

## ***IAG V3 Top Feed TGV Housings with Butterfly Pass Thru for 08-14 WRX, 07+ STI, 07-12 LGT***



### **IAG-AFD-3050 IAG V3 Top Feed TGV Housings with Butterfly Pass Thru (08-14 WRX, 07+ STI, 07-12 LGT)**

**Part# IAG-AFD-3050**

**Tools Required:** Ratchet, extensions, reciprocating saw w/ metal blade, in-lb torque wrench, Phillips head screwdriver

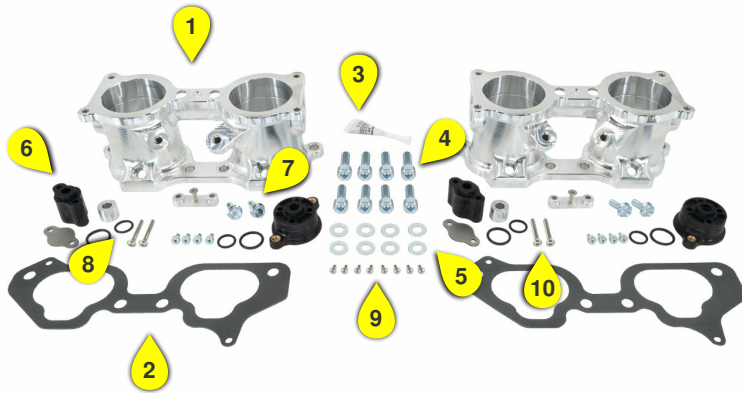
**Sockets:** 10mm, 6mm Allen, 3mm Allen, 2.5mm Allen, 2mm Allen

Congratulations on the purchase of your IAG V3 Top Feed TGV housings with Butterfly Pass Thru and thank you for choosing IAG Performance. This installation manual is intended to guide you through the modification of the factory TGV housing and the installation of the IAG TGV housings. You **MUST** install the factory butterflies and motors onto your new TGV housings. Installation of the TGV housings without the factory butterflies and motors is prohibited and unlawful. Tuning is not required after installation.

Step 1/36

### Step 2/36

Numbered annotations (10)



- 1 2x TGV Housing Assembly
- 2 2x Nitrile Lower Intake Gasket
- 3 1x Loctite 263
- 4 8x M8x1.25x25mm Socket Head Bolt
- 5 8x Flat Metal Washer
- 6 2x TGV Tail Housing
- 7 4x M6x1.00x16mm Hex Flange Screw
- 8 4x Small O-Ring
- 9 8x M3.5x0.6x6mm Button Head Hex Socket Screw
- 10 4x M4x0.7x30mm Button Head Hex Screw

### Step 3/36

Numbered annotations (6)

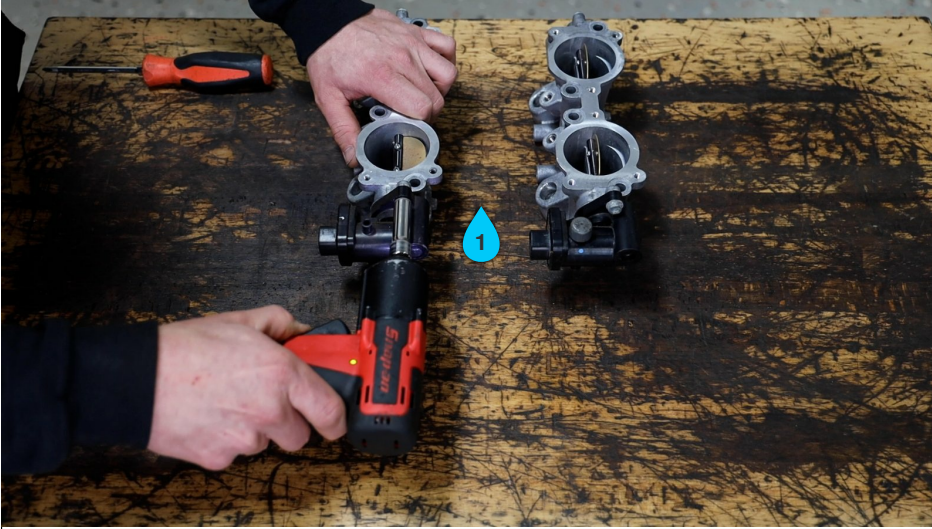


- 1 4x Large O-ring
- 2 2x TGV Motor Housing Adapter
- 3 2x Flip Chip
- 4 2x M4x0.7x12mm Flat Head Hex Screw
- 5 2x Metal Sleeve
- 6 8x M4x0.7x6mm Socket Head Cap Screw

### Step 4/36

Numbered annotations (1)

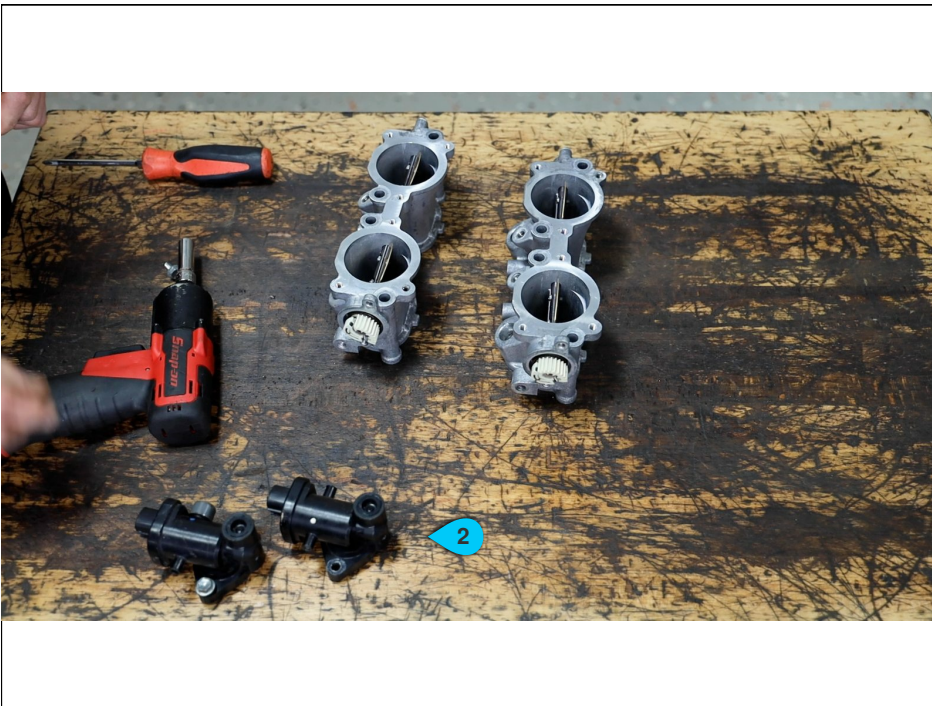
- 1 Remove the 4 bolts (2 on each TGV) securing the TGV motors to the housings using a 10mm socket.



### Step 5/36

Numbered annotations (1)

- 2 Remove the TGV motors from the housings. Ensure that the factory o-ring is removed with the motor. These o-rings will be reused during reassembly.





### Step 6/36

Numbered annotations (1)

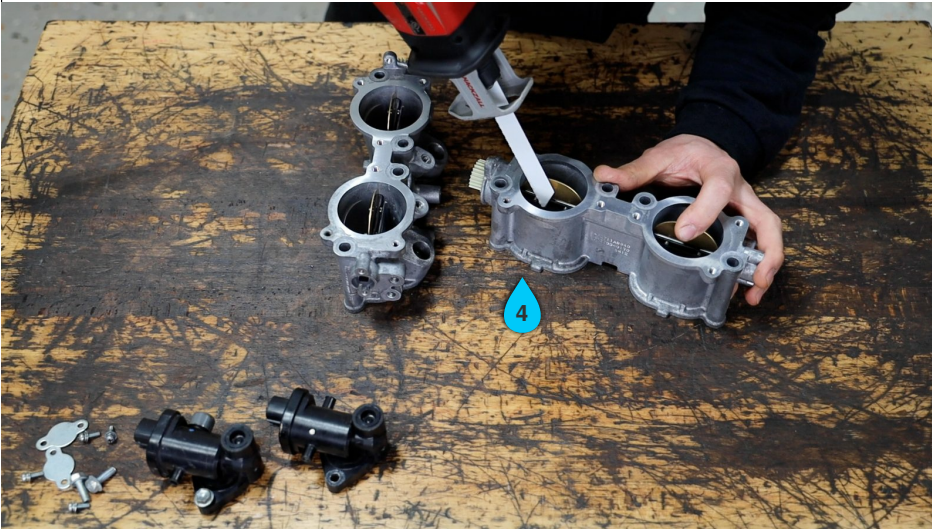
- 3 Remove the 4 screws (2 on each TGV) securing the plates onto the housings using a Phillips head screwdriver.



### Step 7/36

Numbered annotations (1)

- 4 The Phillips head screws securing the butterflies are peened over from factory. The backside of the screws will need to be cut off. We have found the best way is to use a reciprocating saw equipped with a metal blade.

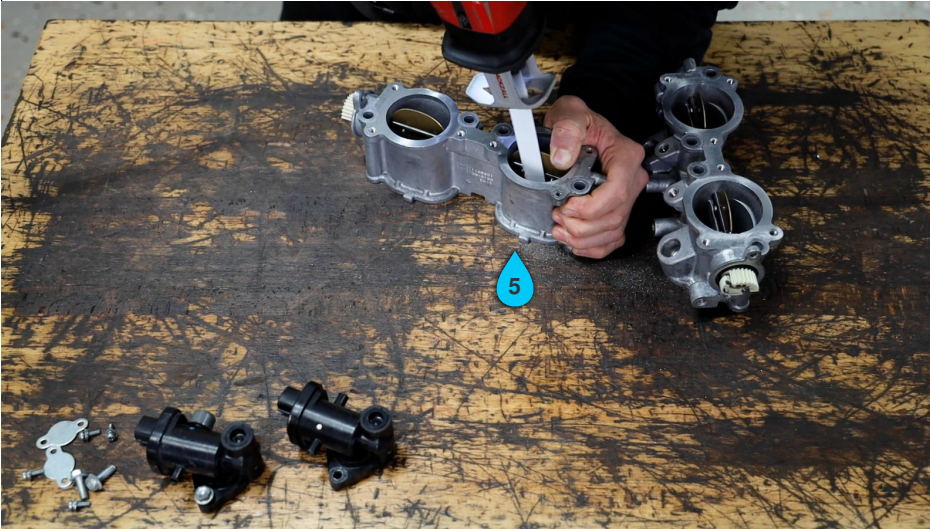




### Step 8/36

Numbered annotations (1)

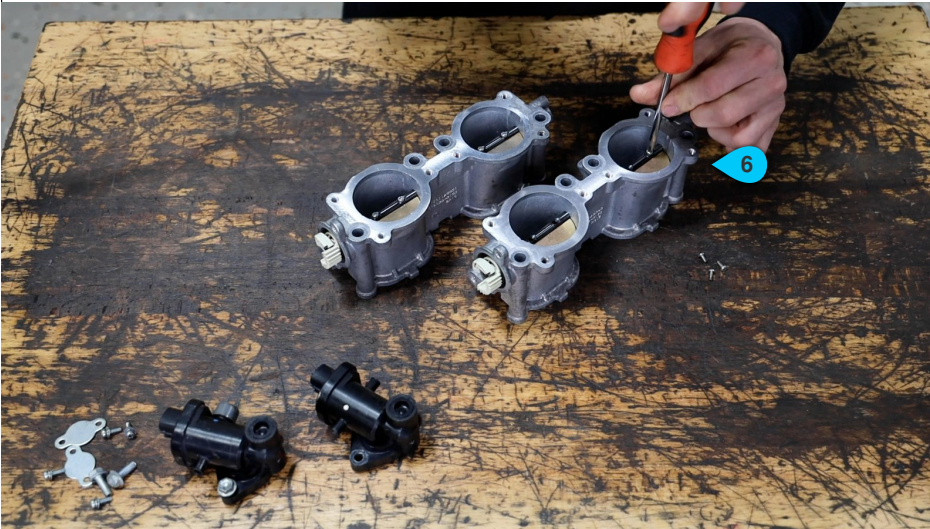
- 5 Cut off the backside of the 8 Phillips head screws securing the butterflies to the TGV shaft.



### Step 9/36

Numbered annotations (1)

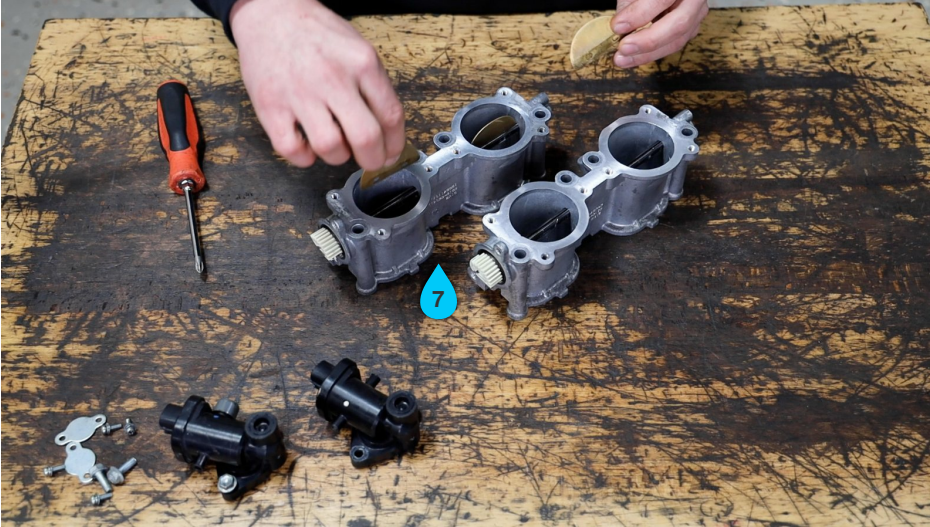
- 6 Remove the 8 screws securing the butterflies to the TGV shaft using a Phillips head screwdriver.



### Step 10/36

Numbered annotations (1)

- 7 Remove the 4 butterflies from the TGV shafts and set aside. These will be used during reassembly.



### Step 11/36

Numbered annotations (1)

- 8 Using a hammer and brass punch, tap the shaft out of the TGV housing from the side opposite the plastic gear. Repeat this process for the other TGV housing.

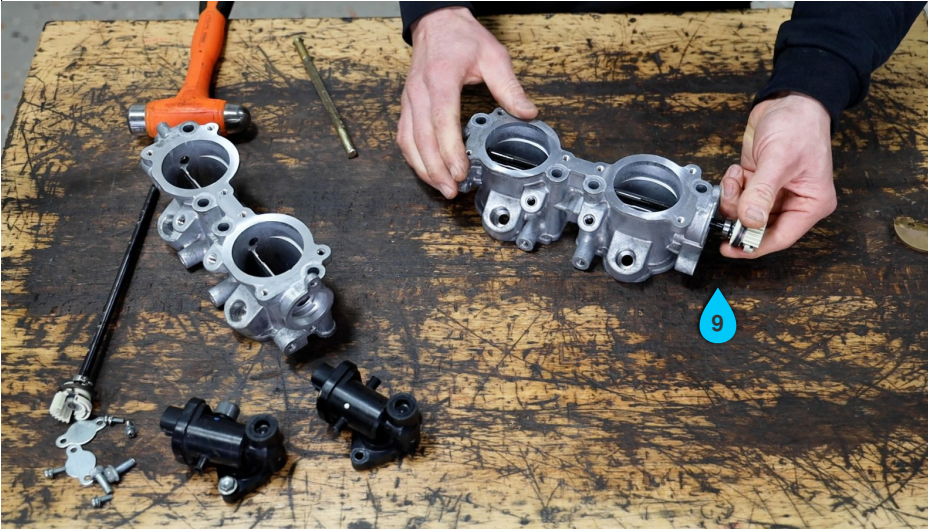




### Step 12/36

Numbered annotations (1)

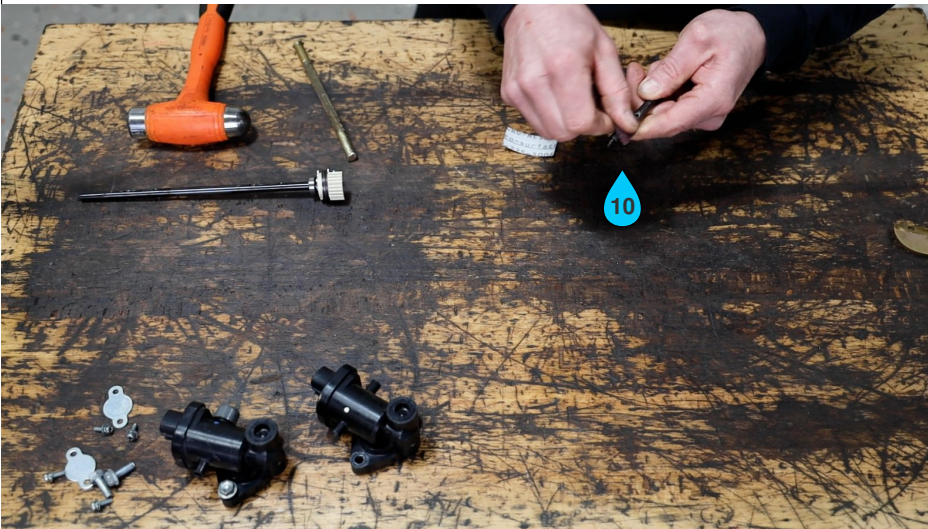
- 9 Completely remove the shafts from both TGV housings.



### Step 13/36

Numbered annotations (1)

- 10 Using scotch brite pad or very fine sand paper, polish both shafts to remove any burrs or debris.





### Step 14/36

Numbered annotations (1)

- 11 Clean shafts and butterflies using brake cleaner.



### Step 15/36

Numbered annotations (1)

- 12 Layout all parts to prepare for installation.



### Step 16/36

Numbered annotations (1)

- 13 Install one of the included small o-rings into the small recess in the TGV body on the motor housing side.



### Step 17/36

Numbered annotations (1)

- 14 Install one of the included large o-rings into the large recess in the TGV body on the motor housing side.





### Step 18/36

Numbered annotations (1)

- 15 Install included motor housing adapter onto the TGV body using 4x of the included M4x0.7x6mm Socket Head Cap Screws.  
\*Do not overtighten\*



### Step 19/36

Numbered annotations (1)

- 16 Repeat steps 13-15 on the remaining TGV housing.





## Step 20/36

Numbered annotations (1)

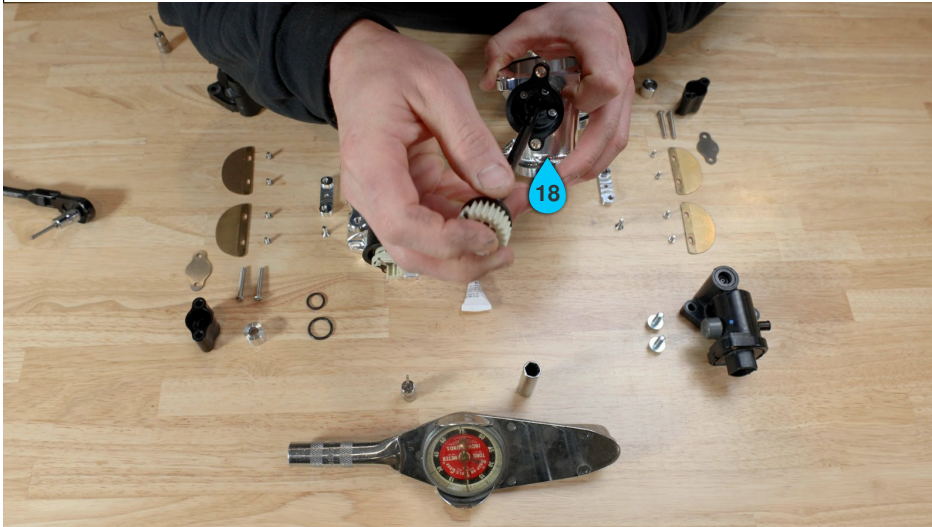
- 17 Insert clean shaft into motor housing adapter through entire TGV body. Push firmly to seat bearing. When oriented correctly a positive start/stop point can be felt when turning the gear.



## Step 21/36

Numbered annotations (1)

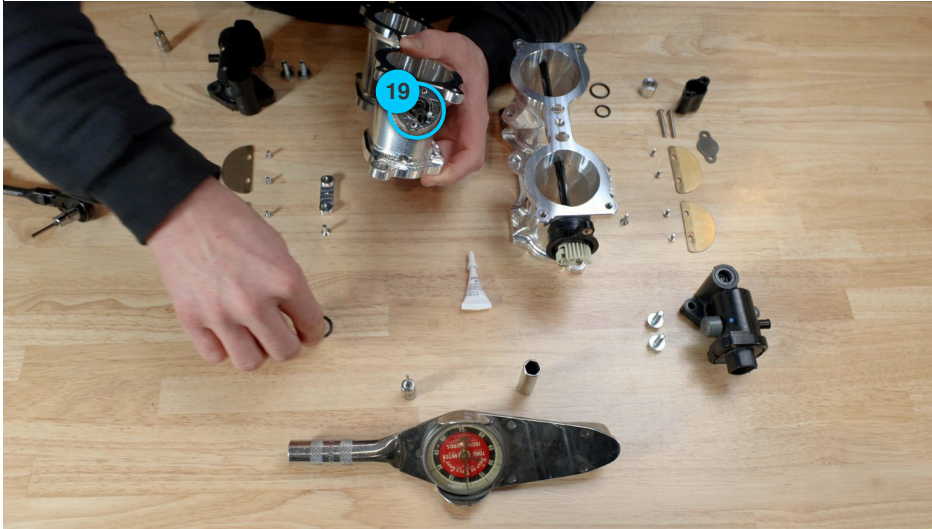
- 18 Insert clean shaft into remaining motor housing adapter through entire TGV body. Push firmly to seat bearing. When oriented correctly a positive start/stop point can be felt when turning the gear.



### Step 22/36

Numbered annotations (1)

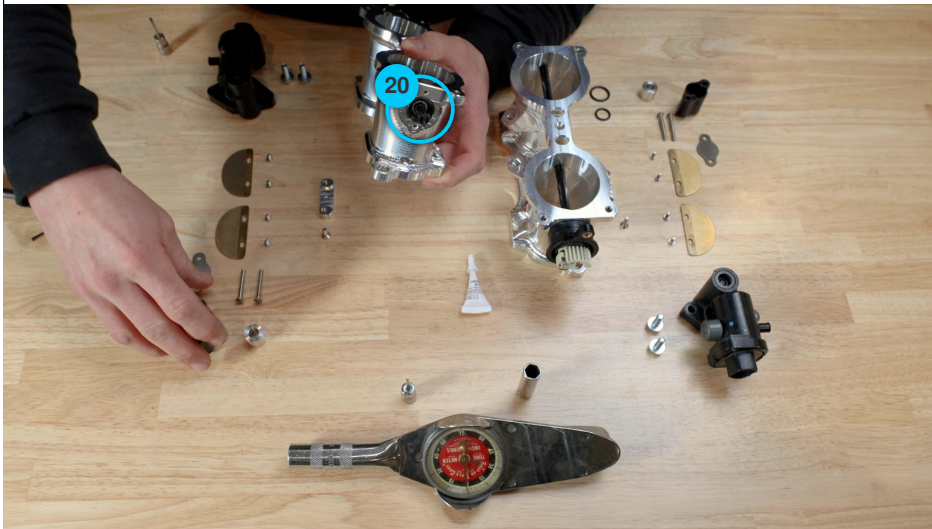
- 19 Install one of the included small o-rings into the small recess on the opposite side of the TGV body.



### Step 23/36

Numbered annotations (1)

- 20 Install one of the included large o-rings into the large recess on the TGV body.





### Step 24/36

Numbered annotations (1)

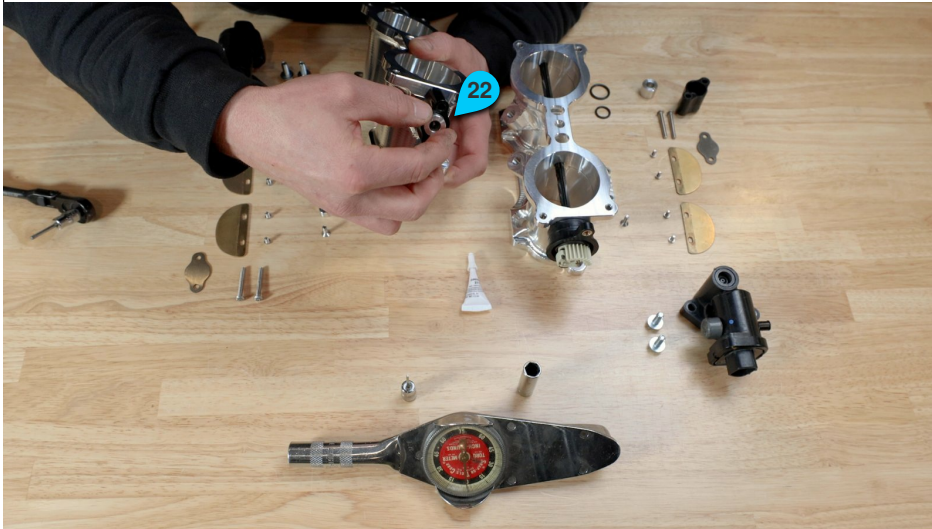
- 21 Press included tail housing onto TGV body.



### Step 25/36

Numbered annotations (1)

- 22 Insert included metal sleeve into tail housing.



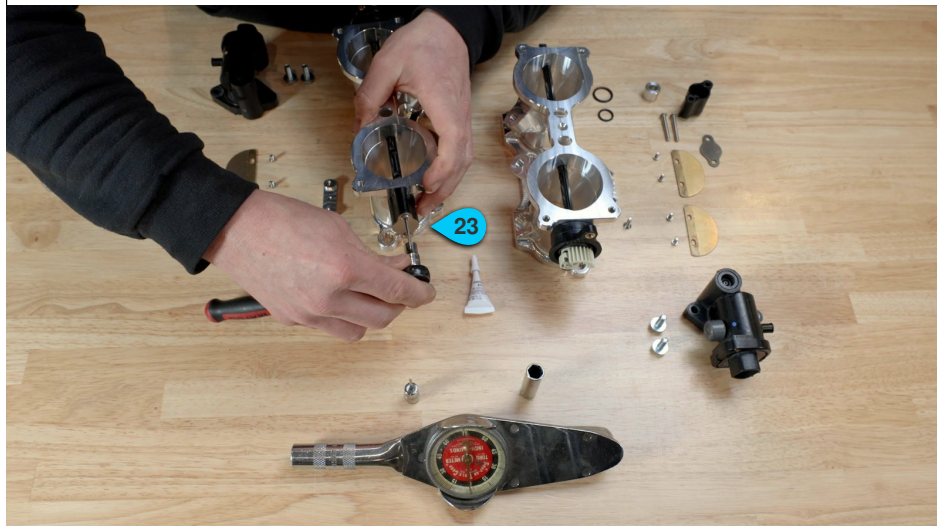


## Step 26/36

Numbered annotations (1)

- 23 Install included tail housing plate using 2x of the included M4x0.7x30mm Button Head Hex Machine Screws.

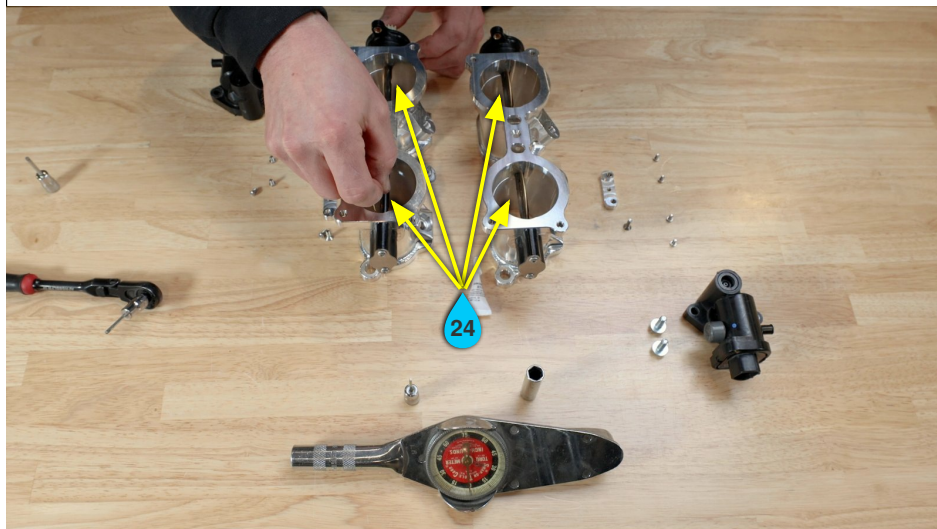
Repeat steps 19-23 for remaining TGV housing.



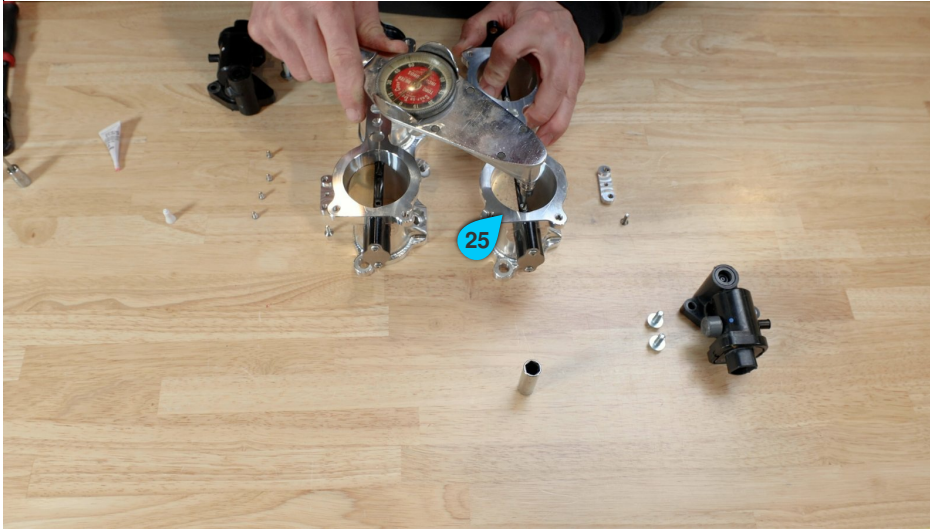
## Step 27/36

Numbered annotations (1)

- 24 Insert the 4x factory butterflies into the slots in the shafts.



## Step 28/36

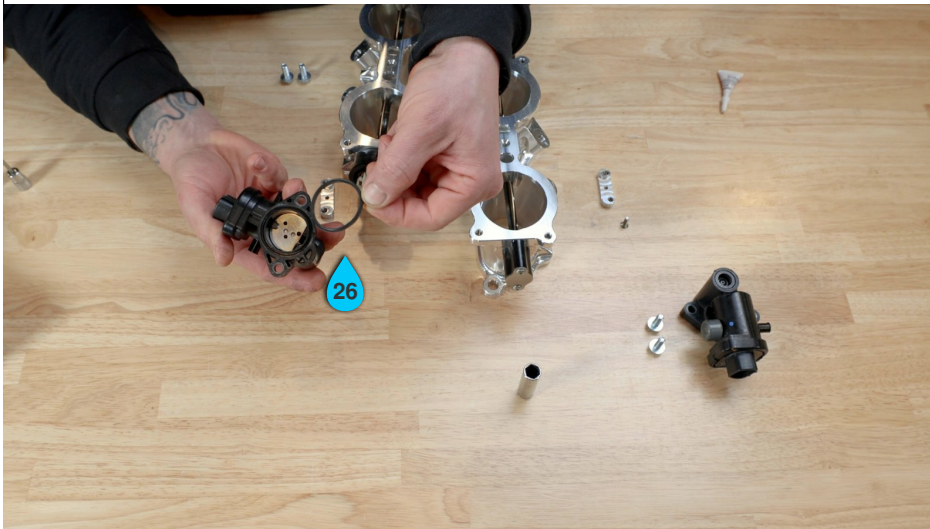


Numbered annotations (1)

- 25 Apply Loctite to 8x included M3.5x0.6x6mm Button Head Hex Screws. A generous application is recommended. Install 8x M3x0.6x6mm Button head Hex Screws after applying Loctite to secure butterflies to shafts. Tighten to 12 in-lbs.

!!Proper torque and Loctite application is essential for this step!!

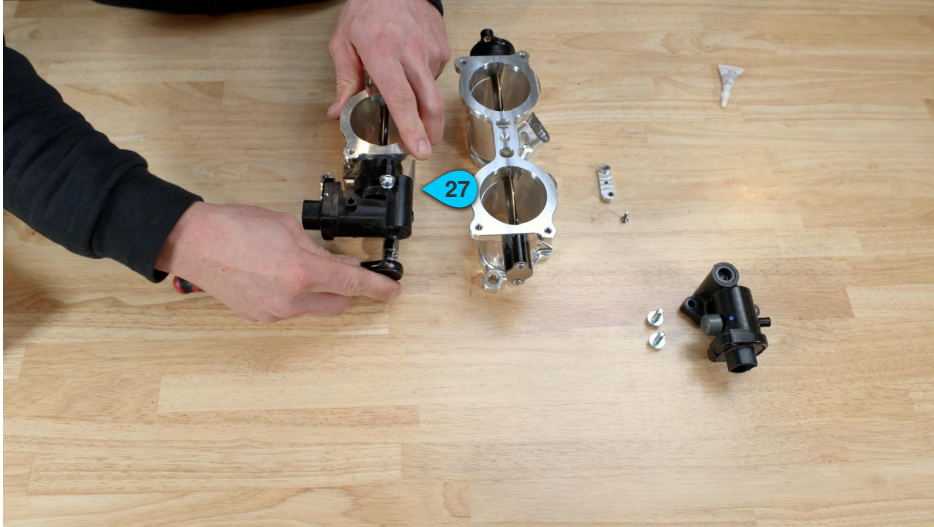
## Step 29/36



Numbered annotations (1)

- 26 If factory o-ring is dislodged from factory motor, reinstall o-ring into motor housing.

### Step 30/36



Numbered annotations (1)

- 27 Install motor housing onto motor housing adapter using 2x included M6x1.00x16mm socket head bolts. Repeat this step for remaining TGV housing.

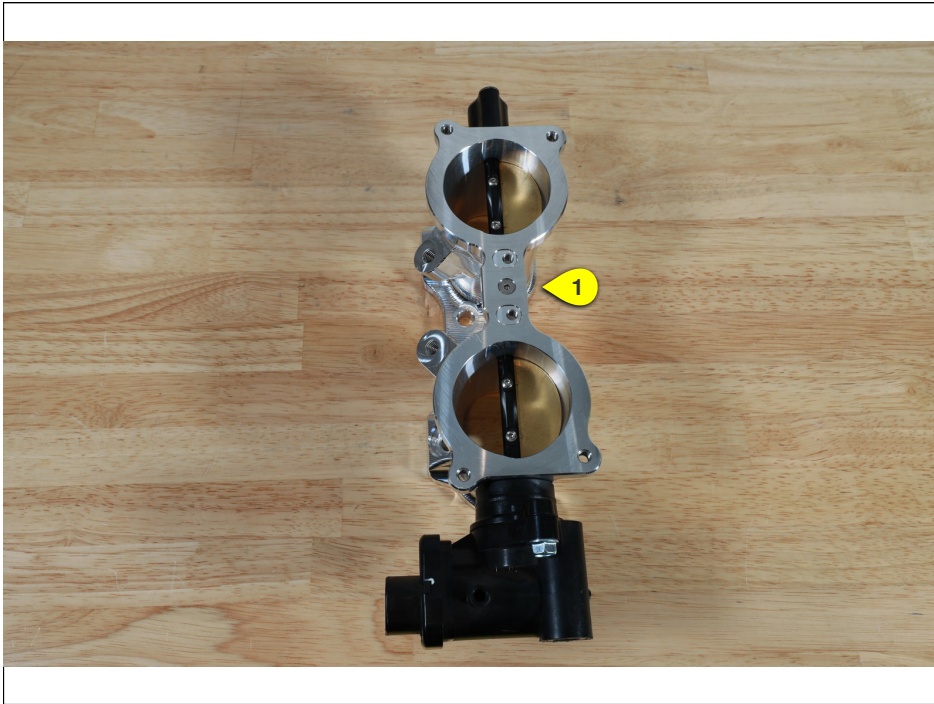
### Step 31/36



Numbered annotations (1)

- 28 Based on your application insert the included "flip chip" into TGV housing. Using included M4x0.7x12mm Flat Head Hex Screw draw flip chip up into slot in TGV housing and tighten. Repeat this step for remaining TGV housing.

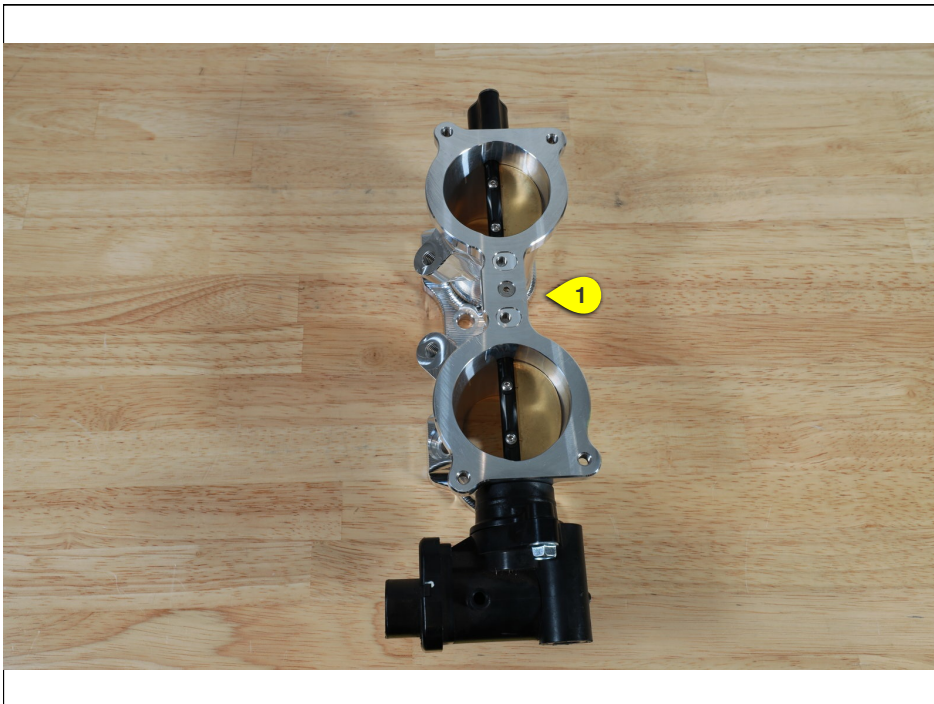




### Step 32/36

Numbered annotations (1)

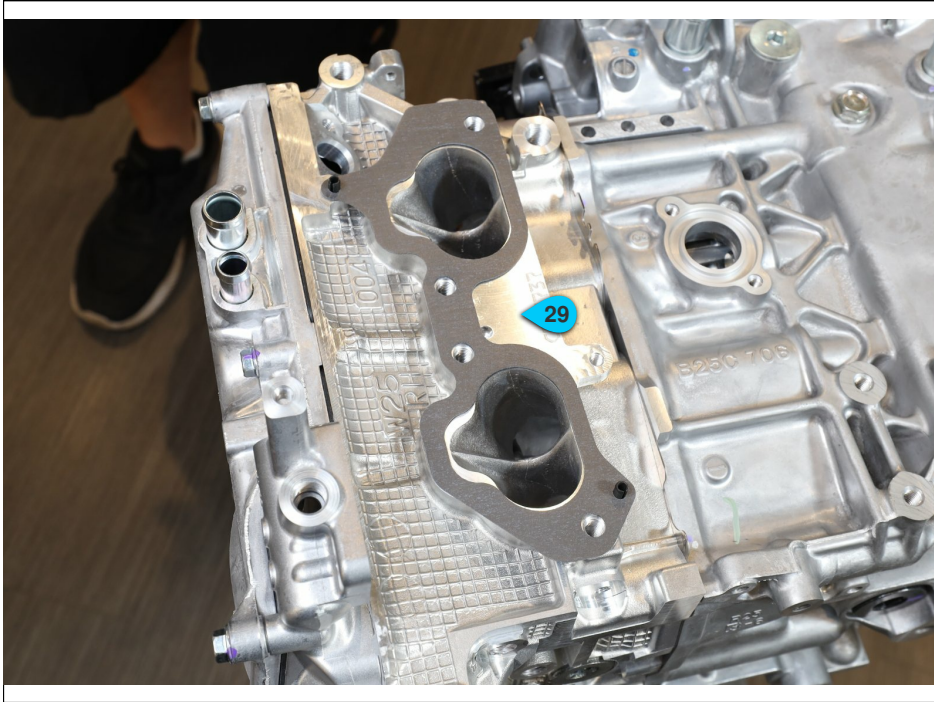
- 1 This orientation fits:
  - 2007-20 STI
  - 2008-14 WRX
  - 2007-12 LGT
  - 2009-13 FXT



### Step 33/36

Numbered annotations (1)

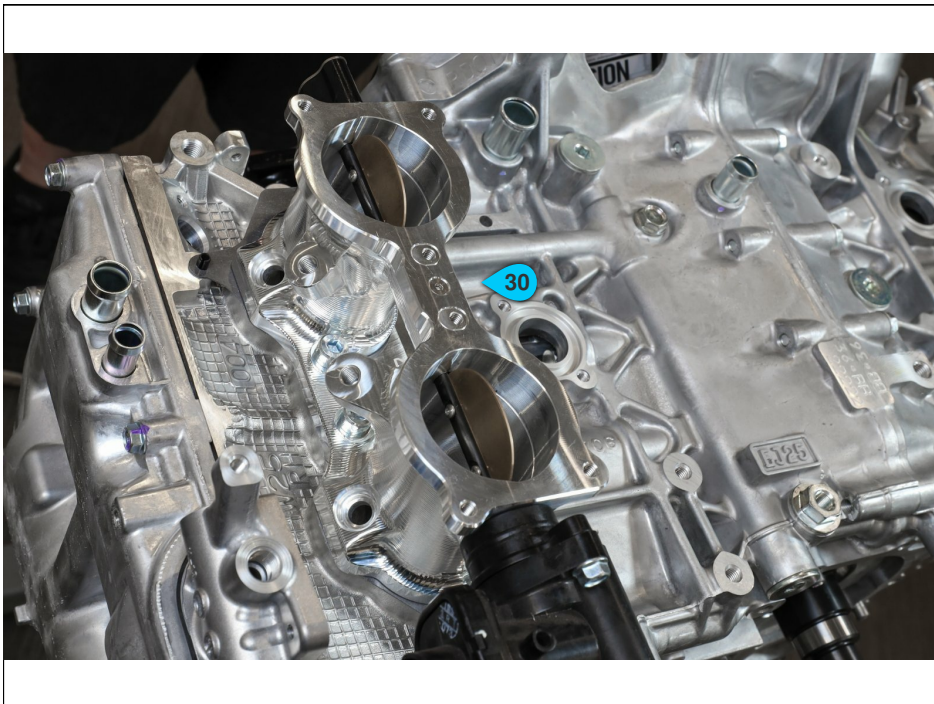
- 1 This orientation fits:
  - 06-07 WRX
  - 06-08 FXT



### Step 34/36

Numbered annotations (1)

- 29 Install included gasket onto cylinder head. Repeat for other side.



### Step 35/36

Numbered annotations (1)

- 30 Carefully place each TGV on the cylinder head. Use 8x of the included M8x25x1.25mm hex head bolts and 8x of the flat metal washers to secure the TGV carefully place each TGV on the cylinder head. Use (x8) of the included M8x25x1.25mm hex head bolts to secure the TGV to the heads. Torque the bolts to 18.4 ft/lbs.



## Step 36/36

Numbered annotations (1)

- 31 Install the OEM intake manifold hardware using the factory torque specifications which is 6.1 ft/lbs.

