

TR 5 250 & 6 POWER STEERING FITTING INSTRUCTIONS

In fitting this power assisted steering kit you are going to re-use certain original components:

- Radiator
- Lower hose assembly
- Track rod ends
- Steering column UJ
- Water Pump
- Fan Belt

- **An electric cooling fan has to be fitted.** A standard size Kenlow can be fitted either in front or behind the radiator.

- You may need a small quantity of gasket sealant.

PLEASE READ THESE INSTRUCTIONS BEFORE STARTING.

(Any comments will be welcomed)

OPERATIONS

Lift front of car and support safely and securely on axle stands.

Remove front road wheels. Remove intake plenum and trunking.

Secure steering wheel in the straight-ahead position – **SEE PHOTO 1.**

Disconnect battery.

Disconnect hoses from radiator. Remove radiator and supports. including air filter.

If fitted, loosen bumper struts at front / body end and remove bolts to X member.

Remove X member.

Undo the 2 bolts attaching the starter motor to the bell housing and move forwards so that the flywheel can be locked with a large flat bladed screwdriver (wires stay attached).

OR

Enlarge the drain hole in the bottom of the clutch housing and use the large flat bladed screwdriver to engage the teeth of the flywheel to lock it.

Remove crank mounted cooling fan and extension shaft. 1 1/4 A/F, the 2 dowels should be refitted to the crank pulley.

Remove steering rack and intermediate column; note position of the reinforcements under the rack mountings and check the mountings for cracks, repair if necessary. Check universal joint for condition, this will be used as the top joint so renew if necessary.

Fit the new secondary crank pulley, making sure that the mating surfaces are clean, the dowels engaged and use Loctite (provided) on the new crank bolt, 15/16 A/F, Torque to 90 to 100 lbs ft.

PACK A

Replace the starter motor if removed

Now cover the crank pulleys with an absorbent cloth/paper.

Slacken and remove the alternator drive belt (renew if necessary).

Check the water pump for any slop in the bearings, remove the pump, renew if necessary. Make sure that the gasket face of pump and housing are clean also the spot faced recesses (3 off) for the water pump attachment nuts. Water pumps with detachable pulley and webbed casing will have to be replaced with the later type of pump.

Remove the original studs (3 off) and replace with the new ones, use Loctite to secure (2 extra plain nuts are provided for this, use and discard) make sure that 24 mm is protruding. Let the Loctite cure.

PACK B - SEE PHOTO 2.

Make sure that the top hose clip of the lower hose is accessible for adjustment.

Now, **PACK B**, put sealant on the gasket, put the gasket over the studs followed by the water pump, a washer on each stud, a dab on loctite on each stud, the pas pump bracket and the plain nuts. Fiddly but possible – put a nut on each stud in turn 'only just engaging the thread' when all are on tighten in turn. 18 to 20 lbs ft torque.

Refit alternator belt.

SEE PHOTO 3. Fit the rear mounting block, chamfered end to the block with the M6 hole under the main bolt (does not matter if the engine lifting eye is fitted or not) do not tighten.

Fit pump to front mounting and fit rear mounting – narrower slot goes onto the rear mounting block with the 6 mm bolt. You need 10 mm and 13 mm A/F spanners/sockets for this.

Fit pas pump belt and tighten (belt does not have to be very tight) now tighten the two M8 adjuster bolts and the M6 nut and bolt.

Now fit the rack mounting plate **PACK C. PHOTO 4.** Leave the M10 bolts in place as they cannot be fitted later.

Use the original rack mounting reinforcements (one may have to be trimmed). On all fixings hold the head still and turn the nut to tighten, while pushing the mounting towards the nearside. 13 mm socket.

Fit the power steer rack. There should be 4 mm minimum between pulley and rack casing. If not then slacken engine and gearbox mts and lever the engine / gearbox assy rearwards, then retighten all mountings.

Check clearance on the inner wing flange ref the rack gaiters, bend flange if necessary.

Centre the rack using the 114 long strip between the end of the ram cylinder and the post nut.

Fit intermediate column, check seating of the lower UJ while tightening the M8 nut on the special bolt. **SEE PHOTO 5.**

Tighten bolts on top steering column UJ, new nyloc nuts are provided. (Fan to hub bolts are ok)

It is possible that the column will not align with the steering wheel held centrally, in which case the rack must be central and the intermediate column fitted. Straighten the steering wheel by altering its' position on the top spline.

Fit electric fan to radiator.

Fit Cross member, bumper struts, radiator and supporting struts, original type air filter and reconnect radiator hoses.

SEE PHOTO 6.

PACK E. Fit the fluid reservoir to the brake master cylinder / servo studs; two new nyloc 3/8unf nuts and washers are provided, suggest use Loctite on the threads.

Now mount the reservoir to the bracket using an M6 bolt at the top and a ty-rap at the bottom.

Twist the mounting so that the reservoir is vertical

Connect the large diameter feed hose (warm hose and use Vaseline) from the reservoir to the pump, cut to length as required.

In **PACK D** there are two pipe seats, these have a 45 degree cone at one end and a 60 degree cone at the other.

The smaller one goes into the smaller rack port and the larger one in the larger port, both with the 60 degree cone facing into the rack ie. with the 45 degree cone facing out. Make sure these are seated properly.

On later racks the pressure and return hose connection is made by push in connectors (wet the seal with a little PAS fluid and push in while making a small circular motion)

The hoses are held into the rack by a keeper plate, take note that the plate is not symmetrical, smaller indent is for the pressure hose.

There are no pipe seats with this type of installation. And the pipes will turn easily in the rack for alignment.

Attach banjo to pump and tighten, if necessary the relative position of the banjo to the hose end can be changed, Put the banjo end into a vice (protect the faces) and twist the hose to gain the desired alignment. When done install and the hose reservoir to pump.

Screw in only: Now fit the pressure hose the pump see PHOTO 6, DO NOT TIGHTEN ; fit the rack end and tighten; now tighten the pump end.

Screw in only: Fit the return hose to the rack and tighten; lead the hose to the reservoir, cut to length and secure with the jubilee clip.

Refill the coolant system. Fill the PAS system with the Dexron fluid provided. Refit intake plenum.

Reconnect the battery.

Start the engine topping up the fluids as required to their correct levels while working the steering from lock to lock 5 or 6 times (do not hold on full lock). Check for leaks.

Fit the track rod end lock nuts to the new rack and then the track rod ends. The engaged thread length is the same as the manual rack.

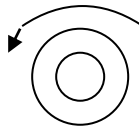
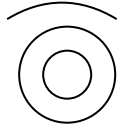
Now fit the track rods to the steering arms. It may be that new track rod ends will not fully seat, do not worry, engage the nut on the thread and lower the car to the ground now completely tighten the nut.

Re track the car to the standard setting, 1/16 inch (1.6 mm) toe in, do not tighten the lock nuts.

Drive a short distance and determine where the steering wheel is relative to the straight-ahead position.

See diagram to correct small misalignment: for large misalignment move steering wheel hub on the top column spline.

To turn steering wheel:



Turn track rod ends:

N/S - IN
O/S - OUT

N/S - OUT
O/S - IN

Do this and test drive again. If OK, then re-track.

New components are used in this conversion, they will take some miles to 'loosed up'.

When driving, take time to become accustomed to the steering.