AUTODESK Instructables

Fiat 500 Improved Clutch Slave Cylinder Connector

By x8rltd in WorkshopCars
Published Mar 12th, 2024

Introduction: Fiat 500 Improved Clutch Slave Cylinder Connector

Symptoms of Fault

Brake and clutch fluid leaking from the coupler (under the passenger side wheel arch), loss of pres sure under the clutch pedal, clutch pedal floppy/to the floor, squeaking clutch pedal (this can be a si de affect of the leaking fluid).

The Fault

It is extremely common for the coupler on the clutch hydraulic pipe to fail

The metal / plastic coupler that connects the two clutch pipes from the reservoir to the slave cylinde r often deteriorates and fails. This is a very common fault, the coupler is a very poor design, the los s of hydraulic / brake fluid will lead to a loss of pressure in the clutch system and result in the clutch pedal being floppy or flat to the floor.

Another symptom is a squeaky clutch. The loss of fluid in the slave cylinder can cause the slave to make excess noise.

The Solution

Very simply install our marine grade stainless steel coupler and permanently fix this fault.

Until now the only solutions on the market were simple metal or plastic couplers from plumbing war ehouses. These have their own inherent faults for this automotive application. Or replacement of th e entire clutch pipe and slave system which would be a time consuming and unnecessary repair.

Our parts are purpose manufactured for this application.

The X8R kit is the most comprehensive kit on the market and consists of a new connector manufac tured from 316 marine grade stainless steel, the most durable material on the market for this comp onent. Will not corrode or deteriorate like other parts offered.

The X8R kit also includes a full fitting kit including amalgamating tape to protect the joint and keep out contaminates, anti-leak crush rings (supplied within the connector), 316 marine grade stainless steel pipe inserts to strengthen the inside wall of the existing clutch pipes and a bleeding hose to as sist in bleeding the clutch system from any trapped air or excess fluid without mess.

The X8R kit also includes a full fitting kit including amalgamating tape, anti-leak crush rings (supplie d within the connector), pipe inserts to strengthen the existing clutch pipes and a bleeder hose to a ssist in bleeding the clutch system from any trapped air or excess fluid.

The X8R kit also contains comprehensive instructions supplied via QR code on the packaging (can also be accessed online) and a handy and easy-to-follow YouTube video.

Vehicles Affected

Fiat 500 Hatchback (312) 1.2, 1.2 LPG and 1.4 models from 2007 onwards

Fiat 500 Convertible (312) 1.2 and 1.4 models from 2009 onwards

Fiat Panda Hatchback (169) 1.1, 1.2, 1.2 4x4, 1.2 LPG and 1.4 models from 2003 onwards

This may be compatible with 0.9 TWINAIR engines

Please note this is NOT compatible with the later MHEV (1.0 mild hybrid) vehicles.

Please note this is NOT compatible with the Abarth 500 vehicles.

Ford KA Hatchback (RU8) 1.2 models from 2008 - 2016

Associated part numbers

51761144 – retaining clip

55183387 / 46346190 – slave cylinder (Fiat)

1547981 – slave cylinder (Ford)

55187040 / 55215194 – master cylinder

You Will Receive

1 x 316 marine grade stainless steel coupler complete with 2 x anti-leak crush rings fitted inside

2 x 316 marine grade stainless steel pipe inserts

1 x length of self amalgamating tape

1 x clear bleeding hose

Supplies

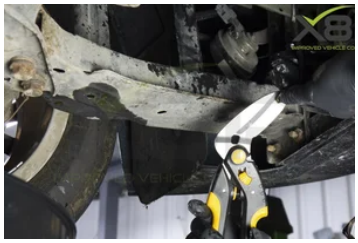
You will need:

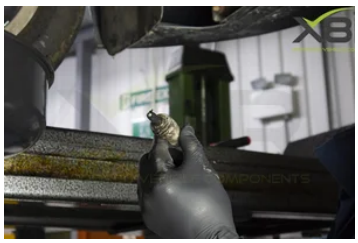
- Trolley jack or ramp
- Wheel nut removal wrench (remember to find your locking wheel nut key if you have one!)
- Flathead screwdriver
- Oil catch can
- Heavy-duty tin snips or a hacksaw
- 2 x 17mm spanners
- 1 x 15mm spanner
- 1 x 10mm spanner
- 13mm socket and rachet set
- WD40
- Silicone lubricant spray or squeezy tube
- Allen key
- Torque wrench

Step 1:

Jack up the vehicle or load onto a ramp and remove the wheel to expose the clutch slav e cylinder connector as shown. Remove the connector from the housing by inserting a fl athead screwdriver into the clips on the connector.

Step 2:





Place an oil catch can underneath the connector.

Cut the clutch pipes at either end of the connector where the pipes are a normal diameter (not wher e they bulge to meet the union), as demonstrated here with the yellow lines. Do so with sharp and heavy-duty tin snips or a hacksaw.

Please note this can be done through the wheelarch, you do not necessarily have to be under the c ar on a ramp.

Step 3:

Slide the pipe inserts into both sides of the clutch pipes.

Unscrew the end nuts from the main body of the union. Slide the nuts and the crush ring over the cl utch pipe and press into the main body, screw until handtight. Do this for both sides. Use two 17m m spanners to tighten as much as possible. Place a 15mm spanner on the centre of the connector and use one 17mm spanner on each side (one at a time) to tighten further. Leave for a few minutes to ensure there is no clutch fluid leaking from the connector. If there is, tighten it up further.

Please note this is demonstrated on our work bench but this can easily be carried out in-situ.

Step 4:

Take the self-amalgamating tape provided to wrap around the connector. Do so by peeling off the b acking and stretching the tape to activate the tape. Wrap it around the connector by overlapping th e tape ontop of itself. The tape will self-stick.

If there is enough slack on the clutch pipe, insert the new connector in the clips that originally held i t in place. Please note that because some of the clutch pipe has been cut away it may not reach, b ut in no way does this affect the function of the clutch system.

Step 5:

Remove the battery by disconnecting the negative followed by the positive using a 10mm spanner.

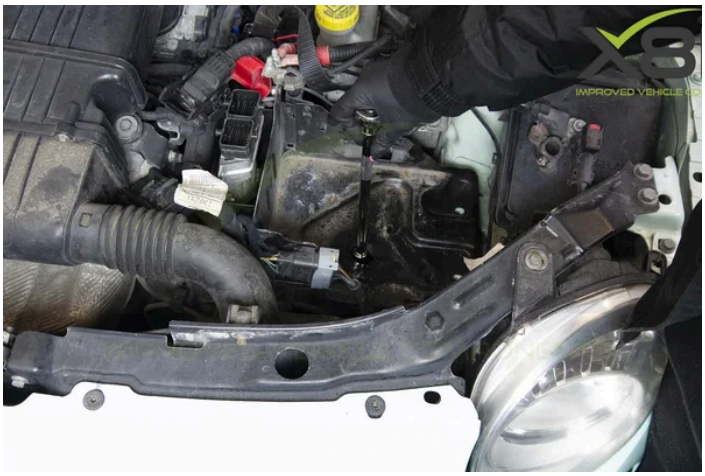
Use a 13mm socket set to undo the nut retaining the fuel strap. If this is stuck use some WD40.

Step 6:


Disconnect the two ECU connections on the side of the battery housing.

Remove the rubber battery mat.

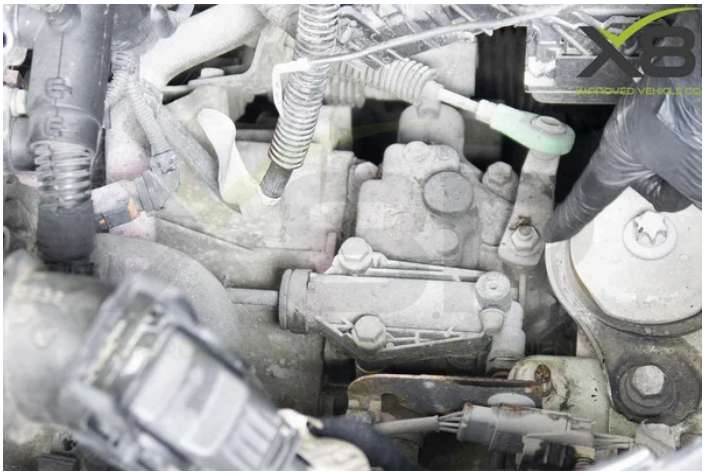
Step 7:

Use a 13mm socket set to remove the two bolts on the top of the battery housing.

Use the same tool again to remove the nut beneath the battery housing.

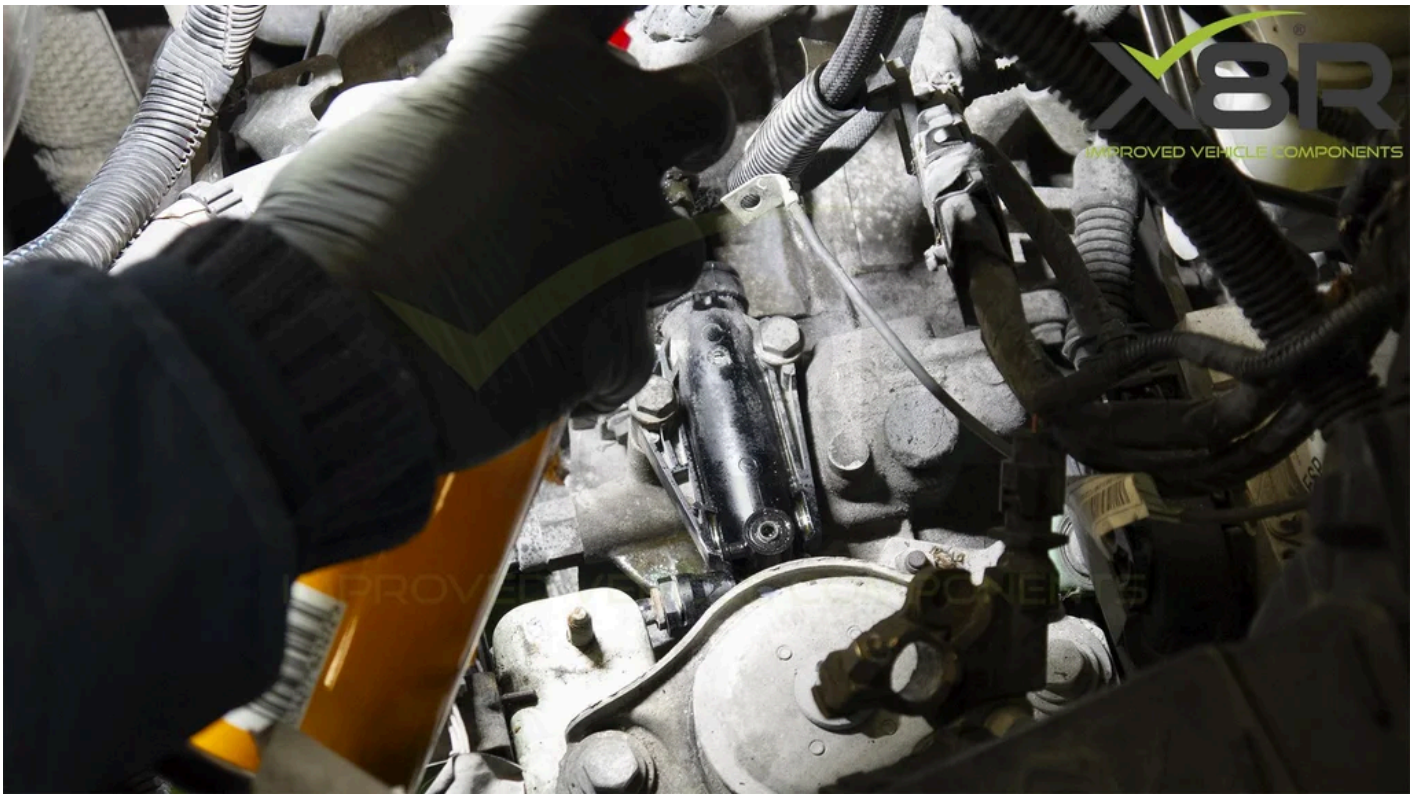
Step 8:

Undo all connectors and clips which hold the wires into place on the battery tray. Most of the clips h old on the ECU cables.

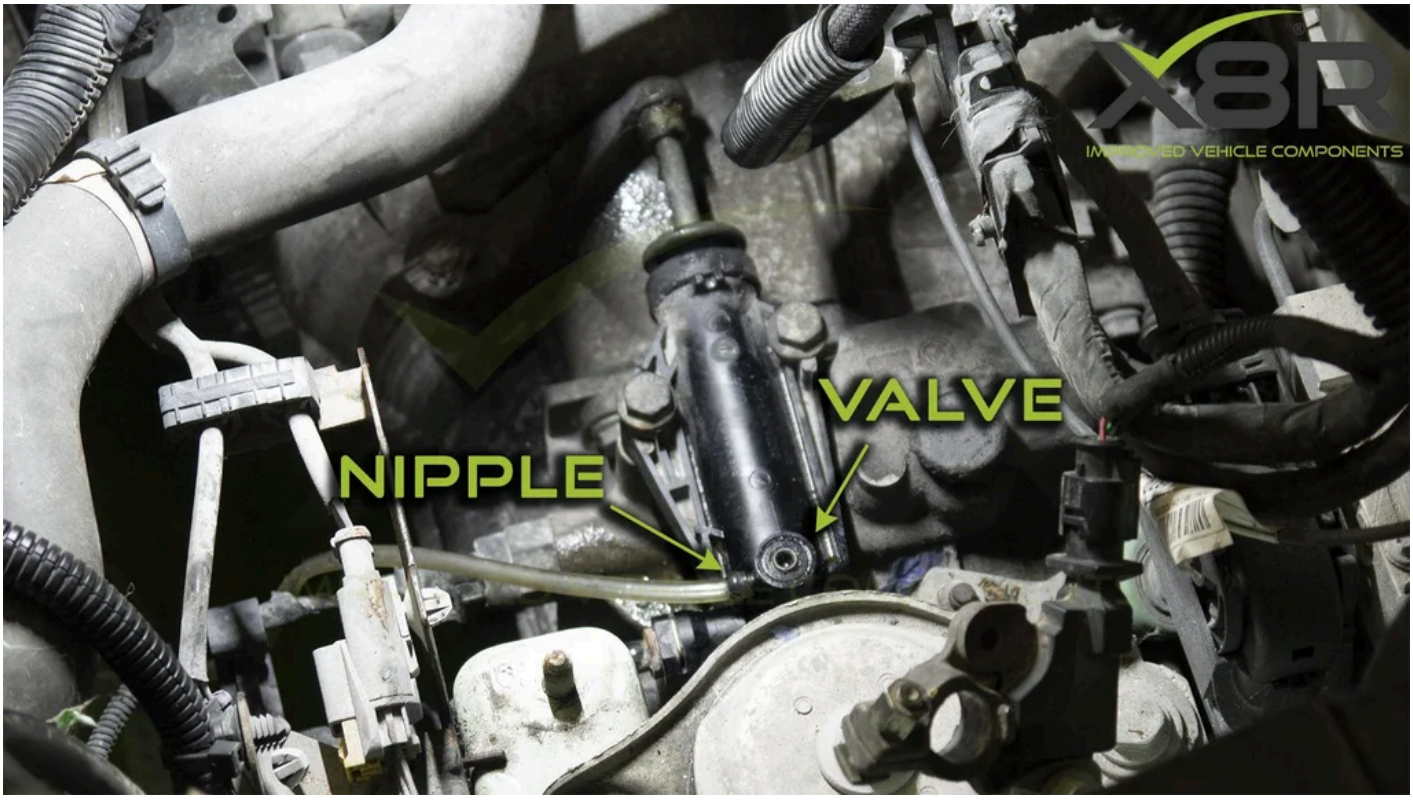
Lift out the battery tray to expose the clutch slave cylinder underneath.

Step 9:



Spray some silicone lubricant on the shaft of the slave cylinder. This will stop the clutch from squee king and will provide smoother travel for the clutch pedal.

Step 10:

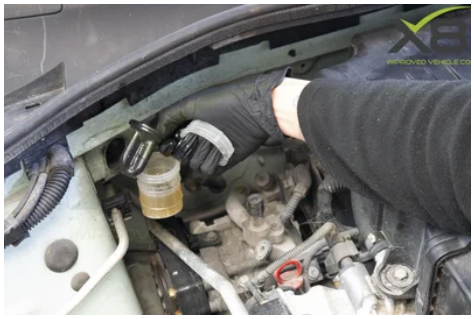


The next step is to bleed the clutch system. Remove the rubber cap from the bleed nipple on the sl ave cylinder. Attach the bleeding tube onto the bleed nipple and the other end of the pipe into a con tainer to catch excess fluid.

Crack the bleed valve using an allen key. Pump the clutch pedal until any excess fluid and air has l eft the system (this should take a few pumps).

Close the bleed valve and remove the tube. Replace the rubber cap.

Step 11:



Locate the clutch fluid resevoir in the top right-hand corner of the engine bay. Remove the lid and bl ack filter from the reservoir. Top up the system with the Dot 4 brake fluid if necessary. You will only need a small amount as the system does not utilise a great deal of fluid.

Replace the filter and lid. Pump the clutch pedal until the pedal feels under resistence.

Step 12:

Repeat steps 5-8 in reverse to reinstall the battery tray, mat and battery. Do not worry about a radio code, these vehicles automatically store the radio code so it does not need to be entered.

Replace the wheel and wheel nuts in a criss-cross fashion and torque to 80NM for steel wheels an d 100NM for alloy wheels.

This completes the installation. If you need any further guidance on this install or would like to purc hase the parts shown please call us on +44 01843 446643 or email us at sales@x8r.co.uk. Please also check out our instruction guide on YouTube. www.x8r.co.uk Installation is carried out at installe rs risk, if unsure please contact us or a professional, X8R Ltd cannot be held responsible for any ad verse result of installing this product or any injuries caused by install, if in doubt ask a professional.