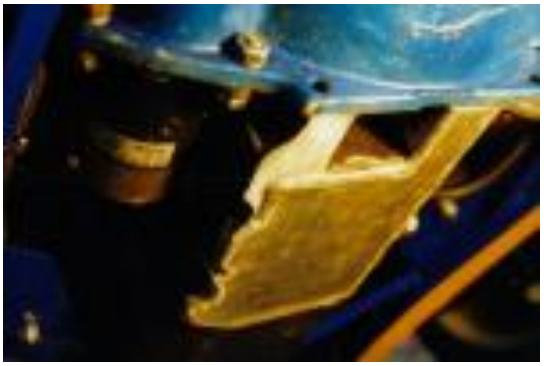
## 15 Engine and Gearbox



### 15.1 Gearbox Preparation

On the gearbox there is a reverse stop fitted this needs to be removed.

- To do this knock out the oval flat plate in the end of the gearbox (just behind the mount for the standard gear stick )
- The stop(a small metal piece) should now easily be knocked out through the back of the box(a ½" drive extension bar is useful to do this job)lever out against the mount hole in box.
- Replace the plate.

**What you need:**

Gearbox.
mount
1 x M12 x 25 bolt.

The mount is taken from a sierra and in standard form also has a larger pan attached to it—drill out the two rivets holding the mount to pan.-the pan is thrown away-the mount sits in the square section in the tunnel-two 8 mm holes are drilled to hold in place-a 12mm bolt holds mount to box.

**R6**—the mount sits on the two small tubes inside the tunnel-and when positioned 8 mm holes are drilled to hold in place. Fig 15

### 15.2 Engine /gear box Preparation (general)

The first thing to be done is to fit the clutch to the engine.

**What you Need:**

Engine.
Clutch.
Clutch Cover.

You must ensure that no oil or grease gets onto the friction plate or flywheel.  Clean the flywheel face  with petrol or thinners

- Place the friction disk against the flywheel making sure  correct side is against flywheel.
- Place the clutch cover over the friction plate with the dowels passing through the holes on the cover locating it.
- Insert the bolts and spring washers and do them up finger tight so that the friction plate may be moved.
- Using a clutch alignment tool ---  Without the correct tool you need to visually check that it is in the center.
- Tighten up all the bolts using a torque wrench to 20-25 Nm or 15-18 lbf ft.

Now to fit the clutch release arm to the gearbox.

**What you need:**

Gearbox.
Release Arm. And bearing

- Place the release arm over the first motion  shaft of the gearbox and position it onto the fulcrum pin as shown in figure
- Place the release bearing over the input shaft and guide sleeve and turn it whilst applying gentle pressure until the spring clips clip onto the release arm and secure

it in position.

- Fig 15aa

- the release arm should now slide freely up and down the input shaft, pivoting at the fulcrum pin.

## 15.3 Fixing Engine to Gearbox

**ON R6 gearbox is fitted in car before engine**

Gearbox.
Engine.
M10 x 35 bolts.

- Lightly grease the input shaft spline of the gearbox.
- Line up the engine and gearbox, the gearbox will need lifting and angling to do this.

Push the gearbox onto the dowels on the engine block.

- Insert the M10 x 35 bolts and tighten -leave starter bolts and one top bell housing bolt for the earth strap.
- Tighten the bolts using a torque wrench to 40-50 Nm or 30-37 lbf ft.
- The Picture shows both Auto and manual boxes/ engines - Fig 15a…15 . If you are fitting an engine from a front wheel drive car eg.- zetec 16v remember you must fit a spigot bearing in the rear of the crankshaft to
- Support the first motion shaft in the gearbox-. Remember also to check the engine dowls for correct size where the engine bolts to the box(usually the two center bolts.) and also before fitting the spline size on the first motion shaft in relation the center plate spline size.

## 15.4 Starter Motor

**What you need:**

Engine.

Starter motor.
Bolts.

- The starter motor is bolted to the offside of the engine as pictured, in figure 15b

## 15.5 Engine and Mounts

**What you need:**

mounts steel x 2.
8 x M8x 25 bolts.
.
Rubber mounts.

The steel mounts are fitted as the gear box and engine are lowered into place, lower the engine when fitting onto small 2" thick blocks of wood.

R6 the gear box is fitted into the chassis first and the engine is lowered into place and bolted after.

## 15.6 Fitting Engine and Gearbox Most tiger models

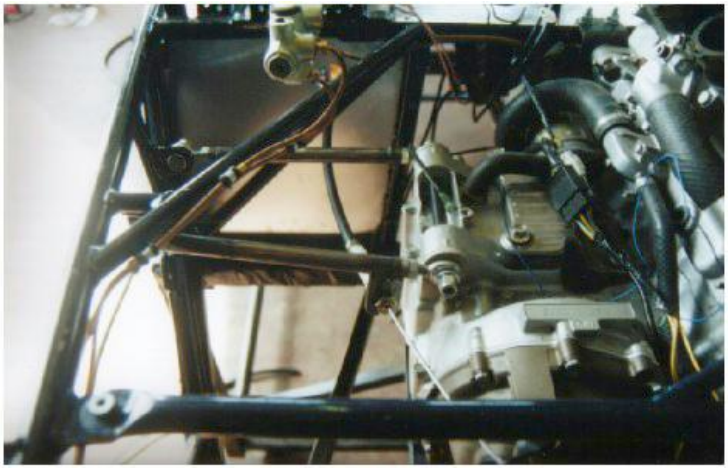
**LHD cars Pinto(ohc) measure 168-170mm from left hand edge of head at front to inside of chassis (Square)blank fuel pump(if manual)A small amount may be required to be sanded off the flat section of the tiger steel engine mount and posibley a small section off of the round rubber mount on left hand side—the standard alternator position can be used on LHD cars but the smaller Lucas type 100-or-101 is required**

**What you need:**

Hoist.
Chain /strap
2" block wood

When lifting the engine and gearbox great care needs to be taken and a hoist must be used.
The engine and box is dropped in at approx. 45 degree angle it is recommended to if possible have a helper than can lift and guide the rear of the box from inside the car over into position on center chassis/gear box mount
When rear of box is in position-lower the engine down to an approx horizontal position and bolt on the steel mounts-then lower down on to the 2" wood and remove the hoist. Aprox position head left hand
Front(measure from edge of head to inside of chassis 190mm (pinto)
At this time try a temporary fitting of exhaust system and position of alternator.

When the position/fitting of exhaust/alternator is acceptable drill through the engine mount holes and through the wood and into and through the chassis flat section –be aware of the brake pipes /loom under chassis flat section



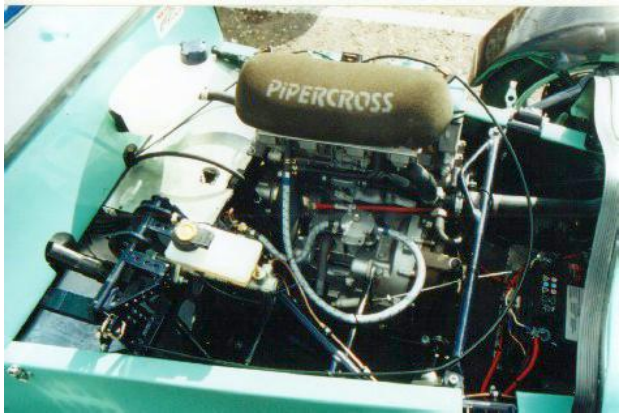
now lift the engine using a small jack under the sump(use piece of wood on jack)and fit the rubber mounts.

Bike Engine

**15.66 Bike reverse box--------This is fitted and bolted into 4 bolt holes shown**

**in fig 15c**

The Bike engine (B6) single has GSXR 1000 suzuki engine / box- there is a engine fitting kit(cross bars and mounts/bolts in the kit
Rose joints are used also for holding in position.
There is a short tiger propshaft from bike box(designed with slide mech.)
Onto reverse box (quaife) – from output side of box there is a tiger longer propshaft.
The gears are selected by tiger cable- the clutch is operated by cable.




**ZX9 Fitment**

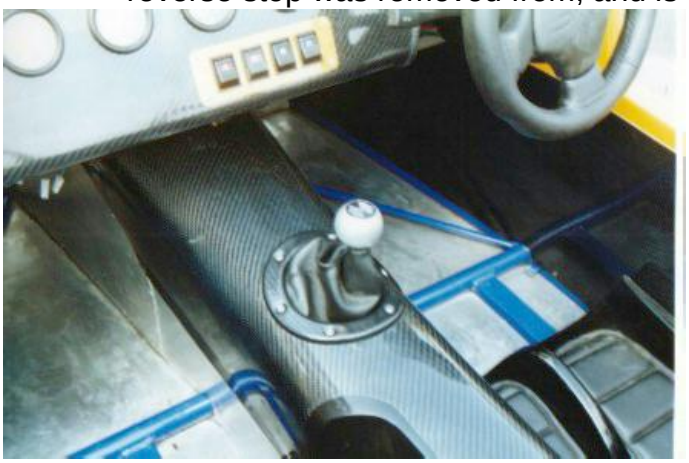
### 15.7 Gear remote fitting

**What you need:**

Gear Remote

3 x m8 x 15 mm bolts

- The modified gear remote sits in the prop shaft end of the gearbox, where the reverse stop was removed from, and is secured in place by the 3 x M8 x 15mm



Kawasaki ZX9 bike eng. fitment

This pic shows gear stick and gaiter and carbon tunnel R6

### 15.8 new Reverse Stop for Gear Stick

**What you need:**

1 x m8 x 40mm

2 x M8 lock nuts.

The m8 bolt fits through the hole in the bracket on the remote on drivers side of the transmission tunnel next to the gear stick.

- The bolt is locked to the bracket by the two nuts and the head of the bolt acts as a reverse stop, this can be filled/cut to suite.

The bolt is positioned such that you are unable to select reverse gear without pushing the gear stick down below the bolt head, as in the figure.

**As a guide put car into first gear and adjust stop up against the small square section on bottom of remote.**