



# General Fact Sheets

**The following information sheets are used in conjunction with the specific vehicle installation instructions to show adjustment details which are common features for all dual control systems & some features which are specific to the rod or cable dual control systems or those which feature an accelerator pedal.**

**This information includes:-**

- Pedal & Lever Removal
- Pedal Angular Adjustment
- Pedal Height Adjustment
  - Torque Settings

### **For Cable Systems**

- General Cable Information
- General Cable Arrangement
- Typical Clamp & Pulley Bracket Arrangement
  - Cable Adjusters
- Pedal Box Pulley Assembly
  - Accelerator Assembly
    - Maintenance

### **For Rod Systems**

- Dual Control Pedal Options
  - Shaft Collars
  - Hinged pedals
- Ball Joint Link Alignment
  - Rigid Link Alignment

All instruction sheets supplied with the dual control are part of the dual control kit and must be retained with the dual control for future reference & adjustments etc.

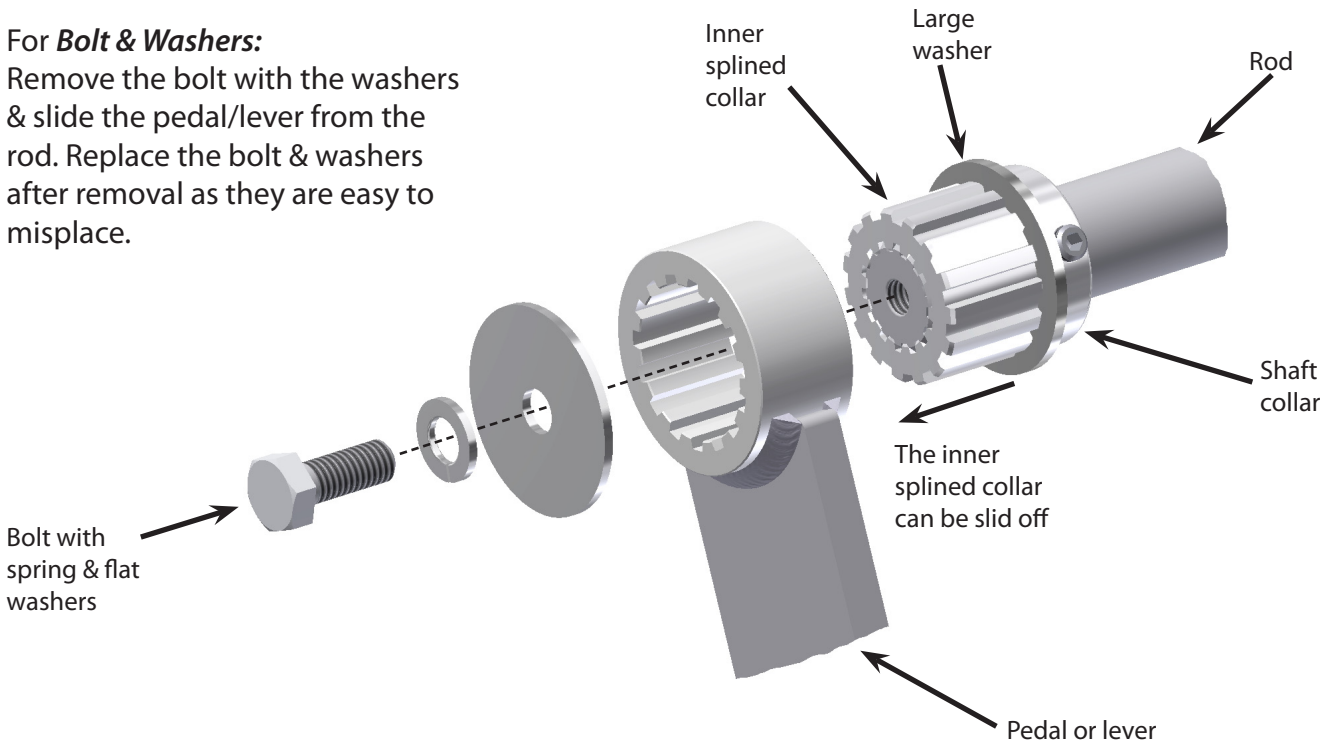
Please note: the dual control kit has a protective coating applied after assembly and some minimal paint overspray may be noticeable. This is completely normal and does not affect the reliability or safe function of the dual control.

## Pedal /Lever Removal

Detachable pedals/levers are secured to the rods with either a **Latch/Circlip** or a **Bolt & Washers**

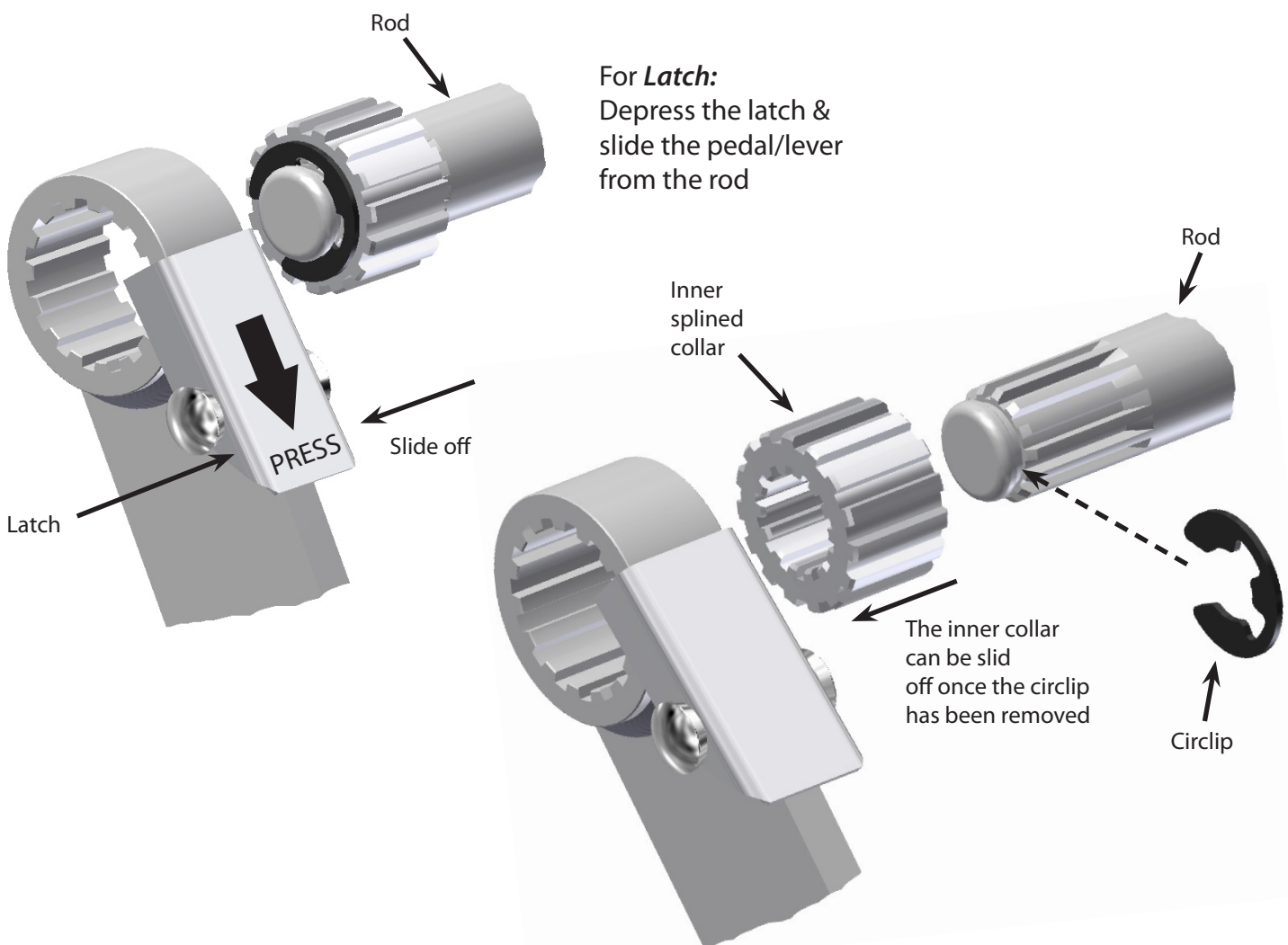
### For **Bolt & Washers**:

Remove the bolt with the washers & slide the pedal/lever from the rod. Replace the bolt & washers after removal as they are easy to misplace.



### For **Latch**:

Depress the latch & slide the pedal/lever from the rod



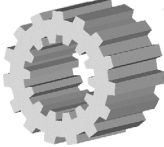
# Pedal Height Adjustment

## Correct Pedal height

It is advantageous, and we recommend, that the dual control clutch pedal height is set slightly (5 to 10mm) higher than the vehicles clutch pedal pad, this is to ensure that the vehicles clutch is fully disengaged when the dual clutch pedal is depressed whilst not placing excessive strain on the dual linkages.

The dual control brake pedal pad may be placed at any convenient height but must allow the vehicles brake pedal full movement in all circumstances - the vehicles brake should be able to operate nearer the floor should the vehicles primary braking system malfunction. We recommend the dual control brake pedal pad be at the same height as the dual control clutch pedal pad for ease of use also.

## Pedal height Adjustment

Once a dual control system has been installed (either rod or cable) the dual pedals will need adjustment to an appropriate height in order to operate correctly, to achieve **fine** adjustment the pedals first need to be removed **together** with the internal splined collar  from the rod, see sheet 2.

To achieve **fine** adjustment of the pedal height (approximately 1.7° intervals) the internal splined collar must be rotated within the pedal. If the pedal has a latch fitted it will be necessary to push down on the latch in order to slide the splined collar out, see Figure 'A'.

Figure 'A'

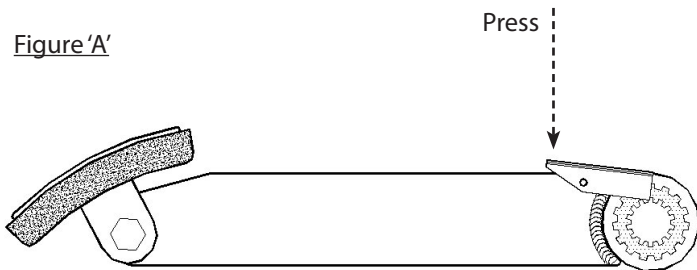
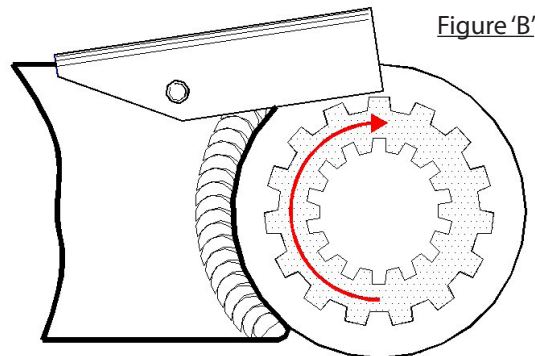
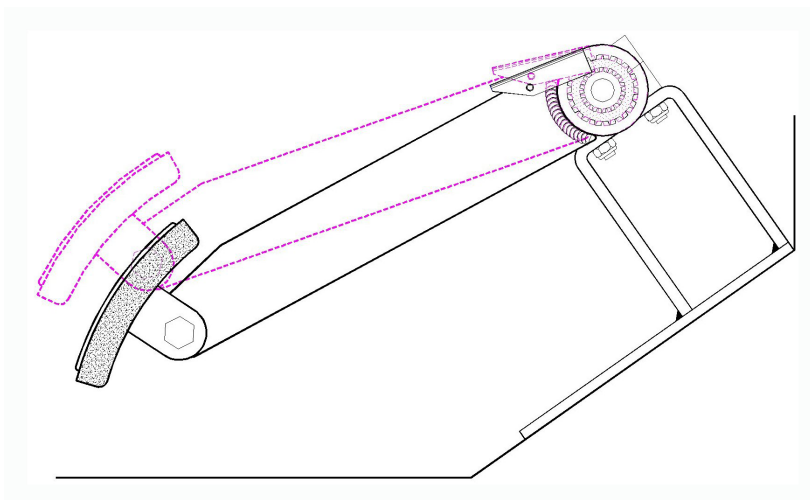


Figure 'B'



To **raise** the height of the pedal rotate the splined collar 1 or 2 teeth in a clockwise direction as figure 'B', re-fit the pedal to check the travel & operation of the dual control pedals. Continue adjusting the pedal height with this method until the desired height is achieved. In order to lower the pedal height simply rotate the internal splined collar in a anti-clockwise direction.

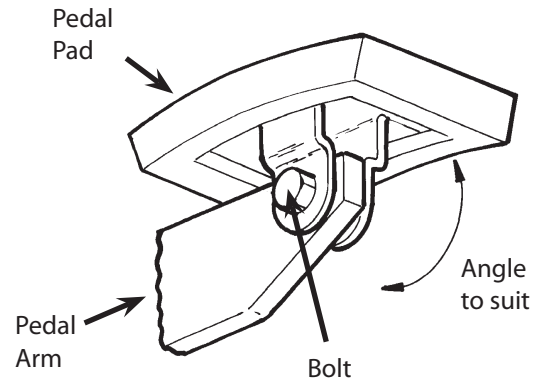


With the height adjustment complete re-secure the pedals to the rods.

If the pedals are removed from the rods leaving the internal splined collar still on the rod, rotating the pedal 1 tooth up or down will result in an adjustment angle of approximately 25°.

## Pedal Pad Angular Adjustment

Most dual control pedal pads pivot about a high tensile bolt from the pedal arm allowing the pedal pad a convenient angle to be set to the user's choice. Loosen the bolt, set to the desired angle & retighten the bolt so that the pedal pad is locked in position.



## Cable Dual Control System

The cable system comprises of a flexible steel inner cable, a PVC covered flexible steel outer cable with a liner inside. The inner cable runs through adjusters at the pedal box & pulley brackets. The outer cable & liner slot into recesses in the adjusters.

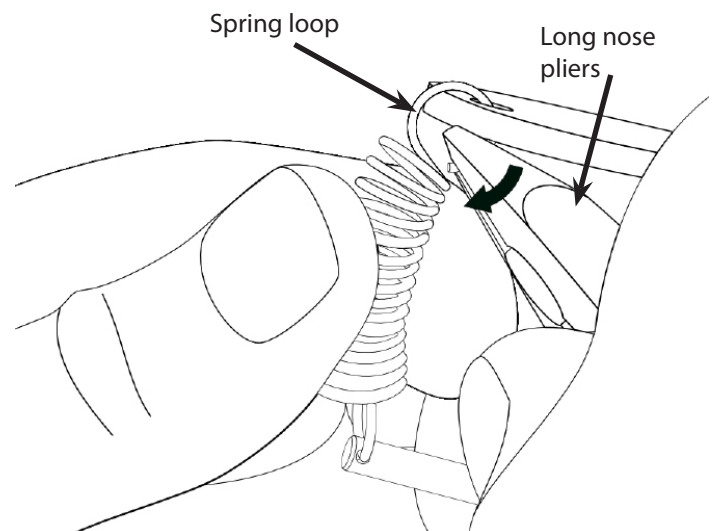
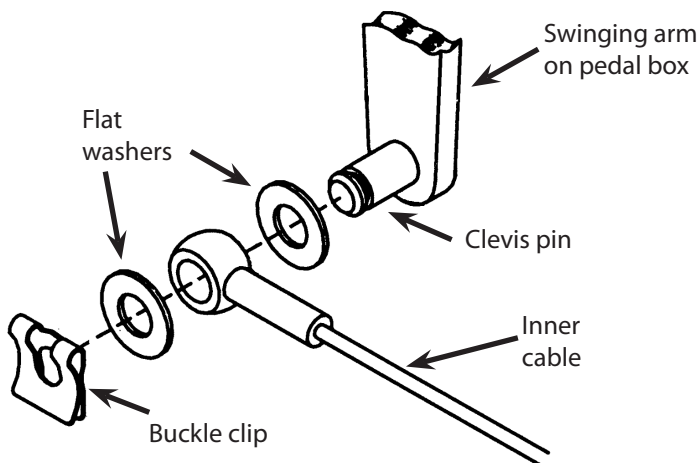
### Cable Arrangement

From each pulley wheel on the pedal box assembly the inner cables are attached to clevis pins on their respective swinging arm. Adjust the cable at the drivers side with the adjuster sleeve to ensure that there is a small gap of approximately 1mm (2mm max) between the adjuster sleeve and the eye bolt on the pedal clamp to ensure full return when used. More adjustment of the cable can be obtained from the adjuster at the pedal box, adjusting the outer cable out from the pedal box effectively shortens the inner cable.

On vehicles with cable operated self adjusting clutches, ensure the gap between the adjuster sleeve & the eyebolt is always maintained, periodic inspection is recommended.

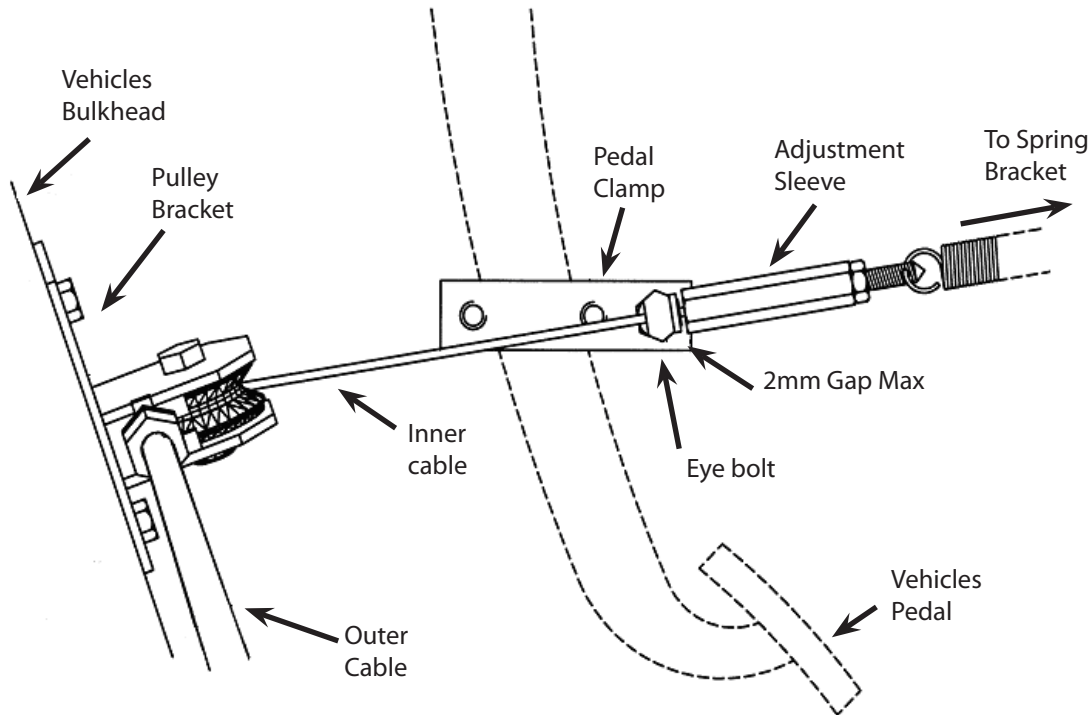
Springs are attached to the adjuster end of the cables & are fixed to a spring bracket which in turn is attached to fixing points at the lower dash. The springs are to ensure that the weight of the dual control pedals does not impinge upon the vehicles pedals & to keep tension on the inner cables avoiding contact with each other at the pedal box. Once the springs are attached, it will be necessary to tighten the connecting loops on each end to ensure the springs remain fixed to the cable and spring bracket. It is important to do this without damaging the spring. Long nose pliers should be used to grip the end of the spring loop and pull/twist the end towards the centre of the spring to prevent it from 'unhooking' from the bracket or cable end. Do not attempt to squeeze the end loop across its width - this will weaken the spring and may lead to an unexpected failure.

The dual control pedals remain stationary whilst the vehicles pedals are operated.



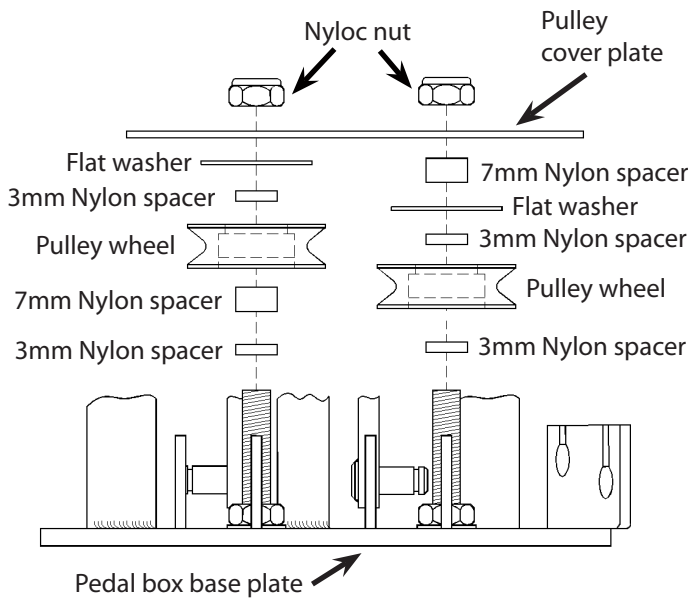
# Cable Dual Control System

## Typical Pedal Clamp & Pulley Bracket Arrangement Clutch & Brake

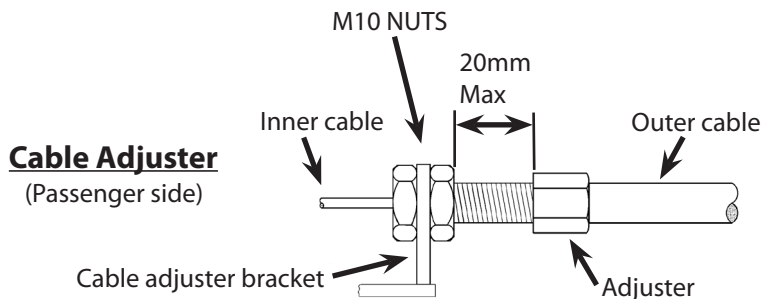
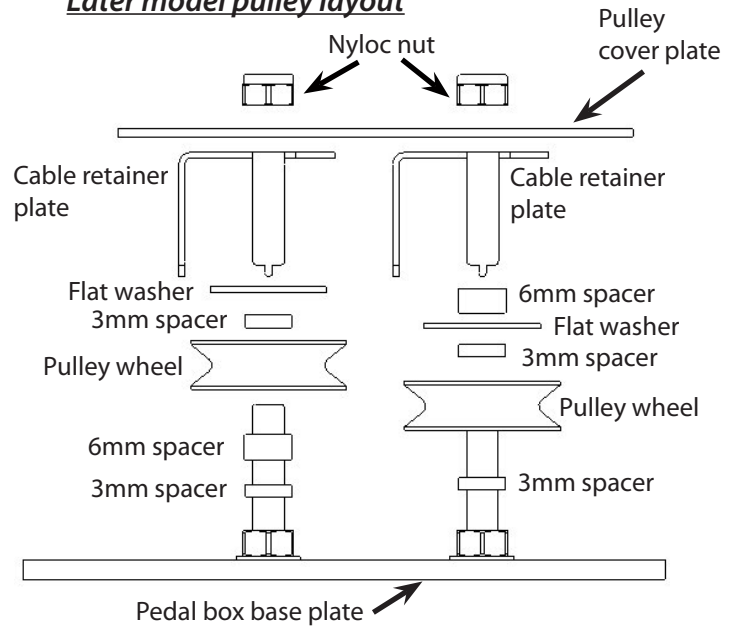


### Pulley Assembly on the Pedal box

#### Early model pulley layout

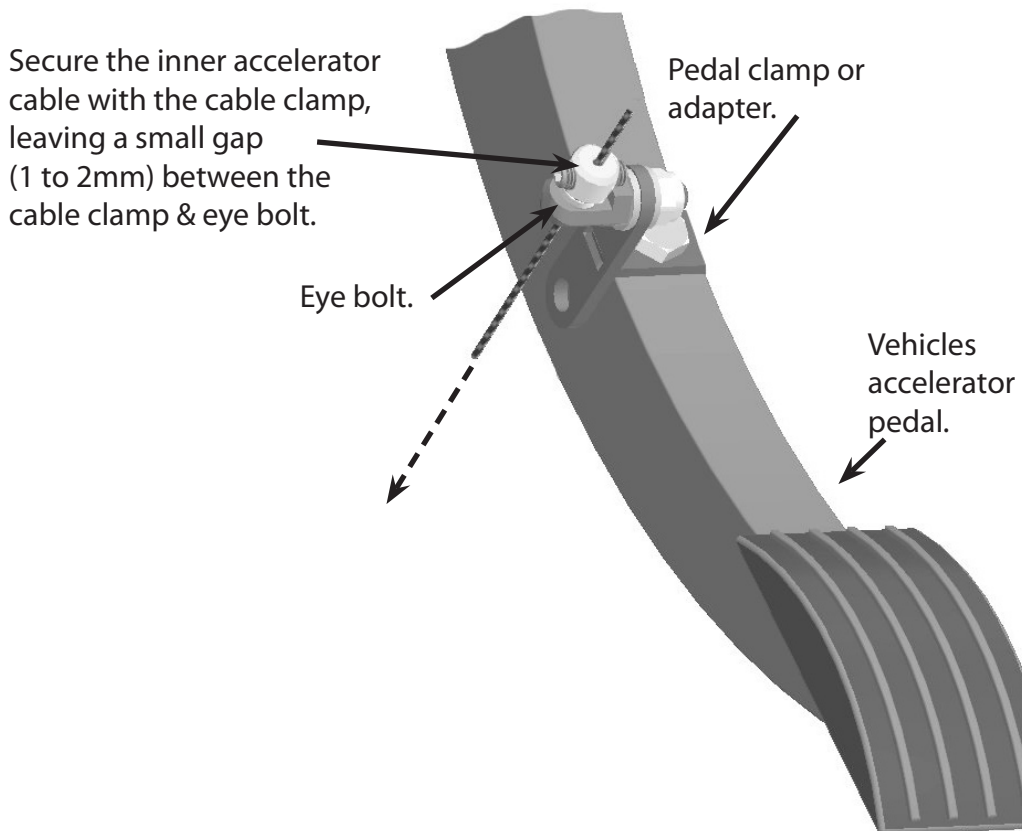
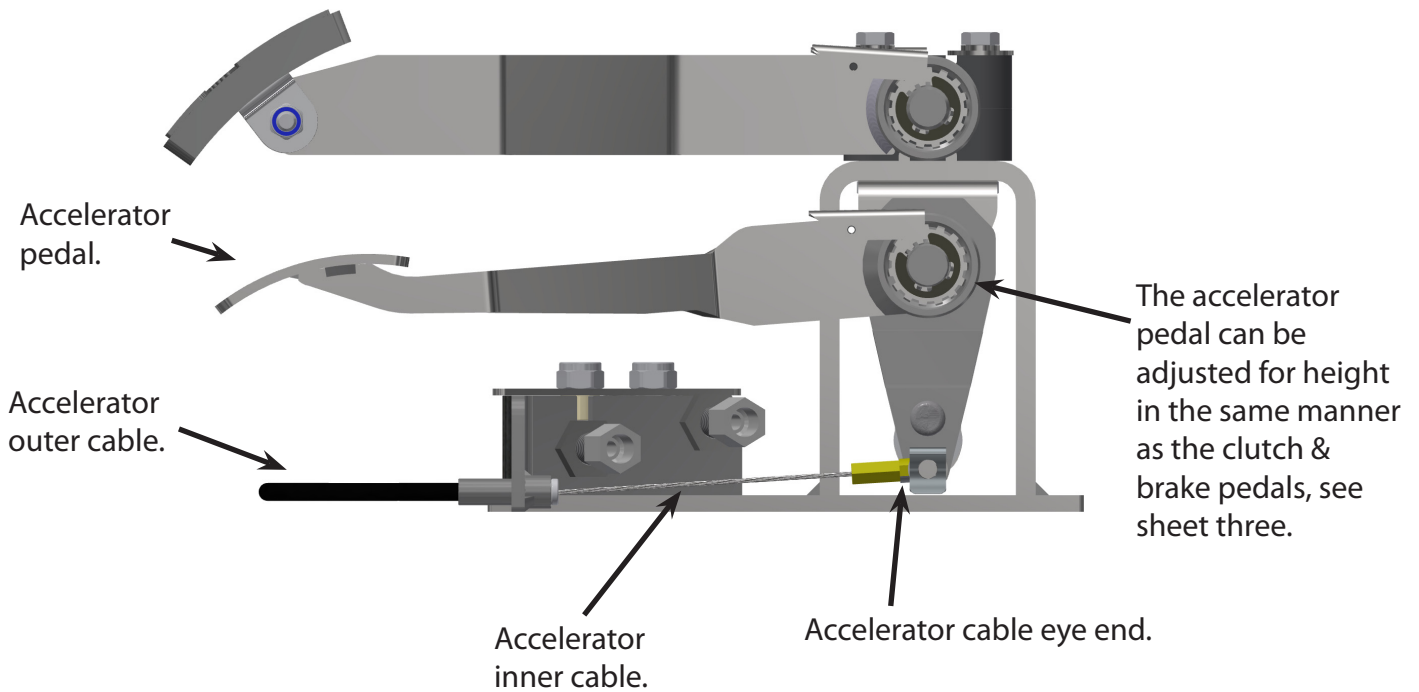


#### Later model pulley layout



**DO NOT OVERTIGHTEN THE M10 NUTS - THIS WILL RESULT IN DAMAGE TO THE ADJUSTER.**

# Accelerator Assembly



*Some components may vary slightly from the images shown but the principles of operation remain the same whether right hand drive or left hand drive vehicles.*

# Rod Dual Control System

## Pedal Options

The following options *may* be available to the rod operated dual controls;

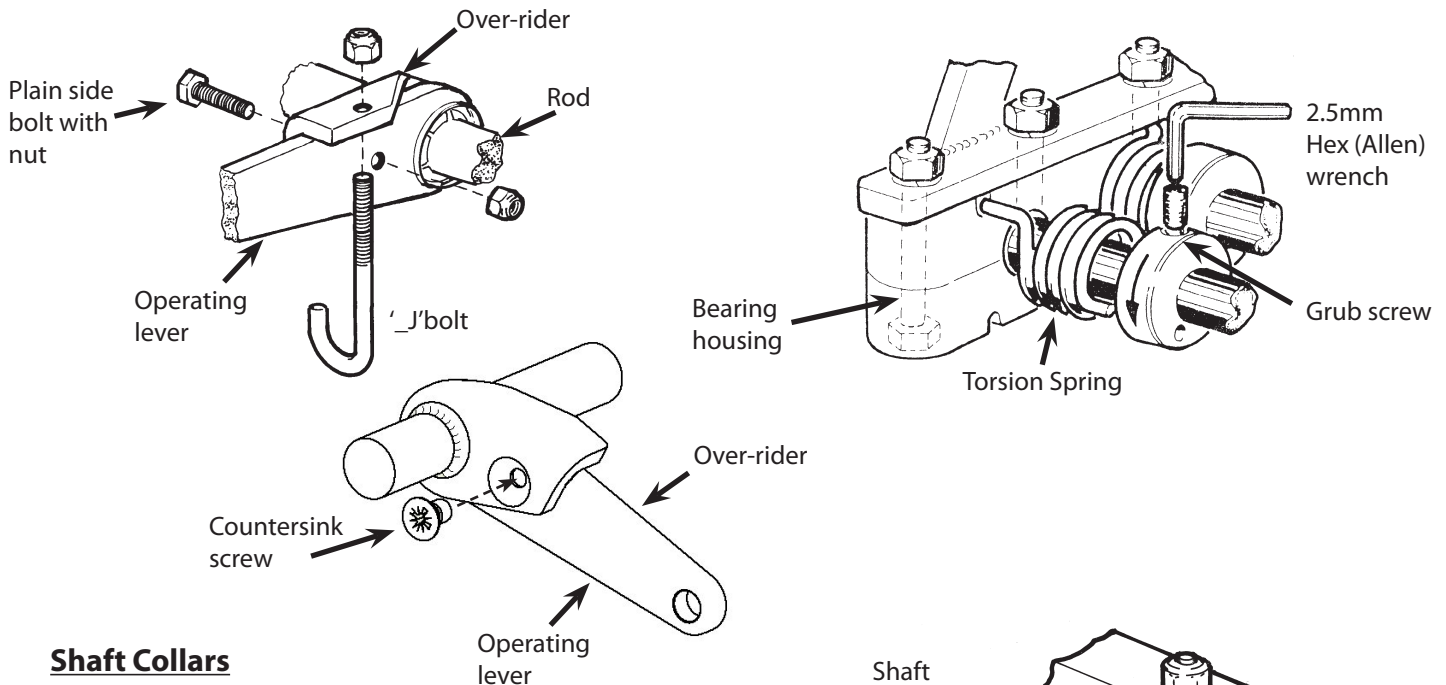
**Option A.** The dual control pedal remains stationary whilst the vehicles pedal is moved.

After setting the appropriate pedal height, ensure that the torsion spring tangs are fully engaged in the bearing housing and collar. Then using the 2.5mm Allen key in the grub screw, turn the collar so that the torsion spring applies just enough force to hold any residual weight from the dual control off the vehicles pedals. Lock the spring in position by tightening the grub screw with the Allen Key. **Too much tension on the spring will cause the pedals to flip up whilst too little & the dual pedals will move when the vehicles pedals are applied, a balance between the two points is required.**

Ensure that the spring is rotated & set in the correct direction as rotating in the wrong direction could cause problems with the vehicles clutch & brake operation.

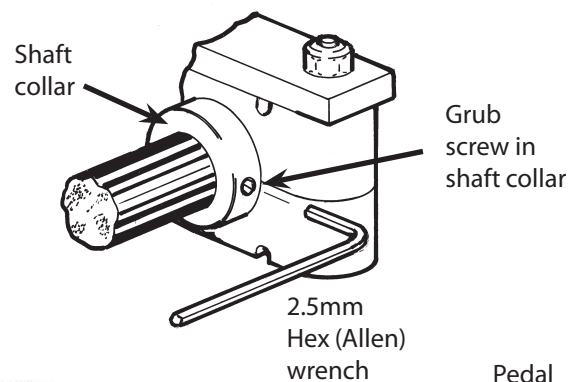
**Option B.** The dual control pedal moves directly with the vehicles pedal.

First apply option 'A', if available, and then bolt the over-rider and operating lever together using either the 'J' bolt through the top hole in the overrider, plain bolt & nut or countersink screw as applicable through the side. Remove excess thread from the 'J' bolt once the nut is secured in place.



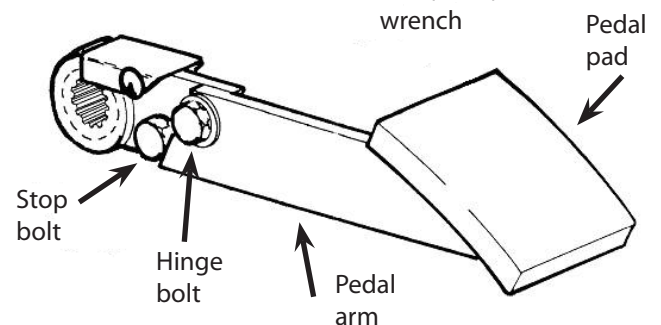
## Shaft Collars

Shaft collars are used for locking the sideways movement of the rods, sub assemblies etc. Tighten the grub screw with the 2.5mm Hex wrench (Allen Key) to lock the collar in position ensuring that the rods etc, rotate freely.



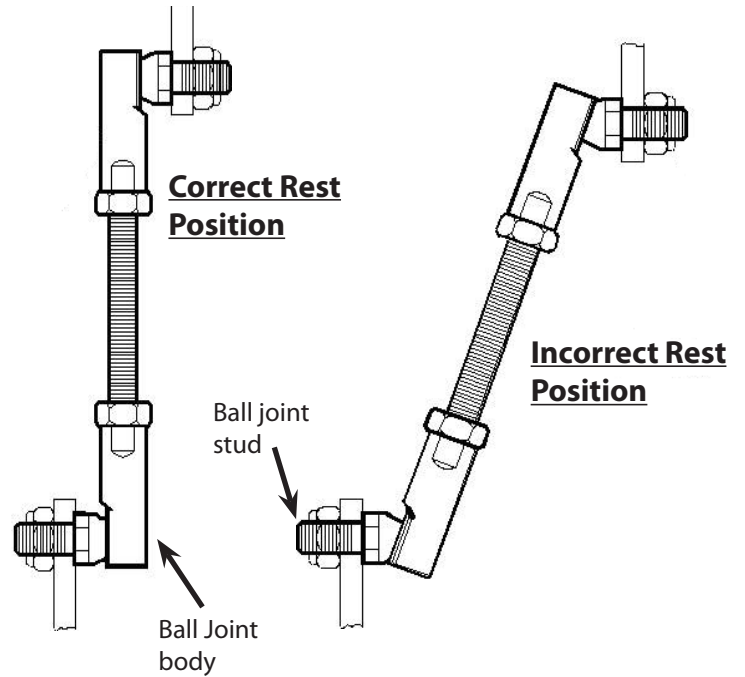
## Hinged Pedal

Hinged pedals maybe used when the vehicle layout only allows the dual control 'Pedal Option B' for the clutch, i.e. no 'stationary' option is available. A hinged pedal will follow the vehicles pedal down but will stop upon contact with an obstruction e.g a foot. The pedal should pivot freely on the hinge bolt to avoid foot entrapment.



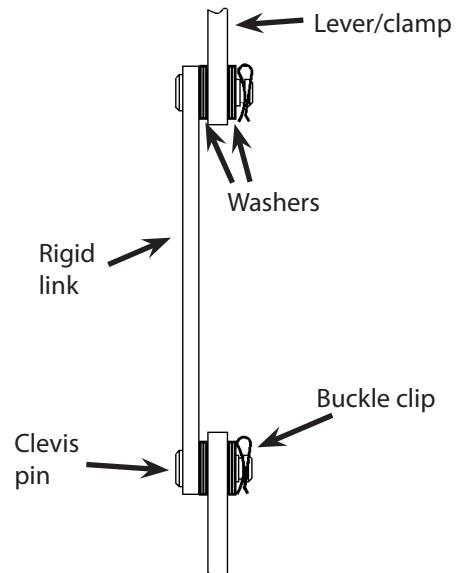
## **Ball Jointed Link Alignment**

Ball joints are designed to move in all directions within certain limits. These limits will not be exceeded if the ball joint link is set to the correct position when at rest, with the ball joint stud perpendicular to the ball joint body. If the link is not set to the correct position when at rest, operational movement and force may cause excess strain on the ball joints and these will fail in time.

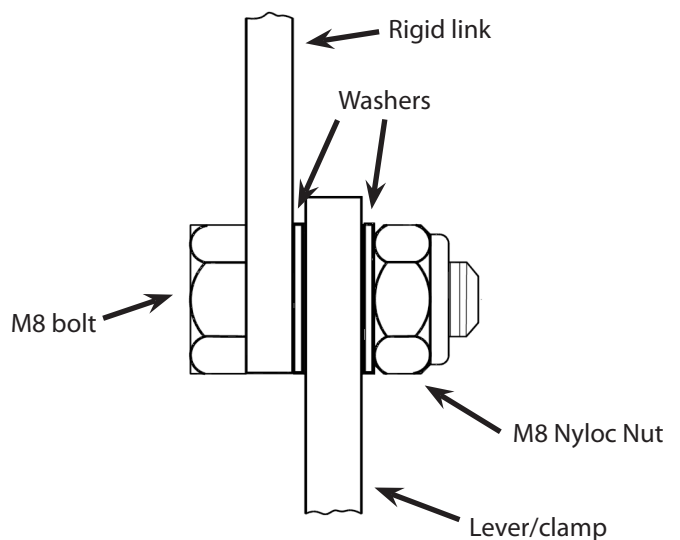


## **Rigid Link Alignment**

Rigid links can be adjusted sideways by varying the number of washers either side of the lever or clamp. Rigid links must operate parallel to the attached levers or the link may 'bind up'.



On some models that use rigid links, the clevis pin & buckle clips are replaced with M8 bolts with Nyloc nuts. The Nyloc nuts can be adjusted where the links connect to the levers & clamps to ensure that they pivot freely.





## Maintenance of the dual control system

Ensure all moving parts of the dual control are lubricated once a month to reduce friction.

On the rod & cable dual control systems periodically check the clamps/adaptors attached to the vehicles pedals are fully secure.

On rod operated controls check that any rigid links attached to the clamps & levers pivot freely.

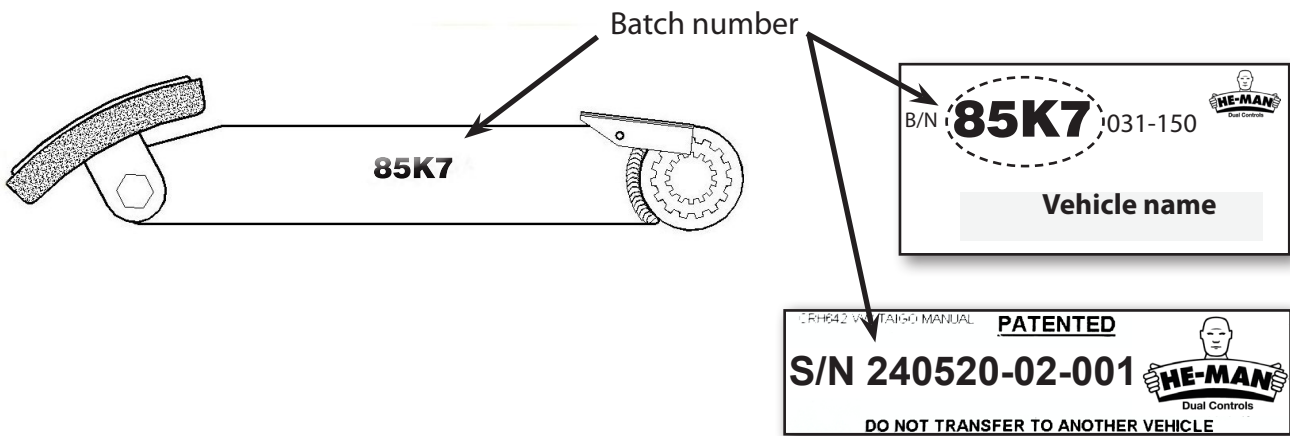
On the cable operated dual control system inspect the cables once a month for any possible wear, free-play & alignment with the pulley wheels & guides. Cables should be replaced annually.

Replace pedal pads if the rubbers become excessively worn.

Annually check that all fixings for the brackets to the bulkhead/floorpan are secure.

## Batch Numbers

The batch number is used to identify the dual control unit type and date of manufacture. The batch number is a series of numbers or letters or a combination of both & are either stamped into the metalwork or, on later models, will be displayed on a white sticker. The batch number can usually be found on the brake pedal of the dual control.



## Recommended Torque Settings

M6 Bulkhead fixing bolts = 11Nm

M8 Bulkhead fixing bolts = 18Nm

M6 Pedal Clamp bolts = 11Nm

M8 Pedal Clamp fixing bolts = 14Nm

M6 Bearing housing bolts = 3Nm Maximum

Self-Tapping hex head screws = Tighten screws to hold brackets securely to the bulkhead/floorpan.