 Now it's a case of loosening and removing the two nuts from the base of the carburettor, and lifting it off the top of the inlet manifold. Make sure you keep it upright as you lift it, and empty it of petrol before you put it into storage.



Emission control

8 Some 2.25s had 'emission control' – a breather system that meant any blow-by gases were piped back into the inlet and burned. It won't work with our adaptor; we'll route the breather into the oil bath air filter later. Unplug pipes, loosen nuts and remove it.



Clean the manifold

9 Remove the plastic spacer from below the emission control unit on the inlet manifold, then carefully scrape any traces of old paper gasket off the sealing face. Be sure to plug the hole to make sure no bits of debris fall inside the manifold.

How to



Fit the adaptor

10 With the top of the inlet manifold all nice and clean, fit the first gasket, then the aluminium spacer, then the second gasket and finally the adaptor. Drop the spring washers onto the studs and spin the original nuts on, and nip them down with a spanner.



Stud-u-like

11 Next, the four studs that secure the new carburettor can be spun into the adaptor. Once they're wound all the way in, use two of the new nuts locked together to tighten the studs into place. Don't overdo it; the adaptor is aluminium.



Spacer and bracket

12 Slide one of the new square gaskets over the studs, followed by the spacer (note the arrow in direction of flow), then another gasket, then the cable bracket and finally the last gasket. The order these fit can differ depending on what carb you've chosen.



So shiny!

13 It's finally time to offer that lovely reconditioned SU HiF44 carb into place on the adaptor, and secure it with the new nuts and washers. Tighten the nuts evenly until the spring washers are compressed; the lower ones are a bit fiddly.



Position pedal bracket

14 Next, it's time to sort out the throttle cable. Start the procedure by offering up the aluminium cable bracket to the flat part of the accelerator pedal, then use a marker pen or dot punch to mark clearly where the two holes need to be drilled.



Drill and fit

15 Using a compact drill and a good, sharp 5.5mm bit, carefully make the holes where you marked them in the flat section of the metal. With the two supplied Allen-headed screws and Nyloc nuts, fix the bracket securely to the accelerator pedal.



Make another hole

16 Measure the centre point of the throttle cable bracket's 'throw', then mark it on the inside of the footwell. Drill a pilot hole, then increase its size to 12mm with a step drill, while making sure you don't run into anything in the engine bay.



Route the cable

17 Push the new cable through the top of the footwell and secure it with the large washer, lock washer and nut. Make sure the cable is sitting nicely before nipping up the nut and connecting the cable to the throttle pedal bracket with the nut and bolt.



Connect to carb

18 Remove one nut from the threaded end of the cable; fit it to the bracket before spinning on the other one. Feed the cable inner through the brass clamp until there's no slack. Nip up the 7mm nut and bolt before tightening two 10mm nuts to secure the cable.



Remove choke cable

19 Loosen the instrument pack screws to allow movement of the cluster; undo the screws holding the steering column cowl and remove. Use needle-nose pliers to loosen the screw and release the old choke cable from its housing, then pull it all the way out.



Run the new one

20 From inside the cab, feed the end of the new Range Rover choke cable through one of the grommets in the bulkhead and into the engine bay. Position the handle, and use the nut on the back to secure it to the steering column cowl.



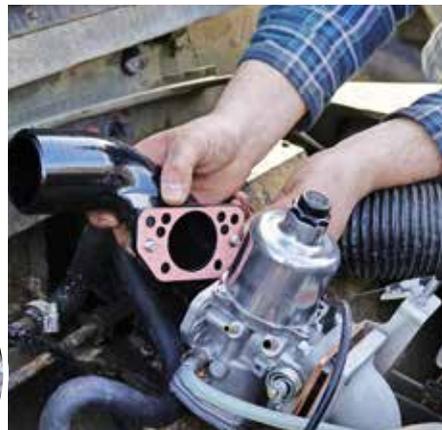
Attach and adjust

21 Use the original spring clip to secure the cable outer sheath to the bracket, and feed the cable inner through the clamp on the carb's choke linkage. With the choke fully closed and cable handle pushed in, nip up the clamp with a screwdriver.



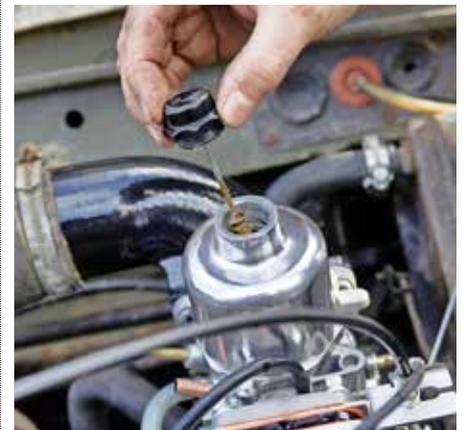
Fit fuel line

22 Luckily, our fuel line was long enough to mate up to the new carburettor with no problems, though you may need to extend yours if it's too short. Push it on to the barbed fitting and tighten the hose clamp, and push the vacuum advance pipe home.



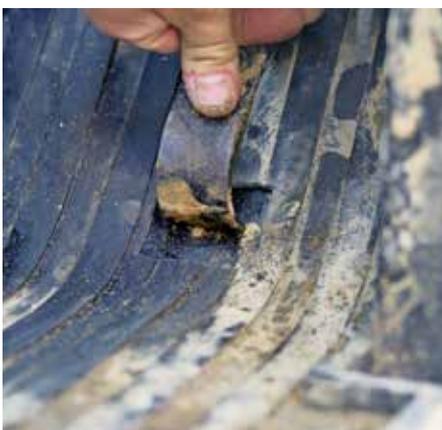
Intake adaptor

23 Take the plastic elbow and fit the gasket to the mating face. With the Allen-headed screws with washers and spring washers, offer it up to the carb's intake and tighten up the screws. Connect the rubber hose to the elbow and air filter.



Top up the dashpot

24 Before starting the engine for the first time with its new carburettor in place, unscrew the plastic cap and withdraw the piston. Fill the dashpot with SAE 20 oil, then refit the plunger – there should be resistance as you push it back down.



Final tweaks

25 Make sure the choke opens and closes as it should, and that you get full throttle when the pedal is depressed. If needed, adjust the throttle stop screw in the footwell – we also had to cut a hole in the rubber mat to allow full pedal travel.



Test-drive time

26 Prime the fuel system by pumping the lift pump manually until petrol flows into the carburettor. Start the engine, being sure to use the choke if it's a cold day. Make sure it idles and revs smoothly before you set off on a drive. Revel in the smoothness and improved response and power of the larger SU carb, then return to base and carry out a final check for leaks. There – that's you done! **LRO**