



# **Intake System**

## **(IS-6)**

### **Installation Documentation**

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**Rev 2.0 – 11/2020**

**Overview:**

1. Introduction.....	3
2. Disclaimer.....	3
3. Component List.....	4
4. Required Tools and Supplies .....	5
5. Installation.....	6
5.1. Preparation .....	6
5.2. Fuel System Install.....	12
5.3. Electrical Connections .....	12
5.4. First Start & Syncing .....	13
5.5. Technical Specifications.....	14

## 1. Introduction

Rasant Products would like to thank you for your order of our Intake System! We are honored to be a part of your Porsche 911 build and would like to congratulate you as you take steps towards modernizing and enhancing your 911.

Our goal at Rasant Products is to provide a quality product to fellow members of the Porsche community as they seek to improve the performance, drivability, and enjoyment of their vehicles. It is our sincerest hope that you find this customized kit exceeds your expectations as you tune and drive your 911. We are fully committed to offering support both during and after installation, so please feel free to reach out with any questions, comments, or feedback you may have.

We look forward to working together as you get one step closer to perfecting your 911.

Best Regards,

*Andrew Darud*

Rasant Products LLC

## 2. Disclaimer

An Intake System used improperly can result in serious engine damage. Rasant Products LLC is not liable for any personal or property damage while installing or using our products. You continue at your own risk. We always recommend a qualified tuner to dial in your new intake system. Please follow all local regulations regarding vehicles that have aftermarket parts installed.

### 3. Component List

	Item	QTY
<b>Machined Components</b>	Throttle body assemblies	2
	Oil breather cover and rocker assembly	1
	Throttle cable actuator	1
	M5x212mm linkage shaft	2
	M5x78mm linkage shaft	1
	Vacuum Junction Box	1
	Air filter Adapter	1
	Resonant valve housing	1
<b>Fuel</b>	-8AN to -6AN Adapter	2
	-8AN Port Plug	2
<b>Idle/Vacuum Circuit</b>	-6AN to -6AN Adapter	2
	-6AN Port Plug	2
	Idle Air Control Valve	1
	Resonant Valve Solenoid	1
	Air Check Valve	1
	Vacuum Reservoir	1
	3/16 Hose T-Fitting	1
	3/4 Silicone Hose	0.2
	4mm Silicone Hose	3
	XRP Push On 3/8 Hose	3
	90 Deg 3/8 Hose End	2
<b>Resonant Plenums</b>	GT3 Plenum	2
	Intake Air Filter	1
	Plenum to ITB boots	6
	Plenum to ITB worm clamps	12
	Plenum to center section boots	4
	Plenum to center section worm clamps	8
<b>Misc</b>	Intake gaskets	12
	Intake Spacers	6
	Throttle Position Sensor	1
	M8 Throttle cable actuator Stud - Long	1
	M8 Throttle cable actuator stud - short	2
	Throttle cable actuator spacer	1
	Throttle cable actuator input ball joint	1
	M6 Oil breather cover stud - long	2
M6 Oil breather cover stud - short	2	

#### 4. Required Tools and Supplies

- 7mm open end wrench
- 8mm open end wrench (qty 2)
- 10mm open end wrench
- 13mm open end wrench
- 7mm Nut Driver
- 3/8" Drive socket wrench
  - 10mm socket (for 3-bolt ITB version)
  - 13mm socket
- 1/4" Drive socket wrench
  - 10mm Socket (for 3-bolt ITB version)
  - 13mm Socket
- 3mm Allen key
- Syncrometer
- Zip ties
- Side cutters

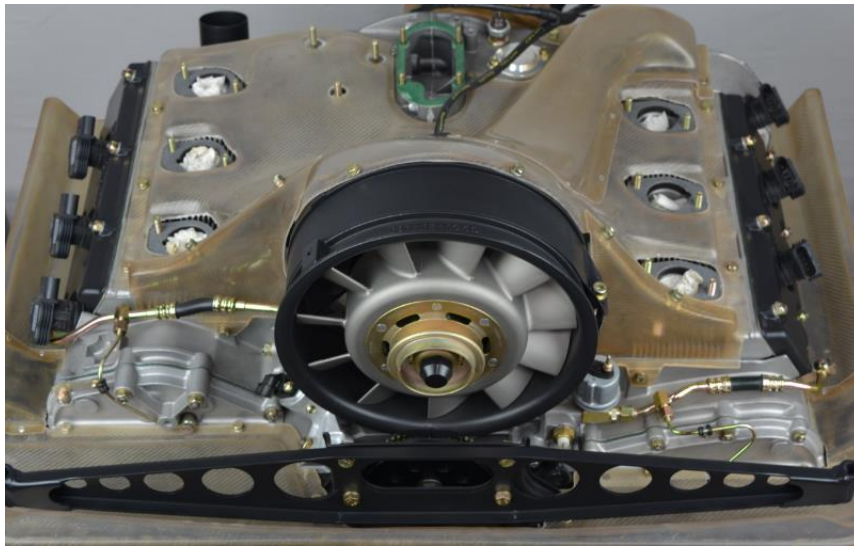
## 5. Installation

We recommend using the following procedure to install your Rasant Intake System. Please keep in mind that Porsche made several small variations to vehicle bodies and engines over the years. Should you find something is not compatible with your vehicle, or you discover a more efficient process, please let us know so we can modify your instructions accordingly.

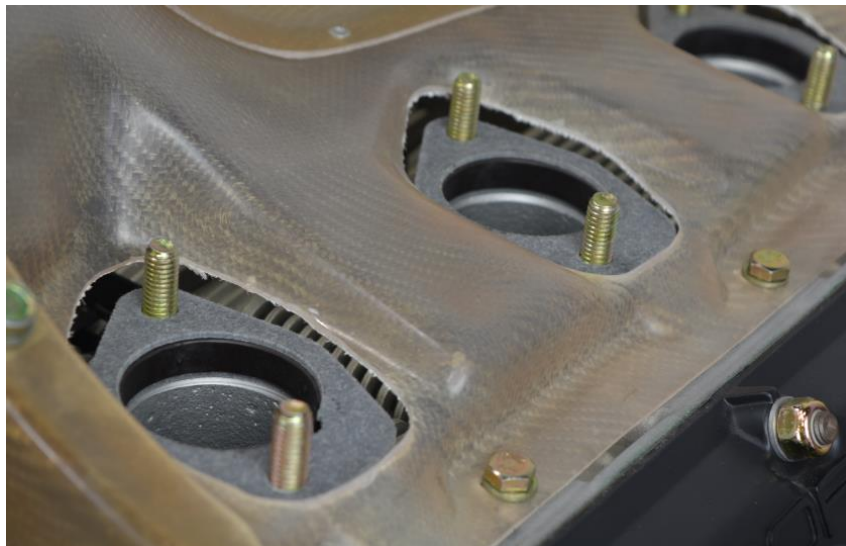
This installation manual documents the process for installing on a 2-bolt cylinder head. The process for a 3-bolt head (3.6L engines and later) is identical with the exception of the three M6 nuts securing the throttle bodies instead of the two M8 nuts on 2-bolt heads.

### 5.1. Preparation

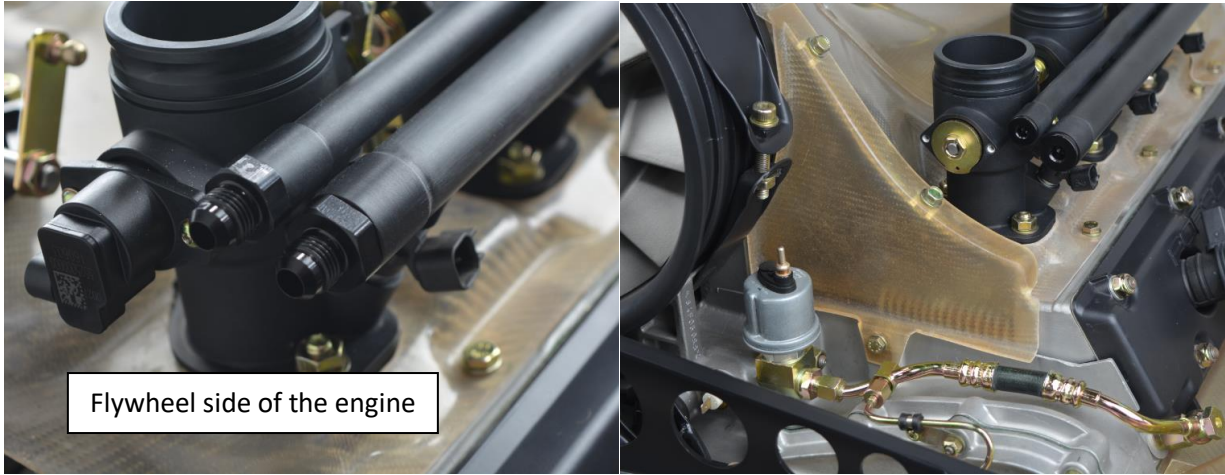
- The engine should be bare of any intake parts, including the oil breather cover and factory throttle cable actuator (where applicable), before beginning install.



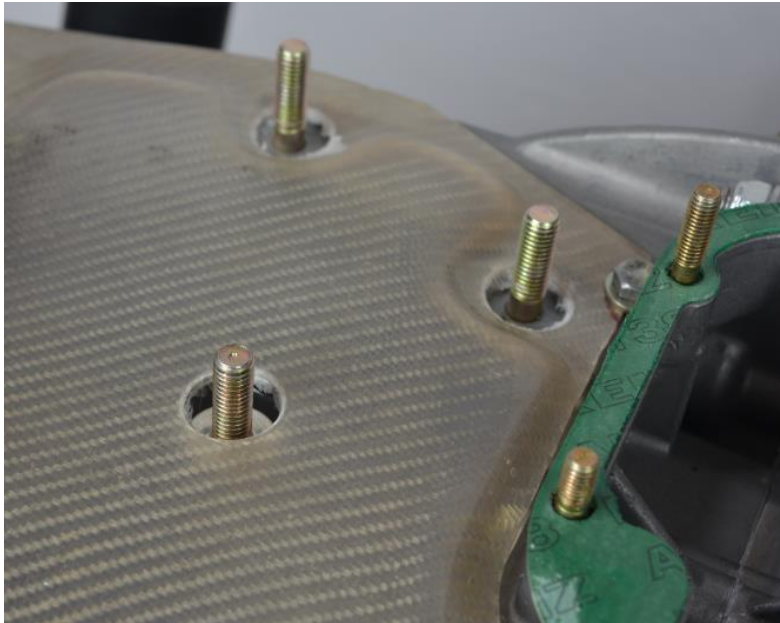
- Install the gaskets and thermal spacers - one gasket directly on the head, thermal spacer, then one final gasket.



- Install the throttle body assemblies onto the engine. The throttle body with the throttle position sensor is cylinder #3. The AN Hex Plugs should be nearest to the fan.



- **On early chassis (pre-964)** prepare the three (3) studs for the throttle cable actuator. In some cases the fan shroud will require slight enlargement to fit the part. Use the provided machined aluminum spacer for the taller stud as necessary (earlier engine cases don't require the spacer).



Install the four (4) studs for the oil breather cover at this time as well. The larger studs go towards the flywheel side of the engine, shown above.

- Install the throttle cable actuator(early chassis pre-964), oil breather cover/rocker assembly, and vacuum reservoir.



- On 964+ Chassis using a throttle cable, use the provided adapters to convert the cable to a mechanical rocker.
  - Remove the inverted ball joint on the Rasant rocker linkage.
  - Install the ball and nut from the provided ball joint adapter kit.

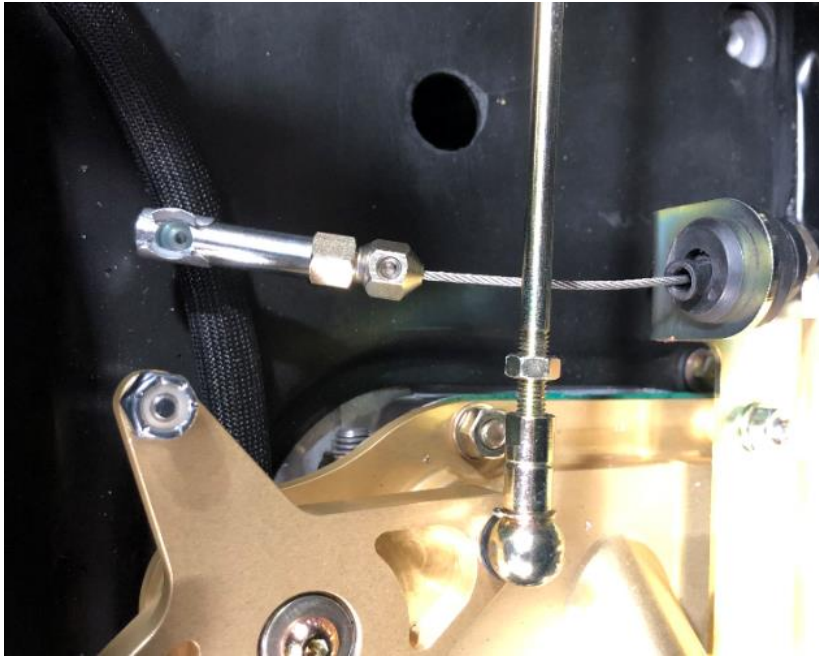


- Cut the end of the factory throttle cable off.





- Install the provided cable to ball-stud adapter. It's important to evaluate length of the cable when tightening the locking allen key. The ball socket of the adapter and the ball on the rocker linkage should be aligned.



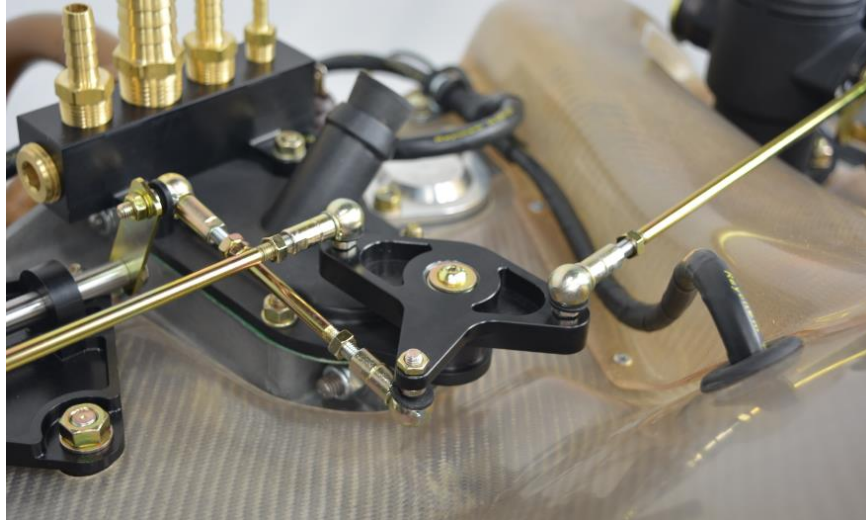
- Install the L-shaped bracket that retains the throttle cable.



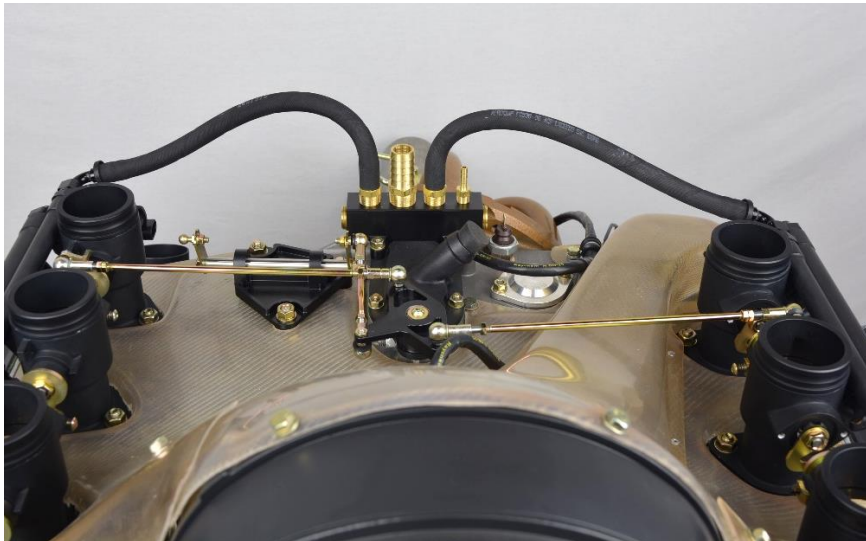
- Clip the adapter onto the rocker.

- Install the three (3) linkage shafts (only 2 on 964+ setups). The two longer shafts connect the ITB's to the throttle rocker, the shorter shaft connects the throttle rocker to the throttle cable actuator.

The end of each shaft that has a single nut is left handed thread and goes into the throttle rocker, shown below. Approximate adjustments are OK for now.



- Cut the 3/8" push on hose to appropriate lengths. We recommend 12" for the left side and 12.5" for the right. Install the hose onto the 90-degree hose end – do this before installing on the engine. Fix the 90-degree fitting in a vise and push the hose onto the hose end. Next install onto the barb fitting and finally onto the idle air rails.

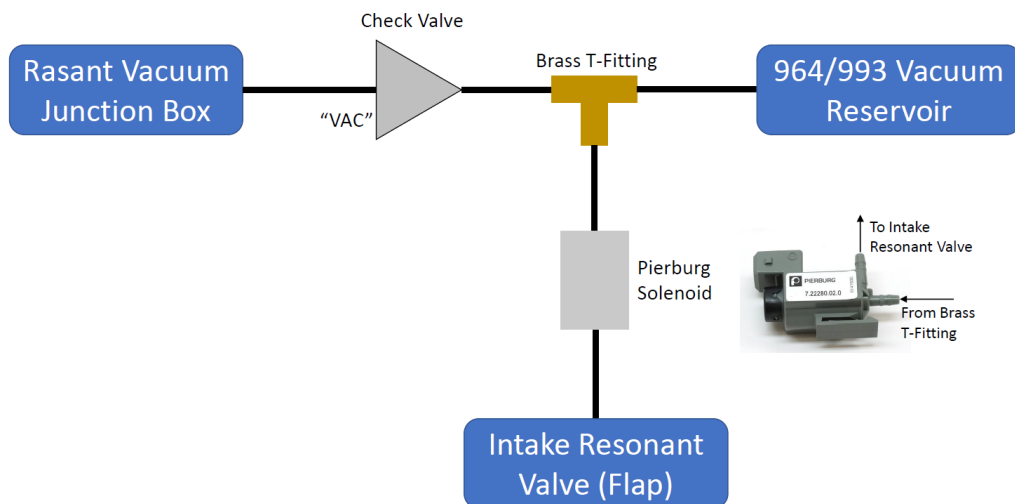




- Install the idle air control valve and 3/4" silicone hose onto the vacuum reservoir. Optional K&N filter 62-1560 may be used.

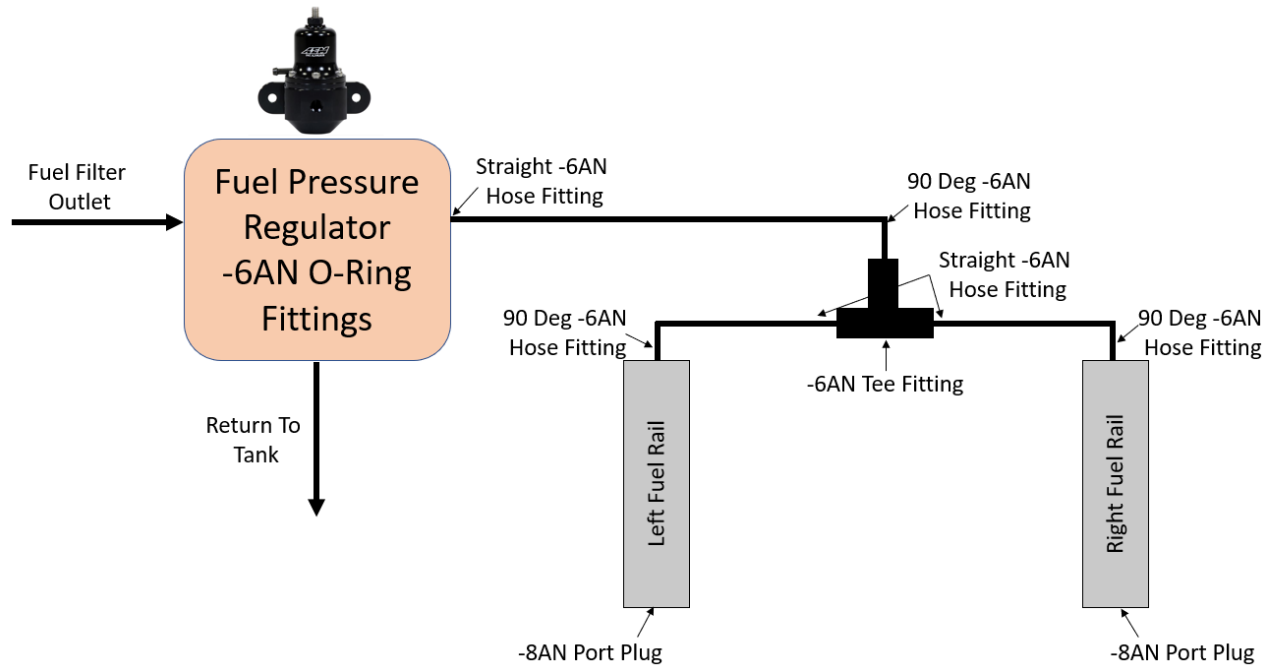


- Cut and route the 4mm silicone hose for using the resonance valve with a plenum according to the diagram below (not required for trumpets).



## 5.2. Fuel System Install

We prefer using a “dead-head” style fuel system on our ITB installs. The system can also use a “flow-through” routing method if preferred. See our engine management system installation for details on that style.



## 5.3. Electrical Connections

Verify the electronics are connected. Details included in “Technical Specifications” below.

- Idle air control valve (IACV)
- Intake valve solenoid – where applicable
- Fuel injectors
- Throttle position sensor

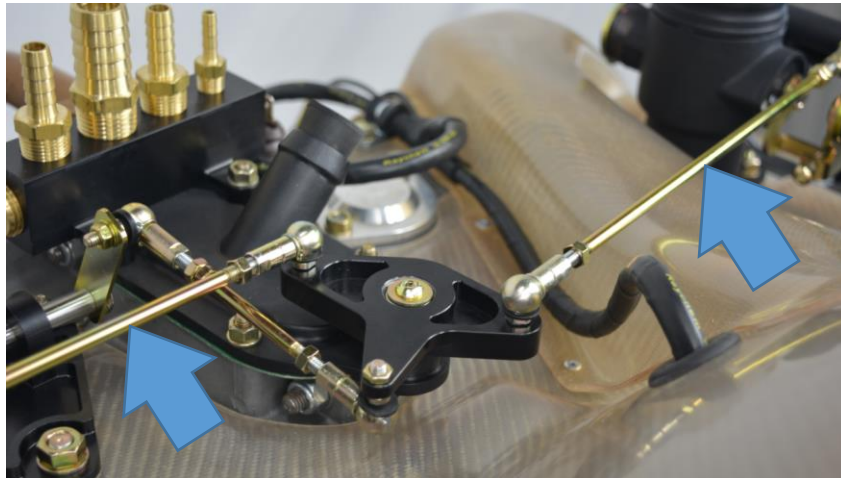
## 5.4. First Start & Syncing

Congratulations, you're ready to start your engine! Before proceeding, verify your fuel system is sealed properly by priming the fuel pump and checking for leaks.

When syncing our system with idle air control, it's important to know a few details compared to a traditional throttle body system:

- Syncing should occur at 2,000 RPM. Air flow at idle is likely unreadable through traditional syncrometers due to the idle air control valve supplying air to the engine
- The throttle stop screw on cylinders 2 and 5 should be just touching the bracket to prevent the plate from sticking when closed – it does not dictate the idle speed. This is done via ECU control through the idle air control valve.

Syncing should begin with adjusting the two longer linkage shafts to get cylinders #2 and #5 close in air flow. Again, checking at around 2,000 RPM. It does not need to be precise at this point. When they are close, hand tighten the left-hand nut against the throttle rocker to keep the linkage shaft from moving.



Now that the banks are relatively close, use the button head screws on each throttle body linkage to sync cylinders 1, 2, and 3. Then proceed to 4, 5 and 6.

Once each bank is dialed in, go back to fine tune the long linkage shafts to get the left and right banks equal. The small linkage shaft between the throttle rocker and throttle input shaft can be adjusted as necessary. It should be close to the vacuum reservoir at wide open throttle (not touching though).

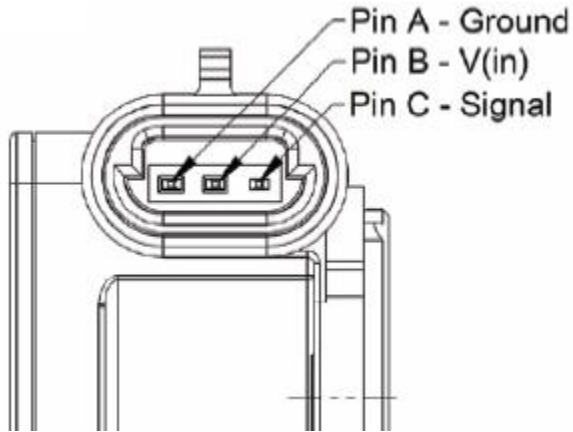
Finally, tighten all fasteners on the linkage shafts to their ball joints.

## 5.5. Technical Specifications

### Throttle position sensor:

Connector: 12162182

Terminals: 12124076



### Solenoid & IACV:

Connector: 827551-3

Terminals: 964284-2

Pinout: 1 – Switched 12V

2 – ECU low side drive

### Fuel Injector Form Factor:

Length - 34mm

Top O-Ring - 14mm

Bottom O-Ring - 14mm