

## **Coupe Rear Brakes & Handbrake Cable guide and FAQ - all models**

### **Overview**

The handbrake on the coupe is cable operated and mechanically operates the hydraulic piston within the rear callipers, so when the operating arm is moved by the cable it pushes the piston forwards allowing the pads to contact with the disc.

The rear pedal brakes are the standard single hydraulic piston sliding calliper type. Due to the way the handbrake operates the rear callipers are quite complex and are not unknown to seize. If this is the case replacement is recommended rather than overhaul.

There are at least two types of rear calliper fitted but for the purposes of this guide there are no differences. The differences are in materials and style.

The rear brakes also have a compensator valve fitted. The Brake Compensator Valve is attached to the rear sub frame in the middle of the car behind the fuel tank. It is shrouded in a rubber boot.

It has a connection (a spring) from the valve itself to the rear anti-roll bar which is attached to the swinging arms. As the swinging arms go down away from the body of the car the anti-roll bar comes up the way, forcing the spring backwards and operating the valve. This reduces the amount of brake pedal pressure applied to the rear callipers.

The idea is that under hard braking as the nose of the car dips, and the rear rises, the valve reduces pressure to the rear callipers to prevent the brakes from locking.

### **Issues with the Coupe Handbrake and Rear Brakes**

- Freezing in Winter
- Cables Stretched
- Seized Brake Compensator Valve
- Lack of efficiency which can lead to an MOT Fail
- Sticking Pads

### **Frozen Handbrake**

One of the most common Coupé issues and a sure fire forum thread every October and throughout the winter.

### **What Happens?**

Simply put, water enters into the handbrake casing and when this freezes, normally overnight, the handbrake is stuck. So if you leave your car with the handbrake on you will not be able to drive away.

## Why does this happen?

There are two reasons:-

1. Over time the rubber gaiter at the end of the cables perish allowing water to enter.
2. The routing of the cable is such that any water entering the cable will collect at the lowest point of the cable, which is where it loops under the rear sub frame. So once the water is in it will stay there with no way of draining. Any water in the cables will freeze solid and lock the cables in the position in which they were left.

## How to fix it

Simple answer is to wait until it thaws. This can be accelerated by dousing the cables with hot water or by just waiting. You could also use a hairdryer.

If you encounter this problem leave the car in gear on level ground rather than using the handbrake and book the car to have the cables replaced.

Long term and proper fix is to replace the cables.

## Replacement Cables and Prevention

Preventing the problem is always better than fixing the cause. Fortunately the issue is easily fixed on the coupe by following these easy steps.

- Buy new cables, they must be genuine Fiat ones as issues have been reported with “pattern parts” in the past.
- Before fitting the cables inject them with oil, any decent oil will do and each cable will take about 10ml
- Inject enough grease to fill the rubber gaiters at the cable ends
- Be careful when fitting that you do not damage the gaiters

## Fitting new Cables

Tools needed, 13mm socket and ratchet handle, Jack and Axle stands.

Time taken - quite an easy DIY job and should take no more than 1hr

The part numbers for new cables are:- :- 46401725 and 46401730 at £25.12 each official Fiat Dealer price. Or [Alternative Autos](#) will do aftermarket ones at£7.95 each or Fiat ones at £16.95 each.

Advice is ALWAYS to Fiat genuine Fiat items as OE ones have been known to stretch or not fit correctly even when new.

First you need to have the back end of the car raised high enough above the ground to be able to reach and see around the middle of the bottom of the car. Ideally reverse the car onto ramps and use sandbags/wooden/metal chocks to chock the front wheels.

Next, slacken the handbrake tensioner located just below the lever. Turn the nut almost to the end of its thread but don't undo it completely.



Now release the ends of the cables from the tie bar. This is in the middle of the car underneath and is easily accessible. Just remove the plastic clip and turn the cable ends out of the slots.



Working towards the rear of the car, simply pull the cable assembly rearwards from these supports.



On each side of the car working rearwards you'll come across a clip like this. Simply prise it open with your fingers.



Also on both sides of the car you'll find these supports. The cable sits in them but you'll need to unbolt the 13mm bolt that holds the supports' bracket on to make room to slip the cable out.



On the side of the car away from the exhaust you'll find this small free moving plastic widget. This stops the cable chafing on the tank.



On the exhaust side you'll find this aluminium sheath which protects the exposed section from heat damage.



Finally, BEFORE connecting the new cables to the calliper slacken off handbrake cable, pump brake pedal 10 times with car level and all four wheels on ground.

Then jack car up car and fit the cables into the calliper levers. Re-tighten main handbrake cable at lever so that it travels about 5 notches to full lock. Make sure wheels don't bind with handbrake off.

Make sure also that the handbrake levers on the callipers are returning to their stops before and after fitting the cables.

If you are having to manually push the levers back then you need to work them back and forth (while the calliper and brake pads are all still assembled) while spraying a little oil into the pivot point. If that doesn't sort it then your calliper is probably in need of replacement.

One notable difference between the old and new cables (besides the old rubbers being torn) was the inner cable. On the new ones they are plastic coated which should in theory prevent and water ingress causing problems. The new cables seemed infinitely better made than the originals too.

### **Reduced Brake Efficiency and Brake Compensator Valve**

The Brake Compensator valve is attached to the rear sub frame in the middle of the car behind the fuel tank. It is shrouded in a rubber boot but water can get in and cause the mechanism to seize.

Here is a photo of the item (subframe removed from the car, so viewed from above)



The idea is that under hard braking as the nose of the car dips, and the rear rises, the valve reduces pressure to the rear callipers to prevent the brakes from locking. So if the valve has seized in this position foot brake efficiency at the MOT will be poor. It is worth checking the condition of the rubber boot occasionally and giving the area behind the boot a good spray of copper grease every year or so..

### **Freeing the Rear Compensator Valve**

- Support the rear on axle stands underneath each shock (or have the car on ramps). Take the spring and rubber boot off the compensator and remove the centre shaft and washer. Wire brush the lever to clean it up a bit and free the adjustment bolt. With the help of pliers, WD40 and a rag, clean up the centre shaft and two valve pistons

*If this fails Arm is in 2 halves with a rusty nut and stud.  
Remove lever and show the stud and nut the business end of Mr Blowtorch; failing that leave it on the gas hob till red hot.  
Only then try to undo the nut. Then adjust so spring is just slack at full suspension travel. The spring and arm are not available as parts on their own so don't break them*

- Apply new copper grease to everything
- Reassemble

If all else fails a new valve assembly is the final option.

### **Setting the Compensator lever and Spring**

The workshop manual tells you to put 40kg in the boot and apply 5daN (Aprox 5kg) to the eye at the back of the lever via a dynamometer and set the adjustment nut. In reality, if these items are not available, adjust the arm so that the spring is under tension with a “light” pull on the lever. Note, the spring should not be loose when the weight of the wheels are on ramps or on the ground.

### **Sticking Pads**

More often than not this is due to the pad guides and the pad edges being dirty or affected by corrosion. This is a simple issue to resolve. Disassemble the pads from the calliper and clean and copper grease all the guides and the back of the pads where they contact with the calliper piston.

**NOTE: Replacing the pads is covered in another guide but be aware that a windback tool is required to move the pistons. The self-adjustment mechanism can be destroyed if the correct procedure is not followed.**

Another cause of sticking pads can be the calliper sliders, these are protected by corrugated rubber sleeves but these can come loose and allow dirt or water to ingress. The sliders should move smoothly and easily. If not they can be pulled apart, cleaned and re-greased.

If this does not solve the issue then it could be a seized piston especially if the wheel does slow when the foot brake is applied.