



# **BMW M42/44 ITB Kit**

## **Assembly instructions**

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#### **M44/42 BMW ITB kit**

Installing a standalone ecu is recommended however this kit has been very successfully installed and used with the original engine management system with little to no modification needed.

To install and set up this kit correctly you will need a basic understanding of mechanical devices and the appropriate mechanics tools. Please check all the parts are included and contact us immediately if you have any pieces missing.

Your kit should include the following parts:

Manifold	2 pcs
42mm ITBs	2 pcs
Trumpets	4 pcs
Trumpet flanges	4pcs
Trumpet spacers	4 pcs
Backing plate	1 pc
50mmx2mm O rings	12 pcs
Linkage brackets	2 pcs
M5 drop link set	1 pcs (LH & RH rod ends, bras link, m5 cap screws, washers)
Spring balance adjuster	1 pcs
TPS mount and screws	1 pc
Cable wheel	1 pc
ITB master lever set	1 pc (Idle stop, m4 screw, secondary return spring)
Universal leverlong	1 pc
180mm x 8mm shaft	1 pc
Primary return spring	1 pc
Return spring locking boss	2 pc
M6 x 16 Hex bolts	2 pcs
6mm Flat washers	2 pcs
Fuel rail spacers	2 pcs
M6 x 55 cap screws	2 pcs
M44 ICV plate	1 pc
7 port Vacuum block	1pc
M8 x 25 cap screws	8 pcs
M6 x 20 cap screws	16 pcs
M5 x 20 cap screws	4 pcs
8mm x 1/8 bsp hose tail	7 pcs
8mm x 1/4 bsp hose tail	1 pc
12mm x 1/4 bsp hose tail	3 pcs
1/4 BSP m/f/f Tee fitting	1 pc
6mm x 1/4 bsp hose tail	1 pc
3mm x 1/4 bsp hose tasil	1 pc
12mm x 3/8 bsp hose tail	1 pc
16mm x 3/8 bsp hose tail	1 pc
70 x 75mm 45d inlet hose	1 pc

## Assembly Notes

Please study the following drawings very closely they show the EXACT placement of all the fittings and linkage parts

**Note:** there are small washers required UNDER the m5 rod end drop link parts this is essential to allow the m5 rod end bearing to have enough clearance as the linkage moves through its travel.

The small return spring on the master ITB is only intended as a SECONDARY spring to ensure the throttles close should any linkage part becomes loose or disconnected. A second main return spring is included this can be preloaded up to a maximum of 180 degrees to add the desired amount of pedal resistance.

The resting signal voltage from the tps should be exactly 0.5v (centre pin) In some cases this might need to be very slightly increased by rotating the mount for the engine to idle correctly

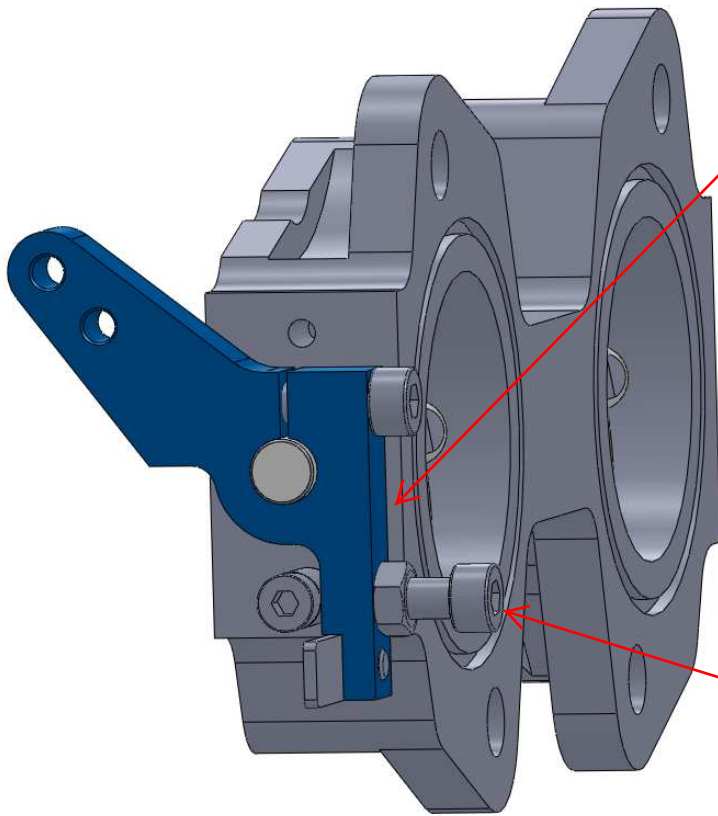
For nice progressive throttle action keep the drop link as long as possible. However if your ITB does not reach full throttle when the pedal is fully depressed then adjusting the brass drop link to a shorter length and reset the cable slack will alter the mechanism gain and will enable the throttle to reach full open. In some cases it may be required to trim the ends of the brass link slightly to allow for a short enough length.

Make sure the linkage moves freely and smoothly without any binding. It is important the ITB linkage doesn't reach full throttle when there is still lots of extra travel on the pedal this will put extra load on your cable and the linkage resulting in possible damage or premature failure.

For effective brake booster operation follow the diagram. The booster will work exactly as it did before running from just 1 cylinder. DO NOT connect the brake booster line to the vacuum block! This has reduced vacuum strength due to the ICV and the cross distribution between other cylinders which are not all producing vacuum at the same time. It is essential that the small plastic 1-way valve fitted to the factory booster line is maintained.

After installation you must adjust the throttle synchronization, this is EXTREAMLY sensitive and essential for smooth idle and light throttle driving. To do this you will need the use of a synchronizer such as the one pictured below. Open the idle stop screw until the engine is running at lease 1200rpm then fit the synchronizer to each trumpet adjusting the balance coupling until the flow into each runner is the same. Then adjust the idle stop back down to the desired idle speed and reset the TPS voltage.

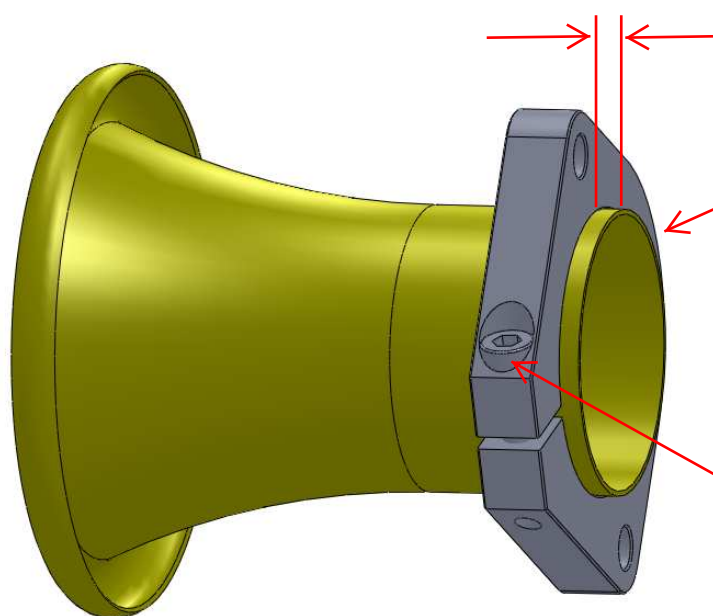




Install master lever with back face perfectly vertical or parallel to the back face of the ITB when the throttle plates are fully closed

Set the idle stop screw so that it just contacts the bush well

3mm



Set the trumpets so they protrude exactly 3mm from the back of the clamp

Tighten firmly but do not over tighten so much that it will crush the trumpet tube

