

Refitting Bypass Actuator for TVS 1320 and 1900 (3.0 & 5.0 Engines)

These are instructions are for refitting your bypass actuator, which may have been left removed to ship your supercharger back to you and reduce the risk of damaged parts during transit.

These instructions cover both the 3.0 and 5.0 JLR engines with the TVS Superchargers. 2008 – 2013 Early type 5.0 with pneumatic actuator and 2013 onwards electronic type actuator.

Front sensor fitting instructions

1. Refitting front air sensor (if supplied) – Fitting this sensor is very simple. Line up sensor input hole/nipple with hole and push down carefully until flush. This sensor has a small rubber o-ring on the input, so there is no need for any sealant or any other gasket.
2. Once sensor has been pushed down and flush, align bolt hole up with top of sensor and insert the 1 x T30 torx bolt into the hole and screw in, ensuring the thread is screwed in straight and not crossthreading.
3. Once the bolt is down, this bolt only needs to hand tight or a maximum of 7nm. This stage is now complete. We recommend doing this first before fitting the actuator, as access to the bolt for the sensor can be obstructed when the actuator is put on first.



4. The front sensor is now fitted to the supercharger and ready for fitment of actuator. Depending on model, please see below instructions for fitment of actuator.

Pneumatic actuator fitting instructions (2008-2012/13 5.0 models)

1. These instructions are for fitting the earlier type "Pneumatic" actuator on JLR 5.0 models between 2008-2012/13. The parts include 1 x pneumatic actuator and 2 x 10mm bolts.
2. Firstly, offer up the end of the pneumatic actuator rod with the shaft end arm and use keyed hole to insert, as seen in photos below. Once the rod is through the keyed hole in the shaft arm, rotate the assembly anti clockwise so that the bolts line up with the elongated holes on the actuator bracket. Centre lines have been marked on these photos to show correct position for the actuator adjustment, but previous bolt clamping marks can be seen on the bracket for original position.



3. While holding the actuator in position as shown, insert 1 x 10mm bolt and loosely screw this in just enough so that the actuator and bracket hold in the correct position. Take the 2nd 10mm bolt and do the same. Re-check position of actuator is in correct adjustment position before screwing down tight.
4. We recommend a small amount of blue (mild) thread lock compound (Loctite 243 or similar) on the bolt threads and torque down to 20nm, to ensure these bolts do not work loose, and actuator adjustment is not altered.
5. Once bolts are torqued to spec, your bypass actuator is now set. There will be two pipes which come off either side of the actuator. The rear pipe (pointing toward the back of the unit) needs to be attached to the nipple on top of the supercharger snout as shown. The other pipe can be left until the intake pipe is fitted and attached to that.



POWERHOUSE, Unit 3A Broom Business Park, Bridge Way, Sheepbridge, Chesterfield, S41 9QG

Tel: 01246 260665 – Option 3 Email: enquiries@powerhouse.uk

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Electronic actuator fitting instructions (5.0 from 2013 Onwards & all 3.0 models)

1. These instructions are for fitting the later type "electronic" bypass actuator on JLR 5.0 models from 2013 onwards and all JLR 3.0 V6 models.
2. Firstly, check the current position of your bypass plate. This will currently be "free floating" and allowed to move wherever it likes. Reposition the plate so that it is in an upright position as shown on the 2nd picture. This will allow easier fitment of the actuator later.
3. Take the actuator drive key and install on the shaft end as shown on pictures 3 & 4. This key can be either way but needs to be set in a position where the prongs are in a 12 – 6 o'clock position.



4. Once the key is in position, offer up the actuator assembly to the supercharger casting, making note of the locating holes and related pins which are on the actuator. The actuator may require a slight wiggle to seat it onto the key and align the pins on the actuator into the locating holes.
5. Once the actuator is located, use the two original 8mm bolts with a small amount of Loctite 243 or similar and torque to 9nm to hold the actuator in place. No markings for adjustment or similar need to be made or checked as this type of actuator is fixed. The actuator is now fitted.



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