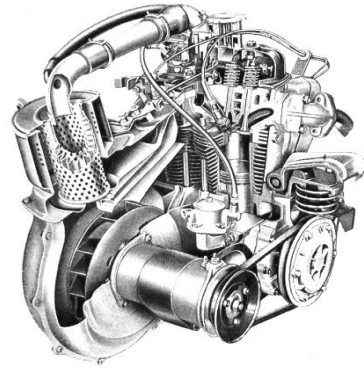
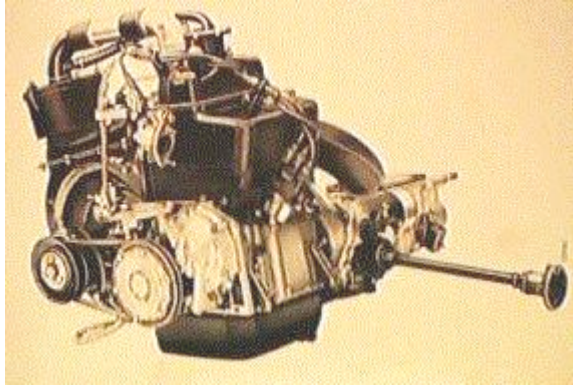


# **Everything you always wanted to know about swapping Niki (126) parts in your 500 but were afraid to ask.**



- This is the definitive, step by step, guide to swapping engines, gearboxes, brakes, suspension and anything else you can possibly fit from your Niki (126) donor car into your 500.
- All models are covered from your 1957 full sun roof Nuova to your 1972 F & L. (R's are Niki's anyway)
- The processes are in sections so you can just refer to the swap you want to do.

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*This 1958 Nuova has had the "treatment" and was used for taking notes for this project. Note the 60mm lower front courtesy of the Niki front spring and the exceptionally low rear caused by having to fit the rear swing arms from an "F" and 850 sport springs. The track is now about 45mm wider and better camber angles have been achieved.*

## 1. Engine (500)



*This is the Nuova engine bay before work began.*

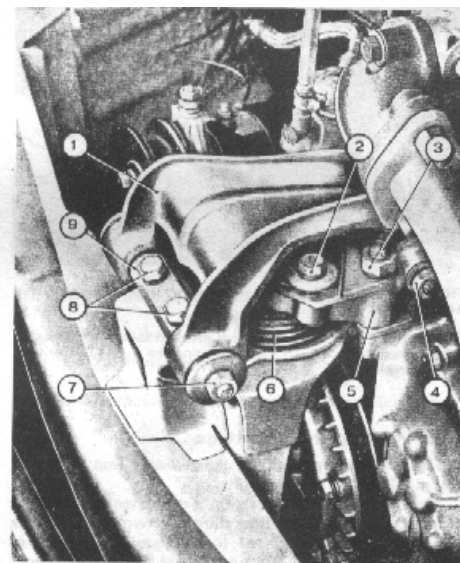
*Note the extra, cold weather, heat pipe from the top of the engine cowling outlet, to the air induction fitting.*

- a) Disconnect battery –ve terminal.
- b) Remove engine lid by undoing 10mm nut on hinge, disconnecting license-plate wire & removing stay rubber.
- c) Remove air cowling from above exhaust (2 x 10mm bolts)
- d) Remove air cowling from underneath engine bay (7 x screws)
- e) Disconnect throttle & choke cables, fuel line, distributor & oil & generator & earth & H/T wires.
- f) Place jack under middle of engine and take up strain only.
- g) Remove 4 x 13mm nuts holding rear panel and 2 x 13mm bolts holding rear of engine hinge mount.
- h) Remove rear panel (be careful of the spring tension)
- i) Remove 2 x 13mm nuts (or bolts) from the bottom of the bell housing. (through to the engine)
- j) Remove 3 x 10mm bolts from clutch inspection cover and remove cover.
- k) Lower jack as far as it will go without causing damage.



*The engine, having been lowered on the jack, is much easier to work on, especially the bell housing and starter motor bolts.*

- l) Remove air pipes from the inlet and heater.
- m) Remove remaining bolts (or nuts) from bell housing. (through to the engine)
- n) Jack up engine slightly and wheel engine out of the engine bay. (wiggle the engine about if necessary)
- o) Remove 2 x 17mm nuts from engine hinge mount and take out studs. (the Niki/126 ones are too short)



Power plant rear suspension

- |                          |                          |
|--------------------------|--------------------------|
| 1 Suspension arm         | 2 Screw,                 |
| rubber pad to bracket    | 3 Bracket-to-engine nut  |
| 4 Nut, arm to bracket    | 5 Arm bracket            |
| 7 Arm pin-to-support nut | 6 Spring                 |
| 9 Pin arm to support     | 8 Screws, pin to support |

## 2. Gearbox (500)

- 1) Remove 2 nuts from clutch cable.
- 2) Undo battery cable and starter cable from starter motor and remove starter.
- 3) Remove 8 x 13mm bolts from both drive flanges.
- 4) Remove bolt from front of gear change shaft.
- 5) Remove speedometer cable.
- 6) Remove 13mm nut holding clutch cable.
- 7) Place jack under gearbox and take up strain.
- 8) Remove 2 x 17mm bolts from the gearbox mounting bracket.
- 9) Lower gearbox and remove from engine bay.

## 3. Clean and inspection and wiring changes. (500)

- (a) This is the time to check out all your fuel lines, cables, etc and clean up everything thoroughly.
- (b) Remove regulator (2 x 10mm nuts and wires)
- (c) Connect all the big wires from the regulator together (there will be either 2 (D) or 3 (F)) with solder.
- (d) Connect the two small wires together with solder and insulate well.
- (e) Remove manual starter cable assembly. (do not do this if you are fitting a 126 engine with pull start)
- (f) Run new wire from dash to starter motor. (for electric start) (as above)
- (g) Fit new ignition switch with start function or push button in dash and wire up as necessary. (as above)
- (h) Re-shape heater box assembly. ( This is the cylindrical shaped fitting under the floor alongside the inner swing arm mount) Use the Niki/126 one as a guide or hold new gearbox with starter attached in position and mark where reshaping is necessary.
- (i) Check out drive block rubbers and replace if worn.
- (j) For 500 D series only you will need to replace the rear swing arms to allow for the larger diameter drive blocks which will be needed for the extra power. (*ref Swing arm swap*)

## 4. Removal of engine (Niki/126)



*The Niki engine bay before work has begun.*

*The removal job is much the same as for the 500 with a few slight changes due to the alternator, starter and engine mount differences.*

- p) Disconnect battery –ve terminal.
- q) Remove engine lid by undoing 10mm nut on hinge, & removing stay wire.
- r) Remove air cowling from above exhaust (3 x screws)
- s) Remove air cowling from underneath engine bay (7 x screws)
- t) Disconnect throttle & choke cables, fuel, vacuum & breather lines, distributor, oil, alternator, earth & H/T wires.
- u) Place jack under middle of engine and take up strain only.

- v) Remove 4 x 13mm nuts holding rear panel and 1 x 17mm bolt & spring holding engine in rear mount.
- w) Disconnect 2 x wire connectors from L/H side and 1 x connector from R/H side of panel.
- x) Remove rear panel.
- y) Remove 2 x 13mm nuts (or bolts) from the bottom of the bell housing. (through to the engine)
- z) Remove 3 x 10mm bolts from clutch inspection cover and remove cover.
- aa) Lower jack as far as it will go without causing damage.
- bb) Remove Air pipes from the inlet and heater.
- cc) Remove remaining bolts (or nuts) from bell housing. (through to the engine)
- dd) Jack up engine slightly and wheel engine out of the engine bay. (wiggle the engine about if necessary)
- ee) Remove 2 x 17mm studs from engine mount and fit longer studs from 500 engine.
- ff) Fit 500 hinged engine mounting. (check condition of rubbers & replace if necessary) (ref. Swapping engine mounts)
- gg) Remove and discard old 3 way engine breather and fit new hose from rocker cover to air cleaner.
- hh) Remove vacuum hose from bottom of carby base and block off hole.

## 5. Gearbox (Niki/126)

- 10) Remove 2 nuts from clutch cable.
- 11) Undo battery cable and solenoid wire from starter.
- 12) Undo 2 x 10mm bolts and 1 x 13mm nut from rear of starter motor & remove starter motor.
- 13) Remove 8 x 13mm bolts from both drive flanges.
- 14) Remove bolt from front of gear change shaft.
- 15) Remove speedometer cable.
- 16) Disconnect reverse light switch. (Niki only)
- 17) Remove clutch cable.
- 18) Place jack under gearbox and take up strain.
- 19) Remove 2 x 17mm bolts from the gearbox mounting bracket.
- 20) Lower gearbox and remove from engine bay.

## 6. Clean, inspection & changes. (Niki/126)

- (k) This is the time to repair all your oil leaks, fuel lines, check valve clearances, plugs, points, timing, carby clean out, new air and fuel filters, etc and clean up everything thoroughly.
- (l) Inspect & replace clutch if worn out.
- (m) If the Niki/126 is fitted with an external regulator, remove and fit in 500 engine bay.
- (n) Remove twin outlet coil and fit in place of 500 one. (or you can use your old coil, rotor & distributor cap from the 500)
- (o) If you want to use your 500 gearbox you will need to swap over the bell housings from a Niki/126.
- (p) If using the Niki/126 gearbox, you will either have to swap the axles from your 500F gearbox or purchase an aftermarket, extra strong, axle kit from your local supplier. (*ref. Swapping axles and bell housings*) (*Contact Club Fiat 500 of SA Inc. if you have trouble getting supplies*)
- (q) *The Niki/126 carburetor has a return line fitted to the float bowl. You will need to block off this line by either soldering up the brass fitting or fitting a plug and hose clamp to the outlet pipe.*  
*Alternately you can run a new hose, to use a return line, to the front of the vehicle. You will then need to use the Niki/126 fuel tank sender unit / fuel pick up which has the extra pipe to return the fuel to the tank.*  
*This will also require some reshaping of the float lever to clear the baffle plate in the 500 tank.*  
*See "SWAPPING THE FUEL TANK SENDER UNIT" later in this publication.*
- (r) Refitting is the reverse of all the above



## 7. Swapping engine mounts.



*The rear “beaver” panel from the Niki/126 with the engine mount shown after the spot welds have been drilled out.*



*The Niki/126 engine mounting bracket welded onto the 500 “beaver” panel, shown here with engine fitted and spring in position.*

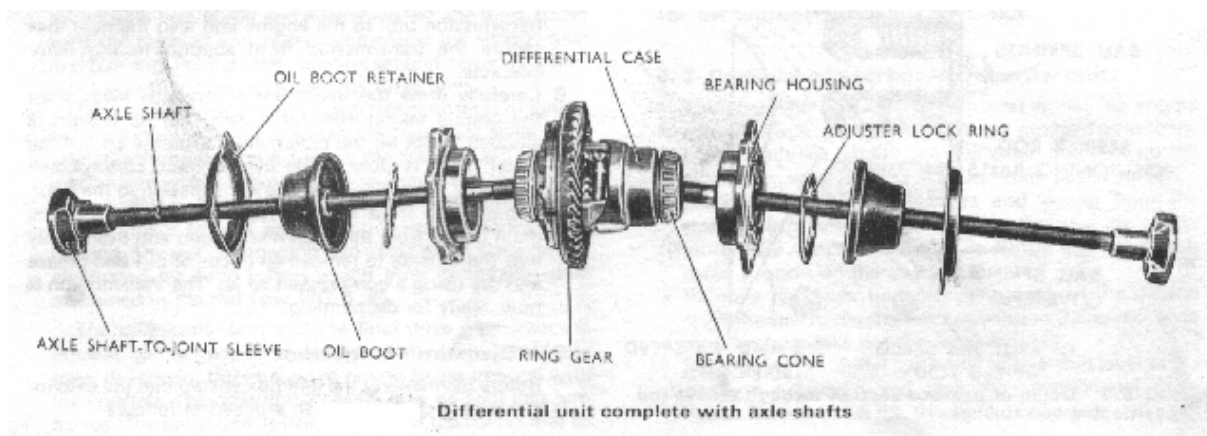
- Drill out all spot welds holding the engine mounting brackets from both rear panels.
- Work out how high you want your engine to fit, depending on what type of carburetor you want to use.
- Mig weld the Niki/126 bracket in place of the old 500 one.  
NB; watch the height of the bracket as it needs to be fitted higher than the top lip would indicate.

(if in doubt, wait until your engine is refitted and mark where it needs to go)

## 8. Swapping bell-housings.

- Remove 8 x 13mm nuts from bearing carriers.
- Remove diff bearing carriers.
- Remove 8 x 17mm bolts from inside of bell housing.
- Remove bell housing and swap with Niki/126.
- Refit 8 x 17mm bolts.
- Refit diff bearing carriers & 8 x 13mm nuts.

## 9. Swapping axles and fitting new big axle kits.





*The new, heavy duty, axle kit, shown at the bottom, with the old axles and differential assembly shown above.*

- Assuming you have the bell-housing off;
- Remove circlips from end of axles and take off drive flanges and diff. bearing carriers
- Remove 6 x 13mm bolts from round crown-wheel.
- Split open diff assembly. (this may require considerable force)
- Remove steel retaining plate and pin holding planetary gears.
- Remove axles from both halves and fit either 500F or after-market ones in their place. (reuse drive blocks from old axles)
- Reassemble planetary gears, pin and holding plate.
- Refit 6 x 13mm bolts from around crown-wheel.
- Refit diff. bearing carriers and drive flanges and refit circlips to end of axles.
- If using a new axle kit, now is the time to swap over the oil boots by R&R of the 8 10mm bolts
- Reassemble as per “Swapping bell-housings”.

## 10. Swapping rear brakes & hubs.

- Assuming you have already removed the engines and gearboxes from both vehicles & have the vehicles on stands;
- Undo 21mm nuts holding drive blocks to stub-axles. (some have split pins and others, crush nuts)
- Remove drive blocks.
- Remove wheel, brake drum & stub-axles as an assembly from both sides.
- Undo handbrake cable ends.
- Undo brake pipes from slave cylinders.
- Undo 8 x 17mm nuts holding backing plates to swing arms.
- Remove bearing carriers & brake backing plates.
- Swap the 500 parts for the Niki/126 parts.
- Reassemble in the reverse order.
- Bleed brakes.

NB. Very early Nuova models have a **small, 3 bolt drive block** & all other Nuovas and D's have a **drive block** that is **smaller** than the F or Niki/126. You will need to swap the rear swing arms from an F model before this swap can be done. (ref. *Swapping rear swing arms*)

NB. All Nuova and D models have a **different flare** on their brake pipe fittings. You will need to have some new brake pipes made up with the appropriate flares and tube nuts fitted.

NB. Always clean and inspect the new parts for wear etc.

## 11. Swapping rear swing arms (from Nuovas & Ds to Fs)



*The Nuova swing arm on the right has the spring support on the upper side of the arms. It has the same size springs but they fit into a recessed hole in the rear sub-frame. The result when fitting the “F” swing arms is a 100mm lower car. You will have to source some longer springs to overcome this problem.*

*The later D models, from 1959 on, had the spring pads in the right position for our swap but were too thin to allow for the larger “F” style Drive blocks. These larger drive blocks will be needed to handle the extra power from the 650cc engine.*

- Assuming that the car is on stands and that the brakes, hubs and drive blocks have been removed;
- Undo the brake lines at the car end of the flexible hoses.
- Undo the handbrake cables.
- Place jack under arms & raise to take up load.
- Undo the bottom shock-absorber nuts. (be careful as they are limiting the suspension travel and are under tension)
- Let down jack slowly.
- Note the number and location of spacers in the swing arm mounts
- Remove the 4 x 17 / 19mm bolts from the swing arm mounts.
- Remove swing arms.
- Fit the “F” swing arms by reversing the above process.

*NB. The car will need a rear wheel alignment after this swap even if the spacers referred to are correctly repositioned.*

## 12. Swapping front suspension, brakes & hubs.



*The Nuova front hub assembly showing the top bolt and shock-absorber which both need to be undone.*

- Jack up front of vehicles and place stands underneath.
- Remove front wheels from both vehicles.
- Remove 4 x 17mm nuts holding spring retaining brackets on both cars.
- Remove 2 x 17mm nuts from tie rod ends and undo tie rods from both cars.
- Undo both brake hoses on both cars.
- Remove 2 x 17mm bolts and nuts from top suspension arms on both cars.
- Place jack under lower suspension joint, (eye of spring) and take up strain.



- Undo lower shock-absorber 13mm nut. (be careful as they are limiting the suspension travel and are under tension)
- Slowly lower jack.
- Repeat on other side of the cars.



*The front suspension assembly , still with hubs, shock-absorbers etc. attached, can be swapped, as illustrated in this photo.*

- Remove the assembly and swap between both cars.
- Reassemble by reversing the above process.
- Bleed brakes.

*NB. The car will need a front wheel alignment after this swap even if the tie-rod ends are correctly repositioned.*

*NB. Always clean and inspect the new parts for wear etc.*



*The engine bay of the completed car.  
Note that this model has the ignition coil mounted on the left hand side of the engine compartment.  
Although difficult to get to when the engine is in place, it is away from the hot side of the engine which is always a good thing for electrical components.*



*This is another Niki/126 engine which has been fitted to the author's Barchetta.*

### **13. Swapping the Fuel gauge tank unit.**





*This is a Niki/126 fuel tank sender unit / fuel pickup and return unit fitted to the Nuova. Note the two wires and the two pipes. One wire is for the “low fuel light” the other is for a fuel gauge. You can purchase an aftermarket fuel gauge for you dash. One hose is for “fuel out”, the other for the “fuel return” Reshaping of the float lever will be necessary and will vary from “D” to “F” models.*

More detailed instructions to follow.

## **14.Swapping the steering wheel, column and switch.**



*This “D” has had the steering wheel, column and switch gear swapped from a Niki. This is beneficial in providing a good sized steering wheel, better switches for lights and wipers, a steering column lock with the ignition switch and a collapsible steering column for safety.*

*More detailed instructions to follow.*

**NB. This swap may need approval from your local motor registration authority.**

## **15.Swapping the Rack and Pinion**

*More detailed instructions to follow.*

**NB. This swap may need approval from your local motor registration authority.**

## **16.Swapping the interior trim**

*Many parts of the interior and trim will swap straight over without any modifications.*

*These include;*

*The front seats*

*The centre trinket tray*

*The hand brake assembly with warning light switch*

*The gear-change mechanism and gear knob.*

*The levers for the starter and choke*

*The pockets on the doors*

*The throttle pedal assembly*

*All the cables, clutch, choke, speedometer, throttle and battery*

*The Sun visors.*

*Other parts can be swapped with slight modifications.*

*These include;*

*All the carpets.*

*The seat belts. **NB This may be illegal in your part of the world.***

*Pedal assembly. **NB This may be illegal in your part of the world.***

## **17.Disclaimer;**

- *These swaps are written in good faith for all those Fiat 500 owners out there who want their cars to perform better, be safer and be more environmentally friendly. (Niki's run unleaded fuel)*
- *No responsibility will be accepted for any of the advice given.*
- *All work should be carried out by a qualified technician.*
- *Some of the swaps will need approval from your local motor registration authority. It is up to you to find out this information.*
- *Any further advice or clarification can be obtained from Club Fiat 500 of South Australia Incorporated.*