

## CHRYSLER 3.6 PENTASTAR 2012-2015 COOLING SYSTEMS

### SUMMARY:

It has come to our attention at Sprintex, that Chrysler vehicles equipped with the Pentastar 3.6 V6 engine require special procedures to satisfactorily fill and bleed the engine cooling system.

For proper operation of the vehicle, and to achieve the expected power uplift and acceptable driveability with Sprintex Tuning, it is essential that the engine cooling system be properly filled and bled.

Chrysler maintenance instruction recommends a 20 point procedure to properly fill and bleed the cooling system in these vehicles. **This includes use of a vacuum bleeder to fill the system.**

### ATTENTION!!

**It is important to use the correct coolant specified for the vehicle.** Please note that the specification changes from year to year for Chrysler, Jeep and Dodge vehicles.

In the event that a vacuum bleeder is not available, it is possible to successfully fill and bleed the system, but this is time consuming and must be completed.

#### Step 1:

Upon initially filling the radiator with coolant, it will be necessary to loosen the bleed valve located on top of the thermostat housing. When the air bubbles stop, close the valve and complete the fill process.



#### Step 2:

Upon starting the engine for the first time, the heater must be set to the highest temp setting and the fan turned on high. After the engine has run for five minutes or so, the radiator fan will come on and fan speed will slowly increase until it reaches full speed. At this point it can be noted that the heater still blows cold, the top hose and radiator may also still be cold. This is because the engine block has reached high temp and the fan is ECU controlled.





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**Step 3:**

Run the engine with the radiator cap installed, so that the system builds pressure. Holding the engine at 3000rpm for 2-3 minutes may help, or a short drive (less than a mile) with the heater still set to full heat may help move the air to the radiator so it can be purged.

At this point it is likely the coolant will be boiling in the engine block. The radiator may still be cold.

**Step 4:**

**WARNING**

We advise using extreme caution to avoid scalding and recommend that this step is only undertaken by a technically competent person.

Appropriate Personal Protective Equipment is recommended to be worn at all times during this procedure.

As the coolant will be boiling in the engine block, hot coolant may spray out under high pressure. Cover the radiator cap with a shop towel and release the pressure by loosening the cap slowly.

**Step 5:**

After releasing the pressure, refill the radiator and repeat the above steps 1 - 4 until the heater blows hot and stays hot and the radiator is hot. Ensure there is sufficient coolant in the overflow reservoir, so that the system can draw coolant as necessary.

**Step 6:**

Test drive the car with the heater set to full heat. If the temperature gauge reads above half way during acceleration or highway cruising, there is air in the system and insufficient coolant.

This will cause poor performance, poor shifting with auto transmission, poor fuel economy and possible engine damage.

**It is important to get this right.**

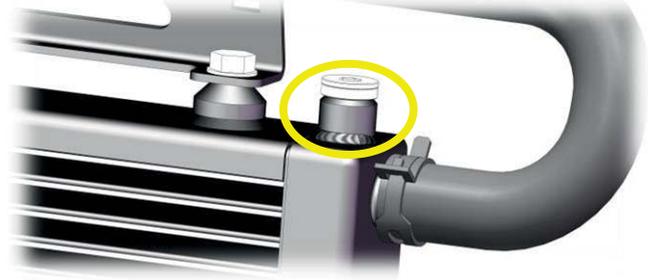
**INTERCOOLER SYSTEM**

Similarly, the intercooler must be properly bled to achieve the best performance and fuel economy.

As with the engine cooling system, a vacuum bleeder is the most effective way to fill the intercooler.

**Step 7:**

Ensure that the bleed plug is removed from the top of the intercooler radiator whilst filling the system. Allow any air and bubbles to be expelled before installing the plug.



**Step 8:**

Leave the plug loose while adding more coolant, until coolant with no bubbles escapes through the threads of the plug. Then tighten the plug.

**Step 9:**

A short section of 5/8" heater hose will push neatly into the intercooler filler, allowing a small funnel to be placed in the top of the hose. This will provide some 'head' to assist in bleeding the system.



**Step 10:**

Maintain coolant in the funnel and work the intercooler hoses (squeeze manually) to help the air escape through the coolant in the funnel.

**Step 11:**

Leaving the funnel attached with coolant in while idling the engine for 10 minutes or so will also expel more small air bubbles. The pump only runs for a few seconds when the key is turned on but the engine has not been started, so idling is more effective.

- Careful attention to the above will ensure the engine cooling system and the intercooler system are both fully bled and provide the best results from the Sprintex supercharger installation.
- Failure to ensure the above will result in poor performance and may cause engine damage and / or coolant leaks.
- Re-check both the engine radiator and the intercooler system for coolant level after 20 to 40 miles of driving and top up as necessary.



**TECHNICAL  
BULLETIN- 0002**  
DATE: 15-DEC-2015

## **CUSTOM TUNE INSTALLATION INSTRUCTIONS JEEP- JK (3.8L) NON-INTERCOOLED / INTERCOOLED SUPERCHARGER SYSTEM**

### **SUMMARY:**

In conjunction with Diablosport, Sprintex is continually seeking to ensure you have the best tuning device and tunes available for your vehicle. We wish to ensure that the handheld tuner included is loaded with up-to-date user menus and tunes, and that it fully supports your vehicle's stock calibration. The preliminary steps for your tuner device will help save installation time.

Please read these instructions fully, prior to installing the Sprintex supercharger system.

Sprintex supercharger system for the Jeep- JK (3.8L) requires a custom tune file which is vehicle specific and optimised for the application.

Approx. Turnaround time for receiving the custom tune from Sprintex is 48 hours.

**Installing custom tune file for your vehicle involves 4 phases which are described in detail below.**

### **Phase-1:**

Check for updates and update the firmware (if required) for the Diablo inTune handheld device.

### **Phase-2:**

Retrieve a backup copy of the vehicle's OEM tune and a last written tune file from the stock vehicle.

### **Phase-3:**

Forward the backup copy of vehicle's OEM tune and a last written tune file to the Sprintex sales department / technical support.

### **Phase-4:**

Receive the custom tune file from Sprintex and install on to the vehicle.



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**General notes prior to installation of Sprintex supercharger system:**

- Installing a Diablo tune before beginning installation of the supercharger system will ensure compatibility, with no last minute glitches and also provide Sprintex the time necessary to supply the custom tune.
- The initial process of “marrying” the inTune to the vehicle can take up to 30 minutes.
- Once the supercharger system has been installed, **the vehicle may not be driven without loading the Sprintex custom tune.**

However it can be driven with the Diablo tune prior to installing the Supercharger system, please consider these facts if you require the use of your vehicle prior to receiving your custom tune and installing your Supercharger system.

- Please be aware that when changes are made to the calibration, it may take some time to take complete effect.
- In order to achieve the best outcome from these changes Sprintex requires that you start with a full tank of the highest grade of fuel you can purchase in your area, also that you allow the engine to reach its normal running temperature, before driving in a manner that achieves full boosted conditions during the first few trips.
- Chrysler ECMS ‘learn’ various offsets constantly, based on changes in such things as fuel quality, weather and altitude as well as driving cycles and styles. During the first week it can be quite noticeable that each time you drive the car, it seems better than the last. After about 10-12 trips, the car can have a marked improvement due to the learning. This learning is known to continue for up to 50 drive cycles.

The time taken for most of the learning is largely dependent on the variety and repetition of different speed and load conditions seen in any one drive cycle.

- Loading a new calibration does not cancel out all of the adaptive learning, so the previously learned values will still be in play, to a reducing degree over the first few trips.
- It is recognised industry wide, that in order for any given drive cycle to be recognised as a valid learn cycle, the cycle begins with a cold start, which is defined by the coolant temperature being below 122°F (50°C) also with the coolant and air temperature sensors being within 10% of one another.



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**PHASE-1 (Update Intune device firmware):**

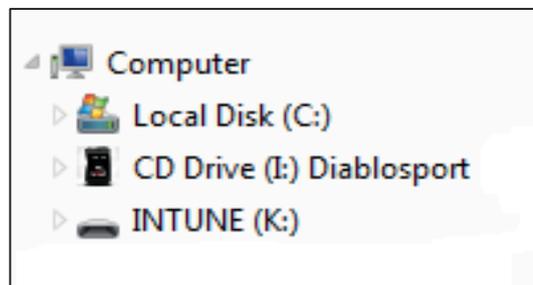
The inTune device automatically updates via the provided USB cable and internet connection on a Computer.

**NOTE: Since the inTune handheld device firmware updates regularly to ensure smooth function, we strongly recommend updating it before connecting it to your vehicle, and before you begin installation of your Sprintex supercharger system.**

**Step 1:**

1. Plug the inTune into your Windows Computer, and let it boot up, this will generate 2 x AutoPlay windows.
2. Run the file in the second AutoPlay window titled "Intune.exe".

"Intune.exe" can also be accessed by selecting **CD Drive Diablosport** under 'My computer'.





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3. Once you have selected "Intune.exe" you will be presented with a view as below, stating that the tuner is up to date.
4. Should an update be available the automated program will download the latest Diablo tunes, firmware, and calibration update files from Diablosport's servers.
5. Once the process is complete the inTune will reboot.
6. Disconnect inTune from the computer.

**NOTE:**

Please be patient as it can take 30 minutes or more for the process to complete. Do not let your Computer or laptop go to sleep mode as this will interrupt the program while it is running.





**PHASE-2 (Retrieve backup copy of the vehicle's OEM tune and a last written tune file):**

**Step 1:**

Plug the inTune's OBD-II cable into the vehicle's connection port.

**Step 2 (inTune Main Menu):**

Select "**Tune Vehicle**" from the main menu.



**Step 3:**

1. From the "Tune vehicle" menu select "**Write Vehicle**".
2. The device will either allow you to proceed to the Diablo tunes menu to select a tune and load it or it will ask to check for a calibration update. If 'Yes' proceed to Step 4.

**NOTE:**

The Calibration Update is a process to change the vehicle's stock calibration ID to one that is supported by the tool. If the device asks to "Check for a calibration update", please press the green check ✓ button, and return the inTune to your computer and repeat the preceding steps to let the software download the file it is requesting.





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### Step 4:

1. If prompted, turn the key to “ON” position without starting your engine.

**NOTE:**

The inTune will now attempt to recognize your vehicle by communicating with the ECU(s). Do not unplug the tool during this process.

2. PLEASE READ AND ACCEPT THE DISCLAIMER ON THE SCREEN.



### Step 5:

Once your vehicle has been identified, the inTune will display your vehicle’s VIN along with any available tunes.

Select “**87 OCTANE**” tune under the list of available tunes.

The tune selected will “glow” confirming the selection.

**NOTE:**

This is not the final tune for your vehicle with the supercharger system. Custom tune will be supplied at a later stage. Refer Phase-4 in this manual.



### Step 6:

1. A pop-up window will appear confirming the tune selection.
2. If additional information is available for the tune, it will be displayed here.

Confirm by pressing the green check  button.  
or

To go back and select another tune press the red  button.

3. The inTune will now save a copy of your vehicle's back up file.

**NOTE:**

Please be aware that creating original backup will only occur the first time you introduce the tuner to the vehicle.



### Step 7:

Once the vehicle's backup has been saved, a pop-up window will appear asking if you wish to modify the tune.

Touch the red **x** button to skip this step.

**WARNING:**  
Modifying the custom tunes is not authorised by Sprintex and will not be covered under warranty.

**NOTE:**  
This process can take few moments, please do not unplug the inTune or start your vehicle.

Diablo inTune device has created a backup copy of your OEM tune and a last written tune file.



### Step 8:

Disconnect inTune's OBD-II cable from the vehicle's connection port.





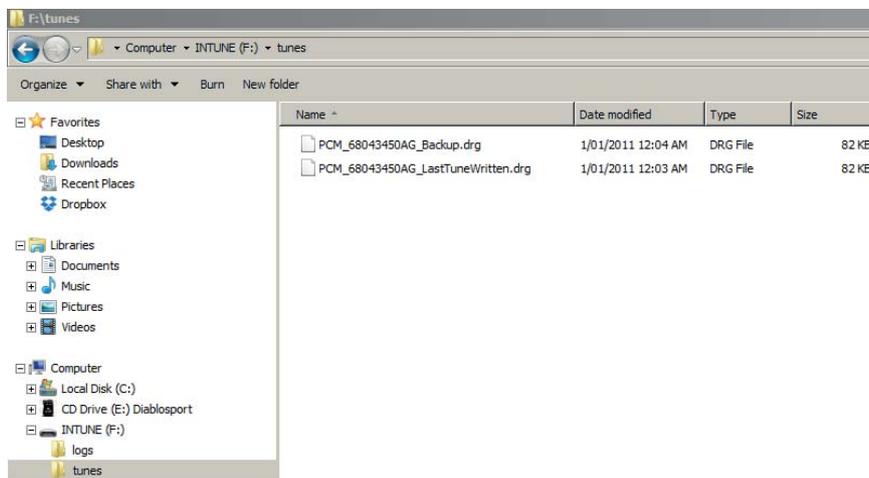
### PHASE-3 (Forward backup files to Sprintex):

#### Step 1:

1. Plug the InTune device into your Windows Computer.
2. When it boots up, run the open folder to view files option.

Alternately go to my computer and select the INTUNE drive. This will open your INTUNE folders.

3. Open the tunes folder and copy the backup and last written files to send to Sprintex for construction of your custom tune file. See picture below.



#### Step 2:

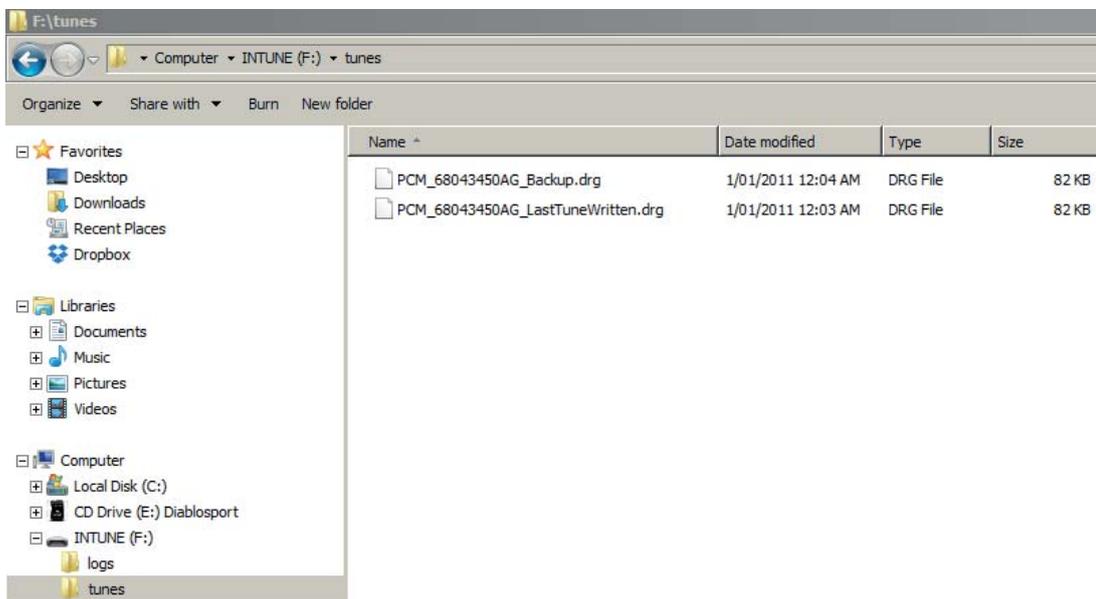
Forward these files with the checklist (See page-14) to the Sprintex sales department / technical support team to enable them to provide the latest custom tune available for your vehicle type and application.



## PHASE-4 (Loading Custom Tune file):

### Step 1:

1. When you receive the custom tune file from Sprintex, Open the inTune folder (inTune device).
2. Copy and paste the Sprintex custom tune file into this folder.



Once the inTune has written the file to in Tune memory, a splash screen on your tuner will be displayed informing that the tune has been successfully loaded to the unit. The inTune device will then automatically re-boot.

Custom tune will then become available for selection and loading next time you plug in to the vehicle.

#### **NOTE:**

The custom tune file supplied by Sprintex will only be visible within this folder for the short period of time it takes for the inTune to write this file to memory.

### Step 2:

Repeat steps 1 to 4 (PHASE-2) noting that Custom Tunes are now an available option.

### Step 3:

1. Select “**Diablo tuning**” under Tuning type.
2. Select “**Custom tune**” under Available Tunes.
3. Select your latest **tune** under “Custom tunes” containing all available custom tunes for your vehicle.

**NOTE:**

Most recent tune is always at the bottom of list.

The tune selected will “glow” confirming the selection.

**NOTE:**

If the inTune contains custom tunes for the vehicle the “custom tune” button will appear as the first tune (you may need to use the scroll bar if multiple tunes are available).



**Step 4:**

1. A pop-up window will appear confirming the tune selection.
2. If additional information is available for the tune, it will be displayed here.

Confirm by pressing the green check  button.  
OR  
To go back and select another tune press the red  button.

The inTune device will load the custom tune on to the vehicle.

**NOTE:**  
Please be patient as it can take 30 minutes or more for the process to complete.



**Step 5:**

Once the vehicle is loaded with custom tune, a pop-up window will appear asking if you wish to modify the tune.

Touch the red  button to skip this step.

**WARNING:**  
**Do not modify the custom tune as this tune file has been fully optimised for the vehicle's application by Sprintex.**

**Modifying the custom tunes is not authorised by Sprintex and will not be covered under warranty.**

**NOTE:**  
This process can take few moments, please do not unplug the inTune or start your vehicle.



### **Step 6:**

If the tune is successfully installed, disconnect the inTune device from the vehicle's connection port.



### **Troubleshooting:**

1. It is possible to return the vehicle back to stock factory setting (which is recommended prior to any dealership service /maintenance) by selecting Restore Vehicle located in the Tuning Menu.
2. If the inTune fails to install the custom tune to the vehicle for any reason it will enter into "Vehicle Recovery Mode".
3. Please see the Diablo inTune instructions on how to recover your vehicle's backup tune.



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DATE: 15-DEC-2015

**CHECKLIST FOR REQUESTING CUSTOM TUNE:**

<b>Date:</b>	
<b>Customer name:</b>	
<b>Customer Email:</b>	
<b>Vehicle Make:</b>	
<b>Vehicle Model:</b>	
<b>Vehicle Year:</b>	
<b>Supercharger serial number:</b>	
<b>Kit serial number:</b>	
<b>Intercooled / Non-Intercooled:</b>	
<b>Files attached:</b>	<b>Backup file</b>
	<b>Last tune file</b>
<b>OTHER MODIFICATIONS</b>	
<b>Tyre size</b>	
<b>Axle ratio</b>	
<b>After market exhaust details</b>	
<b>After market air box details</b>	
<b>Suspension lift with size</b>	



**TECHNICAL  
BULLETIN- 0003**  
DATE: 25-FEB-2016

## **MODIFIED TUNE INSTALLATION INSTRUCTIONS BRZ / FRS GT/GTS86 (2012-2015) NON-INTERCOOLED / INTERCOOLED SUPERCHARGER SYSTEM**

### **SUMMARY:**

Sprintex is continually seeking to ensure you have the best tuning device and tunes available for your vehicle. We wish to ensure that the handheld PnP tuner is loaded with up-to-date user menus and tunes, and that it fully supports your vehicle's stock calibration. The preliminary steps for your tuner device will help save installation time.

Please read these instructions fully, prior to installing the Sprintex supercharger system.

Sprintex supercharger system for the BRZ / FRS GT/GTS86 (2012-2015) requires a modified tune file which is vehicle specific and optimised for the application.

Approx. Turnaround time for receiving the modified tune from Sprintex is 48 hours.

### **General notes prior to installation of Sprintex supercharger system:**

- Installing the modified tune before beginning installation of the supercharger system will ensure compatibility, with no last minute glitches and also provide Sprintex the time necessary to supply the modified tune.
- Please be aware that when changes are made to the calibration, it may take some time to take complete effect.
- In order to achieve the best outcome from these changes Sprintex requires that you start with a full tank of the highest grade of fuel you can purchase in your area, also that you allow the engine to reach its normal running temperature, before driving in a manner that achieves full boosted conditions during the first few trips.
- Loading a new calibration does not cancel out all of the adaptive learning, so the previously learned values will still be in play, to a reducing degree over the first few trips.

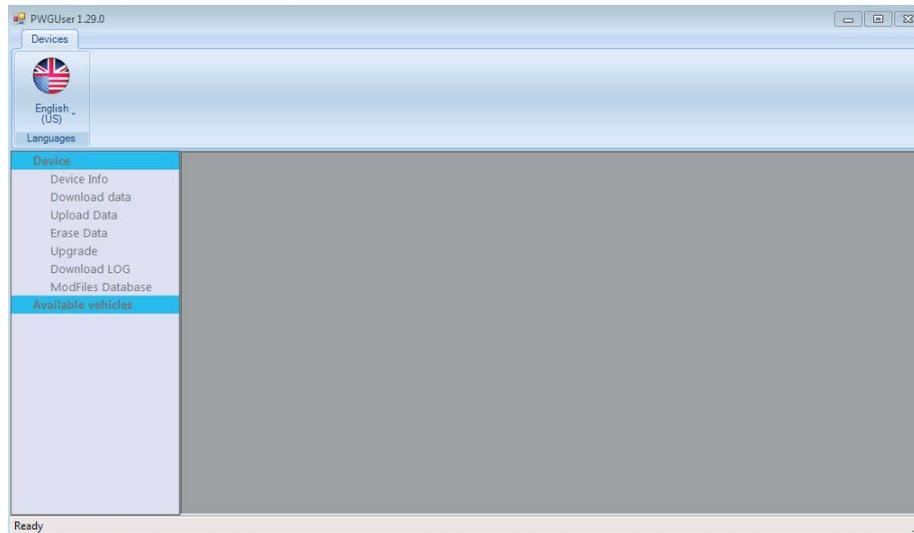


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BULLETIN- 0003**  
DATE: 25-FEB-2016

## **COMPLETE BEFORE SUPERCHARGER INSTALLATION!**

1. Email Sprintex to obtain the PWGuser file.  
This program will be used to upload and download tunes to and from the Sprintex PnP Tuner.

2. Once you have received the file, please install and a new program named PWGUser should appear on your desktop.

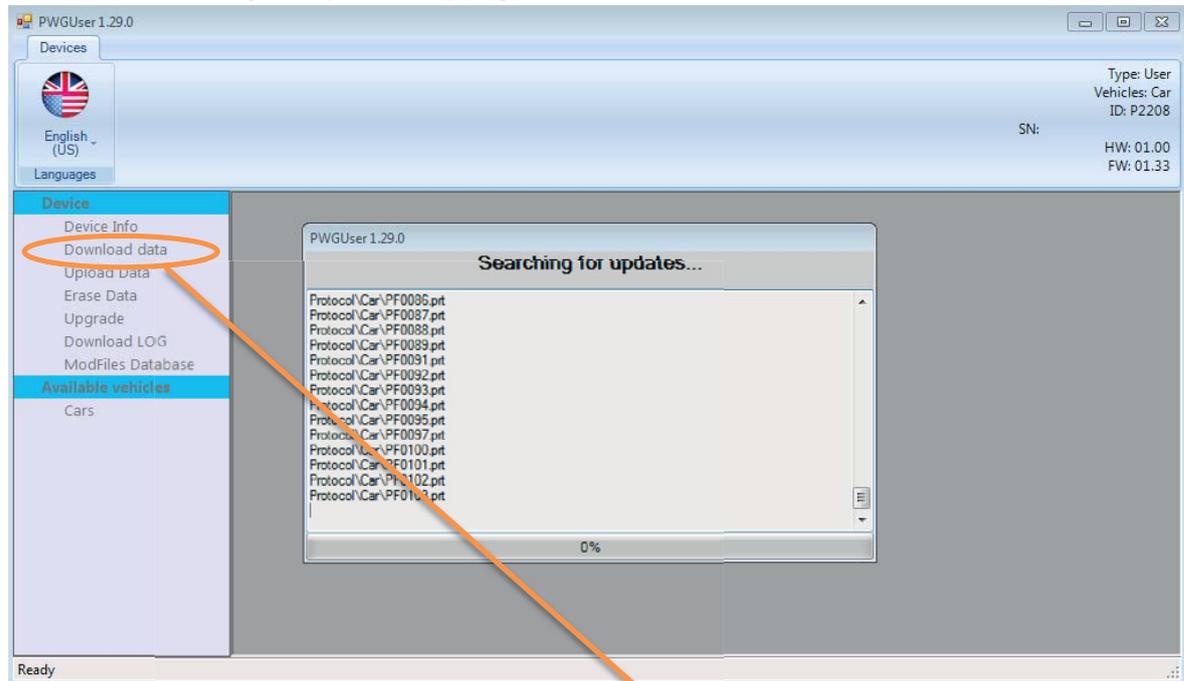


3. Proceed to your vehicle.
4. Locate the BRZ/FRS OBD-II port. This is under the dash and directly above the pedal assembly.
5. Plug the Sprintex OBD-II cable into the OBD-II port of the car.
6. Grab the opposite end of the OBD-II cable and plug into the Sprintex PnP Tuner.
7. Turn the key to "ON" position without starting your engine.
8. The Sprintex PnP Tuner will now attempt to recognize your vehicle by communicating with the ECM. Do not unplug the Tuner during this process.
9. Using your finger, tap the **TUNING** icon, follow directed steps and it will download the stock tune from the ECM.

10. Once the tuner has completed the download of the stock tune and the vehicle is OFF, proceed to your computer.
11. Open the PWGUser program that you installed earlier (Step 2).
12. Use the USB cable supplied to connect your Sprintex PnP Tuner to your computer.

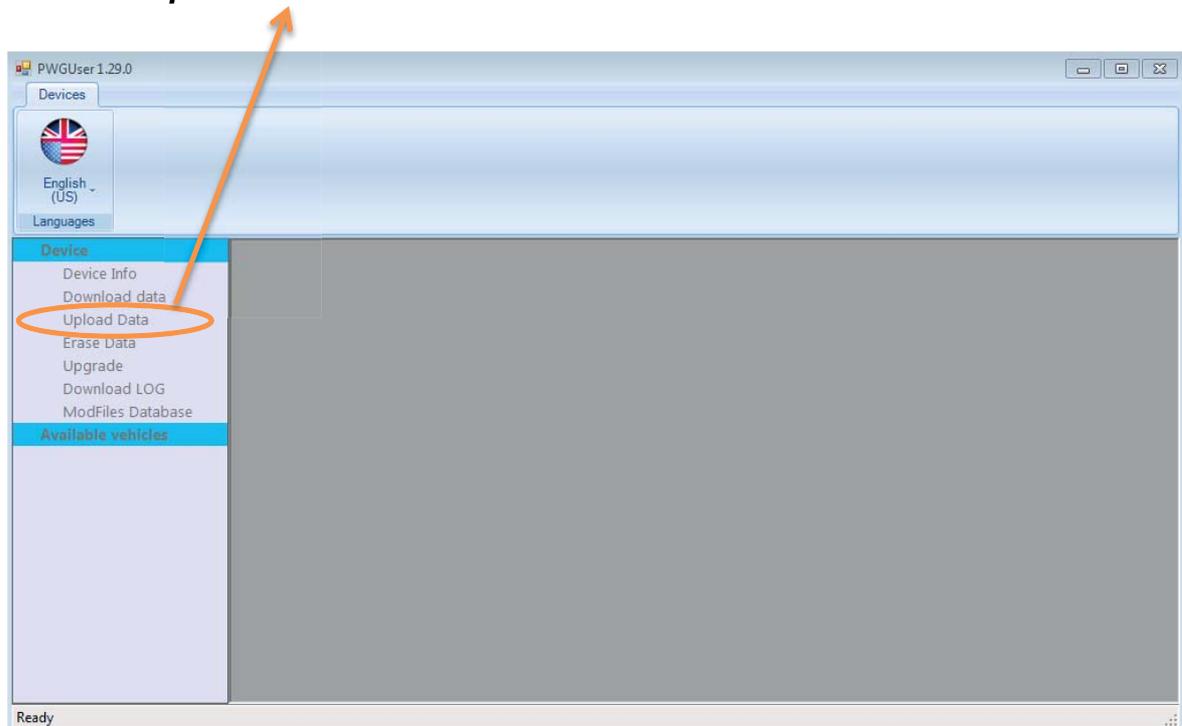


13. Now the program will auto update (PC needs to be connected to the internet), it will do this each time you open this program.



14. Once completed you will see a tab named **Download Data**. Click on this once.
15. Now hit the **Start button** near the center of the program to download your stock tune file.

16. A Pop-Up screen will open and ask you to choose a location to save the file, and name it. Save this file on your desktop with your first and last names (Ex: John Smith).
17. Next you will attach this stock tune file and send to the emails mentioned in Step 1.
18. Once we have sent you the new modified tune, copy this to your desktop.
19. Open the PWGUser Program and plug in your Sprintex PnP Tuner once again.
20. Select the **Upload Data tab** and then select Browse near the center of the window.



21. Select the new modified tune that you saved to your desktop.
22. A screen will pop up and ask you to confirm, select **YES**.
23. Once completed, exit the program and unplug your Sprintex PnP Tuner.
24. Return to your vehicle and plug the Sprintex PnP Tuner in.
25. Tap the **TUNING** icon, choose the new tune, confirm by clicking **YES**.
26. Tap **OK**, once KEY ON position has been made.



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27. Once writing has finished you will see a pop up that says **KEY OFF AND CONFIRM**. Turn the vehicle off and hit **OK** on the Sprintex PnP Tuner.
28. This will take you back to the main screen. Now click on **INFORMATION** and you will see **FILE IN ECU**. Under that title, the modified tune you wrote to the vehicle will be listed.

**YOU ARE DONE!! Congratulations! GO MAKE BOOST!**

**WARNING:**

**Do not modify the Sprintex modified tune as this tune file has been fully optimised for the vehicle's application.**

**Modifying the Sprintex modified tune is not authorised by Sprintex and will not be covered under warranty.**



**TECHNICAL  
BULLETIN- 0003**

**DATE: 25-FEB-2016**

**CHECKLIST FOR REQUESTING MODIFIED TUNE:**

<b>Date:</b>	
<b>Customer name:</b>	
<b>Customer Email:</b>	
<b>Vehicle Make:</b>	
<b>Vehicle Model:</b>	
<b>Vehicle Year:</b>	
<b>Supercharger serial number:</b>	
<b>Kit serial number:</b>	
<b>Intercooled / Non-Intercooled:</b>	
<b>Files attached:</b> <b>Stock Tune</b> <b>file</b>	
<b>OTHER MODIFICATIONS</b>	
<b>Tyre size</b>	
<b>Axle ratio</b>	
<b>After market exhaust details</b>	
<b>After market air box details</b>	
<b>Suspension modification details</b>	

### Toyota 86 / Subaru BRZ / Scion FR-S, Idler pulley alignment

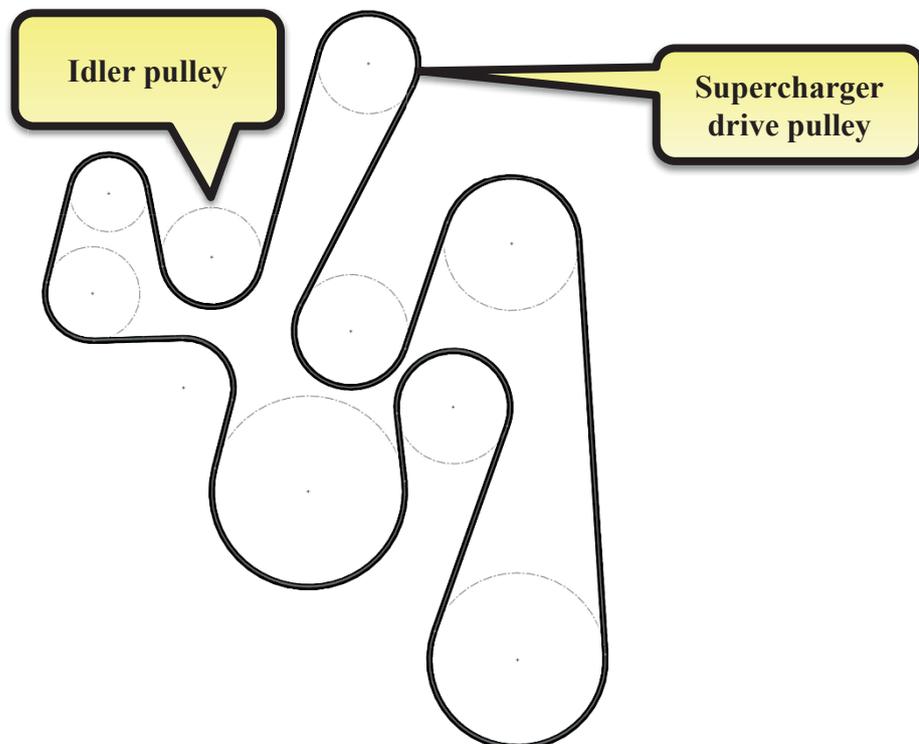
#### SUMMARY:

To prevent premature wearing of the supercharger drive belt, the idler pulley mount requires an additional bearing shim to be added to the idler pulley mount, prior to attaching the idler pulley to the idler pulley mount, to improve pulley alignment.

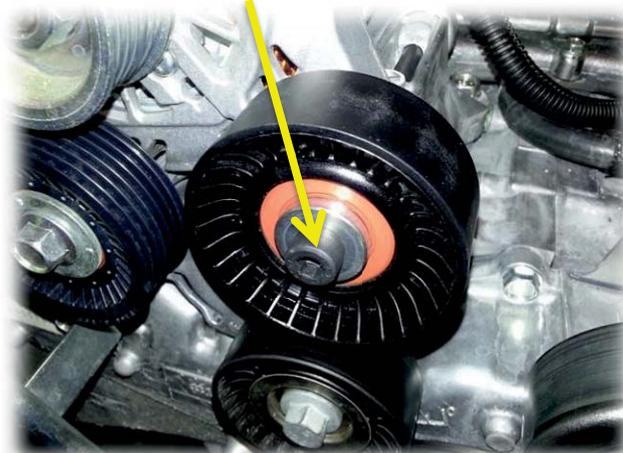
If the vehicle is already fitted with the supercharger system, the idler pulley will have to be removed via the steps stated below,

#### Step 1:

- Relieve the tension from the drive belt by releasing the dynamic tensioner. (see step 44 of the installation manual for instructions) (Installation manual No. 260\_5D1000 Rev. 1.1)
- With the tensioner relieved remove the belt from the supercharger drive pulley and idler pulley.



- Remove idler pulley and mount from the vehicle via the M8 x 170mm long bolt.
- Remove the idler pulley from the mount.



## Step 2:

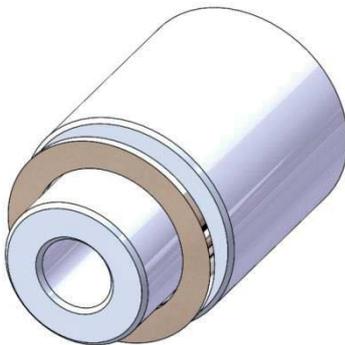
(Please note that the following steps replace step 26 of the installation manual 260\_5D1000 Rev. 1.1)

- For new installations, remove the bolt from the alternator mount.



- Attach the bearing shim to the idler pulley mount.
- **NOTE:** Systems equipped with an Ø80mm or larger supercharger drive pulley requires the Ø60mm idler pulley to be fitted with a bearing shim. Systems equipped with an Ø75mm or smaller supercharger drive pulley, require the Ø70mm idler pulley to be fitted. If the Ø70mm idler pulley is to be fitted, it requires two bearing shims to be installed on the pulley mount behind the bearing.

Ø60mm idler pulley, requires 1 bearing shim



Ø70mm idler pulley, requires 2 bearing shims



- Attach the supplied idler pulley mount, shim/s, idler pulley, M8 x 170 bolt and retaining washer to the alternator. Tighten to 23Nm.



## Step 3:

- Re-attach the supercharger drive belt as per Step 33 of the installation manual.



**TECHNICAL  
BULLETIN- 0005**  
DATE: 24-AUG-2017

## **JEEP- JK PENTASTAR (2012 - 2017) SUPERCHARGER SYSTEM IDLER AND SUPERCHARGER PULLEY ALIGNMENT INSTRUCTION**

**Procedure for adjusting and verifying the alignment of the idler pulleys and supercharger pulley for technicians who may not be familiar with checking drive belt alignment.**

### **SUMMARY:**

Sprintex has received reports from some customers that idler pulleys and drive belt wear prematurely on the Sprintex Jeep- JK Pentastar Supercharger system. This is due to not following the correct alignment procedures mentioned in the installation manual supplied. It is therefore recommended to check and correctly align the supercharger drive pulley and idler pulleys. This bulletin will assist the customers who have already installed the supercharger system on to the vehicle.

Please read these instructions fully, prior to adjusting the alignment of the pulleys.  
If the vehicle is already fitted with the supercharger system, then follow the instructions given below.

### **GENERAL NOTES:**

This bulletin should be read in conjunction with the latest version of the installation manual 263D1001.

#### **a. Idler pulleys**

Check idler pulley condition and bearing rotation for smooth operation prior to adjusting the alignment and if necessary, replace the idler pulleys.

#### **b. Supercharger drive belt**

Inspect for cuts, cracks, missing chunks and other signs of wear and if required replace the belt. The belt may also need to be replaced if it makes chirping or squeaking noises or if it's stretched.

### **Tools required:**

- Metric & inch spanners (wrenches) and sockets
- Metric Allen key set
- ½" Breaker bar
- Torque wrench
- 12" Steel rule (Metric)
- Vernier Caliper / Digital caliper / Steel rule (Metric)

### 1. Disconnect battery

- Disconnect both battery cables.
- Always disconnect the negative battery terminal first. This prevents possible shorting and potential battery damage.

### 2. Remove the clean air duct

- Disconnect IAT sensor wiring harness plug.
- Remove the clean air duct and place the items in a safe location.



### 3. Remove drive belt from supercharger pulley

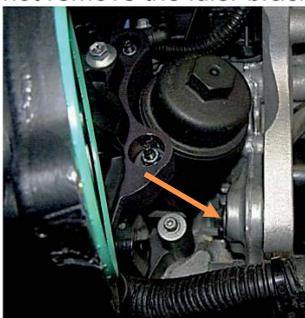
- Release torque of the four M6 SHCS for the supercharger pulley while the belt is still on. Ensure that the four M6 SHCS are hand tightened.
- Relieve the tension from the drive belt by releasing the dynamic belt tensioner and remove the drive belt from the supercharger pulley and idler pulleys.



### 4. Loosen idler bracket

- Loosen two M6 Hex head screws for the strap.
- Loosen two M6 Hex head screws at the front face of the idler bracket.
- Loosen one M6 Hex head screw at the rear of the idler bracket.

**Note:** Do not remove the idler bracket.

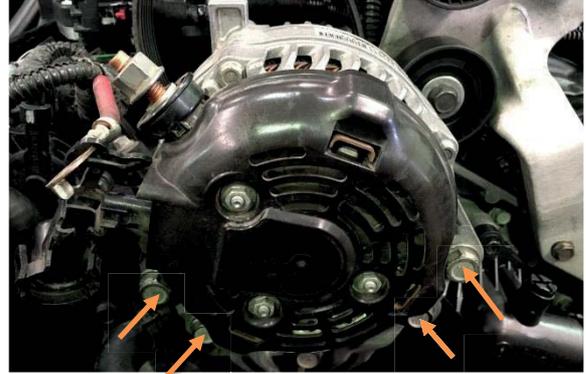


## 5. Remove alternator

- Disconnect electrical connector.
- Remove the positive battery cable and position aside the cable.



- Remove the alternator via the 2 Hex head screws either side of the alternator and the 2 Hex head screws in the lower section of the alternator mount bracket.



## 6. Remove idler pulley

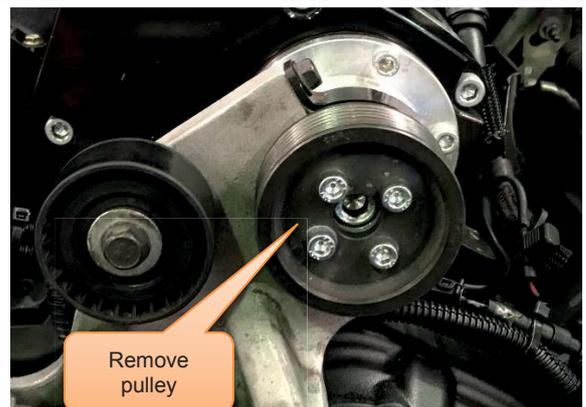
- Remove bottom idler pulley from the idler bracket.

**Note:** Check idler pulley condition and bearing rotation for smooth operation.



## 7. Remove supercharger pulley

- Loosen four M6 SHCS and remove supercharger pulley.

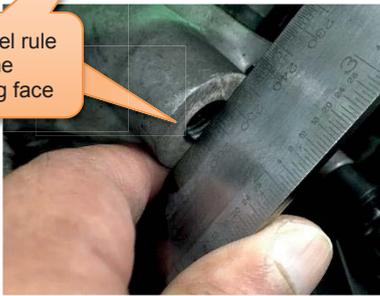


### 8. Check distance for supercharger pulley shim size

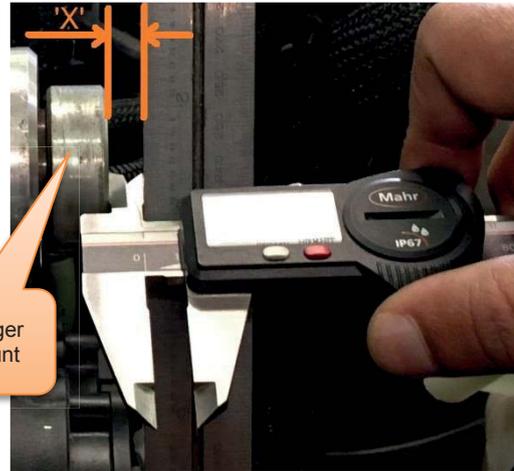
- Firmly hold and align a 12" steel rule against the alternator mounting boss. See picture.



Align steel rule to the mounting face



- Using a Vernier caliper / digital caliper or steel rule, check distance between the face of the alternator mounting boss and the supercharger pulley mount. See picture.



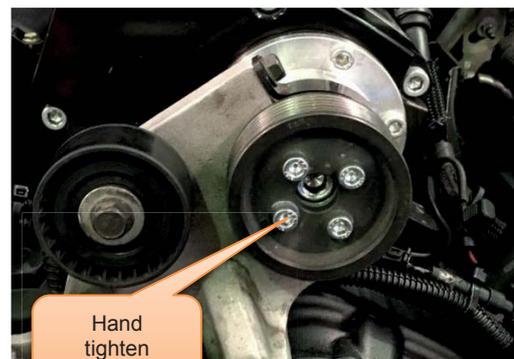
Supercharger pulley mount

### 9. Add shim to the supercharger pulley

- Refer table below and use appropriate shim for the supercharger pulley based on the distance measured in the previous step.

Distance 'X'	Shim thickness
>8mm	3mm
7mm	2mm
6mm	1mm

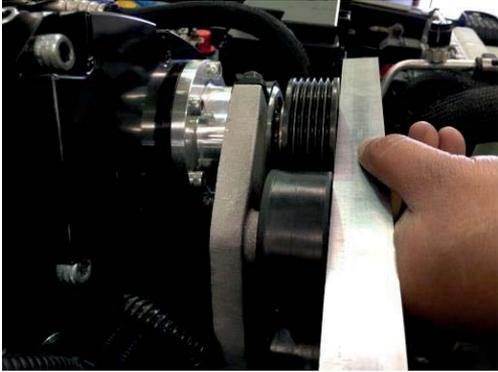
- Fit the supercharger pulley with appropriate shim and hand tighten four M6 SHCS.



Hand tighten screws (x4)

### 10. Align idler pulley to supercharger pulley

- Firmly hold the steel rule against the supercharger pulley and manually align the front face of top idler pulley to the front face of the supercharger pulley. See picture.

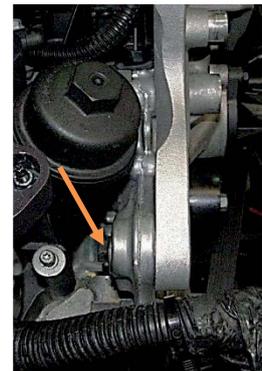


- Hand tighten all the fasteners of the idler bracket.
- Tighten the two M6 Hex head screws to 12Nm (9 lbf.ft) for the strap.



### 11. Tighten idler bracket

- Tighten all remaining fasteners of the idler bracket to 12Nm (9 lbf.ft).



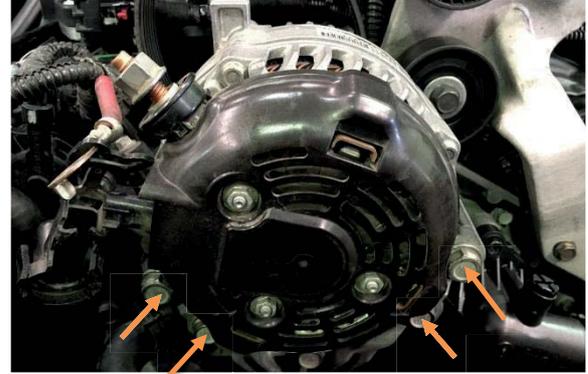
### 12. Re-fit idler pulley

Re-fit the previously removed bottom idler pulley. Tighten the M8 Hex head screw with washer to 23Nm (17 lbf.ft).



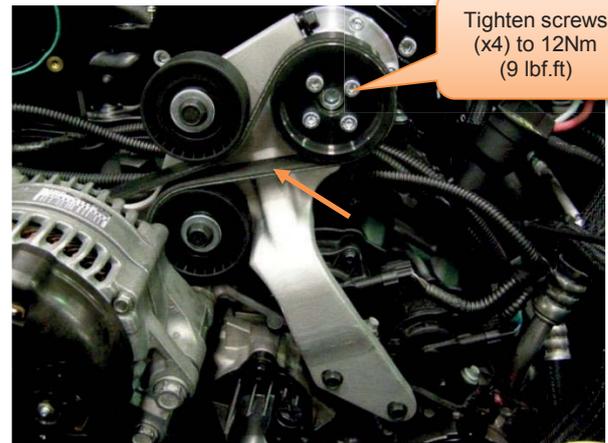
**13. Attach alternator**

- Tighten the 2 top screws to 54Nm (40 lbf.ft) and tighten the bottom 2 screws to 30Nm (22 lbf.ft).
- Attach the positive battery cable to the alternator and tighten nut to 13Nm (10 lbf.ft).
- Attach the electrical connector.



**14. Fit drive belt**

- Release the tension on the dynamic belt tensioner using a ½" breaker bar and install the drive belt over the remaining pulleys.
- Tighten four M6 SHCS for the supercharger pulley to 12Nm (9 lbf.ft).



**15. Install clean air duct**

- Attach the duct to the air box and throttle body and tighten the hose clamps.
- Connect the IAT sensor wiring harness plug.

